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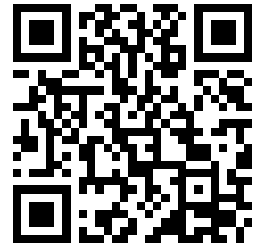
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The Croonian Lectures

ON

THE CHEMICAL PRODUCTS OF PATHOGENIC BACTERIA CONSIDERED WITH SPECIAL REFERENCE TO ENTERIC FEVER.

Delivered before the Royal College of Physicians of London on June 14th, 16th, 21st, and 23rd, 1898,

BY SIDNEY MARTIN, M.D. LOND., F.R.S.,

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LECTURE III.[1]

Delivered on June 21st.

PRODUCTION OF THE POISONS OF THE TYPHOID BACILLUS IN ARTIFICIAL-CULTURE MEDIA.

MR. PRESIDENT AND GENTLEMEN,—Two different kinds of media were employed in which to grow the bacillus. Ordinary peptone broth was used to determine the presence or not of secretory products of the bacillus and broth containing no peptone but mixed with some proteid solution—either blood serum or alkali albumin made from the spleen or extract of lymphatic gland—in order to determine the presence of digested products of the bacillus. In some cases liquid blood serum sterilised at 60° C. was used without the addition of broth. The virulent bacillus grows well in ordinary peptone broth but the growth in solutions containing much proteid is very much less exuberant. This is especially the case with sterile blood serum and most commonly the bacilli, after growing for a time, sink to the bottom in clumps and cease growing, although they still are alive and active. They grow much better in a solution containing a small proportion of alkali albumin, but still not nearly as well as they do in broth. The object of growing them in the presence of proteids was to test whether there was any digestive action of the bacillus. In one experiment two test tubes were filled about 3 in. deep with liquid blood serum, which was rendered semi-solid by heating at a temperature of from 65° to 70° C. The medium was translucent and one of the tubes was inoculated with the bacillus, the other being kept as a control. It was observed that the bacillus rapidly grew in the medium, spreading through all parts of it, but that no liquefaction indicative of digestion occurred during incubation, which lasted 102 days. When grown in a liquid medium, however, containing a small proportion of alkali albumin, and especially alkali albumin made from splenic pulp, the virulent bacillus has a slight but very insignificant digestive action. Thus in one experiment after the bacillus had grown 32 days in such a medium it was found that the solution gave a distinct biuret reaction with copper sulphate and potash and that the alkali albumin was beginning to be changed into albumoses. This digestive action, although slight, is explanatory of the albumoses found in the spleen in cases of typhoid fever.

Poison formed in proteid solutions.—If the non-virulent bacillus is grown in a solution containing digestible proteid instead of peptone a poison is formed which has an action like that of the poison formed in broth. Thus in one experiment the bacillus was grown in a 1 per cent. solution of serum alkali albumin in broth for 29 days, at the end of which time it was filtered, the filtrate concentrated, and the proteid was separated by alcohol. Some amount of digestion had taken place as the solution gave a biuret reaction. The solid product obtained was injected in two doses (about 0·3 gramme) on successive days into the marginal vein of the ear of a rabbit. There was a marked lowering of the temperature and a subsequent rise following each injection, but not to the average normal temperature of the animal for some days. Some bodily depression was observed on the first two days of the experiment and there was a loss of body weight, but there was no diarrhœa and the animal subsequently completely recovered. In another experiment the non-virulent bacillus was grown in a solution of alkali albumin made from the splenic pulp but without adding broth. One flask was filtered after 45 days and 10 c.c. of the filtrate were injected in two doses on successive days into the marginal vein. After the first injection there was only a very slight rise of temperature which, however, was more marked after the second injection. The animal showed no particular symptoms except a gradual loss of weight, which amounted to 235 grammes at death, on the twenty-eighth day of the experiment. The post-mortem examination revealed no naked eye change in any of the organs or tissues of the body. No cultivations were obtained from the heart's blood; the heart muscle showed no fatty degeneration and there was no degeneration of the peripheral nerves. Another culture was filtered after 59 days' incubation, and 12 c.c. were given in two doses on successive days also into the marginal vein. There was a well-marked rise of temperature after each injection, but no diarrhœa was produced and there was only a slight loss of weight which was recovered from. The animal died in 24 days and no cultivations were obtained from the heart's blood, liver, spleen, or peritoneal cavity. There was subcutaneous hæmorrhage in patches in front of the thighs and in the caudal region, and the peritoneum contained about 1 centimetre of clear fluid. There was no peritonitis and the organs showed no change to the naked eye. The results of growing the non-virulent bacillus in a proteid solution show that the poisons are of the same nature as that formed by the virulent bacillus in broth. The digestion which takes place in the proteid solution is extremely slight and the toxic body is thus mainly a secretion of the micro-organism.

Although the toxic products are developed in the presence of digestible proteids, yet they are most evident when the bacillus is grown in peptone broth. In one experiment the broth was inoculated with the typhoid bacillus obtained from the spleen in a case of enteric fever but before it had been made virulent by passage through animals. The growth was allowed to continue for 11 days, and the broth was filtered through a Chamberland filter. Two injections into the marginal vein were made on successive days. The first injection, of about 3 c.c., resulted in the lowering of the temperature and in the production of diarrhœa soon after the injection. The second injection—also of 3 c.c.—produced but little effect, and on the three subsequent days no appreciable change occurred in the animal. On the sixteenth day of the experiment the animal was found to have lost 170 grammes in weight, and to have some degree of fever, which, however, did not reappear. It lived for 24 days gradually losing weight until at death it had lost 235 grammes. At the post-mortem examination there was no obvious lesion found in any of the organs of the thorax or abdomen, the intestines were normal and cultures made from the heart's blood in the peritoneal cavity were sterile, showing that there was no bacterial infection. The heart-muscle, examined after staining with osmic acid, showed degeneration of most of the fibres, there being loss of striation with longitudinal fibrillation and fatty granules in the muscle cell. This experiment shows several points which will be brought out more fully later: (1) that a poisonous substance is present in the broth apart from the bacillus itself; (2) that this body produces a lowering of temperature and diarrhœa, as well as a loss of weight; and (3) that at death there was distinct degeneration of the cardiac muscle.

The broth culture from the same stock of bacillus was more poisonous and produced a more profound effect if the incubation lasted 25 days. A rabbit received a single dose of 6 c.c. of the broth filtrate after 25 days' growth. The initial effect of this injection into the venous system was a rise of temperature (the maximum being attained in two and a half hours) and a rapid fall, during which there was profuse diarrhœa, with collapse and laboured breathing. This period of depression lasted some hours and was succeeded on the next morning by a febrile rise which continued during the whole of the day. On the following day the temperature was somewhat irregular, but subsequently no great change in the temperature was noticed. The weight fell rapidly up to the fourth day of the experiment, when the animal had lost 120 grammes. Subsequently, however, it regained part of the weight, and at death, on the twenty-sixth day of experiment, the loss was only 35 grammes from the original weight. No naked-eye changes were observed on

[1] Lectures I. and II. were published in THE LANCET of June 18th and 25th, 1898, respectively.

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post-mortem examination and no cultures were obtained from the organs of the body. The heart-muscle showed slight signs of degeneration.

The more virulent the bacillus the more toxic becomes the broth. Thus, after growing the virulent bacillus for 11 days the micro-organism was killed by chloroform and the broth mixture centrifugalised, the clear broth being used for the injection. Five cubic centimetres were injected in two doses of 2 c.c. and 3 c.c. respectively on successive days. An initial depression of temperature followed by fever was observed after both injections, and the animal died in 12 days with no naked-eye change in the organs of the body, which gave no bacterial growth. There was a very well-marked degeneration of most of the muscle fibres of the heart. These results may be taken to illustrate the action of the clear broth without the bodies of the bacillus—i.e., of the chemical poison which is present in solution in the broth.

Action of broth with the bodies of the bacillus.—The toxic action of the bodies of the bacillus itself was tested by killing the bacillus with chloroform. When the culture was sterile the chloroform was removed *in vacuo* and the liquid used for injection. In one experiment a 13 days' old culture was used and 4 c.c. were injected into the marginal vein of the ear. There was a fall of temperature in two and a half hours, and this low temperature continued the whole of the first day of experiment and also on the second day. On the morning of the third day the mercury of the thermometer would not rise and the animal died. Soon after the injection there was slight diarrhœa. During the subnormal temperature the animal became increasingly weaker, the fur becoming ruffled, although there was no diarrhœa. The loss of weight in the two days of experiment was 180 grammes. There was no naked-eye change in any of the organs and the blood was sterile. This experiment may be taken as showing the profound effects following the injection of the poison. The great depression of temperature, however, observed in this experiment is not the only effect to be produced. In some of the experiments with a weaker poison no depression ensued, but a well-marked rise of temperature; thus 3 c.c. of a broth culture (seven days' growth) killed with chloroform were injected into the marginal vein of the ear of a rabbit. There was a considerable rise of temperature after the injection, which continued during the whole of the following day and the day after. On the fourth day the temperature partly regained the normal limit and continued afterwards normal. There was a loss of weight up to the seventh day after which the animal recovered. In this experiment no diarrhœa was produced and no symptom except that of fever and loss of weight. In two or three other experiments with the broth and the bodies of the bacillus these features were noted, but there was not infrequently an initial fall of temperature, succeeded by a prolonged rise, and diarrhœa for a longer or a shorter period was a fairly constant symptom. There is no doubt, then, that the retention of the dead bodies of the bacillus in the broth renders it more poisonous. The effect on different animals varies somewhat. In the experiment which was mentioned above 4 c.c. took two and a half days to kill. In another experiment 4 c.c. of the same stock caused death with lowering of the temperature in three and a half hours. There is also some individual peculiarity in the animals as regards their resistance against the poison.

The effect of heat.—The effect of high temperature on this poisonous liquid containing the bodies of the bacillus was tested in order to see whether the toxic substances were sensitive to heat or not. In one experiment the broth with the bodies of the bacillus was heated for ten minutes to 60° and 64°C., 4 c.c. were injected into the marginal vein, and death occurred, with lowering of temperature and diarrhœa, in two hours and twenty minutes. This death was more rapid than in the control experiment with the same amount of broth unheated. As marked was the effect of exposing the broth to a higher temperature before injection. 4 c.c. of a broth mixture heated at the boiling point of water for five minutes were injected into the marginal vein and death with profuse mucoid diarrhœa occurred in two and three-quarter hours. This experiment may be compared with a similar one previously mentioned in which the same amount of broth, but unheated, was injected into another animal which lived for two and a half days with great depression of temperature. It may be said, therefore, that this degree of heat not only does not destroy the poison which is in the bodies of the bacillus, but actually brings out its effects. It may be that the heat breaks up the bodies and liberates the poison inside, and after heating some of the bodies of the bacillus may be observed disintegrated under the microscope. There is no evidence from the experiments that there are two kinds of poison, one extra-cellular or secreted by the bacillus and one intra-cellular, with different actions. The toxic properties of the broth from which the bacilli are separated by means of the Chamberland filter are practically the same, although not so pronounced as those observed when the broth contains the bodies of the bacillus as well. This is not an unimportant point, inasmuch as some have made a distinction between the intra-cellular and the extra-cellular poisons of pathogenic micro-organisms. No effect is more marked or more constant in the action of the poison than the production of diarrhœa which with the more active poison is very profuse, lasting a varying time, sometimes hours, sometimes a day, and consists in the passage of liquid motions, with mucus occasionally, but no blood at any time. On a post-mortem examination of an animal dying from this diarrhœa characteristic appearances are almost invariably found. The stomach may be full of undigested food, the cæcum and colon contain liquid fæcal matter, but the greatest change is in the small intestine which is full of a slightly turbid, sticky fluid, containing but little food and no bile. This liquid is simply a solution of mucin, which may be separated by precipitation with acetic acid. The mucous membrane is a little soft on the surface and there is a very large increase in the number of goblet cells. The Peyer's patches are not apparently altered. The changes described by Sanarelli in the Peyer's patches of the intestines have not been observed by me. The loss of weight is also a constant symptom, and the more virulent the poison the more marked it is seen. It is also in these cases progressive. With a smaller dose of the poison, however, the initial loss of weight is regained. No naked-eye change is produced by the poison in the organs of the body. The effect of the poison, when death of the animal is slow, in producing degeneration of the cell fibre of the heart is well marked. The heart was never found in a state of advanced fatty degeneration, but rather in the earlier stage, in which there is loss of transverse striation of the fibre, with the appearances of longitudinal fibrillation and the presence of numerous granules in the fibre, staining more or less black with osmic acid.

BACILLUS ENTERITIDIS (GÄRTNER).

The experiments with this micro-organism were conducted in the same manner as those with the typhoid bacillus. A culture was kindly sent to me by Dr. Durham which gave the reactions previously described as characteristic of the bacillus. It differs from the typhoid bacillus in the fact that it causes gas formation in glucose-agar or glucose-gelatin, but like the typhoid bacillus it does not coagulate milk and it forms but little or no indol in broth. The original culture of the bacillus worked with was toxic, as 5 c.c. of a two days' old broth culture injected into the peritoneum of a guinea-pig killed the animal in less than twenty-four hours. The virulence of this bacillus was increased by passage through animals in a manner similar to that which has been described with regard to the typhoid bacillus—that is, some of the peritoneal exudation from the first animal which died being injected into the peritoneal cavity of a second guinea-pig, and from the second into a third and so on. The death of each animal occurred as a rule in less than twenty-four hours The dose was gradually lessened until a small loopful of an agar culture injected into the peritoneal cavity killed the animal. In the series of experiments the intra-peritoneal injections caused the exudation of a highly albuminous fluid containing numbers of bacilli. In the earlier cases there was also an exudation of leucocytes; later on, however, these disappeared. Occasionally there were a few flakes of lymph on the surface of the peritoneum, but only at the early stage of the series of inoculations. At no time was there any exudation of blood. During the series cultivations were made from the peritoneal fluid of each animal to test the purity of the growth, to see whether the bacillus kept its characteristics, and also to study the distribution of the micro-organism in the body. It was seen that the growth was always typical and pure, and that when the bacillus became virulent it was found always distributed throughout the organs of the body, being obtained from the heart's blood, the spleen, the liver, and the kidneys and peritoneal cavity in pure cultivation. In this

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respect the presence of the bacillus of Gärtner in the various organs of the body is more constant than that of the typhoid bacillus.

The peritoneal fluid was highly toxic. Thus in one experiment in which the bacilli were killed by means of chloroform and removed by subsequent centrifugalising, 3 c.c. of clear peritoneal fluid injected into the marginal vein of a rabbit weighing 470 grammes caused death in one and a half hours, the temperature rapidly falling in half an hour from 102° to 97·4°. The peritoneal fluid filtered through porcelain is not so toxic as the unfiltered fluid from which the bacilli have been removed by centrifugalising. This filtered peritoneal fluid was found to produce fever when injected into the marginal vein of the ear of the rabbit, but when given in two doses of 1·5 c.c. and 1 c.c. it did not cause the death of the animal nor any particular symptoms except a rise of body temperature.

Growth of the bacillus in broth.—The experiments performed in this way were precisely similar to those with the typhoid bacillus. The virulent Gärtner bacillus was grown in broth for 22 days and the culture was not filtered, but the bacillus was killed by chloroform. Experiments were performed with the clear broth after centrifugalising and with the turbid broth—that is, with the broth plus the bodies of the bacilli. Each animal received the same dose—viz., a single dose of 4 c.c. into the marginal vein. The result of the injection of the clear broth was a continued and marked depression of temperature during the day of experiment, the temperature next day again rising to normal. There was diarrhœa soon after the injection of the poison and there was a progressive loss of weight. A similar dose of the broth, plus the bodies of the bacilli, caused a more marked depression of temperature which lasted till the following morning and most of the following day. Here also there was diarrhœa and a progressive loss of weight. The effect of heat on the broth containing the bodies is seen in the two following experiments. Thus the same dose (4 cc. of the mixture) heated to 60° C. for ten minutes caused a depression of temperature which was very great and ended in death in four and a half hours. This animal also showed diarrhœa. A similar dose heated to 100° C. for ten minutes produced also a very great depression of temperature which lasted to some extent till the next day. There was well-marked diarrhœa and great loss of weight. It is thus seen that the characteristic action of the toxic products of the Gärtner bacillus is very like those of the typhoid bacillus. There is present in the broth from which the bacilli have been removed a poison which causes a great depression of temperature, and this poison is also present in the bodies of the bacillus and has an action similar to that of the poison obtained from the typhoid bacillus—viz., it produces diarrhœa and loss of weight. Like the poison of the typhoid bacillus, the virulence of a broth culture containing the bodies of the bacillus is increased by heating the solution at 60° C., so that, as seen in the experiments just quoted, whereas 4 c.c. of the unheated mixture did not cause death, when it was heated to 60° for ten minutes death occurred in 3½ hours with great lowering of the body temperature. The mixture heated to 100° C. for the same time gives a greater effect than the non-heated mixture, but does not produce death in the same day as when the mixture is heated to only 60° C. The effect of heat appears to be to break up the bodies of the bacillus so that the poison is liberated, making the liquid more toxic. When grown in a proteid solution containing alkali albumin or serum proteids Gärtner's bacillus causes some amount of digestion with the formation of albumoses. This is more marked than is the case with the typhoid bacillus, although the digestion is still far behind that which occurs in the case of the bacillus diphtheriæ and the anthrax bacillus. One result obtained is interesting inasmuch as the bacillus coli also produces it—viz., that when grown in Marmorek's fluid Gärtner's bacillus produces a partial precipitation of the proteid solution in the form of a gelatinous clot. In strong solutions containing serum this result, however, was not observed and it was not so constant as with the bacillus coli.

BACILLUS COLI COMMUNIS.

There is one important difference between this bacillus and the two other forms we have considered (the typhoid and Gärtner bacillus). This is the fact that it is one of the causes of putrefaction of proteids. It forms indol, for example, in proteid solutions; it is found in foul water, in soil, and it is a constant inhabitant of the intestines, being found in that region soon after birth. After death it sometimes penetrates the different abdominal organs and is one of the causes of the putrefaction of the body. These characteristics, therefore, mark it sharply off from the two other micro-organisms. There are, no doubt, many different forms of the bacillus coli which differ in minute particulars, some, for example, forming hardly any indol, others coagulating milk slowly. Without however, entering into the different forms which this bacillus may assume or into a discussion as to whether they are all modifications of the same form I may say that the bacillus I worked with was one which was obtained from the spleen in a case of typhoid fever and which no doubt came originally from the intestinal tract. The virulence of the bacillus coli as obtained from the intestines varies considerably and several observers have described an exaltation and an increase in the numbers of the bacillus in the course of cases of typhoid fever. The bacillus I obtained from the spleen was more virulent than the stock cultures of the bacillus which I had in the laboratory and which were obtained from different sources. Its virulence was readily increased, much more readily than that of the typhoid bacillus or of Gärtner's bacillus. 6 c.c. of a fourteen days' old broth culture injected into the peritoneal cavity of a large guinea-pig caused death in under twenty-four hours; 4 c.c. of a broth culture of the peritoneal exudation of the first guinea-pig was injected into the peritoneal cavity of a second and killed the animal in under twenty-four hours. In the succeeding experiments 2 c.c. of the peritoneal fluid were found to kill; 0·5 c.c. was fatal at the fifth inoculation and at the sixth it was found that 0·25 c.c. and 0·1 c.c. killed the animals in four hours. At this stage the virulence of the bacillus was considered sufficiently exalted for experiments to be performed. Throughout, the cultures obtained from the peritoneal fluid were pure and always gave the typical reactions of the bacillus coli. The results of the injection of the bacillus into the peritoneal cavity differed markedly from those obtained from the injection of the other two bacilli, mainly in the fact that the effusion was blood-stained, more so at first than later, when the bacillus became more virulent. The blood-staining was not due to the exudation of corpuscles but to the colouring matter of the blood being dissolved in the liquid, which was highly albuminous. Numerous petechiæ were also observed, both beneath the peritoneum and the mucous membrane of the ileo-cæcal region and cæcum. No peritonitis was observed at any time. The toxic products of the bacillus were investigated by growing it in broth and in proteid solutions.

Growth of the bacillus in broth.—An early experiment was performed with the bacillus which was not extremely virulent and which was grown in broth for twenty-three days. The broth was then filtered through a Chamberland filter and 8 c.c. of the sterile filtrate were injected in two doses on successive days into the marginal vein of the ear of a rabbit weighing 1090 grammes. The initial effect of the first injection was a fall of temperature in about two hours which lasted over four hours, the total fall of temperature being 5° F. The result of the second injection on the following day was practically *nil*, but on the third day the temperature was subnormal. It then began to rise gradually and there was some degree of fever on the fifth, sixth, and eighth days of experiment, which was markedly increased on the ninth day. On the tenth day there was a fall and a subsequent rise on the eleventh day, after which the temperature of the animal became practically normal. The animal steadily lost weight during the first two days of experiment—100 grammes the first day and 38 grammes the second day, the weight remaining stationary on the third, fourth, and fifth days of experiment, after which it slowly regained its normal. The animal exhibited no other symptom; there was no diarrhœa and complete recovery took place. This result shows that the poisonous products which are formed in the broth by the bacillus coli have the initial effect of reducing the temperature of the body as well as weight and that subsequently there is a reactionary rise of temperature, which remains at a febrile point for several days.

Other experiments were done with the broth cultures in the same way as those done with the typhoid bacillus and with Gärtner's bacillus—viz., after a period of 18 days' incubation the bacilli were killed with chloroform and the injection of the clear broth obtained by centrifugalising and

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of the broth with the bodies of the bacilli was performed in different animals. In the first experiment 4 c.c. of clear broth were injected into the marginal vein of a rabbit weighing 720 grammes. In 2½ hours the temperature had fallen 2° and there was slight diarrhœa. In 4½ hours there was a further fall of 2·5° and the temperature altogether remained subnormal for over five hours. On the next day it had regained its normal limit, though the animal continued to lose weight. In the second animal a similar dose of 4 c.c. of the broth containing the bodies of the bacillus were injected into the marginal vein. The temperature fell about 1·5° in two and a half hours, after which it began to rise slightly, and during the whole of the next day the temperature of the animal was febrile. In one and a half hours after the injection there was slight diarrhœa and the animal lost 70 grammes in twenty-four hours. The temperature remained at about the normal level till the fifth day. On the seventh day it had fallen and there was slight diarrhœa. On the eighth day there was a fall to 98° F. and on the ninth day when death occurred the temperature was below 95°. The total loss of weight was 210 grammes. These results were compared with the results of injecting a similar dose of the same stock of broth containing the bodies of the bacillus but which had been subjected to heat. In the first of these experiments the mixture of broth and bodies was heated at 60° C. for ten minutes. The result of the injection was the cause in a very short time of a febrile rise of temperature which lasted the whole of the day and was present in the morning of the following day, the temperature then gradually falling to the normal. In one and a quarter hours after the injection there was profuse diarrhœa and the animal lost somewhat in weight during the first two days of experiment. In another experiment a similar dose was given after being heated to the boiling point of water for ten minutes. In less than an hour after the injection profuse diarrhœa was observed and the temperature rapidly fell, the total fall being 7° F. The animal died in six hours.

It is seen from these experiments that the clear broth—that is, the broth not containing the bodies of the bacillus—produces a fall of temperature and loss of weight with some diarrhœa and that a similar dose of the broth with the bodies of the bacillus causes some lowering of temperature and a reactionary febrile rise and that the effect of heating the mixture of broth with the bodies of the bacillus is to increase the poisonous activity of the solution, so that when the mixture was heated to 100° C. it proved fatal to the animal in six hours with great lowering of temperature. The explanation of this appears to be that the action of the heat causes the discharge of the poison which is present in the bodies of the bacillus. 1. The type of action of the poison of the bacillus coli appears to be the same as that of the other two bacilli investigated, in some cases producing a great fall of temperature and in other cases a rise of temperature. 2. Heating the dead bodies of the bacillus suspended in the broth culture fluid increases the toxicity of the solution, as in the case of the two other bacilli, but in the case of the bacillus coli it requires a temperature of the boiling point of water to effect this, whereas with the other two micro-organisms such a temperature rather diminishes than increases the toxic action. Altogether, the mode of action of the poisonous products of the bacillus coli is more irregular than with the other two bacilli, not only as regards its lethal but also as regards the irregular kind of fever and after-fever produced.

Growth of the bacillus in proteid solutions.—As with the other bacilli, very different forms of proteid solution were used as culture medium—liquid serum, serum diluted with salt solution, serum diluted with broth, alkali albumin in broth, and Marmorek's fluid. The general result obtained in these culture media was that the bacillus coli digested the proteids present and produced an abundance of albumoses (a much greater quantity than the typhoid bacillus and Gärtner's bacillus), so that at the end of a month's incubation of such a culture a brilliant biuret reaction was obtained. The digestion of proteids by the bacillus coli is not nearly so marked as it is with the anthrax bacillus or the diphtheria bacillus. A more remarkable effect was observed in the fact that after the bacillus had been growing in a proteid solution for some time it precipitated the proteid in the form of a clot, and this occurred more particularly in the solutions of diluted serum and in Marmorek's fluid. The results were compared with a control flask which was not inoculated and which was kept in the incubator alongside the cultures. The precipitation of the proteid in the form of a gelatinous clot was not constant although it occurred in the majority of cases. It did not appear to be due to any increased acidity of the culture medium produced by the growth of the bacillus in it, inasmuch as no such increase of acidity was present, the liquid remaining alkaline. The phenomenon appears to be a special action of the growth of the bacillus coli. In some solutions Gärtner's bacillus produced the same result. Thus five flasks were prepared containing about 100 c.c. of Marmorek's fluid, which is a mixture of one part of ascitic fluid with two parts of broth. Two flasks were inoculated with the bacillus coli, two were inoculated with Gärtner's bacillus, and one was kept as a control. In fourteen days a copious and soft clot had formed at the bottom of all the four flasks, the liquid in the control flask remaining limpid and unclotted. In none of the similar experiments with the typhoid bacillus was any clot or precipitation of the proteid observed, so that this serves as another distinction between the typhoid bacillus and the two other bacilli. The clotting of the proteid solution is of interest in connexion with the experiments of Stillmark, who found that the substance called ricin, which is obtained from the seeds of the castor-oil plant and which will be discussed later, also produces a clotting in proteid solutions, especially serum. Stillmark used it as an argument in favour of the ferment nature of the toxic body, ricin.

THE RELATIONSHIP OF SOME FORMS OF COMBINED DEGENERATIONS OF THE SPINAL CORD TO ONE ANOTHER AND TO ANÆMIA.

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INTRODUCTION.

THOUGH the writings of Lichtheim[1] ten years ago first called general attention to the association of symptoms indicating affection of the spinal cord with those of pernicious anæmia, Leichtenstern[2] in 1884 described two cases of what was evidently the same condition, as tabes associated with anæmia. During the decade which has elapsed since Lichtheim's first paper many important communications on the subject have been made which have greatly advanced our knowledge not only of the clinical characteristics of this affection of the spinal cord but also in regard to its etiology and pathology. Among the earlier contributions to the subject two emanated from the National Hospital for the Paralysed and Epileptic, the first by Dr. H. M. Bowman,[3] whose promising career was so early terminated by death, and the second by Dr. James Taylor,[4] whose important communication holds a leading place in the history of the disease. I feel it in a measure my duty, therefore, to record our further experience of the affection at the hospital since the second of these papers appeared in 1895, and I am greatly indebted to Dr. Charlton Bastian, Sir William Gowers, and Dr. Ferrier for allowing me to make use of the cases which form the subject of the present communication. Although a large number of papers have appeared on the subject of the changes found in the spinal cord in cases of pronounced anæmia, and although a few writers have suggested a possible connexion between this condition and that described by Gowers under the title of ataxic paraplegia, no serious attempt has been made to discuss the relationship fully or to establish a connexion between the two affections, if we except an important paper by Rothmann[5] which deals with the whole subject of the primary combined tract affections of the spinal cord. Besides presenting other features of interest the following cases appear to me to afford a good opportunity of discussing

[1] Neurologisches Centralblatt, 1887, p. 236.
[2] Deutsche Medicinische Wochenschrift, 1884.
[3] Brain, 1894, vol. xvii., p. 198.
[4] Transactions of the Royal Medical and Chirurgical Society, 1895, vol. lxxviii., p. 161.
[5] Deutsche Zeitschrift für Nervenheilkunde, 1895, Band vii., p. 171.

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the possibility of such a relationship with a reasonable prospect of adding to our knowledge on this subject. I propose therefore to relate briefly the clinical histories of the three cases, to deal much more fully with the morbid changes met with in the spinal cords post mortem, to discuss the etiology and pathology of these and similar cases, and finally to adduce reasons for considering that the affection is the same as that which has been described as ataxic paraplegia.

CASE 1.—A married woman, aged forty-four years, was admitted into the National Hospital for the Paralysed and Epileptic on May 11th, 1896, under the care of Dr. Bastian, complaining of loss of power and impairment of sensation in both inferior extremities and the right hand, violent intermittent pain in the stomach and chest, and loss of control over the sphincters. A brother, aged thirty-two years, is the subject of locomotor ataxy, two sisters died in youth from concussion of the brain, and a third from convulsions when teething. She had had seven children, of whom two had died within twenty-four hours of birth, and a third at the age of thirteen months from (?) rickets. She had been a teetotaler for thirty years. Thirteen years before her admission she suffered from a severe hæmorrhage after a confinement and had never regained her strength since. Her catamenia had been regular until the last two or three years when it had become very scanty. She had never had miscarriages and there was no history of syphilis. About a year before she came into hospital she began to suffer from tingling and numbness of her hands and feet, which lasted for two months and then passed off. Since Christmas, 1895, she had gradually become weaker, with shortness of breath on exertion, and about the end of January she began to be clumsy in the use of her feet. She took to her bed in the middle of February and about the end of that month, when she tried to get up, she found that she could not stand. About the beginning of March she began to suffer from cramps in her legs, which at the time of her admission were almost constant when she was awake. She suffered from constipation for a time and this was followed by diarrhœa a week ago, since which the motions had been passed involuntarily. A day or two before she came under observation she noticed some difficulty in using the right hand, which became numb and began to tingle. On admission she was found to be emaciated, her skin and mucous membranes were very pale, and there was marked œdema of her ankles, feet and tissues over the sacrum. She was only able to move her lower extremities feebly and was much troubled by twitchings and cramps, the latter extending up into the abdomen. The power of movement of the right arm was also impaired. The muscles of the limbs were much wasted, but no tenderness was elicited on pressure. There was partial loss of sensibility of the lower extremities and right arm, and she was not often able to detect touches on the right side of the trunk. Painful impressions were not felt on the legs and thighs and there was an inability to appreciate heat and cold below the level of the umbilicus on the right side and below the pelvis on the left. The knee-jerks were brisk, there was ankle clonus on both sides, and the plantar reflexes were very brisk. There was absolute incontinence of urine and fæces, with inability to feel when the evacuations were passing. There were no cerebral symptoms and the cranial nerves were intact. Hæmic murmurs were heard over the precordia and in the neck. Hæmoglobin was 28 per cent., the red cells were much diminished, and nucleated red cells were present in relatively large numbers. The pulse was 78, the respiration was 16, the morning temperature was 98·6° F. and the evening temperature was 99°. Subsequently the knee-jerks became abolished, there was œdema of the conjunctivæ, diarrhœa set in, she developed a bedsore on the sacrum, began to be delirious, and eventually died on June 11th, 1896—i.e., one month after admission, and a little more than a year from the commencement of her illness.

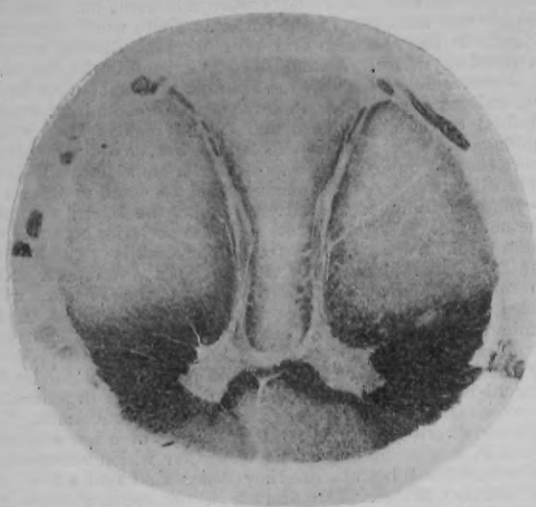
Necropsy.—I made the post-mortem examination nineteen hours after death and found the body extremely emaciated, of a yellowish-white colour, with no abnormal pigmentation, and with œdema of the lower part of the back, ankles, and feet, and a large bedsore on the sacrum. The subcutaneous fat was exceedingly small in amount and the marrow of the long bones was natural. The skull and dura mater were natural, but the cerebral convolutions were shrunken, with compensatory œdema of the pia-arachnoid. The brain was otherwise natural on macroscopic examination, as were the cerebellum, pons, and medulla. The cranial nerves were natural and there were no retinal hæmorrhages. The bones and meninges of the spinal canal were natural, as was the appearance of the spinal cord even on section, no sclerosis or other change being obvious to the unaided eye in the fresh condition. There was a slight excess of bright yellow clear fluid in the pericardium; the left pleural cavity contained about half a pint and the right a few ounces of similar fluid. There was no tabby striation of the heart and there were no hæmorrhages anywhere. Both lungs were emphysematous, with œdema and hypostatic congestion more pronounced on the right side. The liver was slightly fatty and did not give the iron reaction. The spleen was natural; the capsules and the kidneys were adherent, but there was no obvious reduction of the cortex. There were no enlarged glands in the abdomen and no malignant disease was discovered anywhere. A small fibroma existed in the uterus.

Microscopic examination.—The changes met with in the central nervous system on microscopical examination were limited to the spinal cord and caudal part of the medulla oblongata. The regions affected in the medulla oblongata were those occupied by the posterior columns and the direct cerebellar tracts, but the degeneration appeared to extend far beyond the limits of the latter tract in the lateral region of the medulla. The degeneration in the posterior columns was more pronounced in the funiculus gracilis than in the funiculus cuneatus, and the cells of both were intact. Next to no recent degeneration existed in the former, while there was considerable degeneration of this kind in the funiculus cuneatus and direct cerebellar tracts. The restiform body showed no obvious change in sections prepared by the Pal-Weigert method, but in those prepared by the Marchi method an extensive amount of recent degeneration was seen in these structures passing to the cerebellum. The pyramids were intact with the exception of a few scattered fibres in a recent state of degeneration which were seen in these structures both before they decussated and among the decussating fibres. The arcuate fibres passing from the posterior column nuclei were intact and the emergent fibres of the hypoglossal nerves showed no degeneration, though there was marked pigmentation of the cells of their nuclei. The essential changes in the spinal cord consisted in a degeneration of the nerve elements, thickening of the neuroglia, and marked vascular changes. In the cervical region of the cord the degeneration was most pronounced in the postero-internal columns and the cornu commissural and posterior root zones on both sides. Some of the postero-external column was preserved, though there were only scattered fibres, the degeneration being very marked even in this part of the posterior columns. A band of healthy fibres, however, separated the grey matter from the more altered parts of the posterior columns, this being especially well marked at the cornu commissural region and posterior horn; but even in these parts there were many fibres in a recent state of degeneration. Indeed, the fibres showing early degenerative changes were more numerous in these better preserved parts of the posterior columns, and in the areas bordering on them, rather than in parts where the degenerative changes were more pronounced and obviously of longer standing. The lateral region of the spinal cord on each side was similarly affected to the posterior columns; here diffuse degenerative changes existed in both crossed pyramidal tracts and in the direct cerebellar and posterior part of the antero-lateral ascending tracts. Healthy fibres in the lateral limiting layer separated the grey matter from the profoundly altered lateral columns, but even among these fibres there were many in a recent state of degeneration, a condition which, as in the posterior columns, was most marked in the areas of junction between the obviously pronouncedly degenerated and the apparently healthy fibres of this part of the cord. There was marked degeneration of one direct pyramidal tract and slight of the other; there were also two islets of degeneration in the region of the ground bundles on the side of the more affected direct pyramidal tract, and one small islet in the position of the anterior part of the ascending antero-lateral tract a little ventral to the anterior horn. The precise degree of degeneration and its distribution varied at different levels; thus sections from another part of the cervical cord showed only slight affection of the direct pyramidal tracts, though the one was more affected than the other, as was the case in the other section described; but the islets of degeneration in the ground bundles only existed on the side of the more affected direct pyramidal tract. In the thoracic region of the cord, as in the cervical, the precise distribution of the degeneration varied but the main characteristics were

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constant (see Fig. 1). Thus there was marked degeneration of the posterior columns with a zone of healthy fibres separating the degenerated areas from the grey matter. Intermingled with the healthy fibres were many in a state of recent degeneration, this being markedly the case in the cornu-commissural zone also. The degeneration in the lateral region of the cord occupied the crossed pyramidal and direct cerebellar tracts, and in the lateral limiting layer where the fibres were in the

FIG. 1.



Transverse section of the thoracic region of the spinal cord in Case 1.

main preserved there were many in a condition of recent degeneration, a state of things common to the margins of all the areas of healthy fibres bordering on the pronouncedly degenerated parts. In the anterior columns the morbid change extended beyond the confines of the ventral portion of the direct pyramidal tract on each side and to a lesser degree on one side in that part of the tract immediately ventral to the anterior commissure, while this part of the direct tract

FIG. 2.



Transverse section of the lumbar region of the spinal cord in Case 1.

on the opposite side was free from any change. In no part of the transverse area of the cord did the distribution of the degeneration vary so much as in its ventral portion; thus in other sections from the thoracic cord while the amount of change was different in the two anterior columns as before, in neither was that part of the tract immediately ventral to the anterior commissure affected. In other sections, again, not only the ventral portions of the direct pyramidal tracts were degenerated, but also the antero-lateral margin of the cord and the ground bundles to a point opposite the outer limit of the anterior horn.

In the lumbar cord (see Fig. 2) the postero-internal column was markedly degenerated with the exception of that part of it occupied by fibres of the septo-marginal tract and the fibres of the cornu-commissural zone, both of which had escaped. A marginal area of healthy fibres also existed in the dorsal portion of the posterior columns, but was less marked in the postero-internal than in the postero-external column, considerable portions of other parts of which tract had also escaped. A wide band of healthy fibres separated the grey matter from the more altered parts of the postero-external tract. Fibres in a state of recent degeneration existed in fair numbers in all parts of the posterior columns except the most changed parts of the postero-internal tracts. Such fibres undergoing degeneration were evident in the septo-marginal tracts, but were less so in the band of healthy fibres bordering on the grey matter, while the cornu-commissural zone had escaped in great part even from such early degeneration. In the lateral region of the cord the degeneration was limited to the crossed pyramidal tracts, all parts of the transverse area of the cord ventral to this being free from degeneration, with the exception of the tip of the anterior column on one side where it abutted on the anterior fissure; here there was slight degeneration. A considerable number of recently degenerated fibres existed in the crossed pyramidal tracts, and some in the ventral part of the direct tract, which showed no obvious change when treated by the Pal-Weigert method. There was also a considerable amount of recent degeneration present in the apparently healthy parts of both direct tracts, but more marked on one side than on the other. Similar variations were met with as in other regions of the cord; thus the degree of affection of the cornu-commissural zone was more marked in some sections than in others; the amount of the septo-marginal tract which escaped also varied as did the degree of affection of the ventral tip of the anterior column. The lower lumbar region of the cord was the seat of pronounced degeneration of the posterior columns, though this was not complete in any part of them, healthy fibres being scattered among the degenerated. There were, however, certain parts of these columns which had largely escaped degeneration, an occasional degenerate fibre being alone found in them; these areas comprised the cornu-commissural zone, the septo-marginal tract, the external part of the posterior columns bordering on the grey matter of the posterior horn, the posterior root zone, and a very narrow band of fibres extending along the periphery of the dorsal part of the posterior columns except that part of them close to the posterior median septum. Only a few scattered degenerated fibres were seen in the lateral columns and in the antero-lateral region of the cord. The lower sacral region was free from degeneration with the exception of a few scattered fibres in the posterior columns, while the upper part of this region was similarly spared with the exception of a few small areas of degeneration in the posterior columns. On both sides there was a limited area of such degeneration abutting on the inner border of the posterior root zone and a more pronounced band occupying the dorsal third of the posterior column on one side, situated a little internal to a line which, if extended to this region of the columns, would represent the inner border of the gelatinous substance of Rolando and a similar, though less extensive, band than the last, situated in the ventral half of the dorsal fifth of the posterior columns, close to the posterior median septum, from which it was separated by an area of normal fibres no broader than the degenerated band itself. A degenerate fibre here and there in other regions of the transverse area of the sacral cord was all that was to be seen. The neuroglia was much thickened in the affected areas of white matter. The vessels had thickened walls and were engorged, these conditions characterising both those in the affected areas of white matter and in the grey. In the sacral region of the cord, where the degeneration of the white matter was so limited in distribution, the thickening of the neuroglia was equally limited and vascular changes were by no means conspicuous. Though some of the vessel walls were thickened there was little engorgement and no obvious increase in the number of vessels in the grey or white matter. The nerve cells of the anterior horns were scarce in most parts of the cord

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and of those present many were obviously atrophied and others though of good size stained badly. These cells were better preserved in the sacral region of the cord than elsewhere, but even here some groups were wanting and others showed evidences of atrophy. In sections prepared by the Marchi method the anterior horn cells throughout the cord were characterised by marked pigmentation and granularity, a condition of things also seen in the cells of Clarke's columns.

Remarks.—We have in this case a typical example of the spinal cord changes which have been described as occurring in association with pernicious anæmia. Clinically the case conformed to this type and the results of the microscopical examination are strictly in accord with those which are regarded as characteristic of this affection. The case, however, serves to emphasise what has already been shown by certain previous observations—viz., that such changes in the spinal cord and their resulting symptoms may occur in all forms of profound anæmia even though they do not conform absolutely, either clinically or as regards the changes found post mortem, to the rules laid down for the diagnosis of the so-called pernicious variety of anæmia. Thus among other signs wanting in this case were the absence of retinal or other hæmorrhages (apart from those in the spinal cord), the normal condition of the marrow of the long bones, and the failure of the liver to give the iron reaction. The special features which call for comment as regards the changes found in the spinal cord on microscopical examination, in that they have not been constantly met with in all cases of the kind previously recorded, are the changes in the grey matter, there being both altered condition of some of the cells and the existence of small hæmorrhages. It is also worthy of note that no hæmorrhages or the remains of these were met with in the white matter, where the degenerative changes of the nerve elements are so pronounced, and that small areas of degeneration in otherwise healthy parts occur quite independently of the presence of any vessel with altered walls in their neighbourhood. One other point alone calls for comment in this case and that is that in the lower lumbar and sacral regions of the cord the posterior columns are almost exclusively affected. This is not a little curious when we remember how profoundly affected the lateral and antero-lateral tracts were in other regions of the cord, for with such affection of these tracts we are at least justified in expecting to find evidences of descending degeneration in the crossed pyramidal tracts and the efferent antero-lateral tracts, including the direct pyramidal, instead of which there is no evidence of such degeneration, an occasional degenerated fibre being alone found in these tracts in the lower lumbar and the sacral regions of the cord.

CASE 2.—A man, aged fifty-three years, was admitted to the National Hospital for the Paralysed and Epileptic under the care of Dr. Ferrier, on Oct. 16th, 1896, complaining of inability to walk, difficulty in commencing the act of micturition, and girdle sensation. His father died from "consumption of the bowels" and his mother had been paraplegic for five years, the condition having been gradual in onset. A sister had died from phthisis, another from dropsy, and a third with wasting. The patient had been much exposed to wet and cold. Twenty years before his admission to the hospital he suffered from gleet, but never had a sore. He had always been temperate. At the age of twenty-six years he had pains in his calves for three or four days and then woke up one morning quite blind and unable to sit up or move his head, arms, or legs. He could swallow and had no difficulty in passing urine. His limbs were flaccid. By the end of the same day he could move his head and by the end of the second day could see with his left eye and was practically well, except that he could not see with the right eye and was unable to stand for about seven weeks. After this he got quite well, though blind in the right eye, and remained so until a year and nine months before he came under observation, when he began to notice that he was unable to bear the heat of a fire on his legs. The bedclothes and the lining of his trousers felt damp, whereas in reality they were quite dry. These subjective feelings at first got worse and then disappeared about seven months ago; but at this time he had a sensation as if walking on wool, his legs became uncertain in their movements, and he had to use sticks in walking. His walking had become gradually worse and he had been quite unable to do so at all for three months. A month before this he developed a girdle sensation which had persisted and at the same time micturition became precipitate. On admission he was found to be the subject of advanced spastic paraplegia. Both legs were extremely stiff, but he could lift them off the bed, could flex and extend at the hip fairly, and he could draw up the legs and move the toes and feet at the ankles well. By far the weakest movement was flexion at the knees. The left leg was possibly slightly the stronger. A girdle sensation was present and there was some pain complained of in the lower dorsal and lumbar regions of the back. There was slight blunting of sensibility for tactile and painful impressions up to the level of the umbilicus. The knee-jerks were increased but there was no ankle clonus. The arms were normal. There was divergent strabismus of the right eye due to blindness from simple optic atrophy, there being only just perception of light with this eye and the pupil only just reacting to light. The ocular movements were normal, there was no nystagmus, and the other cranial nerves were intact. About five weeks later he was much weaker and apparently very anæmic; he suffered a great deal from pain about the lower ribs and in the abdomen, and there was almost complete retention of urine. The great rigidity of the inferior extremities had now altogether disappeared, the limbs became flaccid at all the joints, and there was slight wasting of the calves and thighs on both sides, with great diminution of Faradaic irritability of the muscles of the buttocks, thighs, and legs. To galvanism K.C.C. > A.C.C. The knee-jerks were completely absent, there was no ankle clonus, the plantar and cremasteric reflexes could not be obtained, and the reflex of the sphincter ani was also absent. The epigastric and abdominal reflexes were, however, present. There was complete loss of sensibility for touch and pain up to the knees and marked impairment to two inches above the groins. The skin over the buttocks and sacrum became acutely inflamed, with superficial points of ulceration. The heart was dilated and a slight systolic murmur was heard at its apex. The temperature was 100·4° F. Two days after this he was slightly weaker and the temperature was subnormal, but the bedsore was slightly better. Four days later he died.

Necropsy.—I made the post-mortem examination nine hours after death and found the bones of the skull natural but the dura mater unduly adherent to the inner surface of the skull-cap. The pia-arachnoid presented old patches of thickening, but the convolutions were natural, as were the rest of the brain, the cerebellum, pons, and medulla oblongata, on macroscopic examination. All the cranial nerves appeared natural with the exception of the right optic nerve, which was much atrophied and grey in colour. The spinal canal was natural, as were the meninges and cord, both on external examination and on section. No sclerosis or other defect was evident to the unaided eye in the fresh state. The heart was dilated, the lower lobes of the lungs were in a condition of hypostatic congestion, with old caseous and pleuritic thickening with adhesions at the apex of the right lung. The abdominal viscera were natural, with the exception of very slight adhesion of the capsules of the kidneys, without any obvious reduction in the width of the cortex, and there was hæmorrhagic cystitis.

Microscopical examination.—Subsequent microscopical examination of the central nervous system revealed the following changes. In the medulla oblongata the degenerations were limited to the caudal end. There was pronounced degeneration of the fibres of the funiculus gracilis and cuneatus, the cells of which were intact, as were the emergent arciform fibres. The lateral region of the medulla occupied by the direct cerebellar tract was greatly altered, and extending dorsally and ventrally along the margin of the medulla from the most changed part were a few scattered degenerate fibres with a little patch of them opposite the commencement of the anterior horn on one side and a larger patch just external to the pyramid on the opposite side. There was some degeneration in both pyramids at the level of the decussation; in one it was the part bordering on the anterior median fissure which was chiefly affected, while in the other there were two patches of degeneration separated from each other and from the anterior median fissure by healthy fibres. Degenerated fibres could also be seen among those decussating. Some small foci of degeneration and scattered altered fibres were present in the pyramids for a short distance above the decussation; otherwise the medulla was free from obvious change after the upper limits of the funiculus gracilis and cuneatus were reached and after the direct cerebellar tract had passed into the restiform body. In the

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cervical region of the spinal cord there was marked degeneration of the postero-internal columns, having all the appearance of being complete, as seen with a low power lens, and separated from the degenerated part of the postero-external column by a narrow band of more or less normal fibres. The postero-external column was much less degenerated and only about the inner half of the tract was affected, the outer part bordering on the grey matter of the posterior horn being preserved. There was, however, a limited area of this outer zone of the postero-external column which was profoundly degenerated near the periphery of the cord in the region of the posterior root zone. The cornu-commissural zone was fairly preserved, but in this as well as in the best preserved parts of the postero-external column many degenerate fibres and spaces from which such swollen degenerate fibres had evidently fallen out were to be seen. The direct cerebellar tract on one side was considerably degenerated about its middle, while the ventral portion was less altered. Dorsal to the more altered part was a less degenerate area, while immediately external to the posterior root was an area of more intense degeneration at the periphery of the cord. On the other side of the cord the ventral part of the direct cerebellar tract was most altered, the middle less so, while the dorsal part of it was as much affected as was the area immediately external to the posterior root. There was degeneration of a patchy and scattered character in the crossed pyramidal tracts; this was less evident in the deeper parts of these tracts and the lateral limiting layer was in the main well preserved. Both direct pyramidal tracts were markedly degenerated in their ventral two-thirds, while only isolated degenerate fibres were dotted about in the portion of the tract immediately ventral to the anterior commissure. The degeneration overstepped the limits of these tracts and extended into the ground bundles and antero-lateral descending tract region at the periphery of the cord; but in both these regions the degeneration outside the area of the direct pyramidal tracts was in the shape of scattered fibres rather than of any compact cluster of these. A few minute islets of scattered degenerate fibres were also seen at the periphery of the cord to about midway between this and the grey matter of the anterior horn.

In the thoracic cord (see Fig. 3) the postero-external

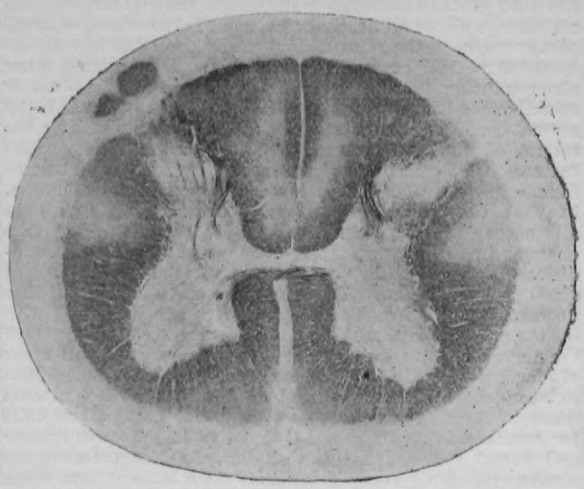
FIG. 3.



Transverse section of the thoracic region of the spinal cord in Case 2.

and internal columns were more equally affected, and the degeneration was less pronounced than it was in the latter tract in the cervical region, being, indeed, more comparable to that seen in the former tract in that region of the cord. Very little of the cornu-commissural zone was preserved at the ventral extremity of the postero-internal column, but at the dorsal end of the tract at the periphery of the cord was a small zone of more or less healthy fibres. A similar condition existed to a lesser degree in the contiguous part of the postero-external column, the whole of the outer half of which tract was also preserved, with the exception of the posterior root zone which was markedly degenerated. The change in the direct cerebellar tracts was considerable, and the crossed pyramidal tracts were more profoundly altered than in the cervical region of the cord, the degeneration being rather more extensive in area on one side than on the other. The lateral limiting layer was fairly preserved. There was marked degeneration of the ventral three-fourths of the direct pyramidal tracts and degenerate fibres in the other fourth, more especially on one side. An extensive overflow of degeneration into the antero-lateral descending tract region and ground bundles was seen, the area of the ventral portion of the cord thus occupied by degeneration being very much more extensive than in the cervical cord. A few scattered degenerated fibres were seen in the white matter between this ventral area of degeneration and that of the crossed pyramidal and direct cerebellar tracts. In the lumbar region of the cord (see Fig. 4)

FIG. 4.



Transverse section of the lumbar region of the spinal cord in Case 2.

there was marked degeneration of only a part of the posterior columns. The septo-marginal descending tract was well preserved, as were the cornu-commissural zone and the outer part of the postero-external column bordering on the posterior horn and root. The whole of the periphery of the cord between the posterior root and posterior median septum, including the posterior root zone, was fairly preserved. There was marked degeneration of the crossed pyramidal tracts and the change was limited to their confines. A patchy and scattered degeneration existed in the direct pyramidal tracts and antero-lateral region at the periphery of the cord, with some scattered degenerated fibres in the ground bundles. Here and there a degenerate fibre was seen between the ventral area of degeneration and the lateral columns. In the sacral cord the septo-marginal descending tracts in the posterior columns were well preserved, while a limited narrow strip of marked degeneration existed on each side just external to them, somewhat patchy and of different extent and distribution on the two sides. A little scattered degeneration was also seen external to this more altered area. The cornu-commissural zone was intact on both sides. The crossed pyramidal tracts were degenerated but there was no evidence of degeneration in the direct pyramidal tracts or antero-lateral region of the cord. In addition to the degeneration of the various tracts of nerve fibres there were pronounced changes in the grey matter, consisting in destructive changes in the cells, diminution in the number of the fine nerve fibres which coursed through it, and increased vascularity. The degree of destruction of the nerve cells of the anterior horns varied at different levels. Some sections of the cervical cord showed that a large number of the cells had disappeared, others were markedly atrophied, while here and there small groups of apparently unaffected cells were seen. In other sections the groups of intact cells were much larger, while in some while there was a marked diminution in the number of cells of one anterior horn in the other the changes were much less pronounced. The same may be said of the thoracic region of the cord, where there was a great sparcity of cells and a great many of those present were atrophied. Similar

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changes were seen in the lumbar cord but fewer cells were atrophied, while many of those present appeared to be swollen. The cells were plentiful in the sacral cord but many appeared to be somewhat swollen, while the pericellular space in some cases was so large as to suggest a certain amount of shrinking of the swollen cells. There was an increase in the number of vessels in the affected areas of white matter, especially the posterior columns; the majority of the vessels had greatly thickened walls with multiplication of nuclei, some appeared to be hyaline, and all were intensely engorged. Pronounced as were these vascular changes throughout the cord in no other part was there so great an increase in the number of capillaries met with as in the lumbar region, where there was a perfect meshwork of small thin-walled engorged vessels in addition to larger vessels with thickened walls. The neuroglia was thickened in the affected area but there was no infiltration of the tissues with round cells, nor were there any perivascular collections of these, and though the vessels were so engorged no hæmorrhages could be detected.

Remarks.—It would serve no useful purpose if we were to speculate as to the nature of the past illness which resulted in the patient's losing the sight of his right eye. A sufficiently long interval elapsed to justify our assuming that there was no direct connexion between that illness and the condition which resulted in his death. The earlier part of the clinical history of the last illness conformed to what we regard as more or less characteristic of ataxic paraplegia, while the subsequent development of anæmia and muscular flaccidity and abolition of the reflexes, together with the rapidly fatal issue, were in keeping with one class of cases of combined cord changes associated with anæmia in which the anæmia only becomes obvious late in the course of the illness. The changes met with in the spinal cord post mortem are such as are seen in ataxic paraplegia and in the cases of spinal cord changes associated with anæmia. It is obvious, therefore, that this case goes far to prove that there is a very close relationship between these two forms of affection of the spinal cord, if, indeed, they be not eventually proved to be identical. It is interesting to note that in contrast to the first case the changes in the sacral region of the cord are most pronounced in the crossed pyramidal tracts and are only slight in the posterior columns, the reverse of that which obtained in the other case.

CASE 3.—A married woman, aged fifty years, was admitted into the National Hospital for the Paralysed and Epileptic on Dec. 19th, 1894, under the care of Sir William Gowers, complaining of weakness in her arms and legs, numbness and tingling in her hands and feet, girdle sensation, and loss of control over the sphincters. Her father died from apoplexy at the age of sixty-three years; one brother had died from variola and another from rheumatism but otherwise the family history was good. She had been married thirty years and had had two sons and one daughter who had survived, while eight children had died in infancy, and she had had one miscarriage. The patient had not suffered from any previous illness, had always been temperate, and had lived in comfortable circumstances; but for six months she had nursed her husband, who died from phthisis five months before she came into hospital. She became ill after her husband's death, feeling great weakness in the lower limbs which caused her to fall about, and in a fortnight's time she was obliged to take to her bed and had not been up for more than a few hours since. At the commencement of her illness she noticed numbness and tingling in her hands and feet, and she had since suffered from girdle pains at the level of the umbilicus but had never had any cramps or lightning pains in the limbs. For three months she had been unconscious of passing her evacuations and both urine and fæces had been passed in her bed; the former did not dribble but passed in a stream; she was not, however, conscious of any desire to pass urine. There had never been any diplopia. On admission there was no loss of power noted in the lower extremities as she lay in bed, and the upper extremities, though relatively not so strong as the lower, presented no definite loss of power. She was unable to raise herself from the horizontal to the sitting posture and was unable to stand alone, and when supported she lifted her feet rather high and stamped them down in walking. There were no contractures, the knee-jerks were equal, there was no ankle clonus, the elbow-jerks were absent, and it was doubtful if any jerks could be elicited at the wrists. The inferior extremities felt cold and stiff, there were tingling and numbness in the fingers and feet, pain in the lumbar region of the spine and in the hypogastrium, with a girdle sensation just above the pubes. There was a loss of tactile sensibility over the right inferior extremity up to the level of the brim of the pelvis in front and to the fold of the buttock behind, with inability to recognise pin-pricks below the knee in front and up to the middle of the thigh behind. In the left leg there was slight blunting of sensibility for tactile impressions up to the middle of the thigh in front and to just below the fold of the buttock behind and there was blunting to pin-pricks over the same area. The plantar reflexes were equal and brisk, while the abdominal reflexes were not obtained. The fundi were normal, the pupils responded normally, there was no nystagmus or ocular paralysis, and the other cranial nerves were also intact. Ten days later the patient complained of bearing-down pain in the abdomen and back; there was retention of urine and incontinence of fæces, and from this time her urine had always to be drawn off by means of a catheter. She was unconscious of the passage of urine and occasionally of the passage of fæces also. A fortnight after this the knee-jerks became extremely feeble and in about two months from the time of her admission they were abolished. The lower limbs were drawn up, flexed at all the joints, and rigid, resisting attempts at passive movement. There were absolute loss of power in the lower extremities, with loss of muscular sense, inability to sit up in bed, and great weakness, unsteadiness, incoördination and loss of muscular sense in the upper extremities, while the intercostals and diaphragm acted fairly well. There was loss of sensibility for tactile and painful impressions up to the brim of the pelvis in front and up to the tenth dorsal spine behind, except the back of the left thigh where there was only blunting and over the lower third of this thigh in front where there was loss of sensibility for painful impressions but where tactile sensibility was only blunted. On the trunk tactile sensibility was blunted up to the level of the fourth rib on the right side and the third rib on the left side. The patient's replies were not to be relied on when the arms were tested, except that she always felt a pin-prick. As regards tactile impressions she sometimes said she could feel while at other times she said she could not. Her urine had always to be drawn off, there was complete loss of control over the sphincter ani, and she was unconscious of the act of defecation. Her general condition was very bad; there was marked general wasting, not limited to any parts specially, with marked tendency to trophic disturbance in the shape of a sacral bedsore and a small black patch on the right heel. So, too, two drops of hot water dropped on the chest gave rise to sores, which at first sloughed, but afterwards healed. The sacral bedsore also improved under treatment. About this time she developed general bronchitis. A week or two later the patient began to wander and to suffer from delusions at night; but during the day, though dull and slow, she remained fairly clear mentally. Her fundi were examined the day before she died and were found to be normal. The fatal termination of the case resulted on March 10th, 1895—i.e., about eight months after the commencement of her illness.

Necropsy.—At the post-mortem examination, performed by Dr. W. S. Colman fourteen hours after death, the body was found to be very thin, with a bedsore over the sacrum. The brain was found to be much wasted, with a large amount of compensatory fluid beneath the arachnoid, but the organ was otherwise natural to the unaided eye, as were the cerebellum and pons, but the medulla low down showed some degeneration in the posterior columns. The cranial bones and meninges were natural, as were those of the spinal cavity. The external appearance of the spinal cord was natural, but on section some discolouration was noticed in the posterior columns down to the lumbar enlargement, while none could be seen in the sacral region of the fresh cord. There was nothing else noteworthy beyond the fact that the liver was enlarged and tough, its capsule thick and opaque, and its lobules very distinct (no iodine reaction). The spleen was enlarged and soft and the kidneys were very tough, with a little thinning of the cortex.

Microscopical examination.—I subsequently made the following microscopical examination. The medulla oblongata only showed changes towards its caudal end, and these consisted in marked degeneration of the fibres of the funiculus gracilis and cuneatus on each side and similar degeneration of both direct pyramidal tracts, all of which changes were obvious in sections stained by Pal-Weigert method. Specimens prepared by Marchi's method showed

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more recently degenerated fibres in the funiculus cuneatus than in the funiculus gracilis, and in both nearly all such fibres were seen in the deeper parts bordering on the grey matter, though some also were seen at the dorsal periphery of the funiculus cuneatus. Fibres in a recent state of degeneration were also seen throughout both direct cerebellar tracts, but most in the deeper parts of both tracts bordering on the formatio reticularis. This method further revealed recently degenerated fibres in large numbers in the restiform body on each side and a few scattered degenerated fibres in the pyramids, which fibres could be seen crossing at the decussation of these structures. Examination of the spinal cord showed that in the cervical region, as seen with a lens of low magnification, there appeared to be a complete absence of normal fibres in the postero-internal column, even the cornu-commissural zone sharing this fate. The postero-external column was also degenerated, though less markedly than the postero-internal, and a band of healthy fibres separated the grey matter from the altered part of the postero-external column. This zone of healthy fibres was most marked in the ventral part of the tract and existed only as a very thin band in the dorsal part of it. Fibres in a recent state of degeneration were conspicuous by their absence, very few being seen except in the zone between the grey matter and the ventral part of the more pronouncedly degenerated area of the postero-external column. There was marked degeneration in the lateral region of the cord, occupying chiefly the confines of the crossed pyramidal, direct cerebellar, and posterior part of the antero-lateral ascending tracts. In parts there was almost as complete a disappearance of nerve fibres as in the postero-internal columns, but on the whole the change was less pronounced than in these tracts. The lateral limiting layer was preserved. Recently degenerated fibres were scattered throughout the lateral columns, in some parts of which they were numerous while in others they were scarce. There were a considerable number in the ventral part of one crossed pyramidal tract and they were also numerous in the lateral limiting layer. The ventral part of the direct cerebellar tract and the dorsal part of the ascending antero-lateral tract were similarly occupied by a considerable number of such fibres in a recent state of degeneration. There was a moderate amount of degeneration in the direct pyramidal tracts and, as seen in the specimens prepared by the Pal-Weigert method, the change was most marked in the ventral part of these tracts, though slight throughout along the margin of the anterior median fissure. Ventrally the area of degeneration tended to encroach on the antero-lateral

FIG. 5.



Transverse section of the thoracic region of the spinal cord in Case 3.

descending tract region of the cord and two islets of degeneration were present in the course of this tract on one side, one opposite the anterior angle of the anterior horn and the other opposite a point midway between this and the lateral horn. A few fibres in a recent state of degeneration were scattered through the direct pyramidal tracts.

Sections from the thoracic cord (see Fig. 5) showed that the postero-internal columns were as markedly changed as in the cervical region, and that the degeneration of the postero-external columns was more pronounced than in the upper regions of the cord, being in great part as advanced as that seen in the postero-internal columns. The cornu-commissural zone was, however, more preserved than in the cervical cord and the band of healthy fibres separating the grey matter from the degenerated part of the postero-external column was more extensive. Fibres in a recent state of degeneration were present in both these zones of apparently healthy fibres, the number of these varying at different levels. The amount of degeneration of the lateral tracts of the cord was more extensive in area, as was that of the ventral portion of it, so that a smaller amount of apparently normal white matter separated the lateral degenerated area from that in the ventral portion of the cord. Less of the lateral limiting layer was preserved on one side than on the other, and recently-degenerated fibres were seen in these better-preserved parts. Such fibres in a recent state of degeneration were also present in the crossed pyramidal tracts and chiefly in one direct cerebellar tract, though they were present in the other also. The precise distribution of these fibres varied at different levels, so that in some sections they were much more scattered and irregularly distributed in the lateral columns than in others. The anterior columns were only affected in their ventral half as seen in specimens prepared by the Pal-Weigert method, with marked extension of the degeneration into the adjacent ground bundles and antero-lateral marginal tract to opposite the external limit of the anterior horn, but even in the healthy part there was evidently a sparseness of normal fibres in the region between the anterior and lateral columns of the cord, especially a short distance from the periphery. Exceedingly few recently-degenerated fibres were, however, seen in the changed and unchanged parts of the anterior columns. In the lumbar region of the cord

FIG. 6.



Transverse section of the lumbar region of the spinal cord in Case 3.

(see Fig. 6) the most pronounced degeneration of the posterior columns was in the middle third of the postero-internal tract, with the exception of that part of it occupied by the fibres of the septo-marginal tract which was preserved. The cornu-commissural zone and a band of fibres between the grey matter and the degenerated part of the postero-external columns were also preserved. Otherwise a scattered degeneration was present in the posterior columns. Recently-degenerated fibres were also scattered through these tracts, but were most marked in the better preserved parts, such as the cornu-commissural zone, the septo-marginal tract, and the band of fibres bordering on the grey matter. Next to no recently-degenerated fibres were seen in the most altered parts of

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the posterior columns. The caudal end of the lumbar region was characterised by marked degeneration of the posterior two-thirds of the postero-internal column, the anterior third of the posterior columns, including the cornu-commissural zone, being intact. The septo-marginal tract was only fairly preserved, there being scattered degenerated fibres in it. The postero-external column was less degenerated than the postero-internal, and the zone of fibres bordering on the grey matter was preserved, as was also a very narrow peripheral zone at the dorsal end of both posterior columns. There was marked degeneration of Lissauer's tract, while the crossed pyramidal tracts were only slightly degenerated and the other tracts of the cord were practically intact. In the sacral region a little scattered patchy degeneration was to be seen in the posterior columns, especially in the dorsal part of the postero-external column, where there was a fairly well-defined patch of degeneration on one side. At the caudal end of the sacral cord, however, there was practically no degeneration except of Lissauer's tract, which was considerably degenerated, though to a less extent than in parts less caudally situated.

As in the two other cases so here there were changes in the grey matter, vessels, and interstitial tissue of a pronounced character. The anterior horn cells had largely disappeared in the cervical region, a few atrophied ones remaining in places, while other small groups of cells were fairly preserved, though even these stained badly as a rule. Similar changes were seen in the thoracic cord, where the cells were even more scarce. Few cells were preserved in the cephalic end of the lumbar cord, but towards the caudal end of this region of the cord it was chiefly the ventral part of the anterior horn that was poor in cells, and those remaining here were markedly atrophied. In contrast to other parts of the cord the anterior horns in the sacral region were rich in cells. In some sections, however, there was a sparseness of them, while others were obviously atrophied. Throughout the cord sections stained by Marchi's method showed the cells to be markedly granular and the majority stained black. Many of the fine fibres in the grey matter stained badly, while others were obviously degenerated. The vascular changes consisted in thickening of the vessel walls, some to such an extent as to almost occlude their lumina, marked engorgement of them, and a large increase in the number of capillaries in some parts. The grey matter of the sacral cord was crowded with engorged capillaries, while vessels with thickened walls were only seen here and there. In the lumbar cord the capillaries were fewer than in the sacral, while vessels with thickened walls were more plentiful. The latter form one of the chief features of the vascular changes in the thoracic and cervical regions of the cord, and such vessels were seen in the affected tracts of white matter as well as in the grey. Indeed, another feature of the thoracic, and more especially of the cervical, cord was the great increase in the number of vessels in the affected parts of the posterior columns. No hæmorrhages were to be seen either in the affected grey or white matter. There was much thickening of the neuroglia in the affected areas of the cord, and this change was most pronounced where the degeneration of the nerve elements was most intense—viz., the posterior columns, especially the postero-internal tracts.

Remarks.—This case is an admirable instance of the occurrence of the clinical features and morbid changes which characterise cases of spinal cord changes in anæmia in a patient in whom if anæmia was present it was not sufficient to attract attention and in whom neither during life nor after death were the signs by which we recognise pernicious anæmia detected. It is noteworthy, however, that although there was no obvious anæmia a condition of profound marasmus existed. Like the other two cases subjective sensory disturbances and inability to coördinate the movements of the inferior extremities were among the earliest manifestations of the disease. Spasticity was never a prominent feature during the time that the patient was under observation, sensory defects, muscular enfeeblement, and ataxy being the leading symptoms pointing to affection of the nervous system. But, as in the other cases, the final stages of the disease were characterised by abolition of the reflexes, flaccidity, and loss of control over the sphincters. As regards the degenerations in the spinal cord, it is noteworthy that their distribution in the lower lumbar and sacral regions of the cord was rather intermediate in type as compared with what was met with in the other two cases, but that it conformed more to the condition met with in the first case than to that met with in the second in that the changes were more pronounced in the posterior columns than in the lateral tracts in these regions of the cord.

General Remarks.

A comparison of the clinical histories of the foregoing three cases is alone sufficient to convince one that they belong to the same category of affections of the spinal cord, and any doubt which may have existed on this point could not reasonably be entertained after comparing the morbid changes met with and their distribution in the three cords. It is equally evident that the clinical manifestations and the nature and distribution of the morbid processes are such as have been described as typical of a group of cases in which symptoms indicating the existence of disease of the spinal cord are associated with profound anæmia. But the character of the nervous symptoms, their mode of onset, progress, and termination, harmonise fairly well with what is met with in ataxic paraplegia, the rate at which one event succeeds another and eventually terminates in death within one or two years from the commencement of the illness being alone contrary to what we have been in the habit of regarding as characteristic of this affection. This rapid progress to a fatal termination corresponds rather to what we would expect in some more or less chronic slowly progressive form of myelitis. The morbid changes met with on post-mortem examination, however, exclude this possibility, while they are quite in keeping with what we are in the habit of finding in cases which clinically present the features of ataxic paraplegia. While there is this general resemblance of the three cases to each other, and they collectively present features characteristic of a certain group of diseases which form a clinical and pathological entity, they individually serve to throw light on certain side issues with regard to the etiology and pathology of the disease of which they are examples. The first case is one in which the association of profound anæmia with the spinal cord changes is unquestionable, but in that the anæmia did not conform either clinically or post mortem to the rules which have been laid down for the diagnosis of the pernicious variety the case serves to emphasise the fact that such spinal cord changes may occur in profound anæmias not having all the characteristics of so-called pernicious anæmia. The second case furnishes an example of the fact that the symptoms of the spinal cord affection may precede any evidence of anæmia and that for a very considerable period of time, in this case about a year and ten months. Of the three cases perhaps this serves more than any of the others, at any rate clinically, to show how close is the association between the cases of combined sclerosis occurring in anæmia with those of so-called ataxic paraplegia or postero-lateral sclerosis. The third case makes it clear that cord changes indistinguishable from those which have been described in profound anæmia may occur without any obvious anæmia throughout the short clinical course of the affection. The patient was, however, markedly debilitated and in a condition of extreme marasmus and it is quite possible that had she lived longer anæmia might have been a late feature in this case as in the second here recorded.

That a close association exists between the changes in the spinal cord and profound anæmia in some cases is beyond question, but it appears equally certain that the cord changes cannot be attributed directly to the anæmia from an etiological point of view, as has been supposed to be the case by some writers. The fact that cases occur, like the third here recorded, in which anæmia, if present, has at any rate not been sufficiently prominent to attract attention argues strongly against the view that the spinal cord changes depend on the anæmia. So, too, instances have been recorded by Nonne,[6] Minnich,[7] Arning,[8] Teichmuller,[9] and Bödeker and Juliusberger[10] where, like the second case, the clinical manifestations of the spinal cord affection preceded any obvious signs of anæmia, which further argues against this view. Another consideration which is opposed to this hypothesis and to which sufficient weight has not been given is the fact that the number of cases of spinal cord changes of this kind is small compared with the large numbers of profound anæmias met with from

[6] Archiv für Psychiatrie, 1893, Band xxv.
[7] Zeitschrift für Klinische Medicin, 1892, Band xxi.
[8] Inaugural Dissertation, Leipzig, 1895.
[9] Deutsche Zeitschrift für Nervenheilkunde, 1896, Band viii.
[10] Neurologisches Centralblatt, 1896.

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various causes, even if we excluded the cases of chlorosis in young girls. Even in these Nonne would expect cord changes to occur, for in concluding that all anæmias of a progressive character may lead to degenerations in the spinal cord he asks if it is not possible for them to exist in cases of chlorosis also. It has been suggested that phenomena such as the absence of knee-jerks sometimes met with in cases of chlorosis may indicate a minor degree of a similar change which in the graver forms of anæmia becomes of so pronounced a character. I, however, venture to contend that the two conditions are not strictly comparable. Prévost[11] showed experimentally that depriving the lumbar centres of blood by compression of the abdominal aorta abolishes the knee-jerks, and I have shown[12] that the same thing occurs in general anæmia produced by bleeding and in cases in which asphyxia is artificially induced. So that if the spinal centres to which the knee-jerks are related be deprived of blood or supplied only with blood containing an excess of carbonic acid the knee-jerks are abolished. While the excess of carbonic acid may have something to do with this result in the case of asphyxia, reasons are given elsewhere[13] for regarding the want of oxygen as the more potent factor in both cases. My contention, therefore, is that in cases of chlorosis in which the knee-jerks are abolished or in which temporary paraplegia occurs such phenomena ought to be attributed to this starving of the spinal centres of oxygen leading to a condition of functional inactivity rather than to the action of an agent so powerful as that which is responsible for the profound changes met with in the spinal cord in cases of combined sclerosis whether associated with anæmia or not. The experiments of von Voss[14] are important in this connexion, for though he succeeded in inducing pernicious anæmia in animals by artificial means and in keeping them alive for periods up to twenty-four weeks, he could find no changes in their spinal cords such as have been found in these cases of combined degeneration in man.

A further argument which might be advanced against the view that anæmia is the cause of the combined degenerations of the spinal cord that have been met with in its association is that profound degenerations of the kind have not been met with in the severe anæmia which occurs in leucocythæmia, lymphadenoma, malignant disease, and the like. Too much cannot be made of this, however, for it is possible that the association has been missed through ignorance of the possibility of such an occurrence, and it may be that systematic examination of such cases in future with this object in view may reveal that such an association is very much more common than we supposed. A striking and instructive instance of the need for caution in this connexion is supplied by a case recorded by Michell Clarke[15] in which symptoms of spinal cord lesions were masked by those due to profound anæmia. Further, Eisenlohr[16] and Müller[17] have each found lesions of the peripheral cranial nerves in lymphatic leukæmia, and changes in the medulla oblongata have been found respectively by Kast[18] and Alt.[19] Then, again, Müller[20] observed a case of leukæmia with slight sclerosis of the postero-internal and to some extent of the postero-external columns, increasing in degree from the lumbar to the cervical part of the spinal cord with increase and thickening of the neuroglia and falling out of nerve fibres. Patches of degeneration were also found in the anterior and lateral tracts. And Nonne[21] has recorded two cases of leukæmia in which there were no nervous symptoms during life, but in which he found patches of degeneration in the anterior, lateral, and posterior columns non-symmetrically distributed. There was in addition in one of the cases sclerosis of the postero-internal columns throughout the cervical cord and slight symmetrical sclerosis of the outer part of this tract and median part of the postero-external column in the cephalic end of the thoracic cord. In spite of cases of this kind which appear to support the views of those who regard anæmia as the cause of the spinal cord degenerations now under consideration the bulk of the evidence is opposed to this hypothesis. It appears to me to be more reasonable to suppose, as has been done by Lichtheim, Minnich, Taylor, and others, that the anæmia and spinal cord changes are the result of a common cause in the form of some toxic state of the blood. I do not, however, concur with Taylor, whose opinion is shared by Michell Clarke, in supposing that the degenerations may in part be the result of the hæmorrhages which take place in the spinal cord, and which are regarded as comparable to those which occur in the retina, brain, and other parts in pernicious anæmia. It may be that the presence of such hæmorrhages in the spinal cord is to be so accounted for; but in that they have also been found in cases of combined degenerations of the spinal cord in which anæmia was not a feature in the clinical history, the hæmorrhages may be the result of the action of a toxin on the walls of the spinal cord vessels whether the poison is or is not capable of inducing anæmia also. We are, of course, familiar with hæmorrhages of the kind in connexion with the action of various toxins on the central nervous system. That they form no essential part in the etiology and pathology of the spinal cord affection under consideration is proved by the fact that the most pronounced degeneration of the nerve elements may be met with in these cases throughout the spinal cord, without any hæmorrhages or their remains being detected. Further, in that such hæmorrhages have been commonly met with in the spinal cord in cases of severe anæmia without clinical manifestations of spinal cord symptoms, and without any change at all comparable to that of the combined degeneration type, it is reasonable to suppose that had they anything to do with the condition now under consideration they would be met with more frequently, in view of the large number of cases of severe anæmia which occur. Anæmia may play a part, and that a not unimportant one, in reducing the resistive power of the nerve elements so as to render them less able to withstand the baneful influence of some toxin, a property which anæmia would share with other debilitating influences and cachectic states. Thus it may come about that anæmia or other impoverished states of the system, themselves dependent on the action of some toxin, may in their turn render the nerve elements more susceptible to the action of the same or it may be some other poison.

In cases like the third, and one recorded by Rothmann, in which without obvious anæmia a condition of general malnutrition and marked cachexia was associated with the spinal cord affection, it is impossible to believe that the nervous system does not share in the general impoverishment, and whether the toxic agent had commenced its special action of destruction on the particular tracts affected in the combined sclerosis before or after the nervous system had commenced to share in the impoverished state of the body generally, the lowered state of nutrition of the nerve elements could not fail to facilitate the special action of the toxic agent on the particular tracts of the cord found degenerated, whether that degeneration is dependent on the action of the same poison which induced the general cachexia or whether some altogether different toxin is responsible for it.

The admission by most observers that the changes in the spinal cord are the result of the action of a toxin, though an important step in our knowledge of the etiology and pathology of these combined degenerations of the cord, leaves much to be further elicited. Thus Rothmann regards the affection of the white matter as endogenous in origin and the result of a primary affection of the grey matter. Teichmüller also regards the change in the grey matter as important and looks on both the tract affection and scattered areas of degeneration in the white matter as the result of small hæmorrhages. Pétion[22] similarly looks on the sclerosis as consequent on small hæmorrhages, while Nonne[23] attributes the changes in the white matter to patches of acute myelitis occurring in the earlier stages of the affection, and Bödeker and Juliusberger hold a similar view in that according to them the affection is to be regarded as a disseminated myelitis, which has a predilection for certain tracts of the spinal cord. The existence of so many different views on this question must, in part at any rate, be due to the opinions of writers being based on the particular conditions found in the cases which have come under their

[11] Revue Médicale de la Suisse Romande, February, 1881.
[12] Proceedings of the Royal Society, vol. liii., 1893.
[13] Loc. cit.
[14] Deutsches Archiv für Klinische Medicin, 1897, Band lxviii., p. 489.
[15] Brit. Med. Jour., 1897, ii., p. 326.
[16] Virchow's Archiv, 1878, Band lxxiii.
[17] Inaugural Dissertation, Berlin, 1895.
[18] Deutsche Zeitschrift für Klinische Medicin, 1895, No. 28.
[19] Wiener Medicinische Wochenschrift, 1896, No. 21.
[20] Loc. cit.
[21] Deutsche Zeitschrift für Nervenheilkunde, 1897, p. 165.
[22] Norddeutsches Medicinsches Archiv, 1896, N.F., Band. vi, and Neurologisches Centralblatt, 1896, p. 747.
[23] Neurologisches Centralblatt, 1896, p. 137.

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individual observations, for a general survey of the whole subject, giving due weight to the changes found in all the recorded cases, does not, it appears to me, admit of such diversity of opinion. Any view which attributes the changes in the white columns of the cord to a primary affection of the grey matter appears to me to be erroneous in that in no small proportion of the total number of recorded cases the grey matter has been found intact, while in a large number of cases in which changes have been found in the grey matter they have been slight and insignificant compared to the degeneration of the white matter, so that the latter could not possibly depend on the former changes. Moreover, there is a wonderful symmetry in the affection of the white matter, while changes in the grey matter when present are irregularly distributed as a rule. A further argument against this view is to be found in the fact that the parts of the white matter which chiefly escape are largely those the fibres of which are of endogenous origin.

The view which supposes the degenerative changes in the various affected tracts of the cord to be due to small hæmorrhages is equally untenable, for in many cases there are no hæmorrhages present nor can the slightest traces of former hæmorrhages be detected. Even when hæmorrhages are present they are too few too small and too scattered to possibly account for degenerations affecting tracts symmetrically and in their entirety throughout so large a part of the spinal cord and producing so profound an alteration as to result in the complete degeneration of certain of them in parts of their course. Moreover, did larger hæmorrhages occur at certain points in the cord so as to interrupt the greater parts of the same tracts on both sides, we should find some evidence of ascending degenerations of certain tracts above such lesions with their escape, at any rate in part, below them and of descending degenerations of other tracts below such hæmorrhages with partial or complete escape of the same tracts above them. Not only have no such large hæmorrhages ever been met with, but the distribution of the degenerations in the cord quite precludes such a possibility. It is only necessary to remember that in most of these cases the degeneration both in the posterior and lateral columns is most pronounced in the cervical and upper thoracic cord and that it diminishes in degree and extent in both pairs of tracts as we pass towards the cephalic and caudal extremities respectively.

The hypothesis which, while not regarding the degenerations in the cord as secondary to hæmorrhages, nevertheless assumes that they are of vascular origin in the sense that the degeneration commences in the immediate vicinity of vessels with altered walls, owes its origin to the observations of Nonne and Minnich, who both found areas of degeneration surrounding such vessels with altered walls. But as von Voss has pointed out, and as I can fully confirm, such areas of degeneration are often seen in the neighbourhood of perfectly healthy vessels, while on the other hand vessels with markedly changed walls may be seen in parts of the cord free from degeneration, and, further, small areas of degeneration occur with no vessel of any kind in their immediate neighbourhood. Burr [24] rejects the vascular theory owing to the fact that he examined the spinal cords in seven cases of pernicious anæmia and in all but one found changes present although he scarcely ever found changes in the blood-vessels. That the topographical distribution of the degeneration of the white matter of the cord depends on the vascular distribution there can be little question. This will be obvious if it is borne in mind that the blood-supply of a given transverse area of the cord is derived from two sources, the anterior median arteries in the anterior median fissure and the peripheral arteries. The former supply the grey matter of the anterior horns and the white matter bordering on them and the neck of the posterior horn including Clarke's columns, while the latter supply the whole of the rest of the white matter of the cord. The distribution of the affection of the white matter of the cord in these cases of combined degeneration is precisely that of these peripheral vessels.

We have seen that cases occur in which there is affection of both regions of these different vascular supplies—viz., the grey as well as the white matter; but we have also seen that there are other cases in which the changes are limited to the area of supply of the peripheral vessels. Why there should be this escape of the area of supply of the anterior median arteries in some cases is not clear; but this much seems certain—viz., that the affection of regions supplied by the peripheral vessels does not depend on pachymeningitis in these cases, as has been supposed by Marie to account for certain forms of combined sclerosis. Difficult as these differences are of explanation they are no more curious than is the fact that in an admittedly infective disease like acute anterior poliomyelitis there should be affection of the area of supply of the anterior median artery alone, while that of the peripheral arteries escapes entirely. This belief that the morbid condition owes its topographical distribution to the vascular distribution must not be interpreted as meaning that I am of opinion that the degenerations of the spinal cord are vascular in the sense that they depend on changes in the vessel walls, whose impermeability leads to impoverishment of the nerve elements. That such thickening of vessels occurs and that when it occurs it cannot fail to affect the nutrition of the parts supplied by such vessels is admitted; but that this is the primary cause of the degeneration of the nerve elements is far from my belief, in that cases have been recorded in which with extensive degeneration of the nerve elements no changes in the vessel walls have been detected. I regard the changes in the vessel walls as rather depending on the same cause as the parenchymatous degeneration of the nerve elements, and that the only part played by the vessels in the initiation of the morbid changes in the nerve elements is that of bringing the toxic material to them.

We have lastly to consider the view of Nonne and of Bödeker and Juliusberger, who regard the degeneration as the result of disseminated myelitis. The objection which has been advanced against considering the degenerations as the result of hæmorrhages to the effect that parts of certain tracts should be affected above such lesions and should escape below, while others should be affected below and escape above, is equally applicable in the case of myelitis. Then, again, although we see all stages, including what appears to be the earliest of the changes in the spinal cord, we never meet with a round cell infiltration of the tissue so characteristic of changes of inflammatory origin. What, then, are we to regard as the mode of origin of the changes met with in the various nerve tracts of the spinal cord? The answer appears to me to be simple. We have already admitted that a toxin is responsible for the production of the spinal cord changes, and nothing appears more natural than that this toxic body (whatever may be its chemical nature) should by its action on the nerve elements result in a parenchymatous degeneration of them. Such a theory accords best with the changes found and with their distribution. The most reasonable explanation which can be offered as to why some parts of the cords are affected and others are not is that all parts of the central nervous system are not equally prone to be deleteriously affected by one and the same toxic agent, and that while certain parts are exceedingly easily damaged by one poison others have a peculiar power of resistance to the action of such a toxin, while it may be that these very parts are much less able to resist the action of some other toxin which may have little or no effect on the parts so susceptible to a poison having different properties.

Another question which deserves fuller consideration than I have already given it in this paper is how far we are justified in regarding all the cases of combined sclerosis of the spinal cord as belonging to the same category. That there are many totally distinct diseases in which tracts of different function are simultaneously affected, or in which the affection of tracts of a certain function is followed by similar affections of other tracts of entirely different functions, is obvious; but there also appear to me to be conditions in which the tracts are so affected, and which are at present regarded as distinct from each other, which should be regarded as identical. As coming within the former category I would instance the following. 1. Cases of tabes with affection of the crossed pyramidal tracts, those with degeneration of the direct cerebellar tracts alone or in conjunction with the crossed pyramidal tracts. 2. Cases of primary lateral sclerosis in which the posterior columns become secondarily affected or in which the direct pyramidal and direct cerebellar tracts are involved and the posterior columns remain normal. (The only recorded cases of the latter are open to question in that the posterior columns may have been affected in the upper unexamined part of the cord in one case and in that Goll's columns were intensely stained by carmine in the

[24] University Medical Magazine, April, 1895.

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cervical region in the other case.) 3. Combined sclerosis of the posterior and lateral columns in general paralysis of the insane. 4. Friedreich's hereditary ataxy. In the second category I would include all those cases in which, with or without the presence of anæmia, degeneration occurs in tracts of different function in the spinal cord simultaneously or in quick succession and in which, irrespective of the duration of the clinical history or the precise order of occurrence of the phenomena dependent on affection of the tracts, there is found post mortem degeneration of the posterior columns, the crossed and direct pyramidal tracts, and the direct cerebellar tract. But it will be obvious that further subdivision of this great group will be necessary if we are to include in it conditions with so wide a difference in length of clinical history as the cases which we have been considering and those described by Gowers as ataxic paraplegia. Let us consider what justification there is for including in this group those acute cases in which, without anæmia, there occur symptoms attributable to affection of the spinal cord indistinguishable from the symptoms which occur in the cases associated with anæmia, the anæmia cases and those which have been described under the title of ataxic paraplegia. Sir William Gowers's description of the clinical features of the last condition leads me to conclude that its course is essentially chronic. While true of many cases, however, exceptions certainly occur to the rule, if, indeed, the rule is still to hold good now that with a wider experience of the condition we find that so many cases presenting the clinical and pathological pictures of ataxic paraplegia differ from it only in one or two minor details, including a shorter clinical course. If we allow that cases of ataxic paraplegia may run a subacute or even an acute course, then there seems little or nothing to separate this class of cases from the cases of combined cord changes which have been described in anæmia. How closely similar the conditions are is well exemplified by two cases recorded by Wagner [25] as instances of postero-lateral sclerosis in the sense that we would regard them as cases of ataxic paraplegia, but which, if a distinction is to be drawn between ataxic paraplegia and the cord changes which occur in anæmia, must unquestionably be relegated to the latter category. Oddly enough, however, Wagner does not appear to have been struck by the similarity of his cases to those which have been described in association with anæmia, although the morbid changes met with are indistinguishable from those found in the cases of anæmia. Further, one of his cases was markedly anæmic and in one the duration of the illness was only six months, while in the other it was two years. To admit that these cases are examples of ataxic paraplegia is to admit that this affection may run a subacute course, and such an admission also involves the necessity of our regarding all these cases of combined sclerosis as belonging to the same class—that originally known as ataxic paraplegia—irrespective of the length of the clinical history and as to whether anæmia was a feature in the case or not. Such a view would not be out of keeping with what we know of other diseases of the nervous system which owe their origin to the action of poisons, whether these are generated in the body or introduced into the system from without, for all such affections present marked variations as regards acuteness and chronicity and as regards the extent and intensity of the resulting morbid process. That such should be the case is only what is to be expected in that the rate of progress and the amount of damage done must of necessity depend largely on the virulence of the poison, its amount, and the resistive or other antagonistic properties possessed by the tissues on which it acts. If, as seems highly probable, therefore, the combined degenerations of the spinal cord owe their origin to the action of some toxic substance, there is no reason why such degenerations should not present all degrees of variation in their rate of progress and why the same poison should not generate the more chronic process of "ataxic paraplegia" and the more acute changes in precisely the same tracts of the spinal cord in the cases of anæmia and of cachectic conditions in which the resistive powers of the nerve elements must of necessity be lessened, whether these states of the general system were in existence before the poison commenced its special destructive action on the nerve elements or only became pronounced subsequently to this. From what has been said it will be seen that there is much which suggests a close relationship between ataxic paraplegia and the acuter forms of postero-lateral degeneration, but it would be premature to regard them as identical for there are some links in the chain of evidence which are still wanting.

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[25] Deutsche Zeitschrift für Nervenheilkunde, 1897, Band xi., p. 1.

HÆMATURIA AS A SYMPTOM: METHODS EMPLOYED IN MAKING A DIFFERENTIAL DIAGNOSIS;

WITH 19 CASES ILLUSTRATING POINTS OF INTEREST IN THE DIAGNOSIS OF RENAL AFFECTIONS CHARACTERISED BY THE PRESENCE OF BLOOD IN THE URINE.

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THE appearance of blood in the urine during micturition is a symptom of a large number of different lesions and, as seen in surgical practice, may have its origin in any of the divisions of the urinary tract. Hæmaturia may be due to (*a*) lesions of the renal parenchyma or the pelvis; (*b*) disease of the ureters; (*c*) disease of the bladder; (*d*) disease of the prostate; (*e*) disease of the urethra; and (*f*) disease of the testicles. In this paper I shall endeavour in the first instance to discuss in a general way the characteristics of the urine in local lesions of the urinary tract in which hæmaturia is a prominent symptom and will describe in detail the exact methods which should be employed in making a differential diagnosis. Having done so, I shall classify the lesions of the urinary tract which are commonly associated with hæmorrhage and then describe in detail and illustrate fully by selected cases the etiology and symptomatology of renal hæmaturia. While in this communication only hæmaturia from lesions of the kidney will be illustrated by cases, I hope at a future time to publish a series of cases of disease of other portions of the tract in which the passage of blood in the urine was a prominent symptom and I shall then discuss the general question of treatment. I shall now refer to lesions of other portions of the urinary tract only in so far as it is necessary for differential diagnosis. We may classify the diseases of the kidney commonly associated with blood in the urine under the following heads:—(1) Traumatic lesions—(*a*) from injury and (*b*) from calculus; (2) Passive hyperæmia—(*a*) pressure on the renal veins, (*b*) torsion of the renal veins, and (*c*) reflex spasm of arterioles; (3) Inflammatory hyperæmia—(*a*) nephritis, acute and chronic, (*b*) tuberculous disease, and (*c*) cystic degeneration and hydatids; and (4) Tumours of the kidney. In the old nosological system of Vogel hæmaturia denotes a hæmorrhage from the kidney exclusively, but the name has been applied with different latitude of meaning by different writers. According to its etymological sense it should be restricted to cases in which blood is effused from the vessels in the kidney, ureters, or bladder and discharged along with urine, excluding from the definition urethral hæmorrhage in which the blood flows by drops or in a continuous stream from the orifice of the urethra and which is not properly a mictus cruentus. Every flow of blood from the urethra ought not to be considered a hæmaturia; a hæmorrhage having its starting-point in front of the muscle of Wilson ought to be distinguished from a true hæmaturia. The pathological conditions which are associated with the appearance of blood in the urine are very various and numerous, and while the great majority of these maladies are such that they naturally come under the cognisance of the surgeon many other cases of hæmaturia do not come under our consideration as they belong strictly to medical rather than to surgical practice. For example, hæmaturia may be an accompaniment of hæmophilia, septicæmia, typhus, enteric, or malarial fevers, small-pox, scurvy, or purpura; or it may be the direct consequence of poisonous agents, such as cantharides, alcohol, turpentine, phosphorus, and arsenic. Red urine is sometimes passed by patients who have taken sulphonal in large doses or for a long period. The Burgundy-red colouration is not due, however, to blood, but to the presence of abnormal pigments, urohæmatoporphyrin or its allies.

Eliminating such sources of hæmorrhage and considering

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only those of a purely surgical nature, it may be said that the presence of blood in the urine indicates disease in some portion of the urinary tract; the red corpuscles may escape from the capillaries of the kidney and become mixed with the urine as it is secreted, or the urine may escape from the collecting tubes of the kidney in the normal state and afterwards become tinged with blood from the calyces, the ureters, or the bladder. How, then, are we to form a differential diagnosis of the source of the hæmorrhage? This may be done in several ways. First, by observing *(a)* the physical characters of the urine and of the blood-clot, *(b)* the admixture of other deposits with the blood, *(c)* the time at which the blood appears in the stream, *(d)* the frequency and duration of attacks, and *(e)* the effects of movements and exercise or of complete rest in the course of an attack. Secondly, by collecting the urine separately from the two ureters or by observing blood escaping from the orifice of a ureter. Thirdly, by estimating the quantity of hæmoglobin and comparing it with the amount of albumin in the urine. Fourthly, by carefully considering all the other accompanying objective and subjective phenomena. In acute disease the diagnosis between hæmaturia of renal and vesical origin is usually easy, but it is frequently otherwise in chronic affections. In the former the objective and subjective phenomena are so pronounced as clearly to indicate the organ which is affected; in the latter the most careful observation of minute details is often necessary in order to determine the seat of the lesion, and in not a few instances examinations conducted by different observers may lead to disagreement as to whether the secreting, the conducting, or the collecting portions of the urinary system are at fault. I shall endeavour to sketch and illustrate by cases under the divisions just enumerated a systematic inquiry respecting the signs and symptoms accompanying hæmaturia in so far as they may lead us to a differential diagnosis of the source of the blood.

1. (a) Physical Examination of the Urine and the Circumstances connected with the Presence of Blood in the Evacuation.

The following questions must be inquired into and answered: What is the colour of the blood? Is it intimately mixed with the urine and is the whole stream equally colourised? Is the quantity of blood augmented by exercise or diminished by rest? Have clots been seen, and what is their form? Are there tube-casts or blood-casts to be discovered, or are there other deposits found in the urine? Are the attacks frequently repeated and of short duration, or are they protracted? These are some of the most important points to inquire into, and presently I shall discuss them in detail. The colour imparted to the urine by the addition of blood varies greatly in intensity and shade—from a pale rose colour to a bright red like red-currant syrup mixed in water, to a dark red, to a colour simulating porter, or to a brown colouration not unlike coffee. As a general rule, however, it may be stated that the nearer the source of hæmorrhage is to the external orifice of the urethra the less is the blood altered in appearance. Sometimes, however, as in cases of tumour of the kidney, the quantity of blood derived from an organ may be so large in amount and may be expelled so rapidly after it has escaped from the vessels that little change may be observed in its colour. Again, as will be illustrated presently, in some cases of rupture of the kidney from direct violence, the urine may be of a bright red colour, the blood having undergone very little change, but if there is no history or symptoms pointing to tumour of the kidney or to rupture of the organ from injury the above statement may be accepted as correct. On the other hand, when the hæmaturia is of vesical origin the first quantity of urine passed may present a normal appearance, especially if the patient has been for some time at rest in a recumbent posture and the urine is passed while the patient is in bed, but in such circumstances as the bladder empties itself the urine gradually becomes more and more tinged, till finally the last drops evacuated may be almost pure blood. This is to be especially noted in cases of tumour of the bladder and of vesical calculus, also in passive hyperæmia of the bladder. In passive hyperæmia probably the engorgement of the vesical veins is greatly augmented by the process of muscular contraction, the efflux trunks being compressed by the muscular trabeculæ through which they pass on their way to join the plexus of veins on the serous surface of the bladder. When the bladder is moderately full the veins are distended and gorged with blood, but when an expulsive effort is added to the already considerable tension the weak capillary walls give way and there may be considerable oozing of blood from the mucous surface without the appearance of any gross lesion when the bladder is examined with the cystoscope. As a general rule, in hæmorrhage from the bladder the urine is mixed with a considerable quantity of mucus and is of a bright florid colour; but if long pent up in the viscus it may assume a dark colour dependent upon the reaction of the urine, which in such cases is usually alkaline. When due to vesical calculus the hæmorrhage is increased by exertion and in cases of tumour of the bladder the bleeding is always worse after an attempt has been made to examine the bladder by instruments. When the blood is from the kidneys or the ureters it is generally intimately mixed with the urine, to which it imparts a dark smoky colour, unless when, as in Cases 7 and 12, the blood issues in considerable quantity from the pelvis of the kidney and flows rapidly along the ureter, distends the bladder, and escapes without undergoing much change. While it is true that usually blood of renal origin is freely mixed with the excretion which presents a smoky or coffee colour, too much importance must not be attached to these appearances, as they do not depend so much upon the source of the blood as upon the reaction of the urine itself—for example, in some cases of enlarged prostate and chronic vesical catarrh.

In cases where there is considerable residual urine freshly oozed blood may rapidly become smoky, and while at one time the urine may be clear and of a bright colour, while the corpuscles may separate rapidly as a deposit, on other occasions the colouring matter may be rapidly dissolved and the urine may present a distinctly smoky appearance. R. von Jaksch states that "when blood-cells are intimately mixed with the urine in such a way that though they present a large quantity of deeply tinged fluid they do *not* form a sediment after many hours' standing it may be inferred that the hæmorrhage took place in the substance of the kidney or in the renal pelvis or ureters. If under these circumstances they are seen with the microscope to be profoundly altered having lost their colouring matter and presenting the appearance of pale yellow rings, the further conclusion results that the blood has been effused from the kidney itself and the symptom points to acute nephritis or to a fresh exacerbation in the course of chronic nephritis." To this statement I cannot assent. In many cases I have seen on careful observation the urine of individual patients vary greatly from day to day, on some occasions presenting the characteristics described by Jaksch and at other times an altogether different appearance, while the hæmorrhage was proved ultimately not to be of renal origin.

Blood having escaped from the vessels its fibrous constituents may coagulate into firm clots which during their formation may entangle some of the histological elements of the structures in which they lie or by their firm appearance, form, or bulk may indicate the source of the hæmorrhage. Clots are seldom noticed in the urine unless in cases of abundant hæmorrhage; they may be few in number or numerous; generally they are soft in consistence, and when small in size they are easily dissolved in the urine and consequently, if not looked for immediately after micturition, they may be lost. The form of the clot may be ovoid, or may be long and worm-shaped, or may resemble in appearance a well-gorged leech. As to colour they are generally dark red, but may vary considerably, sometimes being black, bright red, or they may become partly or wholly discoloured—spotted red in a greyish background or entirely grey. When the clot is large, the hæmorrhage is usually, but not invariably, from the bladder; the clots may be so huge that they cannot pass along the urethra without being broken up either by the repeated contraction of the bladder or by means of instruments. These clots are generally very irregular in form and size; they may be so large as to be described by the patient as like masses of liver, but here again a conclusion must not be drawn from the size and appearance of the clot. It is generally said, and probably truly said, that these large masses of blood-clot are due to a vesical lesion, but many cases have been recorded, and some examples will be given presently, where large clots have been formed in the bladder and evacuated where the hæmorrhage has been clearly due to a renal lesion. The coagulum may make a complete cast of the pelvis or of the calyces. Three years ago, in a case of very acute parenchymatous nephritis, I had sent to me a clot of blood which was almost a complete cast

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of the pelvis and a portion of the ureter of one kidney; and I remember many years ago in an exactly similar case finding at a post-mortem inspection both pelves occupied by blood-clot which extended down to, and protruded from, the orifices of the ureters into the bladder. Rounded clots corresponding to the diameter of the ureter may escape, or leech-like ovoid casts may be taken of the first part of the urethra, or long bougie-like coagula from its anterior part. While the presence of considerable clots is usually, though not always, conclusively against the idea of the hæmorrhage being from the secreting substance of the kidney the absence of clots visible to the eye proves nothing. If the passage of a long worm-shaped blood-clot is preceded by a temporary cessation of the hæmaturia and its escape followed by a recurrence of the bleeding this proves almost to demonstration that the clot has been plugging one ureter, and if in addition the clot is of such a size as to support the idea of being a mould of the ureter the evidence is conclusive as to the source of the hæmorrhage. The hæmorrhage has been from the kidney and blood has coagulated in the ureter and has completely plugged it, the coagulum has then become shrunken, while at the same time an accumulation of urine has taken place in the pelvis and caused dilatation of the ureter until a point has been reached where the onward pressure from above is so great that the clot has been forced out into the bladder along with an accumulation of blood-stained urine. I observed this lately in a case (Case 1) where palpation of the left kidney always brought on hæmaturia, but when the patient was left at rest the blood disappeared. The microscopic appearance of these clots varies according to their age and the changes they have undergone since coagulation has occurred. If the clot is freshly formed the blood corpuscles present practically a normal appearance and are seen to be well coloured and embedded in an amorphous or slightly granular matrix of fibrin; but if the clot is old, and especially if it is small in size, the hæmoglobin will be seen to have dissolved out and the red blood corpuscles to be represented only by little colourless rings from three to five micro-millimetres in diameter. These fragments of discoloured coagulated blood have sometimes been mistaken by microscopists for portions of tumours. I have had frequently sent for examination fragments of bleached blood-clot in the belief that they were portions of malignant tumours, especially sarcomata. The size of the cells, however, and the absence of nuclei, as well as the behaviour of sections when acted upon by staining agents, clear up the diagnosis. In several cases, the details of one of which will be described presently (Case 10), on examination with the cystoscope one ureter was found to be blocked by a coagulum which protruded from the orifice of the ureter and hung into the bladder, not unlike a small worm hanging from the end of a fishing hook. It was of a dark reddish grey colour and firm consistence, being evidently some days old. It was so firm that the examination of the bladder and the movements of the cystoscope disturbed it and its dislodgment was immediately followed by a copious flow of blood from the previously obstructed ureter. In renal hæmaturia minute coagula, casts of the uriniferous tubules, may be discovered in the urinary sediment by the microscope and may give evidence by their form and shape whence they are derived. In this form of hæmaturia the number of blood corpuscles is no criterion of the quantity of albumin in the urine, whereas in hæmorrhage from the conducting or collecting portions of the urinary tract, provided there is no pus in the urine, the number of red corpuscles or the amount of hæmoglobin may be accepted as the measure of the quantity of albumin contained in the excretion.

(*b*) *The Admixture of other Deposits with the Blood.*

In many cases of hæmaturia the only abnormal constituent in the urine is blood, while in other cases it is mixed with pus, mucus, tuberculous material, portions of tumours, or micro-organisms, the detection of which throws considerable light on the etiology of the malady. The mixture of the blood with deposits of another kind requires only to be mentioned here, as space will not permit me to enter into a detailed descripton of the various deposits which may be found. The three most common, however, I may mention—namely pus, mucus, and tuberculous debris. If the urine is placed in a conical glass and allowed to stand for a few hours, and the glass is then held up to the light, if pus is present in any great amount the deposits will be found in distinct layers like geological strata; the bottom of the glass is occupied by a yellowish deposit which may be more or less blood-stained pus, or, in some cases of renal pyuria, the pus may carry down almost all the blood corpuscles so as to leave an almost quite clear supernatant fluid. When mucus is present, on the other hand, not uncommonly the blood corpuscles may be thrown down first, forming a layer at the bottom of the vessel, and following upon this may be seen a layer of glairy gelatinous material which may have a reddish tint or may contain a multitude of minute bloody streaks which intersect it and penetrate into all parts of this gelatinous layer. In such cases the hæmorrhage is usually due to some lesion in the bladder and the presence of such an amount of mucus is generally indicative of a more or less acute vesical catarrh. The tuberculous deposit can only be distinguished by microscopic examination, by the cultivation of tuberculous bacilli, or by inoculation experiments. Beyond demonstrating the presence of blood-casts of the uriniferous tubules the microscope may reveal the existence of other elements of consequence in the deposit. For example, the character of the epithelium as derived from the renal parenchyma, from the pelvis, the ureter, or the bladder may greatly assist one in diagnosis; or, on the other hand, should the urine contain small fragments of tumours, parasites, or bacteria, the hæmorrhage may be explained.

(*c*) *The Time at which the Blood appears in the Stream.*

In order to ascertain the precise moment at which the blood appears in the stream it is necessary for the surgeon to see the patient urinate and to observe whether the colouration is equal during the whole continuance of micturition or is more abundant at the beginning or at the end of the act. The appearance of blood at the beginning of micturition, the remainder of the flow being clear, may be an indication of two distinct conditions: the lesion is either in the prostate close to the neck of the bladder or a malady or injury is present in the urethra. In some lesions of the prostate the blood may pass into the urethra and accumulate there; so also in lesions of the first portion of the urethra the blood may flow backwards into the bladder and mix with its contents. When the blood originates in the urethra and accumulates there, or when it escapes from the prostate and flows into the urethra, the hæmaturia is limited to the beginning of micturition, but if the quantity of blood is great and flows backward into the bladder and mixes with its contents then the whole of the urine becomes more or less coloured. Again, in a lesion at the neck of the bladder giving rise to hæmorrhage the hæmaturia is not limited to the beginning of micturition but blood is also observed to escape at the end of the act. This is easily explained; between the acts of urination the blood accumulates in the urethra or close to its internal orifice and is expelled with the first few drops of urine only, that following being clear, but again before complete contraction of the bladder occurs a fresh hæmorrhage is induced which shows itself in the urine last ejected. When the hæmorrhage is due to injury or disease of the urethra the nature of the lesion is generally clearly indicated by the circumstance that the blood is observed to escape quite independently of micturition; sometimes, indeed, blood is seen to flow from the meatus spontaneously. In cases of tumour of the bladder and also in vesical calculus the hæmorrhage is most profuse at the end of micturition.

(*d*) *The Frequency and Duration of the Attacks.*

While nothing absolutely definite can be ascertained by a close observation and study of the frequency and duration of the hæmaturiæ still considerable help may be got in this way to aid in a diagnosis. For example, in many cases of renal hæmaturia the blood may suddenly appear and just as suddenly disappear soon to be followed by a profuse recurrence; such sudden transformations are in some cases accompanied by the expulsion of long worm-shaped clots, and in such instances we may reasonably conclude that the sudden clearing of the urine has been due to the ureter being obstructed. The blood has coagulated within its lumen and when the clot becomes displaced a fresh and often apparently very profuse escape of blood is observed. The same sudden appearance and disappearance of blood has been observed in cases of moveable kidney with torsion of the renal veins (see Cases 11 and 12); also in cases of renal calculus (see Cases 9 and 10). When hæmaturia comes on without being evidently provoked we may generally surmise that the lesion

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giving rise to it is a serious one although we may not be able to judge its site. In cases of tumour of the bladder the presence of blood is generally very persistent, without intervals, and of long duration, so that the patient may become very anæmic from loss of blood. Again, on the other hand, we meet with cases where hæmaturia more or less profuse has recurred at frequent intervals, but the duration of the attacks has been short and the intervals, between them marked by complete absence of any blood in the urine. Sometimes there may be periods of relief extending over several weeks or even months and usually any fresh recurrence of bleeding can be explained by excessive exercise or unwonted freedom of movement on the part of the patient. If these conditions are associated with the absence of vesical symptoms the strong presumption is in favour of the hæmorrhage being renal in origin and against the hypothesis that the blood is flowing from an ulcerated surface; the total duration of the symptoms is also an important guide to the benign or malignant nature of the malady giving rise to it. The long presence of a stone in the renal pelvis may, after causing occasional hæmaturia for years, be followed by the formation of a carcinoma. I published a case of this kind[1] in which there were symptoms of renal calculus for ten years, pain in and hæmaturia from the left kidney, albumin, and tube-casts from the right kidney. Within six months of death symptoms developed pointing to malignant disease, from which the patient died, and post mortem the left kidney was found to contain six oxalate of lime calculi, the pelvis and calyces were much dilated and the upper half of the kidney was occupied by an epithelioma (see Case 19).

(e) The Effects of Movement or Exercise or of Complete Rest in the Course of an Attack.

When complete rest is taken hæmaturia due to the presence of stone in the renal pelvis, in the bladder, or in the prostate is generally more or less relieved; so also in hæmorrhage observed in cases of movable kidney, or in passive hyperæmia of the kidney resulting from pressure on the renal veins. In such cases it is repeatedly observed that the blood is most abundant in the urine at night when the patient has been taking active exercise during the preceding day, while at the same time the pain in the renal region or irritability of the bladder is increased. It must, however, be also borne in mind, in exceptional instances, that in hæmaturia from an abraded surface, as in carcinomatous or tuberculous ulceration, or in senile prostate, the bleeding occasionally may not be increased by exercise, but as a rule if the hæmaturia persists in spite of prolonged rest in bed, and especially when the bleeding is more abundant during the night than at other times, carcinomatous, sarcomatous, or tuberculous ulceration is to be looked for.

2.—By Collecting the Urine Separately from the Two Ureters or by observing Blood escaping from the Orifice of a Ureter.

Various procedures have been employed to ascertain whether the blood originates in the bladder or flows into it from one of the kidneys and methods have also been devised to ascertain the nature of a vesical lesion. Examination of the bladder by means of the sound, the catheter, or with the finger have been at different times suggested and carried out in practice. When one reads Sir Henry Thompson's[2] description of how exploration of the bladder with the finger should be carried out the marvel is that the injury done to the patient was not appalling. He introduced the *left forefinger into the rectum* as a guide to the incision of the bladder, and when the incision was completed the same finger (*the left index*) presumably without being cleaned was used in exploring the bladder. Sir Henry Thompson[3] went further than this and proposed that portions of a growth might be removed from the main mass by means of a lithotrite and submitted for microscopic examination, surely overlooking the fact that pieces of a growth removed by a crushing instrument must have lost their histological characteristics and hence been rendered valueless for diagnostic purposes. Again, Kuster has employed a curette and Chismore used a calculus aspirator for diagnostic purposes. The use of such imperfect methods is now to be condemned seeing that we have at our disposal the electric cystoscope and ureter catheters, but in order to employ these instruments the surgeon must educate himself in their use, just as in the use of any other instruments of precision. The cystoscope may be used both in men and women and when properly employed the examination subjects the patient to very little risk—less, indeed, than the use of a sound. The sound is too frequently employed in cases of hæmaturia. It is only when the bleeding is the result of a vesical calculus or an enlarged prostate or an hypertrophy of the bladder that any reliable information can be gained by the employment of the sound, and when the hæmaturia is due to other lesions much harm may be done by the rough manipulation necessary to examine the bladder with that instrument. The educated use of the cystoscope being more gentle is less dangerous and it is more valuable, but it should always be used with strictly aseptic precautions. It must be remembered that where the bladder or other portion of the urinary tract is the seat of disease the risk of septic contamination is much greater than when these parts are normal, and when septic contamination does occur the gravity of the condition is proportionately greater. In all cases not only should the cystoscope itself be thoroughly sterilised, but the meatus and surrounding parts should also be carefully washed and rendered as free from contaminating particles as possible, and after examination has been made the bladder should be carefully washed out with a fresh supply of suitable antiseptic solution. Cases undoubtedly have been recorded where, especially in tuberculosis of the kidneys and bladder, dangerous pyelitis and cystitis have followed the use of instruments, but I feel convinced that such evil consequences could not have resulted if the precautions I have just indicated had been carefully attended to. I first suggested the employment of the electric light for examination of the human bladder in 1883 by introducing an electric endoscope into the female bladder. At that time the instrument was simple and for the female served its purpose well, but since then many improvements have been made, so that now for many years the male bladder has been open to inspection by means of Leiter's instrument. By making careful examination with the cystoscope it is usually easy to ascertain whether or not the blood is from the bladder, but in a few instances it is not safe to conclude from the fact of no lesion being observed in the bladder that the hæmaturia is therefore either renal or ureteral in its origin. When, however, the blood is seen by the cystoscope flowing from the orifice of a ureter, or more rarely from both ureters, the observation is of the highest importance as indicating the source from which the blood comes. The following case illustrates this.

CASE 1. *Hæmaturia; pain in the lumbar region and physical signs of left moveable kidney; torsion of the renal vein and the ureter; ragged orifice of left ureter; blood from left kidney only.*—The patient, a woman, was sent to me by Dr. Dunsmuir of Renfrew and in a letter he gave the following history: "She came under my observation on Feb. 17th last, when she complained of frequent micturition, blood in the urine, pain in the lumbar region, and something which she could not well describe in the left renal region. About twenty years ago, while in the act of lifting some heavy wet clothes out of the boiler in the washing-house, she felt as if something had broken in her abdomen and ever after had an uncomfortable looseness which she partly remedied by sewing a pad to her stays. About eight years ago acute pain supervened in the lumbar region and up to the present has been constantly there; it varies with position, being aggravated in the erect posture and minimised slightly by inclining forward. About seven weeks ago frequent micturition came on, and a few weeks later she took to bed and on passing urine her attention was arrested by its fearfully foul smell. On examining it she observed it to be perfectly black and was for the first time alarmed about her health. Since that time the urine has never been free from blood, but varies with her movements: smoky with deposit of mucus and blood-cells after a period of absolute rest, inky black after the jolting in a cab, and claret-coloured after each bimanual examination of the left kidney. Only one clot has been detected, which was of the length and breadth of the little finger-nail and one-eighth of an inch thick with a little tail attached. The abdominal wall is very lax, allowing a fairly easy bimanual examination, which elicited a tumour partly in the left hypochondrium, partly in the epigastric and umbilical regions of a firm consistence and kidney shaped." I examined the patient and found the left kidney mobile and considerably enlarged, and on examination of the urine the

[1] The Scottish Medical and Surgical Journal, vol. i., p. 45.
[2] On Tumours of the Bladder, London, 1884, p. 17.
[3] Brit. Med. Jour., 1890, vol. ii., p. 332.

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deposit presented peculiarities which were difficult to explain, a red deposit was rapidly thrown down, and on microscopic examination it presented the appearance of shreds of fibrous tissue with minute fatty globules entangled in it; along with this numerous blood corpuscles were seen. The deposit was so different from anything that I had previously seen that I submitted it to others for examination, and the consensus of opinion was that these shreds were probably the débris from a renal or vesical tumour. Examination of the bladder with the cystoscope showed it to be practically normal, the only morbid condition was the appearance of the orifice of the left ureter, which was ragged and elevated and presented very much the appearance of the crater of a volcano. While observing the appearance of the ureter blood-stained material was seen to escape from it; this examination led me to suspect the presence of a tumour in the kidney, but the history of the case as given by Dr. Dunsmuir rather favoured moveable kidney leading to torsion of the renal vessels. With the assistance of Dr. D. McK. Dewar I exposed the kidney and found it to be healthy but very free and moveable; a large portion of the adipose capsule was removed and the kidney sutured to the parietes. Since the operation there has been no hæmaturia. During one of the attacks of hæmaturia, while the patient was in the "home," the blood suddenly disappeared and recurred five hours after, apparently more profusely than before. The clearing up of the urine was coincident with increase in the pain and swelling in the renal region and the reappearance of blood gave relief to the pain and swelling and a cast of the ureter was found in the urine.

(To be continued.)

THE PATHOLOGY OF NEUROPATHIC KERATITIS.

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THE occurrence of corneal lesions in association with affections of the trigeminal nerve is well known, but much difference of opinion exists regarding the exact nature of the relationship between the two lesions. The various hypotheses suggested fall into two main groups. In the one the keratitis is regarded as a direct example of perverted trophic action of the nervous system, whereas in the other such a supposed action of the nervous system is regarded as needless and the various effects are thought to be mainly due to the anæsthesia. This insensitive condition of the cornea may act in various ways. Thus foreign bodies may lodge on the cornea and, not being felt, may remain and cause irritation and ulceration. The stimulus to the reflex action of the orbicularis (blinking) being wanting the cornea will not be properly moistened, and this condition may also in part be due to arrest of activity of the lacrymal gland. Again, owing to the sensory paralysis slight injuries (with perhaps microbic invasion from the lacrymal sac or conjunctiva) may give rise to excessive vaso-motor reaction and in this way become more extensive and the reparative processes fail to take place.

During the last year several cases of "neuropathic keratitis" have been under my care at University College Hospital, and as each has some points of special interest I propose to briefly record them and at the same time to review previously recorded clinical cases and post-mortem examinations and also the experimental investigations, with the object of ascertaining how far such evidence favours one or other of the previously mentioned hypotheses.

Now, in the first place, constant exposure of the eye with consequent liability to injury and dryness does not at all necessarily lead to keratitis. Everyone is familiar with cases of old-standing Bell's paralysis in which the cornea has been exposed for years without any damage resulting. And it is quite exceptional to meet with a case of Graves's disease with an inflammation of the exposed cornea. Again, I have notes of a case of a patient who had a severe burn when a child, involving the forehead and eyelid, which prevented effectual closure of the lids, and yet after ten years there had not been the slightest sign of ulceration. Frequently associated with the fifth nerve lesion is a paralysis of other cranial nerves (oculo-motor, &c.), and the presence of ptosis, with consequent protection, does not prevent—though it may modify—the occurrence of typical neuropathic keratitis. And in one of my cases (Case 4) the keratitis developed subsequently to the involvement of the third nerve. Mendel and Hirschberg record a case in a child in which "neuroparalytic keratitis" existed in each eye, associated on the one side with facial paralysis and a sensitive cornea, and on the other with trigeminal paralysis giving rise to an anæsthetic cornea, but with no facial paralysis, and therefore no undue exposure.

In another group of cases the cornea may be completely anæsthetic for a long time and yet no keratitis be set up. The following is a case in point.

CASE 1.—A man, aged fifty years, came to the hospital with acute facial herpes, the patches being situated at the left angle of the mouth, the left lower eyelid and adjacent side of nose, and a fourth large patch on the right ala of the nose and lower lid of same side. Both corneæ were insensitive and no corneal reflex could be obtained, but both were quite sound. It was impossible to bandage both eyes, and as the herpes quickly subsided the man soon returned to work; and although the cornea remained insensitive for several weeks no ulceration or inflammation occurred.

Harlan[1] records a case where the insensitive cornea remained sound "for years" and Gowers mentions a similar one which had been under his observation seven years. And in another of my cases to be given in detail later, the cornea was anæsthetic for some time without being inflamed. W. J. Collins[2] has recorded a case where an anæsthetic cornea became cloudy "after eight months' anæsthesia with perfect pellucidity." Further, complete removal of the Gasserian ganglion in man, with consequent anæsthesia of cornea, is not necessarily followed by keratitis.

In a third group of cases, typical neuropathic keratitis exists with a normally sensitive cornea. Mendel and Hirschberg's case (previously quoted) is a case in point. Genkin reports another in which "trophic keratitis" existed with a normally sensitive cornea. Herpetic eruptions are generally regarded as trophic lesions. Two varieties of herpes of the cornea are met with—the one complicating acute febrile herpes and characterised by small vesicles on the cornea with much irritation which quickly subsides when the vesicles burst; the other occurring with herpes zoster ophthalmicus, differing from the former by the tendency to persistence of the irritation and to implication of the deeper layers of the cornea. The following case is an example of the former variety.

CASE 2.—A woman, aged thirty years, came to the hospital on Sept. 15th with much photophobia. On both upper and lower lids of the right eye were some drying up herpetic vesicles. The lids were separated with great difficulty and then a small superficial ulcer of the cornea was observed. Three weeks later the photophobia was still marked and the ulceration had spread. Ultimately the irritation subsided and the ulcers healed. In this case there was clearly no anæsthesia of the cornea.

In considering this group of cases it must be noted that Mr. Tweedy has for long taught and described that corneal ulcers, having the same clinical characters as those which occur in connexion with grave lesions of the fifth nerve, are frequently found with a normally sensitive cornea; and he thinks that their essential neuropathic nature is shown by the ready way they respond to efficient protective treatment, by the slight vascular reaction accompanying them, and by the frequency of a history of preceding neuralgia.

Lastly, in reference to the hypothesis that an insensitive cornea is less resistant to traumatism, it must be noted that operations on insensitive corneæ—insensitive, that is, from paralysis of the fifth nerve—may do quite well; and Panas[3] records an example of this where the operation was necessitated by a preceding attack of "neuroparalytic keratitis."

It seems fair to conclude from the consideration of these and similar cases that mere anæsthesia of cornea with consequent dryness and impaired vaso-motor reaction cannot be regarded as the essential factor in the production of the keratitis, though there can be no doubt that anæsthesia and also want of protection do modify the course of the

[1] Harlan: American Journal of the Medical Sciences, vol. cxxxiv.
[2] Collins: Transactions of the Ophthalmological Society of the United Kingdom, vol. viii. and vol. ix.
[3] Panas: Maladie des Yeux, vol. i., p. 257.

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inflammation. And this conclusion is further strengthened by the fact (to be more fully emphasised later) that the keratitis is frequently preceded by iritis.

The evidence respecting the remaining hypothesis—namely, that the keratitis is the direct outcome of some perverted trophic nervous action—must be next considered. And in the first place there is a good deal of evidence of the existence of such trophic action of the nervous system in parts of the body other than the eye. The acute bedsores in some spinal cases, the perforating ulcer and joint affections in tabes dorsalis, the atrophy of the phalanges and joint lesions in syringomyelia, and the atrophy of skin and bone which may follow injuries of nerves are all cases in point. The last group of cases mentioned has an important bearing on the subject immediately under consideration, for Gowers states that atrophy of skin and bone in the finger-ends after a lesion of the nerve of the arm may proceed in spite of the existence and persistence of normal sensibility. So that the retention of normal sensation in a part does not in the least militate against the view that perverted trophic action is going on at the same time. Further, there is a good deal of evidence that the changes occurring in the condition known as facial hemiatrophy depend on lesions of the fifth nerve, and interstitial neuritis of this nerve has been found post mortem. And it is important to note that not only has typical neuropathic keratitis been observed in these cases but also patches of choroiditis with vitreous and lenticular opacities, these latter being probably secondary to changes in the uvea.[4] And, lastly, in association with severe cases of trigeminal neuralgia, trophic lesions such as a falling off of the hair and eyebrows or a whitening of them have been observed.[5]

Thus though it may be impossible to prove clinically that neuropathic keratitis is due to a trophic lesion yet such an explanation seems most probable. The further question then arises—viz., whether such trophic action is to be viewed as one of paralysis or as one of irritation. The clinical evidence points most strongly to the process being one of irritation. In the first place, cases of herpes are associated with neuralgic pain; in the next, a history of preceding neuralgia is very commonly to be obtained in cases of trophic keratitis, even though the cornea be anæsthetic at the time when the keratitis supervenes; thirdly, aseptic removal of the Gasserian ganglion, with healing by first intention, is not necessarily followed by keratitis even though the eye be not protected; and finally (and perhaps most important) cases are frequently met with in which a condition of iritis may precede the keratitis. As bearing on these points I will relate the following cases.

CASE 3.—A man, aged forty-one years, came to the hospital on Aug. 14th, 1897. The following notes were then made: "There is complete loss of sensation in the region supplied by the left fifth nerve; there is a shallow, non-vascular ulcer involving the entire extent of the left cornea with the exception of a narrow, clear zone at the outer margin, very slight ciliary injection, no facial paralysis." The patient gave a history of having previously had violent attacks of neuralgia in the left side of the head and eye. The edges of the lids were pared and sutured and the ulcer slowly healed, the cornea becoming much clearer. Later right facial paralysis with intense right-sided neuralgia supervened. Dr. Bastian, who saw the case, regarded it as one of syphilitic meningitis.

CASE 4.—The patient was admitted to University College Hospital under Dr. Bastian in November, 1897, suffering from the effects of an intracranial growth. He stated that the left upper eyelid had "dropped" in the previous September and had remained in that condition ever since. Examination of the left eye showed that there was complete ptosis, the eyeball was quite immobile, the cornea was clear with well-marked circumcorneal injection and deep anterior chamber, the iris was dull, the pupil was of medium size, reacting sluggishly to light; tension was full; and the cornea and conjunctiva were quite anæsthetic. On the right side there was paralysis of the external rectus but no affection of the cornea or iris or fifth nerve. There was optic neuritis in each eye. In addition to the paralysis of the left third, fourth, fifth, and sixth nerves there was paralysis of the left hypoglossal and difficulty in swallowing and in articulation. Eight days after admission a small central funnel-shaped ulcer was noted in the left cornea and there was some increase in the iritis; the eye was now kept effectually bandaged and the ulcer healed in the course of three or four weeks. The patient left the hospital a few days before he died and no post-mortem examination was obtained. The points of special interest in this case are: (1) the supervention of the keratitis in spite of the protection afforded by the presence of ptosis, though doubtless the latter modified and limited the extent of the ulceration; (2) the occurrence of a deep-seated inflammation—iritis—before the corneal trouble; and (3) the presence of irritative lesions (iritis and optic neuritis) at the same time that the cornea was insensitive, indicating that the trophic action is of the nature of irritation and yet may co-exist with paralysis of the ordinary afferent nerves.

CASE 5.—This patient, a woman, was in University College Hospital under the care of Dr. Bastian. On the right side the third, fourth, and sixth nerves were paralysed and there was anæsthesia over the right forehead down to the level of the palpebral fissure. The ptosis was not complete, about the upper half of the cornea being covered. In the lower half of the cornea was a superficial ulcer and above this a nebula, the horizontal upper edge of which corresponded to the edge of the drooped upper lid. There was and had been much neuralgic pain in the region of the fifth nerve. The eye was bandaged and improved a little, but there were repeated attacks of keratitis, always accompanied by severe fifth-nerve pain. The lids were, later, pared and sutured, with the result that the ulcer healed and no recurrences have taken place in the ulceration although the pain has continued. In this case the ptosis certainly modified the extent of the ulcer, but it is important to note that mere bandaging did not arrest the ulceration and also that irritation of the fifth nerve may exist with partial anæsthesia of it.

Ferrier[6] has published a somewhat similar case in which neuropathic keratitis was associated with "anæsthesia dolorosa" in the territory of the fifth nerve and he regarded the keratitis as due to irritation of the nerve. Hutchinson, too, states that the cases of herpes in which the cornea is affected are those most prone to suffer subsequently from neuralgia, and this post-herpetic neuralgia may persist for months after the vesicles have disappeared and may co-exist with complete anæsthesia of the cornea. Hence the presence of an anæsthetic cornea in any one case of keratitis does not render the assumption of irritative processes of a trophic nature going on at the same time at all unjustifiable. Chibret[7] has described cases of iritis and keratitis in which there were "tender points" over the spots of emergence of the branches of the fifth nerve—an observation familiar to most—but he especially described these cases because he found that massage applied to these nerves was quickly followed by marked improvement. I have not found, however, any confirmation of this last statement.

It has been suggested that the phenomena are due to vascular dilatation the result of stimulation of a sensory nerve; but that this is inadequate is shown by the occurrence of neuropathic keratitis with such variable condition of the sensibility of the cornea and also, that though preceding neuralgia is common, yet at the time of supervention of the keratitis anæsthesia is often present.

A review, then, of the clinical study of these cases of keratitis leads to the conclusion that the most likely explanation of them is that they are caused by perverted trophic action, such perversion being of the nature of irritation, the various other explanations suggested being inadequate to explain all cases.

Much experimental work has been done to elucidate the nature of the action of the fifth nerve on the nutrition of the cornea. Majendie (1822) first drew attention to the effect of section of the fifth nerve on the cornea and was followed by Bernard (1863), who showed that the effect was the more marked if the animals were young or diseased at the time. Meissner (1867) showed more or less accidentally that it was possible to divide one portion of the nerve—the inner—with the result of inducing keratitis without anæsthesia and conversely. Snellen (1857) and others tried to show that the results so obtained were merely due to slight injuries—desiccation, &c., of the cornea the direct result of the anæsthesia—and,

[4] Kalt: Société de Biologie, 1889, Février 23. Strümpell: Nervenkrankheiten, p. 29.

[6] Ferrier: THE LANCET, Jan. 17th, 1888.

[7] Chibret: Comptes Rendus de l'Académie des Sciences, July 15th, 1889

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in order to explain how such slight injuries produced such severe corneal inflammation, assumed that the cornea after section of the nerve had a diminished power of resistance, an assumption which almost implies a nutritional change. Later Feuer[8] and Hippel[9] proved that an insensitive cornea does react in a normal way to injuries and thought that the essential factor in the causation of the keratitis was a too dry condition of the cornea. Samuel, Meissner, and especially Duval and Laborde,[10] have drawn attention to the occurrence of iritis and hypopyon *before* the corneal lesions after section of the fifth. The latter observers—confirming an earlier suggestion of Meissner—think that they have demonstrated a bulbar nucleus concerned with these trophic functions of the fifth nerve. Laborde,[11] too, has described choroidal changes developing after section of the fifth nerve exactly analogous to the changes described in some cases of facial hemiatrophy. Gaule[12] describes necrotic changes in the corneal corpuscles with epithelial proliferation after division of the ophthalmic nerve, and assumes that these corpuscles are the "end organs" of the sensory nerves and degenerate in consequence of the atrophy of the nerve. On the whole the experimental work supports the hypothesis of the existence of trophic fibres in the fifth nerve (as distinct from the fibres of ordinary sensation), and bearing in mind that many of those experiments, including Meissner's, were performed in the pre-antiseptic days and contrasting them with the favourable results which follow aseptic removal of the Gasserian ganglion in man they may be taken as indicating that the essential lesion of the trophic fibres is of the nature of irritation. Some few experiments have been done with the object of ascertaining if continuous irritation of a nerve is followed by changes in the tissue, and abscesses and ulcers have been described as resulting from such irritation. But I believe these experiments are generally discredited and in any case need confirmation. In whatever way Gaule's results are to be explained his experiments are of importance as showing that a direct relation does exist between the integrity of the fifth nerve and the essential structure of the cornea.

The lesions of the fifth nerve found associated with trophic keratitis are very various, and from the point of view of the lesion being of the nature of irritation it is important to note that the nerve is as a rule only partially damaged. In one of the earliest cases the Gasserian ganglion is described as yellowish-grey; in another recorded in 1833 it is said to be enlarged and lardaceous. Alison (1836) recorded a case in which the nerve was indurated both in front and behind the ganglion. Haase (1882) found softening in the anterior part of the pons with hæmorrhage into the ganglion. Mendel's case, previously referred to, was found to be due to softening of the upper part of the pons. In a case recorded by Bernhardt there was "superficial destruction of the pons" and changes in the corpora quadrigemina. Genkin[13] found in one case a gummatous tumour of the sphenoid compressing the fifth nerve. Schweinitz in a case of trophic keratitis dissected the ciliary nerves and found them to be normal. On the other hand, in a case of herpes the ophthalmic nerve was found by Wyss[14] to be inflamed, the Gasserian ganglion was surrounded by blood and infiltrated with pus cells, but the nerve on the proximal side of the ganglion was healthy. The changes in the nerve were regarded as indicative of true neuritis. Hæmorrhage and degenerative change in the Gasserian ganglion have been found in other cases of ophthalmic herpes. Baudry[15] relates two cases: in one the nerve was damaged by a fracture of the petrous bone and in the other the corneal changes were consecutive to a neuralgia of the fifth nerve induced by cold. In a case under the care of Mr. Tweedy the nerve and ganglion were found post mortem involved in a large sarcomatous growth.

From the above considerations it seems fair to conclude that the nutrition of the eyeball is directly dependent on the integrity and condition of certain nerve-fibres contained in the Gasserian ganglion and ophthalmic nerve, and that irritation of these fibres leads to those changes in nutrition of the cornea which are recognised as neuropathic keratitis. As to the exact *modus operandi* of such irritation little can be said. The best known effect of nervous stimuli on the structure of organs is that produced by stimulating the secreting nerve of glands. Now, the nutrition of the eyeball is dependent largely on the fluids derived from the ciliary body and within the last few years structures resembling glands have been described in the ciliary processes and those glands have been found enlarged and showing increase in their epithelium in cases of "serous iritis," a condition characterised by increase of aqueous humour and alteration in its composition, as evidenced by the presence of keratitis punctata. It seems possible that the trophic nerves of the eyeball may be the nerves which supply these glands and that abnormal stimulation of them may lead both to an increase in the fluid secreted and an alteration in its composition. In support of this suggestion I would recall the fact previously cited, that frequently in experimental investigations hypopyon precedes the occurrence of keratitis, and a similar sequence may be observed clinically; and also that stimulation of the fifth nerve, as in some cases of trigeminal neuralgia, leads to increase of tension and a deepening of the anterior chamber. Further, the facts alluded to in discussing facial hemiatrophy tend in the same direction. But at the same time it must be allowed that the connexion between the nerves and the integrity of the cornea may be more direct and intimate than this, and although such connexion has not been definitely proved, yet the occurrence of discrete herpetic vesicles on the cornea and the degeneration of the corpuscles after section of the nerve make such a supposition quite possible.

Wimpole-street, W.

[8] Feuer: Sitzungsberichte der Kaiserlichen Academie zu Wien, 1876, 3.
[9] Hippel: Archiv für Ophthalmologie, Band xxxv., 3, p. 217, 1889.
[10] Duval and Laborde: Travaux de Laboratoire de Physiologie de la Faculté de Médecine de Paris, 1885.
[11] Laborde: Société de Biologie, 1889, Février 16.
[12] Gaule: Centralblatt für Physiologie, 1891, 15.
[13] Genkin: Archives d'Ophthalmologie, 1896, p. 757.
[14] Wyss: Archiv der Heilkunde, Band xii., p. 284.
[15] Baudry: Archives d'Ophthalmologie, 1886, tome vi., p. 70.

ON THE HEART-RADIAL INTERVAL AND A HITHERTO UNKNOWN METHOD OF COMPENSATION IN AORTIC REGURGITATION.

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IN the Goulstonian lectures, published in THE LANCET in March, 1894, I criticised at some little length the possibility of the abolition of the "præsphygmic interval" in cases of pure and uncomplicated aortic regurgitation, and I made the following statement, which I believed to be thoroughly justified on physiological grounds, and to be in accordance with my own experimental observations: "In his preliminary chapter on the 'Variations of the Præsphygmic Interval in Disease' Keyt gives as his first proposition that 'the præsphygmic interval is abnormally shortened in free aortic insufficiency,' and I think that this proposition, confirmed as it is from independent sources, is one that should be admitted. He with a positiveness which almost calls up antagonism, says 'the testimony is ample and complete and establishes the fact beyond question.'" This statement I have now to traverse, and, indeed, I am about to show, and by the graphic method which he considered to be incontrovertible, that the heart-radial interval may be excessively increased in pure aortic regurgitation.

In a normal heart no blood can flow from the ventricle into the aorta until the pressure within the ventricle has risen above the aortic blood-pressure; until this time the aortic valves must undoubtedly remain closed. The time during which the intraventricular pressure rises during systole is called the "Anspannungzeit" or (by Keyt) the "Præsphygmic Interval." Keyt says (p. 165): "When the aortic valves are permanently open the pressures in the ventricle and aorta are always in equilibrium at the beginning of systole (the two cavities being in one), whether the mean pressure be low or high. In consequence of this oneness or equilibrium of pressure the heart's impulse and aortic pulse will be synchronous." With regard to this, I always thought that the often confused ideas of blood-flow and of pulse-wave, two wholly different things, were not sufficiently differentiated in Keyt's mind. Even an impact against a *closed* valve may conceivably send on a *wave*, though no fluid pass through the valve. Whether this is so or not in an acting heart I am not prepared to show. It is not likely, and it is not to

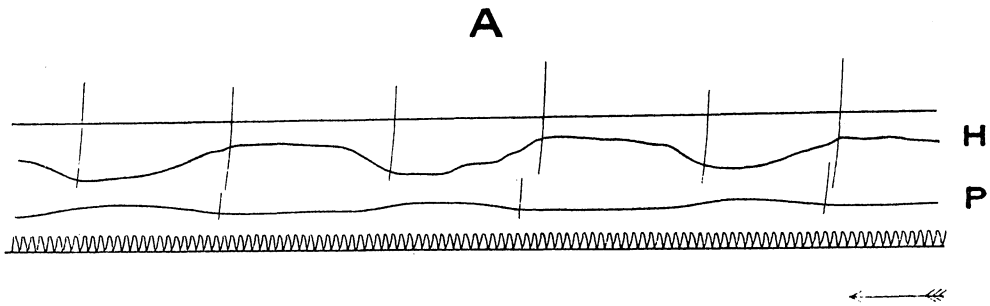
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my present purpose. Keyt's statement that the "præsphygmic interval" is abnormally shortened in free aortic insufficiency—is, indeed, *always* shortened in pure aortic insufficiency—is based on his graphic method, which he thinks conclusively proves that in every case of aortic insufficiency there is diminution or abolition of the *heart-radial* interval. The theory of abolition of præsphygmic interval he calls to his aid in explanation of his facts, and henceforth "the testimony is ample and complete and establishes the fact beyond question." To him experiment and argument certainly went hand-in-hand.

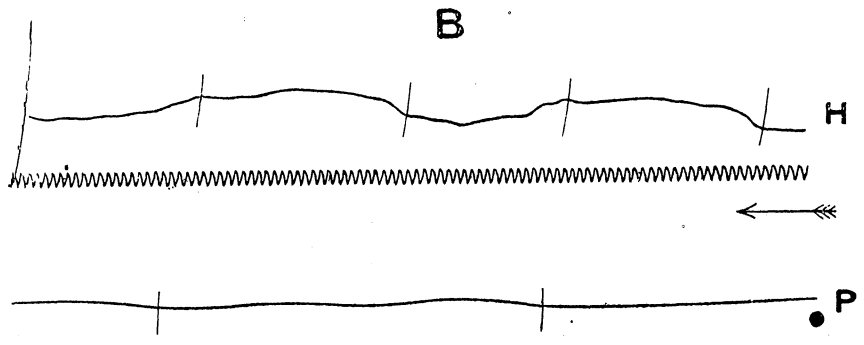
His facts were, however, clinically speaking, new. Before the graphic method various clinicians thought otherwise. Dr. Henderson in 1832 stated that the interval between the heart's impulse and the arterial pulse was prolonged in aortic insufficiency. Flint says that the fact of prolonged delay "is not to be denied" (1859). Walshe says: "The retardation may with care be detected in many, but unquestionably not in all, cases of that disease." Many principal authorities have held the same view. The latest and not the least careful observer, whose deliberate clinical statements are not to be lightly denied, Sir William Broadbent, says[1]: "The pulse in aortic regurgitation is always retarded or delayed—that is, there is an appreciable interval between the beat of the heart or the carotid pulse and the pulsations in the radial artery which varies according to the extent of the incompetence. This delay is due partly to the collapsed and empty state of the arteries between the beats and partly to their large size and loss of tone. There is no longer a continuous column of blood between the heart and the periphery, and the tension in the arterial system has to be considerably augmented by the launching of a large volume of blood into the aorta before the vessels are rendered sufficiently tense for a pulse wave to be transmitted."

Yet Keyt and purely theoretical physiology are not alone in stating that the heart radial interval is diminished. François Franck made observations on patients affected with aortic insufficiency and first presented his results to the Société de Biologie in March, 1878. He states as the conclusion of his researches: "In large, pure aortic insufficiency the retardation of the pulse on the beginning of the systole of the heart is very notably diminished." I cannot hope to completely and for ever decide this question, but I can at least give some evidence in favour of the great clinicians, though differing from Sir Wm. Broadbent as to the explanation of pulse delay in these cases.

In the first place, though I greatly admire Keyt, I must enter some protest against a paragraph of his which I am sorry he ever wrote. He says (p. 165): "It is easy to explain the fallacy of an exaggerated delay of the pulse on the systole of the ventricle in aortic insufficiency; the enlarged ventricle suddenly filling from both the aorta by reverse and the auricle by direct flow communicates a shock so marked as to be mistaken for systole. This impulse occurring in the first part of diastole and preceding the arterial pulse at such distance gives the impression of enormous delay of the pulse. ..... The fallacy arose from an error of observation which the graphic method was needed to correct." This is to attribute an almost laughable incompetence to the great names I have cited and calls for no comment. I did, however, as the result of some of my own observations, think Keyt was safe in the position he was trying to defend. One such case I published in the lectures aforesaid and I thought his proposition should be admitted. I have now to publish a case of pure and uncomplicated aortic regurgitation which demonstrably in a particular instance proves the reverse, and which therefore completely upsets his doctrine.



Tracing obtained in February, 1898. Systole 0·40 sec Diastole 0·36 sec. Heart radial delay 0·53 sec. Pulse rate 80. H, Heart. P, Pulse. Reed chronograph vibrating 64 per second.



A second tracing in the same case as A, but at increased speed.

The patient was granted six months' leave from his employment owing to a breakdown in health and was placed under my care in January last. He was then in an imminently precarious state, with much cardiac distress, and was subject to some curious cerebral sensations which he could scarcely describe. The heart was dilated and presented a loud and solely regurgitant aortic murmur, accompanied by a characteristic pulse. Being of a rather plethoric habit he was put upon careful dietetic treatment with the object of reducing his plethora and the heart condition was treated with strychnine and strophanthus. Living at a distance he was seen only at intervals of a fortnight, but early in February the accompanying tracing (A) was obtained by the transmission apparatus which is fully described in my Goulstonian lectures, some considerable improvement in his symptoms having already taken place. The chronographic simultaneous tracing was taken from a harmonium reed vibrating 64 times in a second, the accuracy of which had been recently tested. The first obvious result of the tracing is to show a very

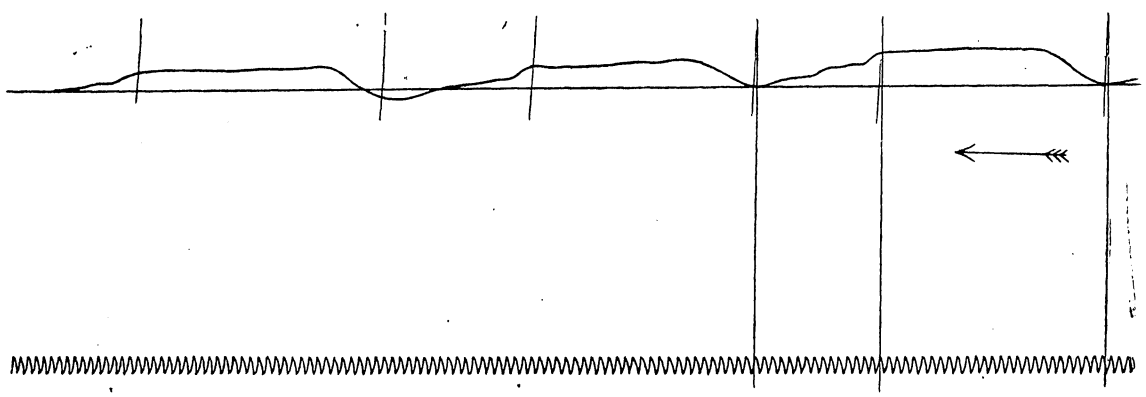
[1] Heart Disease, 1897, p. 142.

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marked heart-radial delay—a delay of 0·53 second—whereas the normal heart-radial delay is about from 0·17 second to 0·2 second. Another striking result is the encroachment of systolic on diastolic time, the systole being of 0·40 second duration and the diastole varying from 0·36 second to 0·39 second. Although the cardiograph was in excellent working order the upstroke at the beginning of systole is seen to be a slow upheaval manifesting itself in an oblique line. The simultaneous pulse tracing was obtained with difficulty; unlike a normal tracing it is comparatively unformed, though the commencement is sharply defined and easily measurable. On March 11th a second tracing (C) was obtained. The patient was subjectively in a much better state of health, though still complaining of strange sensations at the top of the head. The initial slow upheaval in the cardiac tracing is still more clearly seen. The heart-radial delay was 0·4 second. The pulse-rate was 70. The duration of systole—which for that pulse-rate should be from 0·32 second to 0·33 second—was 0·50 second, the diastolic rest being 0·33 second.

With regard to the increased heart-radial delay I think the following explanation seems to be the correct one. That in a sound and normally acting heart there is a definite "Anspannungzeit" or "præsphygmic interval" is not to be questioned. It is based on absolute experiment and does not admit of doubt. The rise of pressure at the beginning of systole is, however, quick owing to the initial low blood-pressure within the ventricle, and the contraction is therefore a sudden thing. In pure aortic regurgitation, however, it is not to be doubted that the intraventricular blood-pressure is already great at the commencement of systole. To lift a 5 lb. weight in the hand upwards in order to strike a drum may be a matter of a moment and the resulting impact may be sudden and great; to raise a weight of 50 lb. the same distance would take longer, while the impact against the drum need not be greater than in the first instance. In pure aortic regurgitation it is perhaps not too much to assume an analogy with the act of lifting the larger weight. The contraction is therefore comparatively a very slow contraction and that this is so can be plainly seen in the cardiac tracing. The first condition

C



Same case as A and B on March 11th, 1898. Heart radial delay 0·40 sec. is not shown in the tracing. Systole 0·50 sec. Diastole 0·33 sec. Pulse rate 70.

I have elsewhere shown that normally, whatever the pulse-rate may be, the diastolic rest exceeds the systolic labour. At a pulse-rate of 70 there should be 15 hours and 5 minutes of rest to 8 hours and 55 minutes of work. Here there is about 14¾ hours of work to 9¼ of rest. As far as I know this kind of compensation for any form of heart disease has not even been surmised. Encroachment of systolic on the diastolic time has not been brought about by physiological experiments either by increasing the blood-pressure or by varying the rate of heart beat or by any like means. In a paper in the Transactions of the Royal Medico-Chirurgical Society, vol. lxix., 1886, on Cardiography I endeavoured to show that while digitalis slowed the heart and regulated an irregular heart, yet it did not lengthen the relative duration of systole, while, on the other hand, convallaria appeared to have the property of really somewhat lengthening systole—that is to say, lengthening it at the expense of diastole. However immediately beneficial this form of compensation may be, by means of maintaining the pressure in the arterial system and thereby avoiding the sudden and futile dilatation arising from the rapid ingestion of a large volume of blood into comparatively empty vessels (the pressure in the arteries varying from perhaps 60 mm. Hg. at the end of diastole to 200 mm. Hg. during systole), yet it cannot be doubted that eventual exhaustion must take place at an early age and the heart's mechanism be worn out by excessive work long before the natural and normal term of life. Should there be truth in the suggestion that convallaria lengthens the relative duration of systole it might be advisable to administer it in cases where this kind of compensation is lacking, in preference to giving digitalis, which does not lengthen the relative duration of systole but slows the heart by increasing diastole, at the same time supporting the ventricle, increasing its force and regulating its action, as well as regulating its action in regard to diastole. A possibly superior merit of strophanthus may lie in its not contracting the arterioles as does digitalis, with the consequence of permitting freer outflow of blood through the arterioles.

of the heart-radial delay is therefore produced. Secondly, the pulse wave arising from the slow contraction of the ventricle is consequently a slow wave, and can only be rapid when the arteries are comparatively empty and the ventricular pressure slight at the commencement of contraction. While, therefore, clearly recognising in normal hearts the presence of an "Anspannungzeit," or what is termed by Keyt a "præsphygmic interval," and acknowledging to the full the necessity and value of its recognition, it does not follow that its abolition necessarily entails a shortened heart-radial interval. It might either be desirable to retain the term "Anspannungzeit" or to create some more convenient term. The preparation to action by rendering the harness tense may in pure aortic regurgitation not be possible—the poor horse (in this instance the heart) being already under a steady stress from the outset. The term "præsphygmic interval," which owing to the meaning given to it by its creator unfortunately presumes a special theory, should certainly be thrown aside in favour of some other term which will not implicitly commit us to theories as to what will happen in its absence.

I would suggest the use of the term "isodynamic interval" to express this period of time *which in aortic regurgitation may be abolished without lessening the heart-radial interval.* Or to those who prefer it the term "prokinetic interval" may perhaps commend itself. The first term suggests the time of activity occupied in attaining balance of blood-pressure, the second the time of activity antecedent to the onward movement of blood. Of the two terms the first appears to me to be the least compromising. Its employment in electromagnetics is too far afield to lead to confusion, and used here it would be a containing term where the desired sense did not overflow the margin. Moreover, I think it better to be able to say in the instance I have been discussing not that an "Anspannungzeit" or "prokinetic interval" did not exist, but that an isodynamic condition prevailed from the beginning of contraction.

Hereford.

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THE DIAGNOSTIC USES OF PERCUSSION OF THE VERTEBRAL SPINES, WITH GENERAL REMARKS ON "PLEXIMETRIC" BONES AND VISCERA.[1]

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PRACTICAL importance attaches to percussion of the spinous processes, though I have never seen it carried out. It is both easy to perform and very definite in its results. Normally the spine is always resonant from the occiput to the coccyx. The slight variations in the degree of this resonance which belong to different levels are matters for finer percussion. The occurrence of any considerable dulness anywhere in the length of the spine is therefore in itself highly suggestive. The normal vertebral resonance is a borrowed resonance, living bones being naturally dull. Its pleximetric character may be easily demonstrated in various ways, as, for instance, by the fact that a considerable pleuritic effusion does not render the spines dull, the conducted resonance from the sound side, and perhaps from the compressed lung, prevailing over the dulling influence due to the fluid. Localised spinal dulness thus indicates local causes isolating the vertebræ at least partially from their usual plentiful supply of resonance, and we cannot expect slight causes to bring it about. All the greater, therefore, is the significance attaching to any marked dulness. This pleximetric conduction of distant local dulnesses is of value since it conveys to us information from an otherwise inaccessible depth (measured by the long axis of the vertebra) as to mediastinal conditions which may be of the first importance. Thus, at different levels in the chest it may afford evidence of upper thoracic glandular enlargements, or of aneurysm of the arch, or of œsophageal disease, or of infra-tracheal glandular swelling, or, lastly, of pericardial effusion, the "lower dorsal dull patch," which is an invariable accompaniment of the latter, always including dulness of the eleventh and twelfth spines.[2] Lower down abdominal and pelvic disease may in the same way be indicated by local dulness as may be described in a future communication. For surgical diagnosis this method is likely to be of advantage. Mere infiltration of the vertebræ with cancer or tubercle would probably not modify their conveyed resonance; but spinal abscess, extensive outgrowths, tumours, &c., might dull the percussion note. My observations on these points are not yet completed, but I have already found this method of considerable use in the diagnosis of œsophageal disease and of mediastinal glandular enlargements in the interscapular region. The same conducting power for vibrations belongs more or less to all the thoracic bones. Three of them, however, are more specially "pleximetric" bones—the clavicle, the sternum, and the scapula, and concerning them there is much to be said. Further remarks on this subject and on that of the pleximetric resonance of viscera will be found elsewhere.[3] I would merely draw attention here to the scapula, which plays the part of a huge pleximéter. This is a leading fact not sufficiently recognised in dorsal percussion. In spite of the great thickness of its muscles the scapula is often the most resonant part of the back, as a comparative percussion outside its borders and within them will show. This resonance which tends to be uniform over the scapula as a whole is derived from the underlying resonant thoracic surface, and it is also propagated along its spine to the shoulder. It thus happens that the acromion, although far removed from the lung, is resonant.

Pleximetric viscera.—The simplest example of a pleximetric visceral resonance is that sometimes afforded by the spleen. Under the influence of gaseous distension of the stomach and of the colon the spleen may become not only resonant but tympanitic, and the "boxy" note which it yields will then enable us to determine its size with as much accuracy as when the customary dull note is our guide. This is of practical importance to the physician, who will sometimes have to decide whether the abnormal resonance at the axillary base is an extension of Traube's area and due to a stomach distended upwards, or whether it is due merely to a pleximetric resonance of the spleen.

The ordinary resonance conveyed to the left lobe of the liver from an inflated stomach is too well known to need comment. Gastric inflation may also impart a tympanitic resonance to the lower part of the præcordium. When these abnormal resonances attain an unusual degree collateral evidence and additional physical signs will generally help us to determine whether they may be due to an intra-peritoneal gaseous accumulation.

Of special interest to the surgeon is the pleximetric resonance sometimes assumed by the right lobe of the liver, simulating the presence of gas in front of that lobe. The most striking case of this sort was one in which opinions were divided as to the origin of the supposed gaseous extravasation. Mr. H. W. Allingham, who operated, failed to discover any lesion in the ileo-cæcal region and made a second incision in search of the gastric lesion which I had suspected. There was no free gas in the peritoneum and the most exhaustive exploration did not succeed in tracing any disease. The symptoms not having been relieved the patient died. The cause of the tympanitic resonance of the hepatic region was revealed at the necropsy. A limited gaseous abscess, due to a gastric ulcer, was closely bound down between the liver and the diaphragm. It was situated so far back that until the liver itself was removed it had escaped detection at the preliminary examination of the parts *in situ*. This was a clear instance of complete pleximetric resonance of the liver due to an underlying collection of gas confined under pressure. The case is instructive as an illustration of the difficulty of diagnosing this conveyed tympanitic resonance from that which arises from a gaseous accumulation between the liver and the parietes.

Curzon-street, W.

[1] Cf. Lectures to Advanced Clinical Students on Practical Points in Percussion and Auscultation, &c., Clinical Journal, July 12th, 1898.

[2] Cf. Practical Aids in the Diagnosis of Pericardial Effusion in connexion with the Question as to Surgical Treatment, Brit. Med. Jour., March 24th, 1896. Also, Remarks on the Dorsal Test for Pericardial Effusion: an Addendum, Brit. Med. Jour., Jan. 23rd, 1897. Also, On Latent and Transient Pericardial Effusion, THE LANCET, Nov. 21st, 1896. Also, On Latent and Ephemeral Pericardial Effusions, Transactions of the Clinical Society, Feb. 11th, 1898.

[3] Cf. Clinical Journal, loc. cit.

COBRA POISON IN RELATION TO WASSERMANN'S NEW THEORY OF IMMUNITY.

BY WALTER MYERS, M.A., M.B., B.SC. CANTAB.
(From the Pathological Laboratory, Cambridge.)

IN a paper read before the Pathological Society of London in April last I gave a short account of some experiments on the antidotal properties of normal tissue emulsions in regard to cobra poison. I was led to undertake the experiments by a consideration of Wassermann's work which was based upon a theory of Ehrlich,[1] according to which every "antitoxin-producing" toxin is specific in the sense that it produces its symptoms by chemical combination of its toxophoric atoms with some cell substance in the body of the susceptible animal. If this is the case then, as Wassermann argued, it is clear that on mixing the toxin and the specific cell substance *in vitro* the toxin should be neutralised; and, indeed, a suitable mixture of tetanus toxin and emulsion of spinal cord substance derived from a susceptible animal is harmless to mice and even to guinea-pigs. On this observation Wassermann[2] based his theory of "Seitenketten-Immunität," according to which a toxin is neutralised (*a*) *in vitro* and (*b*) *in corpore* by saturating its toxophoric atoms with those cell substances for which these atoms have a specific affinity. By the term toxin is meant that class of poisons against which an immunity may be established by repeated injection under suitable conditions and which then lead to the appearance of specific antitoxins in the blood of the immunised animal.

The method I employed in testing the antidotal properties of normal tissues was to emulsify the various organs of a susceptible animal—the guinea-pig being used in most cases—with

[1] Werthbemessung des Diphtherieheilserums: Klinisches Jahrbuch, 1897.

[2] Berliner Klinische Wochenschrift, 1898, No. 10.

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physiological saline solution, to mix the emulsion with the cobra poison, and then to test the action of the mixture on guinea-pigs. For inoculation guinea-pigs also were employed, weighing between 250 and 350 grammes. For such animals the minimal certainly letha dose was 0·1 milligramme of the dried venom. In these experiments 0·15 milligramme was injected, a dose which causes death of the controls in from two to three hours.

Cobra poison belongs to the class of toxins as above defined and contains at least two toxic substances. One of these is hæmolytic—i.e., it alters the red blood corpuscles, setting free the hæmoglobin they contain; the other is a nerve poison, which probably acts on the respiratory centre, and possibly also on other parts of the nervous system. Therefore I made a considerable number of experiments on various parts of the nervous system—e.g., the medulla, the cerebral cortex, and the spinal cord of the guinea-pig and the bullock. The toxicity of cobra poison is not, however, perceptibly altered by mixture with an emulsion of any part of the nervous system or by mixture with the blood or the serum of a susceptible animal. Calmette [3] independently has made similar experiments with the brain of the rabbit and of Bothrops lanceolatus and has obtained similar results. The liver, too, was subjected to a careful examination, because of its action on certain alkaloids [4] and also because of the impunity with which enormous doses of snake poison may be given *per os*. Moreover, as Fraser [5] has recently shown, the bile of various animals prevents death when injected simultaneously with this poison or even subsequently into the opposite side of the body. However, in no case did I succeed in averting or delaying death by the injection of liver emulsion with the venom. On one or two occasions I found that if a solution of poison be added to liver substance, and the mixture be ground up and allowed to stand for twenty-four hours, on injection of such a volume of the supernatant fluid as should contain a lethal dose the animal survives or dies after a longer interval than the control. But even by this method a positive result is not constant and the fallacy of assuming that the poison is equally diffused throughout the mass is obvious. When a certainly lethal dose is added to liver substance already emulsified with saline solution injection of the mixture leads to death with the same symptoms and in the same time as pure cobra poison alone. I have therefore not been able to confirm Professor Kanthack's [6] observations, that liver extract has a marked retarding influence on the action of cobra venom. But Professor Kanthack himself confesses that in one case where he was working with the liver extract of a young rabbit he had obtained no antitoxic effect.

The suprarenal capsules were indeed the only organs which invariably influenced cobra poison. With emulsions of bone-marrow, kidney, lymphatic gland, muscle substance, ovary, spleen, testicle, thymus, uniformly negative results were obtained. In my first experiments on the suprarenals I used those of the guinea-pig and found that in most cases the animals survived, and when death occurred it was considerably delayed. I then tried the suprarenals of the sheep and bullock and found that when fresh they invariably prevented death. *The medulla is inactive in this respect, the cortex alone protecting.* This, then, is probably the explanation of the variancy in the results with the guinea-pig's suprarenals which I occasionally obtained. For in these animals not only are the capsules small but they consist almost entirely of medulla. Rabbits' and sheep's suprarenals also protect.

I then tried the action of tabloids of various organs, using the preparations of Messrs. Burroughs, Wellcome and Co., and found here too that the suprarenal tabloids alone had any action, though the effect of the tabloids is less certain than that of the fresh glands.

This action then of the suprarenals is not shared by any other organ in the body and this fact alone suggests that mechanical precipitation of the poison is not an important factor of their protective power. And as injection of the suprarenal emulsion either mixed with the poison on the same side or by itself on the opposite side of the body alike prevents death, mechanical action, if it even occurs, must play but a very small part. And since, even when administered in large quantities, they only influence amounts of poison just above the minimal lethal dose, and cannot protect against multiple doses, we must conclude that they do not contain an antitoxin, that is, a substance which neutralises the poison *in vitro*.

The suprarenal cortex, then, of susceptible animals contains another of those substances, such as bile salts, cholesterin, tyrosin,[7] which somehow raise the natural resistance of the animal and so prevent death from doses slightly above the minimal lethal. It is noticeable too that the body of the animal most susceptible to cobra poison—viz., the guinea-pig—contains no substance which will combine with this poison *in vitro*, as Wassermann and Takaki [8] and others have found for tetanus, and more recently Kempner and Schepilewsky [9] for the "Botulismus-gift." Whether Wassermann's theory will prove valid or not for all toxins with a measurable incubation period at least it does not agree with the facts above summarised for poison.

Birmingham.

[3] Annales de l'Institut Pasteur, tome xii., No. 5.
[4] Roger: Archives de Physiologie, 1892. Action du Foie sur les Poisons. Paris.
[5] Wiener Medicinische Blätter, 1897, No. 29, p. 481, and Brit. Med. Jour., 1897, vol. i.
[6] Twenty-fifth Annual Report of the Local Government Board, 1895-6, p. 250.
[7] Phisalix: Comptes Rendus de la Société des Sciences Naturelles, 1897.
[8] Berliner Klinische Wochenschrift, 1898, No. 1.
[9] Zeitschrift für Hygiene, 1898, No. 11.

SOME REMARKS UPON A NEW MYDRIATIC.

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THE claims of ephedrine hydrochloride as an agent for dilating the pupil have been before the profession for several years, but apparently without attracting anything like general attention. The first communication upon the subject was made by a Japanese physician, Kinnosuke Miura,[1] and this was soon followed by papers from the pens of J. Inouye [2] and A. de Vriese.[3] From these contributions, however, it was clear that the dilatation of the pupil induced by ephedrine was of moderate extent only, although it possessed the great practical advantage of passing off rather quickly (in from 1 to 20 hours). Later it was found that the action of ephedrine could be enhanced by the addition of a trace of homatropine hydrochlorate in the proportion of a hundredth part of the latter to one part of the former substance. This observation led E. Merck, the well-known Darmstadt pharmacist, to combine the two medicaments. The new agent, which is known as "mydrin," is a white powder, readily soluble in water. Its physiological action has been reported upon by Groenouw [4] in Germany, by Suker [5] in America, by Cattaneo [6] in Italy, and by Mr. Simeon Snell [7] in this country. These various observers find that a 10 per cent. aqueous solution when dropped into the eye has the power of dilating the pupil moderately within a few minutes, without affecting accommodation in the least. They also agree that the action of the pupil to light is to some extent retained while the eye is under the influence of the drug, the effects of which pass away within from 4 to 6 hours. In no instance have they seen any irritation or inflammation result from the application. Groenouw, who experimented on 100 patients, found that the dilated pupil had an average diameter of 5·6 mm. Suker speaks of mydrin as "an ideal mydriatic for diagnostic purposes," and Mr. Snell's experiences appear also to have been equally favourable.

These claims seemed to me too strong to be set on one side without investigation. Accordingly for some time past I have used a 10 per cent. watery solution of mydrin for the purpose of dilating the pupil, when I wished to explore all parts of the fundus oculi with the ophthalmoscope or to examine the cornea carefully in order to ascertain the presence or absence of slight changes. Moreover, for the

[1] Berliner Klinische Wochenschrift, No. 38, 1887.
[2] Klinische Monatsblätter für Augenheilkunde, Band xxvii. (1889), p. 376.
[3] Annales d'Oculistique, tome ci. (1889), p. 182.
[4] Deutsche Medicinische Wochenschrift, No. 10, 1894, p. 161 (quoted in Jahresbericht der Ophthalmologie, 1895, p. 265).
[5] New York Medical Journal, June 8th, 1895, p. 714.
[6] La Clinica Moderna, June, 1896 (quoted in Merck's Annual Report for the year 1896).
[7] Clinical Journal, Nov. 13th, 1895.

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purposes of more exact study I have recently taken 20 patients and noted in each one (*a*) the near and distant sight, and (*b*) the diameter of the pupil. A single drop of mydrin solution (10 per cent.) was then placed in the conjunctival sac, after which the following points were observed: (*a*) the time at which the pupils became dilated; (*b*) the transverse diameter of the pupils; (*c*) the near and distant vision; and (*d*) the time at which mydriasis passed away.

The results obtained in this way may be thus briefly related. The pupil became dilated in a period which varied, according to the individual, from 15 to 68 minutes, the average of the 20 observations being 29·35 minutes. The mydriasis was found to ensue more speedily if patients kept their eyelids closed after the application had been made. Owing to the fact that the iris did not completely lose its action to light, there was some little difficulty in measuring the size of the dilated pupil, the transverse diameter of which ranged from 5 to 7·5 mm., and averaged 6 mm. For a similar reason it was not altogether easy to say with precision when mydriasis had passed away. But in no instance did the maximum time (after full dilatation) exceed 4 hours, while the minimum stood at 75 minutes. The average worked out at 184·84 minutes—that is to say, a trifle more than 3 hours. In no case did sight, either for distant or near objects, show any alteration when the eye was fully under the influence of mydrin, a remark which applies also to the position of the punctum proximum. Lastly, it is practically important to note that the agent set up neither discomfort nor irritation.

As the result of my observations I have reached the conclusion that mydrin is capable of doing all that writers have claimed for it—namely, that it causes a moderate dilatation of the pupil without involving the function of accommodation. It cannot but prove, therefore, a valuable agent in the hands, not only of the ophthalmic surgeon, but also of the physician, who must often be desirous of exploring the fundus oculi with a dilated pupil.

Welbeck-street, W.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ROYAL FREE HOSPITAL.

A CASE OF MALIGNANT PUSTULE; DEATH; NECROPSY.

(Under the care of Mr. E. W. ROUGHTON.)

THE methods by which persons become infected by communicable diseases are often obscure, but in the following case it is practically certain that the patient was infected from one of the hides with which he was working. Attempts have been made to destroy the bacillus anthracis in bales of material which may contain it, and these attempts have been very successful in the case of wool, for it may be subjected without damage to a temperature sufficiently high to kill the bacillus, but hides are spoilt by this treatment, and, so far as we are aware, no satisfactory practical method exists of rendering hides which have been taken from diseased animals absolutely free from power of infection. The negative result of the culture from the blood is hardly sufficient to prove that no bacilli had entered the blood stream; in many of the fatal cases death is due to absorption of toxins and not to the presence of the bacilli in the blood. For the notes of the case we are indebted to Dr. R. P. Williams, house surgeon.

A man, aged fifty-three years, was admitted to the Royal Free Hospital on April 29th complaining of a sore and swelling of the right side of the neck. The patient was a blacksmith employed at the General Parcels Post Office, Clerkenwell. On April 26th he was engaged in mending Parcel Post baskets with strips of raw cowhide. The cowhides are imported from various parts of the world and are chosen by a Government inspector. The particular hides which the patient was using probably came from Rangoon or Zanzibar. He noticed a pimple on the right side of the back of his neck on the 27th and he scratched it. It did not trouble him till the night of the 28th when he found a swelling round a small sore in the original situation. On the following morning (the 29th) he felt so ill that he had to cease work and he was directed to go to his medical attendant, who sent him on to the hospital.

On admission the patient was found to have a typical malignant pustule situated on the right side of his neck. The brawny œdema extended above to the parotid and below to the right clavicle. On microscopic examination of the serum from the vesicles anthrax bacilli were found in large numbers. His temperature was normal. Mr. Roughton operated on the same day, excising the pustule and the skin for 1½ in. around it. The wound was swabbed with pure carbolic acid and left open, being dressed with cyanide gauze soaked in a 1 in 1000 biniodide of mercury solution. This was changed every four hours.

After the operation the temperature rose from normal to 99·2° F. and at 10 P.M. it reached 101·8°. The patient had no sleep during the night and in the morning the œdema had spread down the right side of the chest. The temperature fell to 100° in the evening (the 30th) and he vomited several times. Two bluish patches were noticed in the skin below the right clavicle. These gradually spread, the œdema itself also spreading to the left side of the chest and down towards the pelvis. No diarrhœa was present. The patient gradually became collapsed and, in spite of stimulants, died at 1 P.M. on May 1st.

At 10 P.M. on April 30th two cultivations on gelatin were made from the blood, one from the left index finger and the other from the œdema on the chest. No anthrax bacilli were found in either tube.

Necropsy.—At the post-mortem examination the vessels of the pleura and the intestines were injected but no other gross pathological condition was found.

ANCOATS HOSPITAL, MANCHESTER.

TWO CASES OF ECTOPIC PREGNANCY; RECOVERY.

(Under the care of Mr. STANMORE BISHOP.)

THE following two cases show clearly the benefit of early surgical treatment in ectopic gestation. The older methods, such as electricity, are being discarded, and it is more and more recognised that the best results are obtainable by early laparotomy. The operation should be performed as soon as the diagnosis is made with any fair degree of probability. Delay of even a few days may lead to a fatal issue.[1]

CASE 1. *Hæmatocele in Douglas's pouch; enlarged perforated Fallopian tube containing a clot; probable ectopic pregnancy; cœliotomy; recovery.*—A married woman, aged twenty-eight years, was admitted to the Ancoats Hospital on Sept. 14th, 1897. She had been married for eleven years and had had four confinements and one miscarriage. Her father died at the age of thirty-seven years from fever and her mother died at the age of sixty-five years from pneumonia. Nine of her brothers were dead; the causes of death were not known; two sisters and one brother were alive and in good health. The patient had always been healthy up to the time of her marriage. Her first labour occurred ten years ago; instruments were used, but there was no trouble with the placenta. She got up well, the child living. Her second labour occurred nine years ago; it was easy and her convalescence was normal; the child died from meningitis due to a fall. Her third labour occurred six and a half years ago; it was easy and her convalescence was normal, the child living. Her fourth labour (a miscarriage at three months) occurred five years ago. She got up well, had one period, and then became pregnant again. Her fifth labour occurred four years ago; the pregnancy was normal; the confinement lasted five days and no forceps were used. She was attended by a midwife and had never been well since. She noticed pain in the left iliac region before getting up. She was in bed for two months and pain had been intermittent ever since. The pain never occurred on the right side. The left leg had been painful and aching, but not

[1] American Journal of Obstetrics, April, 1895.

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swollen. She had had much general swelling of the abdomen. Her periods had been regular since her last confinement to July, 1897. Then she was nearly eight weeks without any loss. At the end of August bleeding began and had never entirely ceased up to the date of her admission to hospital. On the first day she passed a clot but no formed material, shreds, or membranes since, passing nothing but blood or bloody fluid. Urination and defecation were normal. The appetite was feeble. There was no vomiting. Sleep was interrupted by pain of a gnawing character. The pain came suddenly, lasted for five or six hours, and went off gradually. During the pain the discharge increased. The temperature was 100·2° F. on admission. There was some pain on fully extending the left leg.

On Sept. 26th the temperature had fluctuated between 97·4° F. and 99° since admission. On vaginal examination the os was found to be split and the cervix open. The sound passed forwards at a normal length. The uterus was in the median line. Behind in Douglas's pouch there was a soft, elastic mass from which the uterus could be partially separated and which extended mostly on the left side. The broad ligament was palpable on the right side, but could not be defined on the left. The patient was a short, stout, healthy-looking woman. The diagnosis was a doubtful one—either pyosalpinx or ectopic pregnancy—but the weight of probability seemed in favour of the latter. The temperature between Sept. 26th and Oct. 4th, the date of operation, was more uniformly normal than it had been at any previous time, never rising above the normal line or descending below 97·6° except on the morning of the 4th, when it was 97·2°. There was no sudden pain or collapse.

On Oct. 4th cœliotomy was performed. The patient was placed in the dorsal position. On the right side there was a small multilocular cyst of the ovary of the size of a cricket-ball; this cyst was removed. On the same side the Fallopian tube was closed and swollen; the fimbriæ had disappeared. This was also removed and the stump was sewn over. Below in Douglas's pouch there was a collection of black clot weighing about 5 oz. which was cleared out by hand and sponges. The wall was cleared as much as possible of rough fibrinous material. The cavity containing this clot was roofed over by loosely adherent intestine and the spread-out left tube, which was much enlarged, and contained an adherent semi-decolourised clot, situated rather outside the middle of the tube. The tube had given way near its uterine extremity. All these parts were fixed by adhesions which yielded readily. The abdomen was closed by a triple suture and was sealed by celloidin. No flushing or drainage was employed. There was no great amount of shock. The operation was over about 1 P.M.

Calomel was given in grain doses every hour, commencing two hours after the operation; seven doses were administered. The patient had nutrient enemata every two hours. As there was a great amount of pain a ¼ gr. morphia suppository was inserted. The catheter was used at 5.30 P.M. and 6 oz. of urine were drawn off at 7.15 P.M. As no flatus had passed by 12.30 A.M. 3 gr. of sulphate of magnesium were given, but were immediately vomited. A sulphate of magnesium enema was given at 11 A.M. on the 5th. The bowels were moved at 6.15 P.M., 6.30 P.M., 8 P.M., and 9.15 P.M. on the same day. There was a little vomiting after the action at 8 P.M. but not afterwards. On the 6th at 3 A.M. a bloody discharge appeared *per vaginam*, but it was never excessive. It gradually decreased until the 8th. No shreds or definable masses were discharged. At 10 A.M. the nutrient enemata were stopped and feeding by the mouth was begun. On the 6th she passed a small amount of urine naturally at 10 P.M., but the catheter was again required until the 13th, when its use was discontinued. On the 17th the progress had been uneventful. The celloidin became loose and was removed with the external sutures on the 15th or the eleventh day. Primary union had taken place except at one point where a small clot had formed between the edges and had thus prevented the line of junction from being uniform. The bowels and bladder had acted regularly. She had been placed on ordinary diet on the 16th. On the 23rd the patient was discharged from the hospital well.

CASE 2. *Ectopic pregnancy; diagnosis before rupture; cœliotomy; removal; recovery.*—A married woman, aged twenty years, was admitted to the hospital on March 3rd, 1898. She was short, dark, and well-developed. She had had one miscarriage eighteen months ago before marriage. She had otherwise been perfectly healthy. She had been married for sixteen months. Her periods, with the above exception, had been regular and normal until two months previously to admission, when she went fourteen days over the proper time. There had been more or less discharge ever since with several shreds and clots. These, however, had been thrown away. She first noticed pain on the left side on Feb. 26th; this came on suddenly whilst she was kneeling as she cleaned the floor. The pain had come in paroxysms ever since. Before entering the hospital the pain was of a bearing-down character, but since lying in bed the character had altered. There was no longer any bearing down, but there was still acute paroxysmal pain and the attacks were becoming more frequent. During the missed fortnight she vomited twice, but she did not vomit after this until the day of admission. She had vomited everything since. She felt as though her left leg dragged upon the parts inside when it was fully extended. There was no pain on defecation but a little sharp pain occurred on micturition.

Bimanual examination showed that the uterus was normal in position and size; the os was perhaps a little softened. A boggy mass of unequal consistence and of about the thickness of a Cambridge sausage, and not unlike it in shape, was close to the uterus, but not fixed to it, and was to be felt in the left fornix; there was some pulsation between it and the finger. Nothing was to be felt in Douglas's pouch. The abdomen was supple, but the skin was dry and harsh. The breathing was costo-abdominal. The pulse was 68, the temperature was 99·4° F., and the respirations were 16. The colour of the lips was good. The face was placid except when the pain returned, when it indicated considerable suffering. A diagnosis of extra-uterine pregnancy, as yet unruptured, was made, and a dose of nepenthe was given. The patient slept for the first part of the night, but the pain woke her up in the early morning and continued with intervals until the operation was performed at 11 A.M. She was wheeled into the theatre, but she got upon the table without assistance.

On March 4th, with the patient in the Trendelenburg position, abdominal section was performed. There was no blood seen under the peritoneum. When this was opened there immediately came into view the left tube which was much enlarged and engorged with blood. About its centre a large rent was seen which was plugged by a firm clot dark red in colour. The abdominal end was closed, curled round and adherent to the ovary. The tube was clamped at both ends, tied and removed. One small adhesion of the tip of the omentum was also tied and divided. In Douglas's pouch, which was unusually deep, some dark clots and fluid blood were found; these and some more dark blood which was found floating amongst the intestines were sponged out. No irrigation was employed. The right ovary was enlarged and cystic and was removed. The right Fallopian tube was enlarged, thickened, and elongated, but otherwise it was healthy; it was left. All raw surfaces, including the stumps, were sewn over by fine catgut, so restoring the continuity of the peritoneum. No drainage was used. The uterus was noted as being slightly enlarged, roughened, and reddened. The abdomen was closed by triple suture and the wound was covered by celloidin.

On returning the patient to bed the temperature was 98·6°, the pulse was 96, and the respirations were 28. There was slight hiccough and she complained of some pain in the back and abdomen, but this had disappeared by the next morning after a hypodermic injection of morphia. Once she passed urine involuntarily, about 3 A.M. on the morning of the 5th, but always naturally afterwards, not requiring the catheter. She vomited once only. A grain of calomel was given every hour for 6 hours. Flatus was passed at 6 P.M. on the second day and the bowels were moved at 10 A.M. on the third, about 48 hours after the operation. In accordance with the usual practice at the Ancoats Hospital nothing was given by the mouth for the first 48 hours, after which feeding was begun with hot milk and beef-tea in small quantities. Nutrient enemata, however, were given after the first 24 hours. There had been no further loss of blood *per vaginam* after the operation until 2 P.M. on the third day, when some slight discharge occurred. This continued and increased until the eighth day, when it decreased and ceased on the ninth. No more shreds or any mass which could be recognised as decidua were seen and that day it was noted that the os

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was quite closed. At no time was the discharge offensive. The sutures were removed on the ninth day, when primary union of the wound was found to have taken place. The abdomen was supple and undistended. Two days after the operation there was slight tenderness on pressure over the left iliac region. This quickly disappeared and the patient rapidly recovered.

Remarks by Mr. STANMORE BISHOP.—The entire absence of shock or collapse or of any noteworthy pain before the operation, which usually shows that rupture of the tube has occurred and considerable loss of blood has taken place into the general cavity of the abdomen, in both cases, is perhaps worthy of attention. The character of the clots pointed to the occurrence as having taken place within 48 hours before. There was no extra pain or collapse and the patient slept as comfortably as usual on the night before the operation.

YORK COUNTY HOSPITAL.

A CASE OF AMENORRHŒA FOR TWO YEARS; SMALL SOLID TUMOUR IN THE LEFT OVARY; REMOVAL OF TUMOUR; RETURN OF MENSTRUATION; PREGNANCY.

(Under the care of Mr. W. H. JALLAND.)

THE patient, aged twenty-six years, was married, but had never been pregnant. She came under Mr. Jalland's care at the York County Hospital and stated that she had suffered from amenorrhœa for two years, which she considered to be due to over-exertion when she was nursing her mother. She was rather anæmic in appearance, but she had no pain or other symptom. Upon examination a small tumour of about the size of a large hen's egg was detected on the left side of the uterus, being apparently connected with the left ovary. The uterus was small and the sound passed barely 2 in. The os was conical with an almost pin-hole aperture. Removal of the tumour was advised, and the patient consented. The operation was performed in the usual way on Feb. 23rd. The tumour proved to be a small solid one which had no adhesions. The patient made an uninterrupted recovery, which presented no particular points of interest. She began to menstruate in a normal way on March 23rd and continued to do so regularly each month until June when she became pregnant. She called Mr. Jalland to see her in October last year, when he found that she was between four and five months advanced in pregnancy. He saw her again in May of this year, she having been confined of a healthy child two months previously. She had lost all her anæmia and looked the picture of health and happiness.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Treatment of Chronic Bright's Disease.—Rheumatic Dilatation of the Heart.

A MEETING of this society was held on June 28th, the President, Mr. BRYANT, being in the chair.

Dr. EWART read a paper on the Treatment of Chronic Bright's Disease (Tubal Nephritis). He pointed out that the methods of treatment, medicinal and general, hitherto adopted in tubal nephritis had not proved curative of the disease or always of its symptoms. On the other hand, the complete and apparently spontaneous recovery of some cases after long periods of ineffectual treatment showed that the lesions were not necessarily incurable or fatally destructive of the renal structure or function. The cases considered in the paper were strictly those of uncomplicated tubal nephritis with dropsy, a disease which left no permanent lesion behind it and which might be regarded as an inveterate epithelial catarrh. In other varieties of kidney disease this epithelial catarrh was only one of the features; they presented more or less intertubal and Malpighian congestion and cellular proliferation and varying degrees of fibroid proliferation throughout the organ. Their treatment was much less hopeful. In them, as also in the purely tubal nephritis, the albuminuria was a separate factor; and this was not necessarily amenable to the treatment which might prove curative of the dropsy. The group of "acute nephritis" presented great analogy with that of chronic tubal nephritis and the indications were largely the same, but its treatment could only be referred to incidentally. The usual well-known features of tubal nephritis were—(1) the dropsy; (2) the anæmia; (3) the oliguria; and (4) the cachexia and marasmus, disguised by the persistent œdema and paving the way to fatal complications or exhaustion. The treatment described was based upon a consideration of these symptoms and particularly of the œdema. Dropsy might be considered as nature's protection and remedy against fatal intoxication; but also, if not dealt with therapeutically, as nature's difficulty and danger. In itself œdema was harmful when persistent by oppressing the tissues, choking the lymphatic circulation and impeding metabolism. So long as it was present it hindered nutrition both locally and in general. Its usual treatment by horizontal rest in bed further depressed the vital functions. These were the systematic evils of œdema. Another set of results affected the kidney itself, the impeded nutrition of which was rendered more difficult by the absence of a free lymphatic flow. By virtue of this persistent œdema tubal nephritis became a lymphatic disease and its treatment might properly be considered from the point of view of the lymphatic system. The indication was to relieve the lymphatic system of the œdema over as large an area as possible and to ensure its escape by systematic drainage. This was to be effected by posture, since gravitation tells upon renal dropsy, although less than upon cardiac œdema. The œdema should be allowed to collect in the lower limbs by slanting the bed, and meanwhile the trunk and the upper limbs, relieved of their puffiness, can be restored to healthier action by massage. Acupuncture or incision and drainage afforded positive relief to the œdematous tissue of the entire body, to the serous cavities if previously occupied by fluid, and to the lymphatic circulation. They also fulfilled the first indication, that of removing from the body the accumulation of contaminated fluid. Moreover, if persevered in systematically, this treatment satisfied the primary indication of physiological rest to the kidney by opening up another channel of exit for the ingested fluids. The lymphatic system then became to a great extent the channel of emunction. A surcharge of the blood with alimentary and with effete products being largely obviated, a varied and sustaining diet could be prescribed, and on the strength of the latter a larger share of renovating exercise might be allowed than was otherwise possible. It had been shown by Hamilton[1] that the inflammatory products of nephritis were largely removed through the lymphatics of the kidney, a mode of relief analogous to that observed in pneumonia. This observation was in harmony with the *rationale* of the method advocated by Dr. Ewart, and it suggested that a free lymphatic circulation was an essential part of the treatment of the kidney in nephritis. The broad indication which had suggested itself to Dr. Ewart was to place every function in the most normal condition possible in order to assist nature in repairing the local damage. It had seemed to him that the prevailing methods had failed—(1) by not systematically relieving the œdema, but rather promoting its prominence all over the body; (2) by imperfectly carrying out the indication of physiological rest to the kidney; (3) by endeavouring to obtain diuresis by medication and to influence the tissue changes by alteratives at a time when the nutrition of the kidney as well as its function were in abeyance, whilst the treatment by sweating and by purging had often proved an additional trial to the strength; and (4) by neglecting the measures both of hygiene and of diet which were most likely to restore normal strength and nutrition to the system constitutionally and locally to the kidney. The special objects of the treatment proposed were: (1) to unblock the lymphatic ways choked by œdema; (2) to establish a thorough flow from the blood, and particularly from that of the renal district, into the lymphatics, whereby soluble solids and toxic products may be removed; and (3) to quicken artificially the lymphatic circulation by passive movement, general massage, &c., so as to favour nutrition and metabolism of the entire body, and by that means of the kidney also. When the œdema was general or localised elsewhere the first indication is to bring it down to the feet by slanting the bed. Southey's tubes, or small incisions where

[1] Journal of Anatomy and Physiology, vol. xxv., pp. 198–200.

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these could be made into dilated lymphatics, preferably at the back of the ankle, were the means of draining the œdema. Every antiseptic precaution must precede the operation and must be kept up throughout the case, the part being kept covered by antiseptic dressings, and the entire foot covered with vaseline to prevent soakage of the skin. Large quantities of fluid might be got rid of in this way. In one case the drainage was kept up for two months. Whilst the flow continued a liberal diet could be adopted, the chief aim of the treatment being to raise the patient's strength, but it might be necessary at times to return for a few days to a strictly milk diet. This would help to restore an abundant flow where the latter tended to dry up. A moderate allowance of tonic wine, such as Burgundy, St. Raphäel, or claret, was part of the dietetic treatment. The patient in any recent case would soon be able to sit up and subsequently to walk about the room. Where prolonged illness had preceded the application of treatment active exercise would have to be carefully adjusted to the gradual return of strength. The ordinary rules applied as regards treatment of the liver and of the alimentary canal. One great object of this treatment was to restore cardiac energy and nutrition, which ultimately tended to fail. This object being partly attained drugs could be tried with much better results. Digitalis might then assist both the heart and the kidney. Iron, indicated by the anæmia, would be better borne and such drugs as mercury and arsenic as well as the bitter tonics could be tried with much greater prospect of success. The treatment described was specially devised for cases of dropsy. The advantages to be gained from it were not, however, necessarily restricted to such cases. Uræmia occurring without dropsy was treated by the removal of so much blood. Analogous relief might be secured without the sacrifice entailed by venesection if a sufficient flow of lymph could be obtained by artificially setting up dropsy of one or both lower limbs. Dr. Ewart had succeeded in fulfilling this indication in a case where the œdema was exceedingly slight although affecting the face as well as the lower limbs. The case not presenting urgent symptoms did not justify severe measures; nevertheless, the artificial œdema was kept up for 12 days and the flow obtained through a single incision continued 7 days, although it was never considerable. The local œdema was obtained by the diffused pressure from a tourniquet applied over cotton wool and cardboard to Scarpa's triangle. Martin's bandage was subsequently substituted for the tourniquet. The treatment suggested addressed itself indirectly only to those conditions which kept up albuminuria independently of nephritis and to the restoration of that part of the renal function supposed to be concerned with active internal secretion; and it claimed merely to be an endeavour to assist vicariously the excretory mechanism of the kidney. It was felt, however, that if this indication could be fulfilled the other renal functions would benefit in a large proportion also.—Dr. HOWSHIP DICKINSON demurred to the use of the term large white kidney by Dr. Ewart as synonymous with tubal nephritis. In the large white kidney there was much hypernucleation and increase of the interstitial connective tissue. He thought also that Dr. Ewart undervalued the part played by the tubes of the kidney itself in carrying off the morbid products. Without unduly disparaging the part played by the lymphatics he held that the tubes were the chief channels of excretion, as shown by the abundance of tube casts and epithelial débris seen in the urine, often in sufficient quantity to form a deposit which could be seen by the naked eye. Dr. Ewart claimed that by drawing off the œdema he could relieve the ascites and hydrothorax, but Dr. Dickinson held that although drawing off an ascitic or a pleural effusion might relieve œdema of the legs by taking off pressure from the central veins the converse did not hold. He did not take such an unfavourable view of the prognosis in these cases as Dr. Ewart appeared to do. It was true that in the old days some cases were cut short by too active treatment, but he had found that following familiar lines renal dropsy was very amenable to treatment. Treatment by puncture or incision was a very old one which had been formerly discredited owing to frequent supervention of erysipelas or septic cellulitis. But now, owing to Listerian methods, it could be practised with little risk and Dr. Ewart had done well to bring it prominently forward. But he was not clear how far such drainage would relieve the uræmic condition. It was true that occasionally patients expressed themselves as better when œdema occurred and it was true that there was urea in the dropsical fluid in such cases. But there was also urea in the blood in the same cases and he thought it probable that the urea escaped from the blood by simple filtration just as the other saline constituents did, and were not thrown off as an excretion. Experience had led him always to try to prevent dropsy or to remove it when present, but Dr. Ewart had so high an opinion of it that he proposed to induce it artificially. He did not appear to have been very successful, and, even if he had, the relief to the uræmic process must have been small. Dr. Dickinson thought that in all cases of renal dropsy there was a tendency, which varied in different cases, to spontaneous recovery which might not show itself for a long time. He thought that this recovery was contemporary with the occurrence of hypertrophy of the left ventricle.—Dr. NORMAN MOORE asked for details of the number of cases observed and the course of the symptoms. Dr. Ewart had drawn attention to the importance of keeping up the action of the heart under treatment, a point insisted on by Southey. It was rare to examine cases of renal disease (other than acute ones) post mortem without finding degenerative processes in the heart wall. There was no doubt a great difference in the clinical type as presented by the two sexes. A woman had about three times as long an expectation of life as a man similarly affected, possibly owing to the different ways of life. He thought that much active exercise was dangerous and that a man's life when convalescent should approximate to that of a woman engaged in ordinary domestic duties.—Sir DYCE DUCKWORTH agreed with Dr. Dickinson in his remarks as to the pathology and as to the importance of the personal element in these cases. In his experience the prognosis was particularly bad in the case of persons of a strumous habit. He took a less gloomy view of the prognosis than Dr. Ewart and relied chiefly on warmth, diuretics, and tonics, and did not restrict his patients to a milk diet. Free incisions with antiseptic precautions often gave great relief.—Dr. EWART, in reply, said that with regard to the possibility of relieving the ascites by drainage of the œdema of the legs he could only say that in the case which formed the text of his paper the ascites had been previously tapped without relief to the symptoms, but that after the œdema had been relieved by incision the ascites rapidly disappeared and on the second day the patient's urinary secretion rose and no doubt helped to carry off the fluid. In another case 150 oz. were removed by incision and in 48 hours the ascites had nearly gone. As regards the use of the term "large white kidney" he admitted that in the class of cases to which he had referred there was intertubal proliferation, but he thought that it was possible to arrest this before it passed on to the formation of fibrous tissue. He did not see how ventricular hypertrophy, being associated with fibrosis of the kidney, would leave the patient any better off, and he regarded the hypertrophy itself as a very undesirable possession. The removal of the dropsy was only a preliminary to feeding up and endeavouring to improve the general condition of the patient, which could not be done while every cell in the body was sodden by the œdema. Although he had only had two cases he thought that the results were so encouraging that he ought to bring them before the society.

Dr. D. B. LEES read a paper on Acute Dilatation of the Heart in Rheumatic Fever. In this paper attention was drawn to the fact that an acute dilatation of the heart was a common occurrence in a rheumatic attack, even when arthritis and pyrexia were slight in amount, and apart from distinct endocarditis and from pericarditis; also that an acute dilatation might, in a more severe attack, intensify the signs and symptoms of pericarditis or endocarditis. The evidence adduced in support of these propositions consisted of tracings of the cardiac dulness at different stages of a rheumatic attack taken by Dr. Lees from patients under his care at St. Mary's Hospital. The question was first discussed whether it was possible by percussion to obtain an accurate knowledge of the actual size of the heart. Reference was made to the writings of Dr. Ewart and to the post-mortem investigations of Dr. Herringham in support of the contention that a tracing representing the outline obtained by careful percussion did indicate with very considerable accuracy the position of the limits of the heart, both to the left and to the right. Tracings taken from the cases showing the size of the cardiac dulness at different periods were thrown on the screen by a lantern. The first three sets of tracings were taken from young adults suffering from subacute rheumatism, with slight

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arthritis and little pyrexia, with no evidence of pericarditis or distinct endocarditis. Three tracings of the cardiac dulness were shown from each of the cases, the first taken before commencing treatment, the second at an intermediate stage, and the third taken on recovery. They all showed the same events—a large extension of the dulness at first, with gradual reduction and final return to the normal. Next followed a set of tracings showing acute dilatation caused by a subacute attack in a heart already diseased by two previous attacks. The large extension of the cardiac dulness registered in the first diagram was seen to subside until it reached a permanent amount due to the previous disease. Lastly, a pair of tracings were shown from a case of rheumatic pericarditis with chorea, showing how acute dilatation may intensify the signs of pericarditis and how a rapid diminution in the area of the præcordial dulness may occur under treatment. It was claimed that these tracings, though doubtless open to criticism in details, were sufficient to prove that acute dilatation of the heart was a feature of rheumatism which deserved more attention than it had hitherto received. Reference was made to remarks on "swollen heart," by Dr. Sansom; also to specimens of dilated heart after rheumatism exhibited at the Pathological Society by Dr. Goodhart and Dr. West; also to Dr. Goodhart's paper on Acute Dilatation of the Heart after Scarlet Fever, and to a case of the same kind reported by Dr. Barlow. It was suggested that the acute cardiac dilatation produced by rheumatism was analogous to the acute dilatation often resulting from influenza, and that in both cases it was due to the poisonous action of a microbic toxin on the cardiac muscle, similar to the effect of dilute solutions of lactic acid and of certain drugs in causing cardiac dilatation, demonstrated many years ago by Dr. Gaskell.

Dr. D. B. LEES and Dr. F. J. POYNTON read a paper on Rheumatic Dilatation of the Heart in the Rheumatism and Chorea of Childhood. This paper recorded the results of a joint investigation of the subject of acute dilatation of the heart in the rheumatism and chorea of childhood carried out at the Hospital for Sick Children, Great Ormond-street, and results of certain inquiries conducted by Dr. Poynton in further elucidation of the subject. These include (1) observations on the hearts of children under the care of various physicians; (2) observations on the hearts of children free from rheumatism; and (3) an analysis of the post-mortem records of 150 cases of fatal rheumatic heart disease in children under twelve years of age. The paper commenced with statements as to the size, strength, and sounds of the heart in children free from rheumatism mainly deduced from Dr. Poynton's examination of the hearts of 45 patients in the surgical wards of the Hospital for Sick Children and of 35 healthy boys of twelve and thirteen years of age at Marlborough School. The observations on the hearts of rheumatic and choreic children were arranged in four groups: (1) cases of subacute rheumatism with no pericarditis and with no murmur or only a systolic murmur best heard internal to the nipple; (2) first attacks of chorea without any previous history of rheumatism and in the great majority of cases no present evidence of rheumatism except the chorea; (3) acute cases in which there were definite cardiac lesions, pericarditis, or undoubted endocarditis; and (4) cases of chronic and relapsing rheumatism. Tracings were given showing the size of the heart in two or three cases from each of these groups at different stages of the disease. They all showed a considerable increase at first in the area of cardiac dulness, which tended to diminish as improvement set in and which might again increase if a relapse of the disease occurred. During the periods of increase the cardiac impulse became diffused and displaced to the left; when the dulness diminished the impulse became stronger, more localised, and more normal in situation. The heart sounds also were altered when the area was increased, the first sound becoming weak and short, while the pulmonary second sound was accentuated. The sounds became more normal as the area diminished. From an analysis of the post-mortem records of 150 cases of fatal rheumatic heart disease in children under twelve years of age it was shown that dilatation was usually found. In 92 cases out of 150 (61 per cent.) special attention was called to its existence in the records. On the other hand, marked excess of pericardial fluid was rare; in only 12 cases of the 150 was more than 2 oz. noted. The value of acute cardiac dilatation as an aid in the diagnosis of arthritis of doubtful nature was pointed out. Dr. Lees and Dr. Poynton held that in many cases the effects attributed to valvular disease or to adherent pericardium might be mainly due to this dilatation, which tended to increase with each recurrence of rheumatism.—Dr. T. J. MACLAGAN observed that the tendency to cardiac complication diminished as life advanced, being much more frequent between the ages of fifteen and thirty years than afterwards, and in the anomalous cases in children attended by the presence of subcutaneous nodules serious heart mischief was almost constant. He thought that hitherto the myocardium had not received its due share of attention. It was notorious that rheumatism had a special effect on red muscle throughout the body as shown by the rapid softening and atrophy and by the excess of lactic acid present, and there was no reason why the cardiac muscle should escape. He himself would be inclined to hold that there was actual myocarditis. When a murmur was first heard it was usually presystolic and indicated an affection of the ring rather than of the flaps of the valve.—Dr. EWART congratulated Dr. Lees and Dr. Poynton on the way in which their research had been made. Since his attention had been drawn to these cases he had examined all that had come before him, but he was inclined to think that in many cases the increased dulness was due to pericardial effusion rather than to dilatation, and in support of this view he showed a number of diagrams.—Dr. NORMAN MOORE was inclined to share Dr. Ewart's doubts and asked what pathological evidence there was. The only cases he had met with which showed so much dilatation after death as had been described were cases of severe whooping-cough. He looked on endocarditis, not as a complication, but as the commencement of rheumatism, and held that the endocardium was affected in every case of true rheumatism.—Dr. THEODORE FISHER said that in cases of acute pericarditis which proved fatal early it was clear that the superficial inflammation could not be the cause of bringing the heart to a standstill and he believed, with Dr. Lees, that it was a toxin acting on the muscle. He quoted recent observations he had made on cases of fatal pericarditis in which extensive degenerative changes in the myocardium were found without any endocarditis.—Dr. LEES, in reply, said that the gradual reduction of the dulness as the rheumatic attack subsided and its immediate increase when there was relapse were consistent with dilatation rather than with effusion and this was entirely confirmed by the post-mortem records of over 150 cases. In only 12 was there any large effusion, while in no fewer than 92 there was dilatation, often extreme. On percussion there was no triangular patch of dulness near the right nipple such as Dr. Ewart held to be characteristic of pericardial effusion.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—Analogues of the Male and Female Genital Tract.—The Position of the Promontory.

A MEETING of this society was held on June 22nd. Dr. MILNE MURRAY, vice-president, occupied the chair.

The following were elected by ballot as honorary Fellows of the Society: Dr. Charles J. Cullingworth, London; Dr. Lombe Atthill, Dublin; Professor S. Pozzi, Paris; Dr. G. Leopold, Dresden; Professor Howard A. Kelly, Baltimore; Professor Henry C. Coe, New York; and Dr. E. Doyen, Paris.

Professor SIMPSON showed specimens of Ovarian Tumours and Doyen's Forceps for Compressing the Pedicle in Ovariotomy.

Dr. BREWIS showed a Cyst with a twisted pedicle and a Large Ovarian Tumour weighing 40 lb.

Dr. FOULIS exhibited Dissections of Embryo Deer to Demonstrate the Development of the Sexual Organs.

Dr. BERRY HART read a paper on the Analogues of the Male and Female Genital Tract. He demonstrated that the sinus pocularis was the analogue of the hymen and lower third of the vagina and therefore that all below and including the sinus pocularis was equivalent to the lower third of the vagina and the vestibule. He had found traces of the uterus masculinus in the prostate of a four and a half months' male fœtus. He regarded the vagina as probably derived from the pronephros and the ovary and testis as certainly developed in connexion with the mesonephros. Thus the sexual glands and ducts were intimately correlated with

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the Wolffian structure. The various analogues of the organs and the significance of the rudimentary organs in either sex were then considered and a limelight demonstration of specimens was given.—Dr. FOULIS, Professor SIMPSON, and Dr. MILNE MURRAY took part in the discussion on the paper and Dr. HART replied.

Dr. FREELAND BARBOUR gave the abstract of a paper on the Position of the Promontory as shown by Frozen Sections and its Effect on the Build of the Pelvis. Dr. Barbour while teaching students clinically found that there was very great difference in the height of the promontory of the sacrum above the symphysis. In order to determine this point accurately he made measurements of the pelves in 18 frozen sections. The anatomical conjugate was found to vary from 3·80 in. to 5·6 in. The obstetrical conjugate or the distance between the promontory and the nearest point of the symphysis varied from 3·44 in. to 5·28 in. This showed the available conjugate for obstetrical purposes. The difference between the anatomical and obstetrical conjugates varied from ¼ in. to ⅝ in. In order to ascertain accurately the height of the promontory above the pubes a line is drawn from the upper part of the symphysis horizontally backwards; another line is carried from the promontory of the sacrum perpendicularly downwards till it meets the horizontal arc. The measurement of the perpendicular gives the accurate height of the promontory above the symphysis. There is great variability, the promontory standing as high as 5 in. and as low as 2·4 in. above the pubes, the average being 3·7 in. If the horizontal line is carried backwards till it impinges on the posterior wall of the cavity it is found in 12 out of 16 available sections to strike the second coccygeal vertebra or a point below it. From this it is learned that the whole sacrum and a portion of the coccyx is above the level of the upper margin of the symphysis. Another item of interest is the angle formed at the symphysis by the meeting of the anatomical conjugate and the horizontal line. This angle varies from 33° to 65° and gives what Dr. Barbour calls the "set of the brim." He also gave measurements of the horizontal distance of the promontory backwards from the symphysis. These varied from 2·0 in. to 4·0 in., with an average of 2·64 in.—Dr. MILNE MURRAY and Dr. BERRY HART discussed the paper and Dr. BARBOUR replied.

Reviews and Notices of Books.

Diseases of the Nervous System (Lewis's Practical Series). By CHARLES E. BEEVOR, M.D., F.R.C.P. Lond. London: H. K. Lewis. 1898. Pp. xvi. and 432. Price 10*s.* 6*d.*

THIS handbook consists in all of twenty-nine chapters. The first four are preliminary in their character, dealing with the anatomy and physiology of the nervous system in a succinct and lucid but necessarily somewhat sketchy manner and with the methods of examination which should be followed in investigating cases of nervous disease. The rest of the book is devoted, section by section, to a short account of the various diseases of the nerves, spinal cord, and brain, and when it is stated that this account is given in 330 octavo pages it will be recognised that the description of each disease is necessarily short. But everything is very clearly put and for the senior student or busy practitioner the book will, we believe, be found extremely useful. Some of the chapters are particularly good, notably those in which organic brain disease is discussed. We think the author has been wise in leaving rather severely alone the new conceptions of nervous disease which the theory of the neuron necessarily introduces. It is more than likely that our ideas of nervous disease will have to be made to fit in with recent anatomical discoveries, but these are as yet too recent to be dealt with satisfactorily in such a handbook as this.

Several minor points may be noticed, not merely for the purpose of finding fault, but with the view of indicating the possibility of the existence of differences of opinion. In regard to tabes, for example, it is stated that syphilis occurs in from one-half to two-thirds of the cases as a predisposing cause. If we are not mistaken Erb in his most recent series of cases found that the proportion was much higher—as much as 90 per cent., we believe. Then, again, pseudo-hypertrophic paralysis and idiopathic muscular atrophy are described as different diseases. No doubt it is true that typical cases are distinct enough, but according to the most recent teaching on the subject these varieties are most likely the different ends of a long series with intermediate examples of varied combinations of the two conditions. And we venture to doubt whether in reference to the surgical treatment of epilepsy it is quite justifiable even in cases where the character of the fit clearly denotes a localised disorder to remove the piece of the cortex corresponding to the part in which the fits commence. These, however, are all points on which an author is entitled to his opinion, especially if the opinion is backed, as in this case, by wide experience and accurate observation. In a small work it would, of course, be unreasonable to expect anything more than the expression of an opinion. We cannot expect to have also the data on which the opinion is based. It is a pity, we think, that an account from the neurological aspect has not been given of general paralysis. Nearly all the descriptions of this disease are given in handbooks of mental disease and naturally from the mental aspect. It is now well known, however, that there are many cases of general paralysis in which the mental symptoms are subordinate to the physical. These are cases which come before the neurologist and a description of them from the neurological standpoint would have formed a valuable addition. On the whole, however, the author is to be congratulated on a work which is clear and, considering its size, wonderfully complete, and the publisher on a most useful addition to an eminently useful series.

Vade Mecum of Ophthalmological Therapeutics. By Dr. E. LANDOLT of Paris and Dr. P. GYGAX of Milwaukee. Translated by Dr. E. NEYMAN of Milwaukee. London: J. B. Lippincott Company. 1898. Pp. 138. Price 3*s.* 6*d.*

THE purchasers of this small volume will find arranged in alphabetical order the names of the chief diseases of the eye intercalated with which is a list of the various drugs and methods of treatment which have been employed for their relief; cross references are in many instances given and the appropriate dose of each drug is appended. Perhaps an example will best show the plan adopted and we select iritis. "Iritis, plastic, rheumatic, arthritic, blennorrhœic, syphilitic. *Mydriatics:* Atropine (23 a), alternating with duboisine (102) or combined with cocaine (23 b) or a combination of atropine, cocaine, and duboisine (23 c). Should the pupil not be enlarged by these solutions: Extract of belladonna or duboisine in substance (having care to close lachrymal points by pressure). Close the eyes for at least five minutes after instillation. Always watch the intraocular tension; as soon as tonus is + replace the mydriatics mentioned by scopolamine (284). *Rest for the Eyes.*—Bandage the eye affected; dark room or smoked glasses according to cause and intensity of disease. *Avoid* sudden changes of temperature, draughts, &c. Blood-letting or dry leeches at temple. Iodine ointment (146 b). *Poultices* (255), hot compresses. For severe pain hypodermic injections of morphia (231 c). Laxatives, diuresis, and diaphoresis (305). Etiologic treatment: Where there are other symptoms of *rheumatism* salicylate of soda (275), antipyrin (15), antifebrin (14), alkalies, acetate of potassium (254), lithia water (225 b). Turkish baths. In case of urethral blennorrhœa, salol (278) and energetic treatment of the urethral trouble. In *syphilis*, specific treatment (291).

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For dysmenorrhœa, scrofula and anæmia, strengthening treatment arsenic (20), iron (164), &c. *Continue mydriatics for some time* after inflammatory symptoms have disappeared. Should synechiæ capable of bringing on relapses remain iridectomy may be indicated." The numbers in parentheses refer to the corresponding headings in which the action and dose of the drug are given. It will be seen that there is little to be added to the above list of remedies which are employed in reducing iritis and that the work fully answers to its title. It will certainly prove very serviceable to those who are able to make a fairly good diagnosis of the nature of ophthalmic diseases, supplying them, as it does, with a concise pharmacopœia.

A Manual of General Pathology. By W. S. LAZARUS-BARLOW, M.D. Cantab., late Demonstrator of Pathology in the University of Cambridge. London: J. & A. Churchill. 1898. Pp. xi. and 795. Price 21*s*.

DR. LAZARUS-BARLOW has attempted a bold task and his attempt has met with no small amount of success. No original book dealing comprehensively with experimental pathology has previously been produced in the English language and the need for such a work was conspicuous. Cohnheim's "Lectures on General Pathology," translated by the New Sydenham Society, form, as they will no doubt continue to form for some time to come, the classic on the subject, and quite recently a portion of Thoma's valuable work has become available in English. But the translation of Cohnheim's work dates from 1882 and a more modern work is now necessary for students; while Thoma is so original in his treatment of some branches of the subject that he can hardly be considered to represent ordinary modern teaching in general pathology. Both the above-named works are, moreover, very bulky. This, then, is the gap which Dr. Lazarus-Barlow has endeavoured to fill and he has produced a manual which will be of very great value to the student. It is not fair to compare it with Cohnheim's book. Cohnheim was a pioneer in an almost unworked field and our modern teaching took its rise in his labours; his lectures remain as a monument to his originality and genius. At the present time a writer on general pathology must draw largely on the results of others, and a good student's manual must be mainly a judicious compilation, well balanced and critically edited. This work has been accomplished by the author in a very excellent manner, and the English student has now at his command a good and lucid summary of the main facts of experimental pathology presented within the reasonable compass of some 800 pages. The writer has, as he frankly admits, drawn freely upon Cohnheim's writings, and he has laid under contribution most of the important original work which has appeared in more recent times; in particular he admits his indebtedness to the various writers who have contributed to Clifford Allbutt's "System of Medicine." All parts of the book are naturally not equally good and it is not difficult to find fault here and there with individual statements. Thus on p. 63 both the anatomist and the practical physician will be surprised to read that "lesions of the tricuspid valve rarely produce any specific murmurs, partly by reason of the depth at which the valve is situated in the thorax and partly," &c., &c. The murmur of tricuspid regurgitation is a common one and the valve is more superficial than the mitral. Most bacteriologists will also learn with astonishment that staphylococcus pyogenes aureus is commonly present in the vegetations of simple endocarditis. It is not even the commonest organism in infective endocarditis. The pathology of the heart is, however, very well put from its physiological side and is soundly based upon experimental work. The author's own work on œdema is well known, and if he has treated this branch of the subject at somewhat undue length he may well stand excused on account of its interest and importance. This is perhaps one of the best sections in the book. The chapters on inflammation are full and clear and the chief objection to the author's concluding definition of that process is one which is common to all attempted definitions of inflammation—that it would convey to one ignorant of the subject no idea whatever of what inflammation is really like. The pathology of infection again is very well treated and there is a good criticism on the phagocyte theory of immunity. The pathology of fever is also excellently set forth. Space fails us to criticise in detail all the sections of the book, though certain omissions may be noticed. Thus under the theories of uræmia, we fail to find any reference to Bouchard's views, which, whatever opinion may be held as to their value, certainly merit discussion. No reference, again, is made to Cabot's book in the literature of blood diseases. It would, however, be unjust to insist upon such matters as these in face of the very signal service which Dr. Lazarus-Barlow has rendered in the production of this manual. He has done his work laboriously and conscientiously and has for the first time provided the student of pathology with a compendious and lucid exposition of the subject of experimental pathology—a subject which must more and more be recognised as lying at the very root of rational medical and surgical education.

LIBRARY TABLE.

A Practical Treatise on Sexual Disorders of the Male and Female. By ROBERT W. TAYLOR, A.M., M.D., Clinical Professor of Venereal Disease at the College of Physicians and Surgeons (Columbia College), New York; Surgeon to Bellevue Hospital, &c. With 73 Illustrations and 8 Plates in colour and monotone. London: Henry Kimpton. 1897. Pp. 451. Price 12*s*. net.—The branch of surgery with which this work deals is one about which very little is said in most text-books of surgery and yet its importance is by no means small, for whether we consider the frequency with which such cases present themselves or the amount of unhappiness which results from them it is very obvious that they are worthy of the most careful attention of the surgeon. Dr. Taylor deals in the first place with the anatomy and physiology of the male sexual apparatus and it is interesting to note that he is inclined to accept the results of the researches of Professor George S. Huntingdon, who asserts that the vesiculæ seminales never contain semen and that they do not act as places of storage of this fluid, but they provide a special form of mucus to dilute and carry on the semen. Impotence and sterility in the male are thoroughly considered and a chapter is devoted to the mental effects of sexual disorders. With regard to sterility in the male, the author thinks that probably in one case in six of unfruitful marriages this is the cause. The second half of the book deals with sexual disorders in the female. The final chapter treats of a peculiar new growth of the vulva, three examples of which Dr. Taylor has seen. He has already written on this condition in the *American Journal of the Medical Sciences*. In some respects it resembled a tertiary syphilitic condition, but potassium iodide seemed to have no effect upon it, and microscopically it appeared to be inflammatory. The volume is a trustworthy treatise on a difficult subject.

Transactions of the American Climatological Association for the Year 1896. Vol. XII. Containing Part II. of the Report of the Committee on Health Resorts. Philadelphia: Printed for the Association. 8vo. Pp. 293.—The American Climatological Association has not only for its object the study of climatology but also of hydro-therapeutics,

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and of the diseases of the respiratory and circulatory organs, and hence we find in this volume of its transactions papers on a few subjects that have but little to do with climatology. However, the greater number of the papers are concerned with the influence of climate on disease and they are well deserving of being printed. Perhaps the articles of most interest to medical men on this side of the Atlantic are those which deal with the climatic conditions of particular health resorts, and we may specially mention a paper on the Climate of Arizona. A valuable appendix contains the second instalment of a report of the committee upon health resorts; in it are given brief accounts of 50 such resorts, with analyses of the waters, if they possess medicinal springs.

International Clinics: A Quarterly of Clinical Lectures and Specially Prepared Articles on Treatment by Professors and Lecturers in the Leading Medical Colleges of the United States, Great Britain, Germany, Austria, France, and Canada. Edited by JUDSON DALAND, M.D. Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, &c.; J. MITCHELL BRUCE, M.D., F.R.C.P. Lond., Physician to, and Lecturer on Medicine at, Charing-cross Hospital; and DAVID W. FINLAY, M.D. Glasg., F.R.C.P. Lond., Professor of Practice of Medicine in the University of Aberdeen, &c. 1896-97 Series. London: Lewin and Co. Vol. i., pp. 344; vol. ii., pp. 359; vol. iii., pp. 349.—The value of clinical lectures is becoming more fully recognised, for they form a very useful adjunct to the accounts of diseases given in text-books. The form of the clinical lecture should differ greatly from that of a lecture in a systematic course of medicine or surgery, but, unfortunately, this difference is not always recognised. These volumes form a portion of a most useful publication appearing quarterly. Each number contains more than forty clinical lectures, which have been delivered by recognised authorities in the subjects to which they refer. The majority of the authors are American, but many are British, and not a few are French, German, and Swiss. By the sub-title of the work it will be seen that all departments of medicine and surgery are dealt with, and though the lectures are necessarily of unequal merit, yet we cannot say that there is one which does not deserve a place in the volumes. Plates and diagrams, though not numerous, exist in sufficient quantity to illustrate the lectures satisfactorily.

Die Behandlung der Syphilis nach den gegenwärtig üblichen Methoden. Für die ärztliche Praxis. Dargestellt von Dr. F. GRIMM, in Berlin. (*The Treatment of Syphilis by Modern Methods.* By Dr. F. GRIMM of Berlin.) Berlin: S. Karger. 1896. Pp. 103. Price 2*s.* 6*d.* net.—This work gives a fairly complete account of the various methods of treatment of syphilis which are in use at the present day. It is specially concerned with the treatment of the primary and secondary manifestations of the disease and the treatment of tertiary syphilis is considered rather more briefly. We think that the treatment of the congenital form of the disease might with advantage have been fuller. As might have been expected a large amount of space is devoted to the hypodermic method of the introduction of mercury into the system. Dr. Grimm points out that there are two hypodermic methods which differ in an important point: in one insoluble preparations are injected and in the other soluble salts of mercury are employed. The injection of insoluble preparations of mercury was introduced by Scarenzio in 1864, but it has almost entirely given place to the injection of soluble salts, if the hypodermic method is employed at all. A very brief account is given of the "blood-serum" treatment of syphilis and it cannot be said in the present stage of our knowledge of the subject that it deserves much consideration.

Stretcher Drill, Illustrated, including Hand, Seat, and Wagon Drill. By Surgeon-Major J. J. DE ZOUCHE MARSHALL, Hon. Assoc. of St. John of Jerusalem in England, Army Medical Reserve of Officers, 3rd V. R. East Surrey Regiment, &c. London: William Clowes and Sons, Limited. 1898.—The simple announcement of the title of this little book, which is published by permission of Her Majesty's Stationery Office, is sufficiently explanatory of its nature and object. It is well illustrated and the accompanying letterpress descriptions and directions are clearly and well given. The book should prove useful as a practical guide to volunteer surgeons and others and especially to such as are desirous of instructing regimental ambulance classes in stretcher drill as well as in First Aid. The best and indeed the only sure way of learning any drill, however, is, as pointed out by the author, to go through it in the ranks under a competent instructor.

Elementary Chemistry, Practical and Theoretical (First Year's Course). By T. A. CHEETHAM, F.C.S. London: Blackie and Sons. 1898. Price 1*s.* 6*d.*—This book is the companion of "Elementary Physics, Practical and Theoretical," which was reviewed in THE LANCET of June 25th, 1898. The author suggests a perfectly correct though somewhat laboured method of recording the weight of a substance; the treatment is otherwise very definite and concise.

Pocket Notes on the New British Pharmacopœia, 1898. Bristol: Ferris and Company. Pp. 123.—The alterations in strength, composition, or dose which the new Pharmacopœia requires to be substituted for those contained in its predecessor occupy about ninety pages of this little book. On an average there are about five formulæ on a page, extra space being allotted to the tinctura chloroformi et morphinæ composita, which differs very materially from the old tinctura chloroformi et morphinæ. The additions, omissions, and alterations in nomenclature, all of which are clearly shown, make up the rest of the book. As its name denotes it is of a shape and size convenient for the pocket.

The British Pharmacopœia, 1898: Alterations, Additions, and Omissions. Sixth edition. London: *Pharmaceutical Journal* Office. Pp. 48. Price 4*d.*—This pamphlet, which is a reprint from the *Pharmaceutical Journal*, gives the essential particulars relative to the preparations the names, composition, strengths, or doses of which have been altered in the new Pharmacopœia. Its arrangement is alphabetical, beginning with Acetum cantharidis and ending with Vinum Xericum, whereby prescribers will have no difficulty in finding the references which they may happen to require. In the case of several of the new extracts, as well as of tincture of opium, the processes of preparation and of standardising with a view to obtaining a finished product of definite chemical strength are described with much fulness. At the end there is a useful table showing the proportions in which spiritus rectificatus must be added to water in order that the mixture may contain a given percentage of absolute alcohol.

Pocket Guide to the British Pharmacopœia, 1898. By FRESHFIELD REYNOLDS.—In this concise summary, published by the author, a pharmaceutical chemist of Harrogate, the changes in the new Pharmacopœia which more particularly concern the prescriber are brought into the convenient compass of eight pages. Special attention is therefore directed to articles which have undergone important alterations of strength, such as the extract of Calabar bean, infusion of ergot, blistering fluid, together with several of the "spiritus" and tinctures. Practitioners will find these notes very easy for reference on account of the absence of details which are of merely pharmaceutical interest. A copy will be sent to any member of the medical profession on receipt of name and address and 1*d.* postage stamp.

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THE LANCET.

LONDON: SATURDAY, JULY 2, 1898.

ON Tuesday night the House of Commons proceeded with the consideration of the Prisons Bill as amended by the Standing Committee. After discussions upon flogging and the treatment of treason-felony prisoners the House passed to the consideration of a subject certainly of deep interest to the whole country and one with which we are immediately concerned. The Home Secretary moved to omit from Clause 1 of the Bill the words "and one of them [i.e., the Prison Commissioners] shall be a medical man skilled in mental diseases." These words had been inserted by the Grand Committee but he did not think that the hands of the Secretary of State ought to be tied by having the appointment of a medical officer skilled in mental diseases made compulsory, though he desired to strengthen the medical element among the Commissioners. In the discussion which followed the Irish Members and many Radicals spoke against the Government, while the front Opposition bench eventually voted with them. A compromise was arrived at, the Home Secretary promising to insert a minute on the records of his office to the effect that it was desirable to appoint a medical Commissioner as well as medical inspectors. It is allowed on all hands that insanity is prevalent in prisons and in all probability the prison routine of the past has had a great deal to do with bringing this about. We cannot agree with those who submit that all crime is insanity, other than in the sense that it is a deviation from the normal. But the ordinary criminally minded man or woman is certainly of very low mental calibre and is mentally unstable, and this being so it is of the greatest consequence that among those appointed to supervise his, or her, treatment and punishment there should be some who have made a study of mental affections.

The present Prisons Bill has made one great step in the matter of prison reform, for as at present drafted it hands over the control of prisons to the House of Commons. But the Prison Commissioners will, we take it, be allowed a certain amount of latitude. Upon them will fall the duty of seeing that the decisions of the House with regard to various matters connected with prison discipline are carried out as they should be. For this purpose medical knowledge will be most valuable and we utterly fail to see the force of the objection of the Home Secretary to the words which he proposed to omit and which have been omitted by a majority of 97. These words were inserted by the Grand Committee and the Standing Committee on Law voted for their insertion by 25 votes to 8. We are far from agreeing with those Members who implied that the decisions of a Committee of the House of Commons should necessarily bind the House itself, but on a matter such as this, where it was allowed by the responsible Minister that increased medical representation was very desirable, it seems to us that th words in question might very well have been allowed to stand part of the clause. One speaker suggested that it was not due to the action of the Home Secretary but to the permanent officials of the Home Office—a view, however, dissented from by Sir MATTHEW WHITE RIDLEY, who took all the blame upon himself. We cannot acquiesce in the charge of unfairness which was brought against him by one Member. The Home Secretary fought the addition to the clause—i.e., the words now omitted—in the Grand Committee, was beaten there, and had every right to fight it again in the House. But in the wisdom or policy of this action we cannot agree. The appointment of a medical Commissioner is not one merely of expediency but of necessity, and, though the compromise arrived at is better than nothing, yet the omission of the words in dispute is a serious blot upon the Bill.

The whole debate was an excellent example of the curious affection which the House of Commons has for hair-splitting, a fact duly noted and commented upon by Mr. BALFOUR. Another point brought out is the dislike that this Government, and we might say every Government, has to saying "must." To our minds the very essence of Government is to say "must." Permissive Bills are never of any use. The Home Secretary argued that he did not want either his hands or those of his successor tied. But the whole object of a law is to tie someone's hands. Sir MATTHEW WHITE RIDLEY allows that a strengthening of the medical element is desirable and yet he omits the very clause in the Bill which provides for this reform. However, as he has pledged himself to place on record at the Home Office a minute to the effect that the medical element shall be represented among the Commissioners, a minute which, though not binding on future Home Secretaries, shall yet, in the words of Mr. ASQUITH, be a guide for them, it is possible that not much, if any, harm has been done.

IN THE LANCET of June 18th we called attention to the subject of the hospital equipment and the medical and sick transport arrangements provided for the troops at the battle of the Atbara, about which a series of questions had been recently put to the Under Secretary for War in the House of Commons. Mr. BRODRICK admitted, it will be remembered, that the litters used for the wounded were not provided with sun protectors in the shape of folding hoods and that no Roentgen ray apparatus had accompanied the field force, adding, however, that measures either had already been, or would be, taken to supply the deficiencies in both these respects. He pointed out at the same time the difficulties attending the adaptation of the Roentgen apparatus to field service and declared, on the authority of the senior medical officer, who had gone very carefully over the cases, that no instance had as a matter of fact occurred in which the apparatus would have been specially useful or would have been instrumental in saving a single life. As regards the other subjects of complaint the Under Secretary for War either refused to allow that there were any grounds for their existence or minimised their importance. He saw no reason for the appointment of any Parliamentary or other committee of inquiry. We said that although Mr. BRODRICK'S replies were on the whole satisfactory we should have been glad if he had expressed himself more definitely in respect of

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the allegations which had been made regarding the severely economical scale on which our Egyptian campaigns had been hitherto conducted. We added that while quite ready to admit that it was not always possible to provide for every contingency occurring on field service, whatever was practicable should unquestionably be done, and that if for financial or military reasons this was not done the responsibility should not be allowed to rest with the medical branch of the service.

Judging from what has since been published Mr. BRODRICK'S explanatory statements in the House of Commons do not seem to be regarded as adequate and we consequently feel amply justified in the comments we made on the occasion in question. Nothing could have been better than the way in which the medical officers did their work at and after the battle of the Atbara, and we have been assured that there was, as a matter of fact, plenty of chloroform at the front. But even were it otherwise, we may safely assume that whatever shortcomings there might have been in respect of anæsthetics or of any other hospital stores they would have been attributable to the self-same cause which is continually *en évidence* in our campaigns—want of transport. The provision of sufficient transport means, of course, the expenditure of money and we may be pretty confident that if any branch of the service is to be squeezed in this respect it will not be the military but the medical branch of the service. We do not say, of course, that such was the case, but if stores and equipment required at the Atbara were at Wady Halfa, for example, they might as well have been at Cairo or in England. Instead of the necessary amount of transport being handed over to the medical department for its special use, to be disposed of in the best way to meet its requirements in the field, medical officers have never, so far as we can learn, had a free hand in this respect in any campaign which has yet taken place. Supposing the required amount of stores and equipment to be allowed and not cut down, there is nevertheless no assurance, as it seems to us, under the present system that they will be forthcoming at the times and places where they are most needed. The military operations in the Soudan against the KHALIFA have been for the benefit of civilisation and humanity; they have been designed and carried out with great skill and at a relatively small cost. The question is, however, whether this policy of cheapness has not been carried too far. The demands on a medical service in the field are becoming more and more severe and exacting, and the force of public opinion in this direction will increase rather than decrease as time goes on. In the coming expedition of the Anglo-Egyptian army to Khartoum the finance and military authorities must be prepared to meet the requirements of the medical service or in common fairness to that service to publicly accept the full responsibility of the position.

IN a recent article[1] we held that it was our duty as a profession to tell the State how it may prevent and control small-pox, but that it was the duty of the State itself to decide how the prophylaxis shall be applied. Every individual in the realm should be vaccinated and re-vaccinated and the State should use all reasonable legislative pressure towards this end, but we argued that the question of how far compulsion should be resorted to is one in which medical men are interested rather as units in the body politic than as a profession. By the narrow majority of 2 votes (26 to 24) the Grand Committee on Law has rejected Sir WALTER FOSTER'S amendment in favour of a conscience clause as regards primary vaccination. So far as the Committee is concerned the State has therefore decided that pressure to a certain extent — afterwards modified — may be exercised towards the vaccination of every child. Our views on this question have been sufficiently expressed since fresh legislation began to be talked of and we need not repeat them here. Looking, however, to the closeness of the division on the proposal for a conscience clause and to the fact that three out of four medical men as well as the solitary Royal Commissioner who is on the Committee supported the proposal, we venture to suggest to Mr. CHAPLIN that the decision with regard to penalties for primary vaccination need not necessarily be applied to any clause which may be introduced to provide for revaccination.

Logically, primary vaccination and revaccination should stand on the same footing, but the Bill is more or less illogical already, and logic, like law, is a good servant but may be a bad master. We assume here that the question of revaccination will be raised and that a clause will be proposed for adoption. It would be mere pettish folly on the part of any members of the Committee who believe in vaccination and revaccination but who have been in the minority on the subject of a conscience clause to withdraw now from their support of revaccination. It would be a shame that revaccination should not be voted on, and any clause for this purpose could have incorporated with it a proviso for the acceptance of a declaration of conscientious objection. To omit from the new law a section dealing with the systematic maintenance and encouragement of national revaccination would be a national blunder, but as the legislative requirement of revaccination would be a new one in this country, it might well be accompanied by that right of relief from penalty for refusal of compliance which was so nearly carried in the committee when primary vaccination was under consideration. Mr. CHAPLIN has said that if the new Act is not a success he will return to Parliament again and again for its improvement. With restricted penalties still possible in the case of primary vaccination, and with a conscience clause as to revaccination, it would soon be possible to learn by experience which of the two methods of inducement towards compliance with the law is the more successful and the less provocative of friction and difficulty. If it were to be found — and it would not surprise us to find — that even single penalties could be wisely dispensed with, then no body of men would more heartily welcome the abolition of fines than would the profession of medicine. Their attitude towards the Bill shows that their aim is not to have fines inflicted but to

[1] THE LANCET, May 21st, 1898, p. 1409.

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have the children and the adults of the land protected against small-pox.

As a step in this direction we may note that on Tuesday last Sir W. PRIESTLEY carried an amendment, against the views of Mr. CHAPLIN, by 17 votes to 12, which would practically reduce the penalties to one. For by this amendment the Committee decided to waive a second prosecution for the same default until the child was of the age of five years, and that even then proceedings would be withheld provided the parent or guardian made a statutory declaration of his objection. This is not very far removed from the spirit of Sir W. FOSTER'S proposal, and if it were to become law it would be almost tantamount to the abolition of compulsion.

ON Tuesday last the London County Council rejected (that is what their action amounted to) by a majority of 2 to 1 the by-law submitted to them by their own committee as a means of dealing with the serious and growing nuisance of street noises in the metropolis, and made it clear that no regulation dealing efficiently with such a matter will ever receive the sanction of the present Council, the consideration of other by-laws dealing with important cognate subjects being at the same time necessarily postponed owing to there not being a sufficient number of councillors present. The by-law which was defeated on the initiative of Mr. STUART, M.P., was admittedly drawn with the concurrence and aid of the Home Office officials, who, as the controllers of the Metropolitan police, would have had a large share in the responsibility of enforcing it. It ran as follows: "No person shall in any street or public place, for the purpose of hawking, selling, or distributing any article, shout or make any loud noise in such a manner as to cause nuisance or annoyance to residents or passengers, or to persons occupying shops, warehouses or offices. Provided that this by-law shall not apply to costermongers or street hawkers, if and so long as by virtue of the Metropolitan Streets Amendment Act, 1867, they are exempted from the operation of Section 6 of the Metropolitan Streets Act, 1867."

This last sentence, by its somewhat cumbrous method of cross-reference, exempts licensed hawkers and makes it perfectly plain that the by-law was aimed not at costermongers who presumably ply their trade in places where their mode of advertising their wares gives no offence, but rather at the persons who yell the attractions offered by the newspapers they seek to sell, either in our busy streets in the afternoons or in our quieter neighbourhoods at night and on Sundays; and also perhaps at some of the irregular and irresponsible criers of coal and other vendibles, who try to trade in places where they are not wanted or expected and where consequently they have to shout to attract attention. To say nothing of those who are lying ill, we have frequently called attention to the positive danger to health to a man carrying on anxious, intellectual work or preoccupied with business cares, whether in his office or in the street, from the incessant irritation caused by the discordant yellings of these street nuisances, and we were prepared to welcome, in company with all decent citizens, a simple workable by-law for the removal of the evil. This the measure rejected by the London County Council seems to us to have been. The objections urged against it were many of them so paltry as to be almost beneath criticism. One reckless suggestion was summarily disposed of by Sir H. B. POLAND, Q.C., a very valuable alderman of the Council, who pointed out that the police-stations could not become filled with men and boys, as another member had suggested, because the procedure would be by summons and not by summary arrest of the offender, and this was by no means the only trivial insinuation of the supporters of Mr. STUART'S amendment. But one argument employed seems to us to strike at the root of all the independence and integrity of the London County Council. It was adduced by a member who is reported to have said that he knew nothing that would subject the Council to so much unpopularity as these by-laws, while another gentleman who supported him said that if the by-laws were passed the chairman of the committee which was responsible for them would be "the most unpopular man in East St. Pancras." We can understand that fear of incurring grave unpopularity in his district might secretly influence the vote of a particular member of any elective body, but we think that respect for his own good name should deter him from avowing it publicly to his fellows. That the possibility of the unpopularity of the body as a whole or of any member of it should be held up as a wholesome and sound argument and as a deterrent from the taking of any particular course of action by the whole body and that the advice so given should pass almost without challenge seems to us a serious matter. Had such an argument weighed with Parliament it might have delayed the Vaccination Acts, the Factory Acts, the Education Acts, and many other measures passed for the public good to the inconvenience and annoyance of many individuals.

That yelling is a necessity to street hawking is an absurdity to anyone who has an elementary knowledge of London. To take newspapers as an example, the regular better-class street-vendors of them—as, for instance, those outside the gateway of the Temple, at Charing-cross, or at Oxford-circus—never shout. The ear-piercing cry of "All the winners" is raised by small boys anxious, no doubt, properly to earn an honest copper, but who certainly have no right to do so at the risk of the peace of the community or to the pain of the sick and suffering; and we have no hesitation in saying that if Mr. STUART and his followers considered the acquirement or loss of votes when they rejected the by-law proposed to them, whether the votes were those of costermongers or of those interested in the cheap and rapid dissemination of betting and racing intelligence, they were actuated by motives unworthy of English municipal life. That they rejected a workable by-law framed for the public health and comfort we firmly believe.

THE thirty-first annual meeting of the Canadian Medical Association will be held in Laval University at Quebec on Aug. 17th, 18th, and 19th next. For all information application should be made to Mr. F. N. G. Starr, general secretary, 471, College-street, Toronto.

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Annotations.

"Ne quid nimis."

THE FIVE-HUNDRED-AND-FIFTIETH ANNIVERSARY OF GONVILLE AND CAIUS COLLEGE, CAMBRIDGE.

AN interesting dinner was held at Gonville and Caius College last week to celebrate the five-hundred-and-fiftieth anniversary of the foundation of the College, and so many eminent medical men have received their education there that although the foundation is not a purely medical one in the least, its anniversaries must always have a peculiar interest for our profession. Five hundred and fifty years ago—to quote largely from an interesting statement made at the commemoration service by Dr. N. M. Ferrers, F.R.S., the distinguished Master—Edmund Gonville, the rector of Terrington, in Norfolk, obtained letters patent from Edward III. to found a hall in Cambridge to be called after his own name and to be dedicated "to the honour of the Annunciation of Blessed Mary the Virgin." Gonville Hall was East Anglian throughout, its revenues being derived from ecclesiastical benefices in Norfolk and Suffolk, and for upwards of 200 years it remained the educational centre of those counties. In 1557 the second founder appeared in the person of "that great and generous John Caius," by whose name the College is colloquially known, and again East Anglia supplied both the man and the money. John Caius was born at Norwich in 1510, was admitted into the College in 1529, and in 1533 was elected a Fellow. Six years later he left the College and after studying under Andreas Vesalius graduated in medicine at the University of Padua in 1541, whence he was admitted *ad eundem* to the Cambridge degree in medicine. On his return to England, learned and full of the fame which he enjoyed as friend and equal of the great continental scholars, he became a Fellow of the Royal College of Physicians of London, of which corporation some eight years later he was elected President. In 1557 Dr. John Caius, who had acquired great wealth by his professional practice, obtained from King Philip and Queen Mary the Charter of Foundation as well as of Confirmation by which he was made co-founder of Gonville and Caius College. He presented to the new foundation manors in Hertfordshire and Norfolk and lands and houses in Cambridgeshire. At his own charge he built two wings of the College building and likewise furnished the library with many books of great value. Over the new or joint foundation he placed Mr. Thomas Bacon, the then master of Gonville Hall, but on Mr. Bacon's death in 1559 he was himself "prevailed on by the unanimous request of the Fellows and the solicitation of the Vice-Chancellor and heads of the University to take into his own hands the government of the College." He accepted the post without stipend. In this station he lived and under him the College flourished for thirteen years and upwards, when he resigned the Mastership in 1573. Two months later he died and is now buried in the chapel of his great foundation. Gonville and Caius College may well be proud of its second founder, who was not only a profound scholar and a skilled and painstaking observer, but was also the most important medical author in England before Harvey. So that although the College has a great record in the schools in every direction—and it may be added that Caius men have been particularly successful this year both in classics and mathematics—the predominating influence of the name and fame of John Caius will probably continue to secure to his foundation a large number of the members of the Cambridge University Medical School. It is interesting to note that Dr. Caius is the only man who has ever ruled over a college of his own founding and called by his own name in Cambridge or, we believe, Oxford. The historic families of Sidney, Clare, and Pembroke have all founded colleges which bear their names, but in no case did the founder of these personally rule over the fortunes of the new college, being in two instances at least debarred by her sex if not by her inclination.

KISSING THE BOOK.

AT the Central Criminal Court on June 23rd Mr. Justice Grantham said that the testaments on which witnesses were sworn had been in use for a great many years and he thought that it was time that the proper authorities should supply new ones. No one, however, seemed to know upon whom this duty devolves. A copy of the Gospels can, we believe, be procured for a penny, so it ought not to be difficult to supply new copies, but we earnestly hope that when new ones are supplied advantage will be taken by the judges to point out that the Scotch form of oath is perfectly valid and should invariably be preferred. We need not again go into the arguments against the practice of "kissing the book," and we merely mention the circumstance because it seems to us a favourable opportunity of doing away with the practice altogether.

THE REPORT OF THE PETROLEUM COMMITTEE.

LAST week we ventured the opinion that it was premature to say definitely what decision would be precisely arrived at by the Petroleum Committee, although a good deal of confidence had been expressed in some authoritative quarters that Mr. Collings's report would be accepted with slight amendment. The march of events has proved this speculation to be wrong. It may be remembered that Mr. Collings proposed to deal with the construction of lamps, while Mr. Ure expressed the conviction that it was only by ensuring the supply of burning oil of a flash-point never below 100° F. that safety could be guaranteed. At their meeting last week the committee divided on this issue, with the net result that a majority of one was in favour of Mr. Ure's contention that a minimum limit of 100° F. should be placed upon oil intended for use in lamps. So far, therefore, as the findings of the Petroleum Committee are concerned the momentous question has been decided by one member. Fifteen members voted, the chairman assuming on a division a neutral attitude by not voting at all. It is doubtful whether this result will convince the Government that the conclusion is sufficiently decisive to demand the adoption of the drastic step which such a recommendation implies. One important point at any rate seems to us to have been overlooked. Is the construction of the millions of lamps now in use adapted to burn oil of a minimum flash-point of 100°F. Abel test? We have decided misgivings on this head and if we are right it is evident that the proposal to fix the flash-point at 100° F. will involve new lamps as well as new oil, whereas assuming that the committee had decided that the oil of 73°F. flash-point could be burnt safely in properly constructed lamps legislation would need only to be brought to bear in one direction instead of two. We fully realise the vexatiousness of the problem and the difficulty of suggesting and bringing to a successful issue a way out—that is, one which will be a means of protecting as far as is humanly possible the public from risk and disaster. We have approached the subject solely from the point of view of public protection; we are quite indifferent as to the direction that legislation may eventually take as long as it appears practicable and proves in actual effect to be a preventive measure shielding the public from a source of danger which has undoubtedly increased during

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recent years. Our attitude is well known and we see no reason for changing it. We have gained practical evidence of the security afforded by properly constructed lamps. We believe the fixing of the flash-point of oil at 100° F. to be impracticable as a basis for legislation, while there are reasons for thinking that its adoption may convey a false sense of safety and lead to even greater carelessness and negligence than have hitherto prevailed. If our attitude should ultimately prove to be wrong we shall none the less welcome any alternative proposal, should it be followed by a happy issue, from whatever lines of reasoning it may have sprung. Let the flash-point be raised by all means if that will protect life and limb and if at the same time it will not engender other hardships in the every-day conduct of human affairs.

THE SMOKE NUISANCE.

LAST week we expressed disagreement with the judgment given by Sir James Vaughan in a case of smoke nuisance. The magistrate said that he was satisfied that the company summoned had done all in their power to mitigate the nuisance and he accordingly marked the summons "No conviction." A precisely similar line of defence, that is, that the nuisance was caused through the difficulty of getting smokeless or Welsh coal owing to the strike, was adopted at Westminster this week, but Mr. Sheil said: "That is no defence. The full penalty is £10. I will fine the defendants £5 and 23*s.* costs." That is precisely our view, which was expressed almost exactly in the same terms on page 1768 of our last issue.

DINNER OF THE EPIDEMIOLOGICAL SOCIETY.

A VERY successful dinner of this society was held on Friday, June 24th, in the Marble Saloon of the Grand Hotel, Trafalgar-square, the President, Professor Lane Notter, being in the chair. Amongst those present were Sir Walter Foster, M.P., Surgeon-Major-General James Jameson, C.B., Director-General of the Army Medical Department, Mr. Shirley Murphy, Dr. Franklin Parsons (President elect of the Epidemiological Society), Dr. Whitelegge, Her Majesty's Chief Inspector of Factories, Dr. Klein, F.R.S., Surgeon-Colonel Stevenson, A.M.D., Mr. Gough, Secretary of the Thames Conservancy Board, Dr. Blake, L.C.C., Dr. Newsholme, Dr. Sweeting, Dr. Hector Mackenzie, Dr. Washbourn, Dr. F. W. Andrewes, Fleet-Surgeon Theodore Preston, R.N., Brigade-Surgeon J. B. Scriven, and many others. The toast of "The Army and Navy" was proposed by Sir Walter Foster, M.P., who congratulated the Army Medical Department upon the reform which they had already obtained and insisted upon the paramount importance of unity of action in the medical profession where the welfare of any of its numerous branches was concerned. The toast was responded to by the Director-General of the Army Medical Department and by Fleet-Surgeon Theodore Preston, R.N. Dr. Whitelegge proposed the toast of "The Visitors" and, coupling it with the names of Dr. Blake of the Public Health Committee of the London County Council and Mr. Gough of the Thames Conservancy Board, drew attention to the great influence which both the London County Council and the Thames Conservancy Board must of necessity exercise upon the health of the metropolis. In the course of his reply to the toast, Mr. Gough gave a very interesting account of the work done by the Thames Conservancy, which he stated was the oldest authority for the prevention of water pollution, powers having been conferred upon it by the Legislature in 1866. These powers, however, being limited to the main stream and parts of tributaries, within three miles of the main stream were found insufficient and, as a result of a recommendation of Lord Balfour's Commission, the Conservators have now jurisdiction *re* pollution over a much wider area. Mr. Gough referred to the excellent results which had been obtained in the tideway by the efforts of the London County Council in the treatment of the metropolitan sewage, while above the western limits of the metropolis the Conservators have constantly at work a chief inspector, seven inspectors, and eight assistants, reports being received from these officers on every aggregation of houses in the area. Samples of water, which last year amounted to 1500, are constantly submitted to the Board's analyst, Mr. C. E. Groves, F.R.S., and it appears that the amount of organic impurity dissolved in the water immediately above the intakes is now only about two-thirds of that which it was prior to 1894, when increased powers were conferred upon the board. The toast of "The Epidemiological Society" was proposed by the President, who dwelt upon the work done by the society and urged the desirability of its keeping in the main to the scientific aspect of epidemiology. He announced amid much applause that it had been unanimously resolved to confer the first "Jenner Medal" upon Mr. William Henry Power, F.R.S., whose work was regarded as being a type of that which the society should seek to honour. Mr. Shirley Murphy, in proposing "The Chairman," thanked Professor Notter for the very valuable advice and guidance which he had afforded to the society during his term of office, and congratulated the council upon their selection of the first Jenner Medallist.

SANITATION VINDICATED.

WHEN the *tout à l'égout* system was first inaugurated in Paris its opponents were numerous and bigoted. It was absurd, they said, to expect that sewage could be purified by pouring it over land, and as for the notion that agricultural advantage would accrue it was simply visionary. Hygienists, like all would-be reformers, were blindly zealous, utterly unable to perceive defects in their precious bantling, and obstinately incapable of letting well alone. If allowed to proceed with this monstrous scheme they would end by creating a centre of infection which would eventually poison the entire city. Facts, however, are stubborn things, and the experiment at Gennevilliers has been so successful that the more reasonable among the early decriers have been converted. The sewage farm at Achères occupies as it were a peninsula formed by the winding Seine and covers about 2470 acres. Each half-year the quantity of sewage dealt with amounts to 20,000,000 cubic metres, but so perfectly is the work done that in spite of this enormous deluge there is no local nuisance whatever and the neighbourhood is remarkably healthy. The great project for purifying Paris has only been partially executed, but even though it were as complete as the projectors desire a minority of detractors would doubtless still raise their voices in depreciation. Notwithstanding the immense benefit conferred on Paris by the actually existing drains there are not wanting people who stigmatise them as so many elongated cesspits in which the movement is so slow that it takes the sewage two or three weeks to reach Clichy. As a writer in *La France* lately put it: "The circulation of the noxious matter is so languid that viscous fermentable deposits must necessarily take place to an extent which cannot but be in the highest degree dangerous to the public health." As usual, the anti-hygienists first beg the question and then triumphantly proclaim the logical conclusion. But, as already said, facts are stubborn things, and M. Bechmann, and M. Launay, the manager and chief engineer of the sewage works, have been fortunately able to demonstrate the unsoundness of their opponents' arguments by means of an object lesson as striking as it is decisive. During the Easter fêtes the streets of Paris were thickly strewn with *confetti*, just as though a violent storm of indissoluble

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hailstones had been raging. The sweeping of the main boulevards began next day at three o'clock in the morning, and before eleven o'clock in the forenoon the *confetti* commenced to put in an appearance at Clichy. By midday the fields at Achères were covered with them. Instead of three weeks the transit occupied about eight hours, the distance measured from the Austerlitz bridge being a little over five miles. As the writer of an article on the subject in a Parisian medical paper remarks, "This original demonstration seems to be decisive."[1]

THE CRYPT OF ST. GEORGE THE MARTYR.

THE Home Secretary, upon the report made to him by Dr. Hoffman, Inspector of Burial Grounds, as to the condition of this crypt, has, we are very glad to announce, ordered the Vestry to remove the bodies which are lying there. At a meeting of the vestry of St. George's, Southwark, held subsequently to the receipt of the official direction from the Home Office, a prolonged and heated debate terminated in the passing of a resolution with one dissentient voice only to the effect that "the vestry as the elected representative of the parishioners of St. George the Martyr, Southwark, regret the action taken by the Home Secretary with regard to the crypt without first giving the sanitary authority of the district an opportunity of being heard, and they now request that a deputation of the vestry on the subject should be received by the Secretary of State." We certainly should like to hear what arguments the vestry can adduce to prove that it is for the good of the community over whose interests they have been chosen to preside that the crypt under the church of St. George the Martyr should remain full of corpses, but probably we never shall hear them, as it is unlikely that the Home Secretary will receive the deputation.

NOMENCLATURE OF NOTIFIABLE DISEASES.

THE vestry of St. Marylebone has memorialised the London County Council for the inclusion among the notifiable diseases of metritis and peritonitis following labour, and of puerperal pyæmia, septicæmia, and sapræmia, alleging that by employing these terms many medical men evade the notification as puerperal fever of cases which would otherwise be described as such and escape the discredit which would attach to the occurrence of such unfortunate accidents in their practice, though it is evident that if all were like-minded there would be nothing left to notify under this head and the purpose of the Act—that of calling the attention of the medical officer of health of the district to the existence in a house of a most "dangerous infectious disease" capable of being conveyed by the medical attendant or nurse to other parturient women and demanding special precautions to prevent its spread—would be completely defeated. The expression "puerperal fever," though from a strictly scientific standpoint inaccurate and, perhaps, indefensible, presents the practical advantage of being generally understood and, though vague, of being sufficiently comprehensive to cover every form of blood-poisoning, whether derived from internal or external sources, occurring during or subsequently to parturition and all in the highest degree infective. Metritis and peritonitis arising under these circumstances being always of septic origin, the distinction between sapræmia and septicæmia being, so to say, academic, and "pyæmia," so-called, being but septicæmia which has led to embolism, thrombosis, and the formation of abscesses and necrosis, "puerperal septicæmia" would seem to be the most appropriate as a general designation, but, as we have said, "puerperal fever" is after all the best as being intelligible to the public. This question is, however, really only part of a larger one, and the same practical considerations are applicable to the nomenclature of other infectious diseases, notably so to the infective sore-throats, pharyngeal and laryngeal, comprehended under the appellations of "diphtheria," "diphtheritic sore-throats," "croup," and other semi-scientific or popular expressions. The obvious and only practicable means of precluding evasions of the Act is to be found in an amendment of the schedule by the addition of synonyms and definitions both inclusive and exclusive, as for example—

Cholera.—Asiatic (not the so-called English, cholera nostras, infantum, and choleraic diarrhœa, cholerine, &c.).

Diphtheria.—Pharyngeal, laryngeal, nasal, &c. (including so-called diphtheritic and infectious sore-throats, membranous and infectious croup, but not catarrhal, non-infectious, and "spasmodic" croup).

Puerperal fever (including all septic, febrile, and inflammatory sequelæ or complications of, and consequent on, parturition).

[1] Le Progrès Médical, May 21st, 1898.

GLOSSITIS IN TYPHOID FEVER.

IN the *Johns Hopkins Bulletin*, May, 1898, Dr. Thomas McCree has described a case of this very rare complication which occurred in Dr. Osler's clinic. A man, aged twenty-seven, was admitted for a mild attack of typhoid fever from which he made a complete recovery. He was discharged after his temperature had been normal for 22 days. He was readmitted in 4 days complaining of pain in the throat, soreness, and swelling of the tongue, which had followed a chill on the previous day. The temperature was 104·2° F., the pulse was 100, the face was flushed, the neck was full and swollen at the angles of the jaws. The mouth presented a striking picture. The tongue was much swollen and protruded between the teeth, preventing the closure of the mouth; it was red, indurated, and tender. There were profuse salivation and dysphagia. The swelling gradually subsided and passed away in 3 days. The patient had a typical relapse of typhoid fever, pyrexia, rose spots, and enlarged spleen, which ran its course in 2 weeks. Cultures made from punctures of the tongue were negative. The punctures seemed to help to reduce the swelling.

THE LONDON SOCIETY OF MASTER PLUMBERS.

THE medical profession cannot fail to recognise the importance of craft associations which are formed with a view of upholding the dignity and position of the professions concerned, and more particularly must this be so when the trade or profession happens to be one upon the work of which the sanitary condition of our towns and villages very largely depends. This is so with the plumbing fraternity, and the London Society of Master Plumbers is an association with commendable objects aiming to secure for the plumber that status which his skill should demand and for the public an efficient and reliable workman. No class, perhaps, has been so roundly abused as the plumber and in many instances it is to be feared that this abuse was justified. The fact is, the merest dabbler in lead work who could make some sort of a joint or stop a leak called himself a plumber, though he was quite without any training, much less qualification, so to practise. Much mischief has been done in this way by the public themselves by ignoring the extreme importance of thorough work, but fortunately for the country there has recently sprung up a strong feeling that in the interests of the sanitary condition of our houses a system should be instituted which should offer some security that all sanitary arrangements may be placed in the hands of competent men. As is well known, the Worshipful Company of Plumbers is doing excellent work in this direction and during the last four years a practical association called the London Society of

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Master Plumbers has been extending similar good offices throughout the country. The association numbers 1000 members and at the annual dinner held at the Holborn Restaurant on June 28th the secretary announced a decided increase in the membership. Everyone with any concern at all for sound sanitary work will wish the association every possible success and none can doubt the worthiness and excellence of its purposes.

THE JENNER MEMORIAL.

THE Jubilee year necessarily interrupted this movement and many others. The committee charged with the duty of promoting a work of national utility in honour of Edward Jenner in connexion with the British Institute of Preventive Medicine, to be distinguished by Jenner's name and devoted to researches on the lines which he initiated, is now at work again. We must all feel anxious for its success. There is every reason why Jenner's fame should be reaffirmed by every intelligent man and woman who values life and researches into the subtle means by which epidemics of all sorts can be as effectually checkmated as Jenner's discovery checkmated small-pox. It should be clearly recognised that Jenner's fame is in no danger. "The civilised world" has taken that into its care. It is the national reputation of Englishmen for common sense and for reverence for their best teachers that is at stake. It will be a bitter reflection for them one of these days to perceive that other nations guard the fame of England's great son and enjoy the exemption from small-pox which we shall lose proportionately as we dishonour him.

TOTAL EXTIRPATION OF THE STOMACH WITH ŒSOPHAGO-ENTEROSTOMY.

IN THE LANCET of Jan. 15th, 1898, we published Dr. C. Schlatter's case—the first in which this operation has been performed. Some cases had been previously recorded as extirpation of the stomach but they were only partial resections. In the *Boston Medical and Surgical Journal*, May 5th, 1898, Dr. C. Brigham has published a second case. The patient was a woman, aged sixty-six years, who had suffered from pain in the stomach for a year and from vomiting of solid food for two months. On a liquid diet she was able to keep to her usual weight, 135 lb., and she was remarkably healthy. There were hardness and tenderness in the pyloric region. The operation performed was not the same as in the first case. When the stomach had been removed Dr. Brigham found that the ends of the œsophagus and duodenum could be brought together without undue tension. As the pulse had become weak from the length of the operation they were united by the Murphy button (œsophago-duodenostomy). In the first case, on the contrary, Dr. Schlatter could only bring the ends together with difficulty; he therefore united the œsophagus laterally to the intestine about 12 in. below the duodeno-jejunal fold (œsophago-jejunostomy). In Dr. Brigham's case the growth was at the pyloric extremity and extended over more than half the stomach. The pyloric orifice was so reduced that only a sound could be introduced. The patient made a good recovery. Water was administered by the mouth on the day after the operation, and other fluids were then given. Deglutition was at times painful. On the eighteenth day solid food was given. At the time of the last report (7 weeks after operation) the patient was eating well, gaining in weight, and was able to walk. Dr. Brigham attributes the occasional dysphagia to the Murphy button, which he thinks had better be dispensed with if possible. At no time was undigested food passed in the motions, which exactly agrees with Dr. Schlatter's observations. These cases therefore confirm what has already been shown by experiments on animals and by observations on certain patients in whom secretion of gastric juice was deficient or absent, that digestion may be completed without the aid of the stomach. Dr. Brigham seems to have had an ideal subject for operation in respect to her general condition. This preservation of health and, above all, of weight by a patient with advanced cancer of the stomach is exceptional.

QUACKS.

ON June 23rd Henry Thomas Kirk Richards was sentenced at the Central Criminal Court to three years' penal servitude for obtaining money by fraud from people in different parts of the country by advertising an inhaler to cure deafness and medical pills to cure female ailments. The judge said that it was impossible to conceive what harm prisoner might do to persons whom he supplied with his quack remedies. We heartily congratulate the Common Serjeant on his dictum; but we desire to know why Munyon, Mother Siegel, Warner, Madame Frain, and all the other advertising quacks should go scot free. Still more, why should "Dr. Bell" and the various "Reverends" be allowed to deceive persons, even though fools, without being punished? If Richards alone is punished it will be unfair. We fear, from the reports of the trial in the daily press, that Richards's illegality technically consisted in not as a rule sending his remedies. This, we think, is a point in his favour, but apparently he sometimes did send them, or the Common Serjeant would not have spoken as he is reported to have done.

THE RED CROSS SOCIETY AND THE SOUDAN CAMPAIGN.

THE refusal to allow the English Red Cross Society to participate in the Nile expedition raises the question as to the position which that society occupies. It may be urged that the medical department of an army should suffice for the need of that army. This, indeed, is the position taken up by the Sirdar and by Lord Cromer. The latter, in his answer to Lord Wantage, the chairman of the English Red Cross Society, says that "very ample arrangements have been made for the sick and wounded and that to accept the offer would involve heavy call on transport beyond that for which calculation is made. This would necessitate diminishing the number of fighting men, which would be very considerable. We are, therefore, unable to accept." Lord Wantage, in reply to this refusal, explains that in 1884–85 two steamers were fully equipped by the society for service on the Nile and an additional steamer was lent by an English gentleman for transport purposes on the Red Sea. The Red Cross Society spent on that occasion £34,000 and comforts and luxuries were supplied which, it is claimed, have never been so fully provided by the army authorities. The position taken up by the Red Cross Society is that it increases the amount of aid which the regulations of the army allow, gives greater luxuries to the sick and wounded, and all this is done without augmenting the burdens of the taxpayer. The Red Cross Society affords the benevolent an opportunity of helping to mitigate the horrors of war. So far the Red Cross Society has worked in harmony with the authorities of the army, but now, for the first time, its services have been refused. It is true that on this occasion distance and difficulties of transport are exceptionally great, but a vast colonial empire must ever face such obstacles. Again, if the Red Cross Society is to render practical service it should lose no chance of acquiring practical experience. Far from seeking to burden the military authorities the Red Cross Society pays its own expenses and provides its own ships and means of transport. Presumably, however, there are some things which it cannot provide. It cannot increase the

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limited rolling-stock for the railway lines laid down in the desert, nor can it supply the military escort that may be necessary to protect its ambulances against the raids of the Dervishes. Perhaps, therefore, there may be substantial reasons for refusing the proffered aid on this occasion, but if so it should be clearly understood and stated that this is altogether an exceptional case. Otherwise, what is the use of the Red Cross Society? In another column some details are given of the great services rendered by the Spanish Red Cross Society in Cuba and elsewhere. What a poor country like Spain has been able to accomplish the wealthy British nation should do on a much larger scale and it is quite easy to understand the disappointment which is now felt by the members of the English Red Cross Society. If it is really impossible to accept their services no pains should be spared to render it evident that there is no desire to discourage their generous and humanitarian efforts.

INSANITARY HOUSE PROPERTY IN HONG-KONG.

IN general the greater the sub-division of a Chinese tenement house the larger the revenue it will produce, but in Hong-Kong it is now proposed to place restrictions on excessive sub-division. The Insanitary Properties Commission have presented a report from the abstract of which, published in the *Hong-Kong Weekly Press*, it appears that all five commissioners are agreed that in houses fronting streets less than 15 ft. in width no cubicles should be allowed on the ground floors; three are of opinion that in such houses no cubicles at all should be allowed and two are of opinion that in houses fronting on lanes and streets of over 15 ft. no cubicles should be allowed on the ground floor without the permission of the Sanitary Board. It is also recommended that an open space of not less than 40 square feet should be provided at the rear of all houses, even back-to-back houses. At the meeting of the Hong-Kong Sanitary Board held on May 6th, the principal civil medical officer (Dr. J. M. Atkinson) presiding, arrangements were made for granting compensation to the owners or occupiers of a number of insanitary and illegal cubicles and cocklofts which had been destroyed.

CONGENITAL OBSTRUCTION OF THE LARYNX.

AN increasing number of observations tend to show that congenital obstruction of the larynx is neither so rare a disease of childhood nor of necessity so dangerous as might be supposed. The clinical and pathological conditions accurately described by Dr. D. B. Lees in the Transactions of the Pathological Society of London of 1883 appear to be fairly constant. His observations have since been confirmed by the experience of others, for a brief *résumé* of which we cannot do better than refer our readers to the interesting paper published in THE LANCET of Sept. 11th, 1897, by Dr. G. A. Sutherland and Dr. H. Lambert Lack. The subject has again been recently discussed in the *Journal de Clinique et de Thérapeutique Infantiles* by Dr. G. Variot who records a case. The patient was a child, aged twenty-two months. The usual symptoms were present, including croaking inspiration, much less noticeable during sleep but becoming well marked on excitement and associated with clear vocal utterance. This child died from broncho-pneumonia soon after she came under treatment. A post-mortem examination showed the epiglottis characteristically folded together and the ary-epiglottidean folds in contact with each other. The vocal cords were normal. The treatment of such cases must naturally depend upon the view which is taken as to their causation and their prognosis. Dr. Variot is unable in face of the anatomical conditions present to agree with those who regard the respiratory difficulty as purely spasmodic, and he even goes so far as to suggest an operation for the partial resection of the obstructing folds of membrane in cases where an accurate laryngoscopic diagnosis has been arrived at. In this connexion it is noteworthy that Dr. Lees and also Dr. Sutherland and Dr. Lack have recorded a not uncommon tendency towards spontaneous disappearance of the stridor. This result is attained under favourable conditions by the end of the second year or even before then. It is also remarkable that the improvement is associated with persistence of the local constriction. Such facts as these may naturally be expected to qualify the urgent necessity of operative interference in this class of cases, at all events until time has been allowed for some enlargement in the size of the infantile larynx. In the meantime every care must of course be taken to ensure good general nutrition, to prevent the risks of laryngitis, bronchitis, and laryngeal spasm, to deal promptly with any surgical emergency arising out of these, and thus to afford nature all possible help in her curative efforts.

THE VALUE OF THE CHRONOLOGICAL SUMMARY.

THE chronological summary of Chicago mortality from 1851 to date, first published by the Commissioner of Health in his second annual report—that for 1894—is developing new uses. Believing that surgical intervention must have reduced the mortality from cancer of the uterus of late years, Dr. Anson L. Clark, Dean of the Bennett Medical College, recently applied to the Department for the data necessary to test his belief. The following facts and figures compiled from the summary were promptly furnished him. Cancer deaths were first reported in Chicago by organs or parts in 1867; prior to that year only the annual total of all deaths from cancer are on record. The reported number of all deaths from cancer and of deaths from cancer of the uterus are here given by years since that date—the year 1879 being omitted from the table because there is an obvious error in the printed report of that year, only four deaths from cancer of the uterus being reported out of a total of 176 from all cancer. It will be seen that the proportion of deaths from uterine cancer to that from all cases of cancer has diminished in each decennium, the percentages being 21·2, 19·4, and 16·0.

Years.	All cancer.	Uterine cancer.	Years.	All cancer.	Uterine cancer.	Years.	All cancer.	Uterine cancer.
1867	45	9	1877	130	28	1888	361	73
1868	82	18	1878	177	48	1889	379	59
1869	63	16	1880	163	33	1890	461	81
1870	87	20	1881	217	31	1891	545	85
1871	68	11	1882	220	45	1892	539	94
1872	75	13	1883	232	42	1893	609	94
1873	107	30	1884	265	45	1894	639	111
1874	109	19	1885	249	50	1895	682	113
1875	122	28	1886	230	56	1896	734	95
1876	122	33	1887	301	47	1897	742	108
10-year totals.	880	197		2184	425		5691	913

THE ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS.

THIS association held its annual dinner at the Hôtel Métropole on June 23rd, Dr. Henry Fitzgibbon, President, being in the chair. Members of the association from all parts of the kingdom were present, besides important guests, including Sir Walter Foster, M.P., Major-General Hailes, Sir Robert Hunter (solicitor to Her Majesty's Post Office), Sir W. H. Wills, Bart., M.P., Mr. H. Osborne Harley,

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Postmaster of Manchester, Sir William Mac Cormac, Sir Thomas Roe, Sir Hugh Gilzean Reid, Mr. Edmund Owen, Dr. W. Christopher Arnison, Sir Dyce Duckworth, and Mr. Ebenezer Davies, J.P. The association seems in a healthy and prosperous way and alive to the advantages of organisation, though it was modest in the assertion of either its grievances or its wants. One of the features of the evening was a quotation by the chairman in proposing the health of Her Majesty the Queen, of words which he attributed to Nicholas Rowe and which he rightly thought most happily prophetic and expressive of the great and gentle rule of Queen Victoria. They were as follows:—

Of Royal race a British Queen shall rise,
Great, gracious, pious, fortunate, and wise.
To distant lands she shall extend her fame
And leave to latter times a mighty name.
Tyrants shall fall and faithless kings shall bleed,
And groaning nations by her arms be freed.
But, chief, this happy land her care shall prove
And find from her a more than mother's love.
From hostile rage she shall preserve it free,
Safe in the compass of her ambient sea.
Though famed her arms in many a cruel fight,
Yet most in peaceful arts she shall delight,
And *her* chief glory shall be to unite.
Picts, Saxons, Angles shall no more be known,
But Britons be the noble name alone.
With joy their ancient hate they shall forego,
While Discord hides her baleful head below.
Mercy and Truth and Right she shall maintain
And every virtue crowd to grace her reign.
Auspicious Heaven on all her days shall smile
And with eternal Union bless her British Isle.

THE SANITARY INSTITUTE: THE SIXTEENTH CONGRESS.

THE preliminary programme of the Sixteenth Congress of the Sanitary Institute, to be held in Birmingham under the presidency of Sir Joseph Fayrer from Sept. 27th to Oct. 1st, has now been issued. Dr. Christopher Childs, M.A., D.P.H., will deliver the lecture to the meeting in plenary Congress, and Dr. Alexander Hill, M.A., J.P., Master of Downing College and Vice-Chancellor of Cambridge University, will deliver the Popular Lecture. The Congress will include three sections, meeting for two days each and dealing with (1) Sanitary Science and Preventive Medicine, presided over by Dr. Alfred Hill of Birmingham; (2) Engineering and Architecture, presided over by Mr. W. Henman, F.R.I.B.A.; (3) Physics, Chemistry, and Biology, presided over by Dr. Sims Woodhead. Five special conferences will also be held: (1) Municipal Representatives, presided over by Alderman W. Cook, Chairman of the Health Committee of the Birmingham City Council; (2) Medical Officers of Health, presided over by Dr. John C. McVail, Medical Officer of Health of Glasgow; (3) Municipal and County Engineers, presided over by Mr. T. de Courcy Meade, M.Inst.C.E.; (4) Sanitary Inspectors, presided over by Mr. W. W. West, Chief Sanitary Inspector, Walthamstow; and (5) Domestic Hygiene, presided over by Mrs. C. G. Beale, the Lady Mayoress of Birmingham.

A COLLEGE FOR MEDICAL MISSIONARIES.

ON June 22nd a small committee, comprising the Bishop of Bristol, the Bishop of Wakefield, the Earl of Stamford, Sir William Paget Bowman, and several members of the medical profession, met at the house of Dr. Symes Thompson, Provost of the Guild of St. Luke, to discuss the scheme of founding a residential college in London where English Churchmen who intend to act as medical missionaries could reside while pursuing their professional education at one or other of the London medical schools. The scheme has long been under the consideration of the Guild of St. Luke and the meeting was convened in order to obtain an expression of opinion on the part of the dignitaries of the Church and some of the leaders of the profession as to its utility and the best mode of carrying it into effect. The proposed College will be controlled by the Council of the Guild of St. Luke and under the immediate management of two officers — a principal (who will be a medical man) and a chaplain (who will be a clergyman of the Church of England). They will assist and guide the students. When necessary the scholars will receive pecuniary aid from the College funds. It is intended that the students of the College shall become fully-qualified practitioners before taking up missionary work and shall acquire special knowledge of tropical diseases and sanitary science. While they will be missionaries they will not be in holy orders. The meeting was cordially in favour of the scheme and the opinion was generally expressed that the time had come for vigorous action. Various details were discussed and it was determined that strenuous efforts should be made to raise the necessary funds. Many letters expressing approval were read, but as the project has evoked so much sympathy it is impossible to give a list of the names of the writers. We may however mention among the supporters of the scheme the Archbishop of Canterbury, the Archbishop of York, the Bishop of London, the Bishop of Rochester, the Bishop of Bristol, the Bishop of Wakefield, Sir Henry Acland, Sir William Broadbent, Sir Joseph Fayrer, Sir Dyce Duckworth, and many other well-known physicians and surgeons.

THE PECULIAR PEOPLE.

AT the Old Bailey recently Mr. Justice Darling tried one of those curious cases which occur occasionally in which members of the sect calling themselves the Peculiar People find themselves the object of prosecutions which to them doubtless seem to be mere persecution. In this particular instance the accused had suffered his child to die from pneumonia rather than call in medical aid to supplement the anointing with oil and laying on of hands performed by an elder of his church. He was convicted of manslaughter and received no punishment beyond being bound over to come up for judgment when called upon. It may be that his lordship thought that the fear of the enforcement of this penalty would deter him from allowing another child's life to be sacrificed to his doubtless sincere convictions; but we are inclined to doubt the correctness of such a view when we consider the evidence given by the prisoner himself before the coroner and read over during his trial at the Central Criminal Court. He then said that he had some years ago lost another child who had died *without medical aid being summoned and on whom no inquest was held*. The Peculiar People show no tendency to be untruthful, so this statement is probably perfectly true, but it may be asked how in such a case the child came to be buried without inquiry, whether a certificate of the cause of death was given, and if so by whom, and why? We also wonder whether Mr. Justice Darling had this previous death in his mind when he passed sentence.

THE CHESTERFIELD HOSPITAL AND MEDICAL CASES.

IN another column will be found a letter from Dr. John Rose upon this important question. The matter as it stands is briefly thus. Chesterfield and district contain a population of 145,000. There is no provision for the gratuitous treatment of medical as opposed to surgical cases except the workhouse infirmary. The Chesterfield Hospital contains room for 60 ordinary beds, but on an emergency—e.g., a bad colliery accident—these 60 beds can be increased to 84. The average number of beds occupied is 30, so that 30 ordinary beds and 54 emergency beds are empty. The advocates of admission for medical cases submit that the 30 unoccupied beds might be used for medical cases. The

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governors of the hospital, however, say that the hospital constitution forbids the admission of medical cases and they cannot break the rules. But they have already broken one of them (Rule 2), which runs as follows: "The hospital shall be open to receive only those persons requiring surgical treatment. Cases of disease or sickness in any form and chronic cases shall be excluded." This definition would at once exclude all cases such as tuberculous diseases of joints, all tumours, and, in fact, only cases of injury could be treated. And yet other cases than injuries have been treated. It being apparently impossible to get medical cases admitted to the hospital, efforts have been made to build a new medical hospital. At present all medical cases have to be sent to either Sheffield or Derby. In our issue of May 15th, 1897, we commented upon the proposal to erect a drill-hall as a Jubilee memorial at Chesterfield, when it was decided that any surplus should be devoted to forming the nucleus of a fund for a medical hospital. We do not know whether there was a surplus or not, but the medical hospital is still *in nubibus*. To our minds the building of a separate hospital involves a waste of time and energy: the two classes of cases had much better be treated under one roof; but provision for the care of those suffering from, say, pneumonia, bronchitis, or rheumatic fever, or even enteric fever, must be made without delay if Chesterfield desires to preserve the reputation of the North for hard-headed common sense.

THE REPORT OF THE METROPOLITAN ASYLUMS BOARD.

THE annual report of the Metropolitan Asylums Board for the year ended March 25th, 1898, contains a new feature of great interest—namely, an account of the steps taken by the Board to provide for certain classes of children the care of whom had hitherto devolved upon boards of guardians. Such are (*a*) those suffering from ophthalmia or other contagious diseases of the eye; (*b*) those suffering from contagious diseases of the skin; (*c*) those requiring special treatment during convalescence; (*d*) feeble-minded and defective children; (*e*) those ordered by a magistrate to be sent to an industrial school or asylum. For class (*a*) sites have been acquired near Brentwood and at Swanley for the erection of suitable schools. Provision for class (*b*) is still under consideration. Class (*d*) is to be provided for by cottage homes which are to be rented in the vicinity of the special schools provided by the London School Board. About 60 children will be provided for in the first instance. With regard to infectious diseases, the cases of diphtheria admitted to the hospitals was for 1897 6592, an increase over the figures for 1896 of 1358. The number of notifications, however, for 1897 was less by 559 than the number of notifications in 1896. It is fair therefore to assume that the prejudice formerly felt with regard to removing patients to hospital is dying out. The percentage mortality of this disease was only 17·7 during 1897. In 1894 it was 29·3. This marked diminution in fatality coincides with the spread of the use of antitoxin. The new Park Hospital was formally opened and the Board has acquired a site upon the Thames Embankment for the erection of new offices.

PSEUDOBULBAR PARALYSIS WITH DIPLEGIA IN A CHILD.

AT the Verein für Psychiatrie und Neurologie in Vienna[1] in November of last year Dr. von Sölder showed a curious case. The patient was a child, aged nine years, whose birth was normal and at full time, and who, during the first five years of her life was healthy both in mind and body. In her sixth year she began to have difficulty in walking, the result apparently of some defect in the right leg and her speech was also interfered with. Later there was weakness of the right arm and in the following year of the left leg, and about this time there was interference with the act of mastication. For more than a year before the time at which the patient was shown there had been difficulty in using the left arm and a little also in swallowing. The gait was now spastic with left talipes equinovarus, and pronation of the right foot. There were lordosis and unsteadiness, and during walking some athetotic movements of the upper extremities and of the lower part of the face—the latter movements being also present in some degree during rest. There was great weakness of the arms and marked spasticity existed in the legs. The knee-jerks were active, the right more so than the left. The speech was bulbar in character, almost unintelligible, and the orbicularis oris and the masticatory muscles were paretic. The act of swallowing was itself apparently not much interfered with and there were no electrical changes in the facial muscles. Dr. von Sölder regarded the case as one of cerebral affection, but the late onset and the slow development of the condition are both noteworthy.

[1] Neurologisches Centralblatt, June 15th, 1898, p. 573.

THE RÔLE AND ETHICS OF MUSIC.

IN no better way can a nation express its gladness than in music and, besides, a well-conducted performance of the choicest excerpts from the great masters is a delight to all concerned and of distinct benefit as a factor in mental recreation. Viewed in this light, the Grand Festival Concert held at the Crystal Palace on June 25th in honour of the sixtieth anniversary of the coronation of Her Majesty the Queen-Empress was an unqualified success and highly appreciated by an audience of over 22,000 persons. Such could hardly have failed to be the case in view of the character of the programme provided and of the promised appearance of such excellent soloists as Madame Adelina Patti, Miss Clara Butt, Mr. Edward Lloyd, and Mr. Santley. The chorus numbered 3000 voices, consisting of the London contingent of the Handel Festival choir and an orchestra of 500 performers. We welcome events of this kind and on this scale—a scale which cannot be less if such works as the "Hailstone Chorus," from Handel's *Israel in Egypt*, or the "Dies Iræ" from Berlioz' *Grand Requiem* are to approach anything like that completeness which the respective composers meant to convey; and it is gratifying to learn from the experience of these occasions that the public, as evidenced by an expanding attendance, are evincing more and more a taste for that class of music which kindles the noblest feelings and fosters the healthiest aspirations in the human mind. This fact points to a wholesome desire for mental rest engendered by the ever-increasing pace and demands of modern existence, and the music-providing section in our midst deserve every encouragement at the hands of the public to persevere in thus ministering to this need. Music is an influence for good, and as Auerbach has said, "Music washes away from the soul the dust of every-day life," and the increasing demand for its enjoyment as shown at our great public performances is a distinct and sure indication of the healthy and moral progress of the nation.

SIR FRANCIS SEYMOUR HADEN will preside at the twentieth annual meeting of the Church of England Burial, Funeral, and Mourning Reform Association to be held at 32, Wimpole-street, on Wednesday, July 6th. Among other resolutions will be one pointing out the desirability of the clergy enforcing the Christian obligation of carrying out the burial of the dead promptly, innocuously, and inexpensively.

MR. WILLIAM GABRIEL ROCKWOOD, M.D. (Madras), has been appointed an Unofficial Member of the Legislative Council of the Island of Ceylon.

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HOSPITAL REFORM.

A SPECIAL meeting of the Council of the Charity Organisation Society was held on June 20th at the United Services Institution to discuss suggestions for the reform of the casualty and out-patient departments of London hospitals. Sir JOSHUA FITCH was in the chair and there was a large attendance.

Mr. T. CLINTON DENT, surgeon to St. George's Hospital, described an experiment which is about to be made in connexion with the New Belgrave Hospital for Children. It was proposed to guard against the overgrowth of the number of out-patients by limitation of new cases and selection and at the same time to place a check upon the undue multiplication of casualty patients. Mr. Dent pointed out that unless this were done any rule limiting the number of out-patients, however strictly observed, would be useless. Although the number of applicants in the surgery of a children's hospital was infinitely smaller than in a general hospital, it was of equal importance to avoid the treatment of ineligible cases and to prevent the surgery from becoming a vicarious out-patient department. Of course, if a case brought to the surgery was so serious that it could not be sent away it would have to be admitted to the in-patient department; but generally speaking the same inquiry would be made in the surgery as in the out-patient department as to the circumstances of the parents and the same regulations would apply. The chief difficulty in a children's hospital was to guard against indiscriminate prescribing. Mr. Dent contested the view that every patient who applied as a "medical casualty" must necessarily receive treatment.

Mr. Dent described in detail the measures which were proposed for the limitation and selection of cases. The number of new cases to be seen by the medical officer at each attendance would be limited to fifteen. Preference would be given first to the most serious and acute cases. Next in order of preference would come those recommended by medical practitioners, while third in order would come those bearing certificates from governors of the hospital. It was not likely that this last class would be numerous, but great importance would be attached to the recommendations of medical practitioners. In fact, the principle underlying the whole scheme was the desire to work with, and not in antagonism to, the general practitioner. The best possible arrangement in his opinion would be for the general practitioner to be practically the almoner of the charity, as no one would probably be so well qualified to judge of the necessities of the case or better informed as to the circumstances of the parents. As to this point it was intended to employ an inquiry officer as an experiment. The benefits of the hospital would also be guarded by a wage-limit estimated on the proportion of the family income to the family. The wage-limit had been purposely fixed low in order that the benefits of the hospital might go to the very poor, for whom they were intended. A register would be kept of the out-patients setting forth age, name, and address, the dates of admission and discharge, and the occupations and wages of the parents. This register would be open for the inspection of local practitioners and the representatives of charitable institutions.

The most novel feature in the new scheme was an arrangement by which the hospital should be available for consultation by people who, though able and willing to pay the moderate fees of general practitioners, could not afford a consultant's fee. Any registered medical practitioner would be allowed to bring to the out-patient department patients under his own care for consultation with members of the honorary medical staff. The actual attendance of the practitioner at such consultations would be eminently desirable and written statements would only be received in exceptional cases. No treatment would be given at the hospital in these cases, but the diagnosis made and the treatment advised would be communicated to the practitioner. The question of charging a fee for such consultations had been considered and the committee were in favour of a small payment. Mr. Dent pointed out that the scheme was only experimental.

Mr. Dent's description of the proposed arrangements in connexion with the new Belgrave Hospital was followed by a short paper entitled Suggestions for the Reform of Casualty and Out-patient Departments, contributed by Mr. W. H. KESTEVEN. It was admitted that the number of cases attending the casualty departments had increased of late years with excessive rapidity, while there had also been an increase of out-patients, and that many cases in both departments were of a trivial character which could be dealt with satisfactorily by general practitioners and for which hospital aid was unnecessary. The practical suggestions which he submitted as the result of conference with others were that all casualty cases should be seen by a medical officer, who should select from them cases which were urgent or of value for educational purposes, referring the rest in general terms to local medical men or an approved provident dispensary. In the out-patient department also the selection was to be made by a medical officer, but the suggestions for disposing of them were more complicated, including a limitation of the number of new cases to 15 or 20, a preference for members of friendly societies, provident dispensaries, and others recommended by their own medical attendants, and the reference of destitute cases to the Poor-law. The suggestions also included the employment of a trained almoner to make inquiries. Mr. Kesteven suggested the advisability of hospitals ceasing to provide drugs and giving prescriptions instead; this would bring the expenditure of hospitals within their means and would secure more experienced treatment for the sick poor who had to resort to them.

A discussion followed in which several medical men took part.

Mr. GARRETT HORDER congratulated the Charity Organisation Society on having secured two such practical papers after years of talk. He questioned the wisdom of Mr. Kesteven's suggestion that prescriptions should be given instead of medicines and he referred to the successful working of admission committees at Oldham and Dorchester. It seemed to him to be a suitable plan for small hospitals.

Mr. NELSON HARDY welcomed the Belgrave Hospital scheme as the first serious attempt on behalf of an established institution to deal with a problem which had been agitated for thirty years and more.

Dr. WARING (Brighton) gave some figures, which have already appeared in THE LANCET, showing that over a quarter of the inhabitants of Brighton and Hove appear to have been in receipt of hospital relief in 1896. He also stated that in a recent year no less than one-third of the births had taken place in the West-street Lying-in Hospital.

Other speakers took part in the discussion, and after brief replies from Mr. DENT and Mr. KESTEVEN the meeting closed with a vote of thanks to Sir Joshua Fitch for presiding.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE twenty-seventh sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, June 27th. With the exception of Mr. Cripps, Q.C., all the Commissioners were present. The first part of the sitting was occupied by hearing the evidence of Mr. James Bigwood, M.P., the Chairman of the Parliamentary Committee of the Middlesex County Council, and Member of Parliament for the Brentford Division of Middlesex. The latter part of the sitting was occupied in hearing the evidence of Mr. E. J. Halsey, the Chairman of the Surrey County Council.

Mr. BIGWOOD, in answer to the CHAIRMAN, said that the area over which the Middlesex County Council had jurisdiction was partly within the limits of supply of the New River, the West Middlesex, the Grand Junction, and the East London water companies, and that the most thickly populated part of Middlesex, which was close to the boundary of London, was supplied by the three first-mentioned companies. The actual sources of the water were situated in the county and in the opinion of the witness Middlesex had a claim to the water found in the county. A large quantity is obtained in Middlesex by the New River Company at White Webbs, Highfield, Campsbourne, and Bettstile wells, situated respectively at Enfield, Edmonton, Hornsey, and New Southgate. During the last twenty-five years the population of Middlesex has practically doubled. The people of Middlesex wish to be a separate body, independent of London both as regards rating and in every other respect, and the Middlesex County

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Council had petitioned against the various water Bills which had been promoted from time to time since the year 1891 by the metropolitan water companies and also against the transfer and purchase Bills which had been introduced by the London County Council. The position which the people of Middlesex took up with regard to the water-supply might be briefly summarised as follows:—1. That no scheme would be acceptable to Middlesex which did not provide for no further water being abstracted from the Middlesex water-supply. 2. Which did not give independent control from the beginning to Middlesex (*a*) of their sources of supply; (*b*) of their service. 3. Absolute non-interference with Middlesex either as to rating or otherwise. The witness thought that although it might possibly be advantageous in some provincial towns that the management of the water should be under the local authorities, it did not follow that that would be the best course in such an area as "Water London," which included not only the metropolis, with a population of nearly 4,500,000, but also the outside population of "Greater London," which in 1891 amounted to 1,401,688; and the outlying parts of "Water London," which in 1891 amounted to 76,041. Should it be thought that the water for Metropolitan London would be best managed by one authority it did not follow that the London County Council should be the authority entrusted with that management. In the opinion of the witness the London County Council had not time to devote to the matter and, moreover, the water-supply should not be managed by an elected body. It was his opinion also that there was plenty of water to supply the wants of Middlesex in the soil of the county and in the Thames.

In answer to Mr. MELLOR the witness said that he himself had dug a well and found an abundant supply of water. The Parliamentary Committee of the Middlesex County Council in the year 1891 formulated their views on what the necessities of the county required in connexion with the question of the water-supply. The resolution was as follows:—

1. That the interests of the county require that in any dealing with the question of the London water-supply, as it affects Middlesex, provision should be made against (*a*) the sinking of any new wells in the county, (*b*) the deepening of any existing wells in the county, (*c*) for limiting the abstraction of water for the London or any other external supply from Middlesex.

2. That no scheme will be acceptable to Middlesex which does not provide (*a*) for no further water being abstracted from the Middlesex area; (*b*) for the independent control (from the beginning) of (1) the source of supply, (2) the supply service; (*c*) for the absolute non-interference with Middlesex, either as to rating or otherwise.

The Middlesex County Council thought that it would be distinctly against their interest that any outside authority should acquire the powers of any of the metropolitan companies with reference to the supply of water in the area which was under the jurisdiction of the Middlesex County Council and that no outside authority ought to be empowered to control or in any way interfere with their supply. The interests of such an outside authority as the London County Council might and probably would be antagonistic to those of the county of Middlesex. Briefly, Middlesex preferred that matters should remain as they are at present and strongly protested against being made a party to the scheme for bringing water from Wales. The Middlesex County Council had at present no jurisdiction over the water supplies and they appeared before the Commissioners to protect the interests of their county, and whilst they were willing that London should take any steps for itself, they on their part protested against the London County Council or any other body interfering in any way with the county of Middlesex. Should any outside authority have such power as the London County Council sought to obtain the results which might be expected would result in (1) Attempts to annex, thereby enormously increasing rates; (2) involving Middlesex in any new scheme which it does not want, and thereby saddling it with still vaster rates for no useful purpose, against its will; (3) compelling Middlesex to pay far more for its water than consumers in London do; and (4) compelling Middlesex to bear part of any burden cast upon Surrey or on South London in which Middlesex has no interest, for supplies which they may need but Middlesex does not.

The witness put in a table which showed that in many cases in which provincial towns supplied outlying districts more was charged for the water in those districts than in the town itself—for example, in the case of Ashton the outside consumers paid 25 per cent. more, and in the cases of Guildford, of Halifax, and of Burnley no less than 50 per cent. more than the inhabitants of those towns were called upon to pay. In the opinion of the witness the scheme for the purchase of the undertakings of the water companies should be rejected and additional powers of control over the present undertakings should be granted. The witness suggested that a Board of Control should be formed with a view to secure the following results:—

1. Sufficient supply to all consumers, whether within or without the county of London. 2. Efficient, and very stringent, methods of preventing waste. 3. The primary right of the inhabitants of any district, from which water is abstracted, to a sufficient supply to meet their requirements. 4. More economical administration of the companies' affairs. 5. The application of any dividends in excess of 10 per cent. on the paid-up capital of any company, to the reduction of water-rates. It might possibly be necessary to come to some arrangement with the companies, especially the Southwark and Vauxhall, and the New River Companies, as to their maximum dividend. 6. Easy and simple method, by application to a tribunal or officer, who can at once and without waste of time, settle questions in dispute between any company and any water consumer. This is partially met by the Metropolitan Water Act, 1897. 7. The right to make up back dividends to be restricted and to be extinguished by such a capital sum as is just in each case. 8. That the companies should be placed under regulations analogous to those under which the gas companies now carry on their undertakings.

The CHAIRMAN examined the witness in some detail with regard to the formation of a board of control and as to how the orders given by the board should be carried out, whether the board should have power to order fines and imprisonment, power, for example, to take a recalcitrant water company director and put him in prison. The witness replied that he had not worked out the details of the manner in which control should be exercised, but he insisted that there were at present matters which required control and he gave in detail the example of a firm of distillers on whom one of the water companies had served a long list of demands, some of which he thought frivolous and some ridiculous. One of these demands referred to the size of a cistern: the company had insisted that a three-gallon cistern should be substituted for a two-gallon one, and shortly afterwards that a two-gallon cistern should be substituted for the new one which had just been put in on their demand. The witness thought that the local authorities should not continue to have the power to alter the level of the public roads in such a way that the distance of the water mains below the surface of the road was lessened and the mains were therefore exposed to the danger of frost.

In answer to Mr. CRIPPS, the Parliamentary agent of the London County Council, who cross-examined in the absence of learned counsel, the witness said that the people of Middlesex objected to having their own water first taken from them without payment and then sold back to them again. In his opinion London was not at present adequately supplied with water. A sufficient amount, for example, was not used for cleansing the streets.

In answer to Lord ROBERT CECIL, who appeared on behalf of the Hertfordshire County Council, the witness said that his contention was that the underground water belonged to the county in which it was situated, and that Middlesex had a right to a share in the Thames. With regard to the metropolitan water companies he thought that some of them had harshly exercised their powers with regard to water fittings, and he thought they were wrong in insisting on payment for water which they did not supply in periods of drought.

Mr. E. J. HALSEY, Chairman of the Surrey County Council, gave evidence with regard to the attitude of that body. In May, 1895, the Surrey County Council had explained fully their views to the Local Government Board and had condensed their reasons for their opinion. The Council adhered to the views which they then expressed and which were briefly as follows: (1) They considered that the council of another county should not have any jurisdiction within the county of Surrey and (2) that by any future action of the London County Council no part of Surrey ought either directly or indirectly to be made liable for the cost of providing a fresh supply of water for London, which they apprehended might happen if the London County Council obtained any control, however slight, of the water-supply available for any part of Surrey.

In answer to Major-General SCOTT the witness said he understood that in the case of purchase the London County Council proposed that Surrey should at first have the amount of water from the Thames which they take at present plus 20 per cent., but if more water were wanted afterwards Surrey would certainly claim her share. Surrey had, however, supplies of her own from the chalk and from the lower greensand.

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In answer to the CHAIRMAN the witness said that he could not imagine a Water Board so constituted that it would be a fair one. However "good and delightful" Welsh water might be Surrey did not want it.

In answer to Mr. DE BOCK PORTER the witness said that the Surrey County Council were not entirely satisfied with the present supply given by the metropolitan water companies; they had, however, at present not had sufficient time to see the effects of the Act of 1897.

In answer to Major-General SCOTT the witness said that for his part he did not very much admire that Act, the machinery he thought was too cumbrous and too expensive. It would be better if a department were created at the Local Government Board or the Board of Trade to which application could be made in case of complaint. A department so created would be absolutely impartial and judicial, and small matters could be much better rectified in that way by a less formal and more friendly appeal than by a process of law. Complaints had lately been made at Kingston with regard to the hours at which the supply was given. It was thought that there might be a delay in getting water in case of a fire. The witness was strongly of opinion that the purchase of the metropolitan water companies' undertakings would not be a good thing, but if purchase were carried each county should undoubtedly have entire control of its own supply.

In answer to Mr. PEMBER, who appeared for some of the metropolitan water companies, the witness insisted that the Kingston people had a distinct grievance in not having had a constant supply of water.

In answer to Lord ROBERT CECIL, the witness said that should it be found necessary to exercise any new form of control it would be most easily and efficiently carried out by a special department under the Local Government Board.

In answer to Mr. CRIPPS, the witness said that the purchase and management of the metropolitan water companies' undertakings by the London County Council would be the worst possible arrangement that could be arrived at.

At the conclusion of the sitting the chairman announced that two sittings would be held next week and that the Commissioners proposed in future to sit regularly twice a week.

THE PRESS BAZAAR.

HER ROYAL HIGHNESS THE PRINCESS OF WALES, accompanied by Her Royal Highness the Duchess of York, arrived punctually at half-past two on Tuesday afternoon last at the Hotel Cecil to open the Press Bazaar in aid of the London Hospital. The Royal party were received by the Hon. Sydney Holland, chairman of the London Hospital, Viscount Knutsford, Lord Tweedmouth, and Mrs. J. A. Spender, honorary secretary of the Bazaar.

"From the entrance the Royal party were conducted to the Oak Room, where the Bazaar Committee were presented to Her Royal Highness.

"The Dowager Countess of Shrewsbury as editor in chief of the *Press Bazaar News* welcomed Her Royal Highness's visit to our office.

"The managing editor was then introduced and Her Royal Highness expressing an anxiety to learn something about the linotype machine Mr. Joseph Lawrence, the chairman, explained the mechanism.

"Special bars were struck commemorative of the Royal visit and handed to their Royal Highnesses."

This is the account of the opening as reported in the *Press Bazaar News*, the official organ of the Bazaar, and our apology for giving it in our contemporary's words instead of devoting some columns to describing the highly interesting scene in our own language must be that no great facility was given to the press for seeing or learning what was going on.

With the exception of absence of provision for the press the Bazaar must be pronounced a decided success, for in no sense can overcrowding be looked upon as other than a virtue at such a function. On both days the rooms devoted to the Bazaar and the approaches to the hotel were thronged with fashionable London, and the display of millinery in the carriages which blocked the Strand during the afternoon of Tuesday was a thing to be seen to be believed in. The newspapers represented at the stalls were: *Queen*, *Referee*, *Weekly Dispatch*, *Stage*, *Sun*, *Tablet*, *Vanity Fair*, *Truth*, *Westminster Gazette*, *World of Dress*, *Illustrated London News*, *Sketch*, *Lady's Pictorial*, *Jewish Chronicle*, *The Lady*, *Morning Post*, *Ladies' Field*, *Strand Magazine*, *Country Life*, *Daily Mail*, *Evening News*, *Naval and Military Magazine*, *Observer*, *Sunday Times*, *Punch*, *Artist*, *Black and White*, *Daily Chronicle*, *Hospital*, *Financial News*, *Gentlewoman*, and *Graphic*.

We cannot attempt to enumerate either the articles for sale or the names of the benevolent ladies who gave their time and energy to selling them, but our readers will have seen full reports of these matters in the daily press. The wares ranged from dairy produce to jewels and from strawberries and cream to monkeys on sticks, and the wives and daughters of the peerage and of editors and proprietors of journals assisted lady-journalists and the aristocracy of the stage to dispense them. Perhaps the most practical stall was that of the London Hospital, presided over by the sisters in their pretty pale-blue dresses. Here clothing of all kinds for charitable purposes could be bought and not a few of the visitors returned their purchases to the Sisters in order that the garments might be given to the patients in the wards of the hospital. The Princess of Wales and the Duchess of York made several purchases at this stall, as they did also at many of the other stalls.

Quite a novel feature of the Bazaar was the issue of the daily paper from which we have already quoted. The *Press Bazaar News*, described as the "dearest little paper in the world," the price being 1*s*. per copy, was a four-page paper with four columns to a page and its entire production was carried out in the Oak Room of the Hotel Cecil. Mr. F. C. Gould drew for its pages three political cartoons in his well-known style. They represent Mr. Joseph Chamberlain, Lord Salisbury, and Sir William Harcourt as visitors to the bazaar with their purchases. Mr. Chamberlain has bought a bust of Kruger, some long spoons, and a case of Russian caviare, and Lord Salisbury has indulged in the luxury of a Dutch clock (with pendulum) and a china vase. The best satire of all is the representation of Sir William Harcourt with Foxe's Book of Martyrs under one arm and a censer in the disengaged hand. Mr. Henry Irving as dramatic critic contributed an amusing account of a recitation entitled "Gemini et Virgo." In connexion with the issue of the paper the press museum formed a feature which attracted many of the visitors.

It remains to be added that some of the most eminent actors and actresses in London contributed to the dramatic and musical entertainments which were provided by the management.

The exact sum which will be received by the London Hospital as the result of the Bazaar has not been announced as we go to press. That the sum will be over £10,000 seems certain, which alone constitutes, we believe, a record, but the takings at several of the stalls have not yet been sent in to the honorary secretary. We have to congratulate Mrs. Spender on the splendid result of her idea. That she has received hearty and influential coöperation is certain; but the Bazaar was initiated by her and the hard work of turning an idea into a going concern was borne wholly by her, and she deserves the hearty thanks of the great charity for the funds of which she has done such a splendid stroke of business. We, in common with many other journals, and perhaps with even more obvious reason, were unable to be practically associated with a bazaar having for its object the relief of one particular London hospital, but this does not prevent us from sympathising with the work and rejoicing at its success.

THE BATTLE OF THE CLUBS.

NOTTINGHAM MEDICAL UNION.

THE annual report of the Council of this Union was adopted at the general meeting on June 1st. In December, 1897, the following important circular was issued to all the members:—

Recent legislation with regard to friendly societies has legalised the admission of juvenile members to adult lodges and members of the Union have been approached on the subject of admitting such juvenile members at rates of payment differing from those of adults.

Under these circumstances the Council of the Union think it desirable

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to remind members that the agreement of Oct. 7th, 1896—"I hereby undertake after Jan. 1st, 1897, not to enter into any new club or contract engagement for less than 4s. per year per member"—applies to juvenile as well as to adult members.

Reports were made to the last meeting of the Council of flagrant instances in which patients of members had been canvassed by agents of one of the medical aid associations, and it is suggested that the promises made a little more than a year ago have not been kept; but the Council have not seen their way to advise any more active policy as regards the medical aid associations this year than last and for the same reason; active opposition cannot be successfully pursued until we have complete unanimity and present an unbroken front.

A few months ago there was a conference in London between representatives of the British Medical Association and some of the friendly societies. It was very amicable and the representatives of the friendly societies seemed anxious to look at all sides of the question and to consider a revision of scales. By quiet work it will gradually be made plain that the club rates must be revised sooner or later.

The question of hospital abuse has not been forgotten. There have been several meetings of the committee involving a great deal of work. A joint meeting with a committee of the monthly board of the General Hospital has been held. Work of this kind is very slow but it has been continuous.

The treasurer reports that the funds of the union are in a satisfactory state.

THE ANCIENT ORDER OF FORESTERS AT EVESHAM.

Court No. 4648, Vale of Evesham of the above friendly society is in a parlous condition as regards medical aid. On June 7th a specially summoned meeting of the court was held to consider a proposal to reduce the salaries of the medical officers, Mr. A. H. Martin and Mr. J. S. Slater, who have held the appointment for the last twenty-five years, from 5s. per member per annum to 4s. The only notice given had been by means of the agenda paper which was dropped into Mr. Martin's letter-box about a week previously to the meeting. Under the rules of the society the surgeons only hold office "according to the pleasure of the court." Mr. Martin attended the meeting on June 7th and before the resolution was put explained that if it were carried he and his partner would immediately resign. It was carried and both medical officers at once sent in their resignations, which were accepted by the court, which thereupon carried a resolution that they should advertise for another medical officer at the rate of 4s. per member per annum. All the other medical men residing in Evesham have been applied to but all refuse to have anything to do with the society at the reduced rates. The club is therefore now without any recognised medical man and the secretary has instructed any members who are ill to go to what medical man they like and then send in the bills to him. The committee of the court have refused to pay Mr. Martin and Mr. Slater the salary due to them on June 7th—i.e., one quarter's salary—and these gentlemen have therefore issued a county-court summons to obtain their due. So matters stand at present and we congratulate the medical men of Evesham upon their firm stand. We will only add that if Mr. G. Carrick, the secretary of the court, likes to send us his official account of what has happened and what is going to happen we shall be happy to comment fully on, or possibly print, it.

EAST SUBURBAN MEDICAL PROTECTION AND MEDICO-ETHICAL SOCIETY, LIMITED, WEST HAM HOSPITAL, E.

The first statutory meeting of the above society was held at the West Ham Hospital on June 23rd, 1898. There was a large and widely representative gathering of practitioners from the neighbouring districts, including some lady practitioners. Over thirty new members were elected at the meeting. The Executive Council was elected for the ensuing year. The President, Dr. F. J. Smith, delivered his address on the Aims and Objects of the Society. These were practically explained at the inaugural meeting of the society, a full report of which was published in THE LANCET of Feb. 12th, 1898, p. 459. The secretary, in answer to inquiries, explained that the scheme for the formation of local branches was under consideration; it was certainly desirable to have local representatives who should be elected as far as practicable by the local men. The secretary also said that a scheme for keeping a black list had been prepared for consideration by the council, that arrangements had been made to commence the debt-collecting at an early date and that the views of individual members would be represented by the fact that the whole council was elected annually.

It was resolved that a general meeting should be held quarterly to receive report of work done by the council.

It was stated that clinical and social meetings would be held as soon as possible and as often as desired by members.

The date of the next council meeting was fixed for Thursday, July 14th.

The headquarters of the society are at the West Ham Hospital, Stratford, E., and the hon. secretary is Mr. Murtaugh Houghton. The society is only in its youth, but there can be no doubt of the necessity for its existence, and the fact of thirty new members joining at the first statutory meeting is of good augury for its prosperity.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

THE annual general meeting of the British Institute of Preventive Medicine was held on June 24th at Chelsea, among those present being the Duke of Westminster, the Earl of Feversham, Lord Lister, Dr. Pye-Smith, Dr. Thomas Bridgwater, and others. The chairman submitted the annual report of the council, which was adopted.

The report stated that during the year the work of the Institute has been marked by progression and expansion. The internal fittings of the new building are in an advanced state, some departments are already in full working order, and it is confidently anticipated that all will be fully equipped in the early autumn. The Institute has published during the year a volume of Transactions, which has been favourably received. The demand for diphtheria and streptococcic serum has increased and there has also been an increased demand for mallein and tuberculin. The Institute has rented laboratory accommodation to the Local Government Board for the purpose of preparing glycerinated calf lymph. It was also stated that the Institute would require a considerable addition to its funds to enable it to carry out adequately the objects for which it was founded.

The report of the hon. treasurer, Sir Henry E. Roscoe, containing the balance-sheet and statement of accounts duly audited, was submitted to the meeting and adopted. The directors' report and the reports of the scientific staff were also adopted and it was directed that these should be circulated amongst the members of the institute.

Dr. Horace Brown, F.R.S., was elected a member of council in place of the late Surgeon-General W. R. Cornish.

The volume of Transactions, published by Messrs. Macmillan and Co. on behalf of the Institute, contained nine original contributions by members of the staff. A review of this volume appeared in THE LANCET of Jan. 8th, 1898, p. 106. A number of fresh investigations have been conducted and completed during the year, some of which are published and others are on the eve of publication. There are also other investigations in progress and the laboratories continue to attract research workers. The courses of instruction given by the staff have also been well attended. About 2000 reports were sent out by the Institute during the year.

The Institute has endeavoured to encourage the periodical examination of water and water-supplies and several local authorities have requested the Institute to undertake this systematic examination on their behalf. Bacteriological work has also been undertaken for several additional sanitary authorities. In the new building every facility is being provided for the furtherance of bacteriological research and the antitoxin department at Sudbury continues to do useful work in the field of serum therapeutics.

At the close of the meeting the members inspected the fittings of the new laboratories which will be formally opened in the autumn.

THE ROYAL EYE HOSPITAL, SOUTHWARK.—A festival dinner of this institution was held at the Hôtel Métropole on June 17th. The chairman said the hospital ministered to the needs of a population of nearly a million and three-quarters and last year had relieved 15,400 out-patients and over 400 in-patients, 30 per cent. of whom were under twenty years of age and about 16 per cent. under thirteen years of age. A large number of the community were thus saved from blindness and a life of comparative inutility. In the course of the evening a record sum of £2170 was announced by the secretary as the result of the dinner.

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METROPOLITAN HOSPITAL SUNDAY FUND.

WE continue below our record of some of the principal amounts received at the Mansion House. At the time of our going to press on Thursday the total amount received was £32,000.

	£	s.	d.
Streatham Parish Church and Chapel of Ease	71	0	10
All Saints', Margaret-street	57	9	10
St. James, Holloway	57	8	0
St. Augustine, Honor Oak	44	1	10
St. Mildred, Lee	45	18	3
St. Augustine, Queen's-gate	84	13	3
Christ Church, Highbury	80	14	8
St. George, Beckenham	76	7	5
St. John's Wood Presbyterian Church	86	6	5
St. Matthew, Brixton	55	4	8
St. Paul Presbyterian Church, Westbourne-grove ...	86	13	2
Brixton Independent Church and Moffat Institute... ...	66	11	4
Holy Trinity, Roehampton...	83	12	0
St. Augustine, Highbury New-park	69	1	7
Christ Church, Southgate	50	0	0
Christ Church, North Brixton	63	12	0
St. Mary Aldermary,...	88	12	5
St. John's Presbyterian Church, Forest Hill	107	16	7
St. Andrew's Presbyterian Church, Upper Norwood ...	68	0	0
St. Paul, Forest Hill	56	5	9
St. Paul, Avenue-road	104	10	7
Gray's Inn Chapel	47	19	10
Hendon Parish Church and Christ Church	47	7	7
St. Andrew, Westminster	60	0	0
Highbury-quadrant Congregational Church	70	6	6
Lyndhurst Congregational Church, Hampstead	49	5	3
St. Giles, Camberwell	80	8	11
St. James, Piccadilly	74	16	3
Dutch Church, Austin Friars	94	18	6
St. John Evangelist, Penge	61	10	0
Heath-street Baptist Chapel, Hampstead	55	3	8
St. George, Bickley, and Widmore Mission	79	9	0
Clapham Parish Church	62	7	0
St. George, Tufnell-park	50	10	0
"F."	60	0	0
West London Synagogue for British Jews	233	15	9
St. Marylebone Parish Church	178	3	5
All Souls, Langham-place	66	16	10
Acton Parish Church and Mission	45	18	0
St. Paul, Greenwich	28	0	0
Christ Church, Westminster-road	38	6	5
St. Mary the Virgin, Hayes	24	4	6
West Hackney Parish Church and Mission	32	19	11
Willesden Presbyterian Church	45	3	11
Streatham-hill Congregational Church...	31	2	6
St. John, Ealing	22	0	0
St. Dunstan, East Acton	24	11	0
St. Mary, Spring-grove	30	0	0
St. Paul, Clapham	32	2	2
St. John, Notting-hill	46	11	3
St. James, Clapton	26	10	2
St. John, Upper Norwood	28	15	8
Holy Trinity, Upper Tooting	49	16	7
Rectory-place Congregational Church, Woolwich	28	1	5
St. Mark, Kennington	33	7	10
All Saints, Putney	31	12	6
Berkeley Chapel, Mayfair	26	11	2
St. Andrew, Stockwell	24	5	10
St. Peter, Streatham...	43	14	7
St. Augustine, Kilburn	48	7	2
Lewisham Parish Church	47	12	0
Highgate Presbyterian Church	41	0	2
Park Presbyterian Church, Highbury	30	0	0
Clapham Congregational Church...	45	0	5
Bromley-by-Bow Parish Church and Mission...	22	14	4
St. Giles-in-the-Fields Parish Church	20	19	2
Chigwell Parish Church	33	4	9
Holy Trinity, Knightsbridge	42	5	1
Newington Parish Church and St. Gabriel	27	7	4
Christ Church, Westminster	20	0	0
Park Congregational Chapel, Crouch-end	41	3	1
Miss Morice	25	0	0
Mitcham Parish Church	28	12	5
St. Anne, Wandsworth	30	7	5
St. Luke, Hackney	26	15	4
St. Paul, Upper Holloway	23	2	3
Streatham Wesleyan Church	26	0	4
Queen's Hall, Langham-place (per Rev. Dr. Momerie) ...	33	2	3
St. John the Evangelist, Clapham-rise	22	10	0
Regent's Park Baptist Chapel	32	1	10
Upper Holloway Baptist Chapel	22	7	8
St. Matthias, Earl's Court	34	2	2
Paddington Chapel, Marylebone-road	20	9	2
St. Jude, Upper Chelsea	20	0	0
St. John, Highbury Vale	22	4	9
St. Matthew, Hammersmith	23	11	7
St. Saviour, Denmark Park	23	14	6
St. Paul, Wimbledon Park	35	8	0
L. G.	20	0	0
All Saints, Clapham Park	46	2	2
St. Andrew, South Streatham	22	0	3
Holy Trinity, Eltham	49	12	2
St. Paul, Ball's Pond	37	3	4
Trinity Presbyterian Church, Hampstead	30	0	7
Holy Trinity, Kilburn	33	3	7
Woodford Parish Church	22	0	0
Upper Clapton Congregational Church	22	13	7
All Saints, Friern Barnet	35	6	4

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On an outbreak of enteric fever in the Urban District of Camborne and in portions of the adjoining Rural Districts of Redruth and Helston, by Dr. R. BRUCE LOW.[1]—A sudden outbreak of enteric fever appeared in December, 1897, at Camborne, in Cornwall, a town with some 14,000 inhabitants. Simultaneously excessive prevalence of enteric fever was manifest in two rural parishes which adjoin Camborne. Altogether 165 cases, 12 of which proved fatal, were notified from these places in the course of six weeks. No doubt, Dr. Bruce Low points out, a considerable number of other cases occurred which did not come to the knowledge of the sanitary authorities concerned. The facts which Dr. Low records leave no room for doubt that the cause of this epidemic was a specifically infected public water-supply. In Camborne and its neighbourhood there are, it is true, numerous insanitary dwellings and nuisances arising from accumulation of excrement and refuse abound in certain localities. But there had been no exceptional incidence of enteric fever upon the occupants of such unhealthy dwellings and localities. And, as Dr. Low shows, the outbreak by its suddenness differed totally from what might have been expected had the epidemic been produced by excremental contamination of soil. The question of infected milk could at once be set aside. But as regards water the case was otherwise. The Camborne Waterworks Company supplies with water the greater number of houses in Camborne and also a few small areas in the adjoining rural parishes of Illogan and Crowan. Dr. Bruce Low gives the following table showing the incidence of the disease upon houses supplied and upon houses not supplied by this public service:—

Localities invaded by enteric fever during December, 1897, and January, 1898.	Houses supplied by the Camborne Company.			Houses not supplied by the Camborne Company.		
	Number of houses supplied.	Invaded by fever.	Per cent. invaded by fever.	Number of houses not supplied.	Invaded by fever.	Per cent. invaded by fever.
Camborne Urban District...	2365	106	4·5	762	5	0·7
Illogan parish	810	26	3·2	1297	2	0·2
Crowan parish	158	7	4·4	427	2	0·5
Total	3333	139	4·2	2486	9	0·4

Persons attacked in the 9 dwellings not included in the area of public supply had in several instances consumed the Camborne Company's water shortly antecedently to illness. Indeed, of the total of 165 cases there were practically only 2 attacks in which there was doubt as to the persons having had opportunities of drinking water from the incriminated supply. The conditions under which water was obtained by the Camborne Water Company can hardly be considered other than scandalous. Two gathering grounds contribute to their supply. Water from the first at Cargenwyn is commonly used in the summer months only. It had been cut off four weeks or more antecedent to the beginning of the epidemic and could not therefore be considered to have had to do with the causation of the outbreak. Incidentally, however, we note that part of this Cargenwyn supply was found by Dr. Low to consist of the natural drainage of fields, upon several of which human excrement was scattered. This is hardly to be wondered at when we learn that of 19 dwellings upon this gathering ground 13 had no privy or closet accommodation

[1] London: Eyre and Spottiswoode, East Harding-street, E.C.; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. 1898. Price 7d.

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whatever. The gathering ground which alone furnished the water supplied by the company immediately prior to and during the outbreak was that at Boswyn. Here the main source of supply is a series of springs, water from which is received in a service tank. But in addition water from a brook in the neighbourhood was conveyed to this tank by pipes. In dry weather this brook receives little pollution, but in rainy weather surface pollutions are washed into it by storm-water. Pollution of surface more especially occurs in connexion with 9 houses on the watershed area. None of these houses have any suitable drainage arrangements and six have no closet or privy of any kind. Now, in October and November 4 cases of enteric fever had occurred in one of these houses. During this time slops and liquid refuse were thrown into a small pond close by the house. There being no privy, excrement was thrown in the neighbourhood of the house on to the surface of ground which drains to the same pond. In dry weather this pond had no overflow, but in times of rainfall the pond water escaped by a small watercourse directly into the brook which fed the service reservoir. Now, the epidemic first became known by the notification of 62 cases of enteric fever between Dec. 4th and Dec. 18th, and on Nov. 12th and 13th there had been an exceptionally heavy rainfall over Boswyn gathering ground. About this date the pond, no doubt highly contaminated with infectious matter, became full and there can be no question that its overflow made its way, as usual, straight to the brook and so to the service reservoir. The water of this reservoir was delivered to consumers without filtration. The outbreak came suddenly to an end after the brook water was shut off from the service tank and after the latter had been scrubbed out and the water-mains had been well flushed.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6173 births and 3247 deaths were registered during the week ending June 25th. The annual rate of mortality in these towns, which had been 16·9 and 14·7 per 1000 in the two preceding weeks, rose again last week to 15·1. In London the rate was 14·5 per 1000, while it averaged 15·5 in the thirty-two provincial towns. The lowest rates in these towns were 9·6 in West Ham, 10·3 in Norwich, 10·9 in Croydon, and 11·1 in Brighton; the highest rates were 19·9 in Manchester, 20·0 in Plymouth, 21·4 in Sunderland, and 24·3 in Newcastle-upon-Tyne. The 3247 deaths included 302 which were referred to the principal zymotic diseases, against 381 and 341 in the two preceding weeks; of these, 89 resulted from measles, 83 from whooping-cough, 61 from diarrhœa, 36 from diphtheria, 21 from scarlet fever, and 12 from "fever" (principally enteric). No death from any of these diseases was recorded last week in Nottingham; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Blackburn, and the highest rates in Plymouth, Sheffield, Gateshead, and Newcastle-upon-Tyne. The greatest mortality from measles occurred in Halifax, Newcastle-upon-Tyne, and Plymouth; and from whooping-cough in Swansea and Sunderland. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 36 deaths from diphtheria included 21 in London, 4 in Birmingham, 2 in West Ham, 2 in Cardiff, and 2 in Manchester. No fatal case of small-pox was registered last week either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals on Saturday last, June 25th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2238, against 2169 and 2194 at the end of the two preceding weeks; 231 new cases were admitted during the week, against 220, 206, and 230 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 212 and 185 in the two preceding weeks, further declined to 171 last week, and were 38 below the corrected average. The causes of 32, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Manchester, Leeds, and in sixteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Preston, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the three preceding weeks from 23·0 to 20·2 per 1000, further fell to 19·5 during the week ending June 25th, but exceeded by 4·4 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·7 in Aberdeen and 17·8 in Edinburgh to 24·5 in Leith and 25·5 in Perth. The 589 deaths in these eight towns included 37 which were referred to measles, 27 to whooping-cough, 26 to diarrhœa, 6 to scarlet fever, 4 to "fever," and 2 to diphtheria. In all, 102 deaths resulted from these principal zymotic diseases, against 116 and 92 in the two preceding weeks. These 102 deaths were equal to an annual rate of 3·4 per 1000, which was 2·0 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 42 and 32 in the two preceding weeks, rose again to 37 last week, and included 14 in Dundee, 13 in Glasgow, and 7 in Edinburgh. The deaths from whooping-cough, which had been 43 and 22 in the two preceding weeks, increased to 27 last week, of which 18 occurred in Glasgow. The 6 fatal cases of scarlet fever were within 2 of the number in the preceding week, and included 4 in Glasgow and 2 in Edinburgh. The deaths referred to different forms of "fever," which had been 8 in each of the two preceding weeks, declined to 4 last week, of which 3 occurred in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 109 and 108 in the two preceding weeks, further declined to 93 last week, and were 11 below the number in the corresponding period of last year. The causes of 27, or nearly 5 per cent., of the deaths in these eight towns were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·1 and 21·9 per 1000 in the two preceding weeks, rose again to 22·8 during the week ending June 25th. During the past four weeks the death-rate in the city has averaged 22·4 per 1000, the rate during the same period being 15·2 in London and 20·5 in Edinburgh. The 153 deaths registered in Dublin during the week under notice showed an increase of 6 upon the number in the preceding week, and included 8 which were referred to the principal zymotic diseases, against 4 and 6 in the two preceding weeks; of these, 5 resulted from whooping-cough, 2 from diphtheria, and 1 from diarrhœa, but not one from small-pox, measles, scarlet fever, or "fever." These 8 deaths were equal to an annual rate of 1·2 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·5 in Edinburgh. The fatal cases of whooping-cough, which had declined from 5 to 1 in the three preceding weeks, rose again to 5 last week. The two deaths referred to diphtheria exceeded the number recorded in any recent week. The 153 deaths in Dublin last week included 23 of infants under one year of age, and 55 of persons aged upwards of sixty years; the deaths of infants showed a decline, while those of elderly persons exceeded the number in any recent week. Seven inquest cases and 5 deaths from violence were registered; and 51, or one-third, of the deaths occurred in public institutions. The causes of 10, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

THE NEW ARMY MEDICAL WARRANT.

IT probably did not escape our readers' attention that Mr. Powell Williams stated in the House of Commons on Monday last, the 27th ult., that the warrant constituting the new Royal Army Medical Corps had been approved by Her Majesty and will be published in the Army Orders for this month.

ARMY MEDICAL STAFF.

Brigade-Surgeon-Lieutenant-Colonel Joseph H. Moore to be Surgeon-Colonel, vice W. Graves, retired. Surgeon-Lieutenant-Colonel James Tidbury retires on retired pay.

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INDIA AND THE INDIAN MEDICAL SERVICES.

To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel Thomas Holbein Hendley, C.I.E., Bengal Establishment. Surgeon-Majors to be Surgeon-Lieutenant-Colonels: *Bengal Establishment:* Jarlath J. Ffrench Mullen, Eugene Cretin, Andrew Duncan, George Frederick Nicholson, Samuel Ferguson Bigger, and Sir George Scott-Robertson, K.C.S.I. *Madras Establishment:* Thomas Henry Pope, Robert Pemberton, Damodar Purshotam Warliker, James Joseph Moran, William Adair Quayle, and Henry Armstrong. *Bombay Establishment:* Charles Monks, Phirozsha Jamsetjee Damania, George Henry Bull, and Frederick Fitzgerald MacCartie, C.I.E. Surgeon-Captains to be Surgeon-Majors:—*Bengal Establishment:* William Grant Thorold, Patrick Hehir, Lionel John Pisani, Basanta Kumar Basu, Narendra Prasanna Sinha, William Rice Edwards, Charles Mactaggart, John Fenton Evans, George James Hamilton Bell, Joseph Thomas Daly, Henry Fooks, Ernest Hudson, Arthur William Dawson, and William Henry Banner Robinson.

The Queen has also approved of the retirement from the service of the undermentioned officers: Surgeon-Colonel Samuel Bradshaw Hunt, Madras Establishment; Brigade-Surgeon-Lieutenant-Colonel James Arnott, Bombay Establishment; Surgeon-Lieutenant-Colonel James Moorhead, Bengal Establishment; and Surgeon-Lieutenant-Colonel James Charles Harding Peacocke, Bombay Establishment.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain J. H. Anderson, to be Surgeon-Major.

VOLUNTEER CORPS.

Rifle: 1st Volunteer Battalion the Buffs (East Kent Regiment): Surgeon-Captain R. Bevan resigns his commission. 2nd Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant A. W. W. Caudle resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the battalion on his retirement.

THE SPANISH-AMERICAN WAR.

The most serious news from a medical standpoint at the present moment is the alleged outbreak of yellow fever among the American troops. The situation of the belligerents has of late become more acute and is at the present time interesting, but as bewildering as ever. The war policy of Spain, as regards her naval forces, baffles the understanding. With one—and the main—portion of her fleet shut up and powerless at Santiago the reason for sending the other portion from Cadiz to the Suez Canal (where it cannot coal), probably for somewhere in the Philippines, is not very obvious, for it cannot reach its destination in time to be of any service as far as Manila is concerned, and Admiral Dewey's squadron there is strong enough to defeat it if it does. It is quite possible that the object of the Spanish Government is simply to put Admiral Camara's fleet in a safe place on this or the other side of Suez. The interest of the situation at Manila is just now connected with the policy of the Germans in that quarter. Meanwhile the Americans are about to send some of their war-vessels into Spanish waters to threaten and bombard Spanish ports and then to follow up and engage Admiral Camara's fleet. An American force has invaded Cuba and had two sharp fights with the Spaniards, and this force is to be followed up by a much larger one for the capture of Santiago. In the small engagements the Americans lost an officer and 11 troopers, while some 50 men, including 6 officers, were wounded and are lying in the field hospital near Juragua. The American troops are about three miles from Santiago, where the Spaniards are strongly entrenched, and severe fighting may be shortly expected. It may prove a serious undertaking to drive the Spanish troops out of their entrenchments. Santiago and its vicinity will be strongly bombarded by the States war vessels previously to an attack. The heat is very great and the uniform provided for the American troops has been found to be unsuitable and altogether too heavy for the Cuban climate. The situation of the garrison of Manila is bad. There is a good deal of sickness, 1000 sick and 200 wounded being in the Spanish military hospitals. The heavy rains have increased the difficulty of holding the outworks and trenches.

RECRUITING.

It is, of course, too early to form any judgment as to what effect the new and more advantageous regulations will have upon recruiting for the army, but we confess to having some misgivings on the point. There can be no doubt that the soldier of the present day is very well off compared with what he was: he is better fed, lodged, clothed, and looked after and, considering the class from which he is commonly drawn, he is fairly well paid and he gets his money with the regularity of clockwork if he has not always so much of it at his disposal as in civil life. It is not the dislike of fighting or adventure which keeps young fellows out of the army, for a war quickens recruiting. It is the dislike of the discipline and routine of barrack life, the curtailment of liberty and loss of independence, together with the prejudice against the army as an occupation so frequently entertained on the part of the relatives and friends of the would-be soldier which deter them from enlisting. With the spread of education and the increase of intelligence it is not likely that this dislike to the restraints of military life will grow less. The army will have to move with the times. Discipline there must be if an army is to be kept efficient as a fighting machine. The point to be determined, however, is the nature and amount of it essential for the purpose and the extent to which petty and irksome restraints and interference with the soldier's liberty and independence can be removed or lessened without injury to the disciplinary spirit.

DEATHS IN THE SERVICES.

Brigade-Surgeon-Lieutenant-Colonel William Alexander Barren, I.M.S., Bombay Sappers and Miners, on June 8th, in his forty-ninth year. He entered the service in 1874 and served in the Afghan War of 1880 in medical charge of the 4th Bombay Infantry (medal); he also served in the Burmese expedition of 1886–88 (medal with two clasps).

Surgeon-General William Henry Adley, I.M.S., of Cleddy Lodge, Haverfordwest, on June 18th, aged seventy years.

Surgeon-General Frederick Morrison Clifford, I.M.S., Bengal (retired), on June 15th.

Surgeon-Lieutenant-Colonel Breame Weston Fowler, A.M.S. (retired), at St. Helena, in his forty-seventh year. He entered the army in 1873, was promoted to Surgeon-Major in 1885, and to Surgeon-Lieutenant-Colonel in 1893.

Surgeon-General J. C. Morice, I.M.S. (retired), on June 24th, aged sixty-one years. He entered the army in 1856 and served in the Indian Mutiny Campaign (medal with two clasps). In 1868 he served in the Hazara Campaign and took part in the operations on the Black Mountains (medal with clasp). In the Expedition of 1885 to Suakin he was mentioned in despatches (medal with clasp and bronze star).

GOOD SERVICE PENSION.

We have to congratulate Surgeon-General Alexander Smith, M.D. Edin., C.B., honorary physician to the Queen, on the fact that a good service pension of £100 per annum has been awarded to him. He entered the medical service in 1846 and retired from it in 1884. Surgeon-General Alexander Smith took part in three campaigns—namely, in the Crimea at the siege of Sebastopol and the attack on the Redan on June 18th, 1855, in the Jowaki expedition of 1877–78, and in the Afghan war of 1878–79–80 (as Principal Medical Officer of Sir Donald Stewart's force) at the actions of Ahmed Khel and Urzoo, on which occasion he was mentioned in despatches and was created C.B. He received medals and clasps for the foregoing campaigns and was appointed honorary physician to the Queen in 1894.

THE EXPEDITION TO KHARTOUM.

We understand that Surgeon-Major-General Taylor is to go as the principal medical officer of the Expeditionary Anglo-Egyptian force when the advance on Khartoum takes place. He has the reputation of being a good organiser and a clear-headed, energetic man of business. We congratulate him on his appointment to the post and on his good fortune. We understand that some 260 sick and wounded have come down to Cairo from the front and it is possible that they may be followed by about the same number before the advance takes place.

MEDICAL MAGISTRATES.—Mr. Marsham A'B. McCarthy, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of Summer Hill, near Sydney, New South Wales, has been appointed a magistrate for New South Wales. Mr. George M. Anderson, M.B., Ch.M. Aberd., of Franklin, Tasmania, and Mr. P. J. A. Rockett, M.B., Ch.B. Melb., of Derby, Tasmania, have been appointed magistrates for Tasmania.

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Correspondence.

"Audi alteram partem."

"THE STATISTICS OF DEATH IN CHILD-BIRTH."

To the Editors of THE LANCET.

SIRS,—Mr. T. A. Coghlan's paper, read before the Royal Statistical Society on June 21st and briefly reported in your issue of June 25th, is worthy of the fuller notice of those who are interested in vital statistics and of those also who are concerned with the problems of child-birth. The paper is a report by the Government Statistician for New South Wales of an investigation into the births (query, rather confinements—the two are not distinguished as they should be in the paper), 115,669 in number, which had occurred in that colony during the three years 1894-96, and the deaths of mothers at child-birth, numbering 813 in all. Of the entire number of births, 9920, or 8·6 per cent., were illegitimate (with 99 deaths), a proportion which may be compared with that of 4·2 in England and Wales (1895), where we have witnessed a steady decline since 1850, when the proportion was 7 per cent.

The mortality of all the mothers amounted, it will be seen, to 7·0 per 1000 births; the married showing 6·7 and the unmarried 10·0 respectively, a higher death-rate for the latter which is to be expected, and which would perhaps have been still higher but that the bulk of such labours occur "in public institutions, which make the treatment of child-bearing women a special feature of their work." Some correction may be needed for multiple births, and still-births if registered.

We may compare these rates with that of 4·72 per 1000 births, which was the mean puerperal death-rate for England and Wales during the 30 years 1861 to 1890 (one mother dying out of 212 births). The difference is not very great and may perhaps be partly explained by the less accessible medical and other help at confinements in a colony where the population is widely scattered.

Mrs. Garrett-Anderson, who was present at the discussion, stated her belief that of late years in this country, since the adoption of antiseptic midwifery, the number of deaths in childbirth had greatly lessened. I fear that there is as yet no evidence of this very desirable result, however much we may hope for it in the future. The Registrar-General's returns show a fluctuating mortality from year to year, but on the whole very little improvement can be claimed. In 1895, the last year for which abstracts have been published, there was a death-rate from puerperal causes of 4·57 per 1000 births. But in 1893 it had been 6·51. Considering, however, the greater accuracy of the returns during recent years it is probable that the actual fatality is rather less than it was. Dr. Boxall,[1] Dr. W. Williams,[2] and Dr. Cullingworth[3] have fully illustrated this subject in your columns, and the first-named has shown that there is more evidence of lowering of the death-rate in London than in the provinces.[4] But the chief value of Mr. Coghlan's paper lies in his investigations into the effect of the number of the confinements and the age of the mother upon the mortality. This is a subject to which, it will be remembered, the late Dr. Matthews Duncan devoted much labour. He found it very hard to get data, and those which he obtained dealt with small numbers only. In his work, "Fecundity, Fertility, and Sterility," published in 1866, he has recorded all the observations he could find, and has drawn certain conclusions from them. Mr. Coghlan's data, although still on a small scale, are much larger than any in Dr. Duncan's possession; and, indeed, so far as I am aware, than any that existed. So that this paper is one of great importance in its own line of study, and cannot fail to be often referred to in the future.

The first question Mr. Coghlan takes up is the risk to life at each confinement. His conclusions agree closely with those of Matthews Duncan. The risk at the first confinement is large, that at the following labours is much smaller, but it gradually rises again later on, until at about the ninth confinement it equals that which attends the first. Mr. Coghlan falls, as I think, into one error. The actual figures for the second labour are very low (they work out at 4·6 deaths per 1000 births, compared with 8·7 for the first labour), but in the necessary adjustment of small variations, and to form a "curve," he raises the figure, and makes the risk to fall gradually from the first confinement down to a minimum at the fourth. Now, Duncan's conclusions and his own unadjusted tables show that the risk drops suddenly from the first to the second and after that gradually rises through later labours. And it is reasonable that it should be so. At the first labour the woman's strength and fitness for parturition are tested and the presence of mechanical or other difficulties revealed. It is more tedious than later labours, the nervous distress is greater, and the majority of illegitimate births is included in the category of primiparæ. All these circumstances increase the danger to life at this labour, whilst the second and subsequent confinements occur only to those who have passed through this ordeal, whose fitness has been tested, and who have retained their health so as to become again fertile.

Mr. Coghlan's tables and diagrams on the risk at first confinements confirm Matthews Duncan's views entirely, and the same is the case with his observations on the effect of the age of the mother. The only difference is that he places the age of least risk at twenty-three years, whilst Duncan makes it twenty-five, both agreeing that the risk rises on moving from this age to either an earlier or a later period of life. The extent of the increased risk is well shown, especially as it affects the immature (before the age of twenty years) and the more elderly mothers (after that of thirty years). Women who begin to bear after thirty years of age experience a considerable mortality. Perhaps an earlier maturity of women in the Australian colonies may have some influence in fixing the age of least risk. It is a striking testimony to the judicial mind of the great Scottish observer, reasoning as he did from scanty data, that Mr. Coghlan should, as it would seem quite independently, for he never refers to Duncan, establish upon fuller data conclusions which are practically identical with his.

The latter part of the paper is occupied with a rather speculative investigation of the probability of a woman's surviving every confinement. The calculations on which this is based were much criticised in the discussion, and the results are certainly startling. It would occupy too much space to enter into them here.

Before leaving the subject may I express the hope that our own registration authorities will follow the lead of New South Wales by including in their schedules such particulars as would make an investigation of this kind possible? At the registration of a birth the number of the confinement and the ages of the father and mother might reasonably be required, and when a death is certified as from puerperal causes, or child-birth is mentioned on the certificate, the number of the confinement and the sex of the infant should be specified. Stillbirths should similarly be registered. One speaker in the discussion averred that there was a larger proportion of male births among the unmarried than among the married, and that the maternal mortality was greater in the case of male infants. The latter is very likely true, for male infants are larger than female, and their own death-rate in infancy is known to be remarkably higher than that of girls. But from this dark region of conjecture, based on scanty records, we should, if my proposal were adopted, emerge into the light of fact. We should soon obtain ample data for investigating the conditions of child-birth, and the bearing of paternal and maternal age and of the epochs of gestation upon the number, sex, and vitality of the infants, and upon the life of the mother and her after-fertility. It is not too much to hope for the discovery of new laws by which the process of reproduction is governed. Chance disappears from nature the more closely we can discern her ways.

I am, Sirs, yours faithfully,

Finsbury-square, June 25th, 1898. R. HINGSTON FOX.

[1] THE LANCET, July 1st, 1893.
[2] THE LANCET, April 18th, 1896.
[3] THE LANCET, March 6th, 1897.
[4] I find that in London in the first 24 weeks of 1898 the deaths from puerperal causes were only 174, against a corrected average for the past ten years of 240·5.

"ESTIMATES OF POPULATION."

To the Editors of THE LANCET.

SIRS,—Will you allow me to make a few comments upon the important leading article in THE LANCET of June 18th upon the subject of the estimate of the population of Liverpool?

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Previous Census returns have shown that during the latter years of inter-censal periods grave errors in the estimates of populations of various cities have been made. With regard to Liverpool the error at the close of the last Census amounted to 100,000 persons—about 19 per cent. of the total population—an error great enough to vitiate the statistics published by the Registrar-General for several years preceding the Census. As you point out, Dr. Ogle, the late Superintendent of the Statistical Department, addressed a letter in 1885 to the town clerk upon the subject of the estimated population, but unfortunately data were not then available to test the trustworthiness of the estimate. That circumstance, however, can hardly be advanced as an argument for declining to consider evidence now available and which tends to show that the estimate of to-day is incorrect.

The Registrar-General estimates that since 1891 the population of Greater Liverpool has increased from 629,443 to 633,078, making a total increase of 3635. The reasons for believing that this estimate is too low may be summarised thus: Since the Census of 1891 the increase in the number of births over deaths amounts to 39,616, the increase in the number of registered voters amounts to 28,466, there is an increase of 2376 in the number of houses built over those demolished, and there is an increase in the number of inhabited houses of 14,448. This latter figure was ascertained by a careful enumeration by specially instructed constables, whose returns were made upon specially prepared forms, and whose results as far as possible were afterwards checked. Local knowledge of the conditions of labour, of the action of the Insanitary Property Committee, together with other matters, must not be left out of sight as available means of checking the correctness of the estimate of the population. So far as the birth-rate is concerned, this, it is quite true, in certain districts in Liverpool is always high, but a remarkable increase in the birth-rates is exhibited since 1891 in the old parts of the city where the under-estimate of population is believed to be most marked. Excluding the suburbs recently incorporated the birth-rate in the old city (with a population of 497,505) is, upon the Registrar-General's estimate, 37·5, as against an average of 34·9 during ten years ending 1896. It is wholly improbable that a population with so high a birth-rate is diminishing as rapidly as the Registrar-General's estimate indicates.

If the City of Liverpool had not absorbed certain suburbs, the population of the city and those suburbs would have been calculated separately, and by the Registrar-General's method the resulting total would have been 11,051 greater than it is under the Registrar-General's method now adopted by which city and suburbs are calculated as one whole. In other words, extension to the suburbs of municipal government has, in the Registrar-General's opinion, lessened the population by 11,051. I have been in communication with the medical officers of health of the other great towns with a view to ascertain whether they consider the Registrar-General's published returns as to their own cities are dependable. The medical officers of health of 29 out of 31 of the other great towns have favoured me with their replies; 5 of them consider that the Registrar-General's estimate is fairly correct, 3 are very doubtful and express dissatisfaction with the method, whilst no less than 21 are of the opinion that the method is wholly incorrect and unreliable. No doubt the views of these gentlemen are merely expressions of opinion, but nevertheless their opinions are based upon local knowledge and are entitled to serious consideration. As regards the small towns the most conspicuous instance of error which I know is that of Bootle, the population of which, according to the Registrar-General's estimate, is almost 40 per cent. higher than what those with local knowledge believe it to be; the local authority have consequently discarded the Registrar-General's method entirely and adopted an estimate of their own.

It may be asked, What does it matter whether the returns are accurate or inaccurate? The importance of the matter is very considerable. There can be no doubt that if during the greater part of the decade ending 1891 the rate of mortality had been correctly published sanitary measures would have been more actively carried into effect. As it was, the decline in the rate of sickness and mortality shown by fictitious returns obscured the need for sanitary measures. Similarly, an under-estimate of population in certain districts masks the results of sanitary measures. Old rookeries are demolished, open spaces provided, artizans' dwellings on modern patterns are erected, and, so far as the Registrar-General's returns are to be taken as an index, the death-rate of the district is higher than it ever was before. Those who believe that the returns of a Government Department are carefully considered can only conclude that the pent-up rookeries were more wholesome than the new dwellings and that money and labour are spent in vain.

It does appear that there are good grounds for the view that the published returns of the Registrar-General should either be amended or accompanied by some explanatory note showing that after so long a period from the Census the figures are to be regarded only as approximately correct. I note with satisfaction your powerful advocacy of a quinquennial census, an advocacy based on the knowledge that the present returns are unreliable and need amendment.

I am, Sirs, yours faithfully,

E. W. HOPE.

Public Health Department, Liverpool, June 22nd, 1898.

ON THE NECESSITY OF A MEDICAL INFIRMARY FOR CHESTERFIELD.

To the Editors of THE LANCET.

SIRS,—The need of a medical infirmary has long been felt and for many years I have advocated its necessity, but hitherto without success. A majority of the governors and subscribers of the present surgical hospital are against admitting medical cases, as it is contrary to its original constitution, and they maintain that its invested money or reserve fund was left for surgical purposes only, as well as the money which was spent in the erection of the present buildings. There is, in my opinion, no probability that this determination will be altered in the present generation and meanwhile the sick poor continue to suffer. I have therefore for many years recommended the erection of a separate infirmary for medical cases. There is a population of 25,000 in the borough of Chesterfield and 120,000 in the district outside without any infirmary except the one at the union, which is almost always full and, indeed, crowded. The infirmaries at Sheffield and Derby are respectively twelve and twenty-four miles distant. I have, I think, made out a strong case for immediate action being taken. I think I am right in stating that there is no district in England with such a large and increasing population without such a charitable provision.

I am, Sirs, yours faithfully,

JOHN ROSE, M.D. Aberd.,

Honorary Consulting Surgeon, Chesterfield and North Derbyshire Hospital.

Chesterfield, June 22nd, 1898.

"THE COMING ELECTION TO THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND."

To the Editors of THE LANCET.

SIRS,—In view of the approaching election of members to the Council of the Royal College of Surgeons of England I have asked an expression of opinion from the various candidates, and especially from the two provincial ones, who naturally rely on the votes of the provincial Fellows. It seems certainly strange that, although circulars have been sent out on behalf of the latter gentlemen, no statement of policy or opinion on matters of interest to the Fellows has been made. Why this should be I cannot understand. Every candidate who is to be elected by the votes of a constituency, such as candidates for Parliament, &c., always makes some pronouncement as to their policy. Why not candidates for the Council? 1. As to the question whether Members should be admitted to some share in the management of their own Council Mr. May says: "I am opposed to any change in the present mode of election to the Council and the Presidentship." 2. With regard to the question of the Council taking action to check those Members and Fellows who act for medical associations who allow touting for members he says: "While I strongly disapprove of Fellows and Members holding appointments in which touting for sick members is allowed, and would support any reasonable and legal efforts to check this evil, I cannot promise beforehand to support any particular course of action which is unknown to me."

As to the point as to how the College representative on the General Medical Council is to be elected he says: "I am not

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in favour of the election of the representative on the General Medical Council by direct vote of the whole body of Fellows and Members. I should be sorry to see this mode of election introduced and cannot promise support in that direction." I may say that Mr. Richardson Cross does not wish me to publish his letters to me about the matter, but I think I may say that he wishes to keep an open mind on these questions and whilst not definitely opposing does not promise to support any of these propositions. As I have been told on good authority that one more member on the reforming side would at any rate give a majority in favour of the last proposition I think it is a pity some candidate holding these views has not come forward on this occasion. I have not received any replies up to this date from the other candidates. Trusting you will publish this for the information of the Fellows of the College.

I am, Sirs, yours faithfully,

Portland-villas, Plymouth, June 28th, 1898. G. JACKSON.

THE SALINE TREATMENT OF DYSENTERY.

To the Editors of THE LANCET.

SIRS,—A recent correspondence in a contemporary shows that the treatment of dysentery by salines (especially sulphate of magnesia) is not as well known as it should be, several writers referring to it as something new. It was, I am informed, first suggested by Bartholow in his "Materia Medica," and for the past eight years it has been much used by civil surgeons in India, *vide* Leahy's paper,[1] Poynder,[2] and Walsh.[3] In the latter the rational treatment of dysentery is discussed. A reference to Surgeon-Major Leahy's valuable paper will show the advantages he claims for the saline over the ipecacuanha treatment. Salines have also been constantly used for years by French colonial surgeons. In my experience there are three kinds of dysentery met with clinically—viz., mild, acute, and chronic.[4] Anything will cure mild cases provided they get rest in bed and low diet. Acute cases in strong persons react splendidly to ipecacuanha in large doses (from 20 to 25 gr.). Other cases are best treated by sulphate of magnesia (saturated solution). The so-called chronic form of dysentery is very different from the above. There is nothing specific about it: it is a low gangrenous form of ulceration which occurs in cachectic cases and is frequently the terminal episode in such cases. It is found in cases of malarial or tuberculous cachexia, in cases which might be called sprue, in "famine diarrhœa," and among exhausted pilgrims going to and from the shrines of India. Such cases need infinite care and patience and a milk diet. The dysenteric stools alternate with diarrhœa or there are intervals of constipation. This form of alternating dysentery and diarrhœa with periods of quiescence much resemble clinically the so-called "amœbic dysentery," with the great difference that they are almost never connected with liver abscess. But nowadays we find few believers in amœbic dysentery (except in America). Even Kartulis, having shown the amœba coli in healthy stools, is less confident as to the pathogenic *rôle* of the amœba. Other more formidable microbes seem to be the active agents. To return to the question of treatment. Rest and sago diet will cure the mild cases in a few days, hence the *post hoc* success of numerous drugs, the latest of which is cinnamon powder. For acute dysentery in strong, sturdy Europeans or natives I give ipecacuanha in Scott-Doeker's method; in the weakly I prefer saturated solution of Epsom salts (two-drachm doses three or four times a day). For chronic dysentery ipecacuanha is best avoided, and castor-oil, soda, antiseptics, such as salol and bismuth may be tried; in some cases where there is an acute exacerbation use the Epsom salts, but general treatment and milk diet are above all necessary, and infinite patience. Perchloride of mercury with opium and tinctura nucis vomicæ are also useful in chronic cases and often prevent or postpone recurrences. Pages might be written on this subject, but unless we define the class or kind of dysentery met with there is no use in recommending any particular drug. The practical clinical distinction I have made above will prevent a too great belief in the powers of a drug which may only have been tried in mild cases which scarcely need drugs at all.

I am, Sirs, yours faithfully,

W. J. BUCHANAN, B.A., M.B. Dub.,
Surgeon-Captain, I.M.S.; Superintendent, Central Gaol, Midnapore.

May 18th 1898.

[1] THE LANCET, Oct. 4th, 1890.
[2] Indian Medical Gazette, July, 1891.
[3] Ibid., September, 1891.
[4] Vide Practitioner, December, 1897.

POISONING BY STRYCHNINE.

To the Editors of THE LANCET.

SIRS,—Dr. Robert Barnes asks in THE LANCET of June 18th, "What will the anti-vivisection bigot's say to this application of experimental science to the aid of justice"? Dr. Thomas Stevenson arrived at the conclusion that death was due to poison partly by physiological tests—i.e., he gave some of the poison to animals. To what animals? Falck says that serpents and fish experience no tetanic phenomena with strychnine and that the frog is really less susceptible to strychnia than various mammals and that it requires four times the dose needed by dogs, cats, rabbits, &c., to produce an equal effect on frogs. Stillé and Maisch[1] say that birds are comparatively insusceptible to the poison. Ten grains may fail to kill a sheep; cats resist it singularly and guinea-pigs and monkeys are said to be little affected by it. "The anti-vivisection bigots" would have some justification therefore for a little scepticism about the value of the physiological test in poisoning cases. Dr. Barnes says the experimental method teaches us how to treat convulsions. But surely we have all learned the lesson by clinical experience long ago. Why do all the books on poisoning by strychnine insist on the use of anæsthetics to keep the patient perfectly quiet so as to avoid the onset of convulsions if it be necessary to recur to animal experimentation for fresh lessons in treatment?

I am, Sirs, yours faithfully,

EDWARD BERDOE, M.R.C.S., &c.

Victoria-park-gate, E., June 21st, 1898.

*** Although the dose required by certain animals may be larger the result is ultimately the same. Resistance to poisons differs even in man to some extent.—ED. L.

"THE MEDICAL EXPERT AID COMMITTEE."

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to an article appearing in your issue of June 18th, and at the request of the sub-committee of the above I desire to allude to certain matters to which reference therein is made. It is true that at present Dr. Woods is the only medical gentleman on the committee, one reason being that it is not and does not pretend to be anything but a number of ladies and gentlemen who (being well aware of the needs of the class for which it was formed, and of the fact that whenever the services of a medical man are really wanted, no matter whether he be a consultant or a general practitioner, those services are ungrudgingly and generously rendered to the patient, whether such patient can or cannot and regardless whether he will or will not pay the usual fee) desire to secure for such class of persons the services of the consultant, but upon terms that will secure to the consultant some recompense for his advice and at the same time remove the patient from the ranks of the hospital or non-paying patients. It is quite possible that the committee might be strengthened by the addition of medical men, and this matter I can assure you will receive the careful consideration of the committee.

You have alluded in your article to the number of hours a consultant spends in the hospital doing gratuitous work. This committee is well aware of such fact and is firmly convinced that a considerable portion of such time should be spent by such consultant in seeing some of the patients he now sees, but instead of seeing them in the hospital he should see them in his own consulting-room upon the terms that the patients so seen should pay to such consultant fees within their means, for if a patient can afford to pay a modified fee, surely he should pay such modified fee rather than nothing at all to the consultant. The consultant will give the patient the benefit of not a part, but the whole of his skill, learning, and

[1] National Dispensatory, p. 1363.

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experience, and surely the patient should make as large a return as possible to the consultant. One of the aims of this committee is to ensure such a result. This committee is told that it is not always easy, neither is it desirable, that a general practitioner should, whenever he desires his patient to see a consultant, place himself under an obligation to such consultant, and if under the circumstances indicated an obligation is imposed, it is suggested it would be better for the same patient to see the same consultant by means of this committee and transfer the obligation from the general practitioner to this committee. It is perhaps using too wide an expression to say that a consultant would be putting himself into the hands of this committee were he to see patients recommended by the committee, for the plan adopted leaves the choice of the consultant entirely with the patient and his medical attendant, and every time a consultant sees a patient recommended by this committee he is specially asked so to do and can, of course, refuse or comply with such request; but in order that such patient may have as large a choice as possible and in order that it may not be suggested that the committee desires to further the interest of any special consultant or consultants, the committee has asked practically all the London consultants to see patients whom it has recommended. A large number of consultants to whom the circular letter was recently sent have sent replies, some consenting to see patients, others declining, and the refusals have (with two exceptions only) been most courteous and in numerous instances the objects of the committee have been approved in a most encouraging manner.

It is, of course, only natural that many (more particularly the junior) consultants, before complying with the request made by this committee will await the decision of their seniors and particularly of those in whom the governing power of the two great medical colleges is vested; and such being the case it is hoped that such decision may be based and given not upon any defect in the details of the scheme that may be readily cured, but upon the main objects of the scheme as disclosed in the circular, and that such decision may strengthen the hands of the committee and bring to the aid of that class of people to which I have already referred, the inestimable benefit of the services of the consultant in such a manner that the patient willing and able to pay something has the satisfaction of knowing that he has to the extent of his means recognised (although possibly not discharged) his liability to the medical or surgical expert of whose services he has availed himself.

I am, Sirs, your obedient servant,

S. GISSING SKELTON, Hon. Sec.

27, Lincoln's Inn-fields, W.C., June 27th, 1898.

A CORRECTION.

To the Editors of THE LANCET.

SIRS,—Permit me to draw your attention to a printer's error in the report of my speech delivered at the dinner of the Indian Medical Service. The mortality stated on line 17, page 1769, col. 2, in THE LANCET of June 25th, should be 0·4, and not 4, per cent.

I am, Sirs, yours faithfully,

June 24th, 1898. J. JAMESON.

THE SCHOOL BOARD FOR LONDON.

To the Editors of THE LANCET.

SIRS,—It is sincerely to be hoped that no medical gentlemen will offer themselves for the lectureships on "First Aid" and "Nursing" for the evening continuation schools of this Board. The object is apparently to cut the ground from under the ambulance department of the Order of St. John of Jerusalem and to get the work done at a lower cost. Truly the time of a medical man must be reckoned at a very low value to offer a fee of half-a-guinea for a lecture of two hours' duration. The medical officer of the School Board for London has, I should think, not been consulted in the matter, or if he has, he must have a very peculiar idea as to the amount of remuneration which professional services demand.

I am, Sirs, yours obediently,

June 27th, 1898. F.R.C.S.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—Permit me to say a word or two on the assistants' side of this question. I and others have advertised for assistancies and certainly our replies do not show that assistants are greatly in demand. One man offers me £60 per annum indoor; another would engage me at a fairly good salary if I were not a few pounds too heavy for his horse to carry; another wants a married man, as if on the usual salary offered a man in his senses dare marry; another still wants a single man; one offers an unfurnished house, which naturally suggests that he wants a man who has been an assistant before and will always continue to be an assistant; and another offers a small salary with a view to share in the practice after a certain probation (and if no agreement is made at first he is often found unsuitable at the end of his probation). Nothing much is said about the main question—whether the man is able to practise his profession intelligently. Again, I was tempted with the offer of £130 "out" with commission. On inquiry I found that the annual commission amounted to a little over £3. I have been told also by several gentlemen that they were compelled to engage qualified men on account of the action of the General Medical Council, otherwise they would not on any account employ qualified assistants. I think the main question is one of remuneration, as with the present salaries a man may spend his life as an assistant unless he has means or influence besides. In any case he usually spends the best part of his working life for the benefit of others. I enclose name and address, not for publication.

I am, Sirs, yours faithfully,

June 21st, 1898. M.D., M.CH.

To the Editors of THE LANCET.

SIRS,—I am one of those who appreciate the action of the General Medical Council in doing away with unqualified assistants. These latter, whether married or single, knew perfectly such would come to pass and should have been prepared for the inevitable either by getting qualified or seeking other employment. As has often been suggested, the General Medical Council should go further and put down quackery (herbalists and bone-setters) and prescribing chemists.

I agree with "M.A. Cantab., &c.," that tempting salaries offered by principals are very few indeed. I once got a situation having a tempting salary as I thought, but I found the work not very tempting—in fact, slavery night and day. My experience of principals is that they are as a general rule very selfish. When one applies for an assistancy he has to give references and testimonials as to character, &c., but is not to expect anything of that nature from the principal either as to himself or his wife, who sometimes "rules the roost," and regards the assistant as a "bottle-washer." The qualified assistant if he is expected to do his work in an efficient manner must be made comfortable in every sense of the term and neither have, as I have had, caterpillars cooked among his vegetables nor flies served among his beer, &c. I was in another situation where my sitting-room was the consulting-room, where many rough and dirty patients left their trace behind them, and the same butcher-meat appeared day after day till at last it appeared with the ribs exposed like the hulk of an old wreck one has seen thrown upon the beach. Yet, forsooth, this may be one of the principals who cannot get an assistant either through friends or agents. I likewise would like to see the position of qualified assistants improved—in fact, a unity among them by which they would be enabled to know about principals, &c., for they as a class have a great deal to endure.

I am, Sirs, yours faithfully,

June 29th, 1898. AN ASSISTANT.

SPANISH MILITARY MEDICAL SERVICES.

(FROM A SPECIAL CORRESPONDENT.)

THERE is nothing new in the idea of creating a laboratory for the manufacture by the State of the drugs, &c., needed by the army. A decree to that effect was issued during the reign of Philip V. It bears the date of 1737 and such a

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laboratory was established at Melilla in the reign of Charles III. for the benefit of the troops in the Spanish African colonies. A ministerial order, dated April, 1787, sanctions the creation of similar laboratories at Malaga and at Madrid. The Malaga laboratory was the first to be completed and it remained in its original premises till the year 1888, when it was removed to a more commodious building. The Madrid laboratory was established at the end of last century in a private house in the Calle St. Bernardo and rendered great service during the War of Independence. Nevertheless this valuable institution was closed when the war was over. On April 5th, 1853, a new set of rules were published relating to the sanitary services of the army. These rules prescribed the creation of a laboratory and a central depôt of medicaments for the use of the army; but this official document did not amount to more than the expression of a pious wish. In 1873, however, what were called "executive regulations" were issued and reproduced the above project of a central laboratory. This was followed by a ministerial order directing that such an institution should be organised. It took, however, four years to carry out these instructions, for it was not till Nov. 26th, 1877, that the central laboratory and medical depôt of the military sanitary services was opened in the Calle de la Isla de Cuba, close to the Montaña Barracks. This was at first a very modest establishment, for the initial expenses only amounted to £1326. Medicaments were sent from this centre to the military hospitals in Spain and in the African colonies. Good work was done, and the services rendered were so obvious and the economies realised so great that all the authorities concerned gave every encouragement. Better appliances were purchased, a more numerous staff was employed, and early in 1885 much larger premises were obtained in the Calle de Amaniel. The laboratory during the first seventeen years of its existence cost 574,132 pesetas in building, &c., 150,589 pesetas in material, machines, and apparatus. The ground which it covers measures 2071 square metres and there is an annexe measuring 365 square metres.

The Central Laboratory now purchases the raw material and manufactures all the medicaments, drugs, chemicals, &c., required for the land and sea forces and their officers as also for the prisons of Spain and of all the Spanish colonies. The result has been a considerable reduction in the Budgets of the Ministers of War, of Marine, of the Colonies, of Justice, and of Public Worship. But apart from these public services arrangements were made by which generals, superior chiefs and officers of the land and sea forces can purchase from this State laboratory, either for themselves or their families, any medicaments they might need. This trade with the officers has yielded a profit during the first seventeen years of 423,543 pesetas, which has in great measure defrayed the expenses of installation. But this is nothing when compared with the immense saving in the purchase of medicaments for the army and navy. As already pointed out when dealing with the sanitary services of Cuba the economy effected in that colony since 1894 amounts to 5,766,722 pesetas. The cost of what was sent out from the central laboratory to Cuba amounts to 3,059,456. Had these medicaments, &c., been purchased in Cuba they would have cost 8,826,248 pesetas. A few figures will best illustrate the rapid growth of this institution. Thus in the year 1882 the amount of subnitrate of bismuth prepared weighed 110 kilogrammes. In the year 1896-97 the laboratory prepared 2000 kilogrammes of this medicament. In 1889-90 salicylate of bismuth to the extent of 25 kilogrammes was prepared; in 1896-97 the supply of this one article was equal to 1200 kilogrammes. At first but few powders were supplied to the hospitals. The laboratory did not possess the mechanical means of manufacturing them. The necessary machinery was obtained towards the end of 1893. In the following year 1639 kilogrammes of powders were produced. This production increased in the year 1898 to 12,309 kilogrammes of all sorts of powders.

To produce all these drugs there are two laboratories for the preparation of chemical products—one laboratory for special articles, such as trisulphides, alkaline solutions of tar, &c.; and a laboratory for what are called "specialities" such as pastilles, lozenges, granules, dragées, pills, &c. Then there is the machine gallery, which was installed in 1893. It is a large glass and iron hall containing a 12-horse power generator, retorts, evaporating apparatus, a 10-horse power horizontal gas engine, iron mechanical mortars, pulverisers, sifters, grinders, hydraulic presses, centrifugal motors for drying or precipitating crystals, extracting apparatus, &c. All these machines have been purchased from the best firms, and especially from French and German manufacturers. There is a department reserved exclusively for the packing and labelling of the medicaments and here some 6000 to 7000 different parcels are sent off every month. Then there is a laboratory for analyses, where all the products purchased are examined and tested so as to make sure that none but the purest drugs are employed. Water, pathological specimens, urine, &c., are also analysed in this laboratory, and altogether from 800 to 1000 analyses are made here during the course of twelve months. It has further been necessary to provide large warehouse accommodation to stock all the medicaments, &c. These amounted for the year 1896-97, if estimated in weight, to no less than 616,254 kilogrammes. Then finally there are the offices where the accounts and the ledgers, &c., are kept and made up.

In the annexe, situated in the Calle de Amaniel, the antiseptic dressing for wounds is prepared. This is quite a new installation and it was opened in August, 1897. The work had been done previously with considerable difficulty for want of proper apparatus. In June, 1895, the laboratory received orders to prepare the small packets of bandages which are supplied to each soldier, and which had previously been bought from private manufacturers. In the course of two years the laboratory produced 189,000 such packets, and these were so well arranged and of such good quality that they have been officially recognised as the best ever given to soldiers. Each packet must measure 11·5 centimetres in length, 7·5 centimetres in width, and 2·8 centimetres in thickness. It consists of a pocket or bag made of a waterproof tissue to which a printed label is affixed outside. This label replaces the card of identity which in several armies soldiers have to carry with them. The contents, to still further protect them and keep them clean, are wrapped up in a parchment-like piece of paper on which is printed a description of what the contents are and how they are to be employed. Finally, two pieces of cardboard impart stiffness and a regular fixed shape to the parcel. The contents consists of two compresses of absorbent cotton each weighing 2·5 grammes, two absorbent gauze compresses measuring 14 by 20 centimetres, two pads of absorbent cotton, a protecting piece of 20 by 25 centimetres in size, a gauze bandage 5 metres long and 6 centimetres wide, a triangular handkerchief, and two ordinary and two safety pins. One important consideration is the fact that this packet only cost 77 centimes, or about 7½*d*., to produce. But to make them quickly and cheaply it was necessary to purchase two machines so as to cut the cotton and gauze. Now that these machines are installed in separate and special premises the bandages can be prepared with great celerity and economy.

The manufacture by the State of the medicaments, &c., required for the army and navy, though admitted in principle some 150 years ago, has only recently been carried out on a large scale. The creation, however, of central depôts for all objects required by the military medical services is far more ancient. Such depôts existed at the times of the wars against the Moors and when Ferdinand and Isabella besieged Granada. To come to modern times, it was in 1853 that the establishment under one single manager of a central depôt was sanctioned. This was the commencement of the present organisation, and it was not in working order till six years later. Previous to that date the various army corps dealt directly with private purveyors and formed local depôts. What was thus purchased differed in nature and in quality, and there was no uniformity in the medical supplies of the army. During the African war of 1859 the first serious effort was made to enforce uniformity, and for this purpose a central depôt was established in the abandoned chapel of the old military hospital. Here were made the first stretchers. These were copies of the Austrian model and were sent to the seat of war. A Spanish model for stretchers was subsequently adopted. The chapel soon proved too small to store the various things required, and the central depôt was transferred to a private house in the Calle de Quiñones. Here there was more room to work at the manufacture of what is required for the ambulances or the transport of the wounded. A few ambulance waggons were constructed, as also boxes, &c., for portable pharmacies, surgical instruments, &c. In time it was again necessary to remove to larger premises, and on this occasion the old San Francisco barracks were selected. Finally in 1890 there was another removal to a still larger *locale* in the Calle de Palos de Moguer. The objects accumulated in this depôt are divided into three categories. First there is the

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material required by an army corps for the care of the sick and wounded in war; secondly, the material suitable for an army corps on the peace establishment; and thirdly, the material necessary for the practical and theoretical instruction of all that relates to the ambulance and medical supplies required by an army. There is a technical committee for purchasing what is needed and for studying and testing all new inventions relating to these services. By the law of Aug. 30th, 1896, a special credit was sanctioned for military constructions, such as transportable field hospitals, ambulance waggons, and other means of transport for the sick and wounded and for the purchase of the most recent and improved surgical appliances. In course of time it is proposed to provide better portable stoves for baking bread and for cooking. Then it is also intended to construct branch establishments in various centres, receiving their supplies from the central depôt. For instance, at present the various local military hospitals have surgical instruments which have been purchased from time to time just as the opportunity or necessity arose. Some of these instruments may be of good make and quality, but many of them are undoubtedly very antiquated. In time all surgical instruments will be provided by the central depôt, where the most recent and best models alone will be manufactured or purchased. A military surgeon will thus wherever he goes find the same instruments; and this uniformity will be of great advantage in the surgical clinics. This uniformity will also bring about an economy of some 15 per cent. in the purchase of instruments. Instead of buying one instrument for one hospital a wholesale purchase of the same instrument for all the hospitals can be made and the above discount obtained on the quantity.

In connexion with the military medical services the Pathological and Anatomical Institute should likewise be mentioned. It was necessary to provide military surgeons with facilities for study and to encourage original researches. Means were to be supplied to test and to verify the importance and exactitude of all recent discoveries relating to the medical and surgical treatment of soldiers and sailors. The narrow compass of the old laboratories barely sufficed for this purpose. A Royal decree of Jan. 14th, 1885, approved the creation of an histological military laboratory. In bacteriological and chemical analysis this new institution soon rendered many practical services. In regard to hygiene and to many medico-legal questions the laboratory was also very useful. Consequently in 1888 a Royal order was issued enlarging the laboratory, to which a museum was attached, and it was henceforth called the Military Pathological and Anatomical Institute. Young army surgeons now follow a course of lectures and studies at this institute for six months and during that time they have opportunities of making original researches. But in 1889 when a portion of the old military hospital was destroyed by fire no less than 1450 anatomical specimens and wax models were consumed in the flames. Thus in a few moments the labour of years and a most valuable collection were irretrievably lost. Other dependencies of the institution were also much damaged, and a part of the library was only saved at great personal risk. The library has since not only been reconstituted but has been considerably enlarged and improved. It will take, however, many years before the new museum can compare with what existed before the fire. One of the most practical services rendered by this institution has been to study and improve all the services relating to vaccination and revaccination in the army. A special building was obtained for the production of calf lymph and its preservation in glycerine. The work that this has occasioned was particularly heavy in consequence of the mobilisation of large contingents of troops for service in the colonies. But the war, while entailing extra work, deprived the institute of many of its professors and students who were obliged to go to the front, and several of the members of the institute lost their lives in the colonial wars, notably Dr. D. Ramón Alba and Dr. D. Manuel Andrés. In spite of the loss of these professors, the researches, the teaching, the experiments and analyses were pursued with undiminished vigour, but not without entailing great fatigue and exertion on those who remained. Among other things no time was lost in utilising the discovery of the x rays for military surgery.

The studies pursued at the institute are divided into four sections. The first comprises all that relates to military hygiene and the preparation of vaccine-lymph; the second, descriptive anatomy, pathological topography, the manufacture of wax and other models for the museum; the third, pathological, chemical, and bacteriological history and chemical analysis; and the fourth, the spectroscope, radiograph, fluoroscope and micro-photography in their application to the medical sciences. After the fire at the old military hospital it was proposed that the institute should occupy one of the pavilions of the new Military Hospital now built at Carabanchel. But the services rendered were so great that it was finally decided to extend the scope of action of the institute and for this purpose it is proposed that in future it should be known under the more general term of the Institute of Military Hygiene. A scheme has been prepared by which 3780 square metres of the site of the old Military Hospital shall be set aside for the erection of a building planned expressly for the purpose and provided with cellars destined for the better preservation of lymph, serum, &c.

The Spanish Red Cross Society is constituted on the same basis as similar organisations existing in other countries and therefore in full agreement with the International Geneva Convention of Aug. 22nd, 1864. A Royal order issued by the Ministry of War called upon the Order of St. John of Jerusalem to organise the Red Cross Society for Spain and the rules and regulations then drawn up received Royal sanction in July, 1868. In 1874 the Red Cross Society was recognised by a special decree as the only authorised auxiliary to the regular medical services of the army. A Supreme Assembly, with its headquarters in Madrid, Calle de los Huertos No. 11 bajo, represents the society. It also possesses central commissions at Havana and at San Juan de Puerto Rico. Then there are provincial commissions in all the principal towns. The ladies' section has a similar organisation, and this institution was admitted as forming part of the International Red Cross Confederation by a circular of the Geneva Committee issued on June 6th, 1893. The uniform worn is recognised by Royal decree, and His Holiness the Pope, Leo XIII., granted on Dec. 9th, 1893, a plenary indulgence *in articulo mortis* to all its members. The Spanish Red Cross Society assists not only the sick and wounded in war, but also all who are the victims of some public calamity or accident. During the Carlist war in the North of Spain it rendered great services, and it was also the first to organise a maritime ambulance at the time of the cantonal insurrection at Carthagena. It further sent a fully equipped ambulance to Melilla during the recent war in Morocco. To Cuba and the Philippine Islands the Spanish Red Cross Society has likewise despatched an enormous amount of ambulance material and has established hospitals at Colon and Cardenas in Cuba. In the course of the first two years of the Cuban insurrection members of the Spanish Red Cross Society have nursed about 15,000 soldiers in the hospitals and some 25,000 on the battlefield and in temporary shelters or ambulances. The society also paid for several burials. It has spent about a million pesetas (£40,000) and has received gifts in kind worth about a third of that amount. Further, the society established at Madrid a sanatorium called the Hospital de Villa Hermosa, which was inaugurated in February, 1896. Here during the first two years 4461 soldiers were nursed and 16,237 medical prescriptions made up. His Excellency Lieutenant-General the Marquis of Polavieja is the President of the Spanish Red Cross Society.

From all these details it will be seen that some considerable progress has been achieved in Spain of late years in respect to the medical services connected with the army and the navy. What is more particularly remarkable is the fact that these reforms, far from involving a large outlay and thus tending to increase taxation, have, on the contrary, in some cases been a source of direct income and in other cases a means of effecting a great saving of expenditure.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Curative Serums for Plague. — The Propagation of the Disease.—Reports of Outbreaks.

THERE are two forms of curative serum for plague now being tried in India—one prepared by Professor Lustig which was introduced last year and gave some promise of success, the other by Professor Roux. The method of preparation

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of the former has already been published but that of the latter is kept a secret until the results are considered to justify its publication. I shall look with great suspicion on any statistics which may be given from these experiments. In the first place, cases have been selected and in the second case the investigations have been chiefly carried out in a declining epidemic, when the virulence of the disease is less and the mortality lower than at any other time. When I say the cases have been selected I do not mean to infer that only the mild attacks have been chosen for inoculation, but that the cases have not been taken in the order of admission to hospital. As by a rough estimate it is probable that 30 per cent. of cases admitted to a plague hospital die within 24 hours and perhaps another 20 per cent. within 48 hours the importance of my contention is obvious. The later results with Professor Lustig's serum of greater strength are reported to be much more promising. These experiments are being carried out at the expense of the municipality of Bombay and it shows the active scientific enterprise and spirit of the corporation in that they have just voted more money for still further investigations. They are certainly doing a public service by offering these facilities for experiment during the present opportunity.

The evidence for the part played by the rat in the propagation of plague is gradually accumulating. At Karachi it has been a comparatively common observation for the occurrence of a case of plague to be preceded a few days by the finding of dead rats. This was particularly noticed in the first two or three cases of the present outbreak. The finding of dead or dying rats has now become the signal to clear out of any dwelling. Mice and cats have also been found to suffer from plague. Although so much attention is given to the disinfection of clothing the evidence that the contagion is ever conveyed by this means is very doubtful. The conveyance of infection by infected rats in grain-bags is much more probable as dead rats have been found among the piles of imported bags. As nearly every house in an Indian town is honeycombed by rat-runs and as the disease is very virulent in this species of animal, it is reasonable to assume that it is by their means that the disease is extensively if not chiefly spread. It is very certain that contagion from the sick to the healthy only accounts for a small proportion of cases. There is some evidence to show, however, that the so-called pneumonic form is more infectious than any other.

The number of cases reported in Calcutta is gradually increasing. The great exodus of people and perhaps the hot season may have combined to postpone its spread. The people are beginning to get over their fright and are said to be returning to Calcutta. They are also learning to see that the sanitary measures adopted when a case of plague is discovered are not so dreadful as they supposed. There are some signs also that inoculation will meet with more favour. Even in Bombay, however, less than 20,000 people have been inoculated, so that unless it be taken up on a very large scale it will have little or no effect on the progress of the epidemic. In Bombay the plague is almost extinguished and the average weekly mortality is nearly reached. In Karachi it is also very rapidly diminishing, the majority of the cases which are now occurring being found in the outlying camps. There is very little elsewhere.

June 9th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Infirmary Question.

THE question of the future of the Manchester Royal Infirmary is at present in a state of suspended, but only suspended, animation. Some short time ago it was intimated to the corporation, in answer to an inquiry as to the willingness of the infirmary authorities to sell the whole of the site in Piccadilly, that they were not willing to do so. At the meeting of the city council on June 8th, Sir John Harwood said he did not think anyone was satisfied with the present position of affairs. The alternatives seem to be either such an extension of the present site as to give space enough for rebuilding the infirmary on an extended scale or the sale of the whole of the site and the removal of the hospital to the suburbs. At present the latter idea does not find favour with the board, but it is possible that the enlargement of the power of dealing with the Owens College hospital estate recently received by the council of the college from the Charity Commissioners may before very long lead to a reconsideration of the question. By these powers the college can "alienate by conveyance or long lease" the hospital estate "to any person or persons, corporation or corporations, who may be willing and able to undertake to establish and maintain a hospital or hospitals upon the same land or part thereof, subject always to providing and securing to the medical school of the Owens College all requisite facilities for instruction," and also subject to safeguarding the provisions made in 1892 for the treatment of cancer. This arrangement would, in the event of purchase, allow of the new hospital being the actual property of the infirmary trustees, subject to conditions which would not be felt as a burden. The alternatives will no doubt be considered in all their bearings and a wise decision may be looked for some time or other. We must hope that it will be in the near future, for the infirmary is being worked at high pressure and much avoidable suffering is the result.

Grocers and Boric Acid.

There is a good deal of anxiety among grocers and milk-dealers as to the use of boric acid as a preservative for butter, bacon, milk, &c., and on June 9th a deputation representing some of the principal grocers of Manchester and Salford waited on Alderman Walton Smith and other members of the sanitary committee of the Manchester Corporation and requested them not to prosecute retail traders just yet. The committee were asked "not to take any active steps in the way of prosecuting retailers of bacon and butter preserved with boracic acid but to stay their hand until a standard has been fixed by the medical authorities connected with the Board of Trade." If the time for fixing this standard is calculated at the customary rate of departmental progression the users of boric acid may hope for a long innings. The deputation pointed out that there was "a great conflict of medical opinion" as to the wholesomeness or otherwise of boric acid as a preservative and said that it had been in use for twenty years without any injurious effects so far as could be ascertained. The committee promised to give the matter their serious consideration but could not make any definite statement as to the course which would be adopted. It is said, by the way, that thoroughly well-made butter—a comparatively rare article perhaps—will keep a fortnight even in hot weather without any artificial admixture, so that the acid is no doubt often used to cover the carelessness which causes an inferior make. At the Chester police-court the other day a farmer was summoned for selling milk mixed with boric acid. The city analyst had certified that "the sample contained boracic acid to the extent of six grains per pint, which quantity would be injurious to the health of young children." It was stated for the defence that it was used in ignorance and that "the defendant put the powder in the milk to preserve it on the assurance of a chemist's commercial traveller that it was not injurious and was allowed by Government." Some check might with advantage be placed on the persuasive eloquence of commercial travellers. It is quite time that if anything is really known as to the effects of the continued use of boric acid in small doses it should be authoritatively set forth and the law as to its employment be clearly stated.

Lamp Throwing at Hyde.

Some folks may be glad to know that at the neighbouring town of Hyde the amusement of throwing lighted paraffin lamps at your wife—probably if at anyone else it would cost more—may be indulged in at the moderate charge of half-a-crown. It is much less expensive than golf. John William Hague has proved this, for on reaching home late at night on June 11th, having previously taken care to get drunk, he began to abuse his wife and as she ran to the door to escape into the street he picked up the lighted paraffin lamp from the table and threw it at her. Fortunately his aim was faulty, but the lamp struck the door and was smashed to pieces, part of it flying into the street. Happily the flame went out in its flight and no further mischief followed. When taken before the magistrates he was fined half-a-crown and costs, and the chairman in reprimanding him made the incontestable remark that lamp-throwing was dangerous, adding moreover that "it would pay him best not to indulge in it any more." One of the other magistrates told the

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prisoner he might have been "before the bench" for manslaughter. He got off cheaply, for these hard words broke none of his bones, but no doubt the cost of the game may rise as it will vary according to the magistrates' views of sport. It does not seem that any addition to the fine was made because the man was drunk, so that it may be asked if it is considered the normal condition at Hyde for the "lords of creation" to be drunk on a Saturday night. No doubt the British working man deserves much of the good that is said of him, but there are exceptions. A drunken Englishman is always a nuisance and too often a dangerous brute to whom such punishment as that inflicted at Hyde is a joke and an incentive to continue the game.

June 21st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow University.

IT is officially intimated that Her Majesty the Queen has been graciously pleased to signify her approval of the appointment of the Rev. Dr. Story as Principal of the University in succession to Principal Caird, resigned. Dr. Story has been Professor of Ecclesiastical History in the University since 1886; he is one of the Queen's chaplain's and principal clerk to the General Assembly of the Church of Scotland. The University Court have sent a letter to Principal Caird expressing their regret at his resignation and their high appreciation of the ability and devotion he has for so many years displayed in the service of the University.—It has been decided that the classes of Materia Medica and Therapeutics at Queen Margaret College shall next session be conducted by a specially appointed lecturer and applications for the position are invited by the Court.—The final examinations for degrees in medicine come to a conclusion this week and the list of successful candidates will be issued in a day or two. The session at the Royal Hospital for Sick Children was closed on June 27th by an address from Professor McCall Anderson. Prizes for excellence in clinical work were awarded to Mr. D. S. Harvey and Mr. A. S. Wells.

Glasgow University Club, London.

The members of this club dined together at the Café Royal on the evening of June 22nd. The chair was taken by Professor William Macewen, F.R.S., who met with a most hearty reception from the large assemblage met especially to do him honour. The toast of the chairman was proposed by Dr. Heron in a very neat and witty speech and was enthusiastically received. Professor Macewen, in reply, gave a number of very interesting particulars concerning the origin of the antiseptic system in Lister's wards in the Glasgow Royal Infirmary and expressed his personal indebtedness to Lister's work and stimulus. The dinner was in every sense a great success.

Hospital Saturday in Aberdeen.

Last Saturday was "Hospital Saturday" in Aberdeen. As usual the friendly societies took charge of the movement. The usual procession to Duthie Park and sports took place, and the committee expect to have a surplus of £1000.

The Sanitary Inspectors' Association.

The annual Congress of the Sanitary Inspectors' Association of Scotland was opened in Perth on June 24th under the presidency of Mr. Kenneth Cameron of Aberdeen. Mr. Cameron's inaugural address was an excellent one. An interesting paper on Sanitation in Perth, 1868 and 1898, was read by Ex-Baillie Alexander, Convener of the Public Health Committee of Perth.

June 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Conjoint Examinations in Ireland.

THE Secretary of the Committee of Management of the Conjoint Examinations of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland has recently made a public announcement addressed to possible candidates for the preliminary examinations to be held during the year 1899. Candidates are informed that considerable changes have been made in the course and are referred to the secretary, Mr. Greenwood Pim, M.A., for particulars.

The Royal Irish Academy.

At a meeting of the Royal Irish Academy held on June 13th the President, the Earl of Rosse, K.P., occupying the chair, Mr. William Frazer, F.R.C.S. Irel., was elected a Member of Council and Librarian in the room of the late Sir John Gilbert.

The Royal Hospital for Incurables, Dublin.

A meeting of the Board of the Royal Hospital for Incurables was held on June 21st, Sir William Fry occupying the chair. A strong resolution expressing the loss which the institution has sustained in the recent death of Mr. Edward Fottrell, for so many years an acting governor of the hospital, was passed unanimously.

The Belfast Union Workhouse.

The Special Committee of the Belfast Board of Guardians, which had been appointed to take into consideration the report furnished by the Local Government Board Inspectors,[1] have replied that they were of opinion that the deficit at the end of the present financial period would not exceed £10,000. Having conferred with Dr. Bigger they were of opinion that the hospital staff should consist of 9 trained and 11 probationer nurses. With reference to Mr. Agnew's remarks about the quality of the beef supplied to the inmates they believed that it was in accord with the terms of the contract which required that it should be supplied from "fair finished beasts." At a meeting of the guardians held on June 21st the report of Mr. Agnew was read in reference to the inquiry into the treatment of a child. The report stated that a serious and lamentable neglect of duty had occurred on the part of the nurse and medical man in charge in facilitating and sanctioning the discharge of the child from the infirmary until they had satisfied themselves by an interview with the mother that she had thoroughly understood what the condition of her child was and that she having such knowledge insisted upon taking her child out of the infirmary. They thought both the nurse and medical man should be censured and this course was acted upon by the board of guardians, who called before them the nurse and medical man and reprimanded both.

Monaghan and Cavan Asylum.

Some time since the governors of this asylum wrote to the Monaghan guardians for the temporary use of the vacant wings of the workhouse for the accommodation of harmless lunatics and the guardians agreed to do so provided the Local Government Board concurred. The Local Government Board, however, would not sanction the arrangement. The governors, at their meeting on June 22nd, having considered the necessity for additional accommodation owing to the extremely overcrowded condition of the asylum, resolved that steps should be at once taken to put up an auxiliary building sufficient to accommodate 120 patients, together with such additions as may be absolutely required for sanitary and cooking purposes, at a cost not exceeding £5000.

Newcastle as a Health Resort.

For strangers visiting the north of Ireland there is no more beautiful health resort than Newcastle. Situated at the foot of the Mourne Mountains in co. Down it commands the most lovely charms of mountain, sea, and wood, and from a tourist's point of view its value and comfort have been immensely enhanced by the erection of a new hotel which was opened by the Countess of Annesley on June 21st. From a medical point of view Newcastle is mild, comparatively dry, and it affords great varieties of sea and mountain air; and there are beautiful coach drives in the district as well as in the neighbouring noblemen's parks, while close to the hotel, exposed to the bracing sea air, there are as fine golf links as are to be found anywhere. Newcastle is about one hour's run from Belfast by train, while on the other side it can be approached by drive from Warrenpoint along a most delightful and bracing stretch of country.

June 28th.

[1] THE LANCET, June 18th, 1898, p. 1723.

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PARIS.

(FROM OUR OWN CORRESPONDENT.)

Serum Therapeusis in Mushroom Poisoning.

THE possibilities of serum therapeutics are by no means exhausted, for every day sees some new application. A case of poisoning by mushrooms has afforded M. Claisse the opportunity of trying a treatment the details of which he laid before the Society of Biology at the meeting of June 18th. It is well known that two widely different substances take part in this kind of poisoning. The one, muscarine, brings about violent gastro-intestinal disturbances; the other, phalline, is more subtle and more alarming and both the guinea-pig and the rabbit are very sensitive to its action. Five milligrammes of powdered amanite per hectogramme will kill a guinea-pig if injected under the skin. M. Claisse, however, demonstrated that immunity is very quickly established and that after 50 days a rabbit will easily support a dose of triple the ordinary fatal strength.

Retention of the Placenta in Abortion.

At the meeting of the Obstetrical Society held on June 9th M. Loviot reported the case of a patient in whom after having aborted the placenta was retained for 101 hours. The general condition of the patient being satisfactory and the after-birth being everywhere adherent M. Loviot determined to adopt an expectant treatment. He give intra-uterine injections of permanganate of potassium and administered one grain of sulphate of quinine in the 24 hours, a drug well known to be an excellent oxytoxic and one which has an advantage over ergot in that it does not cause tonic contraction of the uterus. Contractions were soon set up and the placenta was expelled. M. Loviot considers that in cases of this kind the use of corrosive sublimate must be guarded against, for it is very easily absorbed, the placenta acting as a sponge.

The Dental School of Paris.

The council of the Dental School and Dispensary of Paris, the committee of the Paris Odontological Society, and the council of the General Association inaugurated on the evening of June 25th the new buildings of the Dental School of Paris. After the establishment had been inspected a banquet followed, Dr. Lecandey, the honorary president of the association, being in the chair. The following morning there was a meeting to consider the forthcoming Congress of 1900, also a clinical meeting of the Odontological Society, and the prizes and diplomas for the scholastic year 1896–1897 were distributed to the pupils of the school.

The Bacteriological Laboratory of the Prefecture of the Seine.

The monthly report of this laboratory for May shows that 267 specimens were submitted for diagnosis. There is a remarkable diminution in the figures for material from doubtful cases of diphtheria sent in, but the percentage of undoubted diphtheria is almost the same as that of the preceding month—namely, 12 per cent. The diphtheria mortality continues to steadily diminish. For the month of May, 1897, there were 21 fatal cases, while during the corresponding month of 1898 there were but 15. Of 106 examinations made during May for other diseases 93 dealt with material suspected to be tuberculous and in 38 of these the bacillus of Koch was found. Although suspected cases of diphtheria are becoming fewer suspected cases of tuberculosis continue to be sent up in increasing numbers.

Glycosuria in Wet Nurses following the Administration of Somatose.

Glycosuria is not uncommon in wet nurses and so M. Renon in attributing this condition to somatose, as he did at the Hospitals Medical Society on June 17th, has probably been misled by a mere coincidence. The case in question was that of a wet nurse aged forty years. It is well known that Dreux and Joachim have shown that the ingestion of somatose is an admirable way of increasing the flow of milk and Renon has administered it to this end with great success. In the case reported by him the urine at the end of the three weeks contained sugar to the amount of 3 grammes to the litre. Upon the somatose being left off the urine became normal. There is one fact which goes to show that the glycosuria was a direct consequence of the somatose—i.e., that diabetics pass more sugar when they eat meat; such, at least, was the result of some observations by Naunyn and Lepine. Might the glycosuria in this case, however, not be due to the over secretion of milk—that is, as Lecorche has shown, be due to the absorption of some of the sugar secreted by the breasts? The somatose in that case would have gone beyond its duty by increasing the milk too much. M. Legendre declares that for his part he has never seen a parallel case.

Obituary.

On the morning of June 21st Dr. Genouville, who had been visiting a patient, fell from the fourth floor of a house into the courtyard and was instantly killed. He was in his sixty-first year and was treasurer of the Association of Medical Men of the Seine. An inquiry will be held.—Dr. Auguste Felix Voisin has recently succumbed to anthrax. He was the son of a physician and was born at Paris in 1829. He graduated as Doctor of Medicine in 1858 after having served as *interne* at the hospitals. He was physician at Bicêtre where he studied mental diseases. He was a member of the Anatomical Society, of the Medical Observation Society, of the Medical Society of the Seine and of the Council of Hygiene and Public Health. In 1869 he became connected with the Salpêtrière. Among the many works upon mental diseases which he published may be mentioned, "The Mental States in Alcoholism," "On the Curative Treatment of Mania," "A Treatise on General Paralysis in the Insane," and he was many times rewarded by the Academy of Medicine for his scientific work. Dr. Voisin was in addition *officier* of the Legion of Honour.

June 28th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Professor Koch on Malaria.

AT the last meeting of the Berlin Colonial Society, Professor Koch, who has recently returned to Germany after a long absence in India and South Africa, read a paper on Tropical Malaria. There was a large attendance of members and visitors belonging to the medical profession, who received Professor Koch with loud applause on his entrance, and although he spoke on medical subjects before a mixed audience his hearers listened with the greatest attention for the two hours during which the proceedings were continued. He said that malaria is the specific disease of the tropics; it is the most terrible enemy there is to contend against in these regions, and the full advantages of the colonies will not be realised until it is overcome. The first step in meeting it is to know how it arises. For this purpose Dr. Koch has investigated a tropical disease of cattle which is somewhat like malaria. This disease is the so-called Texas fever, the cause of which has been stated by Smith to be a parasite—parosoma bigeminum. The parasite is present in the blood of the animals and its germs are spread by insects called "ticks." Cattle coming from the north only catch the disease when ticks have access to them. Professor Koch, to verify the statement of Smith, made the following experiment. He collected ticks from healthy as well as from sick cattle and took them to a distant place where Texas fever had never yet occurred. Healthy cattle were then inoculated with the eggs of ticks of both categories, the results being that the eggs obtained from sick animals gave Texas fever to the inoculated cattle, whereas the eggs from healthy animals produced no effect. Cattle reared in places where the fever was endemic did not always show this reaction, apparently because they had suffered from it when young and had therefore become immune against it. Some of them became infected, but in a slight degree only. It is thus possible to obtain an artificial immunity against Texas fever. Malaria, like Texas fever, is caused by parasites in the blood. Laveran and some Italian pathologists detected in the red corpuscles a specific parasite which is very motile and grows somewhat quickly. The climax of its development coincides with the maximum temperature during the fit and it afterwards breaks up into spores which again invade other corpuscles. There are two clinical forms of malaria; one, occurring in Europe, is characterised by a regular course of fever, as quotidian or tertian malaria, the second or malignant form, which only develops in hot climates, shows a very irregular temperature. The relation of the parasites to the different kinds of fever has not yet

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been ascertained. There was no strict indication in the treatment of tropical malaria, as quinine was given at random without considering at what time it might be most efficacious. As a rule it was taken in divided doses throughout the whole day. By microscopical investigation Professor Koch has now discovered that quinine will most surely overcome the parasite at the period preceding the above-described sporulation. The time when quinine must be taken is thus to be determined in the individual case by microscopical examination of the blood, and Professor Koch called special attention to the fact that quinine administered at the right time is able to cure the disease. When the fever has ceased one gramme of quinine must be administered every five days for two months. Blackwater fever, in his opinion, is not due to malaria, as parasites have never been found present in these cases, but is the result of a toxic effect produced by quinine. With respect to the mode of infection Professor Koch said that various conjectures have been made, but nothing is definitely known, and it has not been ascertained how the parasite enters into the blood of the patient. There is no direct infection from one person to another, the malady not being contagious, and infection by air or water is not likely. Diseases, however, are known in which infection is conveyed by insects, as in Texas fever, and it is remarkable that there is no malaria where there are no mosquitoes. This is, for instance, the case in some islands near the African coast and in the Usambara country. The mosquitoes probably deposit their eggs on the human body, the parasites issue from these eggs, and when their number has increased the disease develops. The time of incubation is about ten or twelve days. As to immunity Professor Koch is of opinion that persons who have once caught malaria and have recovered spontaneously without quinine possess a certain degree of immunity. The natives of the coast, who never catch malaria, owe their immunity to the circumstance that their ancestors have passed through the disease. If, therefore, a natural immunity is possible it may be hoped that means of producing artificial immunity may be discovered some day. The measures which have hitherto been used against malaria, such as draining of marshes, planting of eucalyptus trees, and establishment of sanatoria in mountain districts, have failed. What is wanted is to teach the medical men in the colonies how quinine should be given and to construct the dwellings of the Europeans so that the mosquitoes may be kept off. In conclusion Professor Koch said: "When we are able to destroy malaria in our colonies we shall have peacefully conquered one of the most beautiful and fertile countries of the world."

June 28th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Medical School.

A PRELIMINARY list of teachers, mostly already connected with Kasr el Aini Hospital or school has now been sent to the Council of Ministers for their formal approval. After October, both the hospital and school will be controlled by one director aided by two committees. The school, as now, will consist of four sections, male medical, female medical, pharmaceutical, and veterinary. The summer examinations have just ended, so that it may be seen how many students the new staff will find after the holidays. The fourth and final year will consist only of 7 students on the male medical side, the third year will only have 5, but the second year will muster 15, and for the entrance year there are already 12 applications. All candidates for admission must have the secondary certificate. This year there is great tribulation on the French side of the secondary schools, because they have been well beaten by the English side at the final examinations. The test must have been severe, for only 98 passed out of a total of 344. French is still the dominant language in the Government schools, to our shame be it said! In the primary schools, where the parents of the boys must first choose the prevailing language, 51 per cent. learn English and 49 per cent. French. But in the secondary schools the percentage is 63 French and 37 English. The animal stables attached to the medical school have now been finished in the most workmanlike and satisfactory way. They are already stocked with a limited supply of horses, donkeys, goats, dogs, cats, guinea-pigs, rats, foxes, and monkeys.

Infectious Hospital.

The pavilions and huts for infectious diseases in the desert continue to be most useful and probably they save Cairo from the smouldering of many small epidemics. At the present moment there are under treatment there 61 cases of relapsing fever, 2 of typhus fever, 1 of small-pox, and 2 of erysipelas. During the spring months there were 300 admissions of relapsing fever, mostly from the prisons, and 21 of these died. The greatest number of relapsing patients present on any one day was 130. As many as 7 of the attendants have caught the disease this year, but all recovered.

Vaccine Institute.

This establishment is gradually extending its usefulness and will shortly be able to supply calf lymph to the whole of Egypt. The receipts last year included £200 made by selling lymph to the Egyptian Army and to the Alexandria Municipality. Cultures of lymph come every week by post from Europe, but for the last two summers it has been possible to keep up the local supply. The secret of this success is that many more calves are now being used than in former years. It is still found that buffalo calves are much more susceptible and more certain in their results than cow calves. The institute last year provided lymph for about 50,000 vaccinations and 330,000 in the whole country were returned as having been successfully performed. However, no less than 2057 cases of small-pox were treated in the Government hospitals in 1897.

Statistical Returns.

A comparison of the two years 1881 and 1897 has lately been made by Sir E. Palmer to show to what extent Egypt has profited under British rule. A few figures from this return may be briefly quoted. The population of Egypt has increased by 43 per cent. The tobacco-tax now brings in over £1,000,000 instead of £97,168. This is partly due to the flourishing export trade in Egyptian cigarettes. Tobacco is the only tax which has been raised; many others have been reduced or abolised altogether. Two hundred and twelve miles of new railways have been opened and there is a huge development of railway and postal and telegraph traffic. The expenditure on public education has been raised by over 37 per cent. and the schools from 29 to 51. The number of forced men for corvée work is reduced from 281,000 to 11,000. The amount of debt per head of the population was £14 per cent. in 1881 and is to-day £10. Lastly, the 4 per cent. Unified Debt, which is the pulse-rate of Egyptian finance, was at £71 in 1881 and at £106 in 1897.

Cairo Tourist Season.

The last winter season was crowded enough to satisfy all the hotel keepers. About 7500 tourists, mostly English, Americans, and Germans, landed in Egypt between November and April. This number almost reaches the maximum year. Medically speaking the season was a very healthy one, slightly marred by dengue in the autumn, while in the spring, as in many past years, influenza was imported by patients from Europe. The weather was decidedly cold throughout, being the exact reverse of the winter of 1896–97.

Luxor Hospital.

This small hospital of 26 beds continues to do very useful work. It has been supported since 1891 chiefly by the subscriptions of tourists. The late Mr. Longmore took a great interest in its foundation and maintenance, and the winter work is now to be continued by Surgeon-Major Elcum. The hospital remains open during the summer months under the charge of a native medical officer, to whom patients travel from villages 200 miles above Luxor and from places almost 200 miles to the north. Every day there are about 20 new out-patients and the number of surgical and eye operations in the month averages 20.

Cairo, June 19th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Graduation in the Dental Department of the University of Pennsylvania.

IN order that the entrance requirements shall be in harmony with those of the other departments the University

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will hereafter require the following preliminary education in the dental department: for the session of 1898 to 1899 a certificate of high-school entrance; for the session of 1899 to 1900, a certificate of two years of high-school attendance; for the session of 1900 to 1901, a diploma of an approved high school having a three years' course or a certificate showing three years' attendance at a high school having a four years' course or certificates from other schools showing equivalent education. In lieu of such diplomas or certificates the candidate will be required to pass a matriculation examination which shall be the equivalent of that necessary to obtain the certificates above mentioned.

Results of Treatment of Tuberculosis at Loomis Sanatorium.

This institution was established by the friends of the late Dr. Loomis for the treatment of persons suffering from tuberculosis. It is located about 100 miles from New York on the Catskill Mountains. From the report of the physician it appears that during the first year 8 per cent. of the patients discharged had lost their tubercle bacilli; during the last six months covered by the present report 18 per cent. of those discharged had lost their bacilli. During the first year 73 per cent. of those discharged had gained in weight, while during the last six months 81 per cent. of those discharged had gained in weight. During the first year 13 per cent. of the patients discharged were apparently cured, while during the last six months 23 per cent. of those discharged were apparently cured. Last year 10 per cent. were discharged with their disease arrested and during the last six months 9 per cent. It is interesting to note that of those patients discharged after a residence of three months or less at the sanatorium 17 per cent. were apparently cured, while among those who were discharged after remaining longer than three months 26 per cent. were apparently cured. This is a good object-lesson for those physicians who send their patients with the advice that they should remain six weeks or two months. The basis of treatment in all cases has been climatic and hygienic. The climate of Liberty and the site of the sanatorium are well adapted to the treatment of tuberculosis throughout the whole year, but there is even more marked improvement during the winter months than in the summer. The elevation, 2300 ft., is within those limits generally conceded to be most advantageous for lung troubles; this altitude with the peculiarly dry atmosphere and abundance of sunlight furnishes all the conditions necessary in the climatic and hygienic treatment of incipient cases of tuberculosis. Malarial fevers are unknown at Liberty except when imported. While strong winds are generally supposed to be detrimental to the class of patients under consideration they bear well cold and north-west winds. The experiences encountered and the results obtained during the two cold seasons at this sanatorium seem to tend to revolutionise the popularly accepted ideas of the injurious effect of winds and stormy weather upon incipient cases of tuberculosis. A good deal has been said and written against allowing phthisical subjects to walk or to exert themselves to any great extent, especially if their temperatures range above the normal point. It is a rule at this sanatorium to allow all patients whose evening temperatures do not reach above 100° F. to walk moderately and if their temperatures are not above 99° no restrictions at all are placed upon them in this respect, but they are encouraged to gradually accustom themselves to pedestrian tours extending from two to ten miles daily. In the way of specific treatment of individual cases creasote and its derivatives have been used. Of the different forms guaiacol valerianate has been more extensively used than during last year, as it is the form of this drug least irritating to the stomach which has been met with. Ichthyol in keratin-coated pills has been used with considerable success; this remedy seems specially beneficial in cases showing intestinal complications. In regard to the serum treatment 7 out of the 29 cases thus treated, or 24 per cent. of the cases, lost their tubercle bacilli and in 48 per cent. the bacilli decreased. In an examination of 15 cases treated by serum not one had redeveloped the disease; on the contrary, all have been enabled to remain in their homes and at their work.

Medical Aid during Action.

Dr. Spear, an assistant surgeon of the United States Navy on board the flagship *New York*, writes as follows on the duty of the surgeon during action: "When 'general quarters' is sounded aboard the U.S.S. *New York* the sick-bay is immediately converted into an operating-room; an operating-table is placed in the centre, the ordinary instruments for amputating limbs are arranged in trays and immediately disinfected by steam, aseptic dressings are laid out, and antiseptics prepared for immediate use. It becomes the duty of medical officers to take measures to stop all bleeding from wounds. To do this the crew of each gun receives instructions in first aid to the wounded by the medical officers. Each gun has its own outfit of rubber tubing and packages of aseptic dressings. The men are instructed how to apply the rubber tubings to the limbs in order to arrest hæmorrhage, how to apply aseptic dressings, being especially cautioned against touching wounds, and, finally, how to support limbs when broken and how to carry the wounded and where to place them. The medical men take their stations in the most protected parts of the ships—viz., behind the turrets—and here establish dressing stations and attend to all the wounded in the immediate vicinity. The surgeons have received orders to expose themselves as little as possible during action as their real work begins when the fight is over. Each surgeon carries a haversack in which are pieces of rubber tubing for controlling hæmorrhage from the extremities, hæmostatics, a pocket case, hypodermic syringe, and solutions of strychnine and morphine ready for hypodermic use, and some first aid packages. Stationed with each doctor is a nurse, who carries in a knapsack surgical dressings, antiseptic solutions, whisky, and so forth. When the action is over the surgeons will take a hasty survey of the wounded and give such attention as is absolutely necessary to each. When the wounded have been attended to those cases needing immediate operation will be looked after, three operating tables being established if necessary."

June 18th.

Obituary.

HENRY CASE, M.R.C.S. ENG., L.S.A.

HENRY CASE was born in London on June 28th, 1843, and spent his boyhood in West Herts. On leaving school he became the pupil of the late Dr. Ambler of Hemel Hempstead, after which he proceeded to Middlesex Hospital, from which medical school he qualified; becoming M.R.C.S, Eng. in 1867 and L.S.A. in 1868. He was appointed subsequently house surgeon to the hospital and as such he displayed an amount of zeal and efficiency which gained him golden opinions from all concerned. On leaving Middlesex Hospital he was appointed house surgeon to the West Herts Infirmary and this office he held for over three years. So thoroughly did he do his work that on resigning that office in 1873 to become assistant medical officer in the Metropolitan District Asylum at Leavesden, the Infirmary Board formally put on record their high appreciation of his services and expressed their regret at not having the power to mark their appreciation in such a tangible manner as they would have wished. After nearly three years' work as assistant medical officer at Leavesden he became medical superintendent of the Asylum at Hampstead under the same board, and shortly afterwards this asylum was converted into a small-pox hospital, which he managed with singular success. In the autumn of 1876 he succeeded Dr. Claye Shaw—the present medical superintendent of the London County Asylum, Banstead—as medical superintendent of Leavesden Asylum, which office he held until ill-health compelled him to resign in January last. For some six years after 1876 he was Lecturer on Psychological Medicine at the Middlesex Hospital, but finally he had to resign this appointment on account of the onerous nature of his daily work at Leavesden. He performed his duties at Leavesden with ability, tact, and rare vigilance—a vigilance so unceasing that his duty became alike his work and his hobby. He kept pace with current medical literature, displayed great diagnostic power and ripe judgment, and wielded a most humanising influence over his unfortunate patients, and his high qualities as gentleman and physician attracted to himself the ready obedience, respect, and love of his staff. Always of modest and retiring disposition it was only by those who came in daily contact with him that his conscientious labours and sterling worth were fully appreciated

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but within the large institution which he administered so faithfully and so well and among his friends—who include his colleagues and all who knew him—the memory of his noble character and much loved personality will long remain. He leaves a widow to mourn her loss and to her goes out the respectful sympathy of all who loved her husband.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations have been admitted Licentiates in Dental Surgery:—

William Monro Anderson, Lewis Fryer Barton, William Henry Bean, Surg.-Capt., M.R.C.S. Eng., L.S.A. Lond.; Frank Russell Bishop, George Parminter Cardell, Alfred Eastland Carden, Harold Cardwell and Frank Coleman, Charing Cross and the Dental Hospital of London, Sidney d'Alton Corbett, St. George's and the Dental Hospital of London; Frederic Ledger Etheridge, St. Bartholomew's and the National Dental Hospital; Sydney William Garne and Zephaniah Job Gibson, Charing Cross and the Dental Hospital of London; William James Grewcock, Mason University College, Queen's, General, and the Dental Hospital, Birmingham; Hubert Malcolm Griffiths, Middlesex and the National Dental Hospital; John Harper, M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's and Guy's Hospital Dental Department and School; Herman Charles Hessenauer and Frank Holding, Charing-cross and the Dental Hospital of London; Reginald Crompton Holt, University College, Royal Infirmary and Dental Hospital, Liverpool; William Warwick James, Middlesex and the Dental Hospital of London; George Frederick William Jennings, Charing-cross and the Dental Hospital of London; William Henry Jones, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; Harry Percy Joscelyn, Mason University College, Queen's, General, and the Dental Hospital, Birmingham; William Henry Loosely, Guy's Hospital, Dental Department and School; Arthur Robert Marks, St. George's and the Dental Hospital of London; Charles Ernest Mountford, Mason University College, Queen's, General, and the Dental Hospital, Birmingham; Edward Giles Narramore, University College, Royal Infirmary and Dental Hospital, Liverpool; William Nicholson, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; Charles Deane Outred, Guy's Hospital, Dental Department, and School; Alfred Mitchell Partridge, University College, Royal Infirmary, and Dental Hospital, Liverpool; Howard James Paterson, Mason College, Queen's, General, and the Dental Hospital, Birmingham; Oliver Grace Penfold, Middlesex and the Dental Hospital of London; Harry Webb Robey, Charing-cross and the Dental Hospital of London; Arthur Lewis Rowley, Guy's Hospital, Dental Department, and School; William Albert Hodgins Saul, University College, Royal Infirmary, and the Dental Hospital, Liverpool; Frederick William Stanley Stone, M.R.C.S. Eng., L.R.C.P. Lond., St. Thomas and Guy's Hospital, Dental Department, and School; Ernest Stringfellow, Guy's Hospital, Dental Department, and School; Harold Tattersall, Middlesex and the National Dental Hospital; Wallace Atkinson Taylor, Westminster and the Dental Hospital of London; Duncan Powerscroft Tracy, Reginald Umney, Ernest William West, and Thomas Henry Wilkinson, Guy's Hospital, Dental Department, and School; Harry Winder, Charing-cross and the Dental Hospital of London.

21 gentlemen were referred to their professional studies; 20 for six months and 1 for one year.

UNIVERSITY OF CAMBRIDGE.—At the examinations for medical and surgical degrees, Easter term, the following candidates were successful:—

FIRST EXAMINATION.

Part I. Chemistry and Physics.—C. Akerman, Caius; A. E. Barclay, B.A., Christ's; G. F. Bird and H. J. D. Birkett, Trinity; W. F. Blandford, B.A., Peterhouse; M. B. Briggs, St. John's; J. R. Briscoe, H. Selwyn; A. D. Brunwin, Trinity; P. J. Burgess, B.A., Sidney Sussex; S. H. Clarke, Caius; R. M. Courtauld, Pembroke; Coventon, Trinity; G. Cowan, King's; W. L. Cripps, Trinity; A. H. Crossley, Clare; H. F. Curl, Christ's; H. H. J. Fawcett, Trinity; G. R. Footner, Pembroke; C. B. Goulden, Non-Collegiate; H. E. Graham, Jesus; S. L. Harke, Pembroke; G. H. Harper-Smith, Caius; E. T. Harris, Christ's; Hart, Sidney-Sussex; W. H. Hastings, Trinity; G. P. D. Hawker, B.A., Caius; F. A. Hepworth, St. John's; E. Higson, Magdalene; T. W. S. Hills, Downing; G. G. Hirst, Caius; H. F. Horne, King's; J. B. Irving and F. S. Jones, St. John's; H. M. Joseph, Trinity; A. S. Littlejohns, Caius; F. J. Lovett, Trinity; F. Lushington, Jesus; C. W. P. Moffatt, Clare; R. F. Moore, non-collegiate; W. H. Orton, Trinity; B. H. Pain, Emmanuel; O. V. Payne, St. John's; H. I. Pinches, Sidney-Sussex; J. N. Robins, Christ's; G. H. Snepley, St. John's; T. Somerville, Emmanuel; E. C. Sparrow, Trinity; J. M. Stenhouse, Sidney-Sussex; S. J. Steward, Downing; H. T. Thompson, Christ's; G. Thwaites, St. John's; C. F. O. White, Trinity; R. E. Whitting, King's; H. Wight, Sidney-Sussex; A. B. Wilson and N. Wilson, Pembroke; F. L. Woods, Caius; R. A. Worthington, Clare; and E. A. Wright, H. Selwyn.

Part II. Elementary Biology.—C. B. M. Aldridge, A. E. Barclay, B.A., and H. J. Beddow, Christ's; G. F. Bird and H. J. D. Birkett, Trinity; M. B. Briggs, St. John's; J. R. Briscoe, H. Selwyn; E. M. Brown, Pembroke; H. G. Brown, Emmanuel; P. J. Burgess, B.A. Sidney-Sussex; H. M. Clarke, Clare; S. H. Clarke, Caius; D. H. Collingham, King's; G. C. Compton, Caius; E. J. Cooper-Smith, St. John's; R. M. Courtauld, Pembroke; A. W. D. Coventon, Trinity; G. Cowan, King's; F. D. Crew, Emmanuel; A. H. Crossley, Clare; J. M. Cunningham, Trinity; H. A. Cutler, B.A., Clare; S. Dixon, Trinity; E. A. Ellis, Downing; C. H. J. Fagan, Caius; H. Falk, King's; H. H. J. Fawcett, Trinity; G. R. Footner, Pembroke; L. H. Frankenburg, Emmanuel; R. E. V. Hale and G. H. Harper-Smith, Caius; Everard Harrison, Trinity; R. N. Hart, Sidney-Sussex; A. F. Heald, non-collegiate; F. A. Hepworth, St. John's; W. R. Higgins, Caius; E. Higson, Magdalene; T. W. S. Hills, Downing; H. F. Horne, King's; W. E. Hume and W. F. Ingpen, Pembroke; F. A. G. Jeans, St. John's; S. C. Johnson, Trinity; F. S. Jones, St. John's; H. M. Joseph, Trinity; A. E. Kerr, Christ's; H. R. Lawrence, Pembroke; P. C. Lichfield, Trinity Hall; R. Luker, Pembroke; H. F. Marris, Caius; C. W. P. Moffatt, Clare; W. M. Mollison, King's; R. F. Moore, non-collegiate; W. H. Newton, Emmanuel; W. H. Orton, Trinity; H. B. Owen, Caius; B. H. Pain, Emmanuel; O. V. Payne, St. John's; H. I. Pinches, Sidney-Sussex; C. T. MacL. Plowright, St. John's; R. N. Poignand, Caius; T. Somerville, Emmanuel; E. C. Sparrow, Trinity; J. M. Stenhouse, Sidney-Sussex; S. J. Steward, Downing; R. Streatfeild, Queens'; H. T. Thompson, Christ's; W. H. Thresher, Caius; G. Thwaites and G. A. Ticehurst, St. John's; W. E. Weber, H. Selwyn; R. E. Whitting, King's; H. L. Whytehead, H. Selwyn; E. Wight, Sidney-Sussex; R. G. Wills, St. John's; C. D. Wilson, M.A., Corpus Christi; H. W. Wiltshire, Clare; and F. L. Woods, Caius.

SECOND EXAMINATION.

Part I. Pharmaceutical Chemistry.—B. L. T. Barnett, B.A., St. John's; F. M. Bulley, Emmanuel; R. Butterworth, B.A., Christ's; S. Child, B.A., Pembroke; R. A. Clapham, B.A., Emmanuel; G. H. Colt, Sidney-Sussex; W. F. L. Day, Caius; A. P. Day, Christ's; J. H. Donnell, Caius; T. L. Drapes, Sidney-Sussex; R. S. Drew and J. E. Frere, Pembroke; H. P. Gibb, Sidney-Sussex; J. G. Gubbins, Clare; P. Hardy, Trinity Hall; P. Harrison, B.A., Christ's; E. H. Harrisson, Clare; N. G. Harry, Jesus; W. N. Heard, B.A., W. N. Downing; F. C. Hepburn and W. H. Hills, Pembroke; C. D. Horsley, Caius; B. Hudson, Clare; G. C. Lawson, B.A., and W. E. Lee, Trinity; H. B. McCaskie, Caius; F. B. Manser, B.A., Peterhouse; O. May, St. John's; E. B. F. Molteno, Pembroke; W. E. Muil, B.A., Caius; C. H. W. Page, Corpus Christi; P. N. Panton, Trinity; W. E. Paramore, St. John's; C. A. W. Pope, Trinity; R. M. Ranking, Pembroke; R. H. Robbins, Trinity; N. O. Roberts, B.A., Christ's; Rocne, B.A., Queens'; C. T. Scott, Sidney-Sussex; F. E. Shipway, B.A., Christ's; H. C. Sidgwick, Clare; J. L. Timmins, B.A., Emmanuel; S. M. Toppin, Caius; A. C. Warren, B.A., Emmanuel; F. Whitaker, B.A., Trinity; W. M. Willoughby, B.A., Caius; A. F. R. Wollaston, B.A., King's; and H. G. K. Young, B.A., Emmanuel.

Part II. Human Anatomy and Physiology.—A. G. Bate, B.A., King's; F. H. M. A. Beckett, B.A., H. Selwyn; R. L. Bellamy, B.A., Downing; H. Bentley, B.A., St. John's; J. R. Bentley, Emmanuel; F. M. Boulton, B.A., Trinity; W. V. Braddon, Trinity Hall; A. H. Brehaut, B.A., H. Selwyn; C. de L. Carey, B.A., Emmanuel; F. J. Child, B.A., Christ's; E. M. Clark, B.A., Trinity; J. S. Clarke, B.A., Caius; Colyer, M.A., Catharine; G. L. Crimp, B.A., Caius; W. E. M. Ede, B.A., King's; F. P. Edwards, Downing; A. O. M. Fehrsen, B.A., Caius; W. M. Fletcher, M.A., H. S. Flook, B.A., and O. F. F. Grünbaum, B.A., Trinity; A. E. Hodder, King's; C. R. Howard, B.A., Pembroke; J. H. McAllum, M.A., Christ's; A. Martineau, B.A., Emmanuel; A. S. Mellor, B.A., King's; J. W. Mercer, B.A., Clare; C. H. Miller, B.A., Trinity; D. J. Morgan, B.A., St. John's; S. H. Nathan, M.A., Trinity; H. H. Riddle, Peterhouse; L. W. Roberts, M.A., Downing; G. Roper, B.A., Non-Collegiate; E. A. Ross, Trinity; B. B. Sapwell, B.A., Corpus Christi; C. A. St. J. Scott, B.A., and G. A. C. Shipman, B.A., Trinity; A. I. Simey, B.A., King's; A. T. Spanton, B.A., Trinity; C. Stiebel, Trinity Hall; E. J. D. Taylor, Caius; H. Wacher, B.A., St. John's; E. G. Wales, Downing; R. F. Williams, B.A., Caius; J. A. Wood, B.A., St. John's; F. E. Wood, Downing; and R. T. Worthington, B.A., Trinity.

THIRD EXAMINATION.

Part I. Barnes, B.A., Christ's; Boulton, B.A., Clare; Byles, King's; W. D. Chapman, B.A., Corpus Christi; H. N. Clarke, B.A., Trinity; Denyer, M.A., Queen's; Dore, B.A., and W. Eardley, M.A., St. John's; Fryer, B.A., Christ's; Garrood, B.A., St. John's; Glasier, B.A., Emmanuel; Glynn, B.A., Clare; W. D. Harmer, B.A., King's; Hart-Smith, B.A., and Hay, B.A., Gonville and Caius; Jordan, B.A., Sidney-Sussex; Kemp, B.A., Clare; Letchworth, B.A., Emmanuel; A. F. MacCallan, B.A., Christ's; H. F. Parker, B.A., Emmanuel; Pettinger, B.A., H. Selwyn; S. P. Pollard, B.A., Gonville and Caius; Powell, B.A., Emmanuel; S. B. Reid, M.A., St. John's; R. E. Sedgwick, B.A., Gonville and Caius; Sewell, B.A., Pembroke; C. C. Simson, M.A., and G. R. Slade, B.A., Trinity; Stacey, B.A., and F. W. Sumner, B.A., St. John's; Sutcliffe, B.A., Emmanuel; Talbot, B.A., King's; Tallent, B.A., and E. C. Taylor, B.A., St. John's; Thorp, B.A., Emmanuel; I. Ll. Tuckett, M.A., Trinity; Ware, B.A., Pembroke; W. K. Wills, B.A., St. John's; R. J. Willson, B.A., Emmanuel; and A. G. Wilson, B.A., Gonville and Caius.

Part II. Betteridge, B.A., Gonville and Caius; T. H. Brown, B.A., Pembroke; Byles, King's; Carter, B.A., Jesus; Corner, B.A., Sidney-Sussex; H. G. Deller, B.A., Trinity; A. B. Green, M.A., Downing; Gregory, B.A., St. John's; Harrisson, B.A., Magdalene; Heilborn, B.A., Gonville and Caius; Levick, B.A., Jesus; E. A. C. Matthews, B.A., Trinity; H. E. May, M.A., and F. A. Mills, B.A., Clare; Nalsh, B.A., Trinity; Prost, B.A., St. John's; Ransome, B.A., Gonville and Caius; Roberick, B.A., Emmanuel; J. E. Sandilands, B.A., Trinity; Sargent, B.A., St. John's; Hon. G. H. Scott, B.A., Trinity; and C. White, B.A., Christ's.

LITERARY INTELLIGENCE.—The following books based upon the new Pharmacopœia will be published by Messrs. J. & A. Churchill. The third edition of "Materia Medica, Pharmacy, Pharmacology, and Therapeutics," by

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Dr. Hale White, physician to Guy's Hospital. This is now ready. A new work on "Practical Pharmacy," by Mr. E. W. Lucas, examiner in pharmacy to the Pharmaceutical Society; the work will be profusely illustrated and will contain a chapter on the Analysis of Urine; the publication will take place shortly. Also the twelfth edition of Beasley's "Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias," brought up to date by Mr. J. Oldham Braithwaite. The seventeenth edition of Squire's "Companion to the British Pharmacopœia" will, it is hoped, be issued in September.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The Cavendish Lecture was delivered before this society at the Town Hall, Hammersmith, on June 24th, by Mr. Howard Marsh, Mr. H. P. Potter, President, being in the chair. Mr. Marsh took as his subject Growth as an Agent in (*a*) the Production, (*b*) the Removal, of Deformity, and illustrated his lecture by numerous specimens, diagrams, and photographs. After the lecture, which was a thoroughly able and interesting one, the members of the society in large numbers gathered at the annual conversazione. Here there was much to interest in the exhibits placed on the tables by many well-known firms of chemists, instrument makers, and others; and special mention may be made of the beautiful collection of bacteriological cultures and microscopic specimens shown by Mr. W. Severn.

THE CENTRAL LONDON OPHTHALMIC HOSPITAL.—At the Mansion House on June 16th a meeting in aid of this institution was held, when, in the absence of the Lord Mayor, Alderman Sir Joseph Savory, Bart., M.P., presided. The Chairman remarked that he believed everybody present was fully impressed with the needs and utility of this hospital, which was established 54 years ago, and at the present time was relieving about 11,000 patients every year. Since its origin in 1845 it had benefited no fewer than 400,000 persons.—Sir Dyce Duckworth (consulting physician to the hospital, approving of the scheme for rebuilding the hospital, moved a resolution pledging those present to secure by every means in their power liberal aid from all who sympathised with ophthalmic suffering.—This was agreed to and the secretary then announced subscriptions amounting to £637. £13,000 are still required, however, for the proposed work.

PRESENTATIONS TO MEDICAL MEN.—On June 23rd, on the occasion of the first presentation of medallions and certificates to the male and female members of the York Town and Camberley Branch of the St. John Ambulance Association, Mr. H. E. Rayner, F.R.C.S., L.R.C.P. Lond. of Camberley, was the recipient from the male class of a meerschaum pipe, with an inscription on a silver shield. At the same time Mr. A. T. Wooldridge, L.R.C.P. Lond., M.R.C.S. Eng., of Camberley, was presented by the female class with an inkstand, both were thank-offerings for gratuitous instructions on first aid.—Mr. Edward Ryan, M.B. Melb. of Nhill, Victoria, Australia, the medical officer of the Nhill Hospital, Victoria, has been entertained at a banquet by the inhabitants prior to his leaving for England.—Mr. Wm. Geo. Armstrong, M.B., Ch.M. Syd., D.P.H. Camb., of Bowral, New South Wales, has been presented with a handsome clock by the inhabitants on his leaving the district.—Last week the members of the Lydney Junction, Severn, and Wye Joint Railway Ambulance Corps presented Mr. Cyril Nelson Thomas, B.A., M.B., B.C. Cantab., with a gold-mounted umbrella as a mark of appreciation for his services as honorary lecturer.

THE METROPOLITAN PROVIDENT MEDICAL ASSOCIATION.—The Right Hon. Sir U. Kay-Shuttleworth, Bart., presided at a meeting of this association on June 16th, at 121, Sloane-street, when the annual report for 1897 was unanimously adopted. The report stated that the work of the institution has been steadily carried on and in some instances satisfactorily developed. Taken as a whole, however, the figures for 1897 do not show any general improvement on those of previous years. A really satisfactory advance has been made both at Woolwich and at Islington. Pimlico, too, shows a slight advance. One new dispensary has been opened during the year at Whitechapel. Altogether there are now 19 branches of the association, of which 14 are dispensaries and 5 medical clubs. There has been a falling-off in the list of ordinary donations and subscriptions, which, excluding the £1000 given by the Baroness de Hirsch and the grant of £300 from the trustees of the London Parochial Charities, amounted to only £289 9*s.* 6*d.* The Council state that their attempt to grapple with the difficulties connected with the medical treatment of the working classes has been very successful as far as the funds they have had to deal with have permitted and that their system could be largely extended at once if more support were forthcoming. The following figures show the branch statistics for the year 1897:—Number of cards, 10,525. Receipts—Members' payments, £4839; grants from council of the Metropolitan Provident Medical Association, £450; grants from Hospital Sunday Fund, £119; honorary subscriptions, &c., £206. Payments—Medical staff, £3062; dispensers, £824; drugs and dispensary sundries, £415; official salaries (secretaries, collectors, &c.), £485; rent, rates, taxes, &c., £746; postage, printing, stationery, &c., £117.

Parliamentary Intelligence.

HOUSE OF LORDS.

FRIDAY, JUNE 24TH.

The Sale of Poisons.

ON the motion of the Duke of DEVONSHIRE the House gave a second reading to the Poisons Bill introduced and promoted by the Government. His lordship explained that the object of the measure was to give to the public some protection against the indiscriminate sale of poisons beyond that which was already afforded by the Pharmacy Act. That Act dealt with certain poisons and imposed certain restrictions on the sale of those poisons. The chief restriction which the Pharmaceutical Society imposed was that the sale of the poisons was limited to persons registered by the Society. The list of poisons in the schedule might be extended, on the recommendation of the Pharmaceutical Society, by the Privy Council, and repeated applications had been made to the Privy Council to include certain other articles enumerated in the schedule to the Bill now before the House under the Pharmacy Acts. Amongst those articles was carbolic acid, which was largely used as a disinfectant. The other articles were butter of antimony, chloride of zinc and its solutions, cresylic acid, hydrochloric acid, nitric acid, sulphuric acid, sugar of lead and other salts of lead, preparations of carbolic or cresylic acid or their homologues used as disinfectants, and containing more than 10 per cent. of any of them, and substances sold for the purpose of poisoning insects or vermin. The Privy Council had always declined to include those articles in the schedule to the Pharmacy Act upon two grounds. The first ground was that of the inconvenience to which the public would be exposed if any additional difficulty were imposed in the way of obtaining these extremely necessary articles, and the second was the dislocation of the trade which would follow if the sale of the articles were placed in the hands of what was virtually a great monopoly. On the other hand, the Privy Council had received numerous representations from coroners' juries to the effect that some additional precautions ought to be taken against the indiscriminate sale of these articles. It was not contended that this legislation, or any other legislation, could very largely diminish the number of deaths which annually took place in consequence of the use of these articles. Out of 579 deaths which occurred in 1895 and 1896 owing to the use of the articles enumerated in the schedule of the Bill only 111 were due to accidental causes, 468 being cases of suicide. Of the 111 cases 29 were cases of children under ten years of age. There lordships would agree that if better protection could be given against the accidental use of poisons, it ought to be given. The Bill also contained a certain amendment of the Pharmacy Act itself. That Act had not been altogether successful in preventing accidental deaths from the use of poisons included in the schedule of the Act, for of 786 deaths which took place in 1895 and 1896 from the use of the poisons included in the schedule of the Act exactly half were the result of accidental use of the poisons. The Bill provided that the Privy Council might independently of the Pharmaceutical Society make regulations in regard to the sale of the poisons.

HOUSE OF COMMONS.

TUESDAY, JUNE 21ST.

The Indian Medical Service.

Captain NORTON asked the Under Secretary of State for War whether in connexion with coming changes in the Army Medical Staff it was in contemplation to withdraw the officers of the Army Medical Staff from the medical charge of Her Majesty's troops serving in India.—Mr. BRODRICK replied: No, sir; I am not aware of any such intention.—Captain NORTON asked the Secretary of State for India when it was proposed to amend the Indian Medical Regulations so as to insure that officers of the Indian Medical Service who have no previous military experience, or at all events have not any lengthened period of experience in military duties, shall be made to pass a longer period for military medical training than two months in the office of a principal medical officer prior to being selected for promotion to administrative grade; whether any changes and, if so, what changes in this respect had been proposed or recommended; and when they would be promulgated.—Lord GEORGE HAMILTON replied: I have not received from the Indian Government any proposal to amend the Indian medical regulations in regard to the training of medical officers selected for promotion to the administrative grade.

Admissions to Military Hospitals.

Captain NORTON asked the Under Secretary of State for War if he could state the number of non-commissioned officers and men annually admitted into hospital, the number discharged from hospital but

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recommended for light duty, as well as the number of invalids discharged from the service, also the average number in hospital suffering from incurable disease.—Mr. BRODRICK replied that, including the army at home, in India, and at all other stations, the average number of admissions to hospitals during the last ten years was 198,735, but of these cases the great proportion would be unimportant in their character, and would not be regarded in an ordinary hospital as being of the in-patient class. Each admission of the same man was reckoned in the figures given as though it were a separate case: 2887 men had on the average been discharged as invalids. There were no records to show the number discharged from hospital but recommended for light duty or the number in hospital suffering from incurable disease.

THURSDAY, JUNE 23RD.

The Water Question.

At this sitting of the House there were four private Bills promoted by water companies in different parts of the country set down for consideration and in connexion with each of them Mr. Chaplin, President of the Local Government Board, had given notice of a series of new clauses which he proposed to have inserted. Mr. CHAPLIN introducing the subject, recalled to the House what had occurred at Maidstone, King's Lynn, Camborne, and other places, and said that the time had come when, in the opinion of the Local Government Board, some action was necessary. The Board addressed two circulars to all the different local authorities, the first inquiring by whom their water was supplied—whether by local authorities or by water companies—and the second impressing upon them the necessity of seeing that their supplies were pure and wholesome, and urging the responsibility which rested upon them in the matter. The Local Government Board did this early in the year and, in the meantime, various water Bills were delivered and received by them, in some of which there were included clauses to prevent pollution. These clauses, generally, were for the purpose of obtaining further powers of preventing pollution; but they differed in many ways and were open to objections and, although the Local Government Board agreed generally in the objects in view, they had to consider all the alternative proposals which could be made. But apart from the proposals in the Bills they had had complaints in certain cases of the quality of the water supplied by different local authorities and the views of the department with reference to the supply of pure and wholesome water and the means of preventing pollution were embodied in the reports which were sent to the committees to whom the Bills were referred. General clauses were drafted which should be applicable to all the Bills and these now appeared on the paper, though they had been modified to meet, as far as possible, the objections which were taken to them as originally drafted. In this, he had reason to believe, they had to some extent succeeded. As to the clauses themselves, he would point out that two conditions were essential to prevent as far as possible the recurrence of similar disasters to that which took place at Maidstone. The first was that the consumer must be protected against any shortcomings on the part of the water authorities and, secondly, these authorities themselves must be invested with sufficient powers to protect themselves from pollution of the sources from which they drew their supply. There was a third point which somehow or other appeared to have been overlooked in existing legislation. This was that the failure to fulfil existing obligations to provide a pure and wholesome supply of water was to be liable to a definite penalty. This was not the case now, but the matter was dealt with in one of the clauses he had put down on the notice paper. With regard to the other points endeavour was made to protect the consumer from any failure of duty by the water authority, first by empowering an officer authorised by the local authority to enter the premises of the water authority and take samples of the water supplied, and secondly by allowing consumers under certain conditions to take a similar course. Indiscriminate power of entry given to any consumer would entail needless annoyance on water authorities and therefore to the power of entry the following conditions were attached: that the consumer should obtain an order from a justice of the district granted only after reasonable notice given by the consumer to the water company of intention to make the application and upon showing reasonable cause for doing so; and, further, a notice of six hours would be required stating when and where samples were proposed to be taken. These conditions would secure the water authority against frivolous action on the part of a consumer. For the protection of water authorities against pollution of their sources of supply it was proposed to give to officers of the water authority or the medical officer of the local authority power to enter on lands or premises from which water was supplied and "to take and carry away samples of any water or of any matter, substance, or liquid which may appear likely to cause pollution to the water of the company or the sources of supply whereby such water may be fouled, and if the right of entry is obstructed or refused them a justice in the district after notice and reasonable cause may require admission by order." It had been objected that the clauses were unnecessary, and, if necessary, that they should be embodied in a public Bill; that the consumer should be eliminated from the clauses, and that the clauses should not in any case apply to corporations. Admitting the different position of corporations who supplied only their own constituents—these were but a small minority—the great majority of corporations supplied others, and he saw no valid reason for exempting them from the clauses. As to the elimination of the consumer it had apparently been forgotten that, in the Bill of last session dealing with the London water companies, the consumer was given power to take the water company before the new tribunal, and local authorities were empowered to assist the consumer with funds. It had been impossible, owing to pressure of business, to introduce these clauses in a public Bill, and with twenty-one water Bills before the House and in view of disasters such as he had mentioned, he was anxious to make some effort to improve the present position and this opportunity presented itself. This was a question directly affecting the public health, the need of reform could not be denied, there was nothing in the clauses to which reasonable objection could be taken, and he hoped the House would support him in the matter having regard to the useful and beneficial proposals which these clauses contained.—Mr. MELLOR, a former Chairman of Ways and Means, said that this was an attempt to alter the general law by means of a private Bill and as such it was bad legislation and should not be encouraged. He said this quite apart from the merits of the proposed clauses.—Mr. CORNWALLIS, the member for Maidstone, said that while his constituents were grateful to the President of the Local Government Board for what he proposed, they considered that his proposals did not go far enough and that the whole subject should be dealt with in a public Bill.—Sir JOSEPH PEASE also argued in favour of a public Bill.—Sir W. HART DYKE and Mr. BUXTON spoke in the same line.—After some further debate, in which several more members declared themselves in favour of a public Bill, Mr. CHAPLIN said he must yield to the evident sense of the House and withdraw his proposals.—The clauses were accordingly withdrawn.

The Dangers of Italian Ice-creams.

Sir HERBERT MAXWELL asked the President of the Local Government Board whether his attention had been drawn to recent deaths of children owing, as was alleged, to their having eaten so-called "ice-creams" sold by Italians in the streets; whether he was aware that several samples of these creams had been reported on by Dr. Klein, to the effect that all of them were swarming with colonies of the bacilli characteristic either of sewage matter or putrescence, or both; whether, in addition, attention had been drawn to the danger of mouth-to-mouth infection to children sucking ices successively out of the same glass; and whether the provisions of the Public Health Acts and the Food and Drugs Acts were inefficient to control or prohibit the sale of poisonous compounds such as these ices.—Mr. CHAPLIN replied: My attention has been drawn to this subject and I am aware of the fact that two children recently suffered from vomiting and diarrhœa after eating ice-cream, one of them dying, and that the coroner's jury attributed the death to the consumption of ice-creams. I understand that Dr. Klein in 1894 made some investigations for one of the London vestries of specimens of water and ice-cream submitted to him and that he discovered numerous organisms. As to the third question the practice referred to is obviously objectionable, but I have no evidence of actual mischief having resulted. I am advised that these ices would come within the provisions of the Public Health (London) Act, 1891, section 47, and also under the Public Health Acts Amendment Act, 1890, where that Act has been adopted; but I am making further inquiries into the circumstances of these lamentable occurrences, and if it should prove to me necessary I shall have to consider whether any, and what, alteration of the law may be desirable.—Sir HERBERT MAXWELL asked the right hon. gentleman whether these so-called ice-creams could be regarded as dairy products and the places where they were made inspected.—Mr. CHAPLIN replied that he should be sorry to regard these places in the nature of dairies, but there was no doubt from what he knew that the conditions under which the ices were prepared were discreditable and dangerous in the extreme.

The Preparation of Calf Lymph.

Mr. CHANNING asked the President of the Local Government Board whether the calves from which lymph would be taken for vaccination would be submitted to the tuberculin test and those calves excluded from use which were shown by the tuberculin test to be suffering from tuberculosis?—Mr. CHAPLIN replied: I have considered this matter and the proposal of the hon. member will be unnecessary, because I am making arrangements by which each calf from which lymph has been taken will be slaughtered and examined by a competent expert and no lymph will be issued from any calf until it has been ascertained and certified on post mortem that the animal is not only free from all signs of tuberculosis, but that it is also healthy in other respects.

Venereal Disease in Hong-Kong.

Mr. DUNCOMBE asked the Secretary of State for the Colonies whether he was aware that the Contagious Diseases Ordinances which were in force in Hong-Kong from 1858 to 1887 were repealed in opposition to the wish of the colony and that the repeal had been followed by a serious increase of disease, as alleged by the China Association in their memorial of Aug. 30th, 1897; and whether, in view of the recent augmentation of our forces in Eastern waters, he would reconsider the refusal to sanction the re-enactment of these ordinances conveyed in his letter to the association of Feb. 19th, 1898.—Mr. CHAMBERLAIN replied: I am aware of the facts referred to by the hon. Member, but I am not prepared to sanction the re-enactment of the Hong-Kong Contagious Diseases Ordinances. I am, however, conferring with the governor as to whether other measures can be adopted to check the spread of venereal diseases in the colony. The correspondence is not yet completed and when completed it will be laid before the House.

Post-mortem Examinations.

Mr. DAVITT asked the Home Secretary whether his attention had been directed to the proceedings of a medical gentleman in making a post-mortem examination on the body of one John Leonard, who died at Alfreton: was he aware that Leonard was attended by two qualified doctors before death and that a certificate of the usual kind, showing the cause of death, was given on May 9th; that on the same day, a few hours after the signing of this certificate, a medical practitioner in no way concerned in the case entered the room where the body lay and performed the operation referred to without any authority from the coroner or the friends of the deceased; whether such conduct was a violation of the law, and what steps did he propose to take to stop such unwarranted proceedings in future.—Sir M. WHITE RIDLEY replied: Yes, my attention was called to the case some weeks ago and I made inquiries. It appears that the examination was carried out by the son of the doctor, one of the two mentioned in the question who gave the certificate, and at his request, the medical man being of opinion that his judgment as to the cause of death required verification. The only friends of the deceased who were known at the time were the people with whom he lodged and they assented to the examination being made. I am advised that it is by no means clear that there has been any violation of the law.

Hospital Stoppages in the Army.

Mr. ARNOLD FORSTER asked the Under Secretary of State for War what would be the amount of the hospital stoppage in the case of soldiers who have accepted the new messing allowance when the medical officer has certified that the soldier is in hospital owing to illness or injury incurred by reason of the performance of his duty, and when the medical officer has not so certified; and by what amount the hospital stoppage in the cases referred to would exceed or be less than the stoppage in the case of soldiers who have not accepted the new messing allowance.—Mr. BRODRICK replied that the hospital stoppage

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was normally 7*d.* a day and was applicable equally to those who had and those who had not accepted the new messing allowance. In cases where the disability was certified to be the direct result of military service the general officer might remit one half of the stoppage and he might remit the whole if the disability was due to an injury received at drill or manœuvres.

FRIDAY, JUNE 24TH.

Adenoid Disease in the Hanwell Schools.

Dr. FARQUHARSON asked the President of the Local Government Board whether his attention had been called to a report by Dr. Willcocks of the Charing cross Hospital, by which it appears that out of 82 children varying in age from three to sixteen in the barrack schools of Hanwell belonging to the Central London District, it was found that 30 were suffering from adenoid growths of the throat at the back of the nose and 23 from enlargement of the tonsils, while in 9 cases there was considerable enlargement of the tonsils, and in several cases a discharge from the ear with perforation of the drum of the ear; and whether he would direct an inquiry to be made by the Local Government Board with a view to the best being done for each individual child.—Mr. CHAPLIN: I have already given directions for an inquiry with regard to the cases of the children referred to. I may, however, say that Dr. Willcocks in his report distinctly says that the school life and surroundings of the children cannot be held responsible in any sense for the adenoid disease, the disease being prevalent among children in all classes of society.

MONDAY, JUNE 27TH.

The Water Question.

Mr. MARKS asked the President of the Local Government Board whether he intended to introduce early next session a Bill to ensure the supply by water companies of pure and wholesome water and otherwise safeguard the interests of water consumers, and if so whether the Bill would apply to all existing companies.—Mr. CHAPLIN replied: I am not in a position to make any statement as to the legislation which the Government may propose next session or the scope and the extent of any Bill they may introduce.

Cost of Hospital Treatment in the Army.

Captain NORTON asked the Under Secretary of State for War whether he could state the *per capita* cost of each sick soldier in hospital.—Mr. BRODRICK replied that there was no general statement of cost made for all hospitals, but a short time back the cost was worked out at a typical hospital and it was found that the cost per patient over and above his cost when on duty was about 1*s.* 8*d.* a day for items concerning the man himself, or 2*s.* a day if the cost of the medical officers were added.

The Royal Army Medical Corps.

Mr. POWELL WILLIAMS, in reply to Dr. Farquharson, said that the warrant constituting the Royal Army Medical Corps had been approved by Her Majesty and would be published in the Army Orders for July.

Army Nursing Sisters.

Captain NORTON asked the Under Secretary of State for War whether, seeing that an army nursing sister could retire at the age of sixty after from thirty to thirty-five years' service with a pension of £38 10*s.* a year, whereas an army schoolmistress could retire at the age of fifty after twenty one years' service with a pension of £45 10*s.* a year, he would state why there should be such difference between the treatment of these two classes; and whether he would consider the advisability of improving the conditions of retirement of army nursing sisters.—Mr. BRODRICK said that the facts of the case were not as stated in the question. An army nursing sister would receive after thirty years' service £35 a year, and if reported as having given special devotion to her duties might receive a higher pension up to a maximum of £50. An army schoolmistress would receive after twenty-one years' service £31 19*s.* 2*d.*, and after thirty years' service £45 13*s.* a year. The Secretary of State saw no reason to make any change in these conditions.

Vaccination in Scotland.

Mr. DALZIEL asked the Lord Advocate whether the Secretary for Scotland had received a representation from the Abbotshall Parish Council urging that any action in regard to the prosecution of parents who had declined to have their children vaccinated should be delayed until after the election of a new council which would shortly take place; whether the Local Government Board had intimated that, unless the council prosecuted within ten days the members of the council would be summoned before the Court of Session; and whether he could accede to the request of the parish council.—The LORD ADVOCATE replied: In answer to the first portion of the hon. Member's question the Secretary for Scotland informs me that he received a letter from the chairman of the Abbotshall Parish Council a day or two ago, but the letter does not state that it is written by desire of the council. In reply to the second portion, the Local Government Board did make the intimation referred to in strict conformity with the terms of the statute which regulates their procedure in such cases. The Secretary for Scotland cannot, as at present advised, undertake to interfere with the ordinary course of the law in cases of a first prosecution, though he does not propose to make any change in the existing practice not to insist for cumulative prosecutions for the same offence.

THE VACCINATION BILL.

PROCEEDINGS IN THE GRAND COMMITTEE.

The Grand Committee of the House of Commons on Law met on June 21st, when the debate on Sir Walter Foster's amendment was resumed.

Mr THOMAS BAYLEY said that it was evident from the speech of the President of the Local Government Board that he would be rather in favour of a conscience clause like the one proposed, only he was afraid that a great many parents who had no conscientious scruples would take advantage of it. This fear was not justified, for it was only a person with conscientious objections who would take the trouble and bear the expense which the proposal in the amendment entailed. In this matter the Government were treating vaccination as if it were a mathematical medical certainty, while as a matter of fact it was nothing of the sort. No responsible medical man would say that it was a mathematical medical certainty. The army was vaccinated and revaccinated, and, in fact, the medical authorities had full sway over the men in the matter of vaccination; yet, according to the Royal Commission, no fewer than 3953 revaccinated soldiers suffered from small-pox during the last twenty years, and of these 391 died from the disease. That was a larger proportion than the persons who died from small-pox in the same time in the town of Leicester. In the town of Gloucester they had 190 persons who had been vaccinated during the outbreak suffering from small-pox. He agreed with Mr. Gladstone in saying that the State was a bad nurse and he insisted that the State had no right to say to a parent that his child should be treated in a particular way. If there was no conscience clause then there was nothing for it but imprisonment for conscientious objection. Such imprisonment, in his opinion, was a disgrace to our civilisation and a disgrace to us as a nation and for that reason he hoped the Government would accept some compromise. If they did not then agitation would increase and the feeling against vaccination would grow stronger and stronger.

Mr. MONK said that his view of the amendment was that it struck a heavy blow at vaccination generally, inasmuch as it left vaccination optional. He would remind members of the Committee that the Royal Commission said in their report, "Nor are we prepared to recommend that the State should cease to require vaccination and trust entirely to the voluntary adoption of the practice." With this recommendation before them the Local Government Board could not propose that vaccination should no longer be compulsory. For the life of him he could not see why, at any rate, the State should not adopt the suggestion of Sir William Priestley and insist that the child should be vaccinated before going to school and becoming a source of danger to its fellows. Soldiers were vaccinated, and so also were certain of the civil servants, and he saw no reason why the same rule should not apply to children going to school.

Mr. J. BRIGG, speaking in support of the amendment, gave an account of the experience of Keighley, where, he said, great good had been obtained from isolation.

Mr. J. W. WILSON said he intended to support the amendment and to do so in the interests of vaccination. He believed that the objection to vaccination was far more deeply rooted in the minds of the working classes of this country than the Government imagined, and that by the adoption of this amendment something would be done to overcome the objection.

Dr. CLARK also supported the amendment. He declared that the speech of the President of the Local Government Board showed that the department had learned nothing and had forgotten nothing in connexion with this subject. It had consented to the appointment of the Royal Commission and now it refused to accept one of its principal recommendations. Compulsory vaccination was established in this country on the theory that vaccination was a thorough and complete prophylactic, but at the present time no man of science in this country or even in Germany would stand by the theory, and he claimed that in the circumstances of the situation they should give a trial to a conscience clause. In our small-pox hospitals nine-tenths of the patients were people who had been vaccinated and revaccinated. He had no sympathy with the ignorance that underlay a great deal of the agitation against vaccination, but at the same time he could not shut his eyes to the fact that vaccination was only a partial prophylaxis, and that isolation was the thing to look to in this matter.

Mr. JOHNSON-FERGUSON submitted that in the interests of the dignity of the law they should have a conscience clause.

Mr. BRYN ROBERTS also spoke in support of the amendment.

Mr. T. W. RUSSELL, Parliamentary Secretary to the Local Government Board, said that all the material before the Board went to show that the men who really objected to vaccination were a small body while the careless and indifferent parents were to be counted by tens of thousands. In the case of Gloucester, which was practically unvaccinated when the outbreak occurred, no fewer than 27,000 persons rushed to be vaccinated when the small-pox got a grip of the town, while in the case of Cheltenham 7000 persons were vaccinated at the instance of the town council. Altogether he submitted that far too much had been made of the conscientious objector.

Mr. HELDER argued that this amendment meant the repeal of all the vaccination laws.

Sir WALTER FOSTER then replied to the debate. He said that the Committee must deal with things as they found them and recognise that there was a strong feeling in the country against vaccination; not only so, but they must pay regard to the recommendation of the Royal Commission. As to the position of Sir William Priestley he pointed out that there were four medical men on the Committee and Sir William Priestley was the only one of the four who objected to the amendment. To have only one penalty and then give the defaulter the opportunity of making a statutory declaration would not meet the case, because a single penalty would do all the mischief in the way of creating martyrs and stimulating agitation. As to the case of Barton Regis it was manifest that the conditions there were all in favour of an evasion of the law, while the system he proposed was full of safeguards to test the sincerity of the objector.

The Committee then divided, when 24 members voted for the amendment and 26 voted against it.

The amendment was consequently lost.

Mr. CHANNING moved to insert in the clause these words, viz:—"Notwithstanding any regulation of any lying-in or other hospital or infirmary, or other similar institution, the parent of any child born in any such institution shall not be compelled, under such regulation or otherwise, to cause or permit the said child to be vaccinated at any time earlier than the period after birth specified in this section."

Mr. CHAPLIN accepted the amendment and the words were inserted in the clause.

Mr. CHANNING moved to strike out the subsection providing for domiciliary visits on the ground that it involved compulsion on the parent and interference with his rights.

Sir WILLIAM PRIESTLEY said that the system of domiciliary visits had been recommended by the Royal Commission and had worked successfully and harmoniously in Scotland.

Sir CHARLES DALRYMPLE spoke in the same line.

Mr. CHAPLIN assured the Committee that the subsection was conceived in the interest of the parents and their convenience and that they would not suffer in an way from it. There was no compulsion, for the officer merely offered to vaccinate.

Sir WALTER FOSTER said that later he would move the insertion of

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words to provide that where the home of the parent was unsuitable for the operation the vaccination should be performed elsewhere.

Mr. LOGAN condemned the subsection as dictating to the parent and interfering with his liberty.

The amendment was rejected by 26 to 6 votes.

On the motion of Sir WALTER FOSTER the specified period in the subsection was reduced from 9 to 4 months after the birth of the child.

Thereafter the Committee adjourned.

The Grand Committee of the House of Commons on Law met on June 24th, with Sir HENRY CAMPBELL BANNERMAN in the chair, and resumed the consideration of the Vaccination Bill.

Discussion was continued upon Section 3 of the first clause, which sets forth that if a child is not vaccinated within four months (nine months was the period mentioned in the Bill as introduced) the public vaccinator of the district shall visit the home of the child and shall offer to vaccinate the child with glycerinated calf lymph.

Mr. CHANNING moved to insert a provision for at least twenty-four hours' notice of the proposed visit of the public vaccinator.

Mr. CHAPLIN agreed that notice should be given, but he thought it was a matter that might be left to the Local Government Board to deal with by way of regulation.

Sir WALTER FOSTER said that the regulations of the Board did not always give satisfaction, and without saying that the dissatisfaction was well- or ill-founded, he thought in the circumstances it would be a good thing to insert in the Bill itself a proviso with regard to notice.

On the understanding that Mr. Chaplin would deal with the matter during the report stage of the Bill the amendment was withdrawn.

Dr. CLARK moved to delete the words, "with glycerinated calf lymph." The hon. Member argued that scientific investigation had not placed it beyond all doubt that this particular kind of lymph was absolutely free from the danger of communicating such other diseases as tubercle and erysipelas. In their report the Royal Commission on Vaccination said that further scientific investigation was obviously necessary, and so far as he was aware no such investigation had taken place. In these circumstances he thought the Government were not justified in inserting in the statute that glycerinated calf-lymph shall be used in the vaccination. His own idea, he said, was that there should be some option in the matter.

Mr. CHAPLIN opposed the amendment. The mover of it, he said, was quite mistaken in thinking that there had been no further scientific investigation into this matter of the lymph since the Royal Commission made their report. On the contrary, investigation had been carried on and was even now being carried on and the results made it perfectly clear to his mind that there was no danger either of tubercle or erysipelas being communicated by glycerinated calf-lymph.

Mr. CHANNING, supporting the amendment, said that the Royal Commission had established beyond doubt that calf-lymph had been the cause of serious illness and even death and it had not yet been proved that the addition of glycerine prevented these results.

Sir WILLIAM PRIESTLEY gave an account to the Committee of certain experiments with glycerinated calf-lymph which he had himself seen, saying that they furnished remarkable evidence of the power of the solution of glycerine to destroy the organisms of disease which might go along with the calf lymph, without impairing the efficacy of the lymph itself. In his opinion this was the best form of lymph that could be offered to the public, though he quite admitted that in course of time science might improve upon it.

Sir WALTER FOSTER said that to take away these words as had been proposed would be to deprive the Bill of its only merit. Not only so, but he regretted that the question had been raised, for the discussion which had taken place would, he feared, do a great deal to disturb public confidence in vaccination and in glycerinated calf-lymph.

Mr. CARLILE said he had prepared an amendment in which it was proposed that if the parent signified a desire to have the vaccination performed with humanised lymph the public vaccinator might so perform it on receiving a written statement of the desire of the parent signed by the parent and witnessed by one witness. This, he said, represented a compromise which perhaps Dr. Clark might accept.

Dr. CLARK said he was willing to accept this suggestion, for his only object was to give parents an option in the matter.

Mr. J. W. WILSON pointed out that in course of time some other form of lymph might be discovered, and suggested that the provision in the Bill should be to the effect that the vaccination shall be performed with glycerinated lymph or any other form of lymph the Local Government Board might issue.

Mr. CHAPLIN expressed his readiness to accept this suggestion if it commended itself to the Committee generally, though he was afraid some Members had no very great confidence in the Local Government Board. As to there being an option, he might say that one existed already, because it was perfectly open to any parent to employ a private practitioner, and in that event any lymph could be used.

Mr. BAYLEY said that a great many people would feel horrified at the idea of their children being vaccinated with lymph taken from a dead animal and asked the President of the Local Government Board for an assurance on the subject.

Mr. CHAPLIN replied that in no circumstances whatever would lymph be taken from a dead animal or would any be imported from abroad. All the lymph which would be used by the public vaccinators would be produced, prepared, and issued by the Local Government Board and it would be ready in ample time for the passing of the Act.

The amendment moved by Dr. Clark was then withdrawn and words incorporating Mr. Wilson's suggestion were inserted in the section.

Mr. CHANNING moved to insert words providing that the lymph shall be "free from blood and extraneous micro-organisms or ptomaine alkaloids and certified to be absolutely free from the risk of causing any disease other than cow-pox, such certificate to be produced and a copy thereof to be supplied on demand of the parent."

This amendment was opposed by the Government and rejected by the Committee by 14 to 5 votes.

Mr. CHANNING, on behalf of Sir WALTER FOSTER, moved to add the two following sections to the clause—viz.: "The public vaccinator shall not vaccinate a child if, in his opinion, the condition of the house in which it resides is such that it cannot be safely vaccinated. A public vaccinator may give a certificate under Section 18 of the Vaccination Act of 1867 of postponement of vaccination on the ground that the house in which the child resides is in such a state that the child cannot be safely vaccinated, and shall forthwith give notice of any such certificate to the medical officer of health for the district."

This amendment was adopted by the Committee.

Mr. BRIGG moved to add these words: "But no child shall be vaccinated whose parents, or the person in charge of the child, shall at the time allege reasons which to the public vaccinator are considered by him sufficient to justify him in postponing or refusing vaccination."

Mr. CHAPLIN opposed the amendment as unnecessary, saying that under the present law there was power to postpone vaccination for sufficient reason, and the Committee rejected it by 18 to 8 votes.

The question was then put from the chair that Clause 1 as amended stand part of the Bill and upon this there was some general discussion with regard to the merits of the clause.

In the end the clause was adopted by 20 to 7 votes.

The Committee thereafter adjourned.

The Committee resumed consideration of the Bill on Tuesday June 28th, with Sir H. CAMPBELL-BANNERMAN in the chair. Clause 2, which runs as follows, was taken in hand: "An order under Section 31 of the Vaccination Act of 1867, directing that a child be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar order relating to the same child."

Mr. THOMAS BAYLEY moved that a vaccination order should not be made until the sanction of the Poor-law guardians had been obtained. Without this alteration, he contended, the Bill would take from the guardians the power they practically possessed of deciding whether vaccination should be compulsory or not.

Mr. LOGAN called upon every member who respected local self-government to vote for the amendment.

Mr. T. W. RUSSELL preferred the clause as it stood.

Mr. CHANNING invited the Government to reflect that according to the Royal Commission the Local Government Board had always been beaten in conflicts with the guardians over vaccination.

The Solicitor-General (Sir R. FINLAY) hoped the Committee would not accept the amendment, which was revolutionary, because it would nullify not merely the clause but an existing law. It might surprise some people to learn that under the law as it stood a vaccination officer could take proceedings without reference to the guardians. That was made clear in the case of Braddon *v.* Low. The Bill offered the substantial concession that there should be only one conviction under Clause 31 of the Act of 1867 and the Government could not go further.

Mr. BRIGG thought the Solicitor-General showed how little he understood the position of anti-vaccinationists. He stamped on their toes with his law, forgetting that in practice the guardians possessed some option with regard to compulsion. That option would be taken from them if the amendment were not adopted.

Mr. HAZELL hoped the amendment would not be pressed as it would raise discussions among guardians not hitherto agitated by the vaccination controversy.

Sir WALTER FOSTER thought Mr. Hazell mistaken. Anti-vaccinationists were summoned for the first time without their cases being discussed by the guardians. The working of the Bill would only agitate the latter when vaccination was enforced contrary to their wishes. That, however, was a serious contingency. It involved, moreover, an intolerable position for the vaccination officer, on one side of whom would be the Local Government Board, determined that he should vaccinate, and on the other the guardians perhaps bitterly hostile. It was true that the power to vaccinate against the wishes of the guardians had existed for many years, but it had been in abeyance and its resuscitation might provoke very unfortunate contests. He hoped, therefore, that the amendment would be adopted.

The amendment was rejected by 17 votes to 11.

Colonel LONG pointed out that although a person who objected to vaccination would escape a second prosecution under Section 31 of the Act of 1867 he would be liable under Clause 29. He therefore proposed to remove the latter liability, though he regarded anti-vaccinationists as the victims of mistaken views.

Mr. J. W. WILSON appealed to the Government to assent to the amendment for the sake of consistency, their own profession being one of desire to save non-vaccinationists from repeated penalties.

The SOLICITOR-GENERAL, opposing the amendment, assured the Committee that persons convicted under Section 31 were never prosecuted under Section 29.

The amendment was negatived by 16 votes to 14.

Sir WM. PRIESTLEY moved to insert the words "As hereinafter provided," his purpose being to propose when the occasion arises the following consequential provision: "No proceedings under Section 31 of the Act of 1867 shall be taken against any person who has been convicted under Clause 29 on account of the same child until it has reached the age of five years, and if at that time the person in charge of the child still objects he shall make a statutory declaration of his objection and thereupon no order shall be made or proceedings taken with reference to the non-vaccination of the same child." Sir William Priestley thought this might be regarded as a reasonable concession to the anti-vaccinationists. When a child reached the age of five years the objection of the parents to vaccination might have ceased, especially as it might be thought that a five-year old child would bear the operation more easily than an infant; moreover, during the first five years of life the danger from small-pox was incurred chiefly by the family, but afterwards it was one for the whole community, because children five years old were often ready to go to school. This fact was made clear at Gloucester. Children caught the small-pox at school, whence it spread like a great conflagration. He offered his amendment as a compromise, being so anxious to prevent small-pox that he would willingly conciliate opposition if he could.

Mr. CHAPLIN could not agree to the amendment, which would not, he believed, conciliate opposition.

The amendment was, however, carried by 17 votes to 12, the consequential provision being left for future consideration.

Mr. LOGAN moved that there should be only one prosecution in a family instead of one for each child.

Mr. CHAPLIN resisted the proposal as likely to increase the number of unvaccinated children.

Sir WALTER FOSTER did not believe that prosecutions promoted vaccination. Every man so treated made twenty converts against the law. He went about as a missionary. If he were imprisoned he was met on his release by a brass band and held up as a man suffering from what was called an infamous law. He (Sir Walter Foster) thought these agitations detestable. He did not want them to occur and he believed the amendment would help to stop them.

The amendment was rejected by 15 votes to 12, after which a proposal by Mr. BRIGG that the fine for resistance to vaccination should

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not exceed 5s. including costs (instead of 20s.) was negatived by 18 votes to 17. Clause 2 was then added to the Bill.

Clause 3 reads: "The Local Government Board shall have the same powers of making rules and regulations with respect to public vaccinators (whether under contracts made before or after the passing of this Act) as they have with respect to vaccination officers, and any rules or regulations made by the Board with respect to vaccination, whether under this or any other Act, shall while in force have effect as if enacted by this Act."

Mr. CHAPLIN, explaining that the form of the clause had given rise to ungrounded suspicion, proposed to change it to the following:—"The Local Government Board may make rules and regulations with respect to the duties and remuneration of public vaccinators, whether under contracts made before or after the passing of this Act."

A discussion as to whether this proposal should not be postponed till the next sitting lasted till the Committee rose.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALCOCK, R., M.B., Ch.B. Vict., has been appointed an Assistant Honorary Surgeon for the North Staffordshire Infirmary.

ANDERSON, F., M.B., M.S. Edin., has been appointed a Resident Medical Officer for the York Dispensary.

ASHTON, GEORGE, M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Medical Officer for the London County Asylum, Claybury.

BAIGENT, WILLIAM, M.D. Durh., B.S., has been appointed Medical Officer of Health by the Northallerton Urban District Council, vice C. Tweedy, resigned.

BOWMAN, C. CLARK, L.R.C.P. and S. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act for the County Court Districts of Alnwick and Rothbury.

BROWNE, H. W. L., L.R.C.P., F.R.C.S. Edin., M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for No. 85 County Court District, which includes Wolverhampton, West Bromwich, Dudley, and Walsall.

BURTON, C. G., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer for the North-Eastern Hospital for Children, Hackney-road, Shoreditch.

CANT, W. J., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County Court Circuit No. 17, which includes Lincoln, Gainsborough, Horncastle, and Market Rasen.

CLAYTON, W. K., M.D. Brux., L.R.C.P., L.R.C.S. Edin., of Wakefield, has been appointed a Medical Referee for County Court Circuit No. 14.

COSENS, WM. BURROUGH, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Dorset County Court Circuit No. 55 (the whole Circuit).

CUFF, ARCHIBALD, B.A., M.B., B.C. Cantab., F.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County Court District No. 13, comprising Sheffield and Rotherham.

EVANS, EVAN, M.B., D.P.H. Camb., F.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for County Court Circuit No. 31, Carmarthenshire, &c.

FOSTER, J. J., M.B., M.R.C.S., L.R.C.P., has been appointed House Surgeon for the North-Eastern Hospital for Children, Hackney-road, Shoreditch.

FREMLIN, H. S., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Senior Laboratory Assistant at the new Calf Lymph Establishment at the British Institution of Preventive Medicine, near Chelsea Bridge.

GROSVENOR, W. W., B.A. Camb., M.D. Dubl., has been appointed Physician for the Children's Hospital, Gloucester, vice W. M. Hope.

HAIR, ALLAN, M.R.C.S., L.R.C.P., has been appointed House Physician for the North-Eastern Hospital for Children, Hackney-road, Shoreditch.

HAMILTON, T., B.A., M.B., B.Ch., B.A.O. R.U.I., has been appointed a Medical Assessor for the Districts of Newport, Chepstow, Pontypool, and Usk, under the Workmen's Compensation Act.

HARDY, H. NELSON, L.R.C.P. Edin., F.R.C.S. Edin., M.R.C.S., of Dulwich-grove, S.E., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897.

HATTON, G. S., M.D. Durh., F.R.C.S. Edin., M.R.C.S., has been appointed a Senior Surgeon for the North Staffordshire Infirmary, vice J. Alcock.

HICKS, E. BULLER, JUN., L.R.C.S., L.R.C.P., L.F.P.S. Glasg., has been appointed Medical Officer for the Easingwold Union Workhouse, and District Medical Officer and Public Vaccinator.

HOPE, W. M., M.R.C.S., has been appointed Surgeon for the Children's Hospital, Gloucester, vice W. Washbourn.

HOWELL, J., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer to the Trimsaran Steel Works and Collieries, Kidwelly, South Wales.

HUNT, L. G., M.D. McGill Coll., Montreal, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Headquarters Homes of the Sheffield Union.

JACKSON, W. R., M.B., M.S. Edin., has been appointed Medical Officer for the Second and Fifth Sanitary Districts of the South Molton Union.

LAURIE, L. V., M.B., M.S. Edin., has been appointed Medical Officer for the Moretonhampstead Sanitary District of the Newton Abbot Union.

LEWARNE, F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Cricklade Sanitary District of the Cricklade and Wootton Bassett Union.

LITTLER, R. M., F.R.C.S., D.P.H. Vict., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County Court Circuit which embraces the Southport and Ormskirk County Court Districts.

LONGWORTH, STEPHEN, G., L.R.C.P., L.R.C.S. Irel., has been appointed Senior Assistant Medical Officer for the Suffolk County Asylum.

LUSH, WILLIAM GEORGE VAWDREY, M.D., F.R.C.P., F.R.C.S., of Weymouth, has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for County Court Circuit No. 55.

MACDONALD, J., M.B., C.M. Edin., has been appointed a Medical Manager for the Northern Infirmary, Inverness.

MAGRATH, H. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Third Sanitary District of the Wimborne and Cranborne Union.

MASON, F. W., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer for the York Dispensary.

MURPHY, JAMES, M.A., M.D., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Durham County Court Circuit No. 2.

PEARSON, R. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Wigan Rural District Council.

PHILLIPS, G. A., M.R.C.S., L.S.A., of Walsall, has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for County Court Circuit No. 25.

SHAW, W. H. C., M.B., C.M. Camb., has been appointed Medical Officer for the Fourth Sanitary District of the Bedminster Union.

SOPER, R. W., M.R.C.S., has been re-appointed Medical Officer by the Dartmouth and Totnes Port Sanitary Authority.

STANSFIELD, T. E. KNOWLES, M.B., C.M. Edin., has been appointed Medical Superintendent for the London County Asylum, The Heath, Bexley, Kent.

STEPHENSON, G. S., M.D. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County Court District of North Lincolnshire, which includes Grimsby, Barton-on-Humber, Brigg, Caistor, and Louth.

SYDENHAM, G. F., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the South Molton Union.

THOMPSON, C. J., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Calborne Sanitary District of the Isle of Wight Union.

THOMSON, H. CAMPBELL, M.D., M.R.C.P. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for County Court Circuit No. 43.

UPPLEBY, J. G., L.R.C.P. and S. Edin., has been appointed District Surgeon for Port Elizabeth, South Africa.

VACHELL, CHARLES TANFIELD, M.D. Lond., M.R.C.S., L.R.C.P. Lond., L.S.A., J.P., has been appointed a Medical Assessor to the Cardiff District under the Workmen's Compensation Act.

WALL, C. P. B., M.B., Ch.B. Edin., has been appointed a House Surgeon for the Northern Infirmary, Inverness, vice J. G. Sibbald, resigned.

WHITEFORD, C. HAMILTON, M.R.C.S., L.R.C.P., has been appointed Medical Referee under the Workmen's Compensation Act for the County Court District No. 58 (Plymouth and Stonehouse).

WILLIAMS, D. J., F.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act in the Llanelly County Court District.

WILLIAMS, W. E., F.R.C.S. Edin., L.S.A., has been appointed a Medical Assessor under the Workmen's Compensation Act for Ross, Monmouth, Abergavenny, Crickhowell, and West Monmouthshire.

WOODS, H. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of Lymington Union.

WORTH, C. A., L.R.C.P. Lond., M.R.C.S., has been appointed a House Surgeon for the Loughborough General Hospital, vice A. E. Palmer, resigned.

WRIGHT, C. J., PROFESSOR, M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Leeds District of County Court Circuit No. 14.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Senior House Surgeon. Salary £80, with board and washing.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, board and residence.

CARLISLE DISPENSARY.—House Surgeon. Salary £130 per annum, with apartments (not board). Applications to Hon. Secretary, Rivershill, Stanwise, Carlisle.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W. — Clinical Assistant.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Resident Dispenser and Assistant to the House Surgeon. Board, lodging, and washing provided, and an honorarium at the rate of 20 guineas given conditionally.

LAGOS GOVERNMENT RAILWAY.—Assistant Medical Officer on the Railway under construction by the Government of Lagos, West Africa. Salary £30 per month. First-class passage out and home. Full salary from date of arrival; half-pay during voyages. Quarters or allowance in lieu thereof. Applications to the Crown Agents for the Colonies, Downing-street, London, S.W.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

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OWENS COLLEGE, MANCHESTER.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150.

PARISH OF NEWARBEY, DUMFRIES.—Medical Officer and Public Vaccinator. Salary £50 per annum to to provide medicine and surgical appliances to paupor patients gratis. Applications to Captain Stewart of Shambellic.

RIPON DISPENSARY AND COTTAGE HOSPITAL, Ripon.—Resident House Surgeon and Dispenser, unmarried. Salary £70 first year, and advancement after, with board and lodging.

ROYAL FREE HOSPITAL, Gray's-inn-road, London.—House Physician for six months. Board, &c., provided. No salary.

SHAFTESBURY HOUSE PRIVATE ASYLUM, Formby, near Liverpool.—Junior Medical Officer. Salary £50 per annum, with board, lodging, and washing. Applications to S. A. Gill, M.D., Formby, Lancashire.

STROUD GENERAL HOSPITAL. — House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SUFFOLK COUNTY ASYLUM, Melton, Suffolk.—Second Assistant Medical Officer for three years, unmarried. Salary £100 a year, with board, lodging, washing, and attendance.

SUFFOLK GENERAL HOSPITAL, Bury St. Edmund's.—Honorary Assistant Medical Officer.

SURREY COUNTY LUNATIC ASYLUM, Brookwood, near Woking.—Temporary Assistant Medical Officer for about four months. Salary at the rate of £100 per year, with apartments, and all found.

UNIVERSITY OF GLASGOW.—Lecturer on Materia Medica and Therapeutics. Salary £150 per annum (being £100 for the Winter Session and £50 for the Summer Session).

UNIVERSITY OF ST. ANDREWS, St. Andrews.—Professors of Materia Medica and Pathology to conduct classes at Dundee.

VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street, Hull.—Lady House Surgeon. Salary £50 per annum, with board and laundry.

VICTORIA UNIVERSITY (THE YORKSHIRE COLLEGE, LEEDS): DEPARTMENT OF MEDICINE.—Professor of Materia Medica, Pharmacology, and Therapeutics. The emoluments are from fees alone.

Births, Marriages, and Deaths.

BIRTHS.

CULMER.—On June 19th, at Headington, Oxford, the wife of J. W. Culmer, M.R.C.S., L.R.C.P., of a son.

GREENWOOD.—On June 27th, at "Riseley," Bush-hill-park, Enfield, the wife of George Greenwood, M.R.C.S., L.R.C.P., of a daughter.

HILLS.—On June 26th, at Cathcart-road, South Kensington, the wife of William C. D. Hills, M.R.C.S., L.R.C.P., of a son.

SAUNDERS.—On June 16th, at Deddington, Oxon., the wife of Henry Saunders, B.A. Cantab., M.R.C.S., of a daughter.

SMYTH.—On June 25th, at The Beeches, Shenley, Herts, the wife of R. V. Beatty Smyth, M.A., M.D., of a daughter.

MARRIAGES.

HORSBURGH—CRAIGIE.—At St. George's, Edinburgh, on June 28th, by the Rev. Archibald Scott, D.D., minister of the parish, James Henry Horsburgh, M.B., B.Sc., Musselburgh, eldest son of the Rev. Andrew Horsburgh, M.A., Bengal, Chaplain R.L., to Isabella Riddle Glover, eldest daughter of James Glover Denham, 27, Castle-terrace, Edinburgh, and widow of James Craigie, M.D., B.Sc.

KENT—PARSONS.—On June 27th, at St. James's, Kidbrook, Sydney Kent, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., son of the late William Kent, of Johndaryan, Queensland, to Katharine Louisa Maud Parsons, fifth daughter of the late Perceval M. Parsons, M.I.C.E., of Melbourne House, Blackheath, Kent.

LOUGH—FROST.—On June 21st, at the Church of St. Cuthbert, Thetford, George J. Lough, L.R.C.P.I., of Hastings, to Florence, only daughter of Edward Frost, Esq., of Thetford, Norfolk.

MACLEOD—DAVIES.—On June 22nd, at St. Nicholas Church, Leicester, by the Rev. Edward Atkins, B.Sc., and the Rev. A. P. Dawson, M.A., Alexander Lewis Macleod, M.A., M.B., C.M., to Fanny Elizabeth, daughter of Edward Davies, Esq., R.I., of Leicester. At home, 58, Hinckley-road, Leicester, Aug. 10th and 11th.

MITCHELL—SUTTER.—On June 23rd, at Holy Trinity Church, South Hetton, Thomas Ellis Mitchell, B.A., M.B., B.C. Cantab., Oldhill, Staffs., to Mary Helena, third daughter of George Skelton Sutter, Esq., of Port Elizabeth, South Africa.

DEATHS.

CASE.—On June 15th, at Folkestone, Henry Case, M.R.C.S., L.S.A., late Medical Superintendent, Metropolitan District Asylum, Leavesden, and formerly Lecturer on Psychological Medicine, Middlesex Hospital.

DORAN.—On Sunday, June 26th, at 9, Granville-place, W., Emma Mary Harrington, widow of Dr. John Doran, F.S.A., in her 88th year.

NICOL.—On June 22nd, at 12A, Clarendon-road, Leeds, James Main Nicol, M.R.C.S., L.R.C.P., L.D.S., aged 27 years.

RUSSELL.—On June 21st, at Bareilly, Bengal, Archibald William Forbes Russell, M.A., M.B., I.M.S., third son of Alexander Elliott Russell, late B.C.S., aged 29 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 30th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 24	29·70	S.W.	0·15	86	62	55	56	57	Raining
" 25	29·47	S.W.	0·10	113	66	54	55	58	Cloudy
" 26	29·67	S.W.	0·07	105	63	50	53	58	Cloudy
" 27	29·74	N.	0·08	105	64	53	55	58	Cloudy
" 28	30·00	N.	...	102	69	52	52	57	Cloudy
" 29	30·01	W.	0·04	124	77	55	56	61	Fine
" 30	30·06	S.W.	...	82	66	59	59	61	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (9th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. Blacker, Dr. Pembrey (introduced by Dr. A. Routh), Dr Spencer, Dr. Foulerton (introduced by Mr. Bland Sutton), Dr. Dysart McCaw, and Dr. Wise. Papers:—Dr. A. W. W. Lea: The Sagittal Fontanelle in the Heads of Infants at Birth.—Dr. G. Roper: Note on some Difficult Cases of Fronto-anterior Positions of the Fœtal Head.

FRIDAY (8th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-sq., W.).—8 P.M. Card Specimens. 8.30 P.M. Papers: Mr. R. Cross: Subconjunctival Blood-letting for Hæmorrhagic Retinitis.—Dr. A. Turner: Some Points bearing on the Conjugate Movements of the Eyes.—Mr. S. Snell: (1) Large Cyst of the Conjunctiva; (2) Chancre of the Lacrymal Sac. At the close of the Ordinary Meeting the Annual Meeting for the Election of Officers of the Society will be held.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (4th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Wyatt Wingrave: Morbid Growths of the Nasal Septum.

TUESDAY (5th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Mr. Ballance: Lecture.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4.30 P.M. Dr. T. D. Savill: On Methods of Electrical Diagnosis and Treatment in Diseases of the Nervous System.

WEDNESDAY (6th).—HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. S. Martin: Causes of Cardiac Hypertrophy.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. J. B. Ball: Throat Cases.

THURSDAY (7th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Mastoid Operations.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Abercrombie: Demonstration of Medical Cases. (Post-graduate Class.)

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

GYNÆCOLOGISTS IN FICTION.

THE June number of *L'Écho du Bien*, a journal of philanthropic and charitable work, devotes some space to a notice of a recent French novel, "Les Florifères," the authoress of which (for it is said to be written by "un bas bleu") has allowed her imagination to run riot in a morbidly fantastic way. One of the personages depicted in these pages is a medical man who is described as "ovariotomiste spoliateur d'ovaires de mondaines détraquées par la folie de la jouissance sans complication fâcheuse, type nouveau qui tend à se répandre dans une inquiétante proportion. Elles sont telles que certains arbustes créés par la culture moderne, aux admirables fleurs qui ne rapportent pas de fruits. Au milieu de ces mondaines florifères apparaît la silhouette du docteur Trajan, opérateur adoré de ses clientes, qui vit de leurs faiblesses, les exploite et les opère sans pitié; quant à lui il épousera une belle fille, saine et vigoureuse, de la province, pas florifère du tout et très fructifère, qui lui donnera de beaux enfants. C'est le type du gynécologiste mondain qu'on montre entre le diseur de monologues et la princesse à la mode. On aura son castreur comme on a son coiffeur et son pédicure, et le docteur Trajan mettra bientôt sur ses cartes de visites, en sous-titre, *opérateur de la Princesse X. et de la cantatrice Y.* La mode est à la stérilité, aux hanches amincies, aux tailles d'éphèbes souples et insexuées. On se fait débarrasser de ses ovaires, en une certaine classe, comme on se fait percer les oreilles."

"ANNUAL ERYSIPELAS."

To the Editors of THE LANCET.

SIRS,—Having had a similar experience to that mentioned by "M.B. and C.M." in THE LANCET of June 25th it may interest him to know the explanation of these occurrences which presented itself to me and the inferences I drew as to the most likely method of putting an end to the series—viz., that an attack of erysipelas in these patients only gives immunity for a period of something less than twelve months; that their dwellings and wearing apparel become thoroughly infected and that they are reinfected by them; and that the reinfection takes place either during the "clearing down" which occurs next after they cease to be immune or on their resuming the wear of those garments which they were using when the previous attack supervened. In the one case the attacks might probably occur at or about the "spring cleaning"; in the other at the time when summer garments are donned. At both of these epochs there is, I have reason to believe, ample opportunity of meeting with the predisposing chill. The inferences as to prevention are obvious—change or thorough disinfection of the residence, destruction of all infected garments which cannot be efficiently sterilised, and sterilisation of those which can.

I am, Sirs, yours faithfully,

Blackpool, June 27th, 1898. LEONARD MOLLOY, M.A., M.D. Dub.

JUVENILE TRAIN-WRECKERS.

ON June 19th two small boys, aged respectively nine and ten years, were charged at the North London police-court with trying to upset a train by placing a piece of iron and a piece of wood in the catch points. Evidence was given to the effect that in some places the wall which protected the line was so low that children could easily get over. Mr. D'Eyncourt ordered both the little urchins to be birched. The spread of education may be a very noble thing, but it does not seem to have much effect in softening the manners of the rising generation or in preventing them from being savage. The mere attempt to upset a train is such a very serious offence that it should be correspondingly severely punished, and in the case of an adult, whether it succeeds or not, it should certainly rank as manslaughter, even if it should not be considered a capital offence. But the "soaring human boy" must be appealed to through his sense of pain and there must be no sparing of the rod.

THE PAYMENT OF LOCUM TENENTS BY PUBLIC BODIES.

To the Editors of THE LANCET.

SIRS,—I have lately received notice from three public lunatic asylums of vacancies for locum tenents, each offering two guineas a week with board and lodging. It seems a curious contrast that a struggling general practitioner has to pay a locum not only three guineas a week, but also fares and frequently agents' fees, and the contrast does not reflect credit on the responsible asylum authorities. I hope that others will follow my example and refuse to accept such ridiculously small remuneration for what is to most men trying work. If smaller fees than usual are taken by the locum tenents let them favour the poor doctor and not the public bodies who pay their permanent medical officers highly. I am, Sirs, yours faithfully,

June 21st, 1898. LOCUM.

ROBINSON'S MENE TOWELS FOR LADIES.

WE have received samples of various sizes and qualities of towels for ladies' use made by Messrs. Robinson and Sons of Fann-street, E.C., and Chesterfield. They consist for the most part of absorbent cellulose wadding enclosed in gauze, with a layer of absorbent cotton in front and a thickness of waterproof wool on the back, the whole being sterilised by treatment with 1 in 2000 sublimate solution. Cellulose wadding has a high absorptive and diffusive power for liquids and even when thoroughly wetted is retained in shape by the other fibrous materials associated with it. No. 1 towel (the smallest) is about 9 in. long and is suitable for all ordinary cases; it is sold at the low price of 6*d.* per dozen. No. 2 and No. 3 are somewhat thicker and about 10 in. long; they are especially useful when travelling or when changing is inconvenient The prices of No. 2 and No. 3 are 1*s.* and 1*s.* 6*d.* per dozen respectively.

HUNTER'S PATENT AUTOMATIC GRIP AND SPLINT.

THIS instrument is used for the secure fastening of obstetric binders or wide bandages in general, allowing an easily controlled support or compression without the use of pins, straps, hooks, buttons, &c. It consists of a gently curved metal plate about 11 in. long and 1½ in. wide, pierced with a slot about 10 in. long, having a row of 26 sharp points projecting from each edge. The two ends of the bandage, after being drawn through the central slot and tightened as required

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by pulling in opposite directions, are fixed by being pressed against the sharp points, which easily penetrate the material, and are then covered with a thin plate of flexible steel, so that there is no possibility of accidental contact with them. This fastener will obviously act somewhat as a splint in preventing the uncomfortable wrinkling up to which wide bandages are so liable. For obstetric purposes an ordinary strip of thin bleached cotton swansdown calico, the width of the slot in the grip, can be used for the binder over an ordinary towel folded to form the pad. It may also be employed for keeping large poultices, &c., comfortably in position. The grips can be disinfected by boiling when required. They may be obtained from any dealer in surgical instruments or from the patentee and manufacturer, B. Hunter, 22, Lancashire-road, Bishopston, Bristol. The price is 15s. 6d.

"THE ARTHUR JEFFARES BARLOW FUND."

To the Editors of THE LANCET.

SIRS,—Will you please acknowledge in THE LANCET the following donations to the Barlow Fund:—Per Dr. J. W. Moore—"A Sympathiser" (Putney), £2 2s. T. C. D., £1 1s.

I am, Sirs, yours faithfully,

June 27th, 1898. R. H. CAPPER.

THE INTERPRETATION OF AN AGREEMENT.

To the Editors of THE LANCET.

SIRS,—Do you or any of your readers who may have had a similar experience consider one has any redress under the following circumstances? A purchases from B a cash practice, with a verbal undertaking from B that he has an agreement with his assistant (who has carried on the practice entirely for some years) not to practise in the neighbourhood. For certain reasons the assistant was not retained by A, and instead of seeking other employment he takes a room on the same premises, and after an interval of three months opens a surgery a few doors away and solicits the patients, with the result that the practice purchased by A is practically valueless. On applying to the agent for the agreement A finds that the assistant was simply bound down for three months not to practise within a quarter of a mile. Is this a reasonable agreement and likely to stand if contested? Any comment on the above will be gratefully received by

Yours faithfully,

June 28th, 1898. EMPTOR.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

To the Editors of THE LANCET.

SIRS,—I beg to enclose you a copy of the *Llanelly Mercury* of June 23rd announcing the appointment of a local medical man as a medical referee under the Compensation Act of 1897. As a junior member of the profession, living in the same town, I may, perhaps, be allowed to observe that the method of announcing the fact, coupled with the insertion of the letter from the Home Secretary, scarcely reflects dignity upon the medical man in question, nor is it calculated to inspire the rest of his professional brethren with the necessary respect due to his office. I should hardly think either that the Home Secretary intended his letter for publication in local papers. I should be glad to have an expression of your opinion on this subject.

I am, Sirs, yours faithfully,

June 28th. NEMO.

*** We agree that the method in which the appointment has been made public by the *Llanelly Mercury* is unfortunate, but we do not see any evidence that the medical man desired the letter from the Home Office to be printed, and it seems impossible for lay papers to understand the forms of medical etiquette.—ED. L.

THE LATE DR. JAMES McGREGOR LAING.

WE have received from Dr. J. Pickett and Dr. Reginald Hartley a list of subscriptions which have been made to a fund for the widow of the late Dr. Laing. We shall publish the names next week.

THE VALIDITY OF A DEATH CERTIFICATE.

To the Editors of THE LANCET.

SIRS,—A few days ago I certified as the cause of death in a child eight months old as follows: "Primary: meningitis. Secondary: convulsions." On the presentation of the certificate at the Registrar's office the mother was questioned as to the child being insured and on replying in the affirmative was informed that no insurance office would pay on the certificate without an inquest and conducted her to the coroner's court, where she was interrogated and an inquest ordered. I should be obliged if you will inform me—(1) was not this certificate ample to satisfy the Registrar-General? (2) is it not usual to call a medical man to give evidence in such a case (I had no doubt at all as to the case and no suspicion that all was not right)? and (3) has the coroner a right to order an inquest over a medical man's head in this manner?

I am, Sirs, yours faithfully,

June 24th, 1898. PERPLEXED.

*** 1. No doubt the certificate would satisfy the Registrar-General. 2. We think the medical man should be called to give evidence. 3. In our opinion the coroner was quite within his rights, and we go further and say that he exercised a wise discretion. The insurance of infant life should be fenced around with every possible safeguard.—ED. L.

THE GARBAGE-MONGER.

ON June 23rd Herbert Clarkson was sentenced to three months' imprisonment, without the option of a fine, for exposing unsound meat for sale. He had previously been convicted of a similar offence. This is a righteous judgment. Clarkson's offence is absolutely unpardonable and we should like to see the law amended so as to make the crime of exposing unsound meat or the intention of selling it for food on the same level as attempted murder. People who try to foist unsound meat as food are really poisoners and should be treated as such.

"HOLY WATER AND INFECTION."

To the Editors of THE LANCET.

SIRS,—With regard to your note on this subject in THE LANCET of June 18th it may interest some of your readers to know that, according to the *Semaine Médicale* of April 13th, 1898, Professor Vincenzi has found quite a collection of microbes in the holy water of one of the most frequented churches of Sassari (Sardinia). It contained, among others, Löffler's bacillus. The identity of this microbe was proved by cultures and by inoculations and it is important to note that at that time four cases of diphtheria (one of them fatal) had been observed at Sassari. I myself have seen a tramp washing his face in the holy water of one of the fashionable churches of the West-end.

I am, Sirs, yours faithfully,

June 22nd, 1898. J. KEBER.

Questor.—The annual report of the British Medical Temperance Association gives the following information as to the numbers of medical men who are total abstainers and are connected with the Association:—

	Members.	Student Associates.	Associates.
England and Wales	294	116	2
Scotland	63	255	0
Ireland (Central)	37	41	0
,, (Northern)	46	12	1
Scotland	26	0	0
Total ... ...'	466	424	3

W. R. S. would have been justified, in our opinion, in refusing to answer the clergyman's questions, and we should like to hope that in doing so he would have received the general support of the house committee. This opinion is based on our correspondent's account, but it is difficult to conceive circumstances which could modify it. We do not print this letter, as the case might be recognised and a worse violation of professional confidence so be brought about.

Dr. J. G. Bailey.—A portable acetylene lamp would, we think, answer the purpose much better. There are several makers of acetylene apparatus in Blackburn, Manchester, and Liverpool.

Mr. Cholmondeley Webb will find the information which he requires in Mr. A. H. Tubby's work, "Deformities: A Treatise on Orthopædic Surgery."

Sigma.—British American Ball Nozzle Co., 3, Farringdon-avenue, E.C.

Mr. Charles Thomas is recommended to consult his medical man.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Western Gazette, Isle of Ely Advertiser, Southern Times, Scotsman, Eastern Daily Press, Sheffield Telegraph, North British Daily Mail, Newport Advertiser, Times of India, Pioneer Mail, Boston Independent, Leytonstone Independent, Accrington Observer, Architect, Liverpool Daily Post, Agricultural Gazette, Builder, South Wales Daily News, Croydon Guardian, Western Morning News, Devon Gazette, Yorkshire Post, Alnwick County Gazette, Walsall Observer, Bristol Mercury, Salisbury Journal, Newcastle Chronicle, Leeds Mercury, Elgin Courant, Cambridge Independent Press, Worcester Echo, Citizen, Birmingham Gazette, Glasgow Herald, Morning Leader, Yarmouth Mercury, Jewish Chronicle, Herald of Wales, Manchester Guardian, Lancaster Guardian, Yarmouth Advertiser, Leicester Post, Sussex Daily News, Hampshire Advertiser, Somerset Journal, Kidderminster Shuttle, Southern Times, Chester Chronicle, Lynn Advertiser, Portsmouth Times, Bournemouth Directory, Sanitary Record, St. Paul's, Ceylon Observer, Coventry Herald, Warrington Observer, St. Mary's Hospital Gazette, St. Bartholomew's Hospital Journal, Local Government Chronicle, Mining Journal, Hertfordshire Mercury, City Press, Reading Mercury, Local Government Journal, Weekly Free Press and Aberdeen Herald, Surrey Advertiser, Cambrian News, Medical Gazette, Llanelly Mercury, Derbyshire Times, Monmouth Observer, Lancashire Daily Express, Evening Chronicle (Newcastle-on-Tyne), West Middlesex Herald, Bacup Times, Aston Times, Lydney Observer, Stowmarket Courier, &c., &c.**

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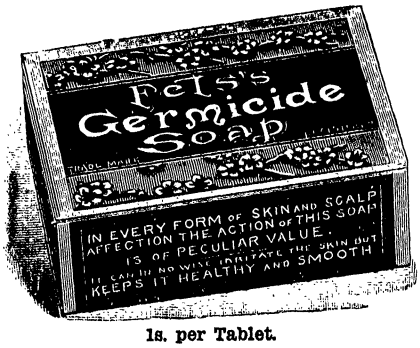
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The Croonian Lectures

ON

THE CHEMICAL PRODUCTS OF PATHOGENIC BACTERIA CONSIDERED WITH SPECIAL REFERENCE TO ENTERIC FEVER.

Delivered before the Royal College of Physicians of London on June 14th, 16th, 21st, and 23rd, 1898,

BY SIDNEY MARTIN, M.D. LOND., F.R.S.,

FELLOW OF THE COLLEGE; PROFESSOR OF PATHOLOGY, UNIVERSITY COLLEGE; AND ASSISTANT PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND TO THE HOSPITAL FOR CONSUMPTION, BROMPTON.

LECTURE IV.[1]

Delivered on June 23rd.

THE ACTION OF THE POISONS OF THE TYPHOID BACILLUS, GÄRTNER'S BACILLUS, AND THE BACILLUS COLI COMPARED WITH THAT OF ALLIED POISONS.

MR. PRESIDENT AND GENTLEMEN,—There are two poisons which are not the products of bacterial action, being found in the seeds of plants, and which are of great interest in connexion with the toxic products of the three bacilli which have been examined. These poisons are ricin, obtained from the seeds of the castor-oil plant, and abrin, obtained from the seeds of the Abrus precatorius. The latter is used by the natives in India in the poisoning of cattle and its symptoms are those of a general toxæmia. Both these poisons produce conjunctivitis when applied to the eye and injected under the skin they cause diarrhœa with great general prostration. In an investigation I conducted some years ago I found that the two proteids present in the seeds of the abrus—viz., the globulin and the albumose—were both poisonous and that they produced similar symptoms. In one experiment a pigeon, weighing 216 grammes, received 0·2 gramme of abrus globulin, and death followed in six hours and was preceded by an increase in the number of respirations and a great lowering of the temperature, the total fall being 23·8° F. or 12·6° C. In another experiment a pigeon weighing 335 grammes received 0·02 gramme of the abrus albumose. The symptoms began in 4½ hours and the animal died in about 6 hours. There was a more or less continuous fall of temperature, and, unlike the first animal, the number of respirations per minute fell instead of rose. In the rabbit abrin produces, like the poison of the typhoid bacillus, a rapid fall of temperature and death. The fact that the abrus proteids produce diarrhœa, which is most commonly bloody, is remarkable. This is associated with the signs of a hæmorrhagic gastro-enteritis, there being great inflammation of the mucous membrane of the intestine and especially of the adenoid patches. The abrus poisons are very sensitive to heat, the action of the globulin being completely destroyed by the momentary raising of the temperature of its solution to 75° or 80° C. and that of the albumose at a rather higher temperature—viz., 85° C. What property it is of the proteid which has this toxic action—whether it resides in the proteid itself or whether there is some toxic body, possibly of a ferment nature, attached to the proteids—it is impossible to say; but the similarity of their action to that of the toxic products obtained from the closely allied micro-organisms—the typhoid bacillus, the Gärtner's bacillus, and the bacillus coli—is remarkable. No doubt in all these cases the effect on the intestine occurs during the excretion of the poison by the mucous membrane in whatever way it may be introduced into the body. The diphtheria poison sometimes produces diarrhœa when given in sufficiently large doses—a result which I never obtained from the injection of even large doses of the albumoses of anthrax or of ulcerative endocarditis—and this is also not an effect which is noticed as a result of the action of the tetanus poison.

With regard to the diphtheria poison the effect of different doses on the temperature and on the body condition is seen in the following experiment. A mixture of the albumoses and toxin was used and in the first experiment 2 c.c. were injected into the marginal vein. This was followed by some rise of temperature on the same day and on the next day weakness in the hind legs and a rapid fall of temperature to about 96° F. occurred, ending in the death of the animal. In another experiment when 5 c.c. of the same poison was given there was a great rise of temperature; the animal died during the night. Neither animal showed any diarrhœa or intestinal symptoms and the general effects were in marked contrast to the effects of the poisons in the three bacilli investigated.

The effect of the diphtheria poison in reducing the temperature of the body is also shown in another experiment in which a mixture of the albumose and toxin, which had been dried, was given. Altogether 0·2 gramme of this powder was injected into the marginal vein. After the first injection there was scarcely any rise of the body temperature, but the next morning the temperature had fallen 3° and a second injection of a small dose still further increased the depression of temperature, the animal dying in 24 hours. The fact, therefore, of a bacterial poison reducing the body temperature is not limited to the three bacilli which we have investigated, although it is a prominent feature of the action of their products. The diphtheria poison is readily affected by heat; thus in one experiment it was seen that after heating to about 60° C. for one hour the injection of 5 c.c. solution of toxin produced not a rise but a fall of temperature, and this was followed by a slight reactionary rise to the normal, after which the animal recovered and showed no symptoms. In another experiment, however, 5 c.c. of diphtheria toxin, heated for ten minutes at 60° C., produced a continuous but gradual fall of temperature up to the time of death on the fifth day of the experiment. Comparing this with a similar experiment in which the same dose—unheated—was given to another animal of the same weight, it was seen that the temperature rose somewhat after the injection and the animal died on the following night. The heat had therefore weakened the action of the toxin and this weakened toxin, instead of producing a rise of temperature, produced a continuous fall, an interesting result when compared with the effects of the products of the three bacilli. It may be concluded that a small dose of the toxin or a weakened toxin may produce a fall of temperature and no other change and that a larger dose of the toxin may produce a rise of temperature followed by a fall which precedes death or it may in some cases be recovered from; and that a large dose of poison may also produce a sudden and rapid fall of the body temperature, ending fatally in a few hours.

The effect of the diphtheria poison in producing a palsy dependent on degeneration of the peripheral nerves and that of the tetanus poison in producing convulsions is in marked contrast to that of the products obtained from the three bacilli, inasmuch as there was no evidence of palsy in any of the animals, even if they lived three weeks or longer, and no evidence of any convulsions. The effect of the abrus poisons on the respirations is well marked, producing in some cases, as has been shown, a rise in the number of respirations, and sometimes a fall, though in both cases the temperature persistently falls. The diphtheria toxin also has a profound effect on the respiratory system. A monkey weighing 1575 grammes received intravenously on successive days two doses of diphtheria albumoses, each of 0·3 gramme. After the first injection there was a depression of the rectal temperature, followed by a rise to a little above the normal, and afterwards, as well as following the second injection, the temperature became irregular, although not very high, until the end of the ninth day of experiment, after which it was normal. The respiratory curve showed, however, a greater irregularity. After the first injection there was a rapid rise in the number of respirations until they were nearly 80 a minute. Afterwards they fell, but following the second injection there was a gradual rise and the respiratory curve remained irregular until about the ninth day, when it fell to about 40 a minute. The effect of the injection of this poison on the general condition of the body was remarkable. After the first dose there were no general symptoms, but in 3 hours after the second dose the animal became progressively weaker, so that in 7 hours it could not sit up or move its arms and legs. There was complete motor palsy of the limb

[1] Lectures I., II., and III. were published in THE LANCET of June 18th and 25th, and July 2nd, 1898, respectively.

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and trunk muscles but no respiratory paralysis and no palsy of the facial muscles, as the animal, lying on one side, with food within reach of its mouth, ate vigorously and swallowed perfectly. No knee-jerks were obtainable and no reflex on pinching the limbs. This condition lasted for over 24 hours after the second injection and in 26 hours the animal could sit up, but there were still no knee-jerks. These reappeared on the second day following the injection, and recovery from the motor and sensory palsy was complete on about the same day. The animal gradually and completely recovered and remained quite normal for several months, when it was killed. It may be remarked, in passing, that the features of the palsy were those of a complete suspension of the functions of the spinal cord.

Like diphtheria toxin tetanus toxin acts on the spinal cord, but in another direction: it produces convulsions instead of paralysis, and it produces this effect not only in the higher animals but in rodents. The diphtheria toxin does not affect the spinal cord in rodents. It produces a well-marked and universal degeneration of the peripheral nerves in the manner I have elsewhere described. The tetanus poison also to some extent acts on the peripheral nerves, inasmuch as I have found in animals which have received a small dose of the poison and which have survived for some time distinct degeneration in a few branches of the anterior crural and in the phrenic nerves. The degeneration is, however, extremely slight and is not sufficient to cause signs of paralysis during life. A special action on the cerebral hemispheres is to be ascribed to the anthrax products, and especially to the alkaloidal body, inasmuch as they produce stupor ending in coma which may either be recovered from or—as is more usual—end in death.

Action on the heart muscle.—In previous papers I have shown that it is a characteristic of the action of the albumoses of anthrax and of ulcerative endocarditis, as well as of the diphtheria poisons, to produce a well-marked fatty degeneration of the cardiac muscle, and this is as marked in the case of the anthrax albumoses as it is in the case of diphtheria poison. The poison of the typhoid bacillus produces the same result, although not to such a marked extent. In those animals which died slowly some change in the heart muscle was almost constantly observed; sometimes, however, it was absent. In none of these animals was there any degeneration of the peripheral nerves discovered, though branches of the anterior crural and phrenic nerves were frequently examined after staining in osmic acid. The actions of these poisons on the heart is therefore one independent of any action on the nervous system and is probably a direct toxic effect on the cardiac muscle. All the bacterial poisons which I have myself examined produce a profound change in the general nutrition, which is in many instances independent of any fever produced, and it may be that the degeneration of the heart muscle is only an expression of this disordered nutrition. Degeneration in the skeletal muscles, however, is not found. The structural changes which occur in the organs are the result of the action of these poisons—a subject which has been worked out very fully by Dr. Simon Flexner.[2]

CHEMICAL NATURE OF BACTERIAL POISONS.

I have previously said that we know very little of the chemical nature of the poisons we have been discussing. There are three theories which have been discussed in regard to these: (1) as to whether the poisons are albuminous substances; (2) whether they are of a ferment nature; and (3) whether they are crystalline chemical substances or, at any rate, not proteid.

Poisons of proteid nature.—Some of these poisons are so closely associated with proteids as to be inseparable. There is, for example, no question whatever that the albumoses of gastric digestion are poisonous when injected into the veins of an animal, and so also are the albumoses formed by the bacillus of anthrax, and that the poisonous nature of these substances is somewhat, although not greatly, diminished by heat. The poisons, however, which have given the greatest difficulty in the discussion as to whether they are of a proteid or of a ferment nature are those of abrus and ricin and a snake-poison. Abrus seeds, for example, contain a globulin and an albumose, both of which are poisonous, and if the globulin be precipitated from its solution by heat its toxicity is lost, and if the albumose is heated to a temperature of 85° C. its toxicity is also completely lost. In this case it may with plausibility be argued that inasmuch as the toxicity of both the bodies is destroyed at nearly the same temperature it is not the proteid itself which is poisonous but something associated with the proteids—that is, some body of a ferment nature. The same difficulty exists with regard to the question of snake-poisoning. Generally speaking, in the venom of the viperine snakes there are two proteid bodies, a globulin and an albumose, both of which are poisonous, and each of which appears to have a distinct action—the globulin acting more particularly on the blood, the albumose acting more particularly on the nervous system (C. J. Martin). If the globulin be precipitated from its solution by heating it to its temperature of coagulation its activity is destroyed, but the toxic properties of the albumose are still intact. Cobra venom does not contain so much globulin as that of the viperine snakes, so that heating its solution to the temperature at which the globulin is coagulated does not greatly diminish the toxicity of the venom and the solution requires to be boiled for a short time before the poisonous action is destroyed. From these facts it certainly appears that the toxic action of snake venom is so closely associated with the proteid as to be inseparable from it and that there is something in the constitution of the proteid moleoule—whatever that may be—which confers this great poisonous property on the venom.

Poisons of a ferment nature.—Several considerations, however, prevent the conclusion that all these poisons, including the bacterial, are of a proteid nature. Diphtheria poison, for example, is practically as toxic as cobra venom or as the venom of the Australian black snake (Hoplocephalus curtus). As previously stated, Roux and Yersin obtained the product from the broth solution in such a form that it acted in imponderable doses. Since that time, by means of the precipitation by zinc salts, and the subsequent decomposition of the zinc salt with carbonic acid, Brieger and Cohn obtained a toxic product from diphtheria, causing all the characteristic symptoms, but not giving any proteid reactions, neither the xanthoproteic nor the biuret reaction. It may be considered therefore that the diphtheria poison is not necessarily associated with a proteid. It may be that this poison, together with the poison of tetanus and that which we have discussed as formed by the typhoid bacillus, is of a ferment nature. The arguments which may be used in this respect are: (1) that they act in infinitesimal doses; (2) that they may act slowly and produce death after many days by profoundly affecting the general nutrition; and (3) that they are sensitive to the action of heat in a way which no chemical poisons are known to be. If, of course, these poisons are of a ferment nature their physiological action is unlike that of any of the other known ferments. They are not digestive ferments in the ordinary sense of the word. I have performed several experiments to test the digestive action on ordinary proteids of the diphtheria and tetanus poisons and have never obtained the slightest indication of digestion. If they are considered as ferments they must be substances which have a peculiar affinity for certain tissues of the body on which they produce their special toxic effect. Thus, the diphtheria poison selects the peripheral nerves for one of its chief actions and in some cases the spinal cord. The tetanus toxin produces its most marked effect on the cells of the spinal cord. Abrus, ricin, and the poisons of the three bacilli we have examined produce a pronounced effect on the body temperature, besides which they have a marked action on the small intestine. They have no pronounced effect on the nervous system except perhaps in the cases of abrus and ricin, which appear to affect the respiratory centre in the medulla. In each case, therefore, the ferment—if ferment it be—must be essentially different; for although they may have a similarity in action, yet their differences are considerable, and especially is this so in considering the results of the toxic reaction of these poisons in the body—the most delicate test for the identification of these poisons. Thus, in the case of abrus and ricin the action of the poison is closely similar, ricin perhaps acting rather more vigorously than abrin, so that so far as their physiological action goes, if that alone were investigated, they might be considered as identical substances, but Ehrlich found that an animal which had been made immune to abrin was not immune to ricin, and *vice versâ*. Similarly the diphtheria antitoxin does not counteract the effects of the tetanus poison nor does the tetanus antitoxin protect

[2] Simon Flexner: The Pathology of Toxalbumin Intoxication. Baltimore, 1897.

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against the diphtheria poison. The association of digestive products with these poisons is an interesting one. In snake venom and in abrus albumoses are present, and these are also formed by the micro-organisms which we have been discussing. The amount of digestion, however, which each individual bacterium produces varies considerably, being greatest with the bacillus of anthrax and least with the typhoid bacillus. These products of digestion are formed, either by the bacillus ingesting the proteid and discharging it as albumose, or the digestion occurs by means of a proteolytic ferment secreted by the bacillus in the body of an individual or animal suffering from the disease. It may be interesting to add the following table[3] of the comparative toxicity of these substances. The figures represent the number of grammes of body weight of a rabbit which will be killed by 1 gramme of dried poison.

Cobra venom	4,000,000	Pseudechis	800,000 to 2,000,000
Hoplocephalus curtus ...	4,000,000	Pelias berus	250,000
Diphtheria toxin	4,000,000	Anthrax albumoses	3,000
Ricin	1,500,000	Cholera albumoses	3,000

THE RELATION OF THE TYPHOID BACILLUS TO ENTERIC FEVER.

The relation of the typhoid bacillus to enteric fever has been much discussed and some confusion has been caused in the subject by work which was done some years ago with non-virulent or slightly virulent forms of the bacillus. It is constantly present in cases of typhoid fever in the intestinal lesions, in the spleen, the mesenteric glands, and sometimes in the blood. It is in not a few cases found in the urine. It is also found—though not constantly—in the fæces. The constant presence of this pathogenic organism in the lesions of the disease is one of the arguments in favour of its being the cause of the condition, and in most cases—as we have seen — it may be obtained in pure culture from the spleen after death. The second argument in favour of the bacillus being the cause of enteric fever rests on the sedimenting reaction and Widal's reaction which is given by the blood-serum of typhoid patients in certain dilutions, causing the bacilli from a young culture to become motionless and to clump together and sink to the bottom of the vessel in which they are contained. This reaction is specific; it is not given by the bacillus coli, but according to Dr. H. E. Durham it is given to some extent by the bacillus of Gärtner. A similar reaction was obtained from the blood-serum of animals which have been rendered artificially immune to the typhoid bacillus. We must consider, therefore, that the serum reaction given by typhoid patients is due to the effects of the typhoid bacillus which is present in their bodies. It is a noteworthy fact, that normal rabbit serum gives a clumping reaction with the bacillus coli and that the serum reaction with the bacillus coli, when artificially prepared coli serum is used is, according to Dr. Durham, very variable. Typhoid serum never gives a reaction with the bacillus coli, nor does the bacillus coli serum give a reaction with the typhoid bacillus. This constitutes an important difference between the micro-organisms. The difficulty with regard to the question of the typhoid bacillus rests mainly (1) on the fact that this disease does not exist in the natural condition in any animal but man. In man it is a very characteristic disease with definite intestinal lesions and a definite enlargement of the mesenteric lymphatic glands and of the spleen. (2) Another statement which has been made is that the typhoid bacillus is not infective. With regard to the first point, enteric fever is in the same position as any of the other diseases which affect man alone, and the difficulty is removed if it can be shown that the typhoid bacillus reproduces the same lesions as occur in the human being. Many attempts have been made to infect animals by way of the alimentary canal with the typhoid bacillus and most of them have been unsuccessful. The want of success does not appear to depend solely on the fact that non-virulent bacilli have been used, but also on the fact that the animals are extremely insusceptible to infection through the alimentary tract by the typhoid bacillus. In my experiments I gave two rabbits enormous and daily doses of the virulent bacillus with the production of no result beyond fever in one animal lasting a day. Remlinger[4] appears to have been more successful and to have produced in some rabbits a definite infection by giving them virulent cultures in their food. Some rabbits were unaffected and others, after a period of fever, diarrhœa, and bodily depression with loss of weight, underwent complete recovery; others again were affected in the same way and succumbed. At the post-mortem examination there was great congestion of the small intestine which contained liquid matter. Peyer's patches were enlarged and there was some ulceration at the level of the cæcum. The spleen was greatly enlarged and the bacillus was obtained in a pure culture from the organs. In one experiment the animal was fed for 5 days with the typhoid bacillus; on the eighth day fever was observed and there was the train of symptoms which had been mentioned up to 17 days, when the animal was dying. In another experiment, 7 days after feeding the fever began and the symptoms progressed for 20 days, when the animal died. Similar results were obtained in rats. One important point is noted by Remlinger—viz., that the blood-serum of the animal infected gave an agglutinating or sedimenting reaction. There can be no question from these experiments that an infection of the animal by way of the alimentary tract was produced, and that the chief stress of the disease was on the small intestine. It may be remembered that a similar difficulty in infecting animals with the cholera vibrio by way of the alimentary tract exists, although this can be effected if the acid contents of the stomach be first neutralised with alkali, as was done by Koch. A true infection follows the injection of the virulent bacillus into the peritoneal cavity or into the venous system, and also under the skin, although to a lesser extent; that is, there is a dissemination of the bacilli through the organs of the body and the blood. In some animals, however, it may be absent in the blood, and this was found also by Remlinger in his cases of intestinal infection. An interesting point in the infection of the animal body by the typhoid bacillus is that although the non-virulent forms of the bacillus are not toxic they may become so and may infect the body when products of certain other micro-organisms are injected at the same time. I have previously mentioned these experiments, and the chief point which is noteworthy is that the injection of the products of the bacillus coli into the peritoneal cavity at the same time as the injection of the living typhoid bacillus under the skin aids the distribution of the bacillus throughout the body. At death in such cases it is found in the peritoneal cavity and in the organs of the body. This does not occur if the non-virulent typhoid bacillus is injected by itself. The products of other micro-organisms will also do this. In some cases enteric fever appears to be a pure infection of the typhoid bacillus; in other cases it is a mixed infection, or there may be infection after the acute disease is over, usually by pus organisms. It has been found in some cases in the course of typhoid fever that the bacillus coli, which is naturally found there, becomes more virulent than it is in life and increases greatly in number. It is possible therefore that these two organisms react on each other, one aiding infection by the other. It is known that the products of the bacillus coli aid infection by the typhoid bacillus, and cases in which there is infection by the bacillus coli during the course of typhoid fever have been observed, for example, in abdominal abscesses and cystitis.

It has been much discussed whether enteric fever is a primary intestinal infection or whether it is a general infection with an intestinal lesion—that is, whether the bacillus primarily infects the Peyer's patches and from there is distributed to the mesenteric glands and the spleen, or whether the micro-organism is introduced into the body in some other way unknown and infects the body, producing an enlargement of the spleen and ulceration of the Peyer's patches in the intestine as part of the general infection. The arguments which have been used for considering enteric fever a general infection with a secondary intestinal lesion are not very satisfactory. It has been said that inasmuch as the bacillus is not constantly found in the motions and is constantly found in the urine it would appear that there are not many bacilli in the intestine such as would exist if the intestine were primarily affected. There is nothing whatever in this argument, inasmuch as even if there were a primary intestinal infection we can readily see that the bacilli might not be discharged in the fæces in sufficient

[3] See C. J. Martin: Physiological Action of Venom of Australian Black Snake, Royal Society of New South Wales, 1895. Martin gives the toxic value of the anthrax albumoses as 80, quoting my earlier work. My later experiments give the toxic value as 3000. See also Calmette, Annales de l'Institut Pasteur, vol. viii., 1894.

[4] Remlinger: Annales de l'Institut Pasteur, vol. xi., p. 829.

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numbers to be readily found. Moreover, if there is a great increase in the number of bacillus coli in the intestinal tract, not only is there great difficulty in finding the typhoid bacillus in the presence of large numbers of this micro-organism, but the more vigorous bacillus coli might actually beat out of the field the less vigorous typhoid bacillus. As regards the passage of the typhoid bacillus in the urine this would as readily occur from an intestinal infection which is followed by a general infection as when there was a general infection primarily.

Another argument which has been used, and which is perhaps somewhat stronger than the first, is the result of Sanarelli's experiments. He found that, however introduced into the body—whether through the venous system, or subcutaneously, or into the peritoneal cavity—the stress of the disease produced by the typhoid bacillus and its poison was on the abdominal organs and chiefly the intestines, which showed what he described as "acute mucous inflammation." The Peyer's patches were described also as swollen. From these results Sanarelli was inclined to look upon the infection as a general one with a local intestinal lesion, but the results obtained by him are not due to an infection of the body by the bacillus, but to the action of the poison of the bacillus. Moreover, the effect on the intestine is due to the poison and not to the infection. It is not due to the fact that the bacilli introduced under the skin or into the vein, so to speak, get buried in the mucous membrane, where they produce a lesion, but it is due to the selective action of the poison on the small intestine—a selective action which, as we have seen, is not limited to the typhoid poison, but is also possessed by the poison of Gärtner's bacillus and of the bacillus coli and also by the two vegetable poisons, abrus and ricin. The result of producing an intestinal lesion by the subcutaneous or intravenous injection of a poison is not limited, therefore, to the typhoid bacillus, and the question is really one not of the action of the bacillus itself, but of the action of the poison introduced with it. It has been a question in these intestinal lesions whether ulceration can be produced by the intravenous injection of a poison. Ehrlich stated that ulceration sometimes followed poisoning with ricin and abrus. In my own experiments such ulceration was never observed, and it was not observed by Flexner. From what we know of other intestinal infections the view that the infection in enteric fever is primarily intestinal is the more logical. The part of the intestine infected—viz., the Peyer's patches—is the least protected part of the mucous membrane, and is a tissue of only slight metabolic activity covered with a single layer of epithelium with no villi, whereas the rest of the mucous membrane is covered with villi which are more or less constantly in a state of active metabolism. Moreover, in tuberculosis produced by feeding the Peyer's patches of the intestine are the first infected, and I cannot conceive of any general intestinal ulceration occurring in the absence of a local infection. In tuberculosis ulceration of the intestine never occurs as the result of general infection, and the ulcerations of the upper part of the small intestine which sometimes occur in septicæmia and pyæmia are always few in number (one or two) and are irregular in situation.

In conclusion, I wish to express to you, Sir, and to the College my sense of the great honour you have conferred upon me by appointing me to deliver these Croonian Lectures and I gladly acknowledge the great help I have received from my two assistants in the investigation—Dr. Greig, my assistant in bacteriology at University College, and Dr. R. Row, of Bombay. Both these gentlemen by their devotion and skill have contributed greatly to whatever success has attended the investigation.

HEALTH OF SOUTH DEVON.—Mr. W. Harvey has just presented to the Devon County Council his annual report on the health of South Devon. The general death-rate during 1897 was 14·1 per 1000, only 0·1 higher than the lowest rate recorded; the birth-rate was 23·5, the lowest ever recorded. Only 6 of the 24 urban districts have an isolation hospital and Torquay alone has made provision for disinfection, although Paignton and Teignmouth have taken action in the matter. All the towns make use of the Dairies Order, 1885, but Torquay, St. Thomas, Kingsbridge, Cockington, Buckfastleigh and Brixham have not adopted the Infectious Diseases Prevention Act, 1890.

NOTES OF A SERIES OF CASES OF ABDOMINAL SURGERY.[1]

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THE following cases illustrate very well the eminent tolerance of the peritoneum to surgical interference. Not so long ago all serous and synovial membranes were regarded as territories which should never be entered or explored by the surgeon except under the most imperative circumstances. Now, happily, these groundless fears are dispelled and these cavities are explored and manipulated by the surgeon, one might almost say, with impunity, always recognising, of course, the paramount importance of using the most rigid antiseptic precautions.

CASE 1. *Rupture of a ventral hernia with protrusion of the greater portion of the small intestines for over twenty-four hours; bowels washed and returned; recovery.*—This is a remarkable case and, so far as I know, is unique. The patient was a married woman, aged twenty-nine years, of dissolute habits, the mother of two children. Some months after the birth of her last child she was admitted under my care to the Hospital for Women suffering from a pelvic abscess which was pointing in the middle line above the pubes. This was incised through the linea alba, much pus was evacuated, and the abscess cavity was flushed and drained. She made an uneventful recovery and was discharged cured and enjoined to wear an abdominal support. In about a year afterwards her husband called at my house late one night wishing me to visit his wife in a slum street, stating that she had "burst." Not interpreting the man's statement in its literal sense I did not go that night but went in the afternoon of the next day, when I found the woman lying on the floor in the corner of a common living room amongst a heap of straw and filthy rags. On questioning her she made the same reply as her husband had on the previous night—namely, that she had "burst." She was lying in the semi-prone position, facing me, and on turning down the scant apparel which covered her I was at once confronted by a ghastly heap of small intestines in front of her amongst the straw and dirt. She told me that in the afternoon of the previous day whilst stooping over the fire stirring some porridge she suddenly felt her abdominal wall give way at the site of the former incision and her bowels shot out. It will thus be observed that the major part of her small intestines had been protruded and exposed to every abomination for a period of twenty-four hours. With the assistance of a medical friend and a nurse I promptly proceeded to return this mass of bowels into the abdominal cavity. For light we had to send out for a halfpenny tallow candle. Our operating table consisted of an old soap box with the patient's head over-hanging one end and the lower extremities the other. My friend administered chloroform whilst I with the assistance of the nurse proceeded to wash and cleanse the protruded intestines with plain unsterilised water drawn from the tap hard by in a not over clean basin. The opening of the parietes had to be enlarged above and below and with some difficulty we succeeded in returning the intestines into the abdominal cavity; a glass drainage-tube was inserted at the lower angle of the wound, sutures were applied, and the patient was removed to her bed of straw on the floor as quickly as possible. I need scarcely say that we entertained no hope of even a rally from the shock of the operation, to say nothing of her ultimate recovery. Any way, on my calling on the following morning to my great astonishment she appeared to be remarkably well in all respects. She had passed a comfortable night without pain or vomiting. The dressings were changed and the drainage-tube was withdrawn. Suffice it to say that she made a rapid and uninterrupted recovery and remained well and free from recurrence of hernia for some years afterwards. I learnt lately, however, that she finally succumbed to pulmonary phthisis, induced perhaps by her profligate habit of living.

[1] A paper read before the meeting of the North Wales Branch of the British Medical Association, March 30th, 1898.

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CASE 2. *Twisted pedicle; rupture of cyst; diffuse peritonitis; collapse; ovariotomy; recovery.*—The patient was a large-framed, fat, and flabby woman, a widow, aged forty-nine years. She had had ten children and three miscarriages. The menopause had taken place one year previously. When she was admitted into the Hospital for Women, on March 19th, 1896, she was in a most alarming condition. Her previous history was something as follows. Two days before her admission, whilst at stool, she was suddenly seized with violent pains in her abdomen and back, cramps, vomiting, and retching. She took a Seidlitz powder, which moved the bowels but slightly, afterwards no fæces or flatus being passed for several days. The district nurse was summoned in the first instance and she, finding the patient so extremely ill, called in the nearest medical man, who in turn advised her instant removal to the Hospital for Women. When she came under my observation two days after the onset of her illness her abdomen was greatly distended and intensely painful; she had bilious vomiting and complete blockage of the bowels both as regards flatus and fæces; in fact, she had the usual signs of acute diffuse peritonitis. It was apparent that something had given way in the abdomen and the most likely thing was a twisted ovarian pedicle or a ruptured ovarian cyst or maybe a combination of both. Under these circumstances a consultation with my colleagues was hurriedly called with the view of opening the abdomen without delay. They, however, considered the patient to be in such an extremely critical condition—too critical to withstand the shock of an abdominal section—that they advised delay in operating with the hope of her rallying somewhat. This course was therefore adopted and during the next few days her condition varied considerably. The treatment was conducted on the usual stereotyped lines—namely, opiates, stimulants, poultices, turpentine enemata, &c. By-and-by we succeeded in getting a slight action of the bowels, a little flatus passing but no fæces, the other symptoms remaining pretty much the same. Suddenly one morning the patient took a decided turn for the worse. She became collapsed, her skin was cold and bedewed with clammy sweat, she was almost pulseless, and her voice was a mere whisper. I happened to see her shortly afterwards and to all appearance she seemed to be sinking fast. It seemed a pity to let the woman drift to her inevitable death without giving her the only chance of saving her life, so I felt impelled to open the abdomen, clear up the diagnosis, and do what I could for her surgically. She was carried into the operating theatre on a stretcher and, with the assistance of a colleague, I performed abdominal section as quickly as possible. On reaching the peritoneal cavity the first object which presented itself in the line of incision was a greenish, sloughy-looking structure, which proved to be a ruptured ovarian cyst with its pedicle twisted. Soft adhesions had formed between the cyst and parietes in every direction. The tumour was speedily freed from its connexions, the pedicle was transfixed, tied in two parts and the cyst was cut off. Both the parietal and visceral peritoneum were deeply injected and there was evidence of acute diffuse peritonitis. The abdominal cavity was quickly flushed with plain warm water drawn from the tap—there being no time for sterilising—and a drainage-tube was passed into the pelvis at the lower angle of the incision. The incision was quickly closed with silkworm gut sutures and the patient put to bed, kept warm with hot-water bottles and stimulated by hot water and brandy enemata. The patient rallied from shock in a wonderful manner and her recovery was rapid and complete. In the course of a few weeks she was discharged from hospital wearing an abdominal support. On account of the extreme laxity and fatness of this woman's parietes and also having to work very hard for her living she presented herself again at the end of a year, but this time with a large ventral hernia at the site of the former incision. I admitted her into hospital and operated again on the hernia with complete success She still wears an abdominal support. I have come to the conclusion that in desperate cases like the foregoing speed in operating is a great element of success.

CASE 3. *Tuberculous kidney; nephrectomy; fæcal fistula through the loin; recovery.* — The patient was a woman aged twenty-nine years. She had been married seven years and had had three children, the last being born eight months ago. The onset of the present illness took place two years ago when, shortly after the birth of her second child, she complained of pain in the back and subsequently she noticed a lump in the left side of her abdomen which became painful. She did not seek medical advice for it and in a while she became pregnant of her third child. Her bladder became unduly irritable but she took no notice of the character of the urine. In due course she was confined and her medical attendant says that she had an easy and natural labour. After the birth of the child her medical attendant also discovered a swelling in the left half of her abdomen and suspecting it might have some connexion with the left kidney he examined the urine and found it contained pus and albumin. After several months of waiting she was sent under my care at the Hospital for Women. At this time she was extremely emaciated, had profuse night sweats, a jumpy temperature, and a large amount of pus in the urine, but no blood at any time. The left half of her abdomen was occupied by a large, prominent, fluctuating swelling extending from the costal arch to the iliac fossa and extending backwards in the loin towards the spine. The diagnosis made was a cystic enlargement of the left kidney, most probably of a tuberculous nature. The absence of blood and renal colic contra-indicated to some extent both stone and cancer. Her family history was perfectly satisfactory, there being no tendency to tubercle in any member of her family. After consultation with my colleagues an exploratory operation was decided upon and this I did by the transperitoneal rather than by the lumbar route, and for two reasons: firstly, because it was absolutely necessary to ascertain in the first instance the exact condition of the right kidney; and secondly, because of the large size of the tumour. An incision was accordingly made through the left semilunar line extending from the costal arch to below the iliac crest, and after the peritoneal cavity was entered the hand was passed into the right loin and the kidney was carefully examined and found to be apparently sound. The peritoneum on the outer aspect of the descending colon was next incised and the kidney-capsule was found to be greatly thickened and firmly adherent to the surrounding structures—above to the dome of the diaphragm, behind to the loin, and in front to the posterior aspect of the colon. So firmly fixed, indeed, was it that we experienced considerable difficulty in turning the tumour out of its bed. The tumour was next freely incised and about 2 pints of curdy pus were evacuated; the pedicle was sought, the renal vessels and the ureter were tied separately, and the mass was cut away. The seat of operation being thoroughly cleansed with warm water a counter opening was made through the structures of the loin, a rubber drainage-tube was inserted, the colon was laid back in its place, the abdominal incision was closed completely, and the patient returned to bed. She bore the operation very well and made an uneventful recovery without a hitch in so far as the kidney was concerned, the remaining kidney performing its double function in a perfectly satisfactory manner. I have to say here, however, that an unfortunate circumstance cropped up and it is this. In drawing the descending colon inwards towards the median line from off the face of the kidney tumour, which I have just said was firmly adherent to the capsule, the posterior wall of the colon must have been damaged, for in the course of a week or so after the operation fæcal matter began to make its appearance through the rubber drainage tube in the loin and hence it became obvious that a fæcal fistula had formed. The amount of discharge lessened and in due time the drainage-tube was withdrawn and I was sanguine that the fistula would spontaneously close, but up to date there is still a small leakage of fæcal matter and sometimes flatus through a small fistulous opening in the loin, otherwise the patient is very well.

CASE 4. *Impacted gall-stones; intense jaundice; cholecystotomy; recovery.*—The patient was a married woman, aged forty-two years, with fat and flabby tissues, the mother of seven children, the last nine months old and still on the breast. For some years she had been subject to what she called "bilious attacks," which seized her at irregular times in the form of spasmodic, crampy pains in the abdomen, with retching and vomiting. The patient said that one of these bouts, some two or three years ago, was worse than the rest and was followed by jaundice which soon passed away. She did not seek medical advice for it. The present attack seized her in the early part of last October and was much more severe than any of the previous ones. She had violent colicky pains in the epigastrium which shot through to the back of the shoulders and particularly to

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the right shoulder tip, retching, vomiting, jaundice, portery urine, clayey stools, recurrent rigors and fluctuating temperature ranging from 101° to 103° F. She came under my observation four days after onset of illness and I found matters as just described. The physical signs were not conclusive of the existence of gall-stones, but one could not examine her very thoroughly because of the exacerbation of pain which it excited. There was, however, an undefinable sense of resistance to be made out in the region of the gall-bladder and the subjective symptoms were so markedly characteristic of gall-stones that I had no hesitation in making a diagnosis of impaction. She was treated for a fortnight on general principles and with the usual negative results. It soon became obvious that the patient was drifting—she was emaciating rapidly, the jaundice was deepening, and there were recurrent rigors with high temperature, &c. Under these circumstances I determined to explore the gall-bladder and this I did with the assistance of some medical friends and under conditions which were certainly not of the most favourable and sanitary kind. A vertical 3 in. incision was made from the tip of the ninth rib in the right semilunar line. On opening the peritoneum two fingers were passed in and the gall-bladder was found contracted and retracted beneath the liver border, so much so that we experienced some difficulty in bringing the viscus into view in the parietal wound. The area of operation having been packed with sponges to prevent soiling of the general peritoneal cavity, the fundus of the gall-bladder was seized with a pair of pressure forceps in order to bring it to the surface, but its walls were so soft and friable that they at once crumbled to pieces in the jaws of the forceps. With some difficulty we succeeded in bringing the gall-bladder into the parietal wound and the tear just made in its fundus was enlarged with scissors. Some mucoid prune-juice-coloured stuff was evacuated, the finger was passed in and four black-coloured stones were readily brought away. I felt convinced that there must be another stone, or stones, impacted further away in the track of the other biliary ducts—hepatic or common—which would explain the urgency of the symptoms. With this view the biliary ducts were explored with fingers and probe both by myself and by Dr. Smart, who assisted me, but with a negative result. The parts around the site of operation were so matted together by adhesive inflammation that the exploration of the biliary passages could not be effected so thoroughly as we would have wished. The sponges were now withdrawn, the field of operation was well flushed with warm water, a gauze drain was passed into the peritoneal cavity below the liver surface, a rubber drainage-tube was placed within the gall-bladder and its incised walls were sewed to the parietal wound, excluding the skin. Several layers of absorbent dressings were applied over all and the patient was returned to bed. She rallied well and next day the dressings were changed and the gauze packing was removed. For some days there was a copious flow of bile through the drainage-tube, afterwards it materially lessened, and at the end of a week the rubber drain was also removed and we had now a biliary fistula established. The flow of bile through the fistula varied very much from day to day, and usually flowed in gushes. The case ran an uneventful course after the operation. All the urgent symptoms quickly subsided. There were no more rigors, the temperature descended to normal, and the amount of bile passing by the kidneys markedly diminished; but the stools bore a clayey appearance for some time, the jaundice disappeared slowly but steadily, and she was soon convalescent. The gall-bladder was frequently injected with various reputed gall-stone solvents—e.g., olive oil, turpentine, ether, and plain water, but with no appreciable benefit. It was interesting to notice the exit of some black débris on several occasions through the fistula. More than once these fragments blocked the fistulous track, which I scooped out with a grooved director. By-and-by the discharge of bile by the fistula ceased and began to appear in the stools. My own view is that, with the subsidence of surrounding inflammation and removal of bile-tension, the calculi and débris impacted in the biliary ducts became dislodged, disintegrated, and passed on by the duodenum or by the biliary fistula. Be this as it may, the patient is now in the enjoyment of perfect health without a vestige of her former ailment. In this case we had to conduct our procedure under very adverse surroundings—a poor artisan's stuffy dwelling in a slum street with no trained nurse, &c.

Liverpool.

HÆMATURIA AS A SYMPTOM: METHODS EMPLOYED IN MAKING A DIFFERENTIAL DIAGNOSIS;

WITH 19 CASES ILLUSTRATING POINTS OF INTEREST IN THE DIAGNOSIS OF RENAL AFFECTIONS CHARACTERISED BY THE PRESENCE OF BLOOD IN THE URINE.

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(Continued from p. 18.)

Catheterisation of the Ureters.

THIS method of examination is not so necessary in cases of hæmaturia, nor is it so reliable as in those of pyuria; not necessary because generally if the hæmaturia is purely renal the escape of blood from the ureter can be readily seen by means of the cystoscope, and not reliable because the use of the catheter may cause hæmorrhage. To perform such a delicate operation by the sensation of touch alone is very difficult and it is only by patient and prolonged practice on dead subjects that one can hope to succeed in performing the operation on the living, but once the art has been mastered it is easier to pass a catheter into the living ureter than into the dead one.

Catheterisation of the ureter in the female has been much simplified by Kelly of Baltimore.[1] The essential feature of his method is that of the introduction of a straight speculum into the empty bladder. The walls of the viscus are slightly separated by the position assumed by the patient, the dilatation being such as to bring the orifices of the ureters into view, when reflected light is thrown into the bladder by a forehead mirror. I have repeatedly used this method and found it simple and satisfactory, and easier of application than the method I first employed, which required very considerable practice and dexterity. Those who desire to catheterise the ureters must carefully study their direction in the various parts of their course and must always remember that gentle manipulation is of the highest importance. I have frequently succeeded in carrying out catheterisation of the male ureters by the special catheters devised for the purpose without the aid of any light.[2]

Within the last few years two catheterising cystoscopes have been introduced, the one by Nitze and the other by Casper. The former instrument I have not had an opportunity of using, but the latter I have employed in a number of cases and find it a considerable improvement upon my own method, and I have no doubt other surgeons also will find it a very valuable instrument when they have become accustomed to manipulate it. Some surgeons, however, who do not take the trouble to gain the necessary dexterity in the use of such instruments are apt to condemn them or to entrust them to experts only, but the use of the cystoscope and the catheterising cystoscope will, I have not the least doubt, become more general, just as the ophthalmoscope, laryngoscope, and rhinoscope have ultimately asserted their position as aids in diagnosis. In catheterising the ureters it must be borne in mind that rough introduction of the catheter may of itself lead to hæmorrhage and certainly this is a drawback to its use, especially when the catheterised ureter is the seat of inflammation. In the female the procedure is easily carried out and the results are tolerably certain, but in the male even when one succeeds in introducing the catheter into the ureter it is difficult to say to what degree the results obtained are to be relied upon.

A point of considerable importance in diagnosis is the appearance of the orifice of the ureter as seen by the cystoscope. This question I cannot discuss in detail at present, but it may be stated as a general observation that when there is distinct evidence of irritation at the orifice of one ureter while the other is normal in appearance it may be safely inferred that the lesion producing the hæmaturia is on the side of the morbid ureter.

[1] Twentieth Century Practice of Medicine, vol. i., 1895, p. 675.
[2] Newman: Surgical Disease of the Kidney, Longmans and Co., London, 1888, p. 415.

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3.—By estimating the Quantity of Hæmoglobin and comparing it with the Amount of Albumin in the Urine.

Urine containing blood is always albuminous, but the relative proportion existing between the red corpuscles and the serum depends upon whether or not the hæmorrhage is associated with inflammation. For example, in acute nephritis the general inflammatory hyperæmia causes large quantities of albumin to pass into the urine independently of the hæmorrhage. The relationship between the quantity of hæmoglobin and the amount of albumin in the urine will therefore aid one in determining the seat of the hæmorrhage. In 1880 I showed at a meeting of the Glasgow Pathological and Clinical Society an apparatus for estimating by a simple method the quantity of hæmoglobin in solution. The quantity of hæmoglobin having been estimated and the amount of albumin determined by one or other of the recognised processes the two results should be compared. If the ratio of albumin to hæmoglobin is as 1 to 1·6, then it may be concluded that the appearance of albumin is entirely due to the presence of blood; but if the quantity of albumin is much increased beyond the proportion just mentioned the indication is in favour not only of an independent albuminuria, but also of a renal affection as the cause of the hæmaturia.

4.—By carefully considering all the other Objective and Subjective Phenomena.

The questions which have been considered up to the present give but a rough sketch, the detail requires to be carefully filled in before the picture is completed. In order to do this the practitioner must consider the most common sources of hæmaturia and enumerate the various lesions of the kidneys, the ureters, the bladder, the prostate, the urethra, and the testicles which may give rise to the symptom under discussion. It is well always to conform to this rule in going over the etiological factors which have been indicated above.

Before illustrating or discussing in detail these individual lesions it may be well to make some general remarks as to the characters of the urine in renal hæmaturia, and it may be here stated that the cases are brought forward only to illustrate the etiology and symptomatology of hæmaturia, the question of treatment not being discussed in the present paper. Placing aside for the present the hæmaturia due to hydatid disease, the renal hæmorrhages of the greatest practical importance from the standpoint of this paper are those arising from injury, renal calculus, tumours of the kidney, and tuberculous disease of that organ. Having determined that the hæmorrhage is not from the lower urinary tract it remains to ascertain which of those four causes is to blame.

When the hæmorrhage is due to renal calculus it is usually small in amount, sometimes constantly present but generally with more or less prolonged intervals and commonly oft-repeated. In some instances, however, the hæmaturia is very slight, while in other cases it may be the only symptom. The bleeding is not closely related to pain or to the development of other symptoms, but as a rule it is increased by movements of the body. This, however, does not always follow immediately, but a short interval may elapse—hours or even days—between the exertion and the appearance of the blood in the urine. While the hæmaturia of renal calculus is more copious after exercise, rest in bed usually appreciably diminishes it. This peculiarity is most characteristic. The blood, it must be borne in mind, is derived from the renal pelvis and not from the parenchyma; consequently renal blood-casts are not found in the urine and the quantity of albumin is fully explained by the presence of blood. When the urine is evacuated the blood is thoroughly mixed with it, but not so intimately as when the cause of the hæmaturia is structural disease of the kidney, and if the urine be allowed to stand for a few hours the blood corpuscles are readily precipitated and leave the supernatant urine clear. If free from blood the urine will also be found to be non-albuminous. The presence or absence of pus in the urine will be determined by the circumstance whether or not the calculus has induced inflammatory changes, and the existence of a swelling in the renal region will depend upon the amount of freedom for the escape of urine by the ureter. Renal hæmorrhage from tumour is generally more profuse and less transient than from calculus, and in not a few cases it is so copious as to cause marked anæmia—a result seldom induced by calculous hæmaturia. It is often developed without any preceding pain. In calculous disease injury or exercise commonly provokes the bleeding and therefore one finds the hæmorrhage more profuse during the day while the patient is moving about. The bleeding from tumours is, on the contrary, most likely to occur during the night, while the patient is at rest in the recumbent posture. The urinary deposit may assist one in the diagnosis. Concretions composed of oxalate of lime, uric acid, phosphates, or urates, may indicate the character of the stone, while by carefully filtering the urine in cases of tumour portions of the growth may be procured for microscopic examination. The presence of a persistent swelling in the renal region associated with considerable hæmaturia is of significance and may be held as clearly indicating the presence of a neoplasm in the kidney. Exceptions to this rule have, however, been recorded by Ebstein, Hirtz, and Fleming. But while this is so it must not be forgotten that the presence of a palpable new formation may for a considerable time be preceded by the presence of blood in the urine. Considerable distension of the pelvis may be produced by a calculus obstructing the ureter and so lead to a swelling in the renal region, or the bulging in the loin may be caused by enlargement of the kidney from tuberculous disease; in neither of those conditions, however, does hæmaturia frequently occur. In the latter the very obstruction which causes an increase in bulk of the kidney prevents the hæmorrhage.

Although much difficulty is often experienced in distinguishing calculous hæmaturia from that caused by tumours there is still greater care required in the diagnosis between the hæmorrhage of early tuberculous disease and that of renal calculus. The symptoms of the two latter conditions are sometimes identical. This is especially so when the patient fails to show any other evidence of tuberculous disease than that revealed by the renal lesion. In tuberculous disease hæmaturia is frequently absent for long intervals, is seldom so severe as in stone, and is not increased by exercise. In both conditions pus may be mixed with the urine, but while in the latter concretions and gravel may be discovered, in the former careful and repeated search may demonstrate the presence of tuberculous bacilli. In the early stage of tuberculous disease of the kidney the quantity of albumin in the urine is generally in excess of that accounted for by the blood and in the later stages when pus appears in considerable quantity, the pus and blood are not so rapidly or so completely precipitated from the urine as in calculous pyelitis. The presence of phthisis pulmonalis, tuberculous disease of bones or joints, of the testicle, the prostate, the vesiculæ seminales, the mesenteric glands, the intestine, or of the lower urinary tract, may give a clue to the cause of the hæmaturia. I will now endeavour to describe more in detail, and illustrate by cases, the various lesions of the kidney which are associated with more or less profuse and persistent hæmaturia.

1.—Traumatic lesions.

(a) From injury.—In hæmaturia consequent upon injury of the kidney the urine is generally scanty and highly coloured with blood, and long thin coagula, casts of the ureters, may be observed. The presence of blood in the urine in such cases does not necessarily denote rupture or laceration of the organ; and, on the other hand, severe injury may be sustained by the kidney without blood at any time appearing in the urine. The latter contingency may arise either as a result of plugging of the ureter by a clot, or as a consequence of rupture of the ureter from the violence which caused the injury to the kidney, or in rare instances it may be due to the rupture of the kidney being so extensive that the blood escapes into the perinephric tissue only and not through the ureter to the bladder.

CASE 2. *Transverse rupture of the right kidney with a great effusion of blood behind the peritoneum and into its cavity; death from peritonitis on the fifth day.*[3]—The patient, a man whom I saw in private, fell from a height of 36 ft., alighting first upon his right foot and thence on the buttock; he dislocated his right hip-joint and ruptured the kidney on the same side. The patient was seen within a few hours of the accident and then to the naked eye there was no appearance of blood in the urine, but within six hours a long, narrow clot, probably a cast of the ureter, was

[3] Royal Infirmary (Glasgow) Museum, Series vii., No. 14.

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evacuated along with a quantity of deeply blood-stained urine. On the following day there was a distinct fulness in the flank corresponding to the position of the right kidney and the hæmaturia continued, but no more blood-clot was observed. The patient complained of a dull, aching pain in the renal region; this was increased greatly by deep inspiration or movement of the body, and on palpation there was great tenderness. The patient died from peritonitis on the fifth day, and at the post-mortem inspection a considerable quantity of blood was found effused behind the peritoneum and into its cavity, and the cortex of the kidney was ruptured transversely in many places, but not to any great depth.

In some individuals very slight concussion may cause hæmaturia independently of the existence of renal calculus, and in those instances recovery usually takes place within a short time. Sprains of the lumbar region may cause the appearance of blood in the urine. The hæmorrhage in such cases is easily explained. When the spine is acutely bent upon itself, as it was in the case just mentioned, the kidneys, being firmly bound to the column, are made to describe a contortion similar to that of the spine, as a consequence of which not only may the convex aspect of the organ be lacerated and torn transversely, but the sudden jerk may force the kidney away from the middle line and tear the pelvis or the ureter. The blood may therefore escape in two ways—into the tissues surrounding the kidney, where, if the patient survives, it may give rise to perinephric inflammation and abscess, or by passing down the ureter it may give evidence of the injury the kidneys have sustained. But while laceration of the kidney may occur without a bruise in the loin, in the majority of instances a blow upon the lumbar region is the direct cause.

There is not much difficulty in diagnosing this form of hæmaturia. The history of a lumbar sprain or of a blow or crush on the loin, indicated perhaps by ecchymosis, leads one to suspect rupture or contusion of the kidney. Severe damage to the kidney may, however, exist independently of any injury to the other abdominal organs and may of itself prove rapidly fatal; but in the great majority of cases there is evidence of violence elsewhere, and there are symptoms of rupture of other internal organs, especially of the spleen and liver. Generally, there will be marked and rapid collapse, pain in the course of the ureters as well as in the lumbar region, retraction of the testicle, difficulty in micturition, or even anuria. The following case is an instructive one and may be quoted as showing how one might be led astray—it is detailed in "Surgical Diseases of the Kidney."[4]

CASE 3. *History of a fall followed by ecchymosis in the left lumbar region; hæmaturia, suspected at first to be due to laceration of the kidney but latterly demonstrated to be from a papilloma in the bladder.*—"Three years ago an instructive case came under my notice in private practice. A boy aged fifteen years fell a distance of 12 ft. and alighted on his side, which struck violently against the edge of a packing-box. When I saw him he was unconscious, and the only facts I could arrive at were the history of a fall, the circumstance that there was ecchymosis over the right eye and in the left lumbar region, half-way between the lowest rib and the crest of the ilium, and the presence of blood in the urine. The lad remained unconscious for two hours, but with the exception of severe pain in the head for a few days he had no bad symptoms. The hæmaturia continued, however, and on more minute inquiry I found that the urine had previously to the accident 'been red when passed,' and when the patient had recovered from the injury due to the fall I discovered for the first time that he had a small papilloma in his bladder from which blood continued to flow at irregular intervals. In this case, from my inability to obtain information respecting his past history, I at first believed the hæmorrhage to be from the kidney, which I thought had been injured by the fall, but subsequent investigation showed that in this assumption I was entirely wrong. It will therefore be seen that while hæmaturia is one of the most reliable symptoms of contusion or laceration of the kidney from traumatic causes cases of injury in the lumbar region may coexist with hæmorrhage without these circumstances being related to one another as cause and effect."

In cases where the kidney is bruised without laceration of its tissues hæmaturia may be present for a few days after the accident. The bleeding is not usually prolonged or severe and the appearance of blood in the urine may not closely follow upon the injury; its appearance, indeed, in some cases may be delayed for hours, or even for days, through a blocking of the ureter by a coagulum. The following case illustrates this:—

CASE 4. *History of a fall with bruising; severe pain and swelling in the left lumbar region, followed three days afterwards by a copious hæmaturia, coincident with relief of pain and disappearance of swelling in the loin.*—A man, aged sixty-four years, was admitted to the Glasgow Royal Infirmary on April 1st, 1896, and he stated that a fortnight previously to admission he had fallen a distance of 30 ft. and landed, he thought, on his buttock, but on recovering from the immediate shock of the injury he suffered from a severe lacerating pain in the left lumbar region. The following morning he had so far recovered that he resumed his work, even although the pain in the region of the kidney was very severe. In the evening of the second day after the accident he found the left side much swollen and the pain had considerably increased, but on the third day the pain was greatly relieved and at the same time the urine became for the first time deeply stained with blood and he observed a number of small blood-clots in the urine. The hæmaturia continued for over a week when he sought admission to the hospital. Previously to the accident he had never noticed any blood in the urine. When he was admitted the bladder was found to be filled with blood-clot, so that a catheter required to be passed and the bladder washed out. The bleeding continued until April 10th when it suddenly ceased without any recurrence of the swelling or pain in the left lumbar region.

In the more severe lacerations of the kidney the urine is usually highly coloured and scanty and blood appears in the first quantity of urine passed after the accident. The hæmaturia may not be constantly present and may vary in amount from time to time or it may not appear at any time in the whole course of the case; consequently its absence must not be taken as an indication that the kidney is free from injury. Supposing the ureter to be completely torn across or the kidney divided through nearly its whole thickness the great probability is that the blood will escape into the tissues surrounding the injured organ rather than by the ureter and bladder.

CASE 5. *History of fall of over 60 ft. producing large scalp wound, punctured wound between the right scapula and spine, compound fracture of the left leg and rupture of the liver and kidney.*—The patient was admitted to the Glasgow Infirmary on March 20th, 1896, suffering very severely from shock. About 11 P.M. on the previous evening he fell down the shaft of a mine, about 66 ft. deep, into water about 3 ft. or 4 ft. in depth. On examination the patient was found to have sustained a long scalp wound on the back of his head, a punctured and lacerated wound between the right scapula and the spine, a wound over the right elbow, and a compound fracture of the left leg three inches below the knee, which exposed the bone for three or four inches. Although suffering severely from shock at the time of admission he gradually improved during the following day, but complained very much of pain in the small of the back. 30 oz. of urine were passed on the 21st and it contained only a small quantity of blood. On the morning of the 22nd he suddenly became much weaker, the pulse failed rapidly, his respirations became more laboured, and death occurred about 1 P.M.

The post-mortem examination showed, beyond the external injuries above mentioned, a slight rupture on the convex upper surface of the liver, some sub-serous ecchymosis at the cardiac end of the stomach, and the adipose capsules of both kidneys were filled with blood which had escaped through large ruptures of the renal tissues; no blood had escaped into the peritoneal cavity. On the other hand, hæmaturia may be a prominent symptom after an accident without the kidneys themselves being injured in any way. I well remember a case which came under my notice many years ago while I was resident assistant in the Western Infirmary, Glasgow.

CASE 6. *Injury to the pelvis and right lumbar region; severe hæmaturia, thought at first to be renal afterwards proved to be from the neck of the bladder.*—The patient, a lad, aged fifteen years, by occupation a carter, was leading his horse and a heavily-laden cart up a steep hill. Walking backwards in front of the horse he suddenly slipped and one wheel of the cart passed obliquely over his pelvis and right lumbar region

[4] Newman: Surgical Diseases of the Kidney, p. 312.

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without causing any fracture of bone. When brought into the Western Infirmary he complained of great pain in passing urine, which was highly stained with blood. For some time the hæmaturia was believed by the late Dr. J. G. Lyon to be due to a rupture of the kidney, but on more careful examination it became abundantly evident that the escape of blood arose from an injury of the urethra close to the neck of the bladder, which led finally to the formation of a urethro-rectal fistula.

CASE 7. *Fall producing severe injury in the right lumbar region followed by renal pain and hæmaturia lasting for three days; apparent recovery in one month, followed by return of pain, sense of weight in the right lumbar region, and physical signs of moveable kidney.*—A man, aged twenty-seven years, a fireman, was admitted into the Glasgow Royal Infirmary on Nov. 19th, 1897. He stated that in the previous July he fell from a ladder and struck his right side just below the ribs; the height of the fall was only about 3 ft. and at the time the injury appeared so trifling that he continued his work for three hours thereafter; but on walking home from his work he began to suffer from severe pain just below the right ribs in the lumbar region. It was aching in character and increased by deep inspiration, coughing, or bending forward the body. The first quantity of urine passed contained blood but no blood-clots were observed. The hæmaturia continued for three days only, after which the urine became quite clear. After remaining ten days in bed the pain became less severe, but occasionally while at work it recurred and did not finally disappear until about a month after the injury. Five months after the accident, while lifting a heavy weight, he felt as if something had given way in his back and shortly the pain became so bad that he was forced to give up his work and take to bed. The pain on admission to the hospital was very severe and occasionally passed down the right thigh as far as the knee. On examining the abdomen a distinct right moveable kidney was discovered even although over it the muscular resistance was increased. In the lumbar region on the right side the percussion was unduly dull, even when the patient was lying upon his face and the right kidney pressed forwards. The urine was strictly normal in all respects.

While these cases sufficiently illustrate the hæmaturia produced by direct injury I have seen other cases where slight indirect violence has been followed by the appearance of blood in the urine for the first time. It is not to be concluded in such cases that the traumatism is the only cause of the hæmorrhage; pre-existing disease may not up till the time have shown itself by a hæmaturia, but a hæmorrhage may be brought on by a slight direct or indirect blow, as, for example, there may be a stone in the kidney, or a tumour, or chronic Bright's disease. The patient receives a blow in the lumbar region, he falls on his buttock, or he sustains a sudden strain from lifting a heavy weight, then suddenly he has a sharp pain in the renal region or feels as if "something had given way," and the first urine he passes thereafter contains blood. Here the injury has been the immediate exciting cause only, but the circumstance that a hæmaturia has been brought on by so trivial an injury makes one very suspicious of the presence of a soft malignant tumour either in the kidney or in the bladder.

CASE 8. *Carcinoma of the right kidney; first symptom profuse hæmaturia after a slight fall followed by great pain in the renal region and the passage of large blood-clots. Subacute tubular nephritis.*—The patient, aged sixty-one years, was seen by me three months before his death in December, 1885. The history given by his family attendant (the late Dr. Robert Smart) was that he tripped going downstairs and fell, landing upon his left side and buttock. No renal pain was experienced at the time of the accident, but two hours afterwards he passed urine containing a considerable quantity of blood and early the next day severe pain was experienced in the right lumbar region. This was coincident with the passage of a large quantity of blood-clot and some blood. On the evening of the day after the accident the bladder was filled with blood-clot so that a large catheter required to be passed and the bladder washed out with boric solution. There was no renal colic, but the patient experienced a diffuse and intense pain in the lumbar region, which was increased by deep pressure; rest in bed and the administration of hazeline had no effect upon the bleeding. The bladder was washed out with a solution of boric acid twice daily. Morphia suppositories were given and after eight days the pain somewhat subsided and the hæmaturia diminished. The temperature rose to 102° F. in the evening and oscillated between that and 99·5° during the next fortnight, when a second profuse hæmaturia occurred, which greatly weakened the patient. The urine had a specific gravity of from 1011 to 1015 and an alkaline reaction; it contained more albumin than was represented by the blood present and the deposit was composed of mucus, triple phosphates, blood, leucocytes, large epithelial cells, and granular and epithelial tube-casts. The question of an operation was considered, but in the circumstances it was not deemed advisable. The patient died three months after the onset of the first hæmaturia and at the post-mortem examination a large fungating carcinoma was found occupying the pelvis of the right kidney. Both kidneys were soft and considerably enlarged and the mucous membranes of the pelves were in a state of acute catarrh and contained some muco-purulent material and on microscopic examination the tissue of the kidney presented the characteristic appearances of subacute tubular nephritis. In this case probably the necessary catheterism of the bladder facilitated the fatal termination, but we had only the choice between two evils.

(b) From calculus.—I have already referred to some of the features which distinguish hæmaturia arising from renal calculus and that due to other causes, but still there are points which require attention. The most obvious characteristics of this form of hæmaturia are that the bleeding is seldom profuse or obstinate. The blood is generally light in colour and the hæmorrhage is as a rule brought on by sudden movements or active exercise, and it is associated generally with severe colicky pain. These circumstances when accompanying or determining the hæmaturia give the symptom its special value. In cases of renal calculus without suppuration, especially if the stone be impacted in the renal substance, the symptoms are not marked; indeed, the only indication of disease may be occasional slight renal pains, with or without hæmaturia, or severe pain may exist for a time and then disappear for a long period. It is in such cases that the diagnosis of renal calculus is difficult, sometimes quite impossible. There may be renal pain, frequent micturition, slight hæmaturia, or even the presence of small quantities of pus in the urine, from an undue increase in the free acid in that excretion or from oxaluria. The habitual deposit of uric acid or oxalate of lime in urines of high specific gravity is often associated with dyspeptic, nervous, and other symptoms strongly suggestive of renal calculus. These may last for long periods, but if suitable treatment be adopted they usually disappear. On the other hand, considerable, sometimes enormous, stones may be discovered in the kidney after death, although no renal disturbance had been known to exist at any period during the life of the patient. This is not uncommonly observed in hospital practice. Under such circumstances the want of knowledge may reasonably be attributed to the carelessness of the patient, but such an explanation cannot be urged for a case which Dickinson describes. A renal calculus composed of phosphates of magnesia and ammonia, weighing 7½ oz., was taken from the body of a daughter of Sir Richard Steele, in whom during life no symptoms indicated its presence. In uncomplicated cases of renal calculus the pain is generally dull or may only amount to a sense of weight in the loin on the affected side. It is, as a rule, inconstant, absent while the patient is at rest but aggravated on any movement of the body, but especially by jolting movements, such as jumping, riding, driving, &c. The pain may also vary with posture, one attitude being generally associated with increased discomfort, while another may bring relief. The unpleasant sensations just referred to are for the most part limited to the affected side, they may, however, extend along the course of the ureter to the perineum, the testicle, or down the thigh; but while this is so the pain may pass over or even be limited to the opposite renal region. In non-suppurating cases of calculus, hæmaturia is one of the most important symptoms. But while, on the one hand, it may be true to state that of all causes of hæmorrhage from the kidney calculus is the most common, on the other hand a calculus may occupy the kidney without at any time causing the patient to lose a perceptible quantity of blood. Although constantly present or oft repeated, hæmaturia from calculus is rarely so profuse as to cause marked anæmia. Perhaps the most characteristic feature of calculous hæmaturia, as distinguished from other forms, is its dependence upon movements of the body. Sometimes the appearance of blood or an increase in the hæmorrhage does not

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immediately follow exercise, but only shows itself after some hours or even days.

CASE 9. *Renal uric acid calculus; exercise causing immediate pain and hæmaturia the following day; no blood-clots in the urine.*—The patient, a woman, aged fifty-eight years, in 1888 consulted Professor (now Sir) William T. Gairdner, who sent her to me. She had suffered from violent colicky pain in the right renal region for the previous six years. At first the attacks were slight, and were always brought on by some active exercise. They did not recur oftener than once in six or eight months, but latterly the recurrences of pain were more frequent, and were accompanied by hæmaturia; usually, however, the quantity of blood was small in amount and the urine cleared up very soon after the patient procured complete rest in bed. So long as she remained at rest the pain did not trouble her and the urine remained clear; but if she took active exercise it was certain to bring on an attack of pain, which was followed by hæmaturia in from eighteen to twenty-four hours. This delay in the appearance of blood was frequently observed. No blood-clots were seen in the urine at any time, and the urine passed at the onset of the attack and for several hours following was clear and of low specific gravity, from 1006 to 1008.

The circumstance that no blood-clots were seen in the urine seems to indicate that the non-appearance of blood in the urine till the day following the onset of pain was not due to obstruction of the ureter by coagulum. The most reasonable explanation of such cases seems to be that the irritation of the calculus in the pelvis or at the entrance of the ureter induced a reflex inhibition of the function of the affected kidney only, either by producing a spasm of the walls of the ureter, or contraction of the small renal arteries, and that this spasm passing off was followed by an undue relaxation of the capillaries, a passive hyperæmia and transitory hæmorrhage following. Most usually, unilateral obstruction, such as is produced by the presence of a calculus in one ureter causes reflex inhibition of both kidneys and complete anuria. Irritation of the uinary bladder, as manifested by frequent and sometimes painful micturition, is not an uncommon accompaniment of renal calculus—so much so that I have seen this disease mistaken for cystitis or suspected to be vesical calculus. This mistake is, however, more apt to occur when the renal stone has caused suppuration. On account of the intimate relationship which exists between the nerve-supply of the kidneys and that of the alimentary canal, hæmaturia and renal pain, especially if intense, are accompanied by more or less gastric disturbance, varying in degree from the mildest attacks of nausea to the most violent vomiting of bilious matter, flatulence, and gastrodynia. When the renal calculus has given rise to or is associated with suppuration the symptoms are generally distressing and persistent. The amount of irritation in the kidney, in the renal pelvis, and in the ureters caused by a concretion depends largely upon its nature and situation. The rougher, heavier, and more freely moveable a calculus is, the higher will be the degree of irritation, as manifested by symptoms of pyelitis or pyonephrosis superadded to those of calculus. On the other hand, the effect of prolonged rest in the treatment of renal calculus is well recognised. The following case is a good illustration of it.

CASE 10. *Constant dull pain of four years' duration, occasional attacks of hæmaturia from the right kidney, sometimes very profuse after exercise; nephro-lithotomy advised but refused; the symptoms cured by rest in bed.*—A man, aged thirty-five years, consulted me at the Glasgow Infirmary and was admitted on Nov. 15th, 1892. Two and a half years prior to admission the patient was playing lawn-tennis, when he suddenly strained himself, and within a few hours he passed a large quantity of dark, mahogany-coloured urine, but this was not accompanied by any pain. Six months after this he had a recurrence of the hæmaturia, associated with an acute attack of renal colic, which, however, only lasted for a short time, but after the first attack he had recurrences both of the hæmaturia and pain every five or six weeks. On admission physical examination elicited no abnormal conditions beyond increased resistance in the right lumbar region. The urine was highly coloured, of specific gravity 1028, acid, containing a deposit of mucus and a slight trace of albumin, but no blood or pus. Four days after admission the patient had an acute attack of hæmaturia and of severe pain which lasted from 6 A.M. till 9.30 A.M., when he was placed under chloroform and the bladder was explored with the cystoscope. The examination revealed blood issuing from the right ureter in small quantity, and the orifice of the ureter was occupied by a clot. The circumstances of the case seemed to warrant a diagnosis of renal calculus and the patient was advised to have it removed by operation. This, however, he refused, and so complete rest in bed was ordered. The patient was kept at absolute rest for four weeks, and during that time he had no recurrence of the pain or of the hæmaturia. He remained in bed for other six weeks after leaving the infirmary, and on March 21st, 1897, he reported that he had had no recurrence of the pain or the bleeding since he left the hospital on Dec. 16th, 1892.

(To be continued.)

TWO CASES OF OBSTRUCTION BY BAND; THE ONE CHRONIC, THE OTHER ACUTE.

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EACH of these cases had special features of interest which seem to make them worthy of record—the first by reason of the position, strength, and exceeding tenuity of the obstructing band, and the second because of the unusual amount of blood-stained peritoneal effusion and the acutely dangerous condition of toxæmia from which the patient was rescued. I am indebted to Mr. F. W. Summer for the notes of the first case which was that of a married woman without children, who was admitted to St. Mary's Hospital on Jan. 15th, 1896. She had previously been treated by Mr. Archer Wood, of Dulwich, from whom it was learned that four years before she had been under his care for a month suffering from some difficulty in the action of her bowels, with occasional passing of a small quantity of blood. The attack, however, ceased, and until within three months of her coming to the hospital she had continued well. The same symptoms then returned. She had through life been healthy and had never to her recollection been laid up with any abdominal disorder. A well-nourished woman, thirty-eight years of age, as far as appearances went she had nothing the matter with her and her aspect was altogether unlike that of a person suffering from malignant disease. There was no abdominal distension, but invariably before action of the bowels she suffered somewhat severe pain to the left of the umbilicus which was relieved by firm pressure with her hand, a manœuvre which experience had taught her was of use in securing action of the bowels. Evacuation of the bowels was thus always a matter of pain and difficulty, but she had no vomiting and beyond a little mucous discharge and slight laxity of the motions there was nothing to call for special remark. Nothing was to be felt *per rectum* and the result of abdominal examination on Feb. 1st under an anæsthetic was equally negative. Anxious herself to be quit of the trouble and in the belief that there must be some cause of partial obstruction in the lower bowel which could in all probability be relieved, exploration was resorted to on Feb. 5th. The abdomen was opened in the left linea semilunaris and an inch or so above the termination of the descending colon there was seen to be a deep sulcus which on closer investigation was found to be produced by a band running transversely across the gut. The finger-nail was passed under it with the object of tearing it, but this proved impossible, for the band was stretched across the bowel with the tightness of a violin string and the knife was necessary for its division, when it snapped with a distinct twang. There were no other bands or adhesions in the neighbourhood and no light was thrown on the origin of this peculiarly tense, unyielding cord. It must, however, have been a thing of old formation and in all probability had its beginning at the time of her first short illness four years before. The affected region of the gut was free from congestion or structural change. It had no mesocolon. The result of the operation was to rid the patient immediately of all her symptoms, and from inquiry in the course of the present year we learned that she had enjoyed good health since leaving the hospital on March 10th, 1896, the

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wound having then soundly healed. It is difficult to surmise what may have been the precise origin of this unusual band, for there had been no history of pelvic trouble and the band itself lay entirely outside the pelvis. I have never seen an abdominal band at all as firm as this, and it was a fortunate event for the woman that it was divided before the bowel had been itself damaged. The history shows how indefinite and obscure were the symptoms and how operation alone could have relieved them. So fine, however, was the band, that had it not been for the sulcus in the bowel it might perchance have been missed—an accident which I know to have occurred in another case with somewhat like symptoms, unfortunately postponing thereby a second operation for the relief of complete obstruction until it was too late. The practical lesson to be learned from the case is thus sufficiently obvious.

CASE 2.—This case was one of the most acute obstruction with symptoms of extreme urgency. A man, aged fifty-nine years, was admitted to St. Mary's Hospital on March 8th, 1898. On the early morning of the 7th he was seized with great pain at the umbilicus while at stool—pain which rapidly became so much worse that he was obliged to leave his work and send for a medical man. In the afternoon he vomited frequently. After 10 A.M. he passed neither fæces nor flatus. On admission to the hospital at midday of the 8th he had a most anxious, ghastly expression; his face and lips were blue, his mouth was parched, he had intense griping pains all over the abdomen, he was well-nigh pulseless, and was almost continuously sick. The abdominal wall was rigid, but there was no marked distension. Nothing could be felt on palpation. The nature of his symptoms admitted of no doubt and he was taken at once to the theatre. The abdomen having been opened in the middle line, systematic examination of the bowel from below upwards ultimately led to the discovery of a coil of jejunum some six inches in length, of a deep plum colour, constricted by a fine band three or four inches long, and running from omentum to omentum. It was easily torn through with the finger and did not bleed. Flatus immediately passed onwards into the empty gut below. The coil of ensnared bowel was smooth and free from lymph—there was indeed no effusion of lymph anywhere—and there was no fear that it would not perfectly recover itself. So much and no more would have been necessary in the way of operation had not the peritoneal cavity contained a large quantity of blood-stained serum—so much, in fact, that it was deemed absolutely essential to remove it, and this was forthwith done by washing out the cavity with a saline solution. Just as a hernial sac is sometimes found to contain blood-stained serum when bowel has been strangulated within it, so here the peritoneum took the place of a hernial sac into which unusual quantities of blood-stained serum had been effused. The wound was closed in the usual way, and thereafter the patient made steady progress to recovery. His course throughout gave little or no anxiety; the vomiting soon ceased and his bowels were in due time moved, his only trouble being the most intense thirst for three or four days after the operation, due in no small measure, it may be conceived, to the loss of fluids both by the vomiting and the peritoneal effusion. He was discharged on May 5th. For the notes of this case I have to thank Mr. Hussey.

The operation was in this case singularly free from difficulty because of the fact that the constricted bowel was high up and the greater portion of small intestine was flaccid and empty. But the site of the strangulation no doubt determined the initial severity of the symptoms, which in their turn contributed to that which was the most prominent feature in the case—the extraordinary amount of peritoneal effusion. This, again, in turn conduced to the serious condition of the patient, which was clearly one of acute toxæmia from which death was imminent. The peritoneum presented none of the grosser visible signs of peritonitis, but the man was nevertheless dying, surely not from the mere fact that a short length of bowel was ensnared by a band but because doses of poison developed in his own peritoneum—and in all probability of the most virulent kind—were being rapidly absorbed into his system. There was never a more striking case. "There is about the patient who is dying of peritonitis every suggestion of a poisoned man. He lies in bed prostrate, with gaunt cheeks and sunken eyes. There is a look of unceasing anxiousness in his face and a sense of hopeless unquiet in his movements. The hands, which wander with pathetic restlessness over the bedclothes, are cold and damp. The tongue is that of a man who is dying of thirst. There is constant vomiting. The breathing is laboured and accompanied with faint sighs and groans, and the countenance is ashen and livid." This is the picture drawn by Treves in his lectures on Peritonitis,[1] and it is eminently suggestive of death by poison. To clear away the source of the poison in the peritoneum must, then, be the surgeon's aim, and it may with truth be said that there is probably no condition in which it is so essential to wash and cleanse the peritoneal cavity of any effusion there may be in it, or in which it is so necessary to disregard, and not be misled by, the absence of the grosser indications of "peritonitis" if the best is to be done for the patient in a case like this at the time of operation.

THE VALUE OF ANTI-STREPTOCOCCIC SERUM IN THE TREATMENT OF SOME PATHOGENIC INFECTIONS.

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So many conflicting statements have been made in the medical journals of late regarding the efficacy and real value of anti-streptococcic serum that I determined to give it an extended and thorough trial in those diseases which were found on examination to be due to infection by the streptococci. In THE LANCET of Feb. 19th, 1898, I recorded a case of puerperal septicæmia in which the patient's life was, in my opinion, saved by this treatment and I then sounded a note of warning against the indiscriminate practice of injecting all cases of septic infection with this powerful remedy. From the very nature of things the serum can only be of service in streptococcal infections and ought never to be used until either the microscope or bacteriological examination has shown streptococci to be present in the blood or discharge. The cases under my care in which the serum has been used are 11 in number—namely, 4 cases of puerperal septicæmia, 2 cases of septic cellulitis, 2 cases of mastoid disease with septicæmia, 2 cases of erysipelas, and 1 case of puerperal sapræmia.

CASE 1.—A married woman, aged twenty-two years, a primipara, was admitted to the infirmary on Oct. 31st, 1897, suffering from puerperal septicæmia. She had been delivered 15 days previously, having been attended by a midwife. The patient's temperature was 106° F. and the pulse was 146. She was quite unconscious and wildly delirious. I curetted the uterus, removing a large quantity of placenta and stinking débris. On examination of this it was found to be swarming with streptococci which were also found in the blood. Injections of serum (20 c.c. as a dose) were given at intervals with marked effect. The temperature was reduced, the delirium abated, the patient became conscious, and the pulse was reduced in rate and altogether much improved. In all she had 60 c.c. of serum in four injections and made an excellent recovery.

CASE 2.—A woman, aged thirty years, was admitted to the infirmary on Nov. 8th. She had been confined of a still-born child on Oct. 28th, having been attended by a midwife. The labour was prolonged, lasting a week; 3 days later she became delirious. On admission the temperature was 103° F. and the patient had all the symptoms of puerperal septicæmia. Microscopic examination showed that streptococci were present both in the blood and in the discharge from the uterus. On Nov. 25th the patient was put under chloroform and the uterus was scraped out and 10 c.c. of serum were injected; the temperature dropped to 101° and she felt much better. She, however, developed septic pleurisy and died on Dec. 5th.

CASE 3.—A girl, aged fifteen years, was admitted to the infirmary on Dec. 30th, 1897, with a high temperature (105° F.), loss of consciousness, and acute delirium. She had a purulent discharge from the left ear and all the symptoms of mastoid abscess with meningitis. On the 31st the mastoid antrum was cleared of a lot of offensive pus and I made a free communication between the middle-ear and external

[1] Lettsomian Lectures, 1894, p. 8.

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meatus. The pus from the middle-ear was full of streptococci. 20 c.c. of serum were injected with an excellent result, the temperature dropped in a few hours, the headache was better, the skin was moist, and the pulse was reduced. She, however, developed septic pleurisy and died on Jan. 1st, 1898. At the post-mortem examination it was found that the lateral sinus and internal jugular were thrombosed and contained stinking thrombi.

CASE 4.—A girl, aged nineteen years, was admitted to the infirmary on Jan. 26th, 1898, with a temperature of 105° F., suffering from a most acute attack of erysipelas which involved the head, neck, and chest. The temperature remained between 104° and 105° for 5 days and the girl was in a very critical condition. Examination showed that the blood was swarming with streptococci. 20 c.c. of serum were given on Jan. 30th with a most astonishing result. The temperature dropped to 100° in 5 hours and the patient was more conscious and felt relieved. The temperature again rose to 105° on the next day and another 20 c.c. of serum were given, with the result that it dropped in five hours to normal. It again rose next day to 104°, when 20 c.c. of serum were given, bringing down the temperature to 101° and the pulse from 140 to 110. The patient had another injection on Feb. 2nd of 20 c.c. of serum, after which the symptoms subsided and she made an excellent recovery. The patient had in all 80 c.c.

CASE 5.—A woman, aged thirty-five years, was admitted to the infirmary on Feb. 19th with septic cellulitis of the hand and arm extending to the elbow. It had a foul and gangrenous smell and was rapidly extending. Examination of the pus showed the presence of streptococci. Under chloroform I made free incisions and removed all the sloughing material and at the same time injected 20 c.c. of serum into the affected arm. The result was magical; the arm quickly quieted down and the patient made a good recovery with a useful arm.

CASE 6.—A woman, aged forty-six years, was admitted to the infirmary with septic cellulitis of the arm following an injury by a rusty nail. She was extremely ill, the wrist-joint was suppurating, and she had septicæmia. I laid open the joint and incised the arm and injected 20 c.c. of serum. She improved considerably, but eventually succumbed to an attack of septic pericarditis.

CASE 7.—A girl, aged seventeen years, was admitted to the infirmary on March 10th, 1898, with all the symptoms of mastoid abscess and meningitis. Her temperature was 104° F. and she had a fœtid discharge from her left ear on March 11th. I trephined the mastoid antrum and made a free communication with the external meatus, clearing out a lot of stinking pus. At the operation I injected 20 c.c. of serum. On the following day she was conscious and her temperature dropped to normal. She afterwards had three injections of 10 c.c. of serum each and although she had a prolonged attack of meningitis she made an excellent recovery. Her blood contained streptococci.

CASE 8.—A woman, aged thirty years, was admitted to the infirmary on March 19th suffering from puerperal septicæmia. She had been confined a week previously of a child and attended by a midwife. The uterus was scraped out and 20 c.c. of serum were given three times, making in all 60 c.c. After each injection she was relieved, the temperature dropped, the pulse became slower, and her headache and pain were relieved. She developed, however, septic pleurisy and pericarditis and died on March 24th.

CASE 9.—A woman, aged thirty-four years, was admitted into the insane wards of the infirmary on April 17th with puerperal mania. She had a temperature of 102° F., which rapidly rose to 105°, with all the symptoms of septicæmia. Under chloroform I curetted the uterus and intra-uterine douches of mercuric chloride were given. Plate cultures were made of the blood and uterine discharge which showed an almost pure cultivation of streptococci. 10 c.c. of serum were given on the 21st with a good result. She had numerous complications in the form of abscesses and infective periostitis of the femur, which were opened and drained under anæsthetics. In all she had 90 c.c. of serum, which in my opinion saved her life, as I have never seen a more complicated case.

CASE 10.—A woman, aged twenty-five years, was admitted to the infirmary on May 26th with all the symptoms of puerperal septicæmia with profound anæmia. She was delivered of a child a week before admission with placenta prævia. On admission her temperature was 105° F. and she was in a most serious condition. Under chloroform I curetted the uterus and removed nearly 2 oz. of stinking placenta and débris. On making plate cultivations of both the blood and uterine discharge no streptococci could be found, but numerous staphylococci, both aureus and albus; before the result of the bacteriological examination was known I injected 20 c.c. of serum (Pasteur's). The good result noted in the previous cases was not seen here, the temperature remained high and no further injections were given. The patient lingered until June 21st, when she died from septic pleurisy and thrombosis. Post mortem a very careful bacteriological examination was made of the organs. Cultivations on Petri dishes were made from the uterus, kidneys, and lungs, and all showed a complete absence of streptococci, but numerous staphylococci and bacilli coli communes were present. The uterus was found to be almost smooth and she had septic pleuro-pneumonia.

CASE 11.—A woman, aged fifty-two years, was admitted to the infirmary on June 24th with an acute attack of erysipelas, the temperature being 105° F. She was given 20 c.c. of serum with a most excellent result and completely recovered.

The above series of 11 most acute and severe infections by streptococci show 6 recoveries and 5 deaths. This is, I admit, not a very large percentage of recoveries, but it must be borne in mind that only the most acute and dangerous cases were submitted to the treatment. The most difficult part of the treatment is to determine the exact nature of the infection, whether it is due to the various forms of streptococci, or to staphylococci, or to a mixed infection of all these organisms. The bacillus coli communis is repeatedly found here, rarely alone, but generally with staphylococcus aureus; whether or not it is the same organism as the bacillus pyogenes fœtidus is a matter of uncertainty. My routine practice now is to at once submit the blood or discharge from any case of acute infection to a bacteriological examination in the laboratory, and if the presence of streptococci is demonstrated clearly to at once inject the serum. If the streptococci are not found the serum can be of no possible service, as was well shown in Case 10.

Much has yet to be done to elucidate the exact bacteriology of the various forms of sepsis and especially to separate and individualise the streptococci. The Pasteur Institute have succeeded in obtaining an anti-streptococcic serum by injecting pure toxins, thus placing it on the same basis as anti-diphtheritic serum, but at present the composition is a secret. If this is accomplished I feel sure it will be a great step in advance in the treatment of pyogenic infections. From a careful and prolonged use of the serum I feel convinced of its efficacy in the streptococcal infections such as puerperal septicæmia, septic cellulitis, erysipelas, and septic meningitis from middle-ear disease. The serum I now use is supplied by any druggist and is obtained from the Pasteur Institute in fluid form, as I find it more pure and free from errors in filtration. I have never seen any bad symptoms from the use of the Pasteur serum if obtained comparatively fresh and injected with antiseptic precautions. The dose I prefer is 20 c.c. In conclusion, I have to express my thanks to my colleagues, Mr. German and Dr. Christophers, for their useful assistance.

Liverpool.

A NOTE UPON A CASE OF ABDOMINAL SECTION IN WHICH STERILE BROTH WAS INJECTED INTO THE PERITONEAL CAVITY PREVIOUSLY TO OPERATION.

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DR. H. E. DURHAM, in an interesting paper upon the Clinical Bearing of some Experiments on Peritoneal Infections,[1] suggested a preliminary treatment of the peritoneum in operations upon the abdomen when there is a risk of contamination ensuing. The treatment he recommended

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lxxx., Part II., p. 191.

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was the preliminary injection of some substance which would increase the "local general resistance" of the peritoneum. This recommendation was based upon the experimental work of Issaef, who showed that the injection of such substances as sterile broth or nucleinic acid into the peritoneal cavity of guinea-pigs 24 hours before inoculation with the cholera vibrio protected the animals from death, while the injection of "cholera serum" was still more potent. Dr. Durham confirmed and extended these observations and drew attention to the fact that the most efficacious substance to employ was the serum of animals immunised to the microbe used for subsequent inoculation. From a careful examination of a number of cases of death after abdominal section he also showed (1) that various kinds of bacteria might be the cause of death after abdominal section, but that the streptococcus pyogenes was the most frequent; and (2) that death after abdominal section was often attributed to collapse or shock when it was really due to bacterial infection. From these considerations Dr. Durham suggested a preliminary treatment of the peritoneum in certain cases of abdominal section, and he thought that the antistreptococcic serum was perhaps the best substance to employ. As this was only a suggestion which had never been carried out the notes of the following case in which the method was employed may be of interest, if for no other purpose, to show that in certain cases, at any rate, it is practicable.

The case was that of a child, aged eight months, who was admitted into Guy's Hospital at midday on May 15th, 1898, for intussusception. The symptoms, which commenced twenty-five hours before admission, consisted of abdominal pain, vomiting, and the passage of blood *per rectum*. No tumour could be felt. An attempt to reduce the intussusception by the injection of milk into the rectum was immediately made. During the evening the patient appeared to be comfortable and it was hoped that the intussusception had been relieved; but the next day all the symptoms had returned. At midday on May 19th an anæsthetic was administered and milk was again injected into the rectum. It was considered that in the event of the injection being unsuccessful an abdominal section would be required within the course of the next twenty-four hours and that the preliminary treatment of the peritoneum recommended by Dr. Durham was indicated. With this object 5 c.c. of sterile broth were injected into the peritoneal cavity with strict aseptic precautions while the patient was still under the anæsthetic. The injection was easily performed in the following manner. The abdominal wall was pinched up into a fold between the finger and thumb of the left hand and the fold was transfixed with the needle of the syringe. On loosening the grasp with the finger and thumb the fold sprang back, leaving the point of the needle in the abdominal cavity. On the 20th, the symptoms continuing, Mr. Dunn, who kindly saw the patient, opened the abdomen and attempted to reduce the intussusception. As the state of the gut prevented the reduction of the last part of the intussusception it was brought out of the wound and a Paul's tube was inserted. On the 21st the abdominal symptoms had subsided and the patient appeared better, but towards the evening he became collapsed and died at 1 A.M. on the 22nd. At the post-mortem examination the wound looked healthy and there was no evidence of peritonitis. All the organs were normal.

Cavendish-place, W.

A CASE OF PUERPERAL SEPTICÆMIA WITH SUBNORMAL TEMPERATURE THROUGHOUT.

BY JAMES J. HARDING, L.R.C.P. & S. IREL.

AT 9 P.M. on Feb. 28th, 1898, I was sent for to attend a woman, aged forty years, who was in her fifth confinement. She was instrumentally delivered of her first three children. Her fourth labour was easy and uneventful (probably premature). All the children survived their birth. I was informed by the nurse that the membranes had ruptured on the morning of the 25th at 2.30 A.M. The patient was an extremely anæmic woman; her pulse was weak at 120 and her temperature was 97° F. The os was dilated and the head, in the first position, was engaged high up in the brim. The uterus was in a state of weak tonic contraction. The fœtal pulsations were good at 140 and were heard below and to the left of the umbilicus. The sacral promontory was easily reached with the index finger, giving as nearly as I could calculate a conjugate of 3¼ in. I had some difficulty in delivering with forceps an asphyxiated child, who after the use of Schultz's artificial respiration, baths, &c., ultimately came to. The placenta and membranes were easily expressed entire. She had no hæmorrhage. After washing out the uterus with a 1 in 3000 sublimate solution and injecting subcutaneously $\frac{1}{100}$ gr. of ergotinin I left her with a pulse of 110, a temperature of 97°, and good uterine contraction. On March 1st the patient had had a restless night. Vomiting had set in at 4 A.M. and continued up to the time of my visit at 10 A.M. Urine had been passed freely but there had been no action of the bowels. The lochia were foul-smelling. The pulse was 150 and the temperature was 97°. I washed out the uterus with a 1 in 2000 sublimate solution; $\frac{1}{100}$ gr. of ergotinin and $\frac{1}{60}$ gr. of sulphate of strychnine were injected subcutaneously owing to the flabby state of the uterus and I gave a draught containing 15 minims of liquor opii sedativus. On visiting the patient in the evening I found that she had rested for two hours. The vomiting had ceased, only to return again, and this time was accompanied by diarrhœa. The lochia were abominably fœtid. The pulse was 130 and the temperature was 97·2°. I washed out the uterus with a 1 in 100 lysol solution and injected subcutaneously $\frac{1}{100}$ gr. of ergotinin and $\frac{1}{60}$ gr. of sulphate of strychnine. I gave an enema of Battley's solution of opium and starch (20 minims). On March 2nd the patient had passed a restless night. She still vomited but the purging had ceased. The lochia were unchanged; the urine was dribbling away, the bladder being full. The pulse was 110 and the temperature was 97·2°. I drew off the urine, washed out the uterus with a 1 in 100 lysol solution and injected subcutaneously $\frac{1}{100}$ gr. of ergotinin and $\frac{1}{60}$ gr. of sulphate of strychnine. I ordered an effervescing mixture containing 2 minims of dilute hydrocyanic acid to be taken every fourth hour. In the evening the vomiting was less but the diarrhœa had returned. The lochia were unchanged, being still horribly fœtid. The pulse was 120 and the temperature was 97·1°. The urine was drawn off. The mixture was stopped and was replaced by 1 minim of creasote in milk every third hour. The uterus was washed out with a 1 in 100 lysol solution and $\frac{1}{100}$ gr. of ergotinin and $\frac{1}{60}$ gr. of sulphate of strychnine were injected subcutaneously. The uterus was still flabby. An enema of liquor opii sedativus and starch (20 minims) was administered. On March 3rd the patient had passed a restless night. The pulse was 106 and the temperature was 97°. The vomiting and diarrhœa still continued, the lochia being as before. The creasote was continued. I washed out the uterus with a 1 in 100 lysol solution and injected subcutaneously $\frac{1}{100}$ gr. of ergotinin and $\frac{1}{60}$ gr. of sulphate of strychnine. I drew off the urine and tamponaded the uterus and vagina with iodoform gauze (10 per cent.). In the evening no change had taken place since the morning. The pulse was 110 and the temperature was 97°. All else was as before. I removed and replaced the tamponade and discontinued the creasote as it appeared to be doing no good, probably it was unabsorbed; otherwise the same treatment as before was carried out. On March 4th the patient was in the same condition as she had been on the previous day and the same treatment was continued. The temperature was still 97°. The uterus was again tamponaded. In the evening she was slightly weaker but otherwise as before. I removed the tamponade and did not replace it. The temperature was 97·1° and the pulse was 130. On March 5th she was dying. The temperature was 97 and the pulse could hardly be felt or counted. The patient died at 4 P.M.

At no time from the beginning did the temperature reach the normal. On referring to the few text-books at my hand I can find no such case mentioned. Galabin, Dührssen, Playfair, and Quain's "Dictionary of Medicine" all refer to fever as being the most noticeable of the symptoms. Even in the very virulent cases, such as this, where collapse setting in, the temperature sinks below 98° and remains so till death, an initial rise is,

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according to those works, always apparent. No such rise occurred in this case nor were rigors noticed at any time. Abdominal tenderness was almost absent, as was also marked tympanites. I did not use anti-streptococcic serum nor did I curette as the symptoms were so profound from the first that I looked upon the case as hopeless and unlikely to be benefited by either. I have not mentioned dietetic treatment, stimulants, &c. They were of the usual description in such cases. The child was not weighed at birth, but on the tenth day it weighed 6½ lb.

I have to thank Surgeon-Captain O. L. Robinson, A.M.S., for kindly seeing the case with me and checking my observations, more especially the temperature observations, both with my own and a second thermometer.

Ballincollig, Cork.

AN INTERESTING CASE OF ANEURYSM.

BY J. H. MARTIN, M.R.C.S. ENG.,
DEPUTY INSPECTOR-GENERAL, ROYAL NAVY.

I BEG to send for publication in THE LANCET the following case, which presents the points of interest of (1) the patient being able to determine the exact moment of the rupture of the coats of the vessel and of (2) the rapid enlargement of the aneurysmal sac, which three days after the lesion was described as being "as big as a walnut" and on admission, eleven days later, was found to be of the size of a hen's egg.

The patient, a man, aged thirty-eight years, was received from H.M.S. *Royal Oak* on April 15th, 1898. The statement sent with him showed that on March 30th, three days before presenting himself at the sick berth, whilst blowing his boatswain's pipe he felt something "give" in his neck, and on examination an aneurysm of the left external carotid of the size of a walnut was discovered, and at the first opportunity he was sent to the hospital. On admission the patient, a spare man looking older than his years, was examined and the diagnosis of aneurysm of the left external carotid was confirmed; it was situated just above the bifurcation of the common carotid. The tumour was hard, smooth, and of the size of a hen's egg, clearly circumscribed, with eccentric, distensile pulsation over every portion which the fingers could reach, a little covered by the sterno-mastoid, which was displaced upwards and outwards. Being questioned the patient stated that a swelling in his neck suddenly appeared whilst he was blowing forcibly his boatswain's whistle, his head at the same time turning sharply over his right shoulder, giving in his neck the sensation "of the snapping of a piece of elastic," but he did not apply for treatment until the feebleness of his voice unfitted him for duty. He had afterwards suffered from a dry, metallic cough and the heart's action had become feeble and irregular. There was no valvular mischief; the arteries at the wrist were soft, compressible, and rather tortuous; there was no arcus senilis and the left pupil was contracted. There was no history of secondary syphilis and he appeared to have been a man of temperate habits and was married. He was placed in bed, put on a milk diet, and ordered twenty grains of iodide of potassium three times a day. Six days after admission he was put under chloroform and I cut down on the left common carotid, the vessel being ligatured with chromicised catgut above the border of the omo-hyoid. When the ligature was tightened pulsation in the sac at once ceased; there was a momentary contraction of both pupils, accompanied by a depression of circulation, pallor of the lips, and duskiness of the face and neck. The wound, practically bloodless, was closed with carbolised silk sutures and a piece of the finest drainage-tube was just inserted into the lower angle. He recovered slowly from the anæsthetic and the pulse remained feeble, intermitting about once in four beats. At 8 P.M. the patient suffered from intense pain over the whole left side of the head; he had vomited once. Three minims of hydrochlorate of morphia were injected. On April 22nd it was ascertained that he had had seven hours' sleep after the morphia and he was free from pain. There was no nervous symptom, but there was faint pulsation in the sac; the heart's action was weak and intermitting, and the left pupil was strongly contracted. On the 23rd the wound had firmly closed, the tube having slipped out. There was no pus and there was no pulsation in the tumour. On the evening of this day the patient suffered from severe headache over the left side of the head, and so he did again on the following evening, but at night he slept for seven hours. From April 25th the patient made uninterrupted progress. There was no headache, he slept all night, his appetite was good, the pulse under the administration of tincture of nux vomica had become stronger and regular, and the cough had ceased. On May 14th the patient was in his normal health. The aneurysmal sac was hard and was materially reduced in size; but the left pupil was still somewhat contracted. There was slight ptosis of the left eyelid, and the voice remained thin and boyish.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GUY'S HOSPITAL.

A CASE OF WOUND OF THE INTERNAL PUDIC ARTERY; OPERATION; RECOVERY.

(Under the care of Mr. C. H. GOLDING-BIRD and Mr. L. A. DUNN.)

THE difficulty of applying a ligature to the gluteal, the sciatic, or the pudic arteries as they emerge from the sacro-sciatic foramen is very great and it sometimes happens that the proximal portion of the wounded vessel retracts into the pelvis so that it is almost impossible to reach the bleeding artery. In these cases it has been suggested to tie through an abdominal incision the internal iliac or the corresponding branch after the division of the trunk. Fortunately wounds of these vessels are rare and especially rarely is the internal pudic wounded in its very short course in the buttock, for it enters this region only to leave it almost immediately. Even in the perineum, where the artery is more exposed to injury, it receives much protection from its sheltered position under cover of the ischial tuberosity. For the notes of the case we are indebted to Mr. Victor E. Collins, house surgeon.

A man, aged twenty-five years, was admitted into Cornelius Ward, Guy's Hospital, on May 25th, 1898, for injuries to the right buttock, head, and left hand. The history of the accident was that whilst painting the patient fell through a glass skylight on to the floor below, a distance of about 16 feet. It was found that he had cut his head and injured his left hand. He was therefore promptly taken to the hospital and was at once admitted. The clothes and stretcher were saturated with blood. On admission he was very collapsed from hæmorrhage, the pulse at the wrist being almost imperceptible, and a hypodermic injection of brandy (10 minims) was immediately given. Examination revealed the presence in the right buttock of a large tender swelling, which was rapidly increasing in size and which was exquisitely tender to the touch. In the middle of the swelling there was a punctured wound which extended right down to the bone and there was smart hæmorrhage from this wound. In the trousers corresponding in position to the wound there was an L-shaped tear and a pointed piece of glass was found in them. There was a deep scalp wound on the summit of the cranium and two lacerated wounds on the dorsum of the left hand were observed. In the absence of Mr. Golding-Bird Mr. L. A. Dunn saw the case and decided upon immediate exploration in order to ascertain the cause of the hæmorrhage. It was thought that the gluteal artery had been wounded.

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Ether having been administered a director was passed into the punctured wound and an incision about 6 in. in length was made in the direction of the fibres of the gluteus maximus, having its centre at the puncture. The wound was carefully deepened till the bone was reached, a considerable amount of blood-clot being turned out. Hæmorrhage was controlled by pressure forceps and the bleeding vessel was carefully sought for. It was then found that the internal pudic artery had been completely divided at the point where it crosses the spine of the ischium. The cut ends were ligatured with silk. This proved to be a matter of great difficulty owing to the depth of the wound. The wound was carefully cleansed, the muscles were approximated with continuous silk suture, and the skin was brought into apposition by interrupted salmon gut sutures. The patient made a good recovery and was discharged from the hospital on June 17th with the wound quite healed.

Remarks by Mr. COLLINS.—The case seems to be one of interest, firstly, on account of the rarity of such an accident, and, secondly, because of the difficulty of controlling the hæmorrhage owing to the depth at which the wounded vessel was situated. In conclusion I have to thank Mr. Golding-Bird and Mr. Dunn for their kindness in permitting me to publish the case.

YORK COUNTY HOSPITAL.

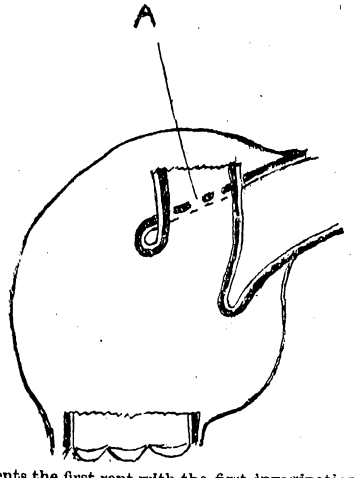
A CASE OF COMPLETE RUPTURE OF THE AORTA PRESENTING SOME EXTRAORDINARY FEATURES; NECROPSY.

(Under the care of Dr. R. PETCH.)

IN the very rare condition which is met with in the case reported below the length of time during which the patient survived is remarkable. Although there was a complete rupture of the aorta life was prolonged for more than five hours; this was only rendered possible by the attachment of the pericardium preventing the further effusion of blood. The explanation offered by Dr. Ashwin of the manner in which the vessel underwent such a curious invagination is very ingenious. For the notes of the case we are indebted to Dr. R. H. Ashwin, assistant house surgeon.

A man, aged fifty-six years, absolutely destitute and homeless, was observed to fall suddenly at 9 P.M. on April 20th while he was walking quietly on level ground. He immediately became unconscious and was taken to the York County Hospital, where he was admitted at 9.30 P.M. under the care of Dr. Petch. On admission he was in an extreme

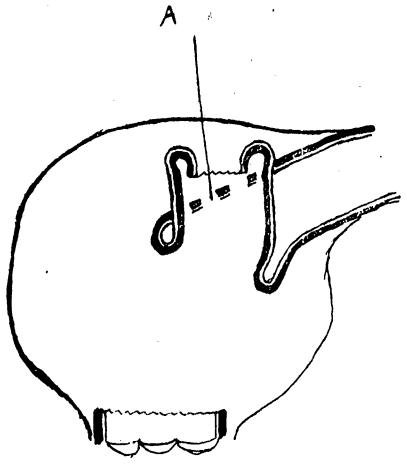
FIG. 1.



A represents the first rent with the first invagination passing through it.

state of collapse. The pulse was only just perceptible at the wrist, the skin was cold, clammy, and covered with perspiration, and the respirations were very infrequent and stertorous. There was also extreme rigidity of all the limbs with increased knee-jerks and an occasional spasm of the pectoral muscles drawing the upper arms in front of the chest. The pupils were dilated and did not react to light, but there was a sluggish conjunctival reflex. He had vomited whilst he was being conveyed to the hospital. From the extreme collapse, associated with rigidity of the limbs, the diagnosis of cerebral hæmorrhage was made. The patient was at once put to bed with plenty of hot bottles and under the influence of hypodermic injections of brandy and ether and the application of hot

FIG. 2.

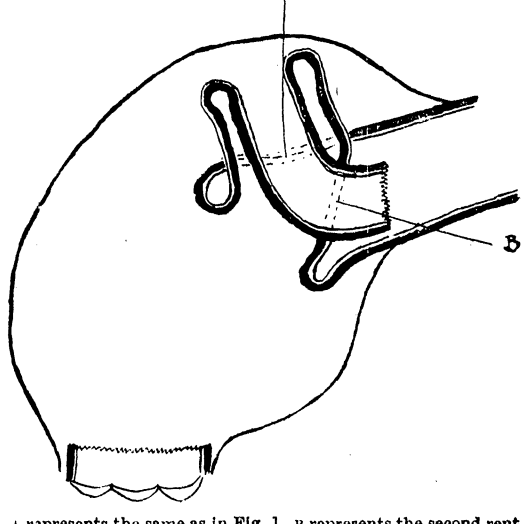


A represents the first rent.

flannels to the præcordial region the pulse improved considerably for a time. He vomited again whilst he was in the hospital, but there was no smell of alcohol or anything characteristic in the vomit. Death took place at 2.30 A.M., about five and a half hours after he fell, without his ever regaining consciousness.

Necropsy.—At the post-mortem examination it was found that the pericardium contained 6 oz. of blood. The heart

FIG. 3.



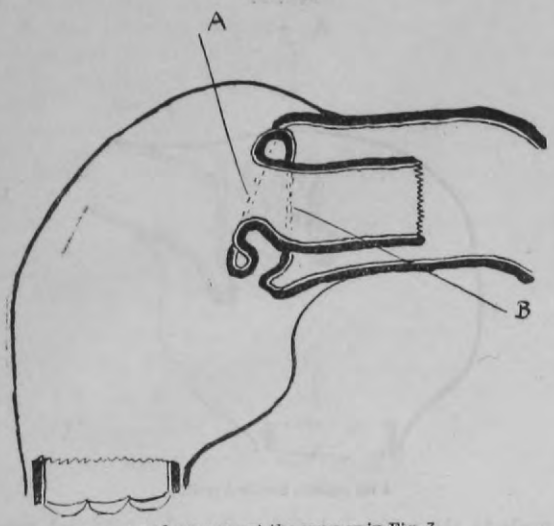
A represents the same as in Fig. 1. B represents the second rent with the second invagination passing through it.

showed some hypertrophy of the left ventricle but all the valves were perfectly healthy. There was a complete rupture of the aorta in a slightly oblique direction about ¾ in. above the aortic valves. The pericardium covering the ascending aorta had been forced away from the outer coat of the vessel as far as the origin of the innominate artery and was distended with recent blood-clot forming the wall of a false aneurysm. The ascending portion of the aorta was

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invaginated into the transverse portion as far as the commencement of the descending portion. This, however, was not a simple invagination as the intima of the penetrating portion looked inwards, and not outwards, towards the intima of the receiving portion. At first sight it was not apparent how this had been brought about and not till the invagination had been reduced was it discovered that

FIG. 4.



A and B represent the same as in Fig. 3.

there was yet another invagination. It was then seen that the condition had been produced thus. The ruptured end of the aorta had been turned inwards and passed through a rent in the arterial coats just below the origin of the innominate artery, as shown in Fig. 1, thus occluding the passage for the blood into the transverse aorta. A second invagination had then taken place, the ruptured end again

FIG. 5.



Showing the appearance of the invagination.

turning in and passing through a second rent in the arterial walls into the lumen of the transverse aorta. Fig. 2 shows this second invagination just commencing, and in Fig. 3 it is seen at a further stage after passing through the second rent. Fig. 4 showing it forced further through in the condition in which it was found. In these figures the first rent is marked A and the second rent B. A way for the blood to pass from the cavity of the false aneurysm into the aorta was thus restored. These figures are very diagrammatic and it has not been attempted to represent in them the fact that the different coats of the vessel were not all torn through at exactly the same place. In the case of the rent marked B the opening was markedly valvular, the intima being ruptured ½ in. further down the vessel than the adventitia. Fig. 5, which is reproduced from a photograph, gives a good idea of the appearance of the invagination. The transverse aorta is slit up to expose the invaginated ascending portion and the left ventricle and the commencement of the aorta are also cut open. There is a blow-pipe (1) passed through the lumen of the invaginated portion showing the course the blood took from the aneurysmal cavity into the descending aorta. A needle (2) is passed through the first rent (A) through which the primary invagination took place and a needle (3) is passed through the second rent (B) through which the second invagination had taken place, a third needle (4) is passed from the cavity of the aneurysm into the commencement of the innominate artery which was torn off from the aorta, and there is a needle (5) placed in the pericardial cavity lying in front of the parietal layer and partly concealed by the visceral layer of pericardium which had been forced away from the outer coat of the aorta.

Remarks by Dr. ASHWIN.—The above case of rupture of the aorta is, I think, interesting, not only on account of the rarity of the accident but also because the distal portion was invaginated twice through two distinct rents in the coats of the artery in such a manner as to restore the lumen of the vessel so that the circulation was maintained and life prolonged for five and a half hours after the occurrence of the rupture. As regards the cause of the rupture I fear I can make no suggestion. The patient does not appear to have been making any violent exertion at the time of its occurrence and the aorta was remarkably healthy for a man of his age, there being only two small patches of atheroma, one of which is marked 6 in Fig. 5. The brain was perfectly normal. I am indebted to Dr. Petch for permission to publish the case and to my senior colleague, Dr. G. W. Gostling, for his assistance and valuable suggestions at the post-mortem examination.

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF ANATOMY AND PHYSIOLOGY.

Irregular Phrenic Nerve.—Muscular Fibres of the Œsophagus.—Muscular Fibres of the Stomach.—Dislocation of Crystalline Lenses.

A MEETING of this section was held on June 3rd, Dr. D. J. COFFEY, the President, being in the chair.

Dr. J. BARTON read a short note on an Irregular Phrenic Nerve which came off from the fourth cervical and ran for one and a half inches in the trunk formed by the fifth and sixth nerves, getting a branch from the fifth. It then passed downwards and inwards in contact with the posterior surface of the sterno-mastoid, crossed the subclavian vein opposite the insertion of the scalenus anticus, and entered the thorax in front of the internal mammary artery and right innominate vein and then passed down by the vena cava and pericardium as usual. He also referred to the frequency with which the phrenic nerve passed behind instead of in front of the internal mammary artery.—Professor BIRMINGHAM suggested that the phrenic had perhaps associated itself with the nerve to the subclavius for some distance in this specimen and exhibited a specimen illustrating the Course of the Left Phrenic Nerve in the Upper Part of the Thorax, which he thought showed the true position of the nerve at a part of its course which is generally neglected in the usual descriptions.

Professor BIRMINGHAM read a paper on the Muscular Fibres of the Œsophagus in which he pointed out (supporting his views by several specimens) that the usual description which made the longitudinal fibres of the œsophagus divide above into three bands, two of which were said to be

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attached to the inferior constrictor and a third to the ridge of the cricoid, was inaccurate. He showed that these longitudinal fibres formed two chief bands above, which were first placed laterally and then wound round to the front, where meeting they passed into a tendinous band one-fourth of an inch wide, and this was attached to the top of the back of the cricoid at the upper end of its ridge. He also explained in detail the arrangement of the muscular fibres at the upper end of the tube and showed the part played by the inferior constrictor in uniting the pharynx and œsophagus.

Professor BIRMINGHAM also read a communication on the Arrangement of the Muscular Fibres of the Stomach. He agreed with the usual description of the longitudinal fibres. With the description of the circular fibres found in all our text-books he could not agree. These fibres were described as forming rings round the organ from the fundus to the pylorus. This is inaccurate. The fibres which form rings round the fundus and the adjacent part of the stomach to the left of the œsophagus belong to the deepest or oblique layer of the muscular coat. The detailed arrangement of the oblique fibres was given and the connexion of the three layers with the fibres of the œsophagus and the points brought out were illustrated by dissections of stomachs in which the muscular fibres were well developed.—Professor FRASER referred to the tendency exhibited by different observers to work out various patterns in the arrangement of the muscular fibres of organs. He remembered when Dr. Pettigrew showed figure of 8 arrangements first in the heart and then tried to make them out in the other viscera. He had not made special dissections of the fibres in the stomach, but he had, he thought, seen the three longitudinal bands described at the upper end of the œsophagus.—Professor BIRMINGHAM, in reply, said that he had made a considerable number of dissections of the œsophagus with the greatest care and in none of them had he found three bands present.

Dr. R. J. MONTGOMERY exhibited a child, aged about eleven years, in whom both Crystalline Lenses were Dislocated Upwards and Outwards. The displaced structures and the amount of their displacement were easily seen with the aid of a simple lens. The only noticeable effect on the vision of the patient was an inability to see small objects clearly.

Reviews and Notices of Books.

A Manual of Surgery for Students and Practitioners. By WILLIAM ROSE, M.B., B.S. Lond., F.R.C.S. Eng., Professor of Clinical Surgery in King's College, London, and Senior Surgeon to King's College Hospital, and ALBERT CARLESS, M.S. Lond., F.R.C.S. Eng., Senior Assistant Surgeon to King's College Hospital, and Teacher of Operative Surgery in King's College, London. London: Baillière, Tindall, and Cox. Demy 8vo, pp. 1162. 1898. Price 21s. net.

FOR a long time it has been generally recognised that a text-book of surgery for the average student has been greatly needed. The almost classical work of Erichsen is still, as it has been since its first appearance, the most trustworthy guide to the art and science of surgery, but, as every teacher of surgery knows, it is impossible to get the average student to read so big a book, and as a rule only those who aim at the degrees of the University of London are willing to peruse it to the end. The other text-book in common use is Walsham's, and though it is a wonderful example of a large amount of information compressed into a small space, yet it is hardly sufficient for many of the examinations in surgery. So an obvious need exists for a book on surgery for those students who take the examinations held by the Conjoint Board in England and other examinations of an equal standard. It is no easy matter to include all that such a text-book should contain and yet not to introduce details which will serve only to overburden the memory of the student. This real want has, in very great part at least, been supplied by the work which lies before us.

The first chapter is devoted to Inflammation, and this difficult subject is presented very clearly; a brief though adequate account is given of the importance of micro-organisms as causes of inflammation, and the present theories of immunity are described. To only one statement in this chapter would we take exception; the offensiveness of the motions in pyrexia is ascribed to the loss of the antiseptic power of the bile; it is now generally recognised that the bile has practically no antiseptic property at all. The chapter on Suppuration and Abscess is good, and especially useful is a table on the methods of opening abscesses in various parts of the body, such as mammary and retropharyngeal abscesses. Sepsis and Infection are dealt with fully and the account is quite up to date; the less important diseases and conditions are printed in a type smaller than the rest of the subject. By this plan which has been adopted throughout the volume much space has been gained. In the description of the treatment of wounds the authors express themselves strongly in favour of the antiseptic as opposed to the aseptic method, but they acknowledge that the aseptic method has been employed with much success, though as it requires many elaborate precautions they do not consider it well suited to a large city hospital. We are glad to see that much stress is laid on the importance of early massage in the treatment of fractures near joints. If this practice were more generally adopted it would do much to prevent the stiffness which so often proves a troublesome sequela in these cases. On page 533 we are told that tuberculous disease of the phalanges was "formerly described under the meaningless title of 'spina ventosa.'" We should be interested to learn on what authority this statement is made, as we were under the impression that the term "spina ventosa" was applied to sarcomata of bone which had undergone cystic degeneration. On the whole, it would have been better to have omitted the term from a book intended chiefly for students; it is better left in oblivion.

The chapter devoted to Abdominal Surgery is very good indeed and fully represents the current views. The sections devoted to the Nose and the Ear have been looked through by Dr. St. Clair Thomson and Dr. Silk is similarly responsible for the contents of the chapter on Anæsthetics. In all there are 392 illustrations, many of which are familiar, as they have already appeared in other works, and for the most part their source has been acknowledged; but we find no small number which have certainly been used on a previous occasion and yet no mention of their having been borrowed is made. Even taking these in account, however, there are numerous excellent illustrations which have been specially prepared for this volume.

The more we examine the book the more we are inclined to pronounce it to be the best manual of surgery for all students who do not aim at the highest examinations. The descriptions are clear, the accounts of disease are concise yet not cramped, and the style is easy. We venture to predict for this work a wide and prolonged success.

Text-book of Nervous Diseases. By CHARLES L. DANA, A.M., M.D. Fourth edition, revised and enlarged. London: J. & A. Churchill. 1898.

A FEW years ago, in noticing the second edition of this work, we ventured to predict that it was likely to become a favourite text-book in America. The appearance of a fourth edition would seem to verify our prediction and it may be said without hesitation that this new edition, in type, in general appearance, and in matter, marks a great advance on its predecessors. There are about 100 pages more than in the second edition and for most of these the fresh considerations rendered necessary by the recent advances in the anatomy of the nervous system are mainly responsible.

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But the page is larger, the type is more distinct, the illustrations are more numerous and better executed, and, in short, the *tout ensemble* is more worthy of the subject. Although the old division into three parts is dispensed with the chapters fall very much into line with those of the former editions, but each chapter has undergone thorough revision, and in reference to its particular subject has been brought well up to date. In short, the book is a most excellent "compendium for the use of students and practitioners of medicine," but it is redeemed from being merely this by the wide clinical and pathological experience of the author, which is evident on almost every page. Dr. Dana is to be cordially congratulated on the appearance of what is, in many respects, a new book and one which will be of no little use to those whose busy lives prevent them from having recourse to larger and more comprehensive treatises.

Convergent Strabismus and its Treatment: an Essay. By EDWIN HOLTHOUSE, M.A. Cantab., F.R.C.S. Eng., Surgeon to the Western Ophthalmic Hospital. London: J. & A. Churchill. 1897. Pp. 177. Price 6*s*.

IN 1854 a course of six lectures on the Pathology of Strabismus and its Treatment by Operation was delivered at the Westminster Hospital by Mr. Carsten Holthouse, the then assistant surgeon to the hospital and lecturer on anatomy in the medical school, and we now welcome an essay on the same subject by Mr. Edwin Holthouse, the son of the preceding author. Much space was taken up in the former course of lectures in detailing the anatomy and physiology of the ocular muscles, and various points in regard to the indications for the performance of an operation and the modes of operating, which at that time occupied much attention but upon which there is now a very general consensus of opinion, were considered. The present volume is written from a higher and better standpoint and is the outcome of a large amount of clinical experience and of careful thought over the data which have been obtained. The constancy with which convergent strabismus is associated with hypermetropia is well brought out, for amongst 144 cases no less than 142 were hypermetropic and only 2 myopic. Of the 142 cases 7 were periodic and 123 constant, and of these 123 were unilateral and 12 alternating.

Mr. Holthouse carefully compared the refraction of each of the eyes of 120 patients and obtained interesting results, for he found amongst the fixing eyes that 40 per cent. were affected with simple hypermetropia and 60 per cent. with compound hypermetropic astigmatism, whilst amongst the deviating eyes 25 per cent. had simple hypermetropia, 72·5 per cent. were affected with compound hypermetropic astigmatism, 0·83 per cent. with simple hypermetropic astigmatism, and 1·66 per cent. with mixed astigmatism, showing that whilst ametropia was present in all the fixing eyes its more complex forms were found in a higher ratio among the deviating ones. Nevertheless that this difference does not afford a complete explanation of the occurrence of squint is sufficiently demonstrated by the circumstance that anisometropia is common amongst those hypermetropes who do not squint, whilst it is not invariably present in those who do and, further, it appears from Mr. Holthouse's observations that in no less than one-seventh of the whole number some other factor than mere inequality of refraction must be sought for as the proximate cause of the squint. This is supported by the fact that in nearly one-fourth of the cases the degree of hypermetropia did not in the fixing eye exceed 2·5 diopters—a degree requiring no extraordinary nervo-muscular effort to overcome.

Mr. Holthouse discusses at some length the question of the impairment of vision in the squinting eye, whether it is a cause or a consequence. Some maintain that in cases of squint more or less perfect binocular vision was originally present, but that as a result of diplopia arising from some defect, to escape the consequent annoyance the images formed on the retina of the deviating eye are ignored or suppressed, such suppression leading in the end to actual loss of the visual power. Others, again, hold that the defective vision of the squinting eye is not acquired but is congenital and that it constitutes a chief factor in the production of squint. And there are still others, with whom we should feel inclined to agree, who combine the two views above mentioned and who believe that a congenital or acquired defect in one eye places that eye at a disadvantage to the other and leads to suppression of the images it receives and further impairment of vision by disuse.

The results obtained by Mr. Holthouse from the systematic employment of appropriate glasses are of considerable interest, for he has found that complete cure, independently of the further use of glasses, occurs in about 13 per cent. of the cases, a number sufficiently high to make it worthy of a trial in all, more especially as in an additional 17 per cent. the eyes became straight during the time that the glasses were actually worn, whilst in 62 per cent. of all the cases improvement was noted. In a certain number of cases tenotomy must be performed to effect a cure, and he advocates single tenotomy in the first instance, and if this be not successful an "advancement" of the external rectus of the deviating eye.

Genito-urinary Surgery and Venereal Diseases. By J. WILLIAM WHITE, M.D., Professor of Clinical Surgery, University of Pennsylvania, and EDWARD MARTIN, M.D., Clinical Professor of Genito-urinary Diseases, University of Pennsylvania. Illustrated with 243 Engravings and 7 Coloured Plates. Philadelphia: J. B. Lippincott Company. Pp. xix. and 1061. 1897.

WE may state at once that this volume is in every way worthy of the two distinguished surgeons whose names appear on the title paper. It is comprehensive in its scope clear in its descriptions, and judicious in the treatment, and though we cannot go so far as to say that we agree with everything the book contains, yet there is wonderfully little in the whole volume to which we can take exception. The book is well printed, and the authors are especially to be congratulated on the excellence of the illustrations; many of these are reproductions of photographs and in nearly every case the points which it was intended to show have been well brought out. A large number of the illustrations in the section on Syphilis come from the collection of Dr. G. H. Fox. The venereal diseases—gonorrhœa, chancroid, and syphilis—form the first section. In the description of venereal warts the authors employ the term "condyloma" without any qualifying word; this is liable to cause some confusion in the mind of the student when he finds that this name is also given to a very characteristic syphilitic lesion. It is certainly better to limit the application of the word to the syphilitic condition. We would specially commend the section dealing with the treatment of Stricture of the Urethra; it is thoroughly up to date. A very useful chapter is that devoted to the care of urethral instruments. The authors consider that a 25 per cent. solution of boro-glyceride is a very good lubricant for catheters as it is antiseptic and very slightly irritating, though they think that oils, especially fluid albolene and castor oil, are really the best lubricants. For the sterilisation of gum elastic catheters which are so injuriously affected by boiling, the use of the vapour of formol, as introduced by Janet and Guyon, is advised; the only objection to the method is that the process requires that the instruments should be subjected to the vapour for 24 hours. The article on Syphilis

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excellent; it occupies nearly 250 pages and contains 59 illustrations.

The authors distinguish between floating and moveable kidney. They define the floating kidney as one possessing a mesonephron and state that a moveable kidney is situated entirely behind the peritoneum and moves because it is unsupported. The distinction is of very little practical importance.

In the account of the etiology of hydronephrosis it should have been pointed out that sudden complete blocking of a ureter produces not a hydronephrosis, but atrophy of the kidney, and that the obstruction must have been incomplete or intermittent if it leads to dilatation of the kidney. It might have been mentioned in the account of the orchitis which may complicate mumps that the orchitis is more frequently met with when the patient is an adult than when he is a child; possibly the functional capability of the organ predisposes it to inflammation. The index is exceptionally good.

Burdett's Hospitals and Charities, 1898: the Year-book of Philanthropy and Hospital Annual. London: The Scientific Press, Limited. Price 5*s*.

SIR HENRY BURDETT'S valuable handbook of information on everything which concerns hospital finance and other charitable subjects presents in this its ninth yearly issue some new features, in that two chapters of the preliminary matter are taken up with the events of last year as affecting the stream of charity and with the Prince of Wales's Hospital Fund. Sir Henry Burdett is by no means in agreement with those who said that the Fund would prove a failure. It is true that the sum desired was an annual income of £100,000 and that although the whole sum received was £227,584 the amount of annual subscription was only in round numbers £22,000. But Sir Henry Burdett estimates that in all 1,100,000 people subscribed something. Purchasers of hospital stamps he considers amounted to nearly 400,000. The *Daily Telegraph's* fund produced £25,000 in shillings alone, which accounts for another 500,000 subscribers, and *Lloyd's Weekly News* by a penny subscription collected £2618, probably representing 250,000 contributors. So that at a moderate estimate Sir Henry Burdett thinks that we may fairly say that at least 1,100,000 persons subscribed. It seems to us that that is a fair supposition; in fact, very possibly the figures are too low. Sir Henry Burdett goes on to say that of this number it may reasonably be expected that 400,000 will continue their subscriptions; on this point, however, we are not so sure as Sir Henry Burdett. It remains to be seen whether many of the subscribers will not drop off in forthcoming years. The year 1897 was, however, one of unexampled prosperity for the hospitals in general, for the total income of 93 metropolitan hospitals for the year was £998,774, while in 1896 it was £787,384, although in 1895 it amounted to £932,543. Another point to which Sir Henry Burdett draws special attention is the necessity of every general hospital providing an annexe composed of paying wards. "Fitzroy House," he says, "is a pay hospital pure and simple, and it would be to the advantage of everybody for a bridge in the shape of pay wards to be built to connect it with the great general hospitals, so that all classes of the community might be adequately provided for in the time of sickness." Patients, of course, could be attended if they wished by their own doctors. In Sir Henry Burdett's opinion the "attempt to set up a hospital for middle-class patients as a separate institution must result in ultimate disappointment and pecuniary loss."

The question of paying hospital patients opens up far too many and important difficulties to be dealt with in the compass of a review, so we shall merely say here that we cannot agree with Sir Henry Burdett's ideas. Apart from these points the statistical and other information as to the various hospitals and charities is as full and useful as in any of the former volumes.

LIBRARY TABLE.

Synopsis of the British Pharmacopœia, 1898. By H. WIPPELL GADD. London: Baillière, Tindall and Cox. Bristol and Exeter: Evans, Gadd and Co. 1898. Pp. 183.—The merit of this compilation is sufficiently shown by the fact that it is now in its second edition, the first having been quickly exhausted. The usual enumerations of additions and omissions are followed by lists of the principal alterations (chiefly in strength), alterations of names, and tables of the various alcoholic solutions which will now replace the rectified spirit and proof spirit of previous Pharmacopœias. The greater part of the book—about 130 pages—consists of a Complete Table of the Chemicals, Drugs, and Preparations of the new Pharmacopœia, with their Characters, Doses, and other particulars. This table, which is in five columns and is made very compact, begins with Acaciæ gummi and ends with Zingiber.

Comfort and Cleanliness. By Mrs. C. M. BUCKTON. London: Longmans, Green and Co. 1898. Price 2*s*.—The sub-title of this little book is "The Servant and Mistress Question," a subject which no one will deny is an important one. We can conscientiously praise Mrs. Buckton's instructions as to how to keep a house clean. The difficulty for most housekeepers is, however, not so much how to do things but to find servants who will do them. Mrs. Buckton gives very full and clear instructions as to how to clean and keep in order a "kitchener." A clean house means a healthy house and towards this desirable end we recommend a study of this book.

Handbook of Obstetric Nursing. By F. W. HAULTAIN, M.D. Edin., and J. H. FERGUSON. Edinburgh and London: Young J. Pentland. Third edition. 1898.—The fact of this book having reached a third edition may be taken as a proof that it supplies a want. The present edition has been carefully revised and brought up to date, an account of an incubator having been added. The absolute importance of cleanliness and antiseptics is made a special point and we are glad to see the stress laid upon the danger of producing cystitis by a dirty catheter or by carrying infectious matter from the vulva or vagina into the bladder. Directions are given how to avoid this calamity (pp. 222–224). The book is clearly written and very useful.

Atlas und Grundriss der Traumatischen Fracturen und Luxationen. Von Professor Dr. H. HELFERICH in Greifswald. Mit 68 Tafeln und 126 Figuren im Text von Maler B. KEILITZ. Dritte gänzlich neubearbeitete Auflage. (*Atlas of, and Introduction to, Fractures and Dislocations.* By Professor Dr. H. HELFERICH of Greifswald. With 68 Plates and 126 Figures in the Text by B. KEILITZ. Third entirely revised edition.) München: Verlag von J. F. Lehmann. 1897. Preis Mark 12 (12*s*.).—All who are acquainted with German medicine and surgery know the very useful volumes of this series issued by Lehmann of Munich. One of the best of them is the work before us; the first edition was good, but this third edition is in many ways a great improvement. The book has been almost rewritten and the plates are new. The author tells us in his preface that his aim has been to make the book of use to those in practice, and we think that no one who can read German could have a more useful book than this to consult on the question of fractures and dislocations. The engravings in the text are chiefly concerned with methods of treatment, but the plates have to do with the anatomy of the lesions dealt with. The plates are most successfully lithographed in colours; we have never seen any which represented in a better manner the structures which they are intended to portray.

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THE LANCET.

LONDON: SATURDAY, JULY 9, 1898.

THE multiplication of universities is a subject upon which much may be said and with regard to which a great variety of opinion exists. But we are disposed to think that the citizens of Birmingham, ably led by a distinguished statesman, are acting wisely in resolving to found a university for Birmingham and the Midlands. The country owes much to the stimulus given to national education, elementary and secondary, by Birmingham men, and in their own city both primary and secondary education have been carried to a perfection which will bear favourable comparison with the state of the same in any similar community. It is altogether natural that men who have been so successful in the promotion of elementary, secondary, and technical education should wish to crown their efforts by establishing a veritable university which shall supply to the city and the surrounding Midland district, with an estimated population of 2,000,000, the undefinable but unmistakeable advantage of a university in which all faculties shall be treated with equal favour and, above all, in which care shall be taken that in all faculties shall be required that preliminary "general culture of mind which is the best aid to professional and scientific study."

It would be a poor compliment to the shrewd men of Birmingham to think that they are under any delusion as to the conditions under which alone a Birmingham university will be able to claim the respect paid in England to her older universities, or that they imagine that by merely raising two or three hundred thousand pounds for the creation of a so-called University their institution will forthwith command either the esteem of the public or the respect of sister universities. If we thought that their estimate of the meaning of a university was thus shallow we should offer to the movement our most decided opposition. But the speeches made at the meeting on July 1st (brief notes of which will be found in another column of our present issue), not only by Birmingham men like its LORD MAYOR, Mr. CHAMBERLAIN, Mr. G. H. KENRICK, and Professor TILDEN, but by independent observers such as the Bishop of HEREFORD, are enough to refute such a fear. And, as we have already suggested, it is also refuted by the extremely good educational work which has already been done in Birmingham and which has led naturally and logically to the present demand. It is impossible to deny that the countries in which universities abound have an advantage over others in which they are few and far between. The case of Scotland, quoted by Mr. CHAMBERLAIN, is very striking. That of Germany is equally so with its 21 universities, having an annual income of £1,250,000, three-fourths of which are contributed by the State. Scotland has done well for her own people by her universities. The humblest of her population have strained to send their sons to them for a training which has fitted them to fill posts of honour in the services and in the professions of the empire, as well as in the British and Colonial Parliaments. The United States carry the multiplication of universities to an excess; but three of their universities have an income of £400,000. Germany threatens by her technical schools and universities to lead not only the intellect, but the commerce, of the world. It would be folly on the part of England not to take such lessons to heart and resolve therefore to spend her ample wealth in refining and perfecting the education of her people. Her material is not inferior to that of the nations which we have named, and it will only be by stinting it in nourishment—i.e., by starving education in its highest and best forms—that she will fall behind in the race of nations.

Two objections may be raised to the creation of a new university in Birmingham. One is that it may fail by the competition of the ancient universities. No doubt these institutions have the charm of a great past and are evincing evidence of fitness for a great future. They will long continue to attract the best thinkers and the best teachers and, perhaps the best students. But there is plenty of proof that there is work for other and more accessible universities whose own fault it will be if they do not give a good account of their opportunities by making a material contribution to the mental and moral cultivation of the people in whose midst they are placed. The other objection is from a medical standpoint — that a new university implies an addition to the already too large number of qualifying medical bodies. This is a real and a strong objection. But it can scarcely of itself be held to justify opposition to a university if on other grounds there is a just claim for it. The addition of one more qualifying body to the present ones cannot make much difference to the system, and we here desire to throw out a suggestion. If the University College of Bristol were included in the scheme of the new Midland University every medical school in England would be affiliated to a university—assuming, as we suppose we may, that the Government intends to pass the Bill for the reconstitution of London University. The movement in favour of a new university may also have the effect of directing public attention to the fact that no authority rests with the General Medical Council or any other body to ascertain whether the knowledge required for obtaining university degrees in medicine is in any way superior to that required for the ordinary qualifications to practise. Such a distinction is assumed by the public. University authorities would blush to admit that the public is wrong in that assumption. If universities are to be multiplied some guarantee must be given that standards of graduation shall be kept high.

THE withdrawal by Mr. CHAPLIN of his amendments to a private Water Bill—which amendments were, if accepted by the House of Commons, to have been made general to all Water Bills before the House during this session—is a severe blow to public health interests in this country. It is true that the objection raised was professedly to the introduction of the new clauses in a few private

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Bills instead of their embodiment in a general Act; but it was perfectly obvious to those present at the debate that the real opposition was due to the fear that the clauses might act injuriously to the pecuniary interests of water purveyors. Indeed, it may be assumed that if the President of the Local Government Board should introduce a general Bill dealing with this subject next session, the "water-interests," which are powerful in the House of Commons, will find that new objections have arisen which will demand the rejection of a general piece of legislation just as the one objection raised this session demanded the withdrawal of the proposals submitted. It is this aspect of the question which is so serious. The clauses, it is true, were not rejected; but the opposition to them had been so well worked up that if they had been pressed to a division the Government, in the person of Mr. CHAPLIN, would have met with a substantial defeat. Hence the clauses were withdrawn.

The essence of the clauses in question was briefly as follows. They enabled a medical officer of health or other person sanctioned by an authority whose district is supplied by a company to take samples of water from any point within the company's works on giving proper notice in advance; and they gave similar powers to any consumer of the water provided he had obtained an order from a justice of the peace authorising him so to do. And, further, they gave powers to water companies to enter upon any lands, such as gathering grounds from which their water was derived, and to take samples of water at various points where such water might be fouled. In this way some provision was made by which authorities and individuals who were compelled to take, use, and pay for a certain water-supply might protect themselves against an unwholesome supply, and might obtain some assurance as to the quality of the water which they had no alternative but to use for domestic purposes. And, on the other hand, provision was made by which water authorities deriving their supply from sources beyond their immediate control might have access to all those sources so as to secure the removal of obvious sources of pollution. The whole of the proposals were in the interests of public health, but incidentally they conferred a great boon both on purveyors of water and on water consumers. The purveyors and their shareholders were too strong at the moment and as a consequence the public must continue to submit to be without protection against the conditions of fouling of public water-services that have within recent years led to such disastrous consequences.

For the present the main question is to determine how best to secure the introduction and the passing of a general Bill next session. In this matter it is important to remember how strong the water interests are in Parliament and how necessary it will be in consequence to support the Government in any action which they may take. For this purpose all who are interested in the protection of the public from the risks attendant upon polluted water-supplies, and all who are interested in securing the purity of the sources of water in which they have a pecuniary interest should lose no time in maturing an organisation which will strengthen the Government and ensure them the support of Parliament in their endeavour to meet the difficulty with which they have unexpectedly found themselves confronted. Medical officers of health will have special influence in setting such organisations in motion, in preparing petitions to the President of the Local Government Board urging the Government to proceed in the matter at the earliest possible opportunity, and in inducing local authorities to ask that deputations may be received at Whitehall with a view of setting out the considerations involved. And in a similar way societies dealing directly or indirectly with questions bearing upon public health may usefully pass resolutions in the same sense and transmit them to the Local Government Board. Unless something of this sort is done the subject may not after all be dealt with in a Government Bill and the Government majority may feel free to act and to vote under the influence of considerations which will be adverse to public health interests.

TWICE convicted of the crime of felony WILLIAM MAUNSELL COLLINS was sentenced at the Central Criminal Court, on July 2nd, to seven years' penal servitude. As Mr. Justice GRANTHAM remarked the prisoner had experienced a chequered career. Possessed of more than average ability he appears to have been unusually favoured by fortune in the earlier years of his professional life. At one time surgeon to the Royal Horse Guards he afterwards engaged in private practice. Some few years since he forged the signature of his patient and friend and for the offence was indicted and convicted on pleading guilty at the Old Bailey. His escape from punishment was at the time the theme of general comment and the serious nature of the crime did not require the observation of Mr. Justice GRANTHAM, that "had he been sentenced he would probably not have had the opportunity of standing in the dock on the present charge," to show that the punishment commensurate with his guilt would have been of no slight magnitude. He was struck off the Medical Register on being convicted of felony, so that at the time of his attendance on the late Mrs. UZIELLI he had no legal status as a medical man.

The evidence in the recent case proved that Mrs. UZIELLI had reason to believe she was *enceinte* and further that she was desirous of being freed from that condition. She had approached her usual medical attendant with a request to aid her to that end. If she did not visit COLLINS for the purpose of engaging his services for an unlawful act, why did she keep from her husband, who is said to have enjoyed her confidence, the fact that she had consulted him at all? and why did she approach COLLINS'S house more or less clandestinely? The clinical history of the crime was singularly complete in circumstantial detail. COLLINS in his evidence before the Coroner averred that Mrs. UZIELLI had a displacement of the womb which he attempted to rectify, but the post-mortem examination disclosed no such displacement at the time of the decease and indicated, moreover, that it had not existed previously—a singular negation of COLLINS'S alleged knowledge and skill if he was an innocent man. Again, whatever the temperament of Mrs. UZIELLI as tending to exaggeration of her symptoms, there was the damning reply that within a few hours of COLLINS'S statement that the case was progressing satisfactorily Dr. STIVENS diagnosed with

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certainty septic peritonitis and foretold a probably fatal issue. On the next day Mrs. UZIELLI died, when Dr. STIVENS refused to certify the cause of death and gave notice to the coroner. We endorse every word spoken by Mr. Justice GRANTHAM as to Dr. STIVENS'S paramount duty under such circumstances. Mr. BOND, who made the necropsy, found that there had been a recent pregnancy. He also found a punctured wound made by some blunt instrument—a wound that, in his opinion, could not have been made with a curette employed, as COLLINS stated, to remove some retained membrane when he became aware that Mrs. UZIELLI had aborted. It may be remembered that the same authority had in another case in which COLLINS was concerned admitted that the laceration discovered in the wound might have been made with a curette—a complete reply to any suggestion that Mr. BOND was biased, had such reply been required. It was not required. Mr. BOND'S reputation and position as standing adviser to the Treasury were sufficient guarantee of his single-mindedness and trustworthiness. The proximate cause of Mrs. UZIELLI'S death was thrombosis of the pulmonary artery, the last link in the chain of morbid events caused by infection of the uterine wound. That there was evidence of the effects of a partial pelvic inflammation long before subsided, in our opinion, was of no pathological moment. It might predispose to a recurrent attack of peritonitis and it might predispose to miscarriage, but what of the punctured septic wound? Naturally Mr. BOND could not do more than approximately fix the date of infliction of the wound, and counsel for the defence wisely did no more than suggest that some other person might have performed the criminal act prior to or after COLLINS'S introduction to Mrs. UZIELLI. Had such been the case would COLLINS not have recognised the fact and acted accordingly? Besides, there was no single fact to prove that Mrs. UZIELLI had submitted herself to operative interference by any other person than the prisoner. It was idle to allege that COLLINS'S failure to procure medical evidence in his favour was due to his impecuniosity. As Mr. Justice GRANTHAM remarked, the medical profession is a large-hearted one. Its generosity, we may say, would have been ample to have extended a helping hand even to a man whose name had been removed from the Register of honourable practitioners.

We have nothing but praise for the matter and manner of the summing up by the learned judge. It was strong but it was just. The evidence led irresistibly to a record of guilt, but why the jury strongly recommended the convict to mercy we do not understand. Probably this recommendation had its weight with the judge or he would have exceeded the merciful sentence of seven years' penal servitude. We have frequently drawn attention to the heinousness of the crime of abortion and have expressed the opinion that its wickedness is grossly exaggerated when committed by a person who is fully cognisant of the danger to the life of the woman. Constructive murder it undoubtedly is and legally it is murder, and the fact that the culprit has every reason to hope that the victim will not die accounts only illogically for the reluctance of juries to convict on the capital charge. We were glad to read the pronouncement of Mr. Justice GRANTHAM that the woman who submits herself to an unlawful operation is guilty of a felony just as much as the agent whom she employs; nor should it be forgotten that any person aiding or abetting is also answerable to the law. The crime of abortion, there is reason to believe, is rife in all classes of society. Though there is little to be said in extenuation of the guilt in the case of single women whose character and livelihood might be jeopardised by the fact of maternity, there is absolutely nothing to lessen the offence of those who, whilst indulging in marital privileges, are so lost to all sense of shame that merely for the sake of fashionable engagements they will sacrifice their honour and their lives. They bring disgrace on the hallowed names of wife and mother. Such a canker in our social life requires that condign punishment should be inflicted on criminal abortionists, whether they be principals or abettors. We sincerely trust that the authorities will vigorously endeavour to put down a crime "despised by men and forbidden by GOD."

Annotations.

"Ne quid nimis."

THE ROYAL ARMY MEDICAL CORPS.

THE Royal Warrant constituting the new Royal Army Medical Corps, which Mr. Powell Williams stated in the House of Commons on June 27th had been approved by Her Majesty and would be published in the Army Orders for this month, has now appeared and a copy of it will be found in the present number of THE LANCET (*vide* p. 98). The Army Medical Service will henceforth take its place side by side with the other scientific branches of Her Majesty's Army—namely, the Royal Engineers and Royal Artillery—a position which we have always contended it should properly and legitimately occupy—and purely military titles have, in accordance with Lord Lansdowne's announcement, been assigned to medical officers up to the rank of Colonel, so that there can no longer be any doubt about their exact army rank. Surgeon-Major-Generals will, however, be styled Surgeon-Generals with the rank of Major-General. The warrant, as will be seen, deals simply with the constitution of the new Royal Army Medical Corps. It only remains for us to congratulate the medical officers and the profession generally on the important change which has taken place. We think that the Minister for War and the present Government are also to be congratulated on the step which they have taken. There is no reason why the Royal Army Medical Corps should not now become a deservedly popular service and attract a number of well-trained candidates from our universities and medical schools. Lord Lansdowne has done all he could to secure medical officers an assured rank and honourable position in the Army worthy of the profession to which they belong, and his efforts in this respect deserve to be ungrudgingly and gratefully recognised. We hope that they may prove successful in inducing a large and good class of men to compete for places in the Royal Army Medical Corps at the next and succeeding examinations.

MEDICAL DEGREES AND CRIME.

WE have dealt elsewhere with the case of Mrs. Uzielli and all its unpleasant lights on the state of social morality in some classes of society. The medical profession has some right to complain of the state of the law on this subject. It

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had long since relieved itself of the responsibility of association with Dr. Collins. The General Medical Council, which in such matters represents the profession, some years ago for the offence of forgery—for which by some strange failure of justice no punishment was awarded—erased Dr. Collins's name from the Register. And he so ceased to be a qualified medical man. But unfortunately he did not cease to be a graduate of his university, the Queen's University, Ireland. To do his university justice it is questionable whether it has the power at present to remove Dr. Collins's name from its list of graduates — a power which nearly every medical corporation has. Surely this is a monstrous state of things. *Noblesse oblige.* Certainly universities should not be behind corporations in preserving the purity of their roll and in giving guarantees to the public that their graduates are men of character. We have no wish to strike a man when he is down, but the public interest here is terribly at stake and so is the fame of universities. It would be a questionable modesty which should allow any false sentiment to prevent Dr. Collins's case being used for the correction of this great defect in university discipline.

THE PUBLIC PARKS.

Now that warm weather has set in and the ground has become fairly dry the London parks are once more tenanted by their usual inhabitants. We do not refer to children who play or to citizens of the humbler or the richer classes who take their sober pleasure therein, but to the collection of tramps who seem past tramping, filthy outcasts of both sexes, who spend the day singly or in groups asleep on the grass, occasionally sitting up to converse, to arrange their horrible rags, and otherwise occupy the time until they are turned out to wander in the streets or lie upon the pavement until the gates are opened again in the morning. The worst specimens of these, the absolutely homeless, as distinct from slum-dwellers who crawl up to St. James's Park as a rule from the smaller streets in Westminster, are, perhaps, most in evidence at the north-east corner of Hyde Park, near the Marble Arch, and must form a very unpleasant subject of contemplation to dwellers on the other side of the Bayswater-road, who, indeed, at times protest in the newspapers. We do not dwell upon the subject from the point of view of the wealthier inhabitants of West London, nor do we go so far as to say that each of the ragged objects alluded to is a certain centre of infection, whatever they may be capable of becoming, and we admit that the vermin which infest them are not likely to leave them and roam in the grass, at least not of their own free will, but we do say that a large portion of the finest park in London is practically rendered useless for the object for which, in our opinion, it should be maintained—namely, the recreation of the citizens at large and of their children in particular. The distinguished military gentlemen whose names are in public lists as its custodians (we do not refer to H.R.H. the Duke of Cambridge, whose post of Ranger is honorary) may not care, or may say that the task of keeping out or moving on the slumbering ragamuffins is beyond their powers. As to the first of these objections our view of their duties differs; as to the second it may be pointed out that under different management Kensington Gardens are practically free from the pest. It may also be added that no tramp can claim as a right the use of half an acre of land in the most costly part of the metropolis for a bedroom, and that the hardship involved in expelling him would be inflicted on individuals rather than on a class. There are many loafers in Hyde Park, but they are a mere drop in the ocean of London misery and can assuredly dispense with such a resting place, as thousands of their fellows do. With the condition of Hyde Park at night we do not propose to deal now. It is a well-known scandal to London, although public safety has recently been slightly protected by the fitting up of electric lights along some of the thoroughfares. In conclusion, however, we submit that, without going into details of the purposes for which the parks are dedicated to the public, these purposes do not include the practice of immorality by night or their use as dosshouses by day.

FARRIERY.

A CONTRIBUTOR to *La Semaine Vétérinaire* is wittily anxious to prove the exceeding importance in every commonwealth of efficient farriery. In France horses are estimated to be worth a milliard and a half of francs, but unless properly shod the animals could do no work and this enormous capital would consequently yield no revenue. In support of his serio-comic contention the writer quotes as follows from a work by M. Delpérier: "Suppress by a thought every mechanic in the world; agriculture would still suffice for the maintenance of mankind. Suppress the butchers and the bakers; the nations would nevertheless continue to exist. Suppress all the veterinary surgeons; their disappearance would scarcely be noticed. Suppress the men who treat the diseases of their fellow creatures; the latter in all probability would be no worse off than before. Suppress the lawyers, the journalists, the members of every Parliament without exception; the result would doubtless be, on the whole, advantageous. But do not dream of suppressing the farrier, for if you did horses could no longer work, agriculture would become impossible, and the human race would die of inanition."

THE POISONOUS SUBSTANCES BILL.

WE fail to see how this Bill, the substance of which, on the occasion of its second reading on the motion of the Duke of Devonshire in the House of Lords on June 24th, was given in our Parliamentary columns last week, is likely to afford much more protection to the public against the indiscriminate sale of poisons than at present obtains. It does not at any rate increase the scope of action under the Pharmacy Act which so far as it has related to the poisons placed within the Schedule has worked not with that completeness which might be desired but still with a fair measure of success. According to the provisions of the Bill carbolic acid (and with it its homologues), which by reason of the ease with which it can be purchased at oil-shops has been responsible for an enormous increase in the number of self-inflicted and, we need not add, most painful deaths, is still to be procured from any class of shop where the shopkeeper chooses to sell it, with, however, the restriction that the purchase is to be labeled distinctly with the word "poison" and with the name and address of the person selling the substance. Such a clause provides very well against the risks of accidental poisoning, but it does nothing for the deliberate suicide. Indeed, it only advertises the fact, it seems to us, that certain mixtures are poisonous. Surely the principle of scheduling certain substances as legally recognised poisons is a sound one to go upon if any hope at all is to be entertained of ever putting a stop to the indiscriminate sale of poisons. The seller should be registered and should be a person who knows exactly the nature of the commodity with which he is dealing and should possess an intelligence which will enable him to an extent to discriminate between purchasers who require the substance for a wrong or a right purpose. But it is urged that if the sale of such things as carbolic acid, disinfectants, and weed-killers, poisonous commodities which are in request every day, was restricted to persons possessing a proper qualification it would cause considerable inconvenience to the public by imposing a difficulty in the way of

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obtaining these extremely necessary articles, and, again, that it would mean the transfer of a source of business and profit from the ordinary shopkeeper to the druggist. In the interests of the public why should not this be so when instance upon instance is on record of an ordinary tradesman having supplied with disastrous results carbolic acid in cups, ginger-beer bottles, black bottles, or any receptacle commonly used for containing beverages? The fact is that carbolic acid is a comparatively recent addition to commercial commodities, and its introduction on the market occurred some time after the passing of the Pharmacy Act, as otherwise without doubt it would have been included as a scheduled poison. We do not attach much force to the argument that such restrictions would lead to an abandonment of sanitary measures by the public owing to the *modus operandi* which would be enjoined in order to effect a purchase. There are plenty of excellent disinfectants which are comparatively non-poisonous, indeed, which would be practically free from harm; but carbolic acid is a poison of a powerful kind, and it is monstrous that its sale to the public has hitherto been as unrestricted as that of sugar. If a really protective measure is to become law the Bill introduced by the Duke of Devonshire and now read a second time in the House of Lords must be very seriously altered and amended. Otherwise the undoubted good which the present Pharmacy Act is doing will be to a great extent nullified.

DOCKRELL *v.* DOUGALL.

THE action of Dockrell *v.* Dougall, which was tried recently by Mr. Justice Ridley and a jury, shows that with all their merits the representatives of "the county" are singularly unable to appreciate the nature of professional reputation and of those influences which tend to injure it. Dr. Dockrell had complained of the use of his name in connexion with a certain medicated water sold by the defendant as a "pleasant health-preserving and health-restoring beverage that suits all constitutions." It seems that Dr. Dockrell, unfortunately for himself, had spoken well of this water in a particular case and had prescribed it under certain conditions in some other cases. These facts appeared in an advertising circular in the following guise: "Dr. Burnet, Physician to the Duke of York, Dr. Morgan Dockrell, Physician to St. John's Hospital, and many of the leading physicians, are prescribing 'Sallyco' as an habitual drink. Dr. Dockrell says: 'Nothing has done his gout so much good.'" The jury which tried the case, being unable to discern the injury which such an announcement was calculated to do to Dr. Dockrell's professional reputation, found that the words were not defamatory, with the consequence that an injunction to restrain the continued publication of the paragraph complained of was refused. It is not very likely that anything that we can say in these pages will have much weight with British juries—upon which medical practitioners do not serve—but it is nevertheless our duty to record a protest against the undiscerning treatment, which this case illustrates afresh, of medical men where their professional duties and professional rights are concerned. If Dr. Dockrell had made himself a party to the advertisement in question he would have committed an outrage against professional etiquette for which he might well have been subjected to professional discipline. And this rule exists for the protection, not of medical men, but of the general public. The medical profession could not possibly discharge its duty to the public if it did not carefully arm itself against the temptation to seek success by the tradesman's methods. In making this remark we cast no aspersion upon tradesmen. We mean, and mean only, that a man whose duty it is to consider what it is best for his patient that his patient should take would fall badly short of that duty if he entertained the consideration what it would be best for himself to administer or to recommend. A tradesman thinks only, and quite properly, what goods it will best pay him to sell, and if he can persuade his customer to buy those goods it does not concern him to inquire whether they are the best from his customer's point of view. He says, and says rightly, that of that his customer is the best judge. That is perfectly upright, perfectly honourable, wholly irreproachable, but it is not the professional point of view. That is the position of the tradesman as against his customer. But the position of the professional man with regard to his patient is wholly different. The patient relies upon his medical attendant's superior knowledge and disinterested care for his, the patient's, well-being. He wants advice, not goods, and would quite properly regard as tainted any advice which was prompted, like a tradesman's puffer, by an enlightened view of the caterer's own interest. The suggestion of quackery, in whatever form conveyed, has therefore always been, and we hope always will be, prejudicial in the highest degree to the medical practitioner. It is very unfortunate that questions of this kind should have to be submitted to a tribunal which consists mainly of tradesmen, for there can be no such thing as quackery in trade, and jurymen are apt to suspect that there is some lack of reality in an ethical doctrine to which their every-day experience assigns no significance. Ever since the days of Lord Langdale medical men have laboured under a serious disadvantage in defending their professional reputations, but as the celebrated case of Clark *v.* Freeman, in which that judge laid down the startling doctrine that the court would not grant an injunction to protect a medical man against the aspersion of being the author of a quack prescription, has seldom been cited in recent times, except to be disapproved, we had hoped that a juster appreciation of the rights of medical men in their reputations would now prevail. Unfortunately, the case of Dr. Dockrell proves that legal prejudices die very hard and that it is yet too soon to reckon upon relief in such a case from the courts of law. It took a recent Act of Parliament to sweep away an old dictum and give to a woman whose chastity had been aspersed a right of action for defamation in that form; we trust that somewhat less violent means may be found sufficient to place medical men upon a level in respect of the defence of their reputations with their more fortunate neighbours.

THE SMOKE NUISANCE.

PUBLIC measures continue to be taken, it is gratifying to record, towards the suppression of the smoke nuisance of which we have repeatedly complained in these columns for now nearly three years. We cannot regard the nuisance as one having newly appeared or only since the Welsh strike. As early as September, 1895, in THE LANCET we remarked that the Section in the Public Health Act providing against the emission of foul smoke into the air was practically without effect. It is with some satisfaction therefore that we are able to state that the authorities have at last been stirred up to a sense of their responsibility in this matter. The nuisance has doubtless been accentuated by the fact of the Welsh strike, Welsh coal being a hard, brittle coal, which burns without much smoke. But, as we have already pointed out, the clause in the Public Health Act was obviously aimed at securing certain structural arrangements of the furnace or fireplace which would deal with smoky coal. A deliberate evasion of the requirements of the Act is admitted therefore, it seems to us, by those who plead in defence that the nuisance was created in consequence of the inability to get smokeless coal. In other words, now

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that only smoky fuel can be obtained the furnaces are found to be in fault and it has remained for the Welsh strike to bring this fact to light. It is a source of satisfaction to ourselves, however, that a distinct note of warning has been issued. Last week we recorded a case in which a conviction was obtained and a penalty imposed, the usual defence of the difficulty of getting Welsh coal being adopted—a line of defence, we are glad to say, which did not appeal to the magistrate. This week, at Greenwich, the Thames Steamboat Company was summoned for a similar offence caused on the river by one of their steam vessels. The defence urged was again the same—the Welsh strike—but the magistrate, Mr. Kennedy, imposed a fine of £5 and £6 9s. costs. We notice with satisfaction that the matter has also been taken seriously in hand by the City authorities. In his report on the sanitary condition of the City of London for the year 1897 Dr. W. Sedgwick Saunders devotes considerable space to the smoke nuisance and particularly that caused by restaurants and houses of public refreshment. In sixty-three cases the inspector served official notices or warnings. Forty-six of these were reported to the Sanitary Committee and six prosecutions were instituted, "but the convictions have been unimportant and certainly not prohibitory." We entirely agree with Dr. Saunders's concluding paragraph, that "in large buildings in which steam boilers are used the smoke nuisance can be dealt with in a different spirit and no rational excuse can be found for any infraction of the law, which directs that the owners shall avail themselves of the best engineering skill in combination with the most suitable fuel as the best means of preventing the vomiting forth into the atmosphere of volumes of dense smoke to the annoyance of their neighbours, the obstruction of daylight, and injury to property." Notwithstanding this the electric lighting stations in the metropolis are amongst the worst offenders. We trust that we shall continue to hear of the unabated efforts of our sanitary authorities to suppress a nuisance for the continuance of which there is not a shadow of excuse.

ULCERATING GRANULOMA OF THE PUDENDA.

IN the *British Guiana Medical Annual* for 1896 a paper by Mr. Conyers and Mr. Daniels appeared on "The Lupoid Form of the So-called 'Groin Ulceration' of this Colony." In this paper the writers gave an account of a disease which seems to be fairly prevalent in the West Indies, though it is probably more widely spread, but only in the tropics. It attacks first in males the skin of the pubes or the groin and in females the labia or vagina, though it may extend later from one iliac spine to the other. It commences by the formation of papules which by increase in size become nodules; these may break down and ulcerate. Cicatrisation may occur, but the scars are not healthy and are prone to break down again. One case has recently occurred in England and has been under the care of Dr. J. J. Pringle at the Middlesex Hospital. An important addition to the scanty knowledge of the disease has been made by Dr. James Galloway, who has contributed a paper on the subject to the *British Journal of Dermatology*. He has examined microscopically portions of the growth sent to him by Mr. Daniels and in this paper he has described what he has found and has given some excellent coloured illustrations. The disease begins with a small-celled infiltration in the upper part of the corium and in the papillæ, then the interpapillary epidermal processes increase in length greatly, the connective tissue of the corium disappears, so that large masses of the small-celled exudation underlie the elongated epithelial columns. There is no tendency to caseation or to suppuration in the infiltrated masses; in the older parts of the growth the cells disappear and their place is taken by newly-formed connective tissue. The absence of giant cells and the negative results of inoculation on guinea-pigs both clearly distinguish it from tubercle; the failure of anti-syphilitic remedies and the absence of other syphilitic manifestations are strongly opposed to the disease being syphilis. There is much resemblance to yaws, but the points of difference are sufficient to justify the assertion that the two diseases are distinct. It may be considered certain that though the disease probably belongs to the infective granulomata yet it is not identical with any of the granulomata with which we are familiar.

CYCLISTS' SORE-THROAT.

AFTER a "spin" along a more or less dusty road the cyclist sometimes experiences a dry and subsequently sore and inflamed throat. Headache and depression often follow and the symptoms generally simulate poisoning of some kind. When the bacteriology of road dust is considered these effects are hardly to be wondered at. Hundreds of millions of bacteria according to the nature of the locality are found in a gramme weight of dust and the species isolated have included well-known pathogenic organisms. Indeed, there can be no reason for doubting the infective power of dust when it is known that amongst the microbes encountered in it are the microbes of pus, malignant œdema, tetanus, tubercle, and septicæmia. The mischief to riders as well as to pedestrians would probably be largely averted if, as nature intended, the respirations were rigidly confined to the nasal passages and the mouth kept comfortably though firmly shut. As investigators have shown, the microbes in the air seldom pass beyond the extreme end of the nasal passage, and consequently never to the pharynx or bronchial surfaces. A useful precaution, therefore, in addition to exclusively breathing through the nostrils would be to douche the nasal cavity after a dusty run or walk with a weak and slightly warm solution of some harmless antiseptic.

CORPORAL PUNISHMENT IN BOARD SCHOOLS.

THE average School Board may very well hope to inherit the blessings promised to those who are evil spoken of, for it is most certainly not a popular body. A case which recently occurred at Laurencekirk shows very well the unfortunate tendency which School Boards have of doing the right thing in the wrong way and also how they have entirely failed to impress parents with the necessity of giving obedience to authority. School Boards are for good or ill part of the legal machinery of the land—they have duties to perform as well as responsibilities to carry out. The case in question arose in the following way. A printer named McLaren and his wife had, according to the report in the *Aberdeen Free Press*, "complained to third parties that one of their children had uttered a swear in the street one day. This had been reported at the school and corporal punishment, it was said, followed." The punishment was administered by an assistant teacher and Mrs. McLaren thereupon wrote a very foolish and offensive letter to the teacher in question. The head-master, to whom the matter was reported, refused to allow the McLaren children to attend school until the parents apologised. The parents did not apologise, the children did not return, and the parents were then summoned before the Board as defaulters. Eventually McLaren apologised for the letter, but afterwards withdrew his apology and was fined. The sequel to this petty squabble was that the minds of both McLaren and his wife gave way, so that they had to be removed to an asylum. Now we do not in the least question the right of School Board authorities to inflict corporal punishment upon unruly children and we would heavily fine the irate parent who assaults teachers for punishing children. But we do not think it right for assistant teachers to have power to inflict corporal punishment — that should be the prerogative of

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the head-master alone. In no one of the great public schools of England, we believe, have any assistant masters the right to flog, though very occasionally the power is delegated to them. Perhaps an exception ought to be made in the case of the Lower Master at Eton and the Usher at Uppingham in olden times, but these gentlemen acted as delegates of the head-master. So much for one error in judgment. Again, could anything have been more foolish than for the Board first to prohibit through their officer the re-entry of the children to school and then to summon the parents for not sending their children to school. And what is the end of it all? The parents are in the asylum at a cost of £66 per annum to the parish and the children are in the workhouse at a cost of some £40 per annum. And all might have been avoided by the exercise of a little of that common-sense in which the Scots nation is by no means lacking.

THE PROPOSED EXTENSION OF HAMPSTEAD HEATH.

IT is gratifying to know that a few of the public-spirited inhabitants of Hampstead have taken steps to save Golder's Hill from the hands of the speculative builder. The proposed extension of Hampstead Heath as an open space is a matter of public moment. It has for the medical profession a special interest as it would secure for all time the site of the property of the late Sir Spencer Wells for public use as a part of the heath. This property, extending over 36 acres, has been bought for £38,000. It is understood that it can easily be sold again for more money to the voracious builders. But we may hope that the public and the County Council together will permanently avert such a catastrophe which in the meantime is temporarily averted by the action of the guarantors. Men with money can scarcely put it to better use than by subscribing to this end. Sir Spencer Wells used to say with pride to his guests—and they were "a numerous host" of all classes and nations and creeds—that he could see as far as Windsor Castle from his grounds. It would be a pity to let the chance slip of saving such views for the workers of London.

TYPHOID CHOLECYSTITIS AND CHOLELITHIASIS.

THE *Johns Hopkins Hospital Bulletin* for May, 1898, contains an important paper on this subject by Dr. H. W. Cushing. In an annotation in THE LANCET of June 12th, 1897, we called attention to the frequency of invasion of the gall-bladder by the typhoid bacillus and the consequent cholecystitis. Dr. Cushing's paper contains some additional facts of great interest. It appears that the gall-bladder, like Peyer's patches, is a site of election for the typhoid bacilli. In 1891 Blachstein noticed their constant occurrence in the gall-bladder of rabbits after experimental inoculation. Later, Professor Welch discovered that they persisted in this situation; in one animal they were found 128 days after inoculation, when they had disappeared from every other organ. Acute cholecystitis may appear in the late stage of typhoid fever, but there is a group of cases in which it appears some months after the attack and always in association with cholelithiasis. The connexion between typhoid fever and cholelithiasis was first pointed out in 1889 by Bernheim and has been confirmed by several writers. In Professor Halsted's clinique in the Johns Hopkins Hospital 10 out of 31 cases of cholecystitis with cholelithiasis which were operated on gave a history of typhoid fever, the interval varying from a few months to twenty years. Such a long interval by no means negatives the connexion, for the bacillus has been found in a case of cholecystitis as late as fourteen years after an attack of typhoid fever. Similarly abscesses of bone may follow typhoid fever after long intervals; in a case recorded by Buschke the interval was 46 years and yet the bacillus was cultivated from the pus. These cases well illustrate that the germs of disease may remain latent in the body for an indefinite period—a doctrine which is only beginning to be appreciated and which has far-reaching possibilities. Dr. Cushing reports a remarkable case of cholecystitis and cholelithiasis in which cholecystotomy was performed and the typhoid bacillus found in the gall-bladder, although there was no history of previous typhoid fever. The blood-serum gave the typhoid reaction. The widespread occurrence of the typhoid bacillus has only been lately recognised. In 1892 Guarnieri first described an infection of the biliary passages, liver, and spleen without intestinal lesions.

A NEW BACILLUS IN MILK.

DR. CAMPBELL MCLURE of Glasgow describes in the current number of the *Deutsche Medicinische Wochenschrift* a bacillus which he discovered while making examinations of milk in the laboratory of Dr. Piorkowski in Berlin. In the agar plate cultures it formed brown granular colonies, which also grew well in glycerine agar at 37° C., presenting a white appearance, confluent in the middle and punctate at the margins, and becoming yellow and slimy in three or four days. Milk treated with the bacillus and kept at 37° C. for 48 hours was coagulated and had a strongly acid reaction and an acetous smell. The appearance of a bouillon culture kept for 24 hours at 37° C. was constant and typical, the fluid being slightly turbid with a considerable flocculent deposit on the bottom and sides of the tube. The bacillus could be stained with the ordinary aniline colours but not with Gram's solution. Cover-glass preparations stained with methylene blue showed a great similarity to the diphtheria bacillus and the pseudo-diphtheria bacillus of Löffler and von Hofmann respectively.

IGNORANCE AND HEROISM.

A CASE came up before the Holsworthy District Council on June 29th which revealed an inconceivable degree of inhumanity and ignorance. A boy named John Gerry was in the employ of a farmer, by name Dufty, of The Barton, Ashwater. Dufty had only recently—i.e., Lady Day—removed to The Barton and had previously lived at Croft, in Halwill. At Croft there had been cases of typhoid fever and the medical officer of health considered that the infection had been carried from Croft to The Barton by means of bedding. About June 7th Gerry was taken ill and the illness eventually proved to be typhoid fever. His employers refused to nurse him at all. Mr. E. O. Kingdon managed to get a trained nurse from Exeter, who nursed Gerry for two days and nights, after which she was naturally exhausted. Mr. Kingdon nursed him for one whole day and the rector, the Rev. G. D. Melhuish, sat up for three days and nights. Eventually it was thought best to remove the boy to Exeter, which Mr. Kingdon did, mainly at his own expense, telegraphing for an ambulance to meet him at Exeter. The poor boy died on the night of his admission to the hospital. It is, of course, a risk to move a patient in the third week of typhoid fever, but what else could have been done? Mr. Kingdon did what he could, but that is all part of the day's work for a medical man; and will it be believed that a sapient district councillor considered that Mr. Kingdon had committed an "error of judgment"? The attitude of Mr. Kingdon and the Rev. G. D. Melhuish deserves all praise. With regard to the former, as we said before, he did what many another medical man has done, and will do again; but though Mr. Melhuish did no more than his duty it was harder for him, being non-medical, to act as he did, and his name will be reckoned in the same category with Mompesson of Eyam, with Father Thomas.

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who ministered to the fever-stricken in the dungeons of Morocco, and with Bishop Belzunce in the plague at Marseilles.

BACTERIOLOGICAL EXAMINATION OF WATER.

THE official report upon the recent epidemic of enteric fever at Camborne, which we reviewed in THE LANCET of July 2nd, leaves no doubt that the outbreak was due to specific pollution of the Camborne public water-supply. From appendices to the report we learn that on Dec. 15th, 1897, at a time when this water was no doubt still distributing infection, a sample was sent to a firm of chemists for analysis. The chemists having reported, as was proper, upon their examination of the sample, concluded with the opinion that "this water is well suited for drinking and domestic purposes." On Dec. 17th a sample of the same water, no doubt still distributing infection, was sent to an association in London for bacteriological examination. The bacteriologist, after reporting, as was proper, upon the organisms contained in the sample, also concluded with the opinion that this water should be "looked upon as fit for drinking purposes." The case affords a striking illustration of the danger of pronouncing a water wholesome on the strength of laboratory examination of a single sample and deserves to be considered by all chemists and bacteriologists who are concerned with the examination of water. Further, the importance of always associating a thorough investigation of the source of the water with both a chemical and bacteriological examination is again illustrated.

SYRINGOMYELIA WITH SYMPTOMS OF ACROMEGALY.

AT the January meeting of the "Gesellschaft der Neuropathologen und Irrenärzte"[1] in Moscow Dr. M. A. Luntz described the case of a woman, thirty years of age, who for three years had suffered from pains in the right upper extremity. Swelling and weakness gradually affected the limb with analgesia and thermo-anæsthesia leading to frequent burns of the extremity. There were also inflammatory affections of the fascia and subcutaneous tissues which occurred without pain. Within the previous year there had also been pains and loss of sensibility of the left upper extremity, of the chest and upper part of the back. There was no neurotic element in the patient's personal or family history. She was of sturdy build with considerable development of subcutaneous fat. There was considerable increase in the circumference of the right upper extremity, especially in the lower third of the forearm and the hand. The enlargement involved the bones as well as the soft parts—an observation confirmed by the Roentgen rays. On the hinder part of the head, the neck, on both upper extremities, on the chest and the back as low down as the ninth dorsal vertebra there were sensory disturbance, analgesia and thermo-anæsthesia, with retention of sensibility for touch and pressure. Below the level mentioned the sensibility was quite normal. There was weakness of both hands, especially of the right, and on this hand were numerous scars from burns. On the palmar aspect of the right thumb was the scar of a deeper inflammatory process and the right index finger was contracted in consequence of an inflammation affecting the tendon. There were signs of trophic disturbance all over the anæsthetic area and evidence of interference with the vaso-motor arrangements of the extremities. The knee-jerks were rather active, the electrical irritability of the upper extremity was diminished to each current, the sphincters were unaffected, and all the internal organs seemed to be normal.

[1] Neurologisches Centralblatt, June 15th, 1898, p. 564.

There seems no reason to doubt that Dr. Luntz is right in regarding the case as one of syringomyelia affecting the cervical and upper dorsal part of the cord. The peculiarities of the case consist in the absence of any very obvious muscular wasting in the upper extremities—signifying that the anterior horns have as yet suffered but slightly, if at all—and in the distinct enlargement of the whole right upper extremity. The cause of this peculiarity—which has been described also by other observers—is not by any means clear.

THE DISPENSING OF MEDICAL PRESCRIPTIONS BY DRUGGISTS.

IN spite of the advances which medical science has made within recent years the medical practitioner when he prescribes for his patient is sufficiently conscious of the prominent place which the element of the unknown still occupies. There are, however, certain factors which he regards as reliable and trustworthy and one of these is the belief that whatever he prescribes will be accurately made up. Certain analyses, however, which have recently been made by Dr. Alfred Hill in the city of Birmingham would seem to indicate that a careful supervision of druggists in this particular is necessary. Out of 60 samples examined no less than 23 per cent. differed so much from the prescription that they were certified as adulterated. 52 of the samples were obtained from qualified pharmaceutical chemists and of these 11 were condemned, while of the remaining 8 samples procured from unqualified vendors 3 were condemned. To go a little into detail we find that of 7 samples of iodide of potassium and cinchona mixture 4 only were of correct composition. So, too, of 4 samples of quinine mixture 3 contained a slight excess of the drug and the fourth an excess of 18 per cent. Camphor liniment was ordered on 15 occasions, and in 4 samples there was found only from 50 to 75 per cent. of the camphor which should have been present. 4 samples of iron and quinine pills were procured and in one of them an excess of no less than 80 per cent. of sulphate of iron was found. Of glycerine 12 specimens were analysed and in 4 traces of arsenic—too much to be regarded as an adulteration—were detected. 2 samples contained dilute glucose-syrup in large quantities.

NEUROTIC SEQUELÆ OF FEVER.

IT is well to remember that even the milder forms of infectious exanthemata are capable of grave developments. In the case of measles this does not appear to be very remarkable when we consider the frequently severe type of the disease, though the occurrence of such complications as myelitis, peripheral neuritis, and even a form of paralysis resembling disseminated sclerosis, all of which have been recorded, is at once recognised as exceptional. The mention of chicken-pox is usually suggestive of something which may safely be neglected, and, happily, the absence of methodical treatment does not in most cases entail any grave consequences. It is not to be forgotten, however, that in this disease not only do we occasionally meet with symptoms of unusual intensity, but also with neurotic sequelæ identical with those observed in the severer infectious fevers. Thus peripheral neuritis has been recorded among the sequelæ of varicella and M. Bouvy, in the *Journal de Clinique et de Thérapeutique Infantiles* of June 23rd, 1898, describes a case of partial paralysis with some of the characters of multiple sclerosis observed in an infant three years old while convalescent from varicella. It was said that a year previously to this attack the child suffered from some form of eruptive fever. A slight facial paralysis with weakness in walking were noticed for a few days subsequently. These symptoms appeared to have passed off, but returned again in a more marked form after the varicella. Observations on

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this subject are still too few to justify any attempt at generalisations, but such as we have are at least suggestive. As far as they go they encourage a belief that the connexion between fever and consequent neuroses is not entirely limited to the case of the severer forms of infectious disease. It is probably to some extent also an effect of idiosyncrasy, marking both the activity of nerve processes, whether in the course of growth or functional employment, and the measure of nerve resistance.

INTRAVENOUS INFUSION IN URÆMIA.

THE doubts which always exist as to a so-called good result reported of any mode of treatment are to a great extent removed when this result follows the failure of other methods. Such cases as the following, published in the *Boston Medical and Surgical Journal* of May 26th, 1898, by Dr. B. Metzger, are always of value as evidence. A child, aged six years, complained of abdominal and lumbar pain, passed a few cubic centimetres of bloody urine, containing hyaline and granular cysts, and vomited several times in the evening. Diuretics were given and hot packs were applied. On the following days the quantities of urine passed were 65, 65, 150, 40, and 10 c.c. He vomited once every ten minutes night and day. He steadily lost ground, became delirious and then comatose. The pulse was slow but of good volume. As a last resort 10 oz. of blood were taken from the median basilic vein and 20 oz. of normal saline solution were infused. In an hour he was conscious and nine hours afterwards he passed 100 c.c. of urine and in the next five hours 670 c.c. Hot packs, digitalis, squills, &c., had been given a faithful trial. This case bears out, what is far from generally appreciated, that water is the best diuretic in renal disease though the improvement was perhaps partly due to the blood-letting.

THE MANCHESTER AND SALFORD SANITARY ASSOCIATION.

WE should like to see sanitary associations formed in all places where the population being fairly great very much depends upon the efficient application of sanitary measures. Such bodies can do an excellent work, can watch over the well-being of their fellow inhabitants, and represent to the proper authorities any defects which have appeared as a result of their own observations and inspection. Indeed, could such a movement be universally adopted much good for the community at large would be done. Our remarks are prompted in particular by a report which we have recently received from the Manchester and Salford Sanitary Association, the perusal of which affords us a case in point. Amongst the subjects recently investigated at the instance of the association, for example, are the disposal of the town's sewage, the use of preservatives in food, the sanitary condition of bakehouses, dangerous paraffin lamps, and chemical nuisances. As the result of an inquiry undertaken by Mr. William Thomson, F.R.S. Edin., F.I.C., on the petroleum lamp accidents question he points out the great danger of a certain lamp which appears to be much in use in Manchester and the neighbourhood, 75 per cent. of the explosions investigated being due to the defects of this particular burner. He concludes that "a good lamp might by accident or carelessness be rendered a dangerous one and it is therefore of the utmost importance that we should follow the example of many of the American States and prevent the importation of oil having a lower flash-point than 100° Fahrenheit." We may remark that the importation of oil having a lower flash-point than 100° F. cannot be prevented in view of the great and indispensable application of oil of a lighter character in the arts and industries. A restriction of the sale of lamp-oil of a lower flash-point than 100° F. has been recommended by a Parliamentary committee, but we doubt whether, even if adopted, the measure will be found practicable. Further, what applies to the possibilities of a good lamp "by accident or carelessness" becoming a dangerous one applies equally to an oil of 100° F. flash-point.

A MEETING of the Executive Committee for the institution of a Jenner Memorial was held at St. George's Hospital last Monday afternoon, when the President, Lord Lister, was able to announce the gratifying news that £10,000 had been subscribed, Lord Iveagh being responsible for the noble donation of £5000.

A CONVERSAZIONE will be held under the auspices of the medical staff and the lecturers of the Dental Hospital of London at the Royal Institute Galleries, Prince's Hall, Piccadilly, on Tuesday, July 19th, 1898. The prizes in connexion with the school will be distributed by Lord Ludlow at 8.30 P.M.

THE distribution of prizes to the successful students at Charing-cross Hospital Medical School will take place on July 20th, Mr. T. McKinnon Wood, chairman of the London County Council, presiding.

WE understand that under the will of the late Sir Robert Rawlinson, chief engineer inspector of the Local Government Board, St. Thomas's Hospital receives a legacy of nearly £35,000.

THE Executive Committee of the General Medical Council will meet on the 12th inst. and the Penal Committee on the 13th inst.

AT the recent meeting of the governors of Wellingto College Sir Joseph Fayrer, Bart., K.C.S.I., &c., was elected a governor of the College.

THE ROYAL ARMY MEDICAL CORPS.

THE following is the text of the Royal Warrant authorising the formation of a Royal Army Medical Corps:—

ROYAL WARRANT.

FORMATION OF THE ROYAL ARMY MEDICAL CORPS.

VICTORIA R.I.

WHEREAS We have deemed it expedient to alter in certain respects the conditions under which officers employed upon the medical duties of Our Army are at present serving;

Our Will and Pleasure is that the officers below the rank of surgeon-major-general serving in our Army Medical Staff shall be formed into a corps together with the warrant officers, non-commissioned officers, and men of Our Medical Staff Corps;

It is Our further Will and Pleasure that the designation "Medical Staff Corps" shall be abolished and that the Corps formed as above mentioned shall be styled the "Royal Army Medical Corps."

The following alterations will consequently be made in the ranks of the medical officers of Our Army:—

Present Ranks.	New Ranks.
Surgeon-Colonel	Colonel.
Brigade-Surgeon-Lieutenant-Colonel / Surgeon-Lieutenant-Colonel	Lieutenant-Colonel.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant	Lieutenant.

The medical staff of Our Army shall in future consist of

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Surgeon-Generals (ranking as Major-Generals) and the title of Surgeon-Major-Generals now serving shall be altered accordingly.

Officers of Our Royal Army Medical Corps holding appointments in Our Household Troops shall be borne as second officers on the establishment of Our Royal Army Medical Corps and shall be dealt with as regards pay and promotion in accordance with the rules laid down in Articles 384, 385, and 387 of Our Warrant for the pay, appointment, promotion, and non-effective pay of Our Army, dated 26th April, 1897.

Given at Our Court at Windsor this 23rd day of June, 1898, in the 62nd year of our Reign.

By Her Majesty's command,

Army Order 93 of 1898. LANSDOWNE.

THE BRITISH PHARMACOPŒIA.

VII.[1]

THE ADDITIONS *(continued)*.

Glycerinum Acidi Borici.—This is a misnamed preparation: it is a compound, a borate of glycerol, not a mere solution of boric acid in glycerine, as its name suggests. It is the Glyceritum Boroglycerini of the United States Pharmacopœia and it now becomes the official representative of the well-known "Boroglyceride," a patented substance used for the preservation of milk, butter, and various foods. It is soluble in water and may be used as a surgical dressing or administered internally in pills or cachets.

Glycerinum Pepsini.—This is a very desirable addition and forms an active preparation, one fluid drachm of which represents 5 gr. of pepsin. It may be administered in the undiluted state in atonic dyspepsia and it has been employed as a paint with the view of destroying the false membrane in diphtheria. The pepsin preparations have of late years given way before papain, as this vegetable digestive acts in an alkaline medium. It is hardly necessary to remind our readers that preparations like the one under notice cannot be employed as a means of peptonising foods, though some of the best text-books err on the subject. If the glycerine of pepsin be added to food before swallowing the digestion leads to the formation of most evil-flavoured by-products which the patient's stomach would be certain to reject; it must therefore be given after a meal or with the food. It can be employed, however, with advantage as an agent for predigesting nutrient enemata, but the following is preferable in every way.

Liquor Pancreatis.—This is a liquid preparation containing the digestive principles of the fresh pancreas of the pig, being most active when the animal from which the pancreas has been obtained has been fed shortly before being killed. 5 oz. of pancreas freed from fat and external membrane and finely divided by trituration with washed sand or powdered pumice-stone should be digested in a closed vessel with 1 pint of 20 per cent. alcohol for seven days and then filtered. It may be regarded as the official representative of the well-known liquor pancreaticus (Benger).

The pancreas contains at least four ferments—viz., trypsin which changes proteids into peptones in the presence of alkalies or in a neutral medium; a second—the curdling ferment—coagulates the casein of milk; the third—the emulsifying ferment—emulsifies or partially saponifies fat; whilst the fourth—the diastatic ferment—changes starch into sugar and dextrin. The new official liquor contains at least three of these ferments.

The use of digestive agents in affections of the stomach and various wasting diseases is of the greatest assistance to the physician in treating these disorders, and therefore this addition to the British Pharmacopœia will be hailed with satisfaction. It is, however, essential that a few cardinal points in chemical physiology be remembered before they can be successfully employed in the treatment of disease. Owing to the acid reaction of the normal gastric secretion the pancreatic ferments do not exert their digestive properties on the contents of the stomach, and as they are also rapidly destroyed by the gastric juice before reaching the duodenal alkaline liquids it is useless to administer them with the intention of aiding digestion. Their use in therapeutics must therefore be confined (with one exception) to the predigestion of various foods before administration. By the addition of the liquor pancreatis and a small quantity of sodium bicarbonate, milk, gruel, beef-tea, soups, and farinaceous foods of various kinds can be peptonised—that is, may have their proteid constituents changed into soluble peptones before administration.

If the peptonisation process be carried out to completion then, as in the case of pepsin, various nauseous and bitter by-products are generated which render the food so unpalatable that it cannot be swallowed. This may be easily prevented by checking the process before the bitter products are formed as in the usual manner of peptonising milk in the sick room. Thus two-thirds of a pint of fresh cow's milk are diluted with about one-third of a pint of water and the mixture is heated in a suitable vessel to about 120° or 140° F., when two drachms of the liquor and 30 grs. sodium bicarbonate are added and the whole is left standing in a warm place for about 15 minutes when it is ready for use. If the entire quantity can be administered without delay nothing more is necessary, but as this is not generally practicable the digestive or peptonising process must be stopped by bringing the food to the boiling-point, which destroys the trypsin, or by plunging the vessel in ice, which stops the process for the time. After boiling for a few moments the peptonised liquid will then keep without change for a considerable time and it may be used like ordinary milk for mixing with, or for making, other foods or dishes, as it is free from objectionable taste or smell. One or more teaspoonfuls of the liquor with a little alkali may be advantageously added to nutrient enemata before or at the moment of administration.

The exception already mentioned to the administration of pancreatic products by the mouth refers to the use of trypsin in intestinal indigestion and diabetes and where there is reason to suspect that the normal secretion of the pancreas is absent or in abeyance. In such cases trypsin may be made into pills which should be coated with keratin so that they may pass through the stomach unaltered. The alkaline bile or duodenal secretion will dissolve the keratin which is unacted upon by acids and will set free the ferment which then supplements the pancreatic secretion.

Various preparations are procurable which are said to contain the emulsifying ferment of the pig's pancreas. They are prepared by dissolving out the pancreatic fat by ether and making an emulsion with alcohol. They are recommended in phthisis where the digestion of animal fats is supposed to be at fault. Only the liquid containing the peptonising, curdling, and diastatic ferments is official.

No doubt papain—the soluble ferment from *Carica papaya*—will be honoured by a place in the next revised Pharmacopœia. Its great advantage lies in its power of changing proteids into peptones in an acid, neutral or alkaline medium. In various diseased or disordered conditions of the stomach where digestion is in abeyance in the presence of large amounts of butyric and other irritating acids and where large doses of alkalies are indicated papain can be administered with very striking results. In such cases pepsin is useless and of course pancreatic ferments are inert, but after the neutralisation of the objectionable acid by the alkali the papain hastens or finishes the digestive process and gives the irritated and pained stomach valuable rest. Papain, pepsin, and pancreatic ferments have been used as local agents for the destruction of the false membrane in diphtheria and for stimulating the healing of ulcers, but the results are unsatisfactory.

Infusum Scoparii.—Many changes have been made in the group of infusions by the revisers, as mentioned in the article on the "Omissions," where we commented upon the rejection of 7 of these preparations. Several changes in the time, strengths, and dosages have also been made, but in no case are these changes of such importance as to come under the scope of the present article. The infusion of broom is introduced to take the place of the old decoction; its strength is doubled and the dose is only one-half of that of the older preparation. Doubtless the revisers had good reasons for the change and we hope that they made careful experiments upon the amount of active principles to be found in the old decoction and in the liquid made by the simpler process of

[1] Articles I., II., III., IV., V., and VI. were published in THE LANCET of April 16th and 23rd May 7th and 28th, and June 18th and 25th, 1898, respectively.

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infusion. In immediate connexion with the group of infusions must be considered the new departure which has given to the British Pharmacopœia the following preparations: Liquor Chiratæ Concentratus, Liquor Calumbæ Concentratus, Liquor Cuspariæ Concentratus, Liquor Krameriæ Concentratus, Liquor Quassiæ Concentratus, Liquor Rhei Concentratus, Liquor Senegæ Concentratus, Liquor Sennæ Concentratus, Liquor Serpentariæ Concentratus, and Liquor Sarsæ Co. Concentratus.

These concentrated liquors are introduced as representatives of the class of concentrated infusions which have been for several years manufactured by wholesale houses and used occasionally by some dispensing hospital chemists as ready-made substitutes for the fresh infusions of the same name. The usual strength of the commercial article was such that 1 part added to 7 parts of water formed a solution equivalent to the fresh official infusion. These new British Pharmacopœia liquors are solutions of the active and flavouring properties of their respective drugs in dilute alcohol (20 per cent.) of such a strength that 1 part added to 9 of water forms a solution as nearly as possible equivalent to the official infusion. We must say that the introduction of this formidable list of preparations of drugs, for the most part of minor importance, is the feature which we like less than any change made by the revisers. To multiply Galenical preparations of drugs like cusparia, serpentary, or even krameria and chiretta, is an unfortunate mistake. There are, however, more grave objections to this new departure. The authorities responsible for the new British Pharmacopœia state in the preface to the volume that after experimenting with the object of preparing the 3 Decoctions and the 22 Infusions of the Pharmacopœia in highly concentrated states they obtained compounds resembling the liquids which manufacturers have termed "concentrated decoctions and infusions." "But some of these compounds underwent deterioration on keeping or were wanting in flavour or aroma and were accordingly rejected. Nine of the most successful have been admitted into the Pharmacopœia as *Liquores Concentrati* and the products of their dilution with water *may be prescribed by practitioners in place of the corresponding official infusions.*"

It will be noticed that the above extract from the preface does not give permission or rather does not legalise the use of these liquids by the chemist when dispensing the prescription of a physician who simply prescribes an infusion. There is, however, a difference of opinion upon this point and some chemists are labouring under the idea that when a mixture containing say 10 oz. of infusion of calumba is prescribed 1 oz. of the concentrated liquid should be used. We believe this to be a mistake, but it is most difficult to really know what the revisers mean by introducing these preparations with the understanding that they may be prescribed in place of the official infusions. The physician may order the corresponding tinctures in place of the infusions if he wishes and there is no necessity for a statement to this effect in the preface. The main consideration, however, is the important one that these liquors when diluted with water do not really represent an infusion at all. The British Pharmacopœia practically recognises this when it states that "the diluted *liquores* differ in minor respects from freshly prepared decoctions or infusions and contain a small quantity of ethylic alcohol." A *watery* solution of the principles of rhubarb root is a very different thing from a solution prepared by percolating the root with weak alcohol. The process for the calumba preparation is a very bad one, as no two samples can be found alike when prepared by maceration and pressure. They require about ten days for their preparation in nearly every instance, thus enormously increasing the cost. We have given only a few of the more serious objections to these liquors, which we are confident will seldom be prescribed by the physician and which if used by the dispenser will certainly lead to endless complaints on the part of the patient and to loss of confidence in both his chemist and medical attendant. We cannot but think that their introduction was a grave error in judgment and that they will be rejected in the next issue of the Pharmacopœia. With the exception of the infusion of digitalis the practitioner never prescribes an infusion except in the form of a vehicle to make the mixture up to a certain fixed bulk, as 6, 8, 10, or 12 oz. If he wishes to order these liquors he must prescribe them as he does a tincture and pause to make an elaborate arithmetical calculation of how much of them will correspond to the amount of fresh infusion which he is in the habit of prescribing.

Liquor Hamamelidis is introduced as a substitute for the popular Hazeline and Pond's Extract. It is to be made from the *fresh* leaves. The imported liquors with which the profession is familiar are made where the witch hazel flourishes and the *twigs*, as well as the leaves, of the tree are employed. How far the new official liquor will resemble the American preparations therapeutically remains to be proved at the bedside. By an oversight the dose of this preparation is not given, though the imported preparations are frequently administered by the mouth in doses up to 1 or 2 drachms. This addition will be, no doubt, extensively employed as a local application to hæmorrhoids and as an injection in hæmorrhage from the bowel and as a means of checking internal bleedings when administered by the mouth.

Liquor Hydrogenii Peroxidi.—This valuable agent has at last found official recognition. It is a colourless and odourless solution of hydrogen peroxide which should yield about 10 volumes of oxygen. It is a powerful antiseptic and bleaching agent and has been much used for changing the colour of dark hair to the light golden shade. It readily destroys the organised ferments without destroying diastase fermentation and already the number of diseased conditions in which it has been administered is very great though the results in the majority of instances are disappointing. It has been given in teaspoonful doses in diphtheria, measles, scarlet fever, fevers, and pertussis with the view of destroying the micro-organisms. As a local application to foul wounds and ulcers it is most valuable and it has proved highly successful in destroying the germs in purulent cavities and abscesses when injected with water (1 in 10). It occurs in Sanitas which is used as a general disinfectant.

Liquor Ethyl Nitritis is a colourless liquid containing from 2½ to 3 per cent. by weight of ethyl nitrite in alcoholic solution with 5 per cent. glycerine. In doses of from 20 to 60 minims it is a valuable relaxer of arterial spasm acting like nitrite of amyl and spirit of nitrous ether. It may be noticed that the official test for spt. æther nit. provides for a percentage of 2½ parts of ethyl nitrite in 100.

Lamellæ Homatropinæ are introduced for ophthalmic use to dilate the pupil. Each disc contains $\frac{1}{100}$ gr. of the hydrobromide; though weaker in action than atropine the effects pass off more rapidly.

Pilula Quininæ Sulphatis is a beautiful mass consisting of 30 gr. of the sulphate, 1 gr. of tartaric acid, 4 gr. of glycerine, and 1 gr. of tragacanth. We have already referred to the great value of the hydrochloride of quinine now made official for hypodermic injections.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE twenty-eighth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, July 4th. With the exception of Sir John Dorington and Mr. Cripps, Q.C., all the Commissioners were present. Mr. Martin, Chairman of the Water Committee of the County Borough of Croydon, was first examined. Afterwards Mr. Salter Whiter gave evidence on behalf of the Rural District Council of Croydon. Mr. T. H. Watney, Chairman of the Water Committee of the Town Council of Richmond, gave evidence on behalf of that borough and Mr. George John Courthope, J.P., for the Parliamentary Committee of the Kent County Council. After the adjournment for luncheon Dr. R. M. H. Randell gave evidence on behalf of the Beckenham Urban District Council; Lieutenant-Colonel Charles Newman Kidd, J.P., for the Dartford Urban District Council; Mr. Arthur Thomas Waring for the Dartford Rural District Council; Mr. F. H. Norman for Bromley Urban District Council; and Mr. Robert Gordon Mullen, clerk to the Bromley Rural District Council, on behalf of that body.

Mr. HOWARD MARTIN, in answer to the CHAIRMAN, said that the Corporation of Croydon had established works for the supply of water in Surrey-street, Croydon, where they had four wells in the chalk. The corporation had also a well at Addington in Surrey, a place outside the borough boundary. The corporation had expended about £150,000 on works connected with the water-supply and they were at present engaged in sinking a new well at Waddon within the borough boundary; this and other works on which they were engaged would cost about £37,000. The corporation supply the whole of the borough with water for public and

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sanitary purposes; they also supply water for private and domestic purposes in the part of the borough south of the town-hall and in so much of the borough north of the town-hall as is within a distance of two miles from it. Altogether about three-fourths of the population of the borough reside in the area supplied by the corporation. The inhabitants of the other part of the borough are supplied with water for private and domestic purposes by the Lambeth Waterworks Company. The inhabitants of the district supplied by this company are extremely desirous of having their water supplied by the corporation. The corporation is prepared to provide that supply and on two occasions, in 1895 and 1897, when the London County Council promoted Bills for the acquisition by that body of some of the undertakings of the metropolitan water companies, the Croydon Corporation agreed that clauses should be inserted in the Bills to enable them to acquire from the London County Council at a price agreed upon so much of the property of the Lambeth Company as is situated within the borough of Croydon. The population of Croydon has increased very rapidly since the year 1851, when it amounted to 20,548. Thus in 1861 it was 30,663; in 1871, 56,123; in 1881, 79,615; in 1891, 102,697; and in 1897 it was estimated at 121,171. On the part of the borough of Croydon it is claimed that whatever change might be made in the present supply of water in the metropolitan area the borough should be preserved in her present rights of water-supply and that the part of the borough now supplied by the Lambeth Company should be transferred to the water area of the corporation. The district supplied by the Lambeth Company could be much better supplied from Croydon than from Lambeth and the present arrangement has many disadvantages. The Croydon Corporation had considered the question which was submitted to the Royal Commissioners—"Whether, having regard to financial consideration and to present prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies, it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed by one authority"—and in answer to this question the opinion of the corporation was as follows:—

The acquisition of the undertakings does not affect the borough of Croydon, except with regard to the small part of the undertaking of the Lambeth Water Company within the borough, and the corporation prefers therefore to limit its statements to that detail. The corporation is of opinion, however, that the question of the water-supply of the area south of the river could be efficiently and satisfactorily dealt with by placing the same in the hands of the four county authorities exercising control over that area—i.e., the County Councils of London, Surrey, and Kent, and the Council of the County Borough of Croydon, each exercising jurisdiction within their own area, and are not in favour of one authority being established for that area.

If the Commissioners decided to recommend that the undertakings should not be acquired by one or more authorities the Town Council of Croydon were of opinion that additional powers of control should be given to local authorities with regard to the water-supply within their own area, and that such control should extend to the quantity, the quality, and the efficiency of the supply.

In answer to MR. MELLOR the witness said that the objection which the inhabitants of part of Croydon had to being supplied as at present by the Lambeth Company was that they had to pay a higher price to the company for worse water.

In answer to the CHAIRMAN the witness said that the water supplied by the Lambeth Company was not so good after floods in the Thames, that the supply given by that company was not constant, and that the mains laid were not sufficiently deeply placed.

In answer to MR. DE BOCK PORTER the witness pointed out that the sum paid for water to the Lambeth Company amounted to about 50 per cent. more than that paid to the Corporation of Croydon. In the case of the water supplied by the corporation, roughly speaking, the price amounted to 5½ and in the case of the Lambeth Company to 7¾ per cent. of the rateable value. The figures arrived at were taken from an average of a number of houses of different rateable values.

Major-General SCOTT said that the corporation could insist that a constant supply of water should be given by the Lambeth Company. The witness said that the corporation had no experience of the Metropolis Water Act of 1897 and not being a lawyer he could give no opinion upon it, but he thought that the working would probably be expensive.

The CHAIRMAN said that under the Act of 1871 the people of Croydon could insist on having a constant supply of water.

With regard to control the witness said, in answer to Major-General SCOTT, that in his opinion the local authorities should have power to examine water in the reservoirs of the water companies, and Major-General Scott remarked that this was a very practical suggestion.

With regard to the complaint of the people of Croydon that they did not have a constant supply of water, the CHAIRMAN pointed out that the Act of 1897 had been in force more than a year, and it appeared that by the provisions of that Act the corporation could easily make the Lambeth Company give a constant supply of water, and that if the town council "did not trouble their heads" about Acts and never even read them it seemed to him that it was useless for them to complain to the Commissioners on a matter which they could have had put right for themselves.

MR. SALTER WHITER, on behalf of the Croydon Rural District Council, said that the district in which he was interested was thickly populated and consisted of nine parishes, more or less surrounding the borough of Croydon. The most thickly populated part of the district was situated to the north-west of Croydon, and bounded towards the north by some of the metropolitan parishes and by Wimbledon. In this district the parishes of Mitcham and Merton contained a population of 17,000, and were supplied by the Lambeth Water Company. In the early part of the year 1895, during the frost, there was almost a general blocking of the company's mains, which in some cases was possibly due to the proximity of the pipes to the surface of the ground. He had many reasons for saying that the company were very dilatory in making provisions for the emergency. Many of the houses in the district were without a proper supply, and as it is the duty of the council to see that the people have water to drink they were obliged to distribute water to the houses until the Lambeth Company had made proper arrangements. The company had refused to recoup the council for the expenses they had incurred in conveying water to the houses of the people. After the frost was over the work of repairing the damage to the mains was delayed for a very long time, and although the extent of the damage was some excuse for the delay still more expedition might have been used. Some houses did not obtain their usual supply until the middle of June, and the majority of the houses were without water for two months.

In answer to MR. DE BOCK PORTER the witness said that the inhabitants paid the water rent for the period during which they had no supply of water from the Lambeth Company. There was no question at all as to the fact that the Lambeth Company had failed to supply water. With regard to the question of the purchase of the water companies' undertakings the council were not unanimous. The opinion of the majority of the council was, however, that there should be some scheme of purchase by the local authorities and that each authority should have full power of control over its own individual supply. Should the scheme of purchase not be carried out the council were of opinion that additional powers should be given to the local authorities whose districts are within the limits of supply of the public companies. The local authorities ought to have power to examine the sources of water-supply at any time and the means and methods employed to store and to purify it. Power should also be given to local authorities to require a constant supply of water to be given by the companies. About half the water in the district was supplied by the Lambeth Company and the other half from wells. The witness thought they would be able to obtain a sufficient amount of water from wells for the supply of the whole district.

In answer to MR. RICKARDS, who appeared for some of the water companies, the witness insisted that in the year 1895 the Lambeth Water Company left the local authorities to supply the people with water as best they could.

In answer to MR. CRIPPS, the Parliamentary agent of the London County Council, the witness said that his council had not gone into the question of the merits of the Welsh scheme at all and did not think the matter of any interest to their district.

MR. T. H. WATNEY, on behalf of the Borough of Richmond, said that in the year 1877 Richmond obtained powers to supply the parish of Richmond with water. At that time the Southwark and Vauxhall Water Company were supplying them with water without Parliamentary sanction, Richmond being outside their authorised limits of

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supply. The immediate cause which induced the Richmond people to wish to supply themselves with water was due to the high charges made by the Southwark and Vauxhall Company in Richmond and to the insufficient supply which they received from that company. The corporation having established their waterworks and carried them on successfully for a number of years did not desire to be attached to any scheme which might be brought forward for the supply of the metropolitan area. The reasons were as follows:—

1. On account of the purity of the water. The Richmond water, with the exception of that purchased from the company, all being derived from springs. 2. The corporation feel convinced that they will by any amalgamation have to pay at least 50 per cent. more for the water that they would consume, not taking into account that the amount now paid for the redemption of the loan is itself equal to a rate of 5d. in the £ out of the present rate of 11d. 3. The water committee hope and believe that very shortly they will have increased their local supply, so as to be enabled to meet all requirements without the assistance of the Southwark and Vauxhall Company.

At the present time, the witness said, the arrangement was that the Corporation of Richmond could have one million gallons of water a day from the Southwark and Vauxhall Company at the rate of 1s. per 1000 gallons. The corporation hoped and believed that in time they would be able to obtain sufficient water from their own wells to supply the whole of the population. They did not wish to be interfered with in any way by the London County Council and were content with the present arrangements. The water which was obtained from the Southwark and Vauxhall Company was not so good as that which came from their own wells. The Bath Committee of the Corporation of Richmond objected to have the Southwark and Vauxhall Company's water for the supply of public baths because they found it "turned green." The corporation objected to any control being exercised over their water-supply by the London County Council because they thought that they might not be strong enough under those circumstances to maintain their present position with regard to the water-supply.

In answer to Major-General SCOTT the witness said that the well which they used went into the chalk, which was reached at a depth of about 300 ft. and extended through it for a depth of about 25 ft. They had been pumping water for ten years and there was no falling off in the quantity of water which they were able to obtain from the chalk. The layer of sand above the chalk had, however, been depleted.

In answer to Mr. CRIPPS, the Parliamentary agent to the London County Council, the witness said that since they had obtained an Act of Parliament in 1877 to enable them to procure their own water-supply they had had no trouble with the Southwark and Vauxhall Company. He did not think that the London County Council would be able to manage the water undertakings as well and as economically as they were managed at present.

Mr. GEORGE JOHN COURTHOPE, J.P., Chairman of the Parliamentary Committee of the Kent County Council, said that the area of Kent affected by the inquiry of the Commissioners was supplied by the Kent Water Company, with the exception of the district of Beckenham, which was supplied by the Lambeth Company. The whole supply of the Kent Company was drawn from wells in the chalk. The company had several wells and pumping stations. The amount of water now drawn from the chalk was very considerable and the pumping had effected a marked diminution in the water of the streams and springs in the neighbourhood of the pumping stations. It had been estimated that the chalk in the district could afford a supply of 27,500,000 gallons a day, but at present rather less than 15,500,000 gallons a day were pumped. The witness thought that if the full amount of 27,500,000 gallons were pumped there would remain hardly a spring or stream of water in the whole neighbourhood. The depletion of the wells and springs by the pumping operations had already caused serious inconvenience to landowners and others in the county and they were anxious that the depletion should not increase. The witness thought that the people of Kent have the first right to the water which lies under their feet and one of their foremost principles was "Kent water for Kent." The authorities of Kent objected to large quantities of water being pumped out of Kent for the use of London and they viewed with apprehension the formation of any "water trust" with intercommunication of supply. They objected equally to any amalgamation of the water companies, as that course would undoubtedly lead to an intercommunication of supply and in the case of any pollution of the river supply the Kent water might be drawn upon for the whole of London south of the Thames and this would involve a most serious state of things for those who relied on a supply of surface water and also for the water consumers of Kent generally. Another objection to the amalgamation of the water companies was that there would probably be an equalisation of water rents, and as the rents charged by the Kent Water Company were lower than those of many of the other companies it was unreasonable that the rates charged to the water consumers of Kent should be increased whilst water can be obtained at a small expense in their own district. The witness contended, however, that although the water rents of the Kent Company were fairly reasonable when compared with those of the other metropolitan companies, yet as he understood that the cost of pumping the water in Kent was less than 2d. per 1000 gallons the company charged more than 10d. per 1000 gallons when the water was taken by meter. The witness contended that the Kent Company stood in a different position from that of all the other metropolitan companies. It was a Kent company and not a London company and should be treated as such. Should there be a "municipalisation" of the water companies the Kent undertakings should be transferred to the Kent authorities and the latter might be placed under the obligation to continue to supply the metropolitan area at present situated in the Kent Company's London district.

In answer to Mr. CRIPPS, the witness said that they wished very strongly that the London County Council should have no power over them.

Dr. REGINALD MAURICE HENRY RANDELL gave evidence on behalf of Beckenham Urban District Council. He said that the district for which he appeared had an area of 3881 acres and a population of 24,200 and that the district was supplied in part by the Kent Company but chiefly by the Lambeth Company. The part supplied by the Kent Company consisted of 413 acres and the population was 1507. The part supplied by the Lambeth Company consisted of 3468 acres and had a population of 22,719. On the question of the water-supply Beckenham had acted in cordial agreement with the other District Councils in West Kent—viz., the Bromley Urban and Rural Districts, the Sevenoaks Rural, the Erith and Dartford Urban Districts, the Bexley Urban and the Dartford Rural District Councils. The areas presided over by these councils formed the district outside the metropolitan area supplied by the Kent company. They comprised altogether an area of 148 square miles and had a population of 126,838 and a rateable value of £926,539. The part of Beckenham supplied by the Kent Company was well served, the charge for water was reasonable and, apart from the general theoretical principle that a primary necessity like water, on which the health of a district so much depends, should be in the hands of a local authority, Beckenham had no reason for desiring a change. In the part of Beckenham supplied by the Lambeth Company the question was entirely different. The Lambeth Company charged a high rate. The water obtained from the Thames had to be carried a distance of sixteen miles and lifted several times in transit. Beckenham being at the farthest distance from the source of supply is affected by every breakdown that occurs at any point between the intake of the company and that district. The inconvenience in connexion with such a breakdown is intensified and becomes a danger owing to the conduct of the Lambeth Company. For example, in the year 1893 the supply was cut off without notice and many cases were brought to the knowledge of the district council where the first intimation the householders had that there was no water was that the kitchen boiler of a would-be water consumer was red hot. Representations were made to the Lambeth Company and they promised to give notice in case of any future breakdown, the council undertaking to make the fact known in their district. Breakdowns had since occurred on no less than five occasions. No notice whatever was given to the council and the inhabitants were left to discover the absence of water for themselves. On Monday, June 21st, 1897, the water-supply failed and no notification was received from the company. On the following day (Jubilee day) the supply was very limited and on Wednesday, by request of the Lambeth Company, road watering ceased. Great inconvenience was experienced in consequence of the want of water. In reply to a strongly-worded remonstrance concerning the deficiency of supply the company refused to continue the correspondence. At the present time Beckenham is partly supplied by river water pumped from Thames Ditton, although there is an ample supply of the

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purest water under Beckenham itself and this water is being pumped by the Kent Company for the supply of other districts. In the opinion of the witness the inhabitants of West Kent have the prior claim to the water in their district and are entitled to make provision for the increase in the population which they have every reason to expect. It is unfair to Kent that its streams and wells should be depleted for the supply of London.

In answer to the CHAIRMAN the witness said that the Beckenham Urban District Council strongly objected to any interference in their water-supply by the London County Council.

Lieutenant-Colonel CHARLES NEWMAN KIDD, J.P., gave evidence on behalf of the Dartford Urban District Council. He said that he had been a member of the Dartford Local Board for more than twenty-four years and of the Dartford Urban District Council for over four years. He entirely objected to the transfer of the Kent water to the London County Council and was of opinion that the Kent Company stood in a different position from that of any other metropolitan company. It was essentially a Kent company, not a London company, and it should be treated as such. There are three wells at Dartford; the amount of water drawn from the chalk there is very considerable and has a marked effect on the springs and streams in the neighbourhood of the pumping-station. The depletion of the wells by pumping operations had caused serious inconvenience to land-owners and others and they were very anxious that the depletion of water should not be increased. Originally the waterworks at Dartford were in the hands of the local authority and they sold them to the Kent Company and the Dartford authorities have since much regretted that they sold their undertakings. The stream near the new pumping-station at Wilmington had almost disappeared in consequence of the pumping from a well which had lately been sunk there.

Mr. ARTHUR THOMAS WARING, on behalf of the Dartford Rural District Council, said that they were quite satisfied with the present supply of water and in their opinion the Kent local authorities should have the control of the water which lies under their feet. There were three wells and three pumping arrangements at Dartford and the depletion of wells and springs both in the Dartford and the Beckenham districts had already caused serious inconvenience. The population of Dartford Union had increased from 53,435 in the year 1881 to 68,702 in 1891, and it was certain that year by year they would want more water for the supply of their district. For this reason the Dartford Rural District Council was in entire accord with the other Kent local authorities in objecting to large quantities of water being pumped out of Kent for the use of the metropolis and they viewed with apprehension the formation of any water trust. The witness said that at the present time the River Cray contained only about one-fourth or one-fifth as much water as it formerly had and in his opinion the amount of water flowing down this stream has been materially affected by the pumping at the Orpington station of the Kent Company.

Mr. F. H. NORMAN, on behalf of the Bromley Urban District Council, said that the population of Bromley was rapidly increasing. In the year 1871 it was 10,673 and at the present time it was estimated at 26,000. The council which he represented, with the exception of two points of detail, were content with the present supply given by the Kent Company. The exceptions were: (1) the absence of a constant supply in various parts of the district; and (2) the unfair terms imposed upon the council for water used for public purposes, inasmuch as small trade consumers were charged as much as 2½ per cent. less than the amount charged to the council for sanitary purposes. The Bromley Urban District Council were unanimously of opinion that the London County Council is not the proper authority to control the water-supply of their district, and that should any transfer of the existing undertakings of the Kent Company be made the various local authorities in Kent outside the London area should be entrusted with the management of their own water-supply, and that the Kent local authorities are primarily entitled to deal with the Kent water, or, as an alternative policy, the Kent County Council should be constituted the water authority with respect to the Kent area.

Mr. ROBERT GORDON MULLEN, clerk to the Bromley Rural District Council, said that the Kent Company had always supplied water of a high standard of purity and upon fairly liberal terms, and the authorities outside the London County Council area in West Kent were unanimous that should Parliament "in its wisdom" decide that the control of the water-supply should be transferred from the existing companies to public authorities, the London County Council ought not to be allowed to control the Kent water but that the control should be vested in the Kent authorities either as a "water trust" composed of representatives of the various local authorities, or that the control of the water should be given entirely to the Kent County Council for their joint benefit.

In answer to Mr. CRIPPS the witness said that he was convinced that in the interests of Kent it would be best if matters were left as they are.

The next sitting of the Commissioners will take place on Monday, July 11th, at the Guildhall, Westminster.

THE COMPLIMENTARY DINNER TO DR. PLAYFAIR.

THIS dinner (adjourned from June 8th) was held at th Grand Hotel on Monday, July 4th. Lord Lister occupied the chair. Nearly a hundred persons were present, among them being Sir Samuel Wilks, Bart., Sir Joseph Fayrer, Bart., Sir James Kitson, Bart., M.P., Sir William Priestley, M.P., Sir Dyce Duckworth, Sir Felix Semon, Sir Walter Foster, M.P., Dr. Farquharson, M.P., Bishop Barry, Rev. Dr. Robertson (Principal, King's College), Rev. Dr. Wace, Dr. Cullingworth, Dr. Constantine Holman, Dr. Buzzard, Dr. Maclagan, Dr. Donald Hood, Dr. Blandford, Dr. Kingston Fowler, Dr. Handfield-Jones, Dr. Amand Routh, Surgeon-Colonel W. H. Roberts, Dr. Octavius Jepson, Dr. Bezly Thorne, Mr. Malcolm Morris, Dr. Thomas Walker (Peterborough), Dr. Nicholson (Brighton), Dr. Murphy (Sunderland), Dr. Marriott Cooke, Dr. Fletcher Beach, the staff of King's College and Hospital, and a considerable number of former resident accoucheurs. Letters of regret were received from Viscount Dillon (chairman of the hospital), Sir William Broadbent, Bart., Sir William Turner and Professor Simpson (Edinburgh), and many others. The proceedings were throughout characterised by the greatest cordiality, the speeches of the Chairman and Dr. Playfair meeting with repeated rounds of applause.

The toast of "The Queen" having been duly honoured,

Lord LISTER, in proposing that of "The Guest of the Evening," referred to their first acquaintance forty-four years ago when Dr. Playfair was dresser under Mr. Syme during his own house-surgeoncy under that great surgeon. He briefly sketched Dr. Playfair's subsequent career, first as a surgeon in the East India Company's service and afterwards as a specialist in the department in which he had been so greatly distinguished. He illustrated Dr. Playfair's clear-sightedness and skill by his early recognition of the importance of antiseptic principles in the days of carbolic putty which he had employed with such success as entirely to abolish sinus of the mamma in his own practice. Dr. Playfair's work on midwifery was at once recognised as of very great value and stamped him as a high authority in his subject. Referring to the trial in which Dr. Playfair was recently concerned Lord Lister spoke of it as a grievous travesty of justice which had not in the slightest degree diminished the esteem in which Dr. Playfair had been previously held. Dr. Playfair's kindness of heart and straightforwardness, together with his professional distinction, explained his great popularity with those who served under him, and this was strikingly illustrated by an illuminated address presented to him that evening by nearly 50 former resident accoucheurs in King's College Hospital. All present, whether former students, former colleagues, or others, rejoiced in this opportunity of doing honour to Dr. Playfair, and united in the cordial wish that his retirement from hospital and professorial duty might be followed by many years of health, prosperity and happiness.

Dr. PLAYFAIR expressed his gratitude to the gentlemen present for the distinguished honour they had done him by being present in such numbers to wish him well. After commenting on his connexion with King's College he said that Lord Lister having spoken so kindly on an incident in his career which certainly could not be regarded as a pleasant one—viz., the *cause célèbre* in which he had the misfortune to be the defendant—he felt that he could not avoid saying a few words with regard to it. Up to this time

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he had made it a rule never to speak of this matter in public and as little possible in private, and had it not been spoken of he should not now have deviated from that rule. On the conduct of that trial he should make no remark lest he should be tempted to say that which had better be left unsaid. The sensation which it caused was mainly due to the question of professional confidence so ingeniously raised by the talented counsel who represented the plaintiff—a question used by him as a sort of forensic red herring in order to divert attention from the other and more important matters; of that he made no complaint, since it was often the duty of counsel to make white appear black and black appear white. The circumstances of the case were so entirely of a domestic and family character as altogether to remove it from the category of ordinary professional attendances, so much so that it had never occurred to him, to his lawyers, or to his counsel that any professional question could be connected with it. All he need say on this point was that in very painful, very exceptional, and difficult circumstances he had acted as he thought a gentleman, a man of honour, and the head of a family who respected the sanctity of family life ought to have acted, and he sincerely hoped that under similar conditions he would have the moral courage to do exactly the same thing again. Amongst the innumerable expressions of confidence, goodwill, and affection which he had received from old patients, friends, and pupils there was none which gratified him so much as a letter he had received from a man whose high moral rectitude and absolute purity of principle were universally acknowledged. Mr. Gladstone, to whom he was practically unknown, had done him the signal honour to write him a letter not marked "private," so that he was justified in quoting it, in which he said: "Having most carefully studied all the evidence in this trial I can come to no other conclusion than that you have done neither more nor less than your duty." That verdict from such a master of ethics carried, to his mind, immensely more weight than the hysterical and sentimental pronouncement of such a judge and such a jury. Dr. Playfair concluded by referring to the careers of many of his old friends and fellow students who were present and to his long friendship with Lord Lister.

Other toasts were "King's College and its Hospital," proposed by Bishop BARRY and responded to by the Rev. Dr. ROBERTSON and Dr. DUFFIN, and "The Chairman," proposed by Sir SAMUEL WILKS. The evening's proceedings were much enlivened with songs by Mr. William Nicoll.

A UNIVERSITY FOR BIRMINGHAM.

THE prospect of a university for the great central town of the Midlands has been kept steadily in view for some years past. It is now within reach of accomplishment. A large and representative meeting was held in the Council House at Birmingham on July 1st, under the presidency of the LORD MAYOR of Birmingham (Mr. Councillor Beale), amid much enthusiasm. The claims of the city and surrounding district to this distinction were warmly advocated and a material impetus was given to the project by the announcement that though no public appeal had yet been made the promises of subscriptions amounted to £95,580, the estimate for the total completion being put at £250,000. At the meeting the advantages of a university for the particular district were set forth from many points of view—the manufacturer, the professor, the statesman, and the bishop alike urging the necessity and merits of such an undertaking.

Mr. G. H. KENRICK, the vice-president of the School Board—a generous contributor of £10,000 to the fund—pointed out that the industries special to the locality were inseparable from the association with science and scientific research and strongly required in their progress the recognition of this teaching.

Professor TILDEN also compared the technical teaching of England with that of the continent and some American universities, giving illustrations from various universities.

The Right Hon. JOSEPH CHAMBERLAIN referred to the advance made in the cause of education in Birmingham during the last thirty years. He dwelt upon the importance and value to public and social life of a school of learning and knowledge in the midst of this great manufacturing centre. A comparison was drawn of the number of universities to the population in Scotland and some continental countries and emphasis was laid upon the local needs for local teaching.

The Bishop of HEREFORD (Dr. Perceval), in expressing his approval of the scheme, stated his opinion that the circumstances of the time made it important that they should do all they could to establish these intellectual centres in the great cities. More and more we were becoming a commercial and industrial democracy.

Dr. C. T. WILLIAMS, the representative of the Royal College of Physicians of London upon the Council of Mason University College, spoke of the difficulty which medical students, even London students, experienced in getting degrees, many having to go to Scotland for them. He predicted that the new university would be one of the most successful in England.

The interest of the medical profession locally undoubtedly lies in the greater facility which the university would afford for the obtaining of degrees. As a rule, in provincial schools it is not so much the want of ability as the lack of means which prevents the acquisition of a degree; it is thus felt that the success of the scheme would yield considerable advantages to the medical student in the lessening of cost, the non-necessity of going from home, and the attachment to the local school with which such exceptional clinical opportunities are allied. The saving of trouble and expense in crowning the curriculum by a degree locally obtained would materially strengthen the medical school. Whatever the comparison with the aims and methods of the older universities may evoke it is unquestionable that for the higher intellectual development, for the opening ground for original research, for the retention of local talent, by adequate acknowledgment, the proposed university would add to the culture and material progress of the city and vast manufacturing population around.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund during the past ten days. The total sum up to Wednesday afternoon amounted to about £34,000.

	£	s.	d.
St. Michael, Chester-square (with additions)	1283	0	0
St. Peter, Cranley-gardens	501	3	7
St. Jude, South Kensington	621	8	0
St. Mary, Bryanston-square	250	0	0
St. Stephen, South Dulwich	197	14	1
Blackheath Congregational Church	196	0	0
St. Paul Beckenham	132	7	6
St. James, Clapham Park	106	15	1
St. Peter, Bayswater	127	6	3
Stamford-hill Congregational Church	77	7	9
St. John, Blackheath	67	17	5
St. John, Deptford	50	1	6
St. Pancras Parish Church	42	16	2
Christ Church, Chislehurst	45	9	6
St Ann, Soho	67	16	10
Wandsworth Parish Church with Holy Trinity	65	8	9
St. James, Muswell-hill	63	8	11
St. Margaret, Lee Parish Church, and Boone's Almshouse Chapel	48	14	9
Windsor-road German Lutheran Church, Denmark-hill	69	6	2
Church of the Ascension, Balham-hill	60	16	8
St. Stephen, Wandsworth	72	16	10
St. Mary the Virgin, Primrose-hill	44	6	6
St. Saviour, Brixton-hill	34	17	11
St. Luke, Battersea	36	8	6
Holy Trinity, Lee	21	0	7
St. Olave, Woodberry-down	36	0	7
All Saints, Notting-hill	28	3	6
St. Mary Magdalen, Paddington	37	2	7
Church of the Annunciation, Portman-square	191	9	4
St. Columba, Pont-street	124	0	0
St. Stephen, Westbourne-park	119	11	8
Temple Church	107	12	3
St Peter, Brockley	103	0	0
Regent-square Presbyterian Church	83	1	1
St. Philip, Kensington	73	19	9
Portman Chapel, Baker-street	86	11	3
Wimbledon Churches, per Rev. Canon Haygarth: St. Mary Parish Church, £40 10s. 3d.; Christ Church, £57 2s. 4d.; St. John, £31 6s. 8d.; St. Mark, £8 0s. 10d.; and St. Matthew, £2 18s. 2d.	139	18	3
Royal Military Chapel, Wellington Barracks	41	1	8
Christ Church, Forest-hill	43	18	8
St. John the Evangelist, Bromley, Kent	31	10	6

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	£	s.	d.
St. John, Redhill	29	4	4
Westbourne-park Baptist Chapel	25	10	0
St. Barnabas, Pimlico	35	16	0
St. James's Parish Church, Paddington	101	3	9
St. Barnabas, Dulwich	22	7	0
St. Peter, Eaton-square: St. Peter's Church, £673 1s. 5d.; St. John's Church, £66 4s. 9d.; St. Peter's Chapel, £7 1s. 7d.	746	7	9
All Saints, Blackheath	50	10	8
Chapel Royal, St. James's Palace	62	0	7
St. Margaret, Westminster	136	17	7
St George, Bloomsbury	51	12	11
Christ Church, Streatham-hill	75	14	6
St. John the Divine, Kennington	59	9	8
St. Peter, Eltham-road, Lee	30	1	0
St. Paul, Great Portland-street	39	12	10
Belgrave Presbyterian Church, Halkin-street	24	11	5
St. Mary, West Kensington	24	4	10
Magdalene Hospital Chapel, Streatham	27	6	7
Keston Parish Church	27	5	6
St. Paul, Finchley	37	12	0
St. Philip, Sydenham	29	8	0
St. Bride, Fleet-street	20	4	6
St Stephen, Portland Town, and Mission	29	15	5
Holy Innocents, Hornsey	23	13	0
St. John, Downshire-hill	33	15	4
St George's Presbyterian Church, Brondesbury	23	10	0
St. Mark, Notting-hill	23	4	0
St. Paul, Harringay	25	12	11
St. John the Baptist, Leytonstone	20	0	0
Box outside Mansion House	32	9	5
Downs Baptist Chapel, Clapton	26	19	2
Barking Parish Church and St. Paul	33	1	9
Hillingdon Parish Church and Evelyn School Chapel	31	10	11
St. Katherine's Royal Collegiate Church	22	6	9
St. Mark's Presbyterian Church, Greenwich	25	18	6
St. Mary, Balham	49	16	10
St. Matthew, Bethnal Green	23	5	9
Spanish and Portuguese Synagogue	34	5	3
St. Paul, Kilburn	40	5	6
Aldenham Parish Church	48	0	0
Church of the Ascension, Blackheath	28	1	7
St. Alban, Holborn	45	17	6
St. Paul, Herne Hill	40	6	9
Camden Park-road Presbyterian Church and Mission	23	14	0
Christ Church, Woburn-square	21	15	7
Bloomsbury Chapel and Mission Hall	22	2	6
Upton Baptist Chapel, Lambeth-road	21	8	6
Christ Church, Newgate-street	25	0	10
St. Anselm, Pinner	21	7	3
Morden Parish Church	22	1	0
St. Thomas, Upper Clapton	25	14	3
Newcourt Congregational Chapel, Tollington Park	30	8	9
Holy Trinity, Northwood-park	24	10	4
Ilford Parish Church and Chapel of Ease	32	10	2
Barnes Parish Church	26	2	9
Farm-street Roman Catholic Church	35	0	0
Barnet Parish Church	35	0	6
St. Mark, Bromley, Kent	28	1	0
Dartford Parish Church and Missions	27	5	0
Emmanuel Church, West Hampstead	22	1	10
Christ Church, St. Marylebone	40	0	3
King's Weigh House Chapel, Duke-street	20	15	0
Holy Trinity, Blackheath	36	13	0
Holy Trinity, Anerley	20	14	4
Hospital Chapel, Ilford	24	4	7
St. Peter, Dulwich-common	45	0	2
St. Mary Mag., Peckham	34	7	4
St. John at Hackney	28	5	8
St. Barnabas, Clapham-common	21	15	10
Christ Church, Brondesbury, and Mission	37	8	2
St. George, Perry-hill	43	4	8
St. Laurence, Catford	20	0	5
St. Saviour, Highbury	27	5	8
St. Paul, Camden-square	46	8	0
St. Mary, Plaistow, Kent	34	13	11
Cordwainers' Company	26	5	0
Mr. Frederick Druce	25	0	0
Mr. Alex. Miller	25	0	0
Miss Emily Old	25	0	0
St. Mary Magdalene, Enfield	29	10	9
Harrow Weald Church	27	15	3
St. John, Upper Holloway	24	15	6
Clapton Park Congregational Church	33	10	2
Ewell Parish Church and All Saints	32	9	1
F. F.	30	0	0
Major Jones	20	0	0
Mr. Julian Senior	21	0	0
St. Mary Parish Church, Finchley	34	7	3
In Memoriam (Crosby Lockwood)	20	0	0
St. Mary, Cuddington	30	15	5
Archway-road Wesleyan Chapel	24	16	0
St. James, Camberwell	28	0	0
St. John the Evangelist, Brixton	22	7	8
Carmelite Church, Kensington	35	5	0
St. Mary, Shortlands	44	5	6
Trinity Presbyterian Church, Notting-hill	42	13	9
Streatham Common Mission Band	3	6	0

BERLIN MEDICAL CLUB.—We are informed that foreign medical men are eligible for membership of the newly-established Berlin Medical Club without payment of entrance fee (*können sich frei einführen lassen*) and that foreign medical visitors to Berlin may be admitted to temporary membership. The club is situated in the Linden-gallerie, Berlin, W.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Liverpool Urban District.—The population of this city was estimated in 1897 to be 644,129, but Dr. Hope considers that this figure is considerably under the actual population, and he tells us that towards the close of the last intercensal period there was an error of not less than 100,000 in the Registrar-General's estimate of the population. The mean birth-rate of the city for the last ten years has been as much as 34·5, the rates for the several wards ranging during 1897 from 46·9 to 19·6 per 1000, and, curiously enough, the rate was higher in the older parts of the city than in the rapidly-growing suburbs. The birth-rate has during the last decade shown no tendency towards diminution. As regards deaths the rate for 1897 was 23·4 per 1000, the ward rates varying from 39·8 to 10·2 per 1000. Typhus fever, though gradually disappearing from Liverpool, still exerts some influence there and last year there were 158 cases with 23 deaths. Of illness from ice-cream we have heard much in London of late, and Dr. Hope records an outbreak in which 27 cases of enteric fever occurring in children were traced to an Italian ice-cream vendor, in whose house, at the time when the children were apparently infected, there was a case of enteric fever. In Liverpool ice-cream vendors must have their premises registered and during 1897 48 persons made application for such registration. There were no less than 1039 deaths from zymotic diarrhœa or acute gastro-enteritis in the six weeks ending Sept. 4th, and Dr. Hope endeavours to show the connexion which obtains between diarrhœal mortality and warmth and dryness, illustrating his point by the rainfall of the last 20 years. He regards the flushing of street surfaces, of drains, and of sewers as the main indications of the conclusions he arrives at. In connexion with the question of sanitary administration it is of interest to note that, counting 2 temporary assistants, there are in all 115 persons on the sanitary staff. The inspectors of meat and animals are butchers by trade, those of fish and fruit fishmongers. To the subject of tuberculosis Dr. Hope devotes considerable space in his report, and in tabular form he shows the marked diminution which has taken place in the mortality from this disease in Liverpool since 1866. In connexion with the infection of milk the following table of samples tested is of interest, and it tends to show, in so far at least as these figures go, that the conditions *quâ* tuberculosis obtaining in the town shippons of Liverpool are better than those found in the country shippons of the surrounding districts. It will be noted that the total number of samples collected from the country is but small.

—	Total.	Infected.	Per cent.
Town shippons	228	12	5·2
Country shippons	67	9	13·4

As regards insanitary property Dr. Hope reports that of the 240 houses included in the thirteenth presentment most had by the end of 1896 been dealt with by the Insanitary Property Committee, while in January, 1897, the medical officer of health presented to the grand jury a report relating to 890 houses, and after taking evidence and inspecting the property the jury ordered the houses to be demolished under the provisions of the Liverpool Sanitary Amendment Act, 1864.

Manchester Port District.—The port of Manchester is what is known as a "temporary" port—that is to say, it is formed for a definite period only, at the end of which time it may either be converted into a "permanent" port or pursue its temporary existence for another period. The limits of jurisdiction of the sanitary authority are extensive and embrace the whole of the Manchester Ship Canal. Between April and December, 1897, there were 790 vessels inspected in the several parts of the port, and on board 86 of these defects were discovered. As to hospital accommodation Dr. J. H. Crocker reports that arrangements have been made by which cases of small-pox can be removed to the Mode Wheel Hospital of the Salford sanitary authority and cases of other infectious disease to the Ladywell Sanatorium.

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Regulations under Section 125 of the Public Health Act, 1875, are now before the Local Government Board and it would seem that the Manchester Port Sanitary Authority will soon be in working order.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6575 births and 3203 deaths were registered during the week ending July 2nd. The annual rate of mortality in these towns, which had been 14·7 and 15·1 per 1000 in the two preceding weeks, declined again last week to 14·9. In London the rate was 14·5 per 1000, while it averaged 15·1 in the thirty-two provincial towns. The lowest rates in these towns were 9·0 in Preston, 10·3 in Norwich, 10·6 in Cardiff, and 10·9 in Croydon; the highest rates were 18·6 in Gateshead, 19·0 in Wolverhampton, 20·8 in Newcastle-upon-Tyne, and 22·8 in Sunderland. The 3203 deaths included 342 which were referred to the principal zymotic diseases, against 342 and 301 in the two preceding weeks; of these, 94 resulted from whooping-cough, 77 from measles, 59 from diarrhœa, 55 from diphtheria, 29 from "fever" (principally enteric), 27 from scarlet fever, and 1 from small-pox. No death from any of these diseases was recorded last week in Derby or in Huddersfield; in the other towns they caused the lowest death-rates in Brighton, Blackburn, and Bradford, and the highest rates in Norwich, Newcastle-upon-Tyne, Salford, and Plymouth. The greatest mortality from measles occurred in Plymouth; and from whooping-cough in West Ham, Salford, Gateshead, and Newcastle-upon-Tyne. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 55 deaths from diphtheria included 28 in London, 4 in Cardiff, 4 in Leeds, and 3 in Bristol. One fatal case of small-pox was recorded in Newcastle-upon-Tyne, but not one in any other of the thirty-three large towns; and no small-pox patients were under treatment during last week in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 2205 on Saturday last, the 2nd inst., against 2194 and 2238 at the end of the two preceding weeks; 204 new cases were admitted during the week, against 206, 230, and 231 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 185 and 171 in the two preceding weeks, further declined to 162 last week, and were 27 below the corrected average. The causes of 38, or 1·2 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Nottingham, Bradford, Leeds, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Bristol, Leicester, and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the four preceding weeks from 23·0 to 19·5 per 1000, rose again to 21·1 during the week ending July 2nd, and exceeded by as much as 6·2 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Perth and 17·7 in Leith to 23·4 in Dundee and 25·5 in Paisley. The 635 deaths in these towns included 41 from measles, 35 from whooping-cough, 30 from diarrhœa, 5 from scarlet fever, 4 from diphtheria, and 4 from "fever." In all, 119 deaths resulted from these principal zymotic diseases, against 92 and 102 in the two preceding weeks. These 119 deaths were equal to an annual rate of 3·9 per 1000, which was 2·3 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 32 and 37 in the two preceding weeks, further rose to 41 last week, and included 13 in Edinburgh, 11 in Glasgow, 11 in Dundee, and 5 in Paisley. The deaths from whooping-cough, which had been 22 and 27 in the two preceding weeks, further rose to 35 last week, of which 19 occurred in Glasgow, 5 in Edinburgh, and 5 in Aberdeen. The 5 fatal cases of scarlet fever were within one of the number in the preceding week, and the 4 deaths referred to different forms of "fever" corresponded with the number recorded in the preceding week. Of the 4 fatal cases of diphtheria 2 occurred in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 108 and 93 in the two preceding weeks, rose again to 101 last week, and were 15 above the number in the corresponding period of last year. The causes of 41, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·9 and 22·8 per 1000 in the two preceding weeks, declined again to 21·8 during the week ending July 2nd. During the thirteen weeks of the quarter ending on Saturday last the death-rate in the city averaged 23·5 per 1000, the rate during the same period being 16·4 in London and 19·7 in Edinburgh. The 146 deaths registered in Dublin during the week under notice showed a decline of 7 from the number in the preceding week, and included 11 which were referred to the principal zymotic diseases, against 6 and 8 in the two preceding weeks; of these, 4 resulted from "fever," 3 from diarrhœa, 2 from scarlet fever, 1 from diphtheria, and 1 from whooping-cough, but not one either from measles or small-pox. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·9 in London and 4·6 in Edinburgh. The deaths referred to different forms of "fever," which had been 4 and 1 in the two preceding weeks, rose again to 4 last week. The two deaths from scarlet-fever exceeded the number recorded in any recent week, while the mortality from diphtheria and whooping-cough showed a decline. The 146 deaths in Dublin last week included 29 of infants under one year of age, and 21 of persons aged upwards of sixty years; the deaths of infants showed an increase, while those of elderly persons were considerably below the number recorded in any recent week. Six inquest cases and 3 deaths from violence were registered; and 63, or more than one-third, of the deaths occurred in public institutions. The causes of 6, or more than 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

SURGEON HORATIO W. A. COWAN has been appointed to the *Howe*.

ARMY MEDICAL STAFF.

Brigade-Surgeon-Lieutenant-Colonel Robert de la Cour Corbett, D.S.O., to be Surgeon-Colonel, vice J. Williamson, deceased. The under-mentioned Surgeon-Lieutenant-Colonels to be Brigade-Surgeon-Lieutenant-Colonels: John C. Dorman, vice J. H. Moore, promoted, and George H. Le Mottée, vice R. de la C. Corbett. Surgeon-Colonel T. O'Farrell, Home District, goes to Egypt as P.M.O., vice Surgeon-Major-General Muir.

VOLUNTEER CORPS.

Artillery: 2nd Middlesex: Surgeon-Captain A. H. Robinson to be Surgeon-Major. 1st Orkney: George Robert Clair Russell to be Surgeon-Lieutenant. 2nd Hampshire (Southern Division, Royal Artillery): Surgeon-Major G. G. Sparrow to be Surgeon-Lieutenant-Colonel. *Rifle:* 1st Volunteer Battalion the Buffs (East Kent Regiment): Herbert Stedman Oliver to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Gloucestershire Regiment: Surgeon-Lieutenant P. T. Lunn to be Surgeon-Captain. 2nd Volunteer Battalion the South Staffordshire Regiment: Captain James Scott Wilson, formerly Surgeon, resigns his commission and is appointed Surgeon-Captain. 3rd Glamorgan: Surgeon-Lieutenant A. L. Jones to be Surgeon-Captain. 1st Volunteer Battalion Princess Charlotte of Wales's (Royal Berkshire Regiment): William Gratwicke Heasman to be Surgeon-Lieutenant. 1st Volunteer Battalion the Buffs (East Kent Regiment): Edward Arthur Crampton Baylor to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Lancashire Fusiliers: Surgeon-Major C. W. Thorp to be Surgeon-Lieutenant-Colonel. 1st (Cumberland) Volunteer Battalion the Border Regiment: Samuel Maclean to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Highland Light Infantry: William Fraser Macdonald to be Surgeon-Lieutenant. 1st (Inverness-shire the Highland) Volunteer Battalion the Queen's Own Cameron

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Highlanders: Surgeon-Lieutenant J. Murray resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the battalion on his retirement.

VOLUNTEER INFANTRY BRIGADE.

East London: Surgeon-Lieutenant-Colonel W. R. Smith, 1st London Volunteer Rifle Corps, to be Brigade-Surgeon-Lieutenant-Colonel, on appointment as Senior Medical Officer to the Brigade.

THE SPANISH-AMERICAN WAR.

The number, rapid movement, and great gravity of the events which have taken place in the short time which has elapsed since the publication of THE LANCET of July 2nd have been of the most striking and dramatic character. There is no need to make any attempt to chronicle them, for this has been already done in the daily press and their sensational interest has compelled public attention. One day it is General Shafter's force besieging Santiago that is in a most difficult position and giving rise to no little anxiety in the States, and the next we hear of the annihilation of Admiral Cervera's fleet in its attempted escape from Santiago and the whole situation is completely changed. The Spanish war policy is incomprehensible as well as most unfortunate. Her naval losses have been unparalleled, but there is nothing to be learned from all the fighting. Turning to medical matters we may say that the Surgeon-General of the United States Army has had a conference with the Surgeon-General of the Navy and preparations have been hurriedly pushed forward to afford medical aid to General Shafter's force. The hospital ships *Solace* and *Relief* have left for Santiago. The latter vessel is admirably fitted out and is said to have accommodation for 500 men.

DEATHS IN THE SERVICES.

Brigade-Surgeon-Colonel Williamson, at Lucknow, in his fifty-fifth year. The deceased officer entered the service in 1867, was stationed at Paisley and Gosport, and subsequently went to Abednegar, India, where he remained for a number of years. On his return home he was for five years stationed at York and returning again to India took part in the first Ashantee expedition (medal). He ultimately became Brigade-Surgeon and principal medical officer of Lucknow.

Surgeon-Captain Archibald William Forbes Russell, I.M.S., suddenly from sunstroke on June 21st at Bareilly, Bengal. He joined the service in 1894, and was promoted surgeon-captain last year. The deceased officer was in his thirtieth year.

THE ROYAL MILITARY TOURNAMENT.

A statement of the finances of the Royal Military Tournament recently held at the Royal Agricultural Hall has been issued. The receipts amounted to £28,992 3*s.* 7½*d.* They have been allocated in the following way: Working expenses, £16,393 10*s.* 9½*d.*; expenses of regimental and district tournaments to be held in spring, 1899, £1200; placed to reserve, £500; handed over to Commander-in-Chief for charity, £10,500; balance to meet contingencies, £398 12*s.* 10*d.*

The Queen has appointed Surgeon-Major-General William Roe Hooper, C.S.I., to be a Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

MANCHESTER THERAPEUTICAL SOCIETY. — The annual general meeting of this society was held in the Owens College on May 29th, Dr. Leech, the President, being in the chair. The report of the committee, recording the work of the session and expressing the opinion that the inaugural session gave very satisfactory promise for the future of the society, was read and adopted. The following office-bearers were elected for the session 1898-99:—President: Professor D. J. Leech, M.D. Lond., D.Sc. Vict., F.R.C.P. Lond. Vice-Presidents: Professor J. Dreschfeld and Professor J. Dixon Mann. Hon. Treasurer: Dr. R. T. Williamson. Hon. Secretary: Dr. R. B. Wild. Committee: Dr. A. Brown, Dr. F. J. H. Coutts, Dr. A. Hopkinson, Dr. T. N. Kelynack, Dr. J. E. Platt, and Dr. A. T. Wilkinson. There was an exhibition of specimens of the new pharmacopœial drugs and those preparations which have been materially altered and Dr. Leech made a communication dealing with the new drugs introduced and pointed out the nature and importance of the changes which have been made.

Correspondence.

"Audi alteram partem."

ARSENIC IN WOOL.

To the Editors of THE LANCET.

SIRS,—Can you spare space in your valuable journal to ventilate the question of disadvantage or injury likely to arise or not from woollen apparel and other goods containing traces of arsenic? In Sweden there is a law against the sale of material containing arsenic in any way over a minute trace. Thus yarn is not allowed to be sold in that country if it contains 0·0009 per cent. of arsenic, or 20 cwt. of yarn may contain up to 9 grammes of arsenic, but if it contains more it will be condemned and not allowed to be sold. It is known that the Swedish Government have condemned a heavy carpet because it contained one-thousandth part of a grain of arsenic in 16 square inches—that is, 1 gr. (possibly in a completely non-volatile form) in a piece of carpet 10 ft. square. This Swedish law is a source of great trouble and annoyance to our manufacturers and merchants who do business in Sweden in the wool branches of the textile trade.

I believe it is nearly if not quite impossible to buy any sheep's wool (home or foreign grown) which does not contain arsenic in larger quantity than that allowed by the Swedish Government. This arises from the fact that all sheep-growers are obliged at certain seasons to dip their sheep in a special chemical preparation to keep the animals healthy and in good order, and it is admitted that all effective sheep dips contain arsenic. Messrs. Cooper and Nephew of Berkhampstead, large manufacturers of arsenical sheep dip, state that they supply dip sufficient each year for one-fourth the sheep in the entire world and they have proved by experience that their dip improves the fleece, and I understand that it is their opinion that one-half the woollen fabrics worn in England are made with Cooper dipped (that is, arsenical dipped) wools. The arsenic from the dip clings so tenaciously to the wool fibre that even the two or three scourings with hot water, soap, and alkali, together with the various other treatments and manipulations of carding, combing, spinning, dyeing, and weaving, which the wool or yarn goes through before it becomes finished cloth, fail to destroy or get rid of the drug. It has been suggested to me that some of the readers of THE LANCET may be in a position and willing to help the home trade by giving information as to the injury or otherwise likely to arise from materials made from the wool treated as above named, and as to the maximum quantity of arsenic which might be allowed without injury to health in a given weight or size of cloth. Such information would, I think, be very valuable to all spinners and manufacturers engaged in the wool branches of the textile trades. I think it is as well to add that the Swedish way of analysing for arsenic is described in the *Chemische Zeitung* of 1892, page 420.

So far I have in a sense appealed to your readers only, but I am in hopes that you, Sirs, may also be induced to favour all interested in the matter with your opinion, which I am sure will be of considerable value. Anticipating your kindness in inserting this letter, I now thank you very much.

I am, Sirs, yours faithfully,

JOHN H. PEARSE,
President, Kidderminster Chamber of Commerce.

Kidderminster, July 2nd, 1898.

THE HABITUAL DRUNKARDS ACT.

To the Editors of THE LANCET.

SIRS,—On April 25th last a new Habitual Drunkards Act was introduced in the House of Commons. According to the provisions of this Bill only habitual drunkards who have committed a criminal offence can be received for confinement and suitable treatment during a period not exceeding two years into State asylums or into licensed private asylums. Dr. Heywood Smith very properly observes in THE LANCET of May 21st that there are many non-criminal habitual drunkards who, in common with other lunatics, should be confined for their own good and for the good of society. If, therefore, every habitual drunkard or

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person suffering from chronic alcoholism be regarded as a patient, such habitual drunkard, whether he has committed a slight or a serious criminal offence or not, should equally be treated as a patient. Now as these alcoholists cannot be placed under a suitable *régime* in a lunatic asylum, and, moreover, as the other patients in the lunatic asylum suffer in many ways from intercourse with alcoholists, it becomes the duty of the State to construct separate asylums in which habitual drunkards—i.e., persons suffering from chronic alcoholism—should be confined for a sufficiently long period—let us say two years—and should be properly treated and finally discharged as cured or should be transferred to a lunatic asylum for permanent care and treatment. We will leave out of this discussion the point whether the State should to a certain extent be made liable for the maintenance of families of habitual drunkards or be charged with the administration of the property of habitual drunkards during the period of detention. The State must, however, in the end adopt the only admissible standpoint—namely, that of humanity and science. A habitual drunkard suffers from brain disease and, in common with other lunatics, must be treated as a patient. Now, a patient recognised as insane does not require to have committed a criminal offence in order to qualify for reception into a lunatic asylum and thereby to participate in the care and treatment of the asylum authorities. Why, therefore, should the case of a habitual drunkard who also suffers from brain disease be regarded in a different light? The Bill introduced on April 25th last can only become a complete success and be recognised as an important advance in scientific legislation if it ceases to be confined to the cases of criminal habitual drunkards and is extended to the cases of all habitual drunkards, being persons respectively afflicted with a psychical defect. In that way alone the final ethical object of the Habitual Drunkards Act can be attained, which should consist in diminishing the total number of individuals lost to the State through immoderate use of alcohol and in restoring a very great number of habitual drunkards to their respective occupations—that is, by curing them.

I am, Sirs, yours faithfully,

DIRECTOR SCHLANGENHAUSEN.

Velden, Austria, June 8th, 1898.

THE BRAVERY OF SURGEON-LIEUTENANT HUGO.

To the Editors of THE LANCET.

SIRS,—Commenting on your report of the speech made by Surgeon-Major-General Jameson at the annual dinner of the Indian Medical Service, in which, amongst other important matters, he refers to the heroic action of Surgeon-Lieutenant Hugo, who saved the life of a brother officer at the imminent risk of sacrificing his own, it must occur to all loyal medicals that such a service should not go without its reward, and I feel sure that there are those medical Members in the House of Commons (alas! few though they be) who, if approached, would gladly bring this matter prominently to the notice of the House and so be the means of assisting the officer to obtain that which alone he cannot—the V.C. decoration, which his commanding officer has said he so richly deserves.

I am, Sirs, yours faithfully,

Shrewsbury, July 4th, 1898. ED. CURETON.

COMPENSATION IN AORTIC REGURGITATION

To the Editors of THE LANCET.

SIRS,—The measurements I have made of the last tracing taken on May 27th of my case of aortic regurgitation have brought to light a source of error in the former tracings which must at once be corrected. Carefully as the earlier ones were taken, so that I thought there was no possibility of mistake, I am now convinced that the earlier tracings are of a reversed type and that the measurements of duration of systole in the later tracing are much more near the normal. The later measurements show: duration of systole 0·36 sec., duration of diastole 0·56 sec., heart radial delay 0·20 sec., and pulse rate 0·69 per minute.

While, therefore, conclusively showing that in this case of pure aortic regurgitation there is certainly no diminution of the heart radial interval I must withdraw the evidence I have set forth as to compensation by increased persistence of systole. It is true that the systole is slightly prolonged for the pulse-rate in question, but the point I wished to emphasise is not proven and has to be further investigated. The patient, a young man, aged thirty-six years, is now feeling quite well and is able to go fly-fishing and to play lawn tennis, &c., but the nature of the beneficial compensation probably does not lie chiefly in a prolongation of the cardiac systolic time, seeing that the prolongation is so slight.

I am, Sirs, yours faithfully,

Hereford, July 2nd, 1898. PAUL M. CHAPMAN.

THE LATE DR. BLUNT.

To the Editors of THE LANCET.

SIRS,—There is a slight error in your obituary notice in THE LANCET of June 25th of my old friend the late Dr. Blunt of Birmingham which it may be well, in memory of old associations, to correct. You say that he was never connected with any of the hospitals or public institutions of the town. For one summer session—I think it was in 1860—Dr. Blunt filled the chair of Forensic Medicine in Queen's College, and for a still shorter time he held the office of Dean of Faculty in that institution. I was his colleague at the time as a Professor in the College and followed him as Dean. It was a time of storm and stress in the history of that institution, for which Dr. Blunt was by his tone of mind not well adapted. Had he been able to retain his connexion with the College its subsequent history might have been very different. Unless, too, my memory plays me false Dr. Blunt was, if not the editor, at least the leading spirit, in the conduct of the *Midland Quarterly Journal of Medical Science*, which had a brief but not an inglorious career, and in which he was largely associated with another old colleague of mine, the late Dr. Heslop, whose memory is, I have no doubt, still cherished by many in the Midlands.

I am, Sirs, yours faithfully,

Gloucester. FRANCIS T. BOND, M.D. Lond.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—Allow me to attempt to depict the reverse side of the picture. In the first place, let me explain that after serving as medical officer and house surgeon in several institutions I took an assistancy in the country obtained by the very simple means of giving my name to a wholesale house of druggists. I was offered, and accepted, the salary of £80 (indoors). I was treated in every way as one of the family, was allowed a free hand with my patients, did a share only of the midwifery, dispensing, book-keeping, &c., and lived far better than I have ever been in a position to live since. I then took a small practice of my own for three years and was at the end of that time recalled by my former employer as partner. During my assistancy my employer's expenses were somewhat as follows: horses, £100; two grooms, £100; my own salary and board, £120; drug bill, £50; rent, £45; rent of surgery, £10; making a total of £425. His income might be averaged at £700 and he was expected to subscribe liberally to everything. I had absolutely no necessary expenses except clothing. Who was in the better position at the time—my employer with a reduced income of £275, on which to maintain a wife and family, two servants, &c., or myself with a fixed salary and no one to maintain? Of course, the thing could not have been done without private means and yet one man alone could not possibly have done the work. Then take my present position. I am in practice and in receipt of an income of about £400, to earn which I work practically night and day. I pay a rent of £35, keep two horses and a groom, and have a drug bill of about £40. I never get a holiday and want an assistant badly, but how on earth is he to be paid? Possibly the practice might increase to £600, but there would be extra horses necessary in a wide country district as well as the assistant's salary.

"An Assistant" writing on June 29th must be either a wit or an epicure. Caterpillars cooked among vegetables I have seen at the best houses and are at times quite unavoidable; the presence of "flies in beer" proves, at all events,

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the presence of the beer, a luxury which many of us struggling practitioners cannot allow ourselves. "M.D., M.Ch." suggests that by offering an unfurnished house the advertiser requires "a man who has been an assistant before and will always continue to be an assistant." That appears to me to be a statement requiring proof, and, even if proved, what harm is there in it? Are there not many who will always be assistants either from want of means or from knowing when they are well off? I shall be glad if the writers will in a future issue put down in black and white what they consider to be the average income and expenses of a country practitioner and what they think an assistant should receive.

I am afraid that many have yet to learn by bitter experience that even good qualifications may not necessarily find a ready market in the medical world and that the practice of their profession entails a life of hardship, a scanty income, constant harass, and too often but little gratitude. I am not complaining of my lot. I am simply convinced that a preliminary apprenticeship would deter many an ardent young spirit from entering the ranks of our overcrowded profession. I have never advertised for an assistant nor do I at present mean to do so simply because I cannot afford it. I consider that "the labourer is worthy of his hire," but I also believe that the employer, if he works, should receive a greater remuneration than the employed; his is the responsibility, his the mental anxiety, and his the necessity for keeping up a position. It is high time that not only assistants but also the public should be made aware of what we have to live on and how difficult it is for the only man in a parish who knows no half-holiday, no evenings off, and very few Sundays, to make both ends meet.

I am, Sirs, yours faithfully,

July 4th, 1898. PRACTITIONER.

THE SANITARY INSTITUTIONS OF MADRID.

(FROM A SPECIAL CORRESPONDENT.)

THERE are several institutions in Madrid connected with public health services which have been organised on modern principles and which show that the cause of sanitary reform has of late years made notable progress in Spain. Thus there is the Provincial Laboratory, which was first installed in 1884 at the hospital of St. Juan de Dios by Dr. Mendoza. It is here that bacteriology is taught. Deputed by the Spanish Government to study these questions in foreign countries, Dr. Mendoza received considerable assistance from Professor Koch at Berlin, and now the laboratory of the St. Juan de Dios Hospital has become a great centre for bacteriological analyses and investigations.

A Royal order of May 29th, 1897, approved the creation of the Brown-Séquard Institute, likewise under the direction of Dr. Mendoza. Here organic extracts are obtained and sterilised in the Aronsval apparatus with the aid of carbonic acid. The extracts are derived from the supra-renal body, cerebral, splenic, hepatic, testicular, ovarian, pancreatic, pulmonary, renal and thyroid glands, &c. Then there is the Micro-biological Institute, situated in the Argüelles, a thickly populated district of Madrid. The object of this institute is the manufacture of anti-diphtheritic serum and the study of all kindred questions. During the first three years of its existence this institute provided serum for the treatment of 730 cases of diphtheria. Deducting those who died within twenty-four hours of the commencement of the treatment the mortality was only equal to 9 per cent. In 1883 an institution for vaccinating with calf lymph was established by Dr. Balaguer in the Calle Preciados, which was subsequently supported by both the municipal and provincial authorities. In 1893, in consequence of an official order, this institute provided the means of revaccinating all the prisoners, both male and female, who were at that time in the Madrid gaols. The same had been done in regard to all the troops quartered in the town during the year 1890. Lymph was also forwarded from the institute to numerous towns and villages where epidemics of small-pox had broken out. In all, some 120,000 persons living in the provinces were thus vaccinated. But there is also what is known as the State Institute of Vaccination which was founded in 1872 for the culture of vaccine coming from the institutes of Dr. Lenoix at Paris and Dr. Negri at Naples. At first this institute only sought to vaccinate calves and to preserve the virus. Then some of the troops forming part of the garrison were brought here for vaccination and the few civilians who were sufficiently well informed to desire vaccination also came to the institute. In 1874 the institute was placed under the direction and inspection of the Academy of Medicine and in course of time it undertook the vaccination and revaccination of the general public. About 30,000 persons belonging to the civil population are vaccinated here in the course of a year. From this institute lymph preserved in Widal tubes and in capillary tubes is sent daily to all parts of Spain.

Needless to say, that in an ancient country like Spain, which was once a very wealthy country, there yet remain many old charitable foundations, such as hospitals, asylums, almshouses, &c. A volume might be written to describe all these institutions. For the moment it must suffice to allude only to those establishments which possess some peculiar feature or have a direct bearing on sanitary questions. Among the former the Provincial Hospital deserves special notice. It was founded in 1587, but a portion of the present structure was built under Charles III. This hospital contains 1000 beds and about 14,000 in-patients are received in the course of the year. The hospital is very old, badly situated, and not built according to modern principles of hygiene. The peculiarity about it is that in spite of these defects epidemics do not spread within the hospital. During the last outbreak of small-pox in Madrid many patients suffering from this disease were admitted yet no one in the hospital caught the complaint. In many other respects the evils which should result from bad sanitation fortunately fail to occur. It is true that the hospital is kept scrupulously clean, but this is scarcely sufficient to atone for the defects of construction. There is one explanation given for this immunity. The hospital was built in days of wealth and luxurious extravagance. Therefore to ensure solidity the walls were made no less than 6 ft. thick. As a consequence, it is said, the wards remain unaffected by the heat of summer or the cold of winter. It is not necessary to light fires. The heat of the summer, stored in the thickness of the walls, reaches the wards by the time the winter comes on and the walls have barely lost their heat when it is renewed by the returning spring. When sewage is thrown on the land the water, if gathered 2 yards below the surface, is found to be perfectly pure, and the walls of the Madrid Provincial Hospital are 6 ft. thick. Would 6 ft. of masonry have the same action as the soil of a well-organised sewage farm?

In contrast with this ancient hospital the Asylum of Santa Cristina may be mentioned. This institution has been recently created by his Excellency Señor Alberto Aguilera, who was Minister of the Interior when the International Congress of Hygiene met at Budapest and when it was invited to hold its next session at Madrid. Since that time Señor Aguilera has been Civil Governor of the Province of Madrid; and such are his popularity and influence that his presence in a crowd is always considered equal to at least 1000 soldiers. No one is better able to maintain order, and therefore all Governments prefer that he should remain Civil Governor of the capital rather than that he should have a seat in the Cabinet. But the influence Senor Aguilera has acquired is due, not merely to his ability and energy—it also arises from his unbounded benevolence and charity. By this time he might have been wealthy, yet it is notorious that he is poor, for he gives away all he possesses. Impressed by the number of beggars who infest the streets of Madrid, he determined to build an asylum for them where they might learn some useful handicraft. On the Moncloa slopes in the outskirts of Madrid he found a suitable site for this establishment. Such was his personal influence that he soon persuaded the owners to yield up the land; and, after giving all the money he possessed, succeeded in obtaining large donations from Her Majesty the Queen, the Marquis of Cuba and many others. A number of pavilions were then built which formed dormitories, with windows on each side and through ventilation. Already 200 beds are fitted up, and when the land is fully built over there will be 600 beds. In the centre of the grounds there is a chapel. Round the sides there are numerous workshops, where carpentering, blacksmith's work, tailoring, &c., are taught. Then the grounds are large enough to admit of lessons being given in market-gardening

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and similar agricultural pursuits. Baths, washhouses, and a disinfecting stove ensure perfect cleanliness. The beggar from the street, and especially the children of beggars, may thus learn here how to become useful members of society and are also taught the gospel of cleanliness. All this has been done in an incredibly short time and such is Senor Aguilera's personal *prestige* that it is difficult to refuse him the help which he requires in carrying out this good work. This institution will materially contribute to raise the most deplorable sections of the Madrid population and will be as useful to the cause of sanitation as it is to that of public morals.

Close at hand, on the same hillside, is the Surgical Institute founded by Dr. Federico Rubio. This is a small model hospital where the only in-patients admitted are those on whom a serious surgical operation has to be performed. The wards are so arranged as to give the patients almost as much air as if they were out of doors. Complete antiseptic precautions are taken throughout and elaborate means of isolation are provided. The patients are allowed the greatest freedom and may receive their friends at any time. The nurses here are able to obtain technical training, while medical students may utilise the Rubio Institute as a surgical school. There are also large out-patient wards where some 600 consultations can be given in the course of a day. This is one of the most modern institutions of Madrid and is a model in its way.

To the north of Madrid there is a large fever hospital which consists of twenty separate pavilions. The whole is drained into hardware sewers with an abundant flush of water. The water used for drinking purposes is specially filtered in a Chamberland filter of 100 bougies. Thus there are two water-supplies, filtered and unfiltered. The grounds cover an area of 42,000 metres square in a good topographical situation and the soil is of impermeable clay. The pavilions are of iron, brick, and hardware, the soil is covered with asphalte, and the inside of the walls are painted in such a manner that they can be constantly washed. The most remarkable fact connected with this fever hospital is the smallness of the sum spent upon its construction. Though it is a permanent building it only cost £40 per bed, and there are in all 400 beds.

There are many other hospitals and asylums in Madrid, but for the most part these are ancient institutions and testify to what was done in the past rather than to the progress of the present day. The present purpose, on the contrary, is to signal out what bears trace of modern ideas and therefore the number of places described is necessarily limited. As, however, contributing actively to the growth of modern principles in sanitation the Spanish Society of Hygiene may, in conclusion, be mentioned. This society was founded in 1881. A solemn inauguration ceremony was held on April 23rd, 1882, at which His Majesty King Alfonso XII. presided. The society had previously been officially recognised by a Ministerial order as an institution of public utility. It is divided into five sections, as follows: epidemiology, climatology, demography, general hygiene and sanitary legislation. The professed purpose of the society is to study and diffuse a knowledge of all matters relating to hygiene and especially all that affects the healthiness of dwellings and food-supply. The meetings held by the members of the society are devoted to the discussion of such subjects and of all that may contribute to prolong human life. The society also exercises its influence so as to establish classes on hygiene in the universities and in the schools. Among the mass of the people it strives to spread knowledge by cheap pamphlets and popular lectures written or delivered in the simplest language. The society is particularly anxious to teach the poorest classes of the community how to render their homes more healthy. A considerable amount of time is devoted to seeking out the causes of the excessive infant mortality and to suggesting suitable remedies. The society also sends delegates to attend congresses held in foreign countries when questions of hygiene are discussed, and at home it attempts to influence the Government in favour of sanitary legislation. At the commencement of each year the Spanish Society of Hygiene holds a solemn opening sitting, at which a speech is delivered on some question of hygiene and the secretary reads a report on the work accomplished during the previous year. Then prizes are offered to the authors of the best and most practical tracts on hygiene. Some of these tracts have a wide circulation amounting sometimes to as many as 50,000 copies. In 1885 the society sent to the municipalities of Spain and various corporate bodies 10,000 copies of a manual giving instructions as to what measures should be taken to prevent the spread of cholera. A similar number of pamphlets have been given away dealing with the precautions to be taken against diphtheria and the best methods of disinfecting. Whenever an epidemic occurs, or when the death-rate is exceptionally high, the society immediately places itself in communication with the local authorities and offers technical advice and tracts on hygiene for distribution among the population affected.

Thus it will be seen that there are several institutions in Spain which seek to improve the sanitary conditions of the country. Undoubtedly there is much room for such improvement. The death-rate is still very high, but the fact that this death-rate can be reduced by sanitary measures is now realised, at least by the more educated sections of the population. Nor has the Government failed to encourage efforts in this direction. The authorities have, on the contrary, shown great readiness to patronise such institutions as seemed likely to be of service in improving public health. The great stumbling-block is the want of funds. Many towns in Spain, commencing with Madrid, require a new system of drainage. Such sewers as exist are badly built; they leak and contaminate the surrounding subsoil and are not self-cleansing. But to redrain a town is a very costly undertaking and the taxpayer is already overburdened. The first step, however—that of teaching the necessity of such measures—has been taken. The next will come in time, and then Spain will have good reason to be grateful to the pioneers who to-day are performing the arduous and often ungrateful task of spreading a higher knowledge of the principles and advantages of good sanitation.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Underground Lavatories.

THE construction of two underground lavatories in different parts of Birmingham will afford a convenience long required. The larger one near St. Martin's Church will be divided by separate entrances. One department will contain six water-closets, with an attendant's room and lavatory with two basins and dressing-tables. Hot and cold water will be provided, a geyser stove supplying the former. In the men's department seven water-closets and other conveniences are to be provided with two lavatories. The latest sanitary improvements will be made and a water-driven air propeller will provide the ventilation. In Corporation-street the second one is being built. Owing to the depth of the excavations and construction it is expected that the work will occupy until October next before completion.

British Medical Association.

The annual meeting of the Birmingham and Midland Counties Branch of the British Medical Association was held at the Medical Institute on June 16th under the presidency of Mr. Vincent Jackson of Wolverhampton. The presidential address was devoted to a history of the medical profession and the progress made in recent years. Some aspects of the daily life of medical men were touched upon and a lesson was drawn from the want of unity among professional men. The members subsequently dined at the Grand Hotel.

Midland Counties Home for Incurables.

The foundation-stone of a new wing for this home was laid by the Lord Mayor of Birmingham (Mr. Councillor Beale) on June 8th. The home was started in 1894 as a private institution and has since grown into proportions necessitating considerable additions. In the present plan provision is made for 33 additional patients, a new kitchen, and accommodation for servants. The cost is estimated at £17,000. It was stated that the home, which is situated at Leamington, received one-third of the subscriptions from that town while four-fifths of the benefit were obtained by the districts around. Of necessity this must be so when the area of population is considered. No doubt the appeal made to the larger town of Birmingham for help will meet with some suitable response.

Cycling Accidents.

The danger of the public streets is immensely increased by the great number of cyclists constantly passing through

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them. Magisterial decisions as to responsibility do not seem to agree as to the liability of the cyclist to ring his bell to warn the pedestrian of his approach; in many instances the sound of the bell and the impact of the cyclist is simultaneous. Certain it is that many nervous people hesitate and place themselves in jeopardy by the warning given and opinions differ as to the desirability of sounding the bell as a note of warning. Still it is more frequently upheld that the fact of doing so is sufficient to relieve the cyclist of any responsibility attaching to an accident. It must be remembered also that the danger to the cyclist is often as great as it is to the pedestrian and that necessarily he would avoid incurring risk to himself. In a recent accident a woman was knocked down by a cyclist who was not going at a rapid pace. Her head struck against the kerbstone, causing fracture of the skull. She was conveyed to the hospital and trephined, but death resulted. A verdict of "Accidental death" was returned. Minor accidents connected with cycling have become very numerous and difficult to prevent.

The Holder Bed Fund.

A proposal to dedicate a bed in the new General Hospital to Sir John Holder by subscriptions limited to 1s. has met with a response so far of £500. As £1250 are required it is doubtful if the amount will be raised, worthy as the commemoration of such services is.

Death of Thomas Lant Smith, M.R.C.S.Eng., L.R.C.P.Edin.

At the advanced age of ninety-one years Mr. Smith passed away on June 29th at his home in the village of Alcester, Warwickshire. A type of a high-minded and honourable man Mr. Smith enjoyed the confidence of many friends. Ever ready to give his services to all who required them he lived among his people with mutual feelings of affection and regard. A trusted friend, a wise counsellor, and a beloved doctor, his memory will long remain dear to those among whom he lived and worked for so long a course of years. Mr. Smith was formerly house surgeon to the Westminster Hospital. He took the M.R.C.S. Eng. in 1829 and the L.R.C.P. Edin. in 1860. Of retiring disposition, he never took much part in public affairs, but his intelligence and powers of observation made him ever a charming companion and a reliable practitioner.

July 4th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Owens College.

THE opening of the Christie Library and the laying of the foundation stone of the Whitworth Hall, which took place on June 22nd, are events of importance in the history of Owens College. For the library, as the Duke of Devonshire, who performed the two ceremonies, told his audience, "the College is indebted to Mr. Christie as a purely personal gift," and to the Whitworth Hall Mr. Christie has devoted his share as a legatee under the will of Sir Joseph Whitworth, amounting to at least £50,000. It is a gratifying fact that in an age much given to extravagant ostentation and display instances like the above occur from time to time to show men a better and nobler way of using the gift of wealth. The library will be, it is said, though of the greatest value to every branch of education, of more special service to the students on the arts side than even to those on the science side of the college. It is no doubt well, as the Duke of Devonshire said, that Owens College has been "distinguished amongst the modern university colleges by the resolution with which it has persevered not to permit the arts side of its course altogether to be overshadowed by the scientific." In a manufacturing district like that in which the college stands, there is a great tendency to consider scientific knowledge merely as something convertible into "dollars," and it is well to be reminded occasionally that there is something loftier even than applied science.

The Recent Case of Poisoning at Crumpsall.

An inquiry was held on June 24th by the Manchester city coroner into the circumstances connected with the death of a woman at the Workhouse Hospital, Crumpsall. The cause of death was given by Dr. Reynolds, who made a post-mortem examination, as cerebral hæmorrhage consequent on consumption. She had been for some time in the imbecile ward and was sent over to the infirmary for active treatment. A dose of "Battley's opium sedative" was given by the nurse in mistake for another medicine of which ½ oz. was ordered, so that the patient had probably taken ½ oz. of "Battley." The nurse discovered her mistake at once and went for the house surgeon, who applied the stomach-pump. The patient shortly became insensible and died next morning. It seemed from the report of the evidence given by the superintendent of the nurses that this "Battley" is kept "in a small cupboard and stores" next to the poison cupboard as a matter of convenience, because "that medicine is given to the patients constantly." This suggests the question, Is this "Battley" given at the discretion of the nurse as it is kept "so handy"? Dr. Reynolds, the consulting physician to the workhouse, stated that the "deceased was not only insane but a mass of disease," and that it was impossible to say whether death was hastened by the Battley's mixture. The verdict was "in accordance with the medical evidence" and the jury "wished strongly to censure" the conduct of the nurse and head nurse. Though the facts given show that there was culpable carelessness in this case, it is only fair to say that the coroner stated that it was about twelve years since there was a similar case at the workhouse hospital. There are about 1000 persons in the infirmary and 2000 or 3000 doses of medicine are given in the day, so that, as he said, it is about one mistake to millions of doses. With a little more care there would be no mistake.

The Burnley Hospital Scandal.

The inquiry into this case, an account of which was given in THE LANCET of June 11th, has resulted in a report which must be consolatory to the board of guardians and to the hospital authorities. Each of these bodies has found that it was not to blame, so that they may be said to have been the victims of circumstances—just like the poor fellow who died.

Sanitary Inspectors' Association.

The North-Western and Midland Sanitary Inspectors' Association has been holding conferences in Manchester, and on Saturday last, July 2nd, they were addressed by Mr. Vacher, the medical officer of health of the county of Cheshire. He spoke of the report of the sanitary committee of the corporation as "a record of work prodigious in its extent," and of the position of Manchester as in the van of the army of sanitary progress. It is well to have the comments of an intelligent observer who can take a wider view than those who are so near the work as to see only the details close at hand. There are sins of omission and commission which are seen at once, and the enormous amount of good work quietly done is apt to be left unnoticed.

Manchester Volunteer Medical Staff Corps.

The two companies of the Volunteer Medical Staff Corps in Manchester were inspected on July 2nd, at Trafford-park by Surgeon-Colonel Scott, C.M.G., principal medical officer of the North-Western district. They mustered 218 strong and were under the command of Surgeon-Captain Coates. Surgeon-Colonel Scott spoke "in high terms of the efficiency of the corps, as proved upon that occasion and also during the recent encampment at Lytham."

July 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Meeting of the British Medical Association: Excursion to St. Andrews.

THE excursion to the ancient cathedral and university city of St. Andrews promises to be one of the most popular and enjoyable of the many offered by the association on the occasion of its visit to Edinburgh. The University and the Cathedral have in some senses been revivified and rejuvenated of late years. At the University new medical buildings are in process of erection, the gift of the Lord Rector, the Marquis of Bute, who takes a keen interest in the development of medical teaching at St. Andrews. The University has to thank the same generous donor for very liberal contributions to the Students' Union and also for several very fine oil-paintings of distinguished personages. The library of the University is one of the largest and finest

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in Scotland and contains many rare books and manuscripts. The University museum—a model one in its way—is particularly rich in zoological specimens, minerals, and fossils, the collection of Dura Den old red sandstone fishes being unique. The new Marine Laboratory is deserving of special attention. It is beautifully situated on the margin of the sea, where an abundance of pure salt water and all kinds of zoological specimens can be obtained. It is equipped with every modern appliance and is the successor of a relatively very old marine laboratory which in its day attracted as original workers the foremost of British and Continental *savants*. Under existing arrangements the following science and medical subjects are taught at St. Andrews University: (1) mathematics, (2) physics, (3) botany, (4) zoology, (5) chemistry, (6) anatomy, (7) physiology, and (8) materia medica and therapeutics. The two *anni medici* or residential years required for medical graduation in the Scottish universities can now be taken at St. Andrews University. The St. Andrews golf links are the most celebrated in the world. Those members of the profession who are interested in golfing will have an opportunity of witnessing a masterly exposition of the game, as an exhibition match has been arranged between professional players for the gratification of the visitors. The St. Andrews climate is one of the driest and most bracing in the kingdom. The summers are refreshingly cool and the winters are crisp, bright, and open, with little frost and next to no snow. Nine months of nearly perfect weather out of the twelve can always be reckoned on. The three bad months (if bad they can be called) are March, April, and May, when east winds prevail. Fogs are unknown. Occasionally, but very occasionally, a sea fret makes its appearance. As a consequence the death-rate at St. Andrews is exceedingly low. The climatic advantages referred to are now being recognised by the profession and by parents having children to educate, with the result that patients and young people keep flocking into the city, which is increasing by leaps and bounds. Within the last ten years it has increased by nearly a third. The harbour, too, is being greatly enlarged and a sea esplanade formed. These point to a yachting station in the near future. The Madras College and board schools have something like 1000 pupils, while St. Leonard's and St. Katharine's Schools have over 250 boarders, to say nothing of day scholars. St. Salvator's, Clifton Bank, and Edge Cliffe Boys' Schools may be described as being in a chronic state of congestion. The Medical Faculty of the University naturally take the greatest interest in the proposed excursion and are, in conjunction with the local medical men, exerting themselves to make it a success. The Faculty with their Dean, Professor Bell Pettigrew, are issuing 200 invitations to members of the association to join them at luncheon in the town-hall, kindly placed at their disposal by the Provost of the city who has expressed his intention to be present on the occasion. As the local members of the profession have considerately arranged to provide afternoon tea in the beautiful grounds of St. Leonard's School, by the kind permission of Miss Grant, very little is being left to chance. A right hearty welcome awaits those who elect to spend the last day of the association meeting in "the grey old city by the sea," as St. Andrews was finely described by the late Dean Stanley, a former Lord Rector of the University.

St. Andrew's Ambulance Association.

The annual meeting of this association was held in Glasgow on June 28th, the Most Honourable the Marquis of Breadalbane, K.G., being in the chair. The annual report indicated the large area of usefulness occupied by the activities of the association and the increasing demands for ambulance service. The most important business submitted to the meeting was the draft of a proposed Crown charter of incorporation and authority was given to certain petitioners to forward this for the approval of Her Majesty's Privy Council. It is contemplated that this step will improve the status of the association, but if the prayer of the petition is granted certain practical advantages will also follow. The association if incorporated becomes a distinct *persona* in law with perpetual succession and the power to take donations, to hold lands and to invest money. The proposal to petition for a Royal Charter has the support of the medical members of the association and the convener of the committee in connexion with the proposal is Dr. George T. Beatson.

Faculty of Physicians and Surgeons, Glasgow.

Mr. Hugh Galt, M.B. Glasg., lecturer on Forensic Medicine in St. Mungo's College, having passed the necessary examinations, has been admitted a Fellow of the Faculty of Physicians and Surgeons, Glasgow.

The Reported Increase of Insanity.

Mr. J. Carswell, medical officer of the Barony Parish, Glasgow, deals with the above question in his annual report and on the basis of figures submitted concludes that "there are solid grounds for the opinion that insanity is not increasing in prevalence even in the face of figures that at first sight seem to prove the contrary."

Dundee Infirmary.

At the weekly meeting of the directors on June 30th the chairman announced that a cheque for £5000 had been received from Mr. John Sharp of Balmuir. The donation is from Mr. Sharp and his brothers and sisters in memory of their late father and mother.—Satisfactory arrangements have now been made between the directors of the infirmary and the authorities of University College, so that when the new professors have been appointed by the University Court of St. Andrews there will be in Dundee a completely equipped medical school which will be a college of St. Andrews University. The professorships of Therapeutics and Pathology are advertised and the appointments will be made in the course of the summer.

July 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mercer's Hospital, Dublin.

AT a meeting of the Corporation of Dublin held on July 4th a letter was read from the governors of Mercer's Hospital asking for a continuance of the annual grant towards the funds of the hospital in view of counsel's advice that they cannot legally comply with the condition which the corporation has laid down as a *sine quâ non* to the continuance of the grant—viz., the election for one year of three members to represent the Corporation of Dublin on the board. During the discussion it transpired that the members of the hospital board could only be legally elected for life. A suggestion was made that some understanding could be come to by which the elected governors should resign at the end of one year. The corporation in the meantime refused to make the grant.

The Irish Medical Association.

The committee and council of the Irish Medical Association met at the Royal College of Surgeons, Dublin, on June 28th. The opinion of counsel was received relative to clause 86 of the Local Government Bill and its effect on "existing officers." A suggested amendment of the clause was also considered and agreed to, to be moved in the House of Commons on the report stage of the Bill.

An Ambulance Corps for Dublin.

The long-talked-of ambulance corps in connexion with the fire brigade of Dublin is at last about to be established. A site has been purchased in Buckingham-street in the proximity of the Quays and the city architect has submitted plans for the construction of the station, which will be built with as little delay as possible. In the meanwhile the brigade are to receive a regular course of instruction on First-aid to the wounded.

The Coombe Lying-in Hospital, Dublin.

The annual meeting of the directors and supporters of the Coombe Lying-in Hospital, Dublin, was held on June 30th, the Lord Mayor occupying the chair. The report, which was read by the master of the hospital, Dr. Frederick Kidd, showed that the institution was in a most satisfactory condition and continuing to do good work. In order to provide the nurses with more modern and better accommodation a collection is being made to which the Countess of Meath has recently contributed £50.

The Royal Victoria Hospital, Belfast.

The Belfast Corporation (Hospitals) Bill received the Royal assent on July 1st, so now that all opposition has been overcome the arrangements in reference to the new Victoria Hospital will, it is hoped, proceed rapidly. A good deal of trouble has arisen in reference to the provisions of the charter, especially in reference to the question of life

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governors, but this has finally been settled, the compromise being that all the old life governors will retain their privileges, but that no new ones will be appointed in the same way. The charter will be submitted for approval to a committee of the subscribers to be held next week.

The Health of Belfast.

For the period between May 22nd and June 18th 499 cases of zymotic diseases have been notified—viz., 327 cases of typhoid fever, 83 of simple continued fever, 48 of scarlet fever, 20 of diphtheria, 16 of erysipelas, 2 each of puerperal fever and croup, and 1 case of typhus fever. There were 81 deaths from zymotic disease, 101 from phthisis, and 93 from diseases of the respiratory organs. The annual death-rate from all causes was 22·9, while for the same period in 1897 the deaths rate was 23·5. Cases of typhoid fever are becoming less numerous and those of scarlet fever and measles comparatively few and attended with little mortality. It is curious to note that although at this season the deaths from chest affections are becoming less numerous the high air temperature seems to have no effect in reducing the mortality from phthisis. Mr. Conway Scott, C.E., the executive sanitary officer of the Belfast Corporation, has, owing to ill-health, been obliged to obtain a month's leave of absence. It has been decided to appoint a practical civil engineer with a thorough knowledge of sanitary work as assistant executive sanitary officer at a salary of £200 with gradual increase to £250.

The Public Health Department of Belfast.

The Public Health Committee of the Belfast Corporation have for some time been considering the working of the department and have drafted a number of recommendations for its better arrangement, but owing to the absence of the chief sanitary officer (due to illness) their consideration has been postponed until his return.

The Belfast Water-supply.

The Public Health Department having drawn the attention of the Water Commissioners to the risk of contamination of one of their supplies at Stoneyford owing to pollution by sewage of one of the streams flowing into their works the Commissioners reply through their secretary that owing to storage and filtration the water is suitable and safe for domestic purposes. However, they are anxious to remove all ground for uneasiness in the public mind and this can only be done by purchasing a number of farms the proximity of which to the reservoirs might be regarded as detrimental to the water. This will probably require a Parliamentary Bill to be passed authorising the Water Commissioners to buy the land owned by these farmers.

Death of Mr. Martin Howard, L.A.H., L.M. Dub., of Oldham.

It was with sincere regret that many members of the Cork profession heard of the death of Mr. Martin Howard who for many years had been practising at Oldham. Mr. Howard was educated at the Queen's College, Cork, and whilst quite a junior in the profession was a constant contributor to the medical journals. He at all times had a great taste for literature and many years ago was officially connected with the London *Daily News* and the Dublin *Freeman's Journal*. He afterwards became assistant to a practitioner in Oldham and later, with the consent of his principal, who had formed a high opinion of him, started an independent practice in that town. His old love of journalism asserted itself and he became editor of the *Oldham Standard*. So great was his energy that he was able to perform his editorial duties and at the same time devote himself to the laborious work of a general practitioner. However, the strain proved too much for a constitution which was never robust. Last Easter he suffered from an attack of influenza and he never completely rallied. His death last week came as a painful surprise to his many friends in Cork who had been unaware of his failing health.

July 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Prophylaxis of Tuberculosis.

AFTER a long discussion on this subject the Academy of Medicine, at their meeting on June 28th, unanimously agreed that the conclusions formulated by Dr. Grancher in his report to the Academy, which were given in THE LANCET of May 14th, 1898, should be adopted. These conclusions were shortly as follows: (1) all sputa should be collected in some vessel or receptacle containing at least 5 per cent. of carbolic acid; (2) sweeping should be as far as possible replaced by rubbing over with a damp cloth; (3) all milk to be boiled; (4) these measures to be strictly enforced by private practitioners attending on families where and as soon as tuberculosis is diagnosed; (5) early cases of tuberculosis occurring in the army to be invalided provisionally until the bacillus of Koch is demonstrated and permanently as soon as it is demonstrated; (6) the importance of hygienic and preventive measures to be urged upon those in charge of schools, workshops and the like; (7) isolation and antisepsis to be carefully carried out in hospitals where tuberculous patients are received; (8) the health of the permanent hospital staff to be more carefully looked after; (9) sundry regulations for the seizure of tuberculous meat and the use of tuberculin recommended to farmers and graziers as a means of diagnosis; and (10) the hygiene of the army to be more carefully attended to by means of improved rations, better ventilation of barracks, and the like.

The Value of the Anti-streptococcic Serum obtained from a Culture of Erysipelas Streptococcus.

At the meeting of the Biological Society held on June 25th M. Courmont gave an account of some experiments he had made with anti-streptococcic serum. He immunised an ass by inoculating it with a culture of streptococci derived from a case of human erysipelas and thus obtained a serum which rendered a rabbit perfectly immune against these streptococci. He had also isolated eleven kinds of streptococci from erysipelas or suppurating lesions in human beings and tried the serum obtained from the ass against these. Of the eleven different streptococci seven only were influenced by the serum. Even then, if an ass be inoculated with two samples of streptococci, it is not possible to obtain a serum efficacious against all kinds of streptococci, for the various kinds of this organism are too different for one anti-streptococcic serum to overcome them all.

The Curability of Fœtal Ichthyosis.

At the meeting of the Hospitals' Medical Society held on June 24th M. Thibierge showed two patients similiar to those individuals who are exhibited at fairs as "human fish." The two patients were aged respectively fifteen and eighteen years, thus showing that, contrary to the general opinion, fœtal ichthyosis is not necessarily fatal. They both presented in a diminished degree all the characters of fœtal ichthyosis. From birth they had suffered from ectropion owing to the thickening of the skin and very soon afterwards scales began to appear. These scales covered the whole body, including the articular surfaces, and in one patient they were regular horny plates which, however, almost entirely disappeared under treatment. In both the hands showed hyperkeratosis and hyperidrosis, which is not the case in ordinary ichthyosis. Both were of very low intellectual development; the father of the one was syphilitic and alcoholic, while the mother of the other suffered from psoriasis and had before given birth to a monster with only one lower extremity, but there was no other case of ichthyosis in the family.

Observations at the Execution of Carrara.

M. Capitan, who had occasion to be present at (*assister à*) the execution of Carrara, was able to note some physiological points which he communicated to the Biological Society at the meeting held on June 25th. On arriving at the guillotine Carrara was deadly pale and almost lifeless. He made not the slightest movement of resistance save only that his body seemed to shrink back when he was laid on the plank. Afterwards he never moved. When the knife fell the section of the neck on the body remained perfectly bloodless. As the body was being tilted into the basket it hit against the side of the plank and then two jets of red blood spouted in the air to the height of about a yard. In this case there was probably cardiac syncope present before the decapitation, whence the absence of hæmorrhage immediately after, although this came on in the ordinary way when the powerful nervous excitation provoked by the fall of the knife acted upon the heart.

The Toxicity of Normal and Pathological Sweat.

At the same meeting of the Biological Society M. Charrin and M. Mavrojanis reminded the society that in a previous

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communication they had decided that the toxic dose of normal sweat was from 60 to 70 c.c. per kilogramme of body weight; they continued their researches by making extracts of sweat both with alcohol and ether and they found that its toxicity was due in the proportion of about two-thirds to substances soluble in ether, most probably fatty acids. They also discovered that there were certain substances insoluble both in ether and alcohol which were capable of setting up grave gastro-intestinal disturbances and a very marked and persistent fall in temperature. Sweat freed from substances soluble in ether causes death, but the dose ought to be triple that of the ordinary toxic dose. Sweat taken from patients suffering from acute infectious maladies was, in accordance with the researches of Queirolo and Salter, sensibly increased in toxicity. A subcutaneous injection made into a healthy guinea-pig of doses of sweat of from 25 to 30 c.c. per kilogramme of body weight produced during two or three days a rise in temperature of from 1·5° to 2°C. and sometimes brought about death in the space of 24 hours. Sweat sterilised in an autoclave at 110°C. for 20 minutes acted in the same way. The sweat collected immediately after a seizure in an epileptic patient and injected into the venous system of a rabbit brought on forcible extension of the vertebral column, but never marked convulsions or death. In the case of melancholiacs the toxicity of the sweat is not increased.

July 5th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Asphyxia produced by Anæsthetics.

DR. HERZOG of Charkow has recently published in the *Deutsche Zeitschrift für Chirurgie* some experiments made according to Dr. Laborde's method of producing resuscitation in cases of chloroform and ether asphyxia by rhythmical traction of the tongue. The effect of making traction on the tongue is to stimulate its sensory nerves and to bring about reflex contraction of the respiratory muscles through the medium of the central nervous system. Dr. Laborde recommends that the tongue should be seized firmly and that traction should be made about twenty times in a minute. Up to the present time 12 cases have been recorded in which this method proved successful in asphyxia from anæsthetics. For the purpose of testing Dr. Laborde's conclusions Dr. Herzog made a series of experiments on dogs partially asphyxiated by means of large doses of chloroform and ether and found that in 19 cases respiration was restored spontaneously in 6, but that traction of the tongue was only successful in resuscitating 3 of the remaining 13. In these 3 instances the animals began to breathe again after traction had been made twelve times, and their recovery was complete; in 2 other cases respiration was restored, but the cardiac action nevertheless failed and although the respiration was kept up for sixteen and six minutes respectively the pulse did not rally and the animals died. The results obtained by Dr. Herzog are thus at variance with those of Dr. Laborde, who obtained resuscitation in the great majority of cases. It is probable that Dr. Laborde commenced to make traction of the tongue at an early stage when the animals were still capable of recovering spontaneously. The asphyxia obtained in Dr. Herzog's experiments always occurred in the last stage of the narcosis. Asphyxia in the early stage of the narcosis, while it is so frequent in the human subject, could not be obtained in the experiments on animals. Dr. Herzog concludes that Dr. Laborde's method is not reliable in the asphyxia of the last stage of narcosis, but that it may be tried as an auxiliary to other methods in the primary stages.

The Giving of Medical Advice by the Clergy.

The Roman Catholic Bishop of Augsburg has recently made a communication to the clergy of his diocese on the subject of the increasing tendency of the clergy to give advice in cases requiring medical treatment—a practice which he condemns as being at variance with the ordinances of the Church, and he charges his clergy to avoid anything which may have the appearance of interfering with the work of the medical profession. This order is the more remarkable because Woerishoffen, where the late Father Kneipp lived and where his successors still continue his work, is in this diocese. The expression of similar views by other clerical dignitaries would no doubt have a beneficial influence as tending to prevent misunderstandings between the two professions. That quackery has its most fervent adherents among the upper classes was clearly shown by a recent occurrence. One of the leading newspapers of Berlin published a letter written by a medical man showing that a so-called "magnetopath" had pretended to cure patients by means of magnetic fluid coming from a well-known Berlin medium now resident in America. This medium had formerly caused a certain amount of sensation in connexion with spiritualist meetings but eventually left the city when it was shown by some medical men that she had been carrying on a system of imposture, and it was by means of the fluid of this medium that the "magnetopath" professed to effect his cures. A few days after the insertion of this letter a public declaration appeared in the advertising columns of the leading Berlin journals, signed by a great number of patients of the quack. The signatures were for the most part those of members of the nobility and of the upper classes, who solemnly stated that they had been cured by this man after having been attended without success by legally qualified medical practitioners. The great popularity of every kind of quack treatment among the upper classes leaves little ground for hope that unqualified practice will be made illegal.

July 5th.

Obituary.

HENRY ALFORD, F.R.C.S. ENG. (HON.), L.S.A. LOND.

MR. HENRY ALFORD recently died at his residence, South-road, Taunton, from old age. The deceased received his medical education at the Bristol Medical School and St. Bartholomew's Hospital, London, qualifying as L.S.A. in 1828 and as M.R.C.S. Eng. in the following year. In 1844 he was admitted to the honorary Fellowship of the College. MR. ALFORD had resided in Taunton since 1830, being formerly surgeon to the Taunton and Somerset Hospital, and at the time of his death was consulting surgeon to that institution. The deceased was one of the most respected and oldest inhabitants of Taunton and had he lived until July 17th would have been ninety-two years of age. In spite of this great age he retained his health until a fortnight before his death. Mr. Alford will be greatly missed in Taunton, where he had assisted in many good works, especially taking a great interest in the hospital. The deceased was a cousin of the late Dean Alford of Canterbury and also of the late Bishop Alford of Victoria. Mr. Alford was twice married and leaves four children, one of whom is the present medical officer of health of Taunton.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF THE COUNCIL.

THE tenth election of Fellows to fill the vacancies in the Council of the College under the new regulations was held in the Library of the College, Lincoln's-inn-fields, on Thursday, the 7th inst., between 1.30 and 4 P.M. The result of the voting was as follows:—

	Votes.	Plumpers.
MR. RICHARDSON CROSS ...	411 ...	... 74
MR. HENRY MORRIS	325 ...	... 7
MR. JOHN LANGTON	322 ...	... 15
MR. R. CLEMENT LUCAS	274 ...	... 53
MR. BENNETT MAY	248 ...	... 26

Mr. Langton and Mr. Morris were therefore re-elected members and Mr. Cross was elected a member of the Council.

651 Fellows voted by proxy, 26 voted in person, and one voting paper was spoiled.

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Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND OF SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated on Monday, July 4th, viz.:—

Anatomy and Physiology.—Hugh Nevill Keeling, Yorkshire College, Leeds; Cyril Henry Hawkins, Mason University College, Birmingham; Thomas Sidney Davies, Herbert James, John Cecil Clayton, Charles W. Wanklyn James, and Kenneth Harold Beverley, University College, Bristol; John Hilton Ashton, Owens College, Manchester, and Surgeon's Hall, Edinburgh; Charles A. Gayer Phipps and Ernest Guy Jones, Owens College, Manchester; John Elder MacIlwaine, John Campbell Rankin, and Howard Stevenson, Queen's College, Belfast; Laurence Unthank Geraty, Royal College of Surgeons, Dublin; Louis Cornelius Driscoll, Charing-cross Hospital; Lachlan Gollan, Melbourne University and St. Mungo's College, Glasgow; William Pettigrew, Firth College, Sheffield; and Guillermo Gómez, University of Bogota and University of Columbia.

Anatomy.—William Beck, Aberdeen and Edinburgh Universities.

Physiology.—James Wodderspoon Bennett, Owens College, Manchester and Mr. Cooke's School of Anatomy and Physiology; Alfred Newman Leathem, Charing Cross Hospital; and Charles C. Tandy Magee, Melbourne University and London Hospital.

Fourteen gentlemen were referred in both subjects, three in anatomy, and one in physiology.

Tuesday, July 5th:—

Anatomy and Physiology.—Lawrence Pick, Herbert Pye-Smith Devitt, and James Farquharsen Powell, St. George's Hospital; Hugh Milville Raven and James Warner Elliott, St. Mary's Hospital; James Sydney Pascoe, Charing-cross Hospital; Lionel Gordon Hopkins, Julian Craig Fleming, William Reith John Scroggie, and Edward Salterne Litteljohn, University College, London; Vernon Montague Wallis and George Jepson Lewis, Guy's Hospital; Leo Hirsch, Grant Medical College, Bombay, and Guy's Hospital; John Crosthwaite Bridge and Percy George Pavitt, Middlesex Hospital; Robert Small, St. Thomas's Hospital; Percy Stanley Hopkins, Edinburgh University, St. Thomas's Hospital, and Mr. Cooke's School of Anatomy and Physiology; Charles Harold Turner, Reginald Thompson, and Hans Hill Sloane, St. Bartholomew's Hospital; Ireton George Pritchard, King's College, London; and Israel Stusser, London Hospital

14 gentlemen were referred in both subjects.

UNIVERSITY OF OXFORD.—At the examinations for the degree of M.B., B.Ch. the following candidates were successful in the subjects indicated:—

FIRST EXAMINATION.

I. Organic Chemistry.—C. H. Barber, non-Collegiate; G. E. Barry, Trinity; C. L. Goode, Hertford; A. G. Gibson and A. H. Hogarth Christ Church; P. A. Mansfield, Keble; J. E. Rutherford, Corpus; and R. H. Sankey, Christ Church.

II. Materia Medica.—G. B. D. Adams, Christ Church; G. D. Allen and C. H. Barber, non-Collegiate; A. W. Brodribb and J. Freeman, University; A. G. Gibson, Christ Church; F. L. Golla, Magdalen; A. C. Goodwing, Keble; T. Harris, non-Collegiage; A. H. Hogarth, Christ Church; C. M. H. Howell, Trinity; F. Howson, non-Collegiate; H. L. Laws, Wadham: H. C. Lecky and T. G. Longstaff, Christ Church; P. A. Mansfield, Keble; L. D. Neave, Merton; L. J. J. Orpen, Keble; D. R. Pike, Jesus; C. Rolleston, New College; P. F. Tinne, Magdalen; E. H. White, University; A. R. Wilson, Wadham; and H. M.M. Woodward, Keble.

III. Anatomy and Physiology.—L. H. Badcock, Trinity; E. C. Bevers, St. John's; G. C. Davidson, New College; O. Hildesheim, Magdalen; E. H. Hunt, Balliol; A. J. Jex-Blake, Magdalen; L. J. Picton, Merton; W. B. Prowse, Pembroke; O. W. Richards, New College; W. V. Shaw, Christ Church; G. F. D. Smith, New College; M. F. Tylor, Trinity; and C. E. A. Wilson, Christ Church.

FINAL EXAMINATION.

E. F. Buzzard, Magdalen; J. Fortescue-Brickdale, Christ Church; E. R. Frazer, Balliol; M. H. Gordon and C. N. Groves, Keble; L. H. Lindley, Magdalen; A. W. Oxford, Christ Church; R. C. B. Wall, Queen's; W. A. P. Waters, B.N.C.; and R. Whittington, Merton.

UNIVERSITY OF GLASGOW.—The following have passed the fourth (final) professional examination:—

A. For degrees of M.B., C.M.—John Donald, William Kilpatrick Hutton, M.A., James Millar, James William Otto van Millingen, William Fullerton M'Ewen, Samuel M'Lean, Charles David Picken, Thomas Boyd Riddall, and Charles Edward Cortis Sanford, B.Sc.

B. For degrees of M.B., Ch.B.—John Aitken, George Alexander, Arthur James Ballantyne, Robert Fisher Ballantyne, Andrew Aitken Barclay, James Barrowman, William Bennett, John George Wilson Boleyn, Theodore Belchambers Broadway, John Brunton, John James Buchan, Ranald Douglas Campbell, James Carruthers, M.A., Robert Carswell, M.A., John Crow, John Ronald Currie, B.A. Oxon., Robert Douglas, M.A., Kenneth M'Kenzie Duncan, Robert Fullarton, M.A., Alexander Garrow, David Sloan Harvey, Edward William Reese Jones, John Wilson Leitch, M.A., Alexander Millar Lindsay, Alexander Matheson, James Blakely Miller, James Alexander Mitchell, Percival Ambler Mitchell, Murdoch Macdonald, Archibald Turner Macewan, Laurence Abel Mackenzie, Dugald M'Kinlay, Alfred Duncan Macnair, Roderick Reid Macnicol, M.A., William Gardner Neill, Robert Niven, Percival Leslie Pearce, Joseph Wilkie Scott, John Macfarlane Sloan, William Hart Steel, B.A., Francis Stevenson, Frederick Ernest Stokes, Peter Donald Strachan, M.A., Thomas Morton Strang, Andrew Taylor, Robert Andrew Hannan Watson, William Webster, James Patterson Wilson. Women. — Daisy Annabelle Bennett, Agnes Forbes Blackadder, Mary Gardner, Jane Grant, Mary Longmire, Eva M'Call, Mabel Catharine Poulter, Jean Effie Prowse, Marion Jamieson Ross.

THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—The following candidates, having passed a special examination for the Licence in Midwifery of the Royal College of Physicians of Ireland, were admitted Licentiates on Friday, July 1st:—

Arthur Cooper Fenn, L.S.A., and Kyran Hutchinson White, L.R.C.P. & S. Edin., L.F.P. S. Glasg.

ROYAL COLLEGE OF SURGEONS IN IRELAND: SUMMER PRIZE LIST.—Barker Anatomical Prize: Miss K. F. Lynn, first, £26 5*s.*, and J. S. P. Stewart, second, £15 15*s.* Carmichael Scholarship: C. R. Boyce, £15. Mayne Scholarship: D. Hadden, £15. Gold Medal in Operative Surgery: G. W. Little. Silver Medal in Operative Surgery: T. G. N. Stokes. Certificate of Merit in Operative Surgery: S. R. Godkin. Practical Histology: J. P. Byrne, £3 and medal, and R. H. Oulton, £1 and certificate. Practical Chemistry: W. Delaney and Miss M. J. Shire (equal), £2 and medals. Public Health and Forensic Medicine: D. A. Fitzgerald, £3 and medal, and Mrs. H. L. Hennessy, £1 and certificate. Materia Medica: J. Levis, £3 and medal, and W. R. Meredith, £1 and certificate. Practical Pharmacy: E. Evatt, £3 and medal, and Miss M. J. Shire, £1 and certificate. Biology: Miss M. J. Shire, £3 and medal, and R. E. Humphrey, £1 and certificate. The preliminary examination for the commencement of medical study will be held on Tuesday and Wednesday, Sept. 27th and 28th.

THE dinner of the Seventh Decennial Contemporary Club of St. Bartholomew's Hospital, which was held on July 6th at Frascati's Restaurant, was made the occasion of presenting Mr. A. A. Bowlby with a service of plate as a wedding gift from members of the club. Dr. John Mason, who was in the chair, as one of Mr. Bowlby's oldest friends, in proposing his health referred to the many services rendered to the club and above all to students of the hospital by him whom they had assembled there that night to honour. There was hardly anybody in the room, to say nothing of other members of the hospital who were by the constitution of the club prevented from being there that night, whom Mr. Bowlby had not assisted by kindly advice or suggestion. He would ask Mr. Bowlby in the name of the club to accept the service of plate before him with their heartiest wishes for the happiness of himself and his wife. Mr. Bowlby, as soon as the cheers allowed him to speak, briefly tendered his warmest thanks.

DIPHTHERIA IN LONDON.—The registered deaths from diphtheria in London have continued to be few in number as compared with earlier periods for many weeks now, and the week ended June 18th proved to be no exception. It is true that the number of such deaths in that week was a trifle above the total of the week preceding it, but that does not affect the statement. In the three weeks ended June 11th the deaths had been 27, 30, and 23 respectively, and though they rose in the succeeding week to 26 this latter total was itself 12 below the corrected decennial average for the corresponding week of the ten years 1888–97. There were 3 deaths each in Hackney and Bethnal Green sanitary areas. None of the deaths were of infants, but 16 were of children under five years of age and only one occurred of a person aged over twenty years. In the Outer Ring 10 deaths were registered from the disease, of which 3 took place in West Ham, 2 in Dartford, 2 in Hendon, and 2 in Edmonton registration areas. In the four weekly period ended on June 18th the deaths from diphtheria registered in London were, as may be expected, fewer in total than in the case of the like previous period ended on May 21st. The 117 deaths of the May period, with a weekly average of 29, gave place to 106 in the June period, yielding a weekly average of 26. Nevertheless the notifications of the earlier period were exceeded in June, the respective totals being 763 and 828, and the weekly averages 191 and 207. In the May period all sanitary areas of London save one were invaded, only one had more than 50 notified cases, whilst other three had only 3 cases in all. In the June period two sanitary districts escaped invasion again, only one area had more than 50 notified cases and other five invaded districts had but 14 cases notified among them. In the matter of case mortality naturally the June period showed the most satisfactory data—namely, 12·8 per cent., as against

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15·3 per cent. in the May period. In the Outer Ring the total of deaths registered from diphtheria was precisely that of the preceding four weeks, 45. As regards the weeks after June 18th, during that ended on June 25th the registered deaths from diphtheria in London fell in number to 21 and were 15 below the corrected decennial average. Chelsea and Camberwell sanitary areas were each of them credited with 4 deaths and 3 occurred in Lambeth. Three of the deaths were of infants and the other 15 took place in the period one to five years, no person aged over twenty years being among the fatal cases. In the Outer Ring there were 11 deaths registered from the disease, including 5 in the Edmonton registration district. Last week the deaths registered in London rose again to 28, but were still 9 below the corrected decennial average. In the Outer Ring the registered diphtheria deaths again numbered 11.

CAMBRIDGE GRADUATES' MEDICAL CLUB.—The annual dinner of this club was held at Limmer's Hotel on June 30th, the President, Dr. W. H. Dickinson, being in the chair. Including members and guests 59 persons were present. After the usual loyal toasts the Chairman proposed that of the club. He referred to the great loss sustained by the club in the death of Professor Roy and alluded to his work in experimental pathology. He also touched on the present financial position of the Cambridge Medical School and the approaching Physiological Congress to be held at Cambridge. The toast was coupled with the name of Dr. Rolleston, who is retiring from the post of senior secretary after admirably filling that office for eight years. Professor Kanthack proposed "The Guests," coupled with the name of Professor Burdon Sanderson who duly replied. After Dr. Hare had proposed the Chairman's health the proceedings terminated.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held at 20, Hanover-square on June 29th, the President, Dr. Radcliffe Crocker, being in the chair.—Dr. Rufenacht Walters read a short paper descriptive of a Papular and Urticarial Rash in a Dog. It was apparently due to "red mange." The dog was exhibited. The rash had been communicated to Dr. Walters's children and to another child.—The President showed a case of Large-spored Ringworm in a girl, aged eight years, and a case of Multiple Lupus Verrucosus in a girl, aged thirteen years, which had existed for twelve years, starting after an attack of varicella.—Mr. Pernet showed for Dr. Savill an example of (?) Angio-neurotic Affection in a woman; the case had been previously brought before the society during the past session.—Dr. A. Eddowes showed a Girl suffering from Morphœa.—Dr. Walsh showed a girl, aged eighteen years, with a congenital Elephantiasis of the Right Eyelid combined with a Lymphangiomatous condition of both the Ocular and Palpebral Conjunctivæ.—The cases and paper were discussed by the President, Dr. A. Eddowes, Dr. Phillips-Conn, Dr. Walsh, Mr. Pernet, and others.

UNIVERSITY COLLEGE, LIVERPOOL.—The Lord Mayor of Liverpool formally opened the new museum and school of hygiene in connexion with University College, Liverpool, on July 4th, in the presence of an influential gathering. The title of Ashton Hall has been given to the building comprising the new museum and school of hygiene, whilst the work of the pathological and bacteriological department is also temporarily carried on there. In 1895, pending the erection of suitable pathological laboratories, the late Mr. George Holt purchased the block of buildings now known as Ashton Hall and converted them into temporary premises for use by the pathological department of the College, of which mention was made in THE LANCET. It had been Mr. George Holt's wish that the building should subsequently be devoted to some branch of medicine having for its object the promotion of public health. After the formal opening of Ashton Hall the visitors were conducted over the new museum, which contains excellent models illustrating house sanitation in every detail, the construction of roadways, and other engineering works. There is also a complete system of models, preparations, and drawings illustrating the water-supply of the city from the source of origin to its destination. Some interesting curios are also to be found in the museum, such as old Roman stone water-pipes, earthenware water-pipes, ancient Persian tiles, &c. The building is well equipped for the purpose of sanitation. The purification of water and sewage and the action of disinfectants can all be carried out experimentally. The course of lectures on Sanitation was commenced in October, 1897, various efficient lecturers having been obtained for the purpose. There can be no doubt that the new school of hygiene will have a most important influence on the future sanitation of the city.

DR. J. A. CAMPBELL, who has so ably filled the post of medical superintendent of Garland's Asylum for a period of twenty-five years, is about to retire from that office.

THE Foundation Stone of the Nurses' Home, in the Marylebone Road, in connexion with Queen Charlotte's Lying-in Hospital, was laid by Lady Portman on Wednesday, July 6th.

THE first meeting of the Executive Council of the East Suburban Medical Protection and Medico-Ethical Society will be held at West Ham Hospital, Stratford, at 4 P.M. on Thursday, July 14th. Members are particularly requested to give the honorary secretary, Mr. Murtaugh Houghton, at the hospital, as long notice as possible of any business which they wish placed on the agenda.

UNFOUNDED CHARGE AGAINST A MEDICAL OFFICER.—At the meeting of the Helston (Cornwall) Board of Guardians held on June 25th a male pauper made a complaint that one of the medical officers (Mr. B. C. Kendall) would not give a certificate of death in the case of a child whom he had not seen for nine weeks. A resolution was unanimously passed exonerating the medical officer from all blame and the complainant was informed by the chairman that it was he, and not the surgeon, who had neglected the child.

A NEW HOSPITAL FOR SOUTH LONDON.—The Bishop of Rochester presided on Tuesday evening last at a public meeting in the Horns Assembly Rooms to support a scheme for transferring the Belgrave Hospital for Children to a site in the Clapham-road adjoining St. Mark's Church, Kennington. His lordship mentioned that the scheme was being warmly supported by the Duke of Westminster, who had issued an appeal for £50,000, the amount required to carry the scheme into effect. The secretary stated that between £4000 and £5000 had been promised, the Duke of Westminster and Mr. Douglas Freshfield heading the list with £1000 each. A resolution pledging the meeting to support the scheme was unanimously adopted.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Poisons Bill.

THIS Bill has passed through all its stages in the House of Lords and has been sent down to the House of Commons. It now contains a provision designed to meet the views of persons interested in the sale of disinfectants.

The Vaccination Bill.

THE Vaccination Bill, after engaging the attention of the Grand Committee on Law during seven sittings, has been reported to the House of Commons as amended, and it now falls to be considered by the House in the report stage. As the House has a great deal of other work in hand it may be some time before it is taken, and there is just a risk that it may be crowded out altogether.

HOUSE OF COMMONS.

THURSDAY, JUNE 30TH.

Phosphorus Matches.

Mr. MONK asked the Home Secretary whether he was aware that safety matches of a better quality than those introduced from abroad and of which yellow phosphorus was not a component part, could be readily manufactured in this country and be retailed in London and the provinces at 1½*d.* per dozen boxes; and whether he would consider the desirability of obtaining power to make the sale of phosphorus matches illegal, as injurious to the health of the operatives and dangerous to those who use them.—Sir M. WHITE RIDLEY replied: Yes, I am aware that safety matches of British manufacture which claim to be made without yellow phosphorus can be bought at about the price named, though I can hardly, I think, though I have had the advantage of a present of a box from my hon. friend, enter upon the question of their comparative quality. As regards the second paragraph I must await the results of the inquiry now being made at home and abroad before coming to any decision; but the hon. member is no doubt aware that it is claimed that by the adoption of certain methods the use of white or yellow phosphorus can be rendered harmless.

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Work in Bakehouses.

On the motion of Mr. WOODS a Bill was introduced and read a first time to restrict the hours of labour in bakehouses to 48 per week.

FRIDAY, JULY 1ST.

Eastbourne Convalescent Hospital.

Captain NORTON asked the Under Secretary of State for War whether he could state if the existing convalescent home for soldiers at Eastbourne with 16 beds was found to suffice for the requirements of the troops stationed in the United Kingdom, seeing that, according to the Army Medical Department's report for 1896, the average admissions to hospital number 64,395, with an invaliding list of 2173 and a constantly sick rate of 3844.—Mr. POWELL WILLIAMS, in reply, said that the convalescent hospital at Eastbourne contained 20 beds and was established originally for the troops in London. It was not sufficient for the whole of the troops in the United Kingdom, whose sick were not sent to convalescent homes, but treated in the various station hospitals.

Vaccination Defaulters.

Mr. STEADMAN asked the Home Secretary if his attention had been called to a statement made by a police-inspector when applying for distress warrants in cases of non-payment of fines by vaccination defaulters. In reply to a question from the magistrate (Mr. Lane) the inspector said he was acting under instructions from the Home Office. And whether, seeing that the Local Government Board now admitted that "adventitious" germs were in vaccine lymph, and that therefore there was a justification in parents refusing to run risks, he could see his way to extend the instructions for application for distress warrants. —Sir M. WHITE RIDLEY replied that his attention had not been drawn to the statement otherwise than by the question, but it was the practice of the Home Office to take steps after proper inquiry as to the circumstances to enforce outstanding fines in cases of different kinds, and the statement was perhaps made in some cases in which such steps had been taken. He did not see his way to give the instructions suggested in the second paragraph.

MONDAY, JULY 4TH.

Rabies.

Mr. WALTER LONG, in reply to Mr. CROMBIE, said that in the course of the operations of the Board of Agriculture against rabies it had been found necessary to apply muzzling orders to the whole or parts of 32 counties; the number had now been reduced to 19. There had been 12 cases of the disease during the first 26 weeks of the present year, as against 88 in the corresponding period of last year, 327 in 1896, and 413 in 1895.

Coroner and Medical Evidence.

Mr. TENNANT asked the Home Secretary whether his attention had been called to the death of Thomas Sargeant, aged fifteen years, from "gassing" by benzol, in the Whitwood chemical works at Normanton about a fortnight ago, and to the circumstances attending the inquest; whether there were no regulations controlling the manufacture or use of benzol; and, if so, whether the desirability of instituting some regulations would be considered; and whether, seeing that the coroner had upon previous occasions dismissed applications for inquiry into matters having the gravest results, any action could be taken on his refusal to institute a medical examination into so serious a misadventure.—Sir M. WHITE RIDLEY replied: Yes, sir, a report has been received from the inspector and the case is still under inquiry. Therefore I am hardly in a position at present to state what steps it may be necessary to take. I regret the action of the coroner. Without wishing to prejudice the matter, I may say that it appears to me that it is much to be regretted that no post-mortem examination was made and no medical evidence given before the jury. But I am looking into the matter.

TUESDAY, JULY 5TH.

Experiments on Living Animals.

Mr. BARRINGTON SIMEON asked the Home Secretary whether his attention had been drawn to the last report of the inspector under the Act relating to experiments on living animals; whether he had observed that seven licensees confessed to having committed offences against the law, of which two consisted in two persons going on vivisecting in 1897 without the requisite licence, and that the inspector, having treated these two persons in the same way as licensed persons, condoned their offences; would he state who these persons were and whether any remonstrance, reprimand, or other communication had been or would be addressed to them.—Sir M. WHITE RIDLEY replied: Yes, certainly, I am aware of the facts stated in the inspector's report to myself. The nature of the irregularities referred to is shown in the report, and it will be seen that in every case they arose from inadvertence. It is not the fact, however, that the irregularities were condoned; letters of reproof were sent and in some cases severer measures taken. No good object would, I think, be served by publishing the names.

The Herbert Hospital at Woolwich.

Mr. BRODRICK, in reply to Captain Norton, said that on June 24th 342 soldiers were in the Herbert Hospital at Woolwich.

THE VACCINATION BILL.

PROCEEDINGS IN THE GRAND COMMITTEE.

The Grand Committee of the House of Commons on Law met on Friday, July 1st, with Sir HENRY CAMPBELL BANNERMAN in the chair, and continued the consideration of the Vaccination Bill.

Clause 3 of the Bill as introduced was to this effect: "The Local Government Board shall have the same powers of making rules and regulations with respect to public vaccinators (whether under contracts made before or after the *passing of this Act*) as they have with respect to vaccination officers, and any rules or regulations made by the Board with respect to vaccination, whether under this or any other Act, shall, while in force, have effect as if enacted by this Act."

Mr. CHAPLIN moved to substitute for this a provision that the Local Government Board "may make rules and regulations with respect to the duties and remuneration of public vaccinators whether under contracts made before or after the passing of this Act."

Mr. BRIGG said that this amendment did not get rid of his objection to the clause and asked whether it was meant that the Local Government Board should be able to give orders to the public vaccinator to prosecute without the authority of the board of guardians.

Mr. CHANNING insisted that the effect of the amendment would be to resuscitate and reinforce Article 17 of the General Order of the Local Government Board which instructed the public vaccinator to institute prosecutions, and he condemned this as an interference with the rights of boards of guardians.

Mr. CHAPLIN explained that his amendment related solely to the remuneration and duties of the vaccination officers and in no way affected the regulations as to prosecutions, which would have the force of law until they were repealed. It was necessary that the Local Government Board should have the proposed power because the vaccination officers would have new duties to perform in making domiciliary visits.

The amendment was then agreed to by the Committee.

Mr. BRIGG moved to add at the end of the clause, "But such rules and regulations shall not come into operation unless they have been laid upon the table of the House for forty days and have been sanctioned by the House."

Mr. CHAPLIN, opposing this amendment, said it had long been the practice of Parliament to leave these matters of detail to the determination of the department concerned and he saw no reason for an exception in this instance.

After a short debate the amendment was by leave withdrawn.

Mr. CHANNING suggested that there should be added to the clause words making it clear that the rules and regulations were to refer only to the duties and remuneration of public vaccinators in connexion with the new policy of domiciliary visits.

Mr. CHAPLIN undertook to consider the suggestion before the report stage of the Bill.

Clause 4, "The enactments mentioned in the schedule to this Act are hereby repealed to the extent specified in the third column of that schedule," was agreed to without debate.

On Clause 5, which says, "This Act shall not extend to Scotland or Ireland. This Act shall come into operation on the first day of January, 1899,"

Mr. BRIGG moved to alter the date to Jan. 1st, 1901. He explained that his object was to allow members of boards of guardians who were opposed to vaccination to retire before the Act came into operation and so to avoid friction.

Mr. CHAPLIN said he could not accept this proposal. He believed in the merits of the Bill and of the improved form of vaccination which it would introduce and he was anxious to see the measure in operation at the earliest possible moment If there were any guardians who found their conscientious objections so deeply in conflict with the new law they could retire and so obviate any difficulty such as the hon. Member contemplated.

Mr. CHANNING, supporting the amendment, said he regarded the Bill as a prodigious act of folly on the part of the Government and he thought it was the duty of this Committee to do something to protest against bad legislation and a measure which would bring about intolerable relations between the central government and the local authorities.

Mr. BAYLEY also spoke in support of the amendment.

Mr. LOGAN thought there should be this delay to enable scientists to complete their inquiries into the value of glycerinated calf-lymph. This form of calf lymph, he said, had not got beyond the experimental stage and it was monstrously unfair to the poor people of the country to force it upon them

Sir WALTER FOSTER spoke of the amendment as a very extraordinary one and said that however bad the Bill might be in some respects it conferred on the public many advantages, and he did not see why these advantages should be delayed.

The amendment was rejected by 21 to 6 votes.

Mr. CHAPLIN moved to insert in the Bill the following new clause—viz., "The Local Government Board may by order, if in their opinion it is expedient by reason of serious risk of outbreak of small-pox or of other exceptional circumstances, require the guardians of any Poor law union to provide vaccination stations for the vaccination of children with glycerinated calf lymph, and modify as respects the area to which the order applies, and during the period for which it is in force, the provisions of this Act requiring the public vaccinator to visit the home of the child otherwise than on request of the parent."

General RUSSELL spoke in support of the clause.

Mr. CHANNING condemned it as another despotic attempt to override the local authority.

On a division the clause was adopted by 23 to 5 votes.

Mr. CARLILE moved to insert the following new clause, viz.:—"The Local Government Board shall make regulations to secure the provision and supply of glycerinated calf or other approved animal lymph and may license on such terms as the Board may think fit any person or body to supply such lymph."

Mr. CHAPLIN said the first part of the clause was unnecessary and the second imposed too heavy a responsibility on the Local Government Board.

Thereupon Mr. CARLILE withdrew his proposal.

Mr. CHANNING then moved to insert this clause, viz.:—"In all cases in which a duly registered medical practitioner shall certify in writing that vaccination is not running an ordinary course and that owing to supervening disease medical attendance is necessary the public vaccinator or any other duly registered medical practitioner practising in the district to whom the certificate may be brought by the parent or other person acting in respect of the child vaccinated shall either himself attend the case or obtain a qualified practitioner to attend the case without charge to the parent, and any reasonable charges in respect of such attendance shall be defrayed by the guardians and shall be a lawful expenditure from the rates."

Mr. CHAPLIN said he could not accept the clause. So far as public vaccinators were concerned it was unnecessary because the point was already provided for, while as to private vaccination it would make the boards of guardians responsible for the carelessness of a private practitioner.

Sir CHARLES DALRYMPLE said that while serving on the Royal Commission nothing impressed him more than the want of substantiality in the allegations with regard to terrible results from vaccination. Very few of them indeed stood the test of inquiry.

Sir WALTER FOSTER submitted that though the cases might be few that was no reason why such a clause as this should not be adopted, but on the contrary it was a reason for its adoption.

The Committee rejected the proposed clause by 21 to 8 votes.

On the motion of Mr. CHANNING a clause to the following effect was

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inserted in the Bill, viz.: "Persons committed to prison on account of the non-compliance with any order or non-payment of fines or cost under the Vaccination Acts shall be treated in the same way as first-class misdemeanants."

Sir WALTER FOSTER moved to insert a new clause to this effect—viz.: "Every duly registered qualified medical practitioner not being a public vaccinator shall be entitled to be paid for each successful vaccination by the guardians of the union in which the vaccinated person usually resides a fee in accordance with the table of fees set forth in the second schedule to this Act, provided he send to the public vaccinator within four weeks after the date of the vaccination a certificate signed by him containing the following particulars: (1) the name and address of the vaccinated person and that the vaccination was successful; (2) the date when the vaccination was performed; (3) the date, not being less than eight or more than fourteen days after the date of the vaccination, when the patient was examined; (4) the number and area of the vesicles; (5) that the vaccinator claims no fee for the vaccination except the fee payable under this Act; and (6) such other particulars as may be prescribed. A medical practitioner who wilfully makes any untrue statement in any certificate under the last preceding section shall be liable on summary conviction to a fine not exceeding £20, or on conviction or indictment to a fine not exceeding £50.

Sir WILLIAM PRIESTLEY, Sir CHARLES CAMERON, and other members of the Committee spoke in support of the proposal.

Mr. CHAPLIN, however, resisted it, doing so mainly on the ground of the cost it involved and the want of supervision of the work done.

On a division the clause was rejected by 21 to 10 votes.

Mr. CHANNING moved to insert this clause: "When it has been determined by the verdict of a coroner's jury or by any court that death or injury has been caused to a child by vaccination or by any other disease directly originating in or provoked by vaccination the parent shall be entitled to obtain compensation from the board of guardians, and any such claim for compensation shall be determined by the judge of the county court, and any payment for such compensation shall be a lawful expenditure by the guardians out of the poor rate."

The clause was under discussion when the Committee adjourned.

The Committee met again on Tuesday, July 5th, with Sir HENRY CAMPBELL BANNERMAN in the chair, and completed the consideration of the Bill.

Discussion was resumed upon the new clause proposed at the last sitting by Mr. Channing to provide for compensation for death or injury caused by vaccination.

Mr. CHANNING said that he learned from the report of the Registrar-General for 1895 that the number of deaths officially certified to have been caused by cow-pox and other effects of vaccination was 785 from 1881 until 1895. He did not wish, he said, to cast aspersions upon the medical profession, but it was evident that where other diseases had supervened before vaccination it was probable that the later symptoms had been certified as the cause of death instead of vaccination itself. Members of the Committee must not lose sight of the fact that in this legislation they were giving a reward to the medical profession for carrying out this practice of vaccination, and in the circumstances he thought it was only right that there should be compensation in cases where negligence had brought about disastrous results.

Mr. LOGAN suggested that as so much power was being taken out of the hands of guardians the compensation should not be found by them but by the Imperial Treasury.

The proposed clause was rejected by 16 to 6 votes.

On the motion of Sir WILLIAM PRIESTLEY, acting on behalf of Sir WALTER FOSTER, the following new clause was inserted in the Bill, viz.:—"Any local authority may incur reasonable expense in the diffusion of information as to the reasons why vaccination of children is required by the State and of literature generally illustrative of the advantage of vaccination."

Sir WILLIAM PRIESTLEY moved to insert the following as a new clause, viz.:—"No proceedings under Section 31 of the Vaccination Act of 1867 shall be taken against any parent or person who has been convicted under Section 29 of the said Act on account of the same child until after it has reached the age of five years, and no such parent or person shall be liable to a penalty under the said Section if he satisfies the court that he conscientiously believes vaccination would be prejudicial to the health of the said child." His great object, he said, was to smooth the working of the scheme of the Bill and to minimise some points of objection to it. He was a believer in the efficacy of vaccination as a preventive of small-pox and he wished to see the benefits of it enjoyed by rich and poor to the very greatest extent possible. He had taken the age of five years because then the child might be expected to go to school, where, if it was unvaccinated, it became a source of danger to its fellow scholars. No one could forget the great object-lesson afforded by the case of Gloucester where the epidemic broke out in one of the schools and thence spread all over the town. He learned from the Vice-President of the Committee of Council on Education and from others that a great number of children were sent to school at an earlier age and therefore he was quite prepared to substitute four for five years. It might be said that his proposal was not logical but it was no more illogical than the scheme of the Bill and after all the country was not ruled by logic.

Colonel LONG pressed the Government to accept the clause in the interests of vaccination.

Mr. JOHNSON-FERGUSON said he was authorised to say on behalf of Sir Walter Foster that while he preferred his own amendment he would have voted for this clause if he had been able to be present.

Mr. HOBHOUSE spoke of the clause as a reasonable concession which the Government ought to make to public feeling on this subject.

Mr. CHAPLIN said he was surprised, after the long debate on Sir Walter Foster's amendment in a full Committee, that this clause should now be brought forward when the Committee was very poorly attended. He opposed the amendment and he opposed this clause because he believed they were not in the interest of vaccination. It was matter of notoriety that removals were frequent among the poorer classes and great difficulty was experienced in tracing them. With much trouble a considerable number of these removals had been traced in the past, but if this clause were carried, and if after tracing a removal with infinite pains, the officer was met with this plea of conscientious objection it was scarcely conceivable that thereafter he would devote much zeal or energy to the work of tracing removals. This, of course, was exactly what the anti-vaccinationists desired to bring about and consequently the clause played into their hands. The hon. Member had selected as the time for this escape from vaccination the time when the child went to school—the time when, on his own confession, the danger to the community began. Surely, he could not have fully considered the probable effect of his clause. He would only say that whatever might be the fortune of the Government in this thinly-attended Committee he could not accept the clause, and it would be his duty to resist it by every means in his power.

After further debate the clause was adopted by the Committee by 20 to 11 votes.

On the motion of Mr. MONK the age of four years was substituted for that of five years.

Mr. CHANNING moved to substitute for "if he satisfies the court" the words "if he makes a declaration," but the Committee rejected the motion by 23 to 6 votes.

Mr. LOGAN moved to insert a new clause to this effect, viz.:—"Nothing contained in this Act or in the Vaccination Acts of 1871 and 1874, or the Poor-law Amendment Act of 1842, shall empower the Local Government Board to make rules or regulations inconsistent with the spirit of this or any other Vaccination Act, and no rule or regulation now in force or made hereafter under the Vaccination Acts shall be regarded as giving the Local Government Board or any person or body of persons authority to direct an officer of a board of guardians to institute or conduct proceedings against any parent or guardian of a child for default under any Vaccination Act."

Mr. CHAPLIN declined to accept it, saying he must preserve all the powers given him by the existing law. He would not assume that boards of guardians would deliberately override the intentions of Parliament, but if any board did put itself in that position he would avail himself of the powers he possessed to enforce the fulfilment of the intentions of Parliament.

The clause was rejected by 22 to 10 votes.

Mr. STEADMAN moved this clause, viz.:—(1) In all cases of severe illness following vaccination the surgeon performing the operation shall be liable to an action for such damages as a jury may seem fit to assess, as in any other case of malpractice; and (2) in case death follows as a consequence of vaccination, the same being affirmed either on the medical certificate of death or by the verdict of a coroner's jury, the surgeon performing the operation shall take his trial for manslaughter.

The ATTORNEY-GENERAL (Sir RICHARD WEBSTER) said that such a clause was altogether out of the question.

After a short debate Mr. STEADMAN withdrew the clause.

On the motion of Mr. HAZELL the following clause was inserted in the Bill, viz.:—"The clerk of any sanitary authority which shall maintain a hospital for the treatment of small-pox patients shall keep a list of the names, addresses, and condition as to vaccination of all small-pox patients treated in the hospital, such entries to be made on admission, and shall at all reasonable times allow searches to be made therein, and upon demand give a copy under his hand or under that of his deputy of every entry in the same on payment of a fee of 6d. for each search and 3d. for each copy."

Mr. BRIGG moved, but afterwards withdrew, these two clauses, viz.:—"The Local Government Board shall issue all lymph marked in such a way as will clearly show its place of origin, and any parent or guardian may require to be shown the unbroken distinctive mark on the capsules, bottle, glass points, or other article used for containing the lymph, before allowing the lymph to be used for vaccinating his child." "The medical officer of health for the district shall, on payment of 1s. to him, furnish a certificate of fitness or non-fitness of any child presented him for the operation of vaccination."

Mr. CHANNING moved to insert: "Where the parent of any child in respect of whom proceedings are taken under the Vaccination Acts proves that any other of his children has died or suffered serious illness owing to vaccination, such proof shall be held to be a reasonable excuse for the purposes of Section 29 of the Act of 1867."

Mr. CHAPLIN undertook to consider the point raised here before the report stage.

On the strength of this undertaking Mr. CHANNING withdrew the clause.

The amendments on the notice paper having now been exhausted the motion was put from the chair and agreed to that the Bill as amended be reported to the House.

BOOKS, ETC., RECEIVED.

ALCAN, FELIX, Paris.

Recherches sur l'Épilepsie et l'Idiotie. Par Bourneville. Vol. XVIII. 1898.

ALLMAN AND SON, 67, New Oxford-street, London.

A Handbook for Volunteer Medical Officers. Compiled by V. Matthews and J. Harper. Price 3s. 6d. net.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.

Aids to Examinations in Medicine, Surgery, Midwifery, and the allied Sciences. Part II. By T. R. Atkinson, M.D. Durh. Price 2s. 6d.

A Manual of Massage. By M. A. Ellison, L.O.S. 1898. Price 3s. 6d. net.

Twenty-two Years' Experience in the Treatment of Cancerous and other Tumours. With an introduction on the Increasing Prevalence of Cancer and the Remedy for that Increase. By Herbert Snow, M.D. Lond. 1898. Price 5s.

BLISS, SANDS AND CO., London.

The Study of Man. By Alfred C. Haddon. 1898. Price 6s.

CHURCHILL, J. & A., Great Marlborough-street, London.

A Course of Lectures on Medicine to Nurses. By H. E. Cuff, M.D., F.R.C.S. Second edition. 1898. Price 3s. 6d.

A Manual of Bacteriology, Clinical and Applied. By R. T. Hewlett, M.D., M.R.C.P., D.P.H. Lond. 1898. Price 10s. 6d.

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The Mental Affections of Children: Idiocy, Imbecility, and Insanity. By William W. Ireland, M.D. Edin. 1898.
Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D., F.R.C.P. Third edition. 1898. Price 7s. 6d.
The Attendant's Companion: A Manual of the Duties of Attendants in Lunatic Asylums. By Chas. Mercier, M.B., M.R.C.P., F.R.C.S. Second edition. 1898. Price 2s.

CLAY, WM. F., Teviot-place, Edinburgh.
Guide to the Clinical Examination and Treatment of Sick Children. By John Thomson, M.D., F.R.C.P. Ed.; illustrated. 1898. Price 9s.

DARLING AND SON, Great St. Thomas Apostle, London.
University of London. The Calendar for the Year 1898-99. 1898. Price 5s net.

DIGBY, LONG, AND Co., Bouverie-street, Fleet-street, London, E.C.
Can it be True? A Psychological Study. By G. Yeates Hunter, I.M.D. 1898. Price 6s.

GAY AND BIRD, Bedford-street, Strand, London.
Penelope's Experiences in Scotland: being Extracts from the Commonplace Book of Penelope Hamilton. By Kate D. Wiggin. 1898. Price 6s.

INSTITUT DE BIBLIOGRAPHIE SCIENTIFIQUE, Paris.
Chirurgie de l'Intestin. Par M. Jeannel. 1898.

KEGAN PAUL, TRENCH, TRÜBNER, AND Co., Charing-cross-road, London.
The Doctrine of Energy: A Theory of Reality. By B. L. L. 1898. Price 2s. 6d. net.

LAPI, S., Cetta di Custello.
I Veleni dei Batterii. A. Muccoli. 1898.

LEWIS, H. K., Gower-street, London.
The Extra Pharmacopœia. By W. Martindale, F.L.S., F.C.S. With an index by W. Wynn Westcott, M.B. Lond. Ninth edition. 1898. Price 10s. 6d.

LONGMANS, GREEN, AND Co., Paternoster-row, London.
Tablets of Anatomy: Dissectional and Scientific. By Thomas Cooke, F.R.C.S., and F. G. Hamilton Cooke. Part I.: The Bones; illustrated. Eleventh edition. 1898. Price 7s. 6d. net. Part II.: Limbs, Abdomen, Pelvis; illustrated. Eleventh edition. 1898. Price 10s. 6d. net. Part III.: Head and Neck, Thorax, Brain; illustrated. Eleventh edition. 1898. Price 10s. 6d. net.

MACMILLAN AND Co., London.
The Development of the Child. By N. Oppenheim. 1898. Price 5s. net.

NEW SYDENHAM SOCIETY, London.
A Report on Vaccination and its Results based on the Evidence taken by the Royal Commission during the Years 1889-1897. Vol. I.: The Text of the Commission Report. 1898.

PENTLAND, YOUNG J., Edinburgh and London.
Handbook of Obstetric Nursing. By F. W. N. Haultain, M.D., F.R.C.P. Edin., and J. H. Ferguson, M.D. Third edition. Illustrated. 1898.
Renal Growths: their Pathology, Diagnosis and Treatment. By T. N. Kelynack, M.D. Vict., M.R.C.P. Lond. Illustrated. 1898.
The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Edin., new series. Vol. III. 1898.

PHILIP, GEO., AND SON, Fleet-street, London.
The Swedish Touring Club's Guide to Sweden, with Maps and Plans. 1898. Price 5s.

REBMAN PUBLISHING COMPANY, 129, Shaftesbury-avenue, Cambridge-circus, London.
Archives of the Roentgen Ray. Edited by W. S. Hedley, M.D., and S. Rowland, M.R.C.S. May, 1898. Vol. II. No. 4. Price 4s.

SIMPKIN, MARSHALL, HAMILTON AND Co., Stationers' Hall-court, London.
Copenhagen and its Environs. Handbook for Travellers. Published by the Danish Tourist Society, with a plan of Copenhagen. 1898. Price 1s. 6d.
Copenhagen, the Capital of Denmark. Published by the Danish Tourist Society. Copenhagen. 1898. Price 2s.
My Home and Household Compendium. By J. W. Jarvis and W. J. Woods. 1898.

SMITH, ELDER AND Co., Waterloo-place, London.
Dictionary of National Biography. Edited by Sidney Lee. Vol. LV. Stow-Taylor. 1898.

UNWIN, T. FISHER, Paternoster-square, London, E.C.
Sir Benjamin Collins Brodie. By T. Holmes, M.A., F.R.C.S. 1898. Price 3s. 6d.

WHITAKER AND Co., White Hart-street, Paternoster-square, London.
The Chemist's Compendium. By C. J. S. Thompson. Second edition. 1898. Price 3s. 6d. net.

Appendix XI. to the second edition of the Descriptive Catalogue of the Pathological Specimens in the Museum of the Royal College of Surgeons of England. By James H. Targett (Taylor and Francis, Red Lion-court, Fleet-street, London. 1898).—The Methodist Episcopal Hospital Reports. Vol. I. 1887-1897. Edited by L. S. Pilcher, M.D., and G. R. Butler, M.D. (published by the Hospital, New York. 1898.)—Veale's System of Medical Booking. Veale's Medical Ledger, Medical Day-Book, Collector's Cash Book, Obstetric Register (published by G. C. Veale, 48, Albion-street, Leeds.)—A Handy Book of the Law of Trustees, their Duties and Liabilities. By Denny Urlin, Barrister-at-law. Sixth and revised edition (Effingham Wilson and Co., Royal Exchange, London. 1898). Price 1s.—The Great Eastern Railway Company's Tourist Guide to the Continent. Edited by Percy Lindley; illustrated with maps (published at 30, Fleet-street and 2, Cockspur-street, London. 1898). Price 6d.—Magazines, &c., for July: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, St. Peter's Magazine.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BALGARNIE, WILFRED, M.B. Lond., F.R.C.S. Eng., has been appointed Medical Referee for the County Court Circuits of Southampton, Winchester, Basingstoke, Alton, Andover, and Romsey.
BLAKENEY, H. T. W., M.R.C.S., has been appointed Police Surgeon for the Dorking Petty Sessional Division, vice H. Chaldecott.
BUCHANAN, P., M.B., C.M. Glasg., has been appointed Medical Officer of Health by the West Dean Rural District Council.
BUSH, J. PAUL, M.R.C.S., has been appointed Medical Referee under the Workmen's Compensation Act for the Bristol County Court District.
CAMPBELL, J. D., M.B., C.M. Glasg., has been appointed Medical Officer for the Navenby Sanitary District of the Lincoln Union.
COLEMAN, J. B., M.D., L.R.C.P. Irel., has been appointed a Visiting Physician for the National Hospital for Consumption for Ireland.
CORRY, WM., M.D., Ch.M. Irel., D.P.H. Camb., has been appointed Officer of Health for the Shire of Phillip Island and Woolamai, Victoria, Australia.
CORY, G. C., M.R.C.S., has been appointed a Government Medical Officer for Bingara, New South Wales.
COWEN, H. O., M.B., Ch.M. Glasg., has been appointed Officer of Health for the Borough of Raywood, Victoria, Australia.
CROOKS, A. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for Corryong, Victoria, Australia, vice G. W. Armstrong, resigned.
DIXON, T. S., M.B., Ch.M. Edin., has been appointed a Member of the Medical Board, New South Wales.
FOXCROFT, F. W., M.B., C.M. Edin., has been appointed Honorary Assistant Surgeon for the Ear and Throat Hospital, Birmingham.
GREEN, W. F. L., M.R.C.S., has been appointed Medical Officer for the North Curry Sanitary District of the Taunton Union.
GREGORY, W. HERBERT, M.D., C.M. Edin., has been appointed Visiting Surgeon to the Beverley Cottage Hospital and Dispensary, and Visiting Physician to the Ann Routh Hospital.
GROSVENOR, W. W., M.D. Dubl., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Workhouse of the Gloucester Union.
HARBISON, J. W., M.B., Ch.B. Melb., has been appointed acting Public Vaccinator for Kew, Victoria, Australia.
HAYNES, P. O., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the Devizes Union.
HICHENS, FRANK, M.D., B.S., L.R.C.P., M.R.C.S., D.P.H. Lond., has been re-appointed Medical Officer for the Redruth Urban District Council.
HICKEY, E. L., M.D. Durh., M.R.C.S., has been appointed a Government Medical Officer and Vaccinator for Nyngan, New South Wales, vice W. H. Jermyn, resigned.
ISAAC, G. WASHINGTON, M.B., C.M., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for County Court Circuit, No. 44 (Westminster).
JONES, R., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Officer of Health for the Shire of Marong, Victoria, Australia, and acting Officer of Health for Eaglehawk, Victoria, vice J. C. McKee.
LAWRENCE, H. CRIPPS, L.R.C.P. Lond., &c., has been appointed Honorary Physician to the Home for Sick Children, Cheltenham.
LESLIE, WILLIAM MURRAY, M.D., F.R.C.S., Barrister-at-law, has been appointed the Government Medical Referee for the City of London.
MASSIE, THOS., M.B., has been appointed by the School Board for London Lecturer on Ambulance at the Evening Continuation Schools in Southwark, Walworth, Newington, and Bermondsey.
MCARTHUR, A. N., L.R.C.P. Lond., M.R.C.S., has been appointed a House Surgeon for the General Hospital, Launceston, Tasmania.
MILES, G. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent for the Hospital for the Insane, Rydalmere, New South Wales.
MULLEN, W. L., M.D., Ch.B. Melb., has been appointed a Member of the Dental Board of Victoria, Australia.
NEWSHOLME, ARTHUR, M.D., F.R.C.P., has been appointed Examiner in Preventive Medicine to the University of Oxford.
PALMER, GEO., M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Ararat, Victoria, Australia.
REED, WALTER HUGO, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for Westbury and Whorwellsdown (Wiltshire) Rural District Council.
REID, M. A., M.B., Ch.M. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed acting Public Vaccinator for Kerang, Victoria, Australia, vice T. M. Austin.
RENWICK, HON. SIR A., M.D. Edin., F.R.C.S., has been appointed President of the Medical Board, New South Wales, vice C. M'Kay.
RICHARDS, S. J., M.B., Ch.M. Syd., has been appointed a Medical Officer for Mount Morgan, Queensland, vice H. C. Brannigan, resigned.

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RILEY, A., M.B., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for the Winton District, New Zealand.

ROGERS, BERTRAM M. H., B.A., M.D., B.C. Oxon., has been appointed Medical Referee under the Workmen's Compensation Act for the Bristol County Court District.

RUSSELL, R. U., L.R.C.S. Irel., L.R.C.P. Edin., has been appointed Medical Superintendent for the Hospital for the Insane, Newcastle, and Health Officer for the port of Newcastle, New South Wales.

SALTER, A. E., M.B., Ch.B. Melb., has been appointed acting Health and Medical Officer for Thursday Island, Queensland.

SIBLEY, J. C., M.D., New York, U.S.A., has been appointed a Medical Officer for the Goodooga Hospital, New South Wales.

SMEAL, J., L.F.P.S. Glasg., has been appointed a Public Vaccinator for Ararat, Victoria, Australia, vice A. Bowe, resigned.

TILLEY, HERBERT, M.D., B.S. Lond., F.R.C.S. Eng., has been appointed to the Honorary Staff of the London Throat Hospital, Golden-square.

WHITE, S., M.D., M.Ch. Irel., F.R.C.S., D.P.H. Cantab., has been appointed an Honorary Medical Officer for the Sheffield Royal Infirmary, vice G. H. Shaw.

WILKINSON, W. C., M.D. Lond., M.R.C.P., M.R.C.S., has been appointed a Member of the Medical Board, New South Wales.

WILLIAMSON, W. C., M.D., Ch.M. Irel., has been appointed Medical Superintendent for the Hospital for the Insane, Gladesville, New South Wales.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRENTFORD UNION.—Assistant Medical Officer for the new Infirmary, unmarried. Salary £100 per annum, with furnished apartments in the Infirmary, rations, washing, &c., subject to statutory deductions. Applications to the Clerk to the Guardians, Union Offices, Isleworth.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House Surgeon for the Northern Branch, unmarried. Salary £140 per annum, with furnished apartments, coal, gas, and attendance. Applications to to the Hon. Secretary, Board Room, Queen's-road, Brighton.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Honorarium £10, and board, washing, and apartments.

CARLISLE DISPENSARY.—House Surgeon. Salary £130 per annum, with apartments (not board). Applications to Hon. Secretary, Riversbill, Stanwix, Carlisle.

CORPORATION OF MANCHESTER. MONSALL FEVER HOSPITAL.—First Medical Assistant at £150 per annum, and a Third Medical Assistant at £100 per annum, with board and lodging. The appointments for one year. Applications to the Town Clerk, Town Hall, Manchester.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer. Salary commences at £130, rising to £160.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary for House Surgeon £100 per annum. Assistant House Surgeon £50. Furnished apartments, board and washing in both cases.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Surgeon for Out-patients.

GENERAL HOSPITAL, Birmingham.—House Physician for one year. Salary £70 per annum, with residence, board, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Junior House Surgeon for six months. Board, lodging, and washing provided in the hospital.

GUY'S HOSPITAL MEDICAL SCHOOL, London, S.E.—Lecturer on Biology.

HASTINGS, ST. LEONARD'S, AND EAST SUSSEX HOSPITAL, Hastings.—Assistant House Surgeon for six months. Residence, board, and laundry provided

HOSPITAL FOR WOMEN, Soho-square, London.—Registrar for twelve months. Honorarium 25 guineas.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with residence, board, and washing.

METROPOLITAN ASYLUMS BOARD.—A medical practitioner to investigate on the Board's behalf for six months all cases of scarlet fever and diphtheria. The fee will be 2 guineas per case, with a minimum of 50 guineas. Apply to the Clerk to the Board, Norfolk-street, Strand, W.C.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £170, with furnished rooms. Also Clinical Assistant for six months. Salary £60, with furnished rooms. Each has to pay one-third for the maintenance of housekeeper and servant.

OWENS COLLEGE, MANCHESTER.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150.

ROYAL HALIFAX INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with an extra allowance of £9 2s. 6d. per annum. An Ophthalmic Department has been recently added to the general practice of the Infirmary. Also residence, board, and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, London.—House Surgeon for six months. Honorarium £25.

SHAFTESBURY HOUSE PRIVATE ASYLUM, Formby, near Liverpool.—Junior Medical Officer. Salary £50 per annum, with board, lodging, and washing. Apply to Dr. S. A. Gill, Formby, Lancashire.

SHEFFIELD ROYAL HOSPITAL.—Honorary Surgeon.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SUFFOLK COUNTY ASYLUM, Melton, Suffolk.—Second Assistant Medical Officer for three years, unmarried. Salary £100 a year, with board, lodging, washing, and attendance.

UNIVERSITY COLLEGE, BRISTOL.—Faculty of Medicine. Demonstratorship of Physiology. Stipend £125.

UNIVERSITY OF ST. ANDREWS, St. Andrews.—Professors of Materia Medica and Pathology to conduct classes at Dundee.

VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street, Hull.—Lady House Surgeon. Salary £50 per annum, with board and laundry.

VICTORIA UNIVERSITY, THE YORKSHIRE COLLEGE, Leeds.—Demonstrator of Pathology. Salary £150.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £60, with board and residence.

WEST RIDING ASYLUM, Wakefield.—Pathologist. Salary £150, increasing to £200.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Surgeon for six months. Board, lodging, and washing provided, and a small honorarium given.

YORK COUNTY HOSPITAL, York.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, washing, &c.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

BAKER.—On July 2nd, at Grove Lodge, Church-end, Finchley, the wife of James Barrington Baker, M.D., of a son.

EHRHARDT.—On July 2nd, at Portland House, Bridge-road West, Battersea, the wife of J. Martin Ehrhardt, L.R.C.P., of a son.

GREEN.—On July 1st, at Folkestone, the wife of Douglas Green, M.B. Lond., Surg.-Capt. I.M.S., of a daughter.

KENNEDY.—On July 1st, at 5, Lammas-park-gardens, Ealing, W., the wife of Arthur Stoddard Kennedy, L.R.C.S., L.R.C.P., of a daughter.

MANNING.—On June 30th, at Hoddesdon, Herts, the wife of T. Davys Manning, M.B., B.S., of a son.

SCOTT.—On June 28th, at Ealing, the wife of Alfred Langston Scott, M.R.C.S., of a daughter.

SILK.—On July 4th, at 47, Devonshire-street, Portland-place, W., the wife of Frederick W. Silk, Esq., M.D., of a son.

MARRIAGES.

CORKERY—LEGG.—On June 29th, at St. Mary's, Hampstead, Timothy Corkery, M.D., of Pinxton, Derbyshire, to Evelyn Geraldine, eldest daughter of the Rev. F. S. Legg, Vicar of Christ Church, Merton Abbey, Surrey.

HUTTON—DUN.—At St. Mary's Cathedral, Edinburgh, on Tuesday, the 5th inst., by the Rev. James Dun, Vicar of Higham Ferrars and Rural Dean, assisted by the Rev. Alfred Griffiths, David Mount Hutton, B.Sc., M.B., C.M., Southport, to Isabel Stirling, third daughter of the late Finlay Dun, of Gorgie House, Edinburgh.

LISHMAN—GARRATT.—On June 11th, at Vice-Consulate and All Saints' Church, Puerto-Orotava, Tenerife, by Rev. D. J. Evans, Frederick Lishman, M.D., son of the late William Lishman, Thornhill Park, Sunderland, to Lucy Foster Garratt, daughter of Rev. C. F. Garratt, Little Tew, Oxon.

MCWILLIAM—FOORT.—On June 30th, at St. Mary Abbot's Church, Kensington, Alexander McWilliam, M.A., M.B., C.M., Heighem Hall, Norwich, to Octavia Lyn Foort, daughter of C. J. Foort, Birlingham, Worcestershire.

MURRAY—WILLS.—On July 6th, at St. Mary Abbot's, Kensington, by the Rev. Canon Ainger, Master of the Temple, assisted by the Rev. Canon Pennefather, John Murray, F.R.C.S., 133, Harley-street, son of the late John Murray, Esq., of Monkstown, County Dublin, to Bertha Marion, youngest daughter of the Hon. Mr. Justice Wills, 7, Chelsea-court, S.W.

NEWBY—ELBOROUGH.—On June 29th, at the Parish Church, Croydon, Gervase Edward Newby, F.R.C.S., son of the late Rev. Henry Newby, vicar of Mears Ashby, Northamptonshire, to Ida Kathleen, younger daughter of the late Charles Marryat Elborough, Town Clerk of Croydon.

ROSS—MULLETT.—On June 29th, at St. George's, Bloomsbury, Richard Adolphus Ross, M.B., C.M., R.N., third son of the late Robert Ross, of County Cavan, to Florence Emma (Flora), elder daughter of F. T. Mullett, of Cambridge.

WALKER—WILKINSON.—On July 1st, at St. Columbus, Pont-street, Chelsea, George Walker, M.R.C.S., L.R.C.P., of Hill-road, Wimbledon, to Mary Elizabeth, eldest daughter of the late Lieutenant-Colonel John Wilkinson, Pembridge-villas, Southfields, S.W.

WEBB—BEAUCHAMP.—On June 30th, at St. Stephen's Church, Dublin, J. Curtis Webb, M.B., Collingham-place, Kensington, London, to Mabel Gertrude, eldest daughter of Robert H. Beauchamp, Esq., J.P., Fitzwilliam-square, Dublin.

DEATHS.

ALFORD.—On June 29th, at Mountlands, Taunton, in his 92nd year, Henry Alford, L.S.A., F.R.C.S.

CADDY.—On July 5th, 1898, at 4, Earl's Court-gardens, S.W., Duncan James Caddy, M.D., F.R.G.S., late H.M. Colonial Medical Service, aged 32.

THOMAS.—On July 4th, at Alexandria, Egypt, of enteric fever, Howard Rawdon, fourth son of William Thomas, F.R.C.S., of Birmingham, aged 22.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 7th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 1	30·20	N.	0·24	112	74	56	54	61	Fine
" 2	29·98	N.	...	116	75	59	58	61	Cloudy
" 3	30·01	N.W.	...	124	73	53	53	62	Cloudy
" 4	30·04	N.	...	113	68	53	53	57	Cloudy
" 5	30·27	N.W.	...	110	72	54	54	60	Hazy
" 6	30·26	N.W.	...	116	78	59	58	63	Overcast
" 7	30·20	N.W.	...	116	76	60	61	68	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (16th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (13th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. **Clinical Meeting.** LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. **Special Meeting to discuss whether it is desirable (1) to Limit the Membership of the Society; and (2) to Alter the Days of Meeting.**

THURSDAY (14th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. **Adjourned Discussion on Mr. S. Keith and Dr. Bantock's papers on Dysmenorrhœa. Specimens:—Mr. B. Jessett: (1) Carcinoma Uteri removed by Vaginal Hysterectomy, Recovery; (2) Carcinoma Uteri with Fibroids, Vaginal Hysterectomy, Recovery; (3) Double Pyo-salpinx with Broad Ligament Cyst, Operation, Recovery. Papers:—The President: Two unusually interesting Cases of Ovarian Cystoma (with specimens)—Mr. C. Martin (Birmingham): Some Moot Points in the After-Treatment of Cases of Abdominal Section.**

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (12th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. **Dr. Colman: Lecture.** WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4.30 P.M. **Dr. F. Beach: On Mental Disorders in Children, with cases.** CITY ORTHOPÆDIC HOSPITAL.—5.30 P.M. **Mr. J. J. Clarke: Deformities caused by Badly-shaped Boots.**

WEDNESDAY (13th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. **Dr. P. S. Abraham: Dermatological Cases.**

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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Subscriptions (which may commence at any time) are payable in advance.

THE AVENGING DRUGGIST.

A CASE has recently been before a provincial police-court which is not without its amusing side, though that side may be obscured to the view of the plaintiff and the defendant. A small boy persisted in

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swinging on the supports to the blinds of a druggist's shop. The druggist dosed him with quassia in solution as a punishment. The small boy "had the law of" the druggist who, as a result, had to pay a fine. Our sympathies are all with the druggist, but yet we think the decision of the case against him was right as well as a foregone conclusion. He should have spanked the boy, whose outside would certainly not have been regarded either by magistrate, parent, or public as so clearly sacred from interference as his gastro-intestinal tract. The ingenuity of the punishment was bound to inflame general sentiment against him, even while no one may deny that the boy's behaviour was aggravating. We think the magistrates were right to inflict a fine and hope that the decision will act as a deterrent for two rather obvious reasons. Firstly, if such retaliatory measures were to be sanctioned by law the next solution administered in this way might not be so harmless as quassia, the punishment might not fit the crime so well, and the executioner might be less instructed in therapeutics. Secondly, an element in this way is imported into punishment which should never be present in the punishment of children at any rate—the element of nervous terror. We know, and the druggist knew, that the solution of quassia was as harmless as, say, many sorts of table beer, but the boy did not know it. He might easily believe that his disagreeable sensations were the prelude to impending death from poisoning and a fond mother might possibly support the view, with the result that much more pain, and of a different sort, would be caused than was intended.

THE ETIQUETTE OF CONSULTING PRACTICE.

To the Editors of THE LANCET.

SIRS,—I am the only medical officer in a wide rural parish fifteen miles from a small town of over 5000 inhabitants in which are four medical men, including the one with whom my relations have become strained. The third party referred to below is the agent of the squire whose servants are the patients. 1. Is it usual or right for a consultant to come and see a patient without first relatives and medical attendant agreeing that such a step was necessary? 2. Is it usual or right for the consultant to prescribe new medicines and new treatment when relatives go to him privately after consultant and attendant have already agreed upon the course of treatment? 3. Is it usual or right for a consultant to write to a third party and explain a case when he has changed his mind regarding it and not do so to the medical attendant in the first instance? 4. Is it usual or right for a consultant to come more than once to see a case at the request of a third party without the consent or approval of the medical attendant when the case is not an urgent one? 5. How should I act in future towards this consultant?

I am, Sirs, yours faithfully,

July 4th, 1898. M.D.

*** Our correspondent will understand that we have only his side of the case before us and that we are not in possession of any of the special circumstances. Speaking generally:—1. It is usual and right that the medical attendant in charge of the case should be informed of the desire for a consultation. 2. and 3. It is usual and right that the consultant should communicate his views with regard to any change of diagnosis or treatment to the medical attendant in charge. 4. This question is not quite clear. If it is irregular for the consultant to see the patient at all without communicating with the medical attendant it is certainly wrong to continue to see the patient. 5. We must leave this point to our correspondent, having given our replies to his first three questions.—ED. L.

A MUNICH "M.D." IN THE CORONER'S COURT.

MR. KING HOUCHIN, deputy coroner for East London, held an inquiry on Tuesday last at the Vestry Hill, Bancroft-road, Mile-end, into the circumstances attending the death of the nine months old female child of Mrs. Annie Bernard of 7, Newman-street, the wife of a Hebrew teacher. From the mother's evidence it appeared that on June 19th the child seemed to be sickening for the measles. She sent for Dr. Jones, but he did not come himself, his assistant attending who ordered the child to be put into a hot bath. She was afraid to carry out this direction because she thought the assistant looked so young and she did not care to take his advice. She then sent for Dr. Wolpe, who came and prescribed. On Saturday the child seemed worse and Dr. Wolpe again attended and prescribed. She afterwards became worse and witness sent for Dr. Jones of Finsbury-square, not the same Dr. Jones whom she had previously sent for, but as this gentlemen was unable to come her husband sent for Mr. Ambrose. Mr. Ambrose gave no hope and the child died at 4 o'clock in the afternoon.—The coroner: Did she come out in a rash? Witness: Yes sir, all over the body.—Achille Wolpe, 2a, St. Mark-street, Goodman-street, E., said he was a medical practitioner.—The coroner: What is your qualification? Witness: I am M.D. of Munich; I was told another doctor had been attending and had ordered a hot bath for the child.—The coroner: How was it you took the case out of his hands? Witness: I know nothing about him at all.—Coroner: May I inquire how it is you practise at all? Witness: I want to pass my examinations here and as far as I understand the law of this country it does not prohibit my practising as such, but it prohibits my recovering my fees in a court of law.—The Coroner: But you misunderstand the law of this country, for you render yourself liable every time you visit or prescribe. You render yourself liable to a prosecution because you are not qualified. Witness: The law does not prohibit my practising as such; I do not wish to dispute, but I have read the law.—The Coroner: There is a letter from you advising the mother to call in another doctor when you saw the child was likely to die. You then advised her to call in a gentleman who has a recognised qualification and you advised Mrs. Bernard to call in Dr. Jones again as you would be unable to certify the cause of death. This places the public in a false position, and how is the public to be protected if individuals like yourself attend cases and then if the patients are near death step out of the way and advise the calling in of another doctor? Witness: I did it in order to save an inquest.—The Coroner: Well, you see, you have not accomplished your object for here is the inquest. What was the child, in your opinion, suffering from? Witness: Measles, complicated by bronchitis.—The Coroner: I do not for a moment dispute your ability, but you are placing yourself within the reach of the law. Witness: I have tried to inform myself on the question and have been told the law does not prohibit my practising.—The Coroner: But you want to get your fees, don't you? Witness: That is my look-out.—The Coroner: I suppose you don't tell everybody you are not qualified? Witness: If I am asked I should certainly say I was not qualified in England.—Mr. Robert Ambrose, 1, The Mount, Whitechapel, said the child was dying when he saw her from congestion of the lungs and measles. There were more children upstairs suffering from measles.—In summing up the case the coroner said he should feel it his duty to inform the proper authorities so that this gentleman might be prosecuted. He had no English qualification and sailed under false colours, thereby deceiving the public. The woman (Mrs. Bernard) had no knowledge that he was not qualified. He accepted the position and then he told the mother she had better call in another doctor. In his note to the coroner Dr. Wolpe stated that he advised the mother to call in another doctor because he could not certify the death himself. In returning a verdict of "Death from natural causes" the jury expressed a wish that the coroner would act in the manner which he had indicated.

AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE JAMES McGREGOR LAING.

To the Editors of THE LANCET.

SIRS,—We have received on behalf of this fund the following subscriptions which we desire thankfully to acknowledge:—

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We are, Sirs, yours faithfully,

J. PICKETT,
June 29th, 1898. REGINALD HARTLEY.

"THE TREATMENT OF SEA-SICKNESS."

To the Editors of THE LANCET.

SIRS,—I have ventured to forward the following remarks in the hope that they may be useful to "M.R.C.S., &c.," whose letter was published in THE LANCET of June 25th.

The treatment of sea-sickness—speaking from an experience of nearly five years in the North Atlantic passenger trade—does not usually give very satisfactory results. We have no means either by

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drugs or otherwise of controlling it, and something which one voyage materially palliates or "cures" the patient will often utterly fail him in his next trip. The nausea and subsequent vomiting of the first few hours are to a passenger prone to this malady almost inevitable but seldom require interference, though the retching may become distressingly violent and, if accompanied by streaks of hæmorrhage, especially alarming to the patient. I have found that the best way of relieving this condition is to apply a mustard leaf to the epigastrium, to give a hypodermic injection of morphia, some crushed ice to suck, and to insist on the recumbent position being maintained by the patient. A whiff of amyl nitrite or chloroform is often useful; alcohol is best avoided, though a little iced champagne may be sipped in very small quantities. The frequently present constipation must be relieved by an enema or suppository—preferably a glycerine "enule" (B. W. & Co.)—as purgatives by the mouth will usually be quickly rejected. Too much must not, however, be expected of this or any other line of treatment, but the urgency of the symptoms usually abates in from twelve to forty-eight hours, the patient gradually acquiring that stability of the nervous system nautically termed "getting his sea legs." The cases of prolonged nausea and sea-sickness in which the patient refuses or rejects all food are very trying both to the invalid and to the surgeon. If the cabin is a fairly large one as cabins go, is efficiently ventilated, and is not crowded I think these cases do better in their berths than on deck—I am speaking of the North Atlantic, in which trade the weather is generally cold—though meddlesome friends will urge them to go on deck, to "walk about," and to "fight against" the malady. This unequal combat generally ends in the victory of Father Neptune, and the vanquished one staggers or is carried below sick, blue with cold, and generally wretched. Hot bottles, blankets, a little stimulant—hot beef-tea—will quickly make the patient more comfortable. For general fluid nourishment I use Valentine's, Wyeth beef-juice, or Brand's essence, and these will frequently be retained, especially if the first two are mixed previously with a little powdered ice and administered in teaspoonful doses. If they are rejected they should be given again directly the fit of vomiting is over. As regards drugs I used with considerable success a prescription of chloroform, nux vomica, and compound tincture of lavender recommended by Mr. Barber of the P. & O. Service. An alkaline stomachic mixture with nux vomica is also useful after the acute symptoms have vanished; it assists a languid or capricious appetite. A dose of bromide of potassium and chloral or a hypodermic injection of morphia is beneficial at night, allaying restlessness and procuring sleep. In those cases which essay—with more or less success—the ordinary saloon fare anything in reason may be allowed them. One woman insisted that "sauerkraut" was the only thing which would relieve her, and it certainly on the trip in question seemed to stop the sickness, though it failed to do so on a subsequent one. Among adults there are some who without any vomiting or nausea suffer from persistent and severe headache and others who suffer from continuous intense giddiness (I am not speaking of the ordinary, generally temporary, vertigo associated with vomiting); the former may derive benefit from phenacetin and caffein, bromide and chloral, or from nitroglycerine. The discomfort of the latter is only alleviated by the maintenance of the horizontal position. In both the bowels must be attended to, and the appetite stimulated by a stomachic mixture. Children rarely suffer severely from sea-sickness, they are sick for a few hours and then are soon running about, though in one case, I remember, a neurotic girl some eleven or twelve years of age, after some four or five days of not very acute vomiting, suffered severely from tetany. A gentle laxative to combat the costiveness usually induced in them by a sea voyage and a little bromide and chloral at night will soon put them right, as a rule. My voyages have never lasted longer than ten days, so that in the case of longer trips one's experience might probably be greatly modified. I have never seen the numerous "quack" remedies do the slightest good, nor have I ever seen the at one time much vaunted "chlorobrom" retained where bromides of potassium and chloral where rejected by the stomach. In conclusion, I would say that a farewell dinner or other jollification the day before commencing a sea voyage is to a person subject to sea-sickness the very worst possible preparation for it. A blue pill followed by a Seidlitz powder is far better, though certainly not so festive.

I am, Sirs, yours faithfully,

HUGH TAYLOR, M.A., M.B. Cantab.

Southampton, June 27th, 1898.

AN IMPORTANT QUESTION.

To the Editors of THE LANCET.

SIRS,—I attended a woman in her confinement on June 1st. Delivery occurred before my arrival and I had only to remove the placenta, which was easily expelled. Puerperal fever set in *immediately* and the patient died on the 13th. Would you be so kind as to inform me when I could safely attend another confinement?

I am, Sirs, yours faithfully,

M R C.S.

*** There is no definite time after the lapse of which our correspondent can be perfectly safe, but he may attend another confinement so soon as he is "aseptic." There are three ways in which he might infect another case: (1) by his hands; (2) by his clothes; and (3) by his instruments. His hands are probably no longer septic from the case which died, but they should be thoroughly cleansed before every case by washing not only with soap and water but with antiseptic solutions, and by paying especial care to cleansing beneath the nails. For details of such ablution we refer our correspondent to all modern text-books of midwifery. Every midwifery case should be looked on as an operation in which the wound very easily becomes affected with sepsis. The clothes in which the patient was attended should be thrown away or, if that be undesirable, they should be disinfected thoroughly by heat. The cuffs of the sleeves very easily get septic. It would certainly be well never to wear the coat again. The instruments are very important; all those of metal, such as scissors used for cutting the cord and forceps, should be well boiled. Catheters should be burnt and the whole midwifery bag, including the bottles, should be rendered aseptic. The lining of the bag especially and the handle are very liable to transmit sepsis and it is well to have a new lining. These directions may appear extravagant and absurd, but it is useless to trust to the mere lapse of time. Puerperal fever is always caused by the transference of micro-organisms and it is possible with care for the accoucheur to be quite sure that his hands and all the instruments he uses are quite free from germs. This care is well repaid, not merely by absence of the grosser forms of sepsis, such as puerperal fever, but by the non-occurrence of slighter septic affections such as pelvic cellulitis and "white leg."—ED. L.

PREJUDICE.

MR. H. K. HUNTER, L.S.A., who was recently fined £5 at the instance of the General Medical Council for using the title of physician, has soon found out that the Council's much criticised action has been of serious import to him. He had occasion recently to sue a man in the county-court and was then told by the county-court judge that the fact that he had been fined in this manner (the circumstances were commented upon in THE LANCET of April 16th) would "make a great difference" to his case. We quote from the *Cambridge Express*. This was certainly frank of the judge, but was it just?

M.A. Cant., M.B.—1. There are many Anglo-Chinese and Franco-Chinese dictionaries, grammars, and manuals of conversation, but some are very expensive and others are unreliable. Our correspondent might try "The Grammar of Colloquial Chinese" (second edition, corrected), by J. Edkins; "Chinese without a Teacher," by H. Giles; and "Select Phrases in Canton Dialect," by W. Lobscheid. Concerning the prices and publishers of these books he must consult a bookseller. Possibly he can get access to a library where he could see Morrison's valuable dictionary. 2. Dr. David Walsh's "Medical Work on the X Rays," the French x ray journal published by Messrs. Baillière, Tindall, and Cox, and a bibliography of x ray work by Mr. C. E. Phillips might also be consulted.

Mr. Percy Gosney.—Our correspondent will allow that what the natives said does not amount to good evidence. It is possible that they have discovered as much as Professor Schenck has discovered, but their inability to divulge the secret makes their position a very weak one.

Subscriber is referred to the Rules in Lunacy for 1892 and 1893 for the reply to his question. We cannot give a general answer. The Masters in Lunacy would be the ultimate judges of any difference of opinion between the Commissioners and a committee.

M.B. (Lond.) does not state in his letter the sum which could be paid for the patient each week. He should also in any further communication give an address to which answers might be sent.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Manchester Guardian, Birmingham Gazette, Hereford Times, Beverley Guardian, Suffolk Chronicle, Herald of Wales, Builder, Scotsman, Citizen, Dundee Advertiser, Bath Chronicle, Worcester Echo, Eastern Morning News, Times of India, Pioneer Mail, Western Morning News, Salisbury Journal, Bournemouth Observer, Architect, Peeblesshire Observer, Liverpool Daily Post, Carnarvon Herald, Eastbourne Chronicle, Buxton Advertiser, High Peak News, Leeds Mercury, Brighton Argus, Leicester Post, Sheffield Daily Telegraph, Sussex Daily News, Newark Advertiser, Cheshire Observer, Halifax Guardian, Barnsley Independent, Luton Reporter, Newcastle Weekly Chronicle, Kentish Observer, Glasgow Herald, Yorkshire Post, Bristol Mercury, Brighton Gazette, Sanitary Record, Reading Mercury, City Press, Cambrian News, Local Government Chronicle, Mining Journal, Carlisle Patriot, Carlisle Journal, Surrey Advertiser, Local Government Journal, Hertfordshire Mercury, Shrewsbury Chronicle, Dunstable Borough Gazette, Poole Herald, Birmingham Daily Post, Langton Weekly Herald, Public Health, West Middlesex Herald, Woolwich Gazette, Spalding Guardian, Peterborough Express, &c., &c.*

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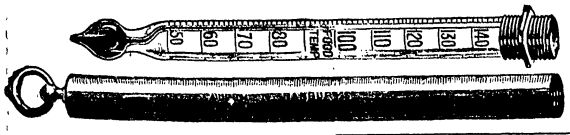
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See also pages 30. 31. 32. and 33.

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"CHARLES A. CAMERON,

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A Clinical Lecture
ON
FRACTURE OF THE NECK OF THE FEMUR IN CHILDHOOD.

Delivered at the Melbourne Hospital for Sick Children

BY R. HAMILTON RUSSELL, F.R.C.S. ENG.,
SURGEON TO THE HOSPITAL.

GENTLEMEN,—I have two cases of injury to the hip in young children to bring before you; the contrasting of the two is important. The first is a little girl, aged four years, brought to me in the out-patient room a few days ago with the following history. She was perfectly well until a month ago, when she fell from a gate on to the pavement and hurt the right hip. Since then the child has been limping and the limping and pain are becoming worse. The pain is much worse at night. Let me here remark that this history may or may not be of importance, it may or may not be trustworthy, for the poor, hard-worked mother can hardly be expected to be an accurate clinical observer and the insidious signs of early hip disease may easily have been overlooked by her before the accident. If this were so the blow on the hip, even though a trivial one, might easily light up the smouldering mischief and thus impart to the mother's mind a false notion as to the severity of the injury and as to the relationship between the injury and the present condition of lameness and suffering. The weight which the history will have with us then will depend largely upon the result of the physical examination which we proceed to make now. Stripped of all clothing it is seen that the child stands with the right thigh slightly flexed upon the pelvis, the knee bent, the heel raised from the ground so that the limb is resting on the forepart of the sole; there is also distinct eversion of the limb. On laying the child on her back the position of slight flexion, abduction, and eversion is maintained, while on inspecting the buttocks we find on the affected side partial obliteration and marked dropping of the gluteal fold; any attempt at free passive movement of the joint in any direction is vigorously resisted. Thus we have presented to us a clinical picture with which we are very familiar indeed, but the most important investigations have yet to come. In a paper published last year on the Early Diagnosis of Hip-joint Disease[1] I dwelt upon the enormous difficulties which may encompass the diagnosis of hip disease in its earliest stages, pointing out that this is due to the seemingly capricious way in which what are called the cardinal signs and symptoms may be conspicuously absent. Thus a child may be presented with a limp and with no pain; or, on the other hand, he may come with complaints of pain and without any limp. In either case there may be a complete absence of any alteration of the gluteal fold or limitation of movement of the joint or local tenderness. Thus it is not surprising that the error of overlooking hip disease in a very early stage is one of extreme frequency; in fact, it appears to me to be in certain cases practically unavoidable. I stated in the paper alluded to that so far as my own personal experience had served me there was only one sign which I had never found to be grievously misleading on occasions, but that I was quite prepared to find that it also would some day prove treacherous. The sign I refer to is general muscular wasting of the suspected limb or, rather, I should perhaps say, the absence of such wasting—for I must not be misunderstood as saying that wasting is a proof of hip disease or any other tuberculous lesion. Such a statement would be obviously absurd, for wasting may occur in various other conditions, some of which—notably certain examples of infantile paralysis—are very prone to be confused with hip disease. The presence of wasting in a suspected case can never be more than confirmatory of other evidences of hip disease, but its absence is a feature of supreme significance in guiding us towards a correct diagnosis. Thus I should say in respect of such a case if wasting is present the case may or may not be hip disease; if wasting is altogether absent, however, I believe we might safely conclude that the case is not hip disease. I repeat that it is the absence, not the presence, of wasting which is of such high diagnostic value. The method we adopt for estimating the wasting is repeated circumferential measurement of the limb at various corresponding levels with a tape measure. Certain obvious precautions must, of course, be taken, the limbs must be placed in exactly similar positions, the levels at which the measurements are taken must be accurately corresponding and the same individual must make the measurements in both limbs. In addition to the thigh, measurement of the calf is most important and usually affords the most satisfactory evidence of all. A veil of mystery still hides from us the true explanation of the wasting so universally associated with tuberculous disease; of one thing only may we be quite certain, which is that such wasting is a thing quite distinct from wasting due to disuse. I could desire no better illustration of the truth of this statement than is afforded by a comparison of our two cases.

CASE 1.—Measurement in this case disclosed distinct general wasting of the injured limb, but no alteration in length; it was regarded as a case of hip-disease and was treated as such.

CASE 2.—The patient is a little girl, aged three years, who is under the care of my colleague, Dr. Jeffreys Wood. She comes with a very similar history to that which we have just heard. About six weeks ago she had a fall on the hip and has been quite lame ever since—in fact, she refuses to make any attempt to walk. Many of her symptoms are similar to those of the first child. Thus she resents any movement of the right hip; she lies with it more or less flexed and always everted and there is marked dropping and diminution of the gluteal fold. She, however, has no marked pain at night, while the tendency to flexion does not seem to be insurmountable as in the first case, but the leg can be quite straightened although the eversion persists. The tape-measure, however, affords striking information, for we find on measuring the calves that there is no wasting of the affected leg whatsoever, while in the case of the thighs there is a slight disparity, but it is actually in favour of the injured limb.[2] On measuring now the length of the two limbs from the anterior superior spine to the inner malleolus we find that the affected limb is shortened by half an inch, and a further scrutiny easily makes it clear that the shortening is in the neck of the bone and that the trochanter is raised half an inch above Nélaton's line. Now it is quite true that this sign is commonly produced in hip disease by a process of absorption, but it is obvious that we may exclude any such consideration here. Both the shortness of the time and the absence of wasting forbids any such supposition; in fact, the shortening, together with the absence of wasting, are, in conjunction, quite irreconcilable with the theory of hip disease. There can be no doubt that the case is one of fracture of the neck of the femur.

Fracture of the neck of the femur in young children is an injury which has been grievously overlooked in the past; hence we must acknowledge our indebtedness for a most valuable paper recently published by Dr. Royal Whitman of New York. From this we gather that this accident is by no means of such rarity as I should have expected to learn, but that, on the contrary, it is an injury which occurs with sufficient frequency, for Dr. Whitman has himself seen no less than 10 cases in the course of 5 years. From a study of our two cases you will be easily able to conceive that in the absence of especial care in the use of the tape-measure such a fracture may very readily find its way into the category of cases of hip disease, and I have no doubt that this has been the usual fate of such injuries in young children. The mistake in diagnosis having once been made the further course of the case is easy to imagine; the child is put into a Thomas's splint, which no doubt will afford considerable relief, and after a few months of this treatment the limb will be found to have largely regained its utility and the surgeon will cherish the belief that the disease has become cured under his treatment. It is true that there will be some shortening and adduction of

[1] Inter-colonial Medical Journal of Australasia, September, 1897.

[2] The explanation of this is very simple. The attachments of the muscles passing from the pelvis to the limb are approximated by the shortening. It is obvious that, given an equal bulk of the thigh muscles in the two limbs when one set of thigh muscles is shortened, such diminution in length must be attended by corresponding increase in circumference.

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the limb, but on the whole there is ample ground for satisfaction at having got rid of the disease in so short a time and without abscess formation. We could regard an error of diagnosis with tolerance if the worst evil resulting from it could be shown to be merely an erroneous belief that we had treated a case of hip disease with great skill and success, but unfortunately this is by no means the case. If we refer to the account of the 10 cases narrated by Dr. Whitman we make the striking discovery that although the result may seem to be fairly good after only a few months have elapsed since the injury, yet the shortening steadily increases as the years pass by and goes on increasing. The explanation given by Dr. Whitman of the causes of this progressive shortening do not appear to me to be quite sufficient; he attributes it to the depression from yielding, due to too early use of the limb during the process of repair and to the later sinking of the neck due to the strain to which it is exposed by the deformity. That which, however, appears to me to be by far the most potent factor in the production of the increased shortening is the altered position of the upper fragment containing the growing epiphysis and the consequent elongation of this upper fragment in a faulty direction. When fracture of the femoral neck occurs, with the consequent drawing up of the trochanter, there is brought about a rotation of the head fragment upon an antero-posterior axis, so that the growing fragment, instead of inclining obliquely downwards, has its direction altered to one more directly outwards. The effect of this will be at once understood by a reference to Fig. 1 and Fig. 2. Fig. 1 depicts the neck obliquely and normally placed; in Fig. 2 the obliquity is represented for the sake of

FIG. 1.

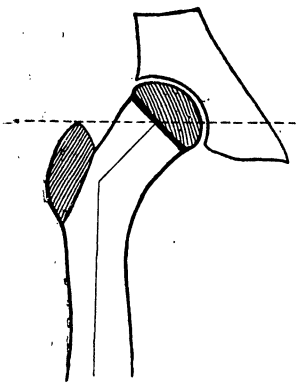
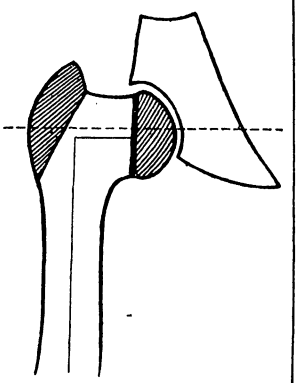


FIG. 2.



simplicity as completely abolished, so that the direction of the neck is horizontal. Now it is clearly by virtue of the obliquity of the neck that the upper epiphysis contributes to the production of the length of the limb throughout the whole period of growth; it is therefore equally evident that when the obliquity of the neck is abolished, as in Fig. 2, the contribution of the head epiphysis to the length of the limb ceases. The same considerations hold good for change in the direction of the neck of any degree intermediate between the normal direction and the complete effacement of obliquity portrayed in Fig. 2, and the impairment of the function of the head-epiphysis as a length-producing agent will be in exact proportion to the deflection upwards of the neck as a result of the injury. It is needless to say that while growth progresses normally in the other limb the injured member will lag behind its fellow, so that the shortening will be increasing and progressive throughout the entire period of growth. Looking again at Fig. 2 I would observe that although the production of length by the growth of the head-epiphysis is abolished once and for all by the deformity resulting from the fracture the epiphysis does not thereby become inactive; its growth proceeds, but the growth which should have been productive of increased length is now converted into an agency for the production of a wholly-evil increase in breadth. Now this increase in breadth through the lengthening of the misplaced neck serves only to increasingly accentuate the alteration of the angle formed by the neck with the shaft of the bone; and the rendering of this angle more acute means a commensurate degree of adduction of the limb, and adduction of the limb further implies a proportionate degree of apparent shortening, together with a slight though practically inconsiderable amount of real shortening. Thus we are confronted with two distinct and separate agencies at work to bring about progressive and increasing disability throughout the whole period of growth. First, the absolute loss of length owing to the abolition or diminution of length-production by the growth of the head epiphysis; and secondly, the added apparent shortening due to increasing adduction of the limb caused by lengthening of the neck in a horizontal direction; and this heaping of Pelion upon Ossa must inevitably make for disastrous lameness. It is hardly necessary for me to point out the enormous difference thus disclosed between fracture of the neck of the femur in a growing child and a similar injury in the adult. The latter is threatened by none of the progressive evils I have been depicting; and if the fracture happens to be an impacted one we gladly accept the result as it is with the slight amount of deformity present, for that deformity will be the end of it. In the case of a child, however, the importance of recognising the injury and treating it correctly is supreme. The first step towards recognising the nature of the injury is to be alert to the possibility of its presence in every case of even moderately severe injury to the hip in a child. A careful, even fastidious, use of the tape-measure can then hardly fail to lead us to a correct diagnosis.

The treatment is obvious; the indication is to open out the angle formed by the neck with the shaft. By doing this the obliquity of the neck will be restored and in proportion as this is effectively accomplished will the subsequent ills be diminished or annulled. The trochanter must be firmly fixed with one hand while the other abducts the thigh and an efficient retentive apparatus should fix the limb in this position. It is open to question whether the best time for doing this will be immediately after the accident. Personally, I should prefer to allow a period of three weeks to elapse for soft union to become established between the fragments in their faulty position, for I conceive that if undertaken in the first instance it might result in failure to draw the neck downwards, producing instead a most undesirable separation of the fractured surfaces and possibly non-union. Again, in an older case, where union is firm and the progressive shortening in full swing, it would appear that the evil could be largely remedied at any period, either by osteotomy of the femoral neck or of the shaft immediately below the trochanter, abduction of the limb being the object aimed at in either case. Of this, however, I am unable to speak with the confidence born of experience and it is of trivial moment compared with my primary object, which is to point out the importance of accurate diagnosis, the dreadful chain of ills which wait upon its default, and the principles which must guide us in our efforts to combat them.

THE MEATH HOME OF COMFORT.—This admirable institution provides for the care of epileptic women and girls. It has been in existence some five years and has already done good service. The report of the medical officer, Mr. P. Dundas Minchin, speaks most favourably of the improvement seen in the patients after their stay at the home. But of course all this work costs money and the committee is sorely hampered for want of funds. Although the home is situated in the country, near Godalming, yet there is great need in addition of a small house at the seaside. This would materially improve the health of the patients by means of enabling the committee to send them there for change of air and would also be a great boon to the nurses, whose work is necessarily trying, as a rest house. The hon. secretary is Mrs. L. H. Burrows, the Vicarage, Godalming.

THE PLAGUE IN INDIA.—We are extremely glad to learn from the Anglo-Indian papers received by the last mail that the plague has been rapidly declining of late at Bombay—where on June 24th for the first time since last year there had not been a single death from this disease reported in the city—Karachi and the Punjab districts. There were still a few cases returned at Calcutta. It still remains to be seen, however, whether this decline is to be attributed to the effect of seasonal changes alone or whether there will be any recrudescence of the epidemic on the approach of the cool weather.

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SOUTH AFRICAN DRUGS IN THE TREATMENT OF DYSENTERY AND ULCERATION OF THE STOMACH AND INTESTINES.

BY JOHN MABERLY, M.R.C.S. ENG., L.R.C.P. LOND.

IN THE LANCET of Feb. 6th and 13th, 1897, I published an article entitled "Dysentery and its Treatment, with an Account of Six Years' Experience in the Transvaal and Matabeleland in the Use of Monsonia as the Curative Agent.' In that article I gave records of 100 cases of acute and chronic dysentery treated with Monsonia ovata and Monsonia Burkei resulting in only one death, and a good deal of interest was aroused, especially among Indian medical men, concerning the results obtained. As stated in the above-mentioned article, I was unfortunate in having all my supplies of the plants destroyed during the Matabele rising of 1896 and till now I have been unable to obtain a fresh supply of them. I have, however, at last succeeded, through the kind assistance of Professor MacOwan, the Cape Government Botanist, in obtaining a considerable quantity of the plants in question, so I now hope that the drugs will get a fair trial by my fellow practitioners, and that their value or otherwise will be thoroughly tested by competent observers in other parts of the world.

Since returning to Africa in June last year I have gained a good deal of information, largely through the help of the friend above named, regarding the history and botany of the order to which the plants belong, and I propose in this paper to give a short sketch of what is known up to the present regarding the plants and the uses to which they have been put in the past, as well as the records of one or two fresh cases which have come under my notice and which help to throw some additional light on their action. The natural order Geraniaceæ is very largely represented in South Africa, many species and even genera being peculiar to this country and quite unknown in any other part of the world. The whole genus Monsonia, to which the plants I have chiefly used belong, comes under this head, as also do a great many Pelargonia, including the sub-genera Hoarea, Seymouria, and Polyactium, possessing tuberous or fleshy roots. It is to various species of these plants that we find that peculiar medicinal properties have been ascribed and they seem to have been matters of common knowledge, judging by the records to be found among the writings of the earlier explorers of the country. In the well-known work entitled "Travels in Europe, Africa, and Asia between the years 1770 and 1779," the author, Charles Peter Thunberg, M.D., afterwards Professor of Botany in the University of Upsal, makes the following note respecting his visit to Cape Town in 1773: "Many gerania with their red and pulpous roots grow in the sandy plains near the town, and as these roots are of an astringent nature the country people used them in the diarrhœa and dysentery." The plants here referred to as gerania are some varieties of tuberous-rooted Pelargonia, probably Pelargonium triste, which grows about Table Mountain. The next written records traceable are to be found among the MS. notes of Dr. Mackrill, a medical man of repute at the Cape early in the present century. He had been deputed by Lord Charles Somerset in or about 1814 to travel through the then thinly-peopled district bounded by the Sneeuwberg and the still less known country adjacent to the Great Fish River for the purpose of selecting a site for a Government tobacco farm. During his travels he assiduously registered in his diary everything which came under his notice respecting native or Boer remedies. Among others he notes the use of Monsonia in the treatment of some forms of dysentery. In 1850 Ludw. Pappe, M.D., Colonial Botanist and Professor of Botany in the South African College, published a small work entitled: "Floræ Capensis Medicæ Prodromus, or an Enumeration of South African Plants used as Remedies." In his preface, after expressing regret at the total want of coöperation on the part of the country practitioners in making themselves acquainted with the various domestic remedies commonly used, he says: "There can, indeed, be no doubt amongst reasonable men that, judging from the vast extent of the South African territory and from the richness of its almost inexhaustible flora, many highly useful officinal drugs will still be discovered. However, the greater part of our information on this point we owe not so much to scientific research as to the experience of the colonial farmer residing in the more remote parts of the interior, to occasional travellers, or to the wandering native." In his work we find the following concerning Monsonia: "The Keita of the Hottentots.—The root and herb of this plant are very astringent and used with great success in dysentery." Regarding the Pelargonium triste there are the following remarks: "The scarlet-coloured root of this Pelargonium is somewhat astringent. If dried and pulverised it is useful in diarrhœa and certain forms of dysentery when purgatives have been previously given." Again, under the heading Pelargonium antidysentericum he writes: "This plant, which is indigenous in Namaqualand, has tuberous roots which often attain the size of a man's head, and are called *t'Namie* by the aborigines, who boil them with milk and make use of them in dysentery." He mentions various other Pelargonia as medicinal. Since Pappe's time, Mr. Andrew Smith, M.A., formerly of Lovedale Mission, where he was exceptionally well placed for obtaining the traditional medical lore of the Kafirs and Fingoes, published a work entitled, "A Contribution to the South African Materia Medica," which has run through three editions, the last is dated 1895 and contains a good deal of information gathered from various sources concerning medicinal plants in Africa. He mentions the Monsonia ovata and Monsonia biflora as being well known for their curative properties in dysentery. From these various statements we gather that the medicinal properties of various plants belonging to the order Geraniaceæ have been known to the inhabitants of South Africa for more than a century at least, and it would appear very extraordinary that plants which have been persistently employed for such a length of time should not contain some of the properties which have been ascribed to them. Among the laity diarrhœa and dysentery are terms which have been employed indiscriminately to denote two distinct classes, which, however, they look upon as the same in many instances. My own experience leads me to believe that the plants in question are quite useless in diarrhœa, at any rate in the form of spirit extracts, and are only useful in cases of dysentery or in some other forms of ulceration of the intestines and stomach.

When in England last year I had some specimens belonging to a tuberous rooted species of Pelargonium sent to me in mistake for my old plants the Monsonia ovata, and although at that time I knew nothing of the uses to which these plants had been put, except that I heard through a lay friend that they were very useful in dysentery, I made a tincture in the usual British Pharmacopœia manner from the dried pounded roots. Among other cases in which I used this tincture are the following: one of chronic dysentery and the other of gastric ulcer. For the records of the first case I am indebted to Surgeon-Lieutenant A. W. F. Russell, Indian Medical Service, who was himself also the patient.

CASE 1.—The patient went to India in October, 1894. In February, 1895, he had a slight attack of dysentery at Ferozepore in the Punjab, from which he soon recovered. In June he had a second attack during which he passed several sloughs and it resulted in his being invalided home in October, 1895. He returned to India apparently cured in September, 1896, but in October he had a third attack of dysentery which lasted about eight days, and on Feb. 14th, 1897, he had a fourth severe acute relapse of the disease, the history of which I will give in his own words: "This attack was caused by eating stale and indigestible food for some days and also precipitated by a slight chill. First felt pain in abdomen, then slight diarrhœa. This was on Feb. 14th, 1887. Feb. 15th: Worse during the night, a distinct rigor. Temperature 99·4° F. Feb. 16th: Thirty to forty motions, bright green matter mixed with a considerable quantity of blood. Feb. 17th: Condition worse, stools more frequent, consisting of mucus and blood. Feb. 18th: Worse. Forty to fifty stools *per diem*. All this time taking ipecacuanha and tinctura opii. Feb. 19th: Passed some large sloughs of mucous membrane. Feb. 20th to 22nd: Motions almost continuous, much straining, some sloughs. Feb. 23rd: Seen by a medical board and ordered to proceed to England at once. Started that night for Karachi, carried in dooly to railway station. Improvement at once on being moved, better in train, worse again on arriving at Karachi.

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Remained at Karachi till March 4th; started for Bombay, arriving there on the 6th and leaving the same day for London by the P. & O. s.s. *Caledonia*. During the voyage was only once able to come up on deck, motions varying between five and eight per diem, mostly mucus and blood. Arrived in London March 25th. March 26th: Motions seven in number, more blood and mucus. Received a bottle of Dr. Maberly's tincture (supposed to be made from the root of one of the Pelargonia); took three two-drachm doses per diem for three days, then noticed that blood had entirely disappeared from the motions, which, however, remained frequent—five per diem. In two more days mucus disappeared from the stools, which had been somewhat like frog-spawn mixed with fæces. Stools remained too frequent. Then took 1 gr. of opium in the morning. This reduced the stools to one or two *per diem* and gave formed motions with no pain. May 5th, 1897: Have not taken the medicine for a fortnight and the stools remain healthy—one *per diem*—no mucus or blood, but there is a tendency to diarrhœa, especially on cold days. This is easily checked, however, and I have almost recovered my former strength and feel fit for work. I am convinced that the tincture kindly supplied by Dr. Maberly exerted a decided influence in healing the ulcers, which must have existed in numbers in the large intestine."

CASE 2.—This case was one of ulceration of the stomach of some months' standing. The following is the history:—Capetown, Dec. 6th, 1897. The patient was a man, aged thirty-two years, fairly well nourished but weak and sallow-looking. His pulse was 82, feeble and small, and he had suffered for the last twelve months from cramps and pain in the epigastrium at irregular intervals, sometimes daily and continuous, at other times coming on about an hour or more after meals, especially worse after eating meat. The pain sometimes became excruciating and appeared to pass round to the back and was then usually followed by vomiting. The vomited matter was generally partially digested food mixed with a dark-coloured fluid and contained a sediment which the patient said was well described as similar in appearance to coffee-grounds. The bowels were irregular. The motions consisted generally of a small quantity of loose fæcal matter mixed with slime, and passed three or four times a day. They were never what the patient called satisfactory. He was usually seized with an irresistible impulse to stool three or four times a day. His appetite was poor. The patient stated that the first attack occurred in November, 1896, when in Bechuanaland, with pain in the stomach, which gradually became worse and lasted continuously for about five days. The bowels were confined and he vomited bilious matter during this time. On palpating the abdomen a localised tender spot was discovered in the left side of the epigastric region, the stomach was not dilated and otherwise the abdomen and chest were normal. Half an ounce of tincture of pelargonium was given at once and powders of 10 gr. each of the powdered root were administered three times a day for the next three days. The patient was seen again on Dec. 9th and he then stated that he had felt quite well since the first dose of tincture except for an hour or so on the 8th, when he felt some dull pain on the right side of the abdomen. On examination the tender spot in the epigastric region had disappeared; the large intestine appeared to be loaded with fæces, however. 4 gr. of calomel to be followed by 1 oz. of compound mixture of senna were ordered. On Dec. 10th the patient passed a very large motion after taking the draught and said he felt better than he had done for months previously. He was given one more dose of 2 dr. of tincture of pelargonium and had no further medicine. He has been in excellent health for more than four months and is apparently completely cured.

Regarding this case I own I was rather sceptical about the patient's statements as to the results of the drug and was inclined to doubt whether he had not been suffering from a delusion, but I found on inquiries from his employers and the medical man who had treated him previously that he was a trustworthy, hard-working man and that what he told me was evidently quite correct. I have, therefore, risked publishing, although up to the present I have not had any corroborating cases and I hope that it may induce some other members of the profession to give the drug a trial in some typical cases of gastric ulcer and to either communicate their results to THE LANCET or else to myself, so that we may be able to come to a definite opinion on the subject.

It is a great pity that I have not been able up to the present to name the exact species of Pelargonium to which these roots belong, but I do not anticipate any special difficulty in doing so in case the value of the drug is established. It is very similar to the Pelargonium reniforme but, according to Professor MacOwan, is not that plant. Only those who, like myself, have taken an interest in ferreting out the plants used as medicine by some of the colonists, know how tiresome it is to get them to send a flowering specimen of the plants used. Their great idea appears to be to keep the knowledge of any valuable remedy to themselves in the hope of obtaining a large recompense for divulging what they think is a secret. I have specimens of the leaves and a large quantity of the roots, and as they are very distinctive there will be no difficulty in tracing them other than the time and expense of a journey to the districts in which they grow. There are several varieties of similar plants, of one of which—the Pelargorium triste—I have collected a considerable quantity. This one contains a body apparently exactly similar chemically to that of the Pelargonium in question, and probably its action would be similar physiologically, but at present I have not had an opportunity of putting it to the test, although it has been used in the treatment of "diarrhœa and dysentery" successfully according to lay records. I have tried the tincture made from the Pelargonium in another case of chronic tropical dysentery in the Somerset Hospital, Capetown, under the charge of Dr. Elliott, but the result was doubtful although the drug was combined with opium. The patient, however, appeared to improve whilst taking the drug, but I only had a small quantity of it at the time and the treatment was not continued long. However, I think it is pretty certain that these tuberous-rooted Pelargonia will not be found so effectual in the treatment of dysentery as the Monsoniæ, although, judging by Case 1 given above, they also have the same action on ulceration. But for some reason they do not appear to me so certain in their action. They will, however, be very valuable if it is found that they have a specific action on ulceration of the stomach. For diarrhœa they have proved themselves in my hands quite useless. In this respect they are similar to the Monsoniæ. With regard to the latter drug I may state that I gave it lately in large doses (½ oz.) in a case of acute diarrhœa with mucus and blood in the stools which, however, was not, I think, pure dysentery, the peculiar tenesmus of that disease being wanting. The drug had no effect whatever. This form of enteritis is not uncommon here; it yields at once to a powder of the compound powder of jalap, the compound powder of ipecacuanha, and phenacetin, and has no tendency to recur. It is probably not due to the same poison as tropical dysentery.

These facts tend to show what I believe will eventually be proved—namely, that the real value of the tuberous-rooted Pelargonia as well as that of Monsonia ovata and Monsonia Burkei lies in their action on ulceration of the stomach and intestines, including that due to acute and chronic dysentery. If this is so we shall probably find that they also have an effect on the typhoid ulcer. This, I believe, is the case any time after about the eighteenth day of the disease. I have given the tinctura monsoniæ in three cases of this disease; twice towards the end of the third week and once in a very bad relapse in the fifth week, with blood in the stools. The first two cases were well by the twenty-first day. In the third case the patient slowly recovered; the hæmorrhage and diarrhœa ceased very soon after the second and last dose of 2 dr. The drug in the first cases appeared to induce constipation, which was, however, easily overcome by a large dose of olive oil. Dr. Foxwell of Birmingham used the tinctura pelargonii in a case of chronic diarrhœa with granular kidneys without any very distinct benefit and also without any ill-effects, which is perhaps worth recording as showing that the drug has no poisonous effect on diseased kidneys, the patient being, as he states, peculiarly susceptible to drugs. In fact, judging by the excessive doses given by the colonists, usually about a wineglassful of strong tincture made with brandy, it is almost certain that the plants contain no poisonous qualities even in quantity.

With the kind assistance of Mr. A. M. Cheyne, analytical chemist to Messrs. Burgoyne, Burbidges, and Co., an attempt was made to discover the active principle of the root of the Pelargonium used in the two cases recorded in this article. The quantity at our disposal was too small for a thorough analysis. We were, however, able to satisfy ourselves that

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there was at any rate, no alkaloid present. The chief body found was a reddish amorphous powder, representing about 6 per cent. of the whole dried roots, this was soluble in rectified spirit and it gave the reactions typical of the class of vegetable bodies named tannins, being allied to that which occurs in cinchona, catechu, salix, &c. It is probable that the action of the drug depends on this substance. There was besides this another body somewhat similar, soluble in hot water, which was not precipitated by gelatin but otherwise gave reactions characteristic of the tannin group. A third body, soluble in ether and in rectified spirit at a temperature of 90° F. but insoluble or only slightly so in cold spirit, apparently a fatty acid, was also separated.

It has been my endeavour in writing these articles to place as much as possible any special knowledge gained at the disposal of my fellow practitioners, in the hope that some among them will be able to carry on the work of further proving or disproving the value of the drugs, which in my own hands have certainly yielded remarkable results. It is almost impossible for a private practitioner to complete single-handed the work necessary to prove absolutely the value or otherwise of a new series of drugs. He has to wait for opportunities for the trial of remedies in suitable cases; the mere necessities of existence compel him to be more or less a fixture wherever his lot may place him, few having the means at their disposal to shift quarters as required to parts where this disease or that is prevalent in order to test the value of some reputed remedy. On this account, therefore, I do not apologise for placing before my fellow practitioners what I am conscious is an incomplete investigation. There are several drugs in South Africa which are well worth the trouble of investigating—some, indeed, which, like the plants referred to here, promise to fill gaps at present existing in the Pharmacopœia. But the work of tracing the plants themselves and then proving their qualities is too prodigal of time and means to be undertaken by private practitioners, and unless some organised effort is made to rescue them from the oblivion in which they are at present sunk and to put them to the test of scientific experiment their virtues will remain unknown to the great bulk of the suffering humanity for whose benefit they were intended. In order that the medical profession may be able to obtain reliable preparations of the plants I have sent a good quantity of Monsonia ovata and Monsonia Burkei (or biflora) as well as some of the Pelargonium of uncertain species, also the Pelargonium triste to Messrs. Burgoyne, Burbidges, and Co., of 16, Coleman-street, London, E.C., who will make tinctures of the various sorts. I have been induced to do this in the first place because I know myself how extremely difficult it is to get reliable plants collected; and, secondly, by the fact that a certain firm in Port Elizabeth took the liberty about June last year of using extracts of my last article in THE LANCET without my knowledge as a means of advertising a certain preparation which they sold as "Tinctura monsoniæ." Seeing that the said papers could not have come to their knowledge till about the end of March and that in ordinary seasons the Monsonia ovata and Monsonia Burkei are at that time of the year either dead or in a withering condition it appears probable that the said preparation could not possibly have contained any active properties even if made from the species mentioned. There are several other species of Monsoniæ without any medicinal properties. Any experiments with the drug carried on under such circumstances would be most disappointing and very damaging to the reputation of a new drug and, perhaps, to that of the unfortunate medical man who had interested himself in bringing it before the profession. As a scientific worker I am quite prepared to find that other medical men may not have the same success as I have myself obtained with the plants in question; the only stipulation I would make is that their experiments shall be with preparations which I feel sure are what they claim to be. In this way only shall we be able to come to any definite conclusion.

For the benefit of those who may feel inclined to give the drugs a trial I may state that my experience leads me to believe (1) that they contain no poisonous properties; (2) that the Pelargonia are more suitable for ulceration of the stomach and upper portion of the intestinal tract and the Monsoniæ for that of the lower portion; and (3) that doses of two drachms are about the minimum for adults except perhaps in the case of typhoid fever, in which disease drachm doses of tinctura monsoniæ after or about the eighteenth day of the disease are sufficient, two or three such doses being all that is necessary, combined with or followed by some laxative, such as an ounce or so of olive oil. As to the Pelargonia in this disease I have had no experience.

In conclusion, I may add that in placing these observations before the medical profession I do so with a certain amount of diffidence and shall await their verdict on the drugs in question not without some anxiety, as no one is more conscious than myself of the uncertain action of drugs in the experience of different men in different parts of the world, and we all know how drugs in which some men have asserted their implicit faith have in the hands of others proved more or less disappointing. It is, however, only after a somewhat extended experience that I have formed any opinion on the plants in question, and I can only hope that they will prove themselves worthy of the faith I have placed in them in thus introducing them to my fellow practitioners.

Capetown.

HÆMATURIA AS A SYMPTOM: METHODS EMPLOYED IN MAKING A DIFFERENTIAL DIAGNOSIS;

WITH 19 CASES ILLUSTRATING POINTS OF INTEREST IN THE DIAGNOSIS OF RENAL AFFECTIONS CHARACTERISED BY THE PRESENCE OF BLOOD IN THE URINE.

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(Concluded from p. 80.)

2.—Passive Hyperæmia.

(*a*) *Pressure on the renal veins.*—There are many lesions which may lead, by pressure upon the renal veins, to a passive hyperæmia, which reveals itself during life by the presence of albumin or of blood in the urine. I have seen instances where large abdominal tumours or aneurysms have caused obstruction to the exit of blood from the kidneys and so produced a hæmaturia. Sometimes a similar condition is brought about by pressure of a greatly-enlarged liver, by syphilitic new formations, or by malignant tumours in the neighbourhood of the spine. Such conditions require only to be mentioned here, as they seldom come under the treatment of the surgeon.

(*b*) *Torsion of the renal veins.*—I brought before the Clinical Society of London[1] two cases of moveable kidney in which hæmaturia was a prominent symptom as a consequence of interference with the venous flow from torsion of the renal veins. When the kidney was displaced in certain positions blood appeared in the urine and when the displacement was rectified by operation the symptoms disappeared and the hæmaturia ceased.

CASE 11. *Moveable kidney caused by a fall; symptoms—severe paroxysmal renal pain, sickness, and vomiting; history of hæmaturia, &c., simulating renal calculus; hæmaturia from hyperæmia; torsion of the renal vein.*—In this case the displacement of the kidney was caused by direct violence. Coincident with the accident the patient suffered pain in the renal region and at the same time he noticed a quantity of blood in the urine. The hæmaturia continued for several days and then gradually disappeared. Following the accident the pain in the lumbar region was so severe that he had to avoid work for over three weeks and after that time he required to be very careful not to over-exert himself, otherwise both the pain and the hæmaturia returned. This condition continued during four years. When he was at rest he had little or no discomfort, but severe suffering was readily brought on by any sudden movement of the body. Complete rest afforded marked relief to his suffering and if he avoided exercise of any kind the pain and hæmaturia seldom troubled him. The urine when free from blood was strictly normal, but when the hæmaturia came on the blood was intimately mixed with the urine, and the quantity of albumin present was in proportion to the hæmoglobin. No coagula, tube-casts, or histological elements of significance were found in the urine at any time. There was no

[1] Transactions of the Clinical Society of London, vol. xxx., p. 65.

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suppression of urine, but during the attacks the urine was concentrated and when they passed off it was dilute and copious.

CASE 12. *Severe paroxysmal renal pain and hæmaturia; occasional blood-casts in the urine; moveable displaced kidney; torsion of the renal veins.*—In this case the patient suffered from severe paroxysmal renal pain and hæmaturia. These paroxysms of pain usually came on after exercise and lasted for several minutes at a time, while during the six months prior to admission he was almost constantly suffering from an aching pain in the left side. At the onset of the attacks of paroxysmal pain the urine was of a dark red colour and contained a large quantity of blood, but gradually the amount of blood diminished and the urine became of a brighter red. When the patient was kept strictly to bed he had no paroxysmal attacks and no hæmaturia or albuminuria. The presence of blood-casts in the urine was observed after the patient had been under observation for a considerable time. At first the case was considered to be one of renal calculus, but the presence of blood-casts in the urine suggested the source of hæmorrhage to be the renal tubules rather than the pelvis of the kidney. In this case the symptoms—namely, paroxysmal renal pain increased by exercise and relieved by rest, hæmaturia, and tenderness on palpation over the right renal region—all pointed to a calculus in the kidney; but the occasional presence of a few tube-casts and traces of albumin, without pus or blood, indicated that the morbid condition affected the tissue of the kidney, while the occasional appearance of blood-casts of the uriniferous tubules pointed to the origin of the hæmorrhage as being a marked but at the same time transitory passive hyperæmia from venous obstruction. At the operation a rotation of the kidney was found, the lower margin presented forward causing the ureters and blood-vessels to be coiled round one another, and so impeded the circulation of blood. As a consequence more or less passive hyperæmia was produced which varied in degree according to the precise position occupied by the kidney at the time. (See also Case 1.)

It is manifest that in such displacements of the kidney as those described the surgeon has to deal with a passive hyperæmia of the kidney due to local causes. In some instances the obstruction may be entirely venous, in others the arterial circulation may also be interfered with. When the efferent resistance is increased the veins and the venous radicals surrounding the uriniferous tubules will become distended. This increased resistance to the flow of blood from the kidney will lead to very considerable augmentation of the blood-pressure within the glomeruli. It is easy, therefore, to understand why blood-casts, blood corpuscles, and albumin appeared in the urine.

(c) Reflex spasm of the arterioles.—Examples of reflex inhibition of the functions of the kidney are numerous. For instance, complete suppression may follow the passage of a catheter and may be succeeded by a hæmaturia lasting for some days; then cases are seen of unilateral obstruction such as is produced by the presence of a calculus in one ureter causing complete anuria which may be more or less prolonged. Again, in cases of transitory hydronephrosis, when the obstruction on one side reaches a certain point the kidney on the opposite side may fail to act, even although the hydronephrosis continues to increase in size. In the *Glasgow Medical Journal* for March, 1896, p. 211, I reported a case of suppression of urine due to reflex spasm followed by the passage of urine containing blood. The case was one of intestinal obstruction. The patient complained of considerable pain in the region of the bladder and inability to urinate. No distension of the bladder could, however, be detected and on passing a catheter no urine escaped, although the instrument was clearly within the cavity of the viscus. Dry-cupping was applied over both kidneys and soon afterwards the patient passed 8 oz. of urine, which contained blood and a quantity of albumin larger than the blood accounted for; also some pus, but no tube-casts. A similar case to this I have recorded in the Transactions of the Clinical Society of London, vol. xxx., p. 78, Case 6. (See Case 14.)

The existence of a marked hyperæmia of the kidneys in cases of acute abdominal affections is not simply a coincidence—I should be almost disposed to regard it as a frequent occurrence and one which should be carefully looked for, and when indicated by prolonged suppression of urine the question of the relief of tension should be carefully considered. When the anuria is followed by the excretion of albuminous and bloody urine it indicates that there has been a serious disturbance to the circulation. The spasm is probably due to morbid motor impulses conveyed from the nerves proceeding from the solar plexus. Sudden relief of intra-abdominal pressure, as, for example, the removal of a large abdominal tumour or the evacuation of ascites fluid, may be followed by either an albuminuria or a hæmaturia, which seldom lasts, however, more than a few days.

3.—Inflammatory Hyperæmia.

(a) Nephritis, acute and chronic.—In cases of acute nephritis, especially when the inflammation of the kidney is a sequela of typhoid fever, scarlet fever, pneumonia, or erysipelas, a considerable quantity of blood, and even blood-clots, may be found in the urine, which may be dirty rose-colour, dark-brown, or almost black. When the urine is very dark in colour it has been observed that the proportion between the colouring matter and the red blood corpuscles has been lost—that is to say, that the colouration of the urine is not fully accounted for by the corpuscles present. This anomaly is probably accounted for by the circumstance that the vessels of the kidney are under great inflammatory tension and probably the inflammatory process is associated with rapid disintegration of the red blood corpuscles and solution of the hæmoglobin. This explanation is supported by the fact that when such urines are examined frequently at different times of the day a true hæmaturia may be at one time discovered, at another a true hæmoglobinuria, while on a third occasion the conditions may be mixed.

Hæmaturia is not only observed during the acute stages of nephritis, but when the disease is chronic occasional outbursts of blood may be emitted during a period measured by hours or even days. These sudden appearances of blood are known in many instances to be traced to some exciting cause. For instance, in some cases of nephropathic anæmia it is only necessary to apply a simple vesicatory to cause the appearance of blood, in other cases cold is the determining cause, or a slight strain or fall on the buttock, or, again, in others the hæmaturia may be provoked by an intercurrent malady. Hence in all cases of hæmaturia arising in anæmic persons from slight causes the question of Bright's disease should be considered.

Time was when a disease such as acute tubular nephritis would be clearly placed under the care of the physician only, and the idea of seeking the aid of the surgeon under any circumstances would not for a moment have been thought of. The theoretical barrier which at one time clearly demarcated the line between medicine and surgery has been moved and the limits of the surgeon have advanced, so that at present it is difficult to say what belongs to the physician and what to the surgeon. The new horizon of surgical activity is far-reaching, and not infrequently new fields of action have been discovered as it were by accident. Take, for instance, the occasional successful treatment of tuberculous peritonitis by abdominal section, which has followed, what cannot but be regarded in the first instance as "random operations"; again, in cerebral surgery the gravest symptoms have in some instances disappeared after trephining, even although no special diseased condition has been discovered; so, also, in renal cases improvement has taken place after free incision of the kidney without any lesion being disclosed sufficient to account for the symptoms. To explain cases such as those referred to considerable speculation has been brought to bear on the subject and various theories have been offered to account for the benefit derived by the patient, but it is only through time and by larger experience that anything like a reliable opinion can be formed. It seems to me that in some of those cases the relief of internal tension may account for the benefit procured; the relief of tension within the peritoneal cavity, within the cranium, and within the firm fibrous capsule of the kidney may possibly explain the good effects of incision in a few instances, but not in all.

The attention of the profession was directed to the subject of "Albuminuria associated with Kidney Tension" in an article in THE LANCET of Jan. 4th, 1897, by Mr. Reginald Harrison. In his first contribution he makes the following observation: "Since the introduction and the more general adoption of direct exploration of the kidney through an incision from the loin or otherwise a certain proportion of cases have been met with where it failed to reveal any obvious cause for the symptom or symptoms which led to the adoption of the proceeding. It has, however, been frequently

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noticed that such cases are often completely and permanently cured by what was done." He then cites three cases in illustration—the first an instance of post-scarlatinal nephritis; the second a nephritis from exposure to cold and damp; and the third case one of subacute nephritis following influenza; and in all of these he believed that considerable benefit was derived from the relief of renal tension by incision of the kidney. The details of the cases are not sufficiently complete for the reader to form an independent opinion from the facts stated, but from what I have seen of other cases I am willing to admit the justness of Mr. Harrison's conclusions as applied to the effects of increased vascular tension on the kidneys and their excretions. In corroboration of Mr. Harrison's view that inflammatory hyperæmia may lead to considerable pain in the kidney accompanied by albuminuria and relieved by incision the following cases may be quoted.

CASE 13. *Sudden suppression of urine, renal colic; hæmaturia; albuminuria; incision of the kidney followed by relief of pain and disappearance of albuminuria.*—In 1888, at the Western Infirmary, Glasgow, I saw a man who complained of severe pain in the loins, more severe, however, on the right side. It came on suddenly about two months previously and at the onset was accompanied by rigors and a sudden diminution in the quantity of urine. I ascertained from his medical attendant, the late Dr. John Moyes of Largs, that the urine at the beginning of the attack contained albumin, but no tube-casts were discovered. The specific gravity was from 1025 to 1030, but the daily quantity of urea was diminished. From 25 to 35 oz. of urine were passed in twenty-four hours. The patient did not complain of headache, nausea, or vomiting, and no other of the characteristic clinical features of nephritis was present, such as anasarca, effusion into serous cavities, anæmia or uræmic symptoms. When seen at the infirmary the urine contained a moderate quantity of albumin but no tube-casts and comparatively little deposit was thrown down on standing. There was a history of the passage of small oxalate of lime calculi and of occasional hæmaturia. While under observation he had several attacks of distinct renal colic, which led me to the conclusion that he was suffering from renal calculus, and he was advised to have an operation performed in the hospital. This he refused, but consented after some delay to have it done in private. On exposing the right kidney by a free incision in the loin the organ was seen to be enlarged, of a dark chocolate colour, and very tense. On examining the kidney with needles for the detection of a stone free bleeding occurred, and as no calculus could be discovered with the needles a free incision was made into the pelvis in order to explore with the finger. The bleeding was very free and the wound in the cortex had to be plugged with iodoform gauze. No calculus was found. I felt that I had made either an error in diagnosis or that my search had been imperfect and left the case with the belief that harm rather than good had been done by the operation, but to the satisfaction of the patient and myself he ceased to suffer any pain, the albuminuria disappeared entirely, and afterwards the patient enjoyed excellent health.

In this case, from the onset of the trouble till the time of the operation, albumin was constantly present and the quantity of urine remained considerably below the normal, but after incision the albumin disappeared and remained absent and the quantity of the urine increased. I have no doubt that in this case the relief of tension by the incision facilitated the renal circulation. Wet- or dry-cupping over the kidney may act in a somewhat similar way.

CASE 14. *Sudden suppression of urine; the pain at first diffuse, afterwards limited to the renal region; albuminuria; blood-casts; wet-cupping, with relief of urinary symptoms; inguinal hernia; operation; cure.*[2]—On May 20th, 1893, a patient, aged sixty-two years, came under observation on account of severe abdominal pain associated with sudden and almost complete suppression of urine, nausea, and vomiting; the pain at first was not limited to any particular spot, but was complained of all over the abdomen. When seen by me the pain had considerably diminished from what it was at the onset the previous day and physical examination of the abdomen did not cause much increase in suffering unless when firm pressure was made over the renal regions. The bowels had been moved freely and there was neither distension nor collapse of the abdomen; no hernia could be discovered. Only highly albuminous urine had been passed since the onset of the pain. The patient had an old stricture but the bladder was almost empty. The following table shows the state of the urine:—

TABLE I.—*Showing the Condition of the Urine before and after Suppression.*

Date.	Quantity.	Specific gravity.	Reaction.	Remarks.
1893.				
May 20th, 10 A.M.	20 oz.	1016	Acid	Slight trace of albumin. No blood. Pain set in at 11.30 A.M. and steadily increased till midnight.
May 20th, 11 P.M.	3 oz.	1018	Acid	Very albuminous. Blood drawn off by catheter.
May 21st, 8 A.M.	1 oz.	?	—	Highly albuminous. Blood-casts.
May 21st, 10 P.M.	4 oz.	1025	Acid	Ditto.
May 22nd, 10 A.M.	3 oz.	1028	Acid	Ditto.
May 22nd, 7 P.M.	—	—	—	14 oz. blood drawn off.
May 22nd, 11 P.M.	6½ oz.	1020	Acid	Highly albuminous blood-casts.
May 23rd, 2 A.M.	7 oz.	1018	Acid	Ditto.
May 23rd, 6 A.M.	10 oz.	1018	Acid	Less albumin and less tube-casts.
May 23rd, 11.30 A.M.	12 oz.	1016	Acid	Albumin and blood much less.
May 23rd, 6 P.M.	12 oz.	1016	Acid	Ditto.

The temperature was never above 100·3° F., the pulse averaged 88 and was of good strength, and the respirations were 22. There were numerous blood-casts in the urine. The skin was moist. From the presence of blood-casts it was evident that the source of the albumin was in the kidneys and the suspicion was aroused as to the possibility of there being an acute tubular nephritis. Acute febrile diseases and their sequelæ were excluded and there was no reason to suspect cardiac, pulmonary, or cerebral causes of albuminuria. I applied wet-cupping to the loin over both kidneys and removed in all 14 oz. of blood at 7 P.M.; by 11 P.M. the patient had passed 6½ oz. of albuminous urine and during the same night 17 oz. of less albuminous urine were excreted and the pain in the loins subsided. The patient remained moderately well for a day (the 23rd) when the pain in the abdomen recurred, but this time it was more marked at the umbilicus and on the right side just over the middle of Poupart's ligament, where there was some increased resistance and dulness on percussion. This pain rapidly became more severe and the patient presented the appearance of a case of acute intestinal obstruction. A very careful examination was made of the abdomen, when the only abnormality to be detected was the dulness and increased resistance just referred to at the region of the right internal abdominal ring. Suspecting a small strangulated inguinal omental hernia I operated and thus gave relief. The patient made a good recovery and the albuminuria disappeared in three days.

Mr. Harrison's cases were clearly instances of acute parenchymatous nephritis and they raise the question how far in such maladies incision into the kidney may produce beneficial results. Parenchymatous nephritis is a disease characterised by scanty urine of high specific gravity which is very albuminous and contains blood and on standing deposits blood-casts and casts of the uriniferous tubules which may be hyaline, epithelial, or granular, and associated with these renal symptoms other conditions are generally present, such as serous effusion, as shown by hydrothorax, ascites, and œdema, while at the same time symptoms of so-called uræmic poisoning may develop. Post mortem the kidney is found to be enlarged and softened and the uriniferous tubules show very marked changes, such as swelling of the epithelium with a marked tendency to desquamation, so much so that the tubules may become blocked. At the same time fatty degeneration of the epithelial cells is present and blood is very commonly

[2] Transactions of the Clinical Society of London, vol. xxx., p. 78, Case 6.

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present in the tubules. The blood probably escapes both from the mucous surface of the uriniferous tubules and from the glomeruli. During life, as I have observed, the extreme tension of the kidney is very marked. Considering that the expansion of the kidney is limited by a firm, fibrous capsule any marked increase of tension in the parenchyma of the organ must seriously interfere with the circulation of the blood and so impair the nutrition of the component elements of the organ and interfere with its function. This raises the question, when an acute parenchymatous nephritis leads to suppression of urine and impending death of the patient, Is not the surgeon justified in stepping in and, by incision of the engorged organ, relieving the tension, which is probably impairing the circulation of blood and the performance of function? Because the kidney is an internal organ, and therefore not so easily reached as external parts, should it be treated otherwise than more superficial parts when presenting practically the same conditions?

In chronic tubular and parenchymatous nephritis occasionally the urine is coloured of a rose-tint or even darker red, but in the intervals between the hæmaturiæ the urine shows evidence of renal disease by the presence of granular or hyaline tube-casts and small quantities of albumin, while the fluid itself is of a low specific gravity. The appearance of blood in chronic Bright's disease is well recognised, and a careful observer is not likely to overlook this form of hæmaturia or mistake it for any other, unless the renal disease happens to be complicated by the presence of other lesions. I met with a case four years ago where considerable difficulty was experienced in the early observations. The case was introduced as one of hæmaturia, which certainly had been more profuse than is usually seen in cases of chronic Bright's disease and was associated with painful and frequent micturition, so much so that the question of tumour of the bladder or vesical calculus was raised, but on cystoscopic examination the bladder was found to be typically healthy. The patient was kept at rest in bed and on milk diet, and within a few weeks the blood disappeared from the urine. The urine all along, however, contained traces of albumin, its specific gravity was seldom higher than 1008, and on standing a precipitate containing finely granular and hyaline tube-casts was detected by the microscope. Such cases require to be recognised by the surgeon but do not strictly come within his domain.

(b) Tuberculous disease of the kidney.—In this malady the urine presents very marked variations at the different stages of the malady. In the initial phases of the affection the presence of the virus induces a congested condition of the organ and hæmorrhages occur which are analogous to the hæmoptyses in the initial stages of pulmonary tuberculosis (see Cases 15 and 16). When the kidney parenchyma and the calyces become more seriously involved the characteristics of the urine are more distinct, but this is not always the case. The physical characters of the urine are in some instances such that one can with certainty state that the urinary tract is the seat of a tuberculous lesion, while in other cases the excretion may be to no appreciable extent altered from the normal. Before destructive processes commence within the renal pelvis or substance traces of albumin and small quantities of blood may be detected, but when the tuberculous deposit has commenced to break down and evacuate into the ureter the quantity of albumin is increased, the urine is liable after a time to become alkaline, and along with greater or less quantities of debris of renal tissue pus appears in considerable quantity.

The albuminuria differs from that of Bright's disease in that the urine is not clear but contains much mucus, is viscid, cloudy and opaque, and does not contain tube-casts. The deposit contains small caseous masses mixed with renal débris and on standing, although a considerable amount of pus may be precipitated, a certain quantity remains suspended and imparts a cloudy appearance to the fluid.

It is only in rare instances that profuse hæmaturia occurs in renal tuberculosis. Trautenroth[3] records the case of a woman, aged twenty-four years, who was the subject of pulmonary tuberculosis in its early stage, but who also suffered from profuse hæmorrhage from a tuberculous kidney which necessitated nephrectomy. The pelvis of the kidney was filled with coagulated blood and upon one of the papilli a considerable ulcer was discovered. The parenchyma of the kidney was the seat of a diffuse tuberculosis. The urine before the operation was found to contain tubercle bacilli; the patient made a good recovery. Routier[4] records a somewhat similar case where the right kidney was the seat of a large tuberculous ulceration. Severe hæmorrhage occurred and continued during seventeen days, associated with renal colic; on making pressure over the right kidney blood was seen to escape from the right ureter by the cystoscope. The kidney was removed and the patient made a good recovery.

As the disease advances the odour of the urine as a rule becomes more and more offensive; the fluid deposits large quantities of mucus and triple phosphates, and on examination is found to be highly albuminous. Occasionally while the urine is pale and of low specific gravity there may be evidences of retention on the diseased side, as shown by increase in the renal swelling, with perhaps indistinct fluctuation and pain accompanied by general constitutional disturbance, or there may be complete suppression, death being ushered in by uræmic symptoms.

In addition to the diagnostic points already indicated the detection of the tubercle bacillus in the urinary débris is of great value. The method which I have employed most successfully is as follows. Allow a quantity of urine to stand in a conical glass in a cold place, for not more than six hours and from the deposit select a small quantity of débris; place it in a glass of ¾ per cent. salt solution. Having placed a small fragment of the débris on a clean cover-glass it should be spread out into a thin layer by pressing another cover-glass against it between the finger and thumb. On separating the cover-glasses a thin film of débris will be found adhering to each. The glasses must be air-dried and then the films may be more firmly fixed by drying over a spirit lamp or in front of the fire. The cover-glasses are then placed in or, still better, floated upon (with film side downwards) a solution of anilin magenta or a staining fluid of gentian-violet. When the film has become sufficiently stained the colour may be abstracted from all structures other than the tubercle bacilli by passing the cover-glass through a 25 per cent. solution of nitric acid. The action of the acid may be arrested by carefully washing the specimen in pure water. When examining the urinary débris for tubercle bacilli it is necessary in most cases to prepare at least half a dozen specimens. Should bacilli be present they will be recognised by a magnifying power of 750 diameters as minute rod-shaped bodies, coloured according to the nature of the staining fluid employed. They are from three to seven micro-millimetres long, may be straight, but are more frequently curved or bent upon themselves at an obtuse angle, are frequently beaded, and occur in bundles or singly. From the urine the micro-organisms are not easily cultivated, as putrefactive bacteria contaminate the culture and destroy the specific bacilli. Koch, however, states that he has succeeded in cultivating tubercle bacilli from cases of tuberculous pyelitis.

In some instances the bacilli in the urine are so few in number that it is difficult or almost impossible to discover them simply by the microscope; in such instances inoculation experiments may help to clear up the diagnosis. When tuberculous urine is injected subcutaneously or into the peritoneal cavity of rabbits it produces a typical tuberculosis, while normal urine when aseptic becomes absorbed without producing any evil effect, or when septic may produce a suppurative peritonitis. If, however, the experiment is performed with care healthy urine produces a negative result, but if the urine contains tubercle bacilli or their spores acute miliary tuberculosis is developed in the course of a few weeks when the injection is made into the peritoneum, or if the urine is placed underneath the skin a hard tuberculous nodule is formed.

Besides the detection of the tubercle bacillus it is necessary to determine whether the disease is on one or both sides. I have several times had occasion to examine by ureteral catheterisation cases of tuberculous pyelitis in which it was considered of importance to determine the extent to which the disease had involved one or both kidneys. Catheterisation can only determine the organ to which the tuberculous disease is limited, it cannot indicate the extent of the tuberculous lesion in the affected organ, but to make sure that one kidney was free from disease was at the time I first employed catheterisation considered to be a point of importance. The first time I succeeded in doing this was in 1886, when I

[3] Centralblatt für Chirurgie, 1896, No. 16.

[4] Bulletin et Mémoire de la Société de Chirurgie de Paris, vol. xxi., p. 148.

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examined a case and clearly showed that the tuberculous lesion was limited to one kidney. A woman, aged twenty-six years, who was admitted into the Glasgow Royal Infirmary suffering from symptoms of tuberculous pyelitis of the left kidney, was first under the care of my colleague, Dr. Alexander Robertson, who asked me to make the examination. Subsequently the patient was transferred to the surgical ward, under the care of Dr. Robertson's corresponding surgeon, Mr. H. E. Clark, who successfully operated by lumbar nephrectomy. Previously to making the examination by the ureteral catheters it was noted that the urine was decidedly below the normal in quantity, that it had a specific gravity of from 1015 to 1020, and that it contained albumin and pus, the former in larger quantity than could be accounted for by the amount of the latter. The examination of the urine separately from the two kidneys gave the following results:—

TABLE II.—*Showing the Characters of the Urine from each Kidney.*

—	Right kidney.	Left kidney.
Appearance	Clear and pale in colour; on standing for 6 hours only a deposit of mucus and a few epithelial cells.	Dark straw colour: clouds on standing for 6 hours, with an abundant deposit.
Reaction	Neutral.	Alkaline.
Albumin	Very slight trace.	1·805 per cent.
Hæmoglobin	None.	1 in 8000.
Tube-casts	None.	None.
Microscopic examination	Slight deposit of epithelium and mucus; no blood, pus, or tube-casts.	Abundant deposit of pus, with triple phosphates; a few blood corpuscles and spheroidal epithelium; no tube-casts.

No tubercle bacilli could be discovered in the deposit from the urine, but after the kidney was removed it was found to be characteristically tuberculous. The patient made a good recovery.

CASE 15. *Profuse hæmaturia with slight pain in the left kidney recurring thrice; no other deposit in the urine and no swelling in the lumbar region; apparent recovery for two years, followed by a relapse of the symptoms and a swelling in the left lumbar region; muco-purulent deposit in the urine and tubercle bacilli; no vesical irritation.*—A young woman, aged eighteen years, consulted me in September, 1893, on account of a profuse hæmaturia which had occurred a fortnight previously. No reason could be assigned for the onset of the bleeding and it was unaccompanied by any pain over and above a sense of fulness and weight in the left renal region. A careful examination of the urine failed to reveal any abnormal constituents beyond a small trace of blood, but the hæmaturia had practically disappeared at the time I saw the patient. Three months after this first hæmorrhage a second attack, not so profuse or so prolonged as the first, occurred and two months thereafter a third attack, all without any concomitant symptoms. On account of the difficulty in forming a diagnosis an examination of the bladder was made during the last attack and blood was seen issuing from the left ureter in a distinct cloud; it was therefore evident that the hæmorrhage was of renal origin, but as there were no symptoms pointing to the nature of the malady complete rest in bed was enjoined and the patient made what was regarded at the time as a complete recovery. Two years after the first hæmorrhage a fourth hæmorrhage occurred; this was associated with considerable pain in the left lumbar region and a distinct swelling could be made out by palpation. Examination of the urine two weeks after the hæmorrhage occurred showed it to contain a deposit of muco-purulent material as well as blood corpuscles, and on microscopic examination tubercle bacilli were discovered. Still there were no symptoms present indicating any irritation of the bladder. The temperature was now elevated for the first time and the patient suffered from night-sweats, but there was no emaciation, loss of appetite or serious constitutional disturbance.

This case illustrates to some extent the analogy between tuberculous lesions in the kidney and those in the lungs. It is by no means an uncommon occurrence to meet with cases of profuse and frequent hæmoptyses long prior to the development of physical signs of tuberculous phthisis, so also in renal tuberculosis hæmaturia may be present as a premonitory symptom of tuberculous disease long antecedent to the development of a gross renal lesion.

CASE 16. *Hæmaturia thirteen years previously to admission and again nine years after the first bleeding; large tuberculous pyonephrosis.*—A man, aged thirty-nine years, was admitted to the Glasgow Royal Infirmary on April 28th, 1896, complaining of pain in the region of the right kidney. The patient's first trouble in connexion with the urine dated back to thirteen years before, when he had a slight attack of hæmaturia accompanied by pain over the right kidney, but these symptoms passed off in a few days. The patient had been in the infirmary in February, 1896, with hæmaturia. He first noticed blood regularly present in his urine in November, 1895. He, however, was able to continue at work until the end of January, when he came into the hospital; at that time the hæmaturia was very considerable. He said that it was only three weeks previously to admission that he noticed anything like severe pain in the right side and since the pain came on he had not noticed any blood in the urine. On examination a very distinct fulness was found in the right lumbar region. The whole space between the liver and the crest of the ilium was dull on percussion and on pressure considerable tenderness was produced. The thoracic organs and the other abdominal organs were normal, so also was the bladder. The urine contained a considerable quantity of pus and some blood and tubercle bacilli were present. The left kidney was healthy. On operation a large tuberculous kidney was discovered on the right side; it was scraped and evacuated.

In this case it is difficult to say whether or not the first hæmaturia thirteen years previously to admission was due to a tuberculous lesion, but the circumstances that nothing else was discovered to cause bleeding and that no hæmorrhage has occurred since the operation rather support the idea that it was a true case of tuberculous hæmorrhage from the beginning. Such cases as the two just recorded are uncommon and are worthy of consideration.

(c) Cystic degeneration and hydatids.—While in the early stage of cystic degeneration of the kidney urinary symptoms are generally absent, as a rule as the disease advances the urine has been found to contain albumin and finely or coarsely granular tube-casts; hæmaturia has also been noted in a considerable number of the recorded cases—I have found it in about one-fourth of the cases which I have tabulated. Sometimes the hæmaturia has been profuse, in other instances small in amount. The fact just stated differs from what is observed by Dickinson, who says, speaking of the urine: "It is characterised in most cases by the frequent admixture of blood, often so copious as to call for styptics; of 16 cases in which symptoms were present hæmaturia was prominent in 11; in some it largely contributed to death by the exhaustion it caused; in others it gave trouble through the formation of coagula." In the case about to be described the urine was never free from blood, the persistent and sometimes considerable hæmorrhages led me for some time to suspect malignant tumour of the left kidney. The character of the hæmorrhage and the circumstance that it was associated with a swelling which was steadily increasing supported this view; while, on the other hand, the fact that subsequently the right kidney became enlarged and was painful—taken in conjunction with the discovery that the hæmorrhage was from the left kidney only and that there was evidence of chronic tubular nephritis—made me doubt the accuracy of my first diagnosis of malignant tumour and inclined me towards that of cystic degeneration. The presence of hypertrophy of the left ventricle and increased arterial tension supported this view.

CASE 17. *Cystic degeneration of both kidneys; persistent renal pain, anæmia, and emaciation; hæmaturia from the left kidney only; albuminuria; granular and hyaline tube-casts; physical signs of cystic kidney on both sides; hypertrophy of the heart; death after five years from uræmia.*—A male, aged forty-six years, consulted me in 1881 when he complained of pain in both loins from which he had been suffering for the previous eighteen months. He complained of loss of appetite and occasional nausea after taking food, also headaches and giddiness; but what alarmed him most was the persistent renal pain and hæmaturia. The latter symptom had been present for seven months. At first the

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quantity of blood was small in amount, being only sufficient to tinge the urine, and when the urine was allowed to stand a red deposit was thrown down which did not amount to more than from ½ to 1 per cent. in volume. When the patient had been under observation for some time a careful examination of the urine was made in order to determine the relative proportion between the amount of hæmoglobin and the quantity of albumin present in the urine, with the following results:—

TABLE III.—*Showing Analysis of the Urine on Various Occasions, with Special Reference to the amounts of Hæmoglobin and Albumin.*

Date.	Quantity of hæmoglobin.	Quantity of albumin.	Specific gravity.	Quantity of urine in twenty-four hours.
	Per cent.	Per cent.		oz.
1881: June 7th	0·101	0·237	1011	60
,, ,, 8th	0·097	0 318	1010	62
,, ,, 9th	0·072	0·201	1018	31
,, Aug. 20th	0·123	0·310	1018	32
,, ,, 21st	0·124	0·379	1016	76
,, ,, 22nd	0·017	0·147	1005	78
,, Dec. 5th	0·071	0·239	1005	78
,, ,, 6th	0·092	0·210	1003	100
,, ,, 8th	0·100	0·307	1010	70
1882: Feb. 11th	0·131	0·370	1018	34
,, ,, 13th	0·127	0 206	1010	50
,, ,, 17th	0·130	0·179	1018	31
Average of twelve examinations	0 099	0·358	1010	58

When albuminuria is due simply to the presence of blood the ratio of albumin to hæmoglobin is as 1 is to 1·6. As shown by the foregoing table in this case the amount of albumin was relatively greater—namely, as 358 is to 99 or, to state it more simply, as 3·6 is to 1—that is to say, the whole of the albumin present in the urine was not accounted for by the presence of blood; indeed, not more than a fifth part of it could be properly attributed to the hæmaturia. Repeated microscopic examinations of the urine failed to show the presence of blood-casts, but on almost all occasions finely granular and hyaline tube-casts were found together with free blood corpuscles, a few leucocytes, and some epithelial cells. The urine from both ureters was examined separately at three different times and it is a fact worthy of note that while on all occasions that from the left kidney contained blood the urine from the right kidney was free from it.

TABLE IV.—*During 1884: Examination of the Urine from the Two Ureters Separately.**

——	Right ureter.	Left ureter.
Appearance	Pale straw-colour, clear; on standing for eight hours slight deposit of epithelium and a little mucus.	—
Hæmoglobin	None.	1 in 6000.
Reaction	Neutral.	Neutral.
Albumin	A trace.	Larger in amount than from right kidney.
Tube-casts	Hyaline and granular.	Hyaline and granular.
Microscopic examination	Slight deposit of epithelium and mucus, a few tube-casts, no blood or pus.	Deposit the same as from right kidney, with red blood corpuscles added.

* Silbermann's method of compressing the ureters was employed.

During the time the patient was under observation the kidneys slowly and steadily increased in size and at no time either suddenly increased or diminished even although the quantity of urine varied greatly in amount. The post-mortem report is as follows. The kidneys weighed 28 oz. and were each converted into a large conglomeration of cysts of varying size and colour and so closely packed together that it was difficult to detect any renal tissue with the naked eye, although with the microscope abundance of tubules and glomeruli could be seen. In both kidneys there was also evidence of chronic tubular and interstitial nephritis. The only difference between the right kidney and the left one was that whereas the latter was somewhat the larger the cysts in the former were not so numerous and were more deeply pigmented. The specimen is in the Royal Infirmary Museum, Series vii., No. 89.

4.—*Tumours of the Kidney.*

Hæmaturia is the most important and significant symptom of malignant disease, especially cancer of the kidney, and tumours of the kidney are nearly always malignant. It is true various forms of fibromata have been recorded and occasionally an osteoma, a lipoma, an adenoma, and cases of a papilloma have been published from time to time, but they are very rare. In tumours of the kidney hæmaturia takes place in about 25 per cent. of cases in children; these are always, or almost always, sarcomata. In adults about 20 per cent. of the cases of malignant disease present hæmaturia as a prominent symptom; these are divided between the sarcomata and the carcinomata. In carcinomata alone 75 per cent. of the cases present hæmaturia as a prominent symptom. Hæmaturia of malignant disease is rarely severe at its early stage, although cases have been recorded in which profuse bleeding occurred. As a rule, however, it is only as the disease advances that the loss of blood attains to such an amount as to form a distinct deposit. When the hæmorrhage has commenced it is more profuse, is steadily progressive, and less transient than when due to other causes, and is generally spontaneous and continuous, although at intervals liable to aggravation. Clots frequently form and may cause obstruction to the escape of urine through the ureter, bladder, or urethra (Case 8). The presence of organised constituents in the urine, such as epithelium, tube-casts, &c., is of comparatively little diagnostic value, although by some observers considerable importance has been attached to the presence of so-called "cancer cells." As a matter of fact, however, cells resembling those of a cancerous growth seldom find their way from the kidney to the bladder; in this opinion I entirely agree with Dickinson, who says: "I have met with not a few in which a discharge of cells of epithelial type, together with blood, has been supposed to indicate cancer of the kidney, but not with one in which this supposition has been verified. If I am told that such a one is passing 'cancer cells' in the urine I conclude that, whatever his disease may be, it is not cancer of the kidney. A deposit consisting of blood-corpuscles, mixed, if with anything, with indefinite sanguinolent material, and that constant, during repose as well as under exercise, is a sign in this respect of more meaning. It is to be borne in mind that a fungating tumour of the kidney is less often cancer than sarcoma, the cells of which, associated as they are with connective tissue, are not to be easily and abundantly shed, while even should they reach the urine they are, at least in the small-celled varieties which are the more numerous, too small to attract attention when confused with red and white blood corpuscles."

In desquamative catarrh of a mucous surface the epithelial cells are shed in large numbers and mingle with the secretion. From what has been written by some observers one would be led to the conclusion that they believed that this process of separation was all that happened to the epithelial cells and that these were thrown off from the mucous surface in much the same form as they presented during health. This is not so. When a mucous membrane is inflamed the epithelium becomes granular and undergoes a process of softening so that the cells are capable of taking on the most varied forms and of throwing out prolongations. This is most marked when the superficial cells are rapidly thrown off and being replaced quickly by means of regenerative multiplication of the deeper cells. Hence the catarrhal secretion may contain epithelium in all stages of development, from round cells resembling pus corpuscles to caudate cells similar in appearance to those described as being characteristic of exudation from the renal pelvis. I do not deny that, for example, in vesical catarrh groups of tessellated epithelial cells of circular form are sometimes significant and that in pyelitis, flattened, laminated, caudate epithelial cells may be often more abundantly present in the

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urine than when the renal pelvis is not involved in the inflammation, but the point I desire to impress is that the diagnostic significance of individual loose cells is of no more value than is the observation of single epithelial cells removed from a tumour. To diagnose pyelitis from the appearance of the cells in the urine is no more justifiable than the diagnosis of a cancer from a few isolated cells detached from a growth. If the mucous membrane was shed in small shreds or in casts, with the epithelium adhering, then the microscope might aid in the diagnosis; but when the histological relationships of the cells are lost so also is their significance. The presence of loose epithelial cells does not indicate the nature of the renal affection, but if small portions of the neoplasm are discovered in the urine their examination under the microscope will clear up the diagnosis.

In malignant disease of the kidney when the tumour is limited to the substance of the organ the urine is usually perfectly natural, but when the neoplasm has invaded the pelvis blood-casts, epithelium, and portions of the growth may appear in the excretion. In the early stage of the disease, however, even before any abnormal constituent can be detected in the urine, the patient may experience considerable difficulty in micturition, probably the result of a reflex nervous excitement. In some cases of malignant disease the hæmaturia is a delayed symptom. This is especially so in cases of sarcomata. An enormous, soft, round-celled sarcoma may exist and develop without hæmaturia or any other disturbance in the secretion indicating the locality of the disease, as, for example, in the following case.

CASE 18. *Large, rapidly growing, round-celled sarcoma of the left kidney without any abnormality in the urine or symptoms pointing to renal tumour; physical signs, however, characteristic.*—A child, aged three years, was admitted to the Glasgow Royal Infirmary on April 2nd, 1897. The patient was pale and emaciated and the left side of the abdomen was occupied by a smooth, rounded swelling, highly elastic but non-fluctuant in the lumbar region, and passing forward to within one and a half inches of the umbilicus. The swelling could be distinctly felt extending between the margin of the ribs and the bones of the pelvis and over the entire area of increased resistance a dull note was elicited on percussion. The swelling was firmly fixed and the patient did not complain of pain or discomfort further than could be explained by the pressure of the new growth. The history of the case showed that the swelling was first noticed three months previously to admission, but at that time it was extremely small in size, so that as far as it is known the tumour was of not more than two and a half months' or three months' growth. No abnormal constituents were found in the urine at any time nor did the patient complain of any vesical irritation. Operation revealed the presence of a huge round-celled sarcoma which was removed by abdominal nephrectomy.

I have seen two other cases of malignant disease of the kidney—one a spindle-celled sarcoma, the other a carcinoma where hæmaturia was noted to have been present during the whole course of the case.

Sometimes the diagnosis of malignant disease is rendered difficult by the presence of a calculus in the diseased kidney. The following case I brought before the Glasgow Pathological and Clinical Society in 1895.

CASE 19. *Renal calculus with symptoms of ten years' duration; pain in the loin; repeated hæmaturia with cessation of symptoms for considerable periods after treatment by rest, thereafter followed by symptoms pointing to malignant disease; calculus and epithelioma of the left kidney.*—A man, aged fifty-six years, was seen by me first on Dec. 12th, 1884, and at that time he gave a history of his illness which clearly pointed to renal calculus in the left kidney. He said that about ten years ago he began to suffer from a dull, aching pain in the loin accompanied by a sense of weight on the affected side when he was occupied at his work, that of a marine engineer. The pain was inconstant but as a rule it was aggravated by any sudden movements of the body, such as jumping, running, or sudden change of position in bed. The pain also varied with posture; when he lay upon his left side the pain was relieved, while if he stood, or lay upon his right side it was increased. At this time the abnormal sensations were strictly limited to the left side. Within six months of the onset of the pain he commenced to suffer from frequent micturition, with pain in the bladder, and at the same time he noticed that the urine contained small quantities of blood. The bleeding was usually accompanied by pain and as a rule it was increased by movements of the body, but sometimes several hours or even days might elapse between the exertion to which it was referred and the appearance of the blood in the urine. The blood was intimately mixed with the urine when passed, but if the urine was allowed to stand for a few hours the blood corpuscles gradually separated as a deposit and left the supernatant urine clear. At this time the urine was acid. The patient was a very intelligent man and I could rely thoroughly upon his statements. He said that the medical men whom he had consulted told him that he suffered from a stone in the kidney and that they had reported his urine to be free from albumin and pus. The symptoms of renal calculus, after being in abeyance for three years, recurred in 1878. When I saw him in 1884 he was suffering very severely from hæmaturia, together with sharp pain in the left renal region. Considering the history above recorded the diagnosis seemed to me to lie between renal calculus and a stone in the bladder; the general course of the hæmaturia was strongly in favour of the hæmorrhages being renal rather than vesical. I ordered the patient to take rest for a week and at the end of that time the pain was greatly relieved and the hæmorrhage had almost entirely disappeared, but the urine on examination was found to contain not only blood but also a considerable quantity of albumin and a few tube-casts; these were present in acid urine and could be readily separated by a centrifugal machine, but the tube-casts did not deposit readily, and if the urine became alkaline they disappeared, probably by solution. The question placed before me by the patient was whether his case was a suitable one for operation or not, and the patient came to me for the special purpose of being informed whether one or both kidneys was diseased, as he had been told by his medical attendant that the urine from each kidney could be examined separately. After some trouble I succeeded in catheterising the ureters and while I found that all the blood came from the left kidney the urine from the right kidney contained both albumin and tube-casts. I consequently advised the patient against an operation, but prescribed what I considered suitable treatment for his relief. At this time there was no evidence of tumour in the renal region. The patient was directed to take as much rest as possible and instructions were given him as to his general health. I did not see the patient again until June, 1885, when he presented himself to report progress. His general appearance was markedly improved and he told me that for the previous three months he had not observed any blood in the urine, although he suffered from occasional pains in the left renal region. These pains were, however, less frequent and less severe than in the latter months of 1884; still there were no signs of swelling in the loin. The next time I saw the patient was in November, 1886, when I observed a great change in his appearance. He was greatly emaciated, pale, and found a difficulty in walking even a short distance. He told me that he had almost no appetite and frequently when he took food it was rejected. About four months previously to his last visit to me he had a very severe and prolonged attack of hæmaturia and sometimes clots were formed which caused obstruction to the escape of the urine from the ureter or from the bladder. The pain was also more intense and more constant, and instead of being dull or paroxysmal, as in former times, it was now more lacerating and the area of distribution of the pain was greater; instead of being limited to the hypogastrium or the lumbar region it now extended down the left thigh, across the abdomen, and to the left shoulder. The urine in addition to tube-casts deposited large epithelial cells which were bound together more or less by blood-clot. Now for the first time a distinct swelling was observed in the left loin, the tumour could be distinctly felt through the lumbar muscles, and, with one hand in the lumbar region and the other in front, a smooth, solid swelling of about twice the size of an ordinary kidney could be made out. The tumour was firmly fixed and painful on pressure, the percussion in the loin was dull as far as four and a half inches from the spine, and this percussion was not varied by the position of the patient.

The two cases last described are exceptional, the one in the circumstance that a huge malignant tumour developed without giving rise to any characteristic symptoms, and the second in that a renal calculus in the pelvis of the kidney by producing local irritation probably induced the formation

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of an epithelioma. In the great majority of patients suffering from tumour of the kidney the first warning which the patient receives of the presence of disease is a profuse hæmaturia (see Case 8), sometimes induced by slight violence but in most instances coming on spontaneously; probably the most profuse renal hæmaturiæ are those met with in cases of malignant disease.

Glasgow.

A CASE OF INTRA-THORACIC TUMOUR WITH SECONDARY GROWTHS IN THE BRAIN AND ALTERNATE PARALYSIS.

By WILLIAM CECIL BOSANQUET, M.A., M.D. Oxon., M.R.C.P. Lond.,

FORMERLY FELLOW OF NEW COLLEGE, OXFORD; ASSISTANT PHYSICIAN TO THE VICTORIA HOSPITAL FOR CHILDREN; MEDICAL REGISTRAR, CHARING-CROSS HOSPITAL.

THE following case appears to be worthy of record as an example of a somewhat curious combination of conditions giving rise to crossed paralysis. I have to thank Dr. Mitchell Bruce, under whose care the patient was, for his kind permission to publish these notes.

A married woman, forty-three years of age, was admitted to Charing-cross Hospital on April 7th, 1897, suffering from cough and weakness of the left side of the body and the right side of the face. Her mental condition rendered it difficult to obtain a satisfactory history of her illness, but from her own account, supplemented by that of her friends, it appeared that she had never been quite well since an attack of "influenza" in 1892 and that she had suffered from cough since Christmas, 1896. She had been actually confined to her bed since Feb. 22nd, 1897, when she had an attack of congestion of the lungs. A fortnight after this (March 8th) her mouth became drawn over to one side and she was unable to move her left arm. There was at the same time loss of feeling in this limb, as was shown as regards thermo-anæsthesia by her holding in her hand an egg which had just been taken out of boiling water. This attack seems to have come on suddenly, as she was found in this condition by her husband, who had left her in her usual health a few hours previously. A week later (March 15th) she was found on the floor unconscious, having apparently fallen out of bed. She was supposed at the time to have fainted as she quickly recovered consciousness, but the paralysis was found to have increased in the affected arm and the left leg also was now partially paralysed. No further sensory disturbance was noticed and the original loss of sensation had by this time passed off. With regard to her previous history little could be ascertained. She had had four children, the last ten years previously, and they were all alive and well. In the last five years she had had three miscarriages. After the death of the patient her husband stated that he believed that she had undergone an operation, apparently gynæcological, in either Guy's Hospital or the Middlesex Hospital, but as he could not fix the date of this even approximately no record of such an operation could be obtained.

On admission to hospital the patient appeared to be a fairly-nourished woman, but looked prematurely aged. Her face was flushed and her expression was melancholy and anxious. While at rest the left corner of the mouth was higher than the right and on attempting to smile or to show her teeth the lower part of the face on the right moved less than the other side. The pupils were equal and reacted normally to light and accommodation. The tongue was protruded with great difficulty and tended slightly to the right side. Her mental condition appeared to be dull and her memory was impaired. Her speech was indistinct and hesitating. She had no difficulty with any special letters and could repeat words at dictation quite correctly but not write them. Told to write "Come here," she put "Mer"; for "To see" she put part of her name and address. She could not read correctly and left off reading a simple book because she could not understand it. In the left arm the grasp and other movements were distinctly weaker than in the right limb, but the range of movement was good or both sides. No sensory defect was discoverable in either arm nor could any deep reflexes be obtained. In the legs all movements of the left extremity appeared to be sluggish and strengthless, but sensation seemed everywhere to be normal. The knee-jerks were equal and not markedly increased. The plantar reflex was more marked on the left side and here there was also ankle clonus. The patient passed urine under her, apparently from mental defect. This had not occurred before admission. In the chest movements of respiration were good—36 to the minute—and the apex beat was in the normal position. The first sound of the heart was short and sharp, but there was no bruit audible. The pulse was regular, the arteries were cord-like and slightly tortuous. Behind there was dulness on percussion at the right base extending upwards nearly to the angle of the scapula, with absence of breath sounds and diminished vocal resonance and fremitus over the dull area. The abdomen was rather full with well-marked lineæ albicantes; nothing abnormal could be made out on palpation. The urine was acid, of specific gravity 1024, and did not contain albumin or sugar or any casts. The optic discs were normal. The patient's mental condition gradually improved throughout the following week and the weakness of the limbs appeared also to diminish. She was treated with an acid mixture containing some arsenic and strychnine. On the 14th she complained of indigestion with some pain in the epigastrium and left iliac region. The mixture was discontinued and a medicine containing iodide of potassium was given on account of the history of miscarriages. On the 16th there was pain in the left supra-clavicular region with slight fulness and tenderness, and on the following day the left shoulder, including this region and the upper arm, were swollen and œdematous. The œdema gradually extended to the forearm and back of the left hand, and pitting could be obtained over both clavicles and the whole of the left side of the thorax. There was no œdema of the legs or back and no ascites. The breath sounds were very harsh over the whole front of the chest and were bronchial in character over the upper lobe of the left lung. There was impaired resonance on percussion over both upper lobes, especially the left; the physical signs at the right base still continued and there was now a very similar condition found at the left base also. Enlarged veins were visible over both supra-clavicular regions and the skin here appeared to be slightly reddened. The patient still complained of indigestion and the action of the heart became slightly irregular. During the next few days the œdema of the arm diminished to some extent, apparently owing to the establishment of a collateral circulation, as the enlargement of superficial veins became more marked. On the 23rd the patient complained of pain in the calves of both legs and there was some œdema on the right side over the gastrocnemius. There were also dyspnœa with slight cough and considerable epigastric pain and flatulence. The latter was relieved by bismuth mixture and the patient from this time forward was given scarcely any solid food. On the next day an erythematous rash appeared on the abdomen, distributed in streaks. There was still some pain in the epigastrium and the recti here were tense and resistant. The right forearm was now also œdematous and a cord-like thrombosed vein could be felt just below the internal condyle of the humerus; a few days later there was also thrombosis of the enlarged superficial veins on the chest and the upper part of the abdomen. On the 29th a distinct friction sound was audible over the base of the right lung behind and there was ægophony on both sides in the inter-scapular region. The dyspnœa was now very marked and the patient was in considerable distress. The right side of the chest was therefore aspirated and 36 oz. of slightly turbid yellow fluid were withdrawn. This was found microscopically to contain a certain number of leucocytes and some large (epithelial?) cells, the latter often aggregated into rounded masses. The breathing improved in consequence of the operation, but the œdema of the arms continued and that of the legs increased. The enlarged veins on the chest and abdomen became still more prominent and the current in them appeared to oscillate, flowing equally in both directions from above and from below. On May 5th the fluid in the right pleura had reaccumulated and was again withdrawn with the aspirator. There was now œdema of the back and a tendency to cyanosis. A mass could be felt in the epigastric and umbilical regions lying somewhat deep in the abdomen and the liver was palpable below the costal margin. The patient's condition gradually became worse; she was restless and slept badly. An offensive vaginal discharge appeared, but

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on examination nothing to account for it was found. Her appetite was bad and she complained of a foul taste in the mouth; there was still considerable dyspnœa. The left pleural cavity was accordingly aspirated, but little improvement resulted, and the patient died on May 18th. On the day before her death the stools were noticed to be very black in colour, suggesting hæmorrhage.

Necropsy.—At the post-mortem examination, made by Dr. William Hunter, the glands in the mesentery and along the aorta were found to be much enlarged and the lymphatics of the pelvis were dilated so as to resemble the condition found in filariasis. The left ovarian and renal veins and the right common iliac vein were thrombosed and impervious, the liver was fatty, the kidneys were normal, and the spleen was shrunken and atrophied; the intestines contained altered blood but were themselves healthy. On the lesser curvature of the stomach was an ulcer 1½ in. in diameter, cleanly punched out and circular in shape; the viscus was partially filled with altered blood. The vagina and body of the uterus were normal; the cervical canal was inflamed and contained a sanguineous discharge. No trace of any operation on these parts could be found. The right pleural cavity contained over two pints of blood-stained serum; both the visceral and parietal layers of pleura were studded with small nodules of vascular new growth. The heart was healthy; the pericardium contained several ounces of bluish serum. The lower lobe of the left lung was in a condition of hypostatic congestion and showed some old cicatrices. In the right lung the lower lobe was collapsed and puckered into a mass of new growth which occupied the lower posterior margin. The growth was pigmented and caseous in parts. The glands on the left side of the neck were much enlarged. The internal jugular and subclavian veins were thrombosed at their junction to form the left innominate vein, and this vessel was also blocked at its junction with the vena cava and contained a quantity of milky fluid, apparently accumulated chyle. Within the cranial cavity there was found some increase of cerebro-spinal fluid at the base of the brain. There was a nodule of growth $\frac{5}{8}$ in. deep by $\frac{5}{8}$ in. wide, and 1 in. in antero-posterior diameter at the vertex close to the longitudinal fissure on the right side, occupying the posterior and inner part of the superior frontal and part of the marginal convolution. A second small growth $\frac{1}{4}$ in. in diameter was visible in the posterior limb of the right internal capsule, and a third nodule $\frac{1}{10}$ in. in diameter on the external capsule at the edge of the lenticular nucleus, just on a level with the former growth. A fourth tumour $\frac{3}{8}$ in. in diameter occurred in the centrum ovale just beneath the cortex on a level with the posterior end of the caudate nucleus. All these lesions were in the right hemisphere. On the left side no new growths were found, but there was a small patch of softening of about the size and shape of a grain of wheat, vertically placed, situated on the anterior limb of the internal capsule. The medulla and pons were normal and there was no apparent disease of the cerebral vessels. No descending degeneration was found in the pons or crura. The spinal cord was unfortunately not preserved. Microscopically the growth was carcinoma consisting of large glandular cells and little intervening stroma.

Remarks.—On the patient's admission the symptoms of crossed paralysis suggested some lesion of the pons, but the slightness of the affection made it difficult to conjecture what the exact nature of this lesion might be. Later, the paralysis appeared to improve and what was left of it was merged in the general weakness resulting from the grave condition of the patient. Signs of intra-thoracic pressure were now the prominent features of the case; the pleurisy, the character of the fluid withdrawn, and the venous thrombosis in various parts of the body pointed to the probability of malignant disease. The gastric ulcer found at the necropsy was not diagnosed during life, though the existence of malignant disease of the stomach had been suspected owing to the emaciation, the epigastric pain and tenderness, and the flatulent dyspepsia. The exact seat of the original cancer could not be determined. The first symptoms were caused by the cerebral growths, which were multiple and evidently secondary. The growth in the lung was the most advanced, and the early occurrence of cough, which had been complained of before admission, might point to this as the original lesion, but the rarity of this seat of primary carcinoma makes the suggestion doubtful. No primary focus could be found in the abdomen to account for the enlarged glands there and it is noteworthy that these occurred late in the history of the case. Judging from the apparently normal condition of the uterus and appendages no severe operation could have been performed, such as might throw any light on the origin of the malignant disease.

The distribution of the paralysis seems fairly accounted for by the cerebral lesions. The large nodule at the vertex occupied part of the leg area; the growth in the right internal capsule explained the weakness of the arm and indirect pressure exerted by it on the fibres of the posterior limb of the capsule was no doubt the origin of the anæsthesia. The facial paralysis on the other side was apparently due to the minute patch of softening in the left internal capsule, but the origin of this lesion was not easily explicable. It may perhaps have been due to some small venous thrombosis, analogous to those occurring later in other parts, such as seems often to occur in malignant disease. The conjunction of the two distinct forms of lesion on opposite sides of the brain is at least unusual. Another point of considerable interest is presented by the fact that the paralysis on both sides completely or almost completely disappeared, although the organic cause of it on the right side of the brain cannot have lessened in extent and was probably actively progressing. The paralysis must be classed as "functional," due to some disturbance in the activity of the nerve-units, not to their destruction. What, however, the exciting cause of the original fits and the ensuing paralysis may have been must remain unexplained. There was no sign of any hæmorrhage into any of the growths such as might have caused a sudden cerebral disturbance. Further, there was no sign of any great increase of intracranial tension, as the convolutions were not flattened, nor was there headache, vomiting, or optic neuritis. In short, the cerebral condition in no way shortened life and had not the thoracic disease progressed so rapidly the patient might have left the hospital relieved of her paralysis, which would have remained entirely unaccounted for.

York-street, Portman-square, W.

TWO CASES OF HALFPENNIES IMPACTED IN THE ŒSOPHAGUS FOR FIVE AND SIX MONTHS RESPECTIVELY, REVEALED BY X RAYS AND REMOVED.

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,

SENIOR SURGEON TO THE GENERAL INFIRMARY AT LEEDS; PROFESSOR OF SURGERY IN THE YORKSHIRE COLLEGE OF THE VICTORIA UNIVERSITY.

THE following unusual cases came under my observation quite independently of each other within the same week and were treated by me on consecutive operating days in the Leeds General Infirmary.

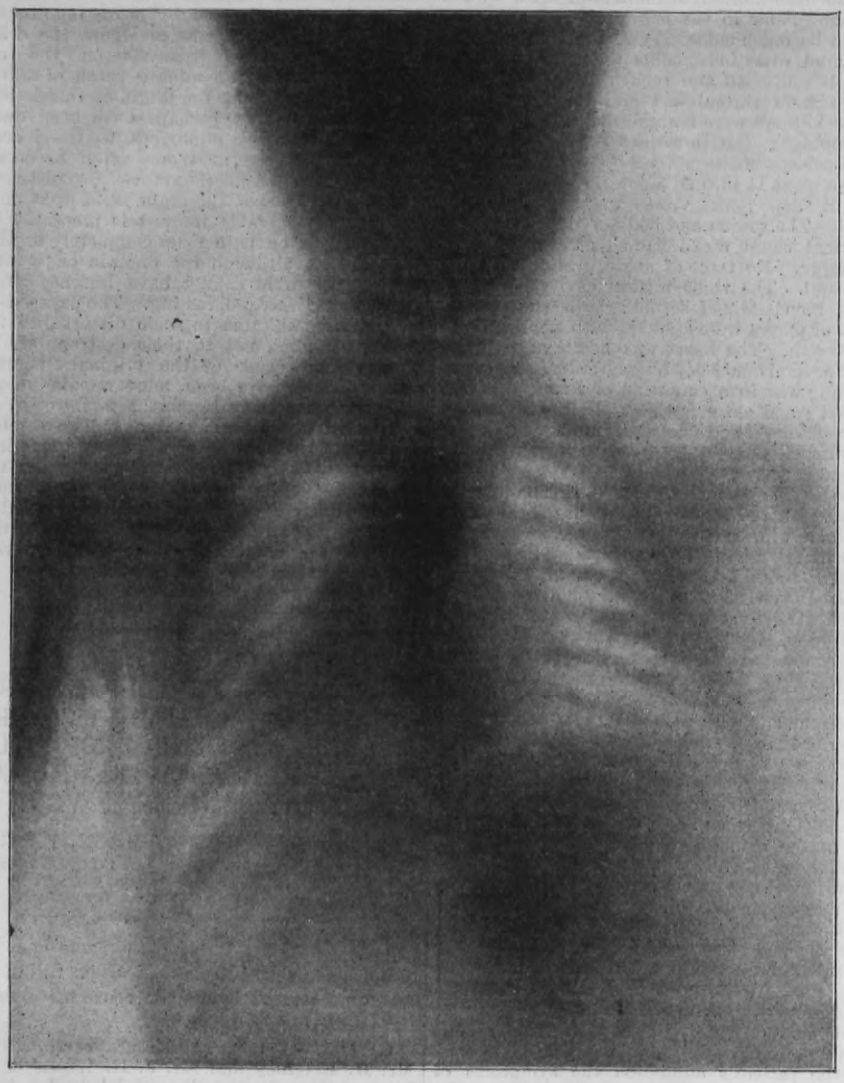
CASE 1.—A boy, aged four years, was sent to me by Mr. H. Keighley and Mr. J. H. Woods of Batley with the history that six months previously he had swallowed a halfpenny and at the time had almost died from suffocation, which was prevented by his mother's presence of mind in pushing the coin beyond the entrance of the larynx by means of her finger. The coin was supposed to have passed into the stomach, as although he had some pain in swallowing there was no actual obstruction to the passage of food. Some weeks after he began to have pain in his neck, to have difficulty in swallowing, and to hold his head stiffly to the left side, almost as if he had caries of the cervical spine. He began to lose flesh and to look ill. It was then decided that he should be photographed by the Roentgen rays. The photograph (by Messrs. Reynolds and Branson of Leeds) was brought with the patient and it shows (*vide* figure) the coin impacted in the œsophagus at a point opposite the pericardium, where it would also be in close contact with the left pleura and with the aorta. I decided to attempt its removal through the patient's mouth, and that failing I obtained permission to perform œsophagotomy. It was explained to the parents that there might be risk of hæmorrhage or perforation in removing the coin from its bed, but they decided to accept all eventualities. On Feb. 18th, the patient being under ether, I inserted the coin-catcher invented by the late Mr. Sam Smith, and at the

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first introduction I withdrew the halfpenny without any difficulty. It was much corroded and covered with greenish-black material. Nothing untoward occurred and the boy left the infirmary quite well the next day.

CASE 2.—The patient was also a boy, aged five years, and the photograph showed the coin in the same position as in Case 1. The same treatment was adopted and with the same result.

The "coin-catcher" is a most ingenious instrument with which I have removed coins recently swallowed on other occasions, and as it is so simple in action and so painless in application it should in any doubtful case be applied as soon as the patient comes under observation. In cases of doubt the new photography can be employed with great advantage, as shown in the two examples I have related. I noticed a report in one of the journals lately that in a similar case, where the coin had been swallowed only a short time previously, œsophagotomy was performed without any attempts being made to remove it through the mouth. My experience would lead me to conclude that such an operation should rarely be necessary and could only be justifiable after the simple means I have related had been thoroughly tried and had failed.



Skiagram showing impaction of halfpenny in the œsophagus opposite the pericardium.

Leeds.

NATIONAL SOCIETY FOR EMPLOYMENT OF EPILEPTICS.—The annual meeting of governors was held on July 11th at the Society's offices, 12, Buckingham-street, Strand, the chair being taken by Mr. E. Montefiore Micholls. In the report for the past year presented by the hon. medical staff it is stated that "a marked improvement has been noted in the majority of cases at the Chalfont Colony," this improvement being especially pronounced in the case of the women colonists. The report of the Executive Committee refers to the rapid growth of the Colony as evidenced by the fact that besides one Home for twenty-four colonists recently completed but not yet occupied four others are now in course of erection, the cost having been provided by contributions for this specific purpose. "Yet the increase of accommodation," it is stated, "does not keep pace with the increase in the number of candidates for admission. This constant development and expansion is therefore clearly a necessity, but it is not always realised that every new Home erected at the Colony creates new wants; on the contrary, these extensions lead to the impression that existing wants have been more than adequately supplied." The result is "that the flow of generosity has been checked when the need for it is greatest," and the gravity of the financial position has led H.R.H. the Duke of York, as President, to issue a special appeal on behalf of the society for the sum of £7000 for certain immediately necessary purposes detailed in the report.

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A CASE OF PEMPHIGUS SERPIGINOSUS.

BY ROBERT Y. AITKEN, M.D. GLASG.,
SENIOR HOUSE SURGEON TO THE BLACKBURN AND EAST LANCASHIRE INFIRMARY.

THE following case was a typical example of a rare form of a rare disease. Of the English text-books on medicine which I have consulted Fagge's is the only one in which a reference to the disease is to be found. It is not mentioned in two of the most recent English works on skin disease. As pemphigus only occurs once in about 400 cases of skin disease this serpiginous variety must be exceedingly rare. The description given by Fagge is so accurate that it can hardly be improved upon. He says: "The bullæ, which are small, are seen on the advancing border of a considerable area of skin formerly the seat of others which have disappeared." He adds that "when first seen in this later stage it might well puzzle an observer."

A girl, aged five years, was admitted to the Blackburn and East Lancashire Infirmary, under the care of Dr. J. M. H. Martin, on March 25th, 1898. She was the eldest of three healthy children. There was no suspicion of a syphilitic taint. Till the onset of the present trouble the child had been quite healthy. From the mother's account it appeared that the disease began in the skin of the cheek near the angle of the mouth sixteen months ago. The child did not complain of itching till the blisters were well developed. As the first blisters dried up others appeared and the disease extended to the neck and chest. Later the disease appeared on the arms, and six months from the commencement it was noticed on the groins and in front of the ankles. The arms were almost well when the eruption appeared on the legs, but they became worse afterwards. When the child was first seen she was in the condition shown in the illustration. The mother stated that the largest blister she noticed was quite an inch in diameter and they varied from this size down to small vesicles. There was no elevation of temperature and all the time the eruption was coming out the general health of the child did not appear to suffer much. This is not unusual in ordinary pemphigus. In the way of treatment local applications of various kinds were tried without success. I may say that she had been under treatment for months at home. When the diagnosis was made arsenic in the form of Fowler's solution, in 4-minim doses thrice daily, was prescribed. Within a week improvement had begun and at the end of a month only a deep red stain marked the seat of the eruption. I report the case because of its rarity and to show the therapeutic value of arsenic in the disease, as Hebra wrote that he knew "of no internal medicine which has proved efficacious against pemphigus." I am indebted to Dr. Martin for permission to publish the case.

Blackburn.



From a photograph of the patient. The bullæ and scarring are well seen on the right thigh, left leg, and left arm.

THE LORD CHIEF JUSTICE ON THE MEDICAL PROFESSION.—At the Bristol Assizes which were held recently the Lord Chief Justice of England in alluding to the medical profession remarked that he thought there was no profession in the world which rendered more entirely gratuitous service than the members of the medical profession and added that so far as his experience went there were not the sordid considerations in this profession which were present in others.

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VITALITY:
AN APPEAL, AN APOLOGY, AND A CHALLENGE ADDRESSED TO BROTHER PRACTITIONERS.

BY
LIONEL S. BEALE.

(*Continued from page 1615, June 11th.*)

I APPEAL with hope to rising biologists having good eyes and understandings and lissome fingers to do their best, and quickly, to confirm or disprove anatomical details brought under our notice during the last forty years or more. Many broad questions of the greatest general interest and of wide application are still undecided—questions which are well worthy of further careful investigation by new methods of inquiry different from those usually followed. And I trust that observers, not only in Europe and America, but the young workers at microscopical investigation in India, Australia, and Japan, where there are many forms of life very different from our own, will help in endeavouring to set at rest some of the most difficult questions which have long resisted our best efforts, but which are certainly not beyond our powers and means of minute investigation. For example, concerning the general arrangement of the most delicate nerve fibres distributed to various organs of sense, to sensitive surfaces, to muscular fibres, and their exact relation to the tissues and bioplasm they influence, we have still much to learn. It is not only as regards minute anatomical detail that we require more complete knowledge, but some general questions with reference to vital action, tissue formation, and the precise action of some of the most important tissue arrangements in the body, not to speak of the question of the nature of mental work, are still open to inquiry. Are not very different and often incompatible doctrines entertained and taught by rival authorities? Microscopical investigation may even yet yield results of philosophical significance.

But to form correct views we must not be content to study only the fully formed tissues of adult organisms, but must endeavour to form an accurate conception of the several stages through which tissues pass from the first indications in connexion with the bioplasm or living matter to the fully formed state when much of the living matter of the early period of development has completely disappeared, and the tissue exhibits structure and performs functions belonging to a category different from that in which the living matter and its action must be placed.

It must I venture to think be admitted that not a few of the specimens of tissues mounted in Canada balsam display little more than the distorted skeletons of dead tissues variously modified by the particular mode of preparation to which they have been subjected; and where fine nerve-fibres are the objects studied the appearances are often open to more than one interpretation. Long ago many of us being impressed with such difficulties endeavoured to gain some advantage by proceeding on different principles. The tissues, always moist in their natural state, were examined in water in which various matters were dissolved to prevent decomposition of the tissues and to render them more transparent, in the hope that their structure and various anatomical or other constituents might be more clearly discerned. The process of preparation I was led to adopt was fully described in communications to the Royal Microscopical Society and published in their Transactions and afterwards in my books. Many of my specimens were shown in class and at my lectures delivered at the Royal College of Physicians of London. My views were fully explained in the Lumleian Lectures for 1875, and afterwards published.[1]

In examining many sections of soft complex tissues mounted in Canada balsam we must bear in mind that when in the living organism they were not compressed and matted together and pressed against one another, as seen in the balsam preparation. Though in living nature elementary parts are near to one another, each is supported and surrounded by fluid which by the action of the bioplasts is always in slow movement and gradually undergoing changes in its composition. Thus the several component parts are protected from injury and undue pressure, each is allowed free action, and at the same time preserved in a healthy condition by the free escape and removal of products of disintegration. This is probably what we should discern if it were possible to examine during life with high magnifying powers the ultimate ramifications of the nerve fibres and their relation to neighbouring tissue elements. Not only so, but from an early period of life onwards we should see suspended in the interstitial fluid minute particles of bioplasm like those present in the blood, lymph and chyle which live, grow, multiply, and after forming various substances die, the various substances resulting from death being dissolved and probably then taken up by other kinds of living matter. These considerations long ago led me to think that much more would be made out if a plan of examination could be devised by which media miscible with water in all proportions and of high refracting power, capable alike of dilution and concentration, were alone employed in preparing all the structures of man and other organisms for microscopical examination under high powers. The process was gradually improved and was found applicable to minute investigations into the structure and formation of tissues of all organisms, whether simple or complex, including plants, under the twenty-fifth-of-an-inch power made for me by Powell and Lealand in 1860.

After much careful work according to various methods at that time in use on the tissues of a variety of organisms, and efforts to trace the changes which occurred in their development and formation I discovered, like many other observers before and since, that the very points of all others which I desired to make clear, were the most difficult to decide and several were left doubtful. One required a process equally suitable for the investigation of all structures, from those which were soft and almost diffluent to those which were exceedingly hard, as bone, tooth structures, enamel, and shell. To study the gradual formative changes in such tissues one required a thin section which included the soft growing matter, the partially formed matter, and the complete structure. To follow the fine ramifications of nerve-fibres for some distance so as to form an idea of their relation to the tissues they influenced, the preparation required to be in such a state that it could be pressed or frayed out by needles, while at the same time the adjacent textures were rendered transparent without disturbing the relations of the several tissue-elements. Then one required to see the capillary vessels and the nerves running very near to them; and, above all, the numerous bioplasts and their relation to the several tissues with which they were connected and which they had formed. And, lastly, it was necessary that the medium in which the specimen was placed should be preservative so that if needful it might be reserved, placed in fresh fluid, again and again, until it became sufficiently transparent for our purpose.

The plan I pursued was well suited for the study of bioplasm of all forms and in different situations in various animals, in insects and crustacea, and in plants, for researches concerning the structure of all parts of the nervous system, including nerve centres of every kind. In the bladder of the little green tree-frog and the thin membrane of the wing of the young bat I was able to clearly make out the arrangement of most delicate nerve fibres distributed to the tissues and to the capillary vessels, to the arterioles and to the muscular tissues.

In attempts to ascertain whether in all living nature there was evidence of any uniform system of action—of any principle which does not affect the "actions and reactions" of ordinary matter—the advantages of a uniform system of inquiry and of preparing so that everything submitted to examination might be treated in the same way must be obvious. Only upon such a plan can very different structures be compared with one another and that which was common to all in arrangement or formation determined. The determination of the directions in which growth was occurring and nutrient matter being introduced, the products of disintegration removed, were also points of importance which had to be considered in the inquiry and if possible elucidated.

The plan of investigation I have pursued is in some cases difficult to practise and I must admit is troublesome and requires much patience. It is not surprising that among teachers of microscopic investigation and those who prepare microscopical specimens for sale it has not been in favour. Great care is necessary in preserving specimens permanently and it is a little uncertain. After some years, however,

[1] "On Life and on Vital Action in Health and Disease," 1875. London: J. and A. Churchill.

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many beautiful specimens of very soft tissues have been successfully preserved and very delicate tissues have retained their characters. For new investigations, however, the process certainly has very great advantages and I cannot but think that some day the principles upon which it was conducted will be recognised by many, followed out, and much improved. The mere fact of our being able to keep pieces of properly prepared tissues in strong glycerine for a length of time, not only without deterioration, but with the certainty of great improvement in transparency and in the state of the tissues for further careful investigation with high powers is conclusive. The tissues will have become after some weeks more transparent, will suffer less from pressure when applied to the thin glass in order to make them thin enough for investigation, and thin sections may be dissected or frayed out in places with needles and without the relative position of the several tissues being altered or the relations of the bioplasts to the tissue or formed matters, or to one another being in any way disturbed. A piece of a highly complex texture which had been soaking for several years in good glycerine in a well-corked bottle and kept in a cool place has provided me with beautiful specimens from which valuable and quite unexpected information was gained.

Is there a naturalist in the world who feels satisfied that the evidence so far obtained in any way justifies the inference that all living things have been derived from a small or large amount of simple "undifferentiated protoplasm," or that the constitution of any one of the innumerable organisms is adequately accounted for by attributing it to the properties of the materials of which its body is composed?

Is there a microscopical observer who believes that the formation of the wonderful structures he studies is adequately explained by the assertion that it has been built up by "molecular forces" or that the movement of a small portion of the clear, transparent matter of an amœba is to be adequately accounted for by potential energy or chemical change?

Surely the great object of studying the works of nature is to try to ascertain how they were made, how they came about, how they work. Is not this the reason why we endeavour to see as far as we can into the arrangements; why we try to increase our power of seeing and make things appear to us hundreds of times larger than they really are; why we spend hours, days, weeks, years trying to learn all we can? This, however, is not the idea which influences all or the theory upon which all scientific investigation is carried on. Even in these days of liberty and freedom of thought and work, some would condemn the microscopical observer to microscopical observation only. He is not to think, to theorise, to speculate, to conjecture; but his results are to be judged by the physicist, the chemist, the mathematician, the generaliser, and the philosopher. If his observations accord with the general views entertained by these authorities the work is approved; if not it is unnoticed or ignored. Even in our empire of liberty there always seems to be springing up amongst us just a little tendency on the part of some liberal minds to form a sort of intellectual syndicate for the purpose of deciding for the people what they ought to think, accept, believe, and teach concerning nature, just as if certain scientifics had somehow captured nature for themselves and had acquired the right to represent her and to declare precisely how she was to be generally regarded by the common people.

BIOPLASM.

The demonstration of structure and the elucidation of the precise way in which it slowly appears and very gradually acquires its characters and properties naturally leads us to endeavour to ascertain the nature of the processes at work in its production and the principles according to which they are governed, guided, and regulated. Much of our physiology of the last fifty years is a physiology of the fully-formed active tissues of the adult—tissues which consist of a considerable amount of débris which under the name of connective tissue has been gradually accumulating for years around many of the active tissues. From the time when the active tissue was first formed and began to discharge its work this indefinite tissue has been, even under the greatest advantages, steadily increasing, and as age advances it seriously impedes the free action of some of the most important tissues, particularly nerve and muscle, and it is one of the causes of that natural deterioration which increases as old age advances and which may lead to natural death.

My views on tissue formation, including the softest, consisting principally of water, and the hardest, containing very little, such as shell, enamel, ivory, dentine, horn, and nail, were published in 1860–61 and soon afterwards were translated into German by my friend, Professor Victor Carus of Leipzig. The living matter was distinguished from the formed matter in each case, the important part taken by the first in the production of formed matter shown, and the absolute difference between the living matter and matter in every other state insisted upon. These views have been recently referred to by Kölliker.[1] But unfortunately 1867 seems to be the latest reference made to any of my observations, though I have done much work since that date and have published several papers and books.

The very important question of the existence or non-existence of vitality surely ought to be seriously considered and carefully debated. For the last forty years we have had at our disposal magnifying powers of 1000 diameters and upwards, by the aid of which many new facts have been ascertained with regard to the arrangement, connexion and action of various forms of bioplasm in different organisms and under different conditions. We are certainly able to distinguish the living matter, which forms tissue from the tissue itself, which has been formed by it, and we have succeeded in proving that tissue does not add tissue to that which already exists. Tissue never forms tissue.

Many of the conclusions which I have been compelled to adopt from actual observation have been so little considered that, interested as I am in the question, it would have been long ago almost a relief to have been judged wrong and to have found that the doctrine according to which all things living are but machines had proved to be correct. A fundamental and general question of such vast interest and importance to every thoughtful person as the *Nature of life* ought not for ever to remain undecided. Naturally, many observers, like myself, have been afraid of pursuing the subject in a wrong direction, and have been hoping for a decision as to first principles by which they might be guided in their further progress in this department of natural knowledge.

It has to be borne in mind that the general evidence which has been accumulating for centuries and the minute research which has been conducted by hundreds of well-trained, naturally patient and thoughtful observers who, during the last fifty years and more, have enjoyed incalculable advantages over their predecessors as regards methods of investigation as well as instruments of research, seems to prove beyond question that if we allow our judgment to be swayed by reason we can no longer accept the dictum that "the living and the non-living are one." If this be so, how many vague though most positive assertions of like tendency must be wrecked! Indeed, is it not now certain that *living* belongs to a category from which all *non-living* must for the future be excluded? Nay, will it not ere long be generally admitted that in the whole living world *Vitality*, during the short time that it influences given particles of matter, reigns supreme, and transcends, guides and governs forces, properties and tendencies which dominate the material world?

The question of the nature of life has been well considered as regards its supposed physico-chemical aspect rather than from the side of actual knowledge, which has been gained since we have been able to study living matter and the process of tissue-construction as it occurs in the widely different organisms around us with the aid of powers magnifying 1000 diameters or more, and with other advantages our predecessors could not enjoy. But ought we not to consider whether the facts now before us justify the view that man is a mechanism or a mere chemico-mechanical apparatus? The conclusions arrived at from the physico-chemical side have been widely taught by distinguished scientific men; but has the study of the comparatively inconspicuous living matter present in all living things received the attention it deserves? The process of construction of tissue in the common living organisms seems to have been little investigated of late, considering the vastly increased advantages we who try to peer into the deepest recesses of the specks of living matter now enjoy. Surely vitality deserves more notice from calm philosophy than has yet been accorded to it.

[1] Verhandlungen der Physik-Medicinischen Gesellschaft zu Würzburg, Neue Folge, xxxi. Band, No. 5, "Die Energiden von v. Sachs im Lichte der Gewebelehre der Thiere."

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We want enlightenment as to the very first principles—the nature of the general changes which occur—how living matter in the simplest organisms is formed—how it grows and multiplies—and the general nature and source of its powers. The great advances of physical physiology and organic chemistry still leave us in doubt as to first principles and we have much yet to learn even concerning the movements of what has been called "undifferentiated protoplasm." The movements of a portion of the structureless matter of a leucocyte, a pus or mucus corpuscle have yet to be explained and accounted for—nay, the cause of the movements of the clear, transparent matter of an amœba which it is said have been exhibited by corpuscles made of gum, water, and oil, have so far resisted the efforts of many of the most talented investigators who have had great experience in inquiries of the kind to account for on chemico-physical principles.

For years have I been trying to convince myself that the views generally accepted by the majority of scientific men were justified by facts of observation and experiment and that my widely different conclusions were erroneous, but I have not been able to obtain a scientific reasonable explanation of the movements of the colourless and perfectly structureless matter of a small and actively growing amœba from any authority, while after all the cross-examination to which I have subjected myself I have failed to shake my belief in vitality as the cause of the movement which no molecular vibrations, osmotic currents, or chemical differentiations will account for.

While much attention has been given to the general structure of all classes of living organisms, their external coverings, their internal organs, and their developmental phenomena, comparatively little notice has been taken of the millions of minute particles of structureless living matter present during their whole life in all their tissues and free in some of the fluids of the body. These are the colourless, structureless bioplasts, usually spherical, or oval, and sometimes stellate in form, from which all structure proceeds, and by the vital action of which in promoting free circulation of interstitial fluid in the very substance of all the tissues the integrity of the latter is preserved and various partially soluble substances which sometimes tend to accumulate and interfere with the action of some tissues are kept in solution. Even deposits may sometimes be dissolved and removed. Many careful investigations have been conducted by highly skilled observers upon the nerves and important results concerning nerve action have been obtained, but to what extent this "action" depends upon changes in the nerve fibre and in the bioplasm particles in connexion with all the finer ramifications of the nerves has not been determined.

This living matter, or bioplasm, part of which ceases to live, while, at the same time, other portions still living communicate their wonderful powers to lifeless matter drawn into its substance in solution in the interstitial fluid, is indeed the *only active living part of us*, for by far the greater part of all our tissues and organs consists of formed matter which cannot of itself increase and multiply, take up nutrient matter, cause it to live and communicate to non-living matter its vital powers.

This bioplasm, the least conspicuous portion of the body, is nevertheless the most important, all our tissues and organs having been derived from antecedent bioplasm and to it their formation, structure, composition, and action are entirely due. So, too, in some of the most important morbid changes the inconspicuous particles of bioplasm are concerned, and it is by the influence of air, water, food and medicines that we are enabled in many cases to promote the return to the normal state of action of bioplasm and thus to restore the healthy condition of tissues, organs, and, perhaps, of the organism generally, that had for some time, perhaps, been out of order.

Bioplasm, which generally consists of more than 90 per cent. of water, is, then, by far the most important matter in living nature and its powers are infinite. All growth, all increase in the size and number of living things, as I have endeavoured to show, depend upon it. Increase is due to bioplasm only. When a particle of bioplasm dies that particular particle can never be restored to life. Lower organisms which, though dead, are said to have been revived or revivified, have, in fact, never ceased to live—have not died.

When a complex living organism dies all its bioplasm does not die at the same moment, and in some cases even tissue formation continues for a short time after the organism as a whole has ceased to live. Even in man under certain conditions some bioplasts may be for a short time more active than they were at the moment of death. In general, the first bioplasm to die in the human subject is that which takes part in the highest functions of the nervous system—the bioplasm near the surface of the grey matter of the cerebral convolutions, which is probably concerned in those mental phenomena by which man is marked off from all lower creatures.

There is nothing in the non-living world which in any way resembles death. All that lives must die and there can be no living matter which does not cease to live, the matter not being reduced in weight by its loss—its life, as far as can be ascertained, not being changed or transformed into any known force, property, or power.

The rate at which bioplasm takes up pabulum and grows and multiplies varies greatly in different organisms and in different parts of the same organism. Generally, formative changes occur slowly; indeed, it may be said that the formation of healthy, well-formed tissue, the elementary parts of which perform their offices most advantageously for the well-being of the organism and for the longest period during life, has been laid down evenly, equably, and at a normal rate. If the process occurs too slowly or too quickly there is a departure from the normal condition detrimental in many ways.

Generally, the production by bioplasm of bioplasts, having far extending and different constructive powers, is a far slower vital process than the production of the succeeding generations of bioplasts which are evolved series after series from the first in gradually increasing numbers and of more limited vital activity. For instance, the vital orderly arrangement slowly taken up by the bioplasts of the plant, produced during the winter months and in comparative darkness from the descendants of which the so-called cells, vessels, and other structures constituting the leaf or flower that is to appear in spring are formed, is a much slower process involving much less taking up and conversion of nutrient matter, than is the growth and multiplication of the succeeding series of bioplasts the last of which takes part in the formation of the several tissues when the nutrient process is active. So also bioplasts taking part in the formation of the pollen and of the ovule require a longer time for this evolution than do those concerned in the production of leaves and the several structures of the flower and its appendages. And, indeed, all through living nature the evolution of the bioplasm from which the infinite series of bioplasts which follow in successively increasing numbers generation after generation, from which at last tissues and organs of wonderful complexity and functional activity or lasting firmness and comparative passivity emanate, requires a much longer time for its completion than does the production of the series which approach nearer and nearer to the bioplasts concerned in the evolution of tissue-producing bioplasts.

Every step we gain in our progress towards the elucidation of the nature of actual vital changes surely renders it less and less reasonable to regard these wonderful vital phenomena as being in any way akin to forces, powers, or properties of any known ordinary matter. This mysterious directing, far-seeing, purposive agency, preparing for certain far-off constructive orderly arrangements of tissues and organs with special powers of action not to be imitated, forming structures operating in, and known only by us in, the living world, must surely be something different from energy or any cosmic forces or properties of matter belonging to the material universe.

The multiplication of bioplasts, having developmental formative powers little inferior to those possessed at an early period of development, after maturity has been reached, varies greatly in different classes of organisms. Thus the adult lobster may reproduce a new claw after the removal of the old one and the lizard its tail after removal; and there are some complex organisms which increase by division, highly complex parts like head and tail being developed before the transverse division of the one organism into two takes place. In many simple organisms multiplication proceeds by division and subdivision under favourable conditions when a certain size has been attained by growth, while in man and the higher animals, even before complete maturity is reached, "cicatricial tissue" seems in many cases to represent the extent of developmental formative power remaining in most forms of bioplasm—not a limb or a finger, not even a complex nerve papilla, a villus, or a

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sweat or sebaceous gland can be again developed in the situations from which these structures have been removed, there being no bioplasts of sufficiently varied and sufficiently general formative powers to reproduce them.

I think all who have examined living things and the tissues of organisms soon after death must often have remarked the general resemblance of different kinds of bioplasm; and the remarkable differences between the several species and individuals which constitute the living world. The likeness of all bioplasm, the wide differences between fully-formed organisms and tissues formed by bioplasm—and impossible in its absence—are evident through all living nature. And I think all who will consider the facts will be more inclined to attribute these differences to differences of power of the bioplasm than to any character or properties of mere matter to be disclosed by the most skilful physicist or chemist—in fact, to vitality—a power working in every particle of the living world—a factor which *cannot be seen, and which cannot be touched, weighed, or measured, isolated, or captured in any way*, but whose marvellous influence upon matter which can be taken up by living things has been handed down from living particle to lifeless matter without a single break or moment's cessation ever since the first appearance of life. A break, an interruption in the vital process, is death.

Consider but a few plants far removed in character from one another and a long distance from the country where they grew, but having very well-marked characteristics and of pretty strong constitution so as not to die immediately, which it is attempted to grow under conditions to which they have not been accustomed. From lovely Japan we have received many such and we long for more. I need only refer to palms, bamboos, maples, and aralias, which have been my delight and have lived many years in the poorest soil within a few miles of London. All came when very small, all live very near to one another and have remained in the same places since they were first planted. All have survived and were hardly hurt by the hard winter of 1895, when water placed near any part of them must not only have frozen hard, but any near the roots must have remained frozen for nearly three months without thawing once. After fourteen years three of the palms have good leaves nearly 4 ft. in width and of good substance—bamboo canes are over 12 ft. in height and the other plants are in sound health and some improve in vigour year after year. Now will anyone maintain that the individuality and great resisting power to adverse conditions, and the adaptability exhibited by these plants, so very different in these respects to many allied species, which would not have survived a single winter if placed under similar circumstances, are due to the material properties of the matter of which they are composed—to any physical or chemical characters? Is it not far more probable, nay, almost certain, that their striking power of resisting adverse conditions is due rather to remarkable vital powers handed down from living to non-living particles without interruption, perhaps for thousands of years; and is it not practically certain that if transferred to their old home they would continue well under the altered conditions and live to be as old as others of the same kind, just as we see happens in the case of some higher organisms and also due to the vital powers of the bioplasm which so far have not been scientifically explained?

Or, as another example of the wonderful vital powers of plant-bioplasm in the fully-formed organism, after serious deterioration had existed for years, when there appeared little hope of improvement, at least under conditions of life widely differing from those of their natural habitat—let me refer to some camellias, which had been deteriorating for some years under the conditions shown by experience to be fairly suitable for these plants when grown in this country. About twelve years ago the plants referred to were in so bad a state that they had been almost given up for lost. Being of no value I gladly received the patients. Knowing that they disliked sunshine and having a good rhododendron hedge in the right position I placed them in an alcove looking towards the pole-star, in peat and sand, and they have not been moved. After a couple of years they began to improve very decidedly and were evidently recovering from the prolonged tissue degeneration from which they had suffered. Their general health so far improved that they formed flower buds, few of which, however, reached the flowering stage till three or four years ago. But last April there were more than a hundred flowers on two trees—one white, the other red,—most of which were well formed and the red flowers were of good colour. Quite certain about the improvement which had occurred I obtained a still more hopeless subject, which after three or four years of almost stationary helplessness is now recovering and forming good leaves. Who will maintain that such facts are to be accounted for by physics or chemistry, or deny that they are to be explained by the gradual production of bioplasm of a more healthy character year after year?

When one considers how closely the living matter, the bioplasm, which takes part in the formation of organisms differing so remarkably from one another in general characters, and in their position among living things; and, according to chemists, the close relation between the substances obtained from it in the laboratory and the comparatively few elements present—the very large proportion of water always existing in living matter and the probable absolute impossibility of living matter of any kind existing even for an instant in a perfectly dry state—it is difficult to resist concluding that the wonderful differences between living things are due to difference in *power* rather than to difference in *matter*, or to a difference in the conditions under which life is carried on—*a power which only influences matter which comes very close to, indeed which passes into, the very substance of the living particle*. The marvellous active power has been transmitted without loss, without one break or fault perhaps during thousands of years. In some cases it seems to be modified, we know not how or why, but powers of modification, like other attributes of vital power, are obviously not unlimited, though the limits within which modification in power can occur without cessation of vital power, cannot be accurately ascertained. The transmission of vital power and the increase in the number of living particles seems to vary according as the surrounding conditions are favourable or not, the power being without limit, though it may cease for ever at any moment. In living nature likeness never reaches identity, and any two forms, however closely they resemble each other, can in nearly all cases be distinguished. Each one of thousands of leaves could at once be identified as belonging to a particular tree, but it would probably be impossible to find two among many thousands which did not exhibit distinguishing marks of some kind. In the living world there is nothing which comes near to mathematical accuracy, no process characteristic of vitality under the sole dominion of physical and chemical law. In the world of life we have never-ceasing movement. In every tissues in every organism, from the very lowest to the highest and most complex, from the youngest to the oldest, from the first moment of the appearance of living matter long, long ago, to the production of that which began to live just this instant, movement which ceases only with death has existed — movement in matter destitute of structure, containing much water, clear as glass, mobile in all its parts—movement called spontaneous, automatic — movements of matter which may be seen but the exact nature and cause of which is undiscovered. Among the substances obtained after its death are proteids, fatty and certain other organic matters, and salts; but the most important of all, and invariably present in large proportion in everything that lives and absolutely necessary to its life, is water. Without water there is no life. How the materials obtained after the death of bioplasm were arranged, how their elements were grouped in the living state, no chemist has yet been able to decide; nor has any physicist yet discovered what happens to living matter at the moment of its death. In fact, neither the chemical constitution nor the molecular arrangement of the matter that lives—of the bioplasm—has yet been determined.

It seems to be agreed that the living body is to be regarded as a transformer of energy, a converter of force, but the transformation, the conversion, is, I think, effected only in the colourless, structureless, mobile living matter, in the bioplasm which constitutes so small and so inconspicuous a portion of any complex living organism. The bioplasm is the only spot which is the seat of action of the wonderful changing, transforming power which is imparted to the non-living matter just brought in solution within the sphere of its influence where the latter acquires similar powers and then manifests vital movements. But heat and light and electricity are not altogether unknown in connexion with the mobile particles of certain kinds of moist living

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bioplasm in which movement is always present. The instant living matter dies all vital movement, all transforming action, ceases. Shall I be expelled from all scientific society if I venture to suggest that this wonderful power upon which depends the living and dying of the only matter which lives now and of that which lived in the past is—Vitality?

(To be concluded.)

A CASE OF GASTRO-INTESTINAL HÆMORRHAGE IN A NEWLY-BORN CHILD; TREATMENT BY LARGE DOSES OF CALCIUM CHLORIDE; RECOVERY.

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THE child who is the subject of this paper was the first offspring of perfectly healthy parents. There was no family history of hæmophilia and the only point of note as regards the labour is that forceps were used when the head was quite low down in the pelvis as there was some delay in the birth. The puerperal period of the mother was quite normal, but it may be noted that her pulse kept well above 100 per minute for the first week, although the temperature never rose above 99·2° F. after the first day. During the first three days of the child's life no unusual symptoms were observed. On the fourth day, however, almost exactly 72 hours after the birth, the infant vomited some dark reddish-brown blood and 3 hours later passed a motion of the same colour, another motion in 2 hours, and another again 2 hours afterwards—i.e., blood was vomited once and three motions of blood were passed during the day, the first being at 12 midday. The amount of blood on each occasion was not great, but it left the patient in a rather anæmic condition. On the next day there was no hæmatemesis. The child was sick once or twice after taking medicine, but there was no blood. Four more motions of blood of about the same amount as the day before were passed and the infant was very anæmic and feeble indeed. On the next day there was no repetition of the hæmatemesis, but there were four more motions of blood considerably less, however, in amount. After this no more blood was passed and the child rapidly convalesced from the resulting anæmia.

The diagnosis of the cause of gastro-intestinal hæmorrhage in newly-born infants is not as a rule difficult. The conditions which may give rise to it are as follows: (*a*) There may be hæmorrhage into the bowel caused by pressure at birth, just as there may be hæmorrhage into other viscera, such as the brain or lungs. It may even be of sufficient amount to cause intestinal obstruction. In my case this explanation was negatived by the fact that the child passed ordinary motions for the first two days of life. This could not have been the case if there were blood in the bowel at birth, for it would certainly have shown itself at the latest at least after one or two motions had been passed. (*b*) There may be acute fatty degeneration of the newly-born. Buhl, in 1861, first described this rare disease, but it is very doubtful whether it is really a definite disease at all. The symptoms are as follows. The child is born in a state of asphyxia without obvious cause. There are cyanosis, blood extravasation under the skin or mucous membrane of the mouth or conjunctiva, jaundice, general œdema, hæmorrhage during the separation of the cord or from the stomach and bowels, and death occurs in two weeks. As all these symptoms except the gastro-intestinal hæmorrhage were absent this was not a case of this disease. (*c*) There may be hæmophilia, but there was no family history of this nor was there any other hæmorrhagic tendency in the child beyond that described—e.g., the cord separated without any bleeding. (*d*) Vomiting and the passage *per rectum* of swallowed blood either from the mother's nipple or from some lesion of the child's mouth or nose may occur, but in this case there was nothing of this kind present. (*e*) There may be ulceration of the duodenum or stomach, as described by Dr. Goodhart and others. In that case hæmatemesis would have been a more pronounced symptom than it was in my case, where it only occurred once. These cases are always fatal. (*f*) Intussusception may occur, but then there would be no hæmorrhage from the stomach and a tumour would be present, and mucus as well as blood would have been found in the stools. (*g*) Congestion of pelvic veins due to a cessation of the circulation in the cord when it was tied might have been another condition, but then the hæmorrhage would have come on directly after birth and would have been accompanied by discharge of blood *per vaginam* from the same cause—i.e., pelvic congestion. Lastly, there may be (*h*) hæmatemesis and melæna neonatorum, and this is the class in which I place this case. The symptoms are simply those which are implied in the name—the passage of blood by the rectum and the vomiting of it in newly-born children. The pathology in this condition is obscure; the necropsy in these cases simply reveals a very much congested condition of the gastro-intestinal mucous membrane without any discoverable cause. Sometimes even this congestion is not seen and no abnormality whatever can be found.

The usual treatment of such cases is by the administration of hæmostatics, such as ergot, perchloride of iron, &c., but the majority prove fatal in spite of all attempted remedies. I gave my patient very frequent 5 gr. doses of calcium chloride. On the first day of the bleeding none was given; on the second day eight doses of 5 gr. were administered every hour through the day and then every two hours through the night; on the third day the same; and on the fourth day every two hours through the day. The drug was then stopped as the bleeding had ceased for twenty-four hours. Altogether the child took 160 grains in three days. The hæmorrhage began to lessen twenty-four hours after its exhibition and ceased completely in forty-eight hours. The resulting anæmia was treated in the usual way by the administration of iron. A practical point to note is this. I warned the mother not to worry if the stools turned black-coloured and it was just as well I did, for she said she would certainly have thought the colour, which was due to the taking of the iron, arose from a recurrence of the bleeding unless she had been prepared. I cannot say whether the stoppage of hæmorrhage was *post* or *propter* the giving of the calcium chloride, but certainly the bleeding ceased soon after its exhibition and I should use it again in a similar case. I have often tried it in other forms of hæmorrhage—e.g., epistaxis, bleeding from tooth socket, &c.—but this is the first case in which I have seen any benefit after its employment.

Bartholomew-road, N.W.

THE SPONTANEOUS OCCURRENCE OF A VESICAL FISTULA IN THE GROIN IN A CASE OF PARAPLEGIA WITH RETENTION OF URINE.

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THE following case exemplifies a remarkable and exceedingly rare result of prolonged retention of urine with overflow and cystitis. For permission to publish the notes I am indebted to Sir William Gowers.

A man, aged forty-eight years, was admitted into the National Hospital for the Paralysed and Epileptic, under the care of Sir William Gowers, on May 24th, 1898, complaining of partial paralysis of both legs and that his urine ran away from him through a hole in the right groin. His family history was unimportant. His previous health had been good. Some years ago he had an abscess in the jaw and another in the left groin. He had never suffered from lead-poisoning.

In June, 1896, the patient was seized with pain in the right leg like "rheumatics." The leg became weak and he commenced to drag it in walking. At the end of a week he had to give up his work on account of pain and weakness in both legs. He was then taken into Charing-cross Hospital, where the bladder was found to be distended. At the end of a fortnight he had completely lost all power in the right leg and nearly all in the left leg and in either leg he could not feel when he was touched. He lost all control over both

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sphincters and developed cystitis. Since this time he had had no pain. He remained in hospital for seven months, where the bladder was kept clean with regular catheterisation and irrigation. His condition of paraplegia did not improve in the hospital but the feeling returned in his legs to some extent.

On leaving Charing-cross Hospital the patient returned home and was treated by his own medical attendant. No instrument was passed and for five months the patient's urine constantly dribbled away. He says he could during this time always feel a round swelling (the distended bladder) above the pubes, but he had no pain. The urine was very offensive. At the end of this time (July, 1897) a small hard lump appeared in the right groin; it was tender and in a few days burst, letting out some pus and a good deal of offensive urine. Since this time the whole of the urine had been voided through the opening in the right groin. He had passed nothing *per urethram* except a little pus occasionally. For the last nine months he had been regaining power in the legs and his sensation had improved greatly, but he was still unable to stand.

The present state of the patient is as follows. He is a sparsely-nourished, sallow-faced man. He complains of no pain. His appetite is good and his temperature is normal. The mental state, speech, special senses, optic discs, cranial nerves, upper extremities and trunk muscles are normal. The spine presents no peculiarities. The lower extremities are rigid at all joints and in all positions. Both feet are dropped and there is some contracture of the calf muscles. There is considerable adductor spasm and the legs are frequently drawn up reflexly. He can flex, extend, abduct, and adduct both hips, but slowly and stiffly. He can flex and extend the knees and can flex the ankles and toes. He cannot dorsiflex the ankles. The legs are rather thin and the muscles are small, but there is no localised wasting. He cannot stand or walk. There is slight diminution of tactile sensibility below the knees on either side, but light touches and pricks are felt everywhere. As regards the sphincters, there is reflex incontinence of fæces. No urine is passed *per urethram*. A No. 16 silver catheter can be passed without much difficulty. The prostate is enlarged. The plantar reflexes are exaggerated and equal. The knee-jerks are exaggerated and equal. There is double foot and double rectus clonus. The heart, lungs, and abdominal viscera present no peculiarities. In the right groin, just above and external to the pubic spine, there is a sinus about 3 in. long. The track begins external to the spermatic cord and then passing behind it opens into the front and right lateral aspect of the bladder. The skin for some inches round this sinus is raw and covered with large moist papules. Urine is constantly dribbling from the sinus. About 3 oz. of dark brown very offensive urine were removed from the bladder by the catheter. On careful examination no signs of the presence of a calculus were found. The bladder is small and contracted. When empty not more than 3 oz. of fluid can be made to enter the bladder even under the pressure of 3 ft. of water.

The origin of the fistula was probably a slough of the bladder wall resulting from the long-continued distension and cystitis followed by a peri-vesical abscess confined by progressive conservative processes and extending underneath the peritoneum to the right groin. It seems unlikely that extravasation of urine into the præ-vesical space with the formation of a secondary abscess had occurred, since at no time had he absolute retention of urine and the signs immediately preceding the bursting of the abscess were quite local. The absence of marked pain and discomfort when these processes were going on and when the patient himself distinctly remembers that he could feel touches perfectly well all over the inguinal regions is remarkable. There was probably such blunting of sensibility from the myelitis that although he could feel touches and distinguish a pin point readily he was unable to feel more severe painful impression in a natural degree, a condition which is not infrequently seen in lesions of the spinal cord interfering with sensation.

CARDIFF.—At the meeting of the Cardiff Board of Guardians held on June 18th it was resolved to accept a tender for £2330 for the erection of a new infants' wing at the workhouse.—Dr. S. W. Wheaton, of the Local Government Board, held an inquiry at Cardiff on June 28th into an application of the Cardiff Corporation for sanction to borrow £21,600 for the erection and furnishing of new wards at the borough sanatorium for infectious diseases.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

NORTH-EASTERN HOSPITAL FOR CHILDREN.

A CASE OF PORENCEPHALUS SIMULATING A DEPRESSED FRACTURE OF THE SKULL WITH A CEPHALHÆMATOMA; NECROPSY.

(Under the care of Mr. H. P. DEAN.)

FOR the notes of the case we are indebted to Mr. J. H. de Villiers, late house surgeon to the hospital.

The patient was a female child, aged four months. There was nothing of note in the family history and in particular there was no evidence of epilepsy or other forms of nervous trouble. The mother had had five other children, all of whom were healthy, and there had been one miscarriage, after the fourth child. With regard to the previous history, the patient was a full-term child (vertex presentation) and the membranes were ruptured thirty-six hours before birth; no forceps were used. A few days after birth the mother noticed a small depression over the right side of the skull, but, thinking that it was due to pressure, she took no more notice of it. It was said that there had been slight wasting since birth, but otherwise nothing wrong was noticed. There were no convulsions. The child was fed from the breast. On Sept. 21st, at 1 A.M., the mother fell down with the infant in her arms; she was unable to say whether the child's head struck against any object, but immediately afterwards she noticed a large swelling extending over the right side of the head. The child was taken to the hospital within a quarter of an hour of the accident; she was found to be unconscious, pale, and collapsed and was immediately admitted. On further examination the child was found to be a healthy-looking and well-nourished infant. Over the right parietal region a large, tense, fluctuating, but not pulsating, swelling presented, covered by normal scalp, which showed no signs of bruising or discolouration. Immediately in front of the swelling, at the junction of the parietal, frontal, and temporal bones, was a small depression simulating a depressed fracture. Both pupils were active to light, but the right was larger than the left; there was no strabismus, but it was impossible to test the ocular movements. No difference in the two sides of the face was detected. The right arm and leg were rigid and the left appeared to be normal. Nothing definite could be made out about the knee-jerks. The temperature was 98° F. From the symptoms the case was considered to be one of depressed fracture of the skull with a cephalhæmatoma. The following is a copy of the notes of the progress of the case. At 6 A.M. the patient was still unconscious. The temperature was 97·6° F. By 10 A.M. the temperature had risen to 100°; the patient was sick twice and was still unconscious. On the 22nd she was sick twice. At 10 A.M. the temperature was 101·6°; otherwise the condition was unaltered. On the 23rd there were marked irregular twitchings of the right arm and leg and complete paralysis of the left arm and leg; no difference in the two sides of the face was detected. The temperature ranged between 102·4° and 99°. On the 24th the child seemed to be conscious, the pupils were equal, and she took milk fairly well. On the 26th the swelling was less tense, and through the swelling two ridges of bone could be felt running from before backwards about an inch apart. The temperature varied from 103° to 100°. On the 30th the temperature was lower, the child seemed to take more notice of her surroundings, and she took food well. On Oct. 1st, at 2 A.M., the temperature was 101·6° and at 10 A.M. 97·6°; rigidity was more marked on the right side; the left side was unaltered. From this date to the 6th the temperature had only on one occasion reached 100°. The child had vomited twice; she seemed much brighter, but otherwise she was unchanged. The patient was sick once on the 7th and twice on the 8th; her temperature was normal. She

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was sick once on the 10th and twice on the 12th, the temperature varying between 97·4° and 98°; otherwise her condition was unaltered. From the 12th to the 22nd there was nothing of note; if anything the rigidity seemed to be less marked; there was no vomiting. The temperature on the latter date was normal. On the 23rd and 24th some diarrhœa occurred, which improved under treatment. On the 25th the temperature was normal. On the 29th, as the child's local condition remained unaltered, Mr. H. Percy Dean made an exploratory incision under chloroform. Immediately on making the skin incision a quantity of cerebro-spinal fluid gushed out. Over an area of about the size of a florin the covering of the cavity inside the brain was extremely thin and at one spot was adherent to the scalp. The margin of the aperture thus made was ragged and seemed to be composed of very degenerated grey cortex. When the flap was completely turned down it was noticed that the right parietal bone was divided into two almost equal halves by a fissure nearly an inch in breadth running from its anterior to its posterior margin and ending anteriorly in the depression before noticed. Beneath the fissure could be seen a smooth-walled cavity evidently in the brain substance; on the floor of this cavity was noticed an opening of sufficient size to admit the little finger, and on passing a probe through the opening it was found to enter the right lateral ventricle. The case was considered to be one of porencephalus, so the skin incision was closed with silkworm gut and dressed with cyanide gauze. The temperature at 2 P.M. (before the operation) was 98°; at 6 P.M. it had risen to 101·4°. On the 30th the general condition was worse. The temperature at 2 A.M. was 100·6° and by 2 P.M. it had risen to 104·6°. The cerebro-spinal fluid was gradually draining away. The patient was sick four times. On the 31st the temperature at 2 A.M. was 100·4°, at 6 P.M. it was 102·4°. Cerebro-spinal fluid was still draining away. The patient was sick four times. On Nov. 1st her general condition was much worse. The temperature at 6 A.M. was 102·2° and the child died at 3 P.M. The temperature just before death was 100·8°; otherwise there was nothing of note.

Necropsy.—A post-mortem examination of the head only was allowed. A widely gaping fissure, running from the anterior to the posterior border, divided the right parietal bone into upper and lower parts of almost equal size. The fissure was closed in its anterior and in its posterior third by united dura mater and periosteum, but the middle third was open, the opening being 2 in. by ¾ in. wide. At the margin of the opening brain matter, membrane, and periosteum were fused together and in a thin layer. Beneath the dura mater, in the upper margin of the opening there were the remains of an old hæmorrhage. Only a thin layer of tissue, evidently the thickened ependyma, prevented the greatly dilated descending horn of the right lateral ventricle from opening at the fissure in the parietal bone. There was no sign of inflammation in the wall of the cavity—in fact, no evidence of septic infection of any kind in the brain or on its surface could be detected. The first frontal convolution, the upper two-fifths of the ascending frontal and ascending parietal, the superior parietal and occipital convolutions were present on the right side. The mesial aspect of the right hemisphere showed a normal arrangement and development of convolutions and fissures. The lower three-fifths of the ascending frontal and parietal convolutions were absent, so were the angular supra-marginal gyri and the part of the posterior parietal adjacent to the angular gyrus; all these convolutions with the first temporo-sphenoidal were involved in the mixed mass of tissue which surrounded and bound the opening in the parietal bone. The second and third temporo-sphenoidal convolutions were long, small ridges, crushed together towards the cerebellar aspect of the temporo-sphenoidal lobe. On the left side the third frontal convolution was well developed, but on the right, although an anterior limb of the fissure of Sylvius was distinctly present, it was impossible to distinguish a distinct third or second frontal convolution, both being represented by a narrow mass of fine convolutions. The island of Reil on the right side was half the size of that on the left; its central sulcus was merely indicated, it had two slight convolutions in front of the central fissure and only one behind it; the island was exposed, the operculum being so slightly developed.

Remarks by Mr. DE VILLIERS.—I have endeavoured to describe this case clinically, not pathologically, especially as no examination of the cord was allowed. Writers on the subject have expressed very diverse views as to its nature. Anyone interested in the subject will find references to other published cases and papers in the following:—Kundrat: Die Porencephalie: eine Anatomische Studie, Gray, 1882; Audry: Les Porencéphalies, *Revue de Médecine*, June and July, 1888; and Norman and Fraser: A case of Porencephaly, *Journal of Mental Science*, October, 1894. By the kind permission of Mr. Dean I am allowed to publish this case.

Remarks by Mr. DEAN.—When the child was seen by me for the first time about three days after admission the symptoms of collapse had subsided and I regarded the condition as one of gradual recovery from a severe contusion and probable laceration of the brain together with either a cephalhæmatoma or traumatic meningocele (meningocele falsa). There were no symptoms of compression of the brain, and as the child seemed to be distinctly improving I decided not to operate at once but to wait a few days before exploring the swelling. At the operation, as soon as the flap of scalp was reflected, the condition was obviously a long-standing one. The only evidence of any recent mischief was the small blood-cyst found at the upper part of the wound. Possibly this was the result of the recent accident, but on the whole I was inclined to think that it was considerably older than this. On enlarging the accidental tear in the thinned-out cerebral cortex a huge cavity was found which I have no doubt belonged to the group known as porencephalus. Using this term in its widest application it may be said to include two distinct conditions: (1) a mal-development of the brain at a fairly early stage of embryonic life; and (2) some extensive lesion, probably vascular in origin, during the later stages of intra-uterine life or at or after birth. This last condition is sometimes called pseudo-porencephalus. In deciding to which group any case belongs there are the following points to consider:—1. Whether the cavity communicates with the lateral ventricle. As a rule in pseudo-porencephalus there is no communication, whereas in congenital porencephalus there is always a communication, usually of about the size which would admit the little finger as in this particular case. Occasionally, in pseudo-porencephalus there is a communication due to an unusually extensive destructive lesion and in such cases the communicating aperture is much larger than in the true cases. 2. In pseudo-porencephalus the cerebral convolutions around the margin of the cavity are quite irregular in distribution, such as one would expect from an extensive hæmorrhage. In true porencephalus the convolutions though malformed are fairly regular in shape and distribution. 3. In true porencephalus the thin layer covering the cavity on its superficial aspect is composed of imperfectly developed brain tissue, whereas in pseudo-porencephalus the lining membrane and the superficial covering are composed of organised tissue containing little or no evidence of its nervous origin. On the whole, therefore, it is fairly clear that this case belongs to the group of true porencephalus and that death was due to alteration in the vascular mechanism of the brain produced by the draining away of cerebro-spinal fluid and to other conditions.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

A CASE OF TRANSPERITONEAL LIGATURE OF THE EXTERNAL ILIAC ARTERY FOR ANEURYSM OF THE COMMON FEMORAL; CURE.

(Under the care of Mr. FREDERICK PAGE.)

ALTHOUGH, as Mr. Page mentions in his remarks, many of the text-books on operative surgery do not describe transperitoneal ligature of the external iliac, yet the subject has not by any means been entirely neglected. A very good account of the operation is given by Mr. Jacobson[1] and by Mr. Treves.[2] Mr. Page refers to Mr. Makins's case in 1892, but he may be interested to know that in the same patient subsequently a similar aneurysm appeared on the other side of the body, and, further, Mr. Makins tied in 1893 the other external iliac, so that in this case both external iliacs were tied with success. Mr. Jessop's case was mentioned in a paper read before the Leeds and West Riding Medico-Chirurgical Society on Nov. 2nd, 1894, and it was reported in THE LANCET of Nov. 17th, 1894, p. 1142. The

[1] The Operations of Surgery, third edition, p. 612.
[2] Operative Surgery, vol. i., p. 211.

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question of transperitoneal or extra-peritoneal operation for the ligature of all the iliac arteries is practically the same, though the arguments in favour of the transperitoneal method are especially strong in the case of the common and the internal iliacs, and it has been urged[3] that the ordinary operation for ligature of the external iliac is so simple that it is undesirable to employ the transperitoneal method for this vessel. Mr. Page's case is of great value, as it shows how simple is the transperitoneal operation, and it is very probable that this method will be more commonly employed in the future. It requires care that the wound is kept aseptic, but that is equally true of the extra-peritoneal method, for if suppuration should appear outside a peritoneum which has been stripped up sloughing is not unlikely to ensue. As to the material of the ligature we cannot see why any harm should arise from aseptic silk.

A man, aged forty-seven years, was, on March 10th, 1898, admitted to the Royal Infirmary, Newcastle-upon-Tyne, under the care of Mr. Frederick Page, suffering from aneurysm of the left common femoral artery of three months' duration. The patient complained of pain and stiffness in his left groin and of pain on the inner aspect of his knee and said that he was unable to use his left leg. There was an aneurysm of the common femoral as large as an orange. Nine years ago he suffered from rheumatic fever. He had now "a very soft aortic systolic and a mitral regurgitant murmur." He had led an irregular life, but had never had syphilis. On March 17th the abdomen was opened by an incision 3 in. long, commencing 1 in. above Poupart's ligament, parallel to and just outside the sheath of the rectus. The intestines and omentum were then packed off by means of sponges and free access was obtained to the vessel, round which a catgut ligature was readily passed and tightly tied. Pulsation in the aneurysm at once ceased. The abdominal wound was closed in layers, the limb was wrapped in cotton wool, and the patient was removed to bed. No constitutional disturbance followed the operation and the wound healed by first intention. On the 19th pulsation returned in the aneurysm, but it was much diminished on the 20th and wholly absent on the 21st, since which date there has been no return. The patient left the infirmary on April 12th cured and is now quite well.

Remarks by Mr. PAGE.—On Sept. 20th, 1892, Mr. Makins at St. Thomas's Hospital and Mr. Mitchell Banks at the Royal Infirmary, Liverpool, in two patients suffering from aneurysm of the common femoral tied the external iliac artery through the peritoneum and both cases were cured. Since then the vessel has been twice, at least, tied by the same method, once by Mr. Brown at Leeds in 1893, and once by Mr. Coppinger of Dublin in 1894, for aneurysm of the common femoral. In Mr. Brown's patient, a fat subject, there were two aneurysms, gangrene followed, and the patient died after amputation. Mr. Coppinger's patient was cured, so that with mine, 5 cases have been recorded as operated upon by this method and 4 of them have been successful. I understand that Mr. Brown of Leeds tied the vessel a second time by the same method last year. Mr. Jessop of Leeds has also once done so, but I have not been able to find reports of these two cases. I notice that most of the text-books on operative surgery do not describe transperitoneal ligature of the external iliac. In the last edition of Erichsen it is stated that "the surgeon may resort to ligature of the vessel through the peritoneum in those cases in which Astley Cooper's operation is impracticable." Mr. T. Holmes, who advocates pressure before ligation of the external iliac where practicable, says that wound of the peritoneum "is not necessarily attended with fatal or even with serious consequences; in fact, a successful case was lately published in which the peritoneum had been divided by mistake for the transversalis fascia to the extent of the external wound, but any injury to the peritoneum should nevertheless be most carefully avoided." I take it, therefore, the general surgical opinion still is that extra-peritoneal ligation of the external iliac is the operation which should be selected, the trans-peritoneal method only being resorted to where extra-peritoneal ligation is impracticable. My own experience is far too limited to allow me to express an opinion on the relative merits of the two procedures. I have tied the external iliac twice for aneurysm of the common femoral, once by the extra-peritoneal and once by the transperitoneal method. Both cases did well. Should I ever have occasion, however, to tie the external iliac again for an aneurysm of the common femoral I should certainly, without any hesitation, select the transperitoneal operation, tying the vessel tightly with a catgut ligature. Mr. Makins, Mr. Brown, and Mr. Coppinger all tied the vessel tightly with a silk ligature. Mr. Mitchell Banks used a catgut ligature and did not tie it tightly. Eleven days after operation his patient became suddenly alarmingly ill from what seems to have been embolism, but she recovered. I am rather surprised to find that no inconvenience arose from the use of the silk ligatures. I should expect that silk would be more liable to give rise to subsequent trouble than catgut. What is the best ligature and what is the best method of its application to an artery in continuity are points, among many others, in the treatment of aneurysm which it would be most interesting and instructive to hear debated by surgeons who have had considerable practical experience in this department of surgery. Much has happened since 1870 when the late Dr. G. Y. Heath, in his address on Surgery at the meeting of the British Medical Association in Newcastle-upon-Tyne, contrasted the relative merits of pressure and the ligature in the treatment of aneurysm in the following terms: "I should rather leave to those who best know what dangers encompass him who is submitted to the knife and the ligature—the shock, the suppuration, the erysipelas, the pyæmia, the gangrene, and the secondary hæmorrhage—the appraisement of a measure which after a few hours' sleep leaves the awakened patient free from his disease, with no wound to heal, no further risk to run, and to say whether any surgical proceeding ever more truly deserved the application of the old maxim, *Cito, tute et jucunde.*"

[3] Mr. Clement Lucas, Brit. Med. Jour., Nov. 5th, 1892, p 1033.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

The Sagittal Fontanelle.—Fronto-anterior Positions of the Head.—Acute Bedsore following Parturition.—Exhibition of Specimens.

A MEETING of this society was held on July 6th, Dr. C. J. CULLINGWORTH, President, being in the chair.

Dr. ARNOLD LEA read a paper on the Sagittal Fontanelle in the Heads of Children at Birth. He stated that abnormal fontanelles had been known to be present in the head of the fœtus at birth for many years; several of these membranous spaces had been described (naso-frontal, cerebellar, medio-frontal, sagittal), of which the most interesting to obstetricians was the sagittal fontanelle, first described by Gerdy in 1837. Dr. Lea's observations were based upon the examination of 500 consecutive cases at birth. The sagittal fontanelle was situated 2 cm. in front of the posterior fontanelle on a transverse line drawn between the two parietal eminences. Its average length was 1½ cm. and width 1 cm. It might form a space as large as the anterior fontanelle or it might be developed on one side only. The edges of the membranous space were usually formed of well-developed bone, but at times there was deficient ossification of the posterior part of the parietal bone. He had found the membranous space present in 4·4 per cent. of his cases; he had not included those in which there was only a notch in the parietal bone. The fontanelle was bilateral in 17 cases and unilateral in 5 cases; in 4 instances it extended up to the parietal eminence on each side. A description was given of the development of the parietal bones and of the obstetric and medico-legal interest of the fontanelle and of its effect in facilitating moulding of the head.—Dr. HERMAN said that two practical points arose out of the laborious and careful investigation of Dr. Lea. The first was that a sagittal fontanelle might mislead one who diagnosed the fœtal position by feeling the sutures and fontanelles. But this would not trouble anyone who was accustomed to diagnose the position by abdominal palpation. The second was that a sagittal fontanelle indicating backward ossification might invite a trial with forceps in a case which with a very hard head would call for perforation.—Dr. HERBERT SPENCER expressed surprise that the fontanelle had been found in 4·4 per cent. of cases. He asked Dr. Lea whether his observations were clinical or post-mortem. He (Dr. Spencer) was well acquainted with fissures in the parietal

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bone which were common and every obstetrician knew how depressible the upper edge of the parietal bone often was; what was really only a fissure might therefore appear to the examining finger as a space; but having carefully examined the skulls of over 300 new-born infants post mortem he had not met with one instance of a sagittal fontanelle at all comparable to the anterior fontanelle. He had, however, met with parietal fenestra and with insular ossification and absence of ossification in the parietal bones of the mature fœtus. He had no doubt that as a considerable anatomical space the sagittal fontanelle occurred with much greater rarity than that stated by Dr. Lea.—The PRESIDENT said it would no doubt have been quite as much a surprise to the Fellows generally as it had been to him to learn that a genuine sagittal fontanelle had been found in so large a proportion of cases. He thought that the liability of this extra fontanelle to be mistaken for a fracture the result of violence had an important medico-legal bearing.—Dr. LEA, in reply, stated that the percentage of cases of parietal fontanelle observed by him was similar to that of M. Hemy. In children some months old instances in which it remained open were not uncommon. He had examined two cases in which the infants died soon after delivery.

Dr. GEORGE ROPER read a note on some Difficult Cases of Fronto-anterior Positions of the Fœtal Head. He stated that after an extensive experience in difficult labours he never felt satisfied with the knowledge he had of the difficulties connected with the fronto-anterior positions of the fœtal head in labour. With a child beyond average size or with a small or misshapen pelvis considerable difficulties occurred. He referred to the description of the labour in Dr. Herman's book on Difficult Labour and stated his opinion that the difficulty was due to the position of the child's trunk. He (Dr. Roper) recommended after a moderate trial with forceps podalic version in the treatment of these cases and showed an instrument he had devised for facilitating traction on the leg.—Dr. HERMAN thought that Dr. Roper had done service in calling attention to the fact that the mechanism of delivery did not depend only upon the relation of the head to the pelvis. The position of the trunk caused extension of the spine, which led to extension of the head. Also, as Dr. Roper had pointed out, the fœtus would enter the pelvis more easily when its concave abdominal aspect was applied to the mother's lumbo-sacral convexity.—Dr. HORROCKS said that he agreed that the tendency in these cases was at first towards extension, but after further descent into the pelvis the head tended to be flexed by the uterine forces. The treatment depended upon the mobility of the fœtus: when there was little or no mobility the proper treatment was not rotation or version but craniotomy.

Dr. BLACKER read a communication on a case of Acute Bedsore following Parturition.

The following specimens were shown:—

Dr. PEMBREY: Five Cake-like Bodies (containing fœtuses) which were found free in the Peritoneal Cavity of a Large Rabbit.

Dr. J. D. MCCAW: A Cystic Fibro-myoma of the Uterus removed by Laparotomy from the Uterus in the Middle of Pregnancy; delivery at term.

Dr. WISE: Ovum with Hæmorrhage into the Placenta.

Dr. TATE: Uterus removed by Vaginal Hysterectomy.

Dr. HERBERT SPENCER: Ovarian Dermoid which, Incarcerated in the Pelvis, was pushed up in the Middle of Pregnancy and Removed after Delivery at Term.

OPHTHALMOLOGICAL SOCIETY.

Subconjunctival Blood-letting for Hæmorrhagic Retinitis.—The Mechanism of the Conjugate Movements of the Eyeballs.—Large Clear Cyst of the Conjunctiva.—Chancre of the Lacrymal Sac.—Exhibition of Specimens.

A MEETING of this society was held on July 8th, Mr. H. R. SWANZY, President, being in the chair.

Mr. RICHARDSON CROSS read a paper on Subconjunctival Blood-letting for Hæmorrhagic Retinitis. Recognising the fact that a considerable amount of blood escaped from the wounded vessels in squint and other subconjunctival operations without any ill-effect Mr. Cross determined to try the effect upon intraocular hæmorrhage or congestion of a more or less free division of the blood-vessels running along the muscles and in the subconjunctival tissue. For this purpose he made free incisions beneath the conjunctiva either between the inferior and internal recti or between the superior and external recti; the incisions were followed by the use of hot fomentations. From the result of this kind of interference in several cases Mr. Cross felt justified in recommending this plan of abstracting blood from the branches of the ophthalmic artery. In one case in which there were numerous retinal hæmorrhages round the disc, with much congestion of the retinal vessels and some optic neuritis, leeches and general medical treatment had been applied without benefit and vision was reduced to $\frac{5}{60}$. Free incisions were made into the subconjunctival tissue with strabismus scissors so as to lacerate as many vessels as possible and warm fomentations were afterwards applied. The next day the pupil was dilated and there was marked diminution in the swelling of the disc, with an improvement in vision. This improvement was steadily maintained and the vision was eventually completely restored. Several other cases were quoted in which considerable improvement resulted.

Dr. ALDREN TURNER read a paper on the Mechanism of the Conjugate Movements of the Eyeballs. He showed that there was accumulating evidence in favour of the sixth nerve nucleus being the lower or pontine centre for the associated action of the internal and external recti muscles and that the fibres from the sixth nucleus of one side probably passed directly into the third nerve of the opposite side, without the intervention of cells in the third nucleus, facts which indicated that the internal recti were doubly innervated—on the one hand from the third nucleus for convergence and on the other from the sixth nucleus for lateral movement. Respecting the path by which impressions were conveyed from the cerebral cortex to the sixth nucleus he referred to an experiment in which the tegment of the pons was divided without interference with the sixth nucleus. As a result conjugate deviation of both eyes to the opposite side, with inability to move them to the side of the lesion, was observed. The conclusion drawn from this observation was that the cortico-pontine fibres decussated in the neighbourhood of the quadrigeminal bodies and passed downwards in the tegment of the pons to the sixth nucleus.—The PRESIDENT made some observations on the position of the nuclear centre for convergence and on the probability of there being not one but several cortical centres for conjugate movements of the eyes.—Mr. JESSOP thought that absence of convergence was a very rare condition; he knew of only one case in a boy subject to epileptic fits. He had advanced both internal recti with the result that the boy now had several metre angles of positive convergent power.—In reply Dr. TURNER stated that he had only seen one case of paralysis of convergence, while the conjugate movements were unaffected. He referred to the loss of pupillary contraction on attempts at convergence in that case, while the pupillary light reflex was retained. This phenomenon was the converse of the Argyll-Robertson pupil.

Mr. SIMEON SNELL (Sheffield) related particulars of a case of Large Clear Cyst of the Conjunctiva. The cyst was as large as a hazel nut; it was concealed almost entirely by the lower eyelid, but when the lid was drawn down it bulged forward. The patient was twenty-three years of age; the cyst had been noticed since childhood but was then quite small. Ten months before coming under observation he was struck over the cyst, which enlarged and became bluish in colour; before this it was transparent. Microscopical examination of the cyst, made by Mr. Treacher Collins, showed it to be lined throughout by a single layer of endothelial cells, outside which was some moderately dense fibrous tissue with patches of round-celled infiltration in it. The cyst was probably lymphatic in origin.

Mr. SIMEON SNELL also related a case of Chancre of the Lacrymal Sac. The patient sought advice for what he deemed subacute inflammation of the lacrymal sac. When seen there was no ulceration of the sac, but there was a more than usually defined margin to the swelling. There was nothing to suggest a primary lesion. Later the canaliculus was slit up and the duct probed with some slight relief; afterwards a macular syphilide appeared on the chest and arms with ulceration of the tonsils. Presuming the lesion of the lacrymal sac to be a primary sore the secondary symptoms appeared in correct sequence as to time, the first swelling of the sac being noticed on April 3rd and the rash appeared on May 13th. The thickening of the sac and the rash quickly dispersed under mercurial treatment.

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The following living and card specimens were shown :—

Mr. RICHARDSON CROSS : Plastic Operation for Contracted Socket.

Mr. ERNEST CLARKE : Pigmented Mole of the Face and Eyelids.

Mr. ADAMS FROST : Case of Pseudo-glioma.

Mr. MARCUS GUNN : Preparation of a Sclerosed Retinal Artery.

The following are the officers and council of the society who were elected to serve for the session 1898–99 :—President : Mr. H. R. Swanzy. Vice-Presidents : Sir W. R. Gowers, F.R.S., Dr. D. Argyll Robertson (Edinburgh), Mr. R. Marcus Gunn, Mr. R. Williams (Liverpool), Mr. E. Nettleship, Mr. Henry Eales (Birmingham), *Dr. W. A. Brailey, *Mr. Priestley Smith (Birmingham), *Mr. F. Richardson Cross (Clifton), and *Mr. George Cowell. Treasurer : *Dr. John Abercrombie. Secretaries : Dr. James Taylor and *Mr. E. Treacher Collins. Librarian : Mr. W. Adams Frost. Other members of council : Dr. Arthur P. L. Wells, Dr. L. H. Tosswill (Exeter), Dr. C. E. Glascott (Manchester), Dr. Arthur W. Sandford (Cork), Mr. Charles J. Oldham (Brighton), Dr. Howard H. Tooth, Dr. W. A. Turner, Dr. G. E. Wherry (Cambridge), Dr. S. H. Habershon, *Mr. J. B. Lawford, *Mr. W. J. Cant (Lincoln), and *Mr. Sydney Stephenson. The gentlemen whose names are marked with an asterisk were not on the council, or did not hold the same office, during the preceding year.

Reviews and Notices of Books.

A System of Medicine. By Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D. Cantab., LL.D. Glasg., F.R.S., F.R.C.P. Lond., &c. Vol. V., Diseases of the Respiratory and Circulatory Systems. London : Macmillan and Co. 1898. Price 25*s.* net.

THE appearance of another volume of this notable work will be welcomed by many a practitioner and student. A striking feature is the large number of contributors which the editor has secured ; several fresh names appear in the present volume which completes the Diseases of the Respiratory System and embarks on those of the Circulatory System. Needless to say that the work continues to maintain the high level of excellence of the previous volumes. Dr. W. Ewart opens with an article on Bronchitis which is admirably arranged and clearly expounded. We note his reference to the frequent association of bronchitis with pleurisy and his statement that this "pleuro-bronchitis" is often of rheumatic origin. In speaking of plastic bronchitis—an affection of such rarity as to be regarded as almost one of the curiosities of pathology—Dr. Ewart is unable to give much encouragement in the use of solvent treatment of the false membrane. There is a section on Putrid Bronchitis—another affection of some pathological obscurity. The treatment of bronchitis is discussed at some length, being followed by judicious remarks upon prophylaxis. The article on Bronchiectasis is from the same pen and is especially interesting from the breadth of view taken on the subject. Attention is drawn to the recently described condition of "acute bronchiectasis in children," or, as Dr. Ewart terms it, "bronchiolectasis," the illustrations of the condition published by Dr. Sharkey being reproduced. The etiology of bronchiectasis is amply discussed, the author stating views at which he has himself arrived which afford a rational explanation of its occurrence. The signs, symptoms, associated conditions, and the differential diagnosis are well described, but perhaps the most noteworthy feature of the article is the opinion expressed that the treatment of bronchiectasis has of late entered on a new era in the introduction of garlic as an internal remedy by Dr. Vivian Poore, the employment of intratracheal injections and the systematic inhalation of creasote as proposed and carried out by Dr. Chaplin. Surgical treatment by incision and drainage is regarded as a closed chapter in the history of pulmonary therapeutics. The important subject of Pneumonia is dealt with by Dr. Pye-Smith in an article the value of which is enhanced by an appended analysis of 434 cases of the disease from the records of Guy's Hospital and other sources. Dr. Pye-Smith departs, and we think wisely, from the routine order of descriptions of diseases in discussing the clinical features of the disease before entering on its pathology and etiology. He gives a sufficiently detailed account of the present state of knowledge of its bacteriology, and we note that he thinks that there is sufficient evidence for continuing to accept the common belief in the agency of cold in the production of the affection. The historical sketch he gives of the treatment of pneumonia is very interesting. Dr. Pye-Smith also writes upon Catarrhal Pneumonia and Chronic Pneumonia, or pulmonary cirrhosis, which he does not think ever arises directly from lobar pneumonia (p. 49). We miss any separate article upon gangrene of the lung, although, of course, reference is made to this sequel of acute pneumonia in the description of that disease. Dr. Percy Kidd writes upon Phthisis Pulmonalis. In his discussion of the causes of this prevalent malady he shows clearly that the undoubted and progressing diminution in its mortality is to be ascribed in great measure to improved conditions of dwelling rather than to states of soil. This section of his article is very well planned. We would especially mention his treatment of the vexed question of heredity, which has assumed a new aspect since the recognition of the infectivity of tuberculosis has become universal. His summary on the matter, that "the only conclusion at present warranted is that direct inheritance is of decidedly subordinate importance to extra-uterine infection, however acquired," will be assented to by all who have studied the subject. He next describes the pathological anatomy of the disease and divides his consideration of the symptoms under the heads of (*a*) *Acute*, comprising the lobar-pneumonic form, the broncho-pneumonic form, and acute miliary tuberculosis ; and (*b*) *Chronic* pulmonary tuberculosis. Five modes of invasion of chronic phthisis are discriminated—namely, the insidious, the bronchitic, the pleuritic, the hæmoptoic, and the laryngeal. The symptoms and physical signs are admirably sketched and there is a very full account of the various complicating conditions. Under treatment a first place is given to preventive measures and indeed the whole article is a model one. To Dr. Arlidge has been assigned the subject of Pneumoconiosis, a field in which he is an acknowledged authority. At the same time we doubt if sufficient stress is laid upon the frequency with which tuberculous invasion is responsible for the destructive lesions of "dust-phthisis." Of the gravity of the inhalation of dust as a factor in the production of disintegration of the lung none can be ignorant, but yet it may well be that the changes which it initiates render the lungs vulnerable to the attacks of the tubercle bacillus. Dr. Rolleston contributes a description of Pulmonary Aspergillosis in an article which will probably rank as the standard account of a rare condition. Dr. J. Kingston Fowler writes upon Emphysema of the Lungs and also on Syphilitic Disease of the Lungs. Both articles are very careful productions, the latter especially, introducing many new facts of great importance in diagnosis and treatment. Readers of Dr. Fowler and Mr. Godlee's recent work will know what to expect in these contributions, which are characterised by thoroughness and accuracy. The contrast drawn between the lesions of pulmonary syphilis and pulmonary tuberculosis on pp. 328 and 329 is of great value and we venture to quote these instructive passages :—

"1. Tubercle usually affects the apex of the lung and subsequently the apex of the lower lobe ; it tends to progress along a certain route. The primary lesion of syphilis is often about the root and central part of the lung ; the disease

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follows no definite line of march and gummata may be found in any position. 2. Both tubercles and gummata may undergo either necrosis and caseation or fibrous transformation; but with caseous tubercle the tendency is towards softening and cavity formation is the rule, whereas a caseous gumma very rarely breaks down. 3. The progressive destruction of the lung by a process of disintegration leading to a gradual increase in the size of a cavity, a change so commonly observed in tuberculous disease, is rarely if ever observed in syphilis except as a secondary result of stenosis of one of the main bronchi. 4. In nearly all cases of advanced destruction of the lung occurring in the subjects of syphilis stenosis either of the trachea or of one of the main bronchi is present, whereas this lesion is very rare indeed in tuberculosis. 5. The cavities found in cases of pulmonary syphilis are usually bronchiectatic, but not invariably so, whereas in tuberculosis they are commonly due to progressive destruction of the lung, but may be bronchiectatic. 6. The tendency to the formation of pulmonary aneurysms, which is so marked a feature in tuberculosis, is rarely observed in pulmonary syphilis. 7. Pulmonary lesions in tuberculosis are very common, whereas in syphilis they are extremely rare."

The close association between hay fever and asthma is well recognised in the article treating of these conditions contributed by Dr. Goodhart, who points out how scanty are the data derived from the study of the clinical and pathological history of asthma to explain its phenomena. He discusses the various views advanced as to its pathogeny in an impartial spirit and does not hesitate to point out the difficulties in the way of accepting any one of them as all sufficient. He inclines, however, to the generally accepted explanation of bronchial spasm, together with that of turgescence of the mucous membrane—a combination of the two most advocated doctrines, which probably brings us nearest to the truth, besides connecting the asthmatic paroxysm with the paroxysmal sneezing of hay fever. At any rate the place of these affections in the nosology is on all grounds rather with the neuroses than with affections of the respiratory system.

The section devoted to the Diseases of the Pleura is introduced by an article on Intra-pleural Tension by Dr. S. West. The subject is a difficult one, involving physical problems of some intricacy, and in spite of the attention which it has from time to time received there is still room for its complete investigation. The essay here contributed by Dr. West deserves careful study and propounds the problem in a clear and concise manner. Dr. Gee writes on the subject of Pleurisy, the section on Morbid Anatomy being furnished by Dr. Herringham. In respect to this disease it is interesting to observe how completely the doctrine of its dependence upon specific morbid poisons has come to be accepted, Dr. Gee admitting that even in cases where traumatism and exposure to cold are followed by pleurisy these agencies serve only to facilitate the invasion of specific microbes. It is needless to say that the subject is treated in a most attractive and masterly manner. Professor Finlay writes on Pneumothorax in a practical and instructive manner, his directions as to the indications for paracentesis being sound and judicious.

The conditions and diseases in which the blood is primarily concerned form the subjects of numerous articles under the heading of Diseases of the Circulatory System. They are preceded by an article, entitled "General Features of the Blood," contributed by Professor Michael Foster, and a fairly exhaustive account of the Clinical Examination of the Blood, by Dr. Monckton Copeman, as well as one on Cardiac Physics by Professor Sherrington. Space forbids our attempting to do more than name these valuable additions to a medical treatise, but their inclusion suffices to show how intimately the methods and results of physiology are bound up with the problems of disease. Professor Clifford Allbutt writes upon Chlorosis in a most interesting article which leaves nothing untouched and combines the rich fruits of his personal experiences with a wide knowledge and appreciation of the scientific labours of others, notably amongst recent writings those of Stockman and Lloyd Jones. Dr. Coupland gives a summary account of Pernicious Anæmia, from which it is apparent that by no means the last word has been said upon the pathology or treatment of this remarkable affection; and Dr. S. West writes on Splenic Anæmia, excluding from his consideration the comparatively large series of cases in children to which attention was, we think, first directed by von Jaksch. Nor does he sympathise with the teachings of Banti upon the propriety of early removal of the spleen as a curative measure. For the subject of Hæmophilia the editor has secured the services of Dr. Wickham Legg whose monograph still remains practically the sole English treatise on the subject. It is noteworthy that he speaks very cautiously on the alleged influence of chloride of calcium in arresting the hæmorrhagic tendency. Dr. John Thomson writes on Hæmorrhages in New-born Children, grouping the conditions under the two heads of (1) Traumatic or Accidental Hæmorrhages, and (2) Spontaneous Hæmorrhages, of which the most remarkable are those rare cases of idiopathic nature the etiology of which is much debated, but considered by some to be due to the intervention of micro-organisms. Dr. Stephen Mackenzie discusses the various conditions which have been styled "Purpura" and shows how complex these are, an instructive analysis of 200 cases at the London Hospital bearing this out, besides proving the relative rarity of the condition. Mr. Johnson Smith writes on Scurvy and Dr. Cheadle on Infantile Scurvy, citing his experience as to the much greater incidence of this affection amongst the children of the well-to-do than amongst the children of the poor. Dr. Monckton Copeman contributes an article upon Hæmoglobinuria which, as he says, is probably invariably due to the separation of hæmoglobin from the red corpuscles in the general circulation. He describes three forms, the infantile, the toxic, and the paroxysmal. With respect to the last named it would have been of interest to learn the ultimate fate of the subjects of it. No doubt in many instances the liability to attack lessens as age advances, but there must be cases where local or general diseases have supervened and the association between them and the blood state may possibly throw light upon the pathology of the latter. Dr. Robert Muir is the author of the article on Leucocythæmia, a subject to which he has himself contributed many important facts. His testimony to the value of arsenic "as the only drug which seems to have a distinct effect on the leucocythæmic condition" will be generally endorsed. A valuable pathological study of Dropsy from the pen of Dr. W. H. Dickinson completes the division of the work treating of the blood.

Next comes the section upon Heart Diseases. It opens with an article by Dr. Laurence Humphry upon Congenital Malformation of the Heart, treated in a thoroughly systematic manner which renders it well suited for reference. Dr. Frederick Roberts writes upon Diseases of the Pericardium. His article is most exhaustive, a fitting successor to the elaborate contribution on the same subject to Reynolds's System by the late Dr. Sibson whose painstaking observations are often referred to by Dr. Roberts. Professor Clifford Allbutt writes in his charming style upon Functional Disorders of the Heart, his article abounding in examples from his personal experiences, most happily chosen, whilst throughout the tone is one of hopefulness and good sense. He also writes upon Mechanical Strain of the Heart, a subject which we are glad to see receive such extended notice. A "sign of the times" is the inclusion here of an article upon Injuries by Electric Currents of High Pressure. It is written by Dr. Thomas Oliver, whose conclusion is that the cause of death in such cases is cardiac, probably, as explained by Bleile, from

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arterial constriction giving rise to an amount of mechanical impediment which the heart cannot overcome. This is contrary to the view of D'Arsonval, who attributes the fatal event to asphyxia. To our thinking Dr. Oliver does not lay stress enough upon the fact that it is not voltage that kills so much as ampèrage—i.e., quantity of current. The voltage of even a small Leyden jar is probably very high—possibly 10,000 volts or so—but the quantity of current being infinitesimal the shock, though unpleasant, does not kill. Dr. Dreschfeld writes upon Endocarditis and Sir R. Douglas Powell upon Diseases of the Myocardium in articles which may well claim to be authoritative. The editor also contributes to the volume a very thorough study of Disease of the Aortic Area of the Heart and Dr. Sansom writes upon Diseases of the Mitral Valve. We trust that enough has been said here to show that the reader of this volume will greatly profit by its perusal. The articles are of high quality and their writers are well chosen, their very number ensuring a delightful variety in style and mode of thought which constitutes a pleasing feature of such treatises. We may also venture to congratulate the accomplished editor upon the near approach of the completion of his labours in the production of a work of abiding interest and value.

Can it be True? A Psychological Study. By G. YEATES HUNTER, I.M.D. London: Digby Long and Co. 1898. Price 6*s*.

"THE principle of heredity is an immense and ever-increasing factor in the human life as the ages roll on." This, one of the closing sentences in Surgeon-Major G. Y. Hunter's tremendously sensational novel, gives the key to the whole work. The rapid growths of insanity and suicide at the present day prove to him that civilisation "with all its magnificent results in improved sanitation and enhanced public and personal hygiene" has not strengthened the modern mind in proportion to the modern body. While the body, he says, "has benefited from applied scientific knowledge and the value of life has increased from an actuarial point of view, the mind has become hypersensitive and therefore more susceptible to disease." Of course there is much in this thesis that is arguable, but they are the writer's opinions and his book is a document in support of them.

The story is not a pleasant one, but this is no reproach to it, for it was clearly not written to please. It tells of two sisters, one weak and a wife, the other wicked and a wanton. Alice, the wanton, covets the husband of her weak sister Mary and persuades her to elope with a major, who is described as the typical profligate and who more than any figure in the book impresses us as a conventional character and not a person of flesh and blood. The major drives his poor victim mad. She escapes from his thrall to confront her evil sister in a tender love-passage, or what is on the point of becoming such, with her deserted husband. From this point onwards the story is one of unmitigated gloom. The major is murdered and Mary shares the same fate, while their double murderer Alice dies in a lunatic asylum. It would not be fair to tell more of the plot than this, although the author relies upon his insight into the psychology of his lurid creations rather than upon his construction to arouse an interest. We recommend "Can it be true?" to our readers as a straightforward story of crime and punishment, well and often powerfully written by a man who knows what he is talking about. The seamy side of life has evidently few secrets from Surgeon-Major Hunter, while a situation has no terrors for him because of its horror or its inherent improbability. Here he is a good disciple, conscious or unconscious, of Balzac, and we confess that we approve his courage.

Surgeon-Major Hunter concludes his book by wishing that the State would think proper to appoint a Health Minister to guard not only the bodies but also the minds of the people, as he considers that "sound education, firm discipline, and unwearied care are called for in the mentally delicate. The first indications of passion have to be met in order that they may not run riot." If this is the moral of his book—and it wears the air of being so—he has to face the question how far State interference would have been able to avert the series of tragedies which he has depicted. For ourselves we do not see how the State could have stopped Mary from eloping or have decided that Alice was mad in time to stop her from committing murder.

Ringworm in the Light of Recent Research. By MALCOLM MORRIS, F.R.C.S. Edin. London, Paris, and Melbourne: Cassell and Co. 1898. Quarto. Pp. 142. Price 7*s*. 6*d*.

THIS work is an expansion of a paper read at the International Congress of Dermatology in 1896. It aims at presenting a concise and critical review of the subject according to the recent observations of Sabouraud and those who have worked on the same lines, including the author himself. In this we think Mr. Morris has been successful and the book may claim to be the clearest and most concise account of the results of an enormous amount of careful and laborious work mainly accomplished by Sabouraud. Yet the outcome of it all is, in Mr. Morris's opinion, that while the main result is that the fungi which cause ringworm may be divided into small-spored and large-spored, the further division of the large-spored into numerous sub-species cannot be considered as proved and, in fact, that there is more evidence against it than for it.

The subject is discussed in twelve chapters—Introductory; the Parasitic Theory; four chapters on Etiology, discussing Sabouraud's doctrine and the researches of other workers, with a summary and comparison of results; Pathology; three chapters on the Clinical Varieties; Diagnosis and Prognosis; Treatment; and Prophylaxis. It can be thus seen that the whole subject is gone over and without repetition or undue verbiage is adequately set forth. In the chapter on Treatment the principal modes of treatment by others, as well as the author's own methods, are given. The work is illustrated with 22 beautifully executed micro-photographs by Mr. Andrew Pringle and a coloured frontispiece of the large- and small-spored fungus stained. It is altogether handsomely got up and is thus a credit to both the author and the publisher, and can be commended to all who wish to be familiar with the present aspect of the subject without wading through the details of the original papers.

LIBRARY TABLE.

Lectures on Medicine to Nurses. By HERBERT E. CUFF, M.D.Lond. London: J. & A. Churchill. Second edition. 1898. Price 3*s*. 6*d*.—At first sight this book might be thought to go too much into medical details, but on consulting the preface we find a satisfactory explanation of this. As Dr. Cuff says, an intelligent nurse will not be satisfied with knowing merely the mechanical details of her calling. She wants to know reasons, and if she is not taught by some duly constituted authority she will try to get them for herself out of medical text-books which she will not understand. Dr. Cuff has therefore aimed at supplying this want by setting out in simple non-technical language anatomy, physiology, pathology, and symptoms. All the lectures are clearly and admirably written and reasons for this or that procedure given in the simplest language. We can cordially recommend the book, not only for nurses, but for those students who are just commencing work as clerks in a medical ward.

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B. Bradshaw's Bathing Places. London: Kegan Paul, Trench, Trübner, and Co. 1898. Price 2*s.* 6*d.*—The edition of this directory for the present year differs slightly from that of last year in the omission of certain of the less known springs. We think, however, that the Caucasian watering-places might have been left in, as, for instance, Piatigorsk. With regard to the glossary of technical terms at the end of the book we would point out to the editor that cyanosis is not a disease of the heart or any other organ any more than jaundice is a disease of the liver, as is the popular opinion.

Aids to Examinations. Part II. By T. REUELL ATKINSON, M.D. Dunelm. London: Baillière, Tindall, and Cox.—This little book, which, as the author candidly states in his preface, "cannot in any way take the place of the ordinary text-books," is purely an *aide mémoire*. It contains questions in anatomy, physiology, surgery, medicine, midwifery, gynæcology, and public health. The answers are clearly and fully given and the book will be found very useful as a "refresher" to the memory.

District Nursing, on a Provident Basis. By JAMIESON B. HURRY, M.D. Cantab. London: The Scientific Press, Limited. 1898. Price 2*s.*—This little volume has been written with the object of extending the system of district nursing and gives valuable suggestions for the formation of a district nursing association *ab initio*. The idea of the author is to make the association as far as possible self-supporting, or provident, in contra-distinction to one which would be dependent upon charity and we thoroughly concur with him that any organisation which raises the standard of comfort in the homes of the industrial classes and at the same time increases their self-reliance and their independence of charity is a step in the right direction. Figures are given by which it is shown that, as a general rule, in towns one district nurse is amply sufficient for 4000 persons and the annual cost of a trained nurse varies from £80 to £100. 2000 persons contributing 1*s.* per year, or 1*d.* per month, would therefore be a sufficient number to provide the necessary funds, and would place the association upon a financially sound basis. The number of visits paid by a district nurse is estimated at from 15 to 20 per day, or 5000 visits in the year. The calculation is made for a compact and thickly-populated district and here the contribution of 1*s.* per head would be amply sufficient. In rural districts, on the other hand, where the population is scattered and where it is estimated that the nurse would only be able to serve 2000 persons a larger annual subscription would be necessary. The figures given are deduced from practical experience in the working of nursing clubs and associations now in existence. There is much valuable information connected with the subject; also suggestions are given for rules and regulations such as have been found useful in establishing and in carrying on a nursing association.

Pharmaceutical Formulas: a Book of Useful Recipes for the Drug Trade, collated chiefly from the "Chemist and Druggist," with Annotations. By PETER MACEWAN, F.C.S. London: Published at the Offices of the *Chemist and Druggist*. 1898. Price 8*s.*—This is essentially a book which is calculated to save reference to a score of books before probably the desired information is found. The recipes and formulas are necessarily up to date since the materials are mostly collated from that brisk organ of the trade, the *Chemist and Druggist*. The universality of information afforded in the book will be gathered from the following outline of the sections. The first section relates to toilet preparations and specialities, the next to preparations for the hair, the next to dental preparations, while the succeeding sections are devoted to perfumes, beverages, household and domestic requisites, writing materials, varnishes, polishes, and stains, lozenges, miscellaneous preparations, and lastly galenical and medicinal preparations. A good index enables the reader at once to ascertain the information which he requires. The directions enjoined are eminently practical and evidently based upon experience. The chapter on Galenical and Medicinal Preparations may be referred to as an example. The book supplies a distinct want and is certain to give satisfactio to those by whom such a work is in constant requisition.

The Extra Pharmacopœia. Revised in accordance with the British Pharmacopœia, 1898. By WILLIAM MARTINDALE, F.L.S., F.C.S. Serotherapy, Organotherapy, Medical References, and a Therapeutic Index. By W. WYNN WESTCOTT, M.B. Lond. Ninth edition. London: H. K. Lewis. 1898. Price 10*s.* 6*d.*—The first edition of this indisputably handy compendium was published in 1883 and up to the time of the recent revision of the Pharmacopœia no less than eight editions had been published, which is a very practical proof of its usefulness and of the esteem in which it is very generally held. The ninth edition has just been issued—that is, within a very short time of the publication of the new Pharmacopœia with the revisions of and additions to which it is in complete accordance. The section of Organotherapy, by Dr. Wynn Westcott, is ably done and affords an excellent *précis* of the literature of the subject. The references are as complete and as recent as anything we have hitherto remarked. The authors merit warm praise for having undertaken what must have been no light task, and for the very excellent and expeditious way in which they have accomplished it. Though from its size the book is regarded as a pocket guide, yet it will be found to be replete with just that new information connected with the subject which every practitioner and pharmacist would do well to possess.

Guide-books.

With the near approach of the holiday season comes the annual issue of guide-books, all setting forth the attractions of the districts they respectively deal with so enticingly that it becomes a matter of some difficulty for the tourist to make up his mind where to go. This important matter having been settled at the well-known family conclave, which invariably ends in one person getting his or her way to the discomfiture of the others, the necessary guide-book is applied to. It remains for us to mention some of the places easily and inexpensively reached. In the Tourist Guide to the Continent, price 6*d.*, published by the Great Eastern Railway Company, the traveller will find in the short space of 158 pages directions how to get to Belgium, Holland, North Germany, the Rhine, Denmark, Sweden, Norway, and Switzerland. The chapter of "dull, useful information" is good with one exception, and that is a remedy taken from the *Queen* for dust or grit in the eye. "One drop of glycerine allowed to fall into the eye generally affords instant relief." It might do so by causing a copious flow of tears, being a strong irritant to mucous surfaces, but the average patient will find one drop of castor oil just as efficacious and far less painful. Apart from this the guide-book is well done.

The Swedish Touring Club's Guide to Sweden. With 15 Maps. London: George Philip and Son. Pp. 215. Price 5*s.*—This little book will prove an excellent guide to those who intend to travel in Sweden. Its appearance is that of the familiar Baedeker and it is good and practical throughout. After chapters upon general information, hotels, sports, and means of getting about, the reader will find thirteen routes and tours described in a terse guide-book style. The Swedish Touring Club is becoming a numerous body. Its income is now about £2500 a year and the members have many privileges in the way of reduced fares and tariffs. It is worked somewhat in the

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way of the English Cyclists' Touring Club, with a head office in Stockholm (Fredsgatan 28) and 400 consuls scattered all over the country. At the chief office information is given free of charge to all comers, be they Swedes or foreigners, on all subjects which relate to touring. The consuls do the same for their respective districts. The club opens new tourist routes and erects signposts and mountain shelters. Visitors to Sweden are encouraged to become members, the annual subscription being about 3*s.* 6*d.* The central parts of Sweden are largely covered by pine-forests and offer a splendid health resort for townspeople. At many places fine hotels have sprung up, where during the summer season first-class accommodation and food may be found in the heart of the wildest country. The districts around Lake Siljan in Dalecarlia, and around Ostersund on the line between Stockholm and Trondhjem, and the region of the two northern rivers Indalelfven and Angermanelfven, form three separate areas each excellent for a summer holiday.

The Danish Tourist Society send us an excellent little book about Copenhagen, published in London by Simpkin, Marshall, Hamilton, Kent and Co., and in Copenhagen by H. Hagerup, price 1*s.* 6*d.* This is an admirable publication for the information and plans, tables, &c., are so clear that even a stupid person could have no difficulty in finding his way about. We are tempted to quote the following as a very happy collocation of sentences. In 1604 in the Helligaandshuset, "100 students in 8 days drank 18 casks of German beer in the place! Later on it was used as a mortuary."

JOURNALS.

IN the *Phonographic Record* for July Sir W. R. Gowers, pointing out that chorea is sometimes mistaken for hemiplegia, says that there is scarcely an exception to the rule that when a child between the ages of seven and fifteen years is said to have lost the use of one arm the malady will turn out to be chorea. Dr. Fletcher Beach, in his paper on Mentally Deficient Children, confirms the aphorism of the late Dr. Langdon Down that the prospect of educating and training these children is "inversely as the child is comely, fair to look upon, and winsome." Dr. Beach describes in detail the characteristics of mentally deficient children in a manner both authoritative and instructive. It is to be hoped that Mr. Lamming Burton's picture of the dark side of an assistant's life is either overdrawn or exceptional.

LITERARY INTELLIGENCE.—The Rebman Publishing Company's new books include a work on the "Ferment Treatment of Cancer and Tuberculosis," by Horace Manders, F.R.C.S. Eng., and the following volumes in the series of "Lehmann Medicinische Handatlanten" (Hand Atlases), English edition, which they are publishing in conjunction with Mr. W. B. Saunders of Philadelphia: "Atlas of Internal Medicine and Clinical Diagnosis," by Dr. C. Jakob of Erlangen; edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, Attending Physician to the Philadelphia Hospital; 68 coloured plates and 64 illustrations in the text. "Atlas of Legal Medicine," by Dr. E. R. von Hofmann of Vienna; edited by Frederick Peterson, M.D., Clinical Professor of Mental Diseases, Women's Medical College, New York; Chief of Clinic, Nervous Department, College of Physicians and Surgeons, New York; with 120 coloured figures on 56 plates and 193 beautiful half-tone illustrations. "Atlas of Laryngology," by Dr. L. Grünwald of Munich; edited by Chas. P. Grayson, M.D., lecturer on Laryngology and Rhinology in the University of Pennsylvania, &c.; with 107 coloured figures on 44 plates and 25 black-and-white illustrations. The Rebman Publishing Company have removed to new premises at 129, Shaftesbury-avenue, Cambridge-circus, W.C.

Analytical Records
FROM
THE LANCET LABORATORY.

TABLOIDS OF (1) BISMUTH SUBGALLATE; AND (2) HYPOPHOSPHITES COMPOUND.
(BURROUGHS, WELLCOME AND CO., SNOW-HILL BUILDINGS, E.C.)

BISMUTH subgallate is a salt of interesting composition which has been comparatively recently introduced in medicine. It acts as a useful check on the progress of fermentative dyspepsia and good results are recorded of the regular administration of the tabloid of 5 gr. in such cases before or after each meal. It has been employed also in typhoid fever, gastric catarrh, and in cholera asiatica, and in various forms of diarrhœa. The salt occurs as a yellowish powder, a condition which appears after the tabloid has been placed for a few minutes in water. The tabloid readily crumbles in this way so that the convenience as well as reliability of the therapeutic effect of the salt in this form is established. The composition of the tabloid of hypophosphites compound is based upon the well-known formula comprising the hypophosphites of calcium, potassium manganese, iron, quinine, and strychnine. Each tabloid weighing 1½ gr. is equivalent to half a teaspoonful of standard compound syrup, many of the drawbacks of which are surmounted by this convenient form of administration.

"ULRICUS" AND "BELVEDRA" MINERAL WATERS.
("PASSUGG," 39, EASTCHEAP, E.C.)

These waters, which are drawn close by the gorge of the Rabiusa, near Coire, Switzerland, present some noteworthy features on analysis. "Ulricus," for example, is a highly alkaline water containing an important quantity of iron in the form of protocarbonate. A distinct amount of bromine is also present. The results of our analysis were as follow: total saline constituents 6·00 grammes per litre; alkalinity reckoned as carbonate of soda, 4·92 grammes per litre; carbonate of iron, 0·069 gramme per litre; common salt 0·84 gramme per litre. The sample examined was bright and clear and under slight pressure of carbonic acid gas. The quantity of alkaline carbonate is somewhat remarkable. The water is therefore distinctly antacid and probably of value as a sedative in certain abnormal gastric conditions. A trace of lithium was also recognised. "Belvedra" is described as a chalybeate spring water, though according to our analysis the iron in it is less than in "Ulricus." It contains, however, much less mineral matter, as the following analysis will show: alkalinity reckoned as carbonate of soda, 1·80 grammes per litre; protocarbonate of iron, 0·0348 gramme per litre; and common salt, 0·029 gramme per litre. This water, like the last, contained a slight excess of carbonic acid gas. Though containing an important quantity of iron it was clear and bright. It may be used after the manner of an ordinary table water with the difference and probable advantage in some cases that it contains iron in a well-known assimilable form.

TEMPERANCE BEERS.
(THE BANKS BEER CO., LTD., THE BREWERY, BLENHEIM-ROAD, HORNSEY-ROAD, LONDON, N.)

We have examined three or four types of the non-excisable beverages of this company with the following results. Pale ale: extractives, 1·28 per cent.; mineral matter, 0·10 per cent.; alcohol, by weight 0·53 per cent., by volume 0·66 per cent., equal to proof spirit 1·16 per cent. This ale possesses a delicate bitter flavour and is slightly charged with carbonic acid gas. Mild ale: extractives, 1·66 per cent.; mineral matter, 0·10 per cent.; alcohol, by weight 0·53 per cent., by volume 0·66 per cent.,

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equal to proof spirit 1·16 per cent. This specimen possessed slightly more "body" than the previous one, having a decided malty flavour, together with that characteristic of the bitter principle of the hop. Stout: extractives, 2·28 per cent.; mineral matter, 0·11 per cent.; alcohol, by weight 0·53 per cent., by volume 0·66 per cent., equal to proof spirit 1·16 per cent. As might be expected the stout contains more extractives than either of the previous samples. Its flavour distinctly suggests ordinary brewed black beer. As will be seen the quantity of alcohol is negligible and nearly a half below the excise limit. The beers were in perfectly sound condition and evidently prepared from malt and hops and not substitutes. We could find no objectionable preservative. In regard to the ginger-beer we did not find it satisfactory. On removing the stopper most of the liquid was lost through violent effervescence and what liquid was recovered was not of a particularly agreeable character. Perhaps the ginger-beer was too young or had been exposed to a too high temperature.

TURTLE JELLY.

(T. K. BELLIS, 6, JEFFREYS-SQUARE, ST. MARY AXE, E.C.)

Turtle jelly is an excellent preparation for patients who requiring a nourishing article, find it inconvenient to take it in the form of warm soup. The jelly is practically clear and possesses that peculiarly agreeable flavour for which turtle soup is highly esteemed. Obviously if desired the jelly may be soon converted into soup by merely warming. In the form of jelly, however, and of course cold, it will often be more acceptable. The jelly is contained in glass jars sealed with a cork cap protected by a capsule.

(1) IODOFORMOGEN; AND (2) TANNALBIN TABLETS.

(B. KÜHN, 36, ST. MARY-AT-HILL, E.C.)

The idea of combining iodoform with albumin, giving rise to a compound which has been called iodoformogen, is ingenious and one presenting certain distinct advantages. Thus iodoformogen has little or no smell, is non-hygroscopic, and occurs in the condition of a fine powder, which it is said does not "lump." In short, iodoformogen would appear to be much superior for the purposes of dressing wounds to iodoform itself, as while exhibiting the antiseptic properties of iodoform it permits of more uniform dusting, the grains clinging more intimately to damp surfaces than is the case with iodoform. Tannalbin is now well recognised as a useful but non-toxic intestinal astringent. It is particularly servicable for checking diarrhœa. This is to be attributed to the fact that while it is insoluble in the gastric juice, producing no disturbance in the stomach, yet it dissolves slowly in the intestinal fluids producing an astringent effect. The compound is prepared from albuminate of tannin by exposure of the substance to a temperature of 110° or 120° C. for five or six hours. The tablets contain five grains of the compound and they afford a very convenient means of administering it.

HARZBACH MINERAL WATER.

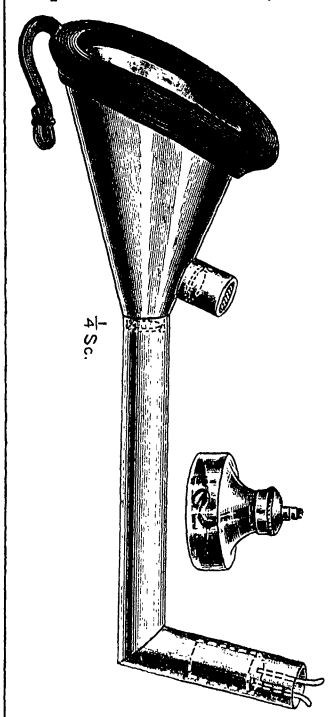
(BROWN BROTHERS AND CO., 35 AND 37, WASHINGTON-STREET, GLASGOW.)

According to our analysis Harzbach water is a mildly alkaline carbonated water suitable for table purposes. The alkalinity of the water reckoned as carbonate of soda was found to be equivalent to 0·84 gramme per litre; the salt amounted to 1·98 gramme per litre. It contains also minor constituents — as, for example, carbonate of magnesia, sulphate of lime, and traces of lithium salts. Amongst the specimens we examined some were not satisfactory, one having parted with the excess of carbonic acid gas and another being of a distinctly yellowish colour. Further, on heating the solid residue a very distinct blackening occurred due to organic matter. The method of stoppering the bottles is novel. It consists of sealing the bottle with a thin layer of cork bound down by metal capsule, so bound under the lip of the bottle as to be firmly attached even though there is considerable pressure within. It is probable, however, that this method of stoppering accounts for some of the unsatisfactory results which we have recorded.

New Inventions.

AN ORI-NASAL INHALATION TUBE.

THIS instrument is for the purpose of inhaling the vapour of drugs such as menthol, oil of eucalyptus, pinol, and many other substances, in a far greater degree of efficiency than has been hitherto possible with other forms of instruments. It consists of a long tube, at one end of which is a mask with metal valves. The mask fits over the mouth and nose. At the other end is a small moveable tube made to open at either extremity and covered at these points by caps of coarse wire gauze, and this tube is to contain the drug to be employed. All parts of the instrument are made of plated metal. The mask is fitted with a comfortable rubber covering. This instrument will prove of much value in cases of throat and lung affections, nasal catarrh, coryza, or cold in the head, and other similar complaints. The chief advantage with this instrument is that heat may be employed by means of the flame of a spirit-lamp in the vicinity of the drug tube, towards the extremity of the apparatus. By this means an immense amount of vapour is given off from the drug which has been employed, and the patient inhaling this concentrated vapour naturally derives a far greater degree of benefit. The ori-nasal inhalation tube being made of metal is not liable to injury like instruments made of glass or china, &c. Another point is that being made of metal it can be readily cleansed with hot water, thus thoroughly purifying it. The instrument is manufactured by Messrs. S. Maw, Son, and Thompson, 7 to 12, Aldersgate-street, London, E.C.



Somerley, Reading. H. HIBBERD BEALE.

UNITED HOSPITALS ATHLETIC SPORTS.—The annual athletic competitions among the London hospitals were held at the London Athletic Club Ground, Stamford Bridge, before a small but enthusiastic gathering of spectators on Saturday, July 9th. The programme consisted of 12 events, 11 of which constituted the contest for the Hospitals Challenge Shield. St. Mary's was again, for the third year in succession, successful with 5 firsts, Guy's and St. Bartholomew's having 2 each. The performances of F. W. Sime (Guy's), A. G. Butler (St. Mary's, who beat the hospitals ½-mile record held by himself), C. E. H. Leggatt (whose high jump of 5 ft. 9 in. also beat the record held by himself), and R. C. Leaning (St. Mary's), were excellent; while in the invitation race of 1½ miles the four miles champion, C. Bennett, only just failed to beat the present record.

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THE LANCET.

LONDON: SATURDAY, JULY 16, 1898.

IT is impossible to doubt that the action of the General Medical Council in the matter of imposing further restrictions on the employment of unqualified assistants by registered practitioners has met with the general approval of the profession. We have given free admission to correspondence on both sides of this question. We have not been insensible to the hard bearing of the Council's new Regulation or Notice on a certain limited number of men who, having passed through a regular curriculum of study, have, from no fault of their own, been unable to qualify. We have even admitted that the Council's slow and halting action in the past in discouragement of the employment of unqualified assistants has given the profession an impression that, under certain conditions of supervision, such employment would not be condemned. But nevertheless, looking at the accumulating evidence of the misuse and abuse of this license, at the growth of a strong public sentiment against it, at the extensive deception practised on the public by it, and at the manifest injustice of it to registered members of the profession, especially to the younger members, it is clear that the time had come for the Council to advance in the matter and to increase the stringency of its regulations. It is equally clear that the weight of public and professional opinion is in favour of what the Council has done. There have been, of course, a few protests and complaints. In the ranks of the unqualified there are men who have been found very handy, very honest, and very serviceable. Years of experience in a general practice do give a certain education and aptitude. Besides, such men have fulfilled duties of management and of book-keeping and dispensing, necessary duties, the delegation of which greatly relieves the busy practitioner whose clinical duties absorb a large portion of his time by day and by night. It is possible that without any violation of the Council's regulations a few of the best class of the unqualified, whose age makes any other calling impracticable, may still be retained for the performance of such duties. It may be admitted that there is something in the complaint of practitioners in some parts of the country that they have a difficulty in getting qualified assistants. The committee of the General Medical Council seemed satisfied with the evidence on this point. But we can scarcely believe that this difficulty will be of long duration. The average annual excess of supply of new practitioners over the annual loss in the way of death is for the last five years 882. Even last year, when the number of new registrations was less than it had been for nine years, there was an excess of supply over loss by death of 648. In the face of such figures we may conclude that the difficulties alleged to exist at present are due to temporary causes and chiefly to some misunderstanding between the parties affected by the new regulations—principals on the one hand and qualified assistants on the other. We claim to have given our correspondents on both sides of this question a fair hearing, and we must admit that both sides have shown considerable skill in stating the facts and the conclusions as they present themselves from their respective standpoints.

The time has come for facing what is practically a new departure. Principals and assistants will now do well to see how they can best meet each other's objections and accommodate themselves to actual facts. Some of our correspondents have described vividly the hardships of the life of a qualified assistant—his modest salary, his humble fare, and his hard work. One of them described his work as "slavery, night and day," and said that, as a rule, he had found principals "very selfish." This assertion is refuted by "Practitioner" in THE LANCET of July 9th in a very forcible letter, and we believe that most of those who have had experience of assistantships will say that principals are very like men in other arduous and unremunerative professions who have enough to do to "make ends meet" and to distribute with fairness their modest income between the claims of their family with a necessary establishment on the one hand and their assistant on the other. Not a few such in the after periods of life will look back to their assistantship as one of their most useful experiences, and will recall their principals with every sentiment of respect and friendship.

A young man, emerging from a period of prolonged study and costly education, having succeeded in getting on the Medical Register naturally thinks that his time for remuneration and reward has come. He has been familiar for years with men, his teachers, at the head of their profession, who keep large establishments and expensive carriages and evidently enjoy considerable incomes. He is apt unthinkingly to apply such standards of comfort and dignity to members of the profession generally. Unlike his seniors in practice he has had little experience of private practice and its standards of remuneration, and if in his first assistantship he chances to be located in a small town or a poor rural district he will probably experience a considerable disillusionment. If he is a man of sympathy and imagination he will put himself into his principal's place and make allowance for his difficulties. If he is not endowed with these qualities he will be dissatisfied with his environment and will vent his censure on the unfortunate principal who may be very little to blame. For he is only one of 30,000 men of the profession. He is responsible, of course, for his own character and for the treatment of his assistants, but for the general state of the profession, for the competition in it, for the loosely administered charities which spoil it, and for the low conceptions in the public mind as to the remuneration of medical men his responsibility may be of the very slightest. This last is the real evil which has to be grappled with and for the cure of which principals and qualified assistants must strive together. The employment of the unqualified assistant did give some excuse to those who made light of medical claims; but the Regulation of the General Medical Council will be a stimulus and unanswerable argument for medical practitioners to demand higher rates of remuneration with

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which they may adequately pay those assistants who bring full qualifications to their work and whose education has extended over years.

THE social and sanitary problems of Liverpool do not differ essentially from those met with in certain other large towns, but the scale on which they may be studied and the graphic way in which they have been set forth in the annual reports of the successive medical officers of health have served to invest them with peculiar interest. Accordingly we have frequently devoted a leading article to the subject or to its principal features with a view to excite interest and to give encouragement to those whose arduous duty it is to make life longer, healthier, and pleasanter in a community which for many years enjoyed among English towns a pre-eminence in overcrowding and all the variety of evils which that condition involves. We have lately shown the difficulty of arriving at quite accurate data as to the population of the city in the long intercensal periods, and allowance for error under this head must always be made; but, even so, the broad figures and facts of the last report include subjects which are worthy the attention of all medical men and of all who realise the part played by municipal government in the application of medical and hygienic science to the wants of large populations. We chance to have on our table two reports of the health of Liverpool—one for 1869 and the other for 1897. The most pessimistic student of modern civilisation must admit the great strides which have been made in improving the health of the most crowded communities and in bringing large classes of deadly disease under comparative control.

Let us take, for example, the case of tuberculous diseases. We are fain to think that if mortality from this class of diseases can be materially reduced in such a community as Liverpool we need not despair of bringing any kind of disease into subjection. This has actually been achieved in Liverpool. The annual average death-rate per 100,000 of the population at all ages from all forms of tuberculosis is given for three decennial periods, as well as for that of 1896-97. The decline is steady. But for greater clearness we will give the comparison of the rate of the decade 1866–75 with that for the last year. For the former period it was 430·8 per 100,000; for the last year it was 258·2. It will be remembered that this improvement has come mainly from broad improvements in sanitation. We are on the eve, it is to be hoped, of seeing many special measures for dealing successfully with this great evil, founded on discoveries, bacteriological and otherwise, which were not made in the decade to which the first statistics apply. It is gratifying to find that the health authorities of Liverpool are availing themselves of the assistance of bacteriological experts in dealing further with this tuberculous problem. In the meantime it is satisfactory to know that, by the ordinary action of their by-laws, by improvements in property, and by the wholesale destruction of large insanitary areas, such great and significant improvements have already been wrought.

We may at this point say a word in strong praise of the sanitary authorities of Liverpool for one other act of enlightened municipal wisdom on their part. Dr. HOPE, the medical officer of health, on page 183 of his report for 1897 says: "The Committee have provided at each one of the city hospitals [isolation] a supply of antitoxin which is given to any medical practitioner making application for it." We know that in other large communities, probably in most, no such provision exists and that public authorities, which are keen to expend many thousands of pounds on large buildings and in other ways, make no provision for supplying promptly and purely an article on the easy and early procuring of which by medical men the saving of life in cases of diphtheria often depends. A comparison of the two reports for 1869 and 1897 shows a great improvement in diagnosis. In the 1869 report, as Dr. HOPE points out, all continued fevers were included under the generic term of typhus—i.e., so-called gastric fever, enteric fever, low fever, continued fever, brain fever, bilious fever, relapsing fever, and typhus fever. Such a method, of course, vitiated the statistics and all conclusions from them. The present report shows a great advance and gives sharp and precise returns of the different forms of continued fever. There survives, however, in the report for 1897 a distinction in diagnosis of very dubious propriety. On page 38 the number of deaths from diphtheria is given as 91; on the next page the deaths from croup and membranous croup are given. We will not say that there are no such diseases as croup and membranous croup distinct from the disease produced by Löffler's bacillus, but we venture to suggest that a closer examination of such cases will very greatly reduce the distinction and identify the cases as diphtheritic ones. The zymotic mortality of Liverpool is still, of course, very large, in spite of the reduction in the number of people living in cellars, the notification system, the creation of isolation hospitals—which are increasingly popular and absorb 54·6 per cent. of the cases of scarlet fever—and other sanitary measures. Typhus fever can still be studied in Liverpool. There were last year 158 cases, of which 23 resulted fatally. There is a gradual decline of typhoid fever, but it still reigns, and the report includes a very well-tracked instance of a small outbreak among 27 children who had, all but two, eaten ice-cream sold at a fair. The two had eaten chip potatoes procured from the same vendor in whose house a case of typhoid fever was found. Infantile diarrhœa still asserts itself with great force and kills nearly as many as all the other epidemics put together. Still, the impression made by the report is that new forces of health and hygiene are gradually gaining the ascendancy. There was not one death from small-pox, but Dr. HOPE does not disguise his apprehensions at the discouraging aspect of vaccination legislation. He admits the value of isolation measures, but like all medical men knows how inadequate this measure will prove in the absence of systematic, conscientious and repeated vaccination.

We must not close this notice of the social and sanitary problems of Liverpool without allusion to one great factor in its sickness and mortality—that of intemperance—the more so as Dr. HOPE devotes, with no exaggerated estimate, two pages to the subject. He does not hide his sense of its gravity as an influence comparable to that of zymotic disease. As a *direct* cause of death it shows a

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slightly higher figure than in the preceding year and has been more fatal than scarlet fever or all the other forms of fever combined. And in its remote and indirect mischief he thinks drink even farther reaching and much more insidious than zymotic sickness, and this in spite of an exceptional decrease in the arrests for drunkenness. The latter are no guide as to the degree in which alcohol is used so as to be pathogenic, which Dr. HOPE evidently considers to be still very serious. "There was no evidence," he says, "that excessive drunkenness in the homes of dwellers in the more squalid regions has materially diminished." It is awkward when there is such a discrepancy between the medical and the police reports of this vice; but it is certain that the medical is the more reliable and will have to be reckoned with before the health of Liverpoo or any such community can be placed on a satisfactory footing.

THE House of Commons Committee having concluded its labours on the Vaccination Bill we may glance at the principal results achieved. In Clause 1 the infantile vaccination age limit has been fixed at six months as in Scotland and a provision has been added that no regulation of any hospital or institution shall override this enactment by fixing an earlier age. The public vaccinator's domiciliary visit is to be made at four months instead of nine months, as proposed when the age limit was intended to be one year. An important alteration has been made with regard to the description of the lymph to be used. In a former article we pointed out that the phrase "glycerinated calf-lymph" was insufficient to prevent any mixture of glycerine and calf-lymph, however carelessly made, being used under the Bill. The clause now runs that the public vaccinator "shall offer to vaccinate the child with glycerinated calf-lymph or such other lymph as may be issued by the Local Government Board." This really amounts to a guarantee that all lymph so used shall have been prepared with the greatest care and in the light of the most recent knowledge. Where the public vaccinator finds a house so unhealthy as to be dangerous to an intended vaccinee he shall postpone the vaccination and send notice to the medical officer of health. Clause 3, the obscurity of which caused much debate, has been altered and simplified as follows: "The Local Government Board may make rules and regulations with respect to the duties and remuneration of public vaccinators, whether under contracts made before or after the passing of this Act." A new clause provides that when small-pox threatens, or in other exceptional circumstances, the Local Government Board may issue an order requiring any board of guardians to make temporary provision of vaccination stations. In any future imprisonments under the Acts the prisoners are to be treated as first-class misdemeanants.

A fortnight ago, in commenting on the defeat of Sir WALTER FOSTER'S amendment providing for a declaration of conscientious objection, we indicated that there was a danger that this defeat might prevent perseverance with amendments for the inclusion of revaccination in the scope of the Bill. At the same time we urged that these amendments should still be pressed, even subject to a conscience clause as regards revaccination, and we suggested that though the scheme would be illogical there would he no special difficulty in applying such a clause to revaccination even if no alternative to penalties were to be allowed as regards infantile vaccination. As a matter of fact during the final sitting of the Committee a conscience clause was passed, but, curiously enough, it applies neither to vaccination of infants nor to revaccination of children before leaving school. At four years of age children who have not been vaccinated in infancy, and whose parents have been penalised under Section 29 of the existing Act, may again be dealt with, this time under Section 31, and a penalty again enforced. But relief from this second penalty may be obtained by the parent satisfying the court that he entertains serious objection to vaccination. This amendment was carried against the Government by a combination of supporters of vaccination, such as Sir WILLIAM PRIESTLEY (who proposed it), Sir CHARLES CAMERON, Sir CHARLES DALRYMPLE, Mr. MONK, &c., with the pronounced anti-vaccinationists on the Committee. On the whole, the amendment has our sympathy, though Mr. T. W. RUSSELL pointed out that, owing to changes of abode and to the want of any provision for obtaining information regarding unvaccinated children of four years old, its application will be very much limited. Whether the Government will accept it on the report stage in the Commons remains to be seen. Its adoption by the Committee serves at any rate to justify our contention that the loss of the conscience clause as concerns infantile vaccination formed no insuperable obstacle to the adoption of revaccination, with a proviso for the relief of "honest" anti-vaccinationists. That being so, we are bound to express our opinion that a blunder was committed by medical members of the Committee in not moving the revaccination amendments which had been put on the notice paper and which could easily have been further altered by incorporation of a provision allowing for conscientious objection. Of course, no such amendment could have been carried against the Government, as there would have been in its support no combination like that which defeated Mr. CHAPLIN in his opposition to Sir WILLIAM PRIESTLEY'S clause. But the amendment would at least have forced Mr. CHAPLIN'S hand and would have crystallised before the Committee the opinion of the medical profession as to the clamant requirement of the time for the prevention and control of small-pox epidemics. Even yet, in the Commons or in the Lords, it is most desirable that this question should be definitely brought forward, so that, whatever be the fate of the Bill, and whatever be the decision of the legislature, the responsibility with regard to a provision for national revaccination shall be laid on the shoulders which ought to bear it.

In his oppostion to the clause providing for the payment of private practitioners for properly performed vaccinations Mr. CHAPLIN had the support of what we may call the anti-vaccinationist section of the committee, and here also he was successful. The rejection of this clause, the non-adoption of revaccination and the bungling as to conscientious objection are the outstanding features of the

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Committee's work on the Bill. They leave it a mere make-shift which will do no credit to the Government and which will not be effective either in drawing the teeth of the anti-vaccinal agitation or in increasing the national protection against small-pox. It is a very poor outcome of the seven years' labours of Lord HERSCHELL'S Royal Commission.

Annotations.

"Ne quid nimis."

THE TEACHING OF TROPICAL DISEASES IN LONDON

THE letter of Sir Henry Burdett and the leading article based thereon in the *Times* of July 11th will bring to a focus the question of the formation of a school for studying and teaching tropical diseases in London. At the suggestion of Mr. Chamberlain the committee of the Seamen's Hospital has placed before him a scheme which practically amounts to an enlargement of the branch hospital at the Albert Docks from 20 to 45 beds, and the building of school premises, museum, and laboratory, with accommodation for from 20 to 25 students, of whom 10 would be able to sleep on the establishment. A medical tutor is to supervise the instruction for six hours daily, whilst the staff of the Seamen's Hospital as well as of the branch hospital, with specially selected additional teachers, are to attend and teach for four hours a day during four days a week. We see no provision in Sir Henry Burdett's letter for the payment of this staff of teachers. It can scarcely be expected that the physicians and surgeons attached to the Seamen's Hospital Society can undertake any more gratuitous work than they have at present. The Albert Docks is not a very accessible place and a visit there, with four hours' teaching, will make a serious inroad into a physician's or surgeon's daily work. The study of tropical diseases is of the utmost practical importance for colonial and military surgeons and practitioners and deserves every encouragement. Hitherto it has been best carried out at Netley and the amount of practical material in that hospital for such a study must not be ignored, although it is only at the disposal of the Indian and army medical officers. Sporadic courses of lectures in London are eminently unpractical because the students cannot watch the course and treatment of the cases illustrating the lectures. Few patients can be brought from Greenwich or the Albert Docks to a metropolitan school and few students will regularly visit either of these institutions. Sir Henry Burdett is sanguine that tropical diseases can be thoroughly studied at the docks and on behalf of the Seamen's Hospital appeals to the public for £10,000 and a net income of £2000 a year, in addition to a capital grant of £3550 from the Colonial Office and the fees from colonial students, estimated at £1000 per annum. We see no statement as to the number of tropical cases which are admitted into the hospitals of the Seamen's Hospital Society. Chronic dysentery, beri-beri, and chronic malaria make up almost entirely the tropical diseases which a student may expect to see during a course of three or four months' study, and acute cases must be extremely rare, judging from the annual reports of the society. Mr. W. Johnson Smith has published the records of the cases of hepatic abscess during twenty-five years and they only amount to fifty. Bacteriological investigation in tropical diseases can be taught in the well-appointed laboratories of many of our medical schools and is a part of the Netley curriculum. Phthisis, cardiac disease, rheumatism, and renal disease figure amongst the most common cases of illness at the Seamen's as well as at other hospitals. If compulsion is exercised on applicants for Colonial medical appointments, as seems to be implied in Mr. Chamberlain's letter, of course a regular supply of students will be at once forthcoming; but if there is no compulsion we question whether many will attend at such an inaccessible situation as the Albert Docks, and we doubt whether the variety of cases is sufficient to interest and instruct them for such a long period as three or four months.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE recent election of members of the Council of the Royal College of Surgeons of England, the result of which we published last week, was somewhat remarkable. Practically there was only one vacancy, as two of the former members, Mr. Langton and Mr. Morris, re-applied; and evidently many electors considered that this vacancy should be filled with a representative from the provinces. Mr. Richardson Cross, who headed the poll, received 411 votes, and of these 74 were plumpers. We believe this large number of plumpers is unprecedented, but it is still more curious that if he had not had even one of these plumpers he would still have been 12 votes ahead of the candidate who polled the next highest number of votes. The votes recorded for the two late members of Council who re-applied were nearly equal, Mr. Morris polling 325 and Mr. Langton 322 votes. We congratulate Mr. Cross on his election and we feel sure that he will prove a valuable addition to the Council. 651 voting papers were received by post—a larger number than on any previous occasion; but against this must be put the very small number of personal voters; in all there were only 26 and the number would be even smaller if it were not that several Fellows have been so long accustomed to vote personally that they do not like to give it up. On some recent occasions it has been found difficult to get the 6 Fellows present (exclusive of the members of Council) who are necessary for the commencement of the election under the Charter. The meeting of Fellows summoned by the Council for 5 o'clock on the same afternoon proved a failure. Only 26 Fellows were present and of these 8 were members of Council, but the quorum required by the by-laws of the College is 30 and therefore no meeting was held. A similar occurrence took place last January and in consequence the Council decided to call only one meeting of Fellows each year, and it was thought that the election of members of the Council would bring Fellows to the College, therefore the Fellows' meeting was summoned on the same day. Even on some occasions when a quorum was obtained there were no agenda beyond the confirming of the minutes of the previous meeting. All these signs point to an early abandonment of the meetings of Fellows unless the Fellows bestir themselves and put on the agenda paper resolutions for discussion which will attract at least sufficient Fellows to form a quorum. When we look back on the long and difficult struggle to get the Council to call meetings of the Fellows apart from the Members we cannot help thinking it would be a very great pity if these meetings should cease to be.

THE FIGHT AGAINST TUBERCULOSIS.

THE necessity for making some defensive efforts against tuberculosis is now fully recognised and we are glad to see that the question is being widely discussed. At the annual meeting of the North of England Branch of the British Medical Association, held on July 11th at Sunderland, the President, Dr. William Robinson, delivered an eloquent address on the Repression of Consumption and the Need for the Erection of Open-air Sanatoria in England. After giving an account of the way in which phthisis is spread and

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referring to the ravages which this disease commits Dr. Robinson pointed out the absolute necessity of strict hygiene being observed in workshops and the like as well as of careful and systematic inspection of meat and milk. Passing on to the question of sanatoria he said:—

"We have no drug which will kill the bacillus when lodged in the tissues, though so easily disposed of in the spittoon. All our remedies only help the host to fight the invader. Yet consumption is curable, for we can all look back on many cases in which the disease has become quiescent. The records of the post-mortem room also teach us how large a proportion of those dying of other diseases or of injuries show evidence of healed tuberculous lesions in the lungs. Fresh air and sunlight alone mean death to the bacilli and life to the patient. It is nearly 40 years since Brehmer established at Gobersdorf, in Silesia, the first sanatorium for the open-air method of treatment of consumptives and the results obtained there have been excellent."

There is one point to which Dr. Robinson did not draw attention and that is the enormous benefit which would accrue were the Smoke Prevention Acts rigorously carried out, not only in London, but in every large town. For months past the air of London has been fouled by filthy smoke arising from the chimneys of hotels, restaurants, and factories, and all this on the plea that smokeless coal cannot be obtained. The County Council have done their best, but some magistrates will not convict and others who do fine the offenders in such small sums that it is cheaper for them to poison themselves and their neighbours than to take the steps which would rectify the evil. Another matter which should be insisted upon is that no new houses should be built which are not fitted with appliances for smoke consumption. If smoke were prevented the hours of sunlight which town-dwellers enjoy might be doubled, and sunlight is a deadly foe to the tubercle bacillus.

A PHYSICAL BASIS IN THE DRUNKENNESS OF WOMEN.

THE inquiry into the liquor laws has been varied and enlivened by the evidence of Mr. Lawson Tait, who may generally be relied on to strike out a line of his own. He is very kind in his estimate of female drunkenness which he entirely differentiates from that of the coarser sex. He does not admit that it is increasing. On the contrary, it is diminishing. With a remarkable confidence he comes to conclusions different from those of other observers and finds in the lowest class of women infinitely less drunkenness now than there was thirty years ago. But Mr. Tait's chief point is that it has a physical basis in the constitution and the sufferings of women, mental or physical. The average age of the majority of the patients whom he has seen was forty-eight years, and so he has no hesitation in associating it with the change of life. In the minority, whose average age was twenty-six years, there was definite physical suffering. Mr. Tait is doubtless right in recognising a certain connexion between the multitudinous pains and ailments of women and the use of stimulants. But few medical men, we apprehend, and fewer gynæcologists, would venture to recommend alcohol for such sufferings as he does. Mr. Tait rather suggests the objection to his own prescription when he shows that in so many women it leads to excess and to almost incurable degradation. Certainly most medical men will agree that a woman is in considerable risk who uses alcohol as a remedy for her periodical troubles. Such treatment is little better than the use of laudanum and little less likely to end disastrously. Equally doubtful in our opinion is Mr. Tait's defence of the grocers' licence. He says that drinking among women is nearly always secret. A very rough observation of what goes on in the street seems to show that an increasing number of women use the public-house. Older men than Mr. Tait think this an enormous change for the worse as compared with what they saw in their earlier days. But undoubtedly there is a stage in female drunkenness when it is secret and furtive. And this form of drunkenness is immensely favoured by grocers' and confectioners' licences.

MEDICAL GRADUATES' COLLEGE AND HOSPITAL.

ON Thursday next, July 21st, at 5 P.M., there will be held a meeting of the medical profession in the building purchased for this College, 22, Chenies-street, Gower-street, W.C. Sir William Broadbent, Bart., will preside and full information will be given as to the objects of the institution. The premises can be inspected at any time and the attendance of all medical men at the meeting is invited. Full information can be obtained from Dr. Fletcher Little, 32, Harley-street, Cavendish-square, W.

LEAD AS AN ABORTIFACIENT.

AT King's Norton on July 9th an inquest was held by Mr. E. Docker, coroner for North Worcestershire, on the body of a married woman, aged twenty-three years, whose death resulted from acute lead-poisoning. It was shown at the inquest that the deceased, whose health was described as having previously always been excellent, had been taking diachylon made into pills for the avowed purpose of bringing on a miscarriage. Some days before the fatal issue she had complained of the "use" leaving one of her hands. Subsequently she was seized with violent cramps and pains, writhing in agony, with blood running from her mouth, and she never rallied. Dr. G. F. Crooke, formerly pathologist to the General Hospital, made a post-mortem examination and stated that he had seen the same effects produced from lead-poisoning in the Potteries and also in an asylum at Dresden. He had no doubt that the deceased died from the effects of acute lead-poisoning. The practice of taking diachylon to bring on abortion is not an uncommon one in the locality referred to and in adjoining districts. Such conduct must be considered as highly reprehensible and dangerous.

BALLOON NAVIGATION.

IN the *Archives de Médecine Navale* for June Dr. Le Dantec concludes an interesting article on "Climates in General and Hot Climates in Particular" with some observations on aerial navigation. In 1894 MM. Dex and Dibos proposed to cross the African continent in a balloon from Inhabimbi on the eastern coast to St. Paul de Loanda on the western, making use for the outward journey of the *alizés* or trade-winds which blow periodically at a low elevation from the south-east and for the return journey of the compensatory currents which are to be met with on a higher level. So far, however, the project, though pronounced feasible, has not been attempted. An aerial traveller desirous of visiting Lake Chad or any part of Central Africa, instead of going all the way round by Senegal could take advantage of the north-eastern *alizé* in order to traverse the Sahara, starting either from Tunis or from some place in Tripoli. On the Asian continent the south-eastern monsoon might be utilised for the conveyance of building material and stores to the otherwise inaccessible Himalayan peaks, where observatories could with advantage be erected. Finally, in the opinion of the above-mentioned travellers, if it should happen that France were to find herself once more engaged in war with Germany it should be practicable to organise speedy and regular communication with Russia by means of the constant south-westerly winds. Doubtless, adds Dr. Le Dantec, these aerial itineraries may at first sight strike the reader as verging on the fantastic, but fifty years ago when Maury first published the results of his studies the schemes which he drew up were looked upon as equally visionary.

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The event has proved that the distinguished American meteorologist was right in every particular. It may, in fact, be said that owing to his researches the duration of sailing voyages has been shortened by one half. Formerly the speediest vessels used to take 180 days between New York and California, but now they can cover the distance in 100 days or less. A well-found ship following the old route could not sail from England to Sydney and back under 250 days, but, since Maury pointed out the advantage of circumnavigating the globe *viâ* the Cape of Good Hope while outward bound and Cape Horn while returning, the double voyage can be done in about four and a half months. The cosmic laws formulated by Maury being equally applicable to aerial navigation Dr. Le Dantec believes that the time is not far distant when journeys above the surface of the earth will be undertaken as a matter of course. Andrée has made a commencement and his example will soon be followed in regions where nature has raised fewer barriers. In this connexion it is interesting to note that Lieutenant Hourst, a French officer who has already made a name as an explorer, is about to undertake a balloon voyage across Africa; so that it is possible that Jules Verne's "Dr. Ferguson" may at no very long interval of time become a real instead of fictitious person.

THE TREATMENT OF CONTRACTURE OF THE BLADDER BY HYDRAULIC PRESSURE.

THE Johns Hopkins Hospital *Bulletin* of May contains an important paper on this subject by Dr. H. Young. Since the opening of the hospital in 1889 cystitis has been treated by vesical irrigation performed without the use of a catheter, hydraulic pressure being used to force the fluid through the urethra. It occurred to Dr. Young that this method might be used to dilate the bladder in cases of contracture from chronic cystitis. He reports eight cases, in all of which it proved most successful. For example, a man had suffered from severe chronic cystitis for 14 years. The urine was alkaline and contained pus and blood, and micturition occurred every 10 or 15 minutes. He had been treated in numerous hospitals with internal remedies and by local irrigations through the catheter with only temporary relief. Under hydraulic pressure 22 c.c. was the largest amount that the bladder would hold without severe pain. He was treated with irrigations of Thompson's fluid at a pressure of 4 ft. He rapidly improved, the urine became acid, the capacity of the bladder increased to 115 c.c. in 18 days and to 250 c.c. in 2 months, when he could retain his urine for 4 hours. A year after the treatment was begun there was no tendency to recurrence. Some points in the technique of Dr. Young's method may be mentioned. A conical urethral nozzle which will fit tightly the meatus is required. The patient lies on his back. The bag containing the fluid is elevated 3 or 4 ft. and the urethra is alternately distended and emptied to clean the anterior urethra; the nozzle is then pressed tightly into the meatus and the bag is raised to an elevation of about 7 ft. The urethra will become ballooned and for a time the flow will stop; soon the sphincters give way and the fluid enters the bladder and the patient experiences a sensation of fulness and gradually increasing pain. The nozzle is withdrawn and the fluid is ejected with considerable force. The operation is repeated until a quart of fluid has been used. Bland fluids, such as Thompson's or boric acid (2 per cent.), are the most satisfactory in general; silver nitrate (½ gr. to 1 oz.) may be used occasionally. The effect of the dilatation is probably to separate or loosen bundles of fibrous tissue and to smooth out pockets in the mucous membrane and also to give the antiseptic the best opportunities of acting on the mucous membrane. Is there any danger of ureteral reflux and of the carrying of pus or organisms up to the kidneys? As a result of his clinical experience and of experiments on the cadaver and on dogs Dr. Young concludes that there is not.

THE RETIREMENT OF SIR WILLIAM FLOWER.

ALL medical men will learn with regret that the state of Sir William Flower's health compels him to resign his appointment as Director of the British Museum, Natural History Branch, at South Kensington. Sir William Flower, K.C.B., who is President of the Zoological Society, was for twenty-three years conservator of the museum of the Royal College of Surgeons of England, in which capacity he earned the general admiration of the scientific world for his valuable contributions to the morphology and classification of the mammalia. He takes into his well-earned retirement the good wishes of his medical brethren, who are proud to remember that a man of such brilliant learning is a member of their own profession.

NEW LABORATORIES AT THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

THE laboratories at the London School of Medicine for Women in Handel-street, Brunswick-square, which have been recently built, form a large block of four storeys and comprise a dissecting-room and laboratories for physiology, chemistry, and physics, with accessory rooms. The dissecting-room is on the second storey; it has a granolithic floor and a tiled dado, so that the whole room can be washed with a hose; above the dado slates for drawing are fixed and form almost a continuous row. The room is lighted by electric lamps and is ventilated by a turret and a cowl. The physiological laboratory is intended for 70 students and is fitted with benches; the three rows of benches which are nearest the windows are fitted for microscopic work, while a fourth row is intended for experimental physiology and has recording cylinders the revolutions of which are worked by an electric dynamo. An arc lamp is also provided for a magic-lantern and the window blinds are light proof so that the room may be completely darkened. The chemical laboratory is not yet completely finished; it will contain tables for about 70 students, and an adjoining room is fitted up as a private laboratory for the lecturer. The basement floor is intended for a physical laboratory. A second and a third block will have to be built before the buildings are complete. The second block is to be proceeded with at once; it will contain two lecture theatres, the library, a biological laboratory and other class rooms, and will cost about £5000. It has been necessary to erect the new buildings block by block, as the old buildings which are still in use have to be pulled down to provide the sites for the new buildings. On Monday, July 11th, the new buildings were opened by the Princess of Wales. The ceremony took place in the room which will be hereafter fitted up as the chemical laboratory. All of the buildings of the school of medicine were decorated with flags and flowers and very many spectators were present, including a large number of qualified medical women, former students of the school. All of them wore academic gowns and hoods. The Princess, who was accompanied by the Prince of Wales, was received by the dean of the school, Mrs. Garrett Anderson, M.D. Paris, who read an address of welcome, in which she said that since the school was started some 24 years ago the students had gained several gold medals at the London University and at the Royal University of Ireland. At present there were 170 students. Those who had passed out of the school and had obtained a medical qualification were engaged in responsible work as practitioners. Some were at the new hospital, others in workhouse infirmaries, asylums, and various provincial hospitals. Others were in India,

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South Africa, China, and Australia. The block of laboratories which had just been erected, being part of the work of rebuilding the school, had cost between £9000 and £10,000. It had been paid for by donations, by a loan from the general funds of the school, and by the share allotted to the school from the Pfeiffer bequest. In memory of Mrs. Pfeiffer the wing would be named after her. After a prayer by the Bishop of London and an anthem by Madame Antoinette Sterling, the Prince of Wales, for the Princess, declared the building open. In the course of his speech he mentioned how fully the Princess of Wales and he sympathised with the desire of women to become qualified medical practitioners, and he thought that India and China offered an almost unlimited scope for the practice of medicine by women. It might have been thought, he continued, that medical men would resent the invasion of their province by women practitioners, but the presence of his friend, Sir William Broadbent, was sufficient proof that no such feeling existed. He had inspected several of the laboratories a few days before and he had been struck with the way in which they were fitted up. He had also paid a visit to the New Hospital for Women opened by the Princess of Wales about ten years ago, which was, he believed, officered entirely by former students of the school.

OPERATION IN MICROCEPHALY.

IN the December number of the *American Journal of Nervous and Mental Disease* Dr. W. W. Keen contributes some interesting remarks on the advisability of operation in cases of microcephaly. His views are based upon the work and writings of others, but also on an experience of 18 cases of his own in which he had operated. Of these the youngest patient was eighteen months old and the eldest six and a half years. Five died after operation and of the 13 that recovered 6 were slightly improved and 7 were not benefited. So that in Dr. Keen's experience the prospect of improvement is not great and the improvement which may take place is only slight. The conclusions, therefore, are that in a moderate number of selected cases of a medium degree of microcephaly death will ensue as a result of the operation and in a small number slight improvement will follow, but in the majority no result, good or bad, will result from the operation. He does not think that a child with an average-sized head is a suitable case for operation nor, on the other hand, does he think operation justifiable in cases in which the head is excessively small. In patients of more than seven years of age he is of opinion that improvement is not to be expected and in all cases after operation the greatest attention must be paid to developing the child's faculties by education.

ONLY A PAUPER AGAIN.

IN THE LANCET of June 25th we commented severely upon the disgraceful neglect of proper provision for the nursing of sick paupers at the St. Marylebone Infirmary Workhouse. England, it appears, is not alone in the crime of committing the most indefensible form of cruelty. There has recently been a Local Government Board inquiry into the administration of the Dumbarton Poorhouse which revealed a most scandalous state of things. The inquiry was undertaken at the request of the Old Kilpatrick Parish Council and the gentleman appointed to inquire was Mr. R. B. Barclay, who, curiously enough, is not only outside visiting officer for supervising outdoor relief but also has for the past twelve years acted as Inspector of Poorhouses and Poorhouse Hospitals, so that the Local Government Board in appointing Mr. Barclay set him to inquire into the efficacy of his own inspection, and we must compliment him warmly on the fact that he found that most of the charges formulated by the parish council were true. In his report upon the poorhouse hospital he mentions that the sanitary arrangements were defective; there were no fires in the wards at night; the nurses, an old woman aged seventy-three years and a younger woman aged forty years who is epileptic, sleep in the kitchen and can only be summoned at night by the patients knocking on the locked doors of the wards. The hospital dietary is the same as in the ordinary wards except when the medical officer orders special diet. It is satisfactory that Mr. Barclay considered that the governor and the matron did their best with the very limited material which they had at hand. Other portions of the report dealt with the administration of the poorhouse itself and many deficiencies were pointed out. The Old Kilpatrick Parish Council considered this report at a meeting held on May 9th and finally came to the conclusion that the Local Government Board should insist upon the House Committee resigning *en bloc*, also that the Local Government Board should be requested to at once make arrangements for carrying out the recommendations made in the report. It is true that the conditions in workhouses and workhouse infirmaries have improved greatly within the last forty years or so, but very much remains to be done. There is still not enough separation between the lazy loafer who enters a workhouse because he does not mean to do any work and the aged and the feeble who enter the same place on account of old age or sickness. The former class deserve no mercy and should be incontinently committed to prison and made to work. But the latter class are in every way pitiable and what they want is a rest house, not a workhouse. The difficulty of providing each class with its deserts ought not to be insuperable, but in the meantime such scandals as those upon which we have been commenting must not be allowed to recur.

MUMPS WITHOUT INFLAMMATION OF THE SALIVARY GLANDS.

IT is gradually becoming more and more evident that the only essential element of an infectious disease is the invasion of the body by a specific microbe. The resulting symptoms and lesions are indefinitely variable. Of late years, partly from clinical observations, but mainly from bacteriological researches, the limits of these variations have been considerably extended. Lesions once supposed to be so characteristic that they entered into the definition of the disease may be entirely absent. Thus typhoid fever is not necessarily enteric; there may be no intestinal lesions. The pneumococcus, the most usual cause of acute pneumonia and the presence of which in other tissues causes the so-called complications of that disease, may attack these tissues and exempt the lung, producing a primary pneumococcic arthritis, pericarditis, &c. At a recent meeting of the Société Médicale des Hôpitaux Dr. M. A. Béclère read a case which showed without doubt that mumps may manifest itself by orchitis without parotitis or inflammation of the other salivary glands. This has already been stated by M. Laveran and seems to be well known in France, but it does not appear to have been observed in this country, though Dr. Eustace Smith states that the orchitis may exceptionally appear before the parotitis. A boy, aged fifteen years, was suddenly seized with violent headache, pyrexia, and repeated vomiting. On the fifth day the right testicle became painful. On the following day he was seen by a distinguished surgeon who finding orchitis with predominating epididymitis thought, as there was no urethritis, that the case was one of acute tuberculous orchitis, although the temperature was 104° F. Dr. Béclère saw the boy on the eighth day. He ascertained that three of his school-fellows had mumps and diagnosed the orchitis accordingly. Resolution was complete on the

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fourteenth day. All doubts as to the diagnosis were soon removed, for his two sisters had typical attacks of mumps. Dr. Béclère pointed out that the diagnosis should be made by the history of an epidemic, the sudden onset of the illness, and the interval of four or five days between the general symptoms and the orchitis. The diagnosis is of importance if only to enable the practitioner to warn the patient's friends that atrophy of the testicle sometimes results.

THE REPORT OF THE SELECT COMMITTEE OF THE HOUSE OF COMMONS ON PETROLEUM.

THE product of four years' labour has at length been placed upon the table of the House in the usual form of a blue-book report. The principal points in the report are that the committee recommend by a majority of one the raising of the flash-point to 100° F. Abel test; by a majority of 8 to 3 the regulation and construction of lamps; by a unanimous vote the regulation of storage and by a substantial majority the regulation of transport. Oddly enough, at the last sitting it was in the power of Mr. Collings and his friends to reverse the decision arrived at on June 24th. Two of the low-flash point partisans, however, refrained from voting and the chairman did not vote, and the report was finally adopted by a majority of one. It is unfortunate that an unanimous conclusion could not have been arrived at in accordance with the very great importance of the issue. We hope next week to deal fully with the report, copies of which have not been published up to the time of going to press.

GEOLOGICAL MODEL OF LONDON AND SUBURBS.[1]

A MAP of London and the surrounding country on a convenient scale of size, with the natural elevations of the ground shown in relief and the character of the superficial strata distinguished by colours, is a valuable means of conveying topographical information and Mr. Jordan is to be congratulated on the excellent manner in which his idea has been carried out. The district delineated by him extends from Finchley and Woodford on the north to Croydon and Orpington on the south, and from Barking and Chislehurst on the east to Hampton Court and Harrow on the west. The map is drawn on thin sheet metal embossed to represent the elevations and enamelled in eight different colours showing the nature of the ground. It has a handsome appearance and the black lines marking the various roads, streets, railways, &c., as well as the names of places, are as distinct as on a map printed on paper. The horizontal scale is 1 in. to the mile, and as it measures 15¾ in. from north to south and 20 in. from east to west the area included is obviously about 320 square miles. The vertical scale is 1 in. to 1000 ft., which is of course about five times as great as the horizontal scale, so that some of the steep inclines about Highgate and Muswell-hill have the appearance of being impracticable for any kind of wheeled vehicle without cable traction. The predominant geological formation is gravel and sand, which stretch across the map from south-west to north-east; London clay covers large tracts in the north-west and southern portions of the district; lower London tertiary deposits are found abundantly to the east of a line drawn from Croydon to Greenwich. The other formations shown are of less extent and consist of alluvium, brick earth, boulder clay, Bagshot sand, and chalk. Vertical sections of the various strata are represented on the frame, some of them being over 1000 ft. in depth. The map is provided with rings on the back by which it may be hung against the wall of a room like a picture. Mr. H. B. Woodward's memoir on the Soils and Subsoils of London and its Neighbourhood, reviewed in THE LANCET of Feb. 5th (page 372), may be advantageously consulted in connexion with the subjects of the map.

[1] By James B. Jordan. London: Edward Stanford. 1898. Price 15s.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

THE practical and delicate work of distributing the receipts of this Fund is now proceeding and by the kindness of Sir Savile Crossley, the honorary secretory of the Fund, we are able to tell our readers something of what is being done. The metropolitan area has been divided into four districts, North, South, East and West, the areas being as nearly as possible equal in the number of hospitals and the total number of beds. To define the boundaries of such areas was no simple matter. Each quarter has been assigned to a divisional sub-committee. Each sub-committee consists of five members, of whom two are thus far experts in hospital management that they are members of the medical profession, the other three being laymen, but men of business and interested in hospital work. One expert and one layman visit each hospital in the district and report upon it, and this is the work which has already been started; but it is considered undesirable until the work is complete to publish the names of the gentlemen who have so kindly undertaken the onerous task of serving on these sub-committees. It is hoped, however, that the names may be given later. At present the sub-committees are confining their visits and inquiries to those hospitals which applied for a grant in accordance with the advertisements inserted in the newspapers on May 17th and 24th, stating that all applications are required to be made by the end of June. The consideration of other claims is for the time deferred. Our readers are thus able to see that the General Council of the Prince of Wales's Hospital Fund for London have started on their task with a full sense of their responsibility; and in our opinion the method adopted for arriving at the real needs and merits of the charities which have applied to them for assistance is an excellent one. It should be thorough without being offensive and result in a proper allocation of the benefits to deserving institutions.

WATER GAS.

CARBON monoxide is an insidious poison, and since it is coming into increasing use, added in the form of water gas to coal gas, it is desirable that some control should be placed upon the public supply of gas so compounded. The gas derived exclusively from coal contains considerably over 5 per cent. of carbon monoxide, but of recent years this quantity in the gas supplied has very materially increased because at the gasworks it is now found expedient to enrich the gas by the addition of carburetted water gas. Water gas is a mixture of nearly equal proportions of carbon monoxide and hydrogen which serves as an excellent carrier of oil gas, the enriching mixture consisting of equal volumes of oil gas and water gas and being known as carburetted water gas. It is asserted that this step is necessary if the illuminating value of coal gas is to be maintained at the Parliamentary standard—namely, 16 candles. The supply of rich coal yielding a highly illuminating gas is said to have fallen short in recent years of the demands and thus the addition of carburetted water gas is adopted. The question as to whether this addition should be limited is at the present time occupying the attention of a Departmental Committee of the Home Office. We certainly are of opinion that some precise limit should be imposed, although hitherto we do not think any serious mischief has been done. Still without some definite system

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of control mischief may be done, and as far as we know there is no law providing against the supply of pure carburetted water gas which would contain over 20 per cent. of deadly carbon monoxide. Coal gas is of course itself a poison and has been used successfully for criminal purposes, while cases of accidental poisoning from its use have not infrequently occurred. The danger would be greatly accentuated of course by a gas containing an increased proportion of carbon monoxide. Again, while carburetted water gas has a decided and distinct smell it is not so pronounced as coal gas, an important property of the latter which has undoubtedly sometimes prevented disaster. We do not suppose, however, that there would be any difficulty in endowing a gas for public supply with an unmistakeable smell. On reviewing the whole question, therefore, it is clear that some control must be placed upon the composition of the public gas-supply and that soon, before any serious charge can be laid at the door of the gas companies. The Public Control Committee of the London County Council has expressed its views to the Home Office, which are as follows:

(1) That considerable danger arises from the introduction of water gas in the process of the enrichment of coal gas; (2) that non-carburetted and non-odorised water gas should not be allowed to be used under any conditions, since it is devoid of smell which would give warning of any escape of the gas; (3) that 25 per cent. should be the *maximum* amount of water gas allowed to be introduced in the enrichment of coal gas, the proportion of water gas being ascertained by determining the amount of carbonic oxide in the enriched coal gas (coal gas enriched to this extent would correspond in poisonous character to the Dowson gas which is already in use for heating purposes and for gas engines, and would exclude the use of carburetted water gas); (4) that when it is proposed to supply poisonous enriched gas to houses and the interior of buildings a proper inspection be made of the service pipes by a responsible officer appointed by the local or other suitable authority, who should certify that the pipes are in a sound condition and that there is no escape of gas, and that the cost of such inspection be borne by the gas company.

We cordially agree with these suggestions and hope that the Government will soon see their way to embody them in a short Act providing for the control of the composition as well as for the quality of the public gas-supply.

THE DRAINAGE OF SWANAGE.

IN our issue of Sept. 18th, 1897, we commented upon a report by Dr. S. W. Wheaton upon the sanitary condition of Swanage. Swanage is one of those places which the Local Government Board thinks necessary to inspect very frequently, for its drainage is disgraceful. In 1893 the town council borrowed £6000 to make new sewers which should discharge into the sea below low-water mark. The sewers were made, but up to now they still discharge on the foreshore. The *Bournemouth Guardian* has been publishing some very plain-spoken articles about the neglect of the work and these articles have naturally excited the ire of some of the members of the urban district council, so a motion was moved and carried that notice of the council meetings should not in future be sent to the *Guardian*. On July 11th the council met as usual and a *Guardian* reporter attended but was requested to withdraw. During the discussion one of the members is reported as saying "that in the *Guardian* everything was drainage—and nothing else but drainage. He thought the council should request the papers to place as little as possible in their columns concerning the drainage as it did injury to the town." Another member is reported as saying "that those who gave up their time for the benefit of the people of Swanage were not prepared to be held up to ridicule by some snobs on newspapers." At the risk of incurring the latter speaker's displeasure we must say that if the drainage scheme is not pushed forward and the other gross insanitary defects pointed out by Dr. Wheaton removed "those who give up their time for the benefit of the people of Swanage" will have a rude awakening. Visitors will rightly keep away from the town, but the Local Government Board will not, neither will typhoid fever. We suppose the council are within their legal rights in asking the *Guardian* reporter to withdraw, but even if so it was the worst thing from their own point of view that they could have done.

THE HUXLEY LECTURE.

OUR readers will learn from an announcement which appears in our advertisement columns that Professor Virchow, of Berlin, has consented to deliver the forthcoming Huxley Lecture at the Charing-cross Hospital on Monday, Oct. 3rd, at 4 P.M. This lectureship was founded at the death of the late Professor Huxley out of a sum raised by the Medical School and its friends to commemorate the fact that Huxley received the whole of his medical education at Charing-cross. The lecture is a biennial one and the subject of that to be delivered by Professor Virchow is Recent Advances in Science and their Bearing on Medicine and Surgery. The first Huxley Lecture was delivered by Professor Michael Foster in October, 1896, and Professor Virchow's lecture on Oct. 3rd will be the second. The Charing-cross Medical School is to be congratulated on the honour which the most venerable and most distinguished of pathologists is willing to pay to the memory of perhaps the most honoured student of that school. It is now five years since Professor Virchow visited this country to deliver the Croonian Lecture for the Royal Society and those who took part in his reception on that occasion will not forget the interest which his visit excited or the cordial welcome which was everywhere extended to him. The Huxley Lecture will be delivered in English, of which language Professor Virchow is a master.

MR. BALFOUR ON MEDICAL RESEARCH.

ON July 13th the First Lord of the Treasury distributed the prizes to the successful students at Guy's Hospital. After the prize-giving he addressed his audience in a telling speech. Commencing by paying a warm tribute of esteem to the nobility of the medical profession, and having referred to his recent election as a governor of the hospital, Mr. Balfour proceeded to point out how science was necessarily getting more and more specialised and that therefore medical men and those whom they would have to treat were being gradually compelled more and more to rely upon those whose work was mainly research. He continued:—

"The man who would succeed in research, the man who, at all events, desires to devote himself to research, must not be asked to burden himself with other labours. He has upon his shoulders not merely what I may call the specialised work of his profession, but he must have a sympathetic and appreciative eye to everything which is going on in other departments of science, so that even where he cannot follow those other departments minutely he knows by the instinct of genius where to pick up those new discoveries which may help his own special branch of research. For men of that kind I think we require further endowment. I have all my life been on ardent believer in the cause which is often laughed at—the cause of the endowment of research. In that cause I most firmly believe, and I think there is no branch of knowledge in which it may find a more useful field of application than in that of advancing medical knowledge."

These are noble words, and we only hope that the speech of Mr. Balfour may be some indication of the mind of the Government, although we do not mean it to be implied that

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he was speaking in any other than a private capacity. The British Government has hitherto been indifferent to the endowment of research. Everyone will remember Pitt's answer to the modest request that the Government would grant a few thousands for the purchase of the Hunterian collection: "We want the money to buy gunpowder," was the only reply. This was in 1793, but it is fair to say that in 1799 the Government did buy the collection for £15,000. Compared, however, with foreign countries Great Britain is sadly deficient in State-aided laboratories or scientific endowment of any kind. At the close of his speech Mr. Balfour implied that he looked to those who already subscribed for the pure medical and surgical work of a hospital to endow research. We ardently trust, however, that his presence at Guy's Hospital may prove the earnest of a Government grant for research in the future.

SYPHILIS OF THE STOMACH.

SYPHILITIC lesions of the stomach have been but seldom described. Possibly, as M. Dieulafoy has recently asserted, they are not so uncommon as is supposed, for when they come under clinical observation it is usually as ulcers of the stomach and the symptoms do not differ from those of ordinary ulcer. Gummata have been found at necropsies, but as a rule they produce symptoms during life only when they ulcerate. A case such as the following, published in *La France Médicale*, July 1st, 1898, by Dr. Dubuc, is very exceptional. In 1880 and 1881 he treated a man for primary and secondary syphilis and in 1884 for a tubercular syphilide on the forearm. In 1891 he detected in the epigastric region a large indurated plaque of the size of the palm of the hand, with a projection having the volume of a pigeon's egg. It was situated behind the abdominal wall and no doubt in the wall of the stomach. It was separated from the liver by a narrow resonant zone and was elevated by the pulsations of the aorta. The patient had wasted, digestion was slow and difficult, and there was pain in the affected region. Mercury and iodide of potassium were given; the plaque appreciably diminished in a week, and was found to have entirely disappeared when the patient was seen four months afterwards. M. Dieulafoy's advice to inquire for a syphilitic history in all cases of gastric ulcer and to treat accordingly is sound.

THE PROSPECTS OF NEW LEGISLATION ON POISONS AND FOOD.

WE must express our satisfaction with the steps which, as announced by Mr. Balfour in the House of Commons on Tuesday, the Government propose to take in regard to two measures in the progress of which we are interested. The Poisons Bill has been thrown over definitely and, in the words of Mr. Balfour, the Government have abandoned all hope of passing it into law. Last week we expressed the opinion that the Bill was unsatisfactory and not only so, but likely if passed to interfere with, if not to nullify, the good being done by the present Pharmacy Act. We take it that the Government found it expedient to drop this Bill on account of the opposition shown to it. It was certainly pushed through the House of Lords by the Duke of Devonshire with extraordinary rapidity. Indeed, it passed the House of Lords practically without discussion. As we said last week, if a really protective measure is to become law the Bill introduced by the Duke of Devonshire must be very seriously altered and amended. We receive, therefore, the announcement of Mr. Balfour with satisfaction and may now hope that a more satisfactory measure will be drafted in the future. It is hardly possible that the new Food and Drugs Bill will be passed this session, but at any rate it is to be introduced at an early date—probably next Tuesday. We believe that the new Bill is a very comprehensive measure, and it will, there is little doubt, give rise to considerable discussion. The terms, we believe, of its provisions are much in a line with those of the Bill introduced in January, 1897, which was dealt with at some length in a leading article in THE LANCET of March 6th, 1897. We should very much like to see it pass speedily, because we believe the Bill to be a good one and calculated to check the many fraudulent practices which now so artfully escape punishment under the present *régime*.

DEADLY ICE-CREAMS.

ANOTHER case is reported of a death presumably due to the eating of ice-creams. The victim was a child aged three years. The medical man in attendance deposed at the inquest that on the previous day he had seen two similar cases in the same street in Hoxton. Surely the authorities should do something in the matter. Is the liberty of unlicensed killing to continue indefinitely? There is proof, circumstantial, bacteriological, and positive, of the deadliness of the filthy "hokey-pokey" and it is high time that regulations were made with regard to its manufacture.

DR. CORNELIUS HERZ, whose death occurred at Bournemouth recently, was a medical man, but his place in science was won by his practical work in electricity. His death was due to angina pectoris and in its mode of onset sufficiently justified the opinion of the well-known English physicians who refused to take the responsibility of saying that he was in a fit state to appear at the Extradition Court.

THE Queen has sent a donation of £20 to the fund for the proposed children's wards in the Kensington Dispensary.

DR. LOMBE ATTHILL has been elected an Honorary Fellow of the Edinburgh Obstetrical Society.

A REPORT ON PELLAGRA IN TRANSYLVANIA.[1]

THE south-eastern part of the Carpathian Mountains forms the boundary between the kingdoms of Roumania and Hungary. Its slopes on both sides are inhabited by the Wallachs, now called Roumanians. They have the same habits and religion, the only difference being that the people on the northern side owe allegiance to Hungary, whilst those on the southern are subjects of the King of Roumania. They are supposed to be the descendants of the legionaries of ancient Rome who were stationed in these parts in the time of the Emperor Trajan and his successors. These people are very poor and live under highly insanitary conditions. Pellagra, which, as is generally known, prevails in certain districts of Italy as an endemic disease, has apparently been unknown hitherto in these parts, at any rate as far as the authorities and the medical profession generally are concerned, but it has recently attracted the notice of sanitarians in the shape of an endemic outbreak. To inquire into the circumstances of this outbreak the Hungarian Government appointed a Commission, consisting of Dr. Niedermann, Dr. Konrád, and Dr. Farkas, which has just presented its preliminary report to the Minister of the Interior at Budapest. The Commission commenced its labours in April last by visiting the villages where the disease was known to prevail, and at the termination of this inquiry it made the preliminary report referred to above from which we glean the following.

It appears that about fifteen years ago Dr. Takách, of the county of Kövár, noticed in his neighbourhood some

[1] **A Pellagra: Niedermann Gyula tr., Konrád Jenö tr. és Farkas Jenö tr. jelentése az erdélyl megyékben fellépett pellagra megbetegedésekről. (Pellagra: A Report of Dr. Gyula Niedermann, Dr. Jenö Konrád and Dr. Jenö Farkas on Pellagra Cases which occurred in some of the Counties of Transylvania.)**

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suspicious cases of skin disease which he named pellagra and described it as such in the medical journals; but owing to doubts expressed by a dermatologist at Budapest as to the correctness of the diagnosis the subject was dropped. Last year, at the International Plague Conference in Venice, the Hungarian delegate, Dr. Chyzer, met Dr. Felix, a delegate of Roumania, and learning from him that pellagra frequently occurs on the southern slopes of the Carpathians he was induced to visit the provincial hospital of Venice and to study some of the cases of pellagra there. On his return to Budapest he gave directions to the chief physician at Kolosvár and to the physician in charge of the lunatic asylum in that city to pay special attention to cases of pellagra, and at the same time he entered into correspondence with Dr. Felix of Bucharest and with several medical practitioners in Transylvania. Dr. Takách was the first to send a patient suffering from pellagra from the town of Somkút to the clinique at Kolosvár; this was on April 19th last. Dr. Lechner, Professor in the University of that city, confirmed the diagnosis and submitted the case to the Commission. The following, taken from their report, may serve as a fair type of cases described.

A married man, aged twenty-six years, of feeble constitution, a farmer, was born of healthy parents in the county of Szathmár. When seven years old his foot was injured by a thorn and periostitis ensued. The part became considerably swollen and he was for a long time under treatment in a hospital, where he underwent an operation, but the suppuration, owing to diseased bones, still continued. At the age of eighteen years he married. His habits were temperate, his ordinary diet consisting of porridge made of Indian corn, wheat-bread, bacon, eggs and milk. Since last autumn his diet has consisted exclusively of Indian corn mixed with wheat-flower. In the spring of 1897 there appeared an affection on the skin at the back of his hands. He became excited, spoke and acted confusedly, and walked about aimlessly, stopping people in the street and saying that he was in search of a wife, although he was already married. By the end of spring the skin disease had disappeared and his brain symptoms had improved, but it was nevertheless thought that he still suffered from hallucinations. In March, 1898, his hands, face, and neck became swollen and erythematous, and his skin grew fissured and knotty and covered with scales and was peeling. He again became excited and spoke and acted in a confused manner and, his agitation increasing, he ran away from home and made attacks on men and on animals. The patient's restlessness subsided on his admission into the hospital, but he became apathetic and stupid, had illusions, saw spectra, heard strange sounds, and refused to take food.

After establishing the diagnosis of the above case as pellagra, other cases of the disease were recognised at the clinique of the University of Kolosvár by Dr. Purjesz and Dr. Marsalko, 11 of which were seen by the Commissioners. On May 20th, 1898, they visited the village of Nagykalota, where in former years the food of the inhabitants was wheat and rye, but this year it was Indian corn. A miller there stated that this year no pure wheat was ground in his mill, although formerly he had a good deal to grind, and he added that "pigs fed better formerly than men do to-day." Last summer many people suffered from malaria and still continue to do so to a certain extent. The village rates amount to 106 per cent. of the ordinary taxes. The Commissioners also examined numerous cases in sixteen different villages with the same result. The symptoms were of the type described above. The disease may be said to be the result of insufficient nourishment aggravated by bad hygienic conditions and by malaria. No cases of pellagra could be detected where the people had good and sufficient food.

The Commissioners conclude their report as follows: "From the above examinations of many cases we arrived at the conclusion that under similar dietetic and hygienic conditions pellagra in an endemic form will be found in other parts of the country. Before submitting a final report we may place our opinion on record that the exclusive use of Indian corn as food is the ultimate cause of pellagra and the nutriment of the people in those places was this year even worse than usual, because (1) the crop last year was of an inferior quality; (2) for the last three years there prevailed a murrain among the flocks, particularly among the pigs; and (3) the flocks of sheep have likewise suffered severely, the consequence being that the people have had no animal food during the winter. All this was aggravated by the continuous rains of last year which produced malaria."

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE twenty-ninth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, July 11th. The only Commissioners present were the Chairman (Lord Llandaff), Major-General Scott, Mr. de Bock Porter, and Mr. Robert Lewis. The first part of the sitting was occupied by taking the evidence of Mr. Andrew Johnston (chairman of the Essex County Council), Mr. W. B. Whittingham (chairman of the Water-supply Committee of the Essex County Council), Mr. William Ivey (Mayor of West Ham), Mr. Frederick Ernest Harris (treasurer of the borough of West Ham), Mr. W. K. Marriott (chairman of the Barking Urban District Council), and Mr. Alfred Plant (accountant to the East Ham District Council). After the adjournment for luncheon evidence was given by Mr. T. L. Knight (chairman of the East Ham Urban District Council) and by Mr. C. G. Musgrave (chairman of the Leyton Urban District Council); and Sir John Evans, K.C.B. (vice-chairman of the Hertfordshire County Council), put in a statement on behalf of the county which he represented and was examined at some length.

Mr. JOHNSTON, in answer to the CHAIRMAN, said that the population of the geographical county of Essex according to the census of 1891 was 785,445 and that of the administrative county 578,471. The county borough of West Ham was entirely within the limits of supply of the East London Waterworks Company. The county council of Essex and the borough of West Ham had acted in concert with a view to opposing the London County Council's Water Transfer Bills. They were, however, willing to come to an arrangement with the London County Council on certain conditions and an agreement was drawn up last year but it was never "signed and sealed." The arrangement was, briefly, that the London County Council should hand over to the Essex authorities the supply and distribution of water within that county. In the county of Essex there were besides the county borough of West Ham ten separate local authorities which were either wholly or partially supplied by the East London Waterworks Company. These districts were Walthamstow, Leyton, Wanstead, East Ham, Woodford, Buckhurst-hill, Chingford, Waltham Holy Cross, Ilford, and the Epping Rural District Council area (Loughton and Chigwell). The Barking Local Authority was also within the company's limits of area and might at any time require a supply of water. The witness thought it was not expedient that ten or more separate water authorities should be formed within the Essex district of supply of the East London Waterworks Company, and that might happen if the powers contained in a clause of the East London Waterworks (Purchase) Bill introduced by the London County Council last year had received Parliamentary sanction. Most of the districts of the local authorities which had been mentioned are supplied by mains passing through one or more other sanitary districts, and had one or more of the local authorities availed themselves of the powers proposed by the London County Council's Bill and undertaken the distribution of water in their respective districts the arrangements would have become very complicated, and if the various parts of the undertaking became vested in a number of different local authorities they would necessarily have to employ additional officers and servants in each district, and the result would be a very heavy expense which would fall directly on the ratepayers.

In answer to Mr. DE BOCK PORTER the witness said that the Essex County Council was not anxious to become the water authority, and they feared that a change from the present arrangement would have the effect of making them pay more for their water. The gross charge for water supplied by the East London Waterworks Company given on an average of six years had been 4·21*d.* per 1000 gallons and the average cost throughout the whole of the London water companies' area had been over 6·97*d.* The witness thought that had the undertakings been purchased by the London County Council they might have tried to charge the Essex district the average price charged for water over the whole of the metropolitan area of supply and in his opinion the East London authorities would be at a disadvantage either in the case of negotiations or

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arbitration if they had any dispute with regard to charges with so rich and so powerful a body as the London County Council and in his opinion they were in danger of having to pay as much as 66 per cent. more for their water than they do at present. In the case of purchase of the metropolitan water companies' undertakings by the London County Council the Essex authorities had drawn up a statement of their opinions which were that—

1. The London County Council should be subject to all the liabilities of the East London Waterworks Company. 2. That a provision should be made enabling the Essex County Council to promote and pay the costs of promoting a Bill to constitute an Essex water authority (with or without the county borough of West Ham), and to authorise such water authority to purchase, on terms to be settled by arbitration, such portion of the undertaking of the East London Company which by the Act might become vested in the London County Council as might be necessary for the purpose of a supply of water both as regards present and future needs within their district. 3. That the said water authority might purchase the Essex portion on the same terms as the London County Council might acquire the whole undertaking of the company. 4. That the Essex County Council or the water authority might at any time within two years from the passing of the Act purchase the Essex portion. 5. That until an Essex water authority were formed the consumers within the Essex district should not be charged a higher rate for the supply of water than they then paid.

The Essex County Council had also passed the following resolutions in reference to their policy on the water question. On April 7th, 1896, the following resolution was passed:—

That the council have considered the Metropolitan Counties Water Board Bill and the proposed resolutions submitted by the Chairman of the Surrey County Council. That they find some provision is made in the Bill for the representation on the proposed water board of the districts outside the county of London, though leaving the outer districts in a minority, but at this stage they are not prepared to offer other comment on the Bill than the following: That a clause be introduced protecting the outside districts from any possible liability to contribute to the cost of bringing water to London from a great distance without the consent of their representatives, inasmuch as the outer districts have abundant sources of supply for themselves within their own areas which they should have the right to retain.

And again on Jan. 5th the following resolution was passed:—

That the President of the Local Government Board having asked for a formal statement of the views of the council as to proposed legislation in the matter of metropolitan water-supply a reply be sent as follows: (*a*) That if the metropolitan water area within the county can be assured of acquiring an adequate proportion of the sources of supply now used by the East London Water Company within such area a separate water authority be formed for such area, combined, if possible, with the county borough of West Ham, otherwise the Council would prefer representation on a general metropolitan water-trust. (*b*) That in any water-trust Bill a clause should be introduced protecting the outside districts from any possible liability to contribute to the cost of bringing water to London from a great distance without the consent of their representatives, inasmuch as the outer districts have abundant sources of supply for themselves within their own area which they should have the right to retain.

In answer to the CHAIRMAN the witness said that the parts of Essex not supplied by the East London Waterworks Company were partly supplied by the South Essex Water Company and by the Essex and Hertfordshire Water Company. In rural districts the water of "old horse ponds" was still used. The witness said that as far as he was concerned he was satisfied with the water supplied by the East London Waterworks Company.

Mr. W. B. WHITTINGHAM, in answer to the CHAIRMAN, said that complaints had been made with regard to the inadequacy of the supply by the East London Waterworks Company during periods of drought and of frost. If the London water companies' undertakings were purchased he thought the control should be vested in the Essex County Council.

Mr. WILLIAM IVEY, in answer to the CHAIRMAN, said that the county borough of West Ham was joined to the metropolis to the east of the River Lee and was divided from it by that river. The population of the borough was growing very quickly. Thus in the year 1851 the population was 18,807; in 1861, 37,639; in 1871, 63,969; in 1881, 128,953; in 1891, 204,903; and in 1897, 273,662. The borough contained a large number of business premises. The works of the Great Eastern Railway Company, the whole of the Victoria Docks, and part of the Albert Docks were within the borough. There were also large sugar, soap, and candle factories. The existence of all these factories depended on a constant supply of water. In the years 1894, 1895, and 1896 there was considerable dissatisfaction in the borough because of the dearth of the domestic water-supply, and for a great part of the time the borough was either without water altogether or on a very short supply. The witness considered that the River Lee was the natural watershed for the supply of West Ham, and if there was any amalgamation of the water companies the town council thought that a proper provision should be made for districts beyond the metropolitan area. The witness said that he believed that the East London Water Company had taken measures to prevent any repetition of the deficiency of the water-supply and subject to the question of the adjustment of the rating for water purposes and subject also to the application of the Water-rate Definition Act of 1855 to the West Ham district he did not think there was any reason why matters should not remain as they are at present. In the case of purchase of the East London Waterworks' undertakings he thought that looking at the magnitude of the area, the number of the population, and the vastness of their interests in the question, it would be most desirable that the Government itself should deal with the matter. But, failing that, if the water undertakings were acquired in any other way the corporation thought that they ought to have powers and privileges conferred upon them similar to those which had been arranged between the London County Council and the Essex County Council in case of the purchase of the undertakings by the former body. The matters which had not been satisfactory in the past were (1) that there had not been a constant supply; (2) that the supply had been insufficient in quantity; and (3) that the charges for water-rents were not fairly made. The charges had been levied on the "annual value," not on the "net rateable value." The question as to the legality of the charges had, however, not been raised in a court of law.

Mr. FREDERICK ERNEST HARRIS, treasurer of the county borough of West Ham, said that the people of West Ham had a distinct grievance against the East London Waterworks Company with regard to the charges levied for water-rents. By the Water Rate Definition Act of 1885 the words "annual value of the tenements supplied with water" are defined as follows: "The words 'the annual value of the tenement supplied with water,' in the 68th Section of the Waterworks Clauses Act, 1847, shall within the unions and parishes to which the Valuation of Property (Metropolis) Act, 1869, extends, mean the rateable value as settled from time to time by the local authority as duly constituted." West Ham being outside the metropolis the words "annual value" are not defined by statute, and the East London Waterworks Company themselves determine what is the "annual value" and the water consumer, if aggrieved by the company's decision, has either to pay or to appeal to two justices. The practical result of the present state of things is that the company arbitrarily prescribe the charges for water and have adopted scales of charges which purport to represent the statutory charge of 5 per cent. upon the "annual value" and no information is given to the water consumer as to how the East London Waterworks Company's "valuation" is made. The witness had compared the rateable values as appearing in the ratebooks of the borough and found that the company's charges in West Ham were considerably higher than those which obtained in London. The witness had prepared two tables, one showing the rates charged in the case of cottages in which the landlords paid the rates and taxes, the other in the case of houses in which the tenant paid both rates and taxes. These tables showed that the amount of water rent charged in West Ham was higher than the water rent charged in London. For example, in the case of a cottage for which the rent was 8*s.* a week the water rent charged in West Ham was 12*s.* 6*d.*, and in London 11*s.*, the difference being 13½ per cent. In the case of a house of the rental of £30 a year in which the tenant paid the rates and taxes the water rent charged in West Ham was 26*s.* and in London 24*s.*, the difference in this case being 8½ per cent.

In answer to the CHAIRMAN the witness said there was no reason to justify this excessive charge on the part of the East London Waterworks Company.

Mr. W. K. MARRIOTT, chairman of the Barking Urban District Council, said that the whole of the district which he represented was in the area of supply of the East London Waterworks Company, but that company did not at present supply any part of it. The district was also within the Parliamentary area of the South Essex Waterworks Company. The population of that district was over 20,000. The Barking District Council were of opinion that in the event of the East London Waterworks Company being acquired by the London County Council a water trust should be formed composed of representatives from the various districts affected. The Barking District Council, however, did not agree to the proposal made by the Essex County Council that that body should be constituted the

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Essex water authority representing the part of Essex within the East London Waterworks Company's limits of supply. The Council were of opinion that an authority constituted by the Essex County Council would not fairly represent the urban area of the district and they therefore submitted that if a water authority were formed it should be composed of persons representing the consumers directly and should be a popularly elected administrative body, and they suggested that the members should be elected from the several districts interested in proportion either to the population or to the rateable value of the districts supplied. If it were decided to allow the local authorities to obtain a sufficient water-supply for their own requirements the council were prepared to obtain such supply or to purchase water in bulk.

In answer to Mr. ROBERT LEWIS the witness said that the South Essex Waterworks Company obtained part of their supply from a well at Grays. The water supplied was all well water.

Mr. ALFRED PLANT, accountant to the East Ham Urban District Counncil, in answer to the CHAIRMAN said that the district of East Ham joined the county borough of West Ham. It was in the area supplied by the East London Waterworks Company. The population, which in 1891 was 32,713, was now estimated at 70,000. The area of the district was 3266 acres and the number of houses 14,500. The requirements of the district were similar to those of the county borough of West Ham. The area of supply of the East London Waterworks Company was confined in this direction to the districts immediately adjoining the metropolis, and the East Ham District Council were in favour of a joint Water Trust being formed for that part of Essex which was within the metropolitan area of water-supply, but they thought that the trust should be distinct from the London County Council. With regard to the difference of the charges of the East London Water Company in their metropolitan and extra-metropolitan districts tables were handed in showing that the charges made in East Ham were greater than those made in the case of similar cottages and houses within the metropolitan area.

Mr. C. G. MUSGRAVE, chairman of the Leyton Urban District Council, in answer to the CHAIRMAN, said that the district which he represented adjoined the metropolis and West Ham and was separated from the former by the river Lee. The whole of the district was within the area of supply by the East London Waterworks Company. The population of the district was nearly 90,000, comprised an area of 2491 acres, and contained about 15,500 houses. In the opinion of the Leyton UrbanDistrict Council it would not be possible for the Essex County Council to fairly represent them with regard to management of their water-supply. Should a new water authority be constituted the council were of opinion that—

1. Such authority should be constituted of persons directly representing the consumers. 2. That the supply of water should be directed by a popularly elected administrative body. That, in the event of Leyton being able to obtain a supply sufficient for its own purposes, the council would be prepared to acquire such supply, or as the supply is within the district of Leyton the council would be prepared to purchase water in bulk at cost price and distribute. 3. That in the event of Leyton being unable to obtain such supply limited to its own district a body should be elected from the various districts for which such supply is required in proportion to population of the districts supplied.

The witness said that his district suffered in the same way as West Ham from the overcharges of the East London Waterworks Company. They had also to complain that the supply was not constant. Last year no water could be obtained in the case of a fire. The East London Waterworks Company's officers had suggested that the fire brigade did not know their duty. The witness was of opinion that the fire brigade was an extremely efficient one and that there was no water available at the time of the fire.

Sir JOHN EVANS, K.C.B., in answer to the CHAIRMAN, said that he was vice-chairman of the Hertfordshire County Council. He had been desired by the Parliamentary Committee of the council to lay before the Commissioners a statement as to the best method of dealing with the question of the water-supply in the interests not only of the County of London but also of the outside areas. His statement dealt with the questions of the advisability of purchase or control, as to how control might affect the question of the quality and the quantity of the water supplied and also its effect on the charges. Purchase and control were considered as they affected the outside areas. In addition to this he had dealt with the question as to what additional powers of control were needed, as to the control of the abstraction of undergound water, and finally he made suggestions as to a new Waterworks Clauses Act. There were also notes on the existing acts for the control of the water supply in the metropolitan water area.

In answer to the CHAIRMAN the witness gave evidence with regard to the effect of pumping by the New River Company. In the opinion of the witness the effect of the uncontrolled pumping by the New River Company had been (1) that wells in Ware in summer are frequently pumped down; (2) that the springs and streams in the neighbourhood of the Amwell Marsh and Amwell Hill pumping stations are pumped dry by those wells when working; (3) that the water which stands in the ditches and ponds in the Lee Valley is affected by the pumping from the companies' wells; (4) that the well at Haileybury College is pumped down; (5) that the well at Beaumont Manor was pumped dry; (6) that the Barnet Water Company find the water in their well falling off yearly; (7) that the Cheshunt District Council's well has given out; (8) that the flow of the Ash, Rib, Quin and Beane tributaries of the Lee has fallen off; and (9) that the flow of the River Lee has been insufficient for the East London Company. The witness thought that no well ought to be sunk by a water company except under the authority of Parliament contained in a special Act. In his opinion an Act ought to be passed which provided that all companies proposing to construct and obtain their supplies from wells should be under an obligation to afford supplies of water to those in the neighbourhood of the proposed wells whose water-supply might be affected by pumping from them. He thought also that companies ought to be controlled by being compelled to afford a sufficient supply of water at a reasonable rate, so that the water consumers might get the benefit accruing to the companies by reason of the practical monopolies which had been conferred on them and he suggested as the lines upon which a solution of the present difficulties might be found: (1) a careful reconsideration of the existing powers to charge for water which are in the hands of the companies with a view to ascertaining whether those powers might be modified in such a way as to secure lower water charges and uniformity of charge over the whole of the metropolitan water area; and (2) a reconsideration of the limitations under which the companies are now required to issue their capital and the amount of dividends which they may pay.

The next sitting will be held on Monday next, July 18th, at the Guildhall, Westminster.

MEDICAL REFORM AT LEWISHAM.

A WELL-ATTENDED meeting of the medical profession of Lewisham and the neighbourhood was held at the Infirmary, Lewisham, on July 6th to hear an address from Mr. R. B. Anderson, as representative of the Corporate and Medical Reform Association, Limited, on "Practical Measures for the Prompt Attainment of Corporate and Medical Reform and for the Maintenance of the Rights and Promotion of the Honour and the Interests of the Medical Profession." Dr. F. S. Toogood, medical superintendent of the Infirmary, presided.

Mr. ANDERSON'S address dealt with what he considered to be the principal evils and abuses which afflict and injure the profession and the public, and showed them to be due to the exclusion of the body of the profession from influence in and control of the corporations, a position which he said could be remedied only by combined action of the profession and the public for obtaining from the State facilities for the self-government of the profession.

It was moved from the chair, seconded by Mr. F. S. BARNETT (Lewisham), and carried unanimously:—

That this meeting of registered medical practitioners of Lewisham and the neighbourhood, constituents of various medical corporations, supports the principles and policy of the Corporate and Medical Reform Association, Limited, and will coöperate collectively and individually by every constitutional means in promoting its measures, particularly combined action of the medical profession and the public to effect the reforms desired.

It was then moved by Mr. F. S. BARNETT, seconded by Dr. J. P. HENRY, and carried *nem. con.*:—

That a provisional committee of members of or joining the association be appointed, with power to add to its numbers, to act with the association in approaching public men and public bodies, medical and

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lay, to invite coöperation in the south-east district of London and throughout the county of Kent in organising a county of Kent branch.

A local committee was then formed with Mr. F. S. Barnett (Lewisham) as local hon. sec.

The meeting terminated with votes of thanks to Mr. Anderson and to Dr. Toogood for receiving the meeting and presiding.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE following is a list of medical referees who have been appointed by the Secretary of State for England and Wales for certain county court circuits in respect of which the arrangements are for the present complete :—

Circuit No. 1.—Dr. George Hare Philipson, Dr. Frederick Page, and Dr. George Halliburton Hume, Newcastle-on-Tyne; Mr. Charles Clarke Burman, Alnwick; and Dr. William Bertie Mackay, Berwick-upon-Tweed.

Circuit No. 2.—Dr. Selby Wetherell Plummer, Durham; Mr. Thomas Alexander McCullagh, Bishop Auckland; Dr. James Murphy, Sunderland; Dr. Robert Anderson, Seaton Delaval; Dr. William Mearns, Gateshead; and Dr. Frederick Hughes Morison, West Hartlepool.

Circuit No. 4.—Dr. James Arthur Rigby and Dr. Edwin Moore, Preston; Mr. Arthur Stanley Barling, Lancaster; Dr. Leonard Greenham Star Molloy, Blackpool; Dr. John Michael Harding Martin, Blackburn; and Mr Oswald Samuel Wraith, Darwen.

Circuit No. 6.—Mr. George Gibson Hamilton and Mr. Joseph D. Crawford, Liverpool; Mr. Robert Meredith Littler, Southport; and Mr. Charles Stuart Pethick, Woolton, Liverpool.

Circuit No. 7.—Dr. George Harry Cooke, St. Helens; Mr. Damer Harrisson, Liverpool; and Mr. Joseph Collier and Mr. Herbert Lund, Manchester.

Circuit No. 11.—Dr. James Mackenzie, Burnley; Mr. William Henry Ellis, J.P., Shipley; and Mr. William Henry Horrocks, jun., and Dr. Henry Johnstone Campbell, Bradford, Yorks.

Circuit No. 12.—Dr. Thomas Michael Dolan, Dr. John Crossley Wright, and Dr. Alfred Mantle, Halifax; and Dr. Thomas Kilner Clarke and Mr. Peter Mac Gregor, Huddersfield.

Circuit No. 17.—Dr. William Arthur Carline and Mr. William John Cant, Lincoln; Dr. George Skelton Stephenson, Grimsby; and Dr. Arthur Tuxford, Boston.

Circuit No. 20.—Mr. Claude Douglas, Mr. Frank Montague Pope, and Dr. Thomas William Gordon Kelly, Leicester; Mr. Joseph Balm Pike, Loughborough; and Dr. William Newman, Stamford.

Circuit No. 21.—Mr. Harry Gilbert Barling and Dr. William Turberville Farncombe, Birmingham.

Circuit No. 23.—Mr. Henry Hammond Smith, Stourbridge; and Mr. John Lionel Stretton, Kidderminster.

Circuit No. 24.—Dr. William Taylor and Dr. Charles Tanfield Vachell, Cardiff; Mr. Octavius Edward Bulmer Marsh and Dr. Samuel Hamilton, Newport, Mon.; Mr. W. Edwin Williams, Abertillery, Mon.; and Dr. William Dyne Steel, Abergavenny.

Circuit No. 31.—Dr. James Fenton Stamper, Pembroke Dock; and Mr. Evan Evans and Mr. David James Williams, Llanelly.

Circuit No. 33.—Dr. Michael Beverley and Dr. Hamilton Ashley Ballance, Norwich.

Circuit No. 35.—Mr. Walter Gifford Nash and Mr. Edward Colby Sharpin, Bedford; and Mr. George Borthwick Mead, Cambridge.

Circuit No. 42.—Mr. James Berry, 60, Welbeck-street, Cavendish-square, W.; and Mr. William Bruce Clarke, 51, Harley-street, W.

Circuit No. 43.—Mr. Christopher Heath, 36, Cavendish-square, W.; and Dr. Herbert Campbell Thomson, 34, Queen Anne-street, W.

City of London.—Dr. William Murray Leslie, 23, Fenchurch-street, E.C.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House up to Wednesday last in aid of this Fund. The total now amounts to £37,000 :—

	£	s.	d.
St. Mary Abbotts Kensington :— Parish Church, £330 9s. 4d.; St. Paul, Vicarage Gardens, £154 5s. 0d.; Christ Church, Victoria-road, £99 10s. 3d.	584	4	7
The Very Rev. The Chief Rabbi, from London Synagogues, including: Great Synagogue, £260 10s. 2d.; New West End, £113 7s. 6d.; Bayswater, £88 7s. 0d.; Central, £77; Hampstead, £55 19s. 2d.; St. John's Wood, £37 9s.; North London, £31 12s. 6d.; Maiden-lane, £23 2s.; Dalston, £20 9s	855	18	9
Conference Hall, Mildmay-park	23	16	7
St. Thomas, Regent-street	20	0	5
Waltham Abbey Parish Church	24	3	4
Mr. W. Mann Cross, C.C.	20	0	0
Trinity Church, Hampstead	74	10	4
St. Andrew, Whitehall-park, N.	29	8	2
St. Luke, Westbourne-park...	42	6	10
St. James, Hatcham	75	9	3
All Saints, Camberwell	26	17	6
Chiswick Parish Church	28	13	9
Christ Church, Beckenham...	38	16	1
All Saints, Hatcham	21	2	5
St. Alphege, Greenwich	28	3	9
St. Luke, Redcliffe-square	51	6	5
St. Mary Magdalen, Munster-square	24	2	9
All Saints, St. John's Wood	21	12	6
All Saints, Child's Hill	21	14	9

Public Health and Poor Law.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Birmingham Sanitary District.—Dr. Alfred Hill is, in his twenty-fifth annual report, in no sense enthusiastic as to the sanitary progress of the city of Birmingham—that city which has ere now been held up as a pattern of municipal administration. The general death-rate is not, Dr. Hill considers, at all what it should be in relation to that of the other large towns, in spite of the fact that at one time the sanitary activity of the corporation led to a very marked diminution in the mortality. This is well shown by the following figures :—

	Average death-rate per 1000.
Five years 1873–77	24·8
,, ,, 1878–82	21·6
,, ,, 1883–87	20·7
,, ,, 1888–92	20·0*
,, ,, 1893–97	20·2*

* Enlarged city.

In 1873 Dr. Hill was appointed medical officer of health, and it is to the sanitary progress which took place in the decade following the appointment that this reduction in the death-rate is probably in large part due. During the past fifteen years, however, despite the extension of the city boundaries, there has been no reduction in the death-rate, and Dr. Hill refuses altogether to accept the position that no further reduction can be effected. He points out in opposition to this view that if other large towns can have death-rates below 20 per 1000 he sees no reason why Birmingham should not do the same. When, for instance, the last quinquennium is compared with the preceding decennium it is found that Blackburn has reduced its death-rate 4, Huddersfield 4, Halifax 3·8, Cardiff 3·8, Oldham 3·7, Preston 3·4, and Manchester 3·3 per 1000, while Birmingham has been practically at a standstill. If the mortality of Birmingham is to be reduced, it is essential, Dr. Hill thinks, to continue the improvements which were followed by such good results after he first took office. The sewers should be thoroughly examined as to their soundness, courts and terraces should be paved, pan-privies should be done away with, and the water-carriage system of excrement disposal generally adopted; scavenging of refuse should be improved and more air-space about dwellings insisted upon. The isolation hospital accommodation of Birmingham is, too, not what it should be, and those who do not already know it will be very surprised to hear that there is no provision either for diphtheria or enteric fever. In reference to this latter disease we notice that as a matter of precaution against the specific contamination of the public water-supply Dr. Hill wrote to every medical officer of health having jurisdiction in the watersheds from which the supply is drawn requesting to be informed of any cases of enteric fever which might occur, and in addition to this it was determined to make monthly bacteriological examinations of water taken from each of the three zones of supply. Diarrhœal diseases exacted an enormous toll in Birmingham during 1897, no less than 1444 deaths having been attributed thereto. Of this number as many as 1150 occurred during the third quarter of the year, and as regards age distribution 1074 were under two years of age and 930 under one year. Into the circumstances connected with a large number of these deaths Dr. Hill has gone very carefully and he found that overcrowding and insanitary yards and privies largely obtained; in fact, his observations have led him to agree entirely with the late Dr. Ballard as to the influence of fouled soil and accumulations of excreta and refuse. There are, we are told, still 30,000 pan-privies in Birmingham, and it is easy to understand that as long as these remain in existence no great progress is likely to be made. With regard to ensuring the free dilution of polluted air among and within dwellings, a point upon which Dr. Ballard insisted so strongly, Dr. Hill advises that steps be taken to reduce the density of the buildings in the older parts of the city. He thinks that a great deal may be done by pulling down under the Housing of the Working

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Classes Act such buildings as obstruct ventilation and he is inclined to advocate a general adoption of this practice as being on the whole of more use—or perhaps we should say as being more practicable—than dealing wholesale with insanitary areas. There is certainly a great deal to be said for this view.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6509 births and 3154 deaths were registered during the week ending July 9th. The annual rate of mortality in these towns, which had been 15·1 and 14·9 per 1000 in the two preceding weeks, further declined last week to 14·7. In London the rate was 14·3 per 1000, while it averaged 14·9 in the thirty-two provincial towns. The lowest death-rates in these towns were 9·4 in Cardiff, 9·7 in Huddersfield, 10·3 in Brighton, and 10·9 in Burnley; the highest rates were 17·9 in Plymouth, 18·1 in Gateshead, 20·3 in Newcastle-upon-Tyne, and 21·4 in Sunderland. The 3154 deaths in these towns included 330 which were referred to the principal zymotic diseases, against 301 and 343 in the two preceding weeks; of these, 99 resulted from whooping-cough, 68 from diarrhœa, 67 from measles, 48 from diphtheria, 25 from scarlet fever, and 22 from "fever" (principally enteric). No fatal case of any of these diseases occurred last week in Birkenhead or in Burnley; in the other towns they caused the lowest death-rates in Brighton, Blackburn, and Preston, and the highest rates in Gateshead, Sunderland, Newcastle-upon-Tyne, and Plymouth. The greatest mortality from measles occurred in Croydon, Plymouth, and Gateshead; from scarlet fever in Gateshead; from whooping-cough in Bolton, Oldham, Salford, Sunderland, and Newcastle-upon-Tyne; and from "fever" in Swansea. The 48 deaths from diphtheria included 27 in London, 6 in Leeds, and 3 in West Ham. One fatal case of small-pox was registered in Liverpool, but not one in any other of the thirty-three large towns; and no small-pox patients were under treatment during last week in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 2250 on Saturday last, July 9th, against 2194, 2238 and 2205 at the end of the three preceding weeks; 237 new cases were admitted during the week, against 230, 231, and 204 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 171 and 162 in the two preceding weeks, further declined to 160 last week, and were 25 below the corrected average. The causes of 42, or 1·3 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Bradford, Leeds, Hull, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, and Burnley.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·5 and 21·1 per 1000 in the two preceding weeks, declined again to 20·0 during the week ending July 9th, but exceeded by 5·3 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 14·3 in Leith and 14·5 in Paisley, to 25·3 in Dundee and 27·2 in Perth. The 603 deaths in these towns included 36 which were referred to measles, 27 to diarrhœa, 21 to whooping-cough, 8 to scarlet fever, 3 to diphtheria, and 1 to "fever." In all, 96 deaths resulted from these principal zymotic diseases, against 102 and 119 in the two preceding weeks. These 96 deaths were equal to an annual rate of 3·2 per 1000, which was 1·7 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had increased from 32 to 41 in the three preceding weeks, declined again to 36 last week, and included 16 in Dundee, 14 in Glasgow, and 4 in Paisley. The deaths referred to whooping-cough, which had been 27 and 35 in the two preceding weeks, fell to 21 last week, of which 18 occurred in Glasgow. The fatal cases of scarlet fever, which had declined from 8 to 5 in the three preceding weeks, rose again to 8 last week, and included 2 in Glasgow, 2 in Edinburgh, and 2 in Dundee. The deaths from diseases of the respiratory organs in these towns, which had been 93 and 101 in the two preceding weeks, further rose to 106 last week, and exceeded by 37 the number in the corresponding period of last year. The causes of 30, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·8 and 21·8 per 1000 in the two preceding weeks, further declined to 20·3 during the week ending July 9th. During the thirteen weeks of last quarter the death-rate in the city averaged 23·5 per 1000, the rate during the same period being 16·4 in London and 19·7 in Edinburgh. The 136 deaths registered in Dublin during the week under notice showed a decline of 10 from the number in the preceding week, and included 6 which were referred to the principal zymotic diseases, against 8 and 11 in the two preceding weeks; of these, 3 resulted from whooping-cough, 2 from scarlet fever, 1 from "fever," and not one either from small-pox, measles, diphtheria, or diarrhœa. These 6 deaths were equal to an annual rate of 0·9 per 1000, the zymotic death-rate during the same period being 1·6 in London and 1·2 in Edinburgh. The fatal cases of whooping-cough, which had been 5 and 1 in the two preceding weeks, rose again to 3 last week. The 2 deaths referred to scarlet fever corresponded with the number recorded in the preceding week, while the mortality from "fever" showed a marked decline. The 136 deaths in Dublin last week included 27 of infants under one year of age and 31 of persons aged upwards of sixty years; the deaths of infants showed a slight decline from the number in the preceding week, while those of elderly persons showed an increase. Three inquest cases and 3 deaths from violence were registered; and 55, or more than a third, of the deaths occurred in public institutions. The causes of 9, or nearly 7 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JUNE, 1898.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during June in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 7·1 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 7·4, 7·1, and 7·2 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Westminster, St. James Westminster, St. Giles, St. Martin-in-the-Fields, Strand, City of London, and St. Saviour Southwark; while they showed the largest excess in Fulham, Hackney, Holborn, Clerkenwell, St. Luke, St. George Southwark, St. Olave Southwark, and Bermondsey. Six cases of small-pox were notified in London during June, against 3, 4, and 1 in the three preceding months; of these, 2 occurred in London City, 2 in Lee, 1 in St. George Hanover-square, and 1 in Whitechapel. Only one small-pox patient was under treatment during the month in the Metropolitan Asylum Hospitals. The prevalence of scarlet fever in London during June showed a slight decline from that recorded in the two preceding months; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Hackney, Clerkenwell, St. Luke, Mile End Old Town, St. George Southwark, and Woolwich. The Metropolitan Asylum Hospitals contained 2146 scarlet fever patients at the end of June, against 2358, 2270, and 2147 at the end of the three preceding months; the weekly admissions averaged 208, against 208, 218, and 223 in the three preceding months. The prevalence of diphtheria in London during June showed a slight further increase upon that recorded in recent months; this disease was proportionally most prevalent in Fulham, Chelsea, Hackney, Clerkenwell, St. Luke, Battersea, and Lewisham sanitary areas. There were 971 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of June, against 1009, 923, and 917 at the end of the three preceding

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ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1898.

(Specially compiled for THE LANCET.)

Sanitary Areas.	Estimated population in the middle of 1898.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	6	1455	1046	—	151	4	21	393	—	3076	7·1	—	283	57	127	221	—	24	—	89	801	1·9	6321	14·6	116
West Districts.																										
Paddington	127,480	—	44	22	—	3	—	1	18	—	88	7·2	—	12	—	4	4	—	—	—	—	20	1·6	169	13·6	140
Kensington	172,174	—	38	26	—	7	—	1	15	—	87	5·2	—	8	1	4	8	—	—	—	1	22	1·3	239	14·4	179
Hammersmith	107,370	—	41	6	—	4	—	—	7	—	58	5·6	—	1	3	—	6	—	—	—	1	11	1·1	136	13·2	107
Fulham	125,275	—	56	62	—	3	—	—	6	—	127	10·6	—	4	5	5	5	—	1	—	2	22	1·8	161	12·6	100
Chelsea	96,713	—	32	33	—	2	—	—	11	—	78	8·4	—	5	—	8	4	—	—	—	—	17	1·8	127	13·7	70
St. George Hanover-square	80,608	1	28	11	—	2	—	—	8	—	50	6·5	—	3	—	2	—	—	—	—	2	7	0·9	92	11·9	116
Westminster	52,574	—	7	7	—	1	—	—	3	—	18	3·6	—	1	—	—	6	—	—	—	1	8	1·6	84	16·7	116
St. James Westminster	22,200	—	2	3	—	1	—	—	2	—	8	3·8	—	1	—	1	—	—	1	—	—	3	1·4	32	15·0	125
North Districts.																										
Marylebone	140,483	—	37	21	—	2	—	2	20	—	82	6·1	—	19	2	4	7	—	—	—	3	35	2·6	220	16·3	107
Hampstead	78,755	—	24	21	—	1	—	—	3	—	49	6·5	—	6	1	2	1	—	1	—	1	6	0·8	72	9·5	56
St. Pancras	243,416	—	61	42	—	6	—	—	26	—	125	5·8	—	6	8	1	8	—	1	—	3	27	1·2	323	13·8	106
Islington	344,616	—	118	40	—	18	—	2	21	—	199	6·0	—	22	1	8	20	—	1	—	3	65	2·0	409	12·4	100
Stoke Newington	34,660	—	16	5	—	5	—	—	—	—	26	7·8	—	—	—	—	—	—	—	—	—	—	—	40	12·0	86
Hackney	219,630	—	112	78	—	14	—	2	17	—	223	10·6	—	13	6	10	4	—	2	—	—	35	1·7	285	12·8	79
Central Districts.																										
St. Giles	37,519	—	3	5	—	—	—	—	5	—	13	3·6	—	3	—	—	2	—	—	—	—	5	1·4	64	17·8	75
St. Martin-in-the-Fields	12,424	—	1	—	—	—	—	—	—	—	1	0·8	—	—	—	—	—	—	—	—	—	—	—	13	10·9	71
Strand	23,284	—	4	2	—	—	—	—	—	—	6	2·7	—	2	—	1	2	—	—	—	—	5	2·2	55	24·6	250
Holborn	30,066	—	9	8	—	—	—	1	3	—	21	9·5	—	2	—	—	1	—	—	—	—	3	1·4	56	25·2	179
Clerkenwell	66,120	—	33	35	—	1	—	—	7	—	76	12·0	—	5	2	3	3	—	—	—	1	14	2·2	97	15·3	129
St. Luke	41,076	—	23	18	—	1	—	—	2	—	44	11·2	—	8	1	—	—	—	—	—	3	12	3·0	77	19·6	97
City of London	29,088	—	9	4	—	—	—	—	—	—	13	4·7	—	1	1	—	—	—	1	—	—	3	1·1	55	19·7	80
East Districts.																										
Shoreditch	121,485	—	34	26	—	3	—	1	12	—	76	6·5	—	5	2	4	6	—	—	—	4	21	1·8	172	14·8	110
Bethnal Green	129,027	—	30	39	—	6	—	—	19	—	94	7·6	—	11	—	7	4	—	1	—	4	27	2·2	219	17·7	160
Whitechapel	80,659	1	17	15	—	2	—	—	12	—	47	6·1	—	4	1	—	4	—	1	—	1	11	1·4	120	16·8	88
St. George-in-the-East	48,241	—	10	10	—	2	—	2	3	—	27	5·8	—	7	1	2	1	—	1	—	7	19	4·1	111	24·0	120
Limehouse	68,661	—	19	11	—	3	—	—	8	—	41	7·3	—	4	—	3	8	—	—	—	6	21	3·7	114	20·3	173
Mile End Old Town	112,528	—	57	25	—	2	—	—	9	—	93	8·6	—	2	—	4	7	—	—	—	2	15	1·4	101	15·3	116
Poplar	170,220	—	61	42	—	8	—	1	17	—	129	7·9	—	5	2	8	5	—	3	—	7	30	1·8	285	17·5	155
South Districts.																										
St. Saviour Southwark	24,562	—	2	5	—	—	—	—	4	—	11	4·7	—	—	—	1	1	—	—	—	—	2	0·8	53	22·5	145
St. George Southwark	60,466	—	34	20	—	—	—	1	5	—	60	10·3	—	3	2	5	7	—	—	—	2	19	3·3	116	20·0	150
Newington	123,183	—	48	25	—	6	—	2	20	—	101	8·6	—	2	3	2	—	—	2	—	4	13	1·1	162	13·8	112
St. Olave Southwark	11,288	—	10	—	—	—	—	—	1	—	11	10·2	—	—	1	—	1	—	—	—	—	2	1·8	18	16·6	182
Bermondsey	85,738	—	39	30	—	2	—	1	6	—	78	9·5	—	9	—	2	3	—	—	—	4	18	2·2	131	15·9	168
Rotherhithe	40,849	—	17	4	—	1	—	—	5	—	27	6·9	—	9	—	1	1	—	—	—	1	12	3·1	67	17·1	162
Lambeth	304,073	—	75	61	—	9	4	27	—	—	176	6·0	—	6	5	5	19	—	2	—	9	46	1·6	426	15·1	114
Battersea	171,921	—	57	62	—	6	—	7	—	—	132	8·0	—	2	4	6	8	—	—	—	5	25	1·5	217	13·3	122
Wandsworth	202,526	—	45	57	—	8	—	2	19	—	131	6·7	—	25	—	7	12	—	—	—	6	50	2·6	250	12·9	122
Camberwell	261,189	—	76	68	—	6	—	1	17	—	168	6·7	—	9	2	11	17	—	4	—	3	46	1·8	316	12·6	91
Greenwich	180,441	—	45	47	—	8	—	1	9	—	110	6·4	—	23	2	1	21	—	1	—	1	49	2·8	261	15·1	110
Lewisham (excluding Penge)	88,562	—	19	29	—	1	—	—	5	—	54	6·4	—	4	1	2	1	—	—	—	1	9	1·1	98	11·5	79
Woolwich...	41,478	—	21	5	—	2	—	—	6	—	34	8·5	—	4	—	1	8	—	1	—	1	15	3·8	70	17·6	222
Lee	39,717	2	17	9	—	2	—	—	3	—	33	8·7	—	1	—	—	2	—	—	—	—	3	0·8	52	13·7	79
Plumstead	62,531	—	23	6	—	1	—	—	5	—	35	5·8	—	22	—	2	4	—	—	—	—	28	4·7	97	16·2	94
Port of London	—	2	1	1	—	2	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 24 cases of membranous croup.

† Including deaths from membranous croup.

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months; the weekly admissions averaged 134, against 129, 111, and 134 in the three preceding months. The prevalence of enteric fever in London showed an increase upon that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Islington, Stoke Newington, Hackney, Poplar, and Newington. The Metropolitan Asylum Hospitals contained 53 enteric fever patients at the end of June, against 64, 59, and 54 at the end of the three preceding months; the weekly admissions averaged 11, against 12 and 8 in the two preceding months. Erysipelas was proportionally most prevalent in Paddington, Marylebone, Bethnal Green, Newington, and Woolwich sanitary areas. The 21 cases of puerperal fever notified in London during June considerably exceeded the number recorded in the preceding month, and included 2 each in Marylebone, Islington, Hackney, St. George-in-the-East, Newington, and Wandsworth sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the five weeks ending Saturday, July 2nd, the deaths of 6321 persons belonging to London were registered, equal to an annual rate of 14·6 per 1000, against 20·8, 18·1, and 15·7 in the three preceding months. The lowest death-rates in the various sanitary areas were 9·5 in Hampstead, 10·9 in St. Martin-in-the-Fields, 11·5 in Lewisham, 11·9 in St. George Hanover-square, 12·0 in Stoke Newington, and 12·4 in Islington; the highest rates were 20·0 in St. George Southwark, 20·3 in Limehouse, 22·5 in St. Saviour Southwark, 24·0 in St. George-in-the-East, 24·6 in Strand, and 25·2 in Holborn. During the five weeks of June 801 deaths were referred to the principal zymotic diseases in London; of these, 283 resulted from measles, 57 from scarlet fever, 127 from diphtheria, 221 from whooping-cough, 24 from enteric fever, 89 from diarrhœa, and not one either from small-pox, typhus, or any ill-defined form of continued fever. These 801 deaths were equal to an annual rate of 1·9 per 1000; no fatal case of any of these diseases was registered during the month under notice either in Stoke Newington or in St. Martin-in-the-Fields; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, Hampstead, St. Saviour Southwark, and Lee; and the highest rates in St. Luke, St. George-in-the-East, Limehouse, St. George Southwark, Rotherhithe, Woolwich, and Plumstead. The 283 fatal cases of measles were 56 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Marylebone, St. Luke, St. George-in-the-East, Rotherhithe, Wandsworth, Greenwich, and Plumstead sanitary areas. The 57 deaths from scarlet-fever were 31 below the corrected average number; the mortality from this disease showed no marked excess in any of the sanitary areas. The 127 fatal cases of diphtheria were 52 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Chelsea, Hackney, Clerkenwell, Bethnal Green, Limehouse, Poplar, and St. George Southwark. The 221 deaths referred to whooping-cough slightly exceeded the corrected average number; the mortality from this disease was highest in Westminster, Strand, Limehouse, St. George Southwark, Greenwich, and Woolwich sanitary areas. The 24 fatal cases of enteric fever were 21 below the corrected average number; the mortality from this disease last month showed no marked excess in any of the sanitary areas. The 89 deaths referred to diarrhœa were less than half the corrected average. In conclusion, it may be stated that the aggregate mortality last month from these principal zymotic diseases was nearly 21 per cent. below the average, the deaths from each of the diseases, except whooping-cough, being below the average.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to registered births, was last month equal to 116 per 1000. Among the various sanitary areas the lowest rates of infant mortality were recorded in Chelsea, Hampstead, Hackney, St. Giles, St. Martin-in-the-Fields, Lewisham, and Lee; and the highest rates in Kensington, St. George Hanover-square, Strand, Holborn, St. George-in-the-East, St. Olave Southwark, and Woolwich.

THE SERVICES.

NAVAL MEDICAL SERVICE.

THE following appointments of Surgeons are announced:—William R. Trythall to the *Daphne;* G. McGregor to the *Mosquito;* R. S. Bernard to the *Vernon;* William H. Pope to the *Renard;* Henry W. Finlayson to the *Victory,* Archibald W. Campbell to the *Alarm;* George E. Macleod to the *Gossamer;* and Godfrey Taylor to the *Leda.*

ROYAL ARMY MEDICAL CORPS.

Captain J. C. Jameson has proceeded to the Royal Arsenal, Woolwich, for duty. Major E. M. Wilson has been selected for service in Egypt. Captain Cummins has been ordered to the Home District for duty. Lieutenant-Colonel B. W. Large has been placed under orders to embark for Egypt. The following officers have been appointed to medical charge of troops as stated: Major W. J. Naismith, A.M.R., 3rd Battalion Royal Scots Fusiliers, at Ayr; Captain W. B. Macdonald, A.M.R., South-East of Scotland Artillery, at Dunbar. The annual gymkhana of the detachment at Gibraltar was held at North Front on June 20th and was a complete success. Lieutenant-Colonel Gunning and many well-known officers were present, whilst the general attendance greatly exceeded that of any previous gathering. Captain J. Thomson has embarked for service in Egypt. Two detachments have recently started from Aldershot for the Soudan. The first left on July 1st and consisted of Major Dodd, in command, Captain Clarkson, Lieutenant Lowsley, and 119 non-commissioned officers and men. The second left on July 13th and consisted of 133 non-commissioned officers and men, under Lieutenant-Colonel Clery, with Lieutenant-Colonel Carey and Lieutenant and Quartermaster Goater. Major W. G. Birrell and Major F. W. C. Jones and Lieutenant E. Brodribb have embarked for service in Egypt. Lieutenant-Colonel G. A. Hughes handed over the medical charge of the Station Hospital, Canterbury, to Major H. J. Barratt on July 1st.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Surgeon-Captain Bourke have been placed at the disposal of the Government of Bombay as Officiating Chemical Analyser. The services of Surgeon-Captain Heard are replaced at the disposal of the Military Department. The services of Surgeon-Captain Burnett are placed at the disposal of the Government of Bombay. The services of Surgeon-Captain Buchanan are placed at the disposal of the Government of Bengal for gaol duty. Surgeon-Lieutenant-Colonel Cook and Surgeon-Captain Donovan are appointed to act as Surgeons, fourth district, Madras. Surgeon-Captain Mitter is appointed to act as District Medical and Sanitary Officer, Ganjam, and Superintendent of Gaol, Berhampore, during the employment of Surgeon-Captain Pereira on other duty. Surgeon-Lieutenant-Colonel Duncan (Army) is appointed to the Civil Medical Charge of the Almora District in addition to his military duties. Surgeon-Captain Vost, Civil Surgeon, Gonda, is appointed to hold Visiting Medical Charge of the Bahraich District in addition to his other duties. Surgeon-Major O'Sullivan (Army) is appointed to the Civil Medical Charge of Roorkee in addition to his military duties. Surgeon-Major MacLaren, Civil Sugeon, Benares, is appointed to hold Visiting Medical Charge of the Jaunpur District in addition to his other duties. The services of Surgeon-Captain Deare and Surgeon-Captain Oldham are replaced at the disposal of the Government of Bengal. The services of Surgeon-Captain Gwyther are placed at the disposal of the Government of Bengal for employment on plague duty. The services of Surgeon-Lieutenant Clemesha are placed at the disposal of the Government of the Punjab for employment on plague duty. The services of Surgeon-Captain Dewes and Surgeon-Captain Prasad are replaced at the disposal of the Government of Burmah. The services of Surgeon-Captain Dallas are replaced at the disposal of the Chief Commissioner of the Central Provinces. Surgeon-Major Shore (Bengal) is appointed to be Residency Surgeon in Newar. Surgeon-Major Woolbert is appointed to officiate as Medical Officer, Kotah and Jhalraptan. Brigade-Surgeon-Lieutenant-Colonel Hall (Bengal) is granted the temporary rank of Surgeon-Colonel whilst officiating as Inspector-General of Civil Hospitals, North-Western Provinces and Oudh, vice Surgeon-Colonel Warburton, on leave. Surgeon-Captain Jordan is appointed to act as Deputy Sanitary

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Commissioner, Metropolitan and Eastern Bengal Circle, and to be an Assistant Health Officer of the Port of Calcutta in addition to his own duties. Surgeon-Captain Vaughan is reappointed to be Deputy Sanitary Commissioner, Western Bengal Circle, and is also placed on special duty in connexion with anti-cholera inoculation. Surgeon-Captain Calvert is appointed to act as Civil Surgeon of Darbhanga during the absence on deputation of Surgeon-Captain Green. Surgeon-Captain Birdwood, Officiating Civil Surgeon, Ghazipur, is appointed to hold Visiting Medical Charge of the Ballia District in addition to his other duties. Surgeon-Lieutenant Stevenson is transferred from plague duty at Hardwar to platform inspection duty, Saharanpur. Surgeon-Lieutenant-Colonel Maitland has been appointed Senior Physician of the Madras General Hospital. Numerous cases of enteric fever, supposed to have been contracted on the march up from the plains, have occurred among the troops at Dalhousie.

MILITIA MEDICAL STAFF CORPS.

The Hants Companies of the Militia Medical Staff Corps arrived at the Royal Victoria Hospital, Netley, on July 4th for their annual training. They are to remain at Netley twenty-seven days and are under the command of Captain W. M. O'Connor, M.D. Dub.; Captain H. E. Mortes is also on duty with his company. The strength consists of 46 privates and 11 non-commissioned officers. The companies are on duty daily at the Royal Victoria Hospital and parades are held daily for company and stretcher drill.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant-Colonel A. T. Norton, C.B., having resigned his appointment in the Volunteer Medical Staff Corps and Surgeon-Captain R. Bevan, having resigned his Volunteer appointment, cease to belong to the Army Medical Reserve of Officers.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Ernest Blechynden Waggett, M.B. Cantab., appointed to be Surgeon-Lieutenant.

THE SPANISH-AMERICAN WAR.

The events which have taken place since our report of last week, in which the complete destruction of Admiral Cervera's fleet and the unsuccessful attack of General Shafter's force on Santiago were referred to, have been followed by some detailed information concerning these occurrences. The information is still very incomplete, however, but the fact remains that there is an end to the naval power of Spain as far as this war is concerned. Admiral Camara's fleet remains, no doubt, but Spain has seemingly very little to hope for in that direction. It is now on its way back to Spain from Suez for the protection of Spanish seaports, but the United States are despatching Commodore Watson's squadron to meet it. Nothing has been more surprising than the collapse of the Spanish navy and the tactical mistakes and apparent incapacity of all concerned in regard to it. General Shafter has been strongly reinforced, and with the artillery and the number of men now at his command, Santiago, which is closely invested, is bound to be taken unless surrendered. The troops composing General Shafter's force showed great dash and bravery in their late engagement before Santiago, but the expedition was altogether premature and from a military point of view a mistake. Without a strong force of artillery the task of driving the Spanish troops out of their entrenchments could not be successfully undertaken. The total loss to the attacking force was heavy: it amounted to 1593, of whom 300 were killed, including 22 officers. No returns have been published of the Spanish losses on that occasion. There does not seem to be much sickness so far among the American troops in Cuba, but they have undergone much exposure and hardship in addition to their losses in fighting. There were about 150 cases of fever in hospital. As is almost invariably found to be the case in such expeditions as that which the United States troops have undertaken in Cuba, the great difficulty is one of transport. From the published reports it would appear that owing to this cause the field hospital and commissariat arrangements have been attended with extreme difficulties and have exhibited many shortcomings. The unpreparedness on the part of both belligerents is one of the remarkable features of the war. Spain was, it is true, exhausted when she began it by the enormous losses she had already sustained in her ineffectual attempts to stamp out the insurrection in Cuba. Still, she had a large army in occupation of that island and a fleet which, if not of equal strength to that of her adversary, was capable, with skilful management, of doing a great amount of damage and mischief in various ways. Nothing, however, is to be learned from the action of her fleet for it is not likely that any other nation would adopt and follow her futile tactics. The Americans, on the other hand, have been audacious and enterprising and surprisingly successful at sea, but far less so on shore, and the Spaniards, if they are still determined upon fighting it out, may give the United States Government an infinity of trouble, although the end is absolutely certain to be in favour of the latter. It seems highly probable that Spain will soon be compelled to come to terms with her adversary.

THE SICK AND WOUNDED IN EGYPT.

Major-General Frank S. Russell's communication to the *Times* of July 11th on the above subject deals in a judicious and temperate spirit with the real and alleged shortcomings at the battle of Atbara and with the provision which should be made to meet the medical and transport requirements of the Anglo-Egyptian force in the forthcoming expedition to Khartoum. We have reason to hope that whatever is practicable in these respects will be done—as should certainly be the case—when the advance during next month takes place. Efficiency and not economy merely is the first aim in war.

INDIAN FRONTIER CAMPAIGN.

A gratuity will be granted to all officers and men employed in the recent operations on the North-Western Frontier. It will be at the rate of 24 rupees per share for the British and 12 rupees for native soldiers. A general will receive 400 shares; a colonel on the staff and a surgeon-colonel, 40 shares; a colonel, lieutenant-colonel, brigade-surgeon-lieutenant-colonel, and surgeon-lieutenant-colonel, 32 shares; a major and a surgeon-major, 16 shares; a captain and a surgeon-captain, 12 shares.

MEDICAL CHARGE ALLOWANCE.

We learn from the *Pioneer Mail* of June 24th last that it has been decided that Indian medical officers shall in future receive an allowance of Rs. 100 a month for the medical charge of each section of a field hospital in lieu of consolidated salaries for medical charge of such hospital as a whole, but the allowances to Army medical officers for the charge of field hospitals and to officers of both services for charge of general hospitals shall remain unchanged.

LEAN'S ROYAL NAVY LIST.

The July number of this valuable work of reference has now appeared and requires no recommendation to those who are aware of the extensive and varied information which it uniformly contains. The publishers are Messrs. Witherby and Co., 326, High Holborn, and 4, Newman's-court, Cornhill.

ARMY MEDICAL SCHOOL, NETLEY.

The seventy-sixth or Summer Session of the Army Medical School, Netley, will be brought to a close on July 29th, when the prizes will be distributed and an address delivered by Lord Lister. The Netley examination will commence on July 21st and will terminate on July 27th.

Dr. Samuel O. L. Potter, M.D. Jefferson Med. Coll., Philadelphia, M.R.C.P. Lond., of San Francisco, has been commissioned as a Brigade-Surgeon of Volunteers with the rank of Major in the United States Army and assigned to the expeditionary forces to the Philippine Islands.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 12th, Inspector-General W. H. Lloyd being in the chair, the sum of £66 was distributed among the several applicants.

PROPOSED APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.—At the meeting of the Somerset County Council held on June 28th the committee appointed to consider the question recommended that the Council should appoint a county medical officer of health who should devote his whole time to the duties at a salary of £500 per annum exclusive of travelling allowances. The consideration of the subject was deferred to the October meeting.

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Correspondence.

"Audi alteram partem."

"VITALITY."

To the Editors of THE LANCET.

SIRS,—I have read Dr. Lionel Beale's "Appeal and Challenge" in an entirely unprejudiced spirit, but the former does not convince my understanding and I am therefore reluctantly compelled to take up the gauntlet he has thrown down to his brother practitioners.

It seems to me more logical and more easy of comprehension to regard *vitality* as a peculiar play of forces belonging to the inanimate world than as a force *per se* essentially different in nature from these forces. On the former assumption vitality is due to the working of forces inherent in the elements of bioplasm and of those environmental forces which share in the reaction between the bioplasm and its environment. If vitality is distinct from these forces it must exist apart from matter and if such is the case how and where, I would ask, does it exist? Dr. Beale would seem to argue that it is a sort of intelligence existing apart from matter, capable of directing the operation of the forces belonging to matter—a position as untenable as that of the spiritualists, who assume that the immaterial can act upon the material.

Dr. Beale will, I presume, allow that the quantity of vitality in an organism tends to vary with its bulk. Other things equal, the quantity of vitality in an organism containing a million cells is a million times greater than that of a one-celled organism. The human organism starts practically as a single cell, but by the process of segmentation it develops into one consisting of millions of cells, and when this has happened the sum of its vitality is many million times greater than that of the primitive embryo. Now whence has come this augmentation of vitality? Force, like matter, cannot be created any more than it can be annihilated. The answer surely is that it comes in the last resort from the nutrient fluids, oxygen, &c., conveyed from the world without. It is carried into the house by the milkman, grocer, butcher, and is borne in by the atmosphere.

I cannot think of vitality as a force *per se*. I conceive that the behaviour of bioplasm is essentially the outcome of physical conditions—that it depends upon the nature and arrangement of the atoms in the bioplasmic molecules, upon the arrangement of the molecules among themselves—upon the structure of the bioplasm in fact—and other purely physical conditions. Dr. Beale's assumption that bioplasm is structureless is to my mind wholly illogical. He assumes it to be so because he is unable to detect any structure in it. In our journey into the world of the infinitesimal we come sooner or later to a point at which we cease to detect structure, but this point is a purely arbitrary one and is continually receding as our means of investigation improve. It marks the limit of our perceptions aided by the most powerful microscopes we can devise, but bears no relation whatever to any grand fact of nature. To my mind bioplasm is highly complex in structure as compared with inorganic matter. We are so apt to forget that the world of the infinitesimal is as unlimited as that of the immense. If we take a single cell as our unit of size, then as regards its relation to space it is no nearer the limit of the infinitely small than of the infinitely great, for neither has any limit; our cell may be divided or multiplied *ad infinitum*. Imbued with this conception we shall the better realise the vastness of the infinitesimal, so to speak, and shall be cautious in regarding bioplasm as altogether devoid of structure.

One further point. On Dr. Beale's view it is most difficult to account for the evolution of life on this planet. If vitality is not correlated with the forces of inanimate nature whence came it? On the assumption that it is a peculiar play or coördination of physical forces, the evolution of life, the coming-into-being of vitality, is to be explained by the coming together of certain atoms in a peculiar way. For my part I believe in the spontaneous evolution of life. The fact that those forms of life which we regard as the most primitive cannot evolve from inanimate matter is no argument against this belief. A proper appreciation of the vastness of the infinitesimal prepares us for the conclusion that the most primitive forms of life known to us are highly complex as compared with those which are actually the most primitive. Such I should expect to consist of a comparatively few molecules and to be altogether too minute for detection by the most powerful microscope.

I am, Sirs, yours faithfully,

Wimpole-street, W., June 26th, 1898. HARRY CAMPBELL.

PENALTIES FOR UNREGISTERED PRACTICE.

To the Editors of THE LANCET.

SIRS,—In view of the general interest, public as well as professional, aroused by the Collins case, the time seems favourable, in spite of the lateness of the session, for an attempt to penalise disregistered practitioners, to the extent of disqualifying them from further practice. As the case stands Dr. Collins retains his degree, in spite of a double conviction for felony and a sentence of penal servitude, and signs are not wanting that other cases of the same kind may speedily transpire. In view of these facts the council of the Incorporated Association of Medical Practitioners has determined to seek an interview with the Home Secretary at once, with the view of inducing him to bring in a Bill on the lines of the one which I enclose.

We recognise fully that the time available is very short, but there can be little doubt that if the profession will bestir itself the object may be effected. Every day is, however, of consequence, and we earnestly appeal to every practitioner who has the dignity of the profession and the safety of the public at heart to communicate with his Parliamentary representative at once to secure his support for the proposal. There is no doubt that the action of the Home Secretary will be greatly influenced by the prospects of the measure as regards opposition, and time is of the last importance. I shall be most happy to supply a copy of the proposed measure to any member of the profession who may apply to me for one enclosing a halfpenny stamp, and shall be glad to hear from any who would be willing to join with me in impressing its importance upon our legislators.

I am, Sirs, yours faithfully,

EDWD. C. BOUSFIELD.

363, Old Kent-road, S.E., July 11th, 1898.

[ENCLOSURE.]

AN ACT to prevent persons who have been removed from the Medical Register under the provisions of Section XXIX. of the Medical Act, 1858, from continuing to act as Medical Practitioners.

WHEREAS it is expedient that persons who have been removed from the Medical Register by the General Council of Medical Education and Registration under the powers conferred upon it by the twenty-ninth Section of the Medical Act, 1858, should be prevented from continuing to act or practise as Medical Practitioners: Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, as follows:—

1. This Act may for all purposes be cited as "The General Medical Council (additional Powers) Act."

2. This Act shall commence and take effect from the First Day of September, One thousand eight hundred and ninety-eight.

3. Any person whose Name shall have been removed from the Medical Register by the General Council of Medical Education and Registration, under the powers conferred upon the said Council by the twenty-ninth Section of the Medical Act, and who shall thereafter practise Medicine or Surgery, or Medicine and Surgery, as the case may be, in any part of the United Kingdom of Great Britian and Ireland, shall, upon a summary Conviction for any such Offence, pay to the said Council a Sum not exceeding Twenty Pounds.

4. The General Council of Medical Education and Registration shall be entitled to receive all Fines inflicted upon Offenders convicted under Section XL. of the Medical Act.

MYDRIN: A NEW MYDRIATIC.

To the Editors of THE LANCET.

SIRS,—THE LANCET of July 2nd contains an interesting note by Dr. Sydney Stephenson on a New Mydriatic. He kindly alludes to my observations on this mydriatic in the *Clinical Journal* in 1895, which were, I think, the first published in this country. I would like to add that I again refer to the value of mydrin in my volume on the "Examination of the Eye" (Pentland), published this year. My object in writing now is to reiterate my opinion of the efficacy of mydrin as a rapid pupil dilator without affecting the accommodation and the effects of which quickly pass off, features marking it as specially adapted for producing mydriasis for ophthalmoscopic purposes. The present price of the drug is, however, almost prohibitive of its use. I

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understand that it still costs something like 25*s.* a drachm, but of course a demand for it would soon bring about a reduction in price. It is further to be desired that some firm should furnish the drug in the form of gelatin discs of such excellence, for instance, as Wyeth's discs of homatropine.

I am, Sirs, yours faithfully,

July 13th, 1898. SIMEON SNELL.

COPYRIGHT IN PRESCRIPTIONS.

To the Editors of THE LANCET.

SIRS,—Now that the Royal Commission on Copyright is sitting would it not be a good plan to devise a scheme for bringing prescriptions under the law of copyright? I mean that it should become legal for medical men to retain the copyright in their prescriptions after a certain limited time after their issue. It is very common for patients to have some prescription which suits them renewed perhaps hundreds of times even to the end of their lives, so that the authors of the prescriptions get compensated with absurd insufficiency by the single fee they receive. The injustice of the present state of things is so palpable and our loss so enormous thereby that there can be no object in disguising the sordid nature of the proposal. It is quite possible that the injury done to us might be obviated in some such way as I suggest.—I am, Sirs, yours faithfully,

F. LUCAS BENHAM, M.D., M.R.C.P. Lond.

Elizabeth-street, S.W., July 12th, 1898.

HOSPITAL REFORM.

To the Editors of THE LANCET.

SIRS,—In the paper I read recently at the United Service Institution embodying certain suggestions as to the reform of the casualty and out-patient departments of London hospitals I made a statement which I have since discovered is not warranted by fact: it was to the effect that in Scotland and in Ireland drugs were not given in the medical out-patient departments of the hospitals. Before I left the Institution I was informed that I was mistaken with regard to Ireland and Mr. Garrett Horder writes to me under date July 6th as follows: "I have been making inquiries of the system adopted in the principal Scotch hospitals and I find that as a rule medicines are supplied to the out-patients."

I regret having made the assertion, but I regret still more that the fact is not as I supposed, as I believe the plan to be a good one.—I am, Sirs, yours faithfully,

W. HENRY KESTEVEN.

Hendon, N.W., July 8th, 1898.

"BLOOD-PRESSURE IN THE INSANE."

To the Editors of THE LANCET.

SIRS,—The article on the above subject from the pen of Dr. Maurice Craig, which appears in THE LANCET of June 25th, is of such importance that I venture to offer some observations which are based upon five months' constant use of Barnard and Hill's sphygmometer, which has been brought into requisition to such good purpose by Dr. Craig, with reference to those who are relatively sound in mind. Dr. Craig is careful to point out that although high intra-arterial pressure is uniformly found to exist in cases marked by depression, especially in melancholia, and infra-normal blood-pressure in those who exhibit excitement and mania, he does not for one moment believe that "any amount of altered blood-pressure can *per se* produce insanity in a perfectly stable person," and suggests that "similar conditions of blood-pressure may exist in other individuals without inducing, or being associated with, mental alienation." In that view he is perfectly correct. Indeed, as far as my experience goes, not only is such the case, but in many persons a pressure of 200 and more mm. Hg. may exist without any psychic effect other than such depression of spirits and gloominess of anticipation as are constantly met with in people who pass as being in average health or as being affected with nothing more grave than the mental state commonly associated with gouty conditions.

Writing on the subject of chronic diseases of the heart in 1895[1] I stated that "intolerance of sound, irritability, difficulty of mental concentration, lessened power of work, depression amounting in some cases to despondency, and night alarm are of common occurrence," and that with rehabilitation of the heart and vessels "all such nerve suffering vanishes like a dream and the spirits rise to a plane of hope and energy." With the aid of the sphygmometer I have been able to verify the fact that depression, the indefinable sense of impending disaster, irritability, and insomnia are generally associated with high blood-pressure and have observed that the lowering of that pressure is followed by very satisfactory results. The instrument referred to indicates the line of treatment which may be required. Of cases of mental excitement associated with infra-normal pressure I have seen so little that I do not venture to express an opinion. There is, however, one point in Dr. Craig's article which, if I may venture so to say, requires further and closer examination, and that is the state of the bowels. He attaches much importance, and doubtless in the main rightly, to the relief of constipation and to the maintenance of somewhat free action of the bowels; but it must not be overlooked that a considerable proportion of the subjects of mental depression with high blood-pressure suffer from chronic intestinal catarrh, involving from two to three actions of the bowels a day, of which only the first may be formed or fragmentary and the others fluid. With regard to the relation of the state of the bowels to the condition under consideration, it is suggested that the depression may be due to sensory nerve stimulation affecting the general arterial pressure through the splanchnic mechanism rather than to self-infection. If such be the case the existence of fæcal accumulation and of inordinate action of the bowels must both be regarded as having a similar disturbing effect on the sensory nerves in question, and I do not deny that such may be the case. On the other hand, I do think that the question of auto-toxication cannot be excluded, the more so as, whether the condition relieved be fæcal accumulation or chronic intestinal irritation, an important point is gained in the lowering of blood-pressure and at the same time a striking change is exhibited in the renal function by the great increase of the excretion of urine and the diminution of its toxicity. The question, therefore, arises: What may be the clinical and therapeutic import of the association between mental depression and high blood-pressure? The observations of some years, which have been strongly confirmed since I have brought the sphygmometer into general use, show that those conditions of the blood which are betrayed by scantiness or concentration of the urine and by increased toxicity are themselves the causes of contraction of arterioles, of high intra-arterial pressure with increase of peripheral resistance, of venous engorgement, and of deficient oxygenation of the blood, and that all these conditions, which together constitute a serious pathological condition, are rapidly relieved by increase of arterial capacity and the relief of peripheral resistance resulting in improved oxidation and metabolism and the repair, among others, of the cerebral and other nerve tissues. It is a matter of observation that fæcal impaction and chronic looseness may both be associated with high intra-arterial pressure; and there are strong clinical grounds for believing that the presence of imperfectly digested substances in the descending colon is causatively connected with re-sorption of toxins which should be excreted and with blood-contamination with products of fermentive decomposition. For these reasons I think that auto-toxication is an important factor in the production of mental depression.

In illustration I give, from many others, the following cases. On May 26th I saw a woman, aged thirty-seven years. Her radial pulse was thready and the pressure was 160 mm. Hg. The apex was 1 in. outside the nipple line. There was dyspnœa on the levels and inclines. She woke with a sense of impending suffocation associated with pain in the præcordium and the inner aspect of the left upper arm. The bowels acted twice or thrice daily; the motions were yellow, the second and third being liquid. The patient was very depressed and unwilling to submit to treatment, as she said that she could never be better; she was never without headache, extending from the frontal region to the vertex and occiput. On June 1st the pressure was 126 mm. Hg., she had scarcely any headache, she felt and looked better, and was more hopeful. On the 7th there was no headache, the appetite and spirits were good, the apex was in the nipple line, the bowels acted once daily, and the motions were healthy. When last seen, on June 30th, she was very bright and cheerful; she had no headache and slept well; the bowels were regular; there

[1] The Schott Treatment of Chronic Diseases of the Heart.

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was no recurrence of anginous pain, and the pressure was from 122 to 124. The second patient was seen on May 14th. She was a woman aged thirty-one years. Pressure was 156 mm. Hg.; exertion brought on præcordial pain extending to the inner aspect of the left forearm; the apex was a quarter of an inch outside the nipple line; the second sound at the base was accentuated in both areas; the bowels acted once daily, the motions being always liquid and brown; she had general rheumatic pains and refused to eat and to speak; she cried frequently and was generally very depressed. She had headache at the vertex on waking every morning. On June 28th the pressure was 122; the patient was very cheerful and in good health; there was no anginous pain; the apex was half an inch within the nipple line; the heart sounds were normal; the motions were healthily formed; and there was no headache.

In both these cases remedies were given to retard the action of the bowels and to promote intestinal antisepsis, in conjunction with small doses of iodide of potassium and 3 gr. daily of nitrite of sodium. The first patient, in addition, had some artificially prepared Nauheim baths. I may add that prior to reading Dr. Craig's article I had suffered for two months from headache at the vertex, coming on daily at about 6 A.M. and subsiding after my morning bath. On taking my pressure at bedtime I found it to be 170 mm. Hg. I took 2 gr. of nitrite of sodium and woke the following morning with a clear head. After breakfast the pressure was 122 mm. Hg. The two following nights I took no nitrite with the result that I had headache in the mornings. Since then I have taken 1 gr. each night with good results. At the present moment (midnight), 24 hours since taking the last dose, the pulse pressure is 130 mm. Hg.

I am, Sirs, yours faithfully,

Upper Brook-street, W., July 4th, 1898. W. BEZLY THORNE.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—If "Practitioner's" ex-employer was making only £700 a year and yet had more work "than one man could possibly do," one cannot help thinking that his fees must have been a good deal below the ordinary standard. And I cannot understand how a man should have to work "practically night and day" to earn £400 a year unless under similar circumstances. My own income is just about that figure, but though I walk my rounds and do everything myself I cannot complain of want of leisure. When men find that it is impossible to get an assistant unless they pay him sufficient to give him a moderately respectable return upon his invested capital of money, brains, and hard work, they will begin to find, too, that branch practices, sixpenny fees, and penny clubs are as unremunerative as they are selfish and undignified. The result will be that everybody will have the chance of making a modest but sufficient income. The recent action of the General Medical Council seems (if the jeremiads which some of your correspondents are pouring into our ears be not exaggerated) likely to bring about this result. It is a consummation devoutly to be wished.

I am, Sirs, yours faithfully,

July 10th, 1898. PRACTITIONER TOO.

To the Editors of THE LANCET.

SIRS,—"Practitioner" gives another, but hardly the reverse, side of the picture. No one questions that there are thousands of practitioners for whom a young man may act as assistant with the greatest satisfaction and mental profit. But that is hardly the point in question. The practical point is the obvious injustice of a man, such as "Practitioner" himself, spending some seven or eight years in study and probably about £1000 to learn his profession, and then only receiving a small pittance which can leave him no margin to save. If he serves with a definite understanding that he will receive a share of the practice in time the matter is not altogether objectionable, but a very large majority of assistants have no such understanding, but give their services simply for cash and because they have not the wherewithal to buy themselves a practice. The public squeezes the principal and the principal the assistant, and so things will go on until the profession is so flat that it can be squeezed no more, and then perhaps it will begin to resist the pressure. One would like to know how much the parish and the clubs were paying "Practitioner's" hard-used principal. I have little doubt that it was Poor-law work done at a loss and club work at some ridiculous price which compelled the unfortunate man to so squeeze his assistant. If there is now a dearth of qualified assistants the principals will have to bear the pressure themselves and I hope they will soon begin to resist. It is only the threat of advertising for another medical man which keeps many of the Poor-law medical officers from demanding a reasonable wage, and if they could be assured that there was no longer a cloud of aspirants hovering over them ready to pounce on the smallest appointment they would begin to resist the ever-increasing pressure. The effect would soon be felt all round and "Practitioner's" description of the profession as a life of hardship, a scanty income, constant harass, and too often but little gratitude, accurate enough now, would soon cease to be true.

I am curious to learn what fee, if any, will be paid the medical officers who are to call on the unvaccinated infants with offers of gratuitous glycerinated lymph. This would seem a good opportunity for them to ask a reasonable fee and one which would at least cover their travelling expenses. Probably they will be asked to do it for nothing on the ground that it will be a splendid advertisement. "Practitioner" has my hearty sympathy if he has to do the work of two men to earn a net income of £200 a year, but let me urge him not to attempt to lessen the pressure by placing part of it on a younger man, but rather take the manlier course of demanding a fair wage from those who use his services. I know it is folly for a man to quarrel with his bread-and-butter, but it is passing strange that the coal-miner will leave his work and starve rather than take a penny less than what he believes is his due, while the hard-worked practitioner dare hardly hint at the request for a slight increase in his starvation wages. With apologies for such a lengthy letter,

I am, Sirs, yours faithfully,

July 9th, 1898. ANOTHER G.P.

To the Editors of THE LANCET.

SIRS,—I think there is little doubt that the average income of medical men, especially those living in country parts, does not exceed £400 a year. The contrast between this amount earned in large towns and in the country is very considerable, as in the former case this income can be obtained on foot or with occasional hiring, whereas in the country it means the necessity of keeping two horses, which, with their necessary expenses of groom, &c., reduces the income by quite a third. In addition to this, in many of the country parts lack of educational facilities necessitates a man with a family sending his children to boarding schools instead of day schools, by which the expense is greatly increased. I speak from experience and say were I not fortunate enough to have some private means I am unable to see how I could have educated my family, as it is with great difficulty I have given them a fair general education at a cost of about £1500, but cannot afford to bring them up to a profession, consequently my two sons have gone abroad. At the commencement of my career I was an assistant for several years at £60 a year in-door and was treated as a gentleman except in one instance. My opinion is that from £60 to £80 a year in-doors ought to be fair remuneration for an assistant, as it does not differ much from what the average practitioner really gets, as board and lodging with proper treatment ought to represent £100 per annum. I think a fair estimate of a country practitioner's expenses would be: horses, grooms, and drugs, £180; rent, rates, and taxes, £60; leaving £160 for household and other expenses.

I am, Sirs, yours faithfully,

July 11th, 1898. MEDICUS.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague in Bombay, Calcutta, and Karachi.—Degrees of Virulence during an Epidemic.—Medical Men and Nurses on Plague Duty.

IN Bombay the general health of the population has greatly improved. A few cases of plague still continue to be reported, which must remind the authorities that this

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disease has not yet been exterminated from the city. An increased number of cases of relapsing fever have occurred, but the mortality from this disease is small. In Calcutta the plague seems to be very gradually increasing. It will be remembered that a very gradual development characterised the first outbreak in Bombay. The totals now stand at 104 cases and 77 deaths—a mortality of 74 per cent. Inoculation with Haffkine's prophylactic fluid is becoming more popular, the total number inoculated up to June 9th being 1239. Large numbers of the people continue to leave the city and judging by the favourable results of clearing out large sections of a population and putting them in health-camps the greatest safety after all probably lies in flight. It is interesting to note the rise in virulence of the plague as an epidemic advances. In Karachi the present outbreak commenced at the end of March. For the first week in April the mortality of plague cases was 55·5 per cent., for the second week 63·3 per cent., for the third week 74·6 per cent., for the fourth week 66·7 per cent., for the fifth week 77·9 per cent., for the sixth week 79·8 per cent., and for the seventh week 89·8 per cent. This fearful mortality occurred just after the highest plague figures had been recorded. From this time, however, the epidemic rapidly declined. For the eighth week the mortality of plague cases sinks to 77·5 per cent., which it also maintains for the ninth week, and for the tenth week it sinks to 73·7 per cent. The epidemic has been shorter in duration but more severe in character than the outbreak last year. The numbers show that compared with the population it has been twice as deadly as even the second outbreak in Bombay. The later season and the exodus of people probably account for its shorter duration. The mortality of this outbreak has been 87·4 per cent.; last year it was 81 per cent.

Considering the various dangers which the English medical men and nurses engaged in attendance on plague cases have incurred not only from plague and other diseases but in very many instances from physical injury, it would be justly a reward of merit if the Government of India were to recognise their services by some mark of distinction. The duties of both medical men and nurses have been arduous and for the most part uninteresting: the climate is trying for new-comers and the pay is not only considerably lower than their position warrants but is inadequate to the services rendered. Should plague develop as the colder weather advances, and should the Government of India require further assistance, I strongly advise both medical men and nurses not to come to India at the present rates of pay. Expenses are heavy, it is only a temporary appointment, there is no prospect after the plague is over, inconveniences are numerous, and you are perhaps isolated from all your friends.

June 16th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Mayor of Bootle.

DR. JOHN MCMURRAY, the popular mayor of Bootle, will be formally presented at an early date with his portrait reproduced in oils. A short time ago a number of representative gentlemen in Liverpool organised a subscription for the purpose. The painting has been executed by Mr. C. J. Orchardson and is to be exhibited in the Walker Art Gallery at the forthcoming Liverpool autumn exhibition.

Health of Birkenhead: Dr. Marsden's Report for 1897.

The annual report of the medical officer of health of Birkenhead on the sanitary condition of the borough just issued records a steady improvement in the health of the inhabitants, the death-rate being lower than in any year since 1881 with the single exception of 1894. The density of the population is now 28·83 per acre over the whole borough, against 20·06 at the time of the incorporation twenty years ago, the population being then 77,260 compared with 111,000 in the middle of 1897. The pressure is chiefly felt in the townships of Birkenhead and Tranmere; the density in Birkenhead being 50·62 per acre, against 39·33 in 1878, and in Tranmere 31·83 per acre, compared with 17·64 in the same year. During the year 1897, 4982 nuisances were reported, 4666 being abated without compulsion. Dr. Marsden remarks that in some hotels girls follow their occupation for upwards of 100 hours a week, and he considers it desirable that the benefits of the Shop Hours' Act should be extended to them also, restricting their working hours to 74 per week. The medical officer states that the quality of the water is excellent and that the average supply is 17 gallons per head. As far as bacteriological examination of the water is concerned it was found that the Spring Hill well is the most perfect, the Borough-road coming next in order. Dr. Marsden has not confidence in the future quality of the Flaybrick-hill source. Altogether the report as affecting the water-supply is very satisfactory. During the past year 402,652 lb. of meat were condemned as unfit for human food, representing 124,662 lb. more than were seized in the previous year. The total number of seizures of unwholesome food was 1618. Of the total quantity of meat seized 377,869 lb. were condemned at the Woodside and Wallasey lairages. During the year numerous complaints had been received of offensive effluvia from open sewer ventilators. The medical officer expresses the opinion that the ventilators are a nuisance and in narrow streets a distinct danger and suggests that the whole of the grids should be closed and all interceptors between house drains and the sewers removed. Every ventilating shaft attached to the house drains would then act as a ventilator for relieving the gaseous pressure in the sewers, while affording absolute immunity from the danger of forcing the house-traps. During the year 2028 cases of infectious diseases were notified, being 1050 less than in 1896. The birth-rate was 31·68 per 1000 of the population for the whole borough and the death-rate was 18·39 per 1000 of the population. The birth-rate was 0·8 per 1000 lower than the average for the preceding ten years, and the death-rate was 1·5 per 1000 lower.

Children's Convalescent Home, West Kirby.

The Lord Mayor of Liverpool and the Lady Mayoress visited the West Kirby Convalescent Home on June 29th and expressed themselves highly pleased with all the arrangements provided for the comfort of the children. Last year 832 children received the benefits of the institution, staying an average time of three and a half weeks. The average number of children in the home during the year was 57. There are 76 children in residence at the present time, and so great is the demand for admission that all the prospective vacancies are filled up to the end of July. The committee contemplate the extension of the building by the erection of a new wing at a cost of £3500, which will be begun as soon as the sum of £2000 shall have been guaranteed. Subscriptions amounting to £900 have already been received towards this purpose.

Bequests to Liverpool Hospitals.

By the will of the late Mr. Andrew Gibson, shipowner, of Liverpool and West Kirby, the following charities have received £100 each: the Liverpool Royal Infirmary, the Royal Southern Hospital, and the Liverpool Northern Hospital.

New Cheshire Infirmary.

Mr. W. H. Verdin, D.L., is about to present to the towns of Winsford and Middlewich a new infirmary, which by special permission of Her Majesty is to be called the Albert Infirmary. Mr. Verdin will also provide for the furnishing of the infirmary with a complete equipment. The Duke of Westminster has consented to perform the opening ceremony.

July 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Meeting of the British Medical Association at Edinburgh.

THE recent Army Warrant dealing with the reconstruction of the Army Medical Service has given rise to the hope in some quarters that a corresponding alteration will ere long be made in the Volunteer Medical Service. With a view to discussing the position it is hoped that a meeting of Volunteer medical officers may be held in Edinburgh during the visit of the Association. Information regarding this meeting may be obtained in the reception room.

Hawkhead Asylum.

The hospital in connexion with this asylum was formally opened on July 8th. A large company of ladies and gentlemen, including the representatives of the Govan Parish

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Council, Dr. Clouston, Dr. Yellowlees, and others, travelled by special train from Glasgow to attend the ceremony. It is now seven years since building operations were commenced and the asylum to accommodate 300 patients was opened in 1895; the present hospital has accommodation for 200 patients. After the ceremony an address was delivered by Dr. Clouston, of Morningside Asylum, Edinburgh, who spoke at length on the modern treatment of the insane. Dr. Clouston remarked on the value of hospitals in connexion with asylums and claimed that the first building devoted to such a purpose was the one at Morningside. He expressed his gratification at the extension of this system, which had received the commendation of the Commissioners in Lunacy. The Hawkhead hospital seemed to him to combine all the scientific ideas which were known for the amelioration of the insane.

Important Prosecution under the Medical Act.

At Glasgow Sheriff-court, on July 8th Abraham S. Eastburn, who was alleged to call himself physician and surgeon, professor, American eclectic medical specialist, and using the letters A.M.S., was charged at the instance of the Scottish branch of the General Medical Council with having been guilty of an offence within the meaning of the Medical Act, 1858, in so far as during the month of June, 1898, he falsely pretended to be, and took, or used, the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, or other names, titles, or descriptions, implying that he was registered under the Medical Act, or that he was recognised by law as a physician or surgeon, or a practitioner in medicine, whereby he had incurred a penalty not exceeding £20. Mr. R. P. Lamond appeared for the prosecution and Mr. A. S. D. Thomson, advocate, represented the respondent. Evidence was led for the prosecution. William M. Leitch, printer, produced specimens of bills which he printed for the respondent. He printed 20,000 of the large bills in the course of a year. A million of the small handbills were ordered at a time, but the delivery was spread over a long period. Robert Forrester deposed that he was handed one of the respondent's bills in Hope-street and that he took the name of the man who was delivering the bills. He also described the respondent's premises, which bore a large sign with the words "Consulting Rooms. Prof. Eastburn, A.M.S." James Robertson, solicitor, registrar to the Scottish branch of the General Medical Council, produced the Medical Register to show that the respondent's name was not in the official list. He said there was no such title as "A.M.S." granted by the universities or medical corporations in the United Kingdom. "M.S." was the recognised abbreviation for Master in Surgery. Members of the public had often directed his attention to the respondent's bills. The subject had also been brought before the General Medical Council, which decided unanimously to institute the present proceedings. In the end Eastburn was convicted and fined £20.

July 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Medical Association.

THE Committee of Council met on July 5th and further considered amendments to clauses in the Local Government Bill which affect the medical profession.

The Health Exhibition, Dublin.

A meeting of the committee was held at the Institute of Civil Engineers of Ireland on July 4th, when the large number of English firms who had applied for and had been granted space was noted. The offer of Messrs. Henderson and Sons to lend plants and flowers for decorating the building was accepted with thanks.

The Ulster Medical Society.

The annual meeting of the Ulster Medical Society was held on July 7th in the Belfast Museum, Dr. Lindsay, the President, being in the chair. The reports of the secretary and treasurer were passed. These indicated that the society is in a most flourishing condition. There are 151 members and the attendance at the meetings showed an average each night of over 43. The balance in hand at present is £25 10s. The following office-bearers were elected for next session:—President: Dr. Joseph Nelson. Vice-Presidents: Dr. John Campbell and Dr. David Gaussen. Treasurer: Dr. John McCaw. Secretary: Dr. James Colville. Pathological secretaries: Dr. J. Lorrain Smith and Dr. Lynass. Librarian: Dr. Cecil Shaw. Council: Professor Byers, Dr. McKisack, Dr. Calwell, Dr. J. Walton Browne, Dr. E. C. Bigger, and Mr. W. G. MacKenzie.

The Death of Dr. David Johnston.

I regret to announce the death of one of the best known and most highly respected practitioners of Belfast—Dr. David Johnston, who died at his residence in that city on July 6th from cerebral disease, at the age of sixty-three years. A few years ago he fractured his patella and he was always slightly lame since that accident. Two years ago he had another fracture of a leg and since then he had practically retired from active practice. Dr. Johnston was born near Castledawson, in County Derry, in 1835, but at an early age he came to Belfast and entered Queen's College, where he was a most hard-working student. He graduated M.D. of Queen's University in 1866 and in the same year he became a Member of the Royal College of Surgeons of England. He shortly afterwards began practice in Belfast, where he spent the remainder of his life and where he had an extremely large *clientèle* amongst the working and middle classes, with whom he was a great favourite and by whom he was deeply respected for his skill, his care, and his unfailing kindness. He was one of the best accoucheurs of his day in Belfast. The funeral took place on July 8th, an immense concourse of medical *confrères*, friends, and former patients attending to show a last act of respect. He leaves a family of two sons and one daughter, his wife having died seventeen years before him.

Pauper Attendants in the Belfast Union Infirmary.

The Local Government Board have written to the Belfast Board of Guardians stating that their inspector, Mr. Agnew, has again informed them that the pauper attendants act as assistant nurses and not as cleaners only, and they wisely recommend the guardians to confer with their responsible medical officers on the subject, the Local Government Board being very properly opposed to paupers being allowed to attend on the sick.

Sale of the Omagh Infirmary.

At a meeting of the County Tyrone Infirmary Board (held on July 8th) a resolution was passed in favour of selling the old building to the post-office authorities.

The Laboratories at Queen's College, Belfast.

In the House of Commons on July 8th on a discussion of the vote of £136,976 to complete the sum for public works and buildings in Ireland Mr. Arnold-Forster pointed out that the item for Queen's College, Belfast, was part of an expenditure which had already been sanctioned for that place and he thought it was high time that laboratories in this College should be completed. That College was doing better work than any of the other Queen's colleges and it was turning out a large number of active men. The medical side of the College was increasing in importance and members every year.

Belfast Royal Hospital.

A special meeting of the corporation was held on July 11th to consider the proposed revised charter for the government of the new Royal Victoria Hospital. The principal alterations in the charter as agreed upon between the Board of Management of the Royal Hospital and the new Victoria Hospital are as follows: 1. The hospital is to be called "Royal Victoria" instead of "Royal" Hospital. 2. The qualification of life governors to remain as at present (subscription of £50), but the qualification of annual subscribers to be £2 2s. instead of £1 1s.; present life governors of the Royal Hospital retain their status as regards the new hospital. 3. Medical, surgical, and other official appointments to the hospital to be made by the board of management instead of as hitherto by the general committee. 4. The representatives of the medical and surgical staff on the general committee to be 5 instead of 2 members and one-fifth of the 60 persons elected to the general committee in addition to the life governors and honorary officers to be ladies. 5. The board of management to consist of the honorary officers, 5 annually elected members of the medical and surgical staff, the present life governors, with 15 life governors and 15 annual subscribers elected by the general committee; one-fifth of the

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said life governors and annual subscribers if possible to be ladies and one-third of each class elected to retire annually. 6. The stated meetings of the general committee and board of management to be abolished and in lieu thereof meetings to be held at such times as either may respectively appoint, the quorum to be 7 instead of 12, and the board of management to have power to appoint committees as they may see fit. The management and direction of all matters having reference to the building of the new hospital, &c., is to be vested in a committee of the subscribers of the moneys for the new hospital until it is opened, when such committee shall cease to exist, and the annual meeting of the corporation is to meet in March. The charter, as amended and submitted to the meeting, was (some of those present dissenting) approved of.

Cork Medical Benefit Association.

A general meeting of the members of the Cork Medical Benefit Association was held on July 9th at the offices of the association, Marlborough-chambers, Mr. William Egan being in the chair. The chairman expressed his gratification at the large number of members present and was glad to be able to tell them that their membership roll was steadily increasing and that the work of the association was being conducted with great success. The secretary (Mr. H. J. Casey) then submitted a financial statement, which showed that as the result of the past six months' working the association had a total balance to their credit of £74 6*s.* 9½*d.* after meeting all claims.

July 13th.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

The Treatment of Strabismus.

AT the meeting of the Academy of Medicine held on July 5th M. Panas communicated some observations upon this subject. He said that the squinting eye was the one which deviated most from the line of vision. Nevertheless strabismus was only apparently unilateral. If the phenomena accompanying this condition were analysed in detail it would be found that the strabismus was always bilateral, and if it appeared unilateral that was because the patient only used the eye which was least affected and in overcoming the deviation of this one exaggerated the obliquity of the other. As for therapeutic measures M. Panas held that as the affection was bilateral so there must be a bilateral operation. In 230 cases M. Panas performed tenotomy of both internal recti and stretched them in addition, thus lessening their tendency to over-action. M. Panas never performs advancement, finding a simple tenotomy sufficient. In 220 cases he had never seen any over-correction, or if there were a little it was only temporary. Of 220 convergent cases of strabismus he had 190 in which the result was immediately successful. In those which were unsuccessful the result was not over-correction but under-correction. In 10 cases M. Panas rectified this by advancement of the antagonistic muscles and in every case with success.

Creasote in Pulmonary Phthisis.

At the same meeting of the Academy M. Savine said that the favourable action of creasote in tuberculosis was due, firstly, to its bactericidal action on the microbes which accompany the bacillus of Koch, such as streptococci, pneumobacilli, and the like; secondly, to its stimulating action on nutrition, so that the phagocytes which prey upon the bacillus of Koch are increased in number; and, thirdly, to its chemical action upon the toxins secreted by the tubercle bacillus. The patients to whose cases M. Savine referred were those suffering from pulmonary phthisis of the first and second degrees but were not cachectic. Creasote was administered (*a*) by hypodermic injections of a 15 per cent. solution in olive oil with sometimes the addition of a little myrtol or eucalyptol in a dose of 10 to 40 cubic centimetres; (*b*) by continuous inhalations of from 5 to 10 grammes of an alcoholic solution containing 33 per cent. of creasote; and (*c*) by the mouth, either in oil, milk, or as an emulsion, beginning with a dose of 40 drops and gradually increasing it to 300 drops in the twenty-four hours. M. Savine objects to the administration of creasote in capsules, pills or cachets, for such methods are, he considers, responsible for the various gastric disturbances which have been set down to creasote. It should always be administered in a considerable quantity of fluid and preferably at the same time as food.

The Operative Treatment of Cancer of the Rectum.

At the meeting of the Society of Surgery held on July 9th M. Quenu read a paper upon the operative treatment of rectal cancer, especially with regard to the removal of these growths by an abdomino-perineal route. M. Quenu had somewhat modified the conclusions which he had formerly laid before the society. He had given up Kraske's operation and now followed one of two methods—the perineal in cases where the growth did not extend further than 10 centimetres from the anus and in other cases the abdomino-perineal. M. Quenu considered that the operations of M. Gaudier and of M. Chalot were faulty in not carrying out complete asepsis during and after the operation and in causing a great loss of blood. His own method was as follows: first stage, opening the abdomen and ligature of the hypogastric arteries; second stage, liberation of the sigmoid flexure and formation of a left iliac anus; third stage, commencement of the freeing of the rectum; fourth stage, perineal extirpation. The preliminary ligature of the arteries resulted in a great economy of blood, and the following stages were very simple. In M. Quenu's opinion this method would be the one of the future, for it allowed the surgeon to remove the majority of growths with a minimum of risk.

The Treatment of Lead Colic by Injections of Artificial Serum.

At the meeting of the Society of Biology held on July 2nd M. Delearde gave an account of nine patients who had been treated in the hospital of Lille. Eight were white lead workers and the ninth was a plumber. They had all worked in the lead for about two years and some of them had already suffered from colic, constipation, muscular pains, and peripheral neuritis. The sole treatment adopted was the injection of large doses of artificial serum (Hayem's formula) under the skin of the abdomen. Only one injection was made and that a quantity of 500 c.c. This dose proved sufficient to entirely relieve all the patients except one who was particularly severely affected, and she had to have an injection of 1 litre in all given in two doses at an interval of one day. The serum had no action upon the paralyses, but it did away with the muscular pains, the constipation, the headache, and the vomiting. Relief was given in a far shorter time than by the old methods of treatment.

The Ninth Congress of Alienists and Neurologists.

The ninth Congress of French Alienists and Neurologists will be held at Angers from Aug. 1st to 6th, 1898. The subjects for discussion are as follows:—Monday, Aug. 1st: Post-operative Psychical Disturbances; Aug. 2nd: The Part played by Arteritis in the Pathology of the Nervous System; Aug. 3rd: Transitory Delirium from a Medico-legal Point of View.

The Biological Institute in the Rue Dutot.

M. Brebant, the architect of the Pasteur Institute, has just been charged with the designing of a large building to contain laboratories and other rooms necessary for the model biological institute about to be built in the rue Dutot, opposite to the Pasteur Institute. Some years ago the ground was bequeathed by an anonymous lady to the Administrative Council of the Pasteur Institute which undertook to build a hospital upon part of the site thus assigned. The works have just been begun and the foundations will soon be laid. The architect hopes that the new institute will be ready for opening before 1900. The expenses are provided for out of the donation of 2,000,000 francs made last year by the Baroness Hirsch. Two-thirds of this sum, or at most three-quarters, will be employed in the building and furnishing; the remainder of the money will be reserved as an endowment. The new institute, the plans of which were designed by the architect of the Pasteur Institute in collaboration with the professors of this institution, will be unique. In it there will be treated patients suffering from those affections which are the special study of Dr. Roux. The new institute, in common with the Pasteur Institute, will be under the direction of M. Duclaux, who has appointed M. Gabriel Bertrand as head of the laboratory of biological chemistry. The biological department of the Sorbonne will be ultimately transferred to the new building in the rue Dutot.

July 11th.

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BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Medical Practitioners' Association.

THE delegates of the German Medical Practitioners' Association (Deutscher Aerztevereins Bund) held their annual meeting on June 28th and 29th at Wiesbaden. The principal subject of discussion was the admission of women into the medical profession. Medical women are very rare in Germany, as they are not permitted to take a German qualification. The few that there are have obtained their qualifications abroad, principally in Switzerland, and are therefore regarded by the laws of Germany as unqualified practitioners. Lawyers are divided in opinion as to the possibility of women becoming qualified under the present laws. A very serious obstacle is, or at least has been, caused by the regulation that German medical students must pass the *Abiturienten-Examen* at a German gymnasium before beginning their medical curriculum and there has hitherto been no gymnasium where women were admitted, but this state of things is now altered as a women's gymnasium has been founded by private means in Berlin. The discussion at the Practitioners' Association was opened by Professor Penzoldt of Erlangen, who first of all described the position of medical practice by females in countries where they are legally recognised as qualified. America, he said, affords no precedent for Germany, owing to the great difference in the social conditions of both countries. In England female practitioners are wanted for the native population in India, where religious prejudices often prevent native women from consulting medical men. In Russia the relatively small number of medical men, especially in the vast country districts, has induced the Government to look for medical aid wherever it may be obtainable, and on this account medical women have been encouraged. In Switzerland, the El Dorado of women's emancipation, there are only 23 ladies actually engaged in medical practice; the others have left the profession. The Swiss university professors are of opinion that the female students come up to the average level, but that they hardly ever excel in either knowledge or dexterity. Women are not strong enough either for the fatigues of country practice or for the performance of some surgical and gynæcological operations, so that female practitioners must necessarily fail in the struggle for existence. Their advocates say that the treatment of the diseases of women and children ought properly to be in the hands of female practitioners, and cases are quoted where women through bashfulness have deferred consulting a medical man until their condition became hopeless, but the fact is that the female gynæcologists in actual practice hardly ever undertake more than gynæcological examinations and minor operations and generally call in medical men for serious cases and important operations. Medical practice by women would therefore not be of any advantage to their own sex, whilst their admission as qualified practitioners would be injurious to the medical profession which already suffers greatly from overcrowding and from the competition of quacks. It seems strange, Professor Penzoldt said, that the medical profession should be the first to be thrown open to women, considering that the necessary course of study is more arduous and prolonged than is the case in the other learned professions. To give women a fair trial they should be allowed to enter the dental or the pharmaceutical professions, where technical ability is more wanted than scientific training. Midwifery practice would also be greatly improved if women of the better classes could be induced to enter on that career. Professor Penzoldt finally summed up his conclusions as follows. The admission of women to medical practice would be (1) of no advantage to the sick; would be (2) injurious rather than beneficial to the medical women themselves; and would be (3) prejudicial to the universities and to the medical profession. When women are admitted to the practice of medicine they must equally be allowed to engage in all the other academic careers. An animated discussion followed Professor Penzoldt's speech, the general result being that the delegates present agreed with his views. The other subjects considered at the meeting were of minor interest.

The State Examination in Medicine.

The Imperial Statistical Office has recently published the results of last year's State examinations. There were 1295 medical students admitted to the examination, of whom 1079 passed within the regular time. The greatest number (179) were examined in Munich, 152 in Würzburg, and 139 in Berlin. Berlin, although resorted to by the largest number of students, thus holds only the third place in numerical order, the explanation being that the Berlin State examination is regarded as the most difficult in the empire. The highest commendation bestowed—*sehr gut*, i.e., very good—was, in fact, not given to any of the candidates in Berlin, while in Munich and Leipzig 14 candidates obtained it. The State examination was passed by 23 foreigners, of whom one was an Englishman and two were Americans.

July 11th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Hospital Saturday Fund and the Sydney Hospitals.

SEVERAL of the regular subscribers to the Hospital Saturday Fund in Sydney complained that on applying for admission to the hospitals assisted by the fund they were questioned as to their financial position and given to understand that payment was expected, notwithstanding that they presented a letter certifying that they were subscribers to the fund and were unable to pay for medical attendance. The committee of the Hospital Saturday Fund called a meeting of its members and delegates representing the regular subscribers to consider the complaints. The committee considered the complaints well founded and wrote to the governing bodies of the hospitals urging them to accede to the claims of the regular subscribers to the fund that they should be admitted to any of the charities assisted by the fund without being catechised as to their financial position or subjected to pressure for payment direct to the hospital. The committee, in recommending the claims of the subscribers, pointed out that "the regular subscribers to this fund consist entirely of wage-earners, mostly of the artisan class, that they contribute per head as much as it is reasonable to expect from them in support of their hospitals, and that the aggregate contribution is more than sufficient to pay the full cost and maintenance and treatment of any proportion of the whole number likely to require hospital treatment. In proof of this, while the fund since its inception has distributed among the various local hospitals the sum of £12,500 it has been called upon to recommend only 125 applicants for admission to those hospitals, the contribution being equal to £100 for each case recommended." The matter was referred to a joint committee of the Sydney Hospital and the Prince Alfred Hospital and this committee unanimously reported that the request of the subscribers should not be acceded to. This report was adopted by the hospitals.

Tenure of Staff at Sydney Hospital.

At a recent meeting of the board of directors of the Sydney Hospital it was proposed that in order to provide for an equitable system of promotion among the junior members of the honorary medical staff it was desirable that members of the staff holding the rank of honorary medical officers should hold office for a limited number of years and that the number of years during which full honorary medical officers may hold office should not exceed 12, divided into two periods of 6 years. After discussion the motion was negatived by a large majority.

Position of the Staff at the Launceston Hospital.

The hospital at Launceston is a growing institution. Originally founded as a cottage hospital it has gradually increased in scope. The medical control of the hospital has, however, remained the same in the hands of paid officers—a medical superintendent and a resident medical officer. For a long time the medical practitioners in the city have been agitating for an alteration and for the appointment of an honorary staff. Some time ago an honorary staff was appointed, but it proved to be such in name only, the work being still done by the paid officers. The local branch of the British Medical Association recently sent a deputation to the hospital board, asking for a change in the system of medical supervision so as to bring it into harmony with the practice obtaining in other countries. The chairman of the board, in reply, pointed out that the hospital was worked under an Act of Parliament

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and the board had no power to alter the arrangements, but it could recommend changes to be made by Parliament. The board would give every consideration to the views of the deputation, but the present system had worked well for the hospital in the past. The board was responsible for the expenditure and had control of the medical staff, and it did not care to retain the responsibility without the control. It does not seem probable that any change in the management will be made.

Site for Infectious Diseases Hospital, Melbourne.

It is almost certain that the site at the Yarra Bend Asylum Reserve will be adopted for the new Infectious Diseases Hospital, Melbourne. The neighbouring municipalities have withdrawn their opposition and the Board of Health has approved of the site.

Thirlmere Home for Consumptives, New South Wales.

The Committee of the Queen Victoria Consumptive Homes Fund in Sydney decided on May 5th that the Executive Committee should take over the Thirlmere Home and part of the grounds on a lease of two years as a temporary hospital for phthisical patients. The hospital will be maintained by subscriptions, by the interest accruing on the amount in hand, and the aid expected from the Government paying £1 for every £1 subscribed by the public.

New Out-patient Department for the Melbourne Hospital.

The committee of the Melbourne Hospital has definitely decided to erect a new out-patient department and recently waited on the treasurer to ask for Government assistance. The treasurer would not give a definite promise, but the committee is going on with the work. Meanwhile it is involved in a dispute with the Board of Health as to the plans, the board insisting on certain fire-escapes and other alterations involving a large additional expenditure.

Austin Hospital for Incurables, Melbourne.

Matters have not been working smoothly at the Austin Hospital for Incurable Disease (Melbourne) for some time past. The medical officer is in supreme control over the nurses, domestic and general arrangements, as well as the patients. This arrangement has not worked well and the committee has determined on a change. It has been decided to appoint a medical officer at a lower salary, whose duties will be confined to the patients; to appoint a matron with full control of the domestic arrangements, and a superintendent of nurses to be responsible for the nursing department. The resignation of the present medical superintendent, Mr. W. B. Norcott, has been accepted and he will be granted three months' leave of absence on full pay in recognition of his excellent services to the hospital during his six years' tenure, which the committee fully acknowledges.

St. Vincent's Hospital, Melbourne.

Some changes have been recently made in the honorary staff of this hospital. Dr. David Grant, M.A., has been appointed honorary physician to in-patients in place of Mr. P. Moloney, resigned; and Dr. Eustace Keogh has been promoted from the post of out-patient to in-patient physician in place of Dr. Riordan, resigned. Dr. Frank Newman has been appointed to Dr. Keogh's position and an additional out-patient physician has been appointed—Dr. J. H. McGee.

June 4th.

SOUTH WALES UNIVERSITY COLLEGE.—A meeting of the council of the South Wales and Monmouthshire University College was held on July 6th. A communication was read from the committee of the Glamorganshire and Monmouthshire Infirmary asking whether it was the intention of the College to complete at an early date the curriculum of the medical school. The council, although feeling that this was desirable, thought that owing to their financial position an endowment of at least £25,000 ought to be provided before they could establish a complete medical school on a sound basis. Professor Andrew Francis Dixon, B.A., M.B., B.Ch. (Trinity College, Dublin), was appointed dean of the medical faculty, and Mr. George Arbour Stephens, M.D., B.S., B.Sc. Lond., was appointed teacher in hygiene and physiology in the technical school.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen have passed the Second Examination of the Board in the subjects indicated:—

Wednesday, July 6th:—

Anatomy and Physiology.—Philip Lansdown Hickes, University College, Bristol, and Guy's Hospital; Hugh Dorsett Kempthorne, Ricardo Luis Jiménez, and Percy James Nash, Guy's Hospital; Richard Griffith, Cambridge University, London Hospital, and Mr. Cooke's School of Anatomy and Physiology; Edward Newbury Thornton, Philip Anthony Green, and Christian Parker, London Hospital; George Dewick, St. Thomas's Hospital and Mr. Cooke's School of Anatomy and Physiology; Charles Woolmer Davies, Archibald Edward Hill, and Robert H. William Garle, St. Thomas's Hospital; Francis Grey Bennett, Cambridge University and University College, London; Gordon Herbert Hackney, University College, London; Percy Reginald Fort and Henry Tregellas Doble, St. Mary's Hospital; Edward Lister Martin, Henry E. Gaskin Boyle, Maitland Bodley Scott, and George Harvey Low, St. Bartholomew's Hospital; Alfred Mason and Fred Bailey Penfold, Middlesex Hospital.

14 gentlemen were referred in both subjects.

Thursday, July 7th:—

Anatomy and Physiology.—Alfred Sheppard Grimwade, Melbourne University and St. Thomas's Hospital; Thomas W. Hardwick Downes and John Walker, St. Thomas's Hospital; William Morton Robson, Stanley S. Howard Shannon, Reginald Prynne Marshall, G. Brooke Forbes Churchill, and Francis M. Maxwell Ommanney, Guy's Hospital; Alfred John Courzens, Charles Leonard Traylen and Francis Inman Trimmer, London Hospital; Walter Gray Paget, George Mervyn Seagrove, Cyril Evelyn Hogan, Leslie Edward Hughes, and Verner George Heseltine, St. Bartholomew's Hospital; George William Curtis, Godfrey Faussett Rugg, and Frank Elliott Bolton, University College, London; James MacBain Ross, Melbourne University and St. Mary's Hospital; John Conrad G. Kunhardt, St. Mary's Hospital; Adrian R. Fortescue Hubbard, Charing-cross Hospital; Lancelot Walter Shadwell, St. George's Hospital; and Graham Pallister Young, King's College, London.

11 gentlemen were referred in both subjects.

Friday, July 8th:—

Anatomy and Physiology.—Francis Curthbert Jobson, Westminster Hospital; Robert Markham Carter, William Edward Houlbrook, Keppel Hart-Reeds, John W. Smyth Seccombe, St. George's Hospital; Thomas Scarbrough Dudding, London Hospital; John Henry Wroughton, Victor John Duigan, St. Bartholomew's Hospital; Sidney H. Charles Bent and Frank Wybourne Smith, Guy's Hospital; Ernest Edward Semmence, Edinburgh University and St. Thomas's Hospital; Walter F. Hamilton Vaughan, George Ralph Cox, and Eric Craiger Lindsey, St. Mary's Hospital; and Edwin Augustus Houchin, Middlesex Hospital.

16 gentlemen were referred in both subjects.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates at the primary examination have passed in the subjects indicated:—

PART I.

Biology.—A. B. Gosse; E. M. Handley, Royal Free Hospital; and M. S. Jevons.

Chemistry.—G. M. Crockett and K. A. Dawson, Royal Free Hospital; A. B. Gosse; M. E. Martin and F. Murray, Royal Free Hospital; W. A. C. Niven; A. U. Parkhurst, Cardiff; T. G. Prosser and L. G. Simpson, Royal Free Hospital; and A. Whitby, Dublin.

Materia Medica and Pharmacy.—K. A. Dawson, Royal Free Hospital; L. Demergue, Paris; L. Denny, Royal Free Hospital; P. T. Goodman, St. Thomas's Hospital; R. A. Lyster and F. H. Maberly, Birmingham; C. J. Marsh, University College Hospital; C. G. Meade, St. Bartholomew's Hospital; H. R. Miller, Guy's Hospital; F. Murray, Royal Free Hospital; A. U. Parkhurst, Cardiff; L. K. Tickner, Durham; and A. Whitby, Dublin.

PART II.

Anatomy.—H. H. Beale, St. Mary's Hospital; A. E. Brown, Royal Free Hospital; P. J. R. Bucknill, Manchester; P. C. Burgess, Middlesex Hospital; T. M. Burton, Royal Free Hospital; E. N. de V. Dawson, St. Thomas's Hospital; S. de Carteret and C. D. A. Dowman, St. Bartholomew's Hospital; E. A. Dunn, Royal Free Hospital; J. C. Furness, Charing-cross Hospital; A. E. Gilford, R. Gillett, H. M. O. Jones, and D. E. Lockwood, Royal Free Hospital; C. L. Mandl, Edinburgh; L. S. Molony and F. M. Payne, Royal Free Hospital; W. Roper, Edinburgh; P. G. Sheppard, Cambridge and Liverpool; A. D. Sibree, Royal Free Hospital; P. S. Stokes, Sheffield; M. E. Unwin, Royal Free Hospital; and G. H. Watson, St. Bartholomew's Hospital.

Physiology.—J. M. Anderson, Aberdeen; A. E. Brown, Royal Free Hospital; P. J. R. Bucknill, Manchester; T. M. Burton and E. Courtauld, Royal Free Hospital; E. N. de V. Dawson, St. Thomas's Hospital; S. de Carteret and C. D. A. Dowman, St. Bartholomew's Hospital; E. A. Dunn, Royal Free Hospital; B. M. Dunstan, St. Thomas's Hospital; A. B. Edwards, St. Bartholomew's Hospital; J. C. Furness, Charing-cross Hospital; A. E. Gilford, R. Gillett, H. M. O. Jones, and D. E. Lockwood, Royal Free Hospital; C. L. Mandl, Edinburgh; L. S. Molony and F. M. Payne, Royal Free Hospital; A. F. Reardon, St. Thomas's Hospital; W. Roper, Edinburgh; P. G. Sheppard, Cambridge and Liverpool; A. D. Sibree, Royal Free Hospital;

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P. S. Stokes, Sheffield; L. K. Tickner, Durham; M. E. Unwin, Royal Free Hospital; G. H. Watson, St. Bartholomew's Hospital; A. Whitby, Dublin; and F. E. D. Woodroffe, Edinburgh.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following gentleman having passed the necessary examination has been admitted a Fellow of the College:—

Thomas Hennessy, L.R.C.S., L.R.C.P. Irel.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At a stated meeting of the College, held on July 8th, the following gentlemen were admitted:—

As Member.—R. Travers Smith, M.D. Dub.
As Licentiate.—A. Cooper Fenn, L.S.A.

FOREIGN UNIVERSITY INTELLIGENCE. — *Chicago (Rush Medical College):* Dr. Henry Baird Favill has been appointed Professor of Experimental Therapeutics. *(Medical College):* Dr. A. R. Edwards has been appointed Professor of Medicine.—*Lyons:* Dr. Bordier has been appointed after public competition *professeur agrégé* of Physics in the Medical Faculty. Dr. Sambuc has been similarly appointed *professeur agrégé* of Chemistry. — *Montpellier:* Dr. Bertin-Sans has been appointed after public competition *professeur agrégé* of Physics.— *Naples:* Dr. Nicola Furgiuele has been recognised as *privat-docent* of Operative Medicine, Dr. Barucco and Dr. Michele de Amicis as *privat-docenten* of Dermatology and Syphilography, Dr. E. de Arcangelis as *privat-docent* of Forensic Medicine, and Dr. Luigi Maramaldi as *privat-docent* of Materia Medica and Pharmacology.—*Paris:* Dr. E. A. Broca has been appointed after a public competition *professeur agrégé* of Physics in the Medical Faculty.—*St. Petersburg (Military Medical Academy):* Dr. M. P. Manassein and Dr. S. T. Kulneff have been recognised as *privat-docenten* of Dermatology and Syphilography.—*Toulouse:* Dr. Gérard has been appointed after public competition *professeur agrégé* of Pharmacy.—*Turin:* Dr. Umberto Monari has been recognised as *privat-docent* of Surgery.—*Vienna:* Dr. Julius Scheff has been appointed Extraordinary Professor of Odontology. — *Warsaw:* Dr. Ushinski has been appointed Ordinary Professor of General Pathology.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—The following have been elected officers and council of the society for the season commencing October, 1898. President: Dr. R. Fortescue Fox (Strathpeffer Spa). Vice-Presidents: Dr. Frederic Bagshawe (St. Leonards-on-Sea), Dr. R. O. Gifford Bennet (Buxton), Mr. Robert Cuffe (Woodhall Spa), Mr. W. Bowen Davies (Llandrindod Wells), Dr. J. Ivor Murray (Scarborough), Dr. Charles Parsons (Dover), Dr. Samuel Hyde (Buxton), Dr. Henry Lewis (Folkestone), Dr. Andrew S. Myrtle (Harrogate), Dr. J. G. Douglas Kerr (Bath), Dr. George Oliver (Harrogate), and Dr. W. V. Snow (Bournemouth). Council: Mr. Walter C. Blaker (Bognor), Dr. Morgan Dockrell (London), Dr. R. Eardley-Wilmot (Leamington), Dr. W. Black Jones (Llangammarch Wells), Dr. H. Laing-Gordon (Forest-hill, S.E.), Dr. John Inglis (Hastings), Dr. C. G. Havell (Felixstowe), Dr. William Haldane (Bridge-of-Allan), Dr. Edmund Hobhouse (Brighton), Dr. John Hackney (Hythe), Dr. Joseph G. Harsant (Bournemouth), Mr. Alfred Haviland (Douglas), Dr. W. Maccall (Southport), Dr. J. Perrott Prince (Natal), Dr. Thomas Macqueen (Eastbourne), Dr. Henry McClure (Cromer), Dr. Patrick Letters (Valencia), Dr. Abraham Thomas (Aberystwith), Dr. W. Moxon (Matlock), Dr. A. W. Orwin (London), Dr. Reginald Pollard (Torquay), Dr. Ernest Solly (Harrogate), Dr. Alfred F. Street (Westgate), Dr. C. H. Tamplin (Ramsgate), Dr. Alexander Thom (Crieff), Dr. C. W. E. Toller (Ilfracombe), Dr. W. J. Tyson (Folkestone), Dr. Leonard Williams (London), Mr. H. H. Ward-Humphreys (Cheltenham), and Mr. George S. Watson (Tunbridge Wells). Chairman of Council: Dr. Samuel Hyde (Buxton). Honorary treasurer: Mr. C. R. B. Keetley (London). Librarian: Dr. Morgan Dockrell. Honorary secretaries: Mr. H. Shirley Jones (Droitwich) and Dr. Septimus Sunderland (London).

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual general meeting of this association was held at the Café Royal, Regent-street, on Tuesday, July 12th. Dr. A. W. Thomas was elected President for the year in succession to Dr. C. T. Brookhouse, and Dr. Younger and Dr. Major Greenwood were re-elected to their respective posts of treasurer and honorary secretary. The following gentlemen were also elected members of Council: Dr. Gabe, Dr. Achard, Dr. Snape, Dr. Naumann, Dr. Wunderlich, Dr. Haydon, Dr. Eady, Dr. Walter Smith, Dr. Edwards, and Dr. Vicars. Dr. Charles Burland was elected vice-president and the honorary secretary on presenting the balance sheet pointed out the satisfactory financial condition of the association and its general progress. After the meeting the members and their friends, to the number of sixty, dined together and spent a very pleasant evening. Dr. F. Roberts, Dr. Heron, Mr. Joseph Smith, Mr. George Brown, Dr. Clement Godson, Mr. Howard Marsh, and Dr. Morgan Dockrell were among the guests. The musical programme was furnished by Madame Minnie Hatch, Miss Rhoda Whiley, and Mr. Stanley Verde, assisted by Dr. Arthur Haydon, who played some admirable violin solos; Dr. Roberts also contributed to the entertainment by singing several songs in his usual excellent manner.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Karl Freiherr von Rokitansky, Professor of Gynæcology in the University of Gratz, on June 21st, aged fifty-nine years. He was the third son of the great pathologist and was for some years attached to the Vienna school as *privat-docent*.—Dr. Karl Edward With, formerly Professor of Clinical Medicine in Copenhagen, aged seventy-two years. He gave up his post about four years ago. His medical writings were chiefly on the subject of heart diseases and diseases of the stomach and intestines.—Dr. Maieff, *privat-docent* of Syphilography in the Military Medico-Chirurgical Academy of St. Petersburg.—Dr. Friedrich Albert von Zenker, formerly Professor of Pathological Anatomy in the University of Erlangen, on June 13th at Reppentin in Mecklenburg, where he was on a visit. He was seventy-three years of age. In early life he had been assistant to Radius in Leipsic and to Rokitansky in Vienna. He went as Professor to Erlangen in 1862 and only retired three years ago. He, together with Professor Ziemssen, founded the well-known *Archiv für Klinische Medicin* in 1865.—Dr. Franz Kretschy of Vienna, who was for some time assistant to the late Professor Bamberger.

THE ADMINISTRATION OF ADDENBROOKE'S HOSPITAL.—At the invitation of a special committee appointed to inquire into the administration of Addenbrooke's Hospital Sir Henry Burdett has made a careful investigation and prepared a report which was presented at the quarterly court held on June 27th. The subjects chiefly considered were the constitution, the expenditure, and the income of the hospital. Sir Henry Burdett's first recommendation is that a selection committee for the purpose of appointing the honorary medical officers of the hospital be set up at the first general court in each year and that it consist of 50 governors, 18 of whom shall be the members of the committee of management subsequently referred to, 8 the honorary physicians and surgeons for the time being, and 24 other governors—namely, 8 from each of the three groups of governors representing respectively the county, the borough, and the university. It is further suggested that a new by-law should be passed providing that any candidate who directly or indirectly canvasses the governors shall be disqualified. Another recommendation is that in lieu of the open weekly board of governors as at present existing, which any governors who please may attend and vote at, there should be appointed a committee of management, consisting of, say, 18 lay governors, with some or all of the physicians and surgeons, who collectively number 8, one-third of the members of this committee to retire every year, but to be eligible for re-election. With regard to the expenditure Sir Henry Burdett is of opinion that if the governors err at all they err, and have erred for some years, not in the direction of over-expenditure, but of under-expenditure. The cost of provisions, including the board of both patients and staff, has for the last three successive years been 6*s.* 4*d.*, 6*s.* 1*d.*, and 6*s.* 2*d.* per head per week. During each of these same three years the income of the hospital from all sources, including legacies, has exceeded the total ordinary and extraordinary expenditure. Sir Henry Burdett is confident that it would tend to promote economy, to increase the income, and to place the hospital administratively in a strong position if a resident superintendent were appointed at a salary of, say, £250 per annum with board and residence. He should be charged with the general administration of the institution, the supervision and purchase of stores, and the general discipline of the household so far as the male servants are concerned.

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THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF PRESIDENT.

A QUARTERLY meeting of the Council was held on July 14th, the President, Sir WILLIAM MACCORMAC, being in the chair. The election of President took place at the close of business and resulted in the re-election of Sir William MacCormac, Mr. T. Pickering Pick and Mr. Howard Marsh being appointed Vice-Presidents.

BEQUESTS AND DONATIONS TO HOSPITALS.—The trustees of the late Mr. Richard Gibbs have contributed out of his estate £1000 to St. Thomas's Hospital to endow a bed in memory of the deceased. — The committee of the Alexandra Hospital for Children with Hip Disease, Bloomsbury, has received £203 3*s*., Mrs. Raphael's collection.—The treasurer of the Royal Sea-bathing Hospital, Margate, has received from the executors of Miss Marter £168 7*s*. 1*d*.—The members of the London Metal Exchange have contributed £788 to the London Hospital as a donation to its funds.—The late Mr. John Bennett of Bristol has bequeathed £500 to the Bristol Hospital for Sick Children and Women and £1736 each to the Bristol Royal Infirmary and Bristol General Hospital. — The treasurer of the Scarborough Hospital and Dispensary has received £250, a legacy bequeathed by the late Dr. Vandyke Carter of Scarborough.—An anonymous donor of £1000 has endowed the Kingsley bed in perpetuity at St. Thomas's Hospital, London, in memory of the late Rev. Charles Kingsley of Eversley.—The treasurers of the Middlesex Hospital have received £105 from the Worshipful Company of Drapers; also £250 from the Goldsmiths' Company; also £105 from the Mercers' Company; also £100 from the Grocers' Company; also £300 from the trustees of Smith's (Kensington Estate) Charity.—The Baroness Hirsch has contributed £100 to the Queen Charlotte's Lying-in Hospital, Marylebone-road, London. The committee of the same institution has received a donation of £105 from Messrs. J. S. Morgan; also £100 from the trustees of Smith's (Kensington Estate) Charity.—The council of the Chelsea Hospital for Women, Fulham-road, has received £1000 bequeathed by the late Mrs. E. H. Harris.—The committee of the Royal Ophthalmic Hospital, Moorfields, London, has received £900 bequeathed by the late Mrs. E. H. Harris; also £100 from Smith's (Kensington Estate) Charity; also £703 7*s*. 2*d*. from the trustees of the late Miss Helen E. Furner; also £100 from Messrs. C. Hambro and Sons.—The committee of the North-Eastern Hospital for Children, Hackney-road, Shoreditch, has received £600 from the Goldsmiths' Company.—The treasurer of the Italian Hospital, Queen-square, Bloomsbury, has received £503 17*s*. 8*d*., the result of the ball held in May last at the Royal Institute of Painters in Water-colours, Piccadilly.—The committee of the Hospital for Diseases of the Throat, Golden-square, London, has received £1000 from the executors of the late Mrs. E. H. Harris and £100 from the executors of the late Mr. H. L. Beddington.—Mr. Herbert J. Allcroft has contributed £105 to the St. Mary's Hospital, Paddington.—Lord Iveagh has given a donation of £1000 to the Endowment Fund of the Eastern Counties Asylum for Idiots.—The committee of the London Fever Hospital, Liverpool-road, Islington, has received from the London Corporation £105 and from the trustees of Smith's (Kensington Estate) Charity £200.—The treasurer of Guy's Hospital has received from Sir James Blyth, Bart., £105.—The committee of the North London Hospital, Gower-street, London, has received a legacy of £421 10*s*. 3*d*. from Mrs. Lecky's trust; also legacies of £90 from Mr. H. L. Beddington and of £6000 from Mrs. E. H. Harris; also a donation of £1200 from Mrs. C. Horsley to found a bed in remembrance of her brother, John P. Potter; also £300 from the trustees of Smith's (Kensington Estate) Charity.—The treasurer of St. Mark's Hospital, City-road, London, has received £1000 from Mrs. D. Henty to endow a bed to be called the "Julia Henty Bed."—The committee of the Great Northern Central Hospital, Holloway-road, N., has received £400 from the trustees of Smith's (Kensington Estate) Charity; also £100 from the Goldsmiths' Company; also £125 from Mr. T. Braithwaite, jun., being the second half of his promised contribution of £350.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Habitual Inebriates Bill.

THIS Bill passed through the Grand Committee with very few alterations. On the motion of Mr. PICKERSGILL a proviso was inserted in Clause 4 to the effect that no regulation of the Secretary of State with regard to the proposed State inebriate reformatories shall authorise the infliction of corporal punishment, and on the motion of the Home Secretary the scope of the Bill was extended to Ireland instead of being confined to England and Scotland as originally proposed.

The Poisons Bill.

Mr. BALFOUR intimated in the course of a statement about the business of the session that the Government will not proceed further with the Poisons Bill during the present session.

Vaccination Bill.

The following is the proposed new clause framed by Sir WALTER FOSTER in view of the report stage of the Vaccination Bill, viz.:—

Where a child is by this Act required to be vaccinated within six months after the birth of the child the parent or person having the custody of the child may, not less than two months before the expiration of six months from the birth of the child, make a statutory declaration of conscientious objection to the vaccination of the child, and if the statutory declaration is within seven days after its date delivered to the registrar of births for the district in which the child resides the registrar shall register the same and shall if required deliver to the parent or other person making the declaration a certificate of such registration and shall also send a copy of the certificate to the public vaccinator of that district, and thereupon an order shall not be made or proceedings taken with reference to the non-vaccination of the child mentioned in the certificate.

The Amendment of the Pharmacy Acts.

The Government has given an undertaking to introduce into the Bill for the amendment of the Pharmacy Acts a provision dealing with the case of companies which carry on the business of drug stores free from any of the restrictions imposed upon members of the Pharmaceutical Society.

HOUSE OF COMMONS.

THURSDAY, JULY 7TH.

Indian Medical Service.

Captain NORTON asked the Secretary of State for India if he would inquire from the Government of India whether any, and if so what, proposals or recommendations had been made as to prolonging the period of Indian Medical Service Officers in Principal Medical Officers' offices to enable them to acquire a sufficient knowledge of military duties before their promotion to administrative military appointments after long years of employment in civil medical billets.—Lord GEORGE HAMILTON replied that the Government of India would forward to him any recommendations they considered necessary or likely to improve the general efficiency of the medical service, and he saw no reason for making the inquiry suggested.

Army Medical Service.

Captain NORTON asked the Under-Secretary of State for War what was the exact strength of army medical officers required for two army corps, this strength to include the number of army surgeons of all ranks required on the staff for bearer companies, for field, stationary, and general hospitals, and hospitals on the line of communications.—Mr. BRODRICK replied: Two army corps would require 226 medical officers, including administrative ranks; but this does not include the line of communications. The stationary and general hospitals would form a part of the line of communications. A stationary hospital of 100 beds has 4 medical officers, and a general hospital of 520 beds has 20. The number of these hospitals would depend on the length of the line, the climate, and the nature of the campaign.

The Bullets for the Soudan.

Mr. DILLON asked the Financial Secretary to the War Office, whether a special bullet had been manufactured to be used by the British troops in the Khartoum expedition; if so on what grounds had it been found necessary to supply the troops with a special bullet, and whether the War Office had had any medical report as to the effect of the bullet on animals before allowing it to be used in war.—Mr. POWELL WILLIAMS replied that no special bullet had been manufactured for use in Egypt. The bullet sent was that which had been adopted for general use in the army after experiment and medical report.—Mr. SWIFT MACNEILL asked whether it was the Dum Dum bullet.—Mr. POWELL WILLIAMS replied in the negative.

Asylum Accommodation in London.

Sir MANCHERJEE BHOWNAGGREE asked the President of the Local Government Board if he was aware that on account of insufficient accommodation for imbecile children suffering from epilepsy the guardians of the parish of St. Matthew, Bethnal-green, were recently obliged to admit an imbecile child so afflicted into a private lunatic asylum; that the Middlesex County Asylum on being applied to previously had refused to receive this case owing to the overcrowded state of that asylum; and if so, whether it was intended to take any immediate steps with a view to provide sufficient accommodation for such cases.—Mr. CHAPLIN replied: I have made inquiry into this matter and I learn that the boy referred to is eight years of age, that he was formerly an inmate of the Darenth Asylum but was removed by his parents, and that when subsequently admitted to the Bethnal-green workhouse, the guardians found a difficulty in obtaining accommodation for him either at the asylums of the Metropolitan Asylums Board or of the Asylums Committee of the London County Council and he has been sent to the Hoxton Licensed House. The managers of the Metropolitan

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Asylums District are considering the question of additional provision and I understand that the London County Council are providing additional accommodation.

FRIDAY, JULY 8TH.

River Pollution in East London.

Mr. ERNEST GRAY asked the President of the Local Government Board whether his attention had been drawn to the condition of that part of the Channelsea River which lies within the county borough of West Ham; whether he was aware that under certain conditions of tide and of weather this water is little better than an open sewer and therefore dangerous to the public health; also that for several years a conflict of opinion has existed between the Lea Conservancy and the several local sanitary authorities as to the responsibility for the pollution of the river; and whether, having regard to the serious annoyance and dangers arising from the present condition of these waters, he could take any steps to have the local responsibility determined and satisfactorily discharged.—Mr. CHAPLIN replied: I believe that the facts are practically as stated in the question, but the powers of the Local Government Board are very limited in this matter and I have no authority to determine the local responsibility. I am alive, however, to the fact that the present condition of affairs is very far from satisfactory and I am taking such measures as I can to bring about an improvement. I may add that the corporation are disinfecting the Channelsea daily and they promoted a Bill this session which would have given them absolute authority to cleanse and scour the river, but the preamble was held not to be proved.—Mr. GRAY asked whether the right hon. gentleman would consider the advisability of having a public inquiry.—Mr. CHAPLIN said he had already instructed one of the inspectors of the Board to visit the locality and make a report, and in the first instance he should like to see what he had to say about the matter.

MONDAY, JULY 11TH.

Vaccination Questions.

The two following questions appeared on the notice paper, viz.:—Mr. CHANNING: To ask the President of the Local Government Board whether in the case of the child Frederick Edwards, whose death has been found by a coroner's inquest in Southwark to have been caused by erysipelas set up by vaccination, this child was vaccinated by Dr. Cory, superintendent of the National Vaccine Establishment, Lamb's Conduit-street; whether the lymph used was glycerinated calf-lymph and similar to that used in the case of the child Annie Little in Battersea, whose death was recently found by a coroner's inquest also to be due to erysipelas set up by vaccination; whether it has been brought to his notice that Dr. Cory, although requested to attend the inquest by the coroner, Mr. Langham, failed to attend; and, what steps he proposes to take in reference to Dr. Cory and to prevent the use of lymph which has produced these fatal results.—Mr. STEADMAN: To ask the President of the Local Government Board whether he is aware that a death occurred on June 20th, at 17, Railway-approach, London-bridge, from erysipelas following vaccination by Dr. Cory at the National Vaccine Establishment on May 24th; whether he is aware that Dr. Cory did not attend the inquest although the coroner's officer is reported to have said that he had written to Dr. Cory telling him the time of the inquiry; and whether he will give instructions that a public inquiry shall be made into all the circumstances connected with this death.—Mr. CHAPLIN, rising in his place when the first question was put from the chair, said: The hon. Member is not here to ask this question, but it is in the public interest, I think, that it should be answered and I therefore desire to answer it and also the question of the hon. Member for Stepney at the same time The child in question was vaccinated as stated by the superintendent of the National Vaccine Establishment on May 6th. The lymph used was not glycerinated calf-lymph, the child being vaccinated with 12 other children at the same time from the same calf, from calf to arm. The 13 children were inspected seven days afterwards, on May 31st, and in all of them the vaccination had followed the normal course and it was not until twenty days after vaccination that the child was brought again to the station and found to be suffering from erysipelas. The ordinary period of incubation of erysipelas is from one to three days and the period which elapsed between vaccination and the appearance of erysipelas shows that the erysipelas was due not to the lymph, but to secondary infection during the third week after vaccination. Dr. Cory was not requested to attend the inquest. He was informed that an inquest would be held on June 30th at an hour when he had to vaccinate a large number of persons, and he therefore on the 29th visited Dr. Burke, who had attended the child, and gave him all the information he possessed as to the case. As a public inquiry has been held by the coroner, who is reported to have stated to the jury that there was no evidence that the child died from erysipelas set up by vaccination, thus confirming the information which I have received, I do not see the necessity for a further inquiry.

Cost of the Brook Hospital.

Dr. FARQUHARSON asked the President of the Local Government Board if he had had his attention called to a discrepancy of £70,000 between the estimate of the architect for the Brook Hospital and the final cost of this building; and if he would consent to supply the House with a return showing the actual cost of each of the hospitals of the Metropolitan Hospitals Asylum Board in comparison with the original estimate for the same.—Mr. CHAPLIN replied: Yes, sir, there is a large discrepancy, amounting to upwards of £60,000, between the estimate of the architect and the cost of the hospital buildings, and the subject is receiving my attention. If the hon. Member gives notice of motion for a return I will consider the propriety of granting it.

Unsound or Diseased Foreign Meat.

Mr. FIELD asked the President of the Local Government Board to explain why no prosecution could follow a person or property from a foreign company consigning unsound or diseased meat into this country; and whether he could arrange that legal penalties would ensue to importers similar to those inflicted on native producers under like circumstances.—Mr. CHAPLIN replied: When meat has been seized on the ground of its being diseased or unsound the person to whom the same belongs or did belong at the time of exposure for sale, or in whose possession or on whose premises the same is found is liable to a penalty, or may, at the discretion of the justices, be sentenced to imprisonment without the option of a fine. This provision applies equally to unsound or diseased meat, whether imported from abroad or native produce, and there is no exemption in the case of meat sent to this country by a foreign company.

Experiments on Living Animals.

Mr. JOHN ELLIS asked the Home Secretary what were the severer measures which he stated had been taken in respect of the persons who were reported by the inspector as having committed breaches of the Cruelty to Animals Act, 1876, by performing painful experiments on living animals without the necessary licences or certificates.—Sir M. WHITE RIDLEY: Temporary suspension of, and refusal to renew, licences.—Mr. ELLIS asked the right hon. gentleman whether he could state or lay upon the table the terms of the conditions and regulations attached by the Home Office to the licences and certificates granted to persons for the performance of painful experiments of living animals under the Cruelty to Animals Act, 1876.—Sir M. WHITE RIDLEY: The conditions are not always the same, but may vary according to the nature of the investigation. It is hardly possible, therefore, for me to state all the conditions attached to licences and certificates. The most important conditions, however (besides the limitations as to place, time, and number of experiments), and the conditions most frequently imposed are those as to reporting and the use of antiseptics. The latter condition is that the animals are to be treated with strict antiseptic precautions, and if these fail and pain results they are to be killed immediately under anæsthetics. The reporting conditions are, in brief, that a written record in a prescribed form is to be kept of every experiment and is to be open for examination by the inspector; that a report of all experiments is to be forwarded to the inspector; and that any published account of an experiment is to be transmitted to the Secretary of State. Another condition requires the immediate destruction under anæsthetics of an animal in which severe pain has been induced after the main result of the experiment has been attained.—Mr. SWIFT MACNEILL asked whether it was the case that since the Act was passed in 1876 there had never been a public prosecution under it.—Sir M. WHITE RIDLEY: I am not aware of it.—Mr. SWIFT MACNEILL: Well, I am.

TUESDAY, JULY 12TH.

Manchester Prison Case.

Mr. FLOWER asked the Home Secretary whether his attention had been called to the case of an insane prisoner named Edward Cox, confined in Manchester prison; and whether it was a fact that the prisoner had seven and probably eight of his ribs broken, that the medical inspector sent down to inquire into the case reported that only one of the man's ribs had been broken, while Mr. Dickinson, a London stipendiary magistrate, after a special inquiry arrived at the conclusion that seven or eight of the prisoner's ribs were broken, and, if so, what action he had taken with regard to the medical inspector.—Sir M. WHITE RIDLEY replied that he answered a question on this case in March last. The medical inspector had no opportunity of examining the prisoner until seven days after the injury. The prisoner was then still strapped up and as removal of the strap was thought to be inexpedient and the prisoner was unable to give any rational account of his injuries it was impossible for the inspector to ascertain what the extent of the injury had been. His report was that he was not convinced that more than one, or at most two, ribs were broken. In these circumstances he (Sir M. White Ridley) did not consider that any blame attached to him for failing to discover the full extent of the injury.

Venereal Disease in India.

Mr. JAMES STUART asked the Secretary of State for India whether a letter had been issued under date Nov. 20th, 1897, by the Government of India, Military Department, purporting to state explicitly the policy of the Government of India with respect to the future treatment of venereal disease in cantonments, stating that among other things medical officers might make arrangements to carry out from time to time the examination of women who voluntarily present themselves; and whether the statement of policy made in that letter had been sanctioned by him.—Lord GEORGE HAMILTON: The instructions issued by the Government of India in the letter to which the hon. Member refers are based on my despatch No. 25 of March 26th, 1897, which has been presented to Parliament, and I see no reason to question their propriety.

The Superannuation of Irish Medical Officers.

Mr. PATRICK O'BRIEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the case of Mr. R. B. Moore of Rockcorry, county Monaghan, who, at the age of seventy-five years and after serving forty-four years as dispensary medical officer, when obliged to retire through ill-health, was refused any superannuation; and whether, in view of such a case as this and the possibility of other similar cases, he would consider the advisability of accepting some of the amendments on the paper to the Local Government (Ireland) Bill making it compulsory on the new local bodies to grant superannuation.—Mr. GERALD BALFOUR: I am informed that the proposal to grant a retiring allowance to Mr. Moore has been twice before the guardians but that it fell through on both occasions. I could not undertake in the Local Government Bill to deal with the general question of superannuation of officers.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALEXANDER, J., M.D. Durh., L.R.C.P., L.R.C.S. Edin., D.P.H. Glasg., has been appointed Medical Officer of Health for the Burgh of Thurso.

ANCRUM, GEORGE WAYLAND, M B., C.M. Edin., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Honorary Assistant Surgeon for the Gloucester General Infirmary.

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BANNING, R. J., M.D. St. And., M.R.C.S., has been appointed Medical Referee for the County Court Circuit No. 38, Districts of Hertford, Edmonton, Grays Thurrock, Romford, Southend and Waltham Abbey.

BOW, M. R., M.B., M.S., has been appointed Medical Officer for the Brampton Sanitary District of the Scarborough Union, vice H. H. Davies, resigned.

CHRISTOPHERSON, J. B., M.A., M.D., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Demonstrator of Anatomy at the St. Bartholomew's Hospital, London.

COX, E. O., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Second Sanitary District of the Cleobury Mortimer Union.

CRAIG, M., M.B., L.R.C.P., M.R.C.P. Lond., M.R.C.S., has been appointed Senior Assistant Physician for the Royal Bethlem Hospital for the Insane, Southwark, S.E.

DAWNMAN, C. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Burnham-on-Crouch Urban District Council.

DYER, C. HAROLD, M.D. Aberd., has been re-appointed Medical Officer of Health by the Cleckheaton Urban District Council.

EDWARDS, J. W., M.B., C.M. Edin., has been appointed Medical Officer of Health for the Tees Port Sanitary Authority.

FROST, A. E., M.B., B.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road.

FORBES, N. H., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Official Medical Referee for the County of Kent (County Court Circuit No. 48), under the Workmen's Compensation Act, 1897.

GOODMAN, HENRY CYRIL, M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Hospital, Kasr-el-Aini, Cairo, by the Egyptian Government.

GRAY, R. A., M.D., C.M. Aberd., has been re-appointed Honorary Physician for the Blackburn and East Lancashire Infirmary.

HARSTON, LIONEL DE COURCY EAGLES, M.R.C.S., L.R.C.P., L.M. Edin., has been appointed Medical Officer for the Workhouse and to No. 8 and 9 Districts by the Kingsbridge (Devon) Board of Guardians.

HATTON, G. STOKES, M.D., M.S. Durh., F.R.C.S.E., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the Districts of Longton, Stoke-on-Trent, Hanley, Burslem, Tunstall, and Newcastle-under-Lyne.

HAYWARD, J. W., M.R.C.S., has been appointed Medical Officer of Health by the Whitstable Urban District Council.

HILL, CHARLES A., M.B., B.C., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Stipendary Medical Officer for the Liverpool Hospital for Consumption and Diseases of the Chest.

HOUGHTON, MURTAUGH J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the County Court Circuit No. 38, which includes Hertford, Edmonton, Grays Thurrock, Romford, Southend and Waltham Abbey.

HUTCHINSON, FREDERICK ARUNDEL STUART, M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Surgical Officer to the Hospital, Kasr-el-Aini, by the Egyptian Government.

HYSLOP, T. B., M.D. Edin., M.R.C.P., L.R.C.S. Edin., has been appointed Resident Medical Superintendent for the Royal Bethlem Hospital for the Insane, Southwark, S.E.

JEFFERY, E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Second Sanitary District of the St. Austell Union.

LAWSON, T. C., M.R.C.S., has been appointed Medical Officer for the Stogumber Sanitary District of the Williton Union.

MACKAY, W. B., M.D. Edin., M.R.C.S., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the County Court Circuit No. 1, comprising the Districts of Berwick, Belford, and Wooler.

MADDEN, FRANK COLE, M.B., B.S. Melb., F.R.C.S. Eng., has been appointed Professor of Surgery at the Egyptian Government School of Medicine, and Senior Surgeon to the Kasr-el-Aini Hospital, Cairo.

MARTIN, J. M. H., M.D. Vict., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for No. 4 County Court Circuit, which comprises Blackburn, Haslingden, Baoup, and Clitheroe.

MAY, F. H., L.R.C.P. Lond., M.R.C.S., D.P.H. Glasg., has been appointed Medical Officer of Health and Medical Attendant at the Hospital by the Aston District Council.

MILTON, FRANCIS RALPH SEPTIMUS, M.R.C.S., L.R.C.P. Lond., has been appointed Professor of Clinical Surgery at the School of Medicine, and Surgeon to the Hospital, Kasr-el-Aini, Cairo, by the Egyptian Government.

MOIR, J. MUNRO, M.D., C.M. Aberd., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the District of the County of Inverness (Mainland).

NOBLE, H. P., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Honorary Anæsthetist for the Children's Hospital, Paddington-green, London.

NUTTING, E. S., M.B., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the County Court Circuit No. 18, comprising Nottingham, Newark, Mansfield, and Bingham.

ORFORD, R. J., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer by the Market Bosworth Rural District Council.

PARRY, L. A., M.B., B.S., F.R.C.S., has been re appointed Honorary Physician to the St. Pancras and Northern Dispensary, Euston-road, London.

POTTER, J. C., M.B. Edin., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Tudhoe Sanitary District of the Durham Union.

RISELEY, STANLEY, M.D., C.M. Edin., has been appointed Honorary Ophthalmic Surgeon to the Sheffield Royal Hospital.

SANDELL, H. W. A., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health by the Lindsdale Urban District Council.

SMITH, G. P., L.S.A., has been appointed Medical Officer of Health by the Wivenhoe Urban District Council.

SPICER, W. T. HOLMES, M.A., M.B. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital, Moorfields, E.C.

STEWART, F. G., M.R.C.S., has been appointed Medical Officer of Health by the Wadebridge Urban District Council.

STONEY, W. W., M.D. Vict., B.S., has been appointed Medical Officer of Health for Kimberley and Beaconsfield.

TOLLER, SEYMOUR GRAVES, M.D. Lond., M.R.C.P. Lond., M.R.C.S., has been appointed Professor of Clinical Medicine at the School of Medicine, and Physician to the Hospital, Kasr-el-Aini, Cairo, by the Egyptian Government.

TRUMPER, C. B., M.B., Ch.B. Vict., has been appointed Medical Officer for the Market Rasen First Sanitary District and the Tealby Sanitary District of the Caistor Union.

WATT, J. L., M.B., C.M. Aberd., has been appointed Medical Officer for the First Sanitary District of the Third Division of the St. Germans Union.

WILKINSON, W. A. H., M.B., Ch.B. Vict., has been re-appointed Medical Officer of Health by the Gainsborough Urban District Council.

WILSON, ROBERT, M.D. Edin., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the District of the County of Clackmannan, and to act when required in the Sheriffdom of Stirling, Dumbarton, and Clackmannan.

WOODD, CHAS. S., L.S.A., has been appointed Medical Officer for the Watermen's and Lightermen's Asylum at Penge, S.E., vice C. Geo. Woodd, resigned.

YOUNG, M., M.D., C.M. Edin., D.P.H. Vict., has been re-appointed Medical Officer of Health for the Borough of Crewe.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOSCOMBE HOSPITAL, Bournemouth.—House Surgeon. Salary £60 per annum, with board, lodging, and washing, but no beer or spirits.

BRADFORD ROYAL INFIRMARY.—Honorary Physician.

BRENTFORD UNION.—Assistant Medical Officer for the new Infirmary, unmarried. Salary £100 per annum, with furnished apartments in the Infirmary, rations, washing, &c., subject to statutory deductions. Applications to the Clerk to the Guardians, Union Offices, Isleworth.

CARDIFF INFIRMARY.—Assistant House Physician. Also Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. The post is tenable, subject to annual re-appointment, for three years. Honorarium 20 guineas per annum.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer. Salary commences at £130, rising to £160.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary for House Surgeon £100 per annum. Assistant House Surgeon £50. Furnished apartments, board and washing in both cases.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Surgeon for Out-patients.

HOSPITAL FOR WOMEN, Soho-square, London.—Registrar for twelve months. Honorarium 25 guineas.

HUDDERSFIELD INFIRMARY.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and washing. Also Second Assistant House Surgeon. Salary £40 per annum, with board, residence, and washing.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Lectureship in Public Health. Applications to the Warden, Turner-street, Mile-end, E.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with residence, board, and washing.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Two qualified medical women as House Physician and House Surgeon for nine months.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £170, with furnished rooms. Also Clinical Assistant for six months. Salary £60 for that period, with furnished rooms. Each has to pay one-third of the maintenance of the housekeeper and servant, whose wages are paid by the Committee.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150. Also an additional Demonstrator of Anatomy for the ensuing winter session.

ROYAL HALIFAX INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with an extra allowance of £9 2s. 6d. per annum. An Ophthalmic Department has been recently added to the general practice of the Infirmary. Also residence, board, and washing.

ROYAL SEA-BATHING HOSPITAL, Margate.—Resident Surgeon. Salary £100 per annum, with board and residence. Applications to the Secretary, Royal Sea-bathing Hospital Offices, 30, Charing-cross, London.

SALISBURY INFIRMARY.—Assistant House Surgeon for six months. Honorarium of £10 will be given conditionally. Board, lodging, and washing provided.

SHAFTESBURY HOUSE PRIVATE ASYLUM, Formby, near Liverpool.—Junior Medical Officer. Salary £50 per annum, with board, lodging, and washing. Apply to Dr. S. A. Gill, Formby, Lancashire.

SUFFOLK COUNTY ASYLUM, Ralton, Suffolk.—Second Assistant Medical Officer for three years, unmarried. Salary £100 a year, with board, washing, and attendance.

UNIVERSITY COLLEGE, Bristol.—Faculty of Medicine. Demonstratorship of Physiology. Stipend £125.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, Cardiff. Assistant Lecturer and Demonstrator in Anatomy. Stipend £120 per annum. Also Temporary Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Registrar, University College, Cardiff.

UNIVERSITY OF ST. ANDREWS, St. Andrews.—Professors of Materia Medica and Pathology to conduct classes at Dundee.

VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street, Hull.—Lady House Surgeon. Salary £50 per annum, with board and laundry.

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VICTORIA UNIVERSITY (THE YORKSHIRE COLLEGE), Leeds.—Demonstrator of Pathology. Salary £150.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £80, with board and residence.

WEST HAM UNION.—Resident Assistant Medical Officer for the Workhouse and School. Salary commencing at £100 per annum for the Workhouse and £25 per annum for the Schools, together with the usual residential allowances. Applications to the Clerk, Guardian Offices, Union-road, Leytonstone, E.

WEST RIDING ASYLUM, Wakefield.—Pathologist. Salary £150, increasing to £200.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Surgeon for six months. Board, lodging, and washing provided, and a small honorarium given.

WORCESTER COUNTY COUNCIL.—Additional County Analyst for the Administrative County of Worcester (exclusive of the County Boroughs of Worcester and Dudley). Salary £400 per annum, payable monthly, together with all necessary out-of-pocket expenses. Applications to the Clerk to the County Council, Shirehall, Worcester.

YORK COUNTY HOSPITAL, York.—Assistant House Surgeon. Salary £60 per annum, with board, rooms, washing, &c.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

CROSS.—On July 7th, at Worcester House, Clifton, the wife of F. R. Cross, M.B., F.R.C.S., High Sheriff of Bristol, of a daughter.

FULLER.—On July 3rd, at Fairhaven, Queen's-road, Richmond, the wife of J. Reginald Fuller, M.B., B.S., M.R.C.S., of a daughter.

HOME-DOUGLAS.—On June 29th, at the Braid Hills Hotel, Edinburgh, the wife of A. Home-Douglas, F.R.C.P. Edin., of a daughter.

JAMESON.—On July 4th, at "Laceby," Kent-road, Gravesend, the wife of G. B. Jameson, M.D., of a son.

PREEDY.—On July 11th, at Stanley-gardens, Willesden-green, N.W., the wife of Edward Preedy, L.D.S. Eng., of a daughter.

ROBERTS.—On July 5th, at Kingsthorpe, Church-road, Forest-hill, S.E., the wife of Francis H. Roberts, L.R.C.P. Lond., of a daughter.

ROWE.—On July 6th, at Doctor's Lodge, Borough Asylum, Ipswich, the wife of Edmund L. Rowe, Medical Superintendent, of a son.

SHACKLETON.—On June 14th, at Buff Bay, Jamaica, the wife of T. F. Shackleton, M.R.C.S., L.S.A., of a son.

WEBB.—On July 9th, at Church-street, Stoke Newington, the wife of Albert W. Webb, M.B., M.R.C.S., of a daughter.

MARRIAGES.

BORTHWICK—COWELL.—On July 5th, at St. Pancras Parish Church, William John Walter Winfield Borthwick, M.B., son of the late Colonel Borthwick, of the 8th Madras Native Infantry, to Elizabeth, third daughter of the late Robert Cowell, of Ormesby, Middlesbrough, Yorks.

GILES—TINDALL.—On July 8th, at St. John's Church, Lewisham High-road, Arthur Edward Giles, M.D., B.Sc. Lond., M.R.C.P., F.R.C.S., of Queen Anne-street, W., second son of Samuel Giles of Tyrwhitt-road, S.E., to May Hartree, eldest daughter of Alfred A. Tindall, of Wickham-road, S.E.

HEESON—MILLER.—On July 7th, at Redhill Congregational Church, Edwin Ernest Darley Heeson, L.D.S. Eng., elder son of James Ernest Heeson, of Redhill, to Maude Agnes, eldest daughter of William Miller, of Maybury Lodge, Reigate.

HENDLEY—PETRIE.—On July 7th, at the Parish Church, Eastbourne, by the Rev. J. H. Copleston, Rector of Offwell, Devon, assisted by the Rev. H. B. Ottley, Vicar of the Parish, Surgeon-Captain Arthur Gervase Hendley, I.M.S., youngest son of the late Surgeon-General John Hendley, C.B., to Jessie Graham, eldest daughter of J. H. Petrie, Esq., 5, South Cliff, Eastbourne.

KENDALL—CONSTABLE.—On July 12th, at St. Stephen's Church, Hampstead, Herbert William Kendall, M.R.C.S., L.R.C.P., of King's-parade, Clifton, Bristol, to Elizabeth, third daughter of the late Rev. Henry Constable, M.A., Rector of Desert More, Co. Cork.

LANSDOWN—FULLER.—On July 6th, at the Parish Church, Lydford, Francis Poole Lansdown, M.R.C.S., of Clifton, Bristol, to Sarah Sophia, daughter of the late Wm. Fuller, Moor Lodge, Lydford, Devon.

MUMFORD—JAY.—On July 6th, at St. Mary Abbot's, Kensington, Wilfred George Mumford, M.R.C.S., L.R.C.P., of Bartlett's-passage, Holborn, to Louisa Sylvia Dora, daughter of the late Stephen Octavius Jay, of Addison-crescent, Kensington.

DEATHS.

BOSWORTH.—On July 12th, 1898, at Grove-end, Sutton, Surrey, Emily Sophia, wife of John R. Bosworth, M.R.C.S., &c.

GILL.—On July 11th, at Montreux, Shrewsbury, John Gill, L.R.C.P. Lond., M.R.C.S. Eng., of Welshpool, Montgomeryshire, aged 55 years.

WILSDEN.—On July 9th, at the Vicarage, Wooler, Alfred Wilsden, M.B., second son of Rev. Canon Wilsden, aged 30 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 14th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 8	30·15	N.E.	...	109	71	57	56	61	Cloudy
" 9	30·27	N.E.	...	87	64	53	52	56	Overcast
" 10	30·31	N.E.	...	73	60	54	53	56	Overcast
" 11	30·33	N.E.	...	113	73	51	53	56	Overcast
" 12	30·18	N.W.	...	117	78	55	59	63	Hazy
" 13	29·87	N.W.	...	111	71	61	56	62	Cloudy
" 14	30·06	W.	...	116	73	53	52	57	Fine

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

BRITISH MEDICAL ASSOCIATION MEETING AT EDINBURGH.

DURING the forthcoming meeting of the British Medical Association at Edinburgh the Representatives of THE LANCET can be consulted at the Imperial Hotel with regard to our report of papers and proceedings.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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THE TERROR OF THE FASHIONABLE HAIR-COMBS.

THE *Manchester Courier* states that two accidents have occurred outside the theatres—the Criterion and the Prince of Wales's are mentioned—owing to the ignition by over-head gas-jets or casual sparks from smokers' pipes, cigars, or cigarettes of "tortoiseshell" combs while worn in the hair. In one case (says our contemporary) the lady would have been seriously injured had not a fireman deluged her with water.

"COMBINATION SURGICAL SCISSORS AND DRESSING FORCEPS."

To the Editors of THE LANCET.

SIRS,—Allow me to say that the above instrument, described by Mr. H. de P. Veale in THE LANCET of June 25th, is no new invention. Some ten years ago while at Guy's Hospital I had made for me by Messrs. Down Brothers an instrument of the kind described which I still possess. It is practically a narrow pair of scissors with the ends flattened and serrated at right angles to the cutting edge of the blades. I was under the impression then that I had invented a new surgical instrument, but I learnt subsequently that the idea was an old one.

I am, Sirs, yours faithfully,

July 1st, 1898. FREDERICK VICARS, M.D. Brux.

"THE PUBLIC PARKS."

To the Editors of THE LANCET.

SIRS,—In your annotation "The Public Parks" in THE LANCET of July 9th you say with regard to the vagrants, "the vermin which infest them are not likely to leave them and roam in the grass." I wish this were the case. Two years ago my little boy of two years old escaped from his nurse and sat down on the grass in Hyde Park for a few seconds or minutes. When he came home more than a dozen active specimens of pediculus were found on his clothes. The little daughter of a physician of my acquaintance had a similar experience. Since that time my children's liberty and pleasure have had to be severely curtailed when in Hyde Park.

I am, Sirs, yours faithfully,

July 9th, 1898. PATERFAMILIAS.

A NEW POCKET MICROSCOPE.

MR. H. WILLIAMS, 90, Shacklewell-lane, Hackney, N.E., has submitted for our inspection a pocket clinical microscope. It consists of a plano-convex lens mounted in a handle. The substance to be examined is spread upon the plane surface moistened with a drop of water. The instrument is of quite sufficient power to show the corpuscles in a drop of blood as separate bodies. Crystals and cells in the urine can also be seen, but we were unable to detect casts by its aid. As it is easily carried about in the pocket it will be found a useful instrument for making a rough diagnosis at the bedside. The price is 10s. 6d., which includes a special case.

"THE TREATMENT OF SEA-SICKNESS."

To the Editors of THE LANCET.

SIRS,—In reply to "M.R.C.S., &c.," whose letter under the above heading appeared in THE LANCET of June 25th, I may say that I have found the following suggestions copied from Dr. Burney Yeo's "Manual of Medical Treatment" very useful: "It is of great importance to follow a careful and simple diet for a week or two before undertaking a sea voyage, and to take two or three doses of aperient medicine during the same period before embarking. Bromide of ammonia is regarded by some ship surgeons as the best of all remedies both for prevention and cure. It should be begun a day or two before embarking on a long voyage; a dose of 20 gr. in an ounce of water with 15 gr. of sodium bicarbonate twice or three times a day. It will remove acidity and promote gastric anæsthesia."

I am, Sirs, yours faithfully,

June 28th, 1898. LATE SURGEON M.D.S.F.

LONGEVITY AND WINE.

ACCORDING to *La Médecine Moderne* red wines are preferable to white wines because the consumers of the former live longest. A viticulturist of the Gironde bethought himself to carry out an investigation as to human longevity in white and red wine districts respectively, taking as his basis the electoral lists in the various departments. Among 7738 electors domiciled in a red wine country he found 381 individuals who were more than seventy-five years old, whereas among 3029 electors belonging to a white wine country there were only 81, an appreciable difference. Yet red wine is more easily adulterated than white wine.

A NEW HYPODERMIC AND ASPIRATION SYRINGE.

IN the current number of the *Deutsche Medicinische Wochenschrift* Dr. F. Lüscher, of Berne, describes a new pattern of syringe which is said to be equally suitable for the giving of hypodermic injections and for the aspiration of considerable quantities of fluid. It consists essentially of an indiarubber air-ball, to the outlet of which is attached one end of a removable glass tube serving as the receiver for the fluid to be either injected or aspirated, the needle or trocar with cannula being in communication with the other end of the receiver. Only one-half of the air-ball is compressible, the other half being rigid, which is found to make it more convenient to work, and by means of a small air-hole, which can be closed at the proper time with the forefinger, the ball can be used either as a force pump or an exhaust pump. Glass receivers for use with the same air-ball may be made in a great variety of sizes and shapes, varying from a capillary tube to a burette having a capacity of 30 c.c. (about 1 fl. oz.). The ends of the receiver can be sealed by fusion for the safe preservation of pathological fluids which have been aspirated. For sterilisation the whole apparatus can be boiled in soda solution for 12 hours without being injured. Further particulars may be obtained from Mr. G. Klöpfer, instrument-maker, of Berne.

A QUESTION OF ETHICS.

THE following has been submitted to us by a medical correspondent who received it from Woodhall Spa. As Northcote House is not the only building at Woodhall Spa where patients can live, and seeing that anyone is perfectly free to choose his own medical man, we think the wording of the circular is unwise.

"NORTHCOTE HOUSE, WOODHALL SPA,

"June 16th, 1898.

"DEAR SIR,—As you may be aware, I have, as a Spa Practitioner with an experience of the virtues of the Woodhall Spa waters extending over many years, circulated amongst our profession a considerable amount of literature, which I have written on the subject from a very early date, when Balneo-therapy, based on scientific principles, was first introduced by me to my medical brethren.

"In consequence patients are frequently sent to Woodhall with letters of introduction to me; but it has recently come to my knowledge, from letters written to me by my professional friends, that patients sent by them have, on their arrival, been led to go into lodgings, or to hotels, where representations have been made to them, whereby they have been induced to consult other Practitioners.

"Feeling sure that you would disapprove of such a reprehensible practice as that of which I complain, I should be much obliged, in case you should be desirous to place any of your patients under my care, if you would be good enough to warn them against such representations, or to forward to me a copy of your letter of introduction in order that I may call on them on their arrival.

"Yours faithfully,

"ROBERT CUFFE,

"Vice-President of the British Balneological and Climatological Society."

UNFORTUNATE PUBLICITY.

A CORRESPONDENT has sent us Messrs. Cox and Sharland's South of England Monthly Time Tables, in which we find the following unfortunate advertisement:—

REGISTER OF
TESTS FOR DEFECTIVE VISION
OF
CHILDREN IN SCHOOLS,
WITH INSTRUCTIONS FOR USE,
BY
J. F. BULLAR, M.A., M.B. CANTAB., F.R.C.S. ENG.
(Ophthalmic Surgeon to the Southampton Eye & Ear Hospital),
AND
T. G. ROOPER, M.A. OXON.
(H.M. Inspector of Schools).
LONDON:
GEORGE PHILIP & SON 32 FLEET STREET.
SOUTHAMPTON:
COX & SHARLAND, 150, HIGH STREET.
ENTERED AT STATIONERS HALL.

Dr. Bullar should instruct his publishers to withdraw this advertisement from a publication which must have a wide lay circulation.

THE CURSE OF CIRCULARS.

PROBABLY no class of men is more pestered with irritating and useless circulars, sent through the post and often disguised in the form of letters, than are medical men. A correspondence on the subject, from the point of view of the general public and of the senders of the circulars, has been published in a daily contemporary, originated by a writer who suggested methods—vigorous, certainly, and possibly in a measure effective, but at the same time likely to lead to worse inconveniences than the evil itself. This gentleman gives his servants orders to destroy all circulars coming to his house, but complains that even then some of them elude the vigilance of his "well-trained butler" and are forwarded to him with his letters when he is away from home. Now it is clear on reading the list which he gives and from the rest of his letter that even those advertisements which come in duly stamped and sealed envelopes he leaves to be opened and dealt with summarily by his domestics. A well-trained butler is not possessed by everybody and the page boy and the parlourmaid are apt in such circumstances to tear up and burn important notices

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such as lawyers at times necessarily send to their clients—notices of meetings of companies and societies which the intended recipient would regard as important, dividend warrants, calls upon shares and other documents which come in long envelopes and are wholly or partly printed, while they would be sure to forward with scrupulous care or to lay on the study table the lithographed letter of the bishop who proposes to lecture on the Holy Land at Jerusalem, or to rebuild his cathedral, and the coroneted card which invites to a public dinner at which a nobleman will preside, and at which a collection will be made, together with the often carefully-veiled missive of the money-lender and the masseuse. The cheapening of the post has added an impetus to the flood of circulars and as far as we can see no combined action of the public is ever likely to check it. It may gradually be discovered that such advertisements do not pay, but meanwhile the busy man will have to glance through the contents of his letter-box himself or he will some day miss seeing something important and perhaps have serious cause to regret that he did so.

PIOUS CONFIDENCE.

THE *Christian World* of July 7th prints an amusing example of the pious confidence which the Pasha of Damascus—like probably the majority of his congeners—is prepared to put in Allah as a practical statistician and sanitarian. The French statistical department, anxious to obtain definite information on certain matters from the Turkish provinces, sent lists of questions, to which they requested replies, to the various provincial pashas. Certain of the questions were addressed to the Pasha of Damascus and his replies ran, according to our contemporary, as follows:—

Question: What is the death-rate per thousand in your principal city? Answer: In Damascus it is the will of Allah that all must die; some died old, some young.

Question: What is the annual number of births? Answer: We don't know; only God alone can say.

Question: Are the supplies of drinking water sufficient and of good quality? Answer: From the remotest period no one in Damascus has ever died of thirst.

Question: General remarks on the hygienic condition of your city? Answer: Since Allah sent us Mohammed his prophet to purge the world with fire and sword there has been a vast improvement. But there still remains much to do. Everywhere is opportunity to help and to reform. And now, my lamb of the West, cease your questioning, which can do no good either to you or to anyone else. Man should not bother himself about matters which concern only God. Salem Aleikum!

It is clear that the doctrine held by the Christian that God helps those who help themselves finds no favour in the municipal government of Damascus.

SEBORRHŒIC ECZEMA AND OTHER ILLS.

To the Editors of THE LANCET.

SIRS,—May I, through the medium of THE LANCET, ask a brother professional to give me a hint? I have for some years suffered from seborrhœic eczema, indigestion, constipation, and hæmorrhoids. For three years I have had sighing respirat'on (what does that point to?). The patches of skin affection are on the scalp, trunk, and limbs, and are at times troublesome. What can I do or apply to get relief, if not a cure? Arsenic increases the indigestion, ichthyol irritates. My habits are simple; my only indulgences are a little stimulant and a little tobacco in the evening. I am, Sirs, yours faithfully,

July 4th, 1898. A. B. C.

Lux.—There should be a fair price for such a nucleus and our correspondent has a right to take measures to obtain it. Of course, full information should be given to, and is certain to be demanded by, the intending purchaser. From a year to a year and a half's purchase would probably meet the case, but the figure must be settled by inspection of the books.

Mr. A. Foster Clarke.—We do not find the person's name on the Medical Register, so that he would seem not to come under the disciplinary jurisdiction of the General Medical Council—at any rate, while their sphere of action has its present limitations.

Ribald.—A good signature and, in a way, a proper communication. But why does our correspondent adopt a phraseology which prevents us from publishing the letter?

F.R.C.S. (Southsea).—We have asked the author for the name of his publisher. The Jacksonian Prize Essays are not published in the medical press.

Democraticus is referred to a small publication issued from THE LANCET office entitled "Difficulties under the Infectious Diseases (Notification) Act."

Subscriber (Ashby-de-la-Zouch). — The Colonial Office. For the healthier and more popular places there are always many candidates.

Rusticus.—The inquest was held before the coroner for West London in July, 1895, and was fully reported in most of the daily papers.

Senior should communicate with Dr. Fletcher Little, 32, Harley-street, Cavendish-square, who will give all information.

Tussis.—We do not prescribe. The medical attendant will recommend a further opinion if he considers one necessary.

J. L.—The library as a medical library is by no means good or up to date. It contains some valuable old books.

Alpha.—The Students' Number will be published on Sept. 3rd, 1898.

Legalis.—The parallel has been frequently drawn.

F.R.C.S. Edin.—It is certainly preferable.

Mrs. S. G.—2, Fitzroy-square.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

FRIDAY (22nd). — BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (Medical Society's Rooms, 11, Chandos-st., Cavendish-sq., W.).—3 P.M. Clinical Meeting. Cases will be shown by Dr. D. Grant, Dr. M. Hunt, Mr. G. Stocker, Dr. F. Potter and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (19th). — WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street). — 4.30 P.M. Dr. Harry Campbell: On Apoplexy and other Disorders attended by Loss of Consciousness.

DENTAL HOSPITAL OF LONDON (Royal Institute Galleries, Princes Hall, Piccadilly).—8 P.M. Conversazione. 8.30 P.M. Distribution of Prizes by the Right Hon. Lord Ludlow.

WEDNESDAY (20th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. P. Dunn: Ophthalmic Cases.

During the week marked copies of the following newspapers have been received: *Batley News, Hereford Times, East Riding Telegraph, Chester Chronicle, Somerset County Herald, Isle of Wight Observer, Southern Times, Herald of Wales, Times of India, Pioneer Mail, Architect, Shrewsbury Chronicle, Hinckley Times, Brighton Gazette, Citizen, Blackpool Gazette, Carnarvon Herald, Builder, Westmeath Examiner, Bristol Mercury, Guernsey Star, Cheltenham Free Press, Cambria Daily Leader, Yarmouth Advertiser, Cambs Times, Liverpool Daily Post, Boston Guardian, Midland Counties Express, Leicester Post, North British Daily Mail, Lancashire Express, Huddersfield Chronicle, East Devon Advertiser, Bedford Mercury Leighton Buzzard Reporter, Scotsman, Yorkshire Post, Glasgow Herald, Dundee Advertiser, Manchester Guardian, Bridlington Free Press, Sheffield Independent, Western Press, Hampstead Express, West Sussex Gazette, Bridgwater Independent, Birmingham Post, Derby Telegraph, Sanitary Record, Mining Journal, Reading Mercury, Local Government Chronicle, City Press, Hertfordshire Mercury, The Indicator, Local Government Journal, Surrey Advertiser, Weekly Free Press and Aberdeen Herald, Belfast Evening Telegraph, Clifton Chronicle, Free Press (West Bromwich), Abergavenny Chronicle, Leeds Mercury, West Middlesex Herald, Prescot Reporter, Keighley Herald, Horbury Express, &c., &c.*

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Communications, Letters, &c., have been received from—

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B.—Dr. H. C. Bastian, Lond.; Messrs. Bedford and Co., Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. B. Bailey, Leeds; Dr. B. E. Brodie, Macleod, N.W. Canada; Mr. A. E. J. Barker, Lond.; Mr. G. Booth, Woodbridge; Bootle Borough Hospital, Clerk of; Dr. R. L. Batterbury; Great Berkhampsted; Brussels Medical Graduates' Association, Lond., Hon. Secretary of; Dr. Berthold Beer, Vienna.

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Letters, each with enclosure, are also acknowledged from—

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AN ABSTRACT OF AN

Address

ON

INTESTINAL CANCER AND ITS TREATMENT.

Delivered before the Leamington Medical Society on March 22nd, 1897,

BY THE LATE J. GREIG SMITH, M.A. ABERD., F.R.S. EDIN.,

PROFESSOR OF SURGERY, UNIVERSITY COLLEGE, BRISTOL; SURGEON TO THE BRISTOL ROYAL INFIRMARY.

[AFTER some preliminary remarks the lecturer proceeded to demonstrate from specimens some points in the pathology of intestinal cancer which were of importance practically. These specimens, which were chiefly from cases operated upon by himself and which were mounted in transparent media between plates of glass and stained or otherwise treated, showed clearly by reflected and by transmitted light details in the tumour-structure and in the invasion of individual parts which are not visible under ordinary methods of mounting. The points to which the lecturer specially called attention were two: 1. The heaping up of fatty tissue all around ordinary cancer of the intestine. In the later stages of the disease when all the intestinal walls were destroyed the continuity of the canal depended often entirely on the presence of this fatty tissue. 2. The position of the glandular or acinous growth outside the fibrous or cicatrising elements; its instability; and, generally, its behaviour in the scheme of growth.]

1. The cicatrising element is the same in intestinal cancer as in epithelial cancer everywhere else. Starting from the centre of disease the contracting influence spreads out along the strands of fibrous tissue in all directions, pulling towards the tumour-centre all the tissues entangled in the fibrous meshes. The tissues, so drawn in and compressed, atrophy. In pure cicatrising cancer—"atrophic scirrhus" as it is called—invading the breast this is best shown. The fatty lobes all round the growth are dragged in and atrophy from the pressure, while the encircling strands of fibrous tissue increase in size and strength. Close to the tumour, all around it, there is an area of deeply pigmented fat, the cells being compressed or destroyed and the pigment with a little liquid only remaining. As the contraction goes on lobe after lobe is encircled and pulled in; the cells are destroyed and all that remains is a small globular cyst containing dark-brown liquid fat. The contracting influence is not confined to fat but invades muscle. Indrawing and atrophy of muscle is best seen in cancer of the tongue and at the angles of the mouth, but may be found where atrophic scirrhus is invading pectoral or intercostal muscles. It is always a marked feature in intestinal cancer and ultimately results in its complete disappearance. Here, however, the process is obscured by the indrawing of muscle hypertrophied from physiological over-action. [All these points were demonstrated in specimens passed round amongst the audience.] In the intestines this process of cicatrisation of fibrous tissue and its effects are well displayed.

First, there is indrawing of fatty tissue from the neighbourhood all round the bowel. Where the growth starts on the mesenteric aspect the piling up of fatty tissue may be so marked as almost to suggest the presence of a fatty tumour. If there is not much fat to be drawn in the appendices epiploicæ are huddled up together around the growth. In one case of cancer in the transverse colon nearly the whole of the omentum was drawn in. In every case this aggregation of fatty tissue round the growth-centre is found and sometimes to an extraordinary extent.

Secondly, there is constriction of the gut from indrawing of the submucous and subserous fibrous tissue. The musculature being in the grasp of the fibrous tissue outside and inside it and being contractile is pulled inwards and remains as an atrophied fibrous ring. It appears thickened and later, in certain circumstances, does become greatly thickened, but this thickening is apparent rather than real and arises from the fact that muscle forming a ring with a diameter of perhaps a quarter of an inch is thicker than the same muscle stretched out to form a ring with a diameter of two inches or more. One striking result of this constriction is that the mucosa, being mobile, is puckered up into vertical folds inside the contracted lumen everywhere except just over the growth, where it is hypertrophied and often diseased and always adherent. The compressed and folded mucosa soon breaks up and exposes the muscular coat.

Thirdly, there is shortening of the gut. This is, of course, to be expected from the universal distribution of the fibrous tissue affected. The bowel gathered in from above and from below towards the cicatrising centre is folded on itself, producing great ridges towards the mucous surface, between which lie pouches. These ridges and pouches are most marked on the proximal side of the growth, because coincidently with the contracting influence of the fibrous tissue there is going on dilatation of the whole tube as an effect of the obstruction to the passage of fæces.

2. The occurrence and the behaviour of the true acinous or glandular growth are the same in cancer of the intestines as in cancer of the breast or other tissue. It is nearly always secondary. It practically never appears in the centre of the scirrhoid or cicatricial tissue, but always at the periphery. It would seem as if in the centre of the grip of the contracting fibres no cell proliferation were possible; it occurs only outside it or at its free margin. Section after section of cancerous growths show this with a uniformity which is almost absolute. In the intestine this growth, of course, begins in the mucosa. In the grip of the stricture it breaks down almost at once and exposes the muscular coat. Above and below the stricture it grows readily enough and may attain to dimensions sufficient to be classed as a tumour. This is the well-known lip of growth which is found at one stage of all intestinal cancers on each side of the structure. Meanwhile the growth pierces the exposed musculature and burrows amongst the subperitoneal tissue, begetting secondary developments of acinous cancer. But these growths also soon break down towards the surface and the access of pyogenic organisms leads to suppuration and phagocytosis and the formation of granulations. As the new growth and the encircling fibrous and muscular tissues break down the calibre of the bowel enlarges, so that in an advanced case it may actually be greater than normal. Meanwhile, as destruction is going on inside fatty tissue is being drawn in from the tissues around and the intestinal walls are pulled from above and below close up to the tumour area. The condition then would be: at the centre of the disease a ring of fatty and fibrous tissue covered with granulations; above and below this and joined to it the divided and folded extremities of the bowel; and above and below all a lip of hypertrophic glandular growth. [All these points were demonstrated on specimens and illustrated by drawings.]

I say nothing about the histological structure of the growth. That it is cylindrical epithelioma is in keeping with the behaviour of epithelial cancer everywhere—namely, that it follows the tradition of the structure it originates in. All that I insist upon is that associated with the cancerous growth in the intestine proper there is always an indrawing and cicatrising of fibrous tissue at some period of the tumour-growth and that but for this action, which draws in fresh tissue to the cancerous area, perforation would in most cases take place earlier and more frequently than it does.

Clinically cancer of the bowel first signalises its presence as a stricture causing intestinal obstruction. This condition is often known as "ring cancer," a very suitable name. If it happens that obstruction is not produced its presence is not proved till some months later when it will have grown into a tumour and is discovered by palpation through the parietes. This tumour is hollow, and is composed of a conglomerated mass of cancerous, fatty, and inflammatory tissue holding together the more or less completely destroyed ends of the bowel. Obstruction is not associated with it, but cachexia and wasting nearly always are. It might therefore be regarded as fortunate for the patient when attention is early called to the presence of intestinal cancer by its producing obstruction, for then the growth can be completely removed. Later, with the presence of a tumour there is probably invasion of neighbouring tissues and systemic infection, and operation, even if primarily successful, is not likely to be radical.

Cancer originating in some structure outside the intestine and invading the bowel secondarily from its peritoneal surface is often mistaken for true intestinal cancer. It may

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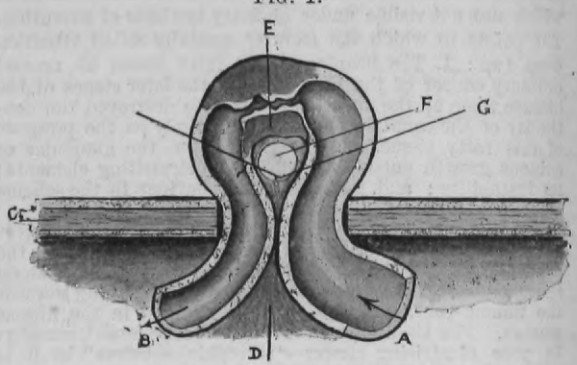
cause obstruction by pressure or by actual ingrowth, but the most common way in which it causes obstruction is by kinking of knuckles of intestine which become adherent to it.

In the treatment of intestinal cancer four surgical measures are available. 1. Removal of the growth—enterectomy or colectomy,—this being, of course, limited to suitable cases. 2. Formation of an artificial anus above the growth—colotomy, or "colostomy" as it is more properly named—may be done either to avoid death from obstruction or to prolong life and make it more comfortable. 3. Intestinal anastomosis—short-circuiting or the joining of healthy intestine above the tumour with healthy intestine below so as to exclude the tumour-growth. This operation should, I think, be limited to cases where there is obstruction and where the tumour is unremovable. It is, of course, unsuitable for cases of cancer in the rectum or low down in the sigmoid. It is useless if there is a large tumour, for obstruction rarely arises in these cases and perforation is equally rare, while the risks of perforation are practically the same whether cancerous fluids or fæces are extravasated. 4. Enterostomy, or the insertion of a small tube into the bowel in certain inoperable cases chiefly of peritoneal cancer associated with great distension from gas, is a measure of undoubted benefit. It is not intended to permit discharges of fæces, but simply to provide an exit for the great quantities of gas which are excreted in such cases and which cause much pain and general disturbance. In connexion with each of these operations I desire to make some critical suggestions which are the outcome of personal study and experience.

1. *Enterectomy.*—Ring cancer is, as already stated, usually discovered during operation for intestinal obstruction. Now, enterectomy for cancerous growth as part of the operation for obstruction is a very grave—according to some authorities an unjustifiable—operation. As usually performed, at one sitting, I admit that the operation is almost unjustifiable. Carried out in the way I recommend, in two stages, I have had 5 enterectomies all successful, and of 2 performed in other ways, 1 was successful and 1 fatal. In all these it is to be noted that the call to operate was from the obstruction and not from the new growth. Tumour-cancer, which is rarely associated with obstruction and is usually diagnosed by palpation through the parietes, may be removed by any of the numerous methods of enterectomy at the will of the surgeon, when and how he chooses. Now, the death-rate after operative removal of intestinal cancer in the absence of obstruction is over 25 per cent. of published cases; over all cases it is doubtless well over 40 per cent. This is a terrible mortality, higher, I hope and believe, than it need be. If with the methods in use this is the best that the best surgeons can do, then I am convinced that there is something wrong in the methods. Our methods of to-day are essentially the same as those in vogue a hundred years ago. Have we got into a wrong groove and been following it up too far? Is it not time to break new ground and to make new paths? The best results by the best surgeons—with bobbin, reel, button, plate or simple suture, whether applied end-to-end, or side-to-side or end-to-side—are all bad, terribly bad, and it is not easy to see how on these lines they can be improved. I am going to venture to suggest an abandonment of the old methods and to recommend an operation which I will now describe. I first performed it for ring cancer during obstruction six years ago, and I have performed it for the same disease during obstruction in four other cases. It is, I believe, certainly the best method of dealing with cancerous bowel during obstruction. For tumour-cancer I had meanwhile been doing my share of operations by the ordinary methods, with bone-bobbins, Murphy buttons, and suturing, and had had the ordinary share of success, no better and no worse than my neighbours. But my success has been less for operation without obstruction than for operation with obstruction; *a fortiori*, therefore, I have argued that the operation I adopted of necessity was better than the one I followed from choice. I have now come to the decision to adopt this method for all cases of enterectomy until something better is discovered. I stumbled on the method when operating on a lady patient of Mr. Eadon of Hambrook, who was desperately ill with intestinal obstruction. The obstruction was comparatively sudden in onset; vomiting had existed for a week and an operation was performed in ignorance of the exact cause. A cancerous stricture was found in the sigmoid flexure. This was brought outside; a wooden penholder was passed through its mesentery, after the method of Maydl, and permitted to rest on the parietes, and the intestine above was opened and drained. A week later the growth was cut away and an artificial anus was left over the pubes. This I closed by means of Abbe's catgut rings which I soon had to remove by another operation on account of a new intestinal obstruction which they caused. Then I had other cases, one after another doing well, and each in method showing some improvement on the one before. The trouble was the artificial anus which was left and how to close it without risk to the patient. Finally, I think I have got a method of doing this and now I venture to put before you the whole operation. It is, I admit, not so simple as other methods, but what of that if it gives more safety to the patient? This was the surprising and delightful element of the operation. After the acute trouble from the obstruction was over—a period lasting rarely more than twenty-four hours—there never was a moment's anxiety as to recovery. It was not so much the recovery as the manner of it which impressed one. The patient, so to speak, had the race well in hand and could have carried pounds more in the handicap and won; and therefore until I hear of something likely to surpass it I mean to practise this operation for the future.

The following are the steps of the operation. It is

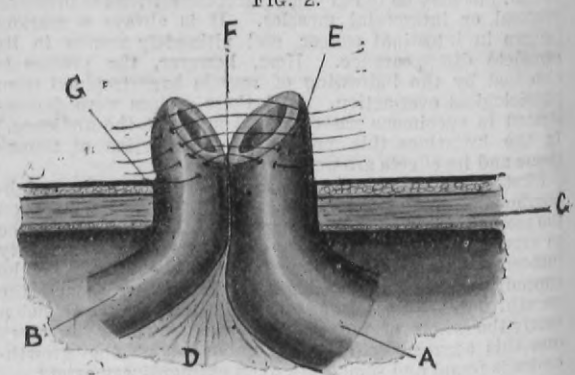
FIG. 1.



First stage of enterectomy; tumour delivered and fixed. A, Entering bowel. B, Returning bowel. C, Abdominal wall. D, Mesentery. E, Line passing through tumour and stricture. F, Skewer passing through mesentery and resting on parietes. G, Lines of excision.

performed in two stages, the first step resulting in fixation of the diseased bowel outside the abdomen in the parietal incision (Fig. 1), the second in resection of the growth and the necessary amount of bowel and in the suturing of the divided ends and returning them inside the parietal incision but not into the general abdominal cavity. (Fig. 2.)

FIG. 2.



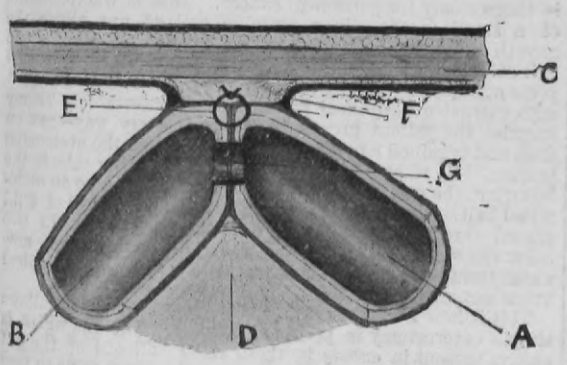
Second stage in enterectomy; tumour excised; suture of bowel begun. A, Entering bowel. B, Returning bowel. C, Abdominal wall. D, Mesentery. E, Lembert's sutures inserted. F, Adhesions between apposed bowels. G, Adhesions between bowel and parietes.

The delivery of the growth is usually quite easy; but sometimes the mesentery is much shortened and then, to get a sufficiency of bowel outside, it may be necessary

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to divide the mesentery at its deep attachment. If what I have said as to invasion of mesentery by growth be true, then we ought to remove more of the mesentery than we usually do. Not a wedge-shaped piece but a fan-shaped piece should be removed, the handle of the fan being at the centre of intestinal disease. The mesentery should be divided between ligatures suitably placed by transfixion and all suspicious portions should be removed outside. Then through the mesentery and under the bowel should be placed one or more skewers or supporting rods. The skewer or skewers should pass through healthy mesentery because everything down to the skewer is to be removed. The incision may be made anywhere, over the disease always if possible. Sutures of any sort, either in the parietes themselves or between parietes and bowel, are quite unnecessary unless the incision has been made too long, and the gut should be placed on the raw parietal incision. If there is no obstruction the bowel, covered with silk protective or gutta-percha tissue, is left in the wound for 48 hours while adhesions are formed. These are always firm enough at the end of this time. If there is intestinal obstruction with distension, drainage of the bowel above the obstruction must be carried out This is done simply by making an incision in the bowel and inserting a rubber tube on the stretch into the opening and fixing the bowel to the tube by a purse-string suture or any similar simple device. At the end of a week more or less, according to circumstances, the bowel is resected down to the skewers and sutured on the spot by Lembert's method, or perhaps better by Halsted's. This is done outside the abdomen and as it causes no pain an anæsthetic is not necessary. But the bowel has to be returned inside the parietal incision; this requires an anæsthetic, for it means separation of the bowel from the parietes and also peeling of the parietal peritoneum from the muscle. This is a delicate process and one which I have not found it easy to describe, while I cannot say that it is easy to do. The secret is not to disturb the adhesion of the parietal peritoneum to the bowel while it is being separated from the muscle sufficiently to permit the knuckle of gut to be pushed inside. The sutured gut is freed from everything save its parietal peritoneum and is pushed inside with the peritoneum adherent. Then over it the parietes are pulled together and sutured in the ordinary way (Fig. 3).

FIG. 3.



Second stage in enterectomy concluded; suture completed; bowel returned. A, Entering bowel. B, Returning bowel. C, Abdominal wall. D, Mesentery. E, Suture placed in intestinal wall. F, Peritoneum adherent to bowel. G, Opening left at junction of divided ends of bowel.

This is the ideal method; but, as a matter of fact, enterorrhaphy, or the closure of the intestinal opening, may well be delayed for a month or longer. All the time the patient is gaining strength, the swollen bowel is being restored to its natural dimensions, and suturing is really easier. By the insertion of a piece of rubber tubing—the excellent suggestion of Mitchell Banks—the spur is removed and the gut is straightened, so that at the end of this time quite a small portion of the circumference requires suture. An anæsthetic is necessary for the operation because the incision above and below the anus must be extended and the areolar tissue uniting parietal peritoneum to muscle must be freely opened up. The operation is, in fact, the one for closure of an artificial anus which I have elsewhere described and figured and which is done shortly as follows. First, an incision is made through the parietes for a couple of inches above the anus. This goes down to the subperitoneal areolar tissue. The forefinger is inserted into this and is made to separate it freely from the parietes all round the adherent gut. The adhesions to the gut must be divided; they are usually very firm. Then the two ends of the gut with its adherent peritoneum are delivered through the wound and sutured carefully. Finally, it is returned and the parietes are sutured over it.

For the operation primary success can almost certainly be predicted. The charm of the proceeding is that there is practically no danger with it and no shock. If it fails there is no harm done and a very simple subsequent proceeding remedies the fault. A failure here is not death, only discomfort for a few days more. And there are few patients or surgeons who mind this if the risk is thereby greatly diminished. Such is the operation which I venture to recommend for the removal of intestinal cancer. There are, however, certain special conditions associated with removeable cancer of the bowel which may negative this operation. One of these is where the new growth forms the apex of an intussusception—not a very uncommon circumstance.

An operation which I have successfully performed in a case where the growth was not cancerous (already published) would probably suffice for cancerous cases. The operation was done rapidly on the spur of the moment in the case of an infirmary patient gravely ill from obstruction; but on thinking it over critically since I am inclined to recommend it as the best I could have done. When it was found that the intussusception could not be reduced and when it was clear that a tumour at the apex of the intussusception was the cause a vertical incision was made over the growth in the receiving bowel and the growth was delivered through this incision and excised. Transfixion sutures were placed through the divided ends of the bowel. When it appeared certain that the intussusception could now be reduced the vertical incision in the bowel was closed, cleansed, and returned into the abdomen, with the receiving bowel as it was peeled off the intussusception. The divided ends when they were drawn out were joined with a Murphy button, which was the quickest method available where speed was everything. The patient recovered, but not so easily as I could have wished, and I should like to believe that some less dangerous method were available. Mayo Robson has had a similar success with his bone bobbin in a case of epithelioma with intussusception. The operation also would not be a good one where the mesentery was extensively implicated, for extensive division of the mesentery involves gangrene of the bowel. Now, bowel which may become gangrenous is best removed at once. There is certainly a tendency for the muscularly powerful gut above the growth to draw it inside the abdomen, rocking it over the skewer. This can be obviated by the use of two skewers one above and one below the disease. But where even a little division of mesentery close to its attachment is made there is great risk of gangrene and the double skewer cannot prevent this. A yard of bowel may be dependent on an inch of mesentery at this attachment for vascular, nervous, and lymphatic supply, and this must not be forgotten in the resection of cancerous growths.

2. *Colostomy (as done now usually by abdominal section).*—The results of the ordinary operation of colostomy are often such that it is abhorred both by the surgeon and by the patient. Some of its frequent concomitants are certainly unpleasant. It leaks continually; fluid fæces and mucus are nearly always escaping from the anus and trickling over the skin. The intestine prolapses, often a little, sometimes a great deal, and anti-prolapse plugs and pads are invented and worn. Then the opening sometimes contracts and anti-stenosis plugs are inserted. Again the opening gapes and inflating rubber bags are pushed in and blown up. The ordinary colostomy is too often one continuous struggle against adverse influences, and not always a successful struggle. In the ideal colostomy there should be no leakage, no prolapse, no stenosis, and no gaping, and the opening should remain of one size, neither dilating nor contracting. Also, although this is a smaller matter, the anus should rise above the surface so that ejected fæces may be caught in a receptacle and not trickle over the skin. It need scarcely be added that all the fæces should be passed through the artificial opening and that none should pass into the lower bowel. This ideal result may, I think, be confidently expected if the operation is performed on the lines I now follow. It can always be got in the transverse colon; nearly always in the sigmoid colon; and in the majority of

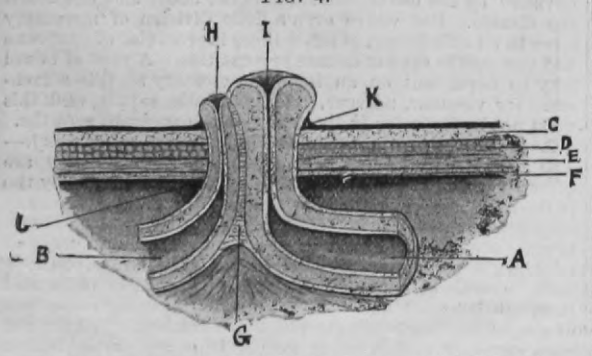
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cases in the descending and the ascending colon. The difficulties lie in excessive thickness from obesity of the abdominal wall or in great shortness of the mesentery preventing complete delivery of the bowel. I have found these difficulties present to the extent of being insuperable only twice in the last 20 operations I have performed in this way, and then simple modifications brought a fair measure of success.

In forming an artificial anus we ought to study the natural methods of effecting closure of the hollow viscera and follow them. To prevent leakage nature provides a canal lined by mucous membrane and surrounded by muscle. The best examples are the natural anus and the female urethra. A mere fistula, lined by granulations, however long, will always leak, even if surrounded by muscle. We know this too well in renal or biliary or intestinal fistulæ which dribble continuously till permanent closure takes place. The mucous lining then is one essential. Further, it should be surrounded by intact muscle. By the ordinary methods the muscle is divided and sutured closely to the bowel. This is all very well for a week or two, but divided muscle first retracts and then atrophies. Nothing can prevent this; there is no getting over it. Muscular fibres when divided atrophy away from the point of division and become fibrous for some distance away from it. Hence grip is impossible. This results in gaping of the opening. But there is contraction also; the ring of cicatricial tissue contracts if it is not continually dilated by prolapsing bowel, and thus we have as an artificial anus a mere hole in the abdominal wall surrounded by a ring of fibrous tissues and atrophied muscle. Finally, to make matters still worse, instability is given to the whole affair by bringing up the parietal peritoneum to the skin and suturing it there and to the bowel. In the operation which I am about to describe I seek to avoid all these drawbacks and now practically always succeed in doing so.

First, a complete mucous tube is provided, the whole calibre of the gut for at least a couple of inches being used. Secondly, it is surrounded by double crossing bands of intact muscular tissue; no muscular fibre is divided, the bowel is surrounded by what is practically a ring of muscle. Thirdly, the bowel is laid on the raw muscle over its whole thickness and is immoveably fixed there by the strongest adhesions. Lastly, there is no fibrous ring scar to either gape or contract. The following in detail are the steps of the method. The parietal incision, two or three inches in length, wherever made must enter the cavity without the division of any muscular fibre—the fibres are separated by the finger, not cut by the knife. If the ascending or descending colon is to be opened and the incision is made in either loin the skin incision is made along the course of the external oblique, the

FIG. 4.



Cœlio-colostomy; bowel carried through separated fibres of parietal muscles. A, Entering bowel. B, Returning bowel atrophied. C, Subcutaneous fatty layer of abdominal wall. D, External oblique muscle. E, Internal oblique muscle. F, Transversalis muscle, fascia, fat, and peritoneum. G, Intestinal adhesions and mesentery. H, Opening into lower bowel. I, Artificial anus: opening. J, Junction of parietal and intestinal peritoneum. K, Muco-cutaneous junction.

fibres of which are separated; then almost at right angles to these the fibres of the internal oblique are also separated, and the transversalis fibres being unimportant are obliquely divided. For the transverse colon the fibres of the rectus are separated after vertical division of the skin. Then a loop of bowel is pulled through the separated muscular bundles and fixed by a skewer passed under it through the mesentery and resting on the parietal skin, as already described for enterectomy. This is the whole operation. Sutures are superfluous; the muscle closely grips the gut, and if the incision is of the proper size, neither too large nor too small, the apposition is exact. The bowel cannot be drawn inwards; it is held over the skewer more firmly than by any stitches, nor can there be protrusion if the skewer is fixed and a graduated and firm dressing is placed around and held in position by strapping carried round the body. Now I nearly always open the bowel at the time of operation and put in a rubber tube; this permits exit of fluid fæces and gas. At the end of a week the bowel is divided transversely down to the skewer, or nearly so, and the operation is complete. In about a fortnight the bowel settles down to a permanent state, such as is shown in the diagram (Fig. 4). The bowel is firmly gripped by intact muscular fibres. It protrudes a little beyond the skin level and so serves to hold up a rubber ring to which is attached a rubber bag to catch the escaping fæces. The patient has by moving the body some power of relaxing and contracting the opening. Stenosis is impossible, as is dilatation. However firmly the muscle grips there is always this patent mucous canal, for mucous surfaces never adhere and dilatation is impossible, for entire and active muscle never wastes.

A colostomy done in the way I recommend is really little more trouble than a natural anus. It acts for about ten minutes or a quarter of an hour in the morning, the parts are cleaned, a little cotton-wool is placed in the bag, and the apparatus is fitted on, and the probability is that it requires no more attention during the day.

3. *Intestinal anastomosis.*—Of intestinal anastomosis, or short-circuiting, I shall say very little. It is employed, as you know, to cause union between healthy bowel above and healthy bowel below in unremoveable cancerous growth causing obstruction. In the disease we are considering it has, in my opinion, a very limited applicability. But in suitable cases it is an extremely valuable operation, far better than colostomy. As to the method to be followed I prefer the employment of immediate sutures to any mediate methods by plate or button or bobbin. All such openings tend to contract and there is no bobbin possible to be inserted which is large enough to give the requisite size of opening. I have described the methods elsewhere and shall not trouble you with them now.

4. *Enterostomy.*—The only other operation to be described is enterostomy for peritoneal cancer. This is the formation of a small opening in a suitable coil of gut above the growth and leaving in it a rubber tube which permits the exit of gas and fluid. This operation I performed first some years ago hoping thereby to make the latter end of a patient with extensive peritoneal cancer more comfortable. To my surprise the patient greatly improved in every way—put on flesh and regained a passage for fæces through the obstructed portion. He wore a tightly fitting small rubber tube in the intestine, the end of which lay in a bottle fitted to an abdominal belt. Great quantities of gas and a good deal of fluid passed through the tube; the fæces passed on. In two other cases similar results followed. A fourth patient now under treatment has so much improved that both her medical attendant and herself think the tube may be removed.

This is how I try to explain the improvement which follows simple enterostomy in peritoneal cancer. The gas which is always present in excess in these cases balloons up the gut and prevents it from contracting on the fæces so as to pass them on. The gut is powerless to propel; it simply compresses. When the gas is permitted to escape the gut grips the fæces and pushes them on with success. Whatever be the explanation I have little doubt as to the fact that provision for the external escape of gas in certain cases of peritoneal cancer, and perhaps other cases as well, is a surgical measure of real therapeutic value. The operation is so simple that it is scarcely worth describing. All that I would insist upon is that the rubber tube, about the size of a No. 4 English catheter, should be encircled by a tube of the intestinal mucosa and that this in turn should lie between intact bundles of muscular tissue.

WATER-SUPPLY OF CAMBORNE.—At the meeting of the Camborne District Council held on July 1st a letter was read from the Camborne Water Company stating that several improvements had been made by the company since the recent epidemic of typhoid fever.

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A CASE OF ACROMEGALY.[1]

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AND
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LATE ASSISTANT MEDICAL OFFICER, WANDSWORTH INFIRMARY.

With a Pathological Note

BY S. G. SHATTOCK, F.R.C.S. ENG.,
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THE patient was a married woman, aged thirty-seven years, of temperate habits, and was admitted to the Wandsworth Infirmary on Oct. 21st, 1893. The following history was obtained from her husband. She had had two children and had previously suffered from chorea, hæmorrhoids, and vomiting of blood. Her present illness was stated to have commenced about fifteen years ago with an attack of hæmorrhage, probably from the stomach. Shortly afterwards her friends noticed her hands to be getting larger and she began to suffer from failing vision, some deformity of her chest also being observed at the same time. During the succeeding seven years her hands and feet increased in size so that she required a larger size in boots and gloves than formerly. At the end of this time she began to suffer from weakness and loss of flesh and a few years later her features were noticed to be undergoing change, the lips becoming larger, the nose more prominent, the eyes protruding, and the whole face becoming lengthened. She became gradually weaker and about a year before admission lost the power in her legs and was obliged to take to her bed. She suffered from incontinence of urine and fæces and occasionally complained of headache. Her appetite was excessive but her general health was becoming worse. Menstruation had ceased shortly after the onset of her illness.

On admission her condition was as follows. She was quite helpless, emaciated, and anæmic, the skin being soft and flabby, the subcutaneous fat almost absent, and the muscles wasted. The nails of the fingers showed a brownish discolouration with longitudinal striation. There was some hypertrophy of the hands and feet, and the bones of the face, especially of the lower jaw and nose, were markedly enlarged. The chin, lips, nose, and forehead were strikingly large, the lower lip when in a passive state hanging down and protruding in front of the upper, giving the patient a fatuous appearance. These points are shown in Fig. 1, which is from a photograph taken soon after admission, and which exhibits a very marked alteration of features when compared with a photograph of the patient fifteen or twenty years previously. The tongue also was considerably enlarged; there were marked proptosis, discolouration of the eyelids, external strabismus, nystagmus, and inequality of the pupils. Vision was completely lost and there was white atrophy of both optic discs. The reflexes were abolished but there was little or no loss of common sensation. There was also general muscular weakness. She exhibited some mental deficiency and her speech was slow and indistinct. She seldom spoke unless addressed, lying for the most part in a quiet apathetic state, and there was incontinence of urine and fæces. The body temperature was subnormal and the pulse was 66 and of small volume. The chest and spine were deformed, the sternum being pushed forward in its upper part, and a condition of kyphosis, most marked in the upper dorsal region of the column, was present. The heart sounds were distant and indistinct at the apex. The thyroid gland was not noticed to be enlarged. The clitoris was greatly hypertrophied. The urine was of low specific gravity but otherwise normal.

The patient was treated with thyroid extract soon after her admission, but after some weeks it was discontinued on account of diarrhœa and vomiting supervening. It was tried on several subsequent occasions for varying periods, but was stopped finally on account of recurrence of the same symptoms. No marked change in her condition was noted as a result of the treatment beyond some improvement in her mental condition up to a certain point. She improved also considerably in her general nutrition, being able during the last two years or so of her life to get up and sit in a chair during part of the day. Measurements taken about nine months before death showed that since admission the hands and feet had diminished slightly in size, while the facial measurements showed an increase over those noted on her admission. As regards her other signs and symptoms she showed little or no change, and except for obstinate constipation there was no particular indication for active treatment. She continued in the same sleepy mental condition, though answering questions rationally when addressed. She suffered from occasional headache but had a good appetite and was able to take a nourishing and free diet. The termination of the case was somewhat sudden, the patient being seized with an attack of diarrhœa and vomiting, which was followed by a rise of temperature, rapid pulse and respiration, with signs of commencing pneumonia. She became rapidly exhausted and died about two days after the commencement of acute symptoms, on June 21st, 1897.

FIG. 1



From a photograph of the patient in 1894.

Necropsy.—The post-mortem examination was performed two days later, when rigor mortis had passed off. The body appeared to be fairly nourished, though there was general muscular wasting and a flabby condition of the subcutaneous tissues everywhere. The enlargement of bones appeared most marked in the head and face, especially affecting the malar prominences and lower jaw; there was general hypertrophy of the features also, as described above, especially of the nose, ears, and lips. The angle formed by the manubrium with the body of the sternum was very prominent, causing a general projection of the front of the chest and some flattening on either side. There was also marked kyphotic curvature of the spine as mentioned above. The hands were flabby and spade-like, but did not appear to be notably enlarged, and on removing one of the metacarpal bones this appearance was confirmed,

[1] The notes of the case were read at a meeting of the Pathological Society of London on Nov. 2nd, 1897.

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as there was no evident hypertrophy of the bone. The knee-joints were enlarged and thickened, being fixed in a position of slight flexion, the bones being apparently affected by outgrowths of an osteo-arthritic nature. Both feet appeared to be unduly large, prominent, and flattened on the plantar aspect and there was great enlargement of the metacarpo-phalangeal joints of both great toes. The subcutaneous fat was everywhere fairly abundant, especially in the scalp, and the muscles in all parts were pale and flabby. The vertex of the skull presented some irregular prominences in several situations, especially in the right posterior parietal region, the bone in this area being uneven and perforated by small apertures. There was also considerable thickening in the frontal and occipital regions, the sawn surface measuring three-quarters of an inch in places. The cerebral membranes appeared to be normal. On removal of the brain a large tumour was found on the under surface occupying the central portion of the middle fossa of the base of the skull, completely filling the pituitary fossa and extending on each side of this to some extent (see Fig. 2). It was smooth on the surface and

FIG. 2.



View of the base of the skull showing enlarged pituitary body *in situ*.

covered with what appeared to be a prolongation from the pia mater, except on the right side over a small area where this had been torn away. The tumour was roughly divided into two lobes, right and left, the former being slightly the larger, and it measured 3 in. transversely by 2½ in. in the antero-posterior direction. The optic tracts were stretched over the tumour and were much flattened. The pituitary fossa of the sphenoid was enlarged and the anterior clinoid processes were widely separated. The brain itself weighed 44½ oz. and showed a marked concavity on the under surface corresponding to the position of the tumour, and the parts forming the floor of the third and adjoining portions of the lateral ventricles were greatly thinned. Except for this condition there was no other noticeable appearance and the substance of the brain seemed normal. The spinal cord was removed for part of its extent only; no abnormal appearances were seen by the naked eye except a few small bony and calcareous spicules on the inner surface of the dura mater. The thyroid gland was considerably enlarged, weighing 6½ oz. The right lobe was slightly larger than the left, but otherwise the increase in size was uniform. The thymus gland was not seen. The lungs were congested at their bases and posterior parts and there was some early pneumonic consolidation of both lower lobes. The heart was enlarged, weighing 18½ oz. The mitral valve was thickened and showed calcareous deposits and there were old vegetations present on one of the cusps. The tricuspid valve was also somewhat thickened. The liver weighed 72 oz., but beyond general enlargement nothing abnormal was noticed. The spleen was also enlarged, weighing 18 oz. The kidneys were of normal size and no morbid changes were observed on section. The stomach appeared to be healthy except for some congestion of the mucous membrane. The intestines contained an accumulation of fæces in the lower part, but no other abnormal conditions were noticed.

Report by Mr. SHATTOCK. — The thyroid gland was uniformly enlarged but to no very notable degree. To the unaided eye the cut surface presented the structure of an ordinary parenchymatous goitre and the microscopic characters corresponded; the gland spaces, which were of abnormal size, were lined with a single layer of cubical epithelium and enclosed homogeneous colloid. There was no trace of parietal infolding into the spaces as in the thyroid enlargement associated with Graves's disease. Sections of the pituitary body revealed a remarkably uniform structure of polyhedral cells somewhat large in size and without visible intervening substance. There was scarcely a trace of connective tissue stroma, the cells closely filling the meshes of a capillary network and resting directly on the capillary wall. In general characters the cells resembled those of the anterior lobe of the pituitary body. The changes may therefore be classed under the head of hypertrophy, as the enlarged body was everywhere encapsuled and the surrounding bone uninvolved. The metacarpal and metatarsal bones examined showed no enlargement.

THE TREATMENT OF TUBERCULOSIS BY TUBERCULIN R.

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IN the *Deutsche Medicinische Wochenschrift*, No. 14, 1897, Professor Koch brought forward his latest work on tuberculin preparations. He makes therein a number of interesting and important observations and the following portion of our paper in inverted commas is a brief summary of his paper.

"Immunity may be either poison immunity or organism immunity and the ideal immunity will include both. Man apparently shows no immunity to tubercle, yet in miliary tuberculosis in man and experimental tuberculosis in guinea-pigs there is a stage in which the bacilli become scanty and difficult to find: here we have an organism immunity which is as a rule too late to be of service." "The one feature in common of the two conditions is a rich quantity of bacilli." "Based upon this glycerine extract of tubercle bacilli was used in treatment and Koch claims that experience has shown that the fear of the dissemination of tubercle bacilli is unfounded, and this agrees with his own experience in men (1000 cases)." "From the therapeutic point of view the glycerin extract gives poison immunity but not organism immunity." "The new preparation, tuberculin R., is obtained by pounding up young virulent cultures of tubercle bacilli in a mortar, treating with distilled water, and centrifugalising. The deposit is dried, again powdered, distilled water added, and again centrifugalised, and the process repeated until the culture is converted into a series of clear fluids. The first fluid obtained differs markedly from the remainder and is rejected; the remaining fluids constitute the new preparation, tuberculin R." "Koch states that tuberculin R. produces marked organism

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TABLE OF A SERIES OF CASES OF TUBERCULOSIS TREATED BY TUBERCULIN R.

Case.	Sex and age.	General and local condition.	Treatment.	Condition after treatment terminated.	Weight.	Later history.	Remarks.
1	F., aged 30.	Nutrition poor; anæmia. Temperature normal; weight 98 lb. Sputum copious; tubercle bacilli present. Consolidation left apex.	April 20th, 1897: $\frac{1}{100}$ mg. Dec. 23rd, 1897: 20 mg.	Sputum scanty; no bacilli. Physical signs disappeared.	+ 12 lb.	Feb. 18th, 1898: in good health.	After 2·6 mg. temperature was 101·4° F. After 4·5 mg. temperature was 100·2°.
2	M., aged 37.	Very anæmic; nutrition fair. Temperature, highest, 99° F.; weight 130 lb. Sputum copious. Tubercle bacilli abundant. Consolidation of right apex; some softening.	Feb. 8th, 1898: $\frac{1}{100}$ mg. T.R. April 2nd, 1898: 5 mg. T.R.	Temperature normal; cough and sweats still present. Physical signs unchanged.	- 2 lb.	June 30th, 1898: *in statu quo*; says he feels better.	Treatment stopped as general reaction occurred without increase of dose.
3	M., aged 37. Marked heredity.	Well-nourished; temperature 99° F.; weight 135 lb. Sputum scanty; fair number of tubercle bacilli. Left apex consolidation; occasional "clicking."	Feb. 1st, 1898: $\frac{1}{100}$ mg. May 8th, 1898: 10 mg.	Temperature normal: no cough. Physical signs entirely cleared up.	+ 17 lb.	June 30th, 1898: working and in good health.	After 3 mg. temperature was 102°; marked excitement; after 4 mg., ditto.
4	M., aged 21. Marked heredity.	Fair nutrition; temperature 100° F.; weight 122 lb. Sputum copious; many tubercle bacilli. Consolidation of left apex; softening; no cavity; some dissemination.	Feb. 1st, 1895: $\frac{1}{100}$ mg. May 9th, 1898: 6 mg.	No improvement.	- 2 lb.	Improved under ordinary treatment.	After 1 mg. temperature was 101°, slight collapse. After 4 mg. temperature was 104°, marked collapse.
5	F., aged 22. Marked heredity.	Fair nutrition; temperature 99° F.; weight 105 lb. Sputum scanty; bacilli present. Consolidation of right apex; crepitations.	Feb. 20th, 1898: $\frac{1}{100}$ mg. May 8th, 1898: 6 mg.	Physical signs gone; cough gone.	+ 7 lb.	June 30th, 1898: in good health.	After 2 mg. temperature 105°; serious collapse.
6	M., aged 42.	Nutrition poor; temperature 101° F.; weight 115 lb. Sputum copious; bacilli numerous. Right apex consolidated; softening; thickened pleura.	March 1st, 1898: $\frac{1}{100}$ mg. May 8th, 1898: 4 mg.	Physical signs increased; temperature hectic.	- 8 lb.	June 30th, 1898: steadily getting worse.	Red corpuscles broke down; anæmia became more marked.
7	M., aged 40. Marked heredity.	Nutrition poor; temperature 101°F.; weight 109 lb.; sputum copious; bacilli present. Both apices consolidated; cavity left apex.	Never stood injections well.		- 3 lb.	June 30th, 1898: *in statu quo*.	—
8	M., aged 26.	Nutrition poor; temperature 101° F.; weight 97 lb. Sputum copious; bacilli present; both apices solid; softening.	March 18th, 1898: $\frac{1}{100}$ mg. 2 mg.	Sputum more abundant; temperature hectic.	- 1 lb.	June 30th, 1898: *in statu quo*.	After 1 mg. temperature was 102°.
9	F., aged 16. Marked heredity.	Nutrition poor; temperature normal; weight 84 lb. Sputum abundant; bacilli present. Right side apical consolidation; thickened pleura.	Feb. 25th, 1898: $\frac{1}{100}$ mg. May 8th, 1898: $\frac{1}{2}$ mg.	Temperature hectic; physical signs unchanged.	- 2 lb.	May 30th, 1898: wasting.	Treatment stopped as condition was becoming worse.
10	F., aged 19. Marked heredity.	Nutrition good; temperature normal; weight 150 lb. Sputum scanty; bacilli present. Left apex consolidation; early softening.	Feb. 20th, 1898: $\frac{1}{100}$ mg. April 10th, 1898: 5 mg.	Chest cleared up; no cough.	+ 10 lb.	May 30th, 1898: still in good health.	No reaction throughout.
11	F., aged 27. Marked heredity.	Nutrition fair; temperature 101° F.; weight 120 lb. Sputum scanty; bacilli present. Consolidation of both apices.	Feb. 20th, 1898: $\frac{1}{100}$ mg. April 12th, 1898: 4 mg.	*In statu quo*.	- 4 lb.	Left at own request.	—
12	F., aged 18.	Extensive unilateral lupus of face; five years' history. Weight 103 lb.; temperature normal.	Feb. 25th, 1898: $\frac{1}{100}$ mg. May 8th, 1898: 5 mg.	Soundly healed.	+ 11 lb.	May 30th, 1898: no recrudescence.	No reaction; marked local redness and scaling.
13	F., aged 16.	Lupus exedens of 12 years' duration; destruction of nose. Weight 53 lb.; temperature normal.	Feb. 11th, 1898: $\frac{1}{100}$ mg. May 7th, 1898: 1 mg.	Soundly healed.	+ 7 lb.	May 30th, 1898: no recrudescence.	No reaction; local reaction as in Case 12.
14	F., aged 14. Marked phthisical heredity.	Tuberculosis of iris; no pulmonary lesion. Temperature normal; weight 67 lb.	March 13th, 1898: $\frac{1}{100}$ mg. May 8th, 1898: $\frac{1}{2}$ mg.	Conjunctivitis and iritis.	+ 12 lb.	Left hospital; general condition much improved.	After $\frac{1}{2}$ mg. marked local reaction.
15	F., aged 30. Marked heredity.	Nutrition fair; temperature 99° F.; weight 69½ lb. Bacilli present. Left apex consolidation; thickened pleura.	Feb. 1st, 1898: $\frac{1}{100}$ mg. May 8th, 1898: 8 mg.	Physical signs the same; cough less; sputum absent; bacilli still present.	+ 6 lb.	Still in hospital, improved.	Treatment stopped on account of pleuropneumonia.
16	M., aged 44.	Nutrition poor; weight 100 lb.; temperature 100° F. Bacilli present; consolidation at both apices.	Feb. 11th, 1898: $\frac{1}{100}$ mg. April 20th, 1898: 6 mg.	Reactions constant; physical signs improved.	+ 5 lb.	No real improvement; cough still severe; bacilli present.	*In statu quo*.

Of the above 16 cases 15 were treated in Mill-road Infirmary.

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immunity and when its action is complete the injection of the old tuberculin causes no reaction." "The fluid is preserved by the addition of glycerine (20 per cent.) and 1 c.c. is equivalent to 10 mg. of solid substance." "The syringe used must not be sterilised with carbolic acid and the necessary dilutions are to be made with normal saline solution." "Dosage.—It is best to begin with $\frac{1}{500}$ mg. of the solid substance; injections may be given every second day, the dose being slowly increased, but so slowly that a rise of temperature of more than 0·5°C. is never seen. Should any rise occur it must subside before a further dose is given. The final dose, as a rule, is 20 mg. and when this is reached without reaction then further injections are not given or only given at long intervals."

Omitting the experiments on animals we have the following statement: "In man immunity is present *only* when doses of 0·5 to 1 milligramme are reached, and consequently *tuberculin R. is not available for treatment when the patient's prospect of life is only a few months.*" "*In cases of mixed infection the remedy is of little use, and Koch states that cases with higher temperature than 38° C. (100·4° F.) are only exceptionally suitable.*" (The italics are ours.)

In pulmonary tuberculosis the effect of the injections is given as follows: "No general reaction occurs, simply a little increase in the adventitious sounds, the sputum soon diminishes in amount, and the tubercle bacilli disappear, the physical signs improve, weight is gained from the beginning, and the temperature regains the normal level."

It is difficult—nay, almost impossible—to obtain in hospital practice a series of cases of tuberculosis exactly conforming to the requirements of Koch for treatment by tuberculin R. Patients with symptoms least distant from the very early stages of tuberculosis were treated, and in some cases where the disease was more advanced an amelioration of symptoms was all that was hoped for. In 4 cases not included in the table with high temperatures the result of mixed infection the symptoms were in no way improved; in fact, in some they were aggravated, so that the treatment was not continued.

Results.—In 13 cases of phthisis pulmonalis subjected to no other treatment but injections of tuberculin and ordinary diet 4 were completely cured—viz., Nos. 1, 3, 5, and 10. They have all gained in weight, the physical signs noted on admission have disappeared, the tubercle bacilli are absent, and the patients have left the hospital, and at the time of writing they are quite well. In Case 2 the treatment was stopped as the disease steadily progressed and weight was lost. In Case 4 severe reactions followed the injection of 4 mg. on three occasions, and as weight was lost the treatment was given up. In Cases 6 and 7 reactions followed the smaller doses and as weight was steadily lost the treatment was abandoned. In Case 9 the whole of the right pleura was thickened, the patient became hectic and she lost weight. In Case 11, no alteration for better or worse occurring, the treatment was abandoned when immunity doses had been reached. In Case 8, which was hardly a suitable case, reactions were early and severe and the treatment was abandoned on reaching 1 mg. In 7 cases the blood corpuscles were counted whilst the treatment was being carried out. In 2 the number of red cells were increased, in 5 diminished; in 4 cases the white cells were increased and in 3 diminished.

The lupus cases were undoubtedly benefited, all being chronic intractable cases which had resisted all ordinary measures. They have all healed soundly and at the time of writing have not broken down. The patient with tuberculosis of the iris was of great interest as the lesion was in a very vascular part and was open to observation. The specific action of the tuberculin was manifest from the earliest dose and it is regrettable that from the extent of the local reaction the treatment had to be abandoned.

General conclusions.—From a very careful observation of the effects of tuberculin R. given alone in doses as prescribed by Koch and not accompanied by any other treatment on cases of phthisis pulmonalis we are able to announce four cases of complete recovery out of thirteen cases treated. These four cases were the most favourable for treatment, as the disease was localised and the temperatures were not such as to suggest mixed infection. We feel that this result is little if any better than that of ordinary treatment combined with nourishing diet and good hygienic surroundings. In the lupus cases, on the other hand, we feel we have a powerful and useful means of treatment. In cases of phthisis it is evident that even with great care in the regulation of the dosage reactions do occur and the general collapse which followed 1 mg. in Case 5 was most alarming. It is possible that the explanation of this is due to the fact that the solutions of tuberculin R. are not of uniform strength throughout.

Liverpool.

THE TREATMENT OF FIBROMYOMA OF THE UTERUS.

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PERHAPS there is no disease so varied in its manifestations as fibromyoma of the uterus. In one case a tumour is accidentally discovered, which causes no symptoms whatever; in another the patient presents every appearance of having malignant disease and is totally incapacitated for work. Of all the different symptoms which we have to combat hæmorrhage and pain are the most prominent. The former, beginning with a slight menorrhagia and gradually increasing for one or two years until in some cases it attains to a continued metrorrhagia completely exhausting the patient, is very characteristic of this disease. This can hardly be said of the pains, although with these again there is a great difference between the slight discomfort experienced by some and the severe distress complained of by others. Intermittent in character they vary with the size and position of the tumours and the pressure exercised on the nerves and structures within the pelvis and abdomen. The most common of all resembles a labour pain in a minor degree. Produced by the contractions of the uterus it may be regarded as a natural effort of this organ to rid itself of an unwelcome visitor. But it is none the less wearing to the patient and requires the earnest attention of the physician. Besides hæmorrhage and pains we find a variety of other symptoms which are more serious and are produced by the pressure of the tumours on important viscera—viz., irritable bladder and retention of urine, difficulty in defecation from pressure on the rectum, œdema of the lower extremities from pressure on the iliac veins, and loss of power in the legs from pressure on the sacral plexus. The ureters appear able to adapt themselves and nearly always escape. Hydronephrosis from the pressure of a fibroma is rare. Pelvic peritonitis is not uncommon with an effusion of lymph fixing the tumour and obscuring its shape. The uterus itself is always enlarged more or less, sometimes to an enormous size. Certain changes take place in the endometrium. There is generally glandular endometritis present, which may lead to the formation of an adenomatous polypus. In addition to this, whenever a tumour or a portion of it is submucous there is an interstitial as well as glandular endometritis with thick-walled vessels and a greatly dilated capillary network. It is this vascular condition of the endometrium or a polypus which causes the hæmorrhage.

The diagnosis is usually very easy, but occasionally very difficult. The typical case is a single woman between thirty and forty years of age or a married woman who is sterile or has not had children for many years, complaining of increasing menorrhagia and occasional pains in the abdomen. On examination an enlarged hard nodular uterus is easily felt. The diagnosis is then certain. But when there is a large, soft, elastic and semi-fluctuating mass, with the uterus pushed out of position, a difficulty will arise. Perhaps it is impossible to pass the sound and there may be no history of menorrhagia. Even in these cases a correct diagnosis may often be arrived at although the physical signs are nearly the same for a multilocular ovarian tumour. An examination under an anæsthetic should always be done in doubtful cases. If the tumour is ovarian the growth is generally more rapid. The history may show that it started on one side of the pelvis. The uterus is separate instead of forming part of the swelling and not as a rule enlarged. Menorrhagia is not a prominent symptom and the tumour is smoother than most myomata. Just as there are great differences in the size, symptoms and gravity of fibromyoma so also is there great variety in the treatment to be adopted. Each case must be considered on its individual merits. Many cases require no treatment whatever. In the early stages when the only symptom is a

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slight increase in menstruation medicine should be given a fair trial. Of the various drugs used the most valuable in my experience is ergot and the preparation of it which I prefer is the fresh British Pharmacopœia liquid extract given in drachm doses two or three times a day in chloroform water after food. Hydrastis canadensis in my experience is very inferior to ergot, but is worth trying when ergot fails. Nux vomica and quinine are also of some value. Bromide of potassium and Viburnum prunifolium help to restrain the loss and ease the pains. The subcutaneous injection of ergotin I have quite discarded because other measures not more painful, but more efficacious, can be adopted.

After the publication of Dr. Jouin's paper on the Influence of Thyroid Extract on Fibromyoma I gave the drug a fair trial in five cases. Four of these were women of about the age of forty years with old hard fibromata of many years' standing. No appreciable diminution in size followed after a three months' course, but in the fifth case sent to me by Mr. Hildyard Rogers in 1896 there was a distinct reduction in size. The patient, a single woman, aged twenty-five years, had a large hard nodular fibromyoma almost filling the pelvis and dipping down into Douglas's pouch. The cervix was drawn up and pressed against the pubes. She suffered from morning sickness and attacks of retention which had to be relieved with a catheter. These symptoms disappeared after a three months' course of thyroid extract. The tumour distinctly diminished in size. Mr. Hildyard Rogers, in answer to my inquiries, wrote in January, 1898: "I certainly think the tumour has diminished in size and in any case it certainly has not increased and she has been quite free from the troubles which she had before and is in fairly good health." The value of saline aperients in relieving the congestion of the pelvic vessels is not appreciated as much as it should be. A full dose of Rubinat, Hunyadi, or Friedrichshall taken every other day before breakfast so as to produce a watery evacuation gives considerable relief. When, however, the menorrhagia persists and increases in spite of medicines other measures must be considered. If the uterine canal is fairly patent a simple and temporarily efficacious proceeding is to swab it with a probe covered with cotton-wool dipped in liquor ferri perchloridi fortior. I have never seen any harm result from doing this, while the hæmorrhage is always stopped for a time. It very often happens that the probe cannot be passed up without squeezing most of the solution out at the external os. Under these circumstances dilatation becomes necessary and a better result will then follow from the use of the curette. The removal of the diseased endometrium already described produces an abatement of symptoms which will last for some months, but neither in my own practice nor in the practice of others have I ever seen a permanent result follow. The menorrhagia returns and we must either curette again or adopt some other treatment which will produce a more permanent result. When dilatation has been done we may find a small fibroid polypus in the uterine cavity which is the chief cause of the hæmorrhage. This is easily removed with the serre-nœud. But if the tumour is at all large or is sessile or has a very thick pedicle considerable difficulty may be encountered. Very often it is necessary to split the cervix on each side and remove the tumour piecemeal. Unless there is a distinct pedicle it is better to temporise than to attempt enucleation. The fibroma is generally firmly embedded and held by adhesions. The amount of force necessary to drag it out may even cause inversion or rupture the wall of the uterus. There is always profuse hæmorrhage. By waiting and giving ergot or with the help of electricity the tumour will become more extruded and can then be removed with much less risk at a later date. There will always remain a large proportion of cases in which the above measures produce no permanent result. We can then fall back on electricity. About 80 per cent. of all cases can be treated with great benefit, without appreciable risk and without mutilation of the sexual organs and without having to lay up.

It has been urged against electricity that the tumour is not got rid of. If we once admit that some cases having no symptoms require no treatment, this argument falls to the ground because it admits that the presence of the tumour does not matter. The female pelvis, being adapted by nature to contain an enlarged pregnant uterus without interference with the general health, very well tolerates an enlargement from other causes. Although Apostoli's method is now well established it may not be out of place to describe a few severe cases treated by this method. Hæmorrhage can always be stopped if an electrode can be passed. A patient under the care of the late Dr. Edis and one of the first whom I treated came to see me last year. In 1887 she was obliged to take to her bed from continued hæmorrhage in spite of ergotin injections and previous curetting. After thirty applications the loss was reduced to normal. She came to see me in 1897, ten years after the treatment was applied. There has never been any return of the hæmorrhage. In 1895 the menopause ensued and the tumour is now of about half the size and only reaches to the level of the pubes instead of to the umbilicus.

In my last list of cases[1] I described one case where a permanent cessation of hæmorrhage had not followed. This patient came to me subsequently in 1895 and told me that the metrorrhagia had gradually left off; she has since been quite regular. In July, 1894, Sir Francis Laking asked me to see a patient, aged thirty-nine years, with profuse hæmorrhage commencing eighteen months previously. The uterus was enlarged and two small fibromata could be felt in the fundus. She was unable to leave her bed and was so ill and anæmic that her appearance suggested malignant disease. After seven applications the hæmorrhage was stopped. Eighteen applications in all were given and full doses of iron to combat the anæmia. I heard from Dr. Vernon-Jones, who took charge of her with me during the treatment, that she is now (after four years) in excellent health and has had no return of the hæmorrhage. In July, 1896, Dr. Braxton Hicks sent a woman, aged thirty-six years, to me for profuse hæmorrhage. The tumours reached to the umbilicus and also involved the cervix uteri. There were œdema of the ankle and great weakness from the hæmorrhage so that she had to be taken to a nursing home. After five applications the loss was much reduced and she was able to leave the home. Twenty-one applications were given altogether and the loss has been quite regular and normal in quantity since. This patient wrote from the country as follows: "January, 1898: I am very well and wish I could call just to show you the thoroughly satisfactory result of your treatment. It has been a very jolly autumn; life seems such a different thing when one feels perfectly well and strong."

Of all the cases I have treated for hæmorrhage since the publication of my last paper only one has had any return after the treatment. This was a woman, aged thirty years, who came to me in April, 1896, a patient under the care of Dr. R. H. Barkwell. There were two small tumours—one in the fundus and one in the anterior wall. After nineteen applications the loss was reduced to normal, but it began to increase again in a few months. Seven more applications were given, beginning in February, 1897. After a lapse of five months the treatment was then interrupted again for six months on account of a varicose ulcer which laid her up. Now (February, 1898), after twelve more applications, the loss is again normal and I have hopes will remain so. In addition to the arrest of the hæmorrhage by electricity pressure symptoms can also be abolished or relieved in suitable cases. An instance of this was a patient under the care of Mr. Allt of Clapham. She was a single woman, aged thirty-nine years, with a very large tumour reaching up to the ribs. She suffered from severe pains in the abdomen and left leg, with œdema of the ankles, varicose veins and slight menorrhagia. The sound passed 8½ in. She was unable to do any work and had become a chronic invalid. The treatment was commenced in 1897 and after fifteen applications all her symptoms had gone. I saw her in January, 1898; she is now able to work well, all the pains have disappeared, there is no œdema of the ankles, menstruation is quite regular and the loss is normal in quantity. On examination the tumour was reduced by 2 in. in length and very materially in girth. She was delighted with herself and told me that Mr. Allt was also very pleased.

Another patient, a woman aged thirty-five years, had suffered for eighteen months from bladder irritation and repeated attacks of retention of urine and severe pains in the abdomen. The uterus was hard and nodular, reaching half way to the umbilicus. She was admitted into the hospital on Feb. 13th, 1897. After sixteen applications her symptoms had all gone. During my absence from influenza in January, 1898, Dr. Berkeley, physician to out-patients, saw her at the

[1] THE LANCET, Feb. 27th, 1892.

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hospital and found her very well and without any return of the bladder trouble.

In suitable cases with electricity hæmorrhage can be stopped, the pressure symptoms and pain can be got rid of and the tumour reduced in size and this without the patient having to run any appreciable risk or suffer any mutilation of her sexual organs. Some cases are unsuitable—viz.: (1) fibrocystic tumours growing rapidly in young subjects; (2) old hard tumours composed chiefly of fibrous tissue; (3) associated disease of the tubes and ovaries; and (4) very large tumours. With these cases the question of abdominal section must be faced when there are severe or urgent symptoms. I must say that with the help of electricity and other treatment already described I do not often find this necessary.

There are four procedures which can be adopted, according to the case before us—myomectomy, enucleation, castration, and hysterectomy. Myomectomy is only feasible with subperitoneal tumours which have become more or less extruded from the uterine tissue and present some approach to if not a well-defined pedicle. Such cases are uncommon and when they do occur may produce no symptoms. In nearly every case the tumour is embedded in the uterine walls and can only be got out by enucleation if we wish to save the sexual organs. This operation has been chiefly supported by Schröder, but is to a great extent discarded on account of its high mortality, higher even than hysterectomy. The cavity from which the tumour has been dug out very often cannot be properly closed up. There is consequently great difficulty in restraining hæmorrhage, while the accumulation of discharges within the cavity is likely to cause peritonitis. Among practical men the choice in almost every case requiring abdominal section lies between removal of the ovaries and hysterectomy. It is unfortunate that the tumour can rarely be removed without mutilation of the sexual organs. Castration is not always feasible nor are the results always successful. Menstruation may continue and severe hæmorrhage, necessitating further treatment. The risk of the operation in suitable cases is not great. The chief point in operating is not to leave a scrap of ovarian tissue behind and to take the tubes away as well. When it is not possible to remove the ovaries hysterectomy must be done. According to Pozzi the mortality of the leading operators based on over 600 published cases is 21·6 per cent. for the extra-peritoneal operation and 25·7 per cent. for the subperitoneal operation. Since the publication of these statistics the latter operation has been much improved and probably has a lower mortality than the former.

We must, however, bear in mind that hysterectomy still has a higher mortality than any other operation in gynæcology, while it is performed for a disease which if left alone is very rarely fatal and which will in all probability cure itself in middle age. In addition to this it cannot be done without mutilation of the sexual organs. The opinion of one of the greatest surgeons of the century and the most successful in this operation, Thomas Keith, is worth quoting—viz.; "I often ask myself the question, Does a mortality of 8 per cent. justify an operation for a disease that as a rule has only a limited active life, that torments simply, and that only for a time, though of itself it rarely kills? The mortality of an ordinary uterine fibroid if left alone is nothing approaching a death-rate of 8 per cent. I doubt even if the mortality of the extreme cases exceed this. And, after all, the great difficulty is not in doing even the worst of these operations, but in knowing what are the cases in which it is right to advise those who trust themselves to us to run the risk of a dangerous operation with all its attendant miseries. Could we get the mortality down to 5 per cent. in the bad cases—and these only are the fit subjects—then one might advise interference with a more easy mind." These words of wisdom sum up the subject perfectly. I have very often found that the public confused ovariotomy with hysterectomy. In all cases it should be explained that an ovarian cyst is invariably fatal if left, while the operation is not very dangerous, and the sexual organs with one ovary left will continue their functions, whereas a fibromyoma is very rarely fatal if left, while the operation is much more dangerous than ovariotomy, and for a certainty means a mutilation of the sexual organs. If after these facts are made perfectly clear to the patient and she still wishes to undergo hysterectomy when other treatment has failed to relieve her then I think we are justified in performing the operation.

Queen-street, Mayfair, W.

PIPERIDINE AS A URIC ACID SOLVENT: A COMPARATIVE STUDY.

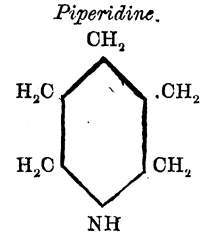
BY F. W. TUNNICLIFFE, M.D., M.R.C.P. LOND.,
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AND
OTTO ROSENHEIM, PH.D., F.C.S.

WE have elsewhere[1] drawn attention to the solubility in water of piperidine urate and to the molecular constitution of this salt.[2] In the first of these papers we stated that experiments were in progress with the object of ascertaining whether this remarkable property of piperidine could be utilised in medicine. This subject must obviously be studied from two points of view—namely, (1) chemical and pharmacological; and (2) clinical. As we have now completed the first part of this research we consider it better to give shortly our results although the second part of the investigation is not at present complete. For the sake of clearness we propose to consider this subject under the following headings: I. Chemistry. II. Conditions which must be fulfilled by any drug to justify its therapeutic use in the uric acid diathesis, including under this head gout. (*A*) Proof of the non-poisonous nature of the drug in doses equivalent to those in which it would have hypothetically to be administered; (*B*) the demonstration of the drug as such in the urine; (*C*) the property of dissolving (*a*) uric acid (on the distal side of the excreting membrane of the kidney), (*b*) urinary sediment,[3] and (*c*) sodium biurate in the blood. Under (*C*) we shall compare the power of piperidine to that of other known uric acid solvents.

I.—CHEMISTRY.

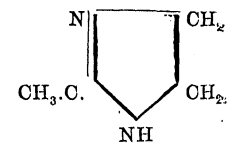
Under this heading it is interesting to note that the structural formulæ of the various uric acid solvents show a certain resemblance. Our research in this connexion has been confined to the following substances, of which we subjoin the structural formulæ;—

Piperidine.



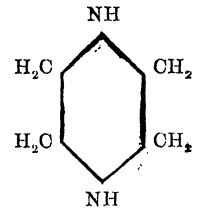
(Pyridine-hexahydrine.)

Lysidine.



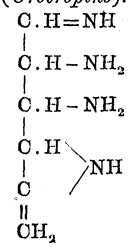
(Methyl-glyoxalidine.)

Piperazine.



(Pyrazine-hexahydrine.)

Hexamethylene Tetramin[4] *(Urotropine).*



This relationship is more apparent in the case of the first three bodies than in that of the fourth. Each, however, of the substances possesses one or more NH (imine) groups

[1] Brit. Med. Jour., Feb. 27th, 1897.
[2] Centralblatt für Physiologie, Band iii., p. 434.
[3] With regard to the chemical nature of the urinary sediment we have not been able to convince ourselves of the existence of the so-called quadriurates. A further discussion here would be beside our purpose.
[4] This formula is the one recently advanced by Georg Cohn (Journal für Praktische Chemie (2), lvi., p. 345, 1897) and seems to accord better with all the known chemical reactions of this substance than the earlier formulæ.

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and further one or more CH_2 groups.[5] The first three are to be regarded as ring compounds; this in the case of the last one is doubtful. The first three may further be regarded as completely (piperidine and piperazine) or partially (lysidine) reduced bases. All four possess basic properties of varying strength. The uric acid solvent power seems to be dependent upon the presence of the NH group, but does not seem directly proportional to the number of these groups. For instance, as we shall subsequently see, piperidine (one NH group) has an incomparably greater solvent power than piperazine (two NH groups), whereas lysidine (also containing one NH group) likewise as a solvent greatly exceeds piperazine (two NH groups) but in certain instances falls short of piperidine. With regard to the constitution of the salts formed by the action of these bases upon uric acid we have more especially studied the piperidine urate. It is formed by the interaction of piperidine and uric acid in molecular proportions in aqueous solution, from which it is precipitated by alcohol and ether as a white crystalline powder. By re-crystallisation from a small volume of water it may be obtained in the shape of well-defined colourless cubes. It is characterised by its solubility in water, which amounts at blood temperature to 9·1 per cent. For further chemical details readers are referred to earlier papers of the authors.[6]

The constitution of lysidine urate is given by Professor Ladenburg[7] as being $C_4H_8N_2$ ($C_5H_4N_4O_3$); that of piperazine urate by Majert and Schmidt[8] as being $C_4N_2H_{10}$ ($C_5H_4N_4O_3$). In the case of urotropine the compound or compounds formed seem to be of a more complicated nature and do not seem as far as we are aware to have been specially studied.[9] Under the circumstances we consider it of interest to briefly describe our own observations in this connexion. If hexamethylene-tetramine be allowed to act upon uric acid in the presence of water a clear solution is obtained at boiling temperature which forms into a transparent gelatinous mass upon cooling. When the compound formed is precipitated from the solution by alcohol and ether or by acetone it forms an opaque gelatinous mass. In both cases filtration is very difficult. When dried at blood temperature or in vacuo it forms a white amorphous powder, which on being dissolved in hot water and subsequently submitted to cooling is precipitated again in the form of a gelatinous mass. When a solution of this substance is evaporated on a water bath formic aldehyde is set free, thus indicating the partial decomposition of the urate. From the above experiments the obvious inference is that hexamethylene-tetramine urate belongs to the class of substances known as colloids. But it was found on submitting the substance to dialysis that it, unlike colloids, dialysed freely and could be re-obtained from the dialysate in a gelatinous form. This colloid-like form of urotropine urate is of interest in connexion with the experiments of Dr. Ord[10] on colloid urates. The dialysability of these latter and their significance with regard to the natural excretion of urates in birds and serpents have already been pointed out by Sir William Roberts.[11]

II.—CONDITIONS WHICH MUST BE FULFILLED BY ANY DRUG TO JUSTIFY ITS THERAPEUTIC USE IN THE URIC ACID DIATHESIS, INCLUDING UNDER THIS HEAD GOUT.

A. Proof of the non-poisonous nature of the drug in doses equivalent to those which would hypothetically be required.—The physiological action of piperidine on the lower animals has been studied by Fliess,[12] A. Heine,[13] A. Gürber,[14] Öchsner de Coninck and Pinet,[15] R. Thielmann,[16] Cushny,[17] Tunnicliffe,[18] and B. Moore and R. Row.[19] These observations, although of extreme interest from a pharmacological standpoint, are not germane to the subject of this paper. As far as we are aware no observations have been recorded with regard to the action of this substance on man. One of us published some results obtained with the guaiacolate of piperidine in phthisis.[20] These patients took as much as 25 grains three times a day, corresponding to 20 grains of piperidine per diem, without any unpleasant effects ensuing. We have also taken ourselves a quantity of the tartrate of piperidine corresponding to 1 gramme (= 15 grains) of piperidine for eight consecutive days without experiencing any symptom. Patients under our care have also taken quantities of the tartrate or carbamate corresponding to from 1 to 1½ grammes (from 15 to 22 grains) of piperidine per diem without any effect. In one case the drug was pushed in order to see what would be the nature of the symptoms corresponding to an overdose. The patient in question took upon an empty stomach at 10 P.M. 15 grains (1 gramme) of the carbamate of piperidine—i.e., 0·7 gramme of piperidine—and repeated this dose at 6 A.M. in the morning also on an empty stomach. About one hour later he experienced a feeling of nausea accompanied by gastric distension. This did not, however, culminate in vomiting. No nervous symptoms of any kind occurred and no diarrhœa. The symptoms soon began to abate and four hours after the second dose had entirely disappeared. This result in man entirely confirms the unpublished results of one of us upon the lower animals, which show that the salts of piperidine in relatively large doses acted as a central emetic, stimulating the vomiting centre in the medulla.[21]

Hypodermic injections in man of carbamate and hydrochlorate of piperidine in quantities corresponding to from 0·1 to 0·3 gramme of piperidine produced no general symptoms whatever, but gave rise to slight local irritation. When, however, the injections were intra-muscular this did not take place. In the early physiological experiments which we made with piperidine we used the hydrochlorate. Subsequently Dr. Schidrowitz drew our attention to, and prepared in a pure form, the salt, which is formed by the action of carbonic acid on piperidine and which is to be regarded as the carbamate. This forms a very serviceable salt and possesses many advantages, of which the relatively high piperidine percentage is perhaps the chief. It occurred, however, to us, in conjunction with Dr. Schidrowitz, that a combination of the diuretic and antacid action of tartaric acid, in combination with the uric acid solvent power of piperidine, would be a distinct desideratum. We therefore prepared the acid tartrate of piperidine, which can be obtained in well-developed crystals. This salt is easily soluble and has a pleasant taste and can be given in doses of 10 grains or more from three to four times a day after meals. The average quantity of uric acid excreted per diem in man is 0·8 g.[22] The theoretical amount to convert this into a soluble form—namely, piperidine urate—is 0·4 gramme piperidine. From experiments which will be detailed later it will be seen that piperidine keeps in solution in urine a little over its own weight of uric acid. Since 1½ grammes of piperidine may be taken per diem without any unpleasant effect ensuing and only about half of this amount is necessary to keep the average diurnal quantity of uric acid in solution, there seems to be a sufficient margin allowed for the quantitative relation between the ingestion and excretion of the drug.

B. The demonstration of the drug as such in the urine.—One of the spheres of action of a uric acid solvent lies on

[5] It is interesting to note that a similar action is exerted also by several alkaloids which contain reduced pyridin = or pyrrolidine = rings—i.e., an NH group in connexion with several CH_2 groups. As examples we may give nicotine, coniine, atropine, &c. For a complete and up-to-date account of the chemistry of these alkaloids see A. Pictet, Constitution des Alcaloids, 1897. That atropine very probably contains a pyrrolidine ring has only been recently shown by R. Willstätter, Berichte der Deutschen Chemischen Gesellschaft, Band xxx., p. 2679.

[6] Centralblatt für Physiologie, Band iii., p. 434. Brit. Med. Jour., Feb. 5th, 1898.

[7] Berichte der Deutschen Chemischen Gesellschaft, Band xxvii., p. 2963.

[8] Ibid., Band xxiii., p. 3718.

[9] The compounds formed by the action of formic aldehyde upon uric acid have been described by Tollens, Weber and Pott (Berichte der Deutschen Chemischen Gesellschaft, Band xxx., p. 2514), and the suggestion made that urotropine acts in a similar way to formic aldehyde. The exact proof of this seems wanting. Recent views with regard to the constitution of urotropine would seem to argue against this hypothesis.

[10] Dr. Ord: On the Influence of Colloids upon Crystalline Form, &c. London, 1879.

[11] Croonian Lectures, 1892, p. 90.

[12] Dubois' Archiv, 1882, p. 111.

[13] Virchow's Archiv, Band cxxii., 1891, Heft 1.

[14] Archiv für Anatomie und Physiologie, 1890.

[15] Comptes Rendus de la Société de Biologie, 1885, p. 613, and 1886, pp. 217, 461.

[16] Dissertation, Marburg, 1896.

[17] Journal of Experimental Medicine, vol. i., p. 202.

[18] Brit. Med. Jour., Jan. 16th, 1896; Centralblatt für Physiologie, Band xi., Heft 25; Journal of the Chemical Society, 1898, p. 145.

[19] Journal of Physiology, vol. xxii., p. 273.

[20] Brit. Med. Jour., Jan. 16th, 1896.

[21] It may be of interest here to note that the emetic action of nicotine, well known to juvenile smokers, is also due to stimulation of the vomiting centre in the medulla and not to a local action on the stomach. Coniine in equivalent quantities has no central emetic action.

[22] Schulze: Pflüger's Archiv, Band xlv., p. 427. Salkowski: Virchow's Archiv, Band cxvii., p. 572.

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the distal side of the kidneys. By the distal side of the kidneys we mean the urine from the point where it leaves the secreting membrane of the kidney to its final evacuation. If any drug, whatever may be its solvent power upon uric acid in the test tube, does not leave the kidneys as such we are not justified in ascribing to it a uric acid solvent power in the urine. The importance of this has been recognised by all workers in this field of research. After a dose by the mouth of piperazine, lysidine, and urotropine the presence of these substances has been demonstrated in the urine.[23] In the case of piperidine we were able to demonstrate the presence of this substance in the urine one hour after a dose of 0·7 gramme (10 grains) of the tartrate. We were also able to demonstrate its presence 4½ hours after this dose. The whole of this amount seemed to be eliminated before the expiration of 48 hours, as at the end of this time we were no longer able to find it in the urine. The method which we used was based upon the property of this substance to form a characteristic well-crystallised compound with potassium-bismuth-iodine solution.[24] 100 c.c. of the urine were made alkaline with potassium hydrate and distilled. From 40 to 50 c.c. of the distillate were acidified with hydrochloric acid and evaporated to dryness on the water-bath. The white residue of the hydrochlorates was extracted with a few c.c. of absolute alcohol in which the hydrochlorate of piperidine is easily soluble. To the warm concentrated alcoholic extract a few drops of potassium-bismuth-iodine solution were added. Upon cooling the piperidine compound crystallised out and could be easily identified under the microscope by the characteristic form of the crystals. By slow crystallisation large, thin, transparent yellow hexagonal plates were obtained, which were occasionally superposed. When the crystallisation was allowed to take place more rapidly smaller crystals of the same kind were obtained. These results were controlled in two ways. First by the fact that normal urine treated as described above with bismuth-potassium-iodine solution gave no such crystals. Secondly, by the fact that urine to which piperidine had been added in the proportion of 0·1 per cent. showed under similar treatment crystals identical with those which were obtained from the urine after the administration of the piperidine by the mouth. We are not at present able to state the exact quantitative relation which exists between the amount of piperidine ingested and the amount excreted. We are, however, in connexion with our clinical researches, directing our attention to this subject.

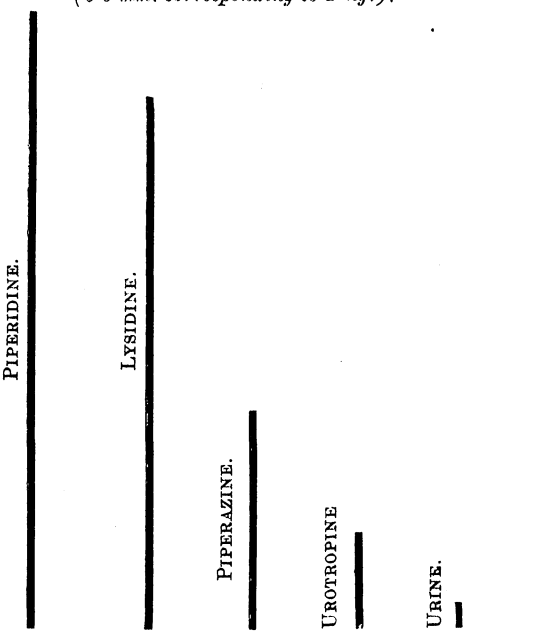
C. The property of the drug of dissolving (a) uric acid on the distal side of the excreting membrane of the kidney.—In order to test this point a set of experiments was made in which the amount of uric acid was estimated which was kept in solution by a certain amount of the drug in a certain quantity of urine. In each case the dissolving mixture consisted of 100 c.c. of mixed normal human urine, 0·5 gramme of pure uric acid[25] and 0·2 gramme of the solvent. The mixtures were placed in an incubator for six hours at blood temperature and frequently shaken. After that time the undissolved uric acid was filtered off and the uric acid estimated in the filtrate by our own method.[26] Three simultaneous experiments were made in each case and the average was taken. The drugs used were: piperidine, lysidine, piperazine, and urotropine. A set of control experiments was made simultaneously. The solvent mixture in this case consisted of a 100 c.c. of the mixed urine and 0·5 gramme of uric acid. The mixed urine used for these experiments had the following properties: specific gravity (15° C.), 1·0204; acidity,[27] 2·7; mineral matter, 1·4 per cent.; and uric acid, 0·0636 per cent. The results of these experiments are best shown by the following table.

TABLE I.—*Showing the Influence of 0·2 per cent. of certain Bases on the Solvent Power of Urine for Uric Acid.*

Quantity of urine.	Quantity of solvent.	Solvent used.	Quantity of added uric acid.	Quantity of uric acid kept in solution.	Original quantity of uric acid in the urine.	Quantity of uric acid kept in solution over and above that originally present.	Solvent power in terms of	
							Urine.	Urotropine.
100 c.c.	0·2 g.	Piperidine.	0·5 g.	0·2273 g.	0·0636 g.	0·1637 g.	38·1	6·5
,,	,,	Lysidine.	,,	0·2065 g.	,,	0·1429 g.	33·2	5·7
,,	,,	Piperazine.	,,	0·1216 g.	,,	0·0580 g.	13·5	2·3
,,	,,	Urotropine.	,,	0·0886 g.	,,	0·0250 g.	5·8	1·0
,,	—	—	,,	0·0679 g.	,,	0·0043 g	1·0	—

Quantities of solids expressed in grammes.

Graphic Representation of the Results expressed in Table I. (0·5 mm. corresponding to 1 mg.).



The property of the drug of dissolving (b) urinary sediment.—As urinary sediments consist of a mixture of uric acid and urates in varying proportions it is obvious that the results obtained above with pure uric acid are not strictly applicable to urinary sediment as it exists in man. We therefore next directed our attention to this point and proceeded as follows. A large quantity of urine possessing deposits of uric acid and urates was collected from different patients in St. Bartholomew's Hospital. Ten litres of urine were so collected and kept preserved by the addition of a few drops of chloroform or a crystal of thymol.[28] Eight litres were filtered and the deposit was rinsed into the remaining two litres by means of the same urine. The resulting liquid was well shaken and had the following characteristics: specific gravity (at 15° C.), 1·0146; acidity, 1·96; mineral matter, 0·68 per cent.; total uric acid, 0·1267 per cent.; and uric acid in solution, 0·0326 per cent. Five sets of experiments were made with this urine artificially saturated with natural sediments, each set consisting of three experiments. The solvent mixture consisted in each case of 0·1 gramme of the respective drug and 100 c.c. of the urine. One set of experiments were controls consisting of the urine alone. In order to ensure an even dissemination of the sediment the

[23] Piperazine: Berichte der Deutschen Chemischen Gesellschaft, Band xxiv., p. 3237. Brit. Med. Jour., June 16th, 1894. Lysidine: Berichte der Deutschen Chemischen Gesellschaft, Band xxviii., p. 3068. Urotropine: Deutsche Medicinische Wochenschrift, Band xxi., p. 541.

[24] Cf. Kraut: Liebig's Annalen, Band ccx., p. 310, where also the quantitative composition of the reagent is given, which was found to be more sensitive for this purpose than Drachendorf's reagent (vide also Berichte der Deutschen Chemischen Gesellschaft, Band xxix., p. 2065).

[25] For the preparation of uric acid the pure commercial product was further purified by Bensch's method (Liebig's Annalen, Band liv., pp. 190–193) through the potassium salt or in some cases through the piperidine salt.

[26] Loc. cit. In cases where the quantity of uric acid to be determined is very small we found it advantageous to use a $\frac{1}{10}$ normal piperidine solution, 1 c.c. of which corresponds to 0·00336 gramme of uric acid. When using so sensitive a solution the error produced by the slightly acid reaction of filter paper or distilled water must be taken in regard. This error was estimated once for all for a certain size of filter paper and the amount of water used by means of comparative experiments. The amount required for the correction was 0·12 c.c. of a $\frac{1}{10}$ normal piperidine solution. For the estimations a normal pipette was used, which allowed the reading 0·01 c.c.

[27] The acidity in this paper is always expressed as the number of c.c. of $\frac{1}{10}$ normal KOH solution required to neutralise 10 c.c. of the urine, using phenolphtalein as an indicator.

[28] Our first idea was to use formic aldehyde for this purpose, as it possesses very great disinfecting powers in minute quantities. It has, however, a marked solvent action on uric acid and in order to eliminate this source of error we used chloroform or thymol.

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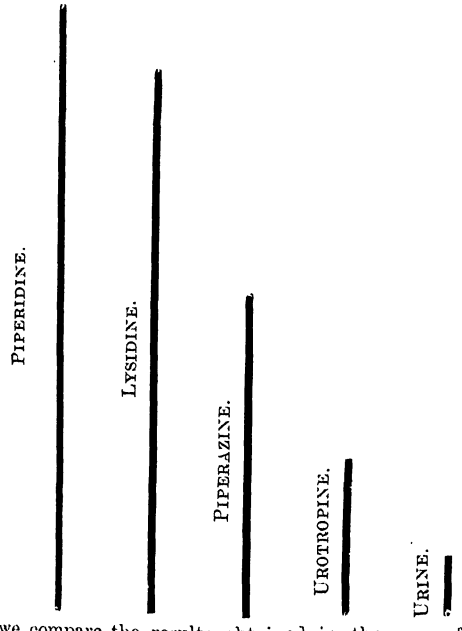
stock of urine was kept constantly stirred while the necessary quantities were measured out by a pipette. The solvent mixtures were kept in the incubator for 2½ hours at blood temperature and were then left to stand in a cool place for 24 hours. After that time they were filtered and the uric acid kept in solution was estimated as before.

TABLE II.—*Showing the Influence of 1 per cent. of certain Bases on the Solvent Power of Urine for Urinary Sediments.*

Quantity of urine.	Quantity of solvent.	Solvent used.	Quantity of uric acid kept in solution.	Original quantity of uric acid kept in solution by urine.	Quantity of uric acid kept in solution over and above that originally present.	Solvent power in terms of Urine.	Solvent power in terms of Urotropine.
100 c.c.	0·1 g.	Piperidine.	0·1113 g.	0·0326 g.	0·0787 g.	10·8	3·6
,,	,,	Lysidine.	0·1047 g.	,,	0·0721 g.	9·9	3·2
,,	,,	Piperazine.	0·0741 g.	,,	0·0415 g.	5·7	1·8
,,	,,	Urotropine.	0·0547 g.	,,	0·0221 g.	3 0	1·0
,,	—	—	0·0399 g.	,,	0·0073 g.	1·0	—

Quantities of solids expressed in grammes.

Graphic Representation of the Results expressed in Table II. (1 mm. corresponding to 1 mg.).



If we compare the results obtained in the case of pure uric acid added to urine with those in which natural urinary sediment was used we shall see that the quantity dissolved by piperidine and lysidine in the latter case is exactly the same as in the former, taking in consideration the fact that in the former case double the quantity of solvent was used. In both cases the solvent power exerted by piperidine and lysidine is greatly in excess of that exerted by piperazine and urotropine. The only difference between the two sets of results is that in the case of urinary sediments the solvent powers of the urine, piperazine, and urotropine were relatively to piperidine and lysidine greater than in the case of uric acid. The results are further of interest in that they show that the solvent power of piperidine and lysidine is directly proportional to the amounts used even in relatively dilute solutions. Since the urinary sediment consisted of uric acid and urates it appears from these experiments that piperidine and lysidine exert a solvent power upon such a mixture in the presence of urine equivalent to that which they exert upon pure uric acid. In the case of piperazine and urotropine this action seems greater in the case of the mixture than in that of pure uric acid.

The property of the drug of dissolving (a) sodium biurate in the blood.—For the purpose of studying this question we prepared according to Sir William Roberts's directions a so-called standard solvent which contains in 100 c.c. distilled water 0·5 gramme sodium chloride and 0·2 gramme sodium bicarbonate. According to Sir William Roberts this solvent behaves towards sodium biurate exactly the same as blood serum.[29] The solvent power of the standard solvent upon sodium biurate was estimated by Sir William Roberts and is given as probably 1 in 10,000. No details are, however, described of the experiments which led to this conclusion. From experiments made by Dr. Luff[30] it appears, however, that sodium biurate is soluble in unaltered serum to the extent of 1 part in 20,000 (0·05 gramme in 1000). From this it is obvious that there is a very considerable difference between the solubility of sodium biurate in standard solvent as calculated by Sir William Roberts and its solubility in serum as ascertained by Dr. Luff. This discrepancy made us consider it worth while to test the solvent power of both these media upon sodium biurate before studying the effect of the addition of small quantities of certain bases in this direction. We shall first direct our attention to the standard solvent.

The solubility of sodium biurate in standard solvent.[31]—In determining the solubility in standard solvent of so relatively insoluble a salt as sodium biurate it is obvious, temperature being constant (38° C.), that two factors of considerable importance are time and volume. With regard to time the longer the exposure the more dissolved up to a certain limit. With regard to volume the relation is not so simple and depends upon the extent to which by means of agitation fresh layers of the solvent can be brought into contact with the substance to be dissolved. As we convinced ourselves by preliminary qualitative experiments that the solubility of sodium biurate in standard solvent is very small indeed we, in accordance with ordinary physical method, took relatively large quantities (500 c.c.) of the solvent.[32] Five separate sets of experiments were made. The first consisted in taking 4 flasks containing 500 c.c. of standard solvent each, adding to each 0·1 gramme of pure sodium biurate and keeping in the incubator at blood temperature under frequent agitation for twenty hours. The contents of each flask was then filtered in the incubator through three thicknesses of filter paper. The uric acid was estimated in the measured filtrates by evaporating them down on a water bath, precipitating and titrating by the ordinary method. The second series of experiments were made at another time and with a standard solvent taken from a different stock and were two in number. In these experiments the final titration of the uric acid was made against a $\frac{1}{50}$ normal piperidine solution (instead of $\frac{1}{20}$ normal), the other conditions being exactly the same as described above. In the third set the time of exposure was five hours, the final titration was made against a $\frac{1}{50}$ normal piperidine solution, the other conditions remaining the same. In the fourth set the time of exposure was twenty hours, the volume of standard solvent 100 c.c., the other conditions remaining the same. Four experiments were made simultaneously, which were repeated at another time and with a standard solvent from a different stock with exactly the same result.

TABLE III.—*Showing the Solubility of Sodium Biurate in Standard Solvent.*

Number of set.	Quantity of standard solvent.	Time of exposure.	Uric acid kept in solution.	Calculated as sodium biurate.	Solubility.
				Per 1000 c.c.	
1	500 c.c.	20 hours.	0·0038 g.	0·0086 g.	1 in 116,000
2	500 c.c.	20 hours.	0·0038 g.		
3	500 c.c.	5 hours.	0·0030 g.	0·0068 g.	1 in 146,000
4	100 c.c	20 hours.	0·0071 g.	0·0769 g.	1 in 13,000
5	100 c.c.	20 hours.	0·0066 g.		

Quantities of solids expressed in grammes.

[29] Croonian Lectures, 1892, pp. 73–83.

[30] Brit. Med. Jour., April 10th, 1897, p. 905.

[31] In order to make our results comparable to those of Sir William Roberts we prepared the sodium biurate according to his directions. Croonian Lecture, 1892, p. 73.

[32] When smaller quantities of the solvent were taken and the amount dissolved expressed in terms of the amount of solvent required to dissolve unity of the salt a much higher solubility was obtained. This explains itself, if we remember that in making any uric acid estimation an experimental error of 1 mg. or more might easily occur, which, taking, for instance, a solubility of 1 in 100,000 and as quantity of solvent used 25 c.c. is multiplied 4000 times when calculating on the unit.

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According to the above observations the solubility of sodium biurate for 20 hours varies from 1 in 13,000 to 1 in 116,000 according to the quantity of the standard solvent. In, however, estimating the influence of drugs upon the solubility of sodium biurate in standard solvent we shall take as our standard the solubility of sodium biurate as found when working with the same volume and for the same time as in the experiments in order to make the results with drugs comparable *inter se*.

Influence of certain bases on the solubility of sodium biurate in standard solvent.—Sir William Roberts states that piperazine has no influence whatever on the solvent power of serum (and, *sic*, of standard solvent) on sodium biurate.[33] We may say at once that this does not correspond with our own observations. As will be seen below we find that it does exert an influence in the direction of increasing the solvent power of standard solvent and serum for sodium biurate. In this instance Sir William Roberts attempted to precipitate the sodium biurate dissolved with hydrochloric acid and got no result. It thus appears that he was unable to precipitate by means of hydrochloric acid both the sodium biurate taken up by standard solvent alone (which according to him amounts to 1 in 10,000) and also that taken up by standard solvent plus piperazine. From these experiments he came to the conclusion that piperazine had no influence "whatever" in increasing the solvent power of standard solvent for sodium biurate. The method of precipitation used by Sir William Roberts for his quantitative estimation is, however, inadequate.[34] Smale[35] has recently shown that sodium chloride in the proportion of 0·2 per cent. and upwards exerts a powerful inhibitory influence on the precipitation of uric acid by means of hydrochloric acid. As standard solvent and blood serum both contain about 0·7 per cent. sodium salts, which are by the addition of hydrochloric acid converted into chlorides, it is evident that by hydrochloric acid a complete precipitation of the uric acid in these media is not to be expected. No such objection holds for the precipitation by ammonium chloride.[36] Our comparative results with regard to the influence of the bases in question are best shown by the following table. Five experiments were done with each base and the average of the numbers (which were nearly all identical) was taken.

TABLE IV.—*Showing the Influence of 0·1 per cent. of certain Bases on the Solvent Power of Standard Solvent for Sodium Biurate.*

Quantity of standard solvent.	Quantity of solvent.	Solvent used.	Quantity of sodium biurate dissolved.	Solubility (in round numbers).	Solubility in terms of standard solvent.
100 c.c.	0·1 g.	Piperidine.	0·0306 g.	1 in 3300	4·0
,,	,,	Urotropine.	0·0149 g.	1 in 6700	1·9
,,	,,	Piperazine.	0·0117 g.	1 in 8600	1·6
,,	,,	Lysidine.	0·0102 g.	1 in 9800	1·3
,,	,,	Lithiumcitrat.	0·0082 g.	1 in 12200	1·1
,,	—	—	0·0077 g.	1 in 13000	1·0

Quantities of solids expressed in grammes.

Having considered the solubility of sodium biurate in standard solvent under different conditions we will now proceed to give our results in regard to blood serum.

Solubility of sodium biurate in blood serum.—For the purpose of our experiments we used bullock's serum, of which we obtained from different animals a total quantity of 2½ litres. This quantity formed our common stock, and all the experiments described below were made with it. After filtration through a Berkefeld filter under pressure[37] it was a perfectly transparent pinkish yellow fluid and had the following characteristics: specific gravity (at 15°C.), 1·0269; inorganic substances, 0·84 per cent.; chlorine, 0·30 per cent.; and alkalinity (expressed as NaOH),[38] 0·26 per cent. As will be seen from the table given below (compiled from Bunge's "Physiological Chemistry") the composition of the serum used very nearly approximated the average. The

Graphic Representation of the Results expressed in Table IV. (2 mm. corresponding to 1 mg.).



slight difference between it and human serum justifies us in concluding that the results which we obtained with this serum are applicable to human serum.

TABLE V.—*Showing the Composition of Serum.*

—	Pig.	Bullock.	Man.
	Per cent.	Per cent.	Per cent.
Inorganic substances	0·77	0·79	0·85
Chlorine	0·36	0·37	0·35
Specific gravity	—	—	1·0292

Before applying the method which we described above for the estimation of uric acid in the various fluids we dealt with to blood serum we thought it wise to study the effects of the necessary manipulations on normal serum. An additional reason for making these control experiments consists in the possibility of the serum originally containing some uric acid. From the results of previous workers in this field[39] there seems little doubt that uric acid is normally present in blood but in very minute quantities. As will be seen from our result below we have succeeded in making a quantitative estimation of the uric acid normally present in bullock's serum. For this purpose we took 100 c.c. of the serum and saturated it with ammonium chloride. After filtration and washing with saturated ammonium chloride solution the residue on the filter was well rinsed with hot distilled water into a small glass basin. A slightly turbid liquid was thus obtained to which hydrochloric acid was added in slight excess. On evaporating gently on a water-bath to a small bulk a flocculent white substance appeared, which we regard as a globuline-like body, precipitated by ammonium chloride, further re-dissolved by hydrochloric acid in excess and subsequently re-precipitated by concentration. After two hours' standing in the cold the precipitate was collected on a small filter and carefully freed from hydrochloric acid by washing with water. The completely neutral residue was then rinsed with hot water into a small flask and titrated with $\frac{1}{10}$ normal piperidine. It was found that the piperidine solution had no dissolving influence on the globuline-like body and only 0·08 of the $\frac{1}{10}$ normal piperidine solution corresponding to 0·00029 per cent. of uric acid was required to produce the colour reaction with phenolphtalein (taking regard of the error mentioned on page 200). We are inclined to regard this figure as actually corresponding to the amount of uric acid originally present in the serum. Whether this is the case or not it is obvious that it

[33] Croonian Lectures, 1892, p. 136.

[34] That uric acid cannot be completely precipitated from urine by hydrochloric acid was shown by Salkowsky (Pflüger's Archiv, Band cox., 1872). See also Bunge: Physiologische Chemie, 1894.

[35] Centralblatt für Physiologie, Band ix., p. 388.

[36] Cf. O. Folin: Zeitschrift für Physiologische Chemie, Band xxiv., p. 224.

[37] For the filtering of the serum we are indebted to Mr. Bokenham.

[38] The alkalinity was estimated by titrating with $\frac{1}{10}$ normal acid until a reaction was obtained with Congo paper.

[39] Compare Gamgee: Textbook of the Physiological Chemistry of the Animal Body. Abeles: Harnsaüre im Blute, &c., Medicinische Jahrbücher, 1887, p. 479.

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must be substracted from our future estimations of the amount of uric acid taken up by this serum under varying conditions.

As till quite recently permanganate of potash was the most usual agent against which uric acid was titrated we thought it would be of interest to see what results would be obtained when normal serum was treated as above and finally titrated against permanganate. It was to be expected that a substance such as the globuline body described above would be partially or completely oxidised by a permanganate solution. From this it would result that a larger amount of permanganate solution would be required when uric acid is titrated in the presence of this substance and that the number calculated from that amount would not represent the actual uric acid alone, but the uric acid and other oxidisable substances. It has been confirmed recently by O. Folin[40] that the uric-acid-permanganate coefficient (1 c.c. $\frac{1}{10}$ normal permanganate = 0·003759 uric acid), although purely empirical, is for pure uric acid constant, but is evidently no longer so in the presence of other substances oxidisable by the permanganate. Our results entirely confirmed this *à priori* reasoning. It was found that the residue obtained in exactly the same way as described above from normal serum when titrated with a $\frac{1}{10}$ normal permanganate solution wanted 1·39 c.c. $\frac{1}{10}$ normal. Permanganate solution = 0·0052 per cent. uric acid. The permanganate solution was standardised immediately before use against pure iron and against the same pure uric acid used for controlling the $\frac{1}{10}$ normal piperidine solution. For this pure acid the figures obtained by permanganate and piperidine solution were absolutely the same. It follows from these results that the extraordinary high number calculated from the amount of permanganate required does really correspond to the uric acid present in the serum (which was found to be 0·00029 per cent. with the piperidine method).

We next turned our attention to determining the solubility of sodium biurate in our serum. 200 c.c. of serum were taken and the solubility estimated as described before was found to be 1 in 60,000 (twenty hours).[41]

Influence of certain bases on the solubility of sodium biurate in serum.—The experiments were made in exactly the same way as described above, serum being substituted for standard solvent, and are best shown in the following table.

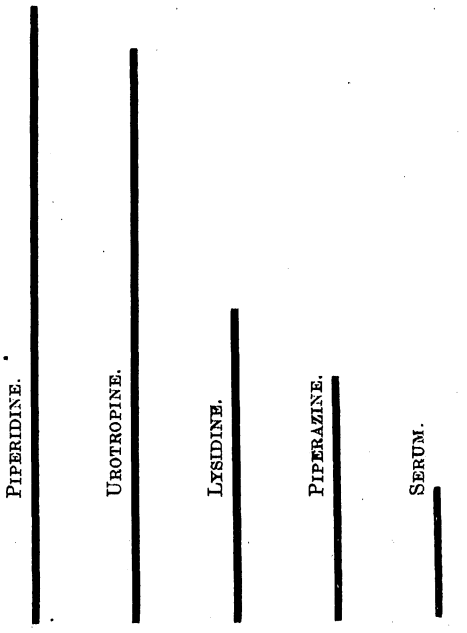
TABLE VI.—*Showing the Influence of certain Bases on the Solubility of Sodium Biurate in Serum.*

Quantity of serum used.	Quantity of solvent.	Solvent used.	Quantity of sodium biurate dissolved.	Solubility (in round numbers).	Solubility in terms of serum.
100 c.c.	0·1 g.	Piperidine.	0·0081 g.	1 in 12,000	4·7
,,	,,	Urotropine.	0·0076 g.	1 in 14,000	4·5
,,	,,	Lysidine.	0·0041 g.	1 in 25,000	2·4
,,	,,	Piperazine.	0·0032 g.	1 in 31,000	1·9
,,	—	—	0·0017 g.	1 in 60,000	1·0

Quantities of solids expressed in grammes.

It will be seen from the above tables that the solvent power of the bases in question is in direct proportion to the solubility of their respective urates in distilled water in the case of urine and urinary sediments, but not so in that of standard solvent and serum. This result we are unable to explain. The physical state of the urates formed, if formed at all, will probably have an influence *per se*. In a complicated fluid like serum the relative strength of the base would also be a potent factor in determining the formation of a urate. A further point to be noted is that the behaviours of standard solvent and serum are by no means identical and that results obtained by the one medium are not applicable to the other and any further experiments which are made in this direction should be made with serum.[42]

Graphic Representation of the Results expressed in Table VI. (10 mm. corresponding to 1 mg.).



CONCLUSIONS.

1. Tartrate of piperidine may be safely given to man in doses of 15 gr. (1 gramme) three times a day or oftener in uric acid gravel and in gout.[43]

2. Taking all the conditions into account this substance is preferable to any other drug up to the present introduced for this purpose, having the additional advantage of being sufficiently cheap to render it within the reach of everyone.

3. Lysidine, piperazine, urotropine all have an influence in increasing the solvent power of serum for sodium biurate and urine for uratic deposit in varying proportions, but to a less extent than piperidine.[44]

In this paper we have made no attempt to examine the *modus operandi* of the so-called uric acid solvents. This subject we shall return to later. Our experiments, so far as they have gone in this direction, have tended to show that all these substances diminish the total amount of uric acid excreted but not the total amount of nitrogen. This fact has led us to the opinion that these substances have a double action in that they, although capable of acting as uric acid solvents, also exert an influence upon metabolism. The close relationship between the constitution of uric acid and xanthin bases, as recently emphasised by the researches of E. Fischer,[45] renders it possible that under the influence of these reducing agents (to which class uric acid solvents mostly belong) uric acid is in the body transformed into xanthin or its immediate allies. This reduction has recently been accomplished in the laboratory with the help of formic acid (chloroform and potassium hydrate).[46]

[40] Zeitschrift für Physiologische Chemie, Band xxiv., p. 224.

[41] This solubility is probably too high, as 200 c.c. is, for reasons explained in a former note (see page 19), too small a quantity of solvent to take. In this connexion we made some estimations and found the solubility apparently considerably increased when small quantities were taken; for instance, the solubility when taking 25 c.c. agreed approximately with that ascribed to it by Dr. Luff (who also worked with 25 c.c.).

[42] This result is of interest, being another instance of the impossibility of obtaining artificially a fluid with the physiological properties of serum.

[43] This substance, at the suggestion of the writers, is now being made on a commercial scale by Messrs. J. Turner and Co., Queensferry, Flintshire.

[44] We should like to express our indebtedness to Dr. D. Ross for the careful and exact manner in which he has helped us in the large number of experiments which were necessary. Some further details of method will probably be published in a thesis upon which he at present is engaged.

[45] Berichte der Deutschen Chemischen Gesellschaft, Band xxx., p. 2226.

[46] E. Sundwick: Zeitschrift für Physiologische Chemie, Band xxiii., p. 416.

SEWAGE DISPOSAL AT MONMOUTH.—At the meeting of the Monmouth Town Council held on July 4th it was decided to treat the town sewage by the septic tank method, known as the "Exeter system."

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NOTES ON A CASE OF

PURULENT CEREBRAL MENINGITIS OF AURAL ORIGIN WITH PECULIAR SYMPTOMS.

BY ADOLPH BRONNER, M.D.,

SURGEON TO THE BRADFORD EYE AND EAR HOSPITAL; LARYNGOLOGIST TO BRADFORD ROYAL INFIRMARY.

THE patient, a lad aged sixteen years, saw me on March 27th, 1898. He had had discharge off and on from both ears since childhood. Six months previously he received a severe blow on the left side of the head and had had pain in the head ever since. A few weeks before I saw him he put a plug of cotton-wool into the left ear and could not remove it. On March 20th he had severe pain in the ear and a swelling appeared behind the ear. Dr. Graham was called in, who removed the cotton-wool and the pain and swelling soon subsided. On the 25th the temperature suddenly rose to 104° F. and on the 26th to 105°. There was a slight rigor. When I saw the patient he seemed rather flushed but was perfectly rational, and with the exception of slight pain in the head and left ear he felt quite well. The pulse, however, was only 54 and the temperature was 100·5°. The patient was put to bed and the pulse and temperature remained about the same till March 30th, when the temperature suddenly rose to 104·5°. The following day it rose to 105°. A soft swelling now appeared behind the left ear and on pressure pus escaped into the external auditory meatus. The left optic disc appeared to be slightly congested. The following day the mastoid cells and attic were opened. The cells were not visibly affected, but the attic contained some caseous matter and débris and its upper wall was rough. The temperature now fell, but on the second day it rose to 105°. The left optic disc became more congested, but there were no signs of papillitis. The pulse varied from 60 to 80. On April 4th the incision behind the ear was prolonged and the cerebral fossa was opened with the chisel from the attic upwards. There was no, or very slight, bulging of the dura mater. Macewen's pus searcher was introduced into the brain, but no pus could be found. The lateral sinus was exposed and found to be normal. The temperature still remained high but gradually fell to 100° on April 13th. It then gradually rose to 102° on the 16th. On the 18th it was again nearly normal and remained so, or subnormal, till death on April 25th. The pulse varied from 60 to 70. On April 7th most peculiar symptoms set in. Slight left facial paralysis was noticed, and aphasia became apparent on the 8th. This increased for 4 days and gradually disappeared. On the 11th the patient had two epileptiform attacks, more marked on the left side of the body. The next day there was well-marked anæsthesia of the left arm up to the elbow, which subsided in two days. On the 18th late at night short epileptiform attacks set in and continued at intervals of from five to ten minutes till the next afternoon.

I am indebted to Dr. Eurich for the following description of the attacks. The jaw moved to the left with a grinding action. The pupils were dilated widely and the eyes were turned to the left, when they twitched in a nystagmus-like manner. Then the frontalis went into clonic contraction on both sides. Subsequently the whole of the left facial region twitched and the eyes were now turned to the right. There was slight laryngeal spasm which ended in sobbing. When these clonic spasms had subsided the patient turned to the right and with an effort raised himself into a sitting position with marked inclination to the right while the right arm was extended out of bed and the left arm was raised. He then sank back into bed; the head was retracted and the back was slightly arched. During the whole fit he was unconscious. He passed fæces and urine involuntarily. All these symptoms seemed to definitely point to pressure on the posterior end of the inferior frontal convolution of the right side. On April 19th a large trephine opening was made about one and a half inches above the right external auditory meatus. There was no pulsation. The dura mater was opened and a large quantity of extremely fœtid pus escaped. The next day the patient became very restless and irritable. He gradually became comatose and died on April 25th.

On post-mortem examination the space between the dura mater and the surface of both sides of the brain was so extensively filled with thick, partly gelatinous, pus that the convolutions were nowhere visible except at the very tip of the occipital lobes. The surface of the brain was rough and irregular. On taking out the brain the pus was found to have involved the base as far back as the apex of the interpeduncular space, including the sheaths of the first to the sixth nerves. All the sinuses appeared to be healthy. There was a small subpial abscess of the size of a marble in communication with the subdural collection of pus and implicating the outer and inner aspects of the left frontal lobe just anterior to the tip of the temporo-sphenoidal lobe.

This case is interesting from many points of view. The fact that the pus extended over both sides of the brain is in itself a not very common occurrence. Some of the symptoms did not point to purulent meningitis and other symptoms which one would have expected were absent. The pulse was slow at the beginning, only from 54 to 60, and varied from 50 to 80 during the course of the illness; only once or twice was it more than 80. The patient was never restless or irritable until a few days before death. Aphasia is a most unusual symptom and was evidently due to a small local abscess in connexion with the meningitis. The patient never vomited, yet sickness is said to be one of the most common symptoms in these cases. The deep and extensive lesion of the cerebral cortex did not cause the numerous and grave symptoms which one would have expected.

Bradford.

A CASE OF PRIMARY SUPPURATION OF BOTH SUPRARENAL GLANDS.

BY W. JANOWSKI, M.D.,

CHIEF OF THE MEDICAL SERVICE IN THE INFANT JESUS HOSPITAL IN WARSAW.

THE patient whose case is now described was a married woman, twenty-five years of age, and was admitted into the hospital under my care on March 4th, 1898. She had passed through small-pox, typhus fever, and diphtheria in childhood. The present symptoms were of three weeks' duration and commenced suddenly with violent shivering fits, which were repeated for several days. She also suffered from severe pain in the back under the right ribs and still had it when she entered the hospital; it was always severe and it spread towards the right side of the posterior and lateral surface of the chest wall and towards the right upper extremity. She was of average size and nutrition and was seven months' pregnant. Her skin was dry, yellowish in colour, and cold, as the fatigue of coming to the hospital had brought on collapse; her conjunctivæ also were faintly yellow. Her pulse was regular, but very weak, and 120 per minute; her respirations were 48 per minute. Her skin was swollen over the spine and seemed to be swollen at the lower part of the right side of the chest wall; it was very painful on the slightest touch both between the ribs and above them, so that she could not lie on her right side. The left lung showed nothing abnormal, but the lower anterior limit of the right lung was on the fourth rib, and the breath sounds were weak. The cardiac dulness was normal. The abdomen was moderately distended. The liver and the spleen could not be felt. The urine was of a very dark-brown colour, suggesting the presence of bile pigment, but no bile pigment, blood, albumin, or sugar could be detected on analysis; it was acid, had a specific gravity of 1022, and did not contain any deposit; the ordinary pigment gave a very dark-coloured reaction with Heller's nitric acid test. The symptoms pointed to paranephritis purulenta dextra; subdiaphragmatic abscess was negatived by an exploratory puncture. On March 5th the patient's state was much the same. During the previous night she had had shivering fits, with a temperature of 39·3° C. (102·8° F.); her pulse was 150 per minute and very weak; the heart-sounds were very feeble. After a consultation with Dr. Krajewski, who agreed in the diagnosis, a long incision was made in the right lumbar region and with some difficulty a collection of fœtid pus amounting to about 100 c.c. (3½ fl. oz.) was discovered

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around the upper part of the right kidney between the capsule of the kidney and the surrounding fat. The patient's temperature ten hours after the evacuation of the pus was 39·8° C. (103·6° F.). She miscarried on March 6th and died an hour afterwards.

The post-mortem examination, made on March 7th by Professor Przewoski, showed no evidence of disease anywhere except in the suprarenal glands. Both these organs had suppurated and there remained of them only somewhat large capsules full of very offensive yellowish-green pus, in which there floated small necrotic, nearly black remains of adenoid tissue. The left kidney and the left paranephrium were quite normal, the abscess which remained in place of its supra-renal gland being entirely encapsulated. On the right side the capsule was adherent to the lower surface of the liver, but it was found on section that the pus had not penetrated into the tissues of the liver. The capsule of the abscess was not perforated on its lower surface either by the pathological process or by the surgeon during the operation, so that the suppurative infiltration round the anterior surface of the upper half of the right kidney was separated from the suppurated right suprarenal capsule by a membrane 0·5 mm. ($\frac{1}{50}$ in.) thick. The right kidney presented no other pathological process than a slight interstitial nephritis. The uterus was of the size of a child's head; its inner surface was quite healthy. A bacteriological examination of the pus was not made, but the omission was of no consequence as the identification of any particular bacteria could not have explained the formation of the abscesses. The conclusion is therefore inevitable that the case was one of primary suppuration of both suprarenal glands, and in this lies its principal interest, because such instances are very rare. At least, Neusser in his monograph on the diseases of the suprarenal gland remarks that primary unilateral or bilateral abscesses of the suprarenal gland are said to have been seen "in exceptional cases."[1] There is no proof that loss of one suprarenal gland is necessarily fatal provided that a normal one is left, but the destruction of both the suprarenal glands in this case must have caused the patient's death under any circumstances, for life would be impossible in the absence of both suprarenal glands since they have a very important function in connexion with the regulation of the blood-pressure. The extraordinary weakness of the pulse and of the first sound of the heart in this case exceeded anything that I had previously observed and I think that it might have been caused not only by the action of bacterial toxins on the organism but by the localisation of the pathological process in the suprarenal glands. The very dark-brown colour of the urine may have depended not only on an excessive amount of urine pigment but perhaps also on the presence of hæmoporphyrine, &c. Uromelanine has been found to occur in Addison's disease.[2] Perhaps the presence of the three above-mentioned symptoms may in future enable suppuration of the suprarenal glands to be diagnosed before an operation is performed.

Warsaw.

[1] **Neusser: Nothnagel's Specielle Pathologie und Therapie. Vol. xviii., Part 3, Erkrankungen der Nebenniere, p. 9.**

[2] **Neusser: loc. cit., p. 56.**

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual general meeting of this society was held on July 15th, Mr. T. G. Alderton, treasurer, being in the chair in the unavoidable absence of the President, Mr. H. P. Potter. The annual report and balance-sheet were presented and adopted. The society has now a membership of 498 and is about to enter much larger and more commodious quarters necessitated by its continued growth. The President's retiring address was read by the senior secretary, Dr. F. J. McCann, and was entitled Some Observations on Old Age. Votes of thanks to the retiring officers of the society were duly passed and the following were elected to fill the offices for the ensuing year, 1898–1899:—President: Dr. S. D. Clippingdale. Vice-presidents: Dr. Lamb, Mr. A. G. Wells, Mr. C. M. Tuke, and Mr. L. A. Bidwell. Council: Mr. F. Lawrance, Mr. Herbert Menzies, Dr. Seymour Taylor, Dr. Elliot, Dr. F. H. Low, Dr. J. Harper, Mr. C. Andrews, Mr. Neville Wood, Dr. F. J. McCann, Mr. F. R. Mallard, Dr. G. P. Shuter, and Mr. F. Savery. Treasurer: Mr. T. Gunton Alderton. Secretaries: Mr. McAdam Eccles and Dr. G. D. Robinson. Librarian: Mr. C. B. Keetley. Editor of Journal: Mr. H. Percy Dunn. Editorial Secretary of Journal: Mr. McAdam Eccles.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF GENU RECURVATUM WITH TALIPES VARUS AND SPINA BIFIDA.

BY JOHN B. O. RICHARDS, L.R.C.P., L.R.C.S. EDIN.

THIS case came under my notice in December, 1897. On Dec. 7th I was called to see a newly-born child as "its legs were not right." The child had been born about 2 hours when I saw her. The nurse in attendance informed me that it was a breech presentation and that there had been no difficulty in delivery. The legs were extended on the thighs at an acute angle, there was no movement whatever at the knee-joint nor could any patella be made out. The joints had the appearance of the flexor surface being in front. The feet were in a condition of extreme varus, the soles facing inwards. Spina bifida existed in the lumbar region, the tumour having a broad, thick base and being covered by membrane only. There was no exudation of spinal fluid and the tumour felt quite tense. Things remained thus till the 10th, when there was escape of spinal fluid and the tumour began to slough. On the 15th there was constant discharge of fluid and sloughing had gone on rapidly. The child was twice convulsed. The fits increased in number till the 19th, when death took place. During the whole period there was no increase in movement at the knee-joints. There was no pain during pregnancy except at the fifth month, when the mother had a fall from a dogcart. She attributes the deformity to this accident. From what I could learn from the nurse there was no excess of amniotic fluid. All the other children, 4 in number, are quite healthy and free from any deformity. The parents refused to allow a post-mortem examination of the joints to be made.

Binbrook, Market Rasen.

A CASE OF SUPRAPUBIC LITHOTOMY.

BY ANTONIUS J. MANASSEH, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, a boy, aged four years, was admitted to the Friends Mission Hospital suffering much pain during and after the act of micturition; he frequently passed urine in the day, had incontinence of urine at night, and was noticed to be constantly handling his penis. His prepuce was elongated. Chloroform having been administered and the bladder sounded the presence and size of a calculus was ascertained by this method and by introducing the finger into the rectum. On June 4th suprapubic lithotomy was performed under chloroform and ether, all preliminary antiseptic precautions having been taken. The bladder was injected with 3 oz. of warm boric acid lotion and a metal catheter was left in as a guide to the bladder. No rectal bag was used. An incision 2½ in. in length was made in the abdominal wall close above the pubes and as soon as the bladder was recognised a sharp hook was passed through its muscular coat and two silk stitches were introduced, one on each side of the middle line. The partially distended bladder was opened with a scalpel, the calculus was sought for and removed, and the bladder was then washed out with boric acid lotion and closed with catgut sutures. The abdominal wound was united with interrupted sutures, and a small indiarubber tube was introduced at the lower end of the wound and just beneath the skin but was removed after twelve hours, a soft catheter passed through the urethra being left in the bladder. The patient suffered very little from the after effects of the operation. He vomited once or twice after being removed to the ward, but passed a good night lying on his back. Next morning the soft catheter was removed and the patient was encouraged to pass urine every hour or two, which he gradually did with ease. On the seventh day after the operation the stitches were removed; the wound then looked healthy, primary union occurred, the patient made a speedy recovery, and was discharged on June 21st, 1898, quite well.

The above case illustrates the advantage of suprapubic

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lithotomy for children. It is not only an easy operation but also free from the risk of wounding important parts. I found the metal catheter a great help to guide me in opening the bladder.

Brumana, Beyrout, Syria.

A CASE OF PELVIC CELLULITIS IN THE MALE.

BY JOHN HUGH REES, M.D. EDIN.,
AND
CHARLES TANFIELD VACHELL, M.D. LOND.

A MAN, aged forty-three years, had been ailing for a fortnight or more, but was first seen by Dr. Rees on Oct. 31st, 1897, and although the symptoms were not characteristic it was thought that the case would prove to be one of mild enteric fever and the patient's diet was prescribed accordingly. The tongue was thickly coated, constipation was persistent and each night there was profuse perspiration; no typhoid spots were noticed. On Nov. 5th the Clinical Research Association reported as follows upon a specimen of the blood: "This serum gives a very marked reaction when in a strength of 50 per cent.; when the serum is used in a strength of 5 per cent. a fairly definite but not complete reaction is obtained within half an hour; after twenty-four hours reaction is still more marked; we should think on the whole that the case is enteric if you are able[1] to eliminate the possibility of a previous attack." On the 20th the temperature, which had been gradually falling since the 12th, became subnormal and continued at or about the normal line until the 27th, when the patient was allowed to get up. At once the temperature rose again until on the 30th it had reached 103° F. Constipation still continued and hard masses of scybala were daily removed by enemata. With rest in bed the temperature quickly declined and became normal on Dec. 13th. On the 19th he got up again; on the next day the temperature again rose and on the 24th was 104°. It was once more normal on Jan. 10th, 1898. On the 16th he was allowed to get up, but on the 17th the temperature again rose and though he was kept in bed on strictly milk diet he was very ill and on the 25th he was seized with severe pain in the lower part of the abdomen, which lasted for 12 hours, the temperature rising to 104°. Constipation was severe, hard scybalous masses being removed with considerable difficulty by means of enemata. The temperature fell to normal on the 31st. On the 29th there was some difficulty in micturition, the flow also stopping suddenly at times; there was tenderness over the bladder region and also much flatulent distention of the abdomen. Scybala were passed daily, being sometimes accompanied with mucus. There appeared on the abdomen spots which had some resemblance to rose spots, but were probably sudamina. On Feb. 6th and 7th the temperature rose to 100° and on the 8th a rectal examination revealed the existence of a large, hard, nodulated, irregular tumour projecting from and filling the recto-vesical pouch. On the 9th Mr. Watson Cheyne saw the patient in consultation. The tumour was examined under chloroform, but no definite diagnosis was arrived at. He was ordered complete rest, aperients, daily enemata, and iodide of potassium, with solid food. On the 19th the swelling had distinctly become smaller and the patient became much more comfortable. The sweats lessened and by the end of the first week in March the tumour had almost disappeared. From this time convalescence was uninterrupted.

[1] There was no history of a previous attack.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the Directors of this society was held on July 13th, Mr. Christopher Heath, Vice-president, being in the chair. Two members were elected and the death of Mr. Henry Lee, Vice-president, was announced. The death of a widow was reported who had been in receipt of grants since January, 1868, and had received in all £893. It was resolved to distribute £1203 10*s.* among the 49 widows and 12 orphans on the books of the society and the 6 recipients from the Copeland Fund. The expenses of the quarter were £44 13*s.* 6*d.* The funded property had been increased by the purchase of £500 Birmingham Corporation Stock.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

ST. MARY'S HOSPITAL.

THREE CASES OF EXTENSIVE VENOUS THROMBOSIS ASSOCIATED WITH SEVERE RHEUMATIC CARDITIS; NECROPSIES.

(Under the care of Dr. W. B. CHEADLE and Dr. D. B. LEES.)

FOR the notes of the cases and the pathological and bacteriological investigations we are indebted to Dr. F. John Poynton, medical registrar to the hospital.

CASE 1.—A girl, aged nineteen years, was admitted into St. Mary's Hospital, under the care of Dr. Lees, for shortness of breath and swelling of the arms and legs. In January, 1897, she had suffered from a very severe attack of rheumatic fever for which she had been kept in bed for thirteen weeks and during this time she was reported to have had both pneumonia and peritonitis. The history of this present illness dated from August, 1897, when the patient noticed swelling of the legs and abdomen; in September, however, there was decided improvement. In the first week in October the symptoms again became more urgent and a few days before admission to hospital the left arm suddenly commenced to swell. On admission, on Oct. 19th, her condition was extremely grave. She was very pale and distressed. The conjunctivæ were icteric and there was orthopnœa. The temperature was subnormal and remained so throughout the illness. The legs and thighs were œdematous. The left arm and hand were much swollen and the face was puffy; the right upper extremity pitted on pressure and the upper part of the chest was œdematous. The cardiac condition was that of advanced organic disease. The pulse was 90 and very irregular in force and frequency. Not all the beats of the heart were perceptible at the wrist. The impulse was diffuse and the heart was much and generally dilated. A systolic apical murmur was heard and an accentuated pulmonary second sound. The air entry and percussion note were impaired at both bases posteriorly. The liver was large and tender and the urine contained some albumin and was loaded with urates. For the next few days there was some slight improvement, but at midnight on Oct. 31st the patient became aphasic, the right hand appeared to be weak, and the right leg was kept semi-flexed. Deviation of the head and eyes did not occur. The patient appeared to understand what was said, but she gradually became more and more drowsy. Then followed loss of sphincter control, difficulty in swallowing, coma, and finally death.

Necropsy.—Dr. Poynton made a post-mortem examination twenty-four hours after death. He found that the pericardium was totally adherent, in places firmly and in other parts only feebly so. Both auricular appendices were compressed by the pericardium and round the large vessels the pericardial and mediastinal tissues were œdematous. The heart weighed 16 oz. and the cavities were dilated, especially that of the right ventricle. The mitral orifice was slightly narrowed by old rheumatic endocarditis, but the valve deformity was quite moderate. The aortic valve was incompetent from previous rheumatic endocarditis. The tricuspid valve was incompetent but there were no rheumatic changes in this valve. The pulmonary valve was natural. The right auricle was empty. The left ventricle was 1¼ in. thick. The muscle was firm and of good colour. Both lungs were adherent to the chest wall. Both internal jugular veins were like firm cords and contained adherent clot throughout their entire extent. The lower end of the left internal jugular was white and narrowed and very firm. Both venæ innominatæ contained adherent clot and the left one could hardly be recognised among the œdematous tissue of the mediastinum. The upper part of the superior vena cava contained clot which was firmly adherent to one side of the

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vein wall but did not occlude the entire lumen or project into the auricle. There was no clot in the inferior vena cava. The brain was generally softened but no local change or change in any particular vessels was found. The liver showed advanced nutmeg changes due to tricuspid incompetence. The kidneys were indurated from chronic venous congestion.

CASE 2.—A young woman, aged twenty-one years, was admitted to the hospital under the care of Dr. Cheadle on Feb. 9th, 1898. When a child she had suffered from an attack of scarlet fever which was followed shortly afterwards by an attack of rheumatic fever. Two years ago she suffered from a second attack of rheumatic fever. This present illness began gradually with weakness, increasing dyspnœa, and œdema of the face and legs. On admission to hospital the patient was very ill, the face was puffy, and she was very anæmic. The temperature was 101°F., the pulse averaged 128 and the respirations 28. The legs pitted on pressure. The pulse was regular and of low tension; the heart was dilated. On auscultation a loud systolic murmur was heard all over the front and back of the chest; the impulse was diffuse and a systolic thrill could be felt. Bronchitic sounds were heard over both lungs. Neither the liver nor the spleen could be felt below the costal arch. The urine contained albumin, blood and some tube casts, and the specific gravity was 1020. During the next week there was marked dilatation of the heart, with irregular pyrexia, free sweating, and decided increase in the œdema and dyspnœa. On Feb. 18th the liver and spleen could both be felt below the costal margin. The urine was scanty and contained albumin and blood, but no more casts were found in spite of repeated and careful search. One special feature of this case was a frequent and harassing cough, for which there was no apparent explanation. On the 21st there was complaint of pain in the wrists and left forearm, the face was more puffy and the conjunctivæ were icteric; the pain in the forearm was localised to the inner side over the region of the flexor carpi ulnaris and palmaris longus; this area was very tender, but there was no local redness. During the next week there was distinct improvement and the heart became smaller, but this was not maintained and in the first fortnight of March the pyrexia, which had been persistent, became more marked and more irregular. The pulse was now irregular and there was orthopnœa, with attacks of severe dyspnœa. On March 17th sudden pain was felt in the left loin and more blood appeared in the urine. The left lung was dull at the base and over a considerable area tubular breathing was heard. The face, which had become almost free from œdema, now again became puffy, especially upon the left side. On the 19th some casts were again found in the urine together with blood, the heart was very dilated, and the patient was moribund. She died on March 20th.

Necropsy.—A post-mortem examination was made by Dr. Poynton on March 21st. The pericardium contained a slight excess of clear fluid, but there was no definite pericarditis. The heart weighed 14 oz. All the cavities were much dilated; in addition there was distinct hypertrophy of both ventricles and of the left auricle. The muscle was pale. The mitral orifice was slightly larger than natural, as also was the tricuspid. There were numerous exuberant granulations on the mitral valve and a portion of the anterior cusp was free, the chordæ tendineæ attaching it to the papillary muscle having ulcerated and given way. Vegetations had also spread along the anterior wall of the left auricle upon the inner surface. On the wall of the left ventricle below the mitral valve were a few isolated vegetations. The tricuspid, aortic, and pulmonary valves were not affected. The lower lobe of the left lung was solid with pneumonic change; the right lower lobe was extremely congested but did not sink in water. The spleen weighed 8 oz. and there were two infarcts within it, one of which was quite recent. The liver weighed 44 oz. and was fatty. Each kidney weighed 6 oz. and contained one infarct; the capsule of each was thickened but not adherent; the cortex was pale. In the left internal jugular vein was a clot extending from the junction with the left subclavian to the angle of the jaw. This was pale and adherent to the wall, especially in the lower part, where the vein was cord-like. The innominate veins and right jugular were not thrombosed nor were the inferior vena cava and its larger tributaries. The brain appeared to be quite natural.

Microscopical examination.—Dr. Poynton is indebted to Mr. Brincker, post-mortem assistant at the time, for much assistance with the microscopic work. The pericardium showed in the visceral layer some early inflammation. The heart muscle had lost striation considerably and most of the fibres showed pigmented perinuclear granules. The mitral valve was much affected by inflammation, but we were unable to demonstrate micro-organisms in the granulations. Sections of the left internal jugular vein showed an organising thrombus, but micro-organisms could not be demonstrated in the vein wall, which was not distinctly thickened. No organisms were found in the clot. Sections of the right internal jugular, which was not thrombosed, appeared to be natural. The left lung was pneumonic and numerous diplococci were demonstrated by Gram's method. The kidneys showed no sign of interstitial inflammation from any old-standing nephritis. In the neighbourhood of the infarcts there were hæmorrhages in the substance, and the renal epithelium showed much cloudy swelling, but otherwise nothing remarkable was observed.

CASE 3.—A girl, aged nine years, was admitted to the hospital under the care of Dr. Cheadle on Feb. 19th, 1898, for swelling of the body and limbs and collapse. Two years previously she had suffered from an attack of scarlet fever, since which time the heart had been affected. There was a marked rheumatic history upon the father's side. The mother unfortunately was addicted to alcoholism, so that it was not possible to obtain a careful description of the onset of the present illness. The child had been ailing for three weeks with pain in the chest and cough, and during the last week dropsy was noticed. On admission to hospital the patient was very pale and the face was œdematous, the expression being distressed. There were slight cyanosis and orthopnœa. The temperature was 97·4° F., the pulse averaged 100, and the respirations 30. The fingers were clubbed, the lower extremities were œdematous, and the front of the chest pitted on pressure. The abdomen contained some fluid. The pulse was irregular, weak and small. The heart was much enlarged; the left limit was four finger-breadths external to the left nipple and the right limit was three finger-breadths external to the right margin of the sternum. There were marked epigastric pulsation, præcordial bulging, and a systolic and diastolic thrill. At the apex a systolic murmur was heard and over the aortic cartilage systolic and diastolic murmurs were audible. There was also a doubtful pericardial scratching sound heard to the left of the sternum. The air entry was impaired over the bases of both lungs and there were scattered rhonchi and sibili over both the front and the back of the chest. The appetite was good, though the tongue was furred. The urine was acid, the specific gravity being 1025; it contained albumin and blood, but no casts. The liver was enlarged and pulsating. The child slept with her face turned towards the pillow. After admission to hospital the œdema gradually subsided and the blood in the urine disappeared. Steady improvement was maintained until March 10th, when pleural friction was heard in the left axilla and there was distinct dulness on percussion at the left base. The urine contained a trace of blood, but there was not any rise of temperature. After this outbreak there was again improvement, the œdema disappeared, the liver became smaller, and the signs in the left pleural cavity cleared up. On April 10th there was once more pain in the left side and also dulness at both bases. The axillary glands were noticed to be enlarged. The heart was more dilated and the action was feebler; the liver also had increased in size. On the 13th the left side of the face became swollen and on the 16th there was marked œdema of the right side of the neck, the face was purple, and the eyelids and lips were swollen. Both sides of the neck were tense and tender on the least pressure. Movement of the neck was painful. The temperature was subnormal; there was no swelling of the legs or ascites. Dr. Cheadle saw the child and diagnosed thrombosis of the internal jugular veins. On the 17th the right arm began to swell. Mr. Willcox, a medical clerk at St. Mary's Hospital, kindly took a photograph of the patient, of which Fig. 1 is a reproduction. Mr. A. L. Saunders, demonstrator of anatomy at St. Mary's Hospital, subsequently made a sketch (Fig. 2) from the dissection of the thrombosed veins. Shortly after the right arm had become swollen the left arm began to swell. The chest was œdematous. The child was very apathetic and took food badly. On the 18th she was very drowsy and apathetic and the face was cyanosed. At midday there was sudden dyspnœa and two attacks of great restlessness occurred. The extremities became cold and the pulse at the wrist was imperceptible;

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there was much suffering. On the 19th the œdema of the right arm was extreme and there was tenderness on pressure, but the face was less swollen. The respiration was slow and sighing. On the 20th two firm cords were felt in

FIG. 1.



Reproduction of a photograph of a patient, aged nine years, with thrombosis of the large veins of the neck. The face, especially the lips, neck, and front of the chest are swollen and the right arm has commenced to become œdematous.

the lower part of the neck. The legs and feet were a little swollen. The area of cardiac dulness was now enormous and there was loud general pericardial friction. Sharp crepitations were heard over both lungs. The urine was scanty; it

FIG. 2.

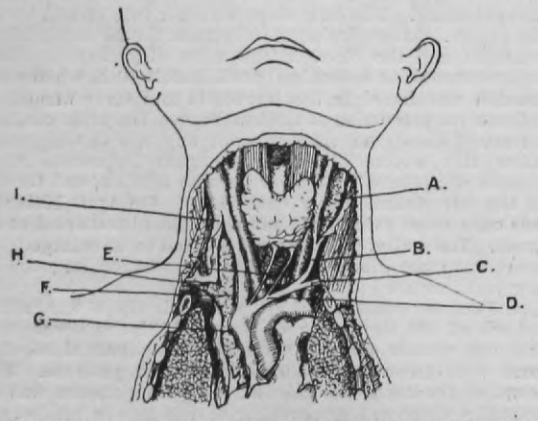


Illustration representing thrombosis of the veins, reproduced from a sketch by Mr. A. L. Saunders. A, Soft clot in the distended left internal jugular vein. B, The narrowed firm portion of the internal jugular vein. C, Left subclavian vein. D, Left innominate vein. E, Inferior thyroid vein. F, Right innominate vein. G, Superior vena cava. H, Right subclavian vein. I, Right internal jugular vein. All the veins were thrombosed. The external jugular veins are not shown.

contained a trace of albumin and no blood. Food was refused. Death took place on the 21st.

Necropsy.—A post-mortem examination was performed by Dr. Poynton on Feb. 22nd. There was great difficulty in obtaining permission and the cranial cavity was not opened. The pericardium contained between 4½ oz. and 5 oz. of turbid fluid and the surfaces were coated with recent lymph. All the cavities of the heart were dilated. Both ventricles were hypertrophied, the right proportionately more than the left. The mitral orifice was incompetent, the valve segments and chordæ tendineæ were thickened, and in addition along the cusps were some recent vegetations. The tricuspid orifice was incompetent and along the cusps were recent vegetations. The auricles were dilated, but the right auricle was empty. The aortic valves were thickened and incompetent and beaded with recent vegetations. The pulmonary valves were natural. The following veins were thrombosed: the right innominate, subclavian, axillary, internal and external jugulars—the last only in the lower part of its course; the left internal jugular, external jugular, inferior thyroid, axillary, subclavian and innominate. In its upper two-thirds the superior vena cava was thrombosed. Looking into it from the auricle a pale, soft clot could be seen, not adherent, blocking completely the lumen of the vessel; higher up the clot was quite firm. Both internal jugulars felt like firm cords in their lower part and were white and small, whereas in the upper part they were bulged with soft clot. The left innominate was small and white and only admitted a small probe. The veins were more adherent to the surrounding tissues than usual. Fig. 2 represents the appearance found post mortem. Though more extensive it is quite comparable to the condition found in Case 1, but there was no pericardial adhesion or obliteration of auricular appendices as in the latter. The inferior vena cava and its tributaries were natural. Unfortunately, whether as in the first case the brain was œdematous could not be ascertained nor whether the lateral sinuses were thrombosed. It is, however, certain that the clotting did not begin in these sinuses, for the further the distance from them the older was the thrombosis in the jugular veins. Nodules were present on the dorsum of the right foot and in the scalp. The remaining organs showed the usual secondary changes from advanced morbus cordis. There was no evidence of infarction.

Microscopical and bacteriological examination by Dr. POYNTON.—Cultivations from the pericardial fluid, lymph, and blood-clot were negative, as also were films made from the pericardial fluid and blood-clot. The conditions of the heart wall and pericardium are of interest because they represented the condition of a very acute rheumatic carditis. As regards the pericardium the vessels in the subserous areolar tissue of the visceral layer were extremely congested and the areolar tissue surrounding them was much swollen and hyaline in appearance. The superficial connective tissue layer contained numerous inflammatory cells, and, finally, there was an adherent layer of lymph, the serous epithelium having disappeared. The same process could be traced throughout the heart wall along the course of the vessels; there were the same swelling of the connective tissue supporting them and the same inflammatory cell exudation—this could be traced between the muscle fasciculi—and the capillaries between the fibres were dilated. Immediately beneath the pericardium the process was quite distinct and there was loss of striation, but no gross change was apparent in these superficial layers as compared with the deeper. The muscle fibres, with their nutrition altered thus and supplied by blood probably toxic with the rheumatic poison, must necessarily have suffered throughout the heart wall. Sections taken through a papillary muscle, with its chordæ and a part of the mitral valve, showed very markedly this interstitial inflammation. The soft clot in the superior vena cava was hardened and sections were cut, but no organisms were discovered. A series of sections were made from the right brachial vein to the axillary, from a region not thrombosed to a region definitely so. Sections of the vein showed the clot gradually permeated by spindle and round cells, with formation of a network, the adhesion of the clot to the vein wall, first at one place, then at several, by means of branches spreading in from the intima, and finally the formation of canals lined with spindle cells. In these sections the vein wall was not noticeably thickened, but as the thrombus became more firmly attached there was evidence of early phlebo-sclerosis. Doubtless the lowest portion of the internal jugulars would have shown this process more markedly. No micro-organisms were found either in the clot or vein wall. A section from the left brachial showed a small adherent

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thrombus at one point, slightly diminishing the lumen of the vessel.

Remarks by Dr. POYNTON.—Owing to the detail in the description of the cases given above it seems advisable to briefly review them, as they are unquestionably of different value. Case 1 is incomplete—clinically because the patient was such a short time under observation and pathologically because, ignorant of the rarity of the condition, which fact was first pointed out to me by Dr. Cheadle, I made no minute observations. Case 2 is an unusual one, resembling very closely malignant endocarditis. It is included with the other two because no micro-organisms were found upon the valves and more especially because, the etiology of acute rheumatism being still obscure, the exact place which malignant endocarditis must take in relation to it must still be uncertain. Having pointed out the gradual onset, the continued pyrexia, the sweating, infarction, and ulceration of the chordæ tendineæ, it is left open to challenge as to whether or not the condition is comparable to that of the other two cases. Case 3 is by far the most complete, for the diagnosis was made some days before death and the symptoms were accordingly studied with more precision. The remarkable similarity in the distribution of the thrombosis in Cases 1 and 3 has been alluded to earlier in this article.

In a comprehensive paper by Gatay on *La Phlébite Rheumatismale*[1] two views are put forward in explanation of the thrombosis. One is that of Schmidt, who considered the thrombosis primary, and the other is that of Letulle and Gatay, who considered a rheumatic phlebitis to be the first event. Confining my attention solely to the cases mentioned above, it seems to me impossible, so long as the exact etiology of rheumatic fever is obscure, to decide which process was the initial one. It is certain that the blood-current was feeble, for the heart muscle was distinctly affected in two cases, and in all there was much organic disease with tricuspid incompetence; the blood was altered, for there was profound anæmia, and both these conditions predispose to thrombosis. On the other hand, the veins most affected were veins in which the circulation was aided by gravity, especially as there was orthopnœa, though where the thrombosis was most advanced the vertical current in the jugulars meets a more or less cross current in the subclavians. Again, in two cases there was active carditis, which suggests the possibility of phlebitis, and in one case there was periphlebitis. Changes in the vein wall would rapidly follow a primary thrombosis and apart from the periphlebitis the changes found were not in favour of a primary phlebitis. That such poisons as snake venom produce a "ferment thrombosis" is well known and it is possible, on the other hand, that a weakened circulation may intensify the effect of the rheumatic poison and thus cause inflammation in structures such as the veins, which are more rarely affected. So much, in fact, depends upon the exact nature of the rheumatic process that in such complicated cases as these are it seems hazardous to dogmatise.

The duration of the thrombosis is a point which has considerable practical interest. The changes in the axillary vein described above pointed to a duration of at least eight days and the condition in the jugulars was of considerably longer standing. Now in both the cases under observation for some weeks there was varying œdema of the face, noted from the time of admission, which is not common in cardiac disease. Again, sections of one vein showed in some places clot adherent in one place only, whilst elsewhere the lumen was free. These facts point to the possibility of a gradual thrombosis having occurred during a period of weeks, with exacerbations when the disease flared up, and at last the final standstill. Œdema of the face, which is more commonly observed in the advanced morbus cordis of children, may in some of the cases, perhaps, depend upon the occurrence of a partial thrombosis of this kind.

The diagnosis may not be quite easy. In Case 3 Dr. Cheadle pointed out the close resemblance in the appearance of the neck to severe parotitis and to angina from severe throat affections. Again, when there are blood and albumin in the urine the œdema and pallor of the face are very suggestive of Bright's disease. The distinctive features are the local appearance and spread of the œdema, the marked tenderness, and the extreme swelling and pain on moving the head in the severe cases. The feeling of the firm cords in the neck is convincing, but not an easy observation because of the danger of any but the lightest manipulation, and also the tenderness and the rigidity of the inner heads of the sterno-mastoids. Mental apathy is a remarkable symptom. The prognosis of these cases, apart from the thromboses, is exceedingly grave, and that they introduce an additional element is shown by the occurrence of aphasia and a gradual coma in the first case and sudden dyspnœa and pulselessness in the second. The treatment must necessarily be considered from the view of the general condition present, and great care in moving the patient is necessary where there is this additional complication.

Thrombosis in rheumatism is quite one of the rarer features of this disease. Dr. Archibald Garrod in his treatise on Rheumatism makes a very definite allusion to it and quotes the researches of Schmidt and Letulle upon the condition. Dr. Cheadle mentioned to me other cases he had met with. Gatay in his paper in 1896 describes two cases with necropsies; one (Macaigne and Laurens's case) showed small-celled infiltration of each coat of the vein and desquamation of the endothelium followed by an inflammatory change in the vessel wall. Bacteriological results were negative. In this case thrombus was found in the brachial, axillary, and subclavian veins. Renouard noted difficulty in turning the neck in one case. Gatay states that it can attack the veins of the neck, but it is exceptional for it to start in the jugulars. One case is quoted where a thrombus was found in the external jugular only. Macaigne and Laurens noted in their case the heavy mental state. Petechiæ, erythemata, and fever are pointed out as occurring simultaneously with the thrombosis and the veins may be arborescent in the neighbourhood. It would appear from the literature on the subject that the veins of the extremities, especially the lower extremities, are most frequently affected. Two of the cases recorded above certainly appear to be quite remarkable both in their similarity and the great extent of the thrombosis.

In conclusion, I must thank Dr. Cheadle and Dr. Lees for most kindly allowing me free use of the clinical notes. I must also thank Mr. Plimmer, bacteriologist to the hospital, for suggestions and advice in the microscopic work; Mr. A. L. Saunders for the sketch of the thrombosed veins; Mr. Willcox for the photograph of one of the patients; and Mr. Brincker for help with the microscopy in one of the cases.

[1] La Gazette Hebdomadaire de Médecine et de Chirurgie, February, 1896.

Reviews and Notices of Books.

Sir Benjamin Collins Brodie. By TIMOTHY HOLMES, M.A. Cantab., F.R.C.S. Eng. Masters of Medicine Series. 8vo. London: T. Fisher Unwin. 1898. 3*s.* 6*d.*

THE newest volume of the Masters of Medicine Series from the pen of Mr. Holmes describes in a clear, pleasant, and scholarly book Sir Benjamin Collins Brodie's career of unbroken success. Brodie was of ancient Scotch lineage, but his grandfather came south in the early half of the eighteenth century, having been involved, probably, in Jacobite plottings, Brodie's father, Peter, was a *protégé* of the first Lord Holland, in accordance with the terms of whose will he became rector of Winterslow in Wiltshire. Benjamin, the subject of Mr. Holmes's biography, was the third son of the rector of Winterslow by his marriage with Sarah, the daughter of Benjamin Collins, the Salisbury printer and banker, who published and was part proprietor of the copyright of the "Vicar of Wakefield." He was born in 1784 and brought up at home very strictly, receiving the sound classical education which would be expected from the character of his forbears. In 1801 he came to London to Abernethy's School of Anatomy, and in 1803 he joined the St. George's Hospital Medical School in the character of Sir Everard Home's pupil. His choice of profession seems to have been dictated by family reasons and not at all by any personal proclivity. Dr. Denman—father of the Lord Chief Justice—was his uncle by marriage; Dr. Baillie, nephew of the great John Hunter, and Sir Richard Croft, the leading accoucheur of the day, had married his cousins; while Sir Everard Home as Hunter's brother-in-law was a connexion. At St. George's

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Hospital Brodie worked hard at literature and physiology as well as anatomy and surgery, and kept carefully written notes of the cases under his staff-surgeon's charge—not at that time a usual proceeding. In 1805 he became house-surgeon. This post he held for six months, resigning it to lecture in anatomy at the Great Windmill-street School. Three years later, when only twenty-five years of age, he was elected assistant surgeon to St. George's Hospital under the style of "Assistant to Sir Everard Home," for in those days there were no assistant surgeons, or assistant physicians so-called, and the present out-patient difficulty was unknown. From this time he went on from strength to strength. In 1809 he set up in private practice with almost immediate success. In 1810 he was elected a Fellow of the Royal Society for his practical work on embryology, and in 1811 he received the Copley Medal of the Society, being the youngest Fellow who had ever received the award. In 1812 he began to work systematically at the great topic with which his name will always be associated as a surgical writer—the diseases of joints. Mr. Holmes considers that it was Brodie's "chief achievement as a surgeon that he threw so clear a light on that most important, because most common, class of diseases"; and that in this way most notably his "surgical labours tended to benefit humanity and to shed a light on the true interests of life (*inlustrans commoda vitæ*)." Before Brodie's work the whole subject of the diseases of joints was treated in an illogical manner; curable diseases were mixed in the surgeon's mind with incurable, and no clear line was drawn between the conditions dependent upon real pathological changes and those which are generally styled hysterical. It was into this sort of chaos that Brodie introduced order. We do not attempt to trace Brodie's career step by step, because we hope that all our readers will go to Mr. Holmes's book for the details of the very interesting story of the life of this master of medicine—Lord Lister's great predecessor in the double character of eminent surgeon and President of the Royal Society. No great surgeon, save only, perhaps, Sir Astley Cooper, has ever bulked so largely in the public eye as Sir Benjamin Brodie and in reading Mr. Holmes's book we can see the reason for this. Brodie was an eminently sane and safe man, who had reached his conspicuous place in the world by methods which were not only creditable to his genius but comprehensible to the public. His science was the straightforward exemplification of the best surgical work of his day. While ready to accept developments and while showing that he was capable of initiating them, he remained respectful to precedent. There was nothing mystical about him and nothing slap-dash. His industry was undoubted and his scholarship respectable. To the medical profession he was a very tower of strength, so high did he stand in the opinion of the outside world as the great surgeon, the President of the Royal Society, the friend of princes, the gentleman by birth and manners but no less the self-made man by work.

"The only physicians," says Mr. Holmes concerning Brodie's Presidency of the Royal Society, "who have been thought worthy of this great distinction were Sir Hans Sloane and Sir John Pringle, besides Wollaston, who, however, threw up both the presidency and the profession in disgust when he was rejected as a candidate for the office of physician to St. George's Hospital. The great man who now fills the chair of the Royal Society is the second surgeon who has filled that office, and the one who has probably succeeded more than any other person who has yet lived in applying science directly to the saving of human life, as Brodie may be said to have been the one who succeeded more than all his predecessors in connecting the pursuit of surgery with the cultivation of science in general. It was John Hunter, indeed, who first established the connexion between surgery and the science of physiology and who then became, as his monument in Westminster Abbey justly styles him, 'The Founder of Scientific Surgery'; but it was Brodie's peculiar glory, his main title to posthumous fame, to have carried this connexion further and to have shown how much the practice of surgery may gain from the possession by its professor of a competent acquaintance with physical science in general and how much he may thereby raise the whole profession in the estimation of the public."

This passage is an excellent summary of Brodie's claims as a man of science over and above his claims as a pure surgeon.

It has been pleasant to us, as it will be to all medical men, to read this story of steady, well-earned success, and Mr. Holmes's style will add much to the enjoyment. The author's range of reading is displayed in his comments; while the practical wisdom of his views on such topics as, for example, the over-examination of students, the proper attitude of the medical profession towards quackery, and the due scope of the work of the General Medical Council cannot be gainsaid. Yet there is no display of learning and no dragging in by the heels of contentious topics. Mr. Holmes never forgets that he is writing a Life of Brodie; but again and again, and unconsciously, he proves that he is the man to give us a proper estimate of his subject. Brodie was more than a surgeon and Mr. Holmes is more than a biographer.

Guide to the Examination and Treatment of Sick Children. By JOHN THOMSON, M.D., F.R.C.P. Edin., Extra Physician to the Royal Hospital for Sick Children, Edinburgh, &c. Pp. 336, with 52 Illustrations. Edinburgh: William F. Clay. 1898. Price 9*s*.

DR. THOMSON'S book is a notable addition to the literature of the diseases of children. It is written entirely from a clinical standpoint, concentrating the reader's attention on the sick child and on the various changes which are produced by different forms of disease. There is no attempt at a systematic description of any maladies, a general knowledge of clinical medicine being assumed. But Dr. Thomson has brought out with great skill the salient characteristic features which would be observed at the bedside of a child suffering from diseases of the respiratory organs, for example, as distinguished from those which would be present in an adult. In a similar way he has drawn attention to the peculiarities of children in their susceptibility to drugs or other therapeutical weapons. The task which Dr. Thomson set himself was an extremely difficult one, and we may preface this notice by saying that he has accomplished it with rare success.

The book commences with an excellent summary of the leading facts in connexion with the growth and development of the child, including the acquisition of speech, followed by an account of the affections which are associated with the epochs of development. With regard to the influence of teething Dr. Thomson steers a middle course. This influence, which older writers made responsible for most infantile disorders, has, according to him, been enormously exaggerated. "At the same time it is equally certain that teething, like menstruation, pregnancy, and other mental states, is often accompanied by marked symptoms both local and reflex, and like them may produce temporarily a tendency to disease which is not present at other times." There is a chapter on the physiognomy of disease which is a model of close observation and is illustrated with some very characteristic photographs showing the facies associated with acute diarrhœa, nephritis, adenoids, and congenital syphilis. The examination of the various regions of the body is then systematically considered and the significance of the signs and symptoms is given in a clear but not too dogmatic style. Dr. Thomson does not hold the view that the presence of craniotabes is necessarily indicative of congenital syphilis, but he admits that the most severe degrees are rarely found.

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except in children who are syphilitic as well as rickety. The section on Heart Disease, both congenital and acquired, will well repay perusal. Dr. Cheadle's teaching has been followed and the striking differences in the clinical picture presented by cases of cardiac disease in childhood and adult life is very well brought out. The section on the Indications of Mental Defect is very useful, as Dr. Thomson describes the appearances met with in quite young children, while the text-books on the subject only deal with children in institutions who are considerably older. There are some particularly instructive photographs illustrating the appearance of infants suffering from the Mongolian form of idiocy which are the only ones which we have seen of this early stage, and there are also characteristic photographs of infant cretins. There is a very useful chapter on Infant Feeding. Dr. Thomson has, like most authorities, a very poor opinion of the various patent "foods." He insists that till the tenth month, if all goes well, the breast-milk should form the main part of the child's food. In cases where breast feeding is impossible full directions are given for modifying cows' milk in order to make it suitable for the child's use under different circumstances and an adequate account of the most convenient methods for sterilising the milk in the house is given. There is an important section in which a short description is given of the Disorders due to Improper Feeding and their Treatment, including a well illustrated section on Rickets and Scurvy. Dr. Thomson agrees with Dr. Barlow that infantile scurvy is due almost always to feeding on patent foods, condensed milk, or milk which has been subjected to prolonged sterilisation. There is an account of the dosage and of the employment of different drugs in the case of young children. Several appendices which the practitioner will find useful are given—viz., a synopsis of the period of incubation and of the duration of infection in infectious diseases, a formulary of prescriptions and of recipes for the preparation of foods, and directions for the rubbing, &c., of paralysed limbs. The value of the book for reference is increased by a very full index.

It will be seen, therefore, that Dr. Thomson's book does not go over the ground covered by the ordinary text-books but is supplementary to them. It is full of information which every practitioner ought to possess on subjects which are usually found scattered through books, but which he here for the first time finds collected in one volume, and we can strongly recommend it both to students and practitioners. Dr. Thomson is well known to the profession by his careful writings on the subject and the present volume will certainly add to his reputation as an observer and as a teacher.

Cataphoresis or Electric Medicamental Diffusion as applied in Medicine, Surgery, and Dentistry. By WILLIAM JAMES MORTON, M.D. With 76 Figures. New York: American Technical Book Co. 1898. Pp. 267.

THE action of electrical currents in promoting the passage of salts through animal membranes has long been established and some of the applications of this property to medical practice have also been long known. Dr. Morton confers a benefit upon the medical profession by giving us a book in which the subject is treated in a practical way, with descriptions of the apparatus, the methods and the formulæ which the author has found to be the best. He tells us that "since 1853 the peculiar property of the electric current of driving medicines into living tissue has hung suspended in the air, so to speak, and has never been brought down to practical bearings in spite of continuous and ingenious effort on the part of numerous individual experimenters." This book seems to meet the requirements of the case very well for it gives a properly worked-out sketch of the history of cataphoresis and of the work done by previous investigators, and then goes at length into the practical details of the modern modes of application, to the working out of which Dr. Morton has largely contributed. The account of the experiments of Sir B. W. Richardson with solutions of aconite and chloroform for producing local anæsthesia and of the opposition which his work aroused are very interesting. We are told that Richardson was attacked so fiercely that he felt obliged to abandon his experiments.

The production of local anæsthesia by cocaine introduced electrically through the unbroken skin is in some ways the more immediately interesting part of cataphoresis and a considerable part of the book is devoted to its applications in surgery and in dentistry. The easy production of a small area of anæsthesia offers peculiar advantages in dental work. In the United States the use of cataphoresis by dentists seems to be gaining ground and in this country also inquiries are being made into its value by dental surgeons. Dr. Morton states quite confidently that his methods can produce complete local anæsthesia in from four to eight minutes. The subject quite deserves to be taken up by those who are interested in it. The volume is handsomely bound and is printed on thick paper in good type and is an important addition to the literature of medical electricity.

Twentieth Century Practice of Medicine. Edited by T. L. STEDMAN, M.D. Vol. XIII. With 13 Figures. Sampson Low, Marston, and Co. 1898. Pp. 621.

THE present volume begins the Infectious Diseases, but almost two-thirds of it are devoted to introductory articles and the great bulk of the infectious diseases are left over for treatment elsewhere. The first of the four general articles is on Ptomaines, Toxins, and Leucomaines and has been wisely entrusted to Professor V. C. Vaughan, who wrote the kindred article on Food Poisoning in Loomis and Thomson's "Contemporary System of Practical Medicine." After some preliminary remarks, a list of the known ptomaines is given and a brief statement is added as to the conditions under which they are formed and their more important properties. In a clear manner the steps by which specific bacterial toxins have been shown not to be albuminous are gone through or detailed. As the poisons of saprophytic bacteria are generally introduced into the body with food, they are discussed under the heading of Food Poisoning or Bromatotoxismus. Professor Vaughan has, with the help of his classical colleague, Professor F. W. Kelsey, invented a number of new and somewhat lengthy terms for the various kinds of food poisoning: mytilotoxismus (mussel), ichthyotoxismus (fish), kreototoxismus (meat), sitotoxismus (vegetable food), and so forth. The necessity of these terms is not very apparent and it is probable that the simple English terms will be sufficient and will survive. The matter of these sections is, however, in every way most excellent and thoroughly reliable. An account of the poisons of the specific infectious diseases is then given and the article closes with a good summary of our present knowledge on leucomaines.

Professor H. C. Ernst of Harvard contributes an exhaustive article on Infection and Immunity in which the methods and paths of entrance of infection are first considered; some interesting examples are given of the spread of infection by flies and by books. After stating and considering the theories which have been put forward to explain the nature and manner of production of immunity the author proceeds in considerable detail to describe the serum treatment. Our knowledge on the general properties of blood serum, such as its bactericidal, attenuating, antitoxic, immunising powers, are first sketched. The effect of serum treatment on the experimental diseases is then described and its practical uses in human diseases and in snake-bites are epitomised. In conclusion, there is an account of the theory of the protective action of serums.

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Water-borne diseases are divided by the late Mr. Ernest Hart and Dr. Solomon Smith into two main groups according as the contaminating substance is living or not. After a brief reference to the first class of diseases a full discussion on the spread of the bacterial diseases, typhoid fever and cholera, is entered upon. In these sections the valuable work done by the late editor of the *British Medical Journal* is fully made use of. In like manner Dr. Dawson Williams brings the results obtained from the elaborate report of the Clinical Society of London into his article on Incubation and Infectiousness in the Acute Specific Diseases, and thus provides a valuable and authoritative article.

After these general and introductory articles, which occupy considerably more than half the volume, we come to the consideration of the individual specific fevers. The first, on Small-pox, is an exhaustive monograph by Dr. J. W. Moore of Dublin. It is well illustrated by charts, cases, and photographs and is evidently the outcome of very extensive research and thoughtful study. From personal experience Dr. Moore speaks well of the red light method of treatment.

Vaccina, which is evidently a mistake for vaccinia, and is probably due to the French term for cow-pox being *vaccine* is the title of Professor Brouardel's (of Paris) article on cow-pox and vaccination. After considerable discussion he sums up in favour of the non-identity of variola and vaccinia. A full description of the normal vaccinal eruption is followed by an account of its anomalies and of the secondary infections which may occur.

The last article in this volume is on Mumps and is contributed by Dr. Salis Comby of Paris, the editor of the *Archives de Médecine des Enfants*. It enters into great detail and should form an admirable source of reference on the subject.

The admirable articles in this instalment fully maintain the international character of the "Twentieth Century Practice of Medicine."

Tablets of Anatomy: Dissectional and Scientific. By THOMAS COOKE, F.R.C.S.Eng., B.A., B.Sc., M.D. Paris, Surgeon to Out-patients, Westminster Hospital, and Lecturer at the School of Anatomy, Physiology, and Surgery; and F. G. HAMILTON COOKE. In Three Parts. Part I.: The Bones. With 230 Illustrations. Pp. 188. Price 7*s.* 6*d.* net. Part II.: Limbs, Abdomen, Pelvis. With 254 Illustrations. Pp. 376. Price 10*s.* 6*d.* Part III.: Head and Neck, Thorax, Brain. With 286 Illustrations. Pp. 420. Price 10*s.* 6*d.* 4to. London: Longmans, Green, and Co. 1898.

MR. COOKE'S Tablets are so well known and we have on so many previous occasions spoken in favour of them that it is almost superfluous to say anything in their praise now. The author has been for many years a most earnest advocate of the importance of careful dissecting for a good knowledge of anatomy, and therefore it goes without saying that his tablets are in no sense intended for "cram," and if properly employed as adjuncts to practical dissection they cannot but help greatly in giving a student such a knowledge of anatomy as will be of use to him, not merely in his examinations in that subject, but also in the study of surgery and in practice itself. The present edition differs from its predecessors chiefly in the large number of illustrations (both coloured and uncoloured) which it contains; these have been culled from a wide area and include very many of those with which we are all familiar in the ordinary text-books of anatomy but which nevertheless help to make clear the statements contained in the text.

LIBRARY TABLE.

A Report on Vaccination and its Results, based on the Evidence taken by the Royal Commission during the Years 1889–1897. Vol. I. The Text of the Commission Report. London: New Sydenham Society. 1898. Annual subscription to the Society, 21*s.*—Many will be glad that the New Sydenham Society should have proceeded to include in its series of publications some account of the labours of the recent Royal Commission on Vaccination. Life is at once too short and too full to permit the majority of our profession to study the six or seven bulky blue-books with their reports of evidence and their voluminous appendices which represent that Commission's work. Yet it would have been a pity had the salient facts elicited during that prolonged inquiry not been made more generally available. This first instalment by the society consists merely of a reprint without note or comment, and we regret to say also without index, of the text of the final report and the report of the dissentients. These documents are historical and are most valuable from the masterly manner in which the whole subject is surveyed in them. It would have added to the interest of the volume had it been prefaced by some account of the reasons for the appointment of the Commission and of the members composing it. We learn from a notice prefixed to this reprint that the New Sydenham Society proposes to include in another volume extracts from the evidence.

A Simple Method of Water Analysis; especially Designed for the Use of Medical Officers of Health. By JOHN C. THRESH, M.D. Vict., D.Sc. Lond., D.P.H. Camb. Second edition, enlarged. London: J. & A. Churchill. 1898. Price 2*s.* 6*d.* — The simple method here described was outlined in an annotation in THE LANCET of Jan. 23rd, 1897. We predicted that medical officers of health would find the method convenient and fairly accurate. We were not mistaken, since Dr. Thresh has found it already necessary to issue a second edition with an additional section on the examination of sewage effluents. The standard of purity adopted in this case is that dependent upon the oxygen-consuming power as shown by permanganate. A better standard is based on the amount of nitrates and a little more stress might have been laid, we think, on the significance of nitrates in sewage effluents. As applied to water analysis we have found the "simple method" very useful in affording a preliminary and reliable indication of the fitness or unfitness of a given water for potable purposes. In the event of the latter conclusion being formed a more elaborate analysis may be carried out. Messrs. Burroughs, Wellcome and Co. supply a neat and portable case containing the necessary reagents in the form of "soloids."

WE wish to draw attention to an announcement of the *Times* reprint of the "Encyclopædia Britannica" which is inserted in this issue of THE LANCET and which may be worth the attention of our readers as affording to those who desire it an opportunity to obtain a well-known work of reference at a great reduction on the price usually charged.

JOURNALS.

The Journal of Physiology. Edited by MICHAEL FOSTER, M.D. Cantab., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. xxiii. Nos. 1 and 2. London: C. J. Clay and Sons. June 10th, 1898. Price 8*s.*—This part contains the following articles: 1. John Berry Haycraft, M.D., D.Sc. Edin., upon the Production of Rapid Voluntary Movements, with 8 Figures in the text. 2. W. M. Fletcher, M.A., The Survival Respiration of Muscle, with 47 Figures in the text. 3. J. S. Macdonald, Demonstrator, and E. Waymouth Reid, Professor of Physiology in University College, Dundee, N.B., Electromotive Changes in the Phrenic Nerve: A Method of Investigating the Respiratory Centre, with 9 Figures in text. 4. W. B. Warrington, M.D., M.R.C.P. Lond., On the Structural Alterations Observed in Nerve Cells, with 1 Plate and 4 Figures in the text. 5. F. Gowland Hopkins, M.B. Lond., and S. N. Pinkus, Ph.D., Observations on the Crystallisation of Animal Proteids.

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THE LANCET.

LONDON: SATURDAY, JULY 23, 1898.

IN THE LANCET of July 2nd we printed a letter from Mr. GEORGE JACKSON, in which he stated that he had addressed to the candidates for the vacancies upon the Council of the Royal College of Surgeons of England certain questions, among others one bearing on the present method by which the representative of the College upon the General Medical Council is chosen by the Council of the College and not by the corporation as a body. It will also be remembered that, as was reported in THE LANCET of June 18th, Mr. R. B. ANDERSON has lately proposed to test by a friendly suit at the expense of the College the legality of the action of the Council of the College in selecting such a representative, he in common with other Fellows and Members of the College considering that a right to exercise a franchise has been and is conferred upon him by the Medical Acts: but Mr. ANDERSON found the Council unwilling to undertake the costs of both sides to the action. We are not prepared, at any rate at the present moment, to express any opinion upon the true meaning of the passage in the Acts upon the wording of which those who take this view are relying, and we strongly counsel Mr. ANDERSON, and those associated with him in the attempt to make good the right of the corporation as a body to choose their representative on the General Medical Council, to abstain from legal subtlety in their arguments. The law of the land must, of course, be administered exactly, but the work of reform does not prosper while it relies upon verbal and technical interpretations, even if those interpretations are correct. No large body of responsible and worthy adherents will be found ready to join in an agitation which trusts for its justification to the rendering of a phrase, while hundreds might join such an agitation in defiance of the wording of all the Acts of Parliament in existence if they could be persuaded that such a course was in accord with justice and expediency.

The representatives of the various universities and corporations upon the General Medical Council are chosen as follows:—

1. The University of Oxford: elective body, Convocation, which consists of every member of the rank of M.A. who has kept his name on the books and duly paid his fees and duties.
2. The University of Cambridge: elective body, the Senate, the constitution of which is practically the same as that of the Convocation of Oxford.
3. The University of London: elective body, the Senate, which consists of the Chancellor, the Vice-Chancellor, and the thirty-six Fellows.
4. The University of Durham: elective body, Convocation on the nomination of the Senate. The constitution of the Senate is the Warden, sundry Professors, the Master of University College, the Principal of Hatfield Hall, and six other members of Convocation. The Convocation is much the same as that of Oxford or the Cambridge Senate.
5. The Victoria University: elective body, the Council, which consists of the Chancellor, Vice-Chancellor, and various other members, of whom only two are even indirectly elected by the Convocation of the University.
6. The University of Edinburgh: elective body, the University Court, consisting of the Rector, the Principal, and three or four assessors appointed by the Chancellor, the Rector, the University Court, and the Senatus Academicus.
7. The Universities of Glasgow, Aberdeen, and St. Andrew's elect in the same manner and under the same constitution as the University of Edinburgh. At Glasgow the University Court includes the Dean of Faculties, an officer elected annually by the Senate.
8. The University of Dublin: elective body, the Provost and Senior Fellows of Trinity College, Dublin.
9. The Royal University of Ireland: elective body, Members of the Senate by open voting. The Senate consists of the Chancellor and thirty-six Members all appointed by the Crown.
10. The Royal College of Physicians of London: elective body, the Fellows sitting in full Comitia.
11. The Royal College of Surgeons of England: elective body, the Council every fifth year. The Council consists of the President, two Vice-Presidents, and twenty-one Fellows.
12. The Apothecaries' Society of London: elective body, the Court of Assistants.
13. The Royal College of Physicians of Edinburgh: elective body, the Fellows in open voting.
14. The Royal College of Surgeons of Edinburgh: elective body, the Fellows.
15. The Faculty of Physicians and Surgeons of Glasgow: elective body, the Fellows.
16. The King and Queen's (now the Royal) College of Physicians of Ireland: elective body, the President and Fellows in annual meeting.
17. The Royal College of Surgeons in Ireland: elective body, the Council, consisting of twenty-one Fellows.
18. The Apothecaries' Hall of Ireland: the representative is elected at the annual meeting of the society.

It will be seen from this list that while the elder universities, such as Oxford and Cambridge, place the voting for a representative upon the General Medical Council in the hands of all members of the universities who are no longer *in statu pupillari*, the younger and more frankly democratic corporations, such as the University of London and the Victoria University, find it advisable to restrict the power of voting for a representative to a much more select body.

From this list, also, it is plain that whatever the corporation of the Royal College of Surgeons of England suffer as a body by the present method of the election of their representative upon the General Medical Council, they suffer it in common with many other bodies—a position of affairs which was, as a matter of fact, taken into account when direct representatives of the medical profession were first elected to the General Medical Council. Perhaps the wording of a charter may give an advantage to one body over another, but the medical profession as a whole are not likely to consider that this would form a good basis upon which to start an agitation for reform. As we have already said such movements only become serious and attract responsible persons when their promoters can prove that justice and expediency as well as the literal right are on their side. For the present let us leave out of consideration the justice of the demand that the Fellows and Members of the Royal College of Surgeons of England should select their own representative on the General Medical Council—an exception which we are able to make in this airy manner in that our readers know that we have unceasingly advocated the claims of the Members and Fellows alike to just treatment in their College and that we shall never disregard justice in these matters because for the moment it seems inopportune to discuss it in the abstract. We come to expediency. It is for those who

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desire a change in the existing methods to show that the profession of medicine as well as the Royal College of Surgeons of England would gain by the proposed reform. They must, if they wish for converts, show that the College and the profession are not only aggrieved in this matter but that the grievances will be abated under the suggested innovation. If the Council of the Royal College of Surgeons of England were elected by the College, as it should be, instead of by a small class of the College, the Council would be a proper body to select the representative of the College upon the General Medical Council. But the Council being elected only by the Fellows, who constitute a comparatively small part of the body corporate, its choice of a representative becomes open to criticism. In our opinion all efforts towards the reform of the College should be directed towards making its Council truly representative of the corporation, so that the point upon which Mr. ANDERSON desires a legal decision seems to us to be of secondary importance.

THE Executive Committee of the General Medical Council had under consideration several important questions at its meeting on July 12th. For the most part these arose out of resolutions of the Council itself in May last. Perhaps the most important of these had reference to a very much needed amendment of the penal clauses of the Medical Act. All parties in the profession and the General Medical Council itself are agreed that these clauses need amendment. There can be little doubt that the public itself must be of the same opinion with the profession up to a certain point. There may be differences of opinion as to how far such amendments should be carried, and we are well aware that the public are jealous of the restriction of personal liberty even in the case of unscrupulous quacks. But there is practical unanimity that the medical profession should be defined and that the titles which imply medical qualifications and status should be protected. The Council on May 31st last resolved that its President should be requested to communicate with the Lord President of the Privy Council as to the practicability of obtaining such an amendment of the law as would more effectually prevent the holder of any medical degree or diploma from using the title thereof after his name had been erased from the Medical Register under Section 29, and for so long as the erasure continued in force. It seems obvious that a person who has been guilty of professional conduct so gross as to induce the General Medical Council to remove his name from the Register should not be allowed to flaunt before the public titles which convey the impression that he is still on the Register. If ever there was any doubt on this point it must surely have been dispelled by recent events. Within the last few weeks public attention has been directed to the painful case of a graduate of a university who has committed more than one crime and is now sentenced to imprisonment for seven years. By his very situation he is prevented from doing further mischief to HER MAJESTY'S subjects or further dishonour to his university and his profession. His profession has cleared itself of all connexion with him through the act of the General Medical Council in removing his name from the Medical Register. But, strange to say, he still continues to be a graduate of the Royal University of Ireland. There is no reason to believe that the Royal University of Ireland wishes to retain such a graduate on its rolls. Indeed, there is no doubt that all the universities of the country and all the medical corporations are desirous of such an amendment of the law as will prevent a graduate or a diplomate so erased from using his titles *so long as the erasure continues*. We italicise these words as showing the justice and mercy of the bodies and the profession which, through their representatives in the General Medical Council, have with practical unanimity asked for this amendment. There are offences and there are crimes. There are cases in which removal from the Register is only temporary, in which the Council properly exercises its clemency and restores the names which it has erased. In any amendment of the law provision for such restoration of status to the holders of degrees or diplomas should be carefully made. But during the period of erasure the qualifications and the titles attaching to them should clearly be suspended too.

It is somewhat discouraging to find from the words of the reply to the communication of the President contained in the minutes of the Executive Committee that the Lord President of the Council "cannot hold out any hope of legislation being undertaken to effect amendment of one provision of the Medical Act, even if the degree-giving bodies had expressed a desire for the amendment, which does not appear to be the case." The last words of this quotation show that the Lord President is of opinion that the universities at least do not wish for the amendment asked for by the General Medical Council. We feel sure that the Lord President will ascertain exactly the truth in this matter. It cannot be the wish of the universities to have their degrees and titles used by graduates who have discredited them, and, as a matter of fact, as we have said, through their representatives the universities are parties to the communication to the Lord President on this subject from the General Medical Council. We are glad to note that the Executive Committee have not regarded the answer of the Lord President as final and have requested Sir WILLIAM TURNER to put himself into furthe communication with the Clerk of the Privy Council on this matter. The President's own action on the subject has been so careful and judicial—we might almost say cautious—that he may be safely trusted to place before the Lord President the serious aspects of the present defects of the law and the urgent need for its amendment.

The minutes of the Executive Committee show that a communication had been received from the Home Secretary in reference to projected legislation for the regulation of so-called massage establishments at the instigation of one of the vestries of London in whose district such institutions threaten to be a cause of scandal. The Home Secretary seems to have thought that the freedom of the medical profession or its rights might in some way be prejudiced by such legislation and very properly directed the attention of the General Medical Council to it. The Executive Committee have replied that in their opinion the regulation of such establishments is essentially a police question and one in no way affecting the medical profession which does not need them. We feel persuaded that such an answer will have the approval of the profession.

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Massage is a very useful thing in its place, but, like every other detail of treatment, it is unduly magnified by those who do not see it in its proper proportions and relation to other means of treatment, and it is clearly being used in many directions for immoral and disgraceful purposes. The medical profession will take its own means of procuring massage for those who need it and the Home Secretary need fear no opposition from the profession or injury to it in legalising any police measures for the punishment and restraint of those who prostitute massage to base purposes.

THE case of KINGSBURY and Another *v.* HOWARD, which came to an end on Tuesday last after a hearing lasting six days, presents many features of interest to medical men. The story has been so widely circulated in the lay press that we need only give its outline here. Dr. KINGSBURY, a medical practitioner at Blackpool, attended assiduously the late Mrs. HOWARD, an old lady who made him a residuary legatee under her will whereby he should benefit to the extent of £30,000 or more. He attempted to hypnotise her in the course of his medical treatment of her on twenty-two occasions, and the will was disputed on the ground that he had exercised undue influence over her, that, in fact, he had "suggested" to her when in the hypnotic state the advisability of making him her legatee. Of evidence that Dr. KINGSBURY had so hypnotised Mrs. HOWARD there was not a scrap, while he denied that he had ever been able to produce any effect upon her in his numerous attempts. It was shown by a will dated before the hypnotic experiments had commenced that Mrs. HOWARD intended to benefit Dr. KINGSBURY, nor was there anything very unnatural in the generous bequest of the deceased to her medical attendant, for Mrs. HOWARD'S only surviving son was already wealthy and was on unfriendly terms with his mother, while Dr. KINGSBURY took nothing until after substantial donations had been set apart for charities. Under these circumstances, as Mr. Justice GORELL BARNES pointed out to the jury in his summing-up, the whole case depended upon whether the jury believed Dr. KINGSBURY'S evidence or not. Dr. KINGSBURY said that he had never hypnotised Mrs. HOWARD, often as he had attempted to do so, and the denial was borne out by Mrs. HOWARD'S confidential servant. The jury found that the will in question, the last of many wills, had been duly executed; that the deceased was of sound mind, memory, and understanding; that she knew and approved its contents; and that the residuary clause under which Dr. KINGSBURY was so large a beneficiary had not been obtained by undue influence. This finding of the jury exonerates Dr. KINGSBURY from the odious charge of having grossly abused the fiduciary position which he occupied towards his patient, and also, to our thinking, inflicts a serious blow upon the claims of hypnotism. The jury arrived at their decision either because they believed Dr. KINGSBURY, who said that he had failed to hypnotise the patient in spite of repeated trials; or because they were unwilling to allow that the power of hypnotic suggestion could be used to sway the testamentary intentions of a sane person; or, most probably, by looking at all the circumstances, from both these points of view. Now Dr. KINGSBURY is an experienced hypnotist who has given exhibition of his powers before assemblies of his fellow practitioners, so that it is damaging to the prestige of hypnotism as a therapeutic agent to learn that so accomplished a professor of the art or science after repeated trials was unable to produce any effect upon an old and sick lady. Again, if the contingency that Mrs. HOWARD might be influenced by hypnotic suggestion so as to deal with her money in what was, after all, no very unnatural manner has seemed incredible to a jury, what would a jury say to the more advanced claims of hypnotism? We have all heard of subjects in the hypnotic state who, though of unblemished character, have cheerfully committed crimes, or rather the simulation of crimes, at the suggestion of the hypnotiser, and experiments with these sensational tendencies have been reported in medical journals and find a place in scientific literature. We do not envy the medical man who is called upon in the witness-box to assist a jury at arriving at a decision upon the credibility of any such situation arising in ordinary life, but we think that he would be quite justified in declining to commit himself to any definite opinion in the present state of our scientific knowledge. And the case of KINGSBURY and Another *v.* HOWARD lends force to our advice.

Annotations.

"Ne quid nimis."

THE VACCINATION BILL: A CHANGE OF FRONT.

ON Tuesday evening the Vaccination Bill was under consideration as amended by the Standing Committee on Law and during the debate Sir Walter Foster proposed a radical amendment. He desired to add after Clause I. a new clause allowing the parent or person in charge of an infant who makes a statutory declaration of conscientious objection to vaccination before two magistrates to be exempt from all proceedings taken with reference to the non-vaccination of the child. The suggested clause practically did away with the compulsory element, so following the spirit of the recommendations of the Royal Commission. Mr. Balfour promised that an amendment should be introduced covering the ground of Sir Walter Foster's proposed clause, believing that every reasonable attempt should be made to get a Vaccination Act which was satisfactory to the sense of the House and not one which was passed by a mere party majority. As a new clause to a Bill cannot be moved when the Bill is in the report stage without notice the debate was adjourned until the Government amendment was formulated. On Wednesday evening Sir Walter Foster withdrew his amendment in favour of the following amendment, which he considered practically identical in principle with his own, and which was moved as a new clause to the Bill by Mr. Chaplin:—

"No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices of such conscientious objection."

After some debate had arisen on the wording of the end of

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the clause, the clause was added to the Bill. For all practical purposes compulsion has therefore gone by the board.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

RIVALRY in business is generally considered to be a benefit to the public, but it is a question whether the rivalry of the numerous sanitary associations is not of less general advantage than would be their amalgamation. Unity is strength and the multiplication of societies all interested in one art or one science weakens the whole. Even if the obstacles in the way of combination are insuperable an agreement upon certain points would be an advantage. Neither the Sanitary Institute nor the Royal Institute of Public Health holds annual congresses and exhibitions; why not, therefore, have them in alternate years instead of both in the same year? The one undoubtedly detracts from the other, and more than one sanitary authority, confused by the multiple requests to appoint delegates, have decided to send delegates to neither. We have already referred to the congress of the Sanitary Institute which is to be held in Birmingham in the autumn and we have now to direct attention to the congress of the Royal Institute, which will be held in Dublin next month. The President is Sir Charles Cameron, M.D. R.U.I., and the Lord Mayor of Dublin is the Honorary President. The Presidential address will be given in the Examination Hall, Trinity College, at noon on Aug. 18th, and the business of the congress will not conclude until the 23rd. Dr. Grimshaw, C.B., will preside over the Section of Preventive Medicine and Vital Statistics; Professor J. W. Moore over the Section of Chemistry and Meteorology; Mr. C. P. Cotton (Local Government Board) over the Section of Engineering and Building Construction; and Alderman the Right Hon. J. M. Meade, P.C., over the Municipal and Parliamentary Section. There will be conferences of naval and army medical officers, of medical officers of health, of sanitary inspectors, and of veterinarians. An exhibition of sanitary appliances is also being organised. The generous impulse of the local executive, so characteristic of the inhabitants of the Emerald Isle, has provided an unusual round of festivities. Everything indicates that the Congress will be a success and if any further inducement is necessary to attract visitors it will be found in the fact that the world-famed Horse Show will open on the closing day of the Congress.

ARTIFICIAL EYES.

ACCORDING to a German authority people wearing false eyes must be pretty nearly as common as the remainder of the victims collectively whom fate has deprived of a portion of their bodies, be it organ or limb. Every year, we are told, no fewer than 2,000,000 of glass eyes are manufactured in the German Empire and it is, of course, far from probable that the whole of the world's supply should be made in Germany. On the contrary it is stated in *La Médecine Moderne* that a single French firm turns out at least 300,000 glass eyes annually, and that there are several other factories in France the output of which is about the same. How, it will naturally be asked, can this enormous stock be utilised? Glass eyes although essentially brittle are little liable to injury, do not wear out quickly, and are quite independent of the vagaries of fashion. Once suited the owner of a glass eye may make it serve him a considerable time. A writer in the *Journal d'Hygiène* is disposed to regard the oculiform millions as a fantastic creation, seeing that one-eyed people are rare comparatively speaking and that the majority of them do not wear false eyes; but a little consideration should suffice to show the critic that his doubts are not well founded. Like many an objector he assumes the premisses—to wit, that all the eyes are used to replace human losses, whereas most likely false eyes of every description are included in the list. Evidently taxidermists, bird-stuffers, the makers of wax figures, &c., must use an immense quantity, to say nothing of the artists who are responsible for the innumerable army of dolls large and small. Viewed in the light thus thrown upon the matter the 2,000,000 which seemed to be so amazingly beyond the mark dwindle to a mere bagatelle—a mere drop, so to speak, in the ocean of false eyes. In this connexion allusion to the singular fact that it is only the one-eyed who seek to conceal their deficiency by means of a substitute may be permissible. The totally blind never wear false eyes, or if an instance now and then occur it merely serves to prove the rule. In consequence of his æsthetic sense a one-eyed man feels compelled to endure the discomfort which in greater or lesser degree attends upon every foreign body which has obtained lodgment in the human economy, but the man who has lost both his eyes is free from this weakness—his æsthetic sense expired along with his vision.

THE CHELSEA PHYSIC GARDEN.

A REMEMBRANCE of pleasant hours spent at the Apothecaries' Physic Garden at Chelsea is part of the heritage of many of the London medical students of thirty years ago. At that time the diplomas which they usually sought were the Membership of the College of Surgeons and the Licence of the Apothecaries' Society. Medical botany was part of the usual curriculum and some knowledge of the officinal plants named in the British Pharmacopœia was an important matter for the candidate at "the Hall." Every week fresh specimens were sent from Chelsea to Blackfriars. The wary candidate, if well advised, visited the Physic Garden during the week preceding his examination, and he possibly consulted one of the gardeners as to the plants which were at the time in their most characteristic state; he then noted their leading peculiarities, so that he could again recognise or, as it was colloquially called, "spot" the specimens and, by the help of Sir Alfred Garrod's Manual and other text-books, mention the virtues credited to them. Of late years, rightly or wrongly, medical botany has been supplanted by other studies and the Society of Apothecaries has now applied to the Charity Commissioners as to the future regulation of the Chelsea Physic Garden, of which they were trustees under the will of Sir Hans Sloane. The trustees of the London Parochial Charities having offered to maintain the garden for the purposes of botanical study the Charity Commissioners will shortly publish a scheme giving general effect to the proposed change of management.

AN AMERICAN VIEW OF THE ABUSE OF MEDICAL CHARITY.

THE *Yale Medical Journal* for June contains a valuable and suggestive paper on "The Existing Abuse of Medical Charity and How it Can be Remedied,"[1] by Frederick Holme Wiggin, M.D., Visiting Gynæcologist to the New York City Hospital. Dr. Wiggin gives a short history of the origin and growth of the out-patient system and traces it to St. Bartholomew's Hospital, London, where a system of out-door relief was established in 1770, known as the dispensary, the object of which was "the relief of the sick poor without regard to place of abode who are able to visit the hospital, *but unable to pay the expense of a medical attendant at*

[1] The paper was read before the Connecticut Medical Society at New Haven on May 26th, 1898.

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home." Philadelphia followed suit in 1788. New York copied Philadelphia in 1790, the promoters being the Medical Society of New York. Dr. Wiggin is indebted for his history and statistics mainly to a recent report of a special committee of the New York State Board of Medical Charities appointed to examine into the method of giving medical relief to the sick poor through dispensaries. The evil has grown over since and is as bad in New York as it is in London, but the unhealthy development of it dates from 1862. It is interesting to notice Dr. Wiggin's view of this evil development. It began with the establishment of clinics, which were to all intents and purposes dispensaries, where no question was asked concerning the patients' means or residence so long as the case was interesting and the patient was willing to exhibit his disease to students. It ignored territorial considerations of district and social questions and distinctions of wealth. Outdoor departments of hospitals followed and these in turn were followed by dispensaries which aimed at publishing numbers rather than at fine discriminations of the needy. Then the churches entered into competition and had their dispensaries, the main object of which was "not the care of the sick poor, but to increase the number of Church adherents." Now Dr. Wiggin considers it is established that not far from 50 per cent. of all applicants for free medical relief in the larger cities are not persons who require aid. A factor in the case is the physician, with his natural desire to do good and to be generous to those in trouble—a desire sometimes accompanied with a disregard of the rights of those nearest to him. The remedies he finds in the education of the laity, in paying physicians of charitable institutions, and in placing all such institutions under a State Board with a central bureau by which individual cases shall be systematically but considerately investigated. Dr. Wiggin's State Board would correspond somewhat to our idea of a Central Hospital Board. We do not give our approval to any State interference nor are we prepared to endorse a sweeping resolution of the Litchfield County Medical Association of which Dr. Wiggin approves, entirely condemning the acceptance by medical men of all contract relations with lodges, societies, and similar organisations as contrary to all ethical medical principles. We must not be unpractical. We must recognise great organisations of working men. But we must imitate them in our organisation and in demanding suitable terms.

THE LIMITS OF A LANDLORD'S LIABILITY.

A CASE of some importance as bearing on the legal liability of landlords in respect to the sanitary condition of dwellings let to tenants was heard before the Lord Chief Justice at the recent Bristol assizes. The plaintiff (Mr. J. W. North, A.R.A.) claimed damages from his landlord (Mr. Wm. Wyndham) in consequence of defects in the drainage of Beggearnhurst House, Washford, which had been tenanted by Mr. North since 1884. The house was an old one, but no grave cause of complaint arose until 1894 when defects were discovered and on application were supposed to have been made good by defendant's workmen. The work, however, was improperly done, so that sore-throats and other sickness continued to prevail in the household, and in September, 1897, Mr. North lost one of his children from diphtheria. Mr. Brettingham, the medical officer of health of the district, pointed out very serious defects and advised the entire reconstruction of the drainage and the removal of a water-closet situated in the middle of the building. The question at issue was as to how far the landlord was liable for the original faulty construction of the drains and also whether the tenant could claim any compensation in the absence of any specific agreement at the time of entering upon his tenancy. The case was compromised, the defendant consenting to forego one year's rent, each party paying his own costs. The judge informed the jury that if a man took a furnished house the law implied that the house should be reasonably fit for habitation, which included that there was nothing in the state of the drains which would affect the health of the inhabitants. But there was no such understanding implied in the letting of an unfurnished house, and without an expressed undertaking on the part of the landlord the law assumed that the tenant took the premises "for better or worse." In this particular case, much as Mr. North had suffered, there was no evidence that Mr. Wyndham was not ready to do all that he could be reasonably required to do in remedying defects which were pointed out. The moral then to be drawn from this judicial deliverance is that a would-be tenant of an unfurnished house must be careful to obtain from his landlord an agreement or warranty that the dwelling is in a fit state for habitation unless he wishes to run the risk of exposure to the effluvia from ill-constructed drains which may not be discovered until he has been some time in possession. In particular should he be careful when dealing with old houses where the sanitary arrangements may be the reverse of satisfactory and where even cesspits may still exist in close proximity. He must remember that no claim for compensation for damage due to such insanitary conditions will lie unless he has previously guarded his interests in some such manner. Better still would be the insisting as an essential preliminary to his possession of the premises that their sanitary condition should be thoroughly investigated and made good.

RECURRENCE OF TYPHOID FEVER IN CHICHESTER.

CHICHESTER is again suffering from typhoid fever and a number of memorialists are asking for the intervention of the Local Government Board. Just the same took place in the autumn of 1896, when, in answer to appeals from the locality, the Local Government Board instructed Dr. Bulstrode to make an investigation into the matter. The result was a searching investigation and a very able and convincing report. The issue of this report was followed by experiments made at the cost of the State into the nature of Chichester soil as a breeding ground for the typhoid bacillus, with the result that when soil was collected from areas where fever is ever recurring in Chichester it was found that after sterilisation its inoculation with the typhoid organism showed that it contained everything necessary to the persistence of this disease organism in a form potent for mischief. In fact, there are parts of Chichester which are sodden with ancient filth and in which typhoid fever recurs from time to time. The corporation, however, themselves made a report showing that all was *couleur de rose* in their ancient city; that the city had "been grossly misrepresented by foreign officials"; and that the town council was "hampered and annoyed by unnecessary and troublesome interference ..... and unjustifiable intermeddling in local self government." It was not, therefore, likely that they would act on the advice which the central authority tendered through their inspector, and now the same disease prevails again and the inhabitants are appealing against their own rulers and asking for another Government inspection. Some sort of inquiry has apparently been promised, but if it takes place it is to be hoped that it will be of an exhaustive character and that it will take close account of the "local self government" system which has brought about a state of affairs in which a portion of the inhabitants seem to have lost all confidence in those who have the sanitary control of the city. There is, however, one aspect of this state of affairs which must be settled locally. The system of local self government which the town council claims to carry out unhindered involves the election of

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councillors by the voters, and if it be really true that the memorialists represent a substantial number of the citizens it will be quite easy for them to show that they mean what they say at the next municipal election. The *Chichester Observer* of July 6th states that "the medical officer has recommended a house-to-house inspection, but the matter proceeds no further." Since it rests with this officer to advise the council as to what is necessary, and since he has the responsibility of determining what are the causes of disease in his district, it is very ominous to find that when he gives his advice "the matter proceeds no further." In view of the present aspect of affairs it may be asked by some why Chichester should receive State aid at which its represen tatives scoff, whilst other districts who would gladly get the advice of independent central experts are often denied that help on the ground of an insufficiency of staff.

THE JUBILEE OF W. G. GRACE.

AT fifty years of age a man's natural force may presumably be supposed to be abating. As medical journalists we are naturally interested in seeing the incomparable "W. G." apparently as well able as ever he was to stand a long day's fielding, to get runs, and to take wickets. The complicated muscular movements and the absolute correspondence of hand and eye which playing sound cricket requires are only to be really appreciated by those who understand anatomy and physiology. We are therefore all the more interested in Mr. Grace's success, for although his fame has been won on other fields than those of the laboratory and the sick room we all remember with pride that he is a member of the profession of medicine and hence we have a double reason for offering our congratulations to one who has shown himself so proficient in every department of the national game.

ENANTHEMATA.

AT the annual meeting of the American Pediatric Society held in Cincinnati in the beginning of June Dr. F. Forchheimer, of Cincinnati, read a paper on what he considered to be a characteristic enanthem of German measles. According to the extract published in *Pediatrics* the enanthem is a macular, distinctly rose-red eruption upon the velum of the palate and the uvula, extending to, but not over, the hard palate. The spots are arranged irregularly, not crescentically, are of the size of large pin-heads, and are very little elevated above the level of the mucous membrane. He studied the eruption in 22 cases. In no case had he seen the exanthem when there was not present a suggestion of the enanthem. The enanthem is very short-lived, fading away within the first 24 hours. It is the same eruption which is found upon the skin, characterised by the size of efflorescence, its arrangement, the absence of great infiltration, and, above all, by its colour, a pure pinky-rose-red, almost exactly the same as the "roseola" of typhoid fever. During the process of involution there are sometimes left pigmented deposits, usually of a yellowish or yellowish-brown colour, either in the form of spots or streaks. The difference between this enanthem and those of scarlet fever and measles is as follows: in scarlet fever the enanthem appears from twelve to twenty-four hours before the eruption. It appears on the pillars of the fauces in the form of characteristic puncta, then rapidly spreads over the mouth in the form of a scarlet-red coalescing eruption, which ends in desquamation, producing the strawberry tongue. In measles the enanthem begins upon the soft palate from thirty-six to forty-eight hours before the exanthem in the form of purplish papules arranged crescentically. Some of the subsequent speakers said that their experience confirmed that of Dr. Forchheimer and Dr. Jacobi made a reference to the enanthem described by Koplik in measles, a report on which was published in a recent number of the *Deutsche Medicinische Wochenschrift*.

THE HAMPSTEAD HEATH EXTENSION SCHEME.

THE Lord Mayor presided on Tuesday over a public meeting at the Mansion House in furtherance of this scheme at which the speakers included the Marquis of Lorne, Lord Knutsford, Sir Samuel Wilks, Lady Jeune, Mr. Seymour Lucas, R.A., Canon Ainger, and Sir Henry Harben. Motions were carried unanimously approving of "the endeavour that is being made to preserve the beauty and extend the area" of Hampstead Heath and calling "upon the public to accord a generous response to the wider appeal that is now being made." Yesterday (Thursday) Sir Henry Harben, chairman of the local committee of the Hampstead Heath Extension Scheme, received a large number of visitors at Golder's Hill during the afternoon, the result of which informal garden-party should be a large accession of subscriptions.

IRREGULAR MEDICAL PRACTITIONERS.

IN the House of Commons on Tuesday last Dr. Farquharson asked the Chancellor of the Exchequer the following question: "Whether, having regard to the fact that a sum of £5000 a year of public money is paid to the Council of the Incorporated Law Society to assist them in purifying the legal profession, he could see his way to make a similar grant to the General Medical Council to enable them to undertake the prosecution of irregular medical practitioners." The Chancellor of the Exchequer said that the sum granted to the Council of the Incorporated Law Society was £2500 and was only a small fraction of the yield from the special duty on solicitors' certificates which went to the Exchequer. No such tax was imposed upon medical practitioners and therefore no question of a similar grant to the General Medical Council arose. Dr. Farquharson must have known that his question would elicit this obvious reply. We hope that he will not be deterred from making further moves in this and other directions towards obtaining for the General Medical Council further powers.

THE X RAYS IN MILITARY SURGERY.

PROFESSOR KÜTTNER of Tübingen, who followed the last Greek war in connexion with the German Red Cross Society, has made some interesting experiments with the Roentgen rays at the Constantinople Hospital. In his report, just issued, he says that while the apparatus proved of service when applied with the screen it was rarely possible to take a satisfactory photograph on account of the difficulty of bringing the patients into the proper position. The former method proved often the only way to ascertain the site of a projectile which had entered the body and had remained there. This was applicable to all parts of the body except the stomach and head. A bullet in the brain, for instance, showed very indistinctly. (Last spring an arrangement of mirrors was exhibited at a soirée of the Royal Institution where a photograph of the brain showed in relief, thus enabling the operator not only to see the foreign body but also to measure correctly its distance from the outer wall of the cranium.) Professor Küttner says it is noteworthy that splinters of bullets and of bone which had penetrated into the soft parts of the body could not be distinguished from each other. Also, he says, it was proved that the opinion that deep-lying masses of pus could be located was erroneous. Injuries to the central nervous system, the spinal cord, and the peripheral nerves were solely ascertainable by the aid of the Roentgen rays. It was impossible

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to do this before. Furthermore, it could be seen whether a bone was totally or only partially severed—a matter of great importance as far as therapeutics are concerned. For shot-wounds in the extremities he recommends that a photograph be taken. His conclusion is that the Roentgen rays are of great importance for medical aid in war, but only for fixed hospitals, such as reserve hospitals and those installed in fortresses, while for moving field hospitals their application is very limited.

THE LATE MR. GREIG SMITH.

WE publish this week a clinical lecture from the pen of the late Mr. Greig Smith, whose lamented death last year, at the early age of forty-three years, deprived our profession of one of its ablest members and the Medical School of Bristol of a most competent and energetic teacher. Mr. Greig Smith had accomplished much in his comparatively short career—enough to have satisfied many men—but in the opinion of all who knew him he would have gone much further. The paper which we issue to-day (the illustrations to which have only recently reached our hands) bears evidence to Mr. Greig Smith's lucidity as a teacher and skill as a draughtsman, as well as to the extreme thoroughness of his work.

"THE LESSON OF MIDDLESBROUGH."

IN a letter to an evening journal under the above heading Mr. Alexander Paul claims that the statistical results of the recent epidemic of small-pox at Middlesbrough just issued by Dr. Dingle, medical officer of health, prove that the "case for vaccination" has "utterly broken down." We desire to say nothing to Mr. Paul's discredit. We recognise in him a fair-minded advocate of a hopeless cause, one, too, who has never stooped to the methods of personal defamation which disfigure the writings of most anti-vaccinationists. Honest himself he gives credit for the honesty of his adversaries in pleasing contrast to the spirit of some of his party. We do not therefore wish to pass by his criticisms in silence but to act as fairly by him as he endeavours to do by us. Yet we would have Mr. Paul remember that the bias which he has against vaccination is quite as potent a factor in his conclusions as any bias may be in the other direction. For what is his argument? According to Dr. Dingle, of those attacked by small-pox 1207 had been vaccinated—a proportion of about 1·3 per cent. of the whole vaccinated members of the community; 198 had never been vaccinated—a proportion of about 11·7 per cent. of the unvaccinated population. The fatality-rate amongst the vaccinated was 8·8 per cent.; amongst the unvaccinated 47·4 per cent. Mr. Paul explains these striking divergencies very simply. The small section of Middlesbrough folk who had escaped vaccination were, he avers, more susceptible to small-pox and to fatal attacks not because they had not been vaccinated (for that is a useless rite), but because they are made up of the "leavings" of the population—the weakly infants, the neglected and the tramp class. Otherwise, he says, it is not credible that nearly one-half of those attacked should have died. This "pure assumption," to use his own phrase in another connexion, is, we suspect, but half a truth, for it cannot apply to places where the majority of the children are unvaccinated and yet they have died (strong and weak alike) in similar proportion when attacked by small-pox. There is no fixed fatality-rate for small-pox or any other epidemic disease; it varies from time to time and from place to place, and though we may admit that 47·4 is excessively high we suspect that in pre-vaccination days it was often just as high amongst the parallel class. But why does Mr. Paul ignore the comparative incidence and fatality amongst the vaccinated and the unvaccinated at similar age-periods? Why does he suppress the evidence adduced as to the comparative severity of attacks in the two classes? Lastly, why does he contemptuously dismiss the explanations frankly given by Dr. Dingle as to the failure of revaccination to protect in all cases? He writes as if he were impartial, but his tone is that of the advocate, not of the judge. The case for vaccination must depend upon the fulfilment of those conditions which point to its being effectively carried out. The anti-vaccinationist naturally ignores all this, for to him vaccination is nothing but a "filthy rite." But no one who approaches the subject with as much freedom from bias as is possible to fallible humanity can arrive at any other conclusion than the one which was attained by the Royal Commission, which is forced upon all who have personal knowledge of small-pox and is proved by the experience of every civilised nation in the world.

THE EXPENDITURE OF THE METROPOLITAN ASYLUMS BOARD.

DR. FARQUHARSON deserves the thanks of the profession, and still more of the public, for his question on this subject in the House of Commons. The reply of Mr. Chaplin is very satisfactory and shows that he at least has not been an unmindful spectator of the financial irregularities which have been brought to light partially in the Brook Hospital case, but which are perhaps not confined to that case. It would be lamentable indeed if the Local Government Board could be supposed to be careless in this matter in which it has such enormous responsibilities. Mr. Chaplin rather invited Dr. Farquharson to move for further returns which doubtless Dr. Farquharson will ask for. The public is almost helpless in such matters. It knows nothing of the cost of hospitals or of their administration. There is nothing in such a question to excite the interest of parties or of party leaders who are apt to spend public money recklessly. But unless local government and those who administer it are to be discredited we must take it out of the hands of architects and those who see nothing in it so much as a boundless and unchecked means of spending public money.

HOT WEATHER DANGERS.

"TO-DAY is the hottest day experienced in London this year, the thermometer registering 86° F. in the shade, and numerous cases of sunstroke are reported." Such was the announcement made in several evening papers on Monday last, the 18th. In the papers of the next morning (the 19th) it was announced that a serious explosion had occurred at the Earl's-court Exhibition on the afternoon of the 18th in connexion with a magazine in which various explosives used in the miniature naval battle were stored. There can be little question, we think, that the first observation throws light on the occurrence of the accident in which unfortunately life was lost and several employés were injured. It is certain that amongst the stored explosives would be some containing nitro-compounds of the class of nitro-glycerine. Under the influence of higher temperatures the fluidity of nitro-glycerine would be very materially increased and nitro-glycerine is infinitely more dangerous in the liquid form than in the solid. Dynamite is a porous earth containing nitro-glycerine which affords a comparatively safe way of carrying and storing the explosive, but when exposed to variations of temperature in the upward direction the oil would probably exude and become dangerous. Thus the slow exudation of the nitro-glycerine is a serious danger because it tends to substitute pure nitro-glycerine for a substance which is but little sensitive to shocks or friction, while the former is, on the

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contrary, extremely sensitive. Direct sunlight is also bad for nitro-compounds as it often leads to their chemical decomposition and to spontaneous explosion. The places or magazines where explosives are stored should therefore be kept cool and in a sheltered spot. It would not be surprising to learn that this was not the case in the unfortunate disaster which happened at Earl's Court. An official inquiry, however, will probably clear up this point.

"THIS HILL IS DANGEROUS."

A STORY of distinctly emerald tinge is related in last week's *Bicycling News*. An English cyclist touring in Ireland came upon a steep descent, but looked in vain for the familiar notice-board indicating danger. Dismounting he wheeled his machine down and right at the bottom of the hill he discovered the missing notice-board, "This Hill is Dangerous to Cyclists." We are not sure whether the man who erected the notice-board is a humourist or some voluntary Ixion with a dilated heart, the penalty of a disinclination to leave his wheel and walk up-hill. It is perhaps a debateable question whether for the benefit of middle-aged cyclists all danger boards should not be placed at the bottom of the hills to which they refer. No doubt there would be more broken necks, but on the other hand there might be fewer over-stretched hearts.

THE LATE GEORGE VERNON BLUNT, M.D. ABERD.

THE will of the late Dr. George Vernon Blunt has recently been proved in the Birmingham district registry at the sum of £43,085, which is considerably more than a medical man, as a rule, has it in his power to leave. The estate is to be kept intact for a period of twenty-one years and certain annuities are to be paid out of the income while the surplus income is to accumulate. After the annuities are satisfied the estate is to be divided, according to the *Birmingham Gazette*, as follows:—

	£
The Blue Coat School, Birmingham	3000
The General Institution for the Blind, Carpenter-road, Birmingham	1000
The Royal Institution for Deaf and Dumb Children, Church-road, Birmingham	1000
The Gordon Boys' Home, Cobham	5000
Mr. Barnardo's Homes, Stepney	6000
The Royal Orphan Asylum for Orphans of Soldiers, Sailors, and Marines at Devonport	5000
The Royal Cambridge Asylum for Soldiers' Widows, Kingston-on-Thames	6000
The Free Cancer Hospital, Brompton, to found two beds	3000
The Royal National Lifeboat Institution, for building and equipping two lifeboats and stations	6000
And the residue to the Shipwrecked Fishermen and Mariners' Royal Benevolent Society.	

The selection of charities is, we think, very catholic and one with which no one will quarrel, for there is hardly any form of infirmity or distress which does not benefit by the bequests.

ABSCESS OF THE BRAIN.

A CASE illustrating the difficulties and uncertainties attending upon operations for cerebral abscess was described at the December meeting of the New York Neurological Society by Dr. F. Peterson. The patient had attempted suicide and wounded his head with a rusty spike and had sustained a compound depressed fracture in the occipital region near the middle line on the right side. He was trephined and the depressed bone was removed. The dura mater seemed to have escaped injury and was left untouched. The wound became infected, but no symptoms appeared for two weeks after the operation. He then gradually developed, in the course of twenty-four hours, left-sided paralysis with hemianæsthesia. The mental condition was clear and there was no aphasia. The temporal half of the field of vision of the left eye was lost; the right is said to have seemed normal. The fundus was slightly clouded. It was thought that there was an abscess deeply situated in the region of the posterior limb of the internal capsule and two days later an exploring needle was introduced and an abscess was evacuated and drained. The anæsthesia disappeared and the patient moved his left hand, but a few days later he suddenly became worse and died. An abscess of the size of a hen's egg was found deeply situated in the right hemisphere, but from the report it is not clear whether this was another abscess or merely a reaccumulation in the cavity which had been emptied. One curious and interesting symptom was the occurrence of blindness of the temporal half of the visual field of the left eye without any apparent involvement of the visual field of the right eye, and if the abscess found post mortem was another collection of pus, the case illustrates the fact that intra-cranial abscess is not infrequently multiple.

THE ROYAL MEDICAL BENEVOLENT COLLEGE.

THE forty-fifth annual report of the Royal Medical Benevolent College, which provides pensions for aged medical men and the widows of medical men in reduced circumstances, with a school open to all classes but offering special advantages to the sons of medical men, 50 of whom are Foundation scholars, has recently been issued. Though the year has been one of great anxiety in consequence of large but necessary expenses there is a small credit balance. This is satisfactory, but funds are urgently needed and unless increased support is forthcoming the College will be seriously impeded in both sides of its work. It should be borne in mind that "it is not only a benevolent society giving help to the aged and the disabled, and doing inestimable good to the children of those medical men who, from death or other misfortunes, have been unable to provide for their families but it is also a great educational institution, by which the whole profession is benefited; and as such it is entitled to the support, in the first place of medical men, and afterwards of all those who are sensible of their obligations to the medical profession." It is also important to notice that while the expenditure of the benevolent side of the institution is considerably over £6000 a year, the amount received from annual subscriptions is under £3500. The office of the College is at 37, Soho-square, London, W.

A MEDICAL CLEARING-HOUSE.

THE *Manchester City News* of July 16th publishes an article from a correspondent dealing with a project well worthy of consideration by any town which is not so unwieldy in size as London. The writer recalls attention to the fact that many of the Manchester hospitals have their out-patient departments separated from the main building by a distance of, in one instance at least, some miles. Manchester is about to build a new infirmary and the scheme suggested is one to run concurrently with the building scheme. The writer proposes to "erect a building in the centre of the city, on a site to be determined later, which will accommodate all the out-departments of the various hospitals and infirmaries. Each of these sections would be under the care of the same distinguished specialists who are now on the staffs of the various special hospitals, and a small number of beds should be provided for emergency cases. It would, in short, be made the medical clearing-house of Manchester." We cannot but think that this scheme offers certain advantages over the system at present existing in Manchester. For a hospital to have its wards separated from its out-patient department by a distance of over a mile involves an enormous waste of energy of various kinds, principally of labour and money. Another great advantage, as the correspondent of the *Manchester City News* points out, would be the remarkable facilities for teaching

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which such a building would afford, for the mass of clinical material gathered together would be enormous. In the case of London we imagine that such a scheme is not necessary, for in no one of the hospitals so far as we know is the out-patient department distant from the main body more than a few yards; but even were the conditions in London on a par with those of Manchester as regards this point the distances in London are far too great to enable the plan to succeed, and no one building could ever provide for the crowds of out-patients who flock to a London hospital. However, it may be feasible in Manchester, and at any rate the proposal is worth serious consideration.

HEROISM WITH RISK.

THE gallant action of Surgeon-Lieutenant J. H. Hugo of the Malakand Field Force will be fresh in our readers' memory, but none the less we may recapitulate the main facts. A brother officer had been hit by a bullet which cut the axillary artery. Surgeon-Lieutenant Hugo came to his aid and having recognised the injury by the light of a match compressed the vessel between his finger and thumb and held on to it under fire for three hours. When the enemy broke into the camp Surgeon-Lieutenant Hugo picked up the patient and carried him into a place of safety. For this act of bravery Surgeon-Lieutenant Hugo has, we are glad to say, been awarded the Distinguished Service Order. It is no light task even in a quiet room to hold on to an artery for three hours, or even for one, knowing that a man's life depends on the grasp not slipping. To do so with bullets flying all round adds an element calculated to make the task infinitely heavier. The Royal Army Medical Corps and the whole profession may well be proud of Lieutenant Hugo (to give him his present title).

DR. WATT BLACK, after a service of close on 30 years, has resigned the appointment of Obstetric Physician to Charing-cross Hospital and the Council have appointed Dr. Amand Routh to succeed him.

SIR WILLIAM HENRY BROADBENT, Bart., has been appointed one of Her Majesty's Physicians Extraordinary in the room of the late Sir Richard Quain.

THE ACCIDENT TO THE PRINCE OF WALES.

THE profession will have heard with regret that His Royal Highness, during his recent visit to Baron Ferdinand de Rothschild, in descending the staircase at the Manor House, Waddesdon, slipped and fractured his patella. It was at first thought that the injury was less serious, but on the Prince reaching London and being examined by Sir William Mac Cormac and Sir Francis Laking it was found that a fracture had unfortunately occurred. The leg affected is the same one in which many years ago after his severe attack of typhoid fever phlebitis ensued. The accident, as our readers are aware, though troublesome and somewhat tedious in its cure, is fortunately not in any way dangerous to life. It may be interesting to recall its mode of causation. In walking along, sometimes in ascending or descending stairs, the foot slips and the weight of the body forcibly bends the knee; to prevent a fall the quadriceps extensor muscle in the front of the thigh makes a sudden and violent contraction; the strain on the patella, resting as it does on the condyles of the femur, is too great and the bone breaks through the excessive energy of the muscular contraction. Immediately the patella gives way the continued action of the muscle draws the upper fragment away from the lower and an obvious gap is felt between the two pieces. All power to extend the leg is at once lost and the only result of attempts to do so is to increase the distance between the fragments. The fracture always opens into the knee-joint and pain and swelling soon follow from the exudation into the articulation. The difficulties in the way of treatment are many and various and some permanent weakness of the injured joint is not unlikely to result. With care, however, and with time much may be done to ensure a firm union; but whatever treatment be adopted the sufferer must exercise patience if he is desirous of having a limb as strong as before the accident occurred. The fracture is certainly more common in men than in women, probably because it is produced by muscular action; it is almost unknown in children; and it is most frequently met with in the middle period of life, rarely indeed being seen in old age.

The treatment in the Prince of Wales's case will doubtless be the one usually adopted, that is, confidence will be placed in splinting, bandaging, &c.—to secure union in a good position. We understand that the alternative question of operation—i.e., of opening the knee-joint and wiring together the fragments of the patella—has had the fullest and most anxious consideration by the medical attendants, who, after careful weighing of all the circumstances of the case, have decided against it. Lord Lister, who was subsequently called in and whose authority in such matters is indisputable, fully endorsed this view of the matter and the favourable position of the fractured ends of the bone as disclosed on Thursday morning goes far to justify the decision. On that morning at a consultation held at Marlborough House between Lord Lister, Sir William Mac Cormac, Sir Thomas Smith, and Sir Francis Laking a very careful examination was made of the precise state of the fracture. The treatment carried out so far was found to have greatly improved the position of the fragments at the seat of the fracture, and the progress made is all that can be desired in the time which has elapsed since the injury. Lord Lister expressed himself as very much pleased with the progress made and is perfectly satisfied that the right course of treatment is being adopted.

Sir William Mac Cormac has handed us the following report for publication:—

"In consequence of the wide-spread interest taken and the sympathy shown for H.R.H. the Prince of Wales in his recent unfortunate mishap, His Royal Highness, with characteristic consideration for the wishes of those who desire authentic information as to the nature of the injury, has sanctioned the following statement: On Monday morning, July 18th, while coming down the spiral staircase at Waddesdon Manor he missed his footing and in the sudden severe effort made to save himself from falling sustained a fracture of the left patella. On examination it was found that the line of fracture was nearly transverse and close to the upper margin of the patella. About one fifth of the bone, somewhat crescentic in shape, was torn away along with the tendinous insertion of the quadriceps extensor and the gap between the fragments amounted to a little more than 2 in. The joint was distended with blood. Means were adopted to immobilise the limb, bring down the upper fragment, and to prevent tilting. This has proved so far successful that upon examination to-day (Thursday) it was found that the interval between the fragments was greatly diminished, not being now more than a quarter of an inch, and the effusion in the joint is lessened considerably. The condition of the illustrious patient is in other respects most satisfactory, and he is bearing the enforced restraint with exemplary patience and good temper."

His Royal Highness will have the sympathy of the profession during the necessary but irksome period of rest to which he will be subjected and their earnest wishes for his speedy recovery.

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THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE thirtieth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, July 18th. With the exception of the Right Hon. William Mellor all the Commissioners were present. The first part of the sitting was occupied in taking the evidence of Mr. Henry Weeden, vice-chairman of the Ilford Urban District Council. Mr. Frederick George Banbury, M.P., a trustee and manager of the Stock Exchange, then explained a scheme of purchase of the London water companies' undertakings which in his opinion would not increase the rates now paid by consumers and would give the consumer free of cost any possible future increase of profit. Mr. Allen Stoneham, the auditor appointed by the Local Government Board to examine the water companies' accounts, next gave evidence. The latter part of the sitting was occupied by the examination of Mr. Reginald E. Middleton, who gave evidence on behalf of some of the water companies.

Mr. WEEDEN, in answer to the CHAIRMAN, said that the inhabitants in the area of the Ilford Urban District Council obtained their water-supply partly from the East London Waterworks Company and partly from the South Essex Waterworks Company. The district was divided into two distinct areas and there was no competition between the companies. The witness said that the council which he represented were satisfied with the charges made by the East London Waterworks Company and with the quality and the quantity of the water they supplied. The charges made by the South Essex Company were higher than those made by the East London Waterworks Company and the people were not so well satisfied with the quantity and quality of the water supplied to them by the provincial company. There were, in fact, frequent and bitter complaints made with regard to the charges levied by the company. The council which he represented wished to have power either to buy up those parts of the East London Company's works which were in their district and to compete with the South Essex Company, or if the London County Council were authorised by Parliament to buy up the East London Waterworks Company's undertakings they thought that they should be supplied with water in bulk in sufficient quantity to enable them to distribute it in competition with the South Essex Water Company.

In answer to the CHAIRMAN the witness said that applications had been made to the East London Company to supply that part of their district which is now in the area of the South Essex Company and the East London Company had declined to do so.

Mr. DE BOCK PORTER suggested that possibly the East London Waterworks Company were bound by an agreement with the South Essex Company not to supply any water in their district.

In answer to the CHAIRMAN the witness said that no agreement had been made with the London County Council that the Ilford district should have a large increase of water should the East London Company's undertakings be bought by that body.

The CHAIRMAN, referring to the Metropolitan Water Act of 1897, suggested that it applied to the whole of the authorised area of the East London Waterworks Company, and that under this Act the people of Ilford could obtain a constant supply of water, which they have not at present.

Mr. FREDERICK GEORGE BANBURY, M.P., in answer to the CHAIRMAN, said that he was a trustee and manager of the London Stock Exchange. He suggested that in case of purchase of the metropolitan water companies' undertakings the scheme which he submitted would not increase the rates now paid by the consumers and would give to the consumers any increase of profits which might accrue to them under the new management. He suggested that Parliament should create a small statutory central body and that this body should be authorised to create a 3 per cent. perpetual water stock secured on the water rents. The new stock should be made transferable at the Bank of England and trustees should be entitled to invest in it. Each shareholder and debenture-holder in the undertakings of the present metropolitan water companies should receive a sufficient amount of the new water stock to yield to him the same amount of dividend that he is now receiving. One advantage of this scheme was that the purchasing authority would not require to raise any more money than the companies are now raising for new works, if the undertakings were, under the new management, carried on as economically as they are by the present companies. Under the proposed arrangement also all saving in expenses which might arise from the amalgamation of the eight companies would accrue to the water consumers. If it should happen that the profits of the amalgamated undertakings continued to increase as those of the water companies had done in the past, these profits would go to the consumers who would have paid nothing for them. If, again, the profits remained stationary the water consumers would be in the same position in which they are at the present time. Under his scheme nothing was to be paid to the water companies' shareholders for these compulsory changes. In the opinion of the witness this arrangement would be fair to the shareholders as they would gain by the increased value which would be given to their stock by the consolidation of the undertakings and by the fact that trustees were allowed to invest in the new water stock. The advantage of this scheme to the consumer was that the companies' undertakings would be purchased for him for the price he is now paying and he would obtain the advantage of any saving which might be made under the new management and any future increase in revenue which might accrue. The newly constituted water board should receive power to raise money for extending the water undertakings as London increased and judging from past experience this extension would be a source of profit. The companies had during the last twenty years considerably increased their capital and their dividends had also increased considerably. In the opinion of the witness purchase on the basis of the dividend now paid was the only satisfactory method. For some years past each company has been compelled to have its accounts examined by a Government auditor, so that no "tampering with" the dividend was possible, whereas, on the other hand, it is impossible to ascertain the true capital value of such an undertaking. At the present time on the Stock Exchange the market for water companies' stock is small and is not a true criterion of the real value of the stock. The market value of a water company's stock can be easily manipulated. No manipulation is possible in the case of a water company's dividend. Under the scheme which he suggested no new capital would have to be raised by the London ratepayers. This was a very great advantage, for the raising of thirty or forty millions would necessarily affect the money market. If the London County Council were to attempt to raise so large a sum they would not be able to obtain it on terms so advantageous as those on which they were able to raise smaller sums. The scheme he suggested would also supply a growing and long felt want—namely, good trustee securities. With regard to the composition of the new water board—the statutory body which he suggested should be formed to carry out the purchases—the witness suggested that the body should be selected somewhat on the same lines as the Council of India, and it should consist of nine or ten paid members who should be appointed because of their fitness to undertake the management and administration of water supplies.

In answer to the CHAIRMAN the witness said that the new authority should have power to arrange as to what amount of water rent should be paid by the consumers.

In answer to Mr. CRIPPS, Q.C., the witness said that he thought the shareholders of the water companies would be very silly if they did not accept the scheme which he had submitted. It would be a good bargain for them. In the case of purchase on the lines he suggested it was true that a good company would obtain less advantage than a bad company if there were such a thing. In the case, for example, of the West Middlesex Waterworks Company the full authorised amount of water rent was not charged because the company was able to pay full dividends without doing so. Still the shareholders of that company would gain by the proposed alteration because they would have a more marketable stock, and one which could be purchased by trustees. Those companies which were on a less satisfactory financial basis would doubtless gain more than the West Middlesex Company would do by the changes. The witness, however, thought that purchase by arbitration would not be a good thing because it would add materially to the cost of transfer. Although nothing was given under

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his scheme by way of compensation for compulsory purchase the present holders of water companies' stock would gain largely in capital value. At the present time trustee securities were very scarce.

In answer to Sir JOHN DORINGTON the witness said that a 3 per cent. trustee stock at the present time was worth about £115. He thought, however, 3 per cent. was the best amount to arrange for the new water stockholders to receive. Water consumers would obtain the future profits of the undertakings. The witness was opposed to the purchase of the water companies' undertakings by the London County Council. "The City had not much faith in the business capacities of the London County Council."

In answer to Mr. ROBERT LEWIS, who asked whether it would not be possible to make the stock terminable by periodical drawings, the witness said that such an arrangement would not do at all. It was essential that the new water stock should be a "trustee stock."

In answer to the CHAIRMAN the witness said that he thought that the shareholders of the London water companies would consent to the scheme he had suggested, that it would be a great advantage to the shareholders, and as both the parties chiefly interested would profit it was not necessary to pay any attention to the wishes of the London County Council. People objected to purchase by the London County Council, but they would not object to the management being in the hands of a central board.

In answer to Mr. DE BOCK PORTER the witness pointed out that the reason why the present shareholders of the companies' undertakings would benefit was that at the present time there was very little market in the water stocks. Buying water stocks was a matter of negotiation and a jobber would not "make a price." The consolidated water stocks would be readily marketable.

With regard to the proposed new water board Sir JOHN DORINGTON asked the witness whether he considered that a body of experts would manage the business better than an amateur body. The witness asked Sir John Dorington whether that was not his experience and admitted that for his own part he had found that things which required special knowledge were not best managed by amateurs. The witness thought that local authorities should retain the powers which they at present possess with regard to control of the water-supply.

The CHAIRMAN pointed out that in the case of purchase by the London County Council they had been distinctly told by the chairman of the water committee of that body that "the representatives of the people" would not require any control whatever.

In answer to the CHAIRMAN the witness said that he did not believe that there was any "cry" in favour of purchase of the water companies by municipal authorities. Lord Farrer, formerly one of the chief supporters of that policy, had changed his mind on the subject.

In answer to Mr. POPE, Q.C., the witness pointed out that the present owners of water stock would gain an enormous advantage by having a free market in their stocks and from the fact that they would become trustee stocks, a thing which perhaps "the lay mind," if he might say so, might fail to grasp at once.

In answer to Mr. CRIPPS, the Parliamentary agent of the London County Council, the witness said that he was not a holder of any water stocks and that the scheme which he had submitted was his own. The cause of one of the East London water famines was due to the opposition of the London County Council to the East London Waterworks Company's Bill for the enlarging of the reservoirs. This statement Mr. CRIPPS denied. Mr. PEMBER, Q.C., loudly re-asserted it and the CHAIRMAN said the matter did not concern the Commissioners and the Commission could not be made a draught house for the dispute.

Mr. ALLEN STONEHAM, the auditor appointed by the Local Government Board under the Metropolis Water Act of 1871 to audit the accounts of the metropolitan water companies, explained the system on which he examined the accounts. In answer to the CHAIRMAN the witness explained that according to the Act of Parliament under which he worked the accounts of the companies were examined from the years 1864 or 1869. When he took over the audit he had necessarily to accept the capital account as given by the metropolitan water companies. In some cases doubtless the capital represented obsolete works. He had been forced on more than one occasion to go to arbitration with regard to the accounts submitted by the metropolitan water companies. On one occasion, for example, there was a question as to the place in which the amount received for the sale of property belonging to the New River Company should be put, whether it should be considered as capital or as interest. In this case the decision given by the present Lord Chancellor was in favour of the company. The witness pointed out that he was not an engineer, that he had no right to visit the companies' properties, and that of course he could not tell whether the engines were worn out or not.

In answer to Mr. DE BOCK PORTER the witness said that the companies did not write off anything for depreciation.

In answer to the CHAIRMAN the witness said that with regard to the amount paid for engines he had, of course, to trust that the directors paid the right amount and that the sums paid were correctly given in the accounts submitted to him. In case the witness required counsel's opinion he had to pay for it himself. He had applied on one occasion to the Board of Trade for expenses which he had paid out of his own pocket and the Board declined to pay those expenses. In one case in which he felt compelled to go to arbitration Sir Henry James, who was the arbitrator, had "acted as counsel" for him. In that case Sir Henry James was arbitrator and "counsel"—that is to say, he told the witness he would do what he could to assist him.

The CHAIRMAN asked whether in this case Sir Henry James was arguing the case "to himself." The witness said that this was the fact and that the Solicitor-General was against him. The Act under which he was appointed made no provision for any legal expenses to be paid by the witness.

In answer to Mr. PEMBER, Q.C., the witness said that although the money paid to him by way of remuneration for his services was as a matter of fact found by the companies it was collected, apportioned, and paid by the Local Government Board.

In reply to Mr. CRIPPS, the Parliamentary agent of the London County Council, the witness said that the West Middlesex Company got rid of some of their surplus profits by giving gratuities to clerks and officials. With regard to the general question of what was capital expenditure, when the witness objected to any particular item occasionally the companies gave way and occasionally he gave way.

Mr. REGINALD E. MIDDLETON, who gave evidence on behalf of some of the metropolitan water companies, said he was a civil engineer, a Member of the Institution of Civil

Estimate of the cost for the construction of five reservoirs to hold a total quantity of 18,000 million gallons and to afford a supply of 123½ million gallons a day.

	£	£
Storage capacity of 18,000 million gallons, at £155 per million gallons stored...		2,790,000
Aqueduct, buildings, pipes, land, fences, &c., for the delivery (along with the aqueduct already authorised) of 270 million gallons daily		908,816
Cost of pumping mains		80,000
Cost of pumping machinery to pump to store		153,592
Cost of pumping power *for supply*, 9000 p h.p. at £45 per p.h.p.		405,000
Total capital cost		4,337,408
Cost of pumping *to store*, during 20 years, at a cost of 7*s.* 6*d.* per million gallons ...	201,924	
Cost of pumping *to supply*, during 20 years, a quantity increasing from *nil* to 123½ million gallons daily, at £2·41 per million gallons actually pumped	1,037,930	
		1,239,854
		5,577,262

Cost of bringing 123½ million gallons from Wales to London, calculated by analogy from the cost of the Thirlmere, Vyrnwy, and Elan Valley works.

YRFON RESERVOIR.	£
Cost of storage for the delivery of 123½ million gallons daily and for 81 miles of pipe-lines and conduit at an average cost of £91,611 per million gallons of daily supply	11,313,958
Add for an average of 81 miles of conduit beyond that in the Thirlmere, Vyrnwy, and Elan Valley schemes to convey 215 million gallons daily at £64,000 per mile	5,184,000
Add for service reservoirs and filters at Elstree	1,314,750
Add for mains between service reservoirs at Elstree and the service reservoirs of the companies	3,000,000
Cost of pumping machinery to pump to supply 30 million gallons daily, equal to 2,184 p.h.p., at £45 per p.h.p ...	98,280
Total capital cost	21,910,988
Cost of pumping to supply during 20 years a quantity increasing from 21·7 to 29·8 million gallons at 30*s.* per million gallons pumped	279,549
	21,190,537

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Engineers, of the Institution of Mechanical Engineers, Fellow of the Surveyors' Institute, Member of the Sanitary Institute, and Fellow of the Royal Meteorological Society. He was Assistant Commissioner to the Royal Commission of which Lord Balfour was chairman. The witness handed in a printed statement of considerable length some of which bore upon the evidence which was given by Sir Alexander Binnie. The tables were, however, not drawn up on exactly the same lines and the CHAIRMAN remarked that it seemed to be a pleasure to scientific gentlemen to introduce changes. These changes did not facilitate a comparison between the statements which had been put in by Sir Alexander Binnie and those of the present witness, who was asked to submit a table at the next meeting which could be more easily compared with those given by Sir Alexander Binnie. There were, however, two tables which the Chairman considered of sufficient importance to go on the notes. Of these tables one referred to the Thames storage reservoirs and the other to the cost of the work necessary for bringing a supply of water from Wales. These tables should be compared with those given by Sir Alexander Binnie which have already been published in THE LANCET.[1]

The next sitting of the Royal Commissioners will be held at the Guildhall, Westminster, on Monday next, July 25th, at 12 midday. It is hoped that after Monday next there will be an adjournment until some date, not yet fixed, in November.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

QUARTERLY MEETING OF COUNCIL.

A QUARTERLY MEETING of the Council was held on July 14th, the President, Sir WILLIAM MAC CORMAC, Bart., being in the chair.

The PRESIDENT reported the result of the election of members of Council, as published in THE LANCET of July 9th, p. 114, and Mr. Richardson Cross, Mr. Morris, and Mr. Langton were introduced, made the declaration in the terms of the oath prescribed by the Charter of 1800, and took their seats as members of the Council.

The SECRETARY reported the death, at the age of eighty-one years, of Mr. Henry Lee, a past-member of the Council, and the Council recorded their deep regret at the death of Mr. Henry Lee whom they greatly esteemed both as a colleague and as a member of the profession and expressed their very sincere sympathy with his widow and family in their bereavement.

The Council approved of a sum of money being expended upon a series of drawings illustrating the pathogenic bacteria of man.

A report of the Committee of Management was approved: it was to the effect that, as already approved by the Royal College of Physicians of London, candidates for the second examination should be required to dissect for twelve months after having received the instruction necessary for admission to Parts I. and III. of the first examination.

The Council (on the recommendation of the Nomination Committee) made the following appointments:—

Hunterian Professors: Mr. Leonard Erskine Hill (subject: Researches on the Influence of Gravity on the Circulation); Mr. Frederick Gymer Parsons (subject: Joints of Mammals contrasted with those of Man); and Mr. Charles Stewart (subject not determined). *Arris and Gale Lecturer:* Mr. Berkeley G. A. Moynihan (subject: The Anatomy and Surgery of the Peritoneal Fossæ). *Erasmus Wilson Lecturer:* Dr. Thomas Grigor Brodie (subject: The Chemical Pathology of some Infective Diseases).

Mr. Rickman J. Godlee was re-elected a member of the Court of Examiners and Mr. J. Howard Mummery was elected a member of the Board of Examiners in Dental Surgery.

A letter was read from Mr. Thomas Bryant reporting the proceedings of the General Medical Council at their late session, and the best thanks of the Council were given to Mr. Bryant for his services as the representative of the College on the General Medical Council.

A letter was read from the Metropolitan Counties Branch of the British Medical Association thanking the Council for allowing the branch to hold a conversazione at the College in June last.

Mr. Bryant was nominated as representative of the College on the Council of the Queen Victoria's Jubilee Institute for Nurses.

The PRESIDENT reported that the required quorum was not present on July 7th when a meeting of Fellows had been called and therefore no meeting was held.

Mr. Thomas Cooke's school was recognised for the ensuing year.

As already reported in THE LANCET, Sir William Mac Cormac, Bart., was re-elected President and Mr. T. Pickering Pick and Mr. Howard Marsh were appointed Vice-presidents. Mr. S. G. Shattock was re-elected pathological curator.

The next meeting of the Council will be held on Tuesday, Aug. 2nd.

ADDITIONS TO THE MUSEUM.

Every year for two or three days in the week in which the election to the Council takes place there is an exhibition of all the specimens which have been added to the Museum during the preceding year.

The new specimens are far too numerous to be mentioned in detail, but an account must be given of those of the greatest interest and importance. Mr. Breward Neal has presented the base of a skull from a case of acromegaly; it shows a greatly enlarged pituitary body. Dr. A. E. Lloyd has given some specimens from a case of diffuse congenital angeioma of the leg; many phleboliths are shown in the dilated deep veins and the tibia and fibula have had an irregular deposit on the surface of new periosteal bone. A specimen of the tongue and larynx from a case of leprosy shows well the great amount of deformity which may occur in these organs in this disease. Almost all the specimens which illustrated Mr. Percy Furnivall's Jacksonian Prize Essay have been added to the Museum; they are twenty-three in number and consist of morbid growths from the stomach and intestines and one specimen shows a section of intestine with a Murphy's button *in situ;* this is intended to illustrate the manner in which the button unites two pieces of bowel. Professor Rose Bradford has presented a specimen which shows the atrophy of the kidney following ligature of the ureter when the dilated pelvis is subsequently drained. Mr. Pearce Gould has given an example of a horseshoe kidney affected with carcinoma. A series of six specimens of molluscum contagiosum on the heads of birds shows well the prevalence of this disease and the fact that two of the specimens (North American bunting sparrows) were mates is much in favour of the contagious character of the condition. The first ovarian cyst removed by Sir Spencer Wells (in 1858) is amongst the additions. Marked retroflexion of the uterus in a monkey is shown in a specimen presented by Dr. W. K. Sibley. Mr. J. Tweedy and Mr. Devereux Marshall have given seven preparations mounted in glycerine jelly illustrating injuries and diseases of the eye.

Laennec's stethoscope (a somewhat ponderous instrument) and the first subcutaneous osteotomy saws used by Mr. William Adams were also on view.

The drawings and photographs were very good and especially must be mentioned one showing hypertrophy of the breasts presented by Mr. H. H. Clutton, and a skiagram showing phleboliths in the case of diffuse angeioma already mentioned.

Mr. Shattock, the pathological curator, has commenced to prepare a series of specimens illustrating the naked-eye characters of cultures of the chief bacteria causing disease in the human subject; these have been preserved by formalin and are to be accompanied by drawings of the microscopic appearances of the micro-organisms. A series of specimens almost equally useful illustrates the effects in animals of inoculation by pathogenic organisms; for instance, one specimen was part of the back of a rabbit showing an abscess due to the intramuscular injection of a broth culture of staphylococcus pyogenes aureus. The additions to the physiological series are even more numerous. A large number of specimens illustrate the various forms of flexible bands intended for union and support. Many specimens show the variations which occur in the muscular systems in animals; as an instance may be mentioned a specimen illustrating the fact that in a setter the soleus muscle is absent. The separation of the two constituent portions of the suprarenal bodies is shown in a skate (Raia clavata), in which are (*a*) a series of small-paired bodies on

[1] THE LANCET, June 11th, 1898, p. 1644.

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the costal arteries and connected with the sympathetic nervous system, and corresponding to the medulla; and (*b*) an interrenal U-shaped body which corresponds to the cortex of the suprarenal bodies of higher vertebrates.

The exquisite dissections, for which the Museum is unrivalled, are on this occasion numerous, and especially may be mentioned dissections showing the sensory and ampullary canals of the skin; these are intended to secrete a lubricating mucus, but from the presence in them of "hair cells" like those in the olfactory mucous membrane and the ampullæ of the semicircular canals, they are thought to be also organs of sense.

Symbiosis is illustrated by some ants (Coractus intrudens) and portions of the stem of a plant in which they live, and parasitism is exemplified by a dodder (Cuscuta epithymum), which lives on a gorse (Ulex europæus); as the dodder does not contain chlorophyll it is dependent on its host whom it pierces by special processes. The dissections illustrating human anatomy are numerous.

There is only one thing to be regretted about this exhibition and that is the fact that it was open for only two days. We think that if it were possible it would be well to have it open for at least a week.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6411 births and 3159 deaths were registered during the week ending July 16th. The annual rate of mortality in these towns, which had declined in the three preceding weeks from 15·1 to 14·7 per 1000, was last week again 14·7. In London the rate was 14·1 per 1000, while it averaged 15·1 in the thirty-two provincial towns. The lowest death-rates in these towns were 8·7 in Portsmouth, 9·0 in Blackburn, 9·2 in Croydon, and 9·5 in Derby; the highest rates were 19·0 in Manchester, 19·3 in Salford, 22·6 in Bolton, and 22·9 in Newcastle-upon-Tyne. The 3159 deaths in these towns included 378 which were referred to the principal zymotic diseases, against 342 and 330 in the two preceding weeks; of these, 122 resulted from diarrhœa, 83 from whooping-cough, 79 from measles, 54 from diphtheria, 24 from scarlet fever, and 16 from "fever" (principally enteric). No fatal case of any of these diseases occurred last week in Croydon or in Blackburn; in the other towns they caused the lowest death-rates in Sunderland and Brighton, and the highest rates in Plymouth, Salford, Birkenhead, Gateshead, and Newcastle-upon-Tyne. The greatest mortality from measles occurred in Plymouth, Norwich, Newcastle-upon-Tyne, and Gateshead; and from whooping-cough in West Ham, Salford, and Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 54 deaths from diphtheria included 39 in London, 4 in Cardiff, and 3 in Leeds. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2314, against 2238, 2205, and 2250 on the three preceding Saturdays; 265 new cases were admitted during the week, against 231, 204, and 237 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 162 and 160 in the two preceding weeks, rose again to 175 last week, but were 9 below the corrected average. The causes of 29, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Manchester, Leeds, and in sixteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, and Halifax.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·1 and 20·0 per 1000 in the two preceding weeks, further declined to 18·5 during the week ending July 16th, but exceeded by 3·8 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 17·0 in Aberdeen and 17·7 in Dundee to 23·7 in Greenock and 23·8 in Perth. The 559 deaths in these towns included 26 which were referred to whooping-cough, 26 to diarrhœa, 23 to measles, 9 to scarlet fever, 5 to "fever" (principally enteric), and 4 to diphtheria. In all, 93 deaths resulted from these principal zymotic diseases, against 119 and 96 in the two preceding weeks. These 93 deaths were equal to an annual rate of 3·1 per 1000, which was 1·3 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 35 and 21 in the two preceding weeks, rose again to 26 last week, of which 18 occurred in Glasgow, and 4 in Paisley. The 26 deaths from diarrhœa were within one of the number in the preceding week, and included 16 in Glasgow. The fatal cases of measles, which had been 41 and 36 in the two preceding weeks, further declined to 23 last week, of which 10 occurred in Glasgow, 4 in Edinburgh, and 4 in Dundee. The 9 deaths referred to scarlet fever showed a slight further increase upon recent weekly numbers and included 4 in Edinburgh, 2 in Glasgow, and 2 in Dundee. Of the 5 fatal cases of "fever" 4 were recorded in Glasgow, and the 4 deaths from diphtheria included 2 in Greenock. The deaths referred to diseases of the respiratory organs in these towns, which had been 101 and 106 in the two preceding weeks, declined to 76 last week, but slightly exceeded the number in the corresponding period of last year. The causes of 35, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the three preceding weeks from 22·8 to 20·3 per 1000, further fell to 18·5 during the week ending July 16th, a lower rate than has been recorded in any week since September, 1896. During the past four weeks the death-rate in the city has averaged 20·9 per 1000, the rate during the same period being 14·4 in London and 19·5 in Edinburgh. The 124 deaths registered in Dublin during the week under notice showed a decline of 12 from the number in the preceding week, and included 3 which were referred to the principal zymotic diseases, against 11 and 6 in the two preceding weeks; of these, 1 resulted from scarlet fever, 1 from whooping-cough, and 1 from diarrhœa, but not one either from small-pox, measles, diphtheria, or "fever." These 3 deaths were equal to an annual rate of 0·4 per 1000, a lower rate than has been recorded in any week since February, 1896. The zymotic death-rate last week was equal to 1·9 per 1000 both in London and in Edinburgh. The 124 deaths in Dublin last week included 16 of children under one year of age, and 27 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from the numbers in the preceding week. Six inquest cases and 4 deaths from violence were registered; and 49, or more than a third, of the deaths occurred in public institutions. The causes of 5, or more than 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

THE following appointments of Staff-Surgeons are announced:—Ernest E. Bray to the *President*, for the Royal Victoria Yard, Deptford, and George Welch to the *Boscawen*, for Portland Sick Quarters.

ROYAL ARMY MEDICAL CORPS.

Major W. E. Berryman has been appointed Embarking Medical Officer, Southern District, as a temporary measure, in addition to his other duties. Major F. H. Treherne has assumed charge of the Station Hospital, Brighton. A special Army Order has been issued stating that permission will be given to non-commissioned officers and men belonging to the Reserve of the Royal Army Medical Corps (sections B and C) to rejoin the colours, according to the terms of their service, subject to certain conditions. Major James E. Nicholson retires from the service receiving a gratuity. Surgeon-General W. Taylor has been appointed Principal Medical Officer on the staff of Major-General W. F. Gatacre, C.B., in the forthcoming expedition to Khartoum.

The Khedive of Egypt has decided to bestow the Order of

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the Osmanieh on Captain Penton, who was attached to the Soudan Expedition. Lieutenant Hugo, who attended a dangerously wounded brother officer for three hours under fire, holding his bleeding artery and finally bearing him to a place of safety, has been rewarded with the decoration of the Distinguished Service Order. Lieutenant-Colonel G. H. Le Mottée, who has been promoted to brigade rank, took part in the Boer War of 1881.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Surgeon-Captain Grayfoot have been placed at the disposal of the Military Department. Surgeon-Lieutenant-Colonel Dane is promoted to be Brigade-Surgeon-Lieutenant-Colonel, vice Brigade-Surgeon-Lieutenant-Colonel Arnott, retired. Surgeon-Lieutenant Powell (Burmah Valley Light Horse Volunteer Corps) has been appointed Surgeon-Captain. Surgeon-Lieutenant-Colonel Pemberton (Malabar Volunteer Rifles) has resigned his commission. Surgeon-Lieutenant Watson (6th Infantry, Hyderabad Contingent) has been appointed to the Officiating Medical Charge of the Regiment, vice Surgeon-Lieutenant-Colonel Swaine, appointed to officiate as Principal Medical Officer, Hyderabad Contingent. Surgeon-Captain Buchanan has been appointed Temporary Superintendent of the Central Jail, Dacca. Surgeon-Captain Gwyther has been appointed to be Inspecting Medical Officer at Chausa Station on the East Indian Railway. Surgeon-Captain Deare has been appointed to be Civil Surgeon of Nadia. Surgeon-Captain Oldham has been appointed to be Civil Surgeon of Backerganj. Surgeon-Major Walsh has been appointed to act as temporary Civil Surgeon of Murshidabad. Surgeon-Lieutenant-Colonel McConaghey, Civil Surgeon, Lucknow, has been appointed to hold Visiting Medical Charge of Rae Bareli in addition to his own duties. Surgeon-Captain Crawford, Civil Surgeon, has been transferred from Muttra to Lucknow. Surgeon-Captain Morton (Madras) has been transferred to the half-pay list. The following officers have retired from the service: Brigade-Surgeon-Lieutenant-Colonel Cunningham C.I.E. (Bengal), Surgeon-Lieutenant-Colonel Baker (Bengal), Surgeon-Lieutenant-Colonel Fitzpatrick (Madras), and Surgeon-Lieutenant-Colonel Backhouse (Madras). The services of Surgeon-Captain Clarkson and Surgeon-Captain O'Kinealy are replaced at the disposal of the Government of Bengal. The services of Surgeon-Captain Street are placed temporarily at the disposal of the Government of Bombay. The services of Surgeon-Captain Vickers are placed at the disposal of the Government of Madras. The services of Surgeon-Captain Henvey are placed temporarily at the disposal of the Chief Commissioner of the Central Provinces. Surgeon-Major Smith, Civil Surgeon, Shahjehanpur, has been appointed to hold Visiting Medical Charge of the Hardoi District in addition to his other duties. The names of the under-mentioned officers, whose promotion to the rank of Surgeon-Lieutenant-Colonel was notified in the *London Gazette* of June 17th, are as follows, and not as given in that *Gazette*: Sir George Scott Robertson, K.C.S.I., and Damodar Purshotam Warliker. A small committee, composed of two medical officers belonging to the Home and Indian Medical Services respectively, is about to meet at Simla to consider the question of modifying the field hospital equipment, with a view to its reduction, in the light of the experience gained during the recent operations on the frontier.

YEOMANRY CAVALRY.

Pembroke: James Wilson is appointed Surgeon-Lieutenant.

VOLUNTEER CORPS.

Light Horse: 1st Fifeshire: Surgeon-Captain A. Drysdale has resigned his commission but is permitted to retain his rank and to wear the uniform of the corps. *Artillery*: 1st Gloucestershire: Surgeon-Lieutenant W. Monckton has resigned his commission. *Rifle*: 1st Surrey (South London): Surgeon-Major C. S. Smith has resigned his commission but is permitted to retain his rank and to wear the uniform of the corps. 4th Volunteer Battalion the King's (Liverpool Regiment) Mr. J. H. P. Graham has been appointed Surgeon-Lieutenant. 5th (the Hay Tor) Volunteer Battalion the Devonshire Regiment: Surgeon-Captain W. H. Webb has been appointed Surgeon-Major. Surgeon-Lieutenant J. F. S. Clarke has resigned his commission. 5th Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Dr. James Pearson Brown has been appointed Surgeon-Lieutenant.

THE SPANISH-AMERICAN WAR.

Events have been rapidly moving of late in connexion with this war. The capitulation of Santiago and the Spanish evacuation of that city have taken place just at the right time for the United States, for an outbreak of yellow fever had occurred in the American lines, torrential rains were falling, and the situation of General Shafter's force, owing to the exposure of the troops and a breakdown in its supply departments, was becoming a serious cause of anxiety at Washington. Under such circumstances it was only to be expected that the hospital accommodation and medical arrangements were inadequate and left much to be desired. The storming and capture of the entrenchments of Santiago would, if stoutly defended, have been a formidable affair and have involved a serious loss of life. The Spanish troops, numbering some 10,000, are to be sent back to Spain, while a sufficient number of American troops will garrison Santiago to keep order, and the rest will no doubt be removed from the hot and unhealthy Cuban seaboard to the hills or return to America. It does not appear that there was any large amount of sickness or any actual famine among the Spanish troops at Santiago at the time of its surrender, but supplies were nevertheless running short, and a great deal of destitution prevails generally amongst the Cuban population. It has been decided to establish a large military hospital at Santiago, and to send a large additional force of medical men, nurses, and medical supplies there. The American troops who have taken part in the expedition to Santiago will not be fit for active service elsewhere for some time to come owing to the hardships which they have undergone and to the prevalence of disease — yellow fever and malarious types of fever and dysentery. According to late accounts there were between 200 and 300 cases of fever in hospital. The hospital ship *Solace* brought 48 wounded Spaniards to the States in a pitiable condition and they were transferred to a naval hospital for treatment. Peace is generally talked of, but there is no definite news as to the Spanish Government having made any official proposals or overtures to bring it about and the United States Government are losing no time in fitting out expeditions for the bombardment of Spanish ports and for the attack and capture of Porto Rico. Meanwhile they have bombarded Manzanillo and destroyed some Spanish ships. The Americans will yet have a difficult task in dealing with the Cuban insurgents who have assumed a hostile attitude towards them.

INVALID BRITISH SOLDIERS IN INDIA.

In THE LANCET of June 25th last we called attention to a question which had been raised in the House of Commons, after having been previously discussed in the columns of the *Morning Post*, regarding the establishment of hospitals and homes for sick and disabled soldiers. In connexion with that subject we pointed out that, as everybody knows who has had any personal experience of sickness, a man is not usually fit to return to his ordinary work on recovery or during convalescence from any illness if it has been at all severe in character. The recommendation that a soldier should be put on light duty or allowed to go on sick furlough does not sufficiently meet all cases; nevertheless, the present method of providing light duty for soldiers discharged from hospital might no doubt be largely extended with advantage to them and to the service. We learn that under instructions from the Secretary of State for War a General Order has been published in India notifying that in order to check if possible the waste which is caused by the invaliding of young British soldiers it is desirable that a certain time may be allowed to pass after the discharge of men from hospital before they are called upon to perform their full duties as soldiers. With a view to attaining this object officers in medical charge of British troops on notifying to commanding officers that soldiers have been discharged from hospital will, when they consider it advisable, state from what particular duties and for what period such men should be exempted.

REVISED FIELD MEDICAL EQUIPMENT.

We have received a description in pamphlet form of the Revised Field Medical Equipment (1898 Pattern) promulgated by Army Orders dated July 1st. The "field medical companion" will in future be known as the "medical companion," the special surgical panniers as "field surgical panniers," and the box of apparatus for fractures and dislocations as the "general fracture box." An antiseptic case (weight about 43 lb.) has been added. Compressed drugs, termed "tablets," have been extensively adopted. The amount of anæsthetics carried has been

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largely increased. All surgical instruments are metal handled. Sterilisers (field pattern) have been added. In the panniers and fracture box, splints have been entirely abolished and perforated zinc substituted, together with tools for making it into splints. All field medical units are now supplied with operating tables.

SURGEON-GENERAL W. TAYLOR.

Surgeon-General Taylor had the honour of forming one of a party of officers dining with the Queen and Royal family previously to embarkation for Egypt to take part in the forthcoming expedition to Khartoum. Surgeon-General Taylor, as we have already intimated, will act as principal medical officer of that expedition and subsequently, on completion of that service, will proceed to India as Surgeon-General and principal medical officer of Her Majesty's forces in relief of Surgeon-General Gore, who will go on the retired list in December next.

ENTERIC FEVER AT OOTACAMUND.

There has been a good deal of enteric fever prevailing of late at this favourite hill station and the Madras Government have appointed a committee to inquire into and report upon the causes of it.

We are glad to hear that Surgeon-Major-General Cleghorn, C.S.I., of the Indian Medical Service, has recovered from the results of his late accident while bicycling.

Correspondence.

"Audi alteram partem."

A PROPOSED SCHOOL FOR TROPICAL DISEASES.

To the Editors of THE LANCET.

SIRS,—Sir H. Burdett in the *Times* of July 11th writing of a proposed school for tropical medicine, states that "the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich, as well as of the branch hospital, together with a number of teachers specially selected and attached to the new school." This was the first intimation of any kind that we had that such a scheme was on foot, and the statement was made without our authority or consent.

We are, Sirs, yours faithfully,

JOHN CURNOW, M.D., F.R.C.P.Lond.,
JOHN ANDERSON, M.D. St. And., F.R.C.P. Lond., } Visiting Physicians.
G. R. TURNER, F.R.C.S.Eng., Visiting Surgeon.

Dreadnought Seamen's Hospital, Greenwich, July 18th.

"REGINA *v.* COLLINS": A PLEA FOR AMENDED LEGISLATION.

To the Editors of THE LANCET.

SIRS,—It would serve no good purpose to dwell in the page of a professional journal on the unspeakably low moral tone of so-called "society," on which the revelations of the recent trial have thrown such a lurid light. The sentiments of the community have already found adequate expression in the columns of the lay press—notably the *Times*—whose fearlessly outspoken article has rendered a distinct service to the cause of public morality. Rather, with your kind permission, would I remind my professional brethren that this trial has once more called attention to the exceedingly shadowy nature of our privileges as duly registered members of the medical profession. When the general public learn, as in this case, that an unregistered man may engage with perfect impunity in medical practice until his career is checked by conviction for felony they not unnaturally ask what the privileges of registration really mean. Briefly they are somewhat as follows. We may sign valid certificates, we may offer ourselves as candidates for public appointments, and we may claim (though we may not always obtain) our fees in a court of law. Apart from this our position is aptly described in the following extract from the leading article in the *Times*: "He [Collins] must have known in what degree his calling was esteemed, or he himself as a member of it, when he found that his patients were as ready to honour him with their confidence after he had been convicted of felony as before, and that a trifle of this kind scarcely at all affected his position." Significant words, and only too true.

A duly enrolled solicitor is adequately protected by law against unscrupulous competition on the part of those whose names have never appeared in the Law List or whose misconduct has entailed their removal from it. The same protection is afforded to duly ordained clergymen of the Church of England. Why, then, should duly registered members of a profession not a whit less honourable be obliged to share the right of practice with anyone possessed of sufficient self-assurance to make a show of professional skill and sufficient cunning to keep within the generously defined bounds imposed by the existing law? Your columns have again and again exposed this absurd and indefensible anomaly. May we not hope that the General Medical Council, as custodian of our Register and of the honour of our profession, may find an early opportunity for urging on our legislators the necessity for some amendment of the present statutes? I feel confident, Sirs, that your powerful aid will not be wanting and that you will allow the subject to be thoroughly ventilated in your columns.

I am, Sirs, yours faithfully,

T. R. HENDERSON, M.B. Edin.

Bedford-hill, S.W., July 5th, 1898.

"A PHYSICAL BASIS IN THE DRUNKENNESS OF WOMEN."

To the Editors of THE LANCET.

SIRS,—I am much obliged for your paragraph on this matter, for its criticism is at least much more kindly and fair than most of that which I have come across.

In most instances I am wholly misrepresented because of a ridiculously garbled and inaccurate report prepared for one of the reporting companies which appeared in most of the morning papers. Even your paragraph falls into one error in which you make me say that I recommend the use of alcohol in treating the inebriety of women. This is not the fact. What I did say was that in the climacteric drunkenness of women I did not regard total deprivation as necessarily a part or always a safe plan. That men and women in the better ranks of life differ materially in their ways of abusing alcohol is a fact which no one can dispute. That there is a specific drunkenness amongst women confined to the climacteric period is a point on which I want the eyes of my profession to be opened. I have often declared it, but my work has so far received no recognition. But I know it not only as a practitioner but as an intimate friend and relation of some of its victims.

That the agonising suffering induced by chronic pyosalpinx and kindred ailments will induce the victims to the periodic abuse of alcohol and morphia, and that these habits may be cured as the sufferings are by surgical treatment, are facts which are proved up to the hilt by my surgical records. My brethren may dispute my conclusions as much as they like, but if they bear my statements in mind and look about for evidence they will not be long before they find that the facts and my statements run together.

Having arrived at such conclusions it seems to me a terrible thing that women may, under the Government Inebriates Bill, be put in prison because they are the victims of curable surgical ailments.

I am, Sirs, yours faithfully,

LAWSON TAIT.

Newhall-street, Birmingham, July 18th, 1898.

"ARSENIC IN WOOL."

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to a letter in THE LANCET of July 9th under the above heading. My only reason for referring to this correspondence is to correct a misapprehension on the part of the writer of the letter, who says: "I believe it is nearly if not quite impossible to buy any sheep's wool (home or foreign grown) which does not contain arsenic." This is a mistake, for while it is quite true that the great majority of sheep are arsenic-dipped a very large number are dipped with other substances, principally carbolic dip, next tobacco, and a considerable number with lime and sulphur. I manufacture, for home and export trade, both arsenical and carbolic sheep dips, and I find that exactly 20 per cent. of my total output last year was carbolic sheep dip; fully 80 per cent. of this carbolic dip was

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exported to the colonies and to South America. There are at least ten or a dozen other firms making both varieties of sheep dip for home and foreign trade, some of whom I am sure sell a larger proportion of carbolic dip.

I am, Sirs, yours faithfully,

Oban, July 18th, 1898. ALEX. ROBERTSON.

TRANSPERITONEAL LIGATURE OF THE ILIAC ARTERIES.

To the Editors of THE LANCET.

SIRS,—A paper on this subject which may have escaped Mr. Frederick Page's notice was published by Dr. Thomas S. K. Morton, Professor of Surgery in the Philadelphia Polyclinic, on Jan. 15th, 1898, in the *Journal* of the American Medical Association. Dr. Morton collected 29 cases, including one operated on by me.

I am, Sirs, yours faithfully,

Liverpool, July 18th, 1898. F. T. PAUL.

SWALLOWED COINS.

To the Editors of THE LANCET.

SIRS,—In reference to Mr. Robson's cases of removal of impacted halfpennies from the œsophagus I may mention that I have quite lately had under my care a boy, aged ten years, who swallowed a penny. The x rays revealed the foreign body in the stomach some 10 days after the event. He was kept on dry food and in about 20 days the boy passed the coin *per anum*. The parents were foolish and purgatives were as usual administered. It is interesting to know that so large a coin as a penny can be swallowed by a small boy and safely pass the pyloric and ileo-cæcal valves, and points to the lesson that we should not be in too great a hurry to operate in such cases.

I am, Sirs, yours faithfully,

July 20th, 1898. A. MARMADUKE SHEILD.

"THE DRAINAGE OF SWANAGE."

To the Editors of THE LANCET.

SIRS,—As medical officer of health of Swanage I must protest against your annotation headed "The Drainage of Swanage," which is calculated to give a wrong impression and lead visitors to suppose that our town is in a very insanitary condition. It is true that we are waiting for the late autumn to carry our drainage outfall further out to sea, but practically the present outfall is no nuisance to the bay or town owing to the comparatively small amount of sewage passing through it; and the distant outfall is to be constructed under the impression that Swanage will rapidly increase in size. What is of more importance is a pure supply of water. This, we are thankful to say, we have, and since I have been medical officer of health, a period of over eight years, there has not been a case of typhoid fever in the town and diphtheria is practically unknown. Unfortunately our council has not adopted the Notification of Infectious Diseases Act, but my brother practitioners are always willing to let me know if they have any infectious cases under their care and I may safely say that we are now free, and have been for months past, from any infectious complaints. I am, Sirs, yours faithfully,

A. S. MCCAUSLAND, M.D. Brux., L.R.C.P. Lond., M.O.H.

Swanage, July 19th, 1898.

P.S.—The *Bournemouth Guardian* you quote from is the organ of a rival watering-place whose medical men and residents frequently come to Swanage for the benefit of the bracing air during the summer months.

*** Our contention is that the sanitary defects pointed out by Dr. S. W. Wheaton in his report made in 1897 still remain. We are glad to hear there is neither typhoid fever nor diphtheria, but are not the conditions in Swanage such as to favour the spread of these diseases should they arise?—ED. L.

CHURCH SANITARY ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly permit me to make known to your readers the aim of the Church Sanitary Association? The object of the society is to aid, by means of the Church's institutions in every parish, in securing for all fresh air, pure water, abundant light, proper food, improved dwellings, wholesome surroundings, and the greatest possible immunity from infectious diseases. With county councils, district councils, and parish councils ready to put into effect the judgment of sanitary officers it is all the more necessary for the preacher to drive home the lesson that man is his "brother's keeper." I am, Sirs, yours faithfully,

F. LAWRENCE, Hon. Secretary.

Church House, Westminster, S.W., July 15th, 1898.

*** We print this letter with pleasure, but our previous allusions to the society must have made its scope familiar to our readers.—ED. L.

BONE-SETTERS AND THE EMPLOYERS' LIABILITY ACT.

To the Editors of THE LANCET.

SIRS,—I wish to ask your opinion on a class of individuals who call themselves "bone-setters." A duly qualified and registered man is called in the first instance to an accident and pronounces it a fracture of both bones just above the ankle. Afterwards a "bone-setter" is employed without in any way informing the medical attendant and tells the patient's employers that "his spiel bone is broken and his ankle put out." I had to see the patient as surgeon for the employers under the new Act and in my opinion the surgeon who first saw the case is right. It was fifteen days after the accident before I could examine and thanks, no doubt, to the interference of the quack in the interval the swelling was still so great that the parts could scarcely be made out. What I want to know is, firstly, whether any objection can be raised by employers as to the compensation to be granted when joints and limbs are mauled by an unskilled and unqualified person who takes upon himself the duties of a surgeon; and secondly, whether the General Medical Council can and will protect us, as otherwise of what avail are our long and severe curriculum, our searching examinations, and our strict registration laws? We have to contend with men who have neither science nor a spark of gentlemanly instinct on very unequal grounds. I, and no doubt many others, could give you some terrible results from the interference of these impostors.

I am, Sirs, yours faithfully,

JOHN CRANKE, L.R.C.P. & S. Edin., &c.

Ulverston, July 19th, 1898.

BRITISH MEDICAL ASSOCIATION: ANNUAL MEETING IN EDINBURGH IN 1898.—CONSTITUTION AND CONDUCT OF THE ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—I shall be glad if you will allow me to intimate to those of your readers who are interested in the proposed alteration in the by-laws that an informal meeting will be held on Monday evening, July 25th, in the chief class-room of the new School of Medicine of the Royal Colleges, Bristo-street. The chair will be taken at 9.30 o'clock precisely, and the proposals bearing upon this and other questions will be considered with a view to facilitating discussion thereon when brought before the general meeting. I trust that as many of those members who have reached Edinburgh and are able to will make it convenient to attend. The best train from Manchester will leave Victoria on Monday at 12.50, reaching Prince's-street at 6.5, and I shall be glad if anyone wishing to go by that train will let me know by Saturday night's post so that carriages may be reserved.

I am, Sirs, yours faithfully,

Old Trafford, July 18th, 1898. JAMES BRASSEY BRIERLEY.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—Your correspondents on this subject seem to be extreme, and if you will permit me to give my impressions from a long and varied experience of both sides of the question it may perhaps be of interest. I must say that the

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six years I acted as assistant in three or four different parts of this country, different classes of practice and both in-door and out-door, I lived as I never lived before or since and enjoyed the best of health. I had plenty of sport and amusements and time therefor and never had to complain of any want of consideration on the part of my principals, and in those days of a plentiful supply of assistants I had no difficulty in getting a post at £150 out- or an equivalent in-door and was always offered an increase if I chose to remain on. Then when I purchased a share in a practice my troubles began and were little diminished when in a few years I succeeded to the whole. It was, as your correspondent describes, slavery day and night, no time for recreation and expenses about half the receipts; consequently, according to the old proverb continual dropping "wears away (even) stones," my health broke down, I had to sell out and take a year's rest to undo the results of trying to earn my living in a country practice. My experience of even a good-class country practice is that I would far prefer an appointment of £200 a year clear and work proportionately. As to assistants, I believe that a steady, reliable man can command a good salary and every consideration from his principal. I have only had experience of two. One was a drunkard and the other was most unsatisfactory. A medical man who considers his own interest will do anything in reason to make his assistant comfortable and settled, otherwise he will injure his practice, give himself any amount of trouble and worry, and yet not harm his assistant. In fact, an assistant can easily lighten his work by frequently changing or by making himself unpopular should his principal not choose to make him comfortable or to remunerate him properly. I cannot understand the position of your correspondent "Practitioner"; he was first an assistant, then had a practice, then a partner at No. 1, and now has a practice of his own at £400 a year. I think the fact of a man working practically "night and day" for £400, keeping two horses and possibly a bicycle, and a £40 drug bill, and requiring an assistant "badly," shows that in selecting a practice he has come upon a *rara avis*. I have practised in one of the poorest and most scattered of agricultural districts where the union appointment was worked at a loss, almost all the remaining population in clubs, and midwifery all round averaged 15*s*. a case, and yet I almost doubled the income of your correspondent. There is no doubt but that if medical men were more in union their conditions of life and remuneration would be far better.

Some years ago I received an offer of over £200 a year and light work from an unqualified man doing at the rate of £900 a year, which I, of course, unhesitatingly declined; this man had got well-qualified men to do it before and no doubt got them to continue to cover him in his work. Again, when I purchased a practice the remuneration as district medical officer was so reduced that I would have declined it until raised to a fair sum, but I had to contest the appointment with an opponent and gladly accept it to be worked at a pecuniary loss. Medical men, I believe, are in a great measure to blame for their own grievances. Nevertheless, I agree with your correspondent that it is not a profession a great many of us would again select had we the chances and opportunities of our youth.

I am, Sirs, yours faithfully,

July 11th, 1898. LOCUM.

To the Editors of THE LANCET.

SIRS,—The letter of "Practitioner" in THE LANCET of July 9th seems to me to have struck the keynote of the above question, but at the same time he does not go far enough in that he gives no explanation as to why the principals are not in a position to pay a good salary. This I believe I have found a solution for, and it is summed up in the expression "medical fees." These not being laid down by law, as are legal fees, have simply been cut down to below a living wage because men desire to have large practices, and that they do have an immense amount of work for a small return is well known, since the public is notoriously fond of the cheapest article though it is not always the best. From past experience I know that a principal who charges a respectable fee of 3*s*. 6*d*. or 5*s*. a visit and who will not see a patient at home for less than 2*s*. is well able when he requires an assistant to pay one well, but those men who have dragged down the profession by accepting fees of 1*s*. for a visit and medicine or 5*s*. for a week's attendance, including medicine and sometimes a night visit, plainly, even though they have a very large *clientèle*, cannot afford to pay a good salary for a qualified man, but when in need of an assistant are forced to make an offer, similar to one in a medical journal of a few weeks back, of £10 per annum in-door, for we all know how many cases at 1*s*. a visit will have to be treated for a return of £300 a year. My contention is, that the medical profession should unite to get a legally recognised fee and those who cannot afford to pay it should be treated either by the hospitals or the parish medical officers, instead of individual practitioners vying with each other in cutting down fees, thereby creating a state of constant work for a starvation wage. In conclusion, may I ask the medical profession to endeavour to elevate it by preserving a respectable fee in the knowledge that "the labourer is worthy of his hire."

I am, Sirs, yours faithfully,

July 16th, 1898. M.B., B.CH. DUBL.

SANITATION AT GIBRALTAR.

(FROM A SPECIAL CORRESPONDENT.)

IT does not come within our province to insist upon the importance of Gibraltar as a fortress and military station. The strategical advantages of holding this Crown colony are fully appreciated, but it is necessary to insist that the military value of the station is dependent to a great extent on its sanitary condition. Fortunately this is a point of view which has not been neglected and very great improvements have been effected. In spite of the increase of population there has been a steady decrease in the death-rate. Thus the mean annual death-rate for the sixteen years from 1851 to 1866 amounted to 29·25 per 1000. The improvement then commenced, and during the ensuing four years the mean death-rate was only 24·61 per 1000. For the next fifteen years the quinquennial average did not reach 24 per 1000 and did not fall below 23·68 per 1000. From 1886 to 1890 the average was 22·44 per 1000. This brings us down to the present epoch, and it will be found that there has been a still greater improvement. Indeed, Gibraltar may now aspire to be compared with the larger towns of England and Wales. Thus in the year 1891 the death-rate did not exceed 18·95 per 1000 and for the five years 1891–95 the average was 19·97. In 1896 the death-rate is set down at 19·52 per 1000; but 1897 was a very bad year, for the death-rate then rose again to 23·56 per 1000. The main sanitary defect at Gibraltar is overcrowding, and it is in regard especially to infant mortality that the colony compares unfavourably with English towns. The birth-rate in 1897 was equal to 31·34 per 1000 and the deaths of infants under one year old was equal to 184·9 out of 1000 born. The principal causes were zymotic and respiratory diseases. The average zymotic death-rate for the entire population was 2·89 per 1000 from 1891 to 1895. It amounted to 2·25 per 1000 in 1895, to 2·69 in 1896, and to 3·77 in 1897. Measles and diarrhœa were the most fatal zymotic diseases in 1897. Pulmonary tuberculosis and respiratory diseases such as bronchitis, pneumonia, &c., caused a death-rate of 7·01 per 1000 in 1897 and 5·23 per 1000 in 1896. Thus, though there has been a general improvement up to 1896, the serious relapse which occurred last year suggests that the general condition of affairs at Gibraltar is not yet absolutely satisfactory. The fact is that the problem of overcrowding has not been solved, nor is it likely to be solved unless the military authorities resign themselves to the necessity of largely increasing the area on which the building of dwellings is sanctioned.

Unfortunately there are at Gibraltar two sets of interests which are diametrically opposed. First, there is the military interest, which would make Gibraltar simply a fortress with scarcely any civil population. Secondly, there is the trading interest, which finds that Gibraltar is a most convenient commercial centre and would soon convert the place into a vast emporium for trade with Spain and the Mediterranean. As usual in such cases neither party has its own way. The trading element is cramped, impeded, and checked by the military element; but, on the other hand, the military authorities have not succeeded in preventing Gibraltar from becoming a very important commercial centre. They have mainly succeeded in producing the excessive overcrowding which is the principal cause of the high death-rate. British

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capital and British enterprise have acted like a loadstone in attracting the poorer populations of the neighbouring countries. The right of residence is refused absolutely to foreigners, but it cannot be refused to British subjects, and these include a number of natives from Malta who overcrowd the poorest tenement houses.

The Maltese workmen and labourers are content to live huddled up together in badly ventilated, damp rooms, tainted with decomposing organic matter. Their linen is washed and dried in small inner courts or patios where the sunshine cannot penetrate and where foul water stagnates on the ground. Under these patios tanks receive the rain-water which, though contaminated by the emanations from the yard, is sometimes used for drinking purposes. It is very difficult to inculcate principles of hygiene among the poorer sections of the population. They cannot be persuaded to open the windows to ventilate the rooms where the sick are being nursed. On the other hand, they still believe that by applying the entrails of pigeons, lamb's fat, and other so-called remedies to parts of the patient's body they will cure the disease. To counteract such ignorance and the over-crowding the very best domestic drainage and sanitation generally are most necessary. Much has been done in this respect, but new defects are being constantly discovered. Thus in 1892 some 127 underground tanks were dealt with by the sanitary authorities but a great number of old surface wells situated close to sewers and house drains were not touched, though half of them contained water proved by analysis to be suspicious if not absolutely dangerous. Fortunately the well water has a tendency to become brackish and therefore cannot often be used for drinking purposes. On the other hand, the rain-water may be contaminated on the roofs of the houses where it is gathered. Thus, in his report for the year 1892, Surgeon-Captain Macpherson, who was at that time medical officer of health, states that in one case the soiled mattress, towels, and clothing from a tenement where there was a case of enteric fever were found lying upon the terrace. On two other terraces refuse-buckets and slop-pails were kept and on one terrace, also connected with the water tank, a pigeon roost was installed. The water here collected was proved on analysis to be excessively impure. In another house there was a well-manured garden on the terrace. The water collected was found to be full of micro-organisms, and there was a case of typhoid fever among the inhabitants who drank the water in question.

It will be seen, therefore, that the question of water-supply is one of the most urgent sanitary problems with which the authorities have to deal. There are in the civilian portion of the town 690 underground private water-tanks which receive rain-water from the roofs and terraces and can store 7,535,504 gallons. In many houses these tanks are not large enough, and there are 170 houses which have no tanks. During the year 1897 no less than 273 of these private tanks were inspected, repaired, and cleaned. Apart from this private supply there is a public supply collected by the Sanitary Commissioners from the upper slopes of the Rock and conveyed by gravitation to a reservoir near the Moorish Castle which has a storage capacity of 1,257,444 gallons. This water is sold to the inhabitants at the rate of ten gallons for one penny. During dry seasons when the supply fails sea-water is distilled and sold at the rate of five gallons for one penny. This, as will be seen, is not a very satisfactory arrangement, and under the direction of Mr. W. Wallace Copeland, C.E., a comprehensive scheme for an increased water-supply is now being carried out. Tunnels are being dug into the rock, and inside the mountain, well away from all danger of bombardment, four great reservoirs will be constructed with a capacity of 5,000,000 gallons. The catchment areas, 21½ acres in extent, are to be covered over with concrete; and when this is done there will be enough water for the population and the shipping; though as matters now stand it is necessary to distil more than 3,000,000 gallons of sea-water in the course of the year. The rain-water will be passed through polarite filters and will be stored in absolute darkness. Doubtless when this work is completed an improvement in the health of the population will result.

The difficulty due to overcrowding will, however, still remain. In his report for 1894 Surgeon-Captain Macpherson says: "One-room tenements are necessities here in consequence of the lack of house accommodation and the high rents demanded, and very nearly half the families in Gibraltar occupy such dwellings." Out of 83 cases of small-pox which occurred in Gibraltar during that year 41 patients occupied one-room tenements and 12 two-room tenements. From one point of view, however, the evil resulting was greater in the better-class houses, because the patients were not removed to the isolation hospital and consequently others contracted the disease from the first case. According to the by-laws removal to the hospital can be enforced when the rent paid does not exceed 50 pesetas per month. Thus though first cases occurred more frequently in the poorest houses they were more easily dealt with and further mischief was prevented. Though overcrowding has not been materially checked a great deal has been done in regard to the compulsory notification of infectious diseases, including measles. This disease appears periodically in epidemic form. Thus in 1887 there were 861 cases of measles and there had been 2157 births since the previous epidemic. This gives a proportion of 39 cases per 100 births. In 1890–91 there were 560 cases out of 1568 births, or a proportion of 35 per cent. But in 1894, when much more energetic measures were taken, there were only 173 cases out of 1304 births, or a proportion of 13 per cent. On the latter occasion each case was visited and all the members of the family were kept away from school. Sanitary inspectors made daily visits to the houses where cases had occurred and insisted on the isolation of the patient and on ample ventilation. Only 5 deaths ensued But in 1897 a more severe epidemic visited the town, for there were 13 deaths and 252 cases. At the same time there were 65 cases of diphtheria, of which 18 proved fatal. A large number of these cases followed a very mild course when antitoxin was administered at an early stage. In spite of these unfavourable figures it would seem as if the prevalence of diphtheria was decreasing. Thus, during the quinquennial period from 1886–90, the average death-rate from diphtheria amounted to 1·20 per 1000, whereas during the period 1891–95 it was only equal to 0·36 per 1000. The gratuitous distribution of antitoxin, the more strict supervision over the milk-supply, and general sanitary measures have helped to bring about these results. On the other hand, the disinfecting service is not yet satisfactorily organised. The bedding, linen, &c., from private houses are taken to the Colonial Hospital, where there is a disinfecting stove; but to light this stove involves a certain amount of trouble and expense. There is a segregation block in this hospital where cases of scarlet fever, diphtheria, or measles are treated, and when the hospital authorities have to disinfect for these patients then they do not object to disinfect at the same time the objects sent in from outside. As a result of this state of affairs people are kept waiting a considerable time before they get their clothes back. It is evident that the sanitary authorities should have a disinfecting stove of their own and not be dependent on the goodwill and leisure of the hospital authorities.

Another serious matter is the want of accommodation for laundry work. A great part of the dirty linen from Gibraltar is taken over the lines to Spain, where it is washed in what often prove to be very unwholesome surroundings. On the other hand, many dwellings in Gibraltar are not provided with proper washhouses nor are there convenient means of drying the linen. A large sanitary laundry with modern appliances is much needed. There are no public wash-houses.

Of course, Gibraltar, like most other towns, is much perplexed and troubled by the general question of drainage. A new main sewer has been constructed and it has a length of 13,300 ft. and a flushing tank which holds 1600 gallons of water is connected with this main. This is brackish water pumped up from the north front, used exclusively for flushing purposes and watering the streets. It is known as the sanitary water and is much too salt to be mistaken for drinking-water. It is thought that the flow in the sewers will now be improved and greater internal cleanliness maintained. For the small district called Irishtown, which is situated between this main sewer and the shore and therefore at a lower level, Shone ejectors will be employed to raise the sewage and to throw it into the main. Nevertheless this does not solve the problem of sewer ventilation, which greatly troubles the inhabitants of Gibraltar. Perhaps the sewer air will be less objectionable, but it is too much to hope that it may cease altogether to create a nuisance. From time to time there have been complaints of the odours issuing from manholes, and then these have been closed, so that a greater amount of sewer-air has gained admission into the surrounding houses. Much of the trouble has arisen from the fact

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that the radical difference which exists between the laws governing the currents of air in Gibraltar and in England had not been realised. In England the sewer air is warmer than that of the street above, at least during about ten months in the year; in Gibraltar the contrary is the case. The sewers are cold in Gibraltar, whereas they are warm in England and it is the difference of temperature which governs the currents. The principal cause of ventilation, the ascending property of the heated air, which secures the ventilation of the sewers in England, does not exist in Gibraltar. The flow and the rise and fall of the sewage are also active ventilating forces. In England the water is generally at its highest at midday and at its lowest at 3 A.M. This acts like a sort of bellows blowing the air out and then drawing it into the sewers. But at Gibraltar there is so little water that the rise and fall of the sewage is almost imperceptible unless there is a storm; then the effect is most distressing. The sewer air, long pent up, is suddenly forced out and the stench is such that it will awaken the soundest sleeper. The inflow of a sea wave caused by the wind blowing in the direction of the sewer mouth or the passage of a strong wind over the top of a sewer ventilator may produce the same effect. The long-stored sewer air thus extracted, being heavier than the outside atmosphere, descends on the neighbourhood and is not promptly dispelled. Under these circumstances, as the sewers at Gibraltar cannot ventilate themselves they must be ventilated by artificial means. The erection of a destructor would render great service and the furnace might be utilised to draw up and burn the sewer air. Some ventilating fans might also be employed, as in coal mines, to move the air in the parts of the sewer which are too far away to be affected by the fire of the destructor.

Thus Gibraltar needs more house-room so as to prevent overcrowding, a much larger water-supply so that the inhabitants need not drink the rain-water gathered on the roofs and terraces of their houses where it can be easily contaminated and which is also stored in tanks under the houses where again it may be befouled by dirty water from the drains, the surface of the yards, or the streets. Then there must be an efficient means of sewer ventilation, and probably mechanical means will alone ensure a satisfactory and uniform result. Again, there is urgent need of accommodation for the proper washing and drying of linen at Gibraltar, and the sanitary authorities should have a disinfecting stove which could be used at all hours and immediately it is required. There should also be a reception house where families might live for a day or two while their homes are being disinfected. Though the food-supply is on the whole of good quality and the markets are clean and well supervised the itinerant milk-vendors who come over from Spain should be compelled to take out licences and should be placed under efficient control so as to prevent adulteration.

All these observations, it will be seen, mainly concern the health and interests of the civil population, but the garrison has also its share of grievances, though it is not so easy to ascertain the details. The authorities are reticent because they have been recently subjected to some very severe criticisms. The sense of discipline is such that no one dares to speak for fear of incurring the displeasure of a superior authority. However, I was very courteously allowed to visit the Military Hospital, one of the institutions which had been abused in very strong language, and certainly it is not easy to speak favourably of this building. Indeed, what can be said of a hospital which dates back to the year 1792? Is it likely that at that date modern principles of hygiene would be applied? On the other hand, it must be recognised that the plan of the building is eminently suited to the climate. There is a large inner yard surrounded not merely on the ground floor, but also on the upper floor, with a very broad verandah. The yard is so large that numerous orange trees grow in the centre, and being square in shape there are always two sides where shade can be enjoyed. Thus the patients without having to go up or down stairs can sit or lie out in the open and in the shade. The wards have had ventilators added, so that a current of air can be established even when the windows are shut. Then there are windows on both sides of the wards, so that there is no lack of air and light; but nevertheless the building is altogether unsuited for a hospital. The ceilings are held up by any number of large wooden rafters which form countless angles and inaccessible dark corners where microbes and dust can accumulate without let or hindrance. Nor is the hospital provided with an operating room. There is, of course, a room in which operations are performed, but it can in no wise be qualified as an operating room, for it does not differ from any other room and possesses all the sanitary defects inherent to the entire building. It does not even contain the special furniture associated with an operating-room. Certainly, there is an old wooden operating-table, but this quaint bit of furniture would best serve for a museum or an historical exhibition of the surgical appliances of a bygone age.

These grave defects are, however, in a great measure compensated for by British cleanliness, the Gibraltar climate, and the topographical situation of the hospital. These are the real life-giving forces which prevent the disastrous consequences which would probably result if such a hospital existed in, for instance, the neighbourhood of London. The hospital stands on a ledge of the rock, overlooking the sea on the Atlantic side, well away from the town and at a sufficient elevation from the sea to enjoy a greater movement of air than exists on the lower levels. The climate allows door and windows to remain wide open the greater part of the year. It rains so seldom that there is rarely any difficulty in placing a patient in the open air. The open-air treatment and sun baths can be enjoyed nearly all the year round, and this will go a long way to compensate for the effect of dust-harbouring rafters. Of course, it is difficult to prevent the defects inherent in a building which is more than a century old, but there is an air of parsimony about the place which certainly need not exist. Undoubtedly economy is a virtue but it can be pushed too far. It seems as if the fear of spending money has undue weight. Thus it is difficult to get over from England new and more expensive medicaments. The supply of bandages, I ascertained, is so limited that even in these times of peace absorbent wool and such articles have been known to run short before the end of the month. If in this respect I am correctly informed it would be impossible to protest too strongly against such niggardliness. Not only should there be bandages, &c., in store to satisfy all likely demands arising in times of peace, but there should be enough to meet to the full the exigencies of war. It is not after war has been declared that we would have time to think about sending absorbent wool to Gibraltar. These are precisely the sort of details which should be thought out and completely organised in advance. If there has been neglect in this matter or unwise economy then a very heavy responsibility rests on the authorities concerned. Officials may seek to make themselves popular with their superiors or with the Government by reducing the expenses of their department, but this must not be done at the sacrifice of efficiency. In bringing this grave question forward I can only hope I have been misinformed, but I hold my information from such good sources that I feel at least justified in demanding that an inquiry should be made to see if the economy practised has not been carried to the point of sacrificing efficiency.

THE SPANISH-AMERICAN WAR.

(FROM A SPECIAL CORRESPONDENT.)

On board U.S. Hospital-ship *Relief*, July 3rd, 1898.

THIS beautiful ship got safely off on the first log of her journey late yesterday and if a peaceful sea and sunny skies are omens for good surely she will bring comfort and relief to our brave men in the field. Our progress down the bay of New York was marked with the wildly enthusiastic tooting of many whistles. It seemed more like a triumphant return from duty well done and must have touched the heart of our commanding surgeon. People crowded the rails of the ferry-boats and cheered long and heartily. The *St. Paul*, looking as if she were in bad humour and longing for another torpedo-boat to eat up, dropped her flag in a dignified way as we passed; the huge *Campania* gracefully did the same with the Union Jack, and with a funny little squeal from a tiny launch we slid out to deeper waters.

It is really difficult to do justice to the absolute completeness of this floating hospital; already things have been put into shape and surgeons, nurses, and hospital stewards seem to have caught the spirit of the surgeon-in-chief and those at home need have no fear but that

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this ship is destined to accomplish great things. There are two chaplains on board, the Rev. Mr. Robinson and Father Connelly. Each held a simple service on deck this morning and asked a blessing on this mission of peace. Both are unaffected Christians whose ministrations will bring consolation to many a poor fellow who is suffering or dying in this war. We stop at Fortress Monroe for a few hours this afternoon and then go to Santiago, where we are due some time on July 7th.

With reference to certain statements recently made in a temperance journal called the *Voice*, recalling certain unfortunate incidents in the Civil War, I have questioned a number of army officers as to the use and abuse of alcohol in that service and they, without exception, affirm the "good habits" of officers and men. The Rev. Mr. Robinson, the chaplain of this ship, tells me that in twenty-two years of service he can recall but one case of an officer being intoxicated on duty, and says it is a pleasure to be able to attest the self-restraint exhibited by our officers in all such matters both on and off duty. He agrees with me in believing that no good purpose can be served by raking up old scores now, over a third of a century after their occurrence. In the old days there was much drinking in both the army and the navy, but that time happily is past, and all who know anything about these branches of our Government recognise this fact and are happy and proud to give credit where credit is due.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague in Bombay, Karachi, and Calcutta.—The System of Appointments in the Government Services.

THE increase in the number of deaths from plague during the past week in Bombay should not be without its warning. A jump from 15 to 53 cannot be accidental, and distributed as the cases have been in different parts of the city it behoves the authorities to make every preparation for a recrudescence. A certain district called Mandvi, where the disease is supposed originally to have broken out, still remains the one spot which is continually recording its cases. In fact, from this particular area it has never been absent. In other respects the health of the city is remarkably good, and what is particularly noticeable is the exceptionally low mortality from fevers. One would almost imagine that the two epidemics had in some way cleared the air. What is perhaps still more remarkable is the almost entire absence of cholera. Karachi is not yet quite free, but the cases are reduced to two or three a day. An experiment to be watched here will be to see whether a redevelopment of the disease occurs when the 30,000 people now out in camps are allowed to return to their homes. The first case of plague among Europeans in Calcutta has just been recorded. The number of cases reported daily is small but steadily continues, and there must be the ever-present danger of a development at any moment. A total of 156 cases has been recorded, with a mortality of 71 per cent. About 2000 persons have so far been inoculated—an utterly insignificant number to have any effect on the possible development of the epidemic.

The system of appointments in the Indian Medical and Civil Services is open to much abuse. One constantly hears that So-and-so has been very fortunate in obtaining some particular berth. It is well known, however, that the so-called "luck" depends upon patronage. With the Civil Service the medical profession has of course little concern, but in both services the evil must be equally detrimental. If it does nothing else it stifles independence of character and original work. It would perhaps be equally unsatisfactory to grade the various appointments and to fill them by a process of pure seniority. The essence of the evil as it exists now probably lies in the power of patronage given to certain officials. A possible solution of the difficulty in properly filling up these posts might be found by the appointment of an independent board. Such a board with definite instructions to appoint on certain definite lines might certainly remove some of the anomalies and grievances which now exist. The Government services naturally attract a large proportion of the ablest men and the appointments under Government should be far removed from the semblance of favouritism. The best work will never be obtained until this principle is recognised and acted upon.

July 2nd.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Hospital Question.

THERE are indications that before long the "infirmary question" will again lend itself to controversy. The last pronouncement of the infirmary board was to the effect that they could not entertain the proposition for the sale of the whole of the site. When the vote of the infirmary trustees was taken about a year and a half ago there was a majority of 46 in favour of rebuilding on the present site, but only 853 votes—about two-thirds of the full number—were recorded. A meeting of the trustees is to be held shortly and the question is to be put to them again. The present site cannot serve for rebuilding on the enlarged scale which will be necessary, and if the infirmary is to remain in the centre of the town more adjoining land must be purchased. This will necessarily be costly and will require some closing and rearranging of streets. The infirmary site is the finest—indeed, almost the only fine one—in the city, and longing eyes are sometimes cast on it as being so admirably adapted for a fine public building. Manchester is said not to have one on a site worthy of itself, and that may indeed be said of the town-hall, the assize courts, and Owens College. They all want lifting up. Manchester needs an art gallery and a central free reference library "badly," as many people think, and they might be lodged in a building and on a site "worthy of itself" if only the Infirmary trustees would sell and the money with which to buy could be found, and both these "ifs" may perhaps be got over. The retention of the infirmary in the centre as a matter of convenience in spite of smoke, smuts and traffic, or its removal to a suburb where the air is presumably somewhat less loaded with impurities, has long been a topic for argument. Of course if removed a site not too far from Owens College would be desirable. Should the removal be decided on, the question of "out-patients" next comes forward. One idea, involving a new hospital near the College and the retention of a good part of the present building for out-patients, with a few beds for accidents, may be given up as wasteful and extravagant, though at one time it seemed to be held by many. A new scheme is now brought forward, that there should be a central receiving and out-patients' department, which would constitute a medical clearing-house for the infirmary and for all the special hospitals in the city. At present no doubt there is great waste of energy both as regard staffs and patients. The Children's Hospital is at Pendlebury and its out-patient department in Gartside-street. The Consumption Hospital is at Bowdon, but the out-patients are at Hardman-street. The Eye Hospital in Oxford-street has an out-patient department in St. John-street. A building in the centre would be required large enough to accomodate all the out-patient departments of the various hospitals. Each would remain under the charge of the respective honorary staffs as at present. There would be a few beds for emergencies, while sickness and accidents would be treated there day by day and "those cases which needed to be made in-patients would be drafted out in suitable ambulances to the new infirmary, the Children's, the Eye, the Consumption, or other hospital." No doubt some economy in administration might result as there would only be one staff of officials. The arrangement is said to be simple, but it seems to be the simplicity of a Clapham-junction. And it is doubtful whether one central station would suit the out-patients from all parts of the city and suburbs as well as does the present arrangement, by which they can get treatment nearer their own doors.

The Nurse's Mistake at Crumpsall.

At the meeting of the Manchester Board of Guardians on July 13th the visiting committee of the Crumpsall Workhouse reported upon the circumstances respecting the administration by mistake of a poisonous preparation of opium. The report does not throw much light on the way in which the mistake occurred, but it states that the opiate solution was "not, in fact, left with the ordinary medicines,

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but was placed in a separate locked cupboard specially used for it and the chloral mixture," and that the two bottles "are entirely different" and both labeled with the word "Caution" in red letters, and therefore that the censure passed at the inquest on Nurse Brooks was undeserved. On the other hand, the report cannot acquit Nurse Jackson, who gave the medicine, of the charge of "failing to exercise due care in the present case," but it adds that "the justice of the case has been met by the censure passed upon her by the jury." It is said, no doubt with truth, that she has suffered great mental distress and as she has not previously given any cause for complaint the report recommends that no further steps be taken in the matter. It is certainly very unlikely that she will ever again make a similar mistake. Medical men no less than the public will like to know whether she was over-tired with having been too long on duty—whether, indeed, she was overworked. It is as necessary that the administration of powerful remedies should be in the hands of a nurse who is fresh and alert as it is that the man in the railway signal-box should not be asleep.

Outbreak of Diphtheria at Urmston.

It was stated at the meeting of the Urmston District Council on July 12th that no fewer than 23 cases of diphtheria had been reported. So far the cause has not been traced. Most of the cases originated in the British schools and the infants' department has been closed. The drains of the district were said to be "in perfect condition and therefore the outbreak was not due to any drainage defect." Similarly the chairman of the sanitary committee "wished to point out most distinctly that those schools were in a perfect state of sanitation and no blame was attached to them for the epidemic." It is not always wise to be so sure. The chairman of the sanitary committee and Dr. Fryer, the medical officer of health, have been requested to inquire into the matter, and it would not be a complete inquiry if these two possible sources of mischief were left out. It may be mentioned that Urmston has its difficulties as to sewage disposal like many other places. The Urmston and Flixton joint drainage committee have a sewage farm and while the hay-making is going on the crude sewage passes directly into the Ship Canal. The joint drainage committee were summoned before the magistrates on July 7th at the Manchester police-court and fined. This imperfect mode of dealing with sewage may possibly have some bearing on the outbreak of diphtheria.

Medical Officer to the Salford School Board.

At the meeting of the Salford School Board yesterday a report was adopted recommending the appointment of a medical officer to the board at a salary of £150 per annum. Amongst other duties he would visit each department of the board schools once a year; report in writing as to the sanitary condition of the premises; examine children reported to the board as being defective or feeble-minded and decide as to their being taught at a special centre; advise the board as to the course of study, &c., of those in attendance at the centres for defective children; and examine blind and deaf children and decide whether they were suitable cases to be dealt with under the Blind and Deaf Children Act.

July 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Appointment of a Professor of Public Health in the University of Edinburgh.

AT a meeting of the University Court held on July 19th Dr. Charles Hunter Stewart was appointed to the newly-established chair of public health. The chair is named the Bruce and John Usher Chair in honour of the gentlemen who endowed it and by their munificence make it possible for the University to separate it from medical jurisprudence. Dr. Hunter Stewart is a graduate of medicine and of science of Edinburgh and has had charge of the public health laboratory for years. The University may be congratulated on having been in a position to make this important change.

The Edinburgh Meeting of the British Medical Association.

The arrangements for this meeting are practically complete and everything points to the meeting being a great success from the local, scientific, and social sides. All that is wanted is fine weather and in Scotland we can never be sure of that. The President-Elect will give an official dinner on Monday night in the Royal College of Physicians of Edinburgh. The meetings will begin on Tuesday.

School of Medicine of the Royal Colleges, Edinburgh.

At a meeting of the governing board of the School of Medicine of the Royal Colleges, Edinburgh, the secretary, Mr. R. N. Ramsay, reported that the number of students so far as ascertained attending the school during the summer session recently closed was 1239. This is a fact of much interest and shows how much extra-mural teaching is taken advantage of by university students.

University of Aberdeen.

In the medical faculty thirty-one candidates have just passed the whole of the third professional examination. Three medical graduates have after examination obtained the diploma in public health. The following have been appointed examiners for degrees and preliminary examinations: In botany, J. Reynolds Green, D.Sc. Camb., F.R.S., Cambridge; in chemistry: John Shields, D.Sc. Edin., London; in medical jurisprudence and public health: W. Leslie Mackenzie, M.A. and M.D. Aberd., medical officer of health of Leith. The appointments of university assistants to the respective professors have also been made.—The Anderson travelling scholarship, value £170, tenable for two years, has been gained by Mr. J. J. R. Macleod.

Extension of Aberdeen City Hospital.

Tradesmen's offers have just been accepted for the carrying out of additions at this hospital at a cost of about £4500. The alterations consist of additions to the administrative block to provide additional accommodation for the nurses and servants and properly-equipped discharge rooms. There will also be an addition to the diphtheria block.

Whooping-cough in Aberdeen.

The epidemic is increasing, 378 cases with 14 deaths having been reported to the local authority for a month past, as compared with 276 cases with 8 deaths in the preceding month.

Corporation Baths, Aberdeen.

The new swimming pond, 90 ft. long by 35 ft. wide, at Aberdeen sea-bathing station was opened last week. There was an aquatic gala at which a large number of medical practitioners were present. The new wing for small baths is hardly finished. The total cost to date (including half a mile of esplanade) is £12,000.

July 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Richmond District Lunatic Asylum, Dublin.

AT a meeting of the governors of the Richmond Asylum held on July 14th, the report of the resident medical superintendent, Mr. Conolly Norman, for the year 1897 was laid before the board. Referring to the fact that phthisis is the most frequent cause of death in the institution the report says: "Consumption will remain unduly frequent and mortal in the asylum until such time as there is an isolation hospital where the sufferers from this disease can be treated apart." Alluding to the serious prevalence of beri-beri during the year 1897 the report states that at the opening of the period under review 25 men and 36 women presented symptoms of the disease, which in several cases persisted during the year. Fresh cases began to come in in June so that the number before the close of the year was 238 among the patients and 8 among the staff of attendants. Besides these, the chief nurse of the infirmaries, who suffered in 1896, had a relapse of the disease in 1897.

The Medical Officers of the South Dublin Union.

At a meeting of the board of the South Dublin Union held on July 14th a memorial was read from eight medical officers of the union requesting that an increase be made in their salaries so as to raise them to the level of those paid at present to the medical officers of the North Dublin Union. The matter will be decided at the next meeting of the board of guardians.

The Royal Hospital for Incurables, Dublin.

At a meeting of the Committee of Management of this

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hospital held on July 14th Mr. John Lentaigne, F.R.C.S. Irel., was coöpted a member of the committee in the room of the late Mr. Edward Fottrell.

The Infectious Diseases Hospital, Belfast.

The Public Health Committee of the Corporation have decided to postpone any action regarding the erection of the infectious diseases hospital, which they proposed to locate at Purdysburn, until after the Local Government Bill becomes law, as the position of affairs may then warrant a change in the arrangements.

The Proposed New Asylum for County Londonderry.

At a meeting of the board of governors, held on July 15th, the committee who were appointed to consider the plans for the new asylum recommended the board to accept them, the opinion of the architects being that for £110,000 the asylum can be completed. The chairman (the Right Hon. Sir Hervey Bruce, Bart., D.L.) said if the board accepted this report they would be acting illegally and the board of control would have to interfere, and another governor asked what guarantee the architects could give that the asylum could be built for the sum mentioned. The chairman (who said he looked upon the whole course pursued as perfectly illegal) and two other members of the board having left the meeting, the Mayor of Derry was moved to the chair and it was decided to adopt the plans, those opposing being of opinion that it would be wiser for a moribund board to drop the matter and leave it to the new county council.

Death of Mr. David Kilpatrick Given, L.R.C.P. Edin., L.F.P.S. Glasg.

Much regret is felt in Drumquin at the sudden death of Mr. Given, which took place at his residence there on July 16th. The deceased was dispensary medical officer of the district and was greatly beloved by his patients and very popular amongst the inhabitants of the district. The coroner having ascertained that Mr. Given's sudden death was due to heart disease did not think it necessary to hold an inquest. Mr. Given's brother is dispensary medical officer of Gortin district.

Return of another Lady Guardian in Belfast.

Miss F. F. Clarke, who was the candidate of the Society to Brighten Workhouse Infirmary Life, has been returned after a contested election for Cormac Ward, Belfast. There are now three lady guardians in the Belfast Union.

Close of the College and Hospital Session in Belfast.

The Summer Session of the Belfast Medical School has now ended both at college and at the hospitals. A large number of medical men in Belfast are going to the Edinburgh meeting of the British Medical Association, the relationship between the two schools (Belfast and Edinburgh) being a close one.

July 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Hæmatozoon of Goitre.

A MEETING of the Academy of Sciences was held on July 4th, when M. Grasset gave an account of his researches among persons afflicted with goitre. Knowing the department of Puy de Dôme was that where cases of goitre were the most common he went there, and after studying the question arrived at the following conclusions. Goitre is not a local affection but a general one, with one predominating symptom—namely, an enlarged thyroid. Just as the enlarged spleen is the predominant symptom in malaria so the enlarged thyroid is the predominant symptom in goitre. There is a curious parallel also between malaria and goitre. Both have a special geographical distribution; both affect mainly a gland having an internal secretion; and in both when they reach an extreme degree cachexia supervenes—in the one case the well-known malarial cachexia and in the other cretinism. M. Grasset examined the blood from eight persons who suffered from recent goitre and was able to demonstrate the presence of a parasite. It showed in the form of spherical segmented bodies, larger in size than a red corpuscle, and recalled the hæmatozoon of malaria.

The Treatment of Lupus by Injections of Calomel.

On July 7th M. du Castel showed at the Society of Dermatology two patients suffering from tuberculous lupus of the face who had been treated during the past six months by injections of calomel after the method of Asselbergs. The good results of this treatment were very marked. M. Gaucher considered that as a rule cases of lupus cured by mercurial injections were errors of diagnosis. M. Brocq had seen in one case the mass of lupoid infiltration diminish under this treatment, but he did not know whether the result was permanent. In another case he had seen some amelioration, but afterwards the lesions remained in a stationary condition and it became necessary to attack them with the cautery; he thought, too, that the patient was syphilitic. M. Fournier was of opinion that an occasional case of wrong diagnosis might occur, but he considered that there was possible association between lupus and syphilis Anti-syphilitic treatment certainly brings about a considerable, if fleeting, improvement in cases of lingual epithelioma. Lupus in a syphilitic patient is probably seriously modified by the soil on which it grows, and this is probably the key to the results obtained by Asselbergs.

The Action of Liquid Air upon Monocellular Organisms and their Secretions.

At the meeting of the Society of Biology held on June 9th M. D'Arsonval referred to some researches which he had made with regard to the action of liquid air upon sundry tissues and upon mucous membranes. Actual contact did not take place and the substance could be introduced into the stomach. M. D'Arsonval had offered a guest some liquid air mixed with champagne and he, without waiting till the champagne thawed, swallowed the whole glassful containing about 15 c.c. of liquid air. After a few moments his stomach was acutely distended, but a sudden violent expulsion of food and gas relieved this condition. If liquid air be poured upon the hand it assumes the spheroidal state and breaks up into globules which scatter in various directions. It has been proposed to employ it in diving operations, for a diver carrying a litre of liquid air upon his back would have 1000 litres of air to breathe. M. D'Arsonval also placed in liquid air some dried bacilli and bouillon cultures of diphtheria and the bacillus pyocyaneus. In one case they were there for six days and nights until the air evaporated. He then sowed the cultures on agar and found that contrary to what he had expected the liquid air had very little effect. Growth went on regularly, the individual bacilli were slightly damaged, and the only marked modification was that the bacillus pyocyaneus had lost its chromogenic power—a modification which, of course, is not of the least importance.

Erysipelas brought on by Inoculation with Pus from a Streptococcic Empyema.

At the meeting of the Hospitals Medical Society held on July 8th M. Menetrier reported a personal observation. While dressing a patient suffering from empyema he scratched his ear, just drawing blood. Six or eight hours afterwards the ear began to smart and some days later the whole ear exhibited an acute inflammatory condition presenting all the appearances of erysipelas. The hairy scalp was invaded and the temperature rose to between 38° and 39° C. Having gone out too soon he had a relapse and this time the face was attacked, but he got well without any special treatment. Bacteriological examination of the fluid from the empyema showed that the streptococci therein were but feebly virulent. M. Nettier considers that this case bore out the experiments made in the laboratory of Koch, where it was found that to produce erysipelas in man streptococci greatly attenuated must be injected.

Removal of the Superior Cervical Ganglion for Acute Glaucoma.

At the meeting of the Ophthalmological Society held on July 5th M. Abadie showed a patient who had consulted him for acute hæmorrhagic glaucoma of the left eye and from whom he had already removed the right eye on account of the same disease. The case was one of those in which the surgeon is apparently quite powerless. The patient, after suffering intolerable agony for seventeen hours, demanded that his left eye should be removed as well. M. Abadie, however, removed the superior cervical ganglion of the left side instead and on the same evening the pain ceased. Fifteen days after this operation the condition of the eye had sensibly improved. It is therefore allowable, M. Abadie considers, in cases of this kind, where there is nothing else to do except enucleation, to remove the superior cervical ganglion. This case confirms the general theory of glaucoma—that is to say, that glaucoma is not a

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vascular affection but that it springs from a stimulation of the vaso-dilators of the eye, a stimulation which goes on even to rupture. M. Valude then remarked that he had known the patient, having attended him and having performed the first operation four years ago. M. Valude had observed in these cases remissions of the same kind as had occurred in the left eye; these remissions occurred spontaneously, so to speak, but on one occasion after the application of an opium poultice. As these remissions were spontaneous or coincided with the application of domestic remedies he said that they could not definitely conclude whether the operation which M. Abadie referred to had done good or not. M. Despaguet mentioned the case of a patient who had suffered from hæmorrhagic glaucoma and had had her eye enucleated. She died from cerebral hæmorrhage, the same process having occurred in the brain which occurred in the eye. This point, he considered, was a proof of the vascular origin of glaucomatous affections.

July 19th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Anti-Rabies Institute.

IT has been proposed by some members of the public that the Government of Egypt should attach a Pasteur institute specially for rabies either to the medical school or to the hygiene institute of the sanitary department. But the Government authorities, before entertaining any such idea for the treatment of bitten folks, are doing what they can to persuade the European consuls-general of the importance of preventing the disease as far as possible. Quarantine ought to be imposed on fresh arrivals, a tax should be levied on dogs, and all stray dogs, whether native or European, should be impounded by the police and destroyed if ownerless. But for all such regulations the consent of all the Powers must be obtained, and this is no easy matter. The police in Cairo alone now kill between 2000 and 3000 stray dogs every year, but this is not enough as there are always a few wandering pariahs to be seen. It is difficult to see how any legislation can be directed against wolves, jackals, and even cats. In the early days of the British occupation there were thousands of pariah dogs in Cairo and we used to be told on all sides that rabies was unknown, but in 1886 a fox terrier at Abbassiyeh belonging to a British soldier broke the record by being the first case. Since that time every year cases among human beings or among dogs have been reported and verified. Besides many doubtful cases the whole number up to last month comprises 36 dogs, 2 wolves, 3 horses, 2 mules, and 60 human beings, all fatal, scattered over Egypt. Since 1893 several bitten people have gone to Paris or to Athens to be treated, and this year already 9 persons out of 15 bitten have gone to the Athens Institute. These figures are enough to show that preventive measures are required.

Native Remedies for Hydrophobia.

Though there are no medical accounts of rabies in times past there are plenty of supposed cures which make it appear as if the disease were well known. Papyri contain mention of the dangers of a bite from serpent, crocodile, or dog. Charms were sold in old days to protect from these three and there is a folk lore story where the wicked fairy condemned the heir at his birth to be killed by one of these three biting creatures. He destroyed a serpent who attacked him and he and his favourite hound killed a crocodile, but the master died in consequence of an accidental bite from the dog during the fight. The modern treatment for a person bitten by a presumably mad dog in Upper Egypt is to kill the dog, extract the spinal cord, bruise the cord with pestle and mortar until a paste is made, and then rub the patient's body all over with paste. Sometimes, too, they burn the dog's hair and apply the ashes to the bite. The Bedouin make the patient eat the raw liver of the dog, and this is done, too, in the Haussa State of the Western Soudan.[1] In Lower Egypt the favourite remedy has been acquired from the Syrians of Mount Lebanon. It is the *Mylabris punctata*, a dark-blue beetle used instead of cantharides and well known in the south of France and Spain. When taken by the patient it produces strangury, and the old women pretend that if the dog be mad the patient's urine will contain dog-like growths each of about the size of a barleycorn.

The Assuan Reservoirs.

The latest news from Assuan tells of a shade temperature of 124° F. beating on the rocks and of the death from sunstroke of an Englishman there. He was superintending the 800 men who are already working for the future reservoirs. Next winter there will be ten times as many labourers and many European inspectors, all of whom will require medical help.

Veterinary Report for Alexandria.

The municipality in its annual report draws attention to the fact that out of 116,439 animals killed in the slaughter-house during 1897 nearly half came from foreign ports, such as Tripoli, Syria, Russia, and Cyprus. This is one of the reasons why quarantine measures have to be strict for all cattle arriving in Egypt, and all entry of Syrian cattle has now been forbidden in consequence of the numerous cases of rinderpest. Several ideas are to be carried out for the better inspection of meat in the town and also for its local transport and a scheme has been approved for cooking at the slaughter-house itself meat which by reason of its parasites is dangerous for consumption only in its raw state. 39 horses and 4 mules suffering from glanders were killed during the year and great praise is given to the use of mallein, which was injected into 197 horses. During the present year it is intended to inject all the horses, mules, and donkeys in Alexandria with mallein to stamp out glanders entirely. The veterinary surgeon has proposed some very stringent laws with regard to tuberculosis of animals and compulsory inoculation of all cows with tuberculin, but these measures have not been adopted by the municipality.

Work at the Barrage.

Two additional weirs across both the Damietta and Rosetta branches of the Nile have now been begun, though, of course, the work can only be carried out during low Nile. Half a million pounds are to be expended, and besides strengthening the two barrages the new weirs will allow 5 ft. extra of water to be held up for the benefit of the three important canals which branch off from the barrage to the Delta. It is calculated that this will make no practical difference to the velocity of the Nile at Cairo, which is already reduced by the barrage from nine miles to seven miles a day during the month of lowest Nile. This year's Nile is late and bids fair to be a poor one.

Cairo, July 6th.

[1] See THE LANCET, May 18th, 1895, p. 1274.

Obituary.

DUNCAN JAMES CADDY, M.D. DURH., F.R.G.S.

DR. CADDY, who died at his residence, 4, Earl's Court-gardens, S.W., on July 5th, was educated at the Merchant Taylors' School. Leaving there he proceeded to King's College, London, where he entered as a medical student in 1889. He graduated at Durham University in 1892 and took his degree as Doctor of Medicine in 1894. In the same year he was elected a Fellow of the Royal Geographical Society. Subsequently Dr. Caddy joined H.M. Colonial Medical Service and did good service in the West Indies. During his appointment there, at a great risk of his life, he saved a native from drowning and afterwards received from the Royal Humane Society its bronze medal for his gallantry. He was kind and courteous to all his patients, respected by everyone who knew him, ever anxious to help all and greatly esteemed. His death at an early age cuts short the promise of a brilliant career.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Hugo Gerold, formerly Professor in the University of Giessen, a post which he subsequently exchanged for a large practice in Gotha. Since his retirement he has been in Halle, where he died at an advanced age, having graduated in 1835. He was a frequent contributor to medical literature, especially on ophthalmic topics.—Dr. Ernst Candèze, Superintendent Physician of the Glain Lunatic Asylum near Liège, who was well known in scientific circles on account of his numerous original papers on entomology.—Dr. Page, Professor of Medicine in the New York Polyclinic.

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Medical News.

FOREIGN UNIVERSITY INTELLIGENCE. — *Berlin*: Dr. Victor Meyer has been recognised as *privat-docent* of Laryngology.—*Bonn:* Dr. Heinrich Walb has been promoted to an Honorary Professorship of Otology.—*Gratz:* Dr. Victor Fossel has been appointed Extraordinary Professor of the History of Medicine.—*Leipsic:* Dr. Martin Ficker has been recognised as *privat-docent* of Hygiene and Bacteriology. —*Moscow:* Dr. Pokrovski has been recognised as *privat-docent* of Pathological Anatomy.—*Odessa:* The organisation of the newly-established medical faculty has been entrusted to Dr. Podvisotski, Professor of General Pathology in Kieff, who is to be the first Dean of the Odessa Medical Faculty.—*Padua:* Dr. Dante Cervesato has been promoted to the Ordinary Professorship of Children's Diseases.—*Prague:* Dr. Ivan Honl, Assistant in the Bohemian Institute for Pathological Anatomy and Bacteriology, has been recognised as *privat-docent* of Bacteriology. — *Vienna:* Dr. Alexander Kolisko, Extraordinary Professor of Pathological Anatomy, has been promoted to the Ordinary Professorship of that subject in succession to the late Dr. M. E. von Hofmann; Dr. Rudolf Gruber has been recognised as *privat-docent* of Ophthalmology.

SWANSEA HOSPITAL. — The report of the Swansea Hospital for the year ending March 31st, 1898, shows that the expenditure during the year was £5159 and the income £4634. The deficiency at present amounts to £525. The report adds that the building is too small for the number of patients and that £2845, derived from the Guesdon Trust, has been spent upon improvements, including the heating of the operating theatre.

THE DENTAL HOSPITAL OF LONDON. — The annual conversazione and prize distribution connected with this institution was held at the Royal Institute Galleries, Prince's Hall, Piccadilly, on Tuesday last. The Right Hon. Lord Ludlow delivered an interesting though somewhat discursive address on scientific advance during the Victorian era with special reference to surgical and dental progress. The noble and learned lord held that surgical science had outstripped medical science in the race, and that the refinements of modern dentistry might trace ither birht to the time of the discovery of antiseptics and anæsthetics. The evening concluded with an interesting musical entertainment.

THE LONDON HOSPITAL MEDICAL COLLEGE.—Mr. Douro Hoare, chairman of the College, on Monday last distributed the following prizes: Price Scholarship in Science (£120), Mr. J. Jones. Price Scholarship in Anatomy and Physiology (£60), Mr. R. Warren. Entrance Science Scholarships: £60 scholarship, Mr. R. V. Dolbey; and £35 scholarship, Mr. T. Williams. Buxton Scholarships—Arts: £30 scholarship, Mr. M. Culpin; and £20 scholarship, Mr. G. Rodolph. Clinical Medicine: £20 scholarship, Mr. A. F. Tredgold; honorary certificates, Mr. W. E. Heilborn and Mr. C. White. Clinical Surgery: £20 scholarship, Mr. R. Howard and Mr. G. R. Slade (equal, scholarship divided); honorary certificates, Mr. E. Frazer and Mr. C. Pike. Clinical Obstetrics: £20 scholarship, Mr. J. Sherren; honorary certificates, Mr. R. C. B. Wall and Mr. D. J. Thomas. Andrew Clark Prize: honorary certificates, Mr. R. C. B. Wall, Mr. A. F. Tredgold, and Mr. C. White.

ROYAL VICTORIA COTTAGE NURSING HOME.—On July 12th the Duchess of Albany opened at South Ascot a new parochial institution which has been erected as a memorial of the Queen's Diamond Jubilee and has been named, by permission, the Royal Victoria Cottage Nursing Home. It serves the double purpose of a cottage hospital and a home for parish nurses employed on the Holt-Ockley system, by which patients contribute according to their means towards the cost of their nursing in time of illness. The originator of the movement is Mrs. Liddell, widow of the late Dr. Liddell, Dean of Christchurch and author, together with Dean Scott, of the well-known Greek Lexicon. Part of the site was given by the late General Crutchley and the other half by Dean Liddell. The building has been erected at a cost of about £2200, the architect being Mr. William Menzies, of Englefield Green, Surrey. It contains three wards and accommodation for seven nurses. The medical staff consists of Dr. G. E. Barron, Dr. A. G. Paterson, and Mr. A. G. Lacy.

DEVON COUNTY ASYLUM.—Dr. G. J. Symes Saunders has just resigned the post of resident physician and medical superintendent of the Devon County Lunatic Asylum, Exminster, Exeter, which he has held for nearly forty years, succeeding the late Sir John Bucknill, M.D. The appointment rests with the Devon County Council.

BEQUESTS AND DONATIONS TO HOSPITALS.—The committee of the Westminster Hospital has received £300 from the trustees of Smith's (Kensington Estate) Charity.—The committee of the City of London Hospital for Diseases of the Chest, Victoria Park, has received £105 from Messrs. Charrington and Co.; also £200 from the trustees of Smith's (Kensington Estate) Charity; also £155 from the employés of the Great Eastern Railway Company.—The committee of the North-West London Hospital, Kentish-town-road, has received £200 from the trustees of Smith's (Kensington Estate) Charity. —The committee of the North London, or University College, Hospital, Gower-street, has received £100 from Mr. Samuel Mills.—A donation of £1000 has been received by the committee of the King's College Hospital, London, for endowment of a bed in memory of the late Mr. H. P. Vulliamy.

DIPHTHERIA IN LONDON.—In the two weeks ended on Saturday, July 9th, the registered deaths from diphtheria in London continued to be considerably under the corrected decennial averages for the particular weeks. In the former, ended on July 2nd, the recorded deaths numbered 29, following upon 23, 26, and 21, the respective totals of the three weeks preceding. The corrected average for the corresponding week of the years 1888-97 was 37 deaths. All the 29 deaths were of young people under twenty years of age, 16 being of children aged under five years, of whom 3 were infants. Poplar was credited with 4 deaths. The close of the week found 976 diphtheria patients still under isolation in London hospitals, the admissions in the week having been 120, against 130, 134, and 126 in weeks immediately preceding. In the Outer Ring there were registered 11 diphtheria deaths, of which 3 occurred in West Ham district. In the succeeding week the registered deaths from the disease in London were 27 in number, being as many as 13 below the corrected decennial average. Five belonged to Poplar and 3 to Shoreditch parish. All the deaths were of young persons aged under twenty years, of whom 16 were children aged under five years, 4 being infants. In the Outer Ring there were 10 deaths registered from the disease, 4 belonging to Hendon and 3 to West Ham districts. Last week the registered deaths from the disease in London rose again, the number having been 39, of which all but one were of persons aged under twenty years, 24 being of children under five years of age. Five deaths belonged to Lambeth, and 4 each to St. Pancras and Islington. In the Outer Ring 9 deaths were registered, of which 3 occurred in Richmond and 3 in Hendon registration districts.

CHARING-CROSS HOSPITAL MEDICAL SCHOOL. The presentation of scholarships, medals, prizes, and certificates took place at this school on Wednesday last, Mr. T. McKinnon Wood, the chairman of the London County Council, presiding. Dr. Montague Murray, the Dean of the school, in submitting his report took occasion to refer to the appointment of Mr. Mackenzie Davidson to the superintendence of the Roentgen ray department and to the resignation of Dr. Watt Black, who has been lecturer on midwifery for twenty-nine years and treasurer of the school for eight years. He has been succeeded in his lectureship by Dr. Amand Routh and in the treasurership of the school by Mr. J. H. Morgan. During the year a new bacteriological laboratory had been opened. A recreation ground had been presented to the students club by Mr. E. J. Churchill. Attention was also directed to the many useful societies organised by the students, and the past academic year was a satisfactory record of successes in the examination room. The report closed with the announcement, which has already appeared in our columns, that Professor Virchow had consented to open the next winter session with the delivery of the second Huxley Lecture, which had been founded three years ago to commemorate the fact that Huxley had received his medical education at Charing-cross

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Hospital. On the occasion referred to the chair will be taken by Lord Lister, P.R.S. Mr. McKinnon Wood having presented the prizes addressed the students in suitable terms. He congratulated them on their success. Referring to the work of the London County Council he pointed out that in one direction their aims were one and the same with the medical profession. Both combined to diminish the death-rate. He referred also to the interest taken by the council in two points of view of hospital work—that of the care of poor patients and of the educational value of such institutions to the medical profession. Sir Joseph Fayrer proposed a vote of thanks to the chairman, which was seconded by Mr. Morgan. The Llewellyn prize, the governor's gold medal, and the senior prizes for medicine, surgery, practical midwifery, and public health were awarded to Mr. P. L. Daniel. Mr. E. F. Ackery secured the Huxley medal, Mr. S. A. Boyd the Golding prize, and Mr. E. L. Lilley the Pereira prize.

BRISTOL AMATEUR DRAMATIC WEEK. — The accounts in connexion with the recent amateur week at the Prince's Theatre, Clifton, in aid of the Bristol medical charities show that, although £487 were taken as a result of the performances, after paying all expenses only £36 10*s.* remained to be divided amongst the charities.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The General Medical Council and Unqualified Assistants.

MR. LOGAN has given notice of the following question for Tuesday, July 26th, viz.:—"To ask the First Lord of the Treasury if he is aware that in December last the General Medical Council passed a resolution disapproving of the employment by medical men of unqualified assistants, in consequence of which a large number of such assistants who have been trained for the medical profession, many of whom have families, are and will be deprived of the means of obtaining a livelihood; and if there are any means whereby he can intervene and provide that those now or recently so employed shall be permitted to continue their vocation."

HOUSE OF COMMONS.

THURSDAY, JULY 14TH.

Lead-poisoning in the Potteries.

Mr. DRAGE asked the Home Secretary whether he could give any statistics showing the effect of employment in the dangerous processes in potteries on the health of women and their children as well as on the health of young persons.—Sir M. WHITE RIDLEY: I am not aware what kind of statistics the hon. Member has in his mind. There are many recorded instances which amply prove that in the pottery trade, as elsewhere, the occurrence of lead-poisoning in the mother is capable of producing grave effects upon the child. The total number of recorded cases of lead-poisoning among women and girls engaged in the manufacture of earthenware and china during the two and a half years since the Act of 1895 came into force is: women, 528; girls, 63—a yearly average of about 230. The number of females employed in Staffordshire was 20,705.—Mr. DRAGE asked the right hon. gentleman whether he could give any statistics comparing the health of workpeople in potteries where mechanical ventilation has been introduced with the health of workpeople employed in potteries without mechanical ventilation.—Sir M. WHITE RIDLEY: I am afraid I have no statistics of the kind and it would be difficult to obtain them. The great improvement effected by the introduction of mechanical ventilation is sufficiently evident, and one of the points aimed at in the new rules I am taking steps to establish is the more general adoption of fans in all dusty processes in potteries.—Mr. WOODALL: May I ask the right hon. gentleman whether he will consider the practicability of informing the House as to the proportion of cases in which lead-poisoning has been certified by a medical practitioner whose report has afterwards been found to be unfounded?—Sir M. W. RIDLEY: Every information of that kind I am now endeavouring to obtain. It is a very difficult question, but I will bear it in mind.

Tuberculosis.

Mr. CHANNING asked the President of the Board of Agriculture whether he had considered the Report of the Commission on Tuberculosis as regards the successful adoption of the policy of gradual elimination of tuberculosis by the use of the tuberculin test in Denmark and elsewhere; whether he would take steps to carry out the recommendation of the Commission that properly prepared tuberculin and the services of veterinary surgeons should be provided by the State to enable agriculturists in this country to adopt the policy of elimination; and whether he would apply to the Treasury to sanction the small grant of £5625 per annum which the Commission think sufficient to initiate this policy.—Mr. WALTER LONG: I am afraid that as yet I can add nothing to what I said in reply to the question addressed to me on this subject in April last, except that since that time the report of the Royal Commission has been fully considered by the Central Chamber of Agriculture and that no desire whatever was then manifested for the provision of facilities for the application of the tuberculin test. It is clear, I think, that I could not approach the Treasury on the subject with any hope of success until there is evidence that agriculturists really wish that their cattle should be subjected to the proposed test on the conditions suggested by the Commission.

Gallant Conduct of Surgeon-Lieutenant Hugo.

Sir WALTER FOSTER asked the Secretary of State for India whether his attention had been called to the gallant conduct of Surgeon-Lieutenant Hugo, of the Malakand Field Force, under the following circumstances:—Lieutenant Ford was dangerously wounded in the shoulder and was bleeding to death from the bullet having cut the main artery when Surgeon-Lieutenant Hugo came to his aid. The fire was too hot to permit lights to be used to examine the wound and there was no cover, nevertheless, the surgeon struck a match and examined the wound. The match went out amid a splutter of bullets, which kicked up the dust all round, but by its uncertain light he saw the nature of the injury and seized the bleeding artery and, as no ligature was available, he remained for three hours under fire holding the vessel between his finger and thumb. When at length it seemed that the enemy had broken into camp he picked up the officer, who was unconscious from loss of blood, and bore him into a place of safety without relaxing his hold of the artery; and whether the authorities had taken steps to reward suitably this splendid act of devotion.—Lord GEORGE HAMILTON: The officer who performed the gallant action referred to in the question was Surgeon-Lieutenant J. H. Hugo, who for his services in the late campaign has received the decoration of the Distinguished Service Order.

The Hospital at Aden.

Mr. MOON asked the Secretary of State for India whether any English nurses had been engaged for the hospital at Aden; and whether the Government of India or the Admiralty would pay their salaries.—Lord GEORGE HAMILTON: I am not aware whether any British nurses have yet been engaged for the hospital at Aden, but I am in communication with the Government of India on this subject, as also regarding the proportion of their salaries to be paid by the Admiralty and Port funds respectively. The latter point to a large extent regulates the class of nurses to be engaged.

Prosecutions for Illegal Operation.

Mr. PICKERSGILL asked the Attorney-General, with reference to the recent trial of Dr. Collins at the Central Criminal Court on an indictment for wilful murder, when the Attorney-General, who prosecuted for the Crown, while presenting the death as due to a felonious act done by the prisoner, invited the jury to return a verdict of manslaughter only, and they accordingly did so, whether, with a view to regularise such verdicts, he would consider the propriety of introducing an amending Bill, so that a person who without an intention to injure kills another by a felonious act not likely in itself to cause death or grievous bodily harm may be regularly convicted of manslaughter and not of murder.—The ATTORNEY-GENERAL (Sir RICHARD WEBSTER): In my opinion there is no need for any such amending Bill. The law, as I endeavoured to express it on the occasion to which the hon. Member refers, has been laid down more than once by distinguished judges in charging the jury.

FRIDAY, JULY 15TH.

Yellow Phosphorus in the Match Trade.

Mr. STEADMAN asked the Home Secretary if he would inform the House what steps he was taking to inquire into the deadly use of yellow phosphorus in the match making trade, and, if so, would he report the result of such inquiries at the earliest opportunity.—Sir M. WHITE RIDLEY: The steps taken are, very briefly, these: every match factory in the country has been specially visited and reported on by the factory inspectors; many of them also, so far as the employment of women is concerned, by the lady inspectors. Inquiries are being made through the Foreign Office as to the measures adopted and results obtained in foreign countries. Further, the question is being investigated on the scientific side by two distinguished experts—Dr. Oliver and Dr. Thorpe—the former of whom has already visited the chief match factories in France and made a special report; and from the dental point of view by Mr. George Cunningham, dental surgeon of the London Hospital, who has already made a preliminary report, and whom I propose to send to France to continue his inquiries in the French manufactories. I shall as soon as possible communicate to the House the result of these investigations.

The Case of Dr. Lynch of Walsall.

Mr. SYDNEY GEDGE asked the First Lord of the Treasury, as representing the Lord Chancellor, on what grounds and on whose recommendation a medical practitioner at Walsall named John Joseph Lynch has recently been made a magistrate of that borough, the following statement of facts respecting Dr. Lynch having been on the 5th instant admitted by the Home Secretary to be correct—viz., that Dr. Lynch did in December last certify that a boy named William Charles Young died from natural causes although he had not seen the boy for a month before his death and another doctor had attended him in his last illness; that on the inquest the jury found that the boy had died from swallowing a halfpenny, and that, in consequence of this and of a further representation made to the Registrar-General officially by the town clerk of Walsall, the Registrar-General directed the superintendent-registrar there to treat all certificates given by Dr. Lynch of deaths from natural causes as equivalent to certificates of death with a view to his holding inquests in such cases; and was the Lord Chancellor aware that Dr. Lynch was under this stigma when he was selected as worthy to be placed on the judicial bench; and whether, now that his lordship's attention had been called to the fact, he would take steps to remove Dr. Lynch from the bench.—Mr. BALFOUR: I am informed by the Lord Chancellor that, following out the principles observed by all his predecessors, he thinks it is undesirable to state the grounds for any appointment to the bench or the sources of information on which it is made further than to state that he has satisfied himself as to the facts on authority in which he has entire confidence. If any facts are brought to his notice establishing *prima facie* any misconduct on the part of Dr. Lynch the Lord Chancellor will, in accordance with the usual practice, inquire into them and give Dr. Lynch an opportunity of explanation.—Mr. SYDNEY GEDGE: The last part of the question has not been answered—whether the Lord Chancellor was aware of the stigma that

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rested upon Dr. Lynch when he made the appointment and whether, now that his lordship's attention has been called to the matter, he will take steps to remove Dr. Lynch from the bench. I may add that the appointment is causing great agitation.—Mr BALFOUR: I have no information as to the state of the Lord Chancellor's information when he appointed Dr. Lynch. The last question I have already answered.

MONDAY, JULY 18TH.

Army Medical Service.

Captain NORTON asked the Under Secretary of State for War whether he could state if officers of the Army Medical Staff were obliged to retire at an earlier age than combatant officers although they entered the army several years older on an average; whether the rule regarding promotion to the rank of major-general had been applied to medical officers to the extent that they were ineligible for promotion after attaining the age of fifty-seven years; and why the rule permitting all major-generals to serve on to sixty-two was not also made applicable to all surgeon-generals, seeing that such an extension of service would be economical to the State.—Mr. BRODRICK replied: In the combatant ranks colonels retire at fifty-seven years of age and major-generals at sixty-two. In the Army Medical Staff the age of sixty holds for both ranks. The medical officers have therefore the advantage of three years in one rank while they lose two years in the other. Medical officers are not ineligible for promotion to the rank of surgeon-general after the age of fifty-seven if recommended by the Promotion Board as possessing exceptional abilities. As a general rule, however, promotion to the rank of surgeon-general is only given to officers who have at least three years to serve. The Secretary of State is advised that having regard to all the conditions involved it would not be desirable to extend the rule under which major-generals are allowed to serve on to sixty-two to all surgeon-generals.

Habitual Inebriates Bill.

This Bill, as amended by the Grand Committee on Law, was considered and on the motion of the Home Secretary a new clause was inserted giving power to recover expenses against the estate of the inebriate. Thereafter the Bill was read a third time.

TUESDAY, JULY 19TH.

The Physic Garden at Chelsea.

Mr. WHITMORE asked the honourable Member of the Thirsk Division of Yorkshire, as a Charity Commissioner, whether he was aware that the Society of Apothecaries had resolved that it could no longer maintain the Physic Garden at Chelsea, and whether, in view of this decision and in order to preserve this ancient garden, the Charity Commission would be willing to sanction its acquisition by the governing body of the City Parochial Charities and its subsequent maintenance by them as a botanical garden.—Mr. GRANT LAWSON, in reply, said that the Society of Apothecaries as trustees of the Physic Garden at Chelsea, had applied to the Charity Commissioners for the establishment of a scheme for the future administration of the trusts regulating the garden which was now maintained at the charge of their corporate funds and they desired to be relieved from the trusteeship. The Commissioners had received from the trustees of the London Parochial Charities an offer to undertake the trusteeship of the garden and to make a provision for its maintenance for the purpose of botanical study which appeared to be sufficient for the purpose. The Commissioners accordingly proposed to publish a scheme giving general effect to these proposals.

The General Medical Council and Irregular Practice.

Dr. FARQUHARSON asked the Chancellor of the Exchequer whether, having regard to the fact that a sum of £5000 a year of public money was paid to the council of the Incorporated Law Society to assist them in purifying the legal profession, he could see his way to make a similar grant to the General Medical Council to enable them to undertake the prosecution of irregular medical practitioners.—Sir MICHAEL HICKS-BEACH replied that the sum of £2500—not £5000—was voted to the Incorporated Law Society for this purpose. It was a very small fraction of the yield from the special duty on solicitors' certificates which went to the Exchequer. No such tax was imposed upon medical practitioners and therefore no question of a similar grant arose.

Accommodation for Epileptics.

Sir MANCHERJEE BHOWNAGGREE asked the President of the Local Government Board when the arrangements for providing further accommodation for imbecile children who are epileptic, which were stated by him recently to be under the consideration of the Metropolitan Asylums Board, were likely to be completed and whether he was taking any steps to provide such accommodation for emergent cases pending the completion of the arrangements.—Mr. CHAPLIN: The arrangements which the managers of the Metropolitan Asylum District have under consideration for providing further accommodation for imbecile children who are epileptic are dependent on their acquiring the buildings of the South Metropolitan School District at Sutton. Negotiations for this purpose are in progress, and I believe are proceeding satisfactorily. It will devolve on the guardians to provide for the cases of children of the class referred to who may become chargeable on the rates when they cannot be admitted to the asylums of the managers.

The Vaccination Bill.

On the question that the Vaccination Bill as amended by the Grand Committee on Law be now considered, Mr. PICKERSGILL moved as an amendment that it be considered on this day six months. He and several members who think with him delivered speeches condemning the measure as a whole, but after a time they withdrew the amendment and allowed the consideration of the Bill to proceed.

Sir WALTER FOSTER moved to insert as a new clause the following, viz.:—"Where a child is by the Act required to be vaccinated within six months from the birth of the child, the parent or person having the custody of the child may, not less than two months before the expiration of six months from the birth of the child make a statutory declaration of conscientious objection to the vaccination of the child, before not less than two magistrates in petty sessions, and if the statutory declaration is within seven days after its date delivered to the vaccination officer for the district in which the child resides the vaccination officer shall register the same and shall, if required, deliver to the parent or other person making the declaration a certificate of such registration, and thereupon an order shall not be made or proceedings taken with reference to the non-vaccination of the child mentioned in the certificate." He pleaded, as he did before the Grand Committee, that such a provision as this for conscientious objection was in the interests of vaccination, being calculated to get rid of the "vaccination martyr" and reduce irritation and agitation throughout the country.

Mr. CHAPLIN opposed the clause.

Sir WILLIAM HARCOURT and Colonel LONG spoke in its support.

Sir WILLIAM PRIESTLEY said he could not vote for it because he regarded it as tantamount to abolishing compulsory vaccination altogether.

Dr. FARQUHARSON supported the clause, saying that the Parliamentary Bills Committee of the British Medical Association, which represented the boiled-down Parliamentary wisdom of the profession, favoured it.

Dr. CLARK also spoke in favour of the clause.

After the debate had gone on for several hours Mr. BALFOUR addressed the House. He suggested as a means of sifting out the genuine objector and distinguishing him from the sham one—the aim which they all had in view—that it should be regarded as a complete defence if a parent when brought before the court could show that he had genuine and conscientious objections to the process of vaccination. He should ask the House, if it was prepared to accept that view, to make the experiment only for five years, because great weight ought to be attached to the report of the Commissioners, who, while advising unanimously that penalties should be abandoned in the case of the conscientious objector, were so conscious that the experiment might prove a perilous one that they suggested that it should be temporary in its operation. The form of clause he would propose was: "No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Act of 1867 if he satisfies the court that he conscientiously believes that vaccination would be prejudicial to the health of the child and that the failure to have the child vaccinated has been and is due solely to such conscientious belief on his part." There would be a subsection: "Proceedings under the said Section 31 shall be taken only once in respect of the same child, and not until such child shall have attained the age of four years." Then at the end of Clause 10 he should add these words: "The Bill shall remain in force until Jan. 1st, 1904." He put this proposal forward as a compromise and he hoped it would be accepted by the House.

Sir WILLIAM HARCOURT suggested that members should have a little time to consider the exact effect of the proposal.

With this object the debate was adjourned until the following day.

WEDNESDAY, JULY 20TH.

The Vaccination Bill.

When the House resumed consideration of the Vaccination Bill Sir WALTER FOSTER withdrew his proposed new clause and the debate proceeded on the following clause proposed by Mr. CHAPLIN—viz.: "No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices of such conscientious objection."

Objection was taken to the word "satisfies" and the proposal was made to substitute for it "makes a statutory declaration before," but when pressed to a division it was rejected by 158 to 101 votes and the clause as moved by Mr. Chaplin was adopted.

Dr. CLARK moved to insert a provision that the vaccination should be "with such lymph as the parents may desire." The Government refused to accept it and in the end it was negatived without a division.

On the motion of Mr. CHANNING words were inserted to provide for the postponement of vaccination in a district where there was or had been a prevalence of infectious disease.

The clause introduced in the Grand Committee on the motion of Sir William Priestley with regard to the dissemination by local authorities of vaccination literature was struck out of the Bill by 270 to 49 votes. The only other alteration of importance made was the insertion of a provision confining the operation of the Act to five years. The third reading of the Bill was postponed.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

ARTHUR, H., M.D., C.M. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Airdrie District of Lanarkshire.

BAILEY, FRANCIS WILLIAM, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Anæsthetist for the Royal Infirmary, Liverpool.

BATE, G. P., M.D. Brux., F.R.C.S. Edin., M.R.C.S., of Hackney, has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the County Court District No. 40.

COLLEN, GEORGE DENBIGH, M.A., M.D., M.B., B.Ch. Dubl., has been appointed Medical Officer for the All Saints' District, Northampton Union.

CRAWFORD, J. D., L.R.C.P., F.R.C.S. Edin., M.R.C.S., of Liverpool and Freshfield, has been appointed a Medical Referee for the district including the County Court of Liverpool.

DOBBIN, F. W., M.D., B.Ch. Dubl., has been appointed Medical Officer of Health by the St. Albans Rural District Council.

DUNWOODY, W. G., M.D., B.S. Dubl., has been appointed Medical Officer for the Downham Sanitary District of Ely Union.

ELKINS, F. A., M.D., C.M. Edin., has been appointed Medical Superintendent for the Leavesden Asylum of the Metropolitan Asylum District.

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GRANT, P. N., M.B., C.M. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheriffdom of Stirling, Dumbarton, and Clackmannan.

HEATH, CHARLES J., F.R.C.S., has been appointed Surgeon to the Throat Hospital, Golden-square, London.

HOLLINGS, C. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Kilham Sanitary District of the Driffield Union.

HOW, A. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Cleygate Sanitary District of Kingston Union.

HUNTON, FRED., M.D., B.S. Durh., has been appointed Medical Officer of Health by the Sedgefield Rural District Council.

JORDAN, H. M., F.R.C.S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the Clerkenwell County Court District No. 41.

MCALISTER, W., M.B., C.M. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Kilmarnock District of the County and also for the Sheriffdom of Ayr.

MCFADYEN, D., M.D. Glasg., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for Stirling District.

MURISON, P. R., M.B., C.M. Edin., L.R.C.P. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheriffdom of Forfarshire.

NICHOLSON, C. R., L.R.C.P., M.R.C.S., has been appointed Senior House Surgeon for the Hastings, St. Leonard's, and East Sussex Hospital, vice H. C. T. Langdon, resigned.

RICHARDSON, W. P., M.B., C.M. Edin., has been appointed a House Surgeon for the Hospital for Sick Children, Newcastle-on-Tyne.

ROSS, J. A., M.B., C.M. Aberd., has been appointed Medical Officer for the Workhouse of the Penistone Union.

ROUTH, A. J. M., M.D. Lond., B.S., M.R.C.P., M.R.C.S., has been appointed Obstetric Physician to the Charing-cross Hospital, vice W. Black, resigned.

SMITH, W., L.R.C.P. Lond., M.R.C.S., has been appointed a House Surgeon to the Walsall and District Hospital, vice Dr. Nixon.

SMITH, W. E., M.B., C.M. Edin., has been appointed Junior House Surgeon to the Royal London Ophthalmic Hospital, Moorfields, E.C.

STEWART, C. H., M.B., C.M. Edin., D.Sc., B.Sc., has been appointed to the Professorship of Public Health and Sanitary Science at the Edinburgh University.

STUART, J. A. ERSKINE, L.R.C.P. & S. Edin., has been re-appointed Medical Officer of Health and Superintendent of Infectious Hospital for the Borough of Batley.

THOMSON, ST. CLAIR, M.D., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed a Physician to the Throat Hospital, Golden-square, London.

THORNE, MAY, L.S.A. Lond., M.D. Brux., has been appointed a Clinical Assistant for the Royal Free Hospital, Gray's-inn-road, London.

WATT, J. R., M.B., C.M. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheriffdom of Ayr.

WALKER, S., M.R.C.S., of Middlesborough, has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County Court Circuit No. 15.

WHITFIELD, ARTHUR, M.D., M.R.C.P., M.R.C.S., has been appointed Physician for the Skin Department of the Great Northern Central Hospital, Holloway-road, N.

WHITTINGTON, THOMAS PRICE, L.R.C.S., L.R.C.P., L.M. Edin., has been re-appointed Medical Officer of Health for Neath, Glamorganshire.

WILSON, T., M.D., F.R.C.S., has been appointed Medical Officer for the infirmary of the parish of Birmingham.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £60, with board and washing.

BETHLEM ROYAL HOSPITAL, Lambeth-road, London, S.E.—Second Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments in the hospital, complete board, and washing. Applications to the Clerk, Bridewell Hospital, New Bridge-street, E.C.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

CARDIFF INFIRMARY.—Assistant House Physician and Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CHARING-CROSS HOSPITAL, London.—Assistant Anæsthetist.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. The post is tenable, subject to annual re-appointment, for three years. Honorarium 20 guineas per annum.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer. Salary commences at £130, rising to £160.

DERBY COUNTY HOSPITAL.—Second Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with board, lodging, and washing. Applications to B. S. Currey, Esq., St. Michael's Churchyard, Derby.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for twelve months. Salary £40, with board, residence, and washing.

DUNDEE ROYAL INFIRMARY.—Two Resident Medical Assistants for six months. Salary at the rate of £40 per annum, with board and washing.

HOLBORN UNION.—Resident Medical Officer for the Workhouse, Shepherdess-walk, City-road, N., unmarried or widower without children. Salary £200 per annum (to include midwifery fees if called upon to act), with furnished apartments, gas, coal, washing, and attendance, fees for vaccination and 10s. 6d. in respect of each certificate under the Lunacy Act. The appointee will be required to pay £60 per annum towards the cost of his rations. The appointment is subject to statutory deductions. Applications to the Clerk to the Guardians, Holborn Guardians' Offices, Clerkenwell-road, E.C.

HOSPITAL OF ST. FRANCIS, 145, New Kent-road, London.—Orthopædic Surgeon and Ophthalmic Surgeon.

LAMBETH INFIRMARY.—Resident Clinical Assistant and Second Assistant to the Medical Superintendent for six months. Salary at the rate of £50 per annum. Applications to the Medical Superintendent, Brook-street, Kennington-road, S.E.

LONDON SCHOOL OF MEDICINE FOR WOMEN, Handel-street, Brunswick-square, W.C.—Demonstrator in Physiology.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the institution.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the Park Fever Hospital, Hither Green, Lewisham, S.E., unmarried. Salary £160 first year, £180 second year, and £200 the third and subsequent years of service, with board, lodging, attendance, and washing, subject to statutory deduction. Applications to the Office of the Board, Norfolk-street, Strand, W.C.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £180 a year, increasing to £200 by £10 a year, subject to board expenses. Also Clinical Assistant for six months. Salary £60.

OWENS COLLEGE, Manchester.—An Additional Demonstrator of Anatomy for the ensuing winter session.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

ROYAL SEA-BATHING HOSPITAL, Margate.—Resident Surgeon. Salary £100 per annum, with board and residence. Applications to the Secretary, R.S.B. Hospital Offices, 30, Charing-cross, London.

SALFORD SCHOOL BOARD.—Medical Officer. Salary £150 per annum. Applications to the Clerk to the Board, School Board Offices, Salford.

SALISBURY INFIRMARY.—Assistant House Surgeon for six months. Honorarium of £10 will be given conditionally. Board, lodging, and washing provided.

SCHOOL BOARD FOR LONDON. Lecturers. Application to the Clerk of the Board, Victoria-embankment, W.C.

SUSSEX COUNTY HOSPITAL, Brighton.—House Physician, unmarried. Salary commencing at £50 per annum, with board and residence in the hospital.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, Cardiff. Assistant Lecturer and Demonstrator in Anatomy. Stipend £120 per annum. Also Temporary Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Registrar, University College, Cardiff.

UNIVERSITY OF ST. ANDREWS, St. Andrews.—Professors of Materia Medica and Pathology to conduct classes at Dundee.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £60, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

CLARK.—On July 13th, at Wilton-place, Ilkeston, the wife of David Y. Clark, L.R.C.P., L.R.C.S. Edin., of a son.

DICKINSON.—On July 16th, at Milverton-terrace, Leamington Spa, the wife of George Dickinson, M.R.C.S., L.R.C.P. Lond., of a son.

JAMES.—On July 16th, at Barton House, Beverley, Yorkshire, the wife of Surgeon-Lieutenant-Colonel James, of a daughter.

KEOGH MURPHY.—On July 17th, at Princes-square, W., the wife of J. Keogh Murphy, M.B. Camb., L.R.C.P. Lond., M.R.C.S., of a son.

MARRIAGES.

ALEXANDER—MILLAR.—On July 19th, at the Cathedral Church of St. Mary, Edinburgh, William Gordon Alexander, M.B., C.M., Stalbridge, to Katrina Louisa Hoyer, daughter of the late Christian Hoyer Millar, of Blair Castle, Culross, N.B.

APPLEYARD—HARRIES.—On June 13th, at the Court House, Umtali, Rhodesia, Francis Edward Appleyard, B.A., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., elder son of George Appleyard, Halifax, to Beatrice Louise, youngest daughter of Barret Harries, of Byfleet, Surrey.

RICHARDSON—TONKING.—At Camborne Parish Church, on July 16th, Adam Richardson, M.B., Mast. Surg. Edin., L.S.A. Lond., to Rhoda Maud, youngest daughter of C. H. Tonking, Esq., Roskear Villas, Camborne.

RITCHIE—SOUTTAR.—On July 12th, at Beaconsfield-place, Aberdeen, James Ritchie, M.A., M.D. Edin., Oxford, to Lily, daughter of James Souttar, F.R.I.B.A., Aberdeen.

TENCH—STANLEY.—On July 16th, at Christ Church, Lancaster-gate, Sidney E. Tench, M.R.C.S., L.R.C.P., of Brixton, to Mabel, youngest daughter of the late Charles Stanley, of Lancaster-gate, W.

DEATHS.

BOWMAN.—At Charlmont-place, Armagh, Robert Bowman, Surgeon-Colonel I.M.S.

FARR.—On July 16th, at Strathallan, Owls-road, Boscombe, Septimus Briggs Farr, M.R.C.S., L.R.C.P. Edin., L.S.A. Lond., aged 65 years.

FOX.—On July 20th, at Mount Park-road, Ealing, W., Oscar Harger-Fox, M.R.C.S., in his 84th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

BRITISH MEDICAL ASSOCIATION MEETING AT EDINBURGH.

DURING the forthcoming meeting of the British Medical Association at Edinburgh the Representatives of THE LANCET can be consulted at the Imperial Hotel with regard to our report of papers and proceedings.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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INCARCERATION OF THE PENIS.

DR. THEODOR FLORAS, principal medical officer of the Anatolian Railway, Constantinople, reports a case of incarceration of the penis in the *Deutsche Medicinische Wochenschrift* of July 14th. The patient was a railway employé, about fifty-five years of age, who, presumably while in a state of intoxication, in presence of a companion passed his relaxed penis through the aperture of an iron screw-nut, this aperture having a width of only 1½ centimetre (0·6 in.). The matter was treated as a joke, and encouraged by his companion he forced the nut with a twisting movement until it arrived at the attachment of the ligamentum suspensorium urethræ. He was subsequently unable to remove the nut, but nevertheless went to work that same day and also the next. On the evening of this second day he consulted a surgeon who drew off his retained urine with a fine catheter, prescribed a diuretic, and directed lead lotion to be applied to the penis. It was only next morning that Dr. Floras saw him, more than thirty-six hours after the application of the nut. The man was then in a state of the greatest alarm and uneasiness, his penis hung down like an enormous tightly filled sausage, and the diffuse swelling was so great that it was difficult to find the nut among the infiltrated tissues. Amputation seemed to be unavoidable, but before resorting to it the man was taken to the engineering shop and held by two men in the upright position against a large anvil. The penis, with the square nut encircling it, was then held horizontally on the anvil, a slight cut was made in the nut by a sharp chisel struck by a hammer, and this cut was cautiously deepened until an iron wedge could be driven into it, whereupon the nut broke in two. The internal screw threads of the nut had sunk into the tissues of the urethra and had caused ulcerative and necrotic changes, but in a few days all these symptoms disappeared and the man returned to his work. Dr. Floras refers to a somewhat similar case recorded by M. Ameisen, quoted in the *Centralblatt für Chirurgie* for 1897, p. 1166.

ANTI-VIVISECTION TACTICS.

A MEDICAL man at Clifton, and perhaps many medical men in the neighbourhood, have received the following document:—

BRISTOL AND WEST OF ENGLAND ANTI-VIVISECTION SOCIETY.

20, Triangle, Bristol, July, 1898

SIR,—As we are often asked if we can give the name of a doctor who is opposed to vivisection we should be glad to keep a list of such for the convenience of inquirers.

Will you therefore kindly answer the enclosed question and return this paper to the above address?

I am, yours faithfully,
F. I. BAKER, Secretary.

QUESTION:—

Are you opposed to Vivisection?

It is to be hoped that all medical men, whether sympathising or no with the anti-vivisection movement, will leave this circular unanswered. To attempt to obtain patients from brother practitioners through the medium of Mr. F. I. Baker would be in opposition to all right ideas and the stress of competition would never excuse such behaviour.

A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of April 2nd, in the Appointments column, an error has crept in which I would like corrected, as already a good deal of misunderstanding and inconvenience has been caused me thereby. It is there stated that H. W. Cooper, M.D. Balt., U.S.A., has been appointed resident medical officer and vaccinator at the Carcoar Hospital, New South Wales. No such appointment has been made. W. H. Cooper, M.D. Balt., U.S.A., succeeded me as medical officer to the Galley Mont Gold Mining Company, Galley Swamp, a position I held as visiting medical officer until it was decided to have a medical man resident on the "field," when my appointment lapsed. Hence, I presume, the error.—I am, Sirs, yours faithfully,

A. W. HAWTHORNE, M.D. R.U.I.,
Resident Surgeon Carcoar District Hospital; Government Medical Officer and Vaccinator, Carcoar District.

Carcoar, N.S. Wales, June 11th, 1898.

THE HEAT IN NEW YORK CITY.

A CORRESPONDENT writes: "New York has just experienced a heat wave of exceptional intensity. The hot weather came in with July. On the 1st of the month the thermometers in different parts of the city registered at four in the afternoon from 90° to 97° F., accompanied with much humidity. This temperature, however, was far exceeded on Sunday, July 3rd, on which date occurred the hottest day for many years—in fact, it is said that not since 1881 has the mercury risen to such a height. The peculiar feature of this excessive degree of heat was the comparative absence of humidity—only 70°—and the presence of a breeze from the south-west travelling at the rate of fourteen miles per hour. Ordinarily a breeze from this quarter tends to mitigate the most severe temperature, but on this occasion it exerted a contrary effect and served to bring upon the city such an excess of heat as will be remembered for many a long day. The current of air had many of the characteristics of a simoon and struck

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one like the blast from a fiery furnace. According to the reports from the weather bureau the highest temperature of the day was 99° in the shade, but it must be understood that the office of the bureau is several hundreds of feet above the ground and many thermometers in the streets registered over 100°, while some on Broadway in the sun stood at from 105° to 115° between the hours of 12 P.M. and 4 P.M. The worst of it was there was no relief. Although indoors the air was stifling, it was even more unpleasant outside The harder the wind blew the hotter it was. The penny boats and pleasure steamers, the usual resorts of New Yorkers in the torrid season, were swept by the burning wind. It is needless to say that there were many cases of heat prostration. The condition of the poor inhabitants of the east side streets was especially pitiable. Few towns in the world possess so overcrowded a district as the section inhabited by the poor of New York. In this part of the town the slum dwellers are herded together in huge tenement buildings crowded in small box-like rooms. The streets are narrow and often paved with asphalt, which attracts and conserves the heat as no other description of pavement does, and as a result the distress and mortality reached a point seldom known. The fall in temperature was very gradual up to eight o'clock, then the earth commenced to cool, until at eleven o'clock the thermometers in the street stood at 89°."

A SHORT WAY WITH AN UNREGISTERED CLUB DOCTOR.

THE Barmen clubs having quarrelled with their medical men these have resigned and strangers have been imported into the town to take their posts—amongst them a Swiss lady, who, though an M.D. of Zürich, has not a German qualification, has been placed in charge of the female members of the clubs. This coming to the knowledge of the local authorities they immediately caused a notice to be served on the committee of the club informing it that every member would be liable to a penalty of 10s. for every day that the unqualified lady practised.

"UNFORTUNATE PUBLICITY."

To the Editors of THE LANCET.

SIRS,—As in THE LANCET of the 16th inst. you have instructed me to withdraw an advertisement which you reproduced in full you will no doubt, in fairness to me, state your grounds for so doing and print this letter in your next issue. I am entitled to assume that, as competent editors, you made yourselves acquainted with all the facts of this particular case before remarking upon it and therefore I need not at present allude to them. I shall be glad to know the precise grounds upon which you object to this advertisement and as I like, when possible, to understand the reasons for adopting any line of conduct I should be obliged if you would kindly enter into some detail and point out what evils you fear and in what manner you expect them to arise. I should also be glad to learn whence you derive the authority to address me in such dictatorial terms. I am, Sirs, your obedient servant,

Southampton, July 19th, 1898. JOHN BULLAR.

*** We have not instructed Dr. Bullar to do anything. We have recommended him to withdraw his advertisement which, by the way, was not reproduced in full. The objections to such advertisements are patent; they advertise the writer of the book in his medical character to a lay public. We fail to see in what way our recommendation was a dictatorial one and at the risk of further offending Dr. Bullar we beg to repeat it.—ED. L.

THE LATE MR. ARTHUR JEFFARES BARLOW: AN APPEAL.

IT will be remembered that an appeal was made in THE LANCET of May 14th on behalf of the widow of the late Mr. Arthur Jeffares Barlow. As the sum received is up to now only small we again give the names and addresses of those to whom subscriptions may be sent:—Dr. J. W. Moore, 40, Fitzwilliam-square West, Dublin; Dr. John Barton, 26, Upper Merrion-street, Dublin; Dr. C. J. Clibborn, 76, Owen-terrace, University-street, Belfast; Dr. L. H. Ormsby, 92, Merrion-square West, Dublin; Dr. Henry, 2, Lewisham-park, Lewisham, London, S.E.; and Dr. A. Matson, 619, Holloway-road, London, N., who desires to acknowledge a subscription of £2 2s. from Sir Edwin Saunders.

MR. MOULD FAILS TO FIND MR JOBLING.

To the Editors of THE LANCET.

SIRS,—I was interviewed to-day by a man who told me he had just come to the neighbourhood to begin business and was desirous of obtaining my patronage. I asked him what business he was in and he replied that he was an undertaker. I rose to show him out when he remarked, "Of course, doctor, *as is usual*, I am prepared to offer you a commission." He left immediately. Is the game really played as low down as this? I am, Sirs, yours faithfully,

July 18th, 1898. F. C.

A Twenty-five Years' Subscriber will find several articles on the appointment of medical referees in the columns of THE LANCET during the past six months. The appointments are in the hands of the Home Secretary and application for them should be addressed to that Minister and sent under cover to the "Private Secretary to the Secretary of State, Home Office" (see THE LANCET, April 23rd, 1898, p. 1137). As was stated last week, the list of medical referees for certain county court circuits is now complete (see THE LANCET, July 16th, 1898, p. 168)

Assistant.—We know no other method of hearing of such posts save advertisement. Applications for colonial service should be made to the Colonial Office, Downing-street, S.W.

Pes.—The "Toe-Post" Shoes are made by Messrs. Holden Bros., 223½, Regent-street, W. Any surgical bootmaker will make sandals to order.

F.R.C.S. (Southsea).—The Jacksonian Prize on Tetanus has not been published. The essay is in the Royal College of Surgeons of England.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (30th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 21st, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 15	30·11	W.	...	122	85	56	60	65	Hazy
" 16	30·10	N.W.	...	124	85	63	64	68	Hazy
" 17	30·16	N.W.	...	106	78	62	62	70	Cloudy
" 18	29·99	WNW	0·08	124	83	69	60	64	Cloudy
" 19	29·90	N.	...	100	71	62	60	62	Cloudy
" 20	30·07	E.	...	97	67	56	53	58	Cloudy
" 21	30·16	S.	...	112	69	62	62	55	Hazy

During the week marked copies of the following newspapers have been received: *Sunderland Daily Echo, Crowle Advertiser, Norwich Advertiser, Glasgow Herald, Ayrshire Post, Lancashire Express, Sheffield Telegraph, Birmingham Daily Post, Times of India, Pioneer Mail, Newbury Weekly News, Perth Constitutional, Bournemouth Observer, Boston Independent, Architect, Rugby Advertiser, Scotsman, Citizen, Builder, Bedford Standard, Liverpool Daily Post, Dundee Advertiser, Bristol Mercury, Manchester Courier, Walsall Advertiser, North Eastern Daily Gazette, Baillie-Glasgow, Eastern Morning News, Cheshire Observer, Buxton Advertiser, Whitby Gazette, Leicester Post, South Wales Daily News, Wigan Examiner, Brighton Gazette, Cheltenham Free Press, Yorkshire Post, Framlingham Weekly News, Sussex Daily News, Duffield Observer, Western Morning News, Leeds Mercury, Newcastle Leader, Bridgwater Mercury, Derby Gazette, Dumfries Courier, Temperance Chronicle, Financial News, Sanitary Record, Mining Journal, City Press, Cork Examiner, Hertfordshire Mercury, Local Government Chronicle, Reading Mercury, Surrey Advertiser, Keene's Bath Journal, Kerry Weekly Reporter, The Clarion, Weekly Free Press and Aberdeen Herald, Bournemouth Guardian, East Anglian Daily Times, Daily Mail (Hull), Irish Times, Coventry Standard, Dentist, Daily Nation, Banffshire Herald, West Middlesex Herald, Local Government Journal, &c., &c.*

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A.—Mr. F. Ash, Birmingham
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B.—Dr. D. Bower, Bedford; Messrs. Barber and Co., Derby; Bristol Corporation, Health Department; Mr. Blackett, Lond.; Dr. F. T. Bond, Gloucester; Messrs. Burroughs, Wellcome, and Co., Lond.; Herr Burckhardt, Berlin; Banks Beer Co., Lond.; T. B. Browne, Ltd., Lond.; B. J. L., Claycross; Mr. H. E. Bridgman, Burton-on-Trent; Mr. H. H. Beale, Reading; Messrs. Brown Bros., and Co., Glasgow; Dr. J. B. Brierley, Manchester.

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Z.—Messrs. A. and M. Zimmerman, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Mrs. R. Appleyard, Southport; Mr. W. Armstrong, West Boldon; A. B. S.; Mr. W. F. Abbott, Addlestone; A. E. T.; A. V. M. Dr. A.; Dr. E. C. Andrews, Lond.

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N.—Norfolk and Norwich Hospital, Secretary of; National Provident Institution, Lond., Secretary of; North Staffs Infirmary, Stoke-on-Trent, Secretary of; Dr. E. P. Norman, Portslade-by-Sea.

O.—O. H.

P.—Rev. C. Pugh, Shipton Oliffe; P. D. T.; Mrs. E. M. Perrott, Honiton; Proprietor, Sydenham.

R.—Mr. A. Roman, Berlin; Royal Halifax Infirmary, Treasurer of; Messrs. A. Riddle and Co., Lond.; Dr. F. T. Roberts, Lond.; Rotherham Hospital, Secretary of; R. S. C.; Mr. R. C. Rodgers, Burnley; Mr. R. Redpath, Newcastle-on-Tyne; Messrs. Renton and Smith, Chester-le-Street.

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Y.—Mr. W. Young, Glasgow; Dr. B. T. Young, Lond.; Yorkshire College, Leeds, Secretary of.

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Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

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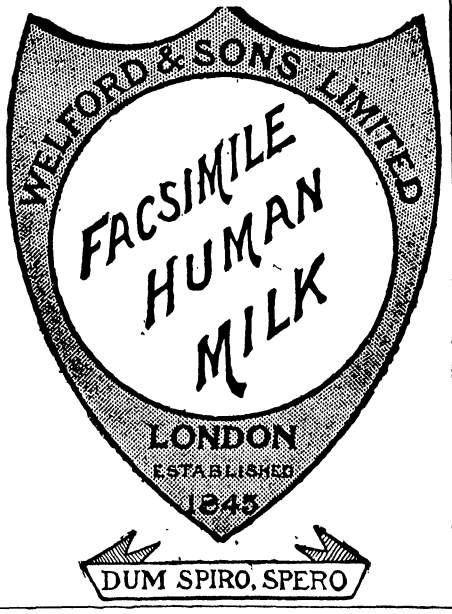
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A Speciality For INFANTS, For the AGED, For INVALIDS. Soft, Flocculent Curd. Readily Digested.



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BUDAPEST, *January 27th, 1898.*

CERTIFICATE.

At the request of the Apenta Company of Budapest, I hereby certify to them that I have for a considerable time repeatedly examined the **APENTA SPRINGS** at Ofen (Budapest) and the filling of the water, which were placed under my scientific supervision, and that I have become convinced that the working is conducted very satisfactorily from a hygienic point of view.

I have also satisfied myself by repeated personal investigations that the **APENTA WATER** as despatched is constant in its chemical composition.

Josef von Fodor

Royal Hungarian Ministerial Councillor; Director of the Hygienic Institute of the Budapest University; Knight of the Austrian Order of the Iron Crown; LL.D. Cambridge; Hon. Memb. Sanitary Institute of Great Britain, Royal Institute of Public Health, &c.

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The only **ALE** which may be drunk with impunity by persons with whom, from various causes, ordinary Beer does not agree.

ABSOLUTELY FREE FROM SUGAR.

Mr. T. FAIRLEY, Leeds City and County Analyst, F.R.S.Edin., F.C.S., F.I.C., certifies, June 3rd, 1896, that this Pale Ale is

"ABSOLUTELY FREE FROM FERMENTABLE SUGAR."

For further analyses see THE LANCET, May 22nd, 1897, and the BRITISH MEDICAL JOURNAL, April 24th, 1897.

An article in THE LANCET says: "For years I have been unable to take beer as a beverage on account of the lethargy, indigestion, pain, and stiffness which invariably followed such indulgence; but for three months continuously I have taken one glass of this Sugar-free Pale Ale at luncheon without the slightest 'rheumatic' effects."
—THE LANCET, August 14th, 1897.

SPECIAL TERMS allowed to the Medical Profession, to whom a SAMPLE BOTTLE will be sent FREE on application.

The Sugar-free Pale Ale is supplied, upon receipt of cheque or postal order, in Imperial Half-pints, price **3s. 9d.** per dozen; Reputed Pints, **5s. 0d.** per dozen.

THROUGH GROCERS, WINE AND SPIRIT MERCHANTS;
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Aylesbury Dairy Company's

Life Belt Brand,

PREPARATIONS OF MILK

FOR

INFANTS and INVALIDS.

SEVEN SILVER MEDALS AND OTHER HIGHEST AWARDS.

HUMANIZED MILK.

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STERILIZED MILK.

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Beware of Spurious Imitations.

HUMANIZED MILK,

The only Genuine is supplied in glass bottles only, bearing the Aylesbury Dairy Company's Registered Trade Mark of a LIFE BELT and also the words

Life Belt Brand,

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N.B.—The Company have no Agents, and the Public are cautioned against Imitations.

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SOMATOSE

is an Albumose Food product. It is prepared from meat, and contains the albuminous elements of the latter in an easily soluble form. The salts present in SOMATOSE correspond to the nutritive salts of fresh meat, among which occur Phosphate of Potassium, so important in the formation of muscular and cellular tissue.

SOMATOSE is a Tasteless, Odourless Powder,—is easily tolerated, even by the most delicate stomachs. It is invaluable in Wasting Diseases, in Convalescence from Exhausting Diseases, and is especially indicated in cases of Children of Backward Development.

SOMATOSE is well borne when no other aliment can be administered. It is also of the greatest service in cases requiring rectal alimentation.

SOMATOSE has been found invaluable in the uncontrollable vomiting of pregnant women and in vomiting following the administration of chloroform.

SOMATOSE is indicated in all conditions where an invigorating and easily absorbed food is required. With the aid of SOMATOSE it is possible to tide the patient over critical periods, since it is capable of acting for a long time as a complete substitute for other nitrogenous foods.

ADULT DOSE: One teaspoonful three times a day, in milk, soup, coffee, cocoa, &c.

The following is the Analysis of SOMATOSE as obtained by Goldman:—

Water	9·20
Total Nitrogen	12·84
Albumoses	77·85
Peptone	2·20
Ash	6·78

IRON-SOMATOSE

(Ferro-Somatose).—An excellent tonic, containing the albuminous substances of the meat (albumoses) organically combined with Iron in the proportion of 2 per cent. of the latter. Under the use of Iron Somatose the weight of the body is increased and the amount of hæmoglobin is augmented. Iron Somatose combines in a most suitable way the well-known and appreciated properties of Somatose with a good Iron preparation.

SPECIAL INDICATIONS: Chlorosis and Anæmia. DAILY DOSE: 75 to 150 grains.

MILK-SOMATOSE

(Lacto-Somatose).—A strength-giving food containing the albuminous matter (albumoses) of the Milk, with 5 per cent. of Tannic Acid in chemical combination. The chief indications for Milk-Somatose are the various chronic maladies of the digestive organs, and especially those disturbances of digestion which, as in Enteroptosis and Anæmia, can be referred to the atonic condition of the muscular organs of the stomach. Milk-Somatose is a good flesh-forming preparation, without irritation, and slightly astringent with patients of weak or diseased digestive organs. In the case of Typhus maladies it is of great value.

Samples and Literature can be had on application to the Wholesale Depôt for all Bayer's Drug Specialities:—

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BAYER'S
PHARMACEUTICAL SPECIALITIES

TRIONAL. *(Diethylsulfonmethylethylmethan).*—A most reliable and quickly acting hypnotic of the Sulphonal group. In simple insomnia Trional will produce sleep with absolute certainty in from fifteen to thirty minutes. Has no influence on the heart, respiration, or temperature.

DOSE: From 15 to 30 grains. Best administered in a cupful of hot liquid, or in aerated water, when a considerably smaller dose suffices.

TANNIGEN. *(Acetyl of Tannin.)*—A most valuable remedy in cases of Acute and Chronic Diarrhœa, and invaluable for the Summer Diarrhœa of Children. Tasteless and Odourless. Passes through the stomach entirely unchanged, decomposition only occurring in the intestines.

DOSE FOR CHILDREN: 2 to 5 grains.
DOSE FOR ADULTS: 8 grains every three hours.

TANNOPINE. *(Hexamethylene-tetramin Tannin).*—A New Intestinal Astringent. Has an excellent effect, without secondary phenomena, in all the various kinds of Enteritis. Has given especially good results in cases of Tuberculous Inflammation of the Bowels, in cases of Non-Tuberculous Subacute and Chronic Intestinal Inflammation, and also in cases of Typhoid.

DOSE FOR CHILDREN: 3 to 10 grains.
DOSE FOR ADULTS: 16 grains, two to four times daily.

SALOPHEN. *(Acetyl-paro-amydosalol).*—The best substitute for Salicylate of Sodium, as it acts quite as promptly, but without any of the unpleasant after-effects of the latter. Its special indication is Acute Articular Rheumatism. It is invaluable for Influenza, Migraine, &c.

DOSE: 16 to 24 grains three or four times a day.

LYCETOL. *(Tartrate of Di-Methyl-Piperazine).*—Combines the Uric Acid solvent properties of Piperazine, with the diuretic properties of Tartaric Acid. Invaluable in all cases of the Uric Acid Diathesis.

DOSE: 16 to 32 grains daily. Best administered in aerated waters, such as Seltzer, &c., or in granular effervescing form. (Effervescing Lycetol: Messrs. A. Bishop & Sons, Ltd.)

IODOTHYRINE. The active principle of the Thyroid Gland. A stable product containing a definite amount of the Iodine compound which forms the active principle of the Gland. Iodothyrine acts more quickly than either the fresh or dried gland substance. It is a preparation of perfectly definite composition, stable and permanent.

ADULT DOSE: 5 grains two to eight times a day.

EUROPHEN. *(Isobutylorthocresoliodide.)*—A perfect substitute for Iodoform. Odourless and non-toxic. Has a specific gravity five times less than that of Iodoform. Non-irritating and does not produce a rash. Adheres closely to mucous surfaces. Specially indicated in Syphilitic Diseases, Gynæcology, Burns and Bedsores, Eye, Ear, Throat, and Nose Affections, &c., &c.

ARISTOL. An Iodine Derivative containing 48% of Iodine. Is an ideal Cicatrisant, forming an absolutely unirritating covering over the surfaces on which it is placed, under which the processes of granulation and cicatrization proceed with extraordinary rapidity. It is a convenient, Non-Irritating and Effective Antiseptic Dressing in General Surgery, Dentistry, Gynæcology, Diseases of Eye, Ear, and Nose. In the treatment of Burns Aristol has proved to be of the greatest value, its antiseptic and healing properties being specially marked.

PROTARGOL. A new silver preparation for the treatment of Gonorrhœa, containing 8% of silver, easily soluble in warm or cold water. Has a better penetrating effect on the tissues than any other known silver preparation. Non-irritating. Usual strength of solution, ¼ to 2%. An excellent antiseptic in the treatment of Wounds. Of the greatest possible service in Ocular Therapeutics.

PHENACETINE-BAYER, SULPHONAL-BAYER, PIPERAZINE-BAYER, SALOL-BAYER, SOMATOSE, IRON SOMATOSE, MILK SOMATOSE, ANALGEN, LOSOPHAN, TETRONAL, &c.

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Re PHENACETINE.

IMPORTANT WARNING to MEDICAL MEN.

As discoverers and original makers of this **safe and valuable antipyretic,** we consider it to be our duty to **warn** the Medical Profession that an adulterated substance is now on the market, and is being sold as genuine Phenacetine. (*Vide* current Chemical and Pharmaceutical periodicals.) Our name is so well known in connexion with this product, that, for our reputation's sake, we are compelled to issue this notice.

Medical Men can protect themselves and their patients, and can rely upon obtaining a thoroughly pure product by adding the name BAYER when prescribing Phenacetine.

PHENACETINE-BAYER

is the pure and original product: the name is a guarantee of purity. Phenacetine-Bayer is put up in 4, 5, 8, and 16 grain Tablets, as well as in the Powder and Crystal form.

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LACTOPEPTINE For Diseases of the Stomach.

Indications: Dyspepsia, Indigestion, Vomiting in Pregnancy, and all diseases arising from imperfect nutrition, such as Anæmia and Cholera Infantum.

Dose: 10-15 grs.

Marketed: In powder and tablets (5 gr.) 1 oz. 3/-, 4 oz. 10/6, 8 oz. 20/6; prices for dispensing and to the Medical Profession only.

Analyses by Prof. Bartlett, Prof. Attfield, and Dr. Jeserich

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Address in Medicine

ON

MEDICAL PROGRESS IN THE PAST QUARTER OF A CENTURY.

Delivered at the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY THOMAS RICHARD FRASER, M.D., F.R.C.P. EDIN., LL.D. ABERD., F.R.S.,

PROFESSOR OF MATERIA MEDICA AND CLINICAL MEDICINE, UNIVERSITY OF EDINBURGH.

MR. PRESIDENT AND GENTLEMEN,—When this Association last met in Edinburgh the Address in Medicine was delivered by the accomplished and universally beloved physician, Dr. Warburton Begbie, and notwithstanding the lapse of time I can still recall—and there are others here also able to recall—the thesis which formed the subject of the address, expressed in the inquiry, Has the practice of medicine made a single step since the time of Hippocrates? In dealing with this thesis Dr. Begbie described the history of medicine from its beginnings, as only could be done by one who had not only carefully studied the writings of the fathers of medicine, but had also made himself familiar with the work of their successors. The doctrines regarding the nature of disease, which successively replaced each other during the twenty-three centuries dealt with, were clearly described, and, as was to be expected from the practical physician, he fully discussed the bearings of these doctrines upon treatment and pointed to the more conspicuous acquisitions in the healing art which had enriched practical medicine. He had the opportunity of showing how greatly medical doctrine had been transformed by Harvey's discovery of the circulation of the blood; how the diagnosis of pulmonary and cardiac disease had received an extension and previously unknown definition, from Laennec's discovery of auscultation; how the memorable discoveries and courageous applications of nitrous oxide, ether, and chloroform by Horace Wells, Morton, and Simpson had deprived the knife of the surgeon and the reproduction of animal life of much of their former terrors and anxieties; and how by that vaccination, which will ever be associated with the name of Jenner—the first and still unsurpassed means of restricting the ravages of a fatal infectious disease—an almost incalculable benefit had been conferred upon the human race. From his elaborate survey of the history of medicine he concluded that no general doctrine—chemical, physical, humoral, or physiological—had been propounded which satisfactorily explained the nature and production of disease; that therapeutic advancement had been obtained, chiefly by the observation of patients, by adhesion to the classic method of rational empiricism; and that by this method such valuable accessions to the means of treating disease had been gained as the administration of turpentine in pulmonary gangrene and bronchitic affections; of quinine in intermittent fever; of iodide of potassium in syphilitic periostitis and thoracic aneurysm; of bromide of potassium in epilepsy; and of cod-liver oil in pulmonary tubercle.

It may not be without interest to consider to-day how far, and in what directions, this great and wide subject of medicine has chiefly advanced since Dr. Begbie delivered his address. The intervening period is the relatively brief one of scarcely a quarter of a century. It has, however, been signalised by a great increase of knowledge regarding the fundamental sciences of chemistry, physiology, and morbid anatomy; by the creation of pharmacology as a science of the action of remedies; by steady advance in symptomatology and diagnosis; and, above all, by so remarkable a development in our conceptions of the nature and production of many diseases that we appear almost to have attained a position vainly sought for during centuries by our predecessors of being able to formulate a doctrine of disease founded upon the satisfactory basis of experimental demonstration, and sufficient to explain many of its forms and to already provide us with assured means and principles for its prevention and treatment. While fully acknowledging the merits of the workers in medical science and practice by whom this gratifying progress has been made it cannot be forgotten that the necessary pioneer work was undertaken amid difficulties of exploration in dark and unknown regions, and that but for this pioneer work the present generation would not have been able to reap so prolific a harvest of medical discovery. This indebtedness to our predecessors is nowhere more conspicuously shown than in the advancements that have been made in the diagnosis of disease. Observation, careful and intelligent, practised by the fathers of medicine had already constructed a nosology sufficient to distinguish the great majority of diseases, and so complete that it is doubtful if much advance could have been made if the methods in use at the commencement of this quarter of a century had alone been trusted to. The introduction, however, of physical aids to our senses and of chemical applications and methods—each rendered possible by the growth of collateral science—has placed us in a position from which we have been able to advance in accuracy of diagnosis and even in the discovery of new diseases.

MODERN ADVANCE IN ACCURACY OF DIAGNOSIS.

By the apparatus now in use for blood determinations the condition of this fluid in regard to many of its most important constituents can be exactly determined and information can be obtained valuable for treatment and previously unattainable by any perfection of intelligent observation by means of the unaided senses. The sphygmograph depicts with precision of detail changes in the pulse which are difficult to apprehend by the unaided finger even after a long apprenticeship and, above all, increases the usefulness of the physician by indicating the characters which without its use he should be trained to detect. He is thus enabled to appreciate changes which are not only of the highest value in prognosis, but are also frequently sufficient either in themselves or aided by the most superficial of further observation to justify without auscultation the diagnosis of the cardiac lesion which is present. The ophthalmoscope has increased the certainty of diagnosis of many nervous affections and toxic processes and some of the difficulties of clinical observation have been overcome by radiography, whose capabilities, however, are as yet undeveloped. By the introduction of chemical processes applied especially to the examination of the stomach contents and of the urinary and other secretions, diagnosis has also been advanced and previously unknown precision has been obtained. The agglutinated effects of the blood-serum in certain infective diseases, as typhoid, Malta and relapsing fevers, and in cholera and anthrax, upon their respective pathogenic organisms, and the application of chemical pigments to reveal the existence of the microscopically minute organisms of such diseases as pulmonary tubercle, pneumonia, and diphtheria, has removed many of the perplexities of diagnosis and rendered identification almost a mechanical art.

While by these and other means the diagnosis of diseases—a fundamental work in the art of medicine—has conspicuously advanced during the last quarter of a century, this advancement, however great, does not in itself justify any claim to a nearer approach to the realisation of the highest aims and objects of medicine. Diagnosis, for the most part, deals only with symptoms, it has no immediate concern with the true nature or course of the disease, and until this has been determined progress in treatment can only be tardy and unsatisfactory. The history of medicine has shown that the advance in these two departments has rarely, if ever, been parallel or equal. The one may reach a position of almost ideal perfection, while the other still remains in the initial stage of vague speculation. This is exemplified by the present state of knowledge of nervous diseases. Minute symptoms have been identified and have been so arranged in groups as to constitute special diseases, and thus numerous forms of disease associated with morbid lesions of parts of the spinal cord or brain have been created. The elaboration is a remarkable triumph of painstaking and skilful observation in symptomatology and in morbid anatomy. It presents a field for the training of the powers of observation and reason probably unsurpassed by any other problems in practical medicine, and the solution of these problems is undoubtedly a cause of satisfaction to the physician, as it frequently also is to the patient. To what extent, however, is the patient a gainer; to what extent is the object of diagnosis and of all medical knowledge fulfilled? It

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must be admitted that the gain in most cases is disappointing. The natural course of the disease is no doubt often beneficially modified, but usually to only a slight extent, unless surgical treatment is successfully applied, which even the scientific discoveries of Ferrier and Horsley and the surgical skill of Durante, Kocher, Macewen, and others have rendered possible in relatively few cases. Whether the investigation of the condition of the patient leads to the diagnosis of acute ascending paralysis or anterior cornual degeneration, of spastic paraplegia or locomotor ataxia, of syringomyelia or bulbar paralysis, the methods of treatment are much the same; and while we may have some satisfaction in adopting measures to relieve symptoms or to protect the patient against conditions favourable to the progress of the disease, or to increase the general powers of resistance, we most frequently find ourselves in the mortifying position of being unable to cure the disease. In those cases, on the other hand, where it is possible to advance from diagnosis to the determination of the actual cause of the disease, when remedies are employed which have been proved to be curative as regards that cause, the disease, whatever be its position in the artificial nosology of nerve affections, may in many instances be arrested in its progress and may even be cured provided the affected tissues have not already undergone incurable destruction.

At the present epoch in medicine it is especially interesting to recognise that the latter gratifying results are to be obtained when there is reason to believe that the disease has been caused by a toxic substance present in the body and that according as this substance be the poison of syphilis, or of rheumatism, or of malaria is the cure effected by remedies which have been proved capable of annulling the toxic effects of these poisons. It is thereby shown that the disease is not truly a product of the structural alterations which are present, but of a hurtful substance or poison capable among other effects of producing these structural alterations. Similar facts are observed with many ordinary poisons and an association, highly significant in regard to the production of disease, is thus indicated. Many of the more common poisons produce changes in structure closely simulating the changes of disease, as the peripheral neuritis, anterior cornual degeneration, granulo-fatty degenerations, and arterial sclerosis of lead, the liver steatosis and yellow atrophy of phosphorus, and the fatty degenerations and diffuse sclerotic hyperplasia of the liver, the peripheral neuritis and the atheromatous changes in blood-vessels produced by alcohol. By such facts, acquisitions of modern pathology, it is strongly suggested that the structural changes found in many diseases may, after all, be mere manifestations, associated with other effects, of a cause which would thus assume the importance of being the essence, the *vera causa*, of the disease, and that this essence is a toxic substance. This idea is rapidly becoming the predominant doctrine of the present-day conception of disease and as investigation proceeds it is almost daily receiving support from new facts. It has been demonstrated that the body is constantly subjected to the risks of poisons produced within itself, as well as of poisons introduced into it from without. Many of the poisons produced in the body, such as the ptomaines and leucomaines, are of the chemical nature of the previously known alkaloids, and not a few of them rival the vegetable alkaloids in toxic power and reproduce their leading effects. Nervine, for instance, is lethal in minute doses and acts in many respects like pilocarpin; while muscarin finds its analogue in the active principle elaborated by poisonous fungi. The organism even in a state of health is a veritable storehouse of these toxic substances. Many of its normal constituents, such as potash salts and carbonic acid, are well-recognised poisons; many of the products of its glands, such as saliva and bile, contain toxic ingredients; many of the substances which are formed in the processes of disassimilation, and which enter such secretions as the urine and the intestinal canal, are capable of disordering health and even of endangering life; and in disorders of function, even if they amount to little more than mere disturbance of nutrition, poisons not found in the healthy body are generated and produce the symptoms of disease. By such toxic influences the symptoms of cholæmia, gout, rheumatism, uræmia, diabetic coma, stercorræmia, and probably also of chorea, sunstroke, neurasthenia, asthma, and the idiopathic anæmias receive a sufficient explanation, even although the toxic substances have not in all cases been identified. The doctrine of the toxic origin of disease has also been applied to mental affections. Auto-intoxication from poisons produced in the intestinal canal is believed to be an important factor in the causation of insanity and already neurologists, such as Nissl and Van Giesen, have expressed the opinion that the toxæmic theory is destined to clear away much of the present vagueness regarding the pathogenesis of mental disease. Further, it is not improbable that in cancer auto-intoxication by a poison generated in the cancer cells, equally with and in some instances to a greater extent than structural degenerations of invaded tissues, accounts for the symptoms and for the fatal termination—a probability which has been strengthened by the separation from cancer of a substance possessing a hyperthermic and powerfully lethal action.

TOXIC ORIGIN OF INFECTIOUS DISEASES.

The widely acting pathogenic influence of poisonous substances has, however, received its most definite and convincing support from the remarkable discoveries in bacteriology which have signalised this period. The gravity and wide prevalence of infective diseases had rendered them a subject of special study from the earliest period. Rhazes in the seventeenth century propounded the view that small-pox was essentially a fermentative disease and thus originated the doctrine of the fermentative nature of all infectious disease. Previously to this time a theory of the parasitic origin of these diseases had been propounded and its more enthusiastic supporters gave a reality to their views by such statements as that syphilis was caused by a minute worm, and measles, small-pox, and plague by infusorial animals or invisibly minute insects. With the introduction of the compound microscope the parasitic theory disappeared in this gross form of it and the fermentative theory was again adopted. It was not, however, until 1861, when Pasteur's great discovery of the nature of butyric fermentation was made public, that the sufficiency of the theory became revealed. His demonstration of the essential part played by minute-living structures in the transformations which constitute the process of fermentation at length removed the process from the mysteries which had previously surrounded it, and opened up applications to the pathogenesis of infective diseases which have revolutionised medicine. He pointed out that the organisms of fermentation are similar to those which had already been discovered by Rayer and Davaine in anthrax. He subsequently demonstrated the virulent nature of the microbes of pyæmia and infectious gangrene, and following Koch's work on the cultivation outside of the body of the bacillus of anthrax he proved also that this bacillus, as well as that of cholera de poules, is able when grown in suitable media to reproduce itself almost indefinitely and to retain for many generations its power to cause the symptoms of the original disease when inoculated into animals. The way was thus opened up for important additions to the knowledge of the etiology of infective diseases, and in rapid succession the pathogenic micro-organisms of swine fever, morve, tubercle, Asiatic cholera, septicæmia, erysipelas, pneumonia, and numerous other infective diseases were discovered. The pathogenic action of the microbes was at first attributed either to mechanical obstruction of the blood-vessels, caused by their accumulation in them which resulted in asphyxia of organs essential to life; or to a biological action which enabled them to appropriate nutritive materials destined for the tissues of the body and thus to deprive these tissues of life. While in the case of a few of them both of these actions may to a slight extent explain their effects, it was subsequently proved that these effects are mainly caused by the poisons which they produce. The poisons are of complex composition; some are alkaloids and others modified proteids, and others, again, have altogether unknown chemical composition. Many of them are of extreme and almost indefinitely great activity; one milligramme, for instance, of the dry poisonous constituents of tetanus toxin is sufficient to kill a horse, or 600 million times its weight of living tissue; while the hypothermal effects of tubercle toxin are appreciable when the dry toxin, in doses of from one to two-tenths of a milligramme, is injected, representing a strong reaction on 60 millions of its weight of living human substance. Like other poisons, they also are capable of producing structural changes, exemplified in the skin eruptions produced by many infectious diseases; in the focal necrosis of peripheral nerves produced by the diphtheria poison; the fatty changes and longitudinal fibrillation of the heart muscle produced by this poison and also by that of

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anthrax; the cerebro-spinal meningitis produced by the poison of influenza; the anterior cornual and muscle degenerations and the neuritis produced by the poisons of tetanus and diphtheria; the acute parenchymatous and hæmorrhagic nephritis produced by serpents' venom; and in the production of nodules in the lungs, reproducing the characteristics of pulmonary tuberculosis, by dead tubercle bacilli.

The demonstration of the toxic origin of infectious diseases has thus added greatly to the number of diseases which are caused by poisons and has thereby been largely instrumental in establishing the doctrine of the toxin origin of disease. Unlike the older doctrines of the iatro-chemists, humoralists, and physiologists, this doctrine is supported by an abundance of convincing facts; and it may confidently be anticipated that it will have an endurance which former systems of medicine have not possessed. Large numbers of disease-producing poisons are thus ever present in the body, created by the normal processes of life and abundantly produced by departures, even in themselves unimportant, from these processes. Many substances well known to have poisonous properties are intentionally introduced into the body, such as alcohol, tobacco, tea, and opium, while others, such as lead, accidentally find their way into it. The respiratory passages and intestinal canal are crowded with micro-organisms and they teem in the soil, air, and articles of food. Many of them are producers of virulent poisons and when they effect a lodgment in the body and find conditions congenial to development they proliferate with so great rapidity that a single bacterium may in twenty-four hours have multiplied itself into many millions of separate toxin-creating organisms. In these circumstances it is of interest to inquire what defence man and other animals can oppose to the disease and death-producing poisons by which they are so constantly endangered. Instances have long been known of a possession of defensive powers against the ordinary poisons, organic or inorganic. Certain animals are by hereditary endowment able to receive with impunity large quantities of poisons, which in minute quantities are hurtful to other animals, well exemplified in the enormous quantities of belladonna and opium which may be administered without injury to herbivora. It is also notorious that man and other animals may become so habituated to the action of several toxic substances that in the course of time doses greatly in excess of the minimum lethal are no longer able to cause death or even much inconvenience. Such acquired powers of defence are produced against arsenic, opium, alcohol, and tobacco, and they are also illustrated in the effects of nitrile ethers. Explanations for these exceptional powers of defence have been found in the special activity of the processes of elimination and particularly of elimination by the kidneys, whereby the quantity of poison requisite to cause injury is prevented from being present in the blood; in an unusual power of producing decomposition, probably dependent on special chemical conditions of the blood; and on the property which certain organs possess of absorbing and retaining toxic substances and of thus preventing their access to the structures on which they act, in quantity sufficient to be hurtful. In the case, further, of many organic poisons, absorption and diffusion are impeded by the walls of cells, as in the instance of the slow absorption of strychnine through the stomach walls and of many albuminoid poisons though the intestinal epidermis. These explanations, however, do not account for all the observed phenomena, and it must in the meantime be assumed that tissues may gradually become accustomed, possibly by exhaustion, to the perturbations produced by substances which modify this normal condition, so that by-and-by a tolerance is induced. Anticipating some statements which will afterwards be made, a fundamental difference exists between both congenital and acquired defence against ordinary poisons and that resulting from the action of disease toxins, venoms and such-like poisons, in so far that in the former there is not produced in the blood any substance which plays the part of a counter-poison or antitoxin. The subject has, however, gained a new importance from the remarkable facts discovered in connexion with the poisons generated by pathogenic micro-organisms and in connexion also with other poisons of very similar chemical composition, represented especially by the venom of serpents and by the vegetable products abrin and ricin.

THE PRODUCTION OF ARTIFICIAL RESISTANCE TO DISEASE.

It had long been known that many infectious diseases conferred upon those who had suffered from them a power of resistance against subsequent attacks of the same disease. After the discovery had been made—and to this I have already alluded—of the microbian origin of infective diseases, it was experimentally shown that if the microbes constituting the cause of any infective disease were inoculated into animals, not only were symptoms of the disease produced, but also that the animal, if it survived, reproduced still further the events of an infectious illness by acquiring a power of successfully resisting the morbific influence of the same microbes subsequently inoculated. It has likewise been found that each of these events could be reproduced by the filtered and therefore microbian-free solution in which the pathogenic microbes had been cultivated, and thus it was demonstrated that neither the original disease nor the subsequently acquired production was actually due to the microbe, but to toxic substances produced by it. From this position the further great advance was made that the blood-serum of protected animals, itself destitute of poisonous properties, when introduced into non-protected animals, conferred upon them a resisting power which might be so great that even large lethal doses of the virulent micro-organism and of its toxin no longer produced death or even symptoms of poisoning. These remarkable results of experiment deservedly claim much attention. They irrefutably demonstrate that infectious diseases are in their essence poisonings; they throw much light on the mystery, previously shrouded in metaphysical phrases, of the nature of the protection acquired by attacks of infectious disease or conferred by vaccination; and they have not only at once led to valuable therapeutic results, but they indicate further applications both in the prevention and treatment of disease, exceeding in their possibilities any expectations that had previously been originated by discovery in medical science. Inquiry into the nature and cause of this protection has thereby been removed from the position of speculation long occupied by it to one in which experimental methods could be pursued with some hope of solving the problems. Many of the results, however, are yet difficult to explain, and considering that new facts bearing upon them are almost daily being obtained it is not to be expected that altogether satisfactory solutions have been found or unanimity of opinion been obtained. More especially does this apply to the nature of the process whereby protection or immunisation is obtained, to the origin of the protection producing substances or antitoxins, and to the manner in which they act as curative or therapeutic agents.

As in the case of some of the ordinary poisons, mineral and vegetable, it may be admitted that a portion of the acquired protection is due to the tolerance brought about by the accustoming of the structures of the body to the action of the poison, but this tolerance could not continue for the long periods during which acquired immunity sometimes persists after the infected disease has been recovered from. It may also be admitted that pathogenic micro-organisms absorb and thus remove from the body certain constituents necessary for their growth and vitality whose removal may, to some slight extent, render the body unsuited for the further growth of these organisms; but, apart from other objections that might be advanced, it is inconceivable that this cause could operate in the bodies of animals which so rapidly change the composition of all their constituent parts and that, therefore, the substances which have been removed would not very soon be again restored to the body and thus render it vulnerable to fresh infections. The doctrine of phagocytosis, enunciated and ably and strenuously supported by Metchnikoff, in which protection is attributed to the power possessed by leucocytes of absorbing and destroying microbes, may, to a limited extent, account for the destruction of living microbes, but it probably accounts to a greater extent for their disappearance after life is extinct; while it can have but little influence upon the soluble toxins which, since the introduction of the theory of phagocytosis, have been proved to be in most cases the true cause of the disease symptom. The frequent persistency of immunity not only exemplified in the after-history of patients who have recovered from certain of the infectious diseases, but also in vaccination against small-pox, while it alone serves to disprove each explanation as yet advanced of the essential nature of acquired protection, must be taken into account in formulating explanations. The micro-organism of an infected disease introduced into the body produces the characteristic symptoms of the disease, and if the animal recover subsequent inoculations of this micro-organism no longer produce any injury. The animal has become

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protected against the disease, and there is abundant clinical evidence to show that in the case of the majority of infectious diseases the immunity lasts for many years. The pathogenic organism of the same disease cultivated outside the body produces a toxin which when administered to an animal likewise reproduces the symptoms of the disease, and if the animal recover, and further quantities of the toxin are successively administered, an immunity may be acquired so great that the animal suffers but little inconvenience when 50 times a minimum lethal dose or even a larger quantity of this toxin is now administered to it. The immunity acquired in the latter case is, however, only of short duration. I do not know if the duration of it has been defined with any of the toxins of disease, except with the toxin of diphtheria, and Roux and Klein have shown that with this toxin it lasts only from 5 to 7 days. Enough at least has been done to show that it is brief when compared with the immunity produced by the microbes from which the toxins had originated, and Klein remarks that a serum which may be relied on to afford any durable protection is still a desideratum. It is also interesting to note that Monckton Copeman has found that lymph filtered so as to remove from it all solid particles, and therefore presumably all micro-organisms, can produce only a briefly lasting protection against unfiltered vaccine lymph of normal potency. In the case of the venoms of serpents—which in composition and in other important respects are analogous to the toxins of disease—the duration of immunity has, however, been defined; and experiments have shown that if an animal be protected so as to survive the minimum lethal dose of the cobra venom, the protection produced against the same dose of venom does not last longer than a few hours; and even when the process of the immunisation has been carried so far that the animal can survive four times the minimum lethal the protection against this dose of venom exists for only 30 days

The protecting substance, antitoxin or antivenine, which appears in the blood after inoculation with pathogenic microbes, or after the injection of toxins or venoms, is chemically unstable and is subject also to the general processes of elimination. Its presence in the body, even when the quantity of toxic substance to which it owes its origin is greatly above the quantity of toxin which has been elaborated in a case of infectious disease by the pathogenic organisms of that disease, is to be measured by days only; and, nevertheless, the protection produced in a patient by an infectious disease may apparently endure for a lifetime, and the immunity from small-pox gained by vaccination for at least seven years. It appears to me impossible to explain these contrasting facts on any other supposition than that in the instances of prolonged immunity successive supplies of the antitoxin of the disease, or of small-pox, must be furnished to the body during the time that protection continues. It is not possible, however, that these supplies could emanate from the pathogenic organism itself, for the life of the host would not endure were they retained in the body in their condition of original virulence. Jenner himself believed that vaccinia is a modified small-pox. The microbe of small-pox, like all other microbes, is greatly influenced by its surroundings. When transferred from man to the calf it is now known that it may gradually acquire the characteristics of vaccinia and elaborate substances which reproduce in man the protective effects of inoculation with human vaccine. The microbe of small-pox, therefore, has obviously become so modified that while it can no longer produce a virulent toxin it still retains the power of elaborating a protective antitoxin and also retains sufficient vitality to reproduce its like through many generations in the human body. Evidence pointing in the same direction had been obtained with other pathogenic microbes. Pasteur found that the microbe of fowl cholera when treated in a certain manner can have its virulence greatly lessened and if it be then injected into the tissues of fowls only slight poisoning is produced. From fowls thus treated microbes are obtained also capable of producing only slight poisoning and inoculations can be carried through a successive series of fowls with a like result. Each of these fowls had by this inoculation with a weakened or attenuated microbe become protected against the original and virulent microbe.

In the case of the pathogenic micro-organism of anthrax this great pioneer in the field of the microbian etiology of disease discovered similar facts. If grown outside of the body at a temperature of 42·5°C. for eight days this microbe could no longer produce the disease in susceptible animals, but, notwithstanding, it endowed them with a certain degree of protection against the original virulent microbe. Similar results were obtained with the microbe of hog fever and it is important to note that a duration of immunity exceeding that known to be produced by any toxin was obtained, for the protection following inoculation of the attenuated microbe lasted for at least one year. These instances are sufficient to show that immunity equally with poisoning is dependent upon a soluble substance produced by the micro-organisms; that the duration of even a high degree of immunity resulting from the introduction into the body of the immunising substance as distinguished from the microbe is only of brief duration; and, accordingly, with the existing evidence it is impossible to account for the prolonged immunity following upon the recovery from many infective diseases or from inoculation with vaccine lymph, otherwise than by assuming that so long as immunity continues the microbian sources of infective disease continue to exist in an attenuated and otherwise modified form in the protected body. Attenuation for the purposes of protection would therefore appear to be essentially a process in which the condition of life of the microbe is so altered that its capacity for manufacturing poisons is weakened or destroyed, while its disease-preventing properties are retained. Unless by education we can so tame and civilise a pathogenic microbe as to subdue its virulent and hostile disposition, while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera, and tubercle—immunising vaccines equal in efficiency to the lymph of vaccinia will probably never be realised. The theory which I have suggested implies that long-enduring protection from infective disease cannot be obtained by the introduction into the body of either the poisonous or the immunising products of microbes—the toxins or antitoxins—but only by inoculation of such microbes as are capable in the body of assuming a non-virulent form or of microbes already converted into this form.

I would here point out that, however highly we may value the objects and successes in some important directions of the experiments of Dr. Monckton Copeman and others on the effects of glycerine upon vaccine lymph, it must not be overlooked that the powerful microcidal action of glycerine upon the contaminating organisms of this lymph may, in the course of time, weaken or even destroy the activity of the specific organism by which the long-lasting protection against small-pox is produced. In the case of some diseases it is possible that the modification of the pathogenic power of the micro-organism necessary to convert it from a poison-producing to an antidote-producing agent cannot be accomplished in the body. Thus may be explained the failure of certain diseases to protect the body from subsequent attacks of the same disease, well recognised in the instances of pneumonia, influenza, diphtheria, rheumatic fever, erysipelas, and tubercle. On the other hand, the microbes of other diseases may in small numbers, and attenuated both in virulence and in power of conferring protection, persist in the body after convalescence has been established and actually render it not only more susceptible to fresh infection, but also to a recurrence of the disease by auto-infection. Results obtained by experiments with toxin and venom support the former possibility, for owing to some as yet unexplained individual peculiarity an animal which had received a number of successive doses of toxin or venom, each considerably below the minimum lethal, instead of having thereby acquired protection, may unexpectedly exhibit serious symptoms of poisoning and may even die when it receives a dose considerably below that required to produce death in an animal which had not previously received any toxin or venom. The probability of the second event is supported by the well-known effects upon the life and pathogenic power of microbes of changes, even although slight, in the conditions to which they are subjected. A change in temperature, the addition to or removal from the fluid in which they are grown of a minute quantity of a chemical substance, may convert a non-virulent form of a pathogenic organism into a virulent form. Similar causes may outside the body also render moderately or intensely virulent a previously non-virulent microbe, and thus may be explained variations in the severity of epidemics as well as the occurrence of outbreaks of infectious disease not originated by infection from any previously existing case. The dependence of microbial existence upon the composition of nutrient

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media may also partly account for the age liability, which forms so conspicuous a feature in the history of such infectious diseases as scarlet fever, measles, and whooping-cough. Further, pathogenic microbes, attenuated as to their virulence but not as to their protective power, may enter the body and render it immune by a process of accidental vaccination; and thus may be explained, without recourse to such unsatisfactory phrases as individual or racial peculiarities, well-authenticated examples known to all of us, of repeated exposure to infection without the production of disease and of the immunity enjoyed by the inhabitants of towns and districts daily subjected to the virus of typhoid fever, malaria, or yellow fever. These are not mere hypotheses unsupported by experimental data. Describing the results of his experiments on anthrax Pasteur states that when fowls are inoculated with the virulent microbes of this disease they remain well until they have been cooled down to a subnormal temperature; and in the earlier stages of the poisoning thus induced, if the temperature be again raised, the symptoms of anthrax disappear and the fowls recover. Anthrax microbes, as well as those of fowl cholera, if cultivated at a temperature between 42° and 43° C., acquire varied degrees of lethality according to the age of the culture, and the microbes of each variety of lethality can be almost indefinitely reproduced by maintaining certain conditions of cultivation. If microbes so grown as to be no longer able to produce anthrax in rabbits are first inoculated in a successive series of experiments in young, and for that reason extremely susceptible, rabbits, and if the microbes obtained from the last of the series are then inoculated into somewhat older and finally into adult rabbits, the original virulence of the microbe is found to have been regained. "The work in my laboratories," he states, "has established that pathogenic microbes are not morbid entities. They can assume various forms of physiological activity, depending on the media in which they live and multiply. As a consequence one can modify their virulence. It can be exalted or enfeebled and each state can be fixed." Impressed by the far-reaching possibilities suggested by these and other fruits of his fertile imagination it is not astonishing that the great enchanter whose divining rod of science had thus thrown a clear light on the mysteries of centuries should exclaim: "The hour has now arrived when we may enter the enchanted grotto full of priceless treasures."

THE ORIGIN OF THE PROTECTION-PRODUCING SUBSTANCES.

Passing now to consider the origin of the protection-producing substances—antitoxins or antivenins—it is important to bear in mind that the symptoms of a pathogenic disease, the toxic phenomena by which it is characterised, are, with a few doubtful exceptions, directly caused by the poisons generated by micro-organisms and not by the micro-organisms themselves. The production of microcidal agents does not, therefore, in connexion with this question require consideration, but it may be pointed out that there is evidence of the production both by toxins and by micro-organisms of substances specially unfavourable to the vitality of the micro-organisms themselves. The explanation of the production of antitoxin in the body, whether following the introduction of virulent microbes or of toxins entirely free from microbes, has generally been explained by a reaction occurring in the tissues of the body, whereby either a proliferation of leucocytes and the production by them of the protecting substances is excited or the normal cells of the body are stimulated in such a way that they secrete the protective substance. I have to some extent already discussed the question of phagocytosis, which is involved in the first explanation. To the objections that have been stated there are others which can be derived from the results of observation and experiment. In many instances, when immunity to a high degree has been produced by venom, no increase can be found in the number of leucocytes immediately or at varying periods after the subcutaneous injection of large though, in the circumstances, easily tolerated doses of venom. Further, when one-half more than the minimum lethal dose of venom is mixed outside of the body with antivenin, and the mixture injected into an animal, the quantity of antivenin required to prevent this lethal dose from producing death is only the quarter of a cubic centimetre, whereas if the antivenin be administered half an hour before the same dose of venin so much as 3 cubic centimetres are required. That is to say, in conditions which are the more favourable for the proliferation of leucocytes, or for the production by them of protecting substances, the antivenine is less efficient as a protecting agent than when the conditions are much less favourable.

As to the second theory, often termed the reaction theory, it is also opposed by the experiments I have last mentioned, but equally so by the fact that a high degree of immunity can be produced by an appropriate adjustment of doses without any observable reaction occurring. Even when a distinct reaction, such as an elevation of temperature, is produced during the process of immunisation, the production of the reaction is in itself of no other significance than that a dose of an active substance sufficiently large to cause an observable effect had been administered. The subject, however, is surrounded by difficulties, not a few of which have arisen from the attempt to obtain an explanation without separating the influence of the microbe from that of the toxin, with the result that biological conceptions have perhaps been introduced unnecessarily into the consideration and discussion of the subject. As a contribution to the solution of the problem I would advance the following facts. Although searched for no proteolytic or fermentative action has been discovered in the case of any toxin or venom; by subjection to certain external influences, such as elevation of temperature and the influence of electric currents and of certain chemical reagents, toxins and venoms may have their poisonous action destroyed while the immunising or protective action is retained; and toxins have been found actually to contain protective or remedial substances along with their toxic ingredients, as shown, for instance, by Hunter in the case of the toxin of tubercle.

These considerations suggest that the protecting substance originates directly from the toxin or is indeed an ingredient in its complex composition. The suggestion is supported by experiments which show that the degree of protection artificially produced in an animal—for it is, perhaps, not unnecessary to state that protection and immunisation are only relative and not absolute—is proportional to the total quantity of toxin or venom introduced, rather than to the amount of reaction produced in the animal by any of the several administrations. The remarkable facts which have been described in connexion with the stomach administration of venom, obtained also by Ehrlich and Kobert with the somewhat similar bodies, abrin and ricin, and by Valli with the virus of hydrophobia, seem likewise to receive their most satisfactory solution on this supposition. A dose of venom several hundred times greater than is requisite to produce death by subcutaneous injection fails when introduced into the stomach to produce any poisonous symptom whatever, but still so protects the animal that considerably more than the minimum lethal dose may now be subcutaneously administered without producing death. It is difficult to account for these facts otherwise than by assuming that the venom while in the alimentary canal had been subjected to a process of analysis, as the result of which its toxic constituents had been separated from those which are antitoxic or protective; and while the former had either been destroyed or had failed to be absorbed the latter had passed into the blood in sufficient quantity to protect the animal against otherwise lethal administration of venom. There are undoubtedly many facts still required before a convincing explanation can be formulated of the origin of the antitoxic substances that appear in the body after the reception of pathogenic or other similar toxins; but the facts already ascertained appear to indicate that the antitoxic or immunising substances originate not from vital reactions upon constituents of the body but from the toxins themselves, being produced by chemical changes in them, or being actually among their normal ingredients. The question is not only of scientific interest, but it has also a practical bearing. The manufacture of the immunising substance is attended by much difficulty. A satisfactory antitoxin can rarely be obtained until a tedious process, extending over several months, has been followed. Anti-pneumococcus serum requires so long a time as six months, the immunising serum of yellow fever from twelve to eighteen months, and the nearest approximation yet obtained to a satisfactory protecting serum for tubercle the almost impracticable period of several years. Were it recognised that the antitoxin originates directly from the toxin the preparation of it would be freed from existing difficulties and mysteries and after some necessary chemical research it could be produced in the laboratory and thus brought into closer relationship with ordinary medicinal substances. Any generalisation in

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medicine, while it may serve the useful purpose of emphasising advancement in knowledge, must remain barren of practical result unless it also supplies general principles as well as specific indications for treatment. It may with some confidence be stated that the doctrine of the toxic origin of disease does not fail in these respects.

In the case of ordinary poisons it has been well established that recovery is largely promoted by hastening the removal of the poison from the body, especially by means which it is the province of pharmacology to indicate, and the eliminative treatment which has long been followed in many diseases thus finds in their now definitely established toxic origin a sufficient explanation and justification. Clinical and experimental evidence, not restricted to ordinary poisons but gained also from the study of the effects of toxins and venoms, has taught us that treatment should also include the adoption of measures for increasing the resistance afforded by the body to toxic and morbific processes. If a dose of venom below the minimum lethal be administered to an animal and after all obvious symptoms of poisoning have disappeared this dose be followed by a second, also considerably below the minimum lethal, the animal may die, although each dose was in itself insufficiently large to cause death. If an animal has been inoculated by a non-lethal quantity of the virus of a recognised disease such as anthrax, and after recovery has apparently been established if a non-lethal dose of the virus of another disease be inoculated, death will follow the inoculation of the second dose, although that dose is quite insufficient of itself to produce death in an animal which has not previously been thus treated. In both cases the power of resistance has been so weakened by the first and apparently recovered from administration that a quantity of virus in itself insufficient to cause death now succeeds in doing so. From such examples the explanation is found of the widely prevalent employment of means to increase the strength or resistance of a patient, of the value of tonics and foods and of fresh air and light, not only in promoting recovery from illness, but also in actually preventing a fatal termination. Expressed in another form these constitute means for slightly increasing for any given degree of disease the minimum quantity of the disease-producing influence or substance required to produce that degree of disease. These as well as other methods of treatment that might be referred to do not, however, directly affect the true cause of the malady. Hitherto this cause could be counteracted or opposed only in the instances of the well-known poisons which are dealt with by toxicology and of a very few diseases such as ague and syphilis, in which the cause was surmised, without being proved to be a poisonous substance; and in substances fitted to antagonise these poisons by chemical combination or, though only to a limited extent, to counteract their effects by physiological processes, therapeutics has possessed satisfactory resources. By the demonstration of the production of many diseases by toxins generated by micro-organisms the opportunities for the application of these principles has been greatly extended. Diseases whose treatment had previously rested on an uncertain basis have now been brought into the range of rational therapeutics, and it has been shown that morbific processes which had already become so definitely established as to display serious symptoms can be entirely arrested and, above all, that illnesses which would otherwise inevitably terminate in death may be so perfectly controlled that the fatal termination can be prevented and recovery ensured. A dose considerably above the minimum lethal of the toxin of tetanus is administered to an animal. Several hours after the administration, when symptoms of tetanus had manifested themselves, the antitoxin of tetanus derived from an animal which had been immunised against the virus is injected under the skin and in a short time afterwards the symptoms of the disease disappear and the animal recovers. A dose of cobra venom sufficient to cause death in two or three hours is administered to an animal. The venom illness is developed and while it is quickly advancing to apparently an early death a dose of antivenin—the blood serum of an animal highly immunised against this venom—is administered and by-and-by the symptoms become mitigated and in a few hours the animal, which otherwise would certainly have died, is restored to a perfectly normal condition. By this antidotal treatment, further, not only is disease arrested and even death conquered, but the structural alterations in the muscle fibre and elsewhere that the tetanus toxin produces, and also the acute and rapid changes in the parenchyma of the kidney, characterising the poisonous action of serpents' venom, are altogether prevented from occurring. How are these marvellous therapeutic or curative effects to be explained? The explanations that have been advanced are essentially the same as those applied to the production of immunity and they have already been disposed of in the discussion of that subject. Specially bearing on the therapeutic aspect of the question are the further considerations, that antitoxins are destitute of any distinct physiological action, and, founding on Declory's recent work on antivenine, antitetanine, and the antitoxin of diphtheria, they have no influence on the processes of ultimate nutrition. Their curative action cannot therefore depend on physiological antagonism and it is highly improbable that it has any biological basis whatever.

Referring again to experiments made with serpents' venom, when this venom in lethal quantity is mixed in a test tube with a small quantity of antivenine the venom almost instantly loses its toxic power. Further, if the smallest quantity of antivenine required to produce this change after contact for a definite time with a lethal quantity of venom be determined, it will be found that if the time of contact is lessened this quantity of antivenine is no longer able to remove the toxicity of so large a quantity of venom. When, again, venom is injected under the skin of an animal at the same time as, but in a different position from, the antivenine, the quantity of the latter required to prevent death is for the same dose of venom about twelve times larger than when the two substances have been mixed together before they were injected. Such distinctions are difficult of explanation otherwise than by supposing that a combination, chemical or mechanical, is effected between the antivenine and the venom, for they indicate that when the conditions are the more favourable for ensuring contact between the antitoxin and the toxin the antidotal action is more powerful than when the conditions are less favourable for this contact. This view is also supported by the fact that if the antivenine be administered after the venom the dose of the former required to prevent death is enormously larger than when the two substances are simultaneously administered after they have been mixed together outside of the body. In the case of antivenine and venom the difference is as great as 1 to 1200. This experimental result, harmonising altogether with a physical as distinguished from a biological explanation of the antidotal action of antitoxins, emphasises the lesson, gradually receiving acceptance in practice, that for the effective treatment of an infectious disease the quantity of antitoxin must be a very large one, and at least 1000 times greater than is indicated by the *in vitro* experiments by which their antidotal power has usually been determined and standardised. For this reason the antitoxic serums frequently in use at the present time must be regarded as too dilute solutions. It is indeed probable that the process of immunisation, even when carried to its utmost limits, is incapable of producing antitoxic serums sufficiently powerful, in doses which can be administered, to cure a patient suffering from the effects of a large lethal quality of toxin. Chemistry, however, has as yet left almost untouched the investigation of antitoxic serums, and it may confidently be expected that when more knowledge has been obtained of their chemical composition this difficulty will be overcome by the separation of the curative from the worthless ingredients.

THE PRESENT POSITION OF SERUM-THERAPEUTICS.

By such results as are exemplified in the experiments that I have described a new era has been originated in practical medicine. Considering how limited were the means—if, indeed, they previously had existed—of actually preventing death when the fatal disease conditions were already present a special fascination attaches itself to the subject of antidotal treatment of disease, the newly created serum therapeutics. It has merely entered the first stages of its development and has had to contend in its applications to human beings with the difficulties presented by the presence of undiscoverable amounts of disease toxins diffused by living generators of it, which are present in the body in unknown quantities and in varying toxic potentialities. The results already obtained are, however, of much value. Diphtheria has had its case mortality reduced from 70 per cent. to 26 per cent., or, according to another estimation, from 40 per cent. to 8 per cent.; hydrophobia has been so far brought under therapeutic control, by means which have not as yet been developed to their full efficiency, that its mortality has shrunk at least from 16 to 1 per cent.; the prognosis of tetanus has been deprived of much of its gloomy forebodings; the cure of pneumonia, of tubercle, of erysipelas,

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and of septicæmia is on the eve of being realised; a complete demonstration has been obtained of the power of anti-venomous serums to prevent the toxic and lethal effects of venoms; and the experimental data are being surely accumulated for completing the greatest triumph of preventive medicine by the discovery of an antitoxic serum for the cure of small-pox.

These, however, are to be regarded as merely the first fruits—in some cases requiring further maturing by the light of science—of the ample harvest which is ripening. Their acquisition at the same time has been sufficient to supply materials for constructing in perfect outline the doctrine of the toxic origin of disease to which I have ventured to ask your attention. This doctrine has at least the merit of being able to bind together in one harmonious unity the conception of the actual nature or essence of a large number of diseases, including those which most urgently demand consideration. It supplies a simple and intelligible basis for treatment. Under its directing influence it may confidently be anticipated that medicine will reach a position of definiteness previously unattainable; and, above all, that the healers of disease will have their resources rendered more effective and beneficial for mankind.

Address in Surgery:

THE PRESENT POSITION OF SURGERY.

Delivered at the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

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MR. PRESIDENT AND GENTLEMEN,—I desire to join my colleagues in offering you a most sincere welcome to Edinburgh, and I desire also to express the hope that you will all be able to look back upon your visit here as pleasant, interesting, healthy, and profitable both to mind and body. When asked by a deputation of my colleagues in Edinburgh to give the Address in Surgery I felt that an honour had been very kindly and courteously shown me; but in accepting this offer I also felt that I had undertaken a responsibility—a esponsibility which called upon me to speak to this distinguished audience as a representative of Scottish surgery. This responsibility was all the more serious to me for my friends know well that I am more ready with the knife than with pen or speech, and as my daily life for many years has been to lecture and demonstrate to students as babes entering the profession I had some fear that I might be offering to you as men and kings in the profession baby's food. My first difficulty was to select a text on which to address you. I might have offered you some of the results of nearly forty years of active hospital and private surgical practice, but I felt that an account of any such results was more fitted for the departmental sections. I also at one time thought I might have endeavoured to prove to you—and I think I could have proved to you with success—how much Scottish surgeons and Scottish work have assisted in the development and improvement of surgical practice, but with this thought there suddenly came to my mind the old Scotch saying, "Ye'll hae a guid conceit o' yersel," and accordingly I at once dropped the idea of Scottish self-glorification. After consideration it seemed best to me to take some more general text, and accordingly I decided to offer you a few remarks upon the present position of surgery. It must, I think, be universally acknowledged that the present position of surgery is of the highest. There are now few diseased conditions in which surgery does not play a very essential part in connexion with treatment, and there is scarcely a single organ of the body, internal or external, which is not the subject of successful surgical procedure. The brain, the organs of the chest, abdomen, pelvis—many of which were so long looked upon as belonging solely to the province of the physician—are now shared, if not principally absorbed, by the surgeon as regards the relief or cure of their diseases.

It has sometimes occurred to me that on not a few occasions my esteemed colleagues the physicians have a strong longing to be surgeons for the time being, in order that they might be able to carry out some surgical procedure which their experience has taught them to be more efficacious than medicine. For the sake of convenience and partly also, as is known to some here, that a discourse in this country is not considered complete unless delivered under from three to twelve heads, I propose to treat my subject under certain heads. In consideration for your feelings and time I propose to confine these heads to three, the minimum number allowed, and to speak of present surgery in (1) its scientific aspect, (2) its practical aspect, and (3) its moral aspect.

I.—ITS SCIENTIFIC ASPECT.

It must at the outset be acknowledged—and acknowledged with gratitude—that the marvellous advances in connexion with present surgical practice are largely indebted to those who have diligently, honestly, and successfully carried on experimental and other research in connexion with the sciences of chemistry, physiology, bacteriology, anatomy, and pathology. We, as surgeons, look forward hopefully to receive the continued aid of these gentlemen in still further promoting our art, and it should be our duty to encourage and assist in every possible way all such scientific work—work which in connexion with surgery can only be considered to be in its early infancy and which will require much care, accuracy, and close industry to establish its steady and sure growth. I would now refer to some of this scientific work which has so benefited surgical practice. To speak of the antiseptic system at the present time is to speak almost of ancient history, but two reasons prompt me to refer to it. First, because it was in this school that its distinguished author carried on those carefully conducted and original researches and experiments which led him to suggest this great principle. Secondly, because I have lived long enough to have had experience of three epochs in connexion with surgical wounds. As a young apprentice more than 40 years ago I witnessed the dressing of wounds by the application of layers of ointment, the edges being brought together by sutures of thick silk and the arteries secured by ligatures of the same material, the ends of the ligatures being left hanging out of the wound and acting much like setons. As a dresser under the great Syme I learnt the simpler methods of water dressings and of dry dressings, and, lastly, as a pupil and colleague of Lister I had the good fortune to follow the various stages of the developments of the antiseptic treatment. In the first of these epochs I gained a large experience in connexion with septic suppuration, hospital gangrene, pyæmia, and septicæmia, all of which conditions were common and frequently led to fatal results. In the second epoch my experience of septic suppuration, pyæmia, and septicæmia was small in comparison, but still too common. In my third and present epoch such experience has been reduced to a minimum.

In the early stages of the antiseptic suggestions failures undoubtedly occurred, but such failures when honestly investigated were important as lessons, and the consideration of their causes did much to establish on a successful basis the great principle. There were some who, ignoring the principle of the antiseptic treatment and also ignoring the established principles of surgery, preached and practised that the mere application of carbolic acid or other antiseptic lotion was all that was required, and when such treatment was unsuccessful condemned the whole system. Let me quote a sentence from an address which I gave when appointed Professor of Clinical Surgery in this University, now twenty-one years ago: "It is not the mere application of carbolic acid in one form or another which constitutes the antiseptic treatment, but the true antiseptic surgery is that which is the result of many years' patient, thoughtful, and scientific research; of vast, laborious, and expensive experiments, and of much and valuable time spent in clinical observation on the part of Mr. Lister." I confess that I was one of those who, while carefully watching the progress of Lister's work, and thoroughly believing and greatly admiring his great scientific abilities, was at first cautious in accepting all the details of its practical application because I felt that these were somewhat complicated, and it was certainly a great relief to my mind and to the minds of many others, I am sure, when it was found that in actual practice many of these details could with safety to

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the principle be much modified and simplified; and, further, I had learnt from experience that even with the use of antiseptic treatment the ordinary principles of rest, avoiding causes of irritation, and attention to the general health must not be ignored. I know that no one rejoiced more than Lister himself when it was proved that his great system could be successfully simplified and so used under circumstances which formerly made it difficult or impossible to carry out. But while the external application of antiseptic means and precautions is now thoroughly established upon a simple and at the same time efficient basis, it must not be forgotten that injurious organisms enter the body and tissues by other channels than through external wounds or breaches of surface; and therefore it is that the science of bacteriology becomes so important a study in connexion with disease and with the results of injuries and surgical procedures. It is to a further study and knowledge of this science—which must be considered as still in its infancy—that surgery as well as medicine looks for more light in connexion with the causation and treatment of diseased conditions.

Although experimental and pathological research and clinical observation have already done something to explain and determine the action of certain organisms the particular manner in which these organisms cause in one case no result and in others injurious results cannot be considered as proved. We certainly have learnt certain facts: first, that organisms of various kinds gain entrance into the tissues or organs of the body; secondly, that some special condition of these tissues and organs favour their development and multiplication. Such organisms vary much in form, source of origin, situation where chiefly met with, conditions under which they develop or are destroyed, and the special effects which they produce. In the majority of instances the bad effects are produced not so much by the multiplication of the organisms themselves as by poisons or toxins caused by their presence or behaviour in connexion with the tissues. Further, it would appear that the resulting toxin may not itself produce the poison, but give rise to chemical changes and products which are the real cause of the injurious results. It is also an interesting fact that the presence of more than one form of bacillus may either increase or destroy these injurious results. The conditions of the tissue or soil in which the organisms settle has much to do with the results caused. Individualism, age, constitution, the general condition of the patient, and any local condition, more particularly any condition which interferes with the vitality of the tissues, influence much the action of organisms. The resistance of the tissues to the injurious effects of organisms depends upon the condition of these tissues, upon the activity of the organisms, and upon the amount and virulence of the toxins developed. It appears that it is the spores of organisms which most resist destruction, and as these spores may germinate not only in the tissues but outside the body they act as a serious source of infection. From the facts I have just stated it will be judged what difficulties arise in connexion with the study of bacteriology, and consequently with the treatment of the injurious results produced by the numerous organisms which invade and affect the human body. Bacteriological experiments upon the lower animals may in some instances aid us, but the conditions of the lower animals are not always the same as those of human beings, and therefore results obtained in the former are not always safe guides as regards results in the latter. Continued careful study of anatomy and pathology and accurate clinical observation should do something to increase our knowledge, but I venture to think that much of our future trust for light must be in connexion with physiological chemistry, which we hope may be able to teach us more of the origin, causation, and behaviour of the various toxins and of the action of the tissues in connexion with them, so that we may be able to counteract their injurious effects by appropriate treatment.

At the present time we endeavour to treat the general effect of these toxins either by the administration of remedies supposed to produce a general antiseptic effect—but it cannot be said that such treatment has proved satisfactory except in a limited number of cases—or by the introduction into the tissues by subcutaneous injection of so-called antitoxins. This latter treatment has met with an encouraging amount of success, especially in certain directions; but its position is still uncertain and much further experience is required to place it on a safe and reliable foundation. All who have employed the antitoxins in connexion with surgical conditions must have encountered this uncertainty as to their action. My own experience is that though some severe cases of septicæmia have recovered after the injection of an antitoxin other cases very similar have recovered without any antitoxin being used. I would suggest that another important subject for further study is the physiological action or connexion between one tissue or one organ and another. May not further experience of this connexion help us in carrying out treatment based upon this connexion? Take, for instance, the suggestion of Beatson for removing the ovaries in cancer of the female breast, incurable by other means. Having thought it my duty to test this suggestion I carried it out in three typical cases, and my experience and the experience of others who have tried this procedure has been that though the disease was not cured the removal of the ovaries had certainly some influence upon the diseased local condition. I venture also to suggest that as a possible and further addition to treatment some more careful work should be devoted to the action of drugs upon the toxin poisons, such drugs being introduced either by the mouth, by subcutaneous or intravenous injection, or by inhalation. We know that large quantities of saline fluid may be injected into the veins with safety and it is therefore not unreasonable to suppose that other solutions of a non-irritating and antiseptic nature may be similarly employed. The remarkable results obtained by thyroid extract should be an encouragement to us in this respect and it has already been proved that certain vegetable products act as powerful antitoxins. If it can be discovered that certain drugs can be safely and successfully used as antitoxins it will much simplify our treatment, for such remedies would be more easily and more certainly handled than the antitoxins now in use. The treatment of sarcoma or other new growths by means of toxins is another subject of great interest to the surgeon. The results obtained by Coley and others by the mixed toxins of streptococcus and prodigiosus do show some hopes, for under the use of these toxins growths have undoubtedly disappeared, but I think that all who practise surgery will agree with me when I say that sarcomas and other growths do occasionally undergo a check in their development and even disappear without any apparent cause. In all probability these occasional occurrences are the result of some physiological or bacteriological action which is not perceptible.

Reference to the scientific aspect of surgery would not be complete without some notice of the "New Photography." Ordinary photography has always been of great assistance to surgeons and will continue to be so for the illustration, progress, and record of many of their cases, but its new and latest development has already proved to be of the greatest service in diagnosis and consequently in connexion with successful treatment, and an improved development of it will no doubt add still more to the success of surgical practice. The scope of this department of science is a very wide one and by its means we may add much to our knowledge of osseous development and growth, of the relation and position of internal organs, and of the actual condition of diseased parts. In connexion with many surgical conditions, and especially in connexion with injuries of various kinds, this photography is invaluable.

In leaving this, the scientific portion of my address, I desire again to express the indebtedness of practical surgeons to those discoverers and workers in science who have by their honest and accurate observation obtained results which have done so much to improve our practice and so to render our treatment more successful.

II.—ITS PRACTICAL ASPECT.

To one like myself who, as apprentice, student, and surgeon, has for more than forty years followed the practice of surgery its steady and remarkable progress is a most interesting study. In watching this progress it not infrequently appeared as if perfection in some particular procedure had been reached, but a little more experience or a little more observation gave rise to a suggestion which entirely drove the so-thought perfection from the field and opened up a new and important practice with resulting benefit to suffering humanity. There are few surgical procedures which have not undergone some change and marked improvement since I first commenced the study of surgery and the number of new procedures suggested would require many pages even to enumerate them. While not a few of these suggestions have become established in practice many others, being founded on incorrect or ignorant principles, have perished and deservedly so. To myself and to others it has often been interesting to observe the gradual development

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of some procedure or treatment; a suggestion made by one surgeon would lead to an improved suggestion by another and this process of improvement might again be taken up by a third or fourth until at length its thorough success was established. My Scottish modesty prevents me from referring to work of my own, but it will always be to me a feeling of satisfaction that in connexion with my very special opportunities for experience in surgical practice I may, in some small way, have been able to assist in adding to or originating such suggestions and improvements. I know I shall be excused if I here refer to the fact that to the great Syme I owe my opportunities for the study and practice of surgery, and it was in connexion with my intimate association as his assistant for more than ten years that I learnt how to attain and how to exercise the qualities which are the essence of good and honest practice. Another personal incident I may be allowed to mention is, that as a baby I once rested in the arms of the great surgeon Liston, who was the favourite chief of my father, and although at that time I received no bodily nourishment from him in after-life I obtained much surgical nourishment from the study of his writings and work.

The advances in our scientific knowledge, combined with extended and more accurate clinical observation, have, as has already been stated, assisted much in the improvement of practical surgery, and the development of what I would designate honest specialism must also be looked upon as adding to our practical resources and treatment. If asked to define any special characteristic which will apply to the practice of surgery at the present day I would be inclined to say simplicity—antisepticity, of course, being granted—a simplicity in which is included operative procedure, instrumental assistance, and after-treatment. It is true that from time to time new procedures and new instruments are suggested, but as a rule it will be found that if practical surgeons adopt and employ them they are in the direction of continued simplicity with some addition to their efficiency. In a general address such as this a reference to all the improvements which have taken place and are taking place is quite unnecessary, as such improvements must be well known, or should be known, to all who desire to carry on with success the active practice of surgery. For such knowledge we have not only our own experience to aid us, but we have to thank the medical press and the many distinguished authors who by their books and papers bring the results of their own experience and observations and researches under the notice of the profession. Although so many and so great changes have taken place as a result of the advances in the departments of science already referred to it would be very wrong to ignore the work of those surgeons who are no longer with us. Many of these surgeons showed a knowledge and wisdom and forethought of conditions and procedures which have stood the test of time and still remain sound and correct as monuments of their genius. This knowledge was principally the result of shrewd and careful clinical observation and reasoning, for they had little or no scientific aids to help them, and their success under such circumstances should be an example to all of us to make every use of our clinical opportunities and to observe closely, carefully, and honestly. But the practice of surgery has not only reached a high standard of improvement, but it has much widened its area both as regards the number of its procedures and the number of those who practise them. This is scarcely the time or place to discuss the exact relationship between surgery proper and what is called gynæcology. Of late years these departments have been gradually merged into one another, so that the line of demarcation between them is scarcely apparent. Both are really surgical procedures and both require for their proper and successful performance that training and those qualities which make the good surgeon. That physicians under the designation of gynæcologists should now become operating surgeons is perhaps only a little return for the fact that surgeons have so extensively and successfully invaded the province of physicians, and as time goes on some balance may perhaps be arrived at which, while guarding the interests of the public, will satisfy the representatives of medicine and surgery.

In this greatly improved era of practical surgery it is well perhaps to suggest a caution, for there is undoubtedly a tendency—and more especially in the case of some of our younger colleagues—to be too ready to resort to surgical procedures. When greater risk was attached to operative procedures surgeons young and old had, for the sake of their patients and their own reputations, to take into account these risks even in comparatively slight operations; but now that so little risk attends operations they may be undertaken without due consideration of all the circumstances or necessities of the case. I would as a senior colleague venture to remind my younger friends that Nature, with perhaps some little non-operative treatment, will do much, and that no operative procedure should be suggested or practised until the case has been thoroughly studied and found to be unrelievable by other means.

As a practical surgeon in this, the Edinburgh School of Medicine, it may be expected that I should refer to my experience of anæsthetics, and I accordingly express the opinion that chloroform holds the field as the best general anæsthetic in connexion with surgical procedures; and although I have met with a few fatal results from its administration I have most thorough confidence in its safety if carefully used and its effects diligently watched. Perhaps the best test of my confidence is the fact that having a few years ago suffered from a poisoned finger received when operating I required to take an anæsthetic on several occasions in order to have deep incisions made for the relief of extensive suppuration. The anæsthetic I took was chloroform, and it was administered according to the "open" method by one of my assistants and not by any special anæsthetist. It is my opinion that fatal results will occasionally take place in connexion with all anæsthetics, and that these fatal cases may be divided into (1) avoidable, and (2) unavoidable. The avoidable ones are those which are due to careless administration or to neglect of means to prevent blood or other matters entering the air-passages, and should not occur if proper care is exercised. To avoid these risks it is essential that one person should give sole attention to the anæsthetic and watch both respiration and pulse, more especially the respiration and its nature, during the whole period of its administration. I need scarcely say that the preparation of the patient is, when possible, important. I prefer to give a small basin of plain soup about two hours before the chloroform is administered and, if the patient is feeble or the operation likely to be attended with much shock, a tablespoonful or more of brandy or whisky a quarter of an hour before the anæsthetic. In cases in which there is a risk of matters, and especially of blood, passing into the air-passages, the dependent position of the patient's head, as advocated by me in 1879, will often prevent this accident, and should it take place immediate tracheotomy must be resorted to if the symptoms are serious. The unavoidable cases are, in my opinion, the result of heart failure from fatty or other conditions and occasionally, I believe, they may be caused by cerebral conditions, as I have seen a fatal case in which the symptoms resembled most an epileptic seizure. Further, I believe that in the majority of these unavoidable cases it is impossible by any external examination prior to giving the anæsthetic to discover the condition which has led to the fatal result. I am inclined to think that the avoidable accidents are more frequent than the unavoidable, and if so it teaches us how important it is to avoid, by careful preparation and administration, anything likely to bring about an unfavourable result. I would like here to give a word of warning as to the use of cocaine in local anæsthesia, and more particularly when it is used by subcutaneous injection. My experience is that some individuals are specially susceptible to its action, and therefore, if too strong a solution or too large an amount of a weaker one is injected, the result may be faintness and serious interference with heart action. It should therefore be used cautiously and a stimulant be given, or be at hand in case of such symptoms occurring. Not wishing to weary you, I close my remarks under this head by referring to the importance of taking carefully into consideration everything likely to influence the performance or result of any surgical procedure, and when possible to first remove by proper treatment conditions likely to interfere with or to retard the recovery of the patient. It is not age or apparent feebleness which is likely to cause anxiety, but it is the condition of the organs and the tissues which should guide the surgeon, for if these be in a weak or in a diseased state they are more likely to become the soil for injurious bacteriological development and action.

III.—THE MORAL ASPECT.

I make no apology for offering a few remarks under this head, with the explanation that I employ the term "moral" in its highest and widest sense, for I am decidedly of opinion

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that it becomes every member of our profession who has the true sense of relieving suffering humanity at heart and who desires to maintain the honour and reputation of his profession to speak out with no uncertain meaning in regard to every action which is dishonest or dishonourable or tends to be so. The actions and practices of so-called quacks or unqualified individuals are much to be deplored, and it is in every way desirable that legalised checks should be established so as to prevent or limit them, and more particularly in the case of the ignorant and uneducated public. If the educated public consult such practitioners—and it is not very uncommon for them to do so—they can only blame themselves should unfortunate results take place. It is, however, of practices inside the profession of which I wish to speak. It is sincerely to be regretted that in some quarters the true, honest, and high feeling which should be the standard principle of the members of our profession is in the present day partially or wholly ignored, and in consequence our profession is not always respected as it should be and its members are looked upon by some as mere humbugs, in some cases not without reason, thinking more of fees and fee accumulations than of their patients' cure or relief. Three causes seem to me to influence this much-to-be-lamented evil which has insidiously invaded our profession—(1) active competition, (2) untrained specialism, and (3) Society demands.

There can be no doubt that the number of medical practitioners has increased, but in connexion with the increase of the population this increase in numbers is not so great as is generally supposed. A few years ago I selected statistics in connexion with this question and, taking some of the largest provincial towns in England and Scotland, I found that the number of medical men as compared with the population was very little changed from what it had been twenty years before. The active competition therefore is, in my opinion, not so much due to the increase of medical men as to the fact that in many instances the most of the remunerative work is done by a few, which leaves much hard work and poor pay for the remainder of the profession. My suggestions for the cure of this are that those who constitute the few should be specially careful to guard and encourage the interests of the many, should not seek to secure every remunerative appointment within their reach, but should at least leave some crumbs for their less fortunate brethren.

The second cause is untrained specialism. I have already stated that honest specialism has aided much the practice of surgery, and by honest I mean such practice as is founded upon a thorough knowledge of all the different departments of the profession and upon an honest study of all the circumstances connected with the various conditions which affect the organ or organs which are specialised. Specialism in the hands of qualified members of the profession, unless practised under these conditions, is simply quackery, and quackery of the worst kind, for it is carried on by those whom the public understand to be properly educated as regards their profession. There are few who endeavour to practise their profession with integrity who have not met with cases in which mere symptoms have been treated by operation or otherwise, the real source of the diseased condition having been entirely ignored, either through ignorance or for reasons which can only be classed as contemptible and degrading to the profession. The cure for such practices is not easy, and it can only be hoped that the honest members of the profession will note such practices and endeavour to check them by exposing their real nature and by endeavouring with tact to educate the public mind to avoid those who practise them as unsafe and possibly dangerous advisers.

The third cause is Society demands. A section of the public, or I should rather say a section of what is termed "Society," has done much to interfere with the proper feeling which should exist in our profession. Men, women, and even young people read and discuss professional matters and diseases; books are published and advertised which are written more to catch the eye of the public than to advance the knowledge or reputation of the profession; a certain class of newspapers and periodicals devote one or more columns to professional subjects, and even give gratuitous advice in the form of Questions and Answers. The manners, qualifications, and doings of members of the profession are freely criticised at afternoon teas and other entertainments. One man is condemned and some supposed failures in treatment are magnified or invented, while another receives extravagant praise and many of his wonderful surgical or other procedures are lauded and not infrequently described with marvellous details added. One is glad to think that in the majority of instances the surgeon or specialist has no art or part in such proceedings and, having with justice confidence in his abilities and upright conduct, much regrets that they should exist and does all he can to prevent their occurrence. But there are some, I fear, who take advantage of such extravagant popularity and, having become the fashion, trade upon it in a manner which is not consistent with the high feelings which should influence all our professional relationships. It is fortunate that there still exist among the public in all classes of society many who are endowed with nature's nobility and good feelings and who are not influenced by the extravagant or false opinions of fashion, but who have both respect and esteem for those members of the medical profession who conscientiously devote themselves to the relief of suffering. We can all hope, but I fear hope in vain, that those members of Society who lead a frivolous, useless, and sometimes unholy life may some day realise that they are not acting as true citizens of their country or taking any proper interest in the welfare of their countrymen and countrywomen. If some of their energies, some of their time, some of their sympathy, and some of their money were employed to assist their fellow-creatures they would themselves reap reward by feeling that their lives were not altogether a selfish existence. If any member of our profession encourages or takes part in Society's ignoble life or actions he is not worthy to belong to the profession and he certainly does not add to its reputation.

In conclusion, Mr. President and gentlemen, I wish to thank you all for the patient and kind manner in which you have received my address and more particularly because I feel that I have not been able to offer you anything which is new or original. I would also wish to express how great a pleasure it has been to me to meet so many of my distinguished and representative colleagues. We are all labouring in the cause of our noble profession and it becomes all of us to join hands and to assist and sympathise with one another, so as to advance our science and art and in this way increase our power for the cure and relief of humanity.

AN ANOMALOUS CASE OF CONTINUED FEVER WITH PERFORATIONS OF THE INTESTINE.

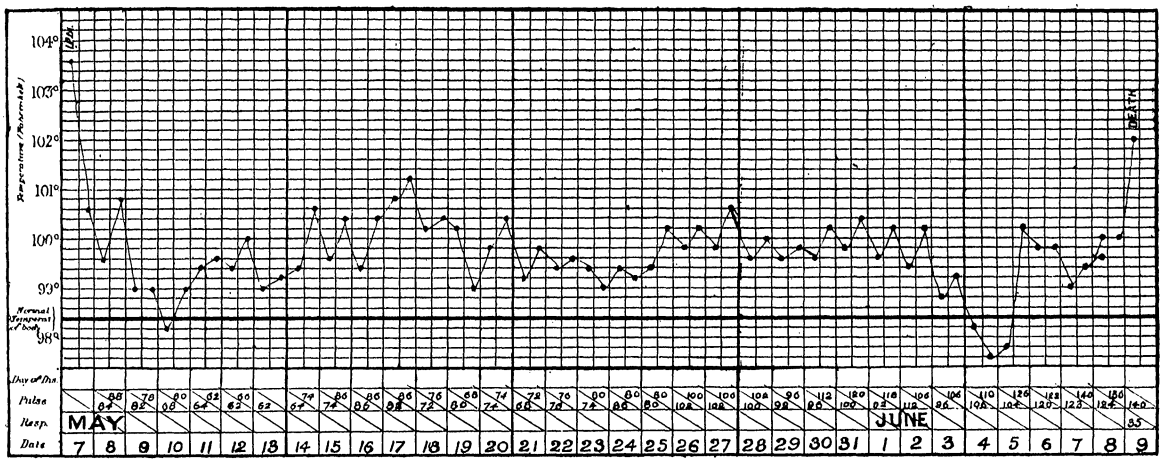
BY SIDNEY HERBERT SNELL, M.D., B.S. LOND.

With Note by Sir WILLIAM BROADBENT, M.D. Lond., *Post-mortem Report by* Dr. HUGH R. SMITH, *and Pathological Report by* Dr. E. D. W. GREIG.

THE patient was a man, aged forty-five years, a brewer, who had always been of quiet and temperate habits, living a plain semi-country life. He was of somewhat nervous temperament, with an occasional tendency to dyspepsia. He had not left home for over two months or eaten oysters. The illness commenced about April 20th, 1898, though it appears that he had not been feeling quite well for some weeks previously. On the 29th he was driving for some time in heavy rain, but does not seem to have been really wetted; however, that night he had a sharp attack of diarrhœa. I saw him on Sunday, May 1st, and noticed that he had a very yellow, "livery" appearance. On the 2nd I was requested to see him professionally. He then complained of a feeling of general malaise with slight headache; the "livery" appearance of the face had increased, but there was no actual jaundice and no fever. The tongue was coated with a white fur; the urine was normal. The bowels were acting once daily, the motion (the patient's description) was of a somewhat light colour with a little slime. Apparently the patient had some simple congestion of the liver. The symptoms continued without relief and on the 4th there was a little pyrexia. On the 5th the pyrexia had increased and the patient was placed in bed. On the 6th the temperature was 102·5° F. in the morning and 102·8° in the evening. There was still the same yellowish appearance but no jaundice. The bowels were open every day; the motions

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were slate-coloured and semi-formed, with some mucus and occasional streaks of blood, but these last were obviously from hæmorrhoids, and the patient told me that they were often present when he was in good health. On the 7th the temperature was 103·6° in the morning and thereafter the temperature was recorded regularly every four hours. The patient was now treated as for typhoid fever. The high temperature fell rapidly until it reached normal on the 10th; it then again rose and continued vacillating between 99° and 101°, the highest temperature being usually recorded about 4 P.M. and the lowest at 4 or 8 A.M., but no great regularity was present. The patient's tongue remained thickly coated with whitish fur and was at times very dry. The pulse was slow, varying from 64 to 80; these variations seemed to occur for no particular reason. In ordinary health this patient's pulse was usually about 65. At this period of the illness, of course, I was in the greatest perplexity as to the nature of the complaint. The possibility of typhoid fever occurred to me almost from the first, but apart from the continued elevation of the temperature there was not a single sign or symptom of typhoid fever. At times there was a little headache and anon some fleeting abdominal pains due to flatulence. The bowels continued acting daily, but about this time the motions assumed a somewhat chocolate-coloured tinge. On the 16th, with Dr. H. R. Smith, I tried Widal's serum reaction with negative results, the movements of the bacillus typhosus being absolutely unaffected by the introduction of serum from the patient. Nevertheless, at this date he was seen by his brother-in-law, the late Mr. Iliffe, medical officer of health of Derby (whose sudden death occurred a very few days after), who had, of course, had great experience in typhoid fever, and he gave it as his opinion that, judging largely from the patient's facial expression, the complaint was typhoid fever. On the 19th a slight trace of albumin appeared in the urine. On the 20th I asked Sir William Broadbent to see the case in consultation. He pronounced the complaint not to be, in his opinion, typhoid fever, and particularly he regarded the motions as not in the least enteric in character. The tongue, however, had now a dry brownish colour with a triangular patch clearing up on the tip. From the 12th the patient had had 1 gr. of quinine every four hours and after the 20th 1 gr. of calomel in a pill nearly every night; this last just kept the bowels acting about once daily. During all this time the patient's general condition was good and the prognosis was apparently favourable, with an absolute want of symptoms or signs of any kind, save an occasional complaint from flatulence and some nervous irritability. From the 19th to the end of May the temperature varied only between very small limits, practically never exceeding 100° or falling below 99°. On the 23rd he developed a thrombosed hæmorrhoid, which we hoped might be the cause of the slight continued temperature. The thrombosed pile eventually sloughed off. A little pain and stiffness of the muscles of the neck and limbs occasionally were present during the latter part of the month. Towards the end of the month, too, there became perceptible the first sign that gave any real cause for anxiety—a sign which was the most remarkable one in this illness, and that was the gradually increasing frequency of the pulse. This, while maintaining its full, quickly collapsing character, showed an increase of frequency now varying between 90 and 100 and still exhibiting the characteristic of altering strangely in rapidity from time to time without apparent cause. There was no suspicion of dicrotism. On the 28th, therefore, digitalis was given (ten minims every 4 hours) and the amount of stimulant was increased to 6 oz. On June 1st there was mild diarrhœa for 24 hours, the bowels acting some six times, the motions being loose and yellow in colour—in fact, for the first time during the illness they became somewhat typhoidal in appearance. On this date the pulse was registered up to 120, yet the patient's general condition seemed fairly good and the mind was clear. Some emaciation was naturally now present, but it was by no means very marked; therefore, apart from the frequent pulse there seemed scarcely a grave symptom about him; but I laid considerable stress on the gravity of this sign in my prognosis to the friends. On June 3rd the sloughing hæmorrhoid separated and the midday temperature fell to normal. Save once, on May 30th, this was the first time it had touched normal since the fall on May 10th. For over twenty-four hours the temperature kept at or below normal; the patient was very weak but fairly cheerful and the outlook might have been hopeful save for the pulse, which kept varying between 90 and 110. On this day and night therefore the patient apparently presented the condition of being at the end of his attack of pyrexia, whatever it may have been, and, with the exception of the weakening heart, there were no morbid symptoms about him. How deceptive this short calm was became quickly apparent. On June 5th the patient began to show extreme weakness, while the pulse-rate leaped to 120 and a slight rise of temperature to about 100° again occurred. On deep pressure over the right iliac region there was now some distinct tenderness. On the 6th the mind began to wander for almost the first time during the illness, the pulse-rate increased to 130, still keeping its quickly collapsing character, and the patient's countenance assumed a very strikingly anxious and pinched appearance. The tenderness in the right iliac region was rather more marked, but the abdomen was not distended, not generally tender, and moved freely with respiration. At this stage Sir William Broadbent again saw the patient. From this time the pulse-rate rapidly increased and the patient very quickly passed into a pronounced typhoid condition and died on June 9th.



In the foregoing description of the course of this illness I have refrained from inserting negative facts; that the lungs were carefully examined, the spleen palpated, and the presence of any rash closely observed, readers will readily understand. Practically for the major portion of the attack the only sign of illness was a long-continued pyrexia hovering between 99° and 101°, with towards the end cardiac weakness, then death from heart failure. The report given below shows what was found at the post-mortem examination, which was possible in this case owing to the intelligence and common-sense of the relatives.

Note by Sir WILLIAM BROADBENT.—I saw this patient with Dr. Snell first on May 20th. There was nothing in his

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appearance or facial expression at all suggestive of typhoid fever. The state of the tongue was the reverse of characteristic; the abdomen was normal in appearance and everywhere soft and supple; there was no enlargement of the spleen, but the liver could just be felt; no spots were or had been present. The motions, which had been kept for my inspection, were copious, heaped up, large-sized soft coils of a peculiar chocolate-brown colour, as unlike typhoid stools, therefore, as well could be. The temperature chart, again, was not that of enteric fever. Although, therefore, the investigation was begun under the idea that the continued fever of three weeks' duration without local cause was probably enteric, I came to the conclusion that this was not the case here. It seemed to me also that tubercle could be excluded, and the only diagnosis at which I could arrive was that there was intestinal sepsis of some kind, not specifically enteric or typhoid. On this hypothesis I recommended that a grain of calomel should be given daily for a few days. I was unable to modify my opinion at my second visit on June 7th, when, although the heart was evidently failing, the patient had not at all the appearance of a person dying from typhoid fever, nor were there any indications of perforation of the bowel when the abdomen was examined. It was consequently a great shock to me to receive a brief intimation that the cause of death was typhoid fever with perforating ulcers. Dr. Hugh Smith, however, added that the ulcerations were not of the usual character or in the usual situation, and this is shown by the excellent detailed description now given. The piece of intestine removed was afterwards brought to me for examination by Dr. Snell. I could find neither infiltrated Peyer's patches nor the elongated ulcers left when they have been destroyed by sloughing or ulceration. It is fortunate that bacteriological examination could come to the aid of clinical observation and morbid anatomy. There would otherwise have been no escape from the conclusion that typhoid fever could assume a type so aberrant as to be unrecognisable clinically, and could give rise to lesions quite unlike those usually met with in this disease. It would be premature to assume that the bacterium coli commune rendered specially virulent by unknown conditions was responsible for the train of symptoms and for the lesions met with in this patient, but it seems highly probable that such was the case. Further investigation will no doubt be made. I am reminded by this case of an opinion which I formed many years ago and to which, I think, I gave expression in my article on Enteric Fever in the first edition of Quain's "Dictionary of Medicine," that there was a disease called typhoid fever in India "which was not the enteric fever of this country." The late Dr. Wall, an old St. Mary's Hospital student, who gave his attention to this question at my suggestion, sent me clinical histories with post-mortem appearances which tended to confirm this opinion, but his early retirement from the Indian Medical Service put a stop to the inquiry. I still hear of anomalous instances of typhoid fever occurring in India which may be due to the specific bacillus, the effects of which are modified by climatic and other conditions or possibly may resemble the case related by Dr. Snell.

Report on post-mortem appearances by HUGH R. SMITH, M.D., M.R.C.P. Lond.—A necropsy was performed 20 hours after death. On opening the abdomen general purulent peritonitis was found which was evidently caused by three perforations in the small intestine between 12 in. and 16 in. above the cæcum. The peritoneal surface of the lower 3 ft. of the ileum presented several patches of intense injection corresponding in position with the ulcers subsequently discovered in the mucous membrane. The floor of these ulcers was very thin so that two more perforations were produced in the act of removing the intestines. Elsewhere the peritoneum presented no special features apart from the ordinary appearance of acute peritonitis. On opening the intestines the mucous membrane of the whole of the small bowel presented a normal appearance with the exception of the last 3 ft., where not only the mucous membrane but the entire wall of the gut was seen to be swollen, soft, and very pliable and in places in an almost necrotic condition; the lymphoid tissue was specially swollen, and the solitary follicles, particularly immediately above the ileo-cæcal valve, stood out very prominently. There were ten ulcers of the intestine, the first 3 ft. and the last 8 in. above the ileo-cæcal valve; they were irregular in outline and distribution, with fairly sharply-cut undermined edges and with smooth floors. In every case the necrotic process seemed to have involved the muscular layer, but in two or three the slough had not separated. The ulcers were not confined to Peyer's patches, although they seemed to start in the lymphoid tissue and tended to spread rather transversely than longitudinally. Five of the ulcers had perforated, but two of these were probably torn in removing the intestines. The mucous membrane in the neighbourhood of the ulcers was very swollen and friable and was slate-grey in colour. The mucous membrane of the large intestine was markedly swollen along its whole extent and was more friable than normal; there was no ulceration. The mesenteric glands in connexion with the diseased ileum were greatly swollen, but those in other parts of the abdomen were unaffected. The spleen was little if at all larger than normal. It felt soft, but was preserved entire for bacteriological examination. There was some collection of gas under the capsule of the spleen. The liver was fatty. The other abdominal organs were healthy. The heart showed very marked post-mortem staining and was soft and flabby and presented well-marked fatty degeneration of its walls. The other organs of the body were healthy. The brain was not examined.

Bacteriological report by E. D. W. GREIG, M.B. Edin.—The spleen, which was received 24 hours after death, was examined with the view of determining the nature of the organisms, if any, present. The spleen was placed in a sterile vessel and the capsule was sterilised by washing with absolute alcohol and then with hot sterilised distilled water. An incision was made into the spleen with a sterile knife. A number of stabs were made in different parts of the pulp exposed with a sterile platinum loop and with this a tube of ordinary peptone broth was inoculated. With a loopful of the juice of the spleen "successive" smears were made on agar plates. A portion of the pulp was removed with sterile scissors and placed in a tube of broth. The tubes of broth and the agar plates were placed in the incubator at 37° C. for one night. Next day they were examined. The plates showed a pure growth of round white colonies which were somewhat fluorescent. The broths were uniformly turbid and had a strong fæcal odour. A hanging-drop preparation made from the broths showed the presence of short bacilli which were slightly motile. Subcultures from the colonies on the plates and from the broths were made in all the media. The examination of the subcultures showed the organism to have the same characteristics in both the plate and the broth cultures. These characteristics were: (1) agar—was pure, and a microscopic preparation verified this and showed the presence of short bacilli with no filaments; (2) broth—was uniformly turbid but had a distinct scum on the surface; it had a very strong fæcal odour; at the end of three days the indol reaction was tested and found to be very marked; (3) glucose gelatin—a large amount of gas was produced; (4) milk—was coagulated in one night; and (5) potato—showed a fleshy yellow growth. From the broth culture a hanging-drop preparation was made at the end of twenty-four hours. It showed short bacilli very slightly motile. In other words, the organism gave all the reactions of the bacillus coli communis. Inoculation experiment.—A medium-sized guinea-pig received 0·5 c.c. of the broth subculture intraperitoneally. It died within twelve hours. Pure cultures of bacillus coli communis were obtained from the peritoneal cavity and spleen. This investigation shows that the bacillus coli communis was present in the spleen in a pure state. The inoculation experiment further shows that it was highly virulent.

Grays, Essex.

THE SOCIETY FOR PHYSICAL VOICE-TRAINING.—A meeting of this society was held on July 21st at London House, by kind permission of the Bishop of London. Bishop Barry presided, and made some strong remarks upon the importance of voice production. He thought the work was in very capable hands and had a fair prospect of success. Archdeacon Emery, the Rev. F. St. John Corbett, the Rev. R. Free, and others addressed the meeting and Mr. William Nicholl, the well-known singer and teacher, spoke of the necessity of balance between vocalisation and articulation. The report stated that lectures had been given in various parts of England, chiefly to the clergy, and at some of the training colleges.

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FATAL CASE OF ACUTE POISONING BY LEAD CONTAINED IN DIACHYLON WHICH WAS TAKEN IN THE FORM OF PILLS FOR THE PURPOSE OF BRINGING ON A MISCARRIAGE.

BY GEORGE F. CROOKE, M.D. EDIN.,

FORMERLY PATHOLOGIST TO THE GENERAL HOSPITAL, BIRMINGHAM; PHYSICIAN FOR OUT-PATIENTS AND PATHOLOGIST TO THE QUEEN'S HOSPITAL, BIRMINGHAM; AND LECTURER ON PRACTICAL PATHOLOGY IN THE MEDICAL SCHOOL AT BIRMINGHAM.

As this case was the subject of an important inquiry held by Mr. E. Docker, coroner for North Worcestershire, at King's Norton on July 9th I have thought it worth while to send an account of it to THE LANCET.

I was called to the deceased, a young married woman, twenty-three years of age, shortly after midday on Monday, July 4th. When I arrived at the house I found her lying on the floor of the front room, raving in maniacal delirium, struggling violently with those who were endeavouring to restrain her, and apparently writhing in great agony. Her seizures were paroxysmal, her intelligence was quite gone, and she seemed to be unable to recognise anyone around her. It was evident at a glance that she was suffering from the effects of some intensely irritant poison and on making a remark to this effect the husband, who was present, informed me that he had every reason to suspect his wife had been taking "stuff" to bring on a miscarriage. At the same time he handed to me a piece of diachylon or emplastrum plumbi from which it was evident by the numerous facets that pieces had been cut off with a knife. I at once told him that in all probability his wife was now suffering from the effects of acute lead-poisoning. Her breath was fœtid and exceedingly offensive; the tongue was dry and coated with a greyish-black fur; blackened sordes had collected about the teeth and gums, along the free border of which there was a distinct slaty-blue line. After administering an injection hypodermically of morphia and atropia to relieve what seemed to be paroxysms of colic she was put to bed. The rectum was cleared out by an enema and a draught of chloral, bromide and iodide of potassium was administered. On account, however, of a peculiar spasm of the throat I was obliged to resort to small enemata containing potassium iodide, and sulphate of magnesia, with which some bromide and hyoscyamus were combined. The patient soon lapsed into a state of coma, on which convulsions of a violent nature supervened. She seemed to be blind and on examining the optic discs I found that both were quite choked. I tried to draw off some urine with the catheter, but succeeded in obtaining only a small quantity, just sufficient to test. This sample of urine was quite turbid, acid in reaction, contained albumin, and under the microscope leucocytes, a few red blood-cells, free epithelial cells, and a few cellular and hyaline casts. Thinking the convulsions might be uræmic and due to some suppression of urine I gave pilocarpine subcutaneously to bring on diaphoresis. Although the convulsions gradually diminished in regard to duration and intensity, yet in spite of all that could be done the patient gradually became weaker and sank from exhaustion on Wednesday, July 6th, during the night. From the time that coma and convulsions set in the temperature became considerably elevated, especially before death (105·4° F.); the breathing was very rapid, laboured and stertorous. The conjunctivæ were insensitive; the pupils at first contracted but afterwards dilated and she never thoroughly regained consciousness. During the attacks of eclampsia I noticed that the left arm was practically passive; it scarcely moved, but seemed paralysed.

The following is the history of the case prior to the fatal seizure. It appears that she had been taking the diachylon for some weeks, and on the Tuesday previous, June 28th, she had a miscarriage in the water-closet belonging to a neighbour's house. This was the second mishap during the last six months and it occurred probably about the third month of pregnancy. She would not lay up after it, but went about as usual as though nothing had happened. All this time she was looking wretchedly ill, complaining of intense headache, of abdominal pain, anorexia and thirst, of attacks of diarrhœa and vomiting, of numbness and loss of power in the left arm and hand, and of general weakness and prostration. Although neighbours advised and her husband begged of her to call in medical advice she obstinately refused to do so. It seems that, under the impression that there was something more to come away, she went on taking the diachylon after her miscarriage so that the lead had been gradually accumulating in her system until, as is sometimes known to be the case, its effects manifested themselves with remarkable suddenness and violence on the day I was called in to see her.

Necropsy.—According to instructions from the coroner I made a post-mortem examination on July 8th, about thirty hours after death, the results of which are as follow. The brain was quite soft in consistence, the membranes covering the surface (pia-arachnoid) looked opaque and thickened in places, the opacity and thickening being more or less patchy in its distribution. The blood-vessels in the pia mater—veins and capillaries—were much engorged and distended with blood and I came across several arteries which were plugged with thrombus, greyish-white in colour, so that in transverse sections the thrombi appeared as minute greyish points. Sections of a thrombosed artery made with the freezing microtome showed the thrombus to be composed of a fine fibrillated network of fibrin enclosing leucocytes and a few red blood-cells, similar in every respect to croupous exudation. The thrombus was firmly adherent to the vessel wall. The pia mater also presented numerous ecchymoses scattered in its matrix. The membrane was examined in the fresh state as follows. Small bits were stained in lithio-picrocarmine and then allowed to soak in changes of iodised serum. They were then treated with a ½ per cent. solution of perosmic acid and mounted on slides in iodised serum. From other pieces unstained fine sections, both horizontal and vertical, were made with the freezing microtome; these were stained in perosmic acid and mounted in Farrant's solution. Microscopic examination revealed some interesting changes. The walls of the smallest capillary blood-vessels were dotted over with numerous oil droplets and albuminoid granules darkly stained with the osmic acid, while the larger vessels showed adhering to their wall cells in a well-marked condition of granulo-fatty degeneration. These fatty cells corresponded either to the endothelium of the perivascular lymph-sheath or to the endothelium of the vessel wall. The muscle cells of the arterioles and small arteries were likewise fattily degenerated and, as seen in transverse or in longitudinal section, these latter vessels showed distinctly a considerably thickened wall. Another interesting feature was the irregularity in the lumen of some of the blood-vessels, which often ran a tortuous course. Here and there the lumen was quite dilated in a fusiform or globular shape and was distended with blood; in fact, quite aneurysmal in forms. Occasionally the perivascular lymph-sheath was found distended with red blood-cells and the extravasation was even extravascular. These blood extravasations into the fibrous matrix of the membrane were well demonstrated in successful transverse sections through an ecchymosed spot; and here, too, the connective tissue cells, as well as the flattened cells in the interfascicular lymph spaces of the lymph canalicular system, showed evidence of granulo-fatty metamorphosis, while other plasma cells contained granules of blood pigment. As regards the substance of the brain the cortex looked paler than usual, cloudy, and ill-defined, and there were scattered in its substance punctiform extravasations of blood. Microscopic examination showed pigmentary and fatty degeneration of the fusiform and pyramidal nerve cells as well as of the delicate neuroglia. As regards the basal ganglia—the corpus striatum and optic thalamus—there was nothing specially characteristic to note more than a general pallor and cloudiness of the grey matter, which seemed to have lost its lustre, so that the outlines of the nuclei were somewhat blurred and obscured. There was a greater quantity of fluid in the lateral ventricles, which seemed to be rather dilated. Still the changes just enumerated were too profound to be overlooked and they may explain to some extent the gravity of the cerebral symptoms owing to the disturbances in the nutrition of the brain for which these changes were responsible. I was not able to obtain portions of the nerve trunks supplying the left upper extremity for future examination as to evidences of neuritis.

With regard to the lungs, beyond œdema and hypostatic congestion of the bases there was nothing special to note. As to the heart, there was no enlargement, but the organ

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was very soft and flabby and the left ventricular wall was quite lax and the cavity was somewhat dilated. The epicardium looked opaque and thickened in places and the endocardium and intima of the pulmonary artery and aorta showed a considerable degree of post-mortem staining. The muscle of the left ventricular wall was very soft and friable, of a pale reddish-brown colour, with slight yellowish and grey streaking. Under the microscope there was slight brown atrophy and also granular degeneration of the myocardium, while there was a distinct increase in the interstitial fibrous tissue. There were no valvular lesions. The liver was slightly enlarged, congested, and very soft and flaccid. On section the liver substance looked swollen, cloudy and opaque, and mottled with congestion and with shades of a greyish-brown colour. Sections examined under the microscope showed a slight degree of fatty infiltration of the peripheral zone, congestion and dilatation of the intercellular capillary spaces in the central zone of the lobules. The liver cells were swollen, much vacuolated, and likewise coarsely granular and fatty (osmic acid preparations). The stomach was empty, the gastric mucous membrane was coated with a gelatinous mucoid secretion, beneath there was both post-mortem staining and also ante-mortem congestion and ecchymosis; the rugæ were flattened. The mucous membrane of the intestinal canal was much congested in parts; the intestinal contents were a brownish liquid fæces in which mucous shreds and flocculi of mucus were mingled. The condition was that of gastro-enteritis. The spleen was enlarged, soft, and deeply congested. The kidneys were slightly enlarged; both were quite soft and flaccid. The capsules were slightly adherent in places. On section the medullary cones were purplish and deeply hyperæmic, the cortex looked swollen, of a pale brown or fawn colour, but variegated by a striated and punctiform congestion, and here and there showing a greyish yellow tint. Histological examination showed a well-marked parenchymatous nephritis. The tubuli contorti were blocked by swollen and granulo-fatty epithelial cells; in other tubules both in the cortex and medullary rays were found leucocytes and occasionally red blood cells, while others again contained here and there a hyaline or cellular cast. Another noticeable change was a general thickening of branches of the renal artery affecting the intima (endarteritis) as well as the muscularis and adventitia; the arterioles in the boundary layer also looked to be thickened. The fibrous capsule of the kidney was also irregularly thickened; there was thickening of the intertubular stroma. The uterus was enlarged to about the size of a large pear, the mucous membrane was thickened, soft and congested, and adhering to it were one or two coagula. It presented all the evidences of recent abortion, but otherwise the organ was quite healthy and nowhere either in its walls or around them was there the slightest evidence of inflammatory mischief.

Remarks.—My first acquaintance with mania as the result of lead-poisoning was made in Germany some fourteen years ago where I saw in an asylum at Dresden patients who had suffered from the effects of it. I met with other cases subsequently and only a year or two ago in the Potteries; and one of these cases is so similar in regard to symptoms and termination to this case that I will relate it. I was called to a middle-aged woman—an old and valued hand employed at one of the principal porcelain factories—who was said to have suddenly gone mad, after complaining a week or so of feeling unwell. I found her raving in a maniacal manner, struggling violently and held down by three or four women. There was an earthy pallor of the face, a well-marked blue line along the free border of the gums, offensive breath, furred and parched tongue, and as she had been working in lead in the glazing department I concluded that she was suffering from acute mania resulting from lead-poisoning. I obtained the assistance of a magistrate and the relieving officer, certified her, and she was removed straightway to the Stafford County Asylum, where she died, as I was informed, two days afterwards with much the same symptoms as the preceding patient.

In regard to the connexion of lead-poisoning with abortion I have heard of cases of miscarriage in women in the Potteries who became the victims of lead-poisoning. Some years ago the town of Sheffield was visited by an outbreak of lead-poisoning traced to the contamination of the water-supply, and I remember at the time it was noted that pregnant women who became affected either aborted or had a premature labour. I have reason to suspect that in this district the practice of taking diachylon in the form of pills to bring on miscarriage is far more prevalent among the working-class than is generally supposed. About eighteen months ago a patient came to me looking wretchedly ill, who admitted having taken diachylon for the purpose. After warning her of the serious consequences which might follow I prescribed for her, told her to go home and rest and call in medical aid if she became worse. From that day I saw no more of her. She miscarried, however, and afterwards became seriously ill and she was laid up for weeks with all the symptoms pointing to the poisonous action of lead—viz., gastro-enteritis and colic, maniacal delirium and slight epileptiform convulsions, intense headache with impairment of vision, and such prostration and weakness of the limbs, especially of the arms, that she feared she was going to lose the use of them. She was compelled to call in a medical man but refused to let them fetch me because I knew what she had been taking and "went on so to her about it." The medical man she did call in she tried to delude by ascribing her illness to a chill caught after miscarriage. And I have since been told of other cases where the victims of such folly have been ill for weeks after and have all but made a wreck of their lives. I have no doubt that not a few have been persuaded to take diachylon who would never have done so had they had any idea of its pernicious effects. I have heard of a case where a woman brought on not only miscarriage but following it also partial paralysis of an arm and hand, and this woman, after reading the account of the inquest, wisely exclaimed, "Never again." A friend of mine tells me of a case he saw in the out-patient room of one of the hospitals—a young woman with paralysis in one arm corresponding to the distribution of the ulnar nerve. She admitted having gone through a miscarriage a week or so previously. This is a case in which one may strongly suspect diachylon to have been the agent in effecting the miscarriage. In the light, then, of the present case I am sure the nature of some of the obscure nervous disorders, with the attendant anæmia, &c., in women who have admitted miscarriage—cases which now and then come under observation in the out-patient room—will be readily cleared up. During my tenure some years ago of the appointment of physician for out-patients to the Queen's Hospital in Birmingham I can call to mind such cases coming under my observation, the etiology of which was never satisfactorily explained simply by the fact of miscarriage. What may be the practical outcome of this case I must leave to the consideration of my readers. Diachylon is in almost every poor man's house; it is bought in the mass for the sake of cheapness and ostensibly for outward use only, though we know now to what terrible misuse its inward application has been put by some of the female community. It is, of course, generally used for cuts, sores, and spread on linen as plasters for drawing away the milk from the breasts after parturition. I regret that time and leisure have not given me the opportunity of looking up recent literature on the subject of lead-poisoning, but such as it stands and such as it came under my observation I have sent an account of this case in the hope that from a utilitarian point of view it may be considered worthy of being placed on record in THE LANCET.

Birmingham.

THE MEASUREMENT OF SUNSHINE AT OUR HEALTH RESORTS.

BY W. BLACK JONES, M.D., B.S. LOND.,
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DURING the last few years a good deal has been written in the pages of THE LANCET in favour of those health resorts which enjoy a good daily record of sunshine. We have heard much of the value of open-air treatment in many morbid conditions which combines the advantages of a pure air with a maximum of sunlight. "Insolation" is a comparatively new word, meaning the exposure of any given thing to the influences of the light of the sun. The sun both breeds life and kills it. Its influence on the great natural processes concerned in plant life has long been established and that it possesses an influence for good on animal life is also known, but in this case the *rationale* of

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the process is not so well defined. In plant life, at any rate, the subtle changes which are brought about are due probably exclusively to the actinic rays of the sun and not to the purely luminous rays. The actinic rays are the chemical rays of sunlight which bleach and exert a reducing action, as in its effects upon the sensitised silver plate. Is the action similar on the hæmoglobin which by alternate and complete reduction and oxidation favourably influences the condition of the blood? Sunlight has a well-known inhibitory effect upon the life of pathogenic organisms, and Koch has shown that direct sunlight kills the tubercle bacilli in a few hours and not infrequently in a few minutes. This action is not fully understood, but here again it is probably due to the actinic value of sunlight in effecting some marked chemical change. Those familiar with the ordinary processes of photography know full well how great are the differences between the effects upon a sensitised film of diffused light and direct sunlight. In other words, moisture as represented in the clouds cuts off much of the actinic power of unobstructed sunlight. It is the same in the effect upon organisms, for whereas, as just stated, direct sunlight kills tubercle bacilli in a few hours or minutes, yet they will live for five or seven days under the influence of diffused daylight or daylight filtered of its active chemical properties by the interposition of clouds. Everybody knows the exhilarating effect of a burst of sunshine in the spring after a dull period in the winter. This effect is probably due not to mere luminosity but to an increased actinic action, a chemical action the precise nature of which we cannot explain but which all the same is very generally felt in the form of invigoration and in taking "a brighter view of things." Indeed, the phrase "a brighter view of things" did we but know refers probably not to luminosity but to an increased activity engendered by the hidden and unquestionable benefits of pure unsophisticated sunshine.

The sunshine recorded at a given health resort, statistics of which of different places have appeared from time to time in the pages of THE LANCET, has hitherto related almost exclusively to its duration. The intensity of the heat may even be recorded, but the intensity of the light, especially in regard to its actinic value or chemical effects, has been hitherto ignored. To me this appears an important omission if we take as our postulate that it is the actinic rays of the sun, and not the luminous rays, which are responsible for biological action. It is certainly so in plant life and we may assume therefore that it is so in animal life. The duration of sunlight is admirably recorded by the Jordan's Recorder, but not for any practical purpose its intensity. Another sort of record may also be obtained by means of the burning effects of the sun, but this again is not an index of its chemical intensity.

At the meeting of the British Association held in Nottingham in 1893 Dr. S. Rideal communicated a very interesting paper on the Iodine Value of Sunlight in the High Alps. This seems to me to be a method depending essentially upon the actinic value of sunlight since a chemical change is produced and the amount of resulting products of the reaction may be easily estimated. The process depends upon the fact that sunlight liberates iodine from an acidulated solution of potassium iodide. The method is briefly as follows. A solution of potassium iodide is made up containing 20 grammes of the salt per litre. Likewise a solution of diluted sulphuric acid is prepared containing 11·9 grammes per litre of the pure acid. Lastly, 0·39 gramme of pure powdered arsenious acid is dissolved in a little water containing 1·5 gramme of potassium bicarbonate and then made up to a litre. In the following experiments 10 c.c. of the potassium iodide solution, together with 10 c.c. of the dilute sulphuric acid, were placed in a stoppered bottle of 50 c.c. capacity and placed upon a white porcelain plate and exposed to the action of the light. At the end of an hour the bottle is removed and bicarbonate of soda added in sufficient quantity to neutralise the free acid present. The bottle is next placed under a burette containing the arsenic solution. The latter is then run in until the colour of the iodine is completely discharged. I have employed this process (which is a slight modification of the method carried out by Dr. Rideal in the Engadine) at Llangammarch Wells, Central Wales, at different periods of the year and in some instances experiments were also conducted in London at the same time.

The following tables (I., II., and III.) are a synopsis of the results obtained at Llangammarch Wells of exposure of an acidified solution of potassium iodide to sunlight. The results are given in milligrammes of iodine liberated per 100 c.c. of solution used, each exposure beginning at about the hour named below and lasting for one hour. The Roman numerals indicate the hours. In practice 20 c.c. of the equally mixed solutions were used and by multiplying by 5 the results are recorded per 100 c.c.

TABLE I.—*Results of all Observations—i.e., Bright Sun, Medium and Cloudy.*

Hour	IX.	X.	XI.	XII.	I.	II.	III.	IV.
Number of observations	10	9	7	4	8	7	4	4
Mean number of milligrammes of iodine liberated	13·0	12·0	13·9	15·0	10·3	14·0	13·3	10·0

TABLE II.—*Results of Observations when the Sun was Shining Brightly for One Hour.*

Hour	IX.	X.	XI.	XII.	I.	II.	III.	IV.
Number of observations	4	1	3	1	2	2	3	1
Mean number of milligrammes of iodine liberated	15·0	14·0	14·75	15·0	17·7	17·7	13·5	11·0

TABLE III.—*Result of Observations when the Sun was Completely Clouded for One Hour.*

Hour	IX.	X.	XI.	XII.	I.	II.	III.	IV.
Number of observations	1	2	0	0	2	2	0	1
Mean number of milligrammes of iodine liberated	4·0	10·7	—	—	8·12	9·25	—	3·0

These observations were made during the period between May 25th and June 15th, 1897, and were undertaken with the view of ascertaining the variations in one place due to uninterrupted sunlight, cloudy intervals, and an entirely dull day. Two important deductions follow from these interesting records. On a day when the sun was shining brightly and continuously the maximum chemical or actinic effect occurred between one and two o'clock. In the case when the sun was completely clouded the results at the same time of the day showed about one-half of this chemical activity. The information gained in these experiments led me next to try the differences between the sunlight at Llangammarch Wells and at London on the same days. The results were as follows:—

TABLE IV.—*The Sunlight of London compared with that of Llangammarch (Summer).*

Date.	Hour.	Milligrammes of iodine liberated per 100 c.c.		Weather observations.	
		London.	Llangammarch.	London.	Llangammarch.
Sept. 10th, 1897.	IX.	—	12·25	—	Bright, sunny.
	X.	—	11·50	—	Bright, with cloudy intervals.
	XI.	3·0	14·50	Alternate sun and cloud.	Alternate sun and cloud.
	XII.	5·5	14·75	Ditto.	Bright, sunny.
	I.	7·0	13·5	Sunny, with cloud.	Alternate sun and cloud.
	II.	5·0	11·25	Ditto.	Bright, with cloudy intervals.
	III.	4·0	8·05	All sun.	Occasionally bright sun; otherwise cloudy.

It will appear, therefore, that the conditions being the same the sunlight in London has nothing like the actinic power of the sunlight at Llangammarch Wells, and probably at other places situated under a similarly pure environment.

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The transparency of the air is, of course, the most important factor to be taken into account. In London the air is seldom transparent in the same sense that the air in the country or in Wales is transparent. Llangammarch in particular is situated in a charming part of the country and is sheltered from adverse winds amongst mountain scenery and is very remote from manufacturing centres. On the other hand, London is hemmed in by factories and other places which load the air with dust or smoke, which have a great effect in absorbing the actinic power of the sun's rays. It happened in London within a fortnight of these experiments to be foggy. The first fog, indeed, of the autumn of 1897 occurred on Sept. 27th. The fog was low-lying and the sun could be seen shining through the gloom. A bottle containing 20 c.c. of acidified potassium iodide was exposed from 11 A.M. to 5 P.M., that is, just six hours, with the result that the iodine liberated per 100 c.c. was only 0·5 milligramme or 0·08 milligramme per hour. This is a striking instance of the remarkable effect which fog has of absorbing practically all the actinic rays although light rays still penetrate.

The next experiments were conducted in the winter and fortunately again I was able to carry out similar experiments in Llangammarch and at the same time in London. The results over four days were as follows :—

TABLE V.—*The Sunlight of London Compared with that of Llangammarch (Winter).*

Date.	Hour beginning.	Milligrammes of iodine liberated per 100 c.c.		Weather observations.	
		London.	Llangammarch.	London.	Llangammarch.
Feb. 14th, 1898.	XI.	3·5	8·5	Sunshine, hazy.	Bright sun at intervals.
	XII.	5·0	7·5	Sunshine, bright.	—
	I.	5·0	9·0	,,	—
	II.	2·5	8·0	,,	—
Feb. 15th, 1898.	XI.	1·0	4·0	Dull; cloudy all day.	Fine rain all day.
	XII.	2·5	3·0	—	—
	I.	1·0	2·5	—	—
	II.	1·0	2·0	—	—
Feb. 16th, 1898.	XI.	5·0	2·5	Bright sun.	Cloudy all day.
	XII.	4·5	3·0	,,	—
	I.	6·0	2·0	,,	—
	II.	4·0	2·0	,,	—
Feb. 17th, 1898.	IX.	—	5·0	Dull; cloudy and dark.	Sun at first, then rain.
	X.	0·5	4·75	—	—
	XI.	0·5	2·0	—	—

Here also will be remembered the great superiority of the sunlight at Llangammarch in winter time when the conditions were meteorologically the same. Thus the maximum amount of iodine liberated in one experiment at Llangammarch was 9 milligrammes, whilst the maximum in London under the same conditions was 6 milligrammes. In both cases it will be observed that the maximum occurred at the same time between the hours of 1 and 2 o'clock. When it was cloudy all day at Llangammarch the activity of the light was always more than twice that in London under the same conditions.

I have already referred to Dr. Rideal's experiments on the iodine value of sunlight in the high Alps. His results were contained in the British Association Reports, 1893, at Nottingham, and 1894 at Oxford. He found at St. Moritz that the average amount of iodine liberated was 9·34 milligrammes per 100 c.c. per hour. The maximum hour value was 13·5 milligrammes on Jan. 1st, 1893, and the lowest was 5·7 milligrammes on the 24th of the same month. In the Grindelwald the average was 8 milligrammes per hour. In 1893, from Dec. 6th to Feb. 28th, 1894, the maximum at St. Moritz was 14·52 milligrammes per hour, the lowest value on Dec. 9th was 3·53 milligrammes, and the average value for the period was 7·05 milligrammes.

I venture to think that these results are very instructive and interesting since they show that at any rate at Llangammarch, and doubtless at other home health resorts, the power and activity of the sun even in the winter is in no sense inferior to that which falls upon the health resort of very high altitudes like the Grindelwald at St. Moritz. After all, the effect of sunlight must be largely determined by the purity of the air and a measure of the actinic value of sunlight must therefore be to some extent a measure of atmospheric purity. The mountainous districts at home, though not of the scale abroad, are notorious for the crystal transparency and clearness of the air, and the experiments I have made at Llangammarch Wells have given results which are by no means disappointing, but which, on the contrary, show that as regards open-air treatment and exposure to a sunny air we may count upon certain of our health resorts at home as providing conditions of an equal value with those in certain places abroad. Some pertinent remarks of Professor von Ziemssen are quoted by Dr. Arthur Ransome in an article in THE LANCET of June 11th, 1898, especially in regard to the treatment of patients at high altitudes. Professor von Ziemssen concludes that the only advantages in favour of mountain climates are "the pure dry air, the slight wind in winter." He then points out the disadvantages of treatment at high altitudes. Marked atmospheric changes occur not infrequently (wind, rain, and snow) and are injurious to the patient. They make the acclimatisation of many patients difficult, and patients with high temperatures (especially those who do not reside in the sanatoria) may become decidedly worse. Other objections are the wearisome journey, with all its bad effects, the separation from the family, the comfortless conditions in severe illness and in case of death; further, the financial anxiety and the economy necessitated. All these have a bad effect upon the patient. When the advantages and disadvantages are compared the former are not so clear as to indicate the unconditional recommendation of treatment at high altitude. The long journey from England is frequently undertaken with great distress to the patient.

It seems to me that the medical profession in England have been somewhat behind their continental brethren in bringing forward the probable advantages of our own health resorts. The experiments I have here recorded appear to me to encourage the belief that, after all, we possess health resorts at home which show equal advantages in regard to purity of air and sunlight, and both these are admittedly important factors in the treatment of disease. I hope the publication of this paper will induce others to adopt this method and report the results at other places. Certainly the results obtained at this health resort (Llangammarch Wells), which, according to the indications of the method employed enjoys the purest of air and the maximum life-giving properties of the sun, are calculated to justify such a step.

Llangammarch Wells.

THE PREVENTION OF TUBERCULOSIS.

BY F. RUFENACHT WALTERS, M.D., M.R.C.P. LOND.,
PHYSICIAN TO THE NORTH LONDON CONSUMPTION HOSPITAL.

THE new society so auspiciously started in embryo on June 22nd at the meeting at Sir William Broadbent's residence will have many matters to attend to. I may perhaps be permitted here to refer to a few of them.

The spread of tuberculosis depends mainly on two factors: on constitutional deterioration largely due to lack of fresh air and on infection. It can therefore only be successfully combated by educating the public in hygienic methods. Houses are on the whole better drained than formerly, but it is by no means certain that they are better ventilated. Many shops are being reconstructed with absolute disregard for ventilation. Scarcely an office in London keeps its windows sufficiently open, even in summer, and no doubt largely because of the imperfect enforcement of the Smoke Acts. But for this, out-door restaurants might flourish in London as they do in Paris, Stockholm and Copenhagen. Even medical men often fail to appreciate the dangers of vitiated air and are deeply impressed with the risks of open windows in early phthisis. It is quite hopeless to prevent the spread of tuberculosis without at the same time improving our organisation for its treatment. Phthisis is curable by combined medical and hygienic

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treatment provided this be applied early and persisted in. Hygienic treatment is almost impossible so long as the conditions of home life are unaltered; and yet the poorer phthisical patients are treated for many months as out-patients before being admitted for a short time to a special hospital, after which it is a matter of pure chance what becomes of them. No doubt this arises partly from insufficient beds, but proper training in open-air methods is impossible in most of our chest hospitals owing to their position, so that instead of largely increasing the hospital accommodation in towns it would be more sensible to organise a series of sanatoria in the country under medical supervision. Such sanatoria have a most important educational value; for with a resident medical man there is a good chance of directing the daily life of the patients into proper hygienic channels. The convalescent homes as at present managed cannot take the place of such sanatoria, although some of them might well be converted to such a purpose. A patient of mine who is now phthisical had severe pleurisy following influenza eighteen months ago, which was apparently the beginning of his illness. After this attack he went to a convalescent home and lodged in the same room with a freely expectorating phthisical patient. No special precautions were taken concerning the sputa, which were cleared away by the visitors themselves. Comment is needless.

It is still the custom in hospitals for disease of the chest to lodge the subjects of heart disease, chronic bronchitis, and early and late phthisis in the same ward. With proper care there is little danger of infection; but such mixture of cases renders the hygienic treatment of early phthisis impossible. Hospitals for phthisical patients should receive them only until they can be transferred to country sanatoria, where all early cases should be received under medical control. When convalescent these should be passed into country colonies, suitably arranged for an open-air life and still more or less under medical supervision. Advanced cases should go to special homes or refuges. By such an organisation there would be a good chance of recovery for early cases and the public would be protected. If at least two years are needed in Colorado or the Alps a few months cannot be sufficient in England.

In France there is an admirable organisation for the treatment of phthisical children, who are sent from a well-arranged dispensary in Paris to one of two country sanatoria, and go thence when convalescent to one of several agricultural colonies to learn a trade which keeps them healthy. In Germany there are over 20 country sanatoria for poor phthisical patients, mostly supported by the sickness and old age insurance companies, who find it cheaper to restore their insurers in an early stage than to give sick pay when they are no longer able to work. As I have already described the treatment in these sanatoria[1] I need only repeat that they constitute a most important means of preventing the spread of tuberculosis.

Welbeck-street, W.

TWO INTERESTING CASES OF OVARIOTOMY.[2]

BY H. MACNAUGHTON-JONES, M.D., F.R.C.S. IREL. & EDIN.

CASE 1. *Large malignant ovarian tumour and smaller anomalous ovarian tumour removed from a patient supposed to be pregnant; recovery.*—The patient was a woman, forty-two years of age, who had had five children. Her last labour occurred in September, 1894, and her last catamenial period was in April, 1897. She had been a widow since November, 1897. The last marital act took place in September, 1897. I learned that pregnancy was suspected and that an anomalous gestation was surmised. There had been occasional attacks of diarrhœa and some sickness for the past six months. I saw the patient on May 28th, 1898. I found her greatly emaciated and very weak. The abdomen presented the shape and character generally seen with ovarian cystoma. On examination I found the skin tightly stretched over a large solid mass of stony hardness; this was moveable and appeared to be lobulated, while a sulcus to the left side seemed to divide it from a second mass occupying the left inguinal region. I could disassociate the uterus from the tumour or tumours; the cervix was very hard and there was an associated movement of the uterus. I arrived at the conclusion that there were no products of conception and that the mass was ovarian, and Mr. Bland Sutton, who saw the tumour before operation and was present when I removed it, considered that it was malignant—a view which I shared with him. The tumour gave the idea of a hard multiple fibroma. I operated on May 31st. On opening the abdomen by an incision which had to extend from a short distance below the ensiform cartilage to the pubes a quantity of ascitic fluid escaped. The large mass was easily delivered and the thin pedicle secured. The second (left) tumour was then removed and the pedicle dealt with. The only complication (which was a serious one for some time) was a return of diarrhœa which was most difficult to control and made the administration of nourishment also difficult. However, the patient left the home one month after the operation greatly improved in health and is now at the seaside. How emaciated she was before operation may be judged from the fact that she weighed 6 st. 5 lb. before leaving.

Mr. J. H. Targett reports the specimen as "a large solid tumour of the ovary with a portion of the adjacent broad ligament. The tumour measures 9 in. by 6 in. by 5 in. and its outline is lobulated and coarsely nodular. The surface of the tumour is smooth and free from adhesions. On section it is white, mottled with yellow and grey areas, and near its outer pole there is a cavity of the size of a hen's egg due to degeneration of the growth. The tissue surrounding this cavity is blood-stained and evidently necrotic. Some small thin-walled cysts containing clear fluid project from the surface of the tumour. The pedicle measures 3 in. in breadth and the Fallopian tube and mesosalpinx are œdematous, but otherwise normal. Histologically the growth is a scirrhous carcinoma."

Mr. J. H. Targett reports: "The small tumour is solid, pyriform in shape, and measures 4 in. by 2½ in. It has a somewhat nodulated exterior. The cut surface shows a rounded gelatinous area in the broader end of the tumour. This area measures 2½ in. in diameter and is fairly well defined. The rest of the tumour is fibrous and traversed by large thin-walled vessels. The gelatinous area is not quite homogeneous in appearance, the peripheral zone being more gelatinous than the rest. The Fallopian tube and mesosalpinx are normal. Histologically the tumour very closely resembles the specimen recently exhibited at the Obstetrical Society of London and referred to a special committee."

[The tumour referred to by Mr. Targett as bearing a resemblance histologically to the smaller tumour removed from Case 1 is one a section of which was reported on by a special committee to the Obstetrical Society of London as an adeno-fibroma, and was removed by me with a large fibroma of the uterus.]

CASE 2. *Semi-solid ovarian tumour with ascites; ovariotomy after general peritonitis which was followed by universal adhesions; recovery.*—The patient, who was forty-six years of age, had had four children. Her last pregnancy occurred in 1894 and her last catamenial period was in 1895. With regard to her history I saw this case with Dr. Disney on May 13th, and he gave me these facts: "I was called to see the patient for the first time on April 21st. She was complaining of slight pains in the abdomen, and having for the past five months increased greatly in size believed that she was in labour. I found a tumour inclined towards the left side; there was no fluid then and the temperature was 99° F. During the day the pain increased and at 11 P.M. I found a considerable amount of swelling; the temperature was 102°. The next day there was evident general peritonitis and the temperature was 104°. On the 23rd she nearly collapsed. This critical state lasted about four days, the temperature ranging between 103° and 105°. There was absolute constipation between April 20th and May 1st despite many remedies. Then the bowels acted naturally. From April 27th there was gradual improvement and by May 1st the temperature was 101° and did not become normal till May 11th. There was a great amount of swelling, and pain on pressure all the time. She was out of bed for the first time on May 14th and was removed for operation on May 19th." I agreed with Dr. Disney that immediate operation was the

[1] THE LANCET, Aug. 14th and Nov. 20th, 1897; Practitioner, June, 1898.

[2] A paper read before the British Gynæcological Society on July 14th, 1898

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only means of saving her life. The patient was then suffering from occasional attacks of pain and was kept under the influence of morphia. She was in an extremely enfeebled condition, so much so that the question of removal had to be anxiously considered. On the 21st I operated. The patient was so feeble that she could not stand; she was greatly reduced and, further, a very rapid and feeble pulse made me anxious about the anæsthetic. This, however, as in the last case, was most admirably administered by Dr. R. T. Bakewell, to whom and to Mr. Sutton, who assisted me in the operation, I feel specially indebted. On opening the abdomen the parietal peritoneum was found completely adherent to the large cyst wall; this was so to its entire extent. The pedicle was completely twisted. This I carefully detached all round before using the trocar and when the cyst had collapsed the bowel was found in various places adherent in festoons to the posterior surface of its wall; in fact, considerable loops of intestine were attached and had to be carefully peeled off, the vessels, where necessary, being ligatured. When all bleeding was arrested I inserted a drainage-tube. This I removed on the fourth day and the patient went to the seaside on June 15th. The recent attack of severe general peritonitis, the universal adhesions, the very enfeebled state of the patient at the time of the operation, and the importance of rapid operation before these adhesions had become stronger are the principal points of interest. Had the operation been delayed its performance, in my opinion, would have been impossible.

The specimen Mr. Targett reports as "a multilocular ovarian cyst, consisting chiefly of one large loculus with imperfect septa. The whole specimen is of about the size of an adult head. The pedicle appears to have been twisted and the surface of the specimen was universally adherent. The mesosalpinx was completely adherent to the cyst wall; the Fallopian tube was normal. There is no evidence of malignant disease."

Harley-street, W.

A CASE OF DEATH UNDER CHLOROFORM, WITH REMARKS.

BY ALEXANDER WILSON, F.R.C.S. ENG.,
SENIOR ADMINISTRATOR OF ANÆSTHETICS, ROYAL INFIRMARY, MANCHESTER, ETC.

THE following unfortunate fatality belongs to that class of chloroform accidents in which the respirations continue after cessation of the pulse. As I have previously endeavoured to show,[1] the symptoms in these cases indicate that the primary lesion is a paralysis of the circulation, and the respiratory centre is affected as a secondary consequence and succumbs from simple anæmia. The first warning of danger is a change in the circulation, manifested by pallor and a feeble pulse. There is no gradual paralysis of the respiration but, on the contrary, a misleading increase in the frequency and depth of the respirations, followed by incoördinate respiratory efforts which gradually cease. The important and notable point is that effective respiration persists at a time when no pulse can be felt, and respiratory movements may be present when the circulation is damaged beyond recovery.

The patient, a boy, aged fifteen years, was being anæsthetised with chloroform preparatory to the removal of a necrosed metatarsal bone. I was not present at the commencement of the administration, being occupied in the adjoining operating theatre, but I saw the patient the moment dangerous symptoms supervened. Chloroform freely diluted with air was administered from a small square of folded lint. During the stage of excitement there was some struggling with holding of the breath, during which the lint was withdrawn from the face. Suddenly the patient began to breathe deeply and he became pale; the pupils were widely dilated and no pulse could be felt. The head was immediately lowered, the tongue was drawn out, and vigorous artificial respiration was begun. Called in from the next room, I found the boy lying on his back with the head and chest hanging over the side of the couch; the tongue was being held out with forceps and artificial respiration by compression of the chest was being employed. The cheeks and lips were of a good red colour, which returned slowly after pressure, but much more slowly than would have been the case had the rich colour been due to a vigorous circulation. The most dependent part of the forehead and the tips of the ears were just beginning to show a faint dusky hue. The pupils were of medium size, if anything a little contracted; there was no corneal reflex in either eye and the eyeballs in tension were about normal. There was no trace of pulse in either the facial, temporal, or carotid arteries. The patient was taking deep gasping respirations at intervals of from four to five seconds, and air was freely entering the chest. This fact was made quite clear on suspending the artificial respiration. Vigorous compression of the chest was continued, the body was alternately laid flat and semi-inverted, hot sponges were applied to the cardiac region, the limbs were rapidly and tightly bandaged, a tight bandage with a pad was placed round the abdomen, and a copious warm enema of brandy-and-water was given, &c. The respirations from being full and free soon came at longer intervals and were more of a gasping nature, degenerating rapidly into mere incoördinate respiratory efforts and ultimately ceasing. The rosy colour of the cheeks, present in the semi-inverted position, almost entirely disappeared when the head was raised, to return again on the resumption of the dependent position, but each time to a less degree as the blood became more and more venous, until the aspect at length became corpse-like. The pupils were widely dilated and it was evident that the lad was quite dead. The post-mortem examination threw no light upon the causes which led to the fatal result.

This case illustrates the futility of trusting to any one isolated sign in estimating the effect of an anæsthetic. Thus any observer, judging solely from the general appearance of the patient, the evident vitality of the respiratory centre, the good colour of the cheeks, and the undilated pupils, would have concluded that there was no danger. Yet when viewed in conjunction with the absence of the pulse these very symptoms, in themselves favourable, become symptoms not only of the gravest import but actually signs of dissolution. The exaggerated respirations, accompanied with pallor and an imperceptible pulse, indicated a failure of the circulation so serious as to induce anæmia of the respiratory centre—a condition which only occurs in fatal hæmorrhage or fatal failure of the circulation from other causes. The red, apparently healthy hue of the cheeks, under ordinary circumstances an indication of vigorous circulation, in this case succeeding to the previous pallor on inversion of the patient and being present in a pulseless subject showed merely how absolute was the paralysis of the circulation. It proved that the blood-vessels had in effect become inert tubes, in which the blood, no longer propelled by the heart or restrained by the arterial tone, was under no influence save that of gravity, and free to flow to any part according to the position of the body.

In this case, as in others of the same type, there was no sign whatever of respiratory paralysis in the ordinary acceptation of the term. The respirations and respiratory movements persisted long after cessation of the pulse, until the respiratory centre succumbed from exhaustion, as it does in death from hæmorrhage or in any sudden failure of the circulation. Judging from the invariable effect of chloroform on the blood-pressure, the primary lesion was no doubt a paralysis of the vasomotor centre. The practical point is that in these cases the first warning of danger is exhibited by a change in the circulation, shown by pallor or lividity of the face and alterations in the pulse. If there have been no struggling and holding of the breath and the blood is well aerated the failure of the circulation will leave the face deadly pale. Should there have been struggling, &c., and defective aeration of the blood the face will become livid. The pulse, could it be carefully observed throughout, would at an early stage show some sign of the fall in blood-pressure. It first becomes soft and compressible and quick—"a running pulse"; then it suddenly collapses, the beats coming slower and irregularly trickling under the fingers like a very slow aortic pulse. I have repeatedly noticed this latter condition and by treating it have been able to ward off more serious danger. The respirations, as already pointed out, undergo marked modification in becoming suddenly accelerated, but only at a comparatively late stage when the mischief is often beyond repair. It cannot be too much insisted upon that as the

[1] The Mechanism of Death under Chloroform, THE LANCET, Nov. 17th, 1894, and Sept. 11th, 1897.

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primary lesion is in the circulation to the circulation must we look for the first signs of danger and to the improvement of the circulation must treatment be directed. If the case is left until the stage of deep respiration is reached recovery is almost hopeless.

As regards treatment the indications are obvious, but the application of remedies is difficult. We are dependent upon the circulation for the conveyance of remedies to the various organs, and in these cases, as a rule, by the time the danger is noticed there is practically no circulation. Hence all remedies requiring conveying by the blood, such as hypodermic injections, rectal injections, &c., have very little chance of reaching the organs which they are expected to influence. The indications for treatment are to raise the blood-pressure and to stimulate the heart and supply it with blood upon which to contract, while at the same time the flow of blood to the nerve centres should be facilitated. This is best done by mechanical means, which in extreme cases are the only ones possible of efficient application. Thus artificial respiration by vigorous compression of the chest both raises the blood-pressure and stimulates the heart and is the only really useful remedy. Bandaging the limbs and compressing the abdomen help by limiting the area of the circulation. Transfusion if performed quickly might also be of some use. Dr. Leonard Hill has pointed out the influence of the position of the body on the heart, which treatment being easy of adoption is well worthy of trial.

As regards drugs, Professor Schäfer, Dr. H. L. Barnard, and Mr. F. Hobday[2] have recently drawn attention to the stimulating effect on the circulation of nicotine, extract of suprarenal capsules, hydrocyanic acid, and ammonia. All these possess the disadvantage that to be useful a fair degree of circulation must exist. Probably, from the mode and facility of administration, the most efficient will prove to be ammonia given by inhalations, as suggested by Dr. Barnard, and exhibited at an early stage before the respiration is altered or the circulation is completely paralysed. In my own experience I have found on several occasions in which the circulation showed the signs of failure previously mentioned that compression of the chest was enough to tide the patient over the danger.

Manchester.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib iv. Proœmium.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

A CASE OF INTUSSUSCEPTION OF THE CÆCUM; REDUCTION AFTER LAPAROTOMY; RECOVERY.

(Under the care of Dr. F. G. PENROSE and Mr. T. H. KELLOCK.)

THE following very interesting case shows that under certain circumstances an intussusception may exist for three weeks and yet so few adhesions may have formed that the intussuscepted bowel may be withdrawn with comparative ease. The chief circumstance which renders such a thing possible is the fact that the large bowel is the portion of intestine mainly concerned as in this case. The interference with the circulation of the invaginated bowel was but slight and this was shown by the absence of blood from the stools and by the non-formation of peritoneal adhesions. The case is another confirmation of the advisability of performing laparotomy as soon as a patient comes under observation, for it cannot be doubted that in a short time the obstruction to the circulation of the intestine would have increased and it would have been impossible to release the bowel. Dr. Penrose and Mr. Kellock are to be congratulated on the successful termination of the case. For the notes of this case we are indebted to Dr. G. F. Still, medical registrar to the hospital.

A male child, aged sixteen months, was admitted to the Hospital for Sick Children, Great Ormond-street, on Feb. 9th, 1898, on account of pain in the abdomen. He was the youngest of three children; one of the others had died from enlarged head and spleen and the third was alive and well. There was a history of phthisis on both sides of the family. The patient was a full-term child, apparently quite healthy at birth; he was brought up on the breast alone until he was eleven months old, when he was given cow's milk, puddings, bread, &c. The bowels had always been regular, but the motions were sometimes slimy and offensive. He had had no serious illnesses but he had not appeared to thrive since the time when he was taken from the breast. In August, 1897, he was unconscious for a few minutes after a fall and in September he had discharge from both ears for three or four days. Three weeks before his admission to the hospital the mother noticed that the child had pain in the abdomen which came on suddenly, causing him to roll about and double himself up; this lasted for some hours, and since then these attacks of pain had occurred at least once a day and had been accompanied on three occasions by vomiting. The attack for which he was admitted had been more severe and had lasted longer than any of the previous ones, and during it he had vomited green fluid six times. There had been no blood noticed in the stools or any straining. On admission to the hospital the child was well nourished; he was strikingly apathetic and listless, even rectal examination failing to make him cry. The expression of the face was not at all suggestive of any serious abdominal condition; he lay quietly with the legs flexed on the abdomen, which was not distended or tender and moved well with respiration. In the left iliac fossa a sausage-shaped tumour was felt lying in the direction of the descending colon and reaching to just below the anterior superior spine of the ilium; the tumour was very hard and somewhat irregular in outline, the hardness varying during examination. A less defined tumour of the same shape could be traced as a continuation of this upwards to the left hypochondrium, across the epigastrium about two fingers' breadth above the umbilicus and curving downwards to the middle of the right lumbar region, where it was lost; the right iliac fossa appeared to be more empty than normal. The rectum was found to be partially filled with semi-solid fæcal matter; no tumour could be felt there, but a little blood came away on the examining finger. The heart and lungs were normal. The temperature was 99·8° F. and the pulse was 144. The child was noticed to assume the genu-pectoral position, to which he immediately returned if disturbed. On the evening of the day of admission, chloroform having been administered, the abdomen was opened by a 4-in. incision commencing 1 in. above the umbilicus. There was a little fluid in the peritoneal cavity but no peritonitis. The small intestines being kept from protruding by a flat sponge two fingers were introduced and the tumour was easily found lying on the left side. It was extremely hard and was evidently an intussusception which reached the descending colon. The greater part of it was easily reduced by the two fingers assisted by manipulation from the outside and without bringing the tumour out of the abdomen. It was found, however, that the last three inches or so could not be reduced in this way, so this part was brought out of the wound and reduction was effected with some difficulty, the walls of the gut being very thick and hard. The intussusception was found to be one of the cæcum into itself; the last part to be reduced was that which had formed the apex. The vermiform appendix had practically no mesentery; it was slightly swollen, as also were some lymphatic glands near its base. When once reduction was complete there was no tendency for the invagination to return. The bowel having been returned the abdominal wound was completely closed. The child bore the operation well and slept fairly after a small dose of morphia had been given hypodermically. The temperature on the following morning was 103·8°, but it fell steadily and was normal on the third day. Thirty-six hours after the operation the urine was found to be strongly ammoniacal and of a dark green colour; this condition, however, disappeared during the day and with this exception recovery was uninterrupted. For some days the œdematous cæcum could be felt as a hard tumour in the right iliac fossa, but it gradually became smaller and softer. The wound healed by first intention; the

[2] THE LANCET, Jan. 1st, 1898.

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stitches were removed on Feb. 24th and the patient left the hospital convalescent on March 2nd. The child has been seen once or twice since his discharge and continues to be in perfect health.

Remarks by Dr. PENROSE.—It appeared from the examination that there could be but little doubt as to the nature of the tumour. As the history was perfectly definite that the infant had been ill for three weeks I thought it advisable to call in the aid of one of my surgical colleagues immediately. The apex of the cæcum as the starting point apparently of the invagination is certainly unusual.

Remarks by Mr. KELLOCK.—The points worthy of remark in the above case seem to be as follow: 1. The nature of the intussusception, which was of a somewhat rare variety. 2. The ease with which after three weeks' duration the greater part of the intussusception could be reduced and that too without bringing the bulk of the tumour outside the abdomen. This fact, together with the possibility in this case of preventing the protrusion of any small intestine, must have minimised the shock which is a necessary accompaniment of an operation of this kind on a young child. 3. The occurrence of carboluria thirty-six hours after the operation. No carbolic acid having been introduced into the abdomen the only possible source of the condition was the dressing applied to the wound, for which double cyanide gauze wrung out of a 1 in 40 carbolic acid solution was used; it was, however, very transitory and appeared to do the patient no harm.

BULAWAYO HOSPITAL.

A CASE OF ABSCESS OF THE LIVER; OPERATION; RECOVERY.

(Under the care of Dr. FRANK ARNOLD.)

THIS is a good example of a "tropical" abscess of the liver in which the connexion between the disease and an attack of dysentery was very close. The operation of transpleural hepatotomy was much simplified by the pleural and peritoneal adhesions which had formed.

A man, aged twenty-two years, was admitted into the Bulawayo Hospital on Jan. 19th suffering from a first attack of dysentery. He had resided for five months in Bulawayo, he had not been to any outlying district, and he had gone direct from England, staying for five weeks at Cape Town on the way. On Feb. 6th he was discharged from the hospital, relieved of, but not quite free from, dysentery. On the 18th he was readmitted to the hospital, his dysentery having become subacute. For about 7 or 8 days after admission his bowels were moderately loose, the number of motions varying from 1 to 10 in the 24 hours. There were no rigors and vomiting was absent except on the exhibition of quinine; night sweats were profuse and exhausting; the appetite even for liquid diet was small. The temperature on the night of admission was 99° F. It fell the next morning to 96°, but rose again the same night to 102°. For the next six days the temperature remained high, rising in the evening to between 102° and 103° and falling in the morning to not below 100°. On the morning of the seventh day after admission the temperature was normal but rose again the same evening to 101° and from this date onwards to the time of operation the difference between the morning and evening temperatures was well marked; at night records of from 102° to 103° were the rule and in the morning a subnormal reading was invariable. On the ninth day after admission pain diffused over the liver area was first complained of and continued up to the date of the operation. This was not severe; no appreciable enlargement of the liver could be made out. It may be noted that the appearance of this pain was synchronous with the change in the temperature curve—namely, the more marked difference between the morning and evening readings. The patient's condition now remained almost stationary up to about March 3rd, when the pain in the liver became more marked and examination of that organ showed that enlargement was now appreciable, the lower border extending in general to about 1½ in. below the costal margin. The whole liver area was tender and especially was this the case with a marked enlargement to the inner side of the gall-bladder. Into this especially tender part the needle of an exploring syringe was introduced with a negative result. After a day or two the local symptoms became less severe and the liver area receded. On the 10th pain in the right shoulder over the supra-spinous area of the scapula was first complained of. On the 18th the patient's general condition was very much worse, he had wasted considerably; his persistently high temperature, night sweats, increased pulse rate, and sallow tinge of skin, all pointed to the presence of pus under pressure with consequent septic absorption. Accordingly the liver was again carefully examined and it was found that the area had diminished, the lower edge being about ¾ in. below the costal margin and the part to the inner side of the gall-bladder being less prominent and less tender. However, in the eighth intercostal space in the mid-axillary line a tender area of about the size of a half-crown was noticed; there was no bulging here, the skin was not red or œdematous, and no dilated cutaneous veins could be seen. On the 19th the needle of an exploring syringe was inserted at this spot and at a depth of 1¼ in. pus of a creamy colour and thick consistency was reached. Microscopic examination of this pus showed nothing peculiar; no amœbæ could be seen. On March 21st Dr. R. T. Michell, surgeon to the British South Africa Company's Police, kindly gave chloroform. Resection in the usual way of 1¼ in. of the ninth right rib in the mid-axillary line was performed and on cutting through the remaining soft structures the finger could be passed into the pleural cavity upwards for about 1½ in. and at this height the edge of the lung fixed by adhesions could be felt. There was no indrawing of air into the pleural cavity. The diaphragm was next cut through and a space could be felt between the liver and the diaphragm, but the apposition of these was unusually close, and it seemed to be probable that the previously mentioned tenderness of the liver had been a localised peritonitis uniting that organ to the diaphragm. The patient's condition both before and during the operation was too serious to allow of either a prolonged manipulation or the division of the operation into two stages. It seemed reasonable to conclude that between the external skin and the liver there existed a small pleural and a small peritoneal sac shut off from the general cavities. After ascertaining that the abscess had been correctly localised by means of an exploring syringe the liver was freely incised and about 6 or 7 oz. of thick pus free from smell were evacuated; the thickness of liver substance cut through was about ¼ in. On passing the finger into the abscess cavity it was found to be situated in the lower part of the right lobe, single, spherical, non-loculated, and of about the size of a small orange. The cavity was douched out with a warm solution of boric acid and Condy's fluid, a large drainage-tube was inserted, and a wood-wool pad, &c., were applied; there was practically no hæmorrhage either during or after the operation.

For the first three days after the operation there was considerable pain over the liver area generally and especially in the neighbourhood of the wound; the evening temperature varied from 100° to 103°, the bowels were confined, but the pulse kept soft and regular. This pain was probably due to the stretching of adhesions caused by the shrinking of the liver and the obliterative localised peritonitis and pleurisy which the operation had set up. On the 24th an attempt to open the bowels by means of a glycerine suppository was made but without effect. The next morning 5 gr. of calomel were given and in the evening at 9 P.M. a glycerine enema was administered. The bowels then acted freely with abdominal pain at the time but great relief afterwards. The same night the patient, during the temporary absence of the sister, endeavoured to sit up in bed and fell back. After this fall he had considerable pain which yielded to morphia. The discharge next morning was more copious and tinged with blood. The pain continued during the 26th and on the morning of the 27th the dressings showed a considerable quantity of bile, and the bowels when moved by a glycerine enema in the evening yielded a clay-coloured motion of very firm consistence. With this appearance of bile in the dressings the pain became less severe. On the 28th there was no bile in the discharge and on the 29th a normal-coloured formed motion followed a glycerine enema. Up to April 8th, eighteen days after the operation, the bowels were moved every second day by glycerine enemata with a gradually decreasing after-pain in the abdomen, but on the 9th, after considerable premonitory pain, the bowels moved of their own accord and continued to act daily. Occasionally some tenesmus occurred and mucus was passed. The pain in the shoulder persisted for about 14 days after the operation; occasionally the pain was referred to the elbow and prevented even passive movements of the joint, which was apparently at other times

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normal. The after-treatment of the case presented nothing of interest beyond that the dressings for a time showed typical "anchovy-paste" discharge. The patient left the hospital five and a half weeks after the operation in good health and free from any local trouble.

Medical Societies.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimen.—Dysmenorrhœa.—Ovariotomy.

A MEETING of this society was held on July 14th, the President, Dr. H. MACNAUGHTON-JONES, being in the chair.

Mr. F. BOWREMAN JESSETT exhibited a Double Pyosalpinx with broad ligament cyst removed by laparotomy.—In the discussion which ensued the following gentlemen took part: Dr. PURCELL, Dr. C. H. F. ROUTH, Dr. HEYWOOD SMITH, Mr. MAYO ROBSON, and the PRESIDENT.

Dr. HODGSON resumed the adjourned discussion on Dysmenorrhœa and said that they seemed to be agreed that there was such a thing as mechanical dysmenorrhœa and that it could be cured by mechanical means. He was glad to find that Dr. Bantock advocated the stem-pessary; he had found it useful in many cases. Sometimes when there was such a tendency to spasm as to cause the stem to be extruded he was in the habit of sewing it into the cervix, removing it in six weeks. He had seen no harm result from its use.—Dr. SNOW could not see any advantage of gradual dilatation over rapid dilatation under an anæsthetic, whilst the latter had several special advantages. If a patient subsequently married dysmenorrhœa was no doubt often improved after gradual dilatation as after other procedures, but in the case of virgins in how many cases was the improvement after gradual dilatation permanent? He believed the ring pessary often did good in these cases by putting the vaginal walls on the stretch and so relieving congestion by equalising the pelvic circulation.—Dr. BURLEIGH-ROBINSON agreed with the objection raised by Dr. Giles at the last meeting to the term "obstructive" as applied to mechanical dysmenorrhœa. The pain was due to congestion which was aggravated by the tension of the broad ligaments in cases of displacement. The veins were principally affected and tended to assume a varicose condition. To relieve this he had adopted the plan, described in a paper in 1892, of placing the patient on an inclined plane with the feet raised for several days before the period. In some cases he had obtained good results by advising that the patient should always sleep with the foot of the bed raised by means of blocks; this was continued for several months.—Dr. TRAVERS said that he had paid attention for many years to the question of dysmenorrhœa and had seen cases yield to Hewitt's treatment, to the Hodge pessary, and to various other kinds of vaginal pessary. He thought it would be a mistake if the opinion went forth that the society condemned all vaginal pessaries in the treatment of dysmenorrhœa. The stem pessary had also been useful in certain cases.—Dr. PURCELL remarked that there were some cases in which no local treatment or even examination was possible, especially in the case of some unmarried women, and then they must rely on medicinal means and measures of depletion. When local treatment was possible he thought gradual dilatation answered best.—The PRESIDENT urged that in every case a clear gynæcological and scientific differentiation of the cause of dysmenorrhœa should be aimed at, and whether the patient were young or old an examination should be made under an anæsthetic if necessary. He did not think "mechanical" was a scientific term and "spasmodic" was open to objection, for in all such cases some interstitial change was found in the uterus, or secondarily in the ovaries or tubes, and he believed there was no true analogy between these cases and organic or spasmodic stricture of the male urethra. Elevation by means of the inclined plane had been recommended by Dr. Heywood Smith many years ago, whilst raising the foot of the bed by blocks was suggested by Goodell of Philadelphia, who spoke of it as "putting the ovaries to sleep."—Dr. BANTOCK and Mr. SKENE KEITH briefly replied.

Dr. MACNAUGHTON-JONES read a paper, illustrated by specimens, on Two Unusually Interesting Cases of Ovariotomy, an account of which will be found on page 259.—Mr. BOWREMAN JESSETT and Dr. PURCELL briefly commented on the paper and Dr. MACNAUGHTON-JONES replied.

The Development of Ovariotomy.

A special meeting was held on July 23rd to hear Professor A. MARTIN'S address on the Development of Ovariotomy. The President, Dr. MACNAUGHTON-JONES, was in the chair, and there were also present: Professor Sanger (Leipsic), Dr. Theodore Landau (Berlin), Professor Mangiogalli (Milan), Dr. Howard Kelly (Baltimore), Professor Lapthorne Smith (Montreal), Professor Gardiner (Montreal), Dr. Young (Sydney), Professor Jacobs (Brussels), Sir James Dick, K.C.B., and Surgeon-General Jameson (the Director-General of the Royal Army Medical Corps).

Reviews and Notices of Books.

A System of Practical Medicine. By American Authors. Edited by ALFRED LEE LOOMIS, M.D., LL.D., late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University. Vol. II.: Diseases of the Respiratory System, Diseases of the Circulatory System and the Mediastinum, Diseases of the Blood, Diseases of the Kidneys, Diseases of the Bladder and Prostate Gland. Vol. III.: Diseases of the Alimentary Canal, Diseases of the Peritoneum, Diseases of the Liver and Gall-bladder, Diseases of the Spleen, Diseases of the Pancreas, Diseases of the Thyroid Gland, Chronic Metal Poisoning, Alcoholism, Morphinism, &c. London: Henry Kimpton. 1898. Price 25*s.* per volume.

THESE two handsome volumes, the scope of which is fairly indicated by the contents of the title-pages cited above, were issued recently at intervals of three months, and there now only remains to appear a fourth volume which will complete a work of somewhat wider extent than the ordinary text-book, but less ambitious than some modern "Systems." The second volume opens with an article upon the Affections of the Nose and Larynx by Dr. Edwin Solly of Colorado. His experience at that famed health resort makes his testimony as to the proportionate frequency of tuberculous laryngitis of much value. He contrasts this with other returns and concludes that laryngeal complications occur in about 30 per cent. of the cases of pulmonary phthisis and laryngeal ulceration in about 13 per cent. Dr. Eldridge Cutler of Boston writes upon Physical Signs of Pulmonary Disease. His descriptions are concise and free from theoretical disquisitions. We were interested to observe his statement that a pulsating empyema may be differentiated from aneurysm not only by its locality, but also by the fact that the former may almost always be made to disappear by pressure and that it increases in size with increased expiration. Dr. Lawrence Mason writes on Bronchitis and Bronchiectasis, as well as on Asthma and Hay Fever. There is nothing special to note in these or in the other articles on pulmonary diseases for which Dr. Reginald Fitz and Dr. W. W. Gannett are responsible. They are hardly full enough for a work of this class. Dr. Herbert Witney describes the "Non-tubercular Diseases of the Pleura," wherein he includes the various forms of pleurisy, empyema, pneumo-thorax, echinococcus and malignant disease. Surely it is barely correct to use the general title, especially as in the text the relationship of sero-fibrinous pleurisy to tuberculosis is discussed with the result that at least 40 per cent. of the former are considered to be dependent on the latter condition. Amongst the several articles upon diseases of the heart we observe one on Endocarditis by one of the editors, Dr. Loomis,

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whose death occurred just as the first volume was about to appear. The article is a concise description of the "simple," "malignant," and "fibrotic" forms and comprises an account of chronic valvular disease of which the section on prognosis is particularly worth noting. The articles of Dr. J. T. Whittaker on Neuroses of the Heart and on Diseases of the Blood-vessels constitute perhaps the most thoroughly worked-out articles in the volume. In his description of Arterio-sclerosis and also in his account of Thrombosis and Embolism and of Aneurysm Dr. Whittaker conveys a vast deal of information based on the most recent knowledge. There is a useful and practical account of the Examination of the Blood by Dr. F. C. Shattuck and Dr. R. C. Cabot preceding their accounts of the various diseases of the blood. They devote a separate section to a discussion of the significance of leucocytosis and make out a good case for the value of this condition as a means of differential diagnosis. Dr. Henry P. Loomis writes upon Diseases of the Kidneys, dividing nephritis into the two great groups of acute and chronic and using the affix "diffuse" to indicate that the lesions are distributed throughout both organs. He thus distinguishes the classes of acute diffuse nephritis, chronic diffuse parenchymatous nephritis, and chronic interstitial diffuse nephritis, and in diagrammatic form shows that the acute disease may, like the chronic parenchymatous, pass by way of the "large white kidney" into the "smooth cirrhotic" form, whilst the "chronic interstitial" is of two types, both of which are common—namely, the "genuine inflammatory cirrhotic kidney" and the "degenerative cirrhotic kidney," or arterio-sclerosis of the kidney. The article is illustrated by several good micro-photographs. Dr. I. N. Danforth writes on Renal Calculus and other conditions as well as upon Diseases of the Bladder and Prostate, whilst to Dr. T. D. Colman are assigned the subjects of Abnormalities of the Urine and Uræmia. He refers to the various views propounded upon uræmia and shows how much light has been thrown on the subject by Bouchard's researches, the conclusions of which are fully stated.

The third volume is in great measure devoted to the consideration of gastro-intestinal and hepatic diseases and the articles upon these subjects show very well to how great an extent these subjects have been studied of recent years. Dr. C. G. Stockton and Dr. Allen Jones describe the Diseases of the Stomach, devoting considerable space to the methods of examination of the viscus and of its contents. It is evident that the subject of dyspepsia has at length emerged from the somewhat vague and uncertain position which it used to hold and that modern science, with its new methods of observation, is fast advancing our knowledge of the conditions which underlie the functional derangements of the secretory and motor apparatus of this important organ. Whether these new methods have really done very much to diminish the trials of the sufferer from dyspepsia may perhaps be open to question. There are very good accounts of gastric ulcer, or "peptic ulcer" as it is termed, and of "dilatation of the stomach" and "gastroptosis," whilst the forms of gastritis are clearly differentiated. Dr. W. W. Johnston commences his account of Diseases of the Intestine by a description of ulcer of the duodenum and points out how its presence may be distinguished from gastric ulcer. His account of intestinal indigestion is of much interest and we would especially point out the full exposition given of the diagnosis of such a state from other and more grave conditions. Dr. Henry Lyman continues the subject of Intestinal Disorders by accounts of acute and chronic intestinal catarrh, of constipation, intussusception, and intestinal occlusion, the subject of Appendicitis being assigned to Dr. W. F. McNutt. This article is characterised by much common sense, the writer endeavouring—and not without success—to clearly differentiate the cases which may be safely treated by medical measures and those which demand surgical intervention. Articles on Intestinal Parasites and on Trichinosis are written by Dr. G. Dock, whilst the important subject of Food-poisoning (Bromatotoxismus) is dealt with by Dr. Victor C. Vaughan. In his contribution upon Diseases of the Liver Dr. J. E. Graham, after describing jaundice and functional derangements, &c., has a section upon Diseases in which the Hepatic Cell is Principally Affected, under which he includes phosphorus poisoning, syphilis, alcohol, toxins of infectious diseases, epidemic jaundice, acute yellow atrophy, food-poisoning, and Weil's disease. It may be remarked, however, that not much is known about the direct action on the hepatic cell of either syphilis or alcohol. The Hepatic Cirrhoses are subdivided into (1) vascular cirrhosis, comprising the toxic, infective, and dystrophic forms; (2) biliary cirrhosis, including hypertrophic and calculous cirrhosis; and (3) capsular cirrhosis, divided into localised and generalised perihepatitis. Dr. G. R. Lockwood writes on Diseases of the Spleen and Dr. C. G. Stockton on Diseases of the Pancreas, whilst the Diseases of the Thyroid are described by Dr. F. P. Kinnicutt who gives an excellent account of Exophthalmic Goitre. The subjects of Cretinism and Myxœdema are admirably treated by Dr. M. Allen Starr and are plentifully illustrated by photographs showing the effect of thyroid medication. The volume also contains articles on Alcoholism, Morphinism, Glanders, Anthrax, Rabies, Actinomycosis, and certain other subjects, such as Purpura, Hæmophilia, Filariasis, Diabetes, and Insolation. In conclusion we may remark that the work, as a whole, is one which well represents the science and art of medicine of to-day.

Practical Plant Physiology. By Dr. W. DETTMER. Translated from the Second German Edition by S. A. MOOR, M.A., F.L.S. Illustrated. London: Swan Sonnenschein and Co. 1898. Price 12*s*.

THERE is no truer remark than that of the translator of this book in his preface that the teaching of plant physiology has been seriously retarded by the want of suitable manuals of laboratory practice. In the study of botany, whether we are dealing with a theoretical or practical manual, the physiological portion of the work (which in practical works is often conspicuous by its absence) invariably consists of a somewhat condensed chapter or chapters forming a conclusion. We quite agree with the author that there is no need for an apology and congratulate him on having made his own addition to the meagre selection of English text-books on this subject. The book is divided into five sections, each of which is further divided into a suitable though varying number of divisions. We may consider one of these divisions—namely, that dealing with the movement of water in plants, leading up through transpiration phenomena to the much vexed question of the ascent of sap through the wood. In a series of experiments he shows the existence of root pressure, the influence of temperature on the flow of sap, the periodicity and causes of root pressure, the escape of liquid, several experiments on transpiration phenomena, and the movement of water through the wood. Two or three experiments illustrate each point, concluding with a few remarks as to the results, no theoretical questions being separately considered. From complicated experiments with the thermostat and on transpiration we pass to some delightfully simple illustrations. Thus on page 233 the following experiment is given. Twigs of *Tilia* and *Salix* are placed in separate narrow-mouthed bottles filled with water, the water being covered with oil. Both are weighed and re-weighed after a certain exposure to

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diffused daylight. This determines the loss by transpiration; in either case the variation is noted and the experiment repeated in bright sunlight when a difference is observed due to the stomata, in the case of *Tilia* opening more fully in strong sunlight than in diffused daylight, those of *Salix* not being affected in this way. Such an experiment could be very well performed in the biological classes of our medical schools. The few lucid experiments by which the author shows that the ascent of sap takes place through the lumen of the wood vessel and not through the wood itself are also worthy of note. While as a whole the book appeals mainly to the research student it will be seen from the above instances that it would prove useful in the hands of a capable demonstrator in the biological classes.

The Mental Affections of Children—Idiocy, Imbecility, and Insanity. By WILLIAM W. IRELAND, M.D. Edin. London: J. & A. Churchill. Edinburgh: James Thin. 1898. Pp. 435. Price 14*s*.

DR. IRELAND'S former work on Idiocy and Imbecility was in its time the best English work on the subject and the present treatise will be welcomed by all interested in the subject. Some chapters are reintroduced with necessary modifications from the older work, but a great part is entirely new. Dr. Ireland commences with a general discussion of the causation of idiocy, in which he gives the chief place to neurotic heredity, considering alcoholism a less important factor *per se* than is generally held. He strongly combats the view that idiocy is to be looked on as an example of reversion to a lower type in the evolutionary scale. Dr. Ireland makes the following classification based on pathological grounds: (1) Genetous idiots, including the well-known "Mongolian" group; (2) microcephalic; (3) hydrocephalic; (4) eclampsic; (5) epileptic (6) paralytic; (7) traumatic; (8) inflammatory; (9) sclerotic (10) syphilitic; (11) cretins; and (12) idiots by deprivation. This classification is convenient, notwithstanding that from the point of view of symptoms the groups are much less definite. The fullest descriptions are of the genetous idiots and of the microcephalic. The general peculiarities of feature and of physical and mental development are very clearly given, although Dr. Ireland has been rather sparing in illustrating his descriptions from photographs of his cases. Individual and striking cases are described in detail, and there are some useful though rather brief accounts of the conditions of the nervous system found after death. Medical treatment in these cases calls for little remark, and Dr. Ireland has no belief in surgery for relieving the mental condition. Craniectomy, he believes—and we agree with him—to be useless for the relief of microcephaly, the operative procedure being "founded on an incorrect pathology." The chapter on Cretinism is a little disappointing. There is an admirable chapter on a subject which usually is passed over—Insanity in Children and Insane Idiots. The sensory deficiencies of idiots are described, but no mention is made of the excessive development of the powers of smell which has been recorded by others. The mental limitations of idiots and the best methods of educating them are described and a short account is given of the laws bearing on the subject. The book concludes with an interesting chapter on "Wolf Boys"—boys who are found wild and are supposed to have been fostered by wild animals. When serving in the army in India Dr. Ireland had opportunities of inquiring almost at first hand into several supposed instances. He believes that some were impostors but that most were idiots who had been exposed by their parents in the woods. He quotes some delightful stories of boys, reminding one of Kipling's Jungle Book hero Mowgli, but it is clear that Dr. Ireland is sceptical as to the truth of most of them.

Dr. Ireland is so well known as an interesting writer that expectation as to the quality of the book was pitched high and was not disappointed. It is the best account we have of an extremely difficult subject and is worthy of the great reputation and long experience of the author.

LIBRARY TABLE.

Economics, Anæsthetics and Antiseptics in the Practice of Midwifery. By HAYDN BROWN, L.R.C.P., L.R.C.S. Edin. London: J. & A. Churchill. 1897.—This is a clearly and sensibly written little book, which in the compass of 103 pages lays down some admirable rules for the conduct of a case of midwifery, including the interview with the patient for the purpose of fixing the expected day of delivery. Mr. Haydn Brown's remarks are eminently practical and cannot fail to be of advantage to the younger generation of practitioners.

Practical Organic Chemistry: the Detection and Properties of Some of the More Important Organic Compounds. By SAMUEL RIDEAL, D.Sc. Lond. Second edition. London: H. K. Lewis. 1898. Price 2*s*. 6*d*.—This is a compact little volume intended essentially for the student engaged in practical organic work. It contains no definite scheme for the identification of compounds, but it gives the specific reactions and tests for each body in separate paragraphs. The information is just such as will be a valuable help and guide to those preparing for the London University examinations. The present edition (second) is revised in accordance with the new Pharmacopœia. As the book is intended largely for medical students we think the section on urinary calculi should have been amplified. In regard to Pettenkofer's test for the biliary acids we have found the substitution of glucose in strong sulphuric acid to serve better than ordinary sugar, which the author recommends, since the former does not easily char and thus tend to obscure the colour reaction. Again, the "mirror" test for tartaric acid when tried in the way suggested does not always give satisfactory results. We prefer first to add potash to a solution of silver nitrate and then just dissolve the precipitate in the slightest excess of ammonia. If to this clear solution the dissolved substance suspected to contain tartaric or citric acid be added and the mixture gently warmed an excellent silvering of the tube results in the former case but not in the latter.

Les Troupes Coloniales: Hygiène du Soldat sous les Tropiques. (*The Colonial Troops: Hygiene of the Soldier in the Tropics.*) Par F. BUROT, Médecin principal de la Marine, Officier de la Légion d'Honneur, Officier d'Académie, Lauréat de l'Institut; et M. A. LEGRAND, Médecin de 1re classe de la Marine, Chevalier de la Légion d'Honneur, Lauréat de l'Institut. Paris: Librairie J. B. Baillière et Fils. 1898. Price 2 fr. 50 c.—This is a very useful and instructive volume in continuation of two preceding parts dealing with the causes of the diseases and deaths in the colonial army of France, which may be read with profit by medical officers and others interested in the hygiene of the French army. It deals in a lucid and logical way with a variety of subjects connected with the life of the French soldier abroad, the organisation and administration of the medical and sanitary services, and the special measures adapted for expeditions, the habitation, alimentation, and clothing of the soldier, the recruiting and selection of troops, the nature of the maladies to which soldiers serving abroad or on expeditions in tropical or sub-tropical climates are liable, with the hygienic measures of a general or special nature that either have been or are really required to be followed in order to avoid a large amount of preventable suffering and sacrifice of life as well as of public money. These are objects in which everybody is interested and an

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incalculable amount of good would be done if the wise precepts and indications set forth in this volume were only carried out.

JOURNALS AND REVIEWS.

Tabib el Aila.—The Arabian medical writers are held in much repute historically, but in England, nowadays, there is seldom an opportunity of seeing contemporary sanitary works printed in Arabic. *Tabib el Aila*, however, a monthly sanitary journal published in Cairo, is now in the end of the third year of its existence, and has subscribers in countries as far apart as Syria and Morocco, but its chief circulation is in Egypt, where we are informed it is a well-known production of the native press. On the front (i.e., the right hand) page the Arabic title is accompanied by the French and English renderings, *Le Médecin chez Soi* and *The Doctor at Home*, which sufficiently indicate that the paper is intended for general readers. The June number consists of 24 pages (12 leaves) of about 20 lines each, to which are added 8 pages of advertisements. The opening article is a biography (with portrait) of Professor Potain, who is described in the Arabic text as having been born in Paris on July 10th, 1825. The subsequent papers are on the precautions to be observed by diabetics, the teeth, on clothing of phthisical patients, hygiene for females, prescriptions for diarrhœa and indigestion, deaths in the Spanish army in Cuba, letters from correspondents on various subjects, and notices of books. The proprietor and editor is Dr. Alfred Eïd of Cairo.

Annales de l'Institut Pasteur. Edited by M. E. DUCLAUX. Paris: Masson and Co. Vol. XII., No. 6. June, 1898.—This number commences with an important and well-illustrated article by Dr. Nowak of Cracow on the Histological Changes produced in Various Organs by Serpent Venom and by the Poison of Scorpions. Changes were chiefly found in the liver and kidneys and consisted of fatty degeneration and rapid necrosis of the hepatic cells and renal epithelium and some small, round-celled infiltration around the bile-ducts. The changes are similar to those found by Sanarelli in yellow fever and those occurring in the early stage of acute yellow atrophy of the liver. Dr. Nowak believes that the liver and spleen are affected because those organs are endeavouring to excrete the toxin. 2. M. Gabriel Bertrand has investigated the bio-chemical production of Sorbose, a peculiar sugar which was found first in a decoction of the berries of the mountain ash which was allowed to ferment spontaneously. M. Bertrand shows the production to be due to the action of a special bacillus and further shows that this bacillus is carried to the syrup by a particular red fly (Drosophila cellaris). Pure cultures of the bacillus will cause the production of sorbose in other liquids than rowan berry juice, such as a mixture of wine and vinegar, and even with cherry juice. 3. On the Maturation of Cheese, by M. J. Schirokich, dealing with the influence of diastase produced by the growth of species of tyrothrix. 4. On an Epidemic of Enteric Fever due to Tainted Water, by Dr. Schneider. 5. Report of the Pasteur Institute at Athens. 6. Critical Review on Proenzymes, by the editor.

The Journal of State Medicine. Vol. VI., No. 7. July, 1898. London: Baillière, Tindall, and Cox. Price 2*s.*—This number contains the conclusion of Professor Delépine's instructive paper on the Bacteriological Survey of Surface Water-supplies, in which he gives some interesting instances of the variations *quâ* bacteriological impurity in specimens of water obtained before and after heavy rainfall and when procured above or below a source of pollution. He also furnishes the results of some examinations showing the danger of relying upon filtration as a means of removing previous contamination. Hygiene in Plague forms the subjec of a paper by Captain W. O. Beveridge, R.A.M.C.; and a full account is given of the annual dinner of the institute.

Analytical Records
FROM
THE LANCET LABORATORY.

"AMIRAL" SOAP.

(THE AMIRAL SOAP SYNDICATE, 28A, BASINGHALL-STREET, E.C.)

"AMIRAL" soap is suggested as an external cure for corpulence and obesity. The idea is distinctly novel and is based apparently upon the solvent action upon fat of the active constituents of animal gall. The *rationale* of the treatment therefore is that when the soap is applied locally it is absorbed by the pores of the skin with the result, it is stated, of dispersing the adipose tissue. We confess to being sceptical as to the possibility of thus dissolving the panniculus adiposus, but we note that references are given of actual trials having been made with this result. It is stated that from two to four tablets of soap reduce the waist measurement of persons from three to five inches within one month. We found the composition of the soap to be well adapted for application to the skin. We could trace no injurious substances and it was quite neutral. It is a light green soap with pleasant aromatic smell. Further analysis showed that it contained a micaceous powder which when separated and placed between the fingers imparted a smooth slippery feeling like French chalk. On decomposing the soap with a mineral acid and filtering the separated fatty acids the clear filtrate was shaken with ether. On evaporating the ether a residue was obtained which gave a marked response to the tests for the biliary acids.

TABLOIDS OF ZINC OXIDE.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUIDINGS, E.C.)

The tabloid of zinc oxide crumbles instantaneously when brought in contact with water. Each tabloid contains 2 gr. of the oxide. The ease with which this tabloid breaks up renders it well adapted for internal administration, as in the treatment of summer diarrhœa and gastralgia. In epilepsy resulting from peripheral irritation zinc oxide has been employed with encouraging results. The base has also been used for the relief of nervous tremors and in reducing the unsteadiness due to chronic alcoholism.

VALTINE MEAT GLOBULES.

(THE VALENTINE EXTRACT CO., LIMITED, ST. GEORGE'S HOUSE, EASTCHEAP, E.C.)

These preparations represent a new and valuable departure in meat extracts. Hitherto meat extract has been met with in the form of a dry paste or else in a nearly liquid condition. Both forms have their disadvantages. The valtine meat globules are made in various sizes and consist in reality of flexible capsules containing a definite amount of semi-solid extract of beef. No doubt some advantage is gained, especially in regard to flavour, from the fact that the concentration of the extract is not carried to a high point or near the solid condition. The result is that the contents of the valtine globule have a very fresh, agreeable, meaty flavour. Again, they are extremely handy and convenient to use, being made in sizes in accordance with various requirements. Thus to make a large cupful of beef-tea or clear soup of excellent flavour it is only necessary to place one of the large-size globules in hot water and to allow the contents to diffuse into the liquid. According to our analysis the extract possesses the properties of both a nutrient and stimulant. It was as follows: moisture, 26·21 per cent.; organic matter, 60·54 per cent.; mineral matter, 13·25 per cent. The organic matter contained nearly equal proportions of meat extractives (soluble in alcohol) and proteoses (insoluble in alcohol and precipitated by a saturated solution

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of ammonium sulphate), with a trace of albumin. A further novelty, and one which we approve, consists in supplying with the globules tablets or "peloids" as they are called, containing various flavouring materials and condiments. Tastes differ widely as to the amount of condiment or flavouring which should be added to beef-tea or soup. By this device, however, each can satisfy himself. This step is particularly advantageous in the case of invalids who often find a meat extract repulsive on account of an objectionable added flavouring. Lastly, it should be stated that the valtine globules are made of a size to admit of swallowing whole without any difficulty. In this way nourishment can be readily administered where extract in the form of beef-tea or soup is unsuitable.

OREXIN TANNATE.

(KALLE AND CO., BIEBRICH-AM-RHEIN. A. AND M. ZIMMERMAN, 9 AND 10, ST. MARY-AT-HILL, E.C.)

Orexin tannate has been tried in the treatment of anorexia, as in phthisis, anæmia, and chlorosis, and in cases of atony of the stomach. It is a yellowish-white powder, not unlike calomel in appearance. It contains tannin in combination with "orexin," a base obtained by a synthetic process from certain coal-tar derivatives. It is soluble in dilute hydrochloric acid and probably therefore in the gastric juice. It dissolves also in alkali, according to our experiments, the solution turning a deep brown from the production of alkaline tannate. When the dry powder is heated in a tube it evolves a strong fishy odour characteristic of amines. Orexin tannate is said to be an excellent stomachic, stimulating the acid secretion of the stomach, encouraging its motor activity and materially shortening the process of digestion. The salt may be obtained in powdered form or in chocolate tablets, the latter containing 4 gr. of orexin tannate.

(1) "GAIACOPHOSPHAL" AND (2) "PHOSPHOTAL."

(SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE, 8, QUAI DE RETZ, LYONS. AGENTS: R. W. GREEFF AND CO., 20, EASTCHEAP.)

These interesting bodies are new combinations of guaiacol and creasote respectively, which are stated to present distinct advantages over the compounds hitherto used. "Gaiacophosphal" is a definite white crystalline salt smelling distinctly of guaiacol. On treatment with potash the smell of guaiacol is more strongly developed. The salt readily melts on heating, and speedily dissolves in water. "Phosphotal" is a phosphite of creasote and is a gummy looking liquid with a creasote-like smell. On warming with potash the guaiacol evidently separates. Experiments are quoted to show the advantages of these compounds in contrast with the phosphates and combinations hitherto employed. As is well known guaiacol and creasote have been administered with encouraging results in some cases in phthisis, typhoid fever, &c., and in respiratory disorders. These new salts are regarded as pharmacological improvements.

EFFICIENCY OR COMPULSION?

To the Editors of THE LANCET.

SIRS,—A report which I recently made to my committee on the relation of vaccination to the recent small-pox epidemic at Middlesbrough has been criticised by Mr. Alex. Paul in letters which he has written to various evening papers, and is also referred to in an annotation in THE LANCET of July 23rd. I take this opportunity of forwarding you a copy of this report, which to my mind points out as has rarely been shown before the value and protection afforded by vaccination; it also clearly shows where the weakness of the present system of vaccination lies—i.e., in the inefficiency of most primary vaccinations and the want of systematic revaccinations. The State requires its servants, the public vaccinators, to practise vaccination in a prescribed manner, but there is no such standard enforced in the cases of the numbers of children vaccinated by other medical practitioners who may and do exercise their own judgment as to whether they shall vaccinate a child in one, two, three, or more places. How many medical practitioners are there in this country who always perform vaccination with the efficiency required by the Local Government Board of the public vaccinators? And what medical man is there who at one time or another, when a mother has brought her child to him for vaccination and has pleaded for "just one place or two small ones, Doctor," out of the kindly sympathy of his heart has not yielded to this prayer in direct opposition to his better judgment?

Should not the Vaccination Bill now before Parliament have clearly defined what constitutes an efficient vaccination and the period for which such protection lasts and have made suitable provision for seeing that such a vaccination was performed in every case? Mr. Paul in his letters expresses astonishment that there should have been 1207 vaccinated persons attacked with small-pox at Middlesbrough, but how many of these 1207 can be considered to be really vaccinated persons—i.e., with scars of such an area and of such a quality as can be considered to be really protective and in whom the protection had not passed off through the lapse of time? We only know of 87 who had been re-vaccinated, leaving 1120 who had only had a primary vaccination. Of these 1044 were over the age of 15 years. If the 1120 were primarily vaccinated during the early months of infancy, as is very probable, then the 1044 cannot be classed as vaccinated persons protected from liability of attack, and the older they are the less is the protective or modifying value of the primary vaccination, this being most clearly shown in the table of deaths amongst the vaccinated class given in my report, the greatest mortality being at the greatest age periods.

The surprise at these results expressed by Mr. Paul denotes that he either looks at the question from the point of view of the biased anti-vaccinationists who do not care to examine both sides of the question or that he, like a great majority of the inhabitants of this country, is utterly ignorant as to what constitutes a thorough and efficient vaccination and what is claimed for it as a protection against small-pox. One fine day does not constitute a summer nor does a vaccination consisting of one or two small scars afford protection for life against liability to attack from small-pox. It should be our duty as medical men, together with all other believers in the virtues of vaccination, to instruct the population on these points and the former should see to it that every child submitted to them for vaccination should be so vaccinated as to ensure its being rendered immune to attack. If this were so the populace would soon gain confidence in vaccination and there would be little need to discuss the question of compulsion. The anti-vaccinationists would not be able to point to the fact, as they have done in the past, that the majority of small-pox cases occur amongst a so-called vaccinated community.

I am, Sirs, yours faithfully,

CHARLES V. DINGLE, M.D., B.Hy. Durh.,
Medical Officer of Health of Middlesbrough.

July 25th, 1898.

THE REPORT OF THE VACCINATION COMMISSION.

To the Editors of THE LANCET.

SIRS,—It is difficult to see what can be the object of the New Sydenham Society in simply reprinting the final report of the Vaccination Commission when it can be purchased of the Government printers at a very reasonable cost. But to print it without an index is still more inexplicable. It is a grave reflection upon *someone*—I do not know whether it may be the Commission itself or the Treasury—that it should have been left to General Phelps, the president of the Anti-Vaccination League, to publish an index to the report of the Commissioners as well as to that of Dr. Collins and Mr. Picton. These two indexes may be obtained (1*s.* each) on application to General Phelps, Edgbaston, Birmingham. They are very fairly done. As to an abstract of evidence, that is much more worth the attention and expenditure of the New Sydenham Society, but it will need to be carefully done to be really useful and by someone who is pretty familiar with the vaccination controversy. What is much more practicable and would be very useful and not very costly would be a consolidated index of the whole of the evidence. But that involves the Herculean labour of indexing the sixth volume, which, like the final report, was published without an index. It is understood that Lord Herschell has made an effort to get this latter defect remedied, but with what success I do not know.

I am, Sirs, yours faithfully,

Gloucester. FRANCIS T. BOND, M.D. Lond.

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THE LANCET.

LONDON: SATURDAY, JULY 30, 1898.

ONE great value of periodical congresses such as that of the British Medical Association which is being held this week in Edinburgh is that they afford opportunity for the exposition of fresh facts and doctrines by men who can speak with authority, thereby adding to the general stock of knowledge and serving a very useful educational purpose. The Address in Medicine delivered by Professor T. R. FRASER certainly comes under this category, for it was mainly occupied with a remarkably lucid and exhaustive account of the present position of science in regard to the share taken by toxins in the production of disease and the new aspect which has been given to the interpretation of the facts of infective disease and the prospects which are offered for their mitigation and abolition. We cannot pretend to follow Professor FRASER in all parts of his scientific address; it must be read and read again before it can be fully mastered, but it yet behoves us to indicate what are its main teachings, since they have such important bearings upon the conception of the nature of such diseases and upon their treatment. It is undoubtedly true that toxic influences play a much larger share in the production of the phenomena of disease and of the structural changes which constitute morbid anatomy than could have been possibly conceived a few years ago. There is abundant evidence, direct and indirect, that poisoning, whether from without or within, plays a chief part in the derangements to which flesh is heir. Indeed, there would seem to be no limit to which this conception of toxæmia may not lead. It embraces conditions as remote from ordinary poisoning as it is possible to conceive, for who can say that auto-intoxication is not at the root of many a disorder, seeing how wide are the opportunities and how varied the conditions for the manufacture and the retention of substances within the body the action of which on blood and tissue is highly detrimental to their integrity. As Professor FRASER remarked, many of the ptomaines and leucomaines are alkaloidal in nature and rival the vegetable alkaloids in potency, and many a disease may well be ascribed to their agency. To some it would appear as if medicine were about to enter upon a new phase of generalisation, and they may see in the doctrine of toxins a parallel to some of the old speculations upon the nature of diseases.

The modern study of infective diseases offers ample scope for the application of this doctrine, only here we have to do with toxins produced by microbic agents which have been revealed by the labours of the bacteriologist. To explain the phenomena of an infective disease it is not merely necessary to postulate the existence of a pathogenic micro-organism, but it requires further that this microbe should produce a poison to which the symptoms and the morbid changes of the specific disease are due. That it is not the microbe that is the immediate cause of the phenomena is proved by the fact that the toxic effects are produced by the filtered solution of the material in which the microbes have been cultivated. Now one of the most remarkable facts about these infective diseases is the protection which a single attack generally affords against further infection. This fact, long observed in the diseases themselves, has been amply verified by experimental inoculations, but it has been still further advanced by the demonstration that the blood-serum of protected animals possesses the power of transmitting this resistance when injected into other animals. Professor FRASER showed that this acquired immunity could not be solely explained as we may explain the immunity to ordinary poisons by any theory of tolerance. Nor did he think it possible for phagocytosis to account for all the facts. He dwelt with necessary emphasis upon the singular differences in the duration of "artificial" immunity as compared with "natural" immunity, or that protection which an attack of the infective disease itself affords. He argued that in cases where immunity is prolonged there must be a continued reproduction of the protective substances, which implies the continued existence of the attenuated micro-organism which yields the antitoxin. This is a view which is most suggestive, and which seems to be necessary to explain the reason why the immunity conferred by antitoxic serum is so fleeting in comparison with the more permanent effect of an immunity conferred by the microbes themselves. We may well quote here a passage which conveys a moral to be taken to heart by all who are working at the experimental side of this question: "Unless by education we can so tame and civilise a pathogenic microbe as to subdue its virulent and hostile disposition while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera, and tubercle—immunising vaccines equal in efficiency to the lymph of vaccinia will probably never be realised." And we note the warning that perchance the very germicidal action of glycerine which is being used to remove from vaccine lymph all external contamination may deprive the lymph of its long-lasting prophylactic power.

Professor FRASER discussed in some detail the origin of the antitoxins and antivenins and argued very plausibly that they are derived from the toxins and venins themselves, produced by chemical changes in the latter or forming part of their complex composition. If this be so it may, as he says, be only a matter of time before the resources of chemistry will enable us to extract the antidote from the poison, without recourse to the somewhat cumbrous method of serum production. He dwelt also upon the mode of action of antitoxins, which is still largely a matter of speculation; but if this is not yet clear it is at any rate accepted that in their employment the treatment of the diseases in which they are available comes to be that of a direct antidote, an attack on the cause of all the symptoms, an arrest of all the changes which are set up by the poison. His experiences with cobra venom have shown him how marvellously these mysterious antidotes act, and we cannot read his words without recognising that we

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have within our reach remedial agents for diseases which have hitherto defied any direct treatment and for the mitigation of the symptoms of which we have hitherto had to rely mainly upon the *vis medicatrix naturæ*, aided by measures to sustain vitality and promote elimination. Already, however, in the partial way in which it has been possible yet to pursue it this line of treatment, in the guise of serum therapeutics, has effected much, and we join with Professor FRASER in the belief that a yet greater boon is in store for mankind, based on the recognition of the toxic origin of diseases and all that flows from that doctrine.

IT is open to question whether the custom of insisting upon an Address in Medicine and another in Surgery at the annual meetings of the British Medical Association would not sometimes be more honoured in the breach than in the observance. We fancy the distinguished surgeon to whom his brethren allotted the task of preparing an Address in Surgery at Edinburgh must have shared this view. For it is evident that he had nothing particular to say to the profession and his address is a plain, homely discourse on the present position of surgery. Many familiar topics are touched upon, none of them of any novelty, and upon none of them are his remarks of striking force or freshness. Mr. ANNANDALE playfully alluded to the necessity every Scotsman feels of dividing his discourse under certain "heads" and he chose the minimum—three. They were good ones, too, for he spoke of surgery in its scientific aspect, its practical aspect, and its moral aspect. Too much stress cannot be laid on the scientific basis of surgery. Science is a word which has come to be used in too technical and artificial a sense. We need to get back to its simple meaning—knowledge. We are too apt to think of it merely as a matter of test-tubes and microscopes, and so when the scientific aspect of surgery is discussed visions of bacteria rise in the mind. We would rather lay stress upon the importance of all branches of surgical knowledge and upon the fact that on all sides in every direction our knowledge of disease and of surgery has increased and become to a large extent defined. The days of empiricism are largely gone by, but we have not escaped altogether from the thraldom of tradition. The art of surgery—the handicraft—is a great accomplishment, but unless associated with a knowledge of nature's processes and powers its possession does not constitute a surgeon. Knowledge is power in everything, and only so far as we know health and disease, the causes, tendencies, signs, and consequences of morbid processes, can we deal with them with real success. The art of surgery is far in advance of the science; our failures arise far more from want of knowledge than from lack of skill. To the average man the acquisition of an art comes easier and is more attractive than the pursuit of knowledge and its results are more immediate. It is therefore all the more incumbent upon our teachers to lay the greatest stress upon the importance of knowledge and to show with unwearying iteration that it is by knowledge alone that we become truly fitted for the practice of our profession. There is one great department of surgery where the absence of this knowledge is almost complete and is attended with grave evil—we mean the pathology of new growths. Of the true nature of tumours we know practically nothing. An enormous amount of experience of their external features and "accidents" has been acquired, but we are as ignorant of their nature, their real cause, and their vital conditions as were our fathers. The result is that we are as powerless as they in their treatment and an empirical amputation is the only therapeutics we adopt.

There are one or two points in the moral aspect of surgery upon which, we think, Mr. ANNANDALE might well have enlarged. In our view the greatest of all the changes in the moral position of surgeons within recent times is the enormous responsibility which now attaches to a surgical operation. In former days the responsibility of the surgeon was limited to determining whether an operation should be undertaken and, if so, what and when. But now we have learnt that the issue of an operation is very largely under the surgeon's control and therefore a new burden is cast upon him. An operative failure cannot nowadays be disregarded as in the past and laid to the charge of fate or trust in Providence. It is not too much to say that this sense of enhanced personal responsibility should be ever present to the surgeon's mind, not as a haunting paralysing dread, but as a stimulus to be ever on the alert and at his very best. On the moral aspect of surgery, too, something may be said about the *cacoëthes secandi* that is not unknown in many branches of the art—the restless activity in the use of the knife that seems to regard the poor human frame chiefly as a field for operative displays. We have heard of surgeons who speak of operating as their "hobby," their chief pleasure in life, their one panacea against *ennui*. When the history of this century comes to be written the story of LISTER'S work will form a very bright page in it, but the historian will have to fill in the shadows if his picture is to be a true one, and to tell that the safety of a surgical operation led in some cases and in some hands to a reckless resort to operation.

IT is not surprising that the Vaccination Bill met with much criticism when reported last week to the House of Commons by the Grand Committee. The criticism, however, was devoted almost entirely to one point, with the result that an issue at least equal in importance was left entirely untouched. On the question of conscientious objection twenty-three speeches were made by Members of Parliament outside the Government and no less than twenty-one of these urged the Government to yield on this point and to make allowance for the alleged conscientious objector. It will be recollected that in the Committee Sir WILLIAM PRIESTLEY carried an amendment providing that, where a penalty had been imposed under Section 29 of the principal Act in the case of an infant no further penalty should be imposed until the child, had reached the age of four years, and even then that conscientious objection might be allowed for if the bench were "satisfied" of the genuineness of the objection. In the end Mr. BALFOUR, speaking for the Government, agreed to frame a similar clause with regard to infantile vaccination. This clause was carried, but in the course of the discussion it began to appear that many Members were now dissatisfied because the Government had yielded, and Mr. CHAPLIN pathetically complained that the

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body of opinion in favour of the infliction of penalties had not given itself earlier expression. Ultimately when the question of the third reading came up protests that the Bill had been essentially altered were so numerous that the Speaker interposed and declared that in the circumstances the reading could not be taken.

That is how the matter stands at present. Many of those who argued for a conscience clause are heartily in favour of vaccination and all those who object to the same clause are equally anxious for the promotion of the Jennerian prophylaxis. There is simply between these parties a divergence of opinion as to the best legislative means for promoting vaccination. We have no hesitation in saying that if the Government had taken the advice which it has received from the medical profession it would have found itself in no such unfortunate position. In effect the advice has been that a provision recognising conscientious objection should be accompanied by a provision placing revaccination on the same footing as primary vaccination. That is the way, and the only right way, out of the present difficulty. As has been frequently shown in these columns since the Royal Commission issued its report there can be no hardship whatever in requiring vaccination at twelve years of age provided that allowance be made for persistent objectors. If Mr. CHAPLIN had been able to point out to those who now oppose the concessions which have been made that while he was relaxing the law with regard to infants this law, as relaxed, was now also to apply to adolescents, he would have closed their mouths so far as the promotion of vaccination is concerned. The application of the law to adolescents would so greatly increase the grand total of protection against small-pox in the country that the concession with regard to infants might have been gracefully yielded. Mr. CHAPLIN, however, has chosen to ignore revaccination and his punishment is that his Bill satisfies no one and that no one excepting the Government itself cares very much whether the measure is passed into law or dropped into limbo. Systematic revaccination could not, it it is true, be carried out without the aid of the Education Department, and it may be assumed as a rule that opposition is the natural attitude of a Government Department towards any proposal for the imposition of new duties and responsibilities. Quite likely the central educational authority has some vague fear that if school boards throughout the country were required to furnish to local authorities for vaccination periodical returns of children about to attain the age of twelve years the interests of education might in some degree be interfered with. Quite likely, too, this might really be the case if revaccination were to be made compulsory. But in the presence of a provision that any parent continuing to entertain serious objection to vaccination might by stating his objection to the bench be relieved of the necessity for submitting his boy or girl to vaccination there could be no hardship felt and no interference with education.

This was where the Royal Commission itself blundered. That body strongly approved of revaccination but did not find itself justified, in the state of opinion in some parts of the country, in recommending that revaccination should be made compulsory. There need, however, be no question of compulsion. Surely, the State, believing in vaccination and revaccination as the only practical means of preventing small-pox, has at least the right to demand that every parent in the country shall be at the trouble when his child is an infant and again when he or she attains the age of eleven or twelve years either to submit the child to vaccination or to go before a proper tribunal and declare his objection to the performance of the operation. From the beginning the Government has shirked this question and it owes its troubles in connexion with the Bill to its weakness on this essential point. If owing to pressure of other business it cannot now change the Bill in order to remedy its radical defects it would be far better to delay the whole subject for another year. The stated opponents of vaccination are dissatisfied. The supporters of vaccination are also dissatisfied. Every believer in vaccination, whatever be his opinion as to the relief of conscientious objection, believes also in revaccination. It can only be by providing for revaccination that the Government will gain any credit for its legislation and that small-pox will be kept in check in the adult as in the infant population.

Annotations.

"Ne quid nimis."

THE WATER-SUPPLY OF DORKING.

THE people of Dorking are suffering much from a deficiency in their water-supply. According, to a report now before us, at the last meeting of the Urban Council the chairman said that he had received many complaints from householders who had stated that they had been without water-supply for weeks. He had pointed out that in his opinion the council had no real power in the matter and that Parliament had given the "monopoly of the supply" to the water company, and that all he could do was to sympathise with those without water, which of course was of little use, but he thought the council ought to try to do something to provide water for the districts now without any supply. The clerk of the council had written to Lord Ashcombe, a neighbouring landlord, to ask him to allow the council to obtain water from a meadow in which there was a swimming bath and where there was an ample supply of water. If they could obtain water and send it round it might tide over the difficulty for the present. Unfortunately, Lord Ashcombe had not yet given permission that his water should be used for that purpose. The chairman thought that the town ought to acquire the Dorking waterworks. If the directors of the company were unable to get water possibly "the representatives of the people" might succeed in doing so. The immediate trouble, however, was to provide water for the emergency. The borough surveyor said that no complaint had been received with regard to the low service supply and he wished that people who had a proper cause of complaint would write so that a proper record could be kept. One member of the Council complained that he had been entirely without water and consequently had been unable to have a fire in his kitchen. If the water company had a monopoly of supply it was certainly their duty to supply the town. As a practical measure the chairman of the council then formally proposed that he should be authorised to make arrangements for the supply of the immediate necessities of the inhabitants who were without water, that additional labour should be employed for that purpose and that the water company should be informed that the council would hold

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the water company responsible for the expenses incurred. One member of the council said that he had never had a constant supply of water although the water company was under a statutory obligation to give a constant supply if possible. The officials of the company had said that they could not give a constant supply, yet they extended the boundary of their area to include outlying places. He thought that the water company should be bought up. At the present time they were paying a dividend of 10 per cent. We give fully this report which has reached us. If correct it shows an extremely disgraceful state of things. According to the evidence the water company is a successful enterprise, paying no less than 10 per cent., and yet it does not carry out the work which it undertook under the privileges of a Parliamentary monopoly. The town council of Dorking have arrived at a very wise decision in agreeing to arrange as well as possible for the present supply of those people who are without water. We strongly advise all those who have suffered from a deficiency of supply to act on the suggestion of the borough surveyor and to note carefully the exact dates on which the supply was deficient. The town council would do wisely to at once communicate to the Local Government Board an accurate account of the state of things which at present exists in the borough. It need not be said that if the water company were at the present moment bought up by the town authorities they would be in no better position to supply the inhabitants than the company itself. Arrangements for water-supply take some time to carry out. Possibly the sources of the company are insufficient or they have not sufficient pumping power. The "municipalisation" of a company, it must be insisted on, does not increase either the amount of water in the wells or the efficiency of the pumping powers. If the Dorking Water Company does not carry out its statutory duties the town council of Dorking would do wisely to apply to Parliament for powers to enable them to carry out the supply for themselves. In a case of this sort it would be a monstrous injustice to the ratepayers for them to buy the company's works at an exorbitant price and then be put to the expense themselves of providing the water and the necessary pumping machinery. We heartily congratulate the town council of Dorking on the public spirit they are showing in doing the best they can in the trying circumstances under which they find themselves placed.

ARE TWO MEDICAL CERTIFICATES NECESSARY FOR LUNACY CASES?

THE Lunacy Act (1890) provides that two medical certificates are necessary in the case of patients—so-called "private cases"—who are removed directly to an asylum from their homes. On the other hand, for pauper cases who pass through the workhouse on their way to the asylum one medical certificate is sufficient, the reason probably being that during the patient's stay in the workhouse under a temporary detention order he is under closer observation. For the converse reason it is very desirable that the justice should seek in all cases sent *directly from home* the opinion and certificate of two medical men separately given, whatever the law may be. It is much safer that he should do so and fewer mistakes would happen, for in private cases it stands to reason that the medical man cannot know so much about the case when he only visits it occasionally and at chance times as when the patient is under the daily observation of skilled attendants and the medical officer of the workhouse. But, curiously enough, the justice is not bound to summon two medical men to his aid in every case "not a pauper." We have lately received a communication from one of our readers informing us that the lunacy justices of his district are in the habit of signing removal orders for lunatics of the working and artisan class on one medical certificate only, and asking if a lunatic can be so dealt with, he not being a pauper in receipt of medical or other parochial relief? The question raised is a very nice one and in order to settle the point a typical case with full detail should have been submitted. Further information is required and especially as to whether the patients in question pass through the workhouse or not on their way to the asylum. Let us first take the case of a patient who does pass through the workhouse and where the medical man certifying is the medical officer of that institution. It is not necessary that the patient should be in receipt of relief or be made a pauper for the justice to accept one certificate and summon one medical man to his aid. Section 18 of the Lunacy Act provides that the justice has to be satisfied that the lunatic is in such circumstances as to require relief for his proper care. "If the justice is so satisfied the lunatic shall be deemed to be a pauper" for the time being. He can then, by Section 16, act with one medical certificate only. Section 18 appears to give the justice discretionary power to consider the lunatic a pauper under certain conditions. That this is the correct reading of the Act is further supported by Section 20, which authorises a constable, relieving officer, or overseer to remove a lunatic to the workhouse, whether pauper or not; and the justice can act with one medical certificate, as in Form 8, which says nothing about the patient being a "pauper." In point of fact, a considerable proportion of London lunatics are removed to an asylum in this way—i.e., lunatics belonging to the middle- and lower middle-classes. They are not, and do not, thereby become paupers, but they pass *through the workhouse*, the one medical signatory being mostly the *medical officer of the workhouse*. Nevertheless, although the law stands thus in such cases, it is extremely desirable in the interests of the patient and of all concerned that two medical certificates should be obtained in cases which do *not* pass through the workhouse and where neither of the certifying medical men is the medical officer of that institution, as provided in Section 13. It is, indeed, a grave question whether such action as that mentioned by our correspondent is not distinctly illegal, for by Section 13 (2) unless the lunatic is a pauper or wandering at large two medical certificates are necessary. The point might well be laid before the Local Government Board either by a parochial medical officer or by the clerk to the guardians for decision. It rests with the medical superintendent of the asylum to which a lunatic is sent to refuse admission if the certification is irregular; and in such case the matter would probably be referred to the Lunacy Commissioners. Combined action of the medical practitioners of the district such as that contemplated is to be deprecated, at any rate, until the Local Government Board and the Lunacy Commissioners have been approached and a typical case has been laid before them.

QUID PRO QUO IN MONEY-LENDING.

THE generous money-lender is a person with whose kind offers of assistance probably every medical practitioner is familiar. His prodigal advertisements leave nothing to be desired. His purse is as full as it is free to the borrower. He asks for no proofs of solvency, for no security beyond a note of hand, and he abjures the inconvenient restraint of legal formalities. His delicate consideration is equal to his liberality, for he would have all communications guarded by the seal of privacy, third parties being entirely superfluous. Nothing could be more business-like than the celerity of his arrangements. There is but a promise on either side and the money flows over. All this no doubt looks excellent, but it has one fault. It is obviously ideal and unpractical. The demand is

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not seen creating the supply but the supply creating the demand and ignoring risk—a pretty good sign that the wares and the market are not above suspicion. We are aware that medical practitioners no less than other persons are liable at times to an unavoidable tightening of means and that advances like those described above may naturally in such a case be expected to attract them. We may be excused for reminding them, however, that there are two sides to a loan as to every other bargain. The *quid pro quo* may be little spoken of, but it will be exacted nevertheless. The need of mutual guarantees and legal safeguards cannot, therefore, be dispensed with, however suave the lender's inducements. A prompt repayment may indeed remove all hazards, but where this can be relied upon the generous money-lender is not likely to be applied to. His offer is made rather to the unsecured poor man, by whom the promissory limit may easily be passed and with it goes the written guarantee for easy terms of interest and repayment. Young practitioners are especially liable to be snared by an offer of this kind and it is they to whom we would more particularly address a word of warning. Professional work of some sort can usually be obtained by one who is qualified to undertake it and the profits of such work, if not always large, are fairly reliable. They are at all times more worthy to be sought than the specious lure of a monetary loan by unknown persons with its millstone of prolonged and anxious responsibility. It is not required of the junior practitioner, however brilliant, that he should sacrifice every other good and even imperil his probity in order to purchase fame. A more moderate, even an obscurer, course will often bring him sooner to his goal. After all, there is no road to fame but through duty, and this latter does not consent to the reckless accumulation of debt. To live beholden to no one for the means of living is the best proof of that character which is essential to success; if in any case an advance is unavoidable it should certainly not be arranged on the unsteady basis of a money-lender's advertisement.

PLAGUE ON BOARD THE STEAMSHIP "CARTHAGE."

FOR a second time during the present plague prevalence in Bombay and Western India the disease has occurred on a ship bound for ports of this country. The case is that of the Peninsular and Oriental Company's steamer *Carthage*, on board which a coal-trimmer sickened with plague on July 6th. Two days later he was landed at Aden with the two members of the crew who had been told off to attend to him. But on the 14th—namely, six days after passing Aden—a second coal-trimmer was found to have slight symptoms of plague, and when the *Carthage* passed Malta the fact was announced by telegram to this country. The *Carthage* had intended to land passengers at Marseilles, but, doubtless, having regard to the panic which took place there in 1896–97 at the mere prospect of such an occurrence, the company decided that the vessel should come straight to this country, where it was certain that no panic measures would be taken. During the voyage and on the occurrence of both attacks the medical arrangements on board seem to have been excellent, the patients and their attendants being isolated in a large boat hung at a height above the side of the vessel in such a way as to avoid communication with others on the ship and at the same time to ensure every necessary comfort for the patients. On receiving the news from Malta the medical officer of the Local Government Board placed himself in communication both with the company and with the medical officers of health of Plymouth and the Port of London, and he found that the arrangements both on board and in these two excellently administered ports were such that no anxiety need be apprehended; and, as a matter of fact, the ordinary requirements of the Government order as to plague having been observed at both the English ports with which the *Carthage* communicated, passengers were allowed to land on giving their addresses. In the Port of London it was necessary to do little further than to isolate the second patient and his two attendants in the port hospital for a day or two so as to be quite certain that recovery and freedom from infection were complete. The *Carthage* was well appointed to deal with infection on board: she had a steam disinfector and ample appliances for disinfecting the localities occupied by the two plague patients, and her medical officer was fully conversant with the precautions which were necessary for the protection of the passengers and others. Indeed, the story of the *Carthage*, taken together with that of the vessels found two years ago to be infected on arrival in the port of London, goes fully to justify the opinion that, subject to due precautions at the port of departure and to proper administration on board ship, plague is a disease which may be easily checked on board a healthy and well-appointed ship at sea. Indeed, when account is taken of the great precautions which are always observed in the case of plague, we shall probably not be going too far when we say that on board such a ship as is now in question plague has less chances of spreading than would be the case if a passenger were attacked with scarlet fever or some other of our current infectious fevers. Great gain has also been achieved since the Venice Conference of 1897, for it is certain that before that date no ship in which plague had occurred between Bombay and Suez would have been allowed to pass through the Suez Canal merely after satisfying the local officials that all due precautions as to disinfection, &c., had been adopted. The case proves that the terms of the Venice Convention are ample to prevent the spread of the disease to European ports when cleanly and properly appointed vessels are in question, and it is only for such vessels that we in this country desire any leniency or any limit to the restrictions strictly demanded by medical and public health considerations.

BRITISH COLUMBIA MEDICAL REGISTER.

THE British Columbia Medical Register for the year 1898 is a pamphlet of 46 pages, printed at New Westminster by Messrs. Jackson and Co. Twenty pages are occupied with a Medical Act divided into 83 sections, a few of which, commencing with the opening paragraph, are as follows: "An Act respecting the profession of Medicine and Surgery. Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows: 1. This Act may be cited as the 'Medical Act, 1898.' 2. The members of the medical profession of British Columbia heretofore incorporated under the name of 'The Medical Council of British Columbia' shall be deemed to be and to have been from its first establishment a body corporate by the name aforesaid, and the said name is hereby changed to that of 'The College of Physicians and Surgeons of British Columbia.' ..... 3. Every person registered according to the provisions of the 'Medical Act' and any other Act of the Legislature of British Columbia relating to the medical profession shall be a member of the said 'College of Physicians and Surgeons of British Columbia.' 4. Every person hereafter registered under the provisions of this Act shall also be a member of the said College. ..... 24. ..... The Council shall admit upon the Register any person who shall produce from any college or school of medicine and surgery, requiring at least four years' course of study, a diploma of qualification ..... provided also that the applicant shall furnish to the Council satisfactory evidence of identification and pass before the

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members thereof ..... a satisfactory examination touching his fitness and capacity to practise as a physician and surgeon. ..... 63. If any person not registered pursuant to this Act, for hire, gain, or hope of reward, practice or profess to practice medicine, surgery, or midwifery or advertise to give advice in medicine, surgery, or midwifery, he shall, upon summary conviction thereof before any Justice of the Peace, for any and every such offence pay a penalty not exceeding one hundred dollars." The typography of the Act and several subjoined pages is unfortunately disfigured by numerous misprints. There are 193 names of practitioners on the Register. Several examination papers are given which have presumably been already made use of, although the fact is not expressly stated. The one on chemistry does not present any considerable difficulties, whereas the one on theory and practice of medicine contains the following: "Give the microscopical appearances of the bacillus coli communis, the typhoid bacillus, the bacillus diphtheria (*sic*), the bacillus of leprosy, and that of syphilis."

THE PRINCE OF WALES.

As the accounts given in the daily press clearly indicate, the progress of His Royal Highness the Prince of Wales during the past week has been quite satisfactory to his surgeons. There have been no local complications and the general good health of the illustrious patient has been maintained. The extravasation in the joint has now almost completely subsided, and the small detached portion of patella and the ruptured tendon are effectively controlled by the apparatus. All the details necessary for his safe transport to the royal yacht *Osborne* in the Solent to-morrow (Saturday) have been carefully thought out and provided for and the fresh sea air and a change of scene cannot fail to be beneficial. His Royal Highness will travel in the train used by Her Majesty, and as it will reach Portsmouth at the proper time of tide there will be no hitch in the transference from the train to the yacht. In addition to Sir Francis Laking, both Sir William MacCormac and Mr. Fripp will accompany the Prince. The last-named gentleman will continue in attendance at Cowes, while Sir William MacCormac will go down from town to see His Royal Highness as often as may seem desirable.

HYSTERIA IN THE LOWER ANIMALS.

DR. H. HIGIER of Warsaw describes in the *Neurologisches Centralblatt* (No. 13, 1898) two instances of what he regards as hysteria occurring in the cat and the canary-bird respectively. The cat, which was nine months old, healthy and active, was one day deeply bitten in the back by a dog and immediately fell down paralysed. When Dr. Higier first saw it, five or six weeks after the injury, it walked only with its fore-paws, dragging its body and hind-paws. There was complete loss of sensation in the hind-paws and in the hinder third of the body, both sides of the abdomen and back of the animal being indifferent to deep punctures with a needle and to hot applications, but it always responded to gentle touching of the anterior half of the body. The tail was also paralysed, but there was no muscular atrophy of the hind limbs in comparison with the anterior part of the body, neither was there incontinence of urine or fæces, in which respect only did the symptoms differ from those of paraplegia intentionally induced by section of the spinal cord. Dr. Higier considered the lesion to be traumatic dorsal myelitis until one day the servant girl, being curious to see whether the cat would fall on all fours as cats usually do, threw it from the first-floor of the house on to the pavement. As a matter of fact, it alighted on all four feet, immediately ran away, and was, contrary to expectation, completely cured of its sensory-motor paraplegia which had lasted for more than two months. Dr. Higier based the diagnosis of hysteria on the sudden onset and equally sudden disappearance of the paralysis, together with the retention of control over the rectum and bladder. The mother of this cat had repeatedly during the last weeks of pregnancy suffered from general clonic convulsions without loss of consciousness (? chorea gravidarum). Dr. Higier's second case of hysteria showed itself in a canary-bird whose cage with the bird in it was pulled down from the wall by a cat, but Dr. Higier interposed before the cat seized it. The bird lay on the bottom of the cage, stiff as if dead, but was revived by sprinkling with cold water, after which it was lively, took its food well, and showed no abnormality except that from having been a fine singer it became silent. After six weeks this condition of aphonia passed off quite unexpectedly, and the canary once more sang very well. Dr. Higier also refers to three cases mentioned by Gilles de la Tourette in which dogs showed hysterical symptoms.

REMOVAL OF A BULLET FROM THE BODY OF THE AXIS AFTER ITS LOCALISATION BY SKIAGRAPHY.

IN the *Intercolonial Medical Journal of Australasia* Dr. F. Bird has published a case of this novel operation which certainly could never have been carried out without the aid of skiagraphy. The operation was performed more than three months after the injury, at the earnest solicitation of the patient, who suffered a good deal from deep cervical pains on the left side and stiffness of the neck. A 3 in. incision was made along the posterior border of the sterno-mastoid muscle in order to gain access to the lateral aspect of the second and third cervical vertebræ. The dissection was continued until the descending fibres of the first bundle of the levator anguli scapulæ were well defined in their upper two inches. The great vessels and nerves were held forward and search was made for the bullet. It could be neither seen nor felt, but the transverse process of the axis was in advance of the next. On holding the pharynx forward the dark bullet was seen buried in the body of the axis. Bone had to be snipped away before it could be extracted. Recovery followed.

THE SCHOOLMASTER ABROAD.

A CORRESPONDENT sends us from Skye an account of a state of matters unfortunately too common—namely, the harm wrought by an utterly ignorant unqualified practitioner. The practitioner in question is a schoolmaster and therefore it is to be hoped a man of some education. Our correspondent, who is a medical man, tells us that he was called to see a patient who had previously been treated by a schoolmaster for an affection of the eye. The schoolmaster said that the patient had an ulcer and gave him a bottle of medicine. Six weeks later our correspondent saw the sufferer and found "intense keratitis and conjunctivitis and in the centre of the cornea a foreign body" which after removal was examined under the microscope and proved to be the scale of a fish. The schoolmaster in question is also said to treat specially girls suffering from amenorrhœa, a statement which may mean nothing or may mean a great deal. He is also understood to receive a fee of 1*s.* for medicine supplied. Now this is a most scandalous state of things, but we are sorrowfully compelled to admit that the chances of stopping such practices are remote. In the first place, the law as it now stands is so impotent that any person whosoever, however ignorant, may treat any patient who is weak enough to go to him, provided only that the self-elected practitioner does not call himself by any "name, title, addition, or description implying that ..... he is recognised by law as a physician," &c., or imply by the use of any title or letters that he is a qualified practitioner. The only method by

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which he might be brought to justice is by means of a prosecution under the Pharmacy Act and that only if he has sold medicines containing certain poisons mentioned in that Act. Whether the Education Department has any legal right to interfere with the occupations of one of their employés out of school hours is doubtful, but we desire to draw the attention of the department to the fact that a practitioner of this sort is quite as dangerous as a defective drain and infinitely more to be condemned than an absence of hat-pegs.

THE GOLDEN WEDDING OF SIR JOHN SIMON.

WE have the greatest pleasure in offering our congratulations on the occasion of their golden wedding to Sir John and Lady Simon. Few members of our profession have lived a longer life of usefulness than Sir John Simon or can flatter themselves more truthfully that they have contributed largely to the happiness and longevity of others. We fear that the events of the last week must give him some unpleasant impressions of the weakness of our legislators in dealing with great questions of public health. But nothing can efface the work of Sir John Simon or affect the satisfaction with which his friends contemplate the effects of it in this and other countries.

THE CRUDE SEWAGE OF LONDON.

WE have received the report made by Dr. Frank Clowes, chemist to the London County Council, to his council on the bacteriological examination of London crude sewage. The report, though handed to the council by Dr. Clowes, is really the work of Dr. A. C. Houston, who was appointed by the council in February last to coöperate with Dr. Clowes as bacteriologist in the experimental treatment of the crude sewage at Crossness by filtration through coke. The report is only to be regarded as a preliminary statement of the progress of the work, as it would be impossible to adequately deal with the bacteriology of sewage after only a few months' attention. However, it contains a description of some of the methods used in the bacteriological examination of sewage, together with a summary of results of experiments and photographs of some of the bacteria found in London crude sewage, which should be of permanent value to the council's staff at the outfalls as well as to others who are not immediately connected with the council.

A LIVING CHILD DISINTERRED FROM AN ASHPIT.

A CASE presenting several interesting medico-legal features formed the subject of an inquest held by Mr. Birks, coroner for Holderness, Hull, on July 18th. From the report published in the *Eastern Morning News* it appears that the deceased was an unmarried woman, thirty-eight years of age, that she had for seven months been servant to a labourer whose wife was an invalid, and that he did not know she was pregnant. On July 16th she complained of lumbago, but declined to have medical attendance and did her work as usual. On July 17th (Sunday), at dawn, before sunrise—i.e., before 4 A.M.—the man heard her moving about downstairs, and after a few minutes he heard her come up again. He got up about ten minutes past eight, called out to her as he went downstairs, and she said she was a little better and would get up soon. About 11 A.M. he procured the assistance of a neighbour, a woman, to whom the deceased admitted that she had had a child and had buried it in the ashpit; she also said the child "belonged to nobody here," and became unconscious, dying before the arrival of the medical man. There was a great deal of blood about the room. Mr. Edward Harrison, assistant surgeon to the Hull Royal Infirmary, who arrived at the house after the death, found the baby buried in the ashpit covered with ashes and the emptyings of the privy to the depth of about 6 in. He was led to the spot by hearing it crying under the filth. The cord, about 18 in. of which was attached to the child, had been torn through. The child was discovered at 12.10 P.M., and it had probably been there since 3 A.M.—viz., about nine hours. According to the man's evidence it must have been there from 8 A.M., or at least four hours, but from what Mr. Harrison could learn the time was most probably nine hours. The inference was that the child was born before 4 A.M., that the deceased tore through the cord, carried the child downstairs, buried it, and returned to bed, and that hæmorrhage occurred subsequently from partial detachment of the placenta. The post-mortem examination showed very little blood in the body, the heart and great vessels being practically empty. The placenta was in the uterus, the greater part of it being attached to, but easily separable from, the uterine wall; a portion of about the size of the palm of the hand was detached, from which the bleeding had evidently taken place. The perineum was rent as far as the anus. There was no evidence of previous pregnancy. There was a small scirrhus in the left breast. The child was in a vigorous condition on July 19th.

THE LONDON UNIVERSITY COMMISSION.

THE Bill for appointing a statutory Commission to deal with the questions arising from the reconstitution of the University of London passed through the Committee stage of the House of Commons at an early hour on Tuesday morning, and was also allowed a third reading. The amendments which were rejected by the Standing Committee, to which the Bill had been referred, were all again submitted to the House but were again rejected by very large majorities. Sir John Gorst, who had charge of the Bill, refused to consider any amendment which would damage the scheme, and so it has practically passed unaltered through both Houses of Parliament. We still think that a local teaching university distinct from the Imperial Examining Board would have been the better solution of the difficulty, but next to this a dual university under a single Senate is undoubtedly the best plan. We hope that the Commission will soon enter on its duties and that medical students in London will have their present cumbrous system of examinations considerably simplified and be able to obtain degrees on similar terms to those which now exist in the provincial and Scottish universities. After many years of struggle this movement, begun by the late Dr. Moxon and the late Dr. Wilson Fox, appears to have reached a successful issue.

THE SURGICAL TREATMENT OF INTESTINAL TUBERCULOSIS.

THE *Journal* of the American Medical Association, May 21st, 1898, contains a useful paper by Dr. N. Senn, which collates the facts referring to this comparatively novel question. It is only primary and localised intestinal tuberculosis which can be considered suitable for operation. The first method of treatment mentioned is laparotomy and the application of iodoform. It is not strange that this procedure, which has been found successful in peritoneal tuberculosis, should prove efficacious in intestinal. Dr. Senn has no doubt that the use of iodoform is of value in tuberculous peritonitis, for recovery in one case followed its use where laparotomy and drainage had twice failed. To return to intestinal disease. In the case of a child recorded by Nové-Josseraud the cæcum and colon, which were extensively affected, were dusted with iodoform and recovery resulted. Enteroplasty (similar to pyloroplasty of Heineke-Mikulicz for pyloric stenosis) for stricture following the healing of solitary tuberculous ulcer has been

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successful (Péan). Enterectomy has been performed for intestinal tuberculosis and in well selected cases yields good results. In one case Dr. Senn resected the cæcum and 18 inches of the ileum and performed lateral anastomosis with the aid of decalcified bone-plates. The patient recovered but died six months later from recurrence. But in some cases resection may be too severe an operation; then entero-anastomosis may be performed. It relieves the intestinal obstruction caused by cicatricial stenosis and secures rest for the affected part. In a boy, aged sixteen years, with acute obstruction Dr. Senn performed ileo-ileostomy. The patient recovered and was in almost perfect health two years afterwards. In several cases of tuberculosis of the cæcum entero-anastomosis has been successfully performed by different surgeons.

THE NATIONAL PROTECTION OF CHILDREN.

THE Prince of Wales, in his recent speech at the dinner of the National Society for the Prevention of Cruelty to Children, laid emphasis on the position of the society as an educator. He was able to show that it had in many instances been the means of reviving and stimulating that parental feeling which appears to exist in some degree even in the most cruel father or mother. This result, which, after all, is the ultimate object of the society's creation, is one which many persons are apt to ignore. Mere punishment even as a measure of justice finds, as we have often shown, no place in its system of work. It is the last resort and its aim is always to reform as much as to chastise or to protect. The speech of Lord Herschell on this occasion, the more weighty as being that of one who knows more about the society's affairs than any other non-official person, leaves no doubt on this point. Further, in spite of a sympathy which all must share with the view that needless interference between parents and children is to be avoided, he has arrived at a perfectly clear decision that unfortunately human nature—even that of parents—is still such that the society's operations are indispensable. In common with the Royal chairman he regrets that notwithstanding an increasing revenue as much as one-third of the United Kingdom is still outside the area of its beneficent exertions. At the dinner the sum of £5010 was collected. This more than sufficed to cover a deficit of £2000 which remained to be met. When we reflect, however, that in order to defray last year's working expenses a sum of £53,000 had to be provided, of which £51,000 had been actually subscribed, it will be seen that ample and willing as has been the support accorded to the society, such aid must be largely increased before the required extension of its field of labour can be carried out. The handsome total contributed at the annual dinner may, we trust, be regarded as an augury of increase during the current year.

AT the thirty-first meeting of the Royal Commission on the Water-supply of London, which was held on Monday last in the Guildhall, Westminster, it was decided to adjourn the sittings of the Commission until next November. We shall publish next week our usual full report of the proceedings and we advise those of our readers who are interested in this important question to run through our previous articles on the subject before the sittings recommence. For the water-supply of London is a matter not only of medical importance, but of national urgency.

DR. W. J. COLLINS, late Chairman of the London County Council, was presented on Tuesday afternoon last with a massive silver tray and claret-bowl and two cups. The following inscription was engraved upon the tray:—"Presented to Dr. William Job Collins on the occasion of his marriage, August, 1898, by his colleagues of the London County Council, as a mark of personal regard and of their high appreciation of his services as an able and impartial chairman of the council." The chief officials of the council presented to Dr. Collins a silver bowl.

THE current number of *Punch* has a cartoon from Mr. Linley Sambourne's mordant pencil which will give some halting politicians cause to think. Death with a ready scythe welcomes the new Vaccination Bill brandishing the document in his bony arms and placing his foot on THE LANCET.

A MEETING of the Council of the Metropolitan Hospital Sunday Fund will be held at the Mansion House no Wednesday, Aug. 3rd, to receive the report of the Committee of Distribution and to order payment of awards to hospitals and dispensaries.

DR. CHEADLE, senior physician of St. Mary's Hospital, has presented the medical school with the sum of £500 to found a gold medal in clinical medicine.

THE library of the Royal Medical and Chirurgical Society, 20, Hanover-square, W., will be closed from Aug. 1st to 31st, both days inclusive.

PROFESSOR W. H. CORFIELD, M.D. Oxon., has been appointed honorary sanitary adviser to University College and Hospital.

DANGEROUS TRADES.

(BY A MEMBER OF ONE OF THE ASQUITH COMMITTEES ON DANGEROUS TRADES).

"BUT it was generally the case that when once a difficulty of this kind had to be faced invention came in. It was so in the case of gunpowder in mines. The Home Office had to prohibit the use of blasting powder in certain mines and soon after a simple method of rendering blasting powder harmless was discovered."—Report in daily paper of the Home Secretary's reply to a deputation on the manufacture of phosphorus matches, July 21st, 1898.

IN the sentence I have quoted at the head of this article the Home Secretary has clearly indicated the way in which a solution of the problem of dangerous trades can be found. The attempt to remove the dangers by means of special rules drawn up by the Home Office has proved a failure in all the more serious cases. When Mr. Asquith appointed committees of inquiry in 1893 I think we all believed that we could draw up special rules which would practically remove the evils complained of, but the experience gained since then has shown very clearly that it is only by revolutionising the industries themselves that we can hope to find a remedy of any value. Comparative statistics to support this statement are wanting, but the fact that 1214 cases of industrial lead-poisoning were reported in 1897 alone is sufficient to show that the special rules have failed in their purpose. These figures are the more significant when we find that about 70 per cent. of the cases occurred in industries which have been working under the special rules, and it would probably not be overstating the case if we multiplied these figures by ten in order to arrive at the actual as distinguished from the reported cases.

I am, of course, aware that it may be said that the special rules have never had a fair trial. The public were, I think, surprised to learn the other day from the law officers of the Crown that as the law now stands special rules drawn up by the Home Office have to be submitted to the employer and if he objects to them he can demand arbitration (Section 8, Factory Act, 1891). As any employer affected may do this the Home Office has been forced to frame the special rules so as to suit the wishes of the manufacturers and the result of this has been to weaken these special rules very seriously. A striking example of this is to be found in the special rules drawn up for manufacturers of china. After the chinaware has been dried it is packed with flint dust in large earthenware "saggers" for baking. After the baking is over this flint dust is brushed off the ware by women, the

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process being known technically as china scouring. During this process this flint dust rises in such dense clouds that I have seen it pouring through an open window like smoke. If this dust is examined under the microscope it is seen to consist of sharp, jagged pieces and Dr. Arlidge has shown that it sets up violent local irritation of the lungs, leading to disease and early death. How long women can live at this employment I do not know, but the belief among the workers in the potteries is that it usually causes death in from two to three years. Now, in the best china factories there is an arrangement of mechanical brushes and fans by which the whole of the dust is removed and never escapes into the room, and it was proposed by the committee of inquiry that such mechanical ventilation should be enforced in all cases of china scouring. This proposal was strongly objected to on the part of the employers on the ground that the smaller manufacturers of china could not afford to put in mechanical power and was consequently struck out of the special rules in their final form and replaced by that convenient word "efficient."

The Home Office are now trying in their new proposed rules to introduce mechanical ventilation for china scouring but are not likely to succeed. There can be no doubt, therefore, that as long as the manufacturers are practically allowed to draw up their own special rules for the Home Office to endorse little improvement can be hoped for, and an amending Act increasing the powers of the Home Office in this direction is urgently needed. It is true there is a clause in the Act of 1895 (Section 28) which was, I believe, intended to give the Home Office the necessary power and seems to do so when read by the layman, but the law officers of the Crown have decided differently.

But while admitting all this it is my special purpose to show that such measures are inadequate and that no arrangements requiring soap and nail brushes to be provided by the manufacturer or overalls and head-coverings to be worn by the workmen are going to remove the dangers caused by the dissemination through the air of compounds of lead or phosphorus. Work in a match factory means constant inhaling of phosphorus vapour, while work in a whitelead works or the dipping-house of a pottery means having the air full of carbonate of lead and getting covered with dust and breathing it in, and getting the clothes, the skin, the hair, and the nostrils loaded with carbonate of lead. If respirators are worn after two or three hours there is more lead inside them than outside them. The first time I saw girls in a whitelead works with their lips white with lead dust I realised the futility of special rules. Such industries must be revolutionised and the problem before us is how to do it. It is, of course, quite useless for the Home Office to make inquiries into the practicability of new processes or to attempt to devise new inventions on their own account. They cannot be competent for such a task, and even if they were could never convince the manufacturer. Let us suppose, for instance, that Dr. Oliver and Dr. Thorpe report, and report quite rightly, that there is no need to use raw lead in glazing earthenware. This will merely remain a pious opinion and will not convince a single potter in Staffordshire. The true way out of the difficulty has been pointed out by the Home Secretary in the quotation at the head of this article. The Home Office must so devise its regulations that it pays the manufacturer better to use an innocuous process. Then what was impossible will become possible and the necessary inventions will be made as soon as there is money in them. Now there are three ways in which this can be done—namely, prohibition, extension of the Compensation Act, and special rules with exemptions.

To take prohibition first, we have already a precedent for this in the Mines Regulation Act, and there is no obvious reason why we should not allow a man to be blown up by gunpowder but permit him to be poisoned by lead or phosphorus. As a first experiment in this direction the Home Secretary might well introduce a short Bill prohibiting the manufacture of matches with yellow phosphorus. The Home Secretary argues against the necessity of this on the ground that the cases of necrosis have been confined to one factory. He should have said the reported cases. Knowing as we do that the discovery of these cases, which had been going on for years, was due to the accident of an inquest and the energy of a newspaper reporter, what confidence can we place in the statement of the Home Secretary that such cases have not occurred elsewhere? It is surely a remarkable fact that phosphorus should confine itself to attacking only the workers in the factory which happens to be investigated by those outside the official ring.

A thorough inquiry will, I believe, show that there is a very strong case here for prohibition, while the trade to be dealt with is so small and the inconvenience to the public so slight that we could hardly take a better case for our first experiment. The whole number of match factories in the country amount to 25 and the whole number of men, women, and children employed amount to 3610. Many of these are already making safety matches and if proper notice were given the remainder could be similarly employed. Then we have no reason to believe that a "strike anywhere" match without yellow phosphorus cannot be made. Receipts are given in the technical books and the minute that there is money in a match without phosphorus plenty will be forthcoming. I should not be surprised to find that the mere threat of prohibition started match manufacturers experimenting and that since the Home Secretary's speech on July 21st all such experiments have ceased.

The next step proposed is the extension of the Compensation Act so as to cover injuries to health as well as accidents. This was proposed by Mr. Asquith as the Bill was passing through the House of Commons and Mr. Hedderwick has brought in a short Bill this year with the same object. The best plan probably would be to take such injuries to health as have been scheduled by the Home Office and of which returns have to be made, such as lead, phosphorus, and anthrax poisoning, and bring them under the operation of the Act. Such an extension of the Act would stimulate enormously the invention of innocuous substitutes for lead and phosphorus. For instance, the whitelead works would find themselves faced with such a heavy charge for insurance that instead of opposing the introduction of whitelead substitutes they would begin to use their enormous resources and vast trade connexions to introduce such substitutes themselves. Several good substitutes are known and few of them are now protected by patent, the inventors having failed miserably in their attempts to introduce them. So the way is open and the change will be made if there is money in it.

The third proposal is the drawing up of special rules with exemptions. An example taken from the pottery industry will perhaps show most clearly how this can be done. It is usual in the operations connected with dipping and printing the ware to employ a considerable number of children and young persons, who are thus brought in contact with lead in the soluble form of the carbonate. On the other hand, it has been shown by the firm of Mintons that the lead can quite well be fused before use into a glass or frit consisting of borates and silicates of lead, which if properly prepared are practically insoluble in the stomach. Furthermore, it has recently been proved that it is possibel to make a satisfactory leadless glaze. Yet in spite of the examples of Mintons before them, who have successfully fritted their lead for years, the pottery manufacturers refuse to give up the use of carbonate of lead. This may ultimately be a case for prohibition, but in the meantime a great deal could be done by raising the age of those employed in contact with lead from fourteen to eighteen years and granting exemption from this rule to those potters who have adopted a glaze which the Home Office after examination has passed as innocuous. This would so increase the cost of manufacture from the higher rate of wages to be paid that lead frits or leadless glazes would probably be quickly adopted. There are many other trades in which a similar plan might well be tried.

I have now, I think, sufficiently developed and replied to the text for which I have to thank the Home Secretary and may add a word or two about the Home Office itself. The factory department of the Home Office had formerly little to do beyond registering the ages and hours of work of women and children and ordering the fencing of machinery. But gradually it has been dawning on the public that a large number of industries on which our national wealth depends and in which a large proportion of our people are employed are carried on in a way which is injurious to health and that we may be paying too high a price for our manufacturing supremacy if we maintain it at the cost of the vitality of the race. Naturally we appeal to the Home Office to set such matters right and by this process the factory department, once an insignificant portion, is finding itself with much groaning and unwillingness converted into a vast department of public health in charge of some of the most vital problems dealing with the nation's welfare. Now for such a department of public health expert knowledge and expert training are necessary. The first step in the right direction was taken in the appointment of a distinguished public

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health officer to the head of the department. But this is not enough. Both inside and outside the department as inspectors and as officials we should have medical men thoroughly trained in public health work who might, if necessary, combine the duties of factory inspectors and certifying surgeons, and if, at the same time, the committee of inquiry into dangerous trades, which is still sitting, is made into a permanent bureau for the collection of accurate information the factory department of the Home Office will be capable of dealing with the enormous field of work before it and become the guardian of our public health.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE Secretary of State has made the following further appointments of medical referees under the Workmen's Compensation Act, 1897:—

Circuit No. 5.—Dr. Frederick Blakesley Mallett, Bolton; Dr. James Corns, Oldham; Dr. James Holmes, Manchester; and Dr. Joseph Henry, Rochdale.

Circuit No. 8.—Dr. William Thorburn, Dr. Samuel Buckley, Dr. Abraham Emrys Jones, Mr. Judson Sykes Bury, Mr. George Arthur Wright, and Dr. Simeon Holgate Owen, Manchester.

Circuit No. 13.—Mr. Rutherfoord John Pye-Smith and Mr. Archibald William Cuff, Sheffield; and Dr. Henry Waytes Pomfret, Manchester.

Circuit No. 14.—Mr. Walter Thompson, Mr. Walter Henry Brown, and Mr. Charles James Wright, Leeds; and Mr. William Kitson Clayton, Wakefield.

Circuit No. 16.—Dr. Charles H. Milburn and Mr. Thomas Melancthon Evans, Hull; Mr. John Dickinson Leigh, Scarborough; and Dr. John Fletcher Horne, Barnsley.

Circuit No. 26.—Mr. Matthew Arden Messiter, Dudley; Mr. Thomas Vincent Jackson, Wolverhampton; Mr. Henry William Langley Browne, West Bromwich; Mr. George Arthur Phillips, Walsall; and Mr. Christopher Atkinson Newnham, Wolverhampton.

Circuit No. 33.—Mr. Charles Hunter Graham, Lowestoft; and Dr. William Alfred Elliston, Ipswich.

Circuit No. 40.—Mr. George Paddock Bate, 412, Bethnal Green-road; Mr. Frederick John Smith, 4, Christopher-street, Finsbury-square; and Mr. Bertram Goddard, 27, Pentonville-road.

Circuit No. 41.—Mr. Alfred Herbert Tubby, 25, Weymouth-street, Portland-place; and Mr. H. Martin Jordan, 9, John-street, Adelphi, W.C.

Circuit No. 45 (further appointment).—Mr. Felix Charles Kempster, 79, Bridge-road, Battersea.

Circuit No. 49.—Dr. Thomas Whitehead Reid, Canterbury; Dr. Charles Parsons, Dover; Dr. Thomas George Styan, Ramsgate; and Mr. James Vincent Bell, Rochester.

Circuit No. 50.—Mr. Ebenezer Snell, Brighton.

Circuit No. 54.—Dr. Bertram Mitford Heron Rogers, Clifton; and Mr. James Paul Bush, Clifton.

Circuit No. 58.—Dr. J. Raglan Thomas and Dr. John Woodman, Exeter; Mr. John Henry Square May and Mr. Charles Hamilton Whiteford, Plymouth; and Mr. J. Snowden Smith, Tavistock.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6423 births and 3356 deaths were registered during the week ending July 23rd. The annual rate of mortality in these towns, which had been 14·7 per 1000 in each of the two preceding weeks, rose again last week to 15·6. In London the rate was 15·4 per 1000, while it averaged 15·7 in the thirty-two provincial towns. The lowest rates in these towns were 4·6 in Croydon, 10·7 in Huddersfield, 10·9 in Hull, and 11·3 in Nottingham and in Halifax; the highest rates were 18·9 in Birkenhead, 19·6 in Gateshead, 21·1 in Liverpool, and 23·9 in Salford. The 3356 deaths included 487 which were referred to the principal zymotic diseases, against 330 and 378 in the two preceding weeks; of these, 220 resulted from diarrhœa, 93 from whooping-cough, 70 from measles, 53 from diphtheria, 26 from "fever" (principally enteric), 25 from scarlet fever, and not one from small-pox. No death from any of these diseases was recorded last week in Huddersfield or in Halifax; in the other towns they caused the lowest death-rates in Nottingham, Bolton, and Croydon, and the highest rates in West Ham, Norwich, Birkenhead, and Salford. The greatest mortality from measles occurred in Plymouth and Norwich; from whooping-cough in West Ham, Preston, Oldham, and Newcastle-upon-Tyne; from "fever" in Burnley; and from diarrhœa in Portsmouth, Birmingham, Birkenhead, and Salford. The mortality from scarlet fever showed no marked excess in any of the large towns. The 53 deaths from diphtheria included 29 in London, 6 in Leeds, 3 in West Ham, and 3 in Liverpool. No fatal case of small-pox was registered last week either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, July 23rd, was 2355, against 2205, 2250, and 2314 at the end of the three preceding weeks; 276 new cases were admitted during the week, against 204, 237, and 265 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 160 and 175 in the two preceding weeks, declined last week to 148, and were 31 below the corrected average. The causes of 29, or 0·9 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Hull, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the three preceding weeks from 21·1 to 18·5 per 1000, rose again to 20·1 during the week ending July 23rd, and exceeded by 4·5 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·2 in Aberdeen and 16·4 in Leith to 22·7 in Paisley and 23·8 in Perth. The 605 deaths in these towns included 55 which were referred to diarrhœa, 29 to whooping-cough, 19 to measles, 8 to scarlet fever, 5 to "fever," and 2 to diphtheria. In all, 118 deaths resulted from these principal zymotic diseases, against 96 and 93 in the two preceding weeks. These 118 deaths were equal to an annual rate of 3·9 per 1000, which was 1·6 above the mean rate last week from the same diseases in the thirty-three large English towns. The 55 fatal cases of diarrhœa showed a further increase upon recent weekly numbers, and included 38 in Glasgow. The deaths referred to whooping-cough, which had been 21 and 26 in the two preceding weeks, further rose to 29 last week, of which 10 occurred in Glasgow, 9 in Edinburgh, and 4 in Dundee. The fatal cases of measles, which had declined from 41 to 23 in the two preceding weeks, further fell to 19 last week, of which 9 were recorded in Glasgow and 6 in Dundee. The 8 deaths from scarlet fever were within one of the number in the preceding week, and included 5 in Glasgow and 3 in Edinburgh. The 5 fatal cases of "fever" corresponded with the number in the preceding week, and included 2 in Paisley. The deaths referred to diseases of the respiratory organs in these towns, which had been 106 and 76 in the two preceding weeks, were 75 last week, and were 12 below the number in the corresponding period of last year. The causes of 32, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the four preceding weeks from 22·8 to 18·5 per 1000, rose again to 22·7 during the week ending July 23rd. During the past four weeks the rate of mortality in the city has averaged 20·8 per 1000, the rate during the same period being 14·6 in London and 20.0 in Edinburgh. The 152 deaths registered in Dublin during the week under notice showed an increase of 28 upon the number in the preceding week, and included 12 which were referred to the principal zymotic diseases, against 6 and 3 in the two preceding weeks; of these, 5 resulted from whooping-cough, 4 from diarrhœa, 1 from scarlet fever, 1 from diphtheria, and 1 from "fever." These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 2·0 in London and 3·2 in Edinburgh. The fatal cases of whooping-cough, which had been 3 and 1 in the two preceding weeks, rose again to 5 last week. The 4 deaths from diarrhœa exceeded the number in any recent week, and the mortality from scarlet fever corresponded with that recorded in the preceding week. The 152 deaths in Dublin last week included 38 of infants under one year of age, and 31 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in the preceding week. Seven inquest cases and 2 deaths from violence were registered; and 64, or more than a third, of

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the deaths occurred in public institutions. The causes of 11, or more than 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

FLEET-SURGEON GEORGE ROBERT DEIGHTON CHARLTON has been placed on the retired list of his rank at his own request. Fleet-Surgeon Thomas Canning Hickey retires with the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments are announced: — Staff Surgeons: H. J. Hadden to the *Rainbow* and A. G. Andrews to the *Thunderer*. Surgeons: John W. Craig to the *Heron*, Edward T. Meagher to the *Caledonia*, and John C. Durston to be lent to the Walmer depôt. Surgeon and Agent: Arthur B. Vise at Fosdyke Station and Fleethaven.

ROYAL ARMY MEDICAL CORPS.

Major Nicholas retires on retired pay. Lieutenant-Colonel G. A. Hughes and Major J. M. Irwin have embarked for service in Egypt. Lieutenant-Colonel C. Douglas, V.C. (retired pay), takes over charge of the Station Hospital, Perth. Lieutenant R. Fawssett is directed to rejoin the Home District. Captain R. J. D. Hall has embarked for Egypt. Captain Bewley is placed under orders for Hong-Kong.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Slaughter (Army) to officiate on the Administrative Medical Staff of the Army, with the temporary rank of Surgeon-Colonel, vice Surgeon-Colonel Williamson (Army), deceased. The Viceroy and Governor-General has been pleased to make the following appointments on His Excellency's personal staff:—Surgeon-Colonel Warburton, vice Brigade-Surgeon-Lieutenant-Colonel Cunningham, retired; Surgeon-Colonel Price (Army), vice Surgeon-Colonel Atkins, vacated; and Brigade-Surgeon-Lieutenant-Colonel G. D. Bourke (Army), vice Brigade-Surgeon-Lieutenant-Colonel Edge, vacated. Surgeon-Lieutenant-Colonel J. P. Greany and Surgeon-Lieutenant-Colonel Davidson have respectively delivered over and received charge of the Dharwar Prison. The services of Surgeon-Captain Gabbett (Madras) are replaced at the disposal of the Government of Madras. Surgeon-Captain Grant, (Bengal) is appointed to officiate as Residency Surgeon and *ex-officio* Assistant to the Resident in Nepal, vice Surgeon-Captain Armstrong, on leave, until further orders, and Surgeon-Lieutenant-Colonel Hall, Officiating Inspector-General of Civil Hospitals, North-West Provinces and Oudh, is appointed to hold charge of the office of Inspector-General of Prisons, North-West Provinces and Oudh, in addition to his other duties, from the date of taking charge.

VOLUNTEER CORPS.

Royal Engineers: 1st Gloucestershire: Surgeon-Lieutenant W. B. Fergusson to be Surgeon-Captain. *Rifle:* 3rd Volunteer Battalion the Queen's (Royal West Surrey Regiment): Josiah Field Hall to be Surgeon-Lieutenant. 3rd Volunteer Battalion the Welsh Regiment: The retirement of Surgeon-Major Evan Jones is cancelled.

THE SPANISH-AMERICAN WAR.

Until Wednesday there had been a comparative lull in the news and progress of events since the destruction of Admiral Cervera's fleet and the capitulation of the Spanish garrison of Santiago and the capture of that place by the Americans. On that day, however, news came that the Spanish Government had through the French Ambassador asked for a cessation of hostilities in order that terms of peace might be considered. A difficulty with which the United States Government are at present confronted is with respect to the Cuban insurgents and the future policy to be adopted in regard to them and to the island and its inhabitants, who have set up a claim for the establishment of a Cuban Republic. It will be very interesting to know how the Washington Cabinet will deal with the various and rather difficult problems which must have been foreseen from the first but with which they are now face to face. Meanwhile the war is going on, the invasion of Puerto Rico has begun, and the fall of Manila must soon occur. The American troops in and around Santiago have suffered greatly from heat and malaria and there are a large number of sick. This gives rise to a large amount of extra work falling upon those remaining well in the way of guards and night duty, and the physical strain entailed on the troops in these respects, unless soon relieved, must probably be followed by an increased amount of ineffectiveness from fatigue and sickness. Sanitary precautions and measures are being carried out on a large scale, but these necessarily take time to effect. The Americans will lose no opportunity, we may feel assured, of camping as many of their troops as possible in any available uplands in the vicinity of Santiago and in transporting to America such invalid soldiers as are not soon likely to render effective service in the field. Those engaged in ambulance work about Santiago must have had a trying and perilous time of it according to a letter written by Mrs. Porter, the wife of President McKinley's secretary, who went to Santiago with the Red Cross Society. Mrs. Porter writes on July 8th describing the measures taken in the aid and care of the wounded and says: "The Spanish wounded captives expressed much gratitude at being given the same attention as the Americans. In several cases wounded men were shot dead as they lay in the Red Cross litters *en route* to the hospitals. This firing upon the wounded and those who were caring for them so increased that the surgeons operated by moonlight, being afraid to light candles or lanterns lest the Spanish sharpshooters should pick them off."

A FRENCH ARMY SURGEON'S EXPERIENCE OF INFLUENZA.

Duplay's *Archives* for July contain two articles by military medical officers—to wit, an "Epidemiological Study" of Influenza and the Diseases that may be Evolved Simultaneously, by Surgeon-Major J. Marty, and the first part of a critical essay on Chloroma or green cancer by Assistant-Surgeon Gustave Lang. Quoting Fuster in Rochard's Encyclopædia of Hygiene Surgeon-Major Marty enumerates as follows the epidemics of influenza which have received historical notice since A.D. 1239: thirteenth century, 1; fourteenth, 6; fifteenth, 7; sixteenth, 17; seventeenth, 12; eighteenth, 28; and nineteenth (up to 1860), 21. Since 1860 several additional epidemics have been noted, so on the whole it is more than probable that the record for our expiring century will largely exceed that of its predecessor. Up to 1892, says Surgeon-Major Marty, atmospheric and meteorological vicissitudes were universally regarded as the cause of influenza, but Pfeiffer's bacillus, discovered in that year, soon came to be acknowledged as the specific agent of the affection, and although the researches of Tessier, Roux, and Pittion raised some doubts on the subject the general belief has not been seriously disturbed. At the same time, as was pointed out in 1895 by Bezançon in *La Médecine Moderne*, Pfeiffer's bacillus is habitually found associated with other microbes which no doubt are more or less concerned in the evolution of the malady, and the true etiology of the latter can only be arrived at through a comprehensive study of all the micro-organisms collectively as well as individually. Surgeon-Major Marty's remarks are based on his experiences at Chollet, where he was quartered for three years, from 1892 to 1895. During this period there were three distinct epidemics of influenza, each one furnishing examples of the nervous, the thoracic and the gastro-intestinal forms of the disease. The numbers are too small for generalisation, but so far as they go the deductions drawn from them are interesting. The influenza bacillus can live amicably with many of its congeners and the latter are responsible for many of the incidental phenomena. There is, however, nothing harder than to draw a line where the effect of one microbe ends and that of another begins. They all react upon each other, but the possibility of coincidence must not be forgotten.

MEDICAL INSPECTION OF FRENCH SOLDIERS PROCEEDING ON FURLOUGH.

According to a decree which was issued in October, 1892, the medical inspection of all French soldiers quitting the service for any cause or proceeding on temporary leave of absence is strictly enjoined, but apparently the latter part, at all events, of the edict has never been acted upon, being regarded as a purely theoretical ordinance. Be this as it may, a supplementary decree, dated May 6th, 1898, has now been promulgated to the following effect: "1. Soldiers desirous of obtaining leave of absence shall be inspected by a medical officer, and if found to present symptoms of any disorder, however slight and non-contagious, they shall be detained with their corps. 2. In cases when soldiers may be

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granted permission as an exceptional measure to return to their families for medical treatment, commanding officers shall grant leave of absence for a period in accordance with the probable duration of the disease, but not until they have satisfied themselves that the families are in a position to receive their relatives." The Minister of War's instructions on the foregoing run as follows: "The decree is designed, so far as possible, to prevent soldiers proceeding on leave of absence while in the incubative stage of disease. The neglect of this precaution might at any moment lead to overcrowding in the civil hospitals or to sick soldiers whose state did not permit of their reception and treatment among their friends being left without an asylum."

THE HEALTH OF THE JAPANESE NAVY.

The Director-General of the Japanese Imperial Navy has just issued his report for the twenty-eighth year of Meiji (1895). The general health he states to be satisfactory. The returns of the number of cases of disease show a decrease of 53·96 per 1000, while the ratio of each day's sickness shows an increase of 0·36 per 1000 of the force when compared with the previous year. As the battle of Wei-hai-wei and the rebellion of Formosa occurred in 1895 the number of casualties was naturally greater than in an ordinary year. The ratio of cases of venereal disease and their sequels was 152·39 per 1000. The mean daily force in service for the year was 13,006 men, an increase of 2003 men over the previous year. Of the total number of 13,006 men 0·02 per cent. were under the age of fifteen years, 5·73 per cent. were between the ages of fifteen years and twenty years, 38·30 per cent. between the ages of twenty years and twenty-five years, 31·58 per cent. between the ages of twenty-five years and thirty years, 18·90 per cent. between the ages of thirty years and thirty-five years, 4·32 per cent. between the ages thirty-five years and forty years, 1·05 per cent. between the ages of forty years and forty-five years, and 0·10 per cent. between the ages of forty-five years and fifty years. As the terms of service were lengthened by the Japan-China War there were some men over forty-five years of age.

SURGEON GENERAL TAYLOR.

Surgeon-General Taylor, R.A.M.C., has, as we have stated, been selected for the appointment of Principal Medical Officer of the Anglo-Egyptian force in the forthcoming advance on Khartoum and is probably in Egypt at the present time. We presume that the size and importance of the expedition and the strength of the British contingent taking part in it were considered to be such as to warrant and require the appointment of an officer of high rank in medical charge of the expeditionary force and its sanitary and hospital arrangements in the field.

DEATHS IN THE SERVICES.

Surgeon-General William Johnston, I.M.S., Madras (retired), at his residence, Cheltenham, on July 24th. He served throughout the Chinese War and was present in ten engagements (medal with clasp). For many years he was deputy inspector of hospitals in the Madras presidency. He retired in 1876.

The appointment of Secretary to the Principal Medical Officer of Her Majesty's Forces in India will, we understand, become vacant on Aug. 14th by extended time expiration in the post of Surgeon-Colonel Beatson, 9th Bengal Cavalry, who will be succeeded by Surgeon-Major Shearer, 27th Punjab Infantry, late in medical charge of the 63rd Native Field Hospital.

THE ROYAL MEDICAL BENEVOLENT COLLEGE, EPSOM.—Founder's day was celebrated on Monday, July 25th. The Rev. T. N. Hart-Smith presided, and among those present were Dr. T. W. Shore, Sir Joseph Fayrer, Dr. Holman, Dr. Lumsden Propert, Dr. Baines, Mr. Kiallmark, Colonel Gordon Watson, Mr. H. E. Vardon, Mr. Clement Smiles, and Mr. A. Oldaker. In his address the headmaster, the Rev. T. N. Hart-Smith, called attention to the large number of scholarships connected with the college and referred to the favourable alterations recently made in the conditions under which they were awarded. Dr. Shore, Warden of St. Bartholomew's Hospital Medical School, bore testimony to the excellence of the education given at Epsom College.

Correspondence.

"Audi alteram partem."

THE RECTAL INJECTION OF THE SERUMS.

To the Editors of THE LANCET.

SIRS,—In the treatment of diphtheria I have successfully employed a method of sero-therapy which has, so far as I am aware, not yet been brought under the notice of the medical faculty in this country. In this borough, and I think in most places where anti-vaccination precepts are rampant, any method of procedure which to the uninitiated savours of what our opponents are pleased to term the "Jennerian ritual" is certain to meet with most unreasonable and bigoted opposition. This spirit of interference is habitually manifesting itself in a stubborn refusal on the part of parents to allow their children to be treated with anti-diphtheritic serum. I think, however, that it is in large measure the method of administration which attracts the attention and calls down the anathemas of these parents. I was, therefore, last year tempted to inject sera *per rectum* instead of hypodermically and with such gratifying results that I see no reason to revert to the ordinary method of administration. So far I have not had a sufficient number of cases under my care to enable me to adduce evidence of any real value for statistical purposes, but I consider it expedient at this early stage to direct the attention of colleagues to what appears to be a simple method of employing a most excellent remedy. Certain it is that no harm can accrue through administering antitoxin by the bowel if the diagnosis is established and if the ordinary rules as to posology and aseptic preservation of the serum are observed. I have not seen a single case of rash or other complication which could reasonably be attributed to the serum. Such complications are, I believe, almost invariably caused by the coinjection of adventitious organisms or their products and it is at least possible that many of these would fail to pass through the rectal mucous membrane. The serum itself, judging by results, appears to undergo rapid and complete absorption, so that I have observed the usual posological rules. A difficulty with which many provincial practitioners have to contend is to procure fresh serum expeditiously. It deteriorates rapidly if kept and the twenty-four hours' delay which perhaps ensues before it can be obtained fresh may determine a case. For this reason dried serum has commended itself, but I think most practitioners will agree with me that its viscidity when dissolved interferes with its hypodermic injection—that is, unless it be mixed with an inconveniently large volume of water. Moreover, it is by no means easy to ensure its sterility when mixing it. If, however, we administer it *per rectum* these two difficulties vanish and it becomes, *cæteris paribus*, the ideal serum for provincial practitioners.

Briefly, the advantages of rectal over hypodermic serotherepy appear to be as follows: (1) It can be employed in almost all cases without fear of prejudicial interference; (2) solid sera can be conveniently used; (3) it is expeditious and simple; and (4) the absorbed serum is purer. I have also administered anti-streptococcic serum per rectum with gratifying result in a case of scarlet fever. Reasoning by analogy the method appears to be deserving of trial, and should my expectation as to its general employment in the near future be verified we may possibly hear of some enterprising firm supplying solid sera in the form of suppositories. The adduction of experimental as well as clinical evidence as to the absorption of sera and, indeed, of lymph by mucous membranes would be pregnant with interest.

I have the honour to be, Sirs, yours faithfully,

J. E. O'CONNOR, M.B. R.U.I.,
Physician to the Lowestoft Isolation Hospital.

Lowestoft, July 21st, 1898.

"ONLY A PAUPER."

To the Editors of THE LANCET.

SIRS,—I notice that you have in THE LANCET for the second time cast a slur on what you term the Marylebone infirmary workhouse. There is no such place as the Marylebone

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infirmary workhouse and your comments in THE LANCET of July 16th might give a false impression to many ignorant persons who would not distinguish the difference between a workhouse infirmary and an ordinary workhouse such as the Gray's Inn-road workhouse. The case reported in THE LANCET of June 25th occurred at the latter place, which is only a temporary workhouse and over three miles from the infirmary. The nurses here, 74 in number, are all fully trained as required by the Infirmary Committee and the committee of the Nightingale Fund, and they are, as acknowledged by many of the leading medical men in London and as shown by the important posts they get after their three years' training here, as well qualified as those trained at any hospital. I should be glad if you will be careful in future not to speak of the Marylebone workhouse as the Marylebone infirmary workhouse and should be grateful if you will come and inspect our wards, when you will see for yourselves that the "paupers," as you call them, have every care, comfort, and kindness that medical skill and good nursing can bestow upon them. In the meantime I beg to enclose a few papers which may give you a small idea of what is required of our nurses. I am, Sirs, yours faithfully,

JOHN R. LUNN,
Medical Superintendent.

St. Marylebone Infirmary, July 23rd, 1898.

*** We are sorry that the mistake should have occurred.—ED. L.

"THE DRAINAGE OF SWANAGE."

To the Editors of THE LANCET.

SIRS,—Allow me to supplement Dr. McCausland's admirable letter of July 19th[1] by the following short account of the deaths here during the three last completed years 1895-96-97. They number 107, which gives 16 per 1000 for the population. On analysis 43 were of those seventy years old and over, 25 of children one year old and under, 5 were the result of accident, 5 were cases of cancer, and 5 died from phthisis, leaving 24 deaths during three years in a population of over 2500 from all other causes—results for which any town may be thankful. Party quarrels and rival interests, I am sure you will admit, should not be allowed to intrude into these questions. The "sanitary defects pointed out by Dr. S. W. Wheaton in his report of 1897" *do not remain*, and this is the seriousness of the charge you have made. I am, Sirs, yours faithfully,

Swanage, July 25th, 1898. EDWARD CALTHROP.

"BONE-SETTERS AND THE EMPLOYERS' LIABILITY ACT."

To the Editors of THE LANCET.

SIRS,—In answer to your correspondent, Mr. John Cranke, I beg to say that I have had considerable experience of cases under the Employers' Liability Act, having until recently held the office of consulting surgeon for such cases to several large unions representing in the aggregate about 100,000 men. Your correspondent's questions are entirely legal ones and as such can be better answered by a solicitor. My experience in cases under the Employers' Liability Act is that the question to be settled is mainly how long the man has been or is likely to continue to be disabled, and that the compensation is settled on that basis—assuming that the man is legally entitled to any compensation at all, and this latter question the practitioner is not called upon to decide. In estimating the recovery of a man the question is *not* when will it be possible for the man to work, but when will he be certainly able to do his usual work as well and with the same ease as before the accident, providing the nature of the injury permits of such recovery within a reasonable period; in other cases the question of the man's ability to do (and obtain) light work will arise.

Personally I have never heard the question raised in court as to how far a man's misjudgment in the selection of a medical adviser who may have retarded his recovery has any effect on the employer's liability. So far as I can judge, however, there is little or no doubt that the employer would be held responsible for the full compensation, including the further injury done by the medical adviser—bone-setter for instance—on the ground that the patient in calling in the medical adviser (bone-setter) acted in good faith and certainly would not have done so had the accident not occurred. Assuming that your correspondent means the "Workmen's Compensation Act, 1897," when he speaks of the "new Act," I certainly think that under that Act the compensation will be largely, if not entirely, settled on the same basis; but this again is a purely legal question. With regard to protection generally the General Medical Council is proverbially slow to act and in this particular case the bone-setter in question does not appear to have represented himself as a registered medical practitioner and I do not think that in the present state of the law he can be prosecuted. Worse luck!

I am, Sirs, yours faithfully,

Ilford, July 25th, 1898. MURTAUGH HOUGHTON.

[1] THE LANCET, July 23rd, 1898, p. 228.

THE TREATMENT OF GOUT BY PIPERIDINE.

To the Editors of THE LANCET.

SIRS,—I was much interested in the paper of Dr. Tunnicliffe and Dr. Rosenheim on Piperidine as a Uric Acid Solvent contained in THE LANCET of July 23rd and consider that the authors deserve every credit for their laborious and painstaking investigation. Undoubtedly the experiments described in the paper show that piperidine may be of use in cases of uric acid gravel and calculi as a solvent of uric acid on the distal side of the kidneys, and the experiments also show that the drug is in such respects superior to piperazine, but the value of the drug as a solvent of gouty deposits is, in my opinion, by no means proved. Dr. Tunnicliffe and Dr. Rosenheim state that the tartrate of piperidine may be given in doses of 15 grains three times a day. Now, if 15 grains of piperidine were introduced at once into the circulation of an adult man of average weight the percentage of the drug in the blood would be about 0·002, yet the only experiments conducted by the authors as to the solvent effect exerted by piperidine on sodium biurate are with 0·1 per cent. solutions, or with fifty times as much as could be introduced into the circulation by ordinary dosage. My experiments described in THE LANCET of June 11th, 1898, showed that piperazine and other drugs, when present in far larger proportions than could be introduced into the blood by medicinal administration, did not increase the solvent power of artificial blood serum for gouty deposits. The results of my experiments confirm those obtained by Sir William Roberts and by Dr. Levison of Copenhagen, and are also supported by my clinical experience. Dr. Tunnicliffe and Dr. Rosenheim state that "there seems little doubt that uric acid is normally present in blood." If they will refer to the comparatively recent results of von Jaksch, Klemperer, Sir Alfred Garrod, and myself they will learn that there is considerable doubt as to the normal presence of uric acid in the blood. Dr. Tunnicliffe and Dr. Rosenheim have certainly estimated something in bullocks' serum, but they do not mention whether they identified the body as uric acid by the murexide test.

I am, Sirs, yours faithfully,

ARTHUR P. LUFF, M.D. Lond.

Weymouth-street, W., July 26th, 1898.

THE HUXLEY LECTURE.

To the Editors of THE LANCET.

SIRS,—I shall feel very much obliged if you can kindly find a corner in THE LANCET for a statement of the fact that the Huxley Lecture which Professor Virchow is to deliver on Monday, Oct. 3rd, will be *in English*, as there seems to be so much doubt on the point, notwithstanding the very clear intimation which you gave in your issue of July 16th.

I am, Sirs, yours faithfully,

H. MONTAGUE MURRAY,

July 23rd, 1898. Dean of Charing-cross Hospital Medical School.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET

SIRS,—With some reluctance I venture to trespass once again upon your space. The above is, however, a subject which deserves and is now receiving a large amount of

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our attention. Your able leading article draws attention to a very important point—that the newly qualified man has been only familiar with men at the head of their profession who enjoy considerable incomes and is apt unthinkingly to apply similar standards of luxury to members of the profession generally. Now there is surely a great difference between the newly qualified and the long qualified man; the former has nearly everything to learn so far as the actual details of practice go; the latter may be an invaluable help to his principal. Most medical men are in such a position that they cannot possibly afford to keep an elderly assistant and so have to do all the important work themselves.

"Another G. P." sympathises with us who get so small a return for our labour. While fully agreeing with most of his letter, I fail to see that I was squeezed by my late principal who paid me £80 in-door. I was satisfied, although I had previously held some important hospital appointments, and I consider that from £80 to £100 in-doors, gradually increasing slightly, is as much as any assistant is worth to a country practitioner.

"Practitioner Too" and also "Another G.P." are anxious to hear some of the details as to clubs, parish work, &c. Both my own practice and also that of my late principal have been practically free from clubs; the few members that either of us had averaged 5*s.* per annum for attendance on the member himself. The parish work was practically *nil* and the remuneration received for it was consequently more than adequate. A fee of 2*s.* 6*d.* was and is the lowest fee charged either in the surgery or for a visit save only in a few exceptional cases. The general fees were charged according to the tariff of various branches of the British Medical Association, but it is one thing to charge and another to be paid. Many of my patients live six miles away, some of them twelve. It is a very scattered district and I am the nearest medical man. The population could not possibly support another. How do your readers expect a labourer earning 10*s.* per week and his food to pay me adequate fees for a twenty-mile journey? This point always suggests to me the possibility of State payment in such cases, especially for attending infectious diseases where our chief aim is to protect the public. We must remember that the medical officer of health is not expected to attend the patient, and is, therefore, not always in a position to say when infection is over. My own expenses could be considerably cut down in the matter of horseflesh by refusing to attend these impecunious long-distance cases, but what is to become of them? Another point is, I consider it high time that the members of the profession awoke in a mass from their lethargy with regard to bad debts in cases where there really is money to pay.

I have explained that this practice is almost devoid of clubs and ridiculously small surgery fees, though I question very much whether the club doctor does not get more adequate return in the long run than we who have to whistle for our money. I will give one instance of where the long distances make the life one of slavery. I have just received the sum of £1 4*s.* for vaccinations performed as public vaccinator; the fees were sufficient for the work performed if it had been done at home, but I was allowed nothing for travelling though I was expected to drive 72 miles to attend the various stations. Your correspondents appear to think my figures extreme and I will allow that there are a few special circumstances, unconnected with myself and which cannot be disclosed, which certainly make my income a little less than it otherwise would be. To my mind bad debts are quite as much to blame as small fees, and if things go on as they are we shall almost certainly have to consider the necessity of either some form of State aid in scattered districts, or compulsory collection of debts, or a wholesale club system at reasonable fees for all working men and their wives and families. If assistants will only consider the matter fairly I feel sure that they will see no necessity to complain of being squeezed by their principals. It is the profession which is being squeezed by the public, and the assistants are in many cases the only ones who are unable to feel the pressure, for they are housed and fed and should surely be able to save something out of £80 or £100. The numerous societies to which we subscribe should be sufficient to safeguard our interests and we must look to them to do it.

One other point: how much would the qualified assistants who are now sneering at a remuneration of £100 in-door be willing to accept from hospital authorities for a house surgeoncy? We have heard very little of the gratuitous or almost gratuitous services rendered in these institutions, but surely it is here that the battle should commence. Here the funds come from the public and it is indeed hard that the public should be let off and the hard-worked practitioner expected to pay large sums for similar services and at the same time bear all responsibility. I have in my mind at the present moment a case in which the principal had to pay nearly £100 for a mistake made by a qualified assistant. If it were not for the long distances I should be satisfied with my income, but it is just these awful journeys which cost the time and money and make up the chief difference between the town and country practitioner. An actual income of £400 represents a far larger amount of bookings, but the latter are of no use without the cash.

I am, Sirs, yours faithfully,

July 24th, 1898. PRACTITIONER.

To the Editors of THE LANCET.

SIRS,—Just now we are hearing a good deal in the columns of THE LANCET and elsewhere concerning the alleged dearth of qualified assistants, the alleged multiplication of poor principals who cannot afford to pay a decent salary, and the alleged dead-lock caused by the recent *pronunciamiento* of the General Medical Council, which numbers the unqualified assistant among the things that were. That the unqualified assistant was an unqualified nuisance, will, I think, be denied by few, save those whose judgment is biased by self-interest. That well-educated and self-respecting young gentlemen should decline to undertake arduous duties for salaries less than the wages of an upper servant is not surprising. That the acceptance of contemptible fees for responsible professional services is degrading to the individual and derogatory to the dignity of a learned profession is abundantly evident. That side by side with the alleged dearth of assistants there is an undoubted plethora of practitioners is shown by the yearly growth of the Register.

If these things are so the question arises, Is there any practical remedy for this sufficiently grave state of matters? I believe that there is such a remedy, though at first sight it may appear an anomalous one. It is this. Raise the preliminary examination at once to a good university standard. Let there be no delay and no half-measures. Weed out boldly. By so doing a large proportion of the unfit will be debarred at the very threshold from entering a profession which they are not fitted to adorn. Lessen the crowd of hungry aspirants who now greedily compete for every appointment, be it ever so paltry, and undersell each other like petty tradesfolk for sixpences and shillings, so that the average practitioner may once more have leave to live and to respect himself. When the principal is decently remunerated the assistant will be decently paid and things will right themselves all round. The public, too, will be the gainer, for the whole tone of the profession will be raised, and it will get a better article for its money, though not perhaps quite such a ruinously cheap one. It is vain to agitate for a legally-recognised minimum fee unless the plea be backed by large and solid voting-power, such as the profession has never had nor ever will have at its command. It is also inexpedient, for such a fee would only tend to pauperise further those who can afford to pay something but not much, so that the remedy might prove worse than the disease. At present an easy preliminary examination opens the door to a long curriculum and hard professional examinations. These, in their turn, open the door to a fierce struggle for existence in an overcrowded arena. Thus the socially and intellectually unfit crowd in—to their own discomfiture at the examination tables or to that of their *confrères* in after life.

The General Medical Council has eliminated the unqualified assistant. Let it follow up what it has well begun by eliminating the unqualified qualified man who enters the profession unhampered by the instincts and culture of a gentleman; who brings his calling into contempt and takes the bread from the mouths of his professional brethren by giving advice and medicine for a few pence; who cannot speak his mother-tongue correctly or indite a grammatical letter; and who munificently rewards his duly qualified and registered assistant with a salary about equal to that of a bricklayer's labourer.—I am, Sirs, yours faithfully,

July 23rd, 1898. M.D. EDIN.

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A POINT UNDER THE INFECTIOUS DISEASES (NOTIFICATION) ACT.

To the Editors of THE LANCET.

SIRS,—I have recently been attending several members of a family suffering from an infectious disease which I notified to the public health authorities in due course. On their recovery the rooms in which the patients had been were disinfected by burning some chemical substance the nature of which I am not acquainted with, under the supervision of the afore-mentioned public health authorities. At the termination of this a paper was left with my patients for me to sign—a printed document in legal phraseology—stating that the process of disinfection had been carried out to my satisfaction and that all articles in the rooms had been thoroughly and efficiently cleansed and disinfected. It was intimated at the same time by the father of the patients that the authorities had informed him that if his medical practitioner signed this it would save further trouble and expense of stripping walls, papering, perhaps painting, &c., but failing that the above would very likely have to be done, though in their opinion it was not necessary. You observe there is no communication between myself and the authorities, it is all conveyed to me by more or less irresponsible but interested third parties and I have to take their word for what has been done; this document to be signed within twenty-four hours. I endeavoured to keep out of the affair by saying that it was for public health people to do as they thought best, but I was so worried by the family that I eventually signed the required form.

It is needless for me to enter into the very unpleasant position this kind of thing places a general practitioner with his patients. I know it is useless discussing this particular case any further. I have acted as I believe for the best and must take my chance of anything cropping up in the future, but the question is, how should one act another time? It appears to me that the responsibilities which were intended to rest with the administration of the Public Health Act are thus thrown upon the practitioner in attendance, rendering him liable to an action at law if such were at any time contemplated by an aggrieved patient. I will not further encroach upon your valuable time by discussing other matters connected with this affair of less importance which naturally present themselves.—I am, Sirs, yours faithfully,

July 25th, 1898. PUBLIC HEALTH.

*** We think our correspondent's scruples about attaching his signature very reasonable.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Bombay City: The Need for Water-meters, the Rise in the Subsoil Water, and the General Health; Plague in the Presidency.—Calcutta: The System of Licensed Family Hospitals for Plague; Extraordinary Regulations for the Lady Nurses.

IT has been asserted for many years that the subsoil water of Bombay was rising and that the soil was becoming water-logged. This has been attributed to the enormous waste of water. The city of Bombay is well supplied with water from several sources, the total quantity brought into the city being at the rate of between 40 and 50 gallons per head per day. Judging from the supplies to other Indian cities probably 10 gallons would be amply sufficient for all domestic purposes. There are numerous public taps continually left running as well as other sources of waste. This reckless waste is a source of considerable loss to the municipal revenue and the reduction of pressure in the mains is so reduced that the supply of water in case of fire is seriously interfered with. Too much water is in reality brought in by the mains, a large portion of which soaks into the soil and is not carried off by the sewers and surface pipes. The municipal commissioner in a recent report most powerfully shows the necessity of adopting the meter system. The proposal has been drawn up so as to provide liberally for the wants of the people. Considering this question so far as it affects the public health this important observation must be made. Notwithstanding that about 30 inches of rain have already fallen during the present monsoon, the reckless waste of water for many years, and the water-logged condition of the soil, the death-rate from diarrhœa and dysentery is 50 per cent. below the average, fevers are lower than the average of past years, and diseases of the respiratory organs show no increase. It is evident, therefore, that the saturation of the soil by all these causes is not immediately productive of disease, although doubtless, from the experience of drainage improvements in English towns, it has some injurious effect on the total yearly mortality. The deaths for the past week have been at the rate of 26·13 per 1000 per annum.

With regard to plague, it is unsatisfactory to find that while the returns are not so high as last week they are higher than the minimum attained in June. The quarter of Mandvie may almost be looked upon as the centre from which the disease spreads. Nine deaths were registered there during the past week. Plague is still existent in the following districts: Broach, Surat, Thana, Satara, Koluba, Belgaum, Dharwar, and Kathiawar.

A very diplomatic compromise between what ought to be done and the wishes and prejudices of the natives has been effected in Calcutta by the establishment of licensed family hospitals for plague cases. The sanitary measures hitherto adopted elsewhere are not adapted to the Indian people and consequently the regulations about plague have been evaded in every possible way. The establishment of this system, therefore, has gained the confidence of the people. Besides the public hospitals and the ward hospitals there are numerous private hospitals, so that all the communities are now well provided for. In addition to this houses possessing anything like suitable accommodation for the isolation of a case of plague are allowed to have one or more rooms set apart for the purpose. By these concessions every case of plague ought to come under observation. The plague scare has greatly subsided and inoculation is coming slowly into favour among all classes. It is very satisfactory to note that the number of cases of plague still continues very small and that it is daily decreasing.

The regulations issued in Calcutta to govern the conduct of the English lady nurses while off duty are simply monstrous. Girls at a school could hardly have their liberty more restricted. Everything has to be referred to the lady doctor who is acting as matron to the establishment. Judged by the rules she must be severely exacting. "Sisters going out driving are required to let the lady doctor know their destination and their escort (if any); and she is given authority to modify the arrangements made." "Visitors to the sisters must send in their card to the lady doctor." The sisters are only permitted to be out for one evening during a week. In case of sickness the sister is only allowed to have the further advice of one of the senior (!) medical practitioners of Calcutta. "Some public duty may be required from such (personal) servant at the discretion of the lady doctor." Even to afternoon tea no visitors may be invited except with the consent of the lady doctor. "*Ladies* may occasionally be invited to other meals (with the consent of the lady doctor)." These rules are issued, printed, and are signed by R. T. Greer, acting chairman. It will be remembered that the sisters were appointed by the Secretary of State for India and came out from England with the title of lady nurses and that they rank as lady superintendents. They were required to furnish the highest credentials of service and capacity. They are, in fact, an exceptionally well-trained staff. Under these circumstances the indignity offered them by these childish regulations is most offensive. Their agreement does not refer to any rules of conduct—only to the lodging and other accommodation to be provided for them. It is evident, therefore, the authorities have exceeded their powers and have placed the English sisters in a position which must lower the public respect due to them as highly trained nurses. The position of the lady doctor under these circumstances must be a most unenviable one.

July 9th.

THE SOUDAN CAMPAIGN.

(FROM OUR SOUDAN CORRESPONDENT.)

THE general health of the troops up here is excellent although several scattered cases of enteric fever and dysentery have occurred. The men are, of course, rather "fine-drawn," but only to the extent one would expect to

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find them after a prolonged stay in the frightful heat of the Soudan in the summer months. The general surroundings of the camp as regards sanitary requirements are good; the water-supply is carefully looked after, all used being filtered, and the supply of Pasteur filters is ample, although it is to be regretted that they were not brought into use before. The temperature runs up to anything in the sun, but in the mud huts and tents the average is about 90° F. The nights are fairly cool and pleasant and were it not for the plague of flies which pervade the huts and make writing or reading almost impossible there would be little to complain of. The men get fresh rations of very fair meat and their diet is supplemented by the issue of bacon and jam twice a week. The scarcity of green stuff and vegetables is, of course, sorely felt, but under the circumstances the food is ample, and there is little cause for grumbling even by that prince of grumblers "Thomas Atkins."

We are sorry to hear that after six months' hard work, able organisation, and devotion to the health and comfort of the numerous sick and wounded, our present principal medical officer, Lieutenant-Colonel McNamara, is to be superseded by an officer of higher rank from home, who will come out and find everything in first-rate order (thanks to his predecessor's unremitting attention). The medical arrangements for the advance are nearly complete and there will be no lack of medical officers when the fighting begins. The hooded stretchers are on their way, if not already here, and the Royal Engineers have been turning out a supplementary supply of splints suitable for field work; in fact, field, communication and base hospitals are excellently equipped. Two sets of x rays are on the way out, but their utility in field work remains to be seen, and I cannot fancy they will be of that amount of service which is anticipated by honourable and gallant Members of the House. However, they will be on hand and there are two medical officers, who have been specially trained, available to work them. The hospitals here are to be emptied by the end of the month, and the men who are not likely to stand the wear and tear of the advance will be sent down. The disposition of the medical staff will be: medical officers allotted to each regiment and to field hospitals, hospitals on the lines of communication, and the base hospital at Cairo.

Darmali, Soudan, July 8th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Distribution of the Hospital Sunday and Saturday Fund.

THE following amounts have been allotted from the Hospital Sunday and Saturday Fund:—£2640 to the Liverpool Royal Infirmary; £1800 to the Royal Southern Hospital; £1560 to the Northern Hospital; and £840 to the Stanley Hospital. Other charities also benefit by various smaller amounts out of a total of £12,000 which has been distributed. An effort was made at the meeting of the Distribution Committee to alter the date of the Sunday collection from the second Sunday in January to the second Sunday in March owing to the numerous complaints of the hardships of contributing so soon after Christmas. The secretaries had invited opinions as to the desirability of altering the date by issuing circulars to 292 places of worship contributing to the Fund. 57, representing a contribution of £2174 1*s.* 10*d.*, were in favour of the existing fixture; 114, representing a contribution of £1727 10*s.* 9*d.*, voted for a change to the month of March; 79, representing a contribution of £1799 6*s.* 9*d.*, sent no reply; whilst others were indecisive. The proposed change was opposed by Mr. F. W. Lowndes (to whose efforts were largely due the early introduction of Hospital Sunday in Liverpool), who urged that a change of date would decrease the total of collections. The feeling of the meeting was in favour of retaining the January fixture, with the result of the rejection of the amendment by 10 to 5 votes.

University College, Liverpool: Fellowships.

The Holt Fellowships in Physiology and Pathology established by the late Mr. George Holt in 1886 for a period of ten years and renewed for a further period by Mrs. and Miss Holt have been awarded to the following gentlemen respectively: Mr. A. Hope Simpson, provisionally upon his attaining full qualifications within a period of three months and Mr. K. Nelson. The Robert Gee Fellowship in Anatomy of the value of £100 has been awarded to Mr. F. Lovegrove.

Hospital for Women, Shaw-street.

Dr. Murray Cairns has been appointed to the new post of stipendiary medical officer for a term of six months; the appointment carries with it an honorarium of £50.

Donation to the Chester Infirmary.

Mrs. Auster, of Edgbaston, Birmingham, has given a donation of £1000 to the Chester Infirmary for the endowment of a bed to be called the "Mr. and Mrs. John Churton Memorial Bed."

The Sanitary Condition of Wallasey, &c.

The annual report of Mr. Francis Vacher prepared for the County Council of Cheshire states that the birth-rate for the county, exclusive of Chester, Birkenhead, and Stockport, reaches 27·8 per 1000 living. There were 9810 deaths registered during the year 1897, giving an excess of births over deaths of 6432, the death-rate varying from 25·2 per 1000 at Neston and Parkgate to 11·3 per 1000 at Bowden and 8 per 1000 at Alsager, the average being 16·8 per 1000, against 17·4 per 1000 for the whole of England and Wales. Wallasey, near Liverpool, is spoken of with approbation as regards the percentage of successful vaccinations. On the other hand, typhoid fever was exceptionally prevalent there in 1897. In a house where a fatal case of typhoid fever occurred the roof of a very offensive privy was formed by the floor of a sleeping apartment. In another house visited by typhoid fever the soil-pipe was inside the house, the flushing-pipe of the water-closet was connected with the house system and the sink waste-pipe was connected to the drains. In a cottage in Wood-lane, Wallasey, it was found that a mother, four sons, of from seventeen to twenty-three years of age, and a daughter aged fourteen years, were sleeping in the same apartment. Some parts of Wallasey clearly stand in need of the vigilant attention of the officials of its health department.

July 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medico-Psychological Association.

THE fifty-seventh annual meeting of the Medico-Psychological Association of Great Britain and Ireland was opened in Edinburgh on July 21st. After the transaction of routine business the retiring President, Dr. T. W. McDowall, of the Northumberland County Asylum at Morpeth, introduced the President-elect, Dr. A. R. Urquhart, of James Murray's Royal Asylum, Perth, who in the preliminary portion of his presidential address touched on the improvements which had taken place in the treatment of insanity, illustrating his remarks by examples drawn from the history of Murray's Asylum. He then said that three Bills before the present Parliament were of special interest to the members of the association—namely, the English Lunacy Bill, the Habitual Drunkards Bill, and the Irish Local Government Bill. With respect to the first he regretted that it contained no proposal for increasing the number of the Commissioners in Lunacy, and he expressed a fear that its policy of legal restraints constituted a danger, for if the treatment of lunacy was governed by a department of the State the effect would be to fetter originality by the red-tape of bureaucratic control and to trammel the advance of scientific opinion by the deadweight of that officialism which is the besetting sin of asylum life. He congratulated his colleagues in Ireland on their opposition to the proposal to transfer the care of the insane to the Local Government Board and on their suggestions for the more efficient medical service of the Irish asylums. He particularly objected to the proposals in the Lunacy Bill to set apart the various wards of an asylum for certain specific purposes and to the limitation of the uses of succursal villas. With regard to the Habitual Drunkards Bill he thought that it ought to provide exceptional protection for individuals so handicapped in life's race and that the courts of law should be empowered to sequestrate any man who has so lost control of himself as to be a danger to himself and others by reason of his indulgence in intoxicants.

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University of Glasgow.

The summer graduation ceremony was held on July 21st. Sir William Gairdner, K.C.B., presided and in the name of the Senate conferred the degrees on the various graduates, the great majority of whom belonged to the Faculty of Medicine. Thirteen gentlemen received the degree of M.D., Mr. J. W. Findlay, M.B., C.M., gaining honours for his thesis on the Choroid Plexus of the Lateral Ventricles: their Anatomy, Functions, and Pathology in Relation especially to Insanity. Mr. R. Gordon Bell, M.B., C.M., and Mr. J. D. O. Wilson, M.B., C.M., were commended for their graduation theses. Nine gentlemen graduated M.B. and C.M. under the old regulations and fifty-four graduates under the new regulations were "capped" M.B. and Ch.B. Amongst these Mr. William K. Hutton, M.A., Mr. Robert Fullarton, M.A., and Mr. William Webster were awarded "Honours," the first-named also gaining the Brunton Memorial Prize as the most distinguished graduate of the year. There were nine lady graduates. The customary address was delivered by Professor Stockman, who expressed in graceful terms his congratulations to the newly made graduates and gave them some sound advice in reference to their professional bearing and conduct. Passing from these appropriate though possibly somewhat trite topics Professor Stockman proceeded to attack in very energetic terms the conditions and circumstances attached to the chair which he occupies in the University. He found himself, he said, without a single scientific instrument either for teaching or research purposes, without any laboratory, and without any hospital wards where he could acquire experience in the actions of medicines, and where clinical instruction could be given to the students who were dependent on him for such instruction. If the present state of matters is to continue Professor Stockman pronounced that his teaching must necessarily become obsolete and he himself an incubus upon the University. These are certainly somewhat startling statements and have excited much comment both in professional and lay circles. As far as is known it is the first complaint that Professor Stockman has made of the equipment of his chair and it is not therefore surprising to find that the course he has chosen to pursue is sharply called in question. A public proclamation of inefficiency will scarcely be grateful to the University authorities nor will it advance the reputation of Glasgow as a medical centre, whilst the selection for the reception of such a complaint of an audience the vast majority of whom were taught by the former occupant of the chair may be criticised on the score of taste, other matters apart. However, there will be a general wish that the outcome will be an improvement in the laboratory and practical equipment of Professor Stockman's chair.

University of St. Andrews.

The following appointments have been made by the University Court: Alexander Mitchell Stalker, M.D. Edin., physician to the Royal Infirmary, Dundee, to be Professor of Medicine; David MacEwan, M.D. Edin., surgeon to the same infirmary, to be Professor of Surgery; and Charles Templeman, M.D. Edin., to be Lecturer on Forensic Medicine and Public Health in University College, Dundee; and David Fraser Harris, B.Sc. Lond., M.B. Glasg., F.R.S. Edin., to be Lecturer on Physiology at St. Andrews.

The Workmen's Compensation Act: Appointment of Medical Referees.

The Secretary for Scotland has appointed the following gentlemen as medical referees for Lanarkshire under the Workmen's Compensation Act, 1897: Dr. Hector Cameron, 200, Bath-street, Glasgow; Dr. T. K. Dalziel, 196, Bath-street, Glasgow; Dr. G. T. Beatson, 7, Woodside-crescent, Glasgow; Dr. Duncan Macartney, 18, Newton-place, Glasgow; Dr. James C. Renton, 1, Woodside-terrace, Glasgow; Mr. H. E. Clark, 24, India-street, Glasgow; Dr. David Newman, 18, Woodside-place, Glasgow; Dr. W. J. Fleming, 3, Woodside-terrace, Glasgow; Dr. James Barras, Westbourne, Bellahouston, Govan; and Dr. Hugh Arthur, Fruitfield, Airdrie. These gentlemen act according to a rotation to be fixed by the sheriff, which will in all probability be according to the above order.

The Sheriff-Clerk of Paisley has received intimation from Sheriff Sir John Cheyne that the Secretary of State for Scotland has appointed the following gentlemen as medical referees under the Workmen's Compensation Act, 1897:—Dr. Donald Fraser and Dr. Thomas Graham for the burgh of Paisley; Dr. James Whiteford and Dr. Thomas Philip for the burgh of Greenock; Mr. R. H. Parrie, 72, Queen's-drive, Glasgow, and Dr. A. E. Maylard, 10, Blythswood-square, Glasgow, for the county of Renfrew outwith the burghs of Paisley and Greenock; Dr. Robert Allan, Ardrossan, for Arran, in the county of Bute; and Dr. J. N. Marshall for the county of Bute, excepting Arran.

Sudden Death of the Medical Officer of Montrose.

On Friday, July 22nd, there died suddenly at Montrose Mr. Herbert William Greatbatch, M.B., C.M. Edin., who was appointed medical officer of the borough of Montrose a few months ago. After graduating he was for two years a junior medical officer at Sunnyside Asylum, near Montrose, and thereafter he was assistant to Sir J. Batty Tuke of Saughton Hall Asylum, Edinburgh. After two years' practice on his own account in Staffordshire, during which period he was deputy medical officer of health in the borough of Stoke-upon-Trent, he returned to Montrose in 1895 and entered into partnership with Dr. Andrew Key, the oldest medical man in the town.

Aberdeen Sick Children's Hospital Bazaar.

H.R.H. Princess Henry of Battenberg has agreed to open the bazaar to be held in Aberdeen on Oct. 28th next in aid of the Royal Aberdeen Hospital for Sick Children. The number of patients in the wards on July 21st was 80 and at Eidda Home 11; total 91.

July 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health Congress in Dublin.

HIS EXCELLENCY THE LORD LIEUTENANT has consented to formally open the Health Exhibition in connexion with the Congress in the Royal University Buildings on Aug. 18th at 3 o'clock. A meeting of the Executive Committee of the Congress was held on July 20th at the offices of the Public Health Department, Dr. Thomas W. Grimshaw, C.B., Registrar-General, occupying the chair. A meeting of the committee of the municipal and Parliamentary section in connexion with the above was also held on the same day, under the chairmanship of Alderman the Right Hon. J. M. Meade, P.C., LL.D., when the details of the programme as affecting the section, together with the subjects for discussion, the titles of papers proposed to be read, &c., were carefully considered. Sir William Stokes has accepted the office of Vice-President of the section of Preventive Medicine and Vital Statistics.

The Proposed Division of the Richmond Asylum District.

At the last meeting of the governors of the Richmond Asylum, held on July 14th, an important letter was read from the Inspectors of Lunatics in Ireland with regard to the probable number of patients who will require accommodation in the near future and the advisability of dividing the district. The communication pointed out that the number of patients in the asylum amounted to 1945. The number of the insane in workhouses in the city and county of Dublin, the county of Wicklow, the county of Louth, and the town of Drogheda on Dec. 31st last was 644; the number wandering abroad, according to the census of 1891, was 312, making a total of 2901. The Inspectors stated that under those circumstances they had laid before the Government the question of dividing the Richmond Asylum District.

The Royal Victoria Hospital, Belfast.

A meeting of the subscribers of this hospital was held in Belfast on July 20th to consider the proposed charter which has already been approved by the Board of Management of the Royal Hospital.[1] On the motion of the chairman (the Right Hon. W. J. Pirrie, High Sheriff of Antrim), seconded by Mr. W. H. Dixon, chairman of the Board of Management of the Royal Hospital, the amended charter as submitted was adopted. Special votes of thanks were passed to the corporation of Belfast for so kindly granting a site for the new hospital and for obtaining the sanction of Parliament. The site given by the corporation is worth from £30,000 to £40,000 and it enables the committee to devote the whole of the £100,000 to the cost of erection. Thanks were also given to the Right Hon. W. J.

[1] THE LANCET, July 16th, 1898, p. 177.

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and Mrs. Pirrie for their exertions on behalf of the hospital scheme. It was announced that there was a sum of £64,000 in the bank to the credit of the fund and there was also a considerable amount promised towards an endowment scheme.

Typhoid Fever and Shellfish.

At a meeting of the Public Health Committee of the Belfast Corporation, held on July 21st, Dr. Bigger, physician to the Fever Hospital, called attention to the fact that many cases of typhoid fever had been traced to the eating of shellfish gathered on the odoriferous banks of Belfast Lough, which are saturated with sewage matter, and it was decided to call public attention to this circumstance in order that people may be apprised of the danger of eating shellfish taken from such an unsavoury locality. It is a great misfortune that both sides of Belfast Lough for a considerable distance from the city, owing to the deposit of sewage matter, &c., in the seaweed at low tide, emit the most horrible stench, especially in the present unusually hot and dry weather.

The Londonderry Lunatic Asylum.

It would seem that the Grand Jury of the county of Londonderry has passed a resolution by 19 to 14 urging that, pending the coming into office of the county council, the Board of Control be requested to restrain the governors of the lunatic asylum from taking further action towards the proposed building scheme, as reported in THE LANCET.[2] Sir Thomas Lea, Bart., M.P., is to ask a question in the House of Commons in reference to this undoubted difference of opinion in county Derry as to whether a moribund body has the right to incur such an expenditure of money so shortly before the transfer of its powers to the county councils.

The Workmen's Compensation Act.

Dr. J. Walton Browne and Dr. T. Sinclair Kirk have been appointed medical referees under the new Workmen's Compensatton Act.

July 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Notification of Infectious Diseases.

AT the meeting of the Academy of Medicine held on July 19th M. Monod said that the notification of infectious diseases was an excellent measure and that the notifications had risen from 23,414 in 1896 to 26,000 in 1897. The authorities had done all in their power to obtain notification by medical men; prosecutions were only undertaken when failure to notify involved danger to the public—as, for instance, during an epidemic. M. Ferrand, who was not an advocate of the system, having compared it to the declaration of births and having expressed the opinion that the onus ought to be laid on the family, M. Monod replied that this change would be difficult to make, for, apart from medical men and some exceptionally well-informed persons, people generally believed that there was some objection to their notifying cases, and it would be remembered that certain parochial authorities had acted as if they shared this opinion. However, the Public Health Bill which was being prepared would extend the duty of notification to heads of families, hotel-keepers, and persons in attendance on the patient.

Pathology of Caseous Pneumonia.

At the same meeting of the Academy of Medicine M. Grancher read for M. Auclair a paper in which he sought to show as the result of numerous experiments that caseous pneumonia is due exclusively to toxins elaborated by Koch's bacillus. All authors have regarded it as a mixed infection due to streptococci and pneumococci. If extracts of cultures of the tubercle bacillus made with ether or chloroform are injected into the trachea of guinea-pigs the result will be the production of caseous pneumonia with giant cells, fibrinous exudation, sclerosis, &c. Cultivation experiments made with the caseous foci thus obtained never yield cultures. Nothing can be more decisive as to the connexion of caseous pneumonia and tuberculosis.

Regeneration of the Mucous Membranes.

At the same meeting of the Academy of Medicine M. Cornil stated that he had recently been studying the repair of mucous membranes and that he had ascertained several new facts by experiments made in dogs on the urinary bladder, the gall-bladder, the uterine mucous membrane, and the ureter. The regeneration of the uterine mucous membrane is accomplished by means of the glands in a peculiar way. The method of investigation consisted in slitting up the ureter or the uterine horn longitudinally and killing the animal some hours or days afterwards. He found in the course of his experiments that mucous membrane, that of the ureter for instance, might be grafted directly on the omentum. The facts brought to light by M. Cornil are of great importance from the point of view of general anatomy.

The Artichoke as a Culture Medium in Micro-biology.

Bacterial cultures have been made on almost all vegetables, but the potato and the carrot are the principal ones which are in daily use in bacteriology. M. Roger has, however, reported to the Society of Biology, at the meeting held on July 16th, that in his opinion the artichoke possesses several advantageous qualities in this respect. Nothing is more simple than to prepare it for the purpose. After having stripped off the scales the thick part is cut up into little cubes, care being taken to preserve the fibres *(foin)*. The pieces are placed in tubes plugged with damp wadding, the fibres being uppermost, so that the culture medium is represented by a fleshy mass surmounted by a sort of tuft. When the wadding is inserted the whole is heated in an oven to 115° C. for a quarter of an hour. In making the inoculation the germs must be deposited at the point of insertion of the flowers.

Influence of Tuberculin on Cultures of Koch's Bacillus.

At the same meeting of the Society of Biology M. Carnot mentioned that he had ascertained that if a small quantity of liquid derived from a previous culture of Koch's bacillus is added to the ordinary culture media before they are inoculated with tuberculous material the effect is to hasten the growth considerably. In practice the same result is obtained by adding some drops of tuberculin to the culture media. If, on the contrary, the quantity of tuberculin is increased—if, for instance thirty drops are added to a culture instead of five or six—the culture either does not undergo development or else its development soon stops.

Rabies in Dogs.

The general report presented by Professor Proust to the Council of Hygiene on the cases of rabies observed in 1897 in the department of the Seine elicited from that learned assembly numerous interesting remarks on rabies and its treatment. Finally, the council repeated the two resolutions which it passes every year: 1. That the council approves of the regulation of May 30th, 1892, relative to stray dogs and recommends that this regulation should be strictly enforced throughout the jurisdiction of the prefect of police. 2. That the council urges the authorities to prosecute the owners of animals which have shown themselves to be vicious and with regard to which the police have presented reports.

July 25th.

MR. D. M. FORBES, who for the last thirty years has held the office of medical superintendent of the Infirmary of St. Leonard's, Shoreditch, was on July 19th entertained to luncheon at the Holborn Restaurant and presented with a testimonial on the occasion of his retiring from that position. Mr. R. G. Alabaster occupied the chair and the company included many of Mr. Forbes's personal friends, among the number being the Ven. Archdeacon Sinclair and a few medical men. Mr. Forbes, a Scotsman by birth, has for many years been a prominent member of the Royal Scottish Corporation and the Royal Caledonian Asylum, and a generous contributor to the funds of these charitable institutions as well as a warm supporter of other Scottish societies in London. He did excellent work with regard to the better treatment and nursing of the sick in the Poor-law establishments of this country and the passing of the White Lead Factories Act of 1891 which has done much to ameliorate the condition of the workers in that industry. The testimonial took the form of a beautifully illuminated address on vellum, together with a purse containing over 600 guineas.

[2] THE LANCET, July 23rd, 1898, p. 234.

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THE BRITISH MEDICAL ASSOCIATION.

MEETING AT EDINBURGH.

THE sixty-sixth annual meeting of the British Medical Association was opened at Edinburgh on Tuesday, July 26th, under the presidency of Sir THOMAS GRAINGER STEWART, M.D., LL.D., F.R.S. Edin., Professor of Medicine in the University of Edinburgh and Physician-in-Ordinary to Her Majesty the Queen in Scotland.

The Association first met in Edinburgh in 1858, under the presidency of the late Dr. William Pulteney Allison; its next visit was in 1875, when the late Sir Robert Christison was President. It is therefore twenty-three years since the Association last met in Edinburgh and the selection of the capital of North Britain for a meeting was to make it a foregone conclusion that the gathering would be a successful one. For not only is Edinburgh a city which is beautiful by situation and architecture, but she is endeared to every medical man by the splendid traditions of her medical school and the memories of Simpson, Syme, and countless other masters of our science whom we leave unnamed because no attempt can here be made to write a roll call of Edinburgh's medical heroes. It is no wonder, therefore, that an unusual number of members are attending and that the contingent of foreign guests should be particularly large.

The arrangements for the reception of members and guests during the week have been excellent. The reception room has been taxed to its utmost capacity to accommodate the large number of members who have assembled each morning to procure the daily journal and to seek information on various matters. This was especially the case on Tuesday morning, when very many members were registering their arrival, and the crowded state of the room must have caused the officials not a little anxiety in their endeavours to satisfy the needs of the large numbers patiently waiting for attention. But for this successful organisation great thanks are due to the general secretaries of the local committees, Dr. R. W. Philip and Dr. J. Shaw M'Laren, as well as to the secretaries of each committee. The hardest work would naturally fall upon the secretary of the Entertainments Committee and the duties of the post were admirably discharged by Dr. A. Stodart-Walker.

A most convenient feature of this year's gathering was the location of the sections in the University New Buildings, which afforded ample shelter for all sixteen sections under one roof—an accommodation which the Association is not often able to avail itself of or many places to offer. The great advantage thus presented to those desirous of attending more than one section the same morning does not need any emphasising. As a rule at congresses much valuable time is spent and much temper is lost in getting about from section to section, but all this has been avoided at the Edinburgh meeting of the British Medical Association.

An opening service was held in St. Giles's Cathedral at 11 A.M. on Tuesday for the members of the Association. Dr. Whyte, Moderator of the Free Church General Assembly, delivered the address and founded his discourse on the text, "The greatest of these is charity," exemplifying it by tracing the life and work of Sir Thomas Browne, the author of the "Religio Medici," and declaring that if ever any man was a truly Catholic Christian it was he. The collection was, as usual, for the Royal Medical Benevolent College and the British Medical Benevolent Fund.

The Drill Hall in Forrest-road, the entrance to which is almost exactly opposite the reception-room, proved to afford quite adequate space for the exhibition of drugs, foods, and sanitary and surgical appliances which is usually associated with the annual meeting of the Association. Although the exhibition was announced to be opened on Tuesday there was very little sign of the arrangements being completed on the morning of that day. By the afternoon, however, the scene had considerably changed and had rapidly assumed the appearance of a really attractive and artistic show. The arrangements were well planned and while the allotted spaces were individually sufficient from the point of view of the exhibitor, there was yet plenty of room for the visitors to move about freely. Indeed, the thoroughfares dividing the lines of stalls made the visit of inspection comfortable and afforded the visitor some chance of appreciating the taste displayed by the exhibitor in his exhibit. A fairly large proportion of the space was taken up by local firms, several well-known chemists and druggists of Edinburgh exhibiting their fine pharmaceutical products and specialities. A feature of the exhibition was the sanitary section, in which were displayed hospital appliances and furniture, models of aseptic operating rooms, &c., included with which was a working model of the septic tank system of sewage treatment. The attendance was good and encouraging to those concerned. We propose to deal at some length with this interesting section in a special article by our commissioner in which the whole of the exhibits will be properly classified, the first section—viz., drugs—appearing in our present issue.

A meeting of the Hospital Reform Association, under the presidency of Dr. Ward Cousins, was held on Tuesday morning. Several papers were read, one of which suggested that a certain number of medical practitioners should be appointed on the executive committees of all medical charities. In that way lay philanthropists who had hitherto pulled the strings of the hospitals with no distinguished success would be kept in touch with the views of the profession. Dr. Rice, of Coventry, described the various attempts which had been made to induce the staff of a badly conducted local dispensary to resign their posts. Those gentlemen, however, not only defied their brethren but also the clearly expressed condemnation of THE LANCET and the *British Medical Journal*. Another speaker stated that one of the Irish colleges had taken action with regard to a diplomate who dealt with a "middleman" to the discredit of his cloth. One of the English colleges, he added, had definitely promised to inquire into the case of any member if clear evidence were forthcoming that he belonged to an association which touted for membership. Several Glasgow practitioners stated that considerable abuse of hospitals went on in their town. The honorary staffs were practically powerless to refuse treatment to applicants unworthy of charitable relief. The system of hospital letters enabled a subscriber of one guinea to demand three guineas' worth of hospital in-patient relief. One speaker gave a specific instance of a patient of his own whose personalty ran into five figures and from whose executors he was paid an account of three figures, but who nevertheless died in a hospital. The President emphasised the fact that the hospital staff had great power in their hands by refusing to treat unfit cases, and that the Reform Association was simply the friendly critic, not the enemy, of the hospital system. The work of this body, moreover, was intended to supplement, and in no sense to replace, that undertaken by the

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Charities' Sub-committee of the British Medical Association. The secretary, Mr. Garrett Horder, read a short paper on The Dispensary System in Scotland where he concluded that abuses existed just as they did in England. He pointed out the successes achieved by the Association in the past and was hopeful of far greater results in the near future. The figures giving the numbers of patients of medical charities for 1897 in the eight principal Scottish towns are worthy the serious attention of the medical profession.

The Museum of Science and Art was the scene of a successful reception on Tuesday evening, when the Lord Provost of Edinburgh and Mrs. Mitchell Tompson were at home to the Association. The Provost, in his official robes, was attended by the Sword and Mace and a number of the city officials; and among those present, apart from the members of the Association were Lord Strathcona and Mount Royal, Sir Charles Cameron, M.P., Dr. Farquharson, M.P., and Mr. J. G. Weir, M.P. Some 4000 ladies and gentlemen accepted the Lord Provost's hospitality.

The Anglo-American Continental Medical Society, whose object is "to serve as a bond of union between the British and American practitioners established on the Continent of Europe and Northern Africa," gave a luncheon at the Balmoral Hotel on Wednesday. Sir William Turner, who occupied the chair, gave the toast of "The Queen and the President of the United States," and said that the first part of his toast appealed to those of the nationality implied in the word "Anglo," meaning the inhabitants of the United Kingdom, and he would therefore give the toast of "The Queen." This having been duly honoured Sir William Turner remarked that the second part of the title was the word "American," and that in saying this they must all think of the President of the United States, who was at present engaged in a struggle more difficult than any encountered by his predecessors since the days of Lincoln. The Chairman next proposed the "Health of the Society," coupling with it the name of Dr. Miller, of Paris, who briefly replied. Dr. Sandwith, of Cairo, proposed the "Health of the Guests," coupling with it the names of Dr. Condé, of Paris; Professor Baginsky, of Berlin; Dr. H. Curtis, of New York; Mr. Bryant, and Dr. Frederick Roberts. Dr. Condé, in reply, made a happy little speech in French and Professor Baginsky, speaking in English, referred to the friendly sentiments which really existed between England and Germany, though they were sometimes obscured. Dr. Brock, of Rome, proposed the "Health of the Chairman," who replied, and the proceedings terminated.

The election of the Earl of Aberdeen, the retiring Governor-General of Canada, and of Lord Strathcona and Mount Royal the High Commissioner, as honorary members of the Association, was a graceful recognition of the services rendered by them to the Association at its meeting in Montreal last year.

At the special invitation of the Livingstone Medical Missionary Society the collection of medical and surgical antiquities from Pompeii and Rome were placed at the disposal of the authorities in Heriot's Hospital by Messrs. Oppenheimer and Co., and excited considerable interest. The collection was substantially the same as that exhibited in the Savoy Hotel on the occasion of the meeting of the Association in London in 1895.

The breakfast at the Edinburgh Café under the auspices of the British Medical Temperance Association was well attended. Professor Simpson occupied the chair. The annual report showed that satisfactory progress was being made by the society, the increase in the number of student-associates being noteworthy. The President, Dr. G. Sims Woodhead, said he had been accused of having asserted that alcohol as a drug was absolutely of no use. What he had asserted was that if alcohol was a drug it must be treated as a drug. Dr. Clouston said the first mental effect of alcohol was to diminish the power of control, and in his opinion no man should take alcohol before his beard had grown. Dr. Ridge (the honorary secretary), Dr. Connell of Peebles, and Dr. Young also spoke.

On Wednesday afternoon a garden-party was given to the members of the Association at Craig House by special invitation of the managers of the Royal Asylum, the guests being received by Sir Alexander Christison and Dr. Clouston. On the same afternoon parties were given by Mrs. Ford at Dreghorn Castle and Mrs. Nelson at Salisbury Green. Receptions were also held by the Public Health Committee of the Corporation of Edinburgh, by the Scottish Society of Painters in Watercolours, and by the Town and Gown Association. In the evening a soirée was given by the President and local committee of the Association in the McEwan Hall and New University Quadrangle.

On Thursday afternoon Professor Annandale delivered the Address in Surgery at the third general meeting. Receptions were held by the Senatus Academicus of the University of Edinburgh the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Medical Society. A garden-party was given at Inverleith House by Professor and Mrs. Bayley Balfour. In the evening the annual dinner of the Association was held in the Music-hall, George-street.

THE selection of Portsmouth as the place for the next annual meeting of the Association is a fitting response to the invitation more than once extended to the Council by the practitioners of that important city. Dr. Ward Cousins's work for the Association has earned him the presidency and we congratulate him upon it.

THE GENERAL MEETINGS.

THE FIRST GENERAL MEETING.

The first general meeting of the Association was held in the McEwan Hall of the New University Buildings at 2.30 P.M. on Tuesday, July 26th. Previously to the opening of the proceedings Mr. Collinson, organist of St. Mary's Cathedral, gave a recital on the magnificent organ. At 2.35 the members of the Council, headed by the Corporation of Edinburgh in their scarlet gowns, with the City Marshal and the Town Clerk, entered the Hall. The Lord Provost, with the Mace and Sword Bearers, and Dr. Roddick, President of the Association for 1897–1898, brought up the rear, while the organist played the march from the *Occasional Oratorio*.

Dr. RODDICK proposed that the minutes of the last meeting should be taken as read, which being agreed to they were confirmed and signed. Dr. Roddick next said that it became his very pleasant duty to resign the Presidential chair in favour of Sir Thomas Grainger Stewart. No introduction of the new President for the coming year was needed by the citizens of Edinburgh or the profession or any country. "In Canada, my own country," continued Dr. Roddick, "his name is a household word, for he has had to do directly or indirectly with the training of most of the more eminent medical men in the Dominion." Dr. Roddick then proffered his warmest thanks to the Association in general, to Dr. Robert Saundby, President of the Council, and to Mr. Francis Fowke, the general secretary, for their kindness and able assistance to him during his term of office.

Sir THOMAS GRAINGER STEWART then took the chair and at once called upon the Lord Provost, Mr. MITCHELL THOMSON, to address the meeting.

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The LORD PROVOST said it was his very pleasant duty, on behalf of the municipality and citizens of Edinburgh, to offer a very hearty welcome to the members of the British Medical Association. No one would accuse him of speaking in any boasting spirit were he to say that the Association could not have chosen a better place for its deliberations than the ancient city of Edinburgh; for to say nothing of its historical associations it possessed one of the foremost medical schools in the world. Referring to the share which the town council possessed in the patronage of the University chairs he said that the distinctions which Edinburgh had won showed that the council had exercised its patronage with judgment. Sir William Turner, a man deservedly honoured in Edinburgh, had lately been called to the proud position of President of the General Medical Council and only the other day he (the Lord Provost) had had the honour of conferring the freedom of the city upon Lord Lister. It was gratifying to know that their new President was one so well known and honoured as Sir Thomas Grainger Stewart. In conclusion, he would beg to ask members of the Association that they would not allow too strict an attention to business and scientific work to interfere with their enjoyment of the various social functions which had been organised for their entertainment, for it was the desire of the whole city to make their stay as pleasant as possible.

The PRESIDENT then warmly thanked the Lord Provost and the Corporation for their welcome and proposed a vote of thanks to Dr. Roddick and that he should be elected a Vice-President for life.

This was carried unanimously, and Dr. RODDICK in returning thanks mentioned that many other places in Canada, even far distant Victoria, were ready to receive the Association with open arms.

The Lord Provost and the Corporation then retired.

The consideration of the report was then proceeded with and the following recommendation of the Council with regard to the election of new honorary members was unanimously adopted:—

At the meeting of the Association at Montreal no one contributed more to its success than His Excellency the Governor-General the Earl of Aberdeen and the Right Hon. the High Commissioner for Canada, the Lord Strathcona and Mount Royal. At the request of that meeting and in hearty concurrence with it the Council desires to recommend them to you for election as honorary members, in accordance with By-law 6, and considers that by so doing you will honour the Association even more than you honour them. The Council also recommends the election of Professor Francesco Durante, the eminent Italian surgeon, as an honorary member of the Association.

The PRESIDENT then handed the roll of membership to Lord Strathcona, who was present, remarking that Canada seemed destined to be firmly associated with medicine. Sir Charles Tupper, a late High Commissioner for the Dominion, had given up medicine to become a politician, and now they had a distinguished Canadian politician and the present High Commissioner becoming a doctor.

Lord STRATHCONA briefly returned thanks.

Dr. SAUNDBY then moved the adoption of the report. He referred to the increase in membership of the Association (1473 for the past year), to there being a surplus of over £3000, and to the successful negotiations for the purchase of the freehold of the premises in the Strand, Agar-street, and Harvey's-buildings. The death of Mr. Ernest Hart had been a great loss to the Association and especially to the *British Medical Journal*, but he felt sure that Dr. Dawson Williams would prove to be an able successor. With regard to the question of medical defence the result of the postcard plebiscite was that only one-third of the members had answered in the affirmative and so in the words of the report—

Your Council is of opinion that the affirmative majority constitutes too small a proportion (one-third) of the whole Association to justify further steps being taken in a matter so seriously affecting the organisation and working of the Association and respecting which such grave differences of opinion are known to be entertained.

Dr. J. MYRTLE (Harrogate) then moved as an amendment:—

That the question of undertaking medical defence by the British Medical Association having been decided by a majority in favour at the annual general meetings in London, 1895, Carlisle, 1896, and London, 1897, the Council should undertake to reconsider the report, with a view of bringing this great question to a satisfactory issue.

This was seconded by Mr. GEORGE JACKSON (Plymouth).

Mr. VICTOR HORSLEY pointed out that although postcards were sent to every member it was well known that should the Council take up the question it was only intended to apply to the United Kingdom. Now of members in the United Kingdom 60 per cent. answered in the affirmative. He was quite aware that the profession was sadly in need of being waked up, and the Council ought to have subsidised the Medical Defence Union to do this.

Dr. J. HUDSON said that the Association should stick to what it was originally founded for—namely, the advancement of science.

Dr. WARD COUSINS said that the question of subsidising involved a quantity of difficulties.

Dr. WOODCOCK said that he had reluctantly come to the conclusion that for the Association in its present state of division on the question to take up the matter would result in hopeless failure.

Mr. GARRETT HORDER said there was no doubt a very strong desire among the profession that the Association should take up the question, and

Dr. MUIR (Glasgow) said that in his branch only 3 members voted against this proposal and they were all consultants.

On Dr. MYRTLE'S amendment being put to the meeting 101 voted against it and 89 for it.

The amendment was thus negatived by 12 votes, but the members of Council present naturally voted in the majority and they numbered quite 12.

The report was then adopted, after which the reports of committee were considered, and the meeting shortly afterwards adjourned.

THE (ADJOURNED) FIRST GENERAL MEETING.

The adjourned meeting met again on Tuesday evening at 8.30, at the McEwan Hall, to hear Sir Thomas Grainger Stewart's Presidential address.

PRESIDENT'S ADDRESS.

Sir THOMAS GRAINGER STEWART commenced by a few hearty words welcoming the Association to Edinburgh and pointing out how necessary it was that a common understanding should exist between the medical profession and the public as to the position of medicine. He then continued:—

The prevention of disease is in its practical results perhaps the most important of all our duties. It is our chief glory that we have been able to accomplish so much. It is our highest hope that we shall accomplish more. The several members of the great group of diseases which owe their origin to invasion by pathogenic micro-organisms are in course of being rationally explained and so it is becoming possible for us to take measures for their prevention. In some of them we can prevent the development of the organisms. In some we may hinder their multiplication and spread. In some we can block the channels by which they have been accustomed to find entrance into the body. In some we are able to modify the germ so that it produces when inoculated a milder disease and yet a disease capable of conferring immunity against the malady in its ordinary form. In some we can interfere with the action of the germ even after it has been introduced or counteract the poisonous substances which the germs generate. With regard to the important group of diseases due to faulty chemical processes we have learned much that is of service for prevention. We have traced the origin of some diseases to the subtle action of chemical substances introduced with the food or in the exercise of various trades and crafts. We have learned not a little regarding toxic substances which are developed within the body from faulty chemical processes or which accumulate as a result of deficient elimination. And most recently of all we have traced important diseases to deficient or excessive supply of what we have come to know as internal secretions; and each discovery which renders the causation of a disease more clear contributes something towards its prevention. Every member of the profession ought to be keeping his eyes open to the advances of science, for in that he may find explanations of morbid action as Lord Lister did in regard to wounds and ought to be always seeking for an explanation of the occurrence of disease, and especially of epidemic outbreaks, for by watchfulness in such matters mighty results may be achieved, as the work of such men as Snow and Budd and Koch has shown. The public may in many ways benefit from such discoveries and the precautions they suggest. Individual health, family

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health, social health, and national health, may all be improved if the individual, the head of the family, the employer of labour, and the legislator duly study and act upon these lessons. It is their duty to do so. But an intelligent appreciation of these subjects is not easily attained. Perhaps we are ourselves in some measure to blame for this because our professional customs do not readily lend themselves to the issuing of clear and popular statements by leaders of medical opinion in such forms as would enable the public to share our knowledge. We ought to take more pains to instruct the public in such questions. Individual members of the community should seek to understand how their own personal health and that of their families may be protected when they act according to the light of modern science. Employers of labour should modify the conditions of their work, as, indeed, so many of them do, with the view of warding off the special dangers proper to each occupation. Teachers and governors of schools should study zealously all that we are learning with regard to the evils of deficient ventilation, of cramped attitudes, and of excessive or too prolonged mental effort. In unnumbered ways may intelligent and well-instructed men ward off dangers by attending to the hygienic rules of modern science. But apart from all the private applications of hygienic laws rises the question of the duty which the legislature owes to the facts of medicine. It is an interesting question whether under our democratic constitution we are in a better or worse situation in this matter than we might have been under an absolute monarchy or an oligarchy. It was perhaps easier in the old days when a monarch was absolute to get him to understand medical questions; a Linacre enjoying the confidence of a Henry VIII. or a Harvey that of a Charles could command a sympathetic appreciation of facts which might readily result in valuable Royal edicts. One can conceive that had supreme power been vested in the hands of such a man as the late Prince Consort his fine perception of scientific facts would have led to his being the friend of such men as Chadwick, Farr, Parkes, and Richardson, and that at their suggestion effect would have been given to every legislative advance that medicine justified. And even in oligarchic days one can understand how a group of men wielding the whole power of the State might similarly be convinced and might promptly bring into action legislative machinery for the prevention of disease. But now when every man is a king, when the whole people rule, it is perhaps not so easy to attain the results which we desire. The whole community requires to be instructed before the lessons can be used to good purpose. It is our task to give that instruction; it is theirs to give effect to what we have taught. The country has since the Queen's reign began awakened to the benefits which legislation in medical matters may afford and history will recognise the fact as one of the chief glories of the Victorian era.

Progress in Medicine and the Position of Vaccination.

But I wish that our progress were more satisfactory. Take, for example, the great subject of the prevention of small-pox. With scarcely a dissentient voice the medical profession recognises the transcendent value of vaccination. A Royal Commission laboured for many years and at last reported unequivocally in favour of that treatment. But with a determination which would be admirable if it were not so disastrous a comparatively small group of men set themselves to opposing and maligning the process, belittling its advantages and magnifying and multiplying the slight risks which attend it. To these a considerable section of the English public have given heed rather than to the medical profession — I speak advisedly of English public for, as Mr. Balfour has pointed out, the public of Scotland remains loyal to medical opinion. But from the attitude of certain districts in England it comes about that the greatest discovery in practical medicine, although it had its native home in Britain, is less efficiently carried out here than it is in many parts of the Continent. In Germany small-pox has practically disappeared; there has been no death from it in the whole of the vast German army since revaccination was made compulsory. In 1853 and 1867 Acts were passed for compulsory vaccination in England. These Acts have been the constant object of attack by the anti-vaccination propaganda. The Vaccination Commission was a result of these attacks. It included active opponents and active supporters of the process, with some members who were understood to take up the inquiry without any definite pre-formed opinion. After seven years' labour they gave in their report. By a majority of 11 to 2 they found that vaccination was a valuable preventive of small-pox; that the process could not be safely abandoned and replaced by other precautions; and that while some alleged dangers are real they are in truth unimportant in relation to the extent of vaccination work done and are diminishing under the better precautions of the present day. More than a year elapsed before legislation was attempted and the Bill was introduced of which the third reading occupied the House of Commons to-day. That Bill contained good provisions in the way of postponing the date of compulsory vaccination of infants, providing for the treatment being carried out at home, the supplying of calf lymph, and taking advantage of Dr. Copeman's valuable discoveries regarding the special security afforded by glycerinated lymph. But the Bill made one disastrous omission. It proposed nothing in the way of revaccination. Now, experience has proved that the protection afforded by the process requires to be renewed from time to time and has amply shown that here, where it has been tried in many ways, as well as in Germany, where it has been since 1874 compulsory, repetition of the process secures an almost absolute immunity. It is in my opinion, and I am sure in that of almost the whole profession, profoundly to be regretted that the Bill contained no proposal in regard to revaccination. It is grievous to think that we lag behind and are deprived of securities which would be of such value and might so readily be obtained. But if this was a disastrous omission the Bill as it leaves the House of Commons shows another defect, for in the course of last week's debate it was decided that "no parent or other person shall be liable to any penalty under the Vaccination Act, 1867, if he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child."

The first remark that I would make is that this clause admits the status of the "conscientious objector" and gives him rights and privileges. An analysis of conscience is always attractive to a Scotsman, but I refrain from attempting to forecast how the process would work out either in regard to that of the "conscientious objector" or those of the justices of the petty sessions. But the right of a person to act according to his conscience is one which a democracy is bound to protect. Only whenever it is distinctly proved that the result of conscientious objections is really dangerous to the well-being both of the individual concerned and of the community, the community is, in my judgment, entitled to set aside the conscientious objections and to insist upon obedience. The Commissioners, who acted as a jury for the nation in this matter, are satisfied that the abandonment of vaccination would inevitably lead to formidable evils. It seems, therefore, to me that the plea of conscientious objection affords no logical ground for resistance to the law. The second remark which I would make is to inquire what the term "conscientious objector" might be made to cover. This is no easy task, but it is safe to say that it would include a great deal more than the strict use of the words should warrant. And besides if this plea be once admitted we may find conscientious objectors springing up in many other quarters. In questions of education they might make themselves heard. In regard to the payment of taxes conscientious objections, if once admitted, would no doubt spread with great rapidity; and in regard to the sanitary laws, the liquor laws, and many other subjects conscientious scruples might soon assert themselves in somewhat startling ways. But apart from speculative opinions let us see what different parties are saying about the practical result of the clause. Mr. Chaplin, who did his best to stand to his ground, says that the administration of compulsory vaccination in the future will be absolutely impracticable and no Ministry will be able to enforce it. Many share his opinion and regard the outlook as gloomy in the extreme.

The anti-vaccinationists are jubilant. One of their representatives on the Commission says that the practical conclusion of the whole matter and the results of the Royal Commission's labours amount to the abolition of compulsory vaccination for a generation. There is another class, that which believing in vaccination and desiring to see it established, yet may be ranked as advocates of "freedom before security." Some of them would not accept that motto, but I think it is just. I sympathise with the love of freedom, but would not have it override the well-being of the community. I cannot advocate freedom to do mischief and to that result this kind of freedom inevitably tends.

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In this matter is it not to be feared that the House of Commons has decided contrary to its own belief? There must be but few Members who do not believe in vaccination and would not desire to see it insisted upon. Why have they voted as they did? Was it not on the part of some a weak yielding to the bigoted prejudices of their constituencies? Would they ever have dreamt of acting as they did but for this influence? And may it not be said that in the case of others the "conscientious objector" has made cowards of them all? I should be sorry to suggest that anyone sought to make party capital out of such material. May we look to the House of Lords for reconsideration of this subject? They have sometimes asserted an opinion. What is their opinion on this matter? We here at all events are, I suppose, practically unanimous in our regret that the exigencies of Parliamentary government has led us into such a retrograde position. I wish that the Legislature would boldly accept the principle that as it is mainly guided by the opinion of lawyers as to legal questions, by those of soldiers in matters military, by practical seamen and engineers in matters concerning their department, so in medical questions they would look for guidance to the medical profession and give effect to its matured opinion. Then we should have less difficulty about the question of vaccination or that of the treatment of inebriates or the prevention of the risks attending certain callings, such as those which expose the workers to lead-poisoning or to poisoning by phosphorus, and we should soon find the statute-book enriched by further beneficent enactments which would save multitudes of lives and immensely diminish sickness and suffering.

[After briefly pointing out the widespread character of the researches for the advancement of scientific knowledge now being undertaken and the necessity for the training of the medical profession and the adequate guarding of the portals thereto the President continued:—]

Medical and State Medical Organisations within the Profession.

I wish we had time to consider together the various organisations which have sprung up in the profession and have been recognised by the State or which the State has instituted for dealing with matters medical. Time would fail me to speak of the origin and the services of the ancient guilds of surgeons and the Royal Colleges, profoundly interesting as that subject would be; nor can I speak of the growth of the medical faculties of the universities, or the medical schools which are now scattered so numerously throughout the kingdom, or of the societies which do so much, not only in the great centres of medical education, but in every considerable city and in almost every district of country throughout the empire. But I must allow myself time to refer to that Association in connexion with which we are assembled here this evening. Little more than fifty years ago it took origin as the Provincial Medical Association and only after a time did it spread to London. It is forty years this week since it first ventured to cross the border and hold a meeting in Scotland. It now consists of upwards of 17,000 members, all legally qualified practitioners, admitted after careful consideration, and resident in all parts of the empire. In every district the Association is represented by branches, each of which serves important local purposes and takes its share in determining the policy of the whole Association, through its representations to and representatives on the Council. I think that the Association will do well to foster the vigour of life in the branches. Its journal has a circulation of more than 20,000 weekly and is recognised as one of the leading medical periodicals of the world. The objects of the Association are the promotion of medical and allied sciences and the maintenance of the honour and the interests of the medical profession. This is effected by the holding of meetings, the publication of a journal and transactions, the granting of money for promotion of science and for defence and promotion or maintenance of the honour or interests of the medical profession by such means and such manner as the Council may think fit, including, in particular, taking or defending legal proceedings and promoting or opposing Bills in Parliament. These objects seem to me to be worthy of the high and noble traditions of our profession. It is for the discovery and dissemination of truth and for the maintenance of the rights and influence of the profession as a whole, not for merely private ends, that the Association exists. It is our duty to inquire how far these purposes are being fulfilled. The mere numerical growth to which I have referred seems to be of itself a proof that a useful end is being served. The value of the journal to the profession cannot be overstated, especially now that such excellent epitomes of recent observation are sent out with each number. I am sure that no member can attend an annual meeting without being enriched in knowledge and inspired with new ideas. The mere contact with other minds is of inestimable value and every man who is thinking for himself or doing original work finds fresh light thrown upon his results by the results of the efforts of kindred intellects.

The Association has for many years devoted considerable sums of money to the endowment of research and much has been accomplished by its research scholars and others whom it has helped. It exerts a considerable influence in regard to public affairs connected with medicine. Our council laboriously considers all questions of medical interests which concern the profession and I can assure you that I had no idea until I came to serve on that body that its work made such demands upon the time, energy, and ability of its members, nor did I realise the far-reaching influence which it exerts. The Parliamentary Bills Committee is now presided over by a distinguished graduate of this university, who is at the same time one of the most popular Members of the House of Commons. The influence of that committee in helping to form opinion among our legislators is very considerable and I have no doubt it will increase as time advances. Apart from that committee the Association is able to intervene with good effect in other ways. No better illustration could be offered than our recent experiences in relation to the Medical Department of the Army. For the Association had its share in making the representations to the Minister of War which have resulted in so hopeful a reorganisation of the whole Army Medical Service. I can speak personally of the courtesy and encouragement with which your deputation was received and I am sure that no one who heard the statement by the Marquis of Lansdowne at the great banquet given by the Lord Mayor of London could fail to see that the intervention of the Association had been attended by the happiest result. Not that we are to claim all the credit, for the hard facts of the state of the Service had been pressing themselves upon the attention of the authorities and many influential representations had been made regarding the questions involved. As time goes on and our influence increases the Association may often be able to perform like service for the profession and for the country.

The General Medical Council.

Among the institutions which, although suggested by medical men, were instituted by the legislature I should mention first the General Medical Council. We have now had forty years' experience of that body and I for one think that it has done good service to the profession and the State It has raised the standard of preliminary examinations; it has extended the period of medical study; it has set its face against the custom of legally qualified practitioners evading the law by what is known as covering others who are not qualified; and it has recently passed a strong resolution against the employment of unqualified assistants, which, however hardly it may press upon the individuals who are worthy of all sympathy, is undoubtedly sound in principle. Its powers have been more limited than might have been desired and perhaps they might be extended and increased with advantage. To take a single instance, I would suggest that just as a diploma of a university or a college entitles the holder, whoever he may be, to be placed upon the Medical Register and gives him all the privileges attached to such registration, so the decision of the General Medical Council that any person on the Register is no longer worthy to have his name retained upon it should *ipso facto* deprive him of the diploma or the degree upon which he had been registered. It seems absurd that there should be a necessity for renewing and repeating the trial in such a case. The decision of the supreme court of the profession should, I think, be held to cover and to include that of the licensing bodies and even of the universities. The legislature is already acquiring the habit of now and then referring a question or an opinion to the General Medical Council, and it seems to me that much would be gained if this expedient were more frequently adopted in regard, not to that Council alone, but to the Association which we here represent.

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The Public Health Executive.

This brings me to speak of the Public Health Executive, the officials who are entrusted with carrying out the laws relating to disease and its prevention. The formation of the department was—like most British institutions—an evolution rather than a creation. For when the Government felt the need of establishing such a branch of the executive it did not construct a new board or appoint new officers beyond what was absolutely necessary, but rather laid additional duties upon boards and officials already existing. There is no need for me to explain the precise arrangements adopted either in England or in Scotland, but in a general way I may say that in the former the new duties were entrusted to what had previously been the Medical Department of the Privy Council, the engineers of the Local Government Office, and the members of the Poor-law Board; while in the latter the board originally established for carrying out the Poor-law of 1845 was turned to account for the new purpose. They were named in each division of the country "The Local Government Board." But these boards were not entrusted with the carrying out of the whole work relating to public health. Sir Benjamin Ward Richardson pointed out nearly twenty years ago that that work is too widely distributed. He said that so much had to be done by the President of the Local Government Board, so much by the Secretary of State for the Home Department, so much by the Registrar-General, so much by the Chief Commissioner of Works, so much by the Lord President of the Privy Council, and so much by the President of the Board of Trade, and all that without reckoning the heads of the army and navy departments, the Postmaster-General, and even some other important officials. On the other hand, the duties of the Local Government Board naturally included, considering its mode of construction, much that might well have been relegated to other departments—as, for example, many matters relating to Poor-law administration. All this might surely be simplified with much advantage. The department has grown so great and so complicated and the importance of the work of some of its parts has become so much more appreciated that it demands reconstruction. I should like to see the Local Government Board entrusted with every question which bears upon the prevention of disease. It should have two divisions—one dealing with the questions of local administration and the other with the public health. These two sub-divisions would cover the whole work at present undertaken and which properly belongs to this great department. The President of the Board thus reconstructed should be recognised as an official of the higher rank and should indeed be not only a Minister, but a Secretary of State for the department. It would be a great benefit that he should be an officer of such dignity and influence as that he would be able to secure in the Cabinet and in Parliament due attention to the subjects with which he has to deal. He might be a Member of either House, but considering the frequency with which financial questions must emerge it would probably be better that he should sit in the House of Commons. He would, of course, have a Parliamentary and a permanent Under-Secretary, the former of whom should also, as at present, be a Member of the House, who should take his share in the administration of the department, and in the absence of his chief answer questions and be available for reference and inquiry in the House on any subject connected with the department. The sub-department should also be maintained, at which information, advice, and direction upon all sanitary questions may be obtained, while at the same time it continued to organise and carry out scientific investigations somewhat on the lines which are at present followed. There should also be other sub-departments dealing with various branches of the subject, as, for example, with the registration of births, deaths, and marriages; with the incidence of notifiable diseases, epizootics, and diseases of plants (unless this is sufficiently provided for by the Board of Agriculture), with meteorological and other reports; with the working out of the various Public Health Acts; with the Vaccination Acts; the medical questions arising under the Factory Acts; with the care of the insane; with all questions as to the disposal of the dead, and such like. There are already officials entrusted with nearly all these duties and in many respects the department is admirably equipped. All that would be required in many instances would be the grouping of them afresh and the clearing up of the precise details as to their work.

I am well aware that it is a serious thing to suggest the addition of even one Minister to the Cabinet and still more to suggest that he should take so high a place as that of Secretary of State; but even with the difficulties which I admit it seems to me obvious that the great importance of the public health, equalling, indeed, that of almost any other department in the State, warrants such a step. And as I believe that history will regard it as one of the chief glories of the reign of Her Majesty that the nation thus awoke to the importance of the question of public health, so I should desire that the executive which subserves it should in that reign also be put upon a footing worthy of the greatness of its work. In respect of the duties of administration as well as of legislation such changes as I advocate would give a great increase of efficiency.

Conclusion.

But I have reached the utmost limit of my time and must hasten to conclude. I have briefly reviewed what I consider the chief relative duties incumbent upon us and the community. I have shown that in our personal relationships things stand fairly well, but that in regard to preventive medicine the attitude of the community and the State leaves much to be desired. I have shown also reason to think that there is room for more generous dealing in respect of the endowment of research and of universities and schools. But I should sum up by saying that our part is to perform our duty conscientiously and to the best of our ability. It is not by banding ourselves like a trades union and crying aloud about our wrongs, real or imaginary, but by the efficient discharge of our own duty that we shall best aid the community to perform theirs. When each of us does his best for every patient and for the State, not with eye-service or as men-pleasers, but with a profound appreciation of our grave and sometimes awful responsibilities, then shall we win the place in public esteem which will bring to our beloved science and art and to us the recognition to which they and we are entitled.

SECOND GENERAL MEETING.

The second general meeting was held in the M'Ewan Hall on Wednesday afternoon, the PRESIDENT being in the chair.

The recommendation of the Council that the invitation to hold the next annual meeting at Portsmouth be accepted, and that Dr. Ward Cousins be the President-elect, was unanimously agreed to, and Dr. WARD COUSINS expressed his thanks for the honour conferred upon the Portsmouth Branch and upon himself.

The PRESIDENT then introduced Professor FRASER, who delivered the Address in Medicine, which will be found on page 243.

At the conclusion of the address a vote of thanks to Professor Fraser was proposed by Sir WILLIAM BROADBENT and seconded by Professor OSLER.

After this the hall, which had been very full, rapidly emptied and, finally, there remained only some 25 members in the body of the hall and about 10 members of the Council on the platform. Sir Thomas Grainger Stewart left the chair, which was taken by Dr. Saundby.

Dr. BRASSEY BRIERLEY, who had given notice of moving certain alterations in the by-laws, withdrew them. He then moved the following as an additional by-law:—

A Parliamentary Committee shall be elected annually, and shall consist of one representative nominated by each Branch having over 150 members, four members elected by the Council of the Association at its first sitting, and three members elected by and present at the annual meeting, but none of these latter shall be already a member of the Central Council.

The Parliamentary Committee shall meet at least six times a year, and a sum not exceeding £2,000 a year shall be placed at its disposal.

Mr. BOUSFIELD seconded.

Dr. SAUNDBY pointed out that this would practically disfranchise all the branches, 17 in number, who had under 150 members.

Mr. R. B. ANDERSON having made a few remarks which called forth a spirited and dignified protest from Dr. Saundby, Dr. Brassey Brierley, in the interests of peace, withdrew his motion.

Dr. J. MYRTLE had given notice of the following—

That whereas long delay has taken place in giving effect to and carrying out certain resolutions passed at general meetings of the Association, this meeting calls upon the Council to at once take the necessary steps to apply to the High Court to legalise the new Articles and Memorandum of Association, and, upon this being granted, to forthwith undertake the medical defence of members of the Association.

He now wished to leave out everything after the word

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"Memorandum of Association," but Dr. Saundby would not allow this because it would open a door for too wide discussion.

Dr. HADDON moved, "That the scientific grants be discontinued," but could find no seconder.

The meeting then terminated.

THE SECTIONS.

The Sectional work commenced on Wednesday, July 27th, in all the Sections.

MEDICINE.

WEDNESDAY, JULY 27TH.

Dr. G. W. BALFOUR, consulting physician to the Edinburgh Royal Infirmary, delivered the following Presidential Address to the Section, entitled

Personal Experience of an almost forgotten Episode in Medical History.

It has struck me that a few words from personal experience in regard to a now almost forgotten episode of medical history might prove both interesting and instructive. There are not many now alive who remember the time when blood-letting was the panacea for almost every ailment, and when patients could be no longer safely bled they were certainly leeched or cupped. There must be few survivors of the time when one of the earliest lessons in surgery was to distinguish between an ordinary blood-clot and one which was buffed and cupped, or who were taught that in uncomplicated pneumonia such confidence was to be placed in blood-letting that "the only essential action of the prognosis was the day of the disease on which the treatment was commenced," as it sometimes failed when delayed more than two or three days from the commencement of the disease. Yet such were the earliest lessons in medicine which I received, lessons which were daily exemplified in the wards of the old Royal Infirmary. When within a year of my graduation I made my way to Vienna with the view of studying homœopathy, which had just made a convert of one of our ablest professors (Henderson), I occupied my time at first in improving my knowledge of percussion and auscultation under the world-renowned Dr. Joseph Skoda, and you may imagine my astonishment when I found that in his wards the severest cases of pneumonia were treated with poultices and regulated doses of extractum graminis (hay tea) and with nothing else unless much pain was complained of, when a few grains of Dover's powder were superadded. The excellent results obtained by Skoda with his hay tea sufficed to dispel the clouds of mysticism which had been raised by homœopathy, while the success of Dietl in the same class of cases in another hospital with simple aqua colorata showed that there was nothing specific even in hay tea and confirmed the unmistakeable conclusion that, as Skoda put it, pneumonia tended not to dissolution but to resolution and that the large blood-lettings thought necessary for its treatment were, to say the least, uncalled for. Much stress continued to be laid upon the necessity for blood-letting in the Edinburgh school, though it had ceased to be carried to such an extreme as in the immediately preceding generation. On my return from Vienna I read to the Medico-Chirurgical Society of this city a report of what I had observed in the wards of Skoda, with an account of 392 cases of pneumonia treated on what might be termed the expectant principle and showing a mortality of only 54, or 1 in 7¼, equal to 13·7 per cent. I pointed out that the Vienna cases were certainly not less sthenic than those in Edinburgh, that they had the disadvantage of being daily unceremoniously auscultated, percussed, and lectured over, which was not the custom in our infirmary in those days, and that they had not the advantage of having been freely bled, yet their mortality was only 13·7 per cent. In the reports of our own infirmary during the five years and three months from July 1st, 1839, to Sept. 30th, 1844, there are recorded 253 cases of pneumonia which escaped the lecturing and had the advantage of having been freely bled, and of these 91 died, a mortality of 1 in 2·78, or 35·9 per cent., showing a proportion of recoveries of nearly 3 to 1, or over 20 per cent. in favour of those who were not bled, to say nothing of the time gained by their more rapid recovery or of the less exhausted condition in which the patients were left whereby they were sooner fit to return to the duties of active life. I urged upon the society the importance of giving the eclectic system of treating pneumonia a fair trial, throwing out the suggestion—made to me by a distinguished Austrian physician—that possibly some change in the type of the disease might underlie the apparent change in its relation to perturbative treatment. My words fell on deaf ears and the conclusion arrived at may very well be summed up in the words of one of the ablest physicians of the day—Dr. John Gairdner: "Nothing was better established than the good effect of blood-letting in Edinburgh, whatever might be the case in Vienna. ..... Of the benefits of early blood-letting he entertained no doubt whatever; they were positive, immediate, unequivocal, and admitted by almost every physician whose experience and judgment entitle him to consideration; and if Dr. Balfour or anyone else could shake his conviction in the truth of his opinion he would also succeed in producing in his mind a general distrust of medical evidence in all cases of every description, since in no case whatever can we have evidence which is stronger or more satisfactory." I need not pursue the subject further; the eclectic treatment passed gradually into the hands of the general practitioner, and within less than ten years the late Professor Bennett wrote: "It is admitted that the practice of bleeding in acute inflammations has within a recent period undergone a great change; that whereas it was formerly the rule to bleed early, largely, and often repeatedly, now such bleeding is rarely practised and is not necessary." After this we had the war of opinions in regard to whether this change was due to a better knowledge of the natural history of the disease and of its pathology or to an actual change in the type of disease which had become less sthenic in character and no longer required the same heroic remedies. But into this I need not enter; it forms part of the history of medicine, and the object of this short sketch is to point out the importance of a knowledge of this subject. We are now on the threshold of new discoveries and of quite a new pathology, which is indeed but a higher development of ideas which have long been slumbering in the professional mind—the connecting links being Dwight, Raspail, Hallier, and Pasteur—but which seem likely now to attain a development of the highest importance for the well-being of mankind. It is well, however, in the light of the past to remember that disease may be recovered from under many different forms of treatment. The practical certainties of our art in all ages have been sufficient for the welfare of mankind and we must be careful never to subordinate to any vague ideas of what may possibly be curative of disease that which is, after all, the paramount object of our art—the relief of suffering.

A discussion was then opened by Dr. ALEXANDER JAMES on

The Clinical Varieties of Hepatic Cirrhosis.

Dr. JAMES began by pointing out that as regards causation, symptoms, and course the phenomena of hepatic cirrhosis at first sight appeared more clear, well defined, and comprehensible than almost any other disease. In atrophic cirrhosis, for example, we have an irritant, usually alcohol, carried to the liver. There it sets up irritation, as the result of which cell proliferation occurs round about the interlobular branches of the portal veins. Those cells, becoming fibrous tissue, contract, compressing and destroying the hepatic parenchyma, and compressing and obstructing the portal veins. Hence arises congestion of the mucous membrane of stomach and intestine, dyspepsia, hematemesis, ascites, enlarged spleen, &c. In the so-called biliary cirrhosis, there occurs a cell infiltration among the cells of the liver lobules, the result mainly of some biliary irritation. Hence arises the jaundice, and in this variety we have a large smooth liver but no portal obstruction, ascites, hematemesis, or enlarged spleen. But there was, he thought, no doubt that an extended observation of cases showed that liver cirrhosis was not always such a well-defined disease. Cases occurred which began with jaundice and an enlarged liver and in which in time the jaundice disappeared; and with the disappearance of the jaundice symptoms of portal obstruction showed themselves—ascites, enlarged spleen, &c. The author believed that the disease—acute yellow atrophy—showed many resemblances to cirrhosis, for in the less rapid forms of it there were found not only symptoms such as one meets with in cirrhosis (gastro-intestinal irritations, hæmorrhages, &c.), but on post-mortem examination there is found, combined with the destruction of liver cells, an increased production of fibrous tissue. The author next discussed how an irritant could at one and

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the same time produce destruction of liver cells and increase of its connective tissue, after which he pointed out that in liver cirrhosis, although the irritating factors might be many, the results were the same. He then delineated four types of hepatic cirrhosis which he thought might be regarded as legitimate varieties—(1) the purely atrophic, (2) the purely hypertrophic, (3) the transitional form, and (4) the form which, occurring in younger individuals, might be the result of congenital causes or of some local condition, such as peritonitic adhesions.

In the discussion which followed Dr. ROSENSTEIN (Leyden) thought that alcohol as a factor in the production of cirrhosis of the liver was very much overrated. In Holland, where enormous quantities of alcohol were drunk, cirrhosis was not met with in like proportion.—Dr. OSLER (Baltimore) thought that the possibly bacterial origin of some kinds of cirrhosis was worth bearing in mind.—Dr. BRADBURY (Cambridge), Dr. EWART (London), Dr. BOYD (Belfast), Dr. HANDFORD (Nottingham), Dr. GERHARDT (Berlin), Dr. DRUMMOND (Newcastle), Dr. ROSENBACH (Berlin), and Dr. ALLISON (Newcastle), also took part in the discussion, the general opinion being that although many anatomical types existed with well-defined pathological differences, it was not always easy to trace the clinical distinctions, excepting only that the small atrophic liver was usually associated with ascites and jaundice was a subordinate feature; while, on the other hand, the large hobnailed liver was frequently associated with jaundice and the ascites was less marked than in the other kind.

A paper on

The Bacteriology of Cirrhosis of the Liver.

(illustrated by numerous lantern slides) by Professor J. G. ADAMI (Montreal), was read by Professor WM. OSLER (Baltimore). It was at the outset pointed out that the experimental injection of alcohol results in fatty liver with at most only a very slight amount of fibroid change in the portal areas. Not a single observer has by this means, and after treating animals for many months, been able to produce anything at all resembling the extreme deposit of fibrous tissue met with in typical hobnailed liver. On the other hand, evidence has been accumulating—notably in India—that extreme cirrhosis may attack children and adults who have never taken a particle of alcohol. Within the last few years some French pathologists, notably Hanot, have regarded the enlarged cirrhotic liver which is associated with jaundice as being of infectious origin and have made use of the term, *le foie infectieux*. But no microbe has been identified and the only case in which a diplococcus was isolated was complicated by endocarditis and suppurative meningitis. After alluding to the possible association between cases of "Hanot's cirrhosis" and "epidemic jaundice" the author passed to the description of his own researches made in connexion with a very remarkable disease affecting cattle in a limited area in Nova Scotia—the so-called Pictou cattle disease—of which the main lesion is a singularly extensive cirrhosis of the liver. This disease appears to have been endemic for forty years in this district, slowly spreading from one animal to another. "The first symptom noticed is a bitterness in the milk and in time the beast dies slowly from exhaustion." The author killed and examined some thirty animals, the main lesions being an extreme condition of generalised hepatic cirrhosis, not only periportal but pericellular, the organ being enlarged and smooth; the gall-bladder was full and fæces were stained and a moderate amount of ascitis was present. Numerous follicular ulcers were present in the fourth or true stomach. These gave the impression that the earliest lesions are the gastric changes, which are followed by the infection of the abdominal lymphatic system and portal area. The spleen was not markedly enlarged. From all the animals a characteristic micro-organism was obtained. It was a polymorphic organism, its most usual form being a short bacillus with polar staining, resembling in some respects the micro-organism of hæmorrhagic septicæmia in the lower animals, but differing in essential features. It was pathogenic for rabbits, guinea-pigs, and mice. The author was struck with the clinical similarity between this disease and portal cirrhosis in man, and he has since endeavoured to reveal a microbe in cases of the latter. In one case a microbe was procured, but it died on the fifth day. The chief difficulty lay in the staining of the micro-organism in the tissues, all colours tried having faded so rapidly. This was overcome by bleaching very deeply stained sections in the sunlight for a short time daily for two weeks or more. In this way, using carbolised fuchsin, the author had been able to discover the same characteristic organism in the cells of all the cirrhotic livers he had examined during the last three years—26 in number—whether of the small shrunken type or the large hobnailed type, whether associated with jaundice and without ascites or associated with ascites and without jaundice. Lantern slides of the micro-organism were exhibited on the screen and the author entered very fully into the methods of staining and of revealing it in the liver cells. It is extraordinarily minute, requiring some experience on the part of the observer and the highest powers of the microscope ($\frac{1}{75}$ or $\frac{1}{90}$ in.) to discover it in the liver cells, in which, however, it is to be found in great abundance. According to the depth of the stain so does it appear, either as an ovoid bacillus (which might easily be mistaken for some stained deposit in the liver cells) or as a minute diplococcus surrounded by a distinct halo. The author knows of no organism so minute, save that recently described by Nocard and Roux as being the causative agent of the contagious pleuro-pneumonia in cattle, and the strain upon the eye of the observer is very severe. The question as to whether the micro-organisms in the human and bovine livers are identical is impossible to decide absolutely at present. It must suffice for the present to state that a characteristic microbe is present in the Pictou cattle disease—a disease having certain close resemblances to progressive cirrhosis of the liver in man—and that large numbers of a micro-organism have been revealed by special methods devised by the author in the lower cells in cases of cirrhosis in the human being; and, finally, that these two micro-organisms greatly resemble each other under the microscope. In an appendix to the paper the author mentioned a case of cirrhosis on which he had just made a post-mortem examination, and in which he had discovered the same micro-organism. Time had not permitted him to make cultures, but this he was about to do. The micro-organism isolated from cattle is polymorphic, appearing as a small diplococcus when grown on broth and tending to assume a distinctly bacillary form when grown on solid media.

Dr. WILLIAM BAIN (Harrogate) read a paper on:—

The Extent of Congestion of the Liver not Dependent on Organic Disease.

The type of disease considered was a chronic form of active congestion independent of organic disease, apyretic, and having existed for a few weeks or months. After considering some of the signs and symptoms of the condition he passed to consider the treatment, of which there are two kinds—that which can be carried out at home and that which necessitates going to a spa. The former might consist of a daily bath (70° to 90°), and some counter-irritation to the liver on alternate nights with cholagogues. The spa advocated was the sulphur spring at Harrogate and in some cases the Kissingen waters, either of which might be combined with deep massage of the liver.

Professor MCCALL ANDERSON (Glasgow) read a paper entitled—

A Plea for the more General Use of Tuberculin.

At the outset he expressed his regret that the wide-spread laudation with which the tuberculin treatment was ushered in had given place to an almost total neglect of it by the bulk of the profession in this country. The reasons of this were not far to seek. Too much was at first expected from it and it was used in too wholesale a manner; the cases were not selected carefully enough and the doses were generally too great or the intervals between the injections too short. After giving the original tuberculin a fair trial he was satisfied of its value and gave cases illustrative of its use (*a*) for diagnostic purposes; (*b*) for discovering foci of disease in unexpected situations; and (*c*) as a curative agent. He had not had sufficient experience of the new tuberculin to enable him to compare it with the old, but he was rather inclined to think that the former is the milder and safer of the two for purposes of treatment, while the latter is probably more useful for purposes of diagnosis. The latter is certainly much cheaper, the full dose costing less than a penny, as against seventeen shillings in the case of the new tuberculin. While admitting the accuracy of many observers to the effect that the treatment is often only temporarily beneficial, he suspected that this not infrequently arises from omitting to act on the principle that there are two almost equally potent factors in the production of tuberculous disease—viz., (*a*) the tubercle

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bacillus, and (*b*) the soil favourable to its growth and development. In all cases, therefore, the tuberculin injections must be combined with good food, pure air, cod liver oil and other anti-strumous remedies, if permanent beneficial results are to be obtained.

Professor ROSENBACH (Berlin) read a paper on Locomotor Ataxy; and

Dr. T. F. S. CAVERHILL read a paper on the Open Air Treatment of Consumption, and exhibited six patients who had been under treatment at Nordach. The discussion of this subject was adjourned to the next meeting.

SURGERY.

WEDNESDAY, JULY 27TH.

The Presidential Address in this Section was delivered by Dr. JOHN DUNCAN, consulting surgeon to the Edinburgh Royal Infirmary, who chose as his subject

Modern Operating Theatres.

After a few words of welcome to his hearers Dr. Duncan said: To one who can look back over thirty or forty years no fact in medical education bulks more largely than the increasing importance of our examination system. Formerly examinations were meant to eliminate the useless; now they dominate the teaching. In some respects this is matter for regret, but there is hope that if a little breathing space be accorded we shall gradually educate the examiners to recognise that the candidate is not a finished practitioner familiar with every meaningless detail, but that the chief business of the teacher is to make men think and of the examiner to find out how far that has been successful. Meantime, however, this educational movement has done much good and one of the most distinct benefits has been increased attention to the practical and clinical. You will find evidence of this in the laboratories and museums which are now attached to every department in our new university buildings and in the associated schools and which culminate in the admirable laboratory of the Royal College of Physicians of Edinburgh and in the important Museum of the Royal College of Surgeons of Edinburgh. The managers of our infirmary have not been slow in responding to this movement. Extensive additions have been made to the pathological and other departments, but I may specially direct your attention to two points which are surgically interesting. The first is that we have now all but completed the arrangements whereby a surgical theatre shall be placed at the disposal of each set of wards. When not many years ago we moved into the present buildings we found that one spacious theatre had been provided in which it was intended that all operations should be performed. But the antiseptic system has thrown open to surgery so wide a field and the population of our towns has so greatly increased that our youngest surgeon now performs almost as many operations as were performed in the whole infirmary in the days of Syme. Moreover, students do not flock nowadays to the surgical theatre as the populace used to flock to an execution, or at least not to the same extent as formerly. The glorification of mere manual dexterity has also greatly diminished. It is seen that if you know what to do there is little difficulty in doing it. And so a surgical operation has come to be regarded as an incident in a case, and the theatre has become an appanage to the ward, in which whatever manipulation is necessary may be carried out in the way most advantageous to the patient and most beneficial to the student as a sequel to the diagnosis and a preliminary to the after-treatment. You will see also that not only have the new theatres been constructed according to modern ideas, but that the older have also been remodelled on the same lines. Our managers deserve all credit for this endeavour to meet modern requirements, but I am not of those who have great faith in surgical upholstery. I cannot believe that the expense which has been incurred here and elsewhere in transforming cleanly and well-ventilated theatres into stuctures of tiles and glass was a necessary expenditure. It may be said that it is all in the right direction, but there are considerations worth bearing in mind before the money of a charity is expended in costly reconstruction. In the first place smooth and impermeable materials are not necessarily those which are most easily rendered aseptic. It is a fallacy to suppose that you render a theatre aseptic by douching its floor with antiseptic solutions I am not sure but that the cleansing of a good old wooden floor is antiseptically as satisfactory as the treatment applied to its modern substitute. In the second place, if the principle be sound on which this change has been made, much more is necessary to carry it to a logical conclusion. The emanations from spectators are more dangerous than those from walls and floor. Must we not, therefore, follow those who have cut the spectators off more or less by an impermeable but transparent screen? The emanations from the operator and his assistants are far more likely to reach the wound than those from spectators. So I picture to myself a time when everyone concerned in an operation—patient, surgeon, and assistants—having been rendered from top to toe cutaneously aseptic, shall cover each natural orifice of the body with an antiseptic mask, and clothing themselves in raiment scientifically pure shall pass into an atmosphere freed from germs by the air pump and by heat. Many years ago we had here a little controversy as to the value of the spray which was then in vogue. Incidentally I convinced myself by experiment and clinical observation that in surgical operations the air was a negligible quantity. If that be so—and if not absolutely true it is very near it—it would be unfortunate that in cases of antiseptic failure the surgeon should be led to seek in unfavourable surroundings for a loophole of escape from self-blame, or to believe that he cannot operate with perfect success save in a glass case or a crystal palace. Our ingenuity need not be directed to the air, which may be trusted to efficient ventilation and the germicide action of the tissues. The skin, the instruments, the apparatus, are the true objects of our care. The other improvement to which I venture to direct your attention is the introduction of electricity into the infirmary. For 30 years I have preached in and out of season the surgical uses of electrolysis, but I feel assured that even now it has not met with the appreciation it deserves. Yet in cirsoid aneurysm no other treatment can be compared with it for a moment. In nævus of the usual mixed variety if you desire to avoid a scar there is nothing so sure and so safe. It does excellently in some other forms of angioma. It gives good results in goitre. It is useful in uterine fibroma. It is an efficient depilatory. Many of these are common diseases which ought to be treated by the ordinary surgeon, and I have hope, now that electricity is being introduced into our infirmaries, that electrolysis will come into greater favour and that the surgeon will have no more hesitation in employing it in suitable cases than in performing lithotomy or amputating a finger.

A discussion was then opened by Mr. BENNETT, Professor of Surgery in Trinity College, Dublin, upon

Injuries of the Elbow-Joint.

He commenced by saying that the subject was exceedingly vast, and therefore he would not attempt to do more than speak on a small portion of it. Our museums and the clinical experience of all surgeons show that errors of diagnosis are frequently made in connexion with fractures of the lower end of the humerus and with displacement backwards of the radius and ulna. There are four reasons for much obscurity in connexion with these injuries. In the first place, the text-books are by no means agreed as to the terms which should be applied to the several parts of the lower end of the humerus; the internal condyle is sometimes spoken of as the internal epicondyle, and sometimes as the epitrochlea, and occasionally the trochlea and its epicondyle are put together and called the internal condyle. A similar confusion exists with respect to the parts on the outer side—namely, the capitellum and the external condyle. With such confusion in the terms employed it was easy to understand that the same name might be employed by two surgeons for two injuries essentially different. Another reason for errors in diagnosis is the very rapid swelling which comes on in these cases, and a surgeon who sees a case only some weeks after an injury may have no difficulty in recognising a mistake in diagnosis made by a surgeon who saw the case a few hours after the accident. A consideration of the difficulties caused by swelling should teach us the doctrine of charity when dealing with the mistakes made by others. A third point in the consideration of these cases is the absence of reference in the standard text-books to incomplete dislocation of both bones backwards. To judge by museum specimens the incomplete variety was even more frequent than the complete form, though of course it is possible that this may be in part due to the easier recognition, and therefore reduction, of most of the complete cases. A fourth cause of confusion is the incompleteness of our knowledge of

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the pathological anatomy of the lesions of the lower end of the humerus. In 1869 Professor Smith put to him the question, "Why in compound separation of the lower end of the humerus does not the elbow joint suppurate?" This was in the days before antisepsis. Hutchinson had advised excision of the protruding end of the diaphysis; but observation had shown that as a rule suppuration did not occur in the joint, and experiment had indicated the reason thus: when the lower epiphysis is broken off it carries with it the epiphysial cartilage and also the periosteum of the lower portion of the diaphysis, which is stripped off the bone. In this way the periosteum protects the synovial membrane and the joint is not involved at all, though the end of the diaphysis is often thrust through the skin.

This paper by Professor Bennett was illustrated by a large number of very interesting specimens, both moist and dry, of fractures of the lower end of the humerus and of backward displacement of the radius and ulna.

Dr. ROBERTS (Philadelphia) expressed the opinion that ankylosis of the elbow-joint was always due to incorrect coaptation of the fractured surfaces, and though it was possible that some of the loss of movement might be due to excessive formation of new bone, yet it was by no means a common cause and the other reasons generally given for limitation of movement, such as thickening of the capsule, had practically nothing to do with it. Another proposition he would like to lay down was that it was desirable to preserve the normal angle between the humerus and ulva. The "gun-stock" deformity is probably always due to fracture of the internal condyle. Mere alteration of the angle in itself will not impair the utility of the joint, for this angle varies in healthy subjects, but it has an unpleasant appearance. To get good results it is necessary to fix the fragments firmly, and Dr. Roberts thought that the use of long nails in cases of difficulty was a useful method. They might be driven right through the skin, and then be withdrawn in two or three weeks. He had devised some special steel nails and other instruments for the purpose. In obscure or severe cases an exploratory incision might be required and that was best made in the groove between the biceps and the supinator longus. The best position in which to put up a fracture was the not quite fully extended one, though many used a position of extreme flexion.

Professor CHIENE (Edinburgh) remarked that injuries in the neighbourhood of the elbow-joint could be treated in three positions. 1. The fully extended position was best for severe cases in which it was necessary to keep the patient in bed; if necessary, strapping and a weight and pulley might be used as in the lower limb. 2. The rectangular position was suitable for cases of fracture of the olecranon *without displacement*. 3. In all other fractures the fully flexed position is best; no anterior pad should be used beyond a little lint, and the limb should be fixed to the chest with a layer of lint between. After a week massage might be employed and a little later movements may be attempted.

Mr. BRYANT (London) accepted Professor BENNETT'S explanation of what took place in a separation of the lower epiphysis of the humerus, and as a confirmation of it he mentioned the great thickening of the lower part of the diaphysis in these cases resulting from the deposition of bone between the raised periosteum and the diaphysis. He further remarked that the extended position was by far the best in which to examine injuries about the elbow, as every point of bone could be felt. The extended position, moreover, was frequently the best position in which to put up the limb, at all events at first.

Mr. DALZIEL (Glasgow) mentioned that during the last few years he had seen six cases of stiff elbow, in each of which a fall on the hand had occurred causing a splitting off of the capitellum, which often is rotated so that the articular surface is applied to the lower end of the humerus. Ankylosis may result, or non-union, or the inner fragment will continue to grow while the outer fragment does not grow; and in this way much deformity may result. It is important to bear in mind that this fracture is not a separation of the epiphysis, but a true fracture. It never occurs after puberty. Nailing the separated fragment is the best treatment and has proved successful even seven years after the accident.

Mr. KEETLEY (London) thought that the absence of suppuration in the elbow-joint in the cases of compound separation of the lower epiphysis of the humerus was probably to be explained by the joint having been rapidly shut off by adhesions. He agreed with Dr. Roberts that displaced bone was the chief cause of ankylosis, but he did not approve of using nails; an incision was not rarely required, and then sutures could be employed. He was of opinion that "passive exercise" of injured joints was much overdone.

Mr. JORDAN LLOYD (Birmingham) considered that pure dislocations of the elbow are extremely rare, though fractures in the lower end of the humerus are often mistaken for them. Splitting off of the capitellum is not rarely a result of a fall on the elbow, the olecranon from its shape acting as a wedge. The injury is probably common in children and is often overlooked; it may heal well and cause no loss of mobility of the joint. The most common cause of stiffness of the elbow is excess of passive movement; the joint after a fracture should be kept at rest for from four to six weeks. A crushing up of the olecranon leading to narrowing of the great sigmoid notch might occur from a fall on the elbow and might lead to great difficulty in the reduction of the dislocation which was generally present.

Mr. J. HUTCHINSON, jun. (London), attributed much of the difficulty of diagnosis in cases of injury to the elbow to the fact that frequently the injury is complex, and he presented a skiagraph which showed multiple lesions in the neighbourhood of the joint. He could not agree with Professor Annandale's opinion, as shown by the numerous specimens in the Pathological Museum, that in compound fracture into the joint excision should be done. He thought that we should remove as little as possible in such cases.

Professor BENNETT, in reply, mentioned that he had brought some skiagraphs which demonstrated very clearly the deposit of subperiosteal bone in cases of separation of the lower epiphysis of the humerus to which Mr. Bryant had alluded.

The PRESIDENT summed up the discussion, saying that there were two great difficulties in these fractures about the elbow; firstly it was difficult to put the fragments in position, and secondly, it was difficult to maintain the mobility of the joint. He thought that passive movements should be applied with great care; in the morning the joint might be flexed and in the evening it might be extended. This was all that was needed.

Intestinal Obstruction.

Professor KOCHER (Bern) read a paper on Intestinal Obstruction. It is still only too common, he remarked, to find cases treated by drugs before the surgeon is consulted. He had had 77 cases of intestinal obstruction (excluding cases of disease of the rectum and external hernia); of these, 26 were due to malignant disease of the bowel, and he resected the intestine in 24 of these cases with only 4 deaths. In 19 cases tuberculous masses had produced stricture of the bowel; in 18 of these he operated and only 1 patient died. If the moribund cases and those where no operation was done were excluded there remained 38 cases in which an operation was performed, and in these the mortality was only 18 per cent. It was, however, curious that in the slighter cases, where the ileus might be said to be symptomatic, the mortality was much higher; of 7 cases of volvulus there were 5 deaths. In fact, in the simpler cases the death-rate was 59 per cent. The logical deduction from these statistics is that the great mortality is not due to the operation. The cause of death in most cases was septic absorption from ulcers occurring in the bowel above the obstruction; these ulcers were usually attributed to pressure from fæces, but they occurred even when the fæces were liquid; they were really due to over-distension, which led to impairment of the epithelium. It was necessary to relieve the distension as soon as possible, and this might be done by a small incision, a radical cure being postponed to a later date. Finally he urged that surgeons should be called in to see a case of obstruction before any drug is given, and it was very advisable for the surgeon to have the benefit of a physician's opinion when making the diagnosis.

Œsophagotomy.

Mr. W. THELWALL THOMAS (Liverpool) read a paper on three cases of Œsophagotomy for Swallowed Toothplates. In the first case repeated attempts had been made to dislodge the plate, and though it was easily removed by operation the patient sank and died; in the two other cases, where no forcible attempts to remove the plates with forceps had been made, recovery was rapid, uneventful and complete. Mr. Thomas thought that a metal-ended bougie would be better than the usual gum-elastic probang as being more likely to give an audible "click" when touching the toothplate and

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that the cases showed the undesirability of any prolonged attempts at extraction through the mouth.

Hepatectomy.

Mr. MAYO ROBSON (Leeds) read a paper on three cases of Partial Hepatectomy for Cancer. He remarked that out of nearly 300 operations on the liver and bile-tracts, of which number 35 were cases of malignant disease, there were only 3 cases in which he had thought it feasible to attempt removal of a small portion of the liver with the affected gall-bladder and duct. Of these 3, 1 died in a few hours, but the other 2 completely recovered from the operation but died some months later from recurrence. In all the 3 cases he had applied an elastic ligature beyond the growth, keeping it from slipping by knitting needles. The mass having been brought out of the abdomen was cut off. Mr. Mayo Robson remarked that in two cases in which he had closed the abdomen, thinking malignant disease was present, complete and permanent recovery had followed. There were probably cases of inflammatory thickening which disappeared after removal of the cause, and he thought that in doubtful cases an exploratory incision was advisable. In conclusion, he enunciated the following propositions:—1. Seeing that statistics agree in showing the frequent association of gallstones and primary cancer of the gall-bladder and liver, it is desirable that cases of cholelithiasis should be treated surgically at an earlier stage than has hitherto been the custom. 2. In all cases of tumour of the gall-bladder, even if unaccompanied by symptoms, an operation is advisable, and the obstruction, usually a calculus, should be removed. 3. If these rules were followed, probably primary cancer of the gall-bladder and liver would be rarer. 4. If early operation in cases of tumour of the gall-bladder were followed out, then, even if primary cancer had commenced, it would be in an early stage, and a complete recovery by partial hepatectomy might be hoped for. 5. An exploratory operation, even in a patient seriously ill with a localised tumour in the region of the gall-bladder, is worth advocating, as though malignant disease may be feared, the disease may be only inflammatory and therefore capable of relief. 6. If there are any secondary nodules in the liver, or if adjoining viscera are seen to be invaded, the operation had better be no more than exploratory.

Mr. MORTON asked if it were possible to examine the whole liver from the wound.—Mr. ROBSON, in reply, said it was quite possible to examine the whole of the surface of the liver, and in reply to a question from Dr. Roberts he explained that if he thought drainage necessary he used a large rubber tube with gauze inside and he placed it in the "right kidney pouch."

Dr. H. G. RAWDON (Liverpool) read a paper on two successful cases of Enterectomy following strangulated hernia, in which Murphy's buttons were used. In each case many inches of bowel were excised, the button was readily adjusted and recovery was speedy and complete. In one case the button was never found though often looked for.

Perforation of Gastric Ulcers.

Mr. J. P. BUSH (Bristol) gave an account of two cases of Perforation of Gastric Ulcer, in which he performed laparotomy. The operation in the first case was done twenty-six hours after perforation and the patient did well for three weeks and then died suddenly, probably from cardiac syncope. The other case, operated on eighteen hours after perforation, recovered completely. In each case he sponged the peritoneum, but did not wash out.

The PRESIDENT expressed his opinion that sponging might be sufficient in cases treated soon after the perforation, but he thought irrigation was needed for those seen later.

Mr. THOMAS H. MORSE (Norwich) had had four cases and only one died and that one was operated on twenty-four hours after perforation. He thought irrigation was less harmful than sponging.

Dr. W. WHEELER (Dublin) thought that irrigation with a saline solution was the best method of treatment.

Dr. MACLAREN (Carlisle) said that the after treatment of perforated gastric ulcer was still in the experimental stage. He considered the chief conditions of success were the strength of the patient and the thorough cleansing of the peritoneum.

Surgical Treatment of Empyema.

Dr. MENZIES HUTTON (Edinburgh) read a paper on the Treatment of Empyema. He expressed the opinion that, though aspiration might be sufficient in children, incision and drainage was the best treatment at all ages. To enable the lung to expand he had devised a valved drainage tube which permitted air to pass out on coughing or expiration, but prevented its return. Good results had followed its employment, in one case even eight months after the incision. The only condition in which this tube should not be used was when a bronchus opened into the empyema.

Mr. J. H. NICOLL (Glasgow) described his operation for Chronic Enlargement of the Prostate. He removed by means of special forceps through a perineal wound portions of the enlarged gland, without injuring the urethra or bladder, so that the risk of septic absorption was much diminished. During the operation the prostate is pressed down from above by the fingers introduced through a suprapubic cystotomy wound. The results had fully justified the operation, and when the doubtful benefits of castration and vasectomy were considered, he thought the operation was deserving of an extended trial.

OBSTETRICS AND DISEASES OF WOMEN.

WEDNESDAY, JULY 27TH.

The Presidential Address in this Section was delivered by Dr. A. R. SIMPSON, Professor of Midwifery and Diseases of Women and Children in the University of Edinburgh, the subject being

The Teaching of Obstetrics.

Dr. Simpson commenced by mentioning that the chair in the University of Edinburgh was the oldest midwifery chair in existence, history showing that when the Town Council of Edinburgh instituted in 1726 a professorship of midwifery in the University they unwittingly established a precedent. He went on to claim that midwifery, though late in development, had now come to rank with medicine and surgery in importance, while its constancy of recurrence rendered it the most important part of the general practitioner's practice. "I try to get students to believe," said Professor Simpson, "that the successful conduct of confinements is the surest guarantee for speedy success on their entrance on the career of an ordinary practitioner. Coming into a locality a young doctor may get a reputation in the community for managing well an outbreak, say, of typhoid fever or for operating well in some case of injury. But his very triumph over the typhoid has only been complete when he has succeeded in preventing the possibility of its recurrence, and people will not be less careful to protect themselves from injuries though they know they have a skilful surgeon near at hand. But each time it is whispered among the ladies that he is specially skilful in the handling of his confinement cases the rumour of his skill and kindness must fall on the ear of someone who will say to herself: 'My time is coming; I must have him to attend on me.' It is the only gate into general practice that is always open everywhere. Men who have gone through a medical curriculum with the bare modicum of midwifery which may carry them past a final examination have afterwards found themselves in a situation where they might have rendered good service to a suffering fellow creature if they had not been in a hurry to forget what little they had learned. I have heard a gentlemen who had attained to eminence tell how during his student course he had imagined that all he needed earnestly to study was surgery, as he was destined for the Army Medical Service; but, to his horror, he found that the first professional service he was called upon to render on board a troopship was to deliver a soldier's wife, a service in which he was glad to avail himself of the efficient help of a skilful matron who was on board. A practitioner may see a case of diabetes once in two or three years; or he may have a run of cases for a time and then for years fall out of acquaintance with it. So with many other forms of disease; they may come and they may go from the visiting list but the midwifery cases go on for ever. So long as the practitioner has his place by the side of the river of life watching its menstrual ebb and flow and prepared to render efficient aid he will find it float confinements to his charge with the steadiness of the tides. Moreover, there is this to be said in regard to deliveries, that whilst the ordinary run of them are cases of natural labour which may not call for active intervention, at any moment emergencies may arise which will tax to the uttermost the practitioner's resourcefulness and self-reliance. If he has a case of heart or lung or brain disease which leaves him undecided when he sees it first as to what should be the best line of treatment,

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he can probably prescribe something that will be useful, or at least not hurtful, until on a second visit the course becomes more clear or until he has had time to read up the subject in a system of medicine. If he cannot at once classify a skin disease, the case will not go wrong whilst he compares it with the plates of some work on dermatology. If he does not feel quite sure what kind of truss to order for a hernia he can politely propose to give the instrument-maker instructions about it and in the interval refresh his memory at some surgical source. In most of the difficulties in ordinary practice the family attendant may even, if he see fit, call in the aid of a consultant. Their combined wisdom may make for the recovery of the patient or, at the worst, give the patient and the friends the comfort of thinking that everything had been done that could be done. But if a man comes to a midwifery case and finds an arm protruding it is too late to think of reading up his Playfair; if at the end of a labour which has gone on smoothly he finds his patient become pale and pulseless he has no time to get assistance. Before help can come the flooding may be fatal. If he is not to see the patient die before his eyes he must recall the measures he has been taught to adopt in this contingency and he must apply them with his own hands immediately. I am persuaded that every member of the Association present will bear me out when I thus intone the prime importance of this department in a doctor's daily round. But as you cast your minds back to your student days how does this predominance of midwifery in your practice look in comparison with the little time devoted to it in your classes? The obstetric teacher among a company of physicians and surgeons is apt to find his subject regarded as a kind of subordinate speciality which may be lectured on at any odd time to senior students whose best hours are all laid out for them in the interests of systematic and clinical medicine and surgery and their subsidiary branches. It has always seemed to me that this is to do an injustice to men whom we profess to send out fully qualified to undertake all the duties of a medical practitioner. It is altogether out of proportion to have them, as they commonly are with us, under the necessity of attending two six-months' courses of systematic surgery and three three-months' courses of clinical surgery, whilst, apart from the gynæcology they learn in connexion with clinical medicine, all the midwifery that is enjoined on them is the six months' systematic course, three months of clinical teaching in the maternity and attendance on six cases of labour. This gives them a false impression of the work which lies before them and implies superfluous attention to surgery or inadequate instruction in midwifery. I would not have the surgical discipline diminished, but, surely, men should not be sent out to practise their midwifery with only half the training which they have enjoyed for their surgery. A fifth year was added just a lustrum ago to the medical curriculum. It was understood to have been added in the interest of the practical subjects of study, but I protest that, in Edinburgh at least, the student has lost rather than gained in his opportunities of qualifying as an accoucheur in consequence of the changes which have been made for the more prolonged curriculum. Examinations in some of the scientific subjects are such that many men find themselves compelled to take two systematic courses as well as the compulsory practical course to enable them to pass, so that not only the first three years are swallowed up, but generally the fourth as well, before they can at all face the subjects of their final examination and then the time that remains is so largely claimed for medicine and surgery that midwifery runs the risk of being driven to the wall. It has sometimes been suggested that a greater security for proficiency in midwifery would be given by making it compulsory on candidates for diplomas to have attended a larger number of cases during their curriculum than has hitherto been required of them. This, I am convinced, is a mistake. The attendance on a case of labour is not like a visit to a dispensary patient. It cannot be done in the course of an afternoon walk. It means the occupation of hours—it may be of a whole day or a whole night. And the young fellow, already overburdened with work, is to spend these hours or days or nights twenty times over in the slums! No; it is not fair. And it is futile. What guarantee does a man's attendance on a score of confinements give of his knowledge of practical midwifery or of his fitness to deal with difficult cases? There may have been some tedious labours among those he witnessed. He may even have had the exceptional luck to see forceps applied. He counted himself most fortunate when he arrived just in time to see the infant washed; or he became a hero because he lighted on a cross-birth where he sent for the house-surgeon to turn, and the house-surgeon had to send for the physician to decapitate. But all that does not make him fit to cope with the first complication that may meet him in his own practice afterwards. What is needed is that arrangements should be made for the student to have a full winter course of systematic study of midwifery after his intellect has undergone the discipline of the earlier scientific subjects and his mind is free from the incubus of the examinations which followed. His teacher should have the opportunity of fully expounding to him the many dangers and difficulties which he must be prepared to encounter and of explaining to him the methods by which these may be most successfully combated. In connexion with this course he will be drilled in the use of the various obstetric and gynæcological instruments and appliances, and especially he will be practised in the application of forceps and in the operation of version on the phantom. Phantom courses should be regarded as an essential part of the student's training. Practical gynæcology ought to constitute a part of his clinical medical discipline and an element in his clinical examination. As for the practical midwifery, in addition to the attendance under superintendence of a qualified practitioner on a limited series of cases—of which he should present a detailed record—he ought to attend the cliniques in a maternity hospital."

STATE MEDICINE.

WEDNESDAY, JULY 27TH.

Sir HENRY LITTLEJOHN, in opening this Section, complimented the members on the presence for the first time of ladies. In the 1875 meeting of the Association as medical officer of health he was dealing with the housing of the working classes. A special Act was afterwards passed and £560,000 were expended in carrying out its provisions. In three or four years there was a marked influence on the death-rate—many of the town councillors expected an immediate fall in the rate. The mortality had fallen from 28 per 1000 to 17 per 1000 for the last five years. Those figures represented the total mortality and to that extent involved a fallacy. Edinburgh has its plague spots, such as, for example, the Cowgate and the Grass-market, where the rate touched 30 and 33 per 1000. Another great subject before the meeting in 1875 was the question of drainage. By reference to maps the growth of Edinburgh was demonstrated from 1620 to the present day. In 1875 the Water of Leith was nothing more or less than an open sewer. Parliament, however, compelled the town to carry out the sewage and discharge it into the Forth. The effluent pipe was made too small, and only within the last five years had a pipe of sufficient size been inserted to carry off sewage and storm-water. At the same time the refuse of paper and other factories was diverted along with the drainage of sundry villages. Fish now flourished in the Water of Leith and the question of drainage was satisfactorily settled so far as the New Town was concerned. The drainage of the south side of the town was diverted from the Powburn and discharged into the Craigentinny irrigation meadows, the rental of which is now £18 per acre, and was formerly £40. In 1875 an interesting addition to the water-supply was in contemplation. The Pentland Hills watershed was drained and a fresh supply was sought from the Lammermoors. To keep up the supply of 38 gallons per head Edinburgh had to go to still other watersheds and a stream, the Talla, had been impounded. A population of 296,000 was supplied nominally, but really it included some 400,000 in all. The Edinburgh system of sewage removal began under difficulties. When many years ago he took the late Dr. Parkes into some of the old tall houses of the town he said he would call them "not houses but upright streets." The system of ashes and refuse removal was in full force in Edinburgh and the inhabitants had been educated up to it in this respect. In 1875 2*s.* 9*d.* per ton were given by the farmers for solid refuse; now the farmers would not take it at any price. The introduction of water-carriage deprived the refuse of its manurial value; now they had built a destructor. In 1875 there was no Notification Act, but the Act was soon afterwards introduced; at that time the proposal was almost universally opposed by medical men, including the Royal Colleges. It passed, however, in the hurry of an

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omnibus Bill. In one year near that period 6000 cases of typhus fever occurred and many medical students and men died from the disease. Now that disease had been practically wiped out by the clearing away of rookeries and by notification. Sporadic cases occurred, but the disease was now as fatal and virulent to this day as ever in Edinburgh. The infectious hospital was located in the old High School, a place of classical association. The hospital was fixed in the poorest site in Edinburgh, but there was no spread in the *entourage*. Small-pox was not treated there, but he (Sir Henry Littlejohn) did not believe that aerial spread of that disease took place, at any rate to any extent, with ordinary care.

Rivers Pollution.

An interesting debate on this subject was then opened by Dr. M'LEAN WILSON, in which Professor GLAISTER, Dr. BRUCE LOW, and Dr. J. C. MCVAIL, among others, took part.

PSYCHOLOGY.

WEDNESDAY, JULY 27TH.

The proceedings in this Section were opened by the President, Dr. T. S. CLOUSTON, physician-superintendent, Royal Edinburgh Asylum and lecturer on mental diseases in the Edinburgh University, who took as his theme

The Neuroses and Psychoses of Decadence.

In 1890, he said, I directed attention to that series of nerve disturbances and diseases occurring early in life which might properly be grouped together under the heading of "The Neuroses of Development." To-day I desire to make a few suggestions which will point to another series in which would be included a considerable number of the nervous and mental diseases and disturbances which occur in the later periods of life, and which might, I think, be properly grouped as "The Neuroses and Psychoses of Decadence." The one series all have as their chief and often their only cause faulty development of nerve centres; the other series have as their predisposing cause unphysiological decadence of brain and nerve. In the former series a neurotic heredity is always present; in the latter it is not necessary. In the former series there need not necessarily exist any exciting or proximate cause; in the latter such exciting causes as toxic agencies in the form of syphilis or alcohol, the effects of hard work or unphysiological conditions on the brain extending over many years, worry or strain, the access of the climacteric or senility are commonly present. In the former class the strain of taking up new functions, especially the all-dominating one of sex and of the reproduction of the species, has upset or arrested nervous development from an inherent weakness of power to produce a sound, strong fabric of nerve centres; in the latter the breakdown is not due only to the cessation of reproductive energy, but commonly to want of staying power of the centres to do the work imposed on them or the want of resistive power against undue strains or poisons. The most of developmental neuroses may in one way be looked on as Nature's effort to stop a bad stock before it reaches the time to reproduce itself. Man's normal, average life may be divided into three periods of twenty-five years each. During the first quarter of a century his body is growing and his functions are maturing, the last organ to attain physiological perfection being the brain cortex. During the next period the fullest muscular action, the highest resistive power against disease, and the most reliable and intense mentalisation are found. During the last period a slow process of retrogression and decay sets in and goes on till the physiological ending of death is reached. As during development one organ or function may lag behind its normal maturation time in reaching perfection thus constituting a neurosis from unrelational development, so during decadence every physician and every alienist has had experience of a premature decay in individual organs and functions, constituting a neurosis through unrelational decadence. One man's trophic energy fails at fifty-five, and he then loses 3st. of flesh and falls a victim to the first severe bronchial catarrh that attacks him. The cardiac innervation of another fails at sixty and influenza cuts him off. The memory of another quite gives way at sixty-six, while another loses originating volitional power at seventy, so that he cannot then manage the simplest business. Then the cessation or slackening down of the great reproductive energy at the climacteric period in both sexes is attended by such frequent nervous and mental disturbances that in their lesser degrees they are commonly regarded as rather normal than abnormal in their character. There are low forms of animal life which terminate their existence with reproduction. Continuation of the species with them is death to the individual. There is no intermediate sexless barren zone between fecundity and death, as in man and most of the higher animals. A period of slower ebbing of life—of decadence in fact—in the latter takes the place of the absolute termination of existence of the former, but the whole barren period becomes subject to many diseases and defects that are incidental to this period. The last epoch of all, that of vascular disease and imperfect blood-supply, and demonstrable nerve cell and fibre degeneration, is one necessarily attended by many neuroses and psychoses. Then it is that senile endarteritis, fatty vessels, atrophies, apoplexies, softenings, senile dementia, with irritative mechanical states superadded, come on. It is the time, too, for the more partial breakdown of muscular weakness and incoördination, senile amnesia, senile irritability, senile paralysis of family and natural affections, and senile immoralities. Though bad heredity does not come in so powerfully in decadence as during development it does operate in some cases and thereby brings on decadence or disease before their time. A glance at the general statistics of the neuroses and the ages at which they prove fatal conveys some idea of how they are related to the periods of development and decadence. Taking the report of the Registrar-General for Scotland for 1895 we find that there are 55 per cent. of the population living between one year and twenty-five years, both inclusive—that is, during brain growth and development. The number of deaths from diseases of the nervous system during this period amounted to 3262 out of the total of 9307, or 35 per cent. At the next period, that of full strength, from twenty-six to fifty years, the proportion of the population alive was 30 per cent., while the proportion of deaths from the neuroses sank to 12·2 per cent. In the next period, when decadence has begun, from fifty-one to seventy-five years, the proportion alive was only 12 per cent., while the proportion of the fatal neuroses rose to 33·2 per cent.; and the last period, from seventy-six to one hundred years, that of marked senility, showed only 3 per cent. of the population alive, while 14·8 per cent. of the deaths from neuroses occurred then. The conclusions from this comparison of figures are that the neuroses prevail largely in the period of brain growth and development of function (the detailed statistics for each year show that the first two years are very deadly neurotic years), that the very best years of life are very free from them, and that decadence brings them on with a rush to a far more deadly degree than even during development, senility being the most deadly neurotic period of all. The functional nervous explosions of convulsions are the most deadly of the developmental neuroses; the organic vascular-neurotic destructive lesions of apoplexies and brain softenings kill most frequently after fifty years. Looking to the prevalence of the insanities of development and those of decadence I find that about 12 per cent. of the whole number of new cases occurring each year may be put down to development, not including idiocy and congenital imbecility. If these are included bad brain growth and development account for about 40 per cent. of the whole existing insanity and weak-mindedness in the country. On the other hand, decadence (climacteric, senile, and paralytic insanities) accounts for about 20 per cent. of the insanity and 5 per cent. of the combined insanity and idiocy of the country. At least our statistics at the Royal Edinburgh Asylum over twenty years give these results. We shall not be able to put on a really scientific basis the diseases of decadence until we know the exact steps in the normal process of decay of structure and function in every tissue and organ. The great regulative action of the higher cortex on the nutrition of all tissues and on the function of all organs undergoes a steady deterioration as age advances. The whole body shrinks in volume, except the less organised fat cells in some cases. No doubt it is owing to this fact that there is a less general resistive power in the organism to certain diseases from within and from without. Rheumatism and gout become chronic, bronchitis kills off its victims after sixty years by the 100,000, and neoplasms then become more numerous. The enemies of the tissues and of the organism get too strong for them. During all this process of decadence of the higher nerve centres it is not surprising that diseases and disorders special to the period should appear—namely, the true psychoses and neuroses of

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decadence. The different ways in which a decadence affects the resistive quality of the brain and spinal cord against nerve toxins is, I think, best illustrated by studying a number of alcoholic cases past the prime of life and correlating their symptoms—mental and bodily—with their ages, their heredity, their occupations, and their habits in youth. We have all had experience of the immense variety in the alcoholic neuroses and psychoses in different cases according to whether the patient was in mid-life or beyond fifty years. The most common case is that in which a man has taken alcoholic stimulants freely but not to manifest excess from his youth and they have had no appreciable mental or bodily effects till he reaches the age of forty-five or fifty years, when all at once, within two or three years, his eye and face get bleary, his hair gets grey, his hand gets shaky, his memory and acuteness of mind fail, his force of character lessens, his morals deteriorate, his weight either goes up by the deposition of useless fat or drops a stone or two through lack of trophic energy, his walk changes so that he no longer has a firm "grip of the ground," and he looks twenty years older in these two years. What has happened? The chief thing, I think, has been that his nerve centres—mental, motor, and trophic—have suddenly lost their resistive power against the alcohol, and its full toxic effects on their functions have thus become apparent, and this because commencing decadence has begun and altered the quality, structure, and energising of his neurons. A parallel series of clinical facts can be observed in regard to syphilis and lead poisoning. We have three chief types of nervous and mental lesion connected with decadence. The first consists chiefly and primarily of a vaso-trophic degeneration, through which the cerebral vessels first lose their elasticity and then gradually their walls take on various trophic changes and degenerations generally or in patches, when in the course of their constant expansions and contractions as more or less blood is called for by the neurine, they can no longer sustain the blood-pressure and they burst. This is the cause of the vast mass of the destructive brain lesions, the softenings, the apoplexies, which bulk largest as the causes of death in the registrar's returns. No doubt the chief degenerations of the vascular coats are the atheromatous, the inflammatory (senile endarteritis), and the hyaline. It cannot be doubted that the brain tissues regulate by innumerable vaso-motor centres their own blood-supply and there can be as little doubt that the nutrition of their walls is also regulated from centres in the brain. No doubt in most cases of apoplexies from vascular disease we have also some amount of surrounding nerve degeneration. There is a solidarity throughout the whole brain, through which a tissue change seldom occurs in one organ, or system, or centre, or envelope without some amount of pathological change in some or most of the others. The second typical lesion of decadence seems to me to be best represented by those degenerations of the motor and sometimes sensory systems which constitute the ataxies, the scleroses, and the other progressive degenerations. The third typical series is constituted by the mental disturbances and diseases grouped under the climacteric and senile insanities. In them undoubtedly the primary lesions begin in the mental tissues and mental areas.

PATHOLOGY.

WEDNESDAY, JULY 27TH.

Professor GREENFIELD, the President, having said a few words of welcome to those attending the proceedings of this Section, Dr. ROBERT MUIR opened a discussion upon

The Nature and Significance of Leucocytosis.

After referring to the importance of the subject and its wide range, he said that he would confine his remarks to leucocytosis as a process in general pathology and more particularly to the fundamental changes on which the excess of leucocytes depends. A general leucocytosis may occur in many acute inflammatory conditions, especially if suppurative; and experimental leucocytosis may be produced by the injection of various substances, especially bacterial products. There can be little doubt that in such cases there is an actual increase in the total number of leucocytes, not simply an accumulation in the peripheral vessels. This view is supported by the observations of Goldscheider, Jacob, and many others, and also by the fact that in conditions of suppuration there is an enormous emigration of leucocytes, so that several ounces of pus may be discharged daily while the number in the blood continues in excess. Where there is such a continuous drain and at the same time an excess in the blood the production of leucocytes must necessarily be greatly increased. The sites of origin of the different varieties of leucocytes is a point on which sufficient stress has not been laid. First, leucocytes multiply by mitotic division in adenoid tissues, lymphatic glands, Malpighian patches of spleen, &c. These leucocytes are small spherical cells with a relatively large nucleus and scanty hyaline protoplasm. Secondly, leucocytes undergo division by mitosis in the bone-marrow. The great majority of the cells dividing these are of somewhat larger size and their protoplasm contains fine granules which have an oxyphile or neutrophile reaction. Eosinophile cells also multiply in the marrow, but they are fewer in number and their division is less active than the former variety. Now, in the blood there are no cells with a simply spherical or oval nucleus and finely granular protoplasm like the finely granular cells in the marrow. Further examination of the marrow shows that these cells present great variation in the configuration of the nucleus, that, in fact, one can trace all the intermediate stages from the simple rounded or oval nucleus through various degrees of lobulation to the markedly multipartite nucleus and the finely granular, actively amœboid leucocytes. According to this view these cells, after division in the marrow, undergo a change in the nucleus which specially adapts them for amœboid movement, and in this fully-formed condition they enter the blood. If the above conclusion is justified, then important changes should be found in the marrow when there is a constant drain on this variety of cell. A considerable number of experiments were undertaken with this object in view. Artificial leucocytosis, or at least a removal of leucocytes from the blood, was produced by subcutaneous or intraperitoneal injections of organisms, chiefly staphylococci. The experiments lasted for various periods of time up to four and a half weeks. Striking changes were found in the marrow. The fat cells become absorbed and the cellular elements undergo a corresponding hyperplasia. The cellular increase is due to excessive production of the finely-granular leucoblasts which are the source of the finely-granular leucocytes of the blood. The coarsely-granular eosinophile cells are relatively, and it may be absolutely, diminished. Erythroblasts or nucleated red corpuscles are also much diminished. The giant cells undergo degenerative changes and in great part disappear. This leucoblastic type of marrow corresponds to the erythroblastic type which is found after hæmorrhage. This fact appears to be of great importance, for in any case of suppuration there are (1) locally an enormous number of finely granular leucocytes (pus corpuscles); (2) in the blood a great increase in number of the same cells; and (3) in the marrow a great increase in the cells from which these leucocytes are derived. Further, it is very probable that the same cause will explain all these phenomena. Bacterial products act as chemiotactic substances, and if in small quantity may produce only local suppuration without leucocytosis. If, however, the suppuration be more extensive, then these substances which produce chemiotaxis are absorbed in such quantities as to act on the leucocytes lying at the periphery of the blood-channels in the bone-marrow and so produce a general leucocytosis. The increase in the number of finely granular leucoblasts is probably due to a direct stimulating effect which these substances exert on them. This view very closely corresponds with that which Ehrlich has adopted in his latest publication, but these conclusions were reached quite independently and the changes in the bone-marrow have not previously been described. Dr. Muir then showed an interesting series of lantern slides from photo-micrographs in illustration of his experimental work in leucocytosis.

Professor GREENFIELD congratulated Dr. Muir on his able exposition of the subject and said that his results threw enormous light on the pathology of leucocytosis.

Professor HAMILTON said that in his opinion many cases of leucocytosis were not due to a general increase of leucocytes but merely to an accumulation in the peripheral vessels. As regards the cause of a general leucocytosis, granted that it did occur—e.g., from injection of various substances or organisms—he said that the usual explanation was the theory of chemiotaxis. He deprecated any dogmatic statement on such questions and suggested as a possible explanation that bacterial poisons stimulated the lymphatic glands to throw off

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more leucocytes just as certain drugs stimulate the liver to increased secretion. He then discussed the phagocytic action of leucocytes.

Dr. EDMONSTON CHARLES (Rome), said that in Malta fever he had found that the polymorphonuclear leucocytes were quite absent from the blood, and only lymphocytes were present. In other fevers, on the contrary, there was no such absence of the polymorphonuclear cells. The great importance of this to the physician was due to the fact that it afforded him a rapid method of diagnosis between typhoid fever and Malta fever. The sedimentation and agglutinative tests were of great value, but could not be undertaken by the ordinary physician. In further illustration of the importance of clinical examination of blood-films he said that in appendicitis the date at which a patient might get up could be told with almost absolute precision. If leucocytosis was present, then the patient should on no account rise even in the absence of all other symptoms; but if the leucocytosis had subsided, then, even in the presence of other symptoms, the patient might get up. He concluded by quoting a case in which the observation of a polymorphonuclear leucocytosis had enabled him to predict the onset of an acute pleurisy twenty-four hours before the physical signs appeared.

Dr. WOODHEAD agreed with Professor Hamilton that theories can at present serve only as working hypotheses, but he thought that Dr. Muir's paper would be of great assistance in forming definite conclusions on this subject. The great importance of his paper lay in the fact that two sets of cells were localised: (1) a series of changes in lymphatic glands and their effects on the blood; and (2) a series of changes in the bone-marrow and their effects. The theory of chemiotaxis might now be more accurately studied when the sites from which the various cells came had been more precisely localised. Similarly, phagocytosis could be more satisfactorily investigated, since the irritant could be applied at special sites.

Dr. LAZARUS BARLOW contrasted the present state of knowledge of granular-celled leucocytosis with that of non-granular-celled leucocytosis, and maintained that the former was the more advanced. He regarded granular-celled leucocytosis as a process of the same nature as that which leads to the appearance of granular cells at the site of an inflammation. The question of non-granular-celled leucocytosis was much more difficult, chiefly because of the uncertainty which prevailed concerning the nature of the cells involved. Lymphocytosis probably depended simply on a washing out of the adenoid tissues during digestion, but where there was an increase of the large hyaline cells then it was uncertain whether they were enlarged lymphocytes or endothelial cells, or fibroblasts, or even cells of a lympho-sarcoma.

Dr. DURHAM said that the bone-marrow was a tissue comparatively neglected, and strongly urged its routine examination in all organismal conditions. In some cases of bacterial infection—e.g., in Malta fever—he had found the organisms present in the marrow though all the other organs and tissues were sterile. He also discussed the resolution of artificial leucocytosis when the number of lymphocytes in the blood is in excess of the normal. He had never seen any transitional forms between the polymorphonuclear leucocyte and the lymphocyte, and suggested that the latter was probably more sluggish in disappearing. He concluded by emphasising the extreme rapidity with which these changes occurred in the blood and in all the cavities of the body after experimental leucocytosis, and said that these were consistent with the changes in the leucoblastic bone-marrow which Dr. Muir had described.

Dr. MILROY said that in the experimental leucocytosis caused by the injection of nucleic acid there was an alteration in the ratio between the amounts of nitrogen and P_2O_5 excreted compared with that in health. There was, indeed, both an absolute and a relative increase of the excretion of P_2O_5. On the other hand, in medullary leucocythemia the excretion of P_2O_5 was both absolutely and relatively diminished as compared with the nitrogen and he suggested that this fact seemed to imply some check in the normal disintegration of the leucocytes.

Dr. COPEMAN and Dr. GRÜNBAUM also spoke.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, JULY 27TH.

The President of this Section, Dr. J. O. AFFLECK, Lecturer on the Practice of Physic and on Clinical Medicine in the Edinburgh Medical School and Physician to the Edinburgh Royal Infirmary, opened the proceedings of the Section by delivering the short Presidential Address which follows entitled—

The Progress of Therapeutics.

The subjects included in this Section can never cease to be of interest to those engaged in the practice of medicine or fail to occupy a prominent position in the business of a congress like this. However widely diverse the topics dealt with in our proceedings here there may be traced through them all a certain unity of purpose and a common object towards which they converge—the treatment of the sick and suffering. Doubtless many points relating to treatment in individual diseases are fully discussed in other sections, but it seems nevertheless an advantage that there should be a department in which therapeutics and our therapeutic resources are specially considered, and towards which some will naturally turn in the hope of gaining or of imparting information. The conjunction of the two subjects of pharmacology and therapeutics necessarily makes the field in this Section a wide one; but it has the obvious advantage of bringing into contact for discussion those specially skilled in the knowledge of the composition, properties, and actions of medicinal agents and those whose main duty lies in practically applying these in the daily work of their profession. Having myself more in common with the latter category, I do not propose in this brief address to dwell upon any subject in the domain of pharmacology, even had time or ability admitted of my doing so. During the twenty-three years which have elapsed since the last meeting of the Association in Edinburgh the number of new remedies has been multiplied enormously, chiefly by the adoption as therapeutic agents of substances which organic chemistry has so richly provided, the virtues of many of which are beyond all doubt. An illustrative instance might be cited in the power of salicin and salicylic acid and its compounds to lessen the pain, and in many cases to shorten the attacks, of acute rheumatism. The groups, too, of synthetic analgesics, antipyretics, and antiseptics have furnished us with substances which (while requiring at all times care and judgment in their selection and administration) are among the most widely employed and efficacious of the resources for treatment placed in the physician's power. Conspicuous among the therapeutic advances during the period have been the large number of remedial measures which lie outside of the materia medica and which—many of them at least—are eminently rational in their conception and application. The developments of pathology and more accurate clinical methods have contributed in no small degree to bring about this result. A therapeutic measure of immense value is the method of treating stomach disorders by lavage, a plan which owes its origin to Professor Kussmaul, who originally designed it for use in dilatation of the stomach, but which has since been extended to the treatment of many other painful conditions of digestion to which it can oftentimes bring marked relief. A better acquaintance with the processes of the gastric chemistry, too, has been turned to useful account in the various methods of peptonising foods in cases of dyspepsia. An entirely new field of therapeutics has been opened up by antiseptic surgery, and some of the most formidable and fatal of all maladies which were at one time regarded as outside the reach of remedies have been made possible of cure. This has been especially the case as regards the abdominal cavity, where the wall of partition which divided medicine and surgery has been broken down and conditions of disease formerly believed to be hopeless are now successfully dealt with by surgical operation. The gynæcologists led the way in this direction. Many cases of acute peritonitis which thirty years ago were treated only by opium are now explored surgically, and, whether due to the perforation of a viscus, disease of the appendix vermiformis, or acute intestinal obstruction, are cured by the timely intervention of the surgeon. Excision of the kidney and operations upon the liver, the stomach, and the intestines are now common occurrences, and many a life is preserved and much suffering spared by these modern methods of treatment. Indeed, it sometimes happens that cases which on exploration were found to be beyond the reach of radical treatment may yet by this very operation be materially benefited as regards some of their distressing symptoms. The surgery of the brain, at one time deemed a practical impossibility, has yielded, especially in the hands of Professor Macewen, results which have arrested the attention of the whole world of medicine.

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The employment of massage as a therapeutic agent has been found to be a valuable adjuvant in the treatment of various forms of paralysis, particularly those of peripheral origin; in many functional disorders of the nervous system; in the disabling sequelæ of rheumatism; in certain varieties of dyspepsia; in insomnia; and in the debility of convalescence. The amount of aid to be obtained from electricity as a therapeutic measure is not to be gauged by the comparatively limited extent of the results hitherto obtained by its use. Its more recent developments seem to promise for it a wider sphere of useful action as a means of treatment. The employment of various forms of baths in the treatment of disease has until recent times held a much less prominent position in this country than on the continent. But their value is now gaining much wider and more practical recognition. The application of regulated exercises in the treatment of heart disease by the Oertel system or by the more recent Nauheim method has been found to yield excellent results in many conditions of cardiac enfeeblement with or without valvular disease. Nevertheless the range of applicability of this form of treatment is probably less extensive than some of its more strenuous advocates contend, and at all events much care and discrimination are called for in the selection of presumably suitable cases and vigilance in observing the effects lest harm result. The open-air treatment of phthisis in specially constructed sanatoria has recently awakened widespread interest. This method, which seems to rest upon a scientific and rational basis, is still but upon its trial, yet results of an encouraging kind have already been obtained. Of no less importance, and with a still wider range of beneficent result, are the means which bacteriological investigation has placed within our power of identifying specific organisms in infectious diseases and observing their life-history and toxic properties. The way has thus been opened for the scientific study of immunity, and this again has resulted in the discovery of protective and curative antitoxins, of which that of diphtheria is the most outstanding example. The testimony which has been borne to the value of this treatment in that dreaded malady has been universal. Others of the deadly scourges of humanity are now also being effectively combated by serum therapeutics. For this work we are indebted to the Pasteur Institute, where also the anti-rabic treatment of hydrophobia was discovered by its famous founder. It would be impossible in any sketch of therapeutic advance to omit a reference to the growth and development of the modern system of nursing the sick. The work of setting apart properly equipped women as nurses, with which the name of Miss Nightingale will ever remain associated, has had the effect of revolutionising to a large extent hospital treatment, has incalculably contributed to the relief and comfort of sufferers, and has lightened the labours and anxieties of medical men. Outside of hospitals, throughout all classes of the community the benefit has been no less conspicuous. The beneficent work of nurses is universally recognised and appreciated by the public and is happily now made available for the poorest of the poor.

OPHTHALMOLOGY.

WEDNESDAY, JULY 27TH.

Dr. ARGYLL ROBERTSON, the President of this Section, in opening the proceedings of the Section, began by thanking the members for the honour they had conferred upon him by electing him President, and expressed the wish that it would be a most profitable meeting, and said that he would do all that lay in his power to make it such. He briefly touched on some of the more important advances that had been made in ophthalmology during the past year, the intra-oculous injections in various forms of septic conditions, and the treatment of corneal opacities. He also pointed out that further investigation was required in the treatment of glaucoma and detachment of the retina. The department of ophthalmology had developed in importance with great rapidity during the past 40 years; at that time there were only two ophthalmic surgeons in Scotland as compared with the large number that abound at the present time. This is largely due to the necessity of the correct treatment of refractive errors. Such things as cylindrical lenses were unknown in those days, but as a result of the labours of men such as Donders, Snellen, and others the state of affairs has very much altered. He then referred to the subject of examinations in ophthalmology for final students. He stated that a great deal had already been done, especially in Dublin, but still a more thorough examination should be insisted upon. The President then closed his remarks by thanking those distinguished men who had come great distances to read papers at the meeting and honour the Association with their presence.

The PRESIDENT then called upon Professor Nuel to give his paper on

Absorption of Aqueous Humour by the Iris, with Specimens and Lantern Demonstration.

Professor NUEL (Liège) commenced his remarks by stating that he had experimented on rabbits, cats, and dogs, and with the aid of microscopical sections illustrated his theory of absorption. Indian ink solution was introduced into the anterior chamber and the effect watched by making section of the iris and ciliary body some hours afterwards. He found that the lymph-channels in the iris of the rabbit are rudimentary, whereas those in the cat and dog are well developed, especially towards the peripheral zone of the iris, those near the pupil being smaller and further apart. When a solution of Indian ink is introduced into the anterior chamber these channels take up the black pigment which is easily demonstrated by microscopical sections. In a few days the pupil becomes dilated and obliterates these lymph-channels. The presence of Indian ink sets up an inflammatory reaction in the iris which extends to the ciliary body. In successful cases this Indian ink penetrates as far as the blood-vessels in the course of six or eight hours; it also extends towards the pupil, accompanied by a deposit of a large number of migratory cells. In one case of a dog a section was shown where the pupil had not dilated and the Indian ink was well marked along the line of the blood-vessels. With a *résumé* of these cases Professor Nuel concluded his remarks.

Mr. GEORGE BERRY asked whether Professor NUEL was of the opinion that extensive absorption took place in the iris? He pointed out that in septic cases as a result of injury absorption takes place from the anterior surface of the iris more than from the canal of Schlemm and the angle of the iris. In reply Professor NUEL stated that it was his opinion that absorption took place more on the anterior surface of the iris than from the other parts mentioned.

Dr. THOMAS REID then gave a lantern demonstration illustrating the reparative processes in the cornea. The specimens shown were the result of many years' investigation on the reaction of the cornea after severe stimulation. The first case showed the edges of the wound in the cornea turned in with complete union of the epithelium over them. The next case showed the epithelium extending over the prolapsed iris in the course of 24 hours after the accident. The next was one of gunshot wound 24 hours after the accident showing total destruction and failure of the epithelium to bridge the rent. Another case demonstrated a rupture of the cornea with ragged edges with the epithelium extending over the corneal tissue; on the third day after the accident in this case the columnar cells were more active than they are usually supposed to be. Several cases were then shown illustrating the appearances of lacerated wounds in the cornea. Other cases were shown, one demonstrating union in a more or less perfect state 15 days after the injury, with a proliferation going on to form corneal tissue. He then showed cases of superficial lacerated wounds with the epithelium extending down into the cavity within a week after the accident.

Dr. GEORGE MACKAY and Dr. J. C. DUNLOP related a case of

Acquired Complete Colour-blindness

(with specimen). The case was read by Dr. Dunlop. The patient suffered from cancer of the stomach. He suddenly lost the colour sense; every colour appeared as grey; there was no word-blindness or loss of the former sense. The vision was $\frac{6}{12}$ and the intellect was clear. He died on April 22nd as a result of cancer of the pylorus. The brain was removed and placed in formalin. The right occipital lobe was considerably reduced in size; there was a distinct atrophic lesion in the posterior part of the fourth temporal convolution on the right side. On the left side there appeared to the naked eye no lesion whatever. However, on making a section of the left lobe there was found another atrophic lesion deeper down in the corresponding convolution. The optic nerves were found to be quite healthy. The lesion did not extend to the calcarine fissure. On microscopical examination the adventitia of the vessel was

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considerably increased in amount, especially in the small vessels; in some of the small arterioles it was markedly increased. In some of the very small arterioles the media had become separated from the adventitia by a clear fluid. The microscopic preparations were made by Dr. Robertson, Pathologist to Morningside Asylum.

The PRESIDENT remarked that they were very much indebted to Dr. George Mackay and Dr. Dunlop for their interesting paper, as the subject was of great interest and a considerable amount of diversity of opinion existed with regard to the localisation of the colour centre in the brain.

Mr. GEORGE BERRY pointed out that although there was defect of the colour sense, the lesion did not limit the colour centre to that particular spot.

The PRESIDENT stated that he was of opinion that there were two distinct centres in the brain, one for colour sensation and another for the form sense.

Dr. GEORGE MACKAY, in reply, remarked that in cases of congenital colour-blindness the form was intact, which pointed to the presence of two distinct centres.

X Rays in Ophthalmology.

Mr. MACKENZIE DAVIDSON gave a demonstration of x rays and ophthalmology. He has applied the x rays to foreign bodies in the eye in 41 cases. The principle of the method is based on getting the three coördinates of any point. The instrument consists of a headpiece with a frame fitted with two knitting needles at right angles to one another, these form two planes and the sensitive plate forms the third plane. The head is then firmly fixed and the eye is directed to a point parallel to the horizontal knitting needle. The tube is placed exactly opposite the vertical needle and then a photograph is taken in that position. The tube is then moved 6 centimetres to one side or another, and then another photograph is taken in this position. By using these two films a stereoscopic effect is produced. The negatives are taken and developed and a piece of celluloid is placed over the wet plate and the position of the foreign body noted. The same is done with the second negative, the difference between these two points being recorded. The known point is located by an ingenious arrangement of silk threads and compasses, and by this means the exact position of the foreign body is estimated. To get accurate results by this method it is necessary to use tubes which form x rays which come from a very fine point, and also which require short exposures, about 90 seconds being the usual time required. Several lantern slides were exhibited illustrating many cases which he had had under his observation.

Mr. E. TREACHER COLLINS presented several cases in which skiagraphy was effective for detection of foreign bodies. The first case, that of a man four months after injury, showed a dark spot on the iris, and Mr. Davidson, by means of the x rays, located a foreign body behind the scar. The foreign body was removed, and excellent vision resulted. The second case described was that in which a piece of steel had penetrated the vitreous, located by Mr. Davidson by means of the x rays. It was removed by Mr. Collins, with a good result. The third case was one of iritis, and there was considerable doubt whether there was a foreign body present or not. It was, however, detected by Mr. Davidson in the iris, it having been in the eye for 14 years without causing irritation. The fourth case was that of a very small particle of flint in the lens, the measurement of which was barely 1 mm. in diameter. In conclusion, Mr. Collins mentioned that the method accurately locates the foreign body, also the size of the body, and whether there is one or more.

THE ANNUAL MUSEUM.

The Drill Hall in Forrest-road, the entrance to which is almost immediately opposite the reception room, afforded ample space for the display of new drugs, instruments, surgical and sanitary appliances, and other things of interest to the profession which annually form the nucleus of the museum. The exhibitors must have been encouraged by the very great interest which the visitors evidently took in the proceedings. From the point of view of merit the exhibits compared favourably with previous events: very good taste had been exercised in the arrangement of the stalls and the stalls themselves presented a very pleasing appearance. Pharmacy affords a wealth of material for the purposes of display, while the line of exhibits was now and then agreeably relieved by the products of other arts and industries, food preparations, mineral waters, scientific apparatus, illustrated periodicals, &c. The management very wisely had not overlooked the importance of allowing plenty of space between the rows of stalls so that the visitors could move freely up and down without uncomfortable jostling, and even when little groups collected round an object of particular interest there was no obstruction. This provision is a great help to those who are really bent on acquainting themselves with new things and modern improvements, not resting satisfied with a mere glance at the exhibits, but stopping awhile to discuss the merits or demerits, as the case may be, and perhaps exchanging ideas with brother practitioners.

In noticing the exhibits at that length which in point of merit they demand we may divide them as on previous occasions into seven sections—viz.: I., drugs; II., foods and food products; III., sanitary appliances, disinfectants, &c.; IV., surgical instruments and appliances; V., mineral waters, beverages, &c.; VI., publications; and VII., miscellaneous.

I. DRUGS.

In no other section of the annual museum is advance more striking and obvious than in that devoted to the exhibition of chemical and pharmaceutical products. More particularly will this appear so when the enormous progress which has been made in the forms of medicaments is considered. The pill is almost a thing of the past, having had to give way to the tablet, tabloid, palatinoid, and flexible capsule. And with these improvements in the design and administrative form of medicaments the drug which is thus presented has become a purer preparation, a more reliable and stable combination in the case of compounds, and satisfactory in regard to other points which are of undoubted importance in considering the therapeutics of the drug. Occupying a central position and illustrative of what we have just said was the admirably designed and electrically lighted stall of Messrs. Allen and Hanbury's (Plough-court, Lombard-street, London). Amongst the novelties of merit noticed were "Kapsols," or capsuled pills, consisting of various medicaments wrapped in a thin jujube coating. Side by side with these were the soluble capsules and "perles," tablets, throat pastilles, hypoderms, and the soluble gelatin coated pills. Then there were the tasteless oils, cod-liver oil and castor-oil, upon which this firm have bestowed considerable care and thought, and their labour has been rewarded in the attainment of "perfected" cod-liver oil and castor-oil, which are practically devoid of both unpleasant taste and smell. The series included also the valuable malt preparations, the basis of all of which is the well-known Bynin, a concentrated fluid extract. It forms an excellent vehicle for the ingredients of Easton's syrup, making a most pleasant tonic combination and withal is a digestive and nutrient. In the same way there are the "Perfected" Malt and Oil and Byno-hypophosphites, the latter a neutral solution of the hypophosphites of iron, calcium, potassium, and manganese and the alkaloids of cinchona and nux vomica. It is a perfectly stable combination, in which, too, the alkaloids are present in the condition in which they occur naturally. Considerable taste was displayed in the exhibit of Messrs. Oppenheimer, Son, and Co., Limited (Victoria House, Victoria Embankment, E.C.). The group was admirably arranged, the various palatinoids, placed in glass cups and jars of various shapes and sizes, tending not a little to the beauty of the whole design. The background consisted of soft plush in two colours which afforded a tasteful drapery. The applications of the palatinoid have apparently no limit. Thus there were palatinoids containing the extracts of animal substances, palatinoids of liquids, palatinoids of amyl nitrite, chlorodyne, chloroform and ether, beechwood creasote, &c. The value of the bipalatinoid appears emphasised in the compound syrups such as the syr. ferri hypophosph. co. and in ferrou carbonate with red marrow, a combination which has given excellent results in anæmia and chlorosis. The exhibit included the various digestive ferments and some new drugs—as, for example, hydrastin with cotarnin co. and cannabin tannate—used in gynæcological practice—and senecio aureus, a species of ragwort, a diuretic and emmenagogue. Messrs. Wyleys, Limited (Coventry), did not fail to place their fine pharmaceutical products to advantage and there were several novelties on view which were very prettily grouped. Mention should be made of the compound soluble liquors, as, for example, liq. aletris dulc., liq. viburni co., liq. papain et iridin, and liq. euonymin—all admirable

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specimens of pharmaceutical skill. Pearl-coated pills, compressed pellets, "tropels" or compressed lozenges, flexible gelatin capsules, cachets, and pastels combined to make the array comprehensive and pleasing. Lastly should be mentioned "neuracetin," a comparatively new antipyretic and analgesic, drug which is said to be free from unpleasant after-effects; and "photopel," a handy developing photographic pellet. A new and interesting series of compounds was presented to view on the stall of the Pharmaceutisches Institut by Mr. Ludwig Wilhelm Gans, Frankfort-on-Maine. They are known as "halogenalbacids" and are said to be a means of administering the halogens, chlorine, iodine and bromine in an effectually therapeutic way without objectionable side effects. The iodalbacid contains 10 per cent. iodine and is reported to have yielded very encouraging results in syphilis and in other conditions in which iodine is indicated. Similarly, "bromalbacid" contains 6 per cent. bromine and gratifying results are recorded from its use in epilepsy. Lastly, "chloralbacid" contains 3 per cent. chlorine, the administration of this halogen albumen compound having been found useful in cases of chronic gastric catarrh and in dyspepsia. The feature of all these preparations is that they are albumen compounds which, while readily yielding the halogens indicated (chlorine, bromine, and iodine), are comparatively inert otherwise. We understand that at present there is no agency for the sale of these compounds in this country, but we were informed that samples would be forwarded gratis to medical men on application to Mr. Gans at the address indicated above. Examples of the application of pharmaceutical skill to the products of stable combinations were well shown at the neatly arranged stall of Messrs. Baiss Bros. and Company (Jewry-street, London). Foremost amongst these was Hopkinson's liq. colchicinæ salicyl, which has been prescribed with success in rheumatoid arthritis, chronic rheumatism, and gout. It is said to be without any depressing effect and a decided advance over colchicum wine and salicylic acid. To this should be added the mist. bismuthi. aromat., a palatable compound, pharmaceutically perfect, and of a composition of which the profession are informed. It is spoken of very highly in dyspepsia and gastric disturbance. The same preparation is combined also with pepsin as an important and valuable adjunct. Though, as might be expected, the stall of Messrs. Armour and Co. (59, Tooley-street, S.E.) was largely devoted to food products, of which we shall give an account later, yet there was an interesting and excellent collection of desiccated powders and tablets which properly come under the heading of this section. These were composed mostly of animal substances like cardin, cerebrinin, myelin, orchitic substance, ovarian tissue, pituitary body, red bone marrow, glycerine extract and powder, spleen, suprarenal capsules, thyroid gland, and so on. The experience of this well-known firm is a guarantee of the reliability and efficiency of these particular products. Messrs. C. J. Hewlett and Son (40 to 42, Charlotte-street, E.C.) brought to the notice of the visitor a very great variety of fine pharmaceutical preparations. We may mention in passing chione glabra, the decoction of the root of which in spirit yields a tincture of aphrodisiac properties, monsonia, which in the form of a rectified tincture has been employed as a remedy for dysentery with marked advantages over opium, and ipecacuanha preparations. Then there were also the animal organic substances and lastly the elegant pharmaceutical combinations of pepsine and bismuth, santal, buchu and cubebs now associated with the name of this firm. The excellent compound of cinchona, the hydrobromate, first successfully prepared by Messrs. Fletcher, Fletcher and Co. (Holloway, London, N.), was shown incorporated with vibrona champagne and "vibrona," the former being a pure *brut* wine containing a definite proportion of standardised cinchona bark in the form of neutral hydrobromate, and the latter a port wine each wineglassful of which corresponds to 5 gr. of red cinchona bark. We have already dealt critically with these preparations in Reports from THE LANCET Laboratory and also with the hydrobromate cachets which contain the neutral hydrobromate of cinchona. There was a very wide assortment of pharmaceutical preparations in the admirably equipped exhibit of Messrs Parke, Davis and Co. (21, North Audley-street, W.). Of particular merit were the standard fluid extracts standardised chemically, and where this is not possible physiologically, examples of which are afforded in ergot, cannabis Indica, digitalis and strophanthus. The exhibit contained also sugar-coated and gelatin-coated pills, enteric pills (passing the stomach but dissolving in the intestinal cavities), soluble gelatin capsules, tablet triturates, and digestive ferments, the most remarkable of which is taka-diastase possessing a remarkable amylolytic power under both an acid and alkaline environment. Messrs. H. C. Baildon and Son (73 and 144a, Princes-street, Edinburgh) offered some interesting novelties for inspection. In addition to the preparations for dermatological application which are associated with the name of Dr. Unna, the well-known Hamburg physician, there was exhibited a useful modification of iron pill known as pil. ferri co. (Dorall), the formula of which includes reduced iron, nux vomica, aloes, belladonna, and hyoscyamine. Worthy of attention also was the malt and mullein preparation which is a compound of pure active extract of malt and the juice of the mullein plant (Verbascum thaspus). This combination appears to promote nutrition and has been employed in wasting diseases. Finally, the exhibit included aperient fruit lozenges, the basis of which is the bark of the Rhamnus frangula. They act as a mild laxative and are free from drastic intestinal effects. Close by was an interesting collection, both historically and scientifically, of pharmaceutical preparations by Messrs. T. H. Smith and Co. (21, Duke-street, Edinburgh). The operations of this firm date, it appears, from the time when the late Sir James Simpson adopted chloroform as an anæsthetic, under whose guidance they paid special attention to the manufacture and purity of this product. In the exhibit were included some remarkably fine specimens of opium in lumps and sticks, while an exceedingly interesting series of the crystalline principles of opium, including codeine and other less known alkaloidal bodies such as xanthalin, were presented for inspection. Several specimens of the active principles of plants were also shown, as, for example, aloin, salicine, and piperine. Credit is due to Messrs. Robertson and Co. (35, George-street, Edinburgh) for the excellence of arrangement of their display. The preparation calling particularly for mention was the Blaud ferruginous pill, made in accordance with the original design and yielding pure ferrous carbonate as a product of inter-action of the ingredients. Besides this there was a praiseworthy series of gelatin capsules, discs, and "perles" and an antiseptic preparation in the form of dusting powder, or cream, as preferred, and known as "borozine," being a chemical combination of oxide of zinc and boric acid. Not far off was a series of synthetic remedies and other chemical and pharmaceutical preparations exhibited by Messrs. Raimes, Clark, and Co. (Edinburgh). On the same table was a series of specimens by the Scottish Acid and Alkali Company, Limited (Longford Chemical Works, Kilwinning, N.B.), relating to the preparation of iodine and iodides from "kelp" or seaweed ash. Amongst these was a beautiful collection of iodine crystals under a glass dome, the dome itself being filled with violet iodine vapour. Hydroxyl-free cod-liver oil is now well known to the medical profession, the elimination of the hydroxyl compounds securing a final product free from the tendency to cause nauseous eructations. This is the process of Mr. Peter Möller (43, Snow-hill, E.C.), whose stall was chiefly occupied by specimens of the oil thus refined, and illustrations were also given of the objections to the old process of preparation by which decomposition products were evolved. As might be expected the well-known firm of Messrs. Duncan, Flockhart, and Co. (104–106, South Canongate, Edinburgh) had a large and representative display of their special preparations. Foremost among these, not to mention the chloroform, the purity of which is deservedly and properly associated with the name of the firm, were the flexible yet non-collapsible gelatin capsules. Of these there were the following: Blaud's pill, Easton's syrup, cascara with or without euonymin, podophyllin, belladonna, nux vomica, &c.; potassium bichromate capsules and syrup of iodide of iron. In addition to these were perles, plastic pills, concentrated mixtures for dispensing, fluid extracts, and other elegant pharmaceutical preparations and combinations. It is enough to mention that the exhibit of chief interest under this section on the stall of Price's Patent Candle Co. was glycerine, which stands pre-eminently as an eminently pure product. This firm, we believe, were the first to separate and concentrate glycerine after the fatty acids of fats had been removed by saponification. We shall return to the rest of the exhibits of this firm, which properly come under the heading of another section. Messrs. Stephen

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Smith and Co. (Malmesbury-road, Bow) decorated their stall chiefly with coca wine, which has already been reported upon in our analytical columns. The preparation is a standard one containing a definite proportion of the principles (intact) of the leaf of erythroxylon coca in combination with a sound port wine. In addition also was a beef wine known as "keystone" with the same wine as basis, but embodying the extractives of beef. The Maltine preparations (the Maltine Manufacturing Company, Limited, 24 and 25, Hart-street, Bloomsbury) have of late years been valuably extended, as, for example, in the combination of Maltine with coca wine, maltine with Easton's syrup, with pepsin and pancreatine, cascara sagrada, phosphates (chemical food), pyrophosphate of iron, &c. The value of such combinations with a reliably active malt essence will be readily conceded. Kutnow's effervescent Carlsbad powder has by the evidence of experience established its claim to being "improved." The active salts present are identical with the world-renowned Carlsbad salts except that they are desiccated, which offers distinct advantages for administration. Recent trials have also shown that the powder is valuable in constipation in infants, a quarter of a teaspoonful taken in milk or liquid food producing a mild, gentle action. In this exhibit also was submitted for inspection the pulvis Kutnovii anti-asthmaticus. There were three new interesting products on the stall of Messrs. Zimmer and Co. (33, Lime-street, E.C.). The first was "euquinine," a substitute for quinine in which a hydrogen atom has been replaced by a molecule of ethyl carbonate. It is said to present the therapeutic advantages of quinine without, however, its drawbacks. The second novelty was "eunatrol," a pure oleate of sodium, and why, therefore, coin a new name? Surely "pure oleate of sodium" is sufficiently descriptive and comprehensive. It is suggested as a cholagogue, having a favourable action on the secretion of bile. Lastly, "validol" is a combination of menthol and valerianic acid, the former being stated to be indefinitely soluble in the latter. It is described as "an excellent anti-hysteric, stomachic, and carminative," while recent experience would seem to point out the compound as worthy of further trial in seasickness. The exhibit of Messrs. Scott and Bowne, Limited (95, 96, 97, and 98, Great Saffron-hill, E.C.), was devoted entirely to "Scott's Emulsion," on which we have so recently reported in our analytical columns as to require no further comment. The "father" of malt extracts, that of Leopold Hoff (29, New Bridge-street, London, and Hamburg), was well represented, and an addition of some importance consists in a combination of the extract with manganite of iron. Mr. B. Kühn (36, St. Mary-at-hill, London) brought to the notice of the visitors to the museum the various preparations of value in surgical practice containing chinosol as a basis. Used in proper proportions this powerful antiseptic is non-poisonous, non corrosive, and soluble in water. In addition there were shown "iodoformogen" powder, a chemical compound of iodoform albumin with little smell but presenting the same properties of iodoform; tannalbin, a non-toxic intestinal astringent and useful in checking diarrhœa; diuretin, as its name implies a diuretic of value in many cases; colchi-sal, a solution of pure colchicine in natural methyl salicylate and betul-ol liniment for outward application where colchi-sal capsules are not tolerated by the stomach.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In July the following candidates passed in the subjects indicated:—

Surgery.—F. Adams, St. Thomas's Hospital; L. D. B. Cogan, Guy's Hospital; A. W. H. Edgelow, Charing-cross Hospital; J. L. Elliott and T. A. E. Fawcett (Section I.), Leeds; F. Hasler (Section II.), London Hospital; G. C. Hobbs (Section II.), St. Bartholomew's Hospital; A. J. Kennedy, Edinburgh; R. A. Lewty, Leeds and St. Mary's Hospital; E. P. Marett, St. Thomas's Hospital; L. R. Marshall, St. Mary's Hospital; M. Pantin (Section II.), Royal Free Hospital; E. J. Parry, St. George's Hospital; W. J. Schuller (Section I.), London Hospital; D. C. M. Shaw, Manchester; and A. P. Square, Middlesex Hospital.

Medicine.—F. Atthill (Section I.) and E. U. Bartholomew, Charing-cross Hospital; M. E. Bennett (Section II.), Royal Free Hospital; G. F. M. Clarke and H. E. Dalby, Charing-cross Hospital; A. G. C. Davies (Section I.), Guy's Hospital; S. E. Dunkin and J. M. Edwards (Section II.), Charing-cross Hospital; P. T. Goodman, St. Thomas's Hospital; E. J. Gruchy and F. Hasler (Section II.), London Hospital; E. S. Johnson, St. Mary's Hospital; A. J. Kennedy, Edinburgh; W. R. Wilson, Dublin and Belfast; and C. C. Worts, Guy's Hospital.

Forensic Medicine.—F. Atthill, E. U. Bartholomew, and H. E. Dalby, Charing-cross Hospital; A. G. C. Davies, Guy's Hospital; S. E. Dunkin, Charing-cross Hospital; E. J. Gruchy, London Hospital; J. W. Haigh, Leeds; A. J. Kennedy, Edinburgh; J. M. Sanderson, Cambridge and London Hospital; S. Sugden, Manchester; and C. C. Worts, Guy's Hospital.

Midwifery.—W. F. E. Ashton, Birmingham; E. U. Bartholomew, Charing-cross Hospital; M. E. Bennett, Royal Free Hospital; T. A. E. Fawcett, Leeds; P. T. Goodman, St. Thomas's Hospital; J. W. Haigh, Leeds; H. L. Hands, Charing-cross Hospital; F. Hasler, London Hospital; D. F. Kennard, St. Mary's Hospital; A. J. Kennedy, Edinburgh; E. P. Marett and W. P. R. Newth, St. Thomas's Hospital; S. Sugden, Manchester; J. Taplin, Birmingham; L. L. G. Thorpe, University College Hospital; and T. J. Vick, Guy's Hospital.

Messrs. F. Adams, J. L. Elliott, A. W. H. Edgelow, F. Hasler, A. J. Kennedy, R. A. Lewty, E. J. Parry, J. M. Sanderson, A. P. Square, and Miss M. Pantin were granted the diploma of the Society entitling them to practise medicine, surgery, and midwifery.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred:—

Degree of Doctor of Medicine (M.D.).—George Allen, M.B., C.M., Fife-Keith, Banffshire; Henry Angus, M.B., C.M., Bingley, Yorks; Wm. Henry Hewlett, M.B., C.M., Wivenhoe, near Colchester, Essex; Francis Kelly, M.B., C.M., Aberdeen; Frederick Marrant Robertson, M.B., C.M., London (old regulations); * David Ross, M.B., C.M., London; Alfred Tennyson Smith, M.B., C.M., Orpington, Kent; Daniel Malcolm Smith, M.B., C.M., Liscard, Cheshire; Robert Turner, M.A., M.B., C.M., Eastwood, Notts; and James Shirran Walker, M.B., C.M., Newton Heath, Manchester.

* Considered worthy of highest honours.

Degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).—Robert John Brown, Aberdeen; John Gerald Chalmers, Aberdeen; Alfred James Hynd, Aberdeen; John Gordon Smith Macpherson, Aberdeen; Ian Macquarrie, Conon Bridge, Ross-shire; Hector Munro, Fortrose, Ross-shire; Harry Michael Nicholls, Paglesham, Essex; and Charles Gabriel Peries, Colombo, Ceylon.

Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).—David Hunter Ainslie, Taitswell, Mintlaw, Aberdeenshire; Robert John Cheves, Middleton of Rora, Longside, Aberdeenshire; Robert Henderson Clarke, East Cottingwood, Morpeth; Frederick William Ellis, Hayle, Cornwall; Adam George Gordon Macleod Fraser, Aberdeen; David Albert Hutcheson, Aberdeen; Robert Fergus Hutchison, Ingleside, Cults, Aberdeen; Forbes Kinnear, Dysart, Montrose; Henry James McGrigor, Torry, Aberdeen; Donald Munro Maciver, Stornoway, Lewis; Farquhar McLennan, Achnashellach, Ross-shire; † John James Rickard Macleod, Aberdeen; Alexander Dalrymple McQueen, Aberdeen; George Jamieson Pirie, Rousay, Orkney; Charles Edward Preston, B.A., Wigton, near Carlisle; William Tuach, Redcastle by Inverness; and Alexander Brown Walker, Aberdeen.

† With honourable distinction. Awarded the Alexander Anderson Scholarship; *proxime accessit*, George F. Petrie.

The John Murray Medal and Scholarship (awarded to the most distinguished graduate (M.B.) of 1898) has been gained by Joseph Alex. Thomson, M.B., Ch.B., B.Sc. Cullen.

Diploma in Public Health.—Middleton Connon, M.B. (Aberd.), Aberdeen; Thomas Wright Parkinson. M.B. (Edin.), Brechin; and George Albert Turner, M.B. (Aberd.), Aberdeen.

MEDICAL MAGISTRATE.—Mr. Kenneth M. Chisholm, M.D. St. And., L.R.C.P., L.R.C.S. Edin., of Radcliffe, has been appointed a Justice of the Peace for the County Palatine of Lancaster.

WEST OF ENGLAND EYE INFIRMARY.—At the meeting of the governors of the West of England Eye Infirmary, Exeter, held on July 15th, it was stated that the donations and promises to the building fund now amounted to £6600. The building committee, seeing the urgent need for increased accommodation, recommended that the first section of the new works, which it is estimated will cost £30,000, should be commenced in August, but after considerable discussion it was decided not to commence building until £10,000 had been raised.

MANCHESTER ROYAL INFIRMARY.—At a meeting of the governors of this institution on Monday last, the chairman, Mr. E. S. Heywood, announced that Mr. Arthur H. Haywood, of Windermere, had presented to the infirmary a very interesting picture, a copy by a skilful artist of Sir Joshua Reynolds's portrait of the great surgeon, John Hunter, which hangs in the board-room of the Royal College of Surgeons of England. The copy is a most faithful and excellent representation, and will find a suitable home in the infirmary.

PRESENTATIONS TO MEDICAL MEN.—The members of the Clayton Branch of the St. John Ambulance Association on bringing their first and successful session to a close on June 23rd presented their instructor, Mr. E. G. Peck, L.R.C.P. Edin., M.R.C.S. Eng., of Queensbury, Bradford, with a fish knife and fork with pearl handles.—On June 27th Mr. G. S. R. Stritch, L.R.C.P., L.R.C.S. Edin.,

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L.F.P.S. Glasg., of Spennymoor, was the recipient of a case of dental instruments and a gold signet ring from his patients and friends on the occasion of his leaving that town.—In connexion with the Bridlington Branch of the North-Eastern Railway centre of the St. John Ambulance Association, on awarding, on July 1st, efficiency certificates to the successful candidates, Mr. Theodosius Thompson, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of Bridlington Quay, the honorary instructor of the class, was the recipient of a silver-mounted walking stick in grateful recognition of his ambulance instructions.—The members of the Society of Medical Phonographers have presented to Dr. Gray of Oxford, the first treasurer of the society, a gold fountain pen. Dr. Gray recently resigned the treasurership of the society.—Fifty-two years having elapsed since Mr. John Burns, F.F.P.S. Glasg., of Bridgeton, commenced practice there his many friends and patients recently expressed the desire to present him with some tangible token of their esteem. A committee was accordingly formed and subscriptions were freely offered by all classes of the community. After some consideration it was decided that the form of presentation should consist of a brougham for his use and a portrait in oils for the adornment of his home, and on July 5th, at the Albert Hall, Bridgeton, Mr. Burns was presented with a brougham, a set of harness, and an outfit for the coachman. The portrait will not be completed for a month or two, but when finished the committee intend to invite all the subscribers to witness the presentation.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Pharmacy Acts Amendment Bill.

THIS Bill has been passed without a provision to meet the case of companies carrying on the business of drug stores. The Lord Chancellor drew up such a provision, but at the last moment he determined not to move it. In announcing this decision his lordship said he quite recognised the need for legislation to meet the point, but he found that a great deal of machinery would be necessary and he did not see his way to encumber this Bill with it.

The Vaccination Bill.

The Vaccination Bill now stands for third reading in the House of Commons and against that motion there appears in the notice paper the following amendment by Mr. Duncombe—viz.: "That this House declines to proceed further with a Bill which, while removing all reasonable objections to compulsory vaccination, deprives the people of the United Kingdom of the proved advantages of the enforcement of the Vaccination Acts, 1867 and 1871."

HOUSE OF COMMONS.

THURSDAY, JULY 21ST.

Factory Prosecutions.

Mr. DRAGE asked the Home Secretary whether any cases had been brought to his notice in which women or children had been dismissed by their employers in consequence of evidence given by them in support of prosecutions undertaken by Her Majesty's Inspectors of Factories, and, if so, whether he proposed taking any action in the matter.—Sir M. WHITE RIDLEY replied: Yes, cases of this kind do from time to time come to my notice. As the law stands, however, I have no power to take any action in the matter, and in view of the great difficulties in regard to proof which are experienced in cases of a similar kind under the Witnesses' Protection Act, 1892, it seems very doubtful whether the matter can be remedied by legislation. Much more good, I think, can be done by the voluntary action of such a committee as I am glad to see is in process of formation for the very purpose of rendering help in these cases.

Diseased Foreign Meat.

Mr. BROADHURST asked the President of the Board of Agriculture whether he could inform the House of the number of cattle lost by death from disease in recent cargoes from the River Plate; whether he could inform the House of the nature of the disease; and whether in the case of those arriving in the Thames alive and slaughtered at Deptford a careful examination was made of the carcass to prevent suspected meat finding its way to the markets.—Mr. WALTER LONG replied: I have made inquiries on this subject but I find no reason to believe that any losses occur amongst cattle brought from the River Plate by reason of disease. The examination of the carcasses with a view to the protection of the public health rests with the local authorities, who in the particular instance referred to have appointed a special inspector for the purpose, but in addition the Board's veterinary officers are instructed to call attention to any carcasses which in their opinion are unfit for human food.

Tuberculosis.

Mr. BROADHURST asked the President of the Board of Agriculture whether he had reason to believe that tuberculosis was prevalent in the dairy herds of the country; and, if so, whether any steps were being taken to warn the consumers of milk of the danger to young children by drinking milk from cows so affected.—Mr. WALTER LONG replied: With regard to the prevalence of tuberculosis among dairy stock I would refer the hon. Member to the very full statement on the subject contained in the report of the recent Royal Commission. I do not myself think that the issue of any warning on the subject is necessary, but the matter is one for the consideration of the Local Government Board rather than of myself.—In reply to further questions on the same subject Mr. LONG said it was not at present contemplated to take any action on the recommendations of the Royal Commission, and as to circulating as a leaflet the information in the report on this subject that was a suggestion he should be quite willing to consider.

Dysentery in Upper Egypt.

Mr. LECKY asked the Under Secretary of State for Foreign Affairs whether the Government in Egypt had made any inquiry into the causes of the epidemic of dysentery which broke out at Assouan last February and led to the deaths of three ladies, and, if so, whether the report could be obtained; and what authority in Egypt inspected and was responsible for the sanitary conditions under which hotels and post-boats in Upper Egypt were conducted.—Mr. CURZON said that no information had been received at the Foreign Office as to cases of dysentery at Assouan last February, but Mr. Rodd would be asked to obtain a copy of any report which might exist on the subject and also in regard to the inspection of hotels and post-boats.

The Cantonment Rules.

Mr. JAMES STUART asked the Secretary of State for India whether in the draft cantonment rules sanctioned by him in his despatch of July 8th, 1897, it was provided that any medical practitioner who in the course of his practice becomes cognisant of the existence in any person of any infectious or contagious disorder shall be bound under penalty to give information to the cantonment authority, and whether the Indian Government had given any reason for omitting this provision in the cantonment regulations issued by them under date Oct. 15th, 1897, and now in operation.—Lord GEORGE HAMILTON said, in reply, the Government of India were of opinion that the rule to which this question refers was as originally drafted too wide and that it required modification. As, however, it was desirable to issue the rules without delay they decided to publish them without this particular rule which they reserved for further consideration, but it was, and is, their intention to restore it in a modified form. This will shortly be done and I will then lay it on the table of the House.

FRIDAY, JULY 22ND.

Treatment of Infectious Disease in the Navy.

Mr. MENDL asked the First Lord of the Admiralty whether the Admiralty intend to build an infectious diseases hospital on the eastern portion of the Naval Hospital grounds at East Stonehouse; and whether, having regard to the fact that this site is adjacent to a very densely and poorly populated quarter of the borough of Plymouth, the Admiralty would in any decision that may be arrived at in the matter consider the danger to the neighbourhood involved in the erection of a hospital for the treatment of infectious diseases; and whether the Admiralty were prepared to consider the advisability of maintaining hulks in Plymouth Sound for the purpose of isolating and treating infectious diseases such as are now maintained by the local authorities of Plymouth, Devonport, and Stonehouse.—Mr. AUSTEN CHAMBERLAIN, who replied for the First Lord, said: New wards for the treatment of infectious cases are being erected on the site named to replace the existing infectious wards, which are unsuitable for the purpose and are required for other cases owing to the growth of the fleet. The new wards will be properly isolated in accordance with the rules of the Local Government Board and will cause no danger to the surrounding district.

Experiments on Living Animals.

Mr. MACNEILL asked the Home Secretary whether his attention had been directed to the greater frequency of the admitted breaches of the law by vivisectors; whether any prosecutions had been instituted under the provisions of the Act of 1876 and if so how many; whether any convictions, and if so how many, had been obtained; whether his attention had been directed to the circumstance that in the return of experiments performed on living animals during the year 1897 Dr. Poore, the inspector, states on page 6 that illegal experiments performed admittedly by persons without the necessary licences and certificates have been recorded as performed by persons holding those licences and certificates; whether Dr. Poore had been asked to give any explanation of this inclusion of illegal experiments in the catalogue of legal experiments; how many inspections of places licensed for the practice of vivisection had been during the year 1897 severally reported to the Home Secretary by Dr. Poore and Sir James Russell; were these inspections carried on during the performance of experiments or were the bodies of the vivisected animals subsequently inspected; were there any inspections of experiments by operators with certificates enabling them to vivisect in unregistered places; and how are such inspections, if any, carried out; and whether he would publish the names of the persons who, on the admission of the report, have performed with impunity illegal experiments on the bodies of living animals.—Sir M. WHITE RIDLEY replied: There were two such cases in each of the years 1894-96 and seven in 1897, but all arose from inadvertence and were not, in my opinion, of a serious character and certainly were not fitting cases for prosecution. There has been only one prosecution under the Act and in that case the proceedings were dismissed. It is the case that two of the licensees (by what I am satisfied was mere inadvertence) omitted to apply for renewal of their licences. This is stated on page 5 of the report. It is also stated on page 7 that the list of licensees contains the names of these two gentlemen. The licences would certainly have been renewed if the ordinary application had been made. I see no objection to this course having been adopted. Dr. Poore paid 61 visits of inspection to licensed places in 1897 and Sir James Russell 68. Some of these visits took place during the performance of experiments and many animals that had been experimented upon were seen by the inspector. The only experiments performed elsewhere than at registered places are inoculation operations in connexion with the diseases of cattle and inspection in such cases is deemed unnecessary and does not take place. With regard to the publication of the names of persons who have performed illegal experiments, I do not think it necessary or right that such publication should take place when the illegality has not been of so serious a nature as to call for the institution of legal proceedings.

Food Products Adulteration.

Mr. CHAPLIN introduced a Bill "to make better provision against the adulteration of certain articles of agricultural and horticultural produce." The right hon. gentleman explained that the measure was

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not introduced on grounds of public health, nor did it deal with any question of public health, because against adulteration which was injurious to health they believed the powers possessed under existing legislation were adequate. The object of the measure was to make the law more effective to prevent fraudulent trading in certain articles by adulteration or otherwise than it was at present under the Merchandise Marks Acts and the Sale of Food and Drugs Acts. The Bill dealt with food products only and did not refer to the other articles mentioned in these Acts which must be dealt with in another measure. In the case of foreign products the Commissioners of Customs were to take samples of consignments of imported milk or butter in accordance with directions given by the Treasury after consultation with the Board of Agriculture. A sample having been taken part of it was sent to the importer and part to the principal chemist of the laboratory at Somerset House, and it would be the duty of the latter to ascertain by examination whether the milk or butter was adulterated or impoverished within the meaning of the Bill—in other words, whether anything had been extracted from it or any foreign substance added to it so as to affect injuriously its substance, quality, or nature. If the sample proved to be adulterated the head of the laboratory was to inform the Commissioners and the Board of Agriculture of that fact at once. The Commissioners would then inform the importer, the Board of Agriculture would publish the fact, future consignments from the same quarter would be suspect, and the Commissioners of Customs would be empowered to detain any subsequent consignment bearing the same import marks and coming from the same suspected quarter, as if they were prohibited goods, unless the importer should have given the Commissioners security against the adulteration of the consignment. With regard to adulteration at home, the allegation was that, while the existing Acts would be perfectly adequate if they were efficiently administered, in some districts and in many cases they were to a large extent inoperative because the local authorities would not do their duty in enforcing them. It was proposed by this Bill to give to the Board of Agriculture power to direct any of its officers to procure samples of food which was exposed for sale or in course of delivery for sale; and if the Board was satisfied that it was adulterated within the meaning of the Act, then it would notify the fact to the local authorities of the place where the sample was taken and call upon them to be more active in the performance of their duty. If the local authority responded to the appeal nothing further would be necessary. If, on the other hand, they continued to be negligent the Board of Agriculture would have power to enforce the Act itself and to recover the costs from the local authority. In connexion with the taking of samples he reminded the House that the committee which sat upstairs on this subject recommended that there should be a court of reference to prescribe standards of quality and purity for all kinds and descriptions of food. Instead of setting up that rather cumbrous machinery the Bill provided that the Board of Agriculture, after causing such inquiry to be made as it might think fit, was to have the power of making regulations for determining what should or should not be considered adulteration or impoverishment in milk or butter within the meaning of the Act. Difficulties had not uncommonly arisen in the past owing to differences of opinion between the local analysts and the officers of the Government laboratory, and these difficulties would be obviated in the future by this proposal. Margarine which was imported as butter, or which was not distinctly marked and consigned as margarine in accordance with the law, would be liable to detention and would be dealt with under the provisions in Section 2 of the Bill to which he had referred. The mode in which margarine was to be marked was prescribed and the occupier of a manufactory of margarine or a wholesale dealer in margarine would be required to keep a register showing the quantity and destination of each consignment of margarine sent from his place of business, and this register was to be open to the inspection of an officer of the Board of Agriculture.—The right hon. gentleman had not completed his exposition of the Bill when he was called to order by the SPEAKER, who reminded him that under the rules of the House he was only permitted on this occasion to make a brief explanatory statement. Mr. Chaplin accordingly resumed his seat.

MONDAY, JULY 25TH.

Vaccination Questions.

Mr. LABOUCHERE asked the President of the Local Government Board whether public vaccinators as such were entitled to superannuation on pension terms under the present law, and, if not, whether they would be entitled to it if the Vaccination Bill became law; what was the number of public vaccinators in England and Wales, and in the event of their becoming entitled to a superannuation allowance under the Vaccination Bill would their previous service be taken into consideration in fixing the amount; how was it intended that the public vaccinators should be remunerated, whether by fee per visit, or by salary, or by each vaccination, and would such remuneration be payable by the local authorities, and if so what powers would they have to fix and alter the remuneration; whether the obligation to satisfy two magistrates of conscientious objection to vaccination, as set forth in the Bill, meant that this obligation must be undertaken by the father or that it might be fulfilled either by father or mother; and whether, if by the father alone, a child whose father was absent from his home during the period allowed for this formality could be contracted out of the obligation to be vaccinated by the mother appearing before two magistrates and stating her conscientious objection.—Mr. CHAPLIN said: The reply to the first paragraph is in the negative. The number of public vaccinators in England and Wales is about 3000. With respect to the third paragraph no matured decision has been at present arrived at, nor is it necessary, for the Act is not drawn to come into operation until Jan. 1st next. What is contemplated, however, is some arrangement like this: remuneration by two methods—first, by a payment based on the number of births to cover the general duties, and, secondly, by a payment in each case of successful vaccination; the amount of these payments to be a matter for arrangement in the first instance between the public vaccinator and the guardians by whom the payments will be made, subject, as in the case of all the principal officers of boards of guardians, to the approval of the Local Government Board. In answer to the last two paragraphs the obligation should be undertaken by the person in custody of the child, whether father or mother. If the father is prevented by absence or other unavoidable cause, then the duty would naturally fall on the mother.—Sir CHARLES DILKE asked the Lord Advocate whether it was intended to propose legislation to extend to Scotland any part of the provisions of the Vaccination Bill.—The LORD ADVOCATE replied: The system in regard to vaccination carried out in Scotland has hitherto worked successfully and the Secretary for Scotland cannot at present come under any obligation to propose legislation on the subject.—Mr. T. P. O'CONNOR asked whether it was not the case that in Scotland the defaulters were only 3 per cent. of the whole.—The LORD ADVOCATE: I cannot speak as to that but there has been no practical difficulty in working the Acts in Scotland.

Mischievous Advertisements.

Mr. CHANNING asked the Home Secretary whether he had considered the facts disclosed in the recent trial of Dr. Collins, and in many previous trials of similar character, and the use made in the St. Neots case of a notorious advertisement; whether he was aware that an enormous number of advertisements inciting to criminal offences of this nature are regularly being inserted in the metropolitan and provincial press, and that a vast amount of social mischief and crime was alleged to arise from these advertisements; and whether he would introduce or support effective legislation to prevent the insertion in the press or other distribution of advertisements of this class, and strengthen the law in dealing with incitements to these offences.—Sir M. WHITE RIDLEY replied that he was fully aware of the character of these advertisements, but legislation on the subject, he was afraid, would be a matter of great difficulty and he was not prepared at present to give any undertaking to introduce it. He would, however, bear the subject in mind.—Mr. CHANNING said that in consequence of this answer he begged to give notice that on an early opportunity next session he would introduce a Bill on the subject himself.

TUESDAY, JULY 26TH.

The General Medical Council and Unqualified Assistants.

Mr. LOGAN asked the First Lord of the Treasury if he was aware that in December last the General Medical Council passed a resolution disapproving of the employment by medical men of unqualified assistants, in consequence of which a large number of such assistants, who had been trained for the medical profession, many of whom have families, are and will be deprived of the means of obtaining a livelihood; and if there were any means whereby he could intervene and provide that those now or recently so employed shall be permitted to continue their vocation.—Mr. BALFOUR: In answer to the hon. Member I have to say that the General Medical Council did, as I am informed, pass a resolution against the practice of employing unqualified assistants for certain purposes which may in some cases have the effect which the hon. Member apprehends, but the resolution is not to be applied so as to restrict the proper training of pupils or prevent the legitimate employment of certain unqualified assistants under the immediate supervision of registered medical practitioners. The Privy Council, which has no official knowledge of the matter, cannot interfere to protect the persons affected, but it is understood that every case brought to the notice of the General Medical Council will be dealt with on its merits.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, H., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

ANSON, G. E., M.D. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

BARNES, J. S., M.D., B.S. Camb., has been appointed a Resident Medical Officer and Public Vaccinator for the Urban, Suburban, and Rural Districts of Katanning, Western Australia.

BLAXLAND, W., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Public Vaccinator for South Australia.

CHAPPLE, W. A., M.B. Univ. N. Z., has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

CLAYTON, G., has been appointed Public Analyst for the Parish of Fulham, S.W.

COLLINS, W. E., M.B. Lond., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

CONNELLY, A. W., M.B., Ch.B. Melb., has been appointed a Resident Surgeon for the Bendigo Hospital, Victoria, Australia.

CORRY, W., M.D., Ch.M. Irel., D.P.H. Camb., has been appointed a Public Vaccinator for the Phillip Island Shire, Victoria, Australia, vice R. Jones, resigned.

DENBY, W., M.B., C.M. Edin., has been appointed a Medical Officer for the Fourth Sanitary District of the Bradford (Yorks) Union.

DOWE, S. A., M.D. Univ. Penn., U.S.A., has been appointed a Government Officer for the district of Bobadah, New South Wales.

FARQUHARSON, W. F., M.B., C.M. Edin., has been appointed Medical Superintendent for Garlands Asylum, Carlisle, vice J. A. Campbell.

FYFFE, E. H., M.B., Ch.M. Glasg., has been appointed an Honorary Pathologist for the Wellington Hospital, New Zealand.

GARDNER, H. BELLAMY, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Anæsthetist to the Charing-cross Hospital, London, vice F. W. Hewitt, resigned.

GODFREY, C. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Acting Medical Superintendent for the Ballarat Lunatic Asylum.

GRANT, DAVID, M.D. Edin., Ch.M., has been appointed an Honorary Physician to the In-patients of St. Vincent's Hospital, Melbourne, Australia.

GWYNNE, C. N., M.D. M.Ch. Dubl., L.M.R.C.P. Irel., has been appointed a Certifying Surgeon under the Factories Act, Sheffield, vice R. J Pye-Smith, resigned.

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HIGGINS, F. C., M.B. Syd., has been appointed a Government Medical Officer and Vaccinator at Walgett, New South Wales.

JAMES, D. P., F.R.C.S. Eng., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

LESLIE, W. M., M.D., C.M. Edin., has been appointed to assist the City Judges as Medical Referee under the Workmen's Compensation Act, for cases arising in the City of London.

LIMRICK, W.S., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Waterloo-with-Seaforth Urban District Council.

LLOYD, J. W., M.R.C.S., L.R.C.P. Lond., L.D.S. Edin., has been appointed an Honorary Surgeon for the Liverpool Dental Hospital.

MACFARLANE, WM., M.D., C.M. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheriffdom of Ayr.

MACKAY, ALEX., M.D., C.M. Glasg., has been re-appointed a Medical Officer of Health by the Crook Urban District Council.

MACKENZIE, F. W., M.B., C.M. Edin., has been appointed an Honorary Ophthalmic Surgeon for the Wellington Hospital, New Zealand.

MARTIN, A., M.D. Lond., M.R.C.P., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

MARTIN, FRED. W., M.R.C.S., L.R.C.P. Edin., has been re-appointed Medical Officer of Health for the Borough of Brighouse.

MCGEE, J. H., M.D., B.Ch. Irel., D.P.H. Camb., has been appointed an Honorary Physician to the Out-patients, St. Vincent's Hospital, Melbourne, Australia.

NEWMAN, F. A., M.B., Ch.B. Melb., has been appointed Honorary Physician to Out-patients, St. Vincent's Hospital, Melbourne, Australia.

POLLEN, H., M.D. Dubl., L.K.Q.C.P. Irel., has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

POWELL, HENRY WILLIAM FITZGERALD, M.D., F.R.C.S. Edin., has been appointed a Physician to the Hospital for Diseases of the Throat, Ear, and Nose, Golden-square, London, W.

PYE-SMITH, R. J., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheffield and Rotherham County Districts of Circuit No. 13.

ROSENFIELD, R. L., M.B. Melb., has been appointed a Government Medical Officer and Vaccinator for the district of White Cliffs, New South Wales.

RYAN, T. F., M.B. Melb., has been appointed, *pro tem.*, Acting Public Vaccinator at Nhill, Victoria, Australia.

SELLS, C. J., L.R.C.P. Lond., M.R.C.S., has been re-appointed a Medical Officer for the Worplesdon Sanitary District of the Guildford Union.

SHARMAN, MARY NONA, M.B. Lond., has been appointed House Surgeon for the Victoria Hospital for Sick Children, Hull.

SOMERSET, W. R., M.B., Ch.B. Edin., has been appointed an Assistant House Surgeon for the Worcester Infirmary.

SMITH, J. M., M.B., C.M. Edin., F.R.C.S. Eng., has been re-appointed Junior Anæsthetic Medical Officer for the Manchester Royal Infirmary.

STURDY, J. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Fifth Sanitary District of the Bradford (Yorks) Union.

TEARE, J., M.B., B.S. Vict. Univ., Manchester, has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

THORNE THORNE, LESLIE, M.D. Durh., B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Examiner to the Technical Education Board of the London County Council.

WILSON, G. B., L.R.C.P., L.R.C.S. Edin., has been appointed a Public Vaccinator for South Australia.

WOODSIDE, R. N., M.B. Melb., has been appointed a Medical Superintendent for the Albury Hospital, New South Wales.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Honorary Medical Officer.

BOROUGH OF DERBY.—Medical Officer of Health. Salary £500 per annum, increasing by £50 per annum to £600 at intervals of two years. Applications to the Town Clerk, Town Hall, Derby.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE, Chelsea, S.W.—A Teacher of Hygiene.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

COUNTY ASYLUM, Gloucester.—Locum Tenens for about two months. Salary £2 2s. per week and all found (except liquors).

CROYDON RURAL DISTRICT COUNCIL.—Deputy Medical Officer of Health for one year. Salary at the rate of £550 per annum, which will include travelling and all other expenses. Applications to the Clerk, Town Hall, Croydon.

CUMBERLAND AND WESTMORELAND ASYLUM, Carlisle.—Senior Assistant Medical Officer. Salary £120 a year, with board. Applications to Dr. Farquharson, Garlands, Carlisle.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for twelve months. Salary £40, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the Institution.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House Surgeon for six months. Board, lodging and washing provided and an honorarium of £10 will be given conditionally.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150, respectively.

ROYAL INFIRMARY, Sheffield.—Junior Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing.

RURAL DISTRICT COUNCIL OF CHESTERFIELD.—Medical Officer of Health for one year. Salary at the rate of £500 per annum, which includes all expenses, stationery excepted. Travelling expenses outside the district will be allowed. Applications to the Clerk to the Council, Union Offices, Chesterfield.

SALFORD SCHOOL BOARD.—Medical Officer. Salary £150 per annum. Applications to the Clerk to the Board, School Board Offices, Salford.

SOMERSET AND BATH ASYLUM, Wells, Somerset.—Junior Assistant Medical Officer, unmarried. Salary £110, rising to £130, with board, lodging, washing, and attendance.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeons for six months. Honorarium at the rate of £30 per annum and residence, board, and washing provided.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Board, washing, and lodging in the hospital provided.

THREE COUNTIES ASYLUM.—Second Assistant Medical Officer, unmarried. Salary commencing at £125 per annum, with board, apartments, washing, and attendance. Applications to the Clerk to the Committee of Visitors, St. Neot's, Hunts.

UNIVERSITY COLLEGE, Bristol, Faculty of Medicine.—Demonstratorship of Physiology. Stipend £125.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, Cardiff.—Assistant Lecturer and Demonstrator in Anatomy. Stipend £120 per annum. Also temporary Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Registrar, University College, Cardiff.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £80 per annum, with first-class rations, apartments, &c. Applications to the Union Clerk, Brougham-terrace, West Derby-road, Liverpool.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer to the Provident Dispensary attached to the hospital. Salary £80 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BRUCE.—On July 24th, at Goole, Yorks, the wife of R. C. Bruce, M.B. Edin., of a son.

GUBBIN.—On July 11th, at New Brompton, Chatham, the wife of Surgeon-Major G. F. Gubbin, Royal Army Medical Corps, of a son.

KEOGH.—On July 23rd, at Oxford-gardens, North Kensington, the wife of Frederick E. Keogh, L.S.A., of a son.

POWELL.—On July 21st, at Morning-lane, Hackney, the wife of Henry Christoffers Powell, L.S.A., of a son.

MARRIAGES.

BATTERSBY—AYRE.—On July 20th, at St. Nicholas Church, Withernsea, by the Rev. J. G. Patrick, Vicar of Owthorne, assisted by the Rev. C. Day, Vicar of Withernsea, and the Rev. F. Weston, Vicar of Balby, John Hargreaves Battersby, M.D., of Balby, Doncaster, second son of the late Richard Battersby, of Heywood, Lancashire, to Lily Rachael, elder daughter of H. H. Ayre, of Withernsea, East Yorkshire.

BOWIE—CHICHELE PLOWDEN.—On July 20th, at Christ Church, Lancaster-gate, Alex. Bowie, M.D., C.M. St. And., L.R.C.P. Edin., of Hertford-street, Mayfair, to Henrietta A., only daughter of the late Captain H. Chichele Plowden, Bengal Staff Corps.

CRAWFURD—BAILEY.—On July 22nd, at Harwood Parish Church, Bolton-le-Moors, Raymond Henry Payne Crawfurd, M.A., M.D. Oxon., M.R.C.P. Lond., of Wimpole-street, W., to Ethelberta Ormrod, youngest daughter of Arthur Bailey, Esq., of Brightmet-hill, Bolton-le-Moors.

DALBY—JEX.—On July 25th, at St. Paul's, Brighton, by the Rev. J. H. Ashley Gibson, M.A., John Lyttleton, of Norfolk House, 13, Buckingham-road, Brighton, only son of Major N. B. Dalby, of Ealing, to Mary, daughter of Mrs. B. Jex, of 44, First Avenue, Hove, late of British Honduras. No cards. At home Oct. 1st and 8th, 4 to 6.

MAHOOD—SCOTT.—On July 6th, at Northam Church, Allan Edward Mahood, M.B., F.R.C.S., of Odun House, Appledore, to Caroline Eva Stanley, eldest daughter of the late Lieut.-Col. Stanley Scott, Bombay Staff Corps, formerly of Northam House, Northam, North Devon.

MUIR—PERKS.—On July 21st, at St. James's Church, Kidbrook, Arthur Muir, M.B., B.C., of Enfield, to Francis Annie (Dolly), only daughter of John B. Perks, of Blackheath.

DEATHS.

GARLIKE.—On July 19th, at Malvern Cottage, Ealing Dean, Ealing, Thomas William Garlike, F.R.C.S., aged 82 years.

JOHNSTON.—On July 24th, at his residence, Edendariff, Cheltenham, Surgeon-General William Johnston, M.D., late Madras Army, aged 81 years.

MORRISSON.—On July 23rd, at Hollier's-hill, Bexhill, Sussex, Stammers Morrisson, L.R.C.P. Lond., M.R.C.S., late of Clapham-common, aged 56 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
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Subscriptions (which may commence at any time) are payable in advance.

"THE TREATMENT OF SEA-SICKNESS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 25th a correspondent about to sail as surgeon to a passenger steamer begs for advice as regards medicines for sea-sickness. Moreover, he states that the majority of the text-books are silent on the subject. During the last twenty years I have myself made about forty short voyages and have been often applied to by patients in search of a remedy for this distressing complaint. Also I have taken many opportunities of consulting ship surgeons as to the best treatment, but although they are always charming men and sometimes of great professional skill they are openly bored by the subject of sea-sickness. Prior to 1892 the drug which seemed to be most useful to sufferers was bromide of potassium or sodium with or without hydrobromic acid, but to produce a satisfactory effect the patient had to take doses sufficiently large to produce unpleasant mental effects. I have seen patients arriving in Cairo and remaining ill for several days from severe bromism. I believe that the patent remedies sold in England and America contain bromides as their chief ingredient. When, therefore, I read in THE LANCET of March 5th, 1892, Professor Charteris's praise of a mixture of bromide and chloralamid I at once felt that here was a combination which might act better than bromide alone. Since then this mixture, chlorobrom, has been often praised and seldom abused in the pages of THE LANCET—as, for example, in the issues of June 24th, 1893 (Dr. Ledingham), and Jan. 19th, 1895. I have tried it now on many patients and can on the whole praise it as the best known drug. I began by prescribing it to twelve people, each of whom had made many journeys and had invariably suffered from very severe sea-sickness, sometimes incapacitating them for a couple of days after landing. Some of these also suffered from train-sickness and some used as children to vomit when driven in carriages. This severe test answered on the whole fairly well and I bound each of the twelve over to write and tell me the result. Eight were surprised to find that they did not vomit, wrote grateful letters, and wanted to know if they might give it indiscriminately to all their friends. Two reported well, but said the sea was so smooth that the test was not a fair one; and two others wrote to say that it failed entirely though they had carried out all my instructions. I ought to say that most of my test cases were ladies between twenty-five and fifty-four years of age. Even in cases where the chlorobrom fails to prevent nausea and vomiting the patients are grateful for the sleep which it produces. One of my early cases, a young man with dangerous symptoms, took too much of the drug and wrote afterwards: "Although for the first 2½ days we were on board we had awfully rough weather I never experienced the faintest symptoms of sea-sickness, so that the medicine was entirely successful in that respect. On the other hand it reduced me to such a deplorable state of drowsiness and (as my friends said) apparent intoxication that at the end of 2½ days they induced me to give it up fearing that it was having too much effect on my head. Altogether I was most thankful for the medicine, &c." This, so far as I know, is the only bad result of the remedy. I began by prescribing wafers of bromide and chloralamid in equal parts, but a solution is obviously easier to take and to those abroad who cannot get the liquid chlorobrom sold in England I would point out that a very good imitation can be made by dissolving the chloralamid in rectified spirits. No drug can be guaranteed to prevent sea-sickness, and to give chlorobrom a fair chance aperients must be taken before and during the voyage, diet on board must be sparing and simple, a belt should be worn, and the first dose of chlorobrom must be taken the night before embarking.

I am, Sirs, yours faithfully,

Cairo. F. M. SANDWITH, M.D. Durh.

"INCARCERATION OF THE PENIS."

To the Editors of THE LANCET.

SIRS,—The case mentioned by you in THE LANCET of July 23rd under the care of Dr. Floras reminds me of a somewhat analogous case which came under my notice some years ago. A man consulted me with reference to his penis. The prepuce was retracted and the glans exposed, a condition which had existed for some years. He had tried every means he knew to return the prepuce to its original position over the glans without success, and as he said it had latterly caused him much irritation he wished to know if I could help him surgically. I, however, told him it was a matter of no great importance and that he had better put up with it. Some weeks afterwards he reappeared and said he had overcome the difficulty himself. On examination, I found his penis ornamented with a brass ring. He had drawn the prepuce well forward, and laying it on a block (probably the village butcher's) had transfixed it with a bradawl, afterwards inserting the brass ring; the wound in the prepuce had quite healed, and there the brass ring remained. He was a married man. I never saw him again.

I am, Sirs, your faithfully,

July 26th, 1898. J. G. B.

A MATTER OF TASTE.

To the Editors of THE LANCET.

SIRS,—Will you kindly inform me if it is the correct thing for a Fellow of a College of Surgeons when signing certificates, &c., to add the initials of his college as Eng., Irel., Edin., for it appears that the London men arrogate to themselves the right to sign F.R.C.S. without the addition of "Eng." There appears to be no rule or custom for medical graduates. Thanking you beforehand for an authoritive opinion,

I am, Sirs, yours faithfully,

July 25th, 1898. R. N.

*** It is better in our opinion that diplomates of the various colleges and graduates of the various universities should indicate the source of their distinctions, but to do so is quite optional. A F.R.C.S. Eng. omitting his "Eng." hardly stands convicted of arrogance.—ED. L.

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A POINT UNDER THE EMPLOYERS' LIABILITY ACT.

To the Editors of THE LANCET.

SIRS,—An expression of opinion is desirable on the following points anent the operation of the new Employers' Liability Act—viz., power of entry of hospital by the employer's professional representative for the purposes of examination of the injured person, also a definition of the word "examination"—i.e., to what extent it may be permitted or restricted?

I am, Sirs, yours faithfully,

July 18th, 1898. A HOSPITAL SURGEON.

*** So far as the employer's surgeon is concerned there is no right of entry or right of examination either in hospital or in a private house. The examination contemplated by the Act is obviously such examination as is necessary to enable the employer's surgeon to form an opinion upon the questions at issue—e.g., the extent and degree of injury, probable time and degree of recovery, fitness for work of one or another kind, &c. It would be impossible to define all this, and the attempt to do so is unnecessary seeing that there is no obligation upon the patient to submit to it.—ED. L.

OVERLAYING.

To the Editors of THE LANCET.

SIRS,—The question of "overlaying" crops up again and again, and I would like to offer a suggestion which might be more acceptable than the substitution of an "orange-box for a cot." This expedient seldom finds favour in the eyes of the class to which it is so often advised, who always persist in sleeping with their infants. Briefly, a sort of hammock may be made by fastening the ends of a piece of material about 27 in. wide (a sheet folded lengthwise would do) to the centre of the bar at the head and foot of the bed respectively. The dependent part of this hammock should clear the level of the bed by some inches. No pillow is required, so that the additional danger of the child turning over on its face and being suffocated (which might occur in the most well-appointed cot) is avoided, as the single, or even double, fold of material would not prevent respiration. The supply of air would be less contaminated and there would be no danger of falling out of bed.

I am, Sirs, yours faithfully,

O. HALL, L.R.C.P., L.R.C.S. Edin., &c.

Holmside, co. Durham, July 23rd, 1898.

"UNFORTUNATE PUBLICITY."

WE have received a long letter from Dr. J. F. Bullar, in which the following passage occurs:—"Some time ago the inspector of schools for this district asked me to examine the eyesight of the children in the board schools. There are about 16,000, the work was to be unpaid and I thought it judicious to decline; but I explained how I thought the masters might make a preliminary examination that would be useful. I prepared certain forms with instructions for their use and further demonstrated to the masters the manner of using them. It became necessary to print the forms and the inspector of schools kindly undertook to get it done. In due course I received a copy of what you describe as the 'book.' I proposed to share the cost of printing with the inspector but he informed me that he had arranged with Messrs. Cox and Sharland to publish it free of cost, they to have any possible profit that might be made." We believe with difficulty that Dr. Bullar's work would be advertised in the publishers' penny time-table against his will, but Dr. Bullar says that he sees no objection to the advertisement. He says also that the proposition that there are patent objections to anything which advertises the writer in his medical character to a lay public is "bosh." We can give no more space to the matter.

"A QUESTION OF ETHICS."

To the Editors of THE LANCET.

SIRS,—Under the above heading the wording of Mr. Cuffe's recent circular is criticised in THE LANCET of July 16th. As the circular was addressed only to the members of our profession and calls attention to a grievance which I know to be common to many health resorts, as well as in London itself, I do not think Mr. Cuffe's action should be condemned. In giving patients letters of introduction addressed to specialists whose opinions I have been anxious to obtain I have often been annoyed to find that the hotel manager or lodging-house keeper has persuaded them to consult someone else. This has occurred frequently in London, in Brighton, Bath, and Harrogate. I now write direct to the specialist and merely give the address to the patient, telling him at the same time that I have described his case to the doctor whom I wish to consult. This, I think, is all Mr. Cuffe asks his medical friends to do.

I am, Sirs, yours faithfully,

July 25th, 1898. FAIRPLAY.

Perplexed.—We give an opinion on the case as disclosed by "Perplexed." It is not right of X or Y to expect A to work for Y without extra remuneration when he has only been engaged to work for X. The legal side turns on the interpretation of the terms of agreement between A and X, which we do not know, and on which a solicitor should be consulted before action is taken.

Indecipherable.—We shall be pleased to learn the name of a recent correspondent whose interesting letter is dated from the Royal Colonial Institute, but whose signature has baffled all our attempts to decipher it.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (6th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 28th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 22	29·85	S.	0·25	100	71	55	62	67	Hazy
,, 23	29·69	N.W.	0·02	118	77	60	60	64	Cloudy
,, 24	29·99	N.W.	...	115	78	55	56	62	Fine
,, 25	30·06	S.	...	104	75	61	59	63	Hazy
,, 26	30·09	S.E.	...	101	73	63	62	64	Overcast
,, 27	30·05	E.	0·50	116	80	61	60	63	Hazy
,, 28	29·95	S.W.	...	90	71	62	59	63	Overcast

During the week marked copies of the following newspapers have been received: *Eastern Morning News, Alliance News, Hampshire Telegraph, Bradford Mercury, Cambria Daily Leader, Times of India, Pioneer Mail, Architect, Manchester Guardian, Sheffield Telegraph, Builder, Derbyshire Courier, Citizen, Southport Visitor, Walsall Advertiser, Liverpool Daily Post, Isle of Wight Observer, Boston Herald, Western Morning News, Birmingham Gazette, Scotsman, Suffolk Chronicle, Kidderminster Sun, Leeds Mercury, Leicester Post, Sussex Daily News, Warwick Advertiser, Yorkshire Post, Craven Herald, Dundee Advertiser, Wilts Standard, Bristol Mercury, Brighton Gazette, Hereford Mercury, South-Eastern Gazette, Cyclers News, Lancashire Post, Vectis, Sketch, Linlithgowshire Gazette, Sanitary Record, Science Siftings, Mining Journal, Vegetarian, Hertfordshire Mercury, Reading Mercury, Local Government Chronicle, Stratford-upon-Avon Herald, City Press, Chelsea Mail, Surrey Advertiser, Swanage and Wareham Guardian, The Millom News, Local Government Journal, Australasian Medical Gazette, Weekly Free Press and Aberdeen Herald, Ripon Observer, Morpeth Herald, Rival, Bournemouth Guardian, Devon Gazette, Devizes Gazette, Cornish Telegraph, Leek Times, Ashton-under-Lyne Herald, Whitby Gazette, Malvern Advertiser, Ilfracombe Gazette, Rotherham Express, Southern Times (Weymouth), Christian Commonwealth, &c., &c.*

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Communications, Letters, &c., have been received from—

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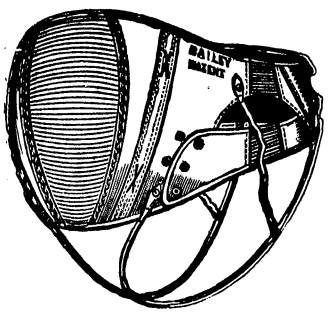
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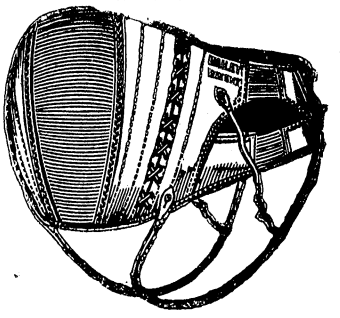
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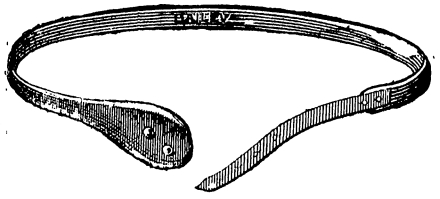
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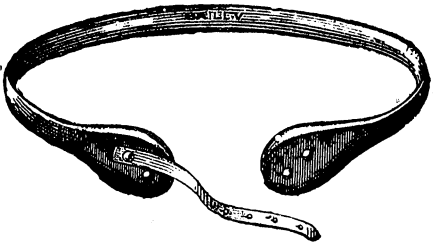


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UTERINE DISEASES.

I am much pleased with ALETRIS CORDIAL as a remedy in uterine diseases. I have been in constant practice for more than half a century, and have used the aletris farinosa most of the time. When I learned the composition of the ALETRIS CORDIAL (Rio Chem. Co.) I inferred at once that it would prove a very good uterine tonic, and find it is just the thing. Following is a case in which I used ALETRIS CORDIAL: Mrs. C., aged 33 years, had been suffering since confinement, some two years since, with leucorrhea, more or less most of the time and frequently quite profuse. I have treated her with ordinary remedies, such as tonics internally and astringent injections, with variable results, but never entirely relieving the leucorrhea. Her general health suffered less than common in such persistent cases. Some time since I made a more critical examination, and found preternatural redness of whole vaginal cavity from labia to uterus; the cervix uteri and the os tumified and sensitive to touch, as also the abdomen, especially over the ovaries; cold feet, hot head, debility and nervous exhaustion, odorous urine, itching of the vulva, etc. I used S. H. KENNEDY'S EXT. PINUS CANADENSIS as an injection and put the patient on ALETRIS CORDIAL. By the time the first bottle was used, the disease was about cured. The leucorrheal discharge ceased and the redness, etc., much diminished. I attribute her speedy relief to the ALETRIS CORDIAL, for all other applications had been persistently tested with but little benefit. I expected the ALETRIS CORDIAL to tone up the weakened womb, but supposed something more specific would be required to subdue the irritation and subacute inflammation of the vagina. JOS. S. BURR, M. D., Leesville, O.

I had under my treatment a lady, Mrs. H., 36 years of age, married twelve years, no children, who had suffered for twenty years with painful and irregular menstruation, followed by leucorrhea and nervous hysteria at times. She had tried all kinds of drugs, but not receiving any benefit from them, consulted a number of physicians, but also without effect. The 14th of April last, she became one of my patients, and I prescribed the usual formulas which were carefully prepared at my own dispensary, but to her and my regret only gained momentary benefit. I concluded to make a trial of the following prescription:

R. Celerina .....8 ounces.
ALETRIS CORDIAL.....8 ounces.
M. Sig. Two teaspoonfuls half an hour before meals.

For injection I prescribed one part S. H. KENNEDY'S WHITE EXTRACT PINUS CANADENSIS with nine parts of water, three times a day. The result has been surprising. I wanted the lady to continue the medicines, but Mrs. H., insisted upon not doing it, for she claimed that having regained her youthful health and vigor, she would need no more medicine at present. C. A. BRUEGMANN, M. D., Marysville, Neb.

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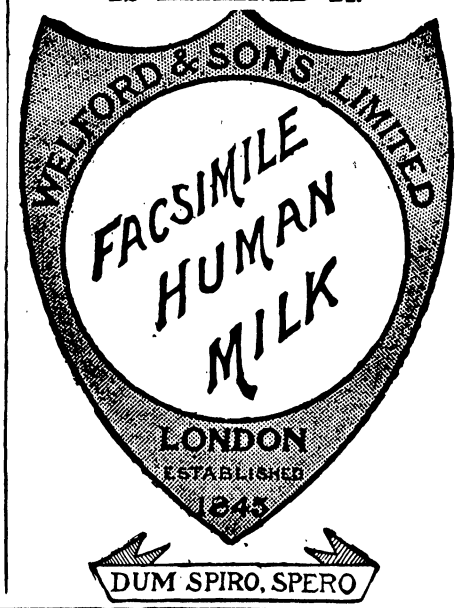
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Address in Psychological Medicine

ON

MODERN CONCEPTIONS OF THE ETIOLOGY OF INSANITY.

Delivered at the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY SIR JOHN BATTY TUKE, M.D. EDIN., D.Sc. DUB.,

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH; HONORARY PHYSICIAN TO THE QUEEN.

MR. PRESIDENT AND GENTLEMEN,—Twice during the current decade the British Medical Association has demanded an Address in Psychological Medicine. For the first time in its history (in 1890) Sir James Crichton Browne was requested to perform this duty, and now, after a short lapse of years, a similar duty has devolved on me. This mere fact must be gratifying to the specialty we had and have the honour to represent as indicative of a growing consideration accorded to a department of medicine which till lately has, in the opinion of many, held a somewhat doubtful position in the realm of the medical sciences. It may be suggested that there is "a sweet reasonableness" in the demand for addresses on this subject during the current decade, for during the corresponding period of last century vast changes were brought about in the principles governing the management of the insane in France and Great Britain, and that therefore it has been deemed desirable to commemorate the centenary of a beneficent revolution. But I doubt much whether this epochal consideration has had much to do with the matter, nor do I think that the requests of your council for addresses on the subject have been prompted by social considerations affecting the general public directly.

Doubtless the rapidly-increasing incubus of lunacy is seriously complicating Poor-law administration, but the question of relief from its pressure is not one which can be referred to the opinion of a single individual. It is a big question with many ramifications, social, medical, and legal, and I take this opportunity of suggesting that its consideration might be referred to a mixed commission appointed by this great Association consisting of authorities in lunacy, representatives from the general profession, lawyers, and Poor-law administrators. It is possible that such a commission might arrive at valuable general conclusions which might influence future policy and arrest the haphazard drifting one which at present obtains. I believe the actual reason for the requests for these addresses to be that the profession at large is alive to the fact that so-called psychological medicine is becoming day by day more and more incorporated in general medicine and less and less a peculiar and isolated department; that with the advance of knowledge of the nervous system the glamour which hung over the general conception of insanity is becoming dissipated; and that the various phases of mental alienation are coming to be recognised as symptoms of numerous and very various morbid physical conditions. In point of fact we are drifting away from the psychological conception of insanity, from the contents of the term "mental disease," even as our ancestors drifted away from the idea of demoniacal possession. "*Nulla mens insana sed in corpore insano*" expresses the principle which is, to say the least, beginning to regulate our conception and our practice in respect of all the conditions comprised under the generic term "insanity." It may be freely admitted that the proposition was enunciated centuries ago, but the theories of the connexion between diseases of the general system and mental symptoms were so loose as to exercise little or no influence on principles or practice. The popular conception of insanity a hundred years ago was to all intents and purposes psychological; at the best it was a rude mixture of a pseudo-psychology and a pseudo-pathology identical with what we find in the pages of Burton, and the views of the medical profession, with a few isolated exceptions, were not much further extended. I hold it to be my duty to-day, so far as time admits, to review the course of events which have served to divert the current of opinion, to indicate the palpable indications of change, and the bearings such change has had, is now having, and may in the future have, on the treatment of the insanities. In so doing I can only hope to sketch the subject in the broadest manner, marking merely the main historical points, and reviewing it from the standpoint of one who for forty years has studied the progress of events.

STUDY OF THE INSANITIES.

It was inevitable that from the earliest down to quite recent times the study of the insanities should be carried out on psychological lines. The prominence of the mental symptoms asserted itself and cases of insanity were classified under the terms "mania," "melancholia," and "dementia." Notwithstanding that these so-called forms were based on mere external appearances, that their common characters were so loose that to say a case belonged to any one of them gave no further indication than could be derived from superficial observation of the case itself, these terms assumed the proportion of diseases. The symptom was the essence of the case and the underlying causating condition was ignored. Undoubtedly to the public and the lawyer the mental symptoms must always be the essence of the case, but to the physician it was not. He has to go further back and seek for the *fons et origo mali*. To him the underlying morbid condition is the essence of the case. Still, in the hands of Pinel and his school the psychological method of study subserved important purposes, the most important of which was the expiscation of general paralysis of the insane out of the general mass, accomplished by the keen clinical observations of Bayle and Calmeil. But the evils of concentration on psychology are well illustrated by the instance of Pinel himself. He, a man of high scientific attainments, a mathematician, an ardent student, and the translator of the works of Cullen, extended to the insanities the analytic method which he held should govern the study of all diseases, and accordingly he not only set aside as useless the observations of Haller and Portal, but reconstituted the Hippocratic classes of insanity as concrete pathological entities. From the acknowledged position attained by Pinel in scientific medicine by the force of character which showed itself in the bold steps he took to improve the management and treatment of the insane, and from the reputation he most justly gained from the beneficent movement, his influence has been and is even now great on the study of insanity. Most of his pupils followed his line of observation, and down to the present day mania, melancholia, and dementia hold practically the position of pathological entities in the mind of the public, of the lawyer, and of no small part of the medical profession. This undivided adherence to the psychological principle of study led to "an undue love of minute detail" and consequently to undue extension. Instances in which intellectual deficiencies were not so apparent as changes in feeling and conduct were designated cases of "moral insanity," with such sub-classes as pyromania, erotomania, kleptomania, homicidal and suicidal mania, and so on, irrespective of the clinical observation that no case of insanity exists without moral aberration, and that in those cases in which moral obliquity is most prominent the intellectual faculty is also weakened, inasmuch as the patient is not able to recognise the nature of his immoral acts or weigh their consequences. Thus confusion became worse confounded and fallacies arose within the psychological conception itself. It had, moreover, a further result in the production of a conflict between law and medicine, the consideration of which, interesting as it is, the limits of this address do not permit of. All that need now be said is that the assumption of a clinico-psychological position on the part of the physician in medico-legal cases served to intensify in his mind the importance of the psychological nosology of insanity. This becomes all the more evident when we turn to the work of such authorities as Stahl, Jacobi, Sauvage, and Cullen, who brought to bear on the subject various principles of study of disease at large, yet when they proceeded to classification of so-called mental diseases reverted to metaphysical or psychological considerations. Accordingly so-called psychiatric medicine held a peculiar and isolated position and, as Griesinger said, "its study was supposed to be distinguished by some difficulties *sui generis*." It is only during the last thirty-five years that the study of the insanities has ceased to be so distinguished, or at least

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that scientific data have been afforded which should prevent it being so distinguished, data which, although still far from perfect, have afforded starting points to the psychiatric physician for the scientific study of his subject. In passing let me say that I deprecate the use of the word psychiatric, but it has become so commonly employed as indicative of the study of morbid mental action as to render its provisional use convenient.

STATE OF KNOWLEDGE IN 1864.

It is of interest and importance to contrast the state of knowledge of the anatomy and physiology of the cerebral hemispheres in 1864 with that of 1898. Up to the former year even the rough naked-eye anatomy of the convolutions was chaotic, only some two or three gyri being recognised as distinct anatomical landmarks, and it was only then that Gratiolet reduced them to system, demonstrated their orderly arrangement, and propounded a nomenclature which, with certain modifications, is in use to-day. The position at the same time as regards minute anatomy, and therefore as regards physiology, is best illustrated by a quotation from the sixth edition of Carpenter's "Principles of Human Physiology." He therein states: "It is a point specially worthy of note that no sensory nerves terminate directly in the cerebrum, nor do any motor nerves issue from it; and that there seems a strong probability that there is not a direct continuity between all or any of the nerve fibres distributed to the body and the medullary substance of the cerebrum. For whilst the nerves of 'special' sense have their own ganglionic centres it cannot be shown that the nervous fibres of 'general' sense, which either enter the cranium as part of the cephalic nerves or which pass up from the spinal cord, have any higher destination than the thalami optici. So the motor fibres which pass forth from the cranium, either into the cephalic nerve-trunks or into the motor columns of the spinal cord, though commonly designated as cerebral, cannot be certainly said to have a higher origin than the corpora striata. And we shall find strong physiological as well as anatomical ground for the belief that the cerebrum has no communication with the external world otherwise than by its connexion with sensori-motor apparatus; and that even the movements which are usually designated as 'voluntary' are only so as regards their original source, the stimulus which calls the muscles into contraction being even then immediately issued from the cranio-spinal axis as it is in the movements prompted by the reflex stimulation of an external impression." This was the opinion of the recognised physiological writer of the day, who, in the absence of anatomical data, set aside the results of ablation of the hemispheres as demonstrated by Flourens and disregarded the inductions of Laycock bearing on what he termed the reflex function of the hemispherical ganglia. The gap was bridged by the ingenious methods of cutting and staining devised by Gerlach and Lockhart Clarke, who were the pioneers of a system of research which, developed in the hands of Meynert, Max Schultze, Rudolph Wagner, Kölliker, Gowers, Weigert, Bevan Lewis, Golgi, Ramon y Cajal, Nissl, Flechsig, and others, revealed paths of conduction between the outer world and the regions of highest cerebral function, between hemisphere and hemisphere, between convolution and convolution, and between the tracts of the special organs of sense. Let me advise those amongst you who desire to fully recognise the altered state of things to keep in mind the statement of Carpenter just quoted and then to study Déjerine's "Centres Nerveux," the last edition of Kölliker's "Handbuch der Gewebelehre des Menschen," or the more readily accessible "Text-book of Physiology" by Michael Foster. In the last edition of this most charming work the part written in conjunction with Sherrington sets before the student a wonderful panorama of brain connexions, paths of conduction between organs without and within the skull, between the various organs of the brain itself, and between various parts of the same encephalic organ. Although the authors never overstep the physiological limit it is difficult for the reader to avoid, whilst studying the relations of the mechanism by which impulses are distributed, the construction of schemes which for the moment seem to make it remotely feasible to conceive how it might be possible to account for the transmutation of external impulses into states of consciousness. Need it be said that his dreams are short and that he wakes to the fact that he is vainly seeking to think of the unthinkable and that his sphere is limited to the study of structures, the destruction or implication of which renders mental activities impossible or imperfect. The very brilliance of the anatomical demonstrations and of the physiological deductions emphasise the wide gaps in our knowledge. Large areas of the cortex exist to which no system of experimentation has been able to assign or even to suggest special functions. But Flechsig has of late asserted that certain of these unnamed regions in the brain may be filled in, for he has arrived at the conclusion, founded on a series of anatomical, physiological, pathological, and clinical observations, that certain of the cortical areas on the superior and frontal aspects constitute the material "antecedents" of mental activities, in that they are the areas in which the stimuli of the various sense spheres are associated. Great as has been the work of the anatomist that of the physiological pathologist has been equally important. Hughlings Jackson's name must ever hold the foremost place in this department of science, and I am sure Fritsch, Hitzig, Ferrier, and Gowers would be the first to acknowledge that his induction opened up that field of inquiry which has been of such importance to the study of nervous physiology and pathology. It is not necessary for the present purpose to do more than allude to the observations of these authors as they are matters of common knowledge, and it is impossible to-day to do more than allude to the contributions of the experimental pathologist, the embryologist, the physicist, the chemist, and the comparative anatomist, all of which converging expand our views on the general question.

THE PSYCHO-PHYSICAL SCHOOL.

The physiologists of the psycho-physical school which arose as a result of scientific developments advanced the study of psychology so far as they ranged scientific data so as to add to the "provisional body of propositions" about states of mind necessary for their philosophy. Whether our knowledge of states of mind has been materially increased by the lucubrations of this school is open to question, but there can be no doubt that the views, not only of the physiologist, but of all thinking men, have been enlarged by the application of the philosophic mind to the scientific position. Were it only that the world has had placed before it the proposition that the essence of mental life and the essence of bodily life are the same—namely, the adjustment of inner to outer relations—great gain has accrued to science and philosophy. But I verily believe that the change of conception of the nature of the insanities is much more due to the establishment of scientific data bearing on the antecedents of mental action than to the generalisations of the philosopher as to mental activities. Remember we are dealing with the mental attitude of a profession which deals with material and which till lately, so far as the cerebral material is concerned, had slight scientific knowledge. Gradually—no, I should say rapidly—perhaps too rapidly for complete assimilation—there has been presented to the physician knowledge of a cerebral apparatus on which he is warranted in basing working hypotheses and practice. Until that apparatus was demonstrated he could not assert, except as an assumption, the fundamental physiological principle that mental action is a function of connexion, or the pathological corollary that interruption of connexion is the cause of impaired mental action. Given those starting points he can work in the same atmosphere as a brother physician. That atmosphere may not be—nay, is not—so clear as that of his colleague; he may still see through a glass darkly; but what he does see is a revelation to him which could not have been afforded by the study of a philosophy which, except in certain of its provisional propositions, is not cognate to medicine. Time to-day will only serve to allude to the observation around which all others centre. That, to my mind, is the demonstration of mechanism by which impulses are carried from the periphery to the cortex and from the cortex to the periphery. We know that series of fibres exist which, starting from the entire surface of the body, the muscles, and from the mucous membranes, are collected in the spinal cord and pass upwards to the optic thalami, whence—as demonstrated by Flechsig whose observations have been confirmed experimentally by Ferrier and Aldren Turner—they are distributed in three systems to the cortex. We will deal with only one of these "sensory" systems—that which passes directly to the Rolandic cortex without forming connexions in their upward course with any other system of fibres. In the external layers of the grey matter these fibres come into relation with the dendrites of the pyramidal cells, but there is no anatomical continuity

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between the sensory fibres and the dendrons; they transfer impulses by contact. It is contended by certain observers that the liberation of energy takes place in the dendrons, which by their gemmulæ are in close contact with the dendrons of other cells, forming what Foster terms "synapses." Be this as it may impulses descend to the cell bodies, through which certain of the fibrils of the dendron pass to the descending axon—till lately spoken of as the axis cylinder—the fibrils of which are distributed to the periphery, throwing off collaterals to remote areas of the cortex. In order to obtain and maintain the conception of the mechanism of a circuit it might be well not to restrict the term "neuron" to the cell body and its dendritic processes, but to include in the term the ascending conducting apparatus, the cell body, and the spinal, cerebellar, and cerebral distributing arcs, and to regard the whole apparatus as a physiological if not an anatomical unit.

It is not necessary for our present purpose to consider where and how the transmutation of peripheral impulses takes place, but it is of importance to emphasise the statement that impulses are not generated in the cell body. As Gowers says, the old battery idea must be thrown aside. It may be regarded as the "vital centre" of the neuron, and making allowances for the possible action of the dendrons it may be held to be a receiver, conservator, and transmutator of energy, and a liberator and distributor of energy by means of its synapses with other pyramidal cells, and, with what is of supreme importance, with association cells. But all impulses come from without, a fact which must have important bearings on the question of the adjustment of outer to inner relations. Although the neuron has been spoken of as an organ it may be as well to state, for the benefit of any layman who may be present, that the neurons can be counted by millions; but anyone can realise that an almost unappreciable number of organs must exist for the reception and distribution of the constant and continuous flood of impulses which streams from without inwards to the brain. It is as difficult to estimate the influence of the developments of knowledge of the nervous system on the individual general physician as it is to gauge the influence of bacteriology. Our acquaintance with both these subjects is a recent acquisition. The latter is a new science, and I believe I am right in saying that in the case of many of us only its outlines are present with us. But its principles pervade the method of thought of the whole profession. So with the study of the minute anatomy of the brain; none but experts can be expected to be acquainted with the full details of its anatomy, but the great leading facts as to structure and the facts, theories, and warrantable assumptions as to its actions have operated, and continue to operate, on the views of the specialty at large. Its members, knowing that they have a mechanism to deal with, solution of the continuity of which in any part of its course may affect its function, have a scientific foundation for the study of the morbific influences productive of interruption of connexion. A strong indication of the awakening of the scientific spirit is afforded by the earnestness with which the study of the morbid anatomy of the brain is being prosecuted by the psychiatrist all the world over. Shortly after methods of cutting and staining microscopic sections of nervous structure were promulgated the rough turning over of the soil was begun. Naturally, in dealing with what was then an occult subject certain errors of observation and deduction were made; still, the fact was elucidated that marked departures from health were to be found by microscopic examination of the brains of persons dying insane. Steady labour, however, soon had its effects, and the results were embodied in the work of Bevan Lewis, in which not only were lesions described in the mass, but differentiation of special lesions in connexion with certain classes of insanity were demonstrated. Since the publication of that book our knowledge of the minute anatomy of the brain has been considerably increased and with it our knowledge of its lesions and our appreciation of their significance. Let me allude to two instances of this. First, the demonstration of the loss of gemulæ of dendrites under the action of disease, the organs which we have a right to believe have important conducting functions; and, secondly, to changes in the cell bodies, the significance of which was misinterpreted so long as it was regarded as an originator of impulse. Now that we understand that one at least of its functions is control over the nourishment of the great neuron the pathological value of its lesions assumes different but still very important proportions, inasmuch as the consequences of impaired trophesis, or interruption of continuity must be sought for in the synapses or in other parts of the paths of conduction.

THE PATHOLOGY OF INSANITY.

The value of research into morbid cerebral anatomy made itself so strongly felt that laboratories were established in many asylums, and eventually the County Council of London were so deeply impressed by the importance of the subject that they instituted a thoroughly equipped laboratory for the systematic study of the pathology of insanity, placing it in charge of that able and experienced physiologist and pathologist Dr. Mott. The work he has already accomplished is of great interest and value and we may confidently anticipate rapid progress in this department of science as the result of his labours. Scotland has followed suit. An association of asylums has been formed for the same purpose. Assisted by the Royal College of Physicians of Edinburgh suitable premises have been provided and systematic work is being prosecuted under Dr. Ford Robertson, one of whose most important duties is the instruction of assistant medical officers of asylums in methods of research. Similar institutions have been erected in the United States and if I merely refer to the observations of Van Giessen of New York, of Berkeley of Johns Hopkins University, and of Hodge of the Clark University, evidence is afforded that important scientific results have been already obtained, bearing, not only on morbid anatomy, but on physiology and normal anatomy. Contributions flow in from Germany, Italy, France, and Russia, and it may be truly said that the psychiatrist all the scientific world over is alive to the necessity of tracing the lesions productive of solutions of continuity as an essential part of the pathology of the insanities. In this connexion I may allude to the importance attached to science by the Medico-Psychological Association of Great Britain and Ireland. This association holds examinations for the certification of practitioners already conversant with insanity. Whilst demanding evidence of knowledge of the normal and morbid anatomy of the nervous centres it excludes psychology in any form as a subject of examination. I do not say this exclusion is to be commended, more especially as it relates to physiological psychology; it is only adduced as an example of the prominence given to pathology. As a consequence of this system of study a vast change has come over the aspect of psychiatric literature. The journals of the day, instead of dealing largely with analyses of the mental condition of real or imaginary persons with abstract considerations and mere clinical details, are now mainly occupied by papers of a strictly scientific character bearing on the production of neuroses, and the reports of cases are rarely confined to a mere description of symptoms, and in one particular instance — the monumental work of Bevan Lewis—we have the study of the insanities preluded by a systematic account of the cerebral apparatus instead of by an attempt to analyse mind, which was the time-honoured introduction to works on mental aberration. But the all-important question remains to be answered, What effect has the change in the principles of study had on general pathology, practice, and treatment? As regards general pathology the evidence is manifold, but I must confine myself to two illustrations. In former times the theory of the effect of the mind on the body held a foremost place and gave rise to many misconceptions. For instance, the general degradation of the system, the complications in the intestinal and reproductive systems, which are such marked and important symptoms in many of the insanities, were regarded either as the results of abnormal mental action or as its cause. Now that we recognise that the brain exercises trophesic functions over all the organs of the body we are alive to the fact that such degradations are referable to imperfect brain action, that they are secondary on the reduction of its nourishing action, and are to be treated accordingly. We connote the well-known results of experimental ablation of the cerebral hemispheres with the evidence of diseased action observable in those regions amongst the insane. Another evidence of change is afforded by the acceptance and extension by the psychiatrist of the principle that all mental symptoms are produced by the action of the same causes of disease which act in other systems than the nervous. In the absence, which I believe will be but temporary, of a nosology of the insanities founded on

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morbid anatomy we find him tracing the history of each etiological class, studying each and all on the same lines as the hospital physician follows in the case of ordinary disease. He is no longer content with the rudimentary classification of the insanities; he disregards the six "Disorders of the Intellect" set forth in the "Official Nomenclature of Diseases," published in 1871, and associates with and qualifies each symptom by an etiological term indicative of the morbific agency which has been potential in its production. Thus he is brought into close contact with general medicine and is asserting, in the words of the far-seeing Griesinger, that "diseases of the nervous system form one inseparable whole, of which the so-called mental diseases form only a certain moderate proportion."

TREATMENT OF THE INSANE.

The psychiatrist has influenced public opinion in this respect very markedly. In most of the recently erected institutions for the insane at home and abroad we find separate hospitals provided for the treatment of recent and acute cases. This surely marks the reduction of theory to practice. Instead of the subject of a recent attack of insanity being mixed up with the residuum of chronic cases he is placed in a separate institution where he is submitted to systematic treatment on thoroughly hospital principles. The extreme delicacy of the brain structure demands early and assiduous medical treatment in order to prevent disintegration and destruction of tissue; and the psychiatrist has so forced this on the mind of lay asylum authorities as to have induced them to place at their disposal hospitals suitable for this purpose. This to my mind illustrates how widely diffused the change of feeling in regard to the insanities has become extended. But even with such appliances many of those working amongst the insane are heavily handicapped, as no provision is made by the public for the treatment of cases in the initial stages. Statistics show that the increase of chronic lunatics occurs amongst the poorer classes of society and not amongst the rich. I believe this to be due to the latter being able to place members of their class showing indications of incipient insanity under systematic treatment at home during the prodromal stage, whilst the former are compelled to allow matters to drift till cases become more or less confirmed. We know that if we exclude general paralysis and epileptic insanity from consideration at least 80 per cent. of recent cases are amenable to treatment. But such treatment is necessarily costly as it involves nursing, possible change of residence, and continuous medical attendance. This is out of the power of the poor to obtain. All general hospitals shut their doors against persons suspected of insanity on the ground that the asylum is the proper place for their treatment. The asylums, however, cannot receive cases until the symptoms are so far advanced as to warrant certification and in England especially the procedure for the transmission of insane persons to asylums is so absurdly cumbrous as to prevent many persons being placed under treatment until such time as the probabilities of recovery are seriously lessened or the case is hopeless. How this state of matters can be improved is one of the questions to be taken up by the commission I have suggested. Some relief may be obtained by the inclusion of the study of the insanities in the five years' curriculum of study demanded of the rising generations by the General Medical Council. If teachers conduct their courses of instruction on the general principles which govern the teaching of medicine the general practitioner will soon be found treating the insanities as he does everyday disease, and we may fairly anticipate a reduction of the number of cases relegated to asylums as a consequence of early and rational treatment. I have merely touched the fringe of the subject. I may plead *inopem me copia fecit*, but if I have been able to indicate, however feebly, that the members of the psychiatric specialty are with you in all things scientific and practical the object of this address has been attained.

ROYAL SOUTH HANTS INFIRMARY. — The governors recently met to consider the question of a new wing to the infirmary in commemoration of the Queen's Diamond Jubilee. The Mayor's Fund falling short of the amount expected, Mr. W. Garton, a local resident, who had already given £1000, generously offered to pay the cost above what had been subscribed—about £5000—an offer which the governors accepted with thanks.

THE EFFECTS OF DRYING OF THE SOIL UPON THE PUBLIC HEALTH OF BUENOS AYRES.[1]

BY JAMES T. R. DAVISON, M.D. EDIN.,
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BUENOS AYRES, the population of which at the end of 1896 exceeded 700,000 inhabitants, possesses an extensive system of sanitary works. In that year there were over 40,000 houses provided with water from the River Plate, and an equal number of houses provided with drains; the city was also provided with works destined to remove its rainfall. These sanitary works were not all constructed at the same time. Their construction was carried out in three periods, and this has made possible the appreciation of the effects produced separately by each of the several sanitary factors which were brought into activity. In this paper I shall limit myself to the study of the effects produced by only one of the factors—that which was concerned with drying the soil.

The soil of Buenos Ayres is composed of clay and sand, with great preponderance of the former. Impermeability and retention of dampness characterise this soil. Almost every year rain falls in torrents over the city. Formerly, owing to the configuration of the ground and because at that time the rainfall lacked an easy exit, Buenos Ayres was subject to continual inundations. These inundations, which remained on a soil of the nature above described, had necessarily to give rise to its perennial dampness, and the population whose houses were built upon such a soil was left exposed to the good and ill effects connected with such a condition.

Briefly, the works destined to prevent the dampness of the soil are the following. The ordinary rain-water which falls upon the houses and streets is carried, respectively by the drains of the former and the sinks of the latter, into the collecting sewers, from which it finds its way into the intercepting sewers and thence through the great sewer into the river. The torrential rainfall takes a different course. Gathered at first as the ordinary rainfall, in its way it overflows into great storm-water conduits and is thus carried directly into the River Plate in front of the city. The works began to be constructed in 1874. First the storm-water conduits, the intercepting sewers, and a fair number of collecting sewers were made, but not until 1876 and the beginning of 1877 was the first series of street sinks (817) constructed, these sinks being destined to receive the rainfall from the streets and to thus prevent inundations, giving exit to water which before had accumulated in the city. The report of Mr. Higgins, the engineer, for this last year, referring to the purpose which these sinks already filled, says: "Although in an incomplete state they have served to save the city from various inundations." The works were suspended in 1877 and were recommenced in 1883. In 1885 the number of street sinks constructed was 2685, and in the following year 1626 new ones were made. The works were once more suspended until 1889, when the construction of house drains was begun, this part of the works having continued during several years.

In the history of the sanitary works of Buenos Ayres there are two epochs when the works destined to carry away the rainfall came into operation—in 1876 and the commencement of 1877, when 817 sinks in communication with the sewers were constructed in the streets, and in 1885 and 1886, when respectively 2685 and 1626 more were made. The system of house drains cannot be taken as an independent factor in removing the rainfall, for formerly the rain which fell on the houses was collected partly in deposits and the rest found its way to the street; now all this rain goes into the house drains, but even if it went into the streets it would not remain stagnant as before, inasmuch as the street sinks would provide for its exit.

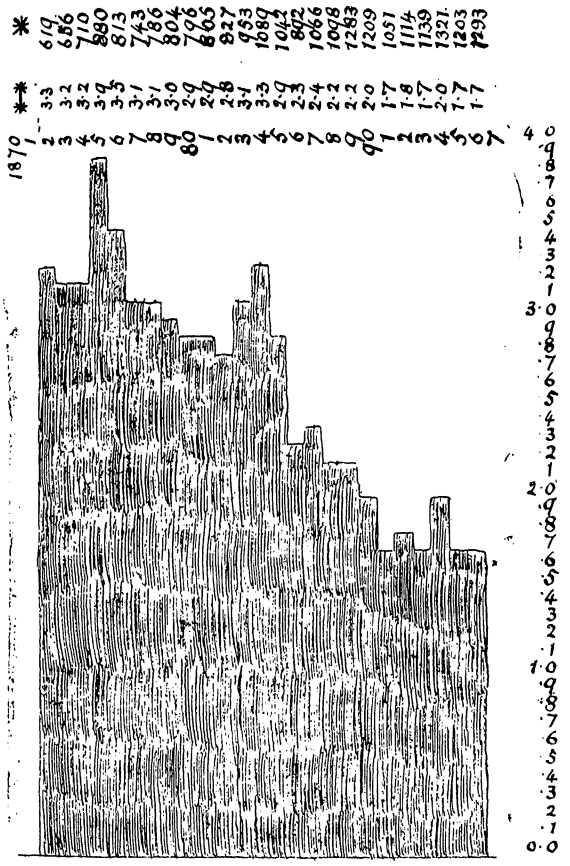
Tuberculosis.—Shortly after the year 1860, Dr. Buchanan in England and Dr. Bowditch in North America, almost

[1] A paper read at the International Congress of Hygiene and Demography held in Madrid in April, 1898.

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at the same time and quite independently, discovered as the result of their investigations that tuberculosis is a disease of a damp soil, and that when this dampness diminishes tuberculosis decreases. The experience gained in Buenos Ayres entirely confirms the affirmations of these sanitarians, who have shown what is the most simple and efficacious means of ridding cities of one of the most potent factors in mortality. Fig. 1 marks the mortality from tuberculosis from

FIG. 1.

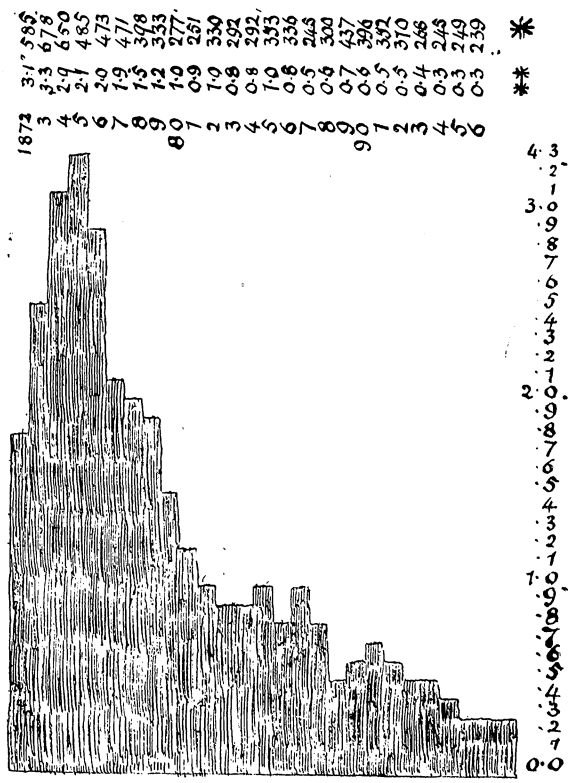


The diagram shows the prevalence of tuberculosis, pulmonary, laryngeal, and mesenteric, from the years 1872 to 1896 inclusive. The row of figures marked with an asterisk shows the absolute mortality for each year. The row marked with a double asterisk and the column to the right of the diagram show the mortality per 1000 inhabitants for each year.

1872 to 1896 calculated at so much per 1000 inhabitants. The general direction of the graphic line is one of descent, but this course is interrupted on three different occasions by elevations, a notable one in 1875 and two of lesser importance in 1884 and 1894. In this paper it is not my purpose to enter into the causes which have produced these elevations, as being foreign to the subject under discussion, but I merely wish to call attention to them so that they may be taken into account when the cause of the general descent of the line is studied, their true characters being assigned as accidental elevations in a line of general descent. The diagrammatic line belonging to 1872–73–74 marks the level of 3·3 and 3·2 per 1000 inhabitants. This represents the normal level of tuberculosis mortality in Buenos Ayres for these years. In 1875 and 1876 accidental factors caused this level to rise, and the line ascended considerably on the first of these years, and while it descended on the second it still only reached a level which was very superior to that occupied during 1872–73–74. In 1877, the factors which had produced this transitory elevation in the mortality having disappeared, the diagrammatic line descended until it occupied its former normal level and it fell even a little lower yet. In 1876 and the commencement of 1877, 817 street sinks were brought into operation, and with so much success that the engineer of the works stated in 1877 that these elements for the removal of rainfall had been the means of saving the city from several inundations. So that in 1876–77 the soil of Buenos Ayres entered into an epoch of relative dryness compared with the dampness of previous years. This relative dryness of the soil soon made itself felt in a diminution of tuberculous mortality. Already in 1877 the line had fallen, and this fall went on progressing, although slowly, until 1882. Accidental factors cause again the mortality to ascend, and in 1883 the line rises and continues to rise in 1884. These factors disappearing, the line returns to find its normal level in 1885. But that year saw the construction of 2685 street sinks, a very large number of openings destined to remove part of the rainfall which formerly stagnated in the streets. In 1886 the mortality from tuberculosis took a rapid descent. In that year the number of new street sinks was 1626. In the following year the mortality line should have undergone a further descent, but it did not; on the contrary, the graphic line was marked by an elevation, although insignificant. But in that year (1887) a law was passed extending considerably the municipal bounds, so that now large suburban areas destitute of works for the efficient removal of rainfall formed part of the city. Nevertheless, the insignificant rise in the mortality in 1887 was but transitory, for in the following year the works which had been constructed in 1885–86 reasserted their influence over the mortality from tuberculosis and the graphic line began once more to fall and continued falling until 1891, when it seems to have remained stationary, for after oscillations it always returned to the same level.

The fall in the mortality from tuberculosis in Buenos Ayres is thus related to the relative drying of the soil compared with the dampness which obtained in former years. The first works for removing the rainfall which commenced in 1876–77 produced a slow fall which lasted in a progressing scale during six years; the second and more extensive works of 1885–86 brought about a much greater fall in the same

FIG. 2.



The diagram shows the prevalence of tetanus, infantile, traumatic, and spontaneous, from the year 1872 to 1896 inclusive. The figures have the same significance as in Fig. 1.

mortality—a fall which in its progressive course has also lasted six years. The level which the mortality had reached in 1896 was that which it already occupied in 1891. Since the former year there has been no further fall, and as during these last years thousands of house drains have been brought

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into operation it must be concluded that this latter sanitary factor has not exercised any beneficent influence over the march of tuberculosis and that the relative drying of the soil has been the only and great factor which has saved Buenos Ayres from its once so high tuberculous mortality.

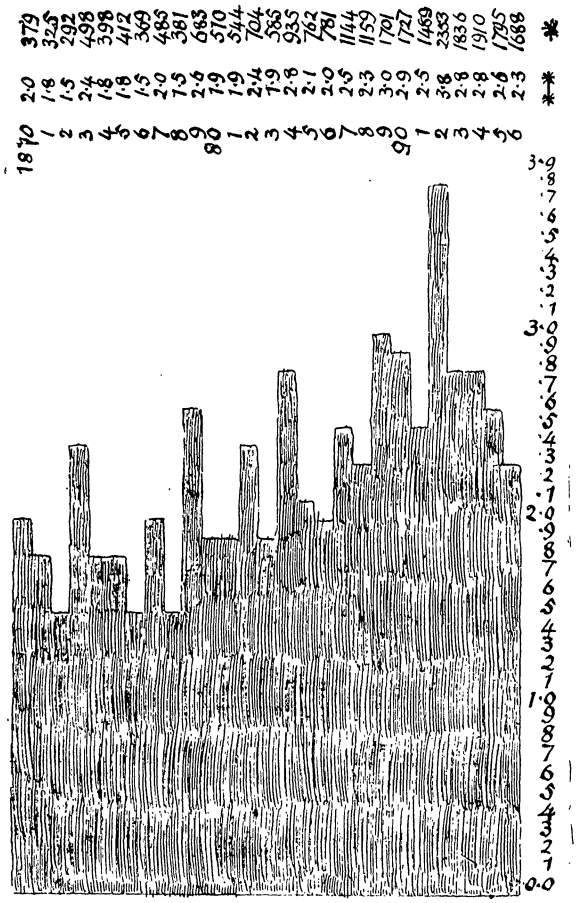
Tetanus.—Tetanus was formerly another scourge of Buenos Ayres. Fig. 2 marks the mortality from tetanus calculated at so much per 1000 inhabitants. In 1870 there was a very great inundation in the city; some persons were drowned in the streets; the cesspools filled with water and their contents flowed out and spreading over the soil polluted its surface. The mortality from tetanus, which was already high, appears to have received a great impulse from this special contamination of a damp soil, for in the following year the graphic line of mortality rose very much and this rise continued up to 1873, the descent beginning in 1874 and the line only reaching in 1877 its former level of the year 1870. It is to be noted that in the course of these years the inundations were not limited to the special one of 1870. Every year there were inundations and these served to maintain alive the flame which had been ignited by the great inundation of 1870, when the soil, besides being saturated with water, was contaminated by the contents of the cesspools which had overflowed. But already, after the first series of works destined to remove the rainfall in 1876–77, the inundations ceased to a great extent and the result of this relative drying of the soil was felt in 1878, when the line of mortality from tetanus took a sudden fall and this fall continued in a progressive sense until 1881. The line now rested at the level of 0·9 per 1000 inhabitants and this level appears to have indicated the maximum of the results obtained by the relative drying of the soil which was due to the works effected in 1876–77, for in the following year of 1882 the mortality line occupied the same position and remained there as a mean level during four years more.

The second series of works destined to remove the rainfall more completely was constructed in 1885 and 1886, when respectively 2685 and 1626 street sinks in communication with the sewers were made. Next year the mortality line from tetanus took a rapid descent. This descent, which should have continued progressively during three or four years more, was interrupted, but in 1888 the annual form of the atmospheric pressure-wave suffered oscillations which interfered with the natural ventilation of the soil, and in 1889 extensive excavations of the same in connexion with the construction of house drains were begun and the work continued for several years. When these transitory factors which interrupted the continuation of the fall of the mortality from tetanus had in great part disappeared in 1893 the mortality line reassumed its course of descent, this lasting until 1894, where the line seems to have remained, and 0·3 per 1000 inhabitants has marked the level of the mortality from tetanus in 1894–95–96.

Re-examining rapidly the graphic line of mortality from tetanus we see that when this line was seeking its former normal level after having ascended owing to a great contaminating inundation, helped by further inundations, the relative drying of the soil obtained by the works of 1876–77 caused it to descend during four consecutive years; that the mortality line then rested upon a stable level during several years, when the new works for completing the removal of the rainfall in 1885–86 caused its further descent—a descent which, although interrupted in its course through transitory factors during some years, reassumed its prolongation on the disappearance of these until in 1894 it reached the level of 0·3 per 1000 inhabitants. It is, again, to the relative drying of the soil that the population of Buenos Ayres is indebted for its marked deliverance from one of the most important factors of its mortality.

Pneumonias.—If the drying of the soil and subsoil in Buenos Ayres has resulted in a marked diminution of the mortality from tuberculosis and in a notable diminution of that from tetanus, on the other hand it has been the means of increasing the mortality from pneumonia. Fig. 3 marks the mortality of the group of pneumonias, including also broncho-pneumonias and pleuro-pneumonias. The graphic line, although subject to great oscillations, has nevertheless a direction of general ascent. The ascent does not follow a march of gradual progression, rising every one or two years; it is an ascent effected by periods of years, rising every so many years to a higher level from which it never again descends but from which it oscillates in an upward direction. Three are the levels of repose belonging to this graphic line. The first one, 1·5 per 1000 inhabitants from 1872 to 1878; the second one, 1·9 from 1879 to 1886; and the third one, 2·3 from 1887 to 1896. The first and lowest level corresponds to the time when the rainfall was allowed to remain in the city; the second and higher one to the time when the effects of the works destined to remove a good deal of the rainfall began to be felt; and the third and highest to the time when the effects of the second and more extensive series of the above works came into operation. In this group of pneumonias there are, of course, many cases which are only

FIG. 3.



The diagram shows the prevalence of pneumonia, broncho-pneumonia, and pleuro-pneumonia from the years 1870 to 1896 inclusive. The figures have the same significance as in Fig. 1.

complications of other diseases and which are altogether independent of the greater or lesser dryness of the soil, but the fact that the level of mortality of the group as a whole rises each time that a greater relative dryness of the soil is obtained is a proof that in this group there must exist a sub-group of pneumonias due to some micro-organism which resides in the soil and the development of which is favoured by a relative dryness of the same.

The experience of Buenos Ayres has permitted the study of the results obtained separately by each of the factors which have been brought into play through the construction of sanitary works. As far as the effects on tuberculosis resulting from the relative drying of an impermeable clay soil go our experience corroborates the teaching of Buchanan and Bowditch, who showed that in that dryness we possess the most formidable weapon to combat that great enemy of the human species. Touching tetanus the effects of the relative drying of the soil have been even more marked than in the case of tuberculosis. And, lastly, regarding pneumonias, the relation between the increase of this group of diseases is too evident to be ascribed to mere coincidence. Several have been the observers who in different countries have noted this relation, but their conclusions have been impugned and

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sometimes with statistics which have been gathered monthly. The question is yet *sub judice*. The statistics which I adduce in this paper have the value that they cover an epoch of a quarter of a century, and they have even greater value because this epoch includes periods in which the construction of the sanitary works was carried out separately in its different elements, so that the effects of these upon the public health could easily be observed. Changes in the subsoil take place with great slowness and their effects upon the public health are likewise slow and *prolonged*. In order to study correctly the relation between subsoil and public health years and not months must cover the periods of observation.

Buenos Ayres.

DISSECTING ANEURYSM.[1]

BY JAMES B. COLEMAN, M.D. R.U.I., M.R.C.P. IREL.,
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THE term "dissecting aneurysm" is applied to cases in which a partial rupture of the inner tunics of an artery allows the blood to become diffused between the coats of the vessel. Having regard to the difference of opinion which exists as to the author of the original description of this very remarkable affection the following extract from Dr. Peacock's "Report on Cases of Dissecting Aneurysm"[2] may be of interest: "It has generally been supposed that Laennec was the first writer who applied the term 'dissecting' to this form of aneurysm, but it has been recently shown by M. Broca that M. Maunoir employed the same designation and clearly described the formation of aneurysms of this kind in his work published in 1802. A characteristic case is also related by Mr. Allan Burns in his work on 'Diseases of the Heart and Aneurysm,' published in 1809." Shekelton[3] published two cases of dissecting aneurysm in 1822, and the preparations are to be seen in the Museum of the Royal College of Surgeons in Ireland. Erichsen, in the earlier editions of his "Science and Art of Surgery," incorrectly refers to this variety of aneurysm as "originally described by Shekelton," and the use of the name "Shekelton's aneurysm" as a synonym for dissecting aneurysm is not justifiable. Dr. Peacock, in the paper to which I have already referred, collected eighty instances in which the affection appeared in well-marked form, including five cases published by Shekelton,[4] R. W. Smith,[5] Kirkpatrick,[6] Lees,[7] and MacDonnell[8] respectively, in the *Dublin Journal*. An interesting specimen was exhibited by Mr. Conolly Norman at the Pathological Section of the Academy a few months ago.

In the earlier published cases of dissecting aneurysm it was supposed that the separation of the coats of the artery took place between the middle and external tunic; but modern pathologists agree that the blood almost invariably makes its way between the laminæ of the middle coat, so that the outer wall of the aneurysm is formed of the outer strata of media together with the adventitia. In the vast majority of cases the rupture of the inner tunics is due to their excessive lacerability—the result of atheromatous degeneration. Indeed, out of 60 of Peacock's cases the arteries were found healthy in only two instances. Ziegler[9] suggests that in the rare absence of morbid changes in the coats of the vessels, traumatic injury to, or defective development of, the vessel-wall is the primary cause of the lesion, and Walshe[10] mentions two cases in which dissection of the aortic coats on a limited scale had been abruptly effected as the result of railway concussion. On the other hand, Rokitansky[11] supposes that in some cases a morbid condition of the external coat deprives the inner coats of support and so predisposes to their rupture.

Dissecting aneurysm is practically confined to the aorta and its large branches, although Ziegler[12] states—on what authority I do not know—that the small arteries of the brain are a usual seat of the affection. The internal rupture is usually situated at the origin of the aorta or in the ascending aorta—it was so in 55 out of 73 of Peacock's cases—but it has been found as low as the end of the abdominal aorta, as happened in Shekelton's cases. The direction of the internal rupture is generally transverse when it is near the aortic valves, whilst it is more frequently vertical at the beginning of the descending aorta. Ordinarily the arterial coats are torn asunder over from one-half to two-thirds of the circumference of the aorta, although the separation of the tunics occasionally extends completely around the vessel. The longitudinal extent of the separation of the tunics varies considerably; as a rule the aneurysm is limited to the ascending aorta, but it is occasionally found to extend beyond the iliac arteries. In my case the separation of the coats begins at the arch and ends in the left femoral, and in a very remarkable case recorded by Tessier[13] the separation extended from the commencement of the ascending aorta to the left popliteal artery. The dissection not unfrequently is carried along the primary branches of the aorta. For instance, in MacDonnell's and Tessier's cases it extended through the innominate artery and its branches to the internal carotid; in another case[14] it followed the course of the coronary arteries; in Laennec's case[15] it passed along the cœliac artery and in my case into the right renal artery. Some of the intercostal and lumbar arteries are frequently found to be cut across by the stream of blood, "so that a probe introduced into the aortic orifice of one of those little branches passes directly into the aneurysmal canal and traverses this before entering the artery itself, which thus appears to arise directly from the aneursym."[16]

In cases which have ended fatally within a short time there has been only a single opening leading from the aorta into the arterial coats, death having been usually due to the subsequent giving way of the external wall of the sac. This is the common form, comprising 73 out of Peacock's 80 cases; my case is also an instance of it. On the other hand, when life is prolonged for any considerable time the blood is found to have forced its way from the sub-adventitious sac back again to the blood-stream at some point farther on in the course of the vessel. In such chronic cases—of which Shekelton's and Fagge's cases were examples—the new blood-channel acquires an endothelial lining. The disease is specially common in persons of advanced age, and though it probably occurs more frequently in men than in women there is not the excessive preponderance in males which is the rule in ordinary aneurysms. Indeed, some writers say that it is more common in women. The case which I now relate, and the specimen which I exhibited, typically exemplify the symptoms and pathology of the early stage of the fully formed dissecting aneurysm.

CASE 1.—A man, aged sixty-five years, was admitted to the Whitworth Hospital under my care on Jan. 13th, 1898, complaining of severe pain in his back and of loss of power in his legs. On the morning of his admission to hospital he was on a ladder engaged in papering a room when he was suddenly seized with a violent pain in the lower part of his back and in his left hip. The pain appeared to start from his lumbar region and to shoot up into his chest and down to his left thigh. It was so intense that (to use his own expression) he "bellowed with agony." He felt faint but did not lose consciousness and he was able to walk across the room with difficulty to a chair. Within a quarter of an hour his lower extremities were completely paralysed and his left leg was anæsthetic. He was removed to hospital in a few hours. Beyond the fact that he was a painter there was nothing noteworthy in his personal history and he came of a healthy family. On admission to hospital he was found to be a well-nourished, grey-haired old man, rather anæmic. He was unable to walk but he could move his legs slightly. He still suffered from severe pain in his back, but he had already recovered sensation in his left leg. Everything he ate or drank was vomited. His arteries, in which there was visible pulsation, were atheromatous and his pulse was high-tensioned. The heart was hypertrophied; no murmurs could be detected, but the aortic second sound was accentuated. He was carefully examined for aneurysm with a negative result. Pulsation could be felt in both of his femoral arteries. There was marked arcus senilis and his gums showed a "lead line." His urine was feebly alkaline, of specific gravity 1014, clear, contained 0·2 per cent. albumin, and a few hyaline and granular casts; neither sugar nor blood was present; the quantity of urine passed was about

[1] A paper read in the Section of Medicine of the Royal Academy of Medicine in Ireland on May 20th, 1898.
[2] Transactions of the Pathological Society of London, vol. xiv., 1863.
[3] Dublin Hospital Reports, vol. iii., 1822.
[4] Ibid.
[5] Dublin Journal of Medical Science, vol. ix. 1836.
[6] Ibid., vol. xxiv., 1844.
[7] Ibid., vol. xxv., 1844.
[8] Ibid., vol. xxvi., 1845.
[9] Ziegler: Special Pathological Anatomy.
[10] Walshe: Diseases of the Heart.
[11] Rokitansky: Manual of Pathological Anatomy. Sydenham Society's Transactions, vol. iv., 1852.
[12] Ziegler: loc. cit.
[13] Giornale della Scienza Mediche, 1842.
[14] Boyd: THE LANCET, vol. i., 1840-41.
[15] Laennec: Traité de l'Auscultation médiate, deuxième édition, 1826.
[16] Fagge: Transactions of the Royal Medical and Chirurgical Society, vol. lii.

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the average amount. He had control over the sphincters of the bladder and rectum. The knee-jerks and plantar reflexes were lost. The pain in his back ceased after twelve hours and next day he felt much better and he was able to move his legs freely. On the following morning he was able to walk a few steps and he expressed himself as feeling almost quite well. At this period I showed him to the hospital class and I diagnosed the case as plumbism and chronic interstitial nephritis, with the usual cardio-vascular changes. I pointed out that the history of the attack clearly indicated some vascular lesion of the spinal cord, and the sudden onset, wide diffusion, and intensity of the pain, together with the transient duration of the paraplegia, appeared to justify the further diagnosis of spinal meningeal hæmorrhage. The patient was apparently well about 4 o'clock in the afternoon, when he took a drink of milk. Five minutes afterwards the nurse found him dead in his bed. His death occurred about fifty-two hours subsequent to the onset of the symptoms.

The post-mortem examination, which was made within 24 hours of his death, showed the right pleural cavity to be filled with blood. The pericardium contained a little clear serous fluid. The heart was rather large, there being hypertrophy of the left ventricle. The arch and upper part of the descending aorta was distended and formed a tumour-like mass, from which the blood had escaped into the right pleura. On opening the aorta its inner aspect was covered with atheromatous plaques, and a dissecting aneurysm extended from the arch at the level of the innominate artery and terminated in the left femoral artery about an inch below Poupart's ligament. A large mass of freshly-coagulated blood was effused between the tunics at the level of the arch and in the upper portion of the descending thoracic aorta, and here the separation of the tunics took place around nearly the whole circumference of the vessel wall. From the abdominal aorta through the left common iliac, external iliac, and femoral artery the coats of the vessels were separated by a thin layer of coagulum, but no palpable thickening of the arteries was so produced. In the lower part of the aneurysm the dissection of the arterial coats did not extend much more than halfway around the circumference of the vessels.

The microscopic sections, which I exhibited, were from the left common iliac artery, and they showed that the blood was effused in the substance of the middle tunic of the artery, so that the external wall of the aneurysmal canal was composed of the outer muscular strata of the media together with the adventitia. The dissection was carried along the coats of the right renal artery, the lumen of which was also occluded by a thrombus. The lumbar arteries were cut across and their orifices likewise contained thrombi. A large coagulum was adherent to the posterior wall of the aorta at the level of the renal and lumbar arteries. The external rupture of the aneurysm was situated about the middle of the thoracic aorta on its posterior aspect. The rupture was an ill-defined, oblique slit, about half an inch long, from which the blood had forced its way through the connective tissue into the right pleura. I have not been able to satisfy myself as to the position of the internal rupture. It might have occurred two or three inches from the termination of the abdominal aorta, for the atheromatous changes were most intense in that position, or possibly it took place at the origin of one of the primary branches of the aorta. Both kidneys were cirrhotic, the right one being, in addition, cystic and extremely engorged with blood. Microscopic sections of this kidney (prepared by Dr. Dargan in Dr. McWeeney's laboratory) showed that it was in a condition of universal hæmorrhagic infarction. There was no hæmorrhage in the spinal cord or its membranes. In the light of the necropsy it was not difficult to account for the symptoms of this case. As predisposing causes of dissecting aneurysm my patient had extensive atheroma of the inner coats of his aorta, which were consequently unduly lacerable and in addition he had hypertrophy of the left ventricle with high arterial tension. The intense pain at onset of the symptoms was due to the primary rupture and separation of the coats of the aorta by the blood; the paraplegia was caused by the interference with the arterial supply to the lumbar enlargement of the cord, partly from thrombosis, and partly from rupture of the lumbar arteries; the sudden death ensued on the rupture of the external wall of the aneurysm and the consequent escape of blood into the right pleura. It is rather remarkable that his urine contained no blood and that the amount passed was not noticeably diminished, for the right kidney was engorged with blood and its secretion must have been completely arrested.

Other cases of dissecting aneurysm have been recorded in which a remarkable series of symptoms was due to arrest of vascular supply to the brain, kidneys, or cord. Tessier's[17] patient died with the symptoms of apoplexy and a dissecting aneurysm was found extending from the arch of the aorta along the innominate artery and its branches to the internal carotid. Todd's[18] case was characterised by hemiplegia and transient suppression of urine, and the post-mortem examination showed softening of the brain due to obstruction in the carotids, and it is probable that there was also obstruction in the renal arteries. Sainet[19] records a case in which the patient became rapidly paraplegic. Latham and Swaine's[20] case was diagnosed during life. The patient was suddenly seized with "agonising" pain in his chest followed by paraplegia. In Dickenson's[21] case a policeman, after seven hours on his beat, was seized with loss of power over his lower extremities, followed by pain and collapse. Death took place within twenty-four hours. Where the symptoms are liable to such variations it is evident that the diagnosis of dissecting aneurysm must always be difficult and uncertain.

In reference to treatment Walshe[22] somewhat cynically remarks: "Were the practitioner fortunate enough to divine the occurrence of acute separation of the coats of the aorta it does not appear that in the present state of our knowledge the management of the case would be materially improved by his sagacity. Did he fail to diagnose the occurrence his aim would be to restore the patient from the first shock of the accident, control excited arterial action, and relieve symptoms as they arose. And it does not appear that art could do more than this were the anatomical nature of the affection understood from the first."

Dublin.

[17] Giornale della Scienza Mediche, 1842.
[18] Transactions of the Royal Medical and Chirurgical Society vol. xxvii., 1844.
[19] Bulletin de la Société Anatomique, 26me Année, 1851.
[20] Transactions of the Pathological Society of London, vol. vii., 1855.
[21] Ibid., vol. xiii., 1861.
[22] Walshe: Diseases of the Heart.

ON A MODE OF STRETCHING SOME URETHRAL STRICTURES.

BY REGINALD HARRISON, F.R.C.S. ENG.,
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IN some remarks on urethral stricture previously published[1] I have referred more particularly to its treatment by dilatation and by certain forms of urethrotomy or section. I have also described some instruments I usually employ with these processes. In an obstructive disease which presents so much structural variety cases are occasionally met with where, either from the urgency of the symptoms or the nature of the stricture, it will be found impossible to utilise these methods and modifications of them may be substituted with advantage.

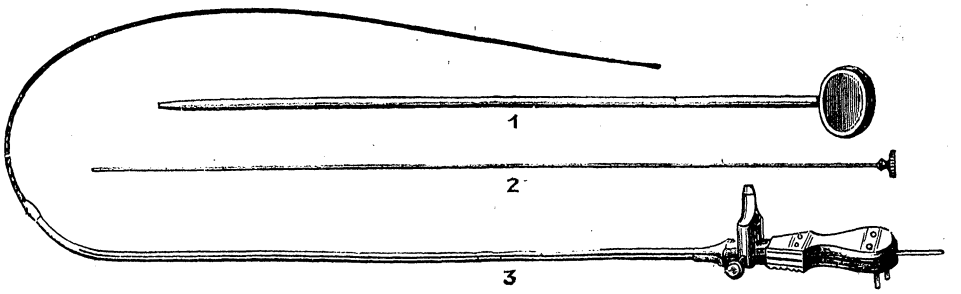
The rarer cases of advanced stricture to which I am now referring usually owe their urgency to being complicated with some degree of retention of urine which also calls for surgical aid. A man of middle age, I will say, has been suffering from a neglected stricture for some months or years. Eventually he is either suddenly seized with inability to pass urine at all or he becomes seriously inconvenienced by the increased tension of a never emptied bladder. Let it be assumed that the stricture is so hard, contracted, or tortuous as to resist hot baths, opium, and catheterism with all forms of flexible instruments, and access to the bladder can only be effected by a fine metallic catheter. Possibly this even may require the aid of an anæsthetic. If such a catheter is tied in it not unfrequently slips out during the night and all the trouble of replacing it or substituting a somewhat larger one has to be repeated and not always with success. Even if it is retained it may not be possible to substitute a larger one and thus the progress of the case in giving increased relief to the patient is either hindered or proves impossible. Nor is the retention of a fine catheter, such as No. 1, 2, or 3, in a septic bladder to be desired, even though some relief to tension is afforded, any more than a drainage tube which will not drain is of service with a putrid abscess. Unless the relief is sufficient in either case sepsis is sure to follow if it has not already commenced. With a small catheter such as those I have referred to it is impossible to wash out and disinfect the bladder, and puncture or any forms of cystotomy or urethrotomy are not always advisable under these circumstances. It is in cases of this type, when the surgeon has succeeded in passing a small metallic catheter through a tight and difficult stricture into a more or less distended bladder, that the inability to expand the instrument at the same time, and so to stretch the stricture before withdrawing it, is not unfrequently experienced. With this object in view I described some years ago an instrument constructed on the lines of a Holt's dilator which appeared to meet the difficulty, and I have since continued to use it with advantage. It is provided with a pilot guide as well as with a screw top in case the former proves useless. It contains a fine test catheter on which the dilators run. It is fitted with a series of seven rods by which dilatation may be carried from a No. 3 to a No. 12 (English gauge), and the introduction of the latter is controlled by a spiral spring which consolidates the instrument and makes it act as one piece. On the dilator being passed, as an equivalent to a No. 3 catheter, the stylet is withdrawn and the correct position of the instrument is judged of by its transmitting urine and from its position relative to the rectum. Then the introduction of the dilating rods in accordance with their number and size is

[1] THE LANCET, April 23rd and June 11th, 1898.

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proceeded with whilst the anæsthetic is continued. This is to be done deliberately so as to stretch and not to lacerate the stricture, the process usually lasting, according to the rigidity of the contraction, from about ten to twenty minutes. When the largest rod is reached the fully distended instrument, now representing No. 12 in calibre, is quietly withdrawn and the urine that remains is drawn off by a full-sized silver catheter, which may be passed easily. The bladder is then washed out and disinfected and a soft catheter is tied in and retained for forty-eight hours or so. As the process is one of stretching alone rigors or fever rarely follow.

The subsequent management of the case merely consists in instructing the patient how and when to pass a bougie for himself and so to endeavour to permanently maintain the normal dimensions of his urethra. It is hardly necessary to illustrate the kind of case to which this treatment is applicable, as it will readily occur to those who have had any practical experience of them. In proceeding to adopt it the only drawback which is likely to happen is the case proving, on trial with an anæsthetic, to be an impassable stricture. Under such circumstances Wheelhouse's perineal operation would probably be selected as the alternative. Where, however, the dilator can be passed in the manner I have endeavoured to describe both patient and practitioner will be none the worse for knowing that the retention of urine has been relieved in such a way as will permit the introduction of a full-sized catheter into the bladder.



Figures illustrating instrument, made by Messrs. Krohne and Sesemann. 1, A dilating rod. 2, Catheter stylet. 3, Dilator.

Lower Berkeley-street, W.

ON A MODIFICATION OF MR. COXONS' METHOD OF PROLONGING NITROUS OXIDE ANÆSTHESIA DURING DENTAL OPERATIONS—

NAMELY, BY MEANS OF A MOUTH TUBE AND CLOSURE OF THE NARES.

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THE recent endeavours to prolong nitrous oxide anæsthesia for the purposes of dental surgery by means of a mouth-tube, nasal catheter, or nose-piece have all tended to supply a very distinct need—viz., an anæsthesia longer than the usual one of about half a minute and perhaps not so long a one as that obtained so easily and safely by the administration of nitrous oxide followed by ether.

I believe that for all lengthy or severe dental operations, especially in cases where numerous teeth or many bad stumps have to be extracted or in cases in which the patient is very young or old or in feeble health and the operation is of more than ordinary severity, three or four full breaths of nitrous oxide followed by a short inhalation of ether is by far the best method of anæsthetisation, for the shock during and after operation is in these cases less than that occurring during or after the administration of gas. The delayed return of consciousness is often of distinct advantage to both the operator and the patient, and the anæsthetist is left with a freer hand to help the dentist, who for his part can with confidence reckon on having plenty of time and is not embarrassed perhaps with anæsthetic appliances.

Last winter, at a meeting of the Society of Anæsthetists, Mr. Coxon, L.D.S., of Wisbech, demonstrated his apparatus for the prolongation of nitrous oxide anæsthesia. It consisted essentially of a mouth-tube made of hard metal with a diameter of about half an inch, at one end nearly half curved and at the other made to fit in the place of the face-piece and stopcock of an ordinary gas apparatus. Mr. Coxon warmed the gas before use by passing it through a metal coil immersed in hot water and interposed between the gas cylinders and the gas bag. In administration the patient was in the usual way put fully under the influence of nitrous oxide, then the face-piece was rapidly replaced by the oral tube, which was inserted into the mouth in such a way that it rested on the back of the tongue, and the free end was in the pharynx pointing towards the side of that cavity. The anæsthetist had of course to keep the tube out of the way of the operator and to arrange that a copious stream of gas was delivered from a fully-distended gas bag and passed on to the pharynx beyond the region involved in the operation and also beyond any collection of blood in the mouth. Mr. Coxon stated that he had often used this method of his devising and had had exceedingly good results from it.

I was much interested in his demonstration and had a metal tube like his made for me, but not regarding the warming of the gas as of importance in short operations at any rate, even if it be so in long operations, which I think doubtful, I made trial of the method without using any heating apparatus on many patients at the Birmingham Dental Hospital. As I preferred to keep the fullest command of the head and jaws and had to manipulate the gag I asked Mr. Thompson Madin, L.D.S., surgeon to the hospital, to kindly insert the mouth-tube for me and take charge of the gas-bag while I controlled the anæsthesia by means of the gas-supply.

The first few cases of trial were not very successful, but we soon became more proficient, and after a little time the great difficulty—that of inserting the tube to the back of the mouth and at the same time keeping it out of the way of the operator, especially in cases where the mouth was small—was dexterously overcome. We found that a central gag—e.g., Brunton's—wherever it could be used was the best. The gas-bag had generally to be kept fully distended and in the case of strong patients even had to be compressed between the arm and side of the body to increase the delivery pressure. It will be seen that a good deal of gas had to be used, for it escaped both by the mouth and the nose. I constantly for some months used this method in cases which needed a longer administration than usual and had a large measure of success. In many instances the duration of the anæsthesia was only determined by the conclusion of the operation. As the extractions were performed by students much longer periods of anæsthesia than usual were sometimes necessary and times of from one to four minutes were recorded without any untoward present or after-effects being noticed except that giddiness lasted perhaps a little time longer than after the ordinary sitting. I judged of the degree of anæsthesia chiefly by the colour of the face, managing the supply of gas so that the patient's lips were kept slightly cyanosed and the breathing rather snoring in character. After the above method had been in use for a few months Mr. Madin ingeniously thought of the modification of closing the nasal passages in order to prevent the escape of nitrous oxide and to limit air entry. After closing the nose by manual pressure he proposed to pass the tube just inside the mouth at a corner and to keep it full of gas by using only a moderate pressure. He himself made trial of this plan with perfect success. As the closure of the nostrils by digital compression

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allows only one hand to be free I had a small nasal clamp made which might be fixed immediately after removal of the face-piece.

This modification of Mr. Coxon's method has been even more successful in our hands than the original plan, and with Mr. Madin's kind help I demonstrated its application at the annual meeting of the Central Counties Branch of the British Dental Association, held at Worcester on July 9th, Mr. Surman of that city being good enough to find a suitable patient. This demonstration very well illustrated the prolongation of anæsthesia by this modified method. The subject, a woman of ordinary type and about thirty years of age, needed the removal of eleven teeth, nine in the upper and two in the lower jaw, including many stumps. After the insertion of a Brunton's gag between the jaws and in the middle line full anæsthesia was induced in the ordinary way by means of Hewitt's apparatus, and when the face-piece was removed the oral tube was quickly substituted for it and inserted by Mr. Madin into the corner of the mouth away from the operator, while I manually compressed the nares and allowed a stream of nitrous oxide to pass from a gas-bag kept moderately distended through the tube, endeavouring to merely keep the mouth full of the gas. An uninterrupted and perfect anæsthesia was obtained, characterised by slight cyanosis of the face and lips and by quietly snoring breathing. The mouth tube was so well manipulated that it did not at all embarrass Mr. Malcolm Knott, the dental surgeon, who was operating with deliberation, especially in the extraction of the last few teeth. The duration of operation was two and a half minutes, and after it had been finished the anæsthesia was prolonged for another half-minute for the purpose of further demonstrating the ease of maintaining it as long as might be necessary. During the latter part of the operation the Brunton's gag was changed for that of Mason. The operator would have done very well indeed to have extracted all the teeth in two ordinary sittings for gas.

This was a most successful case for a demonstration, the patient being well under throughout without movement of any kind, slightly cyanosed as regards colour, her breathing being easy and rather snoring in character. The operator was very pleased with the result. Recovery of the patient was extremely rapid and not marked by any untoward symptom—indeed, was exactly like that after the usual half-minute anæsthesia. The quantity of nitrous oxide used was about 48 gallons and supposing that 8 gallons (which is perhaps a little above the average for an adult) were used in inducing full narcosis, then only 8 gallons were used for each extra half-minute of anæsthesia, a quantity which is considerably less than that used in the same time by Mr. Coxon's original method. For, supposing the nasal passages to remain open and manipulation to be going on in the mouth, there is a tendency for the patient, even in the case of mouth-breathers, to breathe wholly through the nose and the inhaled nitrous oxide is very largely diluted with air in the pharynx, while during expiration and the pause between expiration and the following inspiration there is free vent through the nares for the escape of the gas as well as of air. If the nostrils be blocked much gas is obviously saved, and as possibly some reflex hindrance (induced by the oral interference) to free respiration still exists, the breathing is for a short time at any rate quieter and less frequent, and if the mouth be simply kept full of nitrous oxide it can well be effected that enough gas is inhaled to maintain full anæsthesia, while it is diluted with a not too large quantity of air.

In suitable cases the duration of the anæsthesia may be determined only by the conclusion of operative interference. Where it is possible digital has an advantage over instrumental compression of the nares, in that it gives one more command over the head and can be applied very easily at any period of the anæsthesia, while it is sometimes difficult to quickly apply or reapply a clamp with one hand. One or two chief points for guidance in the use of this modified method have already been indicated, but the last and not the least remains to be noted and concerns the question of an assistant to the anæsthetist. In any dental operation where more than a few teeth have to be extracted under gas in the ordinary way a dexterous speed is necessary on the part of the operator, and it is often advisable for him to have an assistant who shall help him in the matter of sponging, handing instruments, &c., but if this method of prolonging anæsthesia be adopted the operator can take his time and do his own sponging and the assistant (if only three persons besides the patient be present) may help the anæsthetist, for it is a very great advantage to have some one to change the face-piece for the mouth-tube and if skilled to insert and manage the tube while the administrator concerns himself with more serious matters, such as the condition of the patient and degree of anæsthesia, the command of the head and jaws, the manipulation of the gag, the closure of the nares, the gas-supply, and watches that no blood or foreign bodies be allowed to remain in the mouth. The tube I use has an internal diameter of about ¼ in., is made to fit my Hewitt's gas apparatus, and can be carried in the pocket. The advantages of the method are obvious. It is extremely simple and adaptable, needing no cumbrous, complicated, or novel apparatus, and can be effectively applied to probably the large majority of patients who can take gas in the usual way, doing away with the need for many a second sitting for extraction, saving time and trouble to both patient, anæsthetist, and operator, and also perhaps sparing the patient the mental discomfort of anticipating a second administration. I use the modified method in most cases (at the Dental Hospital) requiring a longer anæsthesia than usual.

The disadvantage of the method is that it needs some practice on the part of the anæsthetist and also on the part of the assistant, if one be present, to successfully keep the tube out of the way of the operator. I do not think, as I said earlier, that for really long or severe dental operations the original method of Mr. Coxon or this modified one will or ought to replace the administration of gas and ether, but both should hold a place midway between the ordinary gas inhalation on the one hand and the use of gas followed by ether on the other.

Birmingham.

THE DIAGNOSIS OF HYSTERO-EPILEPSY FROM STATUS EPILEPTICUS.

BY WILFRED R. KINGDON, B.S., M.B. DURH.,

RESIDENT MEDICAL OFFICER OF THE TICEHURST ASYLUM, SUSSEX; LATE ASSISTANT MEDICAL OFFICER TO THE MALE SIDE OF THE BIRMINGHAM CITY ASYLUM.

WE are indebted to French writers, and especially to Professor Charcot, for the more important descriptions of hystero-epilepsy; indeed, the condition appears to be much more frequently found on the continent than in England. When met with in the Anglo-Saxon race this disease seems to be not infrequently of such a type as to be easily mistaken for status epilepticus by those who are unaccustomed to see epilepsy in its severer forms, and for this reason I venture to think that some short account of two cases which it has been my fortune to see during the past two years will not be altogether without interest.

CASE 1.—About sixteen months ago I saw a young woman, seventeen years of age, who was supposed to suffer from epilepsy and who had had that morning what was said to be "status." She was of a highly neurotic family, two or three relatives were described as "hysterical," and, if I remember rightly, a grandfather had attempted his life and ended his days in a lunatic asylum. The patient had been what some would call "over-educated," but which I would prefer to describe as improperly educated—in fact, "crammed." I elicited after some difficulty the following facts concerning the "status" which was said to have taken place. She had been melancholy for a day or two and that morning had complained of pain in the left iliac region and great tenderness when the part was palpated. A feeling of suffocation ushered in the actual attack, followed by fixation of the pupils and then a well-marked tonic stage. The clonic stage was less marked and gradually passed into a condition of violent gesticulations combined with attempts to strike her head and injure those around her. This would continue until apparently she was thoroughly exhausted and then she would gradually become quiet and pass into another convulsion. The patient had been taking at one time and another bromides and the *dragées antinerveuses de gélineau*, but without, it seemed, much result.

The fact of the tongue not having been bitten, the kind of movements (as though with a purpose or object), the struggling with those who were restraining her, the length of each fit, the "something rising in her throat" which she described, and, last of all, the absence of any good result from

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the treatment of her previous condition led me to believe this to be a case of hystero-epilepsy.

CASE 2.—The patient was a neurotic-looking woman, twenty-two years of age, recently married, who had been weakened by an attack of influenza a short time before. During her school days she had had two or three "fits" of some kind, this being, so far as I could gather, when she was about the age of puberty. It was after a hard day's sight-seeing at Versailles—a lot of the time having been devoted to looking at pictures—that the attack came on. She had gone to her room thoroughly worn out to get ready for dinner when she felt tremulous and very nervous, even going so far as to say that she had a feeling that "something dreadful" was going to happen. She sat down to rest a few moments, but had not been on the chair more than two or three minutes when with a shriek she fell on the floor and was seen to be convulsed. When I saw the patient she had had one fit and another was just commencing. The tonic stage was well marked, the back and legs were extremely rigid, and the former was slightly arched. The pupils were dilated and fixed. This lasted for about 25 seconds and then the face began to twitch, the eyelids began to open and shut rapidly, and the to-and-fro movements of the arms and legs quickly followed. Frothy saliva escaped from the mouth, but was unmixed with blood and the face was but slightly livid. For about half a minute these movements were quite epileptic in character, just to-and-fro movements without aim or object, but gradually they began to lose this characteristic, she began to strike her head violently on the pillow as though she wished to injure herself, and she kicked out at us and attempted to bite our hands. She would pause in the midst of all this and remain quite still with her head a little on one side, as though listening (evidently aural hallucinations were present) and then become violent again. The duration of this stage varied from 15 to 25 minutes and then the patient would become quiet and remain in a semi-conscious exhausted condition for a few moments, when the cycle would begin again. All the fits were much alike; the only thing of note was that on one occasion, and one only, was there marked opisthotonos. I administered a hypodermic injection of hyoscine hydrobromate ($\frac{1}{75}$ gr.), which caused the fits to cease and produced five hours' sleep. On awaking the patient was very emotional and far from well, but there was no return of the fits; her tongue had not been bitten and she spoke of having been "choked with something"—evidently "globus."

Hyoscine, we know, is most useful in cases of status epilepticus and in the convulsions associated with general paralysis of the insane; it appears to be of service also in this condition of hystero-epilepsy, and certainly it is much less tedious than the old chloroform method.

Ticehurst.

A CASE OF PACHYDERMIA (VIRCHOW).

BY E. M. LIGHT, M.A., M.B. CANTAB.

THE patient, a man, aged fifty-one years, consulted me in 1895 for a pain on the left side of the throat on swallowing his saliva—nothing else and no pain at any other time. The present symptom had lasted for three months and he gave a history of the same trouble two years previously. He had never noticed the presence of blood in his saliva. He was especially anxious to have the existing condition of his throat cleared up as his father and an uncle had died from cancer. For the last twenty-five years he had suffered from asthma which was worse in autumn, and on inquiry I found that his mother had suffered equally from the same complaint. He weighed 10st. 9lb. and had not lost flesh. On examination with the laryngoscope there was to be seen a distinct ulceration, owing to the break-down of the thickened parts, on the processus vocalis of the left vocal cord, completely corresponding to where he felt the pain and inconvenience. The neighbourhood of the spot was considerably congested. I advised him independently to see Sir Felix Semon, which he did, by whose kindness I received a letter verifying the above condition of the left vocal cord, enclosing a sketch, and stating the case to be one of pachydermia (Virchow). How the patient came by this rather rare affection it was impossible to say, as he lived quietly in the country, was not a great talker, and was moderate in what he drank as in everything else. No local treatment was advised except applications of cold externally (cold compresses at night) and sucking of ice, in order not to irritate still further the part. The importance of resting the voice and of the avoidance of irritants (dust, stale tobacco smoke, hot and peppered food and drinks, &c.) was impressed upon him. Internally, iodide of potassium in 5-grain doses three times a day was prescribed for some time. In about three weeks he wrote to say that his throat was better and the irritation less, but that the medicine gave headache, so the dose was reduced to twice daily. Three weeks later he again wrote to say that he had no pain in the throat and felt quite well. He was advised to continue the iodide of potassium and after another period of six weeks he was again seen by Sir Felix Semon and myself and was pronounced cured. He is alive and well at the present time and has had no return of the affection.

This case is interesting from many points of view. A certain number of authorities, Schrötter among them, deny that a simple chronic laryngitis is ever capable of causing ulceration of the mucous membrane, its presence denoting the existence of specific lesions, tuberculous or syphilitic, and that when one sees lesions apparently ulcerative it is in reality a desquamated mass of epithelial cells or of mucus, without loss of subjacent substance. On the contrary, Störk, Schnitzler, and Heryng[1] consider the existence of "catarrhal" ulcerations as an absolutely undeniable fact. Virchow has confirmed this opinion, his term "erosive" ulcerations denoting a number of simple erosions, as there is never extensive and deep loss of substance. Again, the clearness of outline of the ulcerations, the intense redness of the limiting mucous membrane, the raised appearance of the surface, the seat of the erosions on the internal surface of the cords, the absence of any previous localised infiltration, with the existence of an interarytenoid desquamation with irregular outlines, lead one to consider that the condition is not of bacillary origin, and the spontaneous cure of the erosions confirms this view.

According to Virchow pachydermia is only a chronic inflammation of the mucous membrane of the larynx, a lesion resulting either from a simple catarrh, tubercle, syphilis, or early cancer. The "diffuse" form of pachydermia is especially associated with abuse of alcohol or tobacco, the excessive use of the voice in the open air, or exposure to the inhalation of various forms of dust, while the nodular form is more closely associated with children, women of middle age employed as teachers, actresses, singers, or girls who have been badly taught to sing, and rarely with men.

The nature of the laryngeal affection indicated by the aspect, disposition, and seat of the lesions; the course of events, age, sex, and mode of life of the patient; and the state of the nasal fossæ and pharynx, &c., help to fix a diagnosis. The affection, though chronic and progressive and often rebellious to treatment, is curable, but often enough when one side gets better the other becomes affected.

Wilton-place, S.W.

NOTE ON A MODIFICATION OF THE WEIGERT-PAL METHOD FOR PARAFFIN SECTIONS.

BY E. E. LASLETT, M.B. VICT., B.SC. LOND.,
HOUSE SURGEON TO THE LIVERPOOL ROYAL INFIRMARY.

So far as I am aware no mode of procedure has yet been published by which the Weigert staining method for nervous tissues can be applied to paraffin sections. For some time attempts were made to apply the method which is known in Schäfer's Histology as the Weigert-Pal process to paraffin sections by first fixing them on a slide and, after removal of the paraffin in the usual way, treating with Marchi's solution, followed by the acetic acid hæmatoxylin. This method was found to be unsatisfactory, as, although the nerve fibres were marked out in a more or less definite way, it was seen on close examination that they did not really stain in "ring fashion" at all. In sections stained

[1] Heryng: Revue de Laryngologie, 1er Mai, 1885. Schnitzler: Congrès International de Laryngologie de Paris, 1889.

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by the Weigert method it is the medullary sheath which should be picked out, appearing in cross section as a black ring, whereas in the sections treated as above it was practically the axis cylinder only which retained the hæmatoxylin after differentiation.

The following method was next tried and it has proved an efficient and trustworthy one. The material—spinal cord, medulla, or other tissue—is hardened for about a fortnight in Müller's fluid and then cut into slices which should not be more than about 2 mm. in thickness. These are placed in Marchi's fluid for a week, washed, and embedded in paraffin in the usual way. Thin sections are cut, fixed on the slide by the warm water method, and then after removal of the paraffin placed in the acetic acid hæmatoxylin overnight, preferably in a warm oven, the heat materially hastening the process of staining. After washing they may be passed into a saturated solution of sodium or lithium carbonate, by which the colour is changed to a bluish black. They are then differentiated by the Pal method, in which process it is advisable to use weak solutions, watching the progress of the change carefully lest the sections, which are very thin, become too much decolourised.

The advantages of the above method are (1) that it is a combination of the Marchi and Weigert methods and is therefore applicable to pathological nervous tissues in all stages of alteration and (2) that it offers the advantages of paraffin over celloïdin as an embedding material, the chief one of which is the extreme thinness of section attainable. In thin sections stained as above the fine medullated fibres of the grey matter show a double contour quite plainly. Hence it should be easy to trace the course of degenerating fibres in the grey matter itself, the regular double contour being then broken up in the characteristic way into black staining droplets of myelin. Provided that the pieces placed in the Marchi's solution are not more than 2 mm. in thickness, sections of the human medulla may be quite successfully stained in this way. Professor Sherrington has very kindly examined my specimens, and he considers the method likely to prove a useful one.

Bolton.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

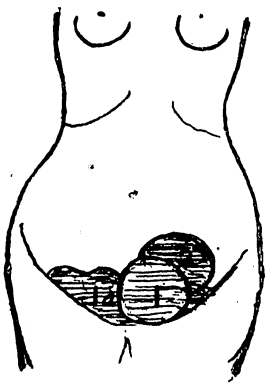
PREGNANCY SIMULATING PEDUNCULATED FIBROID.

BY E. PAGET THURSTAN, M.D., B.A. CANTAB., M.R.C.S. ENG.

I WAS asked on May 20th, 1898, to assist my friend Dr. J. A. Haynes of Perth, Western Australia, to examine a patient under chloroform to ascertain if she were pregnant. The patient, a married woman, who believed herself to be four months pregnant, had had a vaginal discharge with only intervals of a week or ten days ever since the supposed pregnancy began. She came seeking relief from severe pain in the back and in the groins, as well as to relieve her mind of a doubt as to whether she was pregnant or whether she had a tumour. She had milk in her breasts but had had no morning sickness. There were no signs of quickening nor could the fœtal heart or any placental bruit be heard. On palpation the abdomen was found to be enlarged and a tumour of irregular outline could be felt above the pubes. Vaginal examination showed the os high up, patulous, and apparently torn by previous labour. No presentation could be made out. Bimanually at first a round, hard mass (Fig. 1—1) could be felt on the tip of the finger much like a post-partum uterus, while behind it was an irregularly shaped mass (Fig. 1—1*a*). This mass could only be moved within very small limits, as from 1*a* (Fig. 1) to 2*a* (Fig. 2), but the round lump was very freely moveable. On the right side it rose well above the level of the umbilicus and almost merged into the liver dulness (Fig. 2). On the left side it had a lower range, as well as one more limited laterally. Both on the right and the left, however, it was plainly connected to the pelvis. Owing to the presumption of pregnancy no sound was used.

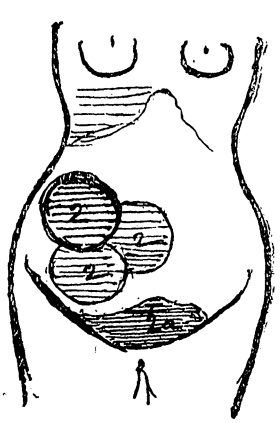
My diagnosis was pregnancy with pedunculated fibroid, but no operation was advisable unless the pain became unbearable or the hæmorrhage proved to be alarming. Dr. Haynes's view was that though pedunculated fibroid was probable there was a possibility that the whole tumour was uterine, as a case had occurred in New South Wales in which an operation had been performed on a supposed

FIG. 1.



1, The round, freely moveable mass. 1*a*, The irregularly-shaped, less freely moveable mass.

FIG. 2.



2, The mass marked 1 in Fig. 1 in its new position. 2*a*, The mass marked 1*a* in Fig. 1 in its new position.

tumour which had ultimately proved to be a uterus with a very elongated neck, a bicornual uterus with one horn extremely developed. Both of us were agreed that pregnancy was probable and that an operation was therefore not indicated.

On May 23rd—three days later—after violent hæmorrhage and severe pain the patient was suddenly delivered of a fœtus with membranes, placenta and all in one mass. The appearance of the afterbirth showed that there had been placenta prævia. The tumours disappeared at once.

This was probably a case of elongated neck of uterus with very thin walls allowing the fœtal head to be felt through the abdominal wall as a floating tumour. It shows the need of caution in the diagnosis of abdominal tumours.

Perth, Western Australia.

DIPHTHERIA OF THROAT, NARES, CONJUNCTIVÆ, AND URETHRA.

BY W. HERBERT GREGORY, M.D., C.M. EDIN.

ON June 6th, 1898, I was summoned to attend a man aged twenty years. The history was that he had felt "shivery" for a day or two previously and had some difficulty in swallowing. His fauces, tonsils, and uvula were deeply congested but not patchy, and the cervical glands were greatly swollen. I diagnosed the case as one of commencing diphtheria and ordered a lotion of perchloride of mercury (1 in 2000) to be sprayed frequently and another lotion of 1 in 500 to swab the throat three or four times daily. I also gave 20 minims of tincture of perchloride of iron and 1 grain of sulphate of quinine every three hours. Strong soups, milk, and alcohol were also given. On the following day (June 7th) his temperature had risen to 101·8° F. There was a greyish-white membrane on the tonsils and uvula and an acrid discharge from the nares indicating extension to the nasal mucous membrane. There was also great swelling of the lower eyelids. On June 8th his temperature had risen to 103·8° and the membrane had spread over the soft palate. The discharge from the nares had increased, the eyelids were very swollen, and there was membrane on the palpebral conjunctivæ. There was also a patch on the anterior lip of the meatus urinarius causing difficulty in micturition. I had by this time received a supply of anti-diphtheritic serum from Messrs. Burroughs, Wellcome, and Co., and of this I injected 20 c.c. Improvement rapidly took place, but a similar dose had to be repeated on three occasions owing to rise of temperature. The case progressed

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without a single drawback, the membrane quickly disappearing from all the situations mentioned. I feared greatly that the corneæ would be destroyed, but this fortunately did not take place and the eyes have quite recovered. About a fortnight ago I had the secretions from the mouth and throat examined by the Clinical Research Association and no Klebs-Löffler bacilli could be found. There has so far been no sign of post-diphtheritic paralysis and the patient is now at the seaside and in excellent health. A curious point is that he had diphtheria six years ago. I venture to quote this case because of the unusual number of mucous membranes simultaneously involved and to show the rapidly curative effect of the anti-diphtheritic serum in a case more than ordinarily virulent.

Beverley.

EXPULSION OF ENTIRE UTERINE CONTENTS AT THE SEVENTH MONTH.

By W. F. GARDENER, M.R.C.S. Eng., L.R.C.P. Lond.

THE patient was a married woman, aged thirty-five years, a multipara. At the time of her delivery she was in the last stage of pulmonary phthisis, unable to lie down at all and greatly emaciated. She was seen on the morning of the day of her confinement and had then no pains. During the afternoon she sent for the nurse whom she had engaged to attend her during her confinement as she "felt her pains coming on." The nurse found these to be slight and infrequent and left her with instructions to send again if they did not leave her. In the evening she sent for the nurse again, shortly after whose arrival the pains became suddenly strong, and with two or three violent straining efforts the child, contained in the membranes, with the placenta, was suddenly extruded into the bed. On my arrival I found the uterine contents left *in situ* as they had been born. I immediately ruptured the membranes, but there was no movement of the child, which had apparently been dead for some hours. The uterus was firmly contracted and there was no further hæmorrhage. Of this there had been a slight amount at the birth but none whatever previously. The patient died during the following night. If the uterine contents were absolutely untouched, as the nurse asserted, there was not placenta prævia, as, judging from the position on the bed, the placenta came last.

Sydenham, S.E.

PRIMARY MENSTRUATION AND FIRST PREGNANCY IN MIDDLE LIFE.

By J. F. WOLFE, M.B. Edin.

THE following case deserves to be recorded on account of the great rarity of similar phenomena. A married woman, aged forty-five years, menstruated for the first time about eighteen months ago. When about nineteen years of age she was treated for amenorrhœa at the Portsmouth Hospital for a period of three or four months, but never had the slightest symptom or sign of menstruation until when in her forty-third year she was seriously frightened by an idiot (a step-daughter living in the same house). Menstruation thereupon commenced on the same day and lasted two or three days, from which time up to the date of impregnation, she menstruated but a few times and not at all regularly. The labour, which came on at full term of pregnancy, was much shorter than might have been expected, lasting not more than thirteen hours; the presentation was left occipito-anterior; the pelvis was roomy; forceps were not required. There was apparently nothing unusual about the external genitals, the mammæ were fairly well developed, and milk came freely on the third day. The patient has had seven brothers and two sisters, all of whom died under five years of age. She herself (the youngest) never had any serious illness, but is rather anæmic and has suffered from frequent headaches (not periodically) which do not appear to have lessened in frequency or severity since menstruation started. She has been married eleven years, her husband is healthy and has been living with her all the time. He had seven children by his first wife, all of whom are alive and healthy with the exception of the one above mentioned. For permission to publish this case, which as far as I can ascertain is unique, I am indebted to Mr. H. P. Gaston of Southsea, for whom I attended the patient.

Portsea.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ROYAL FREE HOSPITAL.

A CASE OF EXTREME COLLAPSE TREATED ON THREE OCCASIONS BY THE INTRAVENOUS INJECTION OF SALINE SOLUTION.

(Under the care of Mr. BOYCE BARROW.)

THE treatment to be adopted in cases of severe shock depends mostly on the cause which has given rise to it and the use of intravenous injection of fluid is practically chiefly of value in those cases in which a large amount of blood has been lost. Although occasionally success followed the transfusion of blood and the intravenous injection of milk, yet the results of these methods of treatment were on the whole very unsatisfactory. Even the employment of defibrinated blood as recommended by Panum of Copenhagen in 1863 was no more successful, and the operation was generally followed by a rise of temperature, possibly due, as explained by some, to fibrin ferment which had been set free in the process of whipping. The use of saline injections into the veins has now entirely replaced all other forms of transfusion. Many complex mixtures of various salts are recommended, but they take time to prepare and there is no evidence that the results following their use are any better than may be obtained by employing a simple solution of common salt of the strength of 1 drachm to the pint. The more extensive present use of the intravenous injection of saline solutions is in great measure due to the advocacy of this method by Dr. William Hunter in 1889. For the notes of this case we are indebted to Mr. Reginald Hayes, late house surgeon.

A delicate boy, fourteen years of age, who was suffering from cleft palate, was admitted to the Royal Free Hospital in January, 1897, with sinuses of the hip which had troubled him for nearly two years and for which some half-dozen operations had been performed elsewhere. For six months he had worn a Thomas's splint and during the past four weeks abscesses had formed in and around his right groin for which he had been treated at the local infirmary. An examination of the hip made it evident that there was a considerable amount of disease and in a week's time he was anæsthetised with chloroform (which was soon changed for ether) with a view to a more thorough investigation of his condition being made. He lost a good deal of blood in consequence of the considerable amount of fibrous tissue in which some large vessels were embedded making it difficult to secure them rapidly. Extensive disease of the pelvis, great trochanter, and upper third of the femur was found, a good deal of carious bone being removed and the cavity being finally packed with bicyanide gauze. Towards the close of the operation the patient's pulse became so feeble that brandy and strychnine were injected subcutaneously and an enema of hot port wine was administered while he was in the theatre. On removal to the ward his legs and arms were enveloped in cotton wool and were bandaged from the extremities upwards; the foot of the bed was raised and the patient was surrounded with warm-water bottles. Nutrient enemata with brandy were ordered to be administered every three hours as vomiting was troublesome, but as his condition got gradually worse, the temperature falling to 96° F. and the pulse becoming feebler and of a running character and all ordinary methods having failed, at 10 P.M. (six hours after the operation) over two pints of normal saline solution at 100° were injected into the left median basilic vein. Marked improvement was apparent for a couple of hours, when the patient became unconscious, with pupils widely dilated, the pulse imperceptible at the wrist and Cheyne-Stokes breathing. He was now apparently moribund, so it was decided again to try transfusion. The right median basilic vein was found

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with some difficulty and over three pints of the saline solution were injected. Towards the end of the injection of the third pint improvement was very obvious; he recovered consciousness and attempted to sit up in bed, smiling and mentioning that he "felt better." The radial pulse became perceptible and of fair volume. He shortly afterwards fell into a sleep which lasted for over five hours and though for several days his condition remained critical he eventually made a good recovery. In about five months time, after a couple of thorough examinations under anæsthetics had been made, Mr. Barrow decided that in consequence of the amount of disease in the pelvic and thigh bones, and taking into consideration the patient's general condition, amputation at the hip-joint would afford him the best chance for his life. This was performed by a modification of the Furneaux Jordan method. Some difficulty was experienced in securing the common femoral artery, which was partially embedded in fibrous tissue and firmly attached to the bone. At this point a good deal of blood was lost. Towards the end the pulse became weak and running and profuse perspiration occurred. On removal to bed the patient became more collapsed; the temperature fell to 95° and the pulse was 146 and grew more and more feeble till it was scarcely perceptible. All the ordinary treatment of shock was tried without any improvement and the patient appeared to be sinking rapidly. Accordingly about 8.30 P.M. two pints of saline solution were injected into the right median cephalic vein, with the result that the temperature gradually rose to normal, and though his condition gave cause for anxiety for several days the lad ultimately made a good recovery. After a few weeks in a convalescent home he returned in the following month, looking very well, in order to have his cleft palate operated on, which was done with a successful result.

Remarks by Mr. REGINALD HAYES.—The case is interesting as showing the striking manner in which this patient reacted to the transfusion with saline solution after failure of the ordinary lines of treatment; and the effect of the second injection after the first operation, when from a moribund condition he recovered sufficiently to smile and speak, attempting to sit up in bed, was very remarkable.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

TWO CASES OF DISEASE OF THE SPINAL CORD FOLLOWING PREGNANCY AND LABOUR.

(Under the care of Dr. J. B. BRADBURY.)

THOUGH there are not wanting arguments in favour of the presence in the blood of toxic substances during pregnancy, and though this theory would serve to explain readily some conditions, such as the nephritis of pregnancy, which are not susceptible otherwise of any easy explanation, yet it must be admitted that in the vast majority of pregnancies there is no evidence of any toxins. The two cases which follow are well worthy of being placed on record, for they are very suggestive of some causal connexion between the pregnancy and the lesion of the spinal cord, though it would be rash to say that one was certainly due to the other. For the notes of the cases we are indebted to Dr. Francis Villy, house physician, and Dr. Burton, late house physician.

CASE 1.—A married woman, aged forty-three years, was admitted into Addenbrooke's Hospital on Sept. 21st, 1896. There was no family history of nervous disease or history of syphilis. The patient had been the mother of eighteen children and had had two miscarriages. Her health had been good till seven years before admission, when she gave birth to a hydrocephalic child. Pain and weakness across the loins followed this event and lasted for nine months; in a year from the same date she lost the use of the right arm and leg suddenly, no loss of consciousness or other cerebral symptoms occurring. There was no facial paralysis or alteration of sensation. About ten months before admission she began to have severe sacral pain; in five months pain occurred in the left knee also, and from that time she began to lose power in the left leg. The sphincters were never affected. On admission the right arm was weak without alteration of sensation or wasting; the reflexes were lively. The left arm was not affected. Both lower limbs were partially paralysed without alteration of sensation, the right one being more advanced than the left, which was slightly wasted. The knee-jerk was much exaggerated and ankle clonus was well marked on the right side; the left leg was normal in these points. Both legs underwent spasms of rigidity at times. No cranial nerves were affected. Subsequently cramp-like pains occurred in both legs and ankle clonus developed on the left side. A feeling of constriction round the abdomen also occurred but did not amount to a definite girdle pain. Under physostigmine the subjective symptoms improved considerably, though the physical signs were still present at the date of the patient's discharge from the hospital (Nov. 15th, 1896).

CASE 2.—A married woman, aged thirty-seven years, was admitted to Addenbrooke's Hospital on Dec. 29th, 1897. There was no family history of nervous disease. She had never enjoyed good health, but there was no history of previous disease except the occurrence of an ulcer of the stomach eighteen years previously. She was the mother of ten children and dated her present illness from her last confinement seven months before admission. She had had sacral pain ever since that event and had never been able to walk properly subsequently, though there had previously been no such difficulty. For three months the legs had been numb, though there had been a deep aching pain throughout their extent for some time. On admission the cranial nerves and the arms were normal. The sensations of touch, temperature, and pain were diminished almost up to the umbilicus, though they were not abolished completely. The distribution of this altered sensation was not regular, tactile sensation being fairly well developed at a zone round each knee and in the feet. Loss of sensation of temperature was most marked. The plantar reflexes were normal, both knee-jerks were much exaggerated, and well-marked ankle clonus was present on each side. The muscular power of the legs was good, no reaction of degeneration being discovered. The patient stated that her legs had wasted slightly during her illness; they were constantly in a spastic condition. The symptoms became steadily worse in spite of treatment and the patient was discharged from the hospital on March 12th, 1898, in a distinctly less favourable condition than on her admission.

Remarks by Dr. VILLY.—The symptoms of lesion of the spinal cord were in each of the above cases so marked and followed so closely after labour that a relation of effect and cause between the two occurrences suggests itself very strongly. Such a relation does not seem to be improbable *a priori*, for it has long been recognised that pregnancy (apart from any septic change due to labour) is a not very uncommon cause of peripheral neuritis.[1] Moreover, there are many who believe that in normal pregnancy there is a general toxic state[2] and such a toxæmia is a recognised precursor of certain diseases of the central nervous system; for instance, syphilis, typhus fever, influenza and other similar diseases may precede lesions of the central nervous system. I can find very little recorded of the production of such diseases by pregnancy. Sir William Gowers[3] mentions that primary spastic paraplegia has in several cases succeeded prostration after childbirth or abortion, or has commenced during lactation, but he gives no further account of such cases. Turney[4] mentions a patient in whom anterior poliomyelitis followed about a month after labour. To prove that the nervous lesions in the two cases in question were actually caused by pregnancy or labour would be a very difficult matter, for not only would it be necessary for such a purpose to exclude the recognised antecedents of similar diseases, but it must also be shown that mere coincidence has not simulated cause and effect. Though much more extended observations than the present ones would be necessary to exclude this last possibility, yet the cases seem to be sufficiently striking to suggest more than coincidence, and it is hoped that this note may serve at least to draw attention to the subject. It will be noticed that in each of the above cases the period of onset followed a considerable time after labour, a course which is at least unusual in peripheral neuritis. In both instances the symptoms were chiefly those of lateral sclerosis, though plainly the lesion was not of the pure form of that disease.

[1] Reynolds: Brit. Med. Jour., Oct. 16th, 1897. Turney: St. Thomas's Hospital Reports, vol. xxv.
[2] Clifford Allbutt: THE LANCET, Feb. 27th, 1897.
[3] Diseases of the Nervous Systems, second edition, vol. i., p. 443.
[4] Loc. cit., p. 38.

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Reviews and Notices of Books.

Diabetes Mellitus and its Treatment. By R. T. WILLIAMSON, M.D., M.R.C.P. Lond., Medical Registrar, Manchester Royal Infirmary. Edinburgh and London: Young J. Pentland. 1898. Pp. 417.

DIABETES mellitus is a disease upon which physicians delight to theorise; the literature on the subject is immense, and there is probably no condition on which more opposite opinions are held by scientific men. Dr. Williamson has succeeded in producing an excellent *résumé* of the various views held as to the pathology of the disease as well as in giving us a large amount of information as to the symptomatology and treatment of the complaint based upon his own experience. After an introductory chapter the author deals very fully with the many tests which have been introduced for the detection and estimation of grape sugar in the urine. He speaks highly of phenylhydrazin as a clinical test for sugar and describes a simplified method of applying it. The reagents, he says, do not readily decompose and the test is easily carried out and consequently is very suitable for clinical work. It is very sensitive—more sensitive than Fehling's test and the fermentation test—but it is not too sensitive and gives no reaction with normal urine. It is also of especial value as a *negative test*—that is to say, a urine which gives no reaction by this method may be declared quite free from sugar for practical purposes.

Chapter III. deals with physiological considerations and demonstrates that the author has given much careful consideration to every detail of his subject. In Chapter IV. Experimental Diabetes and Glycosuria are discussed, the author remarking that "the theories which have been put forward to explain diabetes mellitus are exceedingly numerous. ..... The riddle has not yet been solved and probably the day is far distant when a satisfactory answer will be given. Nevertheless, many important facts have been ascertained and experiments on animals have furnished much interesting information." Dr. Williamson again shows his capabilities of sifting the information he has obtained, rightly deciding to refer only to the more important results of experimental work in a book devoted mainly to the clinical side of the subject.

Extremely interesting is the chapter on the Etiology and Etiological Relations of Diabetes and we would especially draw the reader's attention to the remarks on the relation between diabetes mellitus and lesions of the pancreas. Dr. Williamson considers that it is very improbable that all the varied pancreatic changes which have been recorded in diabetes are the *result* of the disease; but, on the other hand, he believes that in *certain cases* diabetes is *directly due* to pancreatic disease. The symptomatology of the disease, the complications and pathological changes in connexion with the various systems, together with diabetic coma, occupy three long chapters and form a most excellent description of the clinical aspects of the disease given by one who has evidently exceptionally good powers of observation and has made the most of the opportunities he has had for observing patients suffering from diabetes mellitus. The chapter on Treatment will naturally receive great attention from the reader and may be the subject of some adverse criticism, but on the whole we certainly agree with the system adopted by Dr. Williamson. The chief objects to be arrived at are (1) to diminish the amount of sugar in the urine and blood, to diminish the amount of urine, and to relieve thirst. These points are appreciated by everybody, but often the medical man proceeds no further unless there are (2) various complications which require treatment. There is a third object, however, which is often neglected—namely, to increase the weight, or at least to maintain it (except in those mild cases in which the disease is accompanied by obesity) and to improve the general condition. Dietetic treatment naturally holds the first place and the author's remarks are most full and valuable. He emphasises Minkowski's division into the mild and severe forms and gives an elaborate description of the diet to be ordered in each. Comment is also made on the various drugs which have been suggested, the administration of opium being especially commented on. Taking the book as a whole, we can cordially congratulate Dr. Williamson on the success of his labours, and our readers will find it a first-class book of reference.

The Wonderful Century; its Successes and its Failures. By ALFRED RUSSEL WALLACE. London: Swan Sonnenschein and Co., Limited. 1898. Price 7*s.* 6*d.*

A RECORD of the failures and successes of "The Wonderful Century" by a great thinker will command the perusal of all intelligent people. There are those who join issue with Alfred Russel Wallace on certain of his opinions—ourselves among the number—but few, we imagine, would find a place for polemics when considering the enormous advances made in this wonderful nineteenth century. Advances they assuredly are when we reflect upon the present state of the sciences—medicine, chemistry, physics, astronomy, geology, &c.—compared with the condition of our knowledge before Queen Victoria came to the throne. The successful study of these has placed the human race on a footing never reached before. Modern comforts are the fruit of it, accelerated modes of travelling, cheap as well as good food and clothing, rapid transference of thought and communication of ideas, and lightning communication of occurrences are all the outcome of man's curiosity and of this curiosity being followed up by successful discovery. In short, it is pre-eminently the age of discovery, and the progress of inventive genius is still maintained. Each discovery suggests fresh issues, fresh issues beget further discovery, and thus the giant strides in civilisation are made day by day. These are the "successes" which Mr. Wallace forcibly and delightfully recounts in 150 pages in Part I. of his book. But the "failures" occupy 230 pages in Part II. Judging therefore from the length of treatment of the two sides of the story the "failures" are in the majority and would thus belittle the title of the book. Over 100 pages—that is nearly a half of the whole section—are devoted to Vaccination a Delusion: its Penal Enforcement a Crime. Perhaps it occurred to the author that as he accounts vaccination as one of the most conspicuous failures of the age he could astutely find a place for it in the present volume to bring it into bold relief from his point of view with what he accepts as the "successes" of our time. Treated, however, at such a length it might have occupied a separate work. But without this section the "Wonderful Century" would have been a thin volume. Perhaps, after all, the title of the book is more attractive and agreeable to the average reader than vaccination. We have before expressed our admiration and respect for the great mental grasp of natural laws which, as everybody knows, Mr. Wallace possesses, but vaccination is a subject upon which he cannot claim to have any special knowledge, as he is neither a medical man nor a pathologist. Statistics, it has been said, may be made to prove anything. With Mr. Wallace vaccination "is no longer a question of opinion but of science, and I have (he concludes) the most complete confidence that the result I have arrived at is a statistical and therefore a mathematical certainty." He deals more broadly and liberally with

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hypnotism and psychical research and "the neglect of phrenology," but again breaks out in Chapter xix., on Militarism, the Curse of Civilisation; in Chapter xx., on the Demon of Greed; and in Chapter xxi., on the Plunder of the Earth. Despite all this the work must be admitted to be a literary and scientific contribution of no mean order, as might be expected of an author who has written so abundantly, wisely, and fruitfully in the annals of one of the most important branches of science.

On Failure of Brain Power (Encephalasthenia), its Nature and Treatment. By JULIUS ALTHAUS, M.D., M.R.C.P. Lond., M.R.I. Fifth Edition, Enlarged and Revised. London: Longmans, Green, and Co. 1898. Pp. 270. Price 5*s*.

IN this work Dr. Althaus describes the condition commonly spoken of as neurasthenia but which he prefers to call encephalasthenia. It is an affection which notoriously involves much real suffering to patients and much inconvenience to their friends and often to their medical attendants. By some it is regarded as an exhibition of weakness merely requiring an effort of the will to "throw it off," by others as a "psychosis," a morbid mental condition, whilst by Dr. Althaus it is regarded as due to definite disease of certain special areas in the brain. After a historical sketch of the literature on loss of brain power Dr. Althaus gives a more or less popular account of the structure and functions of the brain. He describes with some fulness the "association centres" of Flechsig, which are shown in a diagram. These it will be remembered are districts in the brain which were shown by Flechsig to become myelinated much later after birth than the sensory centres, and he formulated the hypothesis that these were "association centres" connecting the various sensory spheres and specially subserving mental processes. The "posterior association centre" in the temporo-sphenoidal, parietal, and occipital regions is regarded as specially associated with high intellectual work, the "intermediate" as the association centre for language, and the "anterior centre" in the first and second frontal centre "contains the most essential elements of self-consciousness. It regulates our actions, enables us to judge our own performances, and tells us what to do and what to avoid. Disease of this centre changes the perception of the *ego* as an active being; it diminishes or destroys personal initiative, and prevents us from fixing our attention. Irritative disease of this centre causes either unmeasured self-conceit or self-depreciation, while decay of it leads to indifference, self-oblivion, and impaired judgment" (p. 65). All this may be interesting speculation, but it remains pure hypothesis now as much as when Flechsig first enunciated it. But Dr. Althaus speaks as if it were unquestioned, and when at the end he comes to treatment we find that he bases his treatment with great assurance on these hypotheses. "The principal remedy ..... is electricity." The constant current carefully graduated is to be employed and the electrodes are to be applied to these "association centres"—to the anterior centre "in cases where self-consciousness is exaggerated or perverted, self-control deficient or wanting, personal initiative and decision absent or diminished, and where it is difficult to fix the attention. ..... The posterior association centre has to be acted upon whenever the normal interpretation of external impressions is suffering and where the thinking power is more or less in abeyance, with absence or flight of ideas and foolish notions on persons and things" (pp. 262, 264). Dr. Althaus writes with much earnestness and appears to have convinced himself that the success which he claims to have had is due to restoration of these unproved and, we think, rather improbable functions enjoyed by definite areas of the brain. The book contains a great deal of information about the nervous conditions which are grouped under the term "encephalasthenia"; but the title of the book leads us to expect guidance on the nature and treatment of the disease, and on neither of these subjects do we think that Dr. Althaus's teaching is well founded.

A Text-book of the Practice of Medicine. By JAMES M. ANDERS, M.D., Ph.D., LL.D. London: The Rebman Publishing Company. 1898. Price 36*s*.

THERE seems to be no pause in the steady flow of new text-books of medicine and surgery, so that year by year the choice of the student becomes more embarrassing. He may well envy his forerunners of a past generation who were limited in their selection to two or three works of acknowledged merit which appeared in new editions with unceasing regularity. To-day, in addition to fresh editions of old favourites the student is confronted with entirely new books by teachers who must find it increasingly difficult to so compile their material as to justify the addition to the library of the medical school. No doubt, so rapid are the advances of knowledge, each successive text-book contains something which its predecessors lacked, just as the latest edition of such a work comes to bear very slight resemblance to the original from which it sprang. It is obviously impossible for any author of a text-book to impart much novelty into his work, other than the introduction of fresh facts furnished by the progress of science, but it is essential for the success of his teaching that it be well systematised, clear, and precise, with due regard to the relative importance of the facts with which it deals. The work before us seems to fulfil these conditions. It is free from redundancy, it is planned on an intelligible basis, and is obviously prepared by one who has had experience in teaching and knows the student's needs. The author is Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia, and he writes with full appreciation of the bearings of modern science. We note, for example, the inclusion of lobar pneumonia amongst the infectious diseases, and the description of all forms of local tuberculosis, including pulmonary phthisis, under the general head of Tuberculosis. He gives clear directions of the bath treatment of typhoid fever, appraises the value of the antitoxin treatment of diphtheria, describes fully the hæmatozoal origin of malaria, the amœbic origin of dysentery, and so on. There is no need to discuss his chapters in detail, but we may call attention to the extensive introduction of tabular comparisons between allied diseases which summarise the leading points in their differentiation. We are not altogether convinced of the utility of such comparative lists, which are perhaps best left to the student himself to compile; but we must say that they are here judiciously drawn up and may prove of assistance to teachers if not to students. The book as a whole is very complete and it deserves a prominent place amongst medical text-books. It is, moreover, very well printed and illustrated and possesses a copious index.

BRITISH ASSOCIATION.—In connexion with the forthcoming visit to Bristol of the British Association for the Advancement of Science it is stated that the number of foreign guests promises to exceed all anticipations. In addition to the list of excursions already announced in THE LANCET additional ones have been arranged for Exeter, Plymouth, and Torquay. The visitors will begin to arrive in Bristol on Monday, Sept. 5th, and on the following day the Cabot Tower will be opened by the Marquis of Dufferin. The Presidential Address will be given on the evening of Wednesday, Sept. 7th, and the sectional meetings will commence the following morning.

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THE LANCET.

LONDON: SATURDAY, AUGUST 6, 1898.

SIR T. GRAINGER STEWART, standing as successor to ALISON, CHRISTISON, STOKES, and ACLAND as President of the British Medical Association, may be excused for lauding his office and may be congratulated on his address. The address—a full abstract of which we were able to publish last week—was not in any sense a disclosure to the profession of new truths in pathology or therapeutics. It covered a large number of subjects affecting the relations and efficiency of the profession, any one of which might have occupied the whole of his time. But in his selection of topics and in the broad judgment which he passed on them it may safely be said that he expressed opinions which any of his illustrious predecessors would have approved. Some of our readers will not agree with him in his objections to a one-portal system. He recognises the demand for this system but thinks the legislature was well advised in retaining the many portals which exist. He considers that separately they are capable of being made to do good work; that while there should be a minimum standard it is well to have a variety of qualifications, some of a humbler sort and easily acquired, others of a higher order and more difficult to attain; and he thinks it would pass the wit of man to devise a method by which either for the whole kingdom or for each division of it one equitable and trustworthy entrance to the profession could be planned. These are very interesting but very debateable propositions. We are not prepared to say that they do not contain a good deal of truth which may be easily overlooked in a superficial discussion of the one-portal system, but it is certain that the many portals which now exist do not command respect either by the minimum which they enforce at the one end of the scale or by the higher standard which carries University honours and titles at the other. If the many-portal system is to be maintained two things are essential. The minimum standard must be more severely defined than at present and the General Medical Council must be entrusted with the function of determining whether the University examinations are what they pretend to be—that is, higher in standard than those which are supposed to represent a mere pass examination. One of the questions which every student of medical politics must feel to be pressing is whether any examination entitling him who passes it to a qualification to practise and to a place on the Medical Register should be of a really humble sort in the sense of being easy of acquirement. The humblest worker in the most squalid district has the same problems to encounter as the practitioner in the most fashionable district of London. Disaster and discredit will follow ignorance. We know the arguments for humble qualifications and we see how the druggist with no qualifications at all treats half the diseases of the public. But the remedy lies not in imperfect education and humble qualifications, but in that sound training which forms the true medical man and differentiates him from a mere dealer in drugs.

The part of Sir T. GRAINGER STEWART'S address which was most opportune and which commanded the widest attention was that in which he described the duty of the legislature in the prevention of disease. He pointed with just pride to the enormous progress which has been made in the reduction of the mortality from the principal groups of disease. The annual death-rate from disease in England and Scotland has fallen in less than fifty years by more than one-fifth. The proportion of deaths from zymotic diseases as compared with other causes has diminished by more than one-third. The treatment of disease of individual organs is much more successful than it was a few years past. Even the mortality of tuberculous diseases is less by one-third than it was in the sixties. We pointed out a few weeks ago that in Liverpool this was most unmistakably true. It seems more strikingly so in Glasgow, which once ran Liverpool hard in all which was unsavoury and unsanitary. Sir T. GRAINGER STEWART tells us that comparing the last seven years' mortality from tuberculous disease in Glasgow with that of the seven previous years the deaths from pulmonary tuberculosis are nearly one-fifth less and the life of those stricken is much longer. This fact alone justifies Sir T. GRAINGER STEWART'S statement that the country has awakened during the QUEEN'S reign to a sense of the benefits of sanitary legislation, without which such enormous saving of life could not have been effected. It need not be said that such legislation has been suggested by the medical profession and that the Acts which have been so instigated have been practically administered by the same profession. It might have been expected after an Education Act had been in operation for a quarter of a century, and such great results could be shown to have resulted from legislation inspired by medical science, that the public would have been eager to receive further teaching from the profession for the control of preventable disease. Here the President had to confess the limitation of popular intelligence and to point out, as he did most ably, the disastrous influence which is being exerted on the English public and the Parliamentary mind by a "comparatively small group of men" who have fastened on the subject of vaccination with a determination worthy of a better cause, have maligned the process, have belittled its advantages and have magnified and multiplied its slight risks. Sir T. GRAINGER STEWART is a generous and sanguine man and in spite of all which we have lately seen retains faith in the community coming to its senses and to a just appreciation of what it owes to the medical profession. We have not the same fears that he has expressed as to the inclusion of a conscience clause in the Vaccination Bill—our views are fully expressed in a leading article this week—but we fully endorse his claim that the medical profession has established its right to be heard with respect on all questions of public health, while the medical voice on the efficiency of vaccination is practically unanimous.

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We must conclude, though we have not referred to all the subjects touched on by the President in his comprehensive address. He spoke in terms of praise of the work of the General Medical Council in raising the standard of preliminary examinations, in extending the period of medical studies, in its opposition to "covering" and other forms of unqualified practice, and argued for the extension of its powers. Not the least effective part of his address was that in which he discussed the medical organisations within the profession, and notably the British Medical Association, the objects of which are the promotion and advancement of medical and allied sciences and the maintenance of the honour and the interests of the medical profession. With the praise accorded to the Association and its work we concur. It is a great agency for good in the profession—too great a one to be made the tool of any small cliques or the subject of rash experiment. If it continues on its old lines with courage and discrimination it will deserve fifty years hence even more than it does now the praise accorded to it in Edinburgh by Sir T. GRAINGER STEWART.

THE Address in Psychological Medicine delivered by Sir JOHN BATTY TUKE at the concluding general meeting of the British Medical Association is in several ways very encouraging to neurologists. The speaker was certain of having a congenial and familiar theme whatever part of the wide field before him he might select for his subject on this occasion, and in discoursing on Modern Conceptions of the Etiology of the Insanities he was able to refer with justifiable satisfaction to the great progress which has been made in our knowledge of cerebral physiology and pathology. It is no new thing for the researches of the laboratory to bear fruit in the treatment of disease. The elucidation by Pasteur of the nature and effects of microscopic organisms paved the way for the practical work of Lord LISTER by which operative surgery has been revolutionised and the subsequent vast developments of micro-biology have profoundly modified our views with respect to the diagnosis and pathology of a most important class of diseases. In the case of diphtheria, for instance, laboratory methods of diagnosis not only tend to supplant clinical experience, but have introduced fresh complications into the problem by the discovery that the presence of pathogenic organisms is sometimes compatible with apparently perfect health. These are the triumphs of the microscopist and the experimental physiologist, but to those who have the responsibilities and anxieties of lunacy practice, whether as consultants whose advice is sought in doubtful cases of mental aberration or as superintendents of asylums for the certificated insane, it has long seemed as if the progress of scientific discovery did little or nothing to clear away the difficulties of their specialty. Even after the asylum treatment of insanity had been remodelled by the introduction of humane modern methods the heads of such establishments were, and still are, too often doomed to a system of indefinite expectancy in the matter of special treatment. The hardships of enforced detention may be alleviated by kind usage, frequent amusements, liberal and wholesome food, varied occupations, and hygienic surroundings, but it is undeniable that a considerable proportion of the inmates are incapable of improvement—a misfortune which is in some cases probably due to the fact that they have not come under medical observation until the malady was so far advanced that the signing of a certificate for their detention could no longer be delayed. Apart from epilepsy and congenital idiocy, the current classifications of insanity were purely psychological, until in course of time it came to be understood that a group of symptoms known as general paralysis—a condition which could often be recognised in a comparatively early stage—tended inevitably to progress by slow degrees to mental excitement, dementia, and death.

Since 1864, however, as Sir J. BATTY TUKE reminded his hearers, the combined labours of microscopists, physiologists, and pathologists have succeeded to some extent in lessening the influence of mere psychology on our conceptions of insanity and have partially replaced it by the surer basis of anatomy. For the names and merits of the foremost workers in this field we must refer our readers to the address itself, but there is no reason for disguising our satisfaction at the circumstance that the names of HUGHLINGS JACKSON and others of British nationality hold a good position in the honourable list. Let us turn now to the brief outline of their discoveries as given in Sir J. BATTY TUKE'S own words:—

"The observation round which all others centre is, to my mind, the demonstration of the mechanism by which impulses are carried from the periphery to the cortex and from the cortex to the periphery. We know that series of fibres exist which, starting from the entire surface of the body, from the muscles, and from the mucous membranes, are collected in the spinal cord and pass upwards to the optic thalami, whence—as demonstrated by FLECHSIG, whose observations have been confirmed experimentally by FERRIER and ALDREN TURNER—they are distributed in three systems to the cortex. ..... It is not necessary for our present purpose to consider where and how the transmutation of peripheral impulses takes place, but it is of importance to emphasise the statement that impulses are not generated in the cell body. As GOWERS says, the old battery idea must be thrown aside. ..... All impulses come from without, a fact which must have important bearings on the question of the adjustment of outer to inner relations. ..... Shortly after the methods of cutting and staining microscopic sections of nervous tissue were discovered the fact was elucidated that marked departures from health were to be found by microscopic examination of the brains of persons dying insane, and the results were embodied in the work of BEVAN LEWIS, in which not only were lesions described in the mass, but differentiation of special lesions in connexion with certain classes of insanity, were demonstrated. ..... In most of the recently-erected institutions for the insane at home and abroad we find separate hospitals provided for the treatment of acute cases. This surely marks the reduction of theory to practice. Instead of the subject of a recent attack of insanity being mixed up with the residuum of chronic cases he is placed in a separate institution, where he is submitted to systematic treatment on hospital principles."

So far Sir J. BATTY TUKE had been addressing himself mainly to specialists in lunacy work, but in concluding he foreshadowed a time when the importance of early treatment of mental disorder would be more generally recognised than at present. Timely treatment would of course have to be conducted largely by the family medical adviser, as

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there is no prospect of the law permitting certification until the symptoms have become definite and well-established, but when the educated public come to know that mental disease is most amenable to treatment in its incipient stage, and that delay in obtaining medical advice is the worst possible policy, there is good reason to believe that certification may in some cases be dispensed with.

Now that the holiday season is once more upon us it may not be out of place to raise a protest against the tyranny of custom and conventionality. Holidays are not only pleasurable, but in many cases an absolute physical necessity. Still, this is no reason why we should allow ourselves to be tyrannised by the idea that we must take a holiday at a particular season and in a particular manner. Even though Society issues a ukase that everyone shall leave town before the end of August we are not absolutely obliged to obey this order. Instead of studying the edicts of fashion we should study the idiosyncrasies of the individual. Doubtless the country is very pleasant in the autumn, but town also is more agreeable during that season. Indeed, it occurs to us that for those who can afford to travel far enough midwinter may be the best time for a holiday. After all, is it not better, especially for those who have a tendency to diseases of the respiratory organs, to escape from the fogs and foul weather of winter than to leave town during the very best period of the year? In midwinter more sunshine and brighter sunshine can be enjoyed on the Riviera than is seen in England during the summer months. Those, therefore, who have reason to fear the English winter climate should postpone their holidays till November or January unless they are in the fortunate position of being able to take two holidays in the course of the year. It must be borne in mind that the custom of the summer holiday came into existence long before the invention of railways and steamships. In those days the difficulties of travelling on the Continent were very great. Only persons with large fortunes could hope to reach a semi-tropical climate during the winter and even then the fatigue of travelling for days, not to say weeks, in a diligence was so great that no delicate person could safely undertake such a journey. It was therefore quite natural that the best time of the year should be selected for the holiday season. Now, however, even families who possess but moderate means can enjoy two summers instead of one in the course of the year. The Riviera winter is brighter than the English summer. The journey South certainly costs more than the journey to any English, Scotch, or Irish resort, but life on the Mediterranean is cheaper—indeed, much cheaper. The very large and fashionable hotels are expensive, but there are many very good second-class hotels on the Riviera where complete board, including wine, can be obtained for 8*s*. a day. It is because these facilities for wintering in a warm, bright climate have only come into existence quite recently that summer still remains the holiday season. In time and for many people this custom might be altered and the holidays taken in midwinter so as to escape some of the worst features of the British climate.

Meanwhile, and for those who are about to leave home now, we would insist that a holiday should secure complete rest, and the best rest is a thorough change of scene and occupation. Above all, there must be no mental worry or over fatigue. Exercise is most beneficial, but the abuse of exercise is injurious. In this respect cyclists are particularly prone to overstrain themselves. In so far as cycles have induced persons, especially women, to take exercise when formerly they took little or no exercise they have undoubtedly contributed to improve the health of the population. On the other hand, many people have been injured by overstraining. In this respect there is a special danger in the organisation of holiday parties with cycles. If the persons composing the party were physically equal in strength and animated with the same spirit of moderation, such expeditions would be as beneficial as, doubtless, they are enjoyable. But this is rarely the case. Some are stronger than others; some find their pleasure in going far and quickly. The others, from a spirit of emulation or simply so as to be agreeable to their companions, also strive to go far and quickly. Consequently they overtax their powers and the holiday may do them more harm than good. The fable of the tortoise should be taken to heart. It is far better to lag behind to-day and live a long healthy life than to go "scorching" ahead at the risk of breaking down to-morrow. He laughs best who laughs last. There is more than one race to be run in life and he wins most who best husbands his strength.

These laws apply to the mind as well as to the body, though it does seem possible to work the mind much more than the body, as witness the ripe old age of great scholars, statesmen, lawyers, &c. But if such men as M. THIERS and Mr. GLADSTONE accomplished an immense amount of mental work they had also a wonderful faculty for rest. The secret of Mr. GLADSTONE'S long life was doubtless due to the fact that he was not only able to sleep easily, but that he was always ready to abandon even the most important, the most urgent task, and to lie down to sleep then and there, whenever he felt really fatigued. That is the true principle. No matter how disappointing or how humiliating to our pride we must stop, and stop at once, when we feel that we are doing too much. After all, a greater, a higher, a nobler strength is required to confess our weakness than to go struggling on. The youth who can calmly endure the jeers and taunts of his companions rather than attempt that for which he feels he is not physically or mentally fit will in the long run prove to be the better man. A holiday must be a holiday and a false pride must not be allowed to convert pleasurable, easy exercise into a painful strain, an injurious competitive struggle. Over-exertion has always been the accompanying danger and evil of all athletic games and sports, and this cause of injury is now more widespread because an enormous number of people who never indulged in athletics have become bicycle riders. It is, therefore, more than ever necessary to preach the doctrine of moderation. So, likewise, with regard to mental exertion. The man whose mind is overstrained by business responsibilities and worries must so plan out his holiday that it shall not occasion him any mental anxiety. In many instances it is the mind far more than the body which needs a holiday, and this fact should

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be carefully considered. Consequently the holiday should be mapped out, not according to custom, fashion, or the example of friends and of society, but only according to the especial physical and mental requirements of the individual concerned.

THE Vaccination Bill was read a second time in the House of Lords on Tuesday last, and the committee stage was to be taken last night (Thursday). At the time of writing we are in ignorance of the fact whether it has or has not been allowed to pass the Upper House unaltered. There has been much frantic advice to the Peers to save the country by casting out the conscience clause which was inserted by the Government at the eleventh hour, but when we regard the majority by which the Bill passed its third reading in the Commons we do not see what ground there can be for such appeals. For it must be remembered that as it left the Commons the Bill was more in harmony with the recommendations of the Royal Commission than it was when first introduced, and be the motives for the change of front what they may it is equally certain that this change was advocated by the great majority of the speakers in the debate on the report stage of the Bill.

But some writers, and responsible ones, have not only appealed to the House of Lords to re-impose compulsion; they have called on the medical profession to speak "in no uncertain tones" in the same sense. We would venture to remind those who write so urgently that our profession has, with a unanimity rendered all the more striking by the fewness of those who hold a contrary opinion, never faltered in its conviction of the efficacy of vaccination. The pronouncement of the Royal College of Physicians of London that vaccination "*properly performed*" and "*duly repeated*" is the "only known preventive of small-pox" expresses these views. That is a proposition which no sophistry can dislodge, which is confirmed by the experiences of every epidemic and is endorsed by those whose office it is to combat such outbreaks by all the resources of science. The characters of small-pox—its high degree of contagiousness, the rapidity of its spread on congenial soil—defy the efforts to suppress it by isolation alone, or to arrest it in its earlier days of invasion; and if vaccination were not at hand to render its remarkable aid the disease would become as common and as widespread in this country as it was in times when sanitary science was unknown. Nor does the fact, dwelt on with so much unction by the anti-vaccinationists, that epidemics occur in so-called "well-vaccinated" communities, affect the truth of the proposition in the least. The medical profession are aware that vaccination does not afford life-long protection and it is because this Bill ignores the highly important factor of revaccination that it fails to secure our sympathy. To ensure a community having the full benefit of vaccination, then, the operation must be "properly" performed—that is, with every reasonable precaution and with thoroughness. The provisions in the Bill for the use of glycerinated calf-lymph and for domiciliary vaccination are intended to meet this condition. But vaccination must be also "duly repeated," and for this there is no provision in the Bill. And, further, the community cannot reap all its advantages, cannot feel secure in their immunity from small-pox, unless every single member has in compliance with these conditions been properly and repeatedly vaccinated. How is this general vaccination and revaccination to be secured? This is a question for the State, not for the medical man, and when politicians call on us to show them the way they are inciting us to step outside our legitimate province.

The whole question may be summed up in a few words. The object aimed at by the State in legislating on vaccination should be to secure the benefits of this safeguard to the greatest possible number of persons. This can be done with varying degrees of success by one of three courses: (1) universal compulsion under penalties; (2) compulsion limited in extent by mitigation and restriction in the number of penalties; or (3) optional vaccination. The first plan, still effectively carried out in Germany with the best results, has been tried for many years in this country with a gradually increasing want of success. The strong opinion expressed by the Council of the Royal College of Surgeons of England in 1893 and reaffirmed the other day in favour of the continuance of such legislation may be a counsel of perfection, but can be nothing more. *Nulla vestigia retrorsum*, and the practical man, especially if he has perused the evidence given before the Royal Commission on Vaccination, must be convinced that in regard to vaccination the policy of "thorough" compulsion is no longer possible in this country. We may deeply regret the fact and may seek to explain it away as the work of misguided fanatics, but it is none the less real and the continuance of the old plan only tends to bring the law into contempt. None of us are blameless in this matter. We have condoned laxity in the performance of vaccination. We have not striven to set forth its great advantages or to diminish its attendant risks. These have been unscrupulously magnified until parents with no fear of small-pox before their eyes have preferred to resist the law rather than subject their children to the supposed dangers of vaccination. The second alternative, modified compulsion with restricted and mitigated penalties, is what the Government Bill intended, coupled with provision for increasing facilities for and diminishing the risks of vaccination. It was hoped that many objections would be removed by these concessions, but the opinions expressed in the House of Commons led the Government to change their plans and to adopt the third alternative and by the introduction of a conscience clause to practically make vaccination optional and not compulsory. This, which has been variously characterised as a piece of political expediency or as yielding to the clamour of a clique, may nevertheless prove to be the most statesmanlike course, though no medical man can view with equanimity the possibility of an outbreak consequent upon a liberal use by the public of the right to conscientious objection. However, if the plan were to reduce the number of recalcitrants it would not attain the objects aimed at unless it were accompanied by provisions for a similar enforcement of revaccination of adolescents. Therefore, we shall not regret the withdrawal of this Bill.

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Annotations.

"Ne quid nimis."

THE FRENCH GOVERNMENT MATCH FACTORIES.

THE Home Office has just issued a short report prepared by Dr. Thomas Oliver on the French match works at Aubervilliers, Pantin, and Marseilles, which he visited during the course of the month of June. From this interesting document we gather that the prevalence of phosphorus poisoning has been very materially reduced since these factories were taken over by the French Government and the trade in matches was converted into a State monopoly. But this improvement was not brought about at once; it was not till 1896 that the French Government appointed a Commission to investigate the matter. The question with which Dr. Oliver does not deal, but which is nevertheless of some practical interest, is whether the action taken by the French Government was more prompt and more effective than was our action in England. Nevertheless from the facts stated in the report it would appear that such is the case. For instance, at the coroner's inquest concerning the death from lead-poisoning of a "dipper" named Henry Wagstaffe, a witness having admitted that he did not read the warnings posted in accordance with the Factory Act, the coroner, Mr. Wynne E. Baxter, exclaimed: "It is a great pity when the Government try to protect you people you won't take the trouble even to read the rules." Dr. Oliver, in his report on the French State factories, when alluding to similar rules for the protection of the health of the workpeople, says that they have "to be read out aloud on the first Saturday of every month, those in charge inscribing in a memorandum-book the date upon which this monthly reading took place." These rules for the French match factories enjoin that no food or drink be allowed in the workshop, but must be left in the dining-room; that before meals the working clothes must be left in the cloak-room and the workpeople must wash their hands with soft soap and water and must gargle their mouths with a gargle specially provided for that purpose. Then only are they allowed to eat. The same precautions are taken on their leaving the works. Further, it is enacted that no one shall be employed under sixteen years of age and that they must first be examined by the medical man, who must certify that they are free from bodily infirmity and contagious disease, that they have been vaccinated or have had small-pox, and that the state of the teeth is good. As a result of these precautions among the 575 men and women employed at the Pantin and Aubervilliers works there has not been a single case of phosphorus poisoning during the period Dec. 1st, 1896, to Dec. 1st, 1897. Yet during that time the methods of manufacture have not been altered, and the ventilation, though effective in the "dipping," was not effective in the "boxing" department. Dr. Oliver concludes that though formerly there were many cases of poisoning there is now apparently a reduction, at least in the severer cases. This is due to raising the age of admission, to medical examination, subsequent close supervision, repeated dental examination, the personal cleanliness of the workers, and immediate suspension on first symptoms of illness, with allowance of two-thirds of the salary while the employé is away from the works. Dr. Oliver further credits the French Government with doing all in its power to discover better methods of manufacture. Chemists and inventors are paid out of the public purse to study the matter, and the result is that a match which will strike anywhere and yet which is free from phosphorus has been invented, though it has not yet become a commercial article.

QUESTIONS OF MEDICAL SECRECY.

TWO questions relating to the observance of professional secrecy have lately been discussed in France. The first was as follows:—Should a medical man reveal to a mother the fact that her daughter is syphilitic? On the one hand it was maintained that if the girl consults the practitioner on her own account he is absolutely bound to secrecy. On the other hand it was held that if the mother brings the girl—who is very probably a mere child—to the practitioner, he has to consider that she is not likely to appreciate the gravity of the disease or the risks of contaminating other members of the family as well as her mother can, and his own common sense must guide him under the circumstances of the particular case as to whether it may not be for the patient's own advantage as well as for that of the family to explain matters to the mother. The other question relates to a case which has recently occurred. A practitioner having been sent for to a family whose regular attendant he was became a witness of a violent scene between husband and wife terminating in acts of cruelty. He withdrew without giving any professional advice or any prescription. Subsequently he was summoned to give evidence in a court of law in connexion with a demand for legal separation of the husband and wife, but refused, claiming that he was bound to professional secrecy, which, it must be remembered, is more obligatory, from a legal point of a view, in France than in this country. The court, however, did not admit the plea and fined him 10 francs. In view of an appeal against this he asked for the opinion of his professional brethren as to his action. Different views were expressed, some holding that what he saw was not a secret confided to him as a medical adviser, for in fact he was not acting in a professional capacity at all and therefore could only have been an ordinary witness, while others thought that having been for a long time the family professional confidant and having been sent for as a medical man he was bound not to divulge what he knew, especially as he might have been pressed in the witness-box to mention circumstances which had come under his notice in previous visits which had been strictly professional. Doubtless, too, it was urged it would create a bad precedent if it were established that one of two disputants might send for a medical man simply for the purpose of ensuring the presence of a witness to some *fracas*, for this would be a degrading position for a medical man, whose work is certainly not that of a professional witness. The case, as a matter of fact, came to no definite conclusion, being withdrawn by the parties themselves.

THE EFFECT OF TELEGRAPH WORK ON THE HEALTH.

IN a paper read before a meeting of railway telegraph clerks in Manchester on March 26th Mr. J. T. Hull, president of the Railway Telegraph Clerks' Association, gave so unfavourable an account of telegraph work in relation to the health of the operators that he not only described it as being responsible for many bodily ailments, but said that there was an extreme probability of its "being the most deleterious in its effects upon the operator of any trade or profession hitherto regarded as dangerous.' Telegraphy, he said, is essentially a mental action, involving principally the auditory nerves. The development of this faculty in a proficient telegraphist may be approximately ascertained by a simple calculation. In ordinary working—that is, reading twenty words per minute, the operator distinguishes about 150 alternations of pitch (on the needle) or duration of beats (on the sounder) and under pressure it is said that as many as 450 may be accomplished. In telegraphy there is also the translation of

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the auditory symbols into visual symbols—i.e., the writing, which implies mental exertion. While normally 120 discriminations per minute may be made of varying sensations the telegraphist never does less than 150 and may do 450 per minute. Without taking the extreme case it may, therefore, be safely asserted that the auditory faculties of telegraphists are about 2½ times as sensitive as those of ordinary persons. In telegraphy it is the uninterrupted continuance of nerve stimulation, the monotony of sound, and the fixity of attention which are injurious, the work being pre-eminently the reception and mental arrangement of monotonous sounds and demanding close and arduous attention. That this condition of concentrated attention is most acutely enervating is the unanimous testimony of all physiologists. During a pressure of work the interference with normal respiration, the increased action of the heart, and the rush of blood to the head may be readily observed. These effects are most noticeable during a spell of rapid sending and are probably due to the physical movements making the attentive effort more onerous. The prevalence of phthisis among telegraphists is clearly shown in the following tables taken from the evidence given by Mr. Garland before the Royal Commission appointed to inquire into the grievances of the Post Office employés:—

TABLE A.—*Showing Comparative Percentage of Mortality from Respiratory Diseases, with Deaths after Fifty-five Years of Age Excluded.*

—	Phthisis.	Other respiratory diseases.	All respiratory diseases.
All adult males	13·8	10·6	24·4
Telegraphists	46·6	12·9	59·5
Grinders (cutlery)	33·1	24·2	57·3

TABLE B.—*Showing Comparative Percentage of Mortality from Respiratory Diseases, all Ages from 15 up to 65.*

Ages.	All males.	Telegraphists.	Grinders.
15 to 25	3·5	18·4	4·3
25 to 35	4·9	23·1	8·3
35 to 45	5·3	12·0	13·6
45 to 55	5·3	4·3	17·7
55 to 65	5·4	0·5	13·4
Over 65	8·2	0·5	6·7
All ages	32·6	58·8	64·0

Mr. Hull further said that he suspected that many telegraphists suffered from a modified form of chorea consisting of a twitching of the fingers in accordance with the telegraphic symbols of the alphabet.

GOFF *v.* GOFF AND GORDON.

WE do not comment upon this case because Dr. Bruce Goff, who has recently obtained a divorce from his wife under circumstances which have been fully detailed in the lay press, happens to be a medical man, but because an accusation was brought against him by his erring wife, one which, had it received the credence of the jury, would have properly ruined his professional career. Mrs. Goff's counsel admitted the indiscretion of his client's conduct and the mendacity of her letters, while all the evidence showed that excellent opportunities were given to the co-respondent, a man with a significant past, to go all lengths with her; but counsel was instructed to deny the commission of adultery and to accuse Dr. Goff of performing illegal operations upon the respondent for the prevention of pregnancy. Such a deed, though it would not have been an excuse for adultery, would have most certainly palliated in an outraged wife some actions of resentment or reprisal and would, therefore, if proven, have much embarrassed Dr. Goff in his attempts to obtain legal relief. The jury with no hesitation whatever, while finding the respondent and co-respondent guilty of adultery, acquitted the petitioner of the odious act of cruelty to which his wife stated that she had been compelled to submit. We sympathise with Dr. Goff in the painful publicity to which his domestic life has been exposed and in the severe interpretation which was put by the learned judge upon his unwillingness to believe the woman he had married to be utterly unworthy and vicious; but we congratulate him heartily upon the verdict that exonerates him from the disgusting charge of procuring criminal abortion upon his own wife.

ANÆSTHETICS AND UNREGISTERED DENTISTS.

DR. R. C. BUIST of Dundee recently wrote a letter to the General Medical Council with reference to the practice of registered medical practitioners administering anæsthetics for dental practitioners not on the Dentists Register, and received the following reply from the Registrar of the General Medical Council:—

"That the members of the Dental Committee agree with the opinion expressed by the Executive Committee that the practice referred to in Dr. Buist's letter is most reprehensible, and recommend that if a charge of 'covering' in connexion with such administration of anæsthetics were brought before the General Council it should be entertained and investigated."

We take it that this recommendation really amounts to a guarantee that such a charge, if brought, would be investigated. It may be said that if registered medical practitioners are prohibited from administering anæsthetics this function will be performed by unregistered practitioners and the risk to the patient, never a negligible quantity, will be proportionately increased. We do not, however, think that this is a danger of which it is necessary to take serious account. Administration of an anæsthetic by an unqualified person is too risky an operation for either the dentist or his assistant to undertake and the probabilities are that he will either operate without an anæsthetic, which will not tend to increase his practice, or will send his patient away to some other practitioner.

HÆMOPHILIA.

IN the July number of the *Birmingham Medical Review* Dr. E. A. Sadler gives an interesting account of a family two generations of which suffer from hæmophilia, the preceding generation having apparently been exempt. The present head of the family is a widow, sixty years of age, living in Ashbourne, Derbyshire. Her husband died about three years ago from senile decay. They were, as far as they knew, quite unrelated before their marriage, thirty-seven years ago, before which time the woman (who, like her husband, comes of a family long established in the district) worked hard in farm service. She has had 16 children, 3 of whom died from infantile complaints in the first few days of life. The remaining 13 comprise 8 boys and 5 girls, the eldest of whom (a boy) at the age of three years, when apparently in perfect health, fell and bit off the tip of his tongue; the bleeding could not be stopped and death occurred on the fourth day. The next two sons and their children have not shown any tendency to the diathesis, nor has the fourth son. The fifth son died at the age of three months from "sunstroke." The sixth son was noticed to become bruised very easily at the time of his first attempts to walk. When he was nearly seven years of age the cutting of a tooth led to hæmorrhage which proved fatal

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after a week's duration. The seventh son, now aged twelve years, has never bled or bruised. The eighth boy early developed the tendency to bruise, but it is diminishing year by year. He has had several troublesome attacks of epistaxis. The joint affection of hæmophilia first showed itself in him at the age of three years. He has had repeated attacks since and they always begin suddenly in the night. The well-known fact that the girls of a family do not themselves exhibit the hæmorrhagic tendency, but that they transmit it to their male children, appears in the present instance. Both the first and second daughters have always been perfectly healthy; they are married and have had each two boys; three of these children are alive and present marked hæmorrhagic symptoms, the remaining one died at the age of three years from a combination of epistaxis with bleeding from the ears and mouth.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

WE report elsewhere the proceedings of the meeting of the council of the above fund which was held on Wednesday and which was presided over by Sir Sydney Waterlow, Bart., in the unavoidable absence of the Lord Mayor. The meeting was well attended and the council refused to be much discouraged by the fact that they have £5000 less to distribute than in the previous year. Sir Sydney Waterlow is doubtless right in regarding the smaller collection, and that also of last year, as due directly to the temporarily distracting influence of the Prince of Wales's Fund, It will be noted that Sir Henry Burdett does not accept Sir Sydney Waterlow's theory of the deficit. When such doctors differ it is a pity that the council did not accept Dr. Glover's suggestion, and ask its Distribution Committee to investigate and report on the causes of the diminished collection. It is certain that His Royal Highness the Prince of Wales would be the first man to regret that his fund should in any way interfere with the success of that Hospital Sunday Fund of which he is himself vice-patron.

PUBLIC LAVATORY ACCOMMODATION FOR WOMEN AND CHILDREN.

A CORRESPONDENT recently wrote to the London County Council pointing out the imperative need which exists in many parts of the metropolis for further free lavatory accommodation for women and children and suggesting that buildings of this description were urgently needed at among other districts the Elephant and Castle. A copy of this letter was forwarded to Dr. Waldo, the medical officer of health of St. George's, Southwark, who made a special report to his vestry on the subject, in which he drew the attention of the vestry to the fact that he had urged the construction of new public lavatories in his reports for 1895, 1896, and 1897. At the present moment there is only one public lavatory for women—namely, that situated in New-alley near the parish church. Plans have been passed by the vestry for the erection of one additional lavatory for men only at the Obelisk and lavatories for both sexes at the junction of the Old and New Kent-roads. As regards accommodation for women alone tenders have been received for the construction of two—at the junction of the two Kent-roads and near the new public library respectively. Dr. Waldo, however, considers that even when these three have been built there will still be need for more owing to the density of the population. There can be no doubt as to the paramount necessity for conveniences of this kind. The want of them—and undoubtedly there is a great want in our overgrown city—is a fruitful cause not only of danger to health but of offences against decency. But we are not so sure that they should be provided by local efforts. Surely their cost should be a charge upon the whole of London, even as the buildings are used by the population of the whole of that city.

THE REPORT OF THE SELECT COMMITTEE ON PETROLEUM.

WE have received the report of the Select Committee on Petroleum, and propose to give the subject the full attention which it deserves at a later date. Meanwhile we may say that the Committee held 53 sittings and examined 85 witnesses, the latter including scientific experts, traders in and manufacturers of both oil and lamps, and public officials. The final recommendations of the Committee included the following points. That the flash point should be raised to 100° F.; that there should be statutory powers to enable the Secretary of State to issue orders affecting the manufacture and sale of lamps; and that information should be spread among the public as to the nature of petroleum and the management of petroleum lamps.

HAMPSTEAD HEATH EXTENSION.

ABOUT £4000 is still required for the completion of the purchase of the Golder's Hill Estate, adjoining Hampstead Heath, and seeing the great boon which the acquisition of this site would confer upon the metropolis we trust that the money will soon be forthcoming. It is confidently hoped by the committee in charge of the fund that they will be able to hand the control of the estate over to the London County Council within the next four weeks and the Council will then decide whether the house and gardens shall be retained as part of the park and dedicated to the use of the public. A scheme, which certainly merits careful consideration, is on foot to turn the house into a natural history and botanical museum in connexion with the Council's technical education work, and the conversion of the gardens and rosery into a botanical garden for students and the public.

THE DEATH OF PRINCE BISMARCK.

THE death of the real founder of the modern German Empire removes from the purview of this world the most prominent figure of the latter half of the present century. With general politics we are not concerned, and it is a happy coincidence that at the time of the death of him who wrought so sore a blow to France a congress should be sitting in Paris discussing the internationally important question of tuberculosis, a disease the real nature of which was first made clear by the researches of a German. Bismarck died in his eighty-fourth year after a life of the most unremitting toil in both mental and physical fields, but his enormous store of vitality enabled him to undergo and recover from fatigue which would have broken down an ordinary man. He could always eat, drink and sleep and so was enabled to recuperate very quickly, a faculty he showed with that other great leader of men, Gladstone. Like so many great men, Bismarck lived too long for his own happiness and glory. He found Germany a collection of petty principalities and powers; he made it a mighty empire, with its foundations, according to the old mediæval rule, consolidated and laid in blood; but inasmuch as the building was greater than a mere bridge or dwelling-house, so was the sacrifice not merely that of a dog or even a human being but of thousands of men, millions of money and the tears of two nations. Of his methods we need say nothing here; suffice it to say they were successful. But as is inevitable when two strong wills clash and the one is the ruler and the other the subject, it is the subject who has to yield. Bismarck brought the German Emperor into being, and, like Frankenstein, his creation overcame him. There is no need to dwell upon this: let us only remember him as a master statesman,

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a man of unswerving will, a faithful and devoted servant to his country, who gave his whole life to forwarding her interests.

THE EDINBURGH UNIVERSITY CLUB.

THIS club held its August dinner at the Café Royal under the presidency of Dr. Aldren Turner, who, in proposing the toast of the evening, "Prosperity to the Club and our Alma Mater," spoke very clearly of the continued prosperity of the University in spite of the growing competition of other schools and the increased stringency of the preliminary examinations in the Scottish universities. Professor Chiene was present, to the obvious delight of the members, and enlivened the proceedings by several anecdotes and by his speech in proposing the health of the chairman. The guests included Mr. Bland Sutton who replied to the toast of their health, proposed by Dr. Glover.

FOREIGN DEGREES.

MR. J. W. SIDEBOTHAM, M.P. for the Hyde division of Cheshire, has introduced a Bill into the House of Commons which was read a first time the other day. The Bill, which is a short one of five clauses, makes it compulsory for every person who attaches to his name the degree of Bachelor, Master or Doctor in any faculty in which degrees are granted —unless such degree has been received from a British university or from any authority in the United Kingdom which confers degrees by virtue of a Royal charter or by the sanction of the Crown or of Parliament—to clearly indicate the source from which such degree has been received under a penalty of forty shillings and costs. The term "degree" shall mean and include any letters or abbreviations which are commonly used to signify the degree of Bachelor, Master or Doctor of any faculty in which degrees are granted. This Bill is evidently drawn on the same lines as the Medical Act—i.e., to enable persons to distinguish between true and false degrees. It is good as far as it goes, but it does not go far enough. The gentleman who calls himself M.D., U.S.A., or D.D. of the National University of Chicago, will still continue to deceive the ignorant and foolish, neither, so far as we can see, will it affect the ingenious persons who put M.B. after their names and when challenged say they do not mean that they are Bachelors of Medicine but only Medical Botanists. If a "degree" is received from no source at all it is impossible to indicate a source. However, the Bill is a step in the right direction.

THE NATURAL HISTORY MUSEUM.

IT is announced that the trustees of the British Museum have appointed Professor E. Ray Lankester to be director of the Natural History Department in the room of Sir William Flower, who retires at the end of September. We sincerely congratulate Professor Lankester upon this newly-conferred honour, all the more because, though not a medical man himself, he is the son of one and the brother of others and because his scientific pursuits have been so directly ancillary to medicine. He has been a Radcliffe Travelling Fellow of the University of Oxford and is well known as the writer of various works upon zoological and biological science. More and more as knowledge increases do we find light thrown upon pathological processes, solutions—or, at any rate, a clue to them—of various medical problems, and explanations of puzzling questions by a reference to biology. The birth, the progress, the degeneration, and the death of the organism, from the highest to the lowest, is in miniature the replica of the life-history of the race; the phylogeny is set forth in the ontogeny. So we physicians and surgeons—for whom with all our knowledge so much still exists which is dark—owe a debt of gratitude to those who have devoted their lives to the study of biology, and such a one is Professor Edwin Ray Lankester. His appointment is a guarantee that the reforms set on foot by Sir William Flower will in no way deteriorate in the hands of his successor and that the magnificent collection housed in South Kensington will be kept up to, if not exceed, its present pitch of excellence.

INCISION AND DRAINAGE OF PULMONARY CAVITIES.

AT a meeting of the Royal Academy of Medicine of Turin, reported in the *Gazzetta degli Ospedali* of July 17th, Dr. Bozzolo described two cases of successful surgical treatment of tuberculous cavities of the lung. One of the patients was a boy, eleven years of age, who in August, 1897, was found to be suffering from a cavity in the lower part of the right lung, and on whom an operation was performed by Professor Carle in the following December on account of threatening pulmonary gangrene. The Roentgen rays showed that the heart was displaced to the left and that the base of the thorax was dark, as if from localised empyema, but exploratory punctures gave no result. At the operation pleural adhesions were found, the lung was dense, and the cavity was deep and was situated higher than percussion seemed to indicate. The cavity was drained; the patient recovered rapidly and is now quite well. The second case was that of a man, thirty-six years of age, a brother of whom had died from tuberculosis. In March, 1897, he suffered from cough, fever, bronchial catarrh, weakness and emaciation, and could lie only on his left side or on his back. There was a cavity in his right lung and his expectoration was purulent, but Koch's bacilli were not found. The lung was incised but no adhesions were met with, and the man nearly died from pneumothorax succeeding the operation. Two months afterwards a larger and higher incision was made, firm adhesions being encountered. Exploratory punctures after many attempts resulted in the discovery of a small cavity containing pus, situated at some depth and communicating with another larger one. Drainage was followed by complete recovery. Both of these patients were present at the meeting.

SMALL-POX AND VACCINATION IN THE ESTON URBAN DISTRICT.

ESTON is an urban sanitary district on the south of the Tees and a little eastward of Middlesbrough, and it apparently derived its small-pox infection from the same menagerie from which, it is largely believed, the Middlesbrough outbreak started. There have been up to the date of the report which Dr. G. C. H. Fulton, the medical officer of health of Eston, has just presented to his sanitary authority 23 cases, and of this number of patients 20 were vaccinated and 3 unvaccinated. The fatality-rate amongst the vaccinated was 15 per cent. and amongst the unvaccinated (3 cases only) 100 per cent. Eston is stated to be a well primarily-vaccinated community, and this statement, though the total number of cases is small, is borne out by the fact that amongst those attacked there were but 2 under the age of ten years. No person who had been re-vaccinated contracted the disease nor did anyone who was brought in contact with the patients at the hospital. In contrast with this immunity Dr. Fulton mentions that at a neighbouring hospital under his care the only persons brought in contact with the patients who contracted small-pox were three who had not been revaccinated. Fortunately at the beginning of the outbreak isolation accommodation was in readiness, and vaccination and revaccination of the whole district were quickly arranged for. The inmates

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of infected houses were quarantined for a fortnight and all those who had been exposed to the disease were at once vaccinated. Dr. Fulton reports that the modifying influence of vaccination on those attacked was very obvious, the eruption abating early and there being an almost total absence of secondary fever.

OVERCROWDING IN RAILWAY CARRIAGES.

THE question recently asked in Parliament by the Member for East Northampton on the overcrowding of railway carriages which prevails at certain hours of the day on London and suburban railways calls attention to an evil which has long been crying for remedy. Those whose lives are passed in the country or in the smaller provincial towns of England can have no conception of the condition of the suburban railways of London between 5 and 7 o'clock in the afternoon from Monday to Friday, for no other town in England relies so much on railways for intercommunication between its various districts. In no other town are the distances to be traversed so great, and in no other town is the travelling public so enormous. How is that public to be carried? That is the problem which the companies have to solve and it is not too much to say that hitherto they have for the most part entirely failed to solve it. During the busy hours of the day on the District, the Metropolitan, and the North London Railways, to name only a few examples, the passengers in third-class carriages are packed in their compartments in a manner in which it would be illegal to pack cattle. Let anyone stand on the platform at Charing-cross or Victoria on the "Underground" Railway and examine the trains going westward as they enter and leave the station at about 6 o'clock and he will see compartment after compartment crowded in a manner which is fatal to comfort and most inimical to health. The air space of a third-class compartment on the "Underground" Railway is by no means excessive for the ten passengers whom it is "constructed to seat." If to these be added the five passengers standing up and absorbed in the desperate effort to maintain their equilibrium as the train sways to and fro, a state of things is disclosed which calls for the interference of some humane or philanthropic society if not of Parliament itself. We admit the difficulty of the task which the railway companies have to perform. There must be great pressure of traffic at certain hours of the day when all the world is hurrying either to or from its business. It is easy to reply offhand that the companies must run more trains or longer trains, but—at least, as far as the District Railway is concerned—there are very serious practical and financial difficulties in the way of any change in either of these directions. On the busiest section of this line no more trains could be run with safety. They already follow one another as closely as the conditions of working will permit and the interval of time allowed between each train could hardly be further reduced without risk of disaster. The running of longer trains, on the other hand, would require longer platforms and the cost of that improvement is considered by the company to be prohibitive. Railway companies, after all, must consider their dividends. Here, then, we have an *impasse* and the only way out of it seems to be to build more railways. This is now being done as rapidly as may be. The Waterloo and City line which has just been opened will do something, though not much, to relieve the congestion of traffic on the District Railway between Charing-cross and the Mansion House, while the Central London Electric Railway, when it is opened, will do the same for a considerable section of the Metropolitan. But experience has shown that the opening of new suburban railways in London, far from relieving the traffic at the centre, rather tends to increase it. The greater the facilities for travelling from the suburbs to the City the more people flock to the suburbs and by consequence the greater the pressure of traffic upon the railways during the hours when men are going to and from their business. It is a question, therefore, whether even legislation itself can find a way out of the difficulty in which these railways are placed during these hours. In one thing, however, these railway companies seem to us to have failed in their duty to the public in this question of overcrowding. They do not appear to have reckoned with the enormous growth of Sunday travelling in London in recent years. At certain hours of the day on Sundays on many of our local lines there is a pressure of traffic which the companies not only do not attempt to meet but seem determined to ignore. For this there can be no possible excuse. It is absurd that railway companies should run fewer trains on Sunday than on week-days unless they are sure of carrying fewer passengers, and it is the business of the officials to see that the trains on that day are not so far reduced that they cannot comfortably accommodate the traffic which every Sunday brings them. This is not a case of accidental overcrowding on one or two days in the year due to exceptional circumstances, but of a constant and apparently deliberate refusal on the part of the companies to provide proper accommodation for the regular needs of the day. It is unnecessary for us to point out here how entirely contrary to the first principles of hygiene such overcrowding is and how essential it is that it should be avoided as far as possible. The growth of Sunday travelling in London may or may not be a good thing, but that is a question with which the railway companies have nothing to do. Their duty is to provide reasonable accommodation for those who wish to travel. A railway company cannot be permitted, either from indolence or a desire for larger dividends, to ignore this duty wherever it is possible to perform it.

THE FOOL ON A CYCLE.

IN spite of the object lessons which inquests on cyclists give and in spite of police prosecutions the number of cycling accidents increases, while it is evident that the majority of the casualties follow upon reckless riding. The commonest cause of disaster is, of course, want of caution in descending hills. The effort of the National Cyclists' Union to prevent accidents by placing notice-boards at the top of all dangerous hills is treated with contempt by many cyclists, who regard such boards as a playful invitation to put up their feet and "coast" to the bottom. In a recent inquest held at Hull the coroner, Mr. Luke White of Driffield, is reported to have said that if cyclists persisted in disregarding notices which were exhibited for their personal safety it might be necessary for the protection of the public to require all cyclists to dismount on going down hills which were marked "dangerous" and to inflict a heavy fine in every case where the notice was disregarded. We quite agree with Mr. White. "Put a fool on a cycle and he will ride to destruction," makes a very good reading of an old saw and describes a situation which we can regard with equanimity. But when the fool on his way to his proper destination thinks well to smash into other people it is time to put a limit to his folly.

IN the presence of a great sorrow sympathy, however well intentioned, is all too inadequate and yet it is the only thing which can be offered. The profession is well acquainted by this time with the sudden and heartrending calamity which has overtaken Mr. Henry Power and his family in the death of his daughter and granddaughter by drowning. They were swept off the east pier at Whitby by a wave of unusual size and height and owing to the state of the sea all efforts to save them proved useless. Mr. Power himself made an heroic effort, but all unavailingly. His

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daughter, Miss Lucy Power, will be known, by name at any rate, to most of the profession owing to the portrait painted by her of her father which was exhibited in the Academy of 1897. We are certain that these few words in which we express our heartfelt sympathy with the relatives of the deceased will be only giving expression to the general feeling of the medical profession of which Henry Power has for so many years been a prominent member. Specially does this apply to members of St. Bartholomew's Hospital, where he is, though no longer an active member of the staff, lovingly remembered in the wards and the lecture theatre.

DR. J. P. STEELE, for many years a contributor to THE LANCET, mainly in the field of Italian medicine past and present, has had since May last to suspend his contributions owing to a severe accident to his left eye. No effort was wanting, first on the part of Dr. Pereyra of Florence and then of Professor Haab of the Zürich School of Medicine, to save the injured organ, but after some weeks of skilful and steady treatment it was found that the lesion, mainly in the ciliary region, could not be repaired and that sympathetic inflammation was threatening the sound eye. Enucleation was therefore resorted to and successfully performed by Professor Haab in his private clinique at Zurich on July 6th, since which date Dr. Steele has made complete recovery, the right eye being now out of danger, affording every probability of his early resumption of work.

AT Leeds Assizes on July 29th Henry Yeo, editor of a local paper called *Spy*, published in Manchester, was sentenced to twelve months' imprisonment with such hard labour as his health would allow for publishing libels concerning Mr. W. Bevan Lewis, medical superintendent of the Wakefield Asylum. The prisoner's wife, who was indicted for circulating the libel, was bound over.

THE treasurer of Guy's Hospital has received an anonymous donation of £6000 from one who listened to Mr. Balfour's speech on the occasion of the distribution of prizes in the Medical School, with a request that the governors would use the sum for the purpose of the endowment of medical research.

DR. J. C. THRESH, Medical Officer of Health to the Essex County Council, has been appointed Lecturer on Public Health at the London Hospital Medical College. The new laboratories and public health museum now being provided at this college will be ready by the commencement of the winter session.

AT Netley Hospital on July 29th a beautiful tablet erected to the memory of Sir William Mackinnon, late Director-General, by the medical officers of the British Army, was unveiled without ceremony.

KING'S LYNN.—On the reappointment of Dr. C. B. Plowright as medical officer of health the Freebridge Lynn Rural District Council raised his salary from £82 10*s.* to £100 per annum. The District Council also resolved that steps should be taken to add, if possible, phthisis to the list of notifiable infectious diseases.

SANITARY INSPECTORS' ASSOCIATION.—The annual meeting of the Western Branch of the Sanitary Inspectors' Association was held at Exeter on July 16th. A public meeting took place after the annual meeting at the Guildhall, at which the Deputy Mayor presided, supported by Dr. Woodman, Dr. Kempe, and Dr. Pickard. Mr. Cameron contributed an interesting paper on the Treatment of Sewage by the Septic Tank System. A public luncheon followed, which was numerously attended.

THE BRITISH PHARMACOPŒIA.

VIII.[1]

CONCLUSION.

IN our second article we referred to some of the more important changes in strength and dosage. A change has been made in the most active and important group of Galenical preparations with which the practitioner should be familiar. The following liquors are now made with the intention of being 1 per cent. solutions—viz., Arsenicalis, Arsenici Hydrochlor., Atropinæ Sulphatis, Morphinæ Acetatis, Morphinæ Hydrochlor., Morphinæ Tartratis, Potassii Permanganatis, Strychninæ Hydrochlor., Sodii Arsenatis, and Trinitrini. Though these liquors are in reality 1 per cent. solutions, owing to the difference between the minim and the avoirdupois grain they contain 1 gr. of the active ingredient in 110 minims and not 1 gr. in 100 minims as the practitioner is too apt to imagine when dealing with 1 per cent. solutions. They are made by dissolving 1 gramme of the active ingredient in 100 cubic centimetres of solvent. The introduction of the metric system into the British Pharmacopœia does not appear to make the time of its final acceptance in this country any nearer. Practitioners stand in relation to it exactly where they did and it remains to be proved that this laudable intention of the revisers will popularise the new system with the dispensing chemist. Unquestionably the revisers should have gone much further or else left matters as they were. If they had wished to gradually accustom the prescriber to the use of metric weights and measures one way was open to them which they have not thought it desirable to follow. This was to give the dose of every substance and preparation in equivalents of the metric system in addition to the avoirdupois or imperial system. Mr. Martindale has, however, accomplished this in his last edition of the Extra Pharmacopœia with much labour and accuracy.

We would advise the practitioner to take a note of the following important *increases* in the strengths of preparations: Tinctures of belladonna, nux vomica, and podophyllum, 100 per cent.; tincture of quassia, about 270 per cent.; blistering liquid, 100 per cent. Discs of cocaine, and the tincture of chloroform and morphine are four times stronger; spirits of cajuput, cinnamon, peppermint, nutmeg, and rosemary are five times stronger; and pill of phosphorus is increased by 80 per cent. in strength. Of the notable *diminutions* in strengths he should specially note tincture of aconite, 60 per cent.; tincture of strophanthus, 50 per cent.; injections of apomorphine and of morphine, 50 per cent.; suppositories of morphine, 50 per cent.; alcoholic extract of belladonna, 66 per cent.; nux vomica, 33 per cent.; Calabar bean, 75 per cent.; liquid extract of opium, 25 per cent.; and chloroform water, 50 per cent. weaker.

The following important changes in the names of Galenical preparations should be carefully noted, otherwise serious mistakes may arise in prescribing and dispensing. The old Linimentum Iodi was prepared by dissolving 2½ oz. iodine and 1 oz. iodide of potassium and ½ oz. glycerin in 20 oz. rectified spirit. It is now called *Liquor* Iodi Fortis and has its composition slightly altered. It is made by dissolving 2½ oz. iodine and 1½ oz. iodide of potassium in 2½ oz. distilled water and 18 oz. 90 per cent. alcohol. The 1885 British Pharmacopœia Liquor Iodi was about one-third of the strength of this. It is now omitted, and notwithstanding the omission the revisers have thought proper to append the adjective *fortis* although there is now no weak iodine liquor official. It should be noted that it is about four and a half times the strength of the tincture. The omission of glycerin from its composition is a decided advantage. In the 1867 Pharmacopœia it was of about the same strength, but it contained camphor (½ oz. in 20 oz.); in the 1885 revision this was omitted and for some unknown reason glycerin was added. The present revisers have wisely omitted this and their action affords another example of how thoroughly they have reversed the decisions

[1] Articles I., II., III., IV., V., VI., and VII. were published in THE LANCET of April 16th and 23rd, May 7th and 28th, June 18th and 25th, and July 9th, 1898, respectively.

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of the committee which was responsible for the preparation of the 1885 Pharmacopœia and the additions of 1890. The next British Pharmacopœia will probably see this Galenical again altered in its formula, as we suspect that it contains too much iodide of potassium.

Ergotinum of the 1885 Pharmacopœia was defined as "purified extract of ergot, commonly called Ergotin, Ergotine, or Bonjean's Ergotine." It is now called Extractum Ergotæ with the synonym Ergotin and appears in the new volume amongst the Extracts, and minute directions are given for its preparation from powdered ergot by treatment with alcohol, water, diluted hydrochloric acid, and sodium carbonate. The old dose was given as 2 to 5 gr., a quantity, in our opinion, large enough for all ordinary purposes; the new dose is stated as 2 to 8 gr. The old ergotin was simply prepared by evaporating the official liquid extract of ergot on a water-bath till it became of a syrupy consistence, when rectified spirit was added and after filtering, the evaporation was continued till the consistence of a soft extract was reached. It is just possible that the radical change made in the process of manufacture may justify the increase of the dosage. In consistency with the change in the nomenclature of ergotin the hypodermic injection is now altered to Injectio Ergotæ Hypodermica and its composition is changed by the addition of a small quantity of carbolic acid, and though its strength is slightly altered the dose remains as before—3 to 10 minims—though this dosage is altogether out of proportion less than that given for ergotin. Thus the maximum dose of ergotin in the injection is 3·3 grains (and this preparation is the one selected in urgent or desperate cases), whilst 8 grains may be given of the ergotin.

Linimentum Camphoræ Compositum is now to be known as Linimentum Camphoræ Ammoniatum with the old name retained as a synonym. Though it is not apparently intended by the revisers, its strength will be found to be appreciably increased, because in the old formula 2½ oz. camphor and 1 drachm oil of lavender were dissolved in 5 oz. strong solution of ammonia and 15 oz. rectified spirit. This solution made a liniment of about 1 in 9. In the new formula the same ingredients are used in the same quantities, only the spirit is added in sufficient amount to make the finished liniment measure only 20 fluid ounces, which represents a strength of 1 in 8 of camphor. A glance at the new formula will show one of the marked changes running through the volume—i.e., the omission of the absurd plan of "fluid parts" introduced into the 1885 Pharmacopœia; we are unfeignedly pleased at the omission. Pilula Asafœtidæ Composita is now to be known as Pilula Galbani Composita, with the remarkable official synonym "Compound Pill of Asafetida," *not* Pil. Asafetidæ Co. The nomenclature of the new British Pharmacopœia defies criticism or explanation the more we look into it. Thus, running all through the volume we have headings in full Latin whilst the English immediately underneath, though presumably a translation of the heading, is often anything but a literal translation, for example—Hydrargyri Iodidum Rubrum—Mercuric Iodide; Ferri Sulphas—Ferrous Sulphate, &c. Criticism is disarmed by the statement in the preface—viz., "It has been thought desirable to adopt certain well-established changes in chemical nomenclature, though not in such a manner as to occasion inconvenience to prescribers and dispensers. No general alteration, therefore, has been made in the Latin titles, but the English titles of chemical substances have in many instances been modified. These English titles therefore are not as a rule literal translations of the Latin ones." There was one plan open to the revisers by which this violation of custom and outrage upon a dead language might have been avoided—they might have given a literal translation of the title and in each case inserted their "well-established change in chemical nomenclature" as a *synonym*. The synonyms might with little objection have been employed throughout the body of the volume as in the formulæ and the various processes; this would have met every difficulty and obviated what has universally been regarded as a blot upon the literary aspect of the work.

There is still much confusion and real difficulty about one vital point—When does or when did the new British Pharmacopœia actually come into force? We find that no provision was made for this and some druggists still continue to dispense the prescriptions of practitioners by using the preparations of the old Pharmacopœia. Many druggists have sent out notices to the medical practitioners in their districts that on and after a certain date the new British Pharmacopœia will be used for all new recipes, but no uniform practice has been adopted. The licensing bodies and some of the universities have already issued printed information for intending candidates stating that all questions in the approaching autumn examinations in Materia Medica may be answered from the old Pharmacopœia. A sufficient time has now elapsed for every druggist to be supplied with the new Galenical preparations and we hold it to be incumbent upon every medical man to make himself familiar with the numerous changes and to write for some months to come upon his recipes either the words B.P. 1898 or B.P. 1885 after each preparation the strength of which is materially altered. In this way with little trouble errors may be entirely prevented. From what we have pointed out our readers will see that though there may be differences of opinion upon many points of detail in the revision of the British Pharmacopœia, we can only repeat what we have already stated—viz., that the revisers have made an honest and in the main a successful attempt to raise the standard of the work, and in conclusion we tender them the thanks of the medical profession for their labours.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE thirty-first sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, July 25th. With the exception of Sir George Barclay Bruce all the Commissioners were present. The whole of the sitting was occupied by the examination of Mr. Reginald E. Middleton, who appeared to give "expert evidence" on behalf of some of the water companies. At the commencement of the proceedings Mr. PEMBER, Q.C., on behalf of the Metropolitan Water Companies, asked the Chairman if he would examine the witness fully with regard to some of the details contained in the printed statement which he had put in. On behalf of the water companies Mr. Pember said that they wished to establish what he might term a "constructive case." The evidence now tendered and that which he proposed on behalf of his clients to bring forward at future sittings was intended not merely as a criticism of the case so ably brought forward by the London County Council. The water companies wished on their part to state what their own policy was if they were allowed to continue to supply their authorised area with water on the statutory conditions which at present existed. Amongst the points in the statement of Mr. Middleton to which he wished especially to call the attention of the Chairman and of the Commissioners were, in the first place, the estimate with regard to the probable increase of the population of "water London"; and, secondly, that they were of opinion that not only could 300,000,000 gallons of water be obtained daily from the Thames but that the river could supply a greater quantity should it be required; thirdly, it was part of the case of the metropolitan companies that the state of the Thames had improved with regard to purity. With regard to the quantity of water which could be derived from the Thames he contended that the present authorised supply of 185,500,000 gallons could without detriment to the river not only be increased to 300,000,000 gallons daily, but it seemed possible that not less than 400,000,000 gallons daily could be obtained should occasion require.

The CHAIRMAN proposed that Mr. Pember should examine the witness himself, but that counsel suggested that as in the case of the witnesses of the London County Council the examination-in-chief had been conducted by the Chairman and the Commissioners it might be better if the same course were adopted in the present case. The CHAIRMAN said that the mass of figures and the number of tables given in Mr. Middleton's statement were extremely puzzling, especially as some of the tables were not drawn up on the same lines as those which had previously been before the Commissioners. In the course of the proceedings which followed it may be here remarked that consecutive questions were occasionally asked by different Commissioners on different tables and the impressions as to the evidence given varied greatly, as may be learnt from a perusal of the reports which have appeared in the daily papers.

Mr. MIDDLETON was first examined by the Chairman with regard to the future population of London. The witness pointed out that Lord Balfour's Commission did not commit

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themselves to any statement as to what the population would be in the year 1931: they had said that in their opinion it would be more than 11¼ millions. In the opinion of the witness the population would almost certainly be less than this, and if he were right in this conclusion the present sources of supply would amply provide a sufficiency of water for a longer period than that for which the estimate was made. A population of 5,732,950 in the year 1891, quoted in the report of Lord Balfour's Commission, was that for "Greater London" and exceeded the population supplied by the metropolitan companies at that date by over half a million. The present rate of increase in "water London" appeared to be about 15·53 per cent. per decennium. If this rate were adhered to the population in 1931 would be 9,274,046 and in 1937 10,164,349. The amount of water necessary for the supply of this population would be about 356,000,000 gallons daily, or 51,000,000 gallons in excess of the amount for which provision is now being made or construction authorised. With regard to the quantity of water which could be taken from the Thames the witness said that he was of opinion that an amount much in excess of 300,000,000 gallons daily could be obtained without injury to the river. The witness further said that he thought 400,000,000 gallons daily could be taken without injury.

In answer to Major-General SCOTT the witness said that in his opinion that amount could be taken without injury to other parts of the Thames basin.

In answer to Mr. PEMBER, Q.C., the witness said that that quantity could be taken without reducing the flow of the river below an amount of 200,000,000 gallons daily.

The Right Hon. J. W. MELLOR asked the witness whether he had taken any account of water which might be wanted by outside authorities. The witness replied that if the water were taken from wells it would not deplete the Thames and in answer to a further question from Mr. Mellor he said that the abstraction of water from wells would not in his opinion affect the flow of the Thames water.

The CHAIRMAN asked the witness whether the abstraction of the water from wells in the valley of the Lee affected the flow of that river. The witness, in reply, said that in isolated cases the abstraction of water from wells had diminished the flow of water in the river.

Mr. MELLOR asked the witness whether he had taken at all into his calculations the effect that might happen if water were required for the supply of a population situated in the higher parts of the Thames valley, and the witness replied that he had not taken it into calculation at all.

In answer to the CHAIRMAN the witness said that he did not believe that pumping from wells in the Lee valley had any sensible effect. The wells at Ware, which were situated on a bed of gravel, were sometimes pumped down. Three wells were slightly affected but they were not pumped dry.

The CHAIRMAN pointed out that the Commissioners had examined Sir John Evans, who had given evidence with regard to the wells in the Lee Valley, and that the witness had said "that the well at Haileybury College is pumped down." The witness said that he did not believe that statement.

The CHAIRMAN pointed out that they had had a witness before them who said that he could substantiate the statement and that Sir John Evans had also said that "the flow of the Ash, Rib, Quin, and Beane tributaries of the Lee had fallen off." The witness said that this statement was not correct.

Major-General SCOTT suggested that if pumping lowered the water in wells it would have an effect on the flow of a river.

Mr. PEMBER, Q.C., pointed out that the witness admitted that here and there such a thing might happen, "but in a general way no."

In answer to Sir JOHN DORINGTON the witness said that he had heard the evidence which Sir John Evans had given to the Royal Commissioners and that the inferences which had been made from evidence which the witness had given before the Balfour Commission were not correct. With regard to the reservoirs recommended by Lord Balfour's Commission the witness pointed out that the Commissioners did not express any "insistence on Staines" as a locality, they had expressed their approval of reservoirs situated in the Thames Valley as near the intakes of the companies as possible. When Messrs. Hunter and Fraser arranged for intakes to be above Bell Weir, Staines, Sunbury, and some other places drained into cesspools. At the present time many of these places have constructed sewage disposal works.

With regard to the state of the Thames water the witness in his statement quoted the report of Sir E. Frankland as to the quantity of organic matter found in the Thames water as supplied to consumers.

Major-General SCOTT pointed out that the quality of water as supplied to consumers differed from the Thames water before filtration and that therefore the evidence which the witness put in on that point did not bear the interpretation which the witness suggested—namely, that the river itself was purer. With regard to the purity of the water in the River Thames Major-General Scott asked the witness on how many analyses the report was founded. He suggested that they were very few in number and asked the witness how he could suggest that any definite knowledge could be derived from such a small number of analyses.

Mr. MELLOR asked the witness whether he considered that the amount of organic impurity of the present Thames water was bad and the witness immediately replied, "Oh, no."

Major-General SCOTT suggested that the experiments made were haphazard and asked whether the witness seriously contended that any conclusions could be founded on them.

The CHAIRMAN pointed out that he would not like to draw any conclusions from these "fluctuating figures." What conclusion did the witness wish they should arrive at?

Major-General SCOTT insisted that the evidence was founded on very slender foundation and that no certainty could be arrived at with regard to the present as compared with the past condition of the Thames. With regard to the possible amount of water which could be obtained from the county of Kent Major-General Scott asked the witness whether he had made any investigations since the date of the Balfour Commission Report, from which he quoted. The witness said that he had not made any observations and Major-General SCOTT remarked that they, the Commissioners, could refer to the Balfour Report for themselves, and that they had had witnesses who had given evidence with regard to the present state of the water in the Kent district. The witness suggested that in his opinion wells sunk in the chalk in the basin of the Thames could, if necessary, supply a quantity of 190,000,000 gallons daily. Major-General Scott pointed out that this was quite contrary to the opinion expressed by the Balfour Commission. The witness did not give any evidence in favour of his opinion that 190,000,000 gallons daily could be supplied from wells in the chalk but said that he had made many journeys up and down the Thames, had studied the readings of the rain-gauge and had made observations with regard to the percolation of water. With regard to the storage of water the witness pointed out that at the present time the metropolitan companies were not obliged to store water in reservoirs and that they were authorised to take a considerable quantity of water and distribute it without storage. This, the CHAIRMAN remarked, "was not altogether pleasant for consumers."

After the adjournment for luncheon the witness gave evidence with regard to the cost of the Welsh scheme and gave figures which did not agree with those which had been given by Sir Alexander Binnie. The figures will be best understood by a study of the tables drawn up by Mr. Middleton, which we append. With regard to the method by which Mr. Middleton had arrived at some of his estimates the witness said that some of them were made from "analogy."

MR. MIDDLETON'S TABLE SHOWING COMPARATIVE COST OF SUPPLYING 114½ OR 123½ MILLION GALLONS FROM WALES AS ESTIMATED BY SIR ALEXANDER BINNIE AND BY HIMSELF.

SIR A. BINNIE.

Cost of obtaining by the Welsh gravitation scheme the 114½ millons, being the difference between the total 300 million gallons of the Staines scheme and the 185½ million gallons sanctioned taking of water from the Thames by the companies up to date.

	£
Yrfon yield, 121 million gallons per day—Yrfon reservoir and head works	1,850,000
Aqueduct.—162 miles in length, composed of 117 miles of covered conduit and tunnel, to carry 200 million gallons a day, and 45 miles of pipe, to carry 114 million gallons a day	6,867,500
Terminal works at Elstree for 114 million gallons a day, exclusive of filters	1,314,750
	£10,032,250

This estimate is equivalent to that the total of which, as given by Mr. Deacon was £9,848,000, but Mr. Deacon made a proportionate reduction in the cost of the masonry and tunnel portion of the conduit to reduce it to the flo w of 133½ million gallons a day, whereas I have

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preferred to make those portions of the full size for 200 millons gallons a day in the first instance, as I have always based my calculations on the assumption that the Welsh project will be carried out in instalments as necessity may require. Note should be also made of the saving in pumping pointed out by Mr. Deacon in his estimate.

MR. MIDDLETON.

Cost of bringing 123½ million gallons from Wales to London calculated by analogy from the cost of the Thirlmere, Vrynwy, and Elan Valley works.

YRFON RESERVOIR.

	£
Cost of storage for the delivery of 123½ million gallons daily and for 81 miles of pipe-lines and conduit at an average cost of £91,611 per million gallons of daily supply	11,313,958
Cost of an average of 81 miles of conduit beyond that in the Thirlmere, Vyrnwy, and Elan Valley schemes to convey 215 million gallons daily at £64,000 per mile ...	5,184,000
Terminal works at Elstree	1,314,750
	£17,812,708
Add for mains between service reservoirs at Elstree and the service reservoirs of the companies	3,000,000
Add cost of pumping machinery to pump to supply 30 million gallons daily to the districts above gravitation level, equal to 2184 p.h.p. at £45 per p.h.p. ...	98,280
Total capital cost	£20,910,988
Add cost of pumping to supply the districts above gravitation level during 20 years a quantity increasing from 21·7 to 29·8 million gallons, at 30*s.* per million gallons pumped...	279,549
	£21,190,537
Add for accumulated interest	13,078,046
	£34,268,583

N.B.—If pumping charges are capitalised at 30 years' purchase a sum of £253,746 must be added, making the total £34,522,329.

Notes of difference.—Mr. Middleton's first two items—£11,313,958 and £5,184,000, total £16,497,958—approximately correspond with Sir A. Binnie's two items of £1,850,000 and £6,867,500, total £8,717,500. Sir A. Binnie has, however, included no estimate for cost of mains, pumping machinery, pumping charges, and interest. Mr. Middleton has estimated for a conduit as to 81 miles capable of carrying 123½ million gallons and as to the remaining 81 miles capable of carrying 215 million gallons per day, the total yield of the first group of Welsh reservoirs.

MR. MIDDLETON'S TABLE OF COMPARISON OF SIR A. BINNIE'S AND HIS OWN ESTIMATES OF COST OF SUPPLYING FROM THE THAMES 114½ MILLION GALLONS PER DAY, IN ADDITION TO THE TAKE OF 185½ MILLION GALLONS PER DAY ALREADY AUTHORISED, MAKING A TOTAL OF 300 MILLION GALLONS PER DAY.

SIR A. BINNIE.

	£
Capacity for 114½ millions, 20,000 million gallons... ...	6,785,980
* Pumping into Reservoirs, 19,717 at 5*s.* per million gallons = £4929. Capitalised at 30 years	147,870
† Cost of pumping to supply 114½ million gallons per day = 41,792½ at £2 10*s.* per million gallons = £104,481. Capitalised at 30 years	3,134,430
	£10,068,280
Pumping machinery for distribution, reckoned on the capital sum of £1,212,300, apparently included as a total in 1941 for this purpose in the estimate of Messrs. Hunter and Fraser	816,525
	£10,884,805

* The charges for pumping to store have been capitalised on the draft during the year of greatest drought, not on the average of years as they should have been.

† This capitalisation has been made on the cost of pumping 114½ million gallons per day, which will not be reached until the year 1935; it should be, on the average, less than half that quantity. The sum so arrived at should be discounted for present value.

MR. MIDDLETON.

	£
Capacity, 14,987 + 10 per cent. = 16,486 million gallons, at £218 per million	3,593,948
* Pumping into reservoirs 10,570 million gallons, average for 19 years at 7*s.* 6*d.* per million gallons = £3963 15*s.* For 19 years	75,316
* Cost of pumping to supply a quantity increasing from *nil* to 114½ million gallons per day during 19 years at £2·41 per million gallons	932,536
	£4,601,800
Pumping machinery for distribution	375,480
	£4,977,280
Note.—A sum of about £500,000 should be added to this estimate for connecting mains to the boundaries of the companies' districts, to compare with the item of £3,000,000 for connecting mains between the service reservoirs at Elstree and those of the companies in the Welsh scheme	500,000
Total	£5,477,280
* If the pumping charges be capitalised at 30 years' purchase a sum approximating to £1,682,580 must be added. (This has been done by Sir A. Binnie, but I do not concur)	1,682,580
	£7,159,860

Major-General SCOTT pointed out that the figures put in by Sir Alexander Binnie were the result of observations made on surveying the site of the proposed work. Sir Alexander Binnie's estimate for the Welsh scheme had been compared by the witness with the costs of the Thirlmere and Vyrnwy supplies and with the estimated cost of that from Elan Valley supply, and judging from the amount paid in those cases the witness said that he believed that the cost of providing 123,500,000 gallons of water from Wales in addition to the existing supply would cost a sum of about £21,000,000. On the other hand, he thought that the cost of the Thames reservoirs storage scheme to supply the same amount of water would be little over £5,000,000. To this sum of £5,000,000 must be added a further sum of £500,000 for the necessary arrangements for the conveyance of water from the Thames stations to the consumers. If an additional supply of water were derived from Wales the cost would be £22,640,800 for a supply of 135,000,000 gallons. For 172,000,000 gallons the cost would be £28,205,050, and for 215,000,000 gallons the cost would be £33,297,251.

With regard to the distribution of water from the reservoirs, which, according to the Welsh scheme, the County Council proposed to have at Elstree, the witness showed a plan of the distributing mains which he suggested should be made and gave a list of the existing service reservoirs which could be filled from Elstree by gravitation and a list of those which could not be economically filled from Elstree without the use of pumps. These tables gave in each case the top-water level of the reservoirs and their capacity. As these facts have been already given in THE LANCET it is not necessary to repeat them here, and therefore only the list of reservoirs is given, arranged in the two categories mentioned.

List of existing Service Reservoirs which could be filled from the proposed Service Reservoirs at Elstree by Gravitation.

Chelsea Company—Putney Heath.
East London Company—Woodford, Hornsey Rise.
Grand Junction Company—Campden-hill, Hanger-hill, Ealing.
Kent Company—New Cross, Plumstead Common, Greenwich Park, Dartford, Deptford.
Lambeth Company—Brixton, Streatham, Combe.
New River Company—Claremont-square, Maiden-lane, Crouch-hill, Bourne-hill.
Southwark and Vauxhall Company—Nunhead.
Middlesex Company—Campden Hill, Barrow Hill, Willesden.

List of existing Service Reservoirs which could not be economically filled from the proposed Service Reservoirs at Elstree without the use of Pumps.

East London Company—High Beech, Buckhurst Hill.
Kent Company—Woolwich Common, Chislehurst, Shooter's Hill, Farnborough (Cowlass Hill), West Wickham, Knockholt, Betsom's Hill, Westerham, Eltham.
Lambeth Company—Selhurst, Rockhills, Norwood.
New River Company—Hornsey-lane, Highgate, Hampstead, Southgate, Bush Hill, Enfield.
Southwark and Vauxhall Company—Forest Hill.
Middlesex Company—Kidderpore, Shootup Hill.

Towards the end of the sitting the CHAIRMAN asked Mr. Pember how much time the evidence submitted by the water companies would be likely to occupy, and Mr. PEMBER said that their case might be disposed of in about ten sittings. The case for the London County Council had been very fully stated and it was the wish of the companies to state with equal fulness their view of the situation.

At the conclusion of the sitting the Commissioners adjourned until November.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE summer general meeting of the above association was held on Wednesday, July 27th, at 2 P.M., in the students' reading room, Edinburgh.

In the absence of the President (Dr. MAPOTHER), who was detained in London, the chair was occupied by Dr. RICHARD HEATH (St. Leonard's-on-Sea.)

The CHAIRMAN said he was glad to see such a good muster of members notwithstanding the many attractions of the hospitable citizens of the "Northern Athens." He called upon the provincial honorary secretary to make a statement in reference to the hospital appointments question.

Mr. J. STEWART said that since their last provincial meeting another English hospital—and he was glad to say it was a metropolitan one—had rescinded the rule which had previously prevented anyone but a Fellow of the English College of Surgeons from holding a position on the

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honorary surgical staff. He alluded to St. Peter's Hospital for Stone, Covent-garden. These strongholds of monopoly were gradually being reduced in number and he (Mr. Stewart) felt sure that the innate sense of justice which was so marked an element in the English character would ere long lead the governors of the remaining hospitals where the exclusive rule prevailed to open their doors to fully-qualified candidates holding the higher diplomas obtained by examination no matter in which division such diplomas had been obtained. The victories which the association had already gained at Bristol, St. Leonard's-on-Sea, Brighton, and other places were an earnest of what was before them if all those holding Irish diplomas would give a helping hand by joining the association, the membership of which now numbered nearly 750, but which ought to be over 1000.

The CHAIRMAN announced his intention of giving a donation of £10 to the Hospitals Disabilities Fund on the understanding that one of the monopoly strongholds, such as Liverpool, should be attacked by the council as soon as possible and he concluded by moving—

That this meeting hereby records its regret that so many English public hospitals have still among their regulations a rule the effect of which is practically to exclude from candidature for honorary appointments on the staff all who do not hold the diplomas of two specially favoured London colleges.

Dr. P. S. ABRAHAM proposed a vote of thanks to Mr. Stewart for his address and for the untiring efforts he had made for years to bring the monopoly question before the profession and the public.

This was seconded by Mr. JOCELYN SWAN and carried with acclamation.

A vote of thanks to the Chairman concluded the proceedings.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE Secretary of State has made the following further appointments of medical referees under the Workmen's Compensation Act, 1897:—

Circuit No. 3.—Dr. Roderick Maclaren and Dr. Henry Ambrose Lediard, Carlisle; Dr. George Bertram Muriel, Whitehaven; and Dr. Archibald Carmichael, Barrow-in-Furness.

Circuit No. 6 (revised list).—Mr. George Gibson Hamilton, Dr. Thomas Clarke, and Mr. Charles Stuart Pethick, Liverpool; and Mr. Robert Meredith Littler, Southport.

Circuit No. 9.—Mr. William Hugh Hughes, Ashton-under-Lyne; Dr. James Thomson Wilson Baird, Congleton; and Mr. Thomas Castley Bailey, Crewe.

Circuit No. 15.—Mr. Samuel Walker, Middlesbrough; Dr. Charles Dennis Hill Drury and Dr. Walter Petter, Darlington; Mr. Henry Hind, Harrogate; and Mr. William John Beatty, Stockton-on-Tees.

Circuit No. 18.—Dr. Ernest Stanley Nutting, Warsop; Dr. Henry Handford and Mr. Alexander Richard Anderson, Nottingham; and Mr. Simeon Snell, Sheffield.

Circuit No. 19.—Dr. Edmund Vaudrey and Mr. William Legge, Derby.

Circuit No. 22.—Dr. Frederic Thorne, Leamington Spa; Dr. Clement Dukes and Dr. Alfred Russell Darley, Rugby; Mr. Frank Faulder White, Coventry; and Mr. George Heaton, Birmingham.

Circuit No. 24 (further appointment).—Mr. Edward Treharne, Barry.

Circuit No. 26.—Mr. William Dunnet Spanton, Hanley; Mr. George Stokes Hatton, Newcastle-under-Lyme; and Dr. John Holmes Joy, Tamworth.

Circuit No. 27.—Dr. Paul Morgan Chapman, Hereford; and Mr. William Alma Aylmer Lewis, Oswestry.

Circuit No. 29.—Mr. Farington Marsden Granger, Chester; Dr. Joseph Llewelyn Williams, Wrexham; Dr. John Lloyd-Roberts, Denbigh; Mr. John Williams, Carnarvon; and Dr. Edward James Lloyd, Bangor.

Circuit No. 31 (additional appointment).—Dr. Frederick Robson, Port Talbot.

Circuit No. 36.—Dr. Frank Buszard and Mr. Robert Arthur Milligan, Northampton; and Mr. Horatio Symonds and Dr. William Collier, Oxford.

Circuit No. 38.—Dr. Robert James Banning, Shoeburyness; Mr. Murtaugh James Houghton, York-road, Ilford; and Dr. Edward Liveing Fenn, Colchester.

Circuit No. 44.—Dr. John George Garson, 64, Harley-street, W.; Dr. Fletcher Beach, 64, Welbeck-street, W.; and Dr. George Washington Isaac, 75, Gower-street, W.C.

Circuit No. 47.—Mr. Francis James Steward, 24, St. Thomas-street, London Bridge, S.E.

Circuit No. 51.—Dr. William Sykes, Gosport; Dr. John Ward Cousins, Southsea; Mr. Wilfred Balgarnie, Winchfield; and Mr. Ernest Frederick Elliot, Southampton.

Circuit No. 52.—Mr. Frederick King Green, Bath.

Circuit No. 57.—Mr. Joseph Harper, Barnstaple; and Dr. George Lorraine Kerr Pringle, Bridgwater.

Circuit No. 59.—Dr. Peter Gardiner, Camborne; Dr. Arthur Edward Permewan, Redruth; Dr. Hugh Culliford Sharp, Truro; and Mr. Joseph William Gill, Liskeard.

THE ARMY MEDICAL SCHOOL.

THE seventy-sixth session of the Army Medical School, Netley, was brought to a close on July 29th, when the prizes were presented to the successful officers by Lord Lister, in the presence of a large company which included Surgeon-General Jameson, C.B., Director-General of the Army Medical Department; Sir Joseph Fayrer, Bart., K.C.S.I.; Deputy-Surgeon-General Cayley; Surgeon-General M. Webb; the officers of the Army Medical School, and the military and nursing staff of the Royal Victoria Hospital.

The following lists give the positions of the young officers of the Royal Army Medical Corps and Indian Medical Service when leaving Netley, with the combined marks of the Netley and London examinations, the final positions on the lists being determined by the results of both examinations, while the prizes are awarded for marks gained in the special subjects taught at the school.

ROYAL ARMY MEDICAL CORPS.

	Combined marks.		Combined marks.
W. H. S. Nickerson	5048	J. S. Gallie	4254
G. S. Nickerson	4988	F. J. C. Heffernan	4251
G. B. Crisp	4519	A. E. Thorp	4060
R. S. H. Fuhr	4503	C. W. Mainprise	4043
W. Jagger	4488	H. Herrick	3947
A. B. MacCarthy	4467	E. J. Dobbin	3894
G. J. S. Archer	4429	J. Cowan	3889
R. Selby	4413	A. R. O'Flahertie	3833
S. O. Hall	4405	H. B. G. Walton	3676
A. E. Weld	4292	E. P. Hewitt	3174

INDIAN MEDICAL SERVICE.

	Combined marks.		Combined marks.
*T. Hunter	6322	E. F. G. Tucker	5208
†W. R. Battye	6103	G. E. Stewart	5184
‡H. B. Meakin	5948	F. S. C. Thompson... ...	5176
§G. Hutcheson	5603	T. S. Novis	5140
‖W. G. Liston	5585	J. W. Watson	5096
H. Boulton	5505	H. J. R. Twigg	4827
R. W. Anthony	5471	C. W. McG. Orpen... ...	4752

* Gained the Herbert Prize of £20, the Montefiore Second Prize in Surgery, the Martin Memorial Medal, and the de Chaumont Prize in Hygiene.
† Gained the Parkes' Memorial Medal.
‡ Gained the Montefiore Medal and Prize of 20 guineas.
§ Gained the Maclean Prize for Clinical and Ward Work.
‖ Gained the Pathology Prize presented by Sir Joseph Fayrer, Bart., K.C.S.I.

A report of the results of the examination was read by Lieutenant-Colonel J. L. NOTTER, Professor of Hygiene, who invited his lordship to distribute the prizes. After saying a few words to each successful officer Lord LISTER addressed the company and the young officers leaving the school. He said a remark had often been made on occasions like the present, and it was not stale; that was that those who had failed were also to be congratulated not because of their failure, because in many cases that had probably been an accident; but because although some persons had obtained a few more marks and had gained the actual nominal prize, the real prize had been gained by all of them who had striven to attain success. They had gained knowledge which would be a life-long possession to them, and he doubted not would prove of the greatest value to them in their after career. He congratulated the prize-winners on their success and all the young officers upon the fact that they were entering Her Majesty's services under better auspices than their predecessors had done. This was due to the wisdom and understanding shown by Lord Lansdowne, the Secretary of State for War, owing to whose liberal policy the slur which had been attached to the medical service of the Army had been completely removed, and he could not doubt that this would conduce to greater amenities in this branch of the service in the future and to greater self-respect. Whatever the general public might consider thinking men were well aware that their profession was a nobler one than that of arms. It was more exalted in its objects and gave greater scope for the exercise of the highest intellectual powers and the greatest virtues. The virtue which induced a man to tend from day to day his fellow man in the earnest endeavour to diminish the miseries which accident and disease occasioned was one in which their noble profession was especially conspicuous. He considered that the heroism of the medical officer who calmly did his duty on the battle-field was of a higher order than that shown by the combatant who did brave acts

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inspired by the excitement of battle, and he reminded the young officers that in times of peace, when the combatants were largely engaged in the somewhat tedious duties of drill, they themselves would be ever occupied in observing the variations of disease and in making inquiries whereby they would often have opportunities of advancing medical science. As an example of the quiet bravery shown by a medical officer Lord Lister recalled the work done by Sir Joseph Fayrer at Lucknow when exposed constantly to the greatest peril. Continuing his short address his lordship adjured the young officers to keep in view the nobility of their calling. He congratulated them upon the knowledge they had acquired in the great school they were leaving, upon the bright prospects before them, and above all upon being about to enter on the active practice of a profession the due performance of which brought its own never-failing great reward.

The DIRECTOR-GENERAL, in asking the company to accord Lord Lister a very hearty welcome to Netley, said that his visit was especially interesting to them because of his lordship's great services to the world in general and to the army in connexion with aseptic surgery. He mentioned that during the late frontier war in India no death had been due to a wound becoming septic and that all the nine cases of compound fracture of the thigh did well and that we owed these results to Lord Lister's great discoveries and work. He said that among both officers and men a feeling still lingered that the oftener their wounds were dressed the better it would be for them, and that there were those who gauged the attention shown to them by the frequency of wound dressing, while the fact was that if wounds were treated on the principles which Lord Lister had introduced the less a wound were touched after the first dressing the better—that, in fact, wounds should not be redressed for eight or ten days. He hoped that Lord Lister's visit would do something to spread these truths among the officers and soldiers of the army and remove prejudice from the mind concerning a system of treatment which the whole medical profession regarded as scientific. He asked the audience to extend to Lord Lister a very hearty welcome on his visit to Netley.

Sir JOSEPH FAYRER added a few words of congratulation to the successful officers and said that although his official connexion with the school had long ceased it was a source of pleasure to him to watch its progress and to see the results which the Netley teaching had achieved both in India and in other parts of the world. He hoped that the knowledge which they had gained would suggest further investigations, for there was still a great deal lying open to discovery, and he urged and advised them to do their best so that they might thereby become great benefactors to their profession and to the army. In conclusion he congratulated them upon the new titles which Lord Lansdowne had conferred upon them, remarking that in the army only one set of titles carried any weight and enabled men to carry out their duties properly; these titles had now been granted to them and would, he felt sure, be used by them to carry out their responsible duties as the medical officers of the army effectively. No medical officer wanted to command regiments, but as they had other duties to perform it was necessary that they should have military authority and control.

Surgeon-General NASH, Principal Medical Officer of Netley, said he had now to close the session of the school. He hoped that those leaving Netley would feel that their stay there had been profitable and that they would look back upon the time spent in the school as a pleasant one. He wished them success in the services to which they belonged and in which they that day became officers.

Lord Lister and the company were subsequently entertained at luncheon by the officers of the Royal Army Medical Corps.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

A MEETING of the Council of the Metropolitan Hospital Sunday Fund was held on Wednesday, Aug. 3rd, at the Mansion House, to receive the report of the Committee of Distribution and to order payment of awards to hospitals and dispensaries as well as for the transaction of general business. In the absence of the Right Hon. the Lord Mayor, the chair was taken by Sir SYDNEY WATERLOW, Vice-president of the Fund.

The report stated that the Committee of Distribution recommend awards this year to 186 institutions, being an increase of 81 since the first awards were made in 1873 and 2 less than last year. The total amount available for distribution, after allowing for liabilities and the usual current expenses, is £35,000. Of this total £34,304 is now recommended to be paid to 132 hospitals and 54 dispensaries. This year 195 institutions have made applications for grants from the fund. Of this number it was found necessary to invite the attendance of deputations from the governing bodies of 17. In 6 of these cases, including two applications which were withdrawn, the committee were not able to make any recommendation. Deputations from twelve hospitals and from one dispensary conferred with the committee and in nearly every case the committee received explanations modifying the causes of adverse criticism and enabling them to raise the bases of awards as now recommended. Arrangements for restricting the advantages of the out-patient system to the poor have been made at nearly all the large and at some of the smaller hospitals. The practice of making a small charge to out-patients is rather on the increase. The amount available for distribution is less than that distributed last year, but the committee feel that following on a Jubilee year in which strong appeals were made in other directions, the collections this year on Hospital Sunday maintain a fair average, and that the confidence of the public in the Metropolitan Hospital Sunday Fund is well sustained.

Previously to the consideration of the report the CHAIRMAN announced that Mr. Ludwig Mond had for the eleventh time given his annual subscription of £100.

In moving the adoption of the annual report for the twenty sixth time Sir SYDNEY H. WATERLOW said that he could congratulate the fund on the amount collected this year, though the sum was smaller than in previous years. Up to date £38,741 12*s.* 6*d.* had been received and when the difficulties under which collections were made in 1898 as compared with former years were remembered there was very much reason, he thought, to be thankful to ministers of all denominations who had succeeded in collecting so large a sum. Many of their large contributors had either transferred their subscriptions to the Prince of Wales's Fund or had divided their contributions. Referring to hospital abuse he said he believed that it did not exist to any large extent, and the hospitals were doing what they could to check it by appointing officers to inquire into the merits of patients. Sir Sydney Waterlow concluding by moving:—

That the report of the Committee of Distribution for the year 1898 be and is hereby approved, and that the several awards recommended be paid as soon as possible.

Dr. J. G. GLOVER, who seconded the adoption of the report, said he could not suppress his disappointment at the fact that there were £5000 less to distribute than last year.

The Hon. SYDNEY HOLLAND, supporting the motion, pleaded for more support from the public. Hospital managers who devoted their time to the management of hospitals ought to be relieved of the disagreeable work of begging, and he asked the press to make it known that unless the public supported hospitals more energetically than they did at present very evil times were in front of us.

The motion before the meeting was then passed unanimously.

Lord STAMFORD proposed:—

That the cordial thanks of the Council be and are hereby given to Sir Sydney H. Waterlow, Bart. (chairman), and to the other members of the Committee of Distribution for the discretion which they have exercised in interviewing numerous deputations and for the care bestowed in the preparation of the awards they have recommended.

Canon FLEMING seconded the motion, which was adopted.

Sir EDMUND HAY CURRIE proposed:—

That the thanks of the council be and are hereby given to the editors of newspapers who have pleaded the needs of hospitals and advocated the cause of this fund.

In seconding this Sir HENRY BURDETT suggested that greater prominence should be given to the fund by supplying editors of newspapers with literature relating to the fund from time to time and especially just before Hospital Sunday.

Sir SYDNEY WATERLOW said the matter of increased advertising was under consideration.

The resolution was carried.

Sir SYDNEY WATERLOW, in proposing a vote of thanks to

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the Lord Mayor, which was unanimously adopted, referred to the advantage the fund received from having its home at the Mansion House.

Dr. GLOVER asked to be allowed to propose a motion to the effect that the Distribution Committee be requested to investigate and consider the cause of the diminution in the amount collected this year, and to report to the Council at the next meeting.

Mr. THOMAS CHRISTY seconded.

Sir H. BURDETT said he was in a position to state that with the exception of four hospitals, where the circumstances were special and the reasons apparent, every hospital in London last year had a more prosperous year than before. Whatever might be the cause of the fall in the amount collected for the Hospital Sunday Fund it was certainly not due to the year of the Queen's Diamond Jubilee or to the Prince of Wales's Hospital Fund.

Sir SYDNEY WATERLOW said that it would be invidious to make any comparison between the two funds.

Dr. GLOVER disclaimed the slightest wish to make any reflections on the Prince of Wales's Fund.

On the matter being put to the vote three members of Council voted for the motion and three against.

The proceedings then terminated.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE ordinary Comitia of the Fellows of the Royal College of Physicians of London was held on July 28th, the President, Sir SAMUEL WILKS, Bart., being in the chair.

It was announced that the Gulstonian Lectures for 1899 would be delivered by Dr. G. R. Murray, who had chosen the Pathology of the Thyroid Gland for his subject. The Croonian Lectures will be given by Dr. F. W. Mott.

The PRESIDENT stated that the Bradshawe Lecture would be given by Dr. Ord on Myxœdema and Allied Conditions.

Dr. W. B. Ransom was admitted to the Fellowship.

Edward Hanly, M.D. R.U.I., William Darley Hartley, M.D.Durh., and Edward Arthur Saunders, M.A., M.B.Oxon., were admitted Members of the College.

Licences were granted to 135 gentlemen who had passed the recent examination.

Dr. NORMAN MOORE, on behalf of a committee of the Fellows, presented to the College a portrait of Dr. W. Munk, the Harveian librarian, which had been painted by the Hon. John Collier. Dr. Moore recounted the services which Dr. Munk had rendered to the College and in particular dwelt upon his great work of the Roll of the College, which was first published in 1861, and of which a second edition appeared in 1878.—The PRESIDENT briefly acknowledged the gift in the name of the College.

A letter was read from the Charity Commission relative to certain proposals for the future care and maintenance of the Physic Garden at Chelsea, which had been, since its formation by Sir Hans Sloane, in the keeping of the Apothecaries Society, and it was resolved that the College should intimate its desire to be represented on any board of trustees which may be formed to take over the charge of the garden.

Communications were read from the secretary of the Royal College of Surgeons of England reporting the proceedings of its Council.

A letter was read from the Master of St. Katharine's Hospital inviting the College to nominate a representative to act on the council of the Queen Victoria Jubilee Institute of Nurses and in compliance with this request Sir Dyce Duckworth was nominated.

An application from the chairman of Charing-cross Hospital asking for the assistance of the College to the funds of the hospital was read, but the request could not be acceded to as the College had no funds at its disposal for such a purpose.

An application from Sir W. Turner on behalf of the family of the late Sir George Burrows for permission to have a replica made of the bust in the possession of the College to be presented to the General Medical Council was, after some discussion, granted.

The PRESIDENT having informed the College that the University of London Commission Bill had passed the third reading in the Commons a cordial vote of thanks was, on the motion of Dr. STEPHEN MACKENZIE, seconded by Dr. PYE-SMITH, awarded to Dr. Allchin for his long and arduous labours on behalf of the College in connexion with the University question.

On the motion of Dr. DICKINSON, seconded by Dr. CHURCH, it was unanimously resolved:—

The Royal College of Physicians having learnt that certain change are likely to be made in the laws relating to vaccination think it their duty to reiterate their conviction that vaccination, properly performed and duly repeated, is the only known preventive of small-pox, and this opinion they consider to be fully confirmed by the report of the present Commission.

It was further resolved that copies of this resolution should be communicated to Lord Salisbury, Mr. Arthur Balfour, Mr. Chaplin, and the journals.

The Censors and other officers, members of committees, and examiners for the ensuing year were then elected. (See appended list.)

An elaborate report was received from Dr. SIMS WOODHEAD upon specimens of Uganda arrow-head poison, which had been sent to the College from the Foreign Office. A copy of the report was directed to be sent to the Foreign Office and the thanks of the College were voted to Dr. Woodhead.

Reports from the Committee of Management and the Laboratories Committee were read and also reports from the representative of the College on the General Medical Council and from Dr. C. T. Williams, the representative of the College on the Council of Mason College, Birmingham, the latter detailing the proceedings of the meeting lately held to promote the establishment of a midland university.

Reports from the Finance, Museum, and Library Committees and from the examiners for the Licence were also presented.

The following is the list of officers and examiners who were appointed at the meeting:—Censors: Dr. Walter Butler Cheadle, Dr. William Miller Ord, Dr. Philip John Hensley, and Sir R. Douglas Powell, Bart., M.D. Lond. Treasurer: Sir Dyce Duckworth, M.D. Edin. Emeritus Registrar: Sir Henry Pitman, M.D. Cantab. Registrar: Dr. Edward Liveing. Harveian librarian: Dr. William Munk. Elected members of the Library Committee: Dr. Samuel Jones Gee, Dr. Philip Henry Pye-Smith, Dr. John Cavafy, and Dr. George Vivian Poore. Curators of the Museum: Dr. William Howship Dickinson, Dr. Henry Charlton Bastian, Dr. William Cayley, and Dr. Norman Moore. Finance Committee: Dr. Alfred Baynard Duffin, Dr. George Vivian Poore, and Dr. John Mitchell Bruce. *Examiners:* Chemistry and Chemical Physics: Dr. William Ramsay, F.R.S., Mr. Percy Faraday Frankland, Ph D., F.R.S., Mr. John Millar Thomson, F.C.S., Mr. Frederick Daniel Chattaway, Ph.D., and Mr. Henry Wilson Hake, Ph.D. Materia Medica and Pharmacy: Dr. Francis Warner, Dr. William Carter, Dr. Nestor Isidor Charles Tirard, Dr. Hector William Gavin Mackenzie, and Dr. James Calvert. Physiology: Dr. William Dobinson Halliburton, Dr. John Wychenford Washbourn, and Dr. Marcus Seymour Pembrey. Anatomy: Mr. George Robertson Turner and Mr. George Dancer Thane. Medical Anatomy and Principles and Practice of Medicine: Dr. William Cayley, Dr. Joseph Frank Payne, Dr. Thomas Henry Green, Dr. Thomas Lauder Brunton, Dr. Arthur Ernest Sansom, Dr. Horatio Bryan Donkin, Dr. Thomas Barlow, Dr. David Bridge Lees, Dr. Julius Dreschfeld, and Dr. William Hale White. Midwifery and Diseases peculiar to Women: Dr. John Baptiste Potter, Dr. Charles James Cullingworth, Dr. John Phillips, Dr. C. Montagu Handfield-Jones, and Dr. Robert Boxall. Surgical Anatomy and Principles and Practice of Surgery: Mr. John Langton and Mr. John Neville Colley Davies-Colley. Public Health: Part I., Lieutenant-Colonel James Lane Notter, M.D., R.A.M.C.; and Part II., Dr. William Henry Corfield.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Aug. 2nd the President, Sir WILLIAM MAC CORMAC, Bart., being in the chair.

The SECRETARY laid before the Council the balance-sheet and the certificates of the auditors, Messrs. Cooper Brothers and Co., certifying to the accuracy of the accounts for the past year. The balance-sheet and statement of receipts and expenditure were approved and adopted.

The Council considered the desirability of addressing a

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protest to the Government in reference to the proposed alteration of the Vaccination Acts and it was decided to send the following resolution to the Government:

That in view of the proposed alteration in the laws relating to vaccination now contemplated in the Bill before Parliament the Council do reaffirm the following resolution adopted by them on May 11th, 1893, and presented to the Royal Commission on Vaccination, as expressive of their opinion on the value of vaccination—namely:—

We, the Council of the Royal College of Surgeons of England, desire to put on record at the present time our opinion of the value of vaccination as a protection against small-pox.

We consider the evidence in favour of its life-saving power to be overwhelming and we believe, from evidence equally strong, that the dangers incidental to the operation, when properly performed, are infinitesimal.

Experience has satisfied us that even when vaccination fails to afford complete exemption from small-pox it so modifies the severity of the disease as not only to greatly reduce its mortality but to lessen the frequency of blindness, disfigurement, and other grave injuries.

We should therefore regard as a national calamity any alteration in the law which now makes vaccination compulsory.

We are, moreover, firmly convinced that revaccination is an additional safeguard and should be universally practised.

We would add that we believe that the instructions of the Local Government Board for public vaccinators are well designed to secure the greatest efficiency in vaccination and to avoid the liability to risks from the operation.

A letter was read from Mrs. Lee thanking the Council for their condolence on the death of her husband, Mr. Henry Lee.

A letter was read from the Registrar of the General Medical Council forwarding copies of the recommendations of that Council respecting dental education and examination. The subject was referred to the Board of Examiners in Dental Surgery to consider and report.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6910 births and 3709 deaths were registered during the week ending July 30th. The annual rate of mortality in these towns, which had been 14·7 and 15·6 per 1000 in the two preceding weeks, rose further last week to 17·2. In London the rate was 16·8 per 1000, while it averaged 17·5 in the thirty-two provincial towns. The lowest rates in these towns were 9·4 in Cardiff, 11·0 in Blackburn, 11·2 in Preston, and 11·9 in Brighton and in Burnley; the highest rates were 23·0 in Liverpool, 23·7 in Halifax, 25·3 in Birkenhead, and 27·3 in Salford. The 3709 deaths in these towns included 572 which were referred to the principal zymotic diseases, against 378 and 487 in the two preceding weeks; of these, 356 resulted from diarrhœa, 62 from measles, 61 from whooping-cough, 47 from diphtheria, 29 from "fever" (principally enteric), and 17 from scarlet fever. No death from any of these diseases occurred last week in Bolton; in the other towns they caused the lowest death-rates in Bradford, Hull, and Oldham, and the highest rates in Portsmouth, Sheffield, Wolverhampton, and Birkenhead. The greatest mortality from measles occurred in Portsmouth, Plymouth, and Sunderland; from scarlet fever in Wolverhampton; from whooping-cough in Wolverhampton; from "fever" in Huddersfield; and from diarrhœa in Portsmouth, Leicester, Birkenhead, Salford and Sheffield. The 47 deaths from diphtheria included 21 in London, 5 in Liverpool, 4 in Leeds, and 3 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2321, against 2250, 2314, and 2355 on the three preceding Saturdays; 232 new cases were admitted during the week, against 237, 265, and 276 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 175 and 148 in the two preceding weeks, rose again to 173 last week, but were slightly below the corrected average. The causes of 41, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Leeds, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·5 and 20·1 per 1000 in the two preceding weeks, declined again to 18·6 during the week ending July 30th, but was 1·4 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 8·5 in Perth and 13·6 in Leith to 19·7 in Edinburgh and 24·0 in Dundee. The 560 deaths in these towns included 57 which were referred to diarrhœa, 25 to measles, 20 to whooping-cough, 6 to scarlet fever, 3 to "fever," 2 to diphtheria, and not one to small-pox. In all, 113 deaths resulted from these principal zymotic diseases, against 93 and 118 in the two preceding weeks. These 113 deaths were equal to an annual rate of 3·7 per 1000, which was 1·0 above the mean rate last week from the same diseases in the thirty-three large English towns. The 57 fatal cases of diarrhœa showed a slight further increase upon those recorded in recent weeks and included 40 in Glasgow and 4 in Dundee. The deaths from measles, which had declined from 41 to 19 in the four preceding weeks, rose again to 25 last week, of which 13 occurred in Dundee, 5 in Glasgow, 3 in Edinburgh, and 3 in Leith. The 20 fatal cases of whooping-cough showed a decline of 9 from the number in the preceding week, and included 14 in Glasgow and 3 in Aberdeen. The deaths from scarlet fever, which had been 9 and 8 in the two preceding weeks, further declined to 6 last week, of which 3 occurred in Glasgow, where the 3 fatal cases of "fever" and the 2 deaths from diphtheria were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 76 and 75 in the two preceding weeks, rose again to 79 last week and exceeded by 13 the number in the corresponding period of last year. The causes of 29, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·5 and 22·7 per 1000 in the two preceding weeks, further rose to 23·9 during the week ending July 30th. During the past four weeks the death-rate in the city has averaged 21·4 per 1000, the rate during the same period being 15·2 in London and 19.6 in Edinburgh. The 160 deaths registered in Dublin during the week under notice showed an increase of 12 upon the number in the preceding week, and included 14 which were referred to the principal zymotic diseases, against 3 and 12 in the two preceding weeks; of these, 9 resulted from diarrhœa, 3 from "fever," 1 from scarlet fever, 1 from diphtheria, and not one either from small-pox, measles, or whooping-cough. These 14 deaths were equal to an annual rate of 2·1 per 1000, the zymotic death-rate during the same period being 2·6 in London and 1·4 in Edinburgh. The deaths from diarrhœa, which had been 1 and 4 in the two preceding weeks, further rose to 9 last week. The 3 deaths referred to different forms of "fever" exceeded the number registered in any recent week. The mortality from scarlet fever and from diphtheria corresponded with that recorded in the preceding week. The 160 deaths in Dublin last week included 30 of infants under one year of age, and 39 of persons aged upwards of sixty years; the deaths of infants showed a decline, while those of elderly persons showed a further increase upon the numbers recorded in recent weeks. Four inquest cases and 2 deaths from violence were registered; and 64, or more than a third, of the deaths occurred in public institutions. The causes of 9, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

FLEET-SURGEON THOMAS CANNING HICKEY, M.B. Glasg., has been placed on the retired list at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments are announced:—Staff Surgeons: Edward C. Ward to the *Pengwin;* Hamilton Meikle to the *Severn;* and J. O'B. Williams to the *Vivid.*

ROYAL ARMY MEDICAL CORPS.

Major A. E. Tate takes over medical charge of officers,

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women, and children at Colchester. Captain L. Way is placed on the sick list. Lieutenant-Colonel J. C. Dorman has arrived at Dublin.

Surgeon-General John W. Maxham retires on retired pay. Captain Phillip J. R. Nunnerley is placed on temporary half-pay on account of ill-health.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Major Silcock to officiate as Civil Surgeon, Nagpur; Surgeon-Major Price as Civil Surgeon, Bilaspur. Surgeon-Captain Moir, Officiating First Resident Surgeon, Presidency General Hospital, Calcutta, is confirmed in that appointment. Surgeon-Captain O'Kinealy is appointed to be Second Resident Surgeon, Presidency General Hospital, Calcutta. Surgeon-Captain Deare, Civil Surgeon of Nadia, is appointed to act as Civil Surgeon, Midnapore, during the absence, on deputation, of Surgeon-Major Walsh. Surgeon-Major Crawford, Civil Surgeon, Monghyr, is appointed to act as Civil Surgeon of the 24 Parganas during the absence of Surgeon-Major Leahy and to act as Medical Inspector of Emigrants (Colonial Immigration) in addition to his own duties. Surgeon-Major Rogers is appointed to act as Civil Surgeon, Monghyr. Surgeon-Lieutenant-Colonel Comins, Inspector-General of Jails for Bengal, is allowed furlough for eighteen months. The services of Surgeon-Captain Manifold (Bengal) and Surgeon-Captain Young (Bengal) are replaced at the disposal of the Government of the North-West Provinces and Oudh.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain James Turton to be Surgeon-Major.

VOLUNTEER CORPS.

Artillery: 1st North Riding of Yorkshire (Western Division, Royal Artillery): Patrick Bernard Gretton Considine, M.B. Dubl., to be Surgeon-Lieutenant. 4th West Riding of Yorkshire (Western Division, Royal Artillery): Surgeon-Lieutenant J. B. Milne, M.B. Aberd., resigns his commission. *Rifle:* 2nd Volunteer Battalion the East Surrey Regiment: Surgeon-Lieutenant T. Brushfield, M.B. Cantab., to be Surgeon-Captain. 1st (Pembrokeshire) Volunteer Battalion the Welsh Regiment: Surgeon-Major G. Griffith to be Surgeon-Lieutenant-Colonel.

THE SPANISH-AMERICAN WAR.

The political situation and Spain's acceptance of the proffered terms of peace have for the time altogether usurped the place of war news. The Americans will nevertheless be confronted with great difficulties arising from the position which they will have to occupy in regard to the native and insurgent population and the future government and administration of the places to be evacuated by the Spanish troops. But it will necessarily take time to settle these matters, especially as regards Cuba, the Philippines and Manila. The force now advancing under General Miles at Porto Rico appears to be generally welcomed by the inhabitants and to be meeting with little or no opposition from the Spaniards. The Americans are to be sincerely congratulated on the capitulation and capture of Santiago, for General Shafter's expeditionary force, from sickness and other causes, was in serious straits. Fortunately, there has been no severe yellow fever epidemic at Santiago. The total casualties in action among the Americans up to July 15th were: killed—21 officers, 225 men; wounded—98 officers, 1486 men; missing—84 men; or a total of 1914 casualties. The sanitary report from the General shows that on July 28th last the number of sick had increased to 4279, including 3406 cases of fever. The new fever cases numbered 696, and the fever patients who had been restored to duty on the 28th, 590. Brigadier-General Steinberg, Chief of the Medical Department, fully appreciates the seriousness of the situation and is forwarding medical men and nurses to Santiago faster than ever. The sick and wounded prisoners in hospital number 2181. There are also many cases of typhoid fever among the troops stationed at different points in Florida, especially at Miami, where there are now 7500 volunteers under canvas, among whom "malarial typhoid" is very prevalent. Owing to the inadequate facilities for proper sanitation there Mr. Alger, Secretary of War, has ordered the camp to be transferred to Jacksonville. The sick transport service between Cuba and the United States does not seem to have been working satisfactorily. Some of the steamers carrying the sick and wounded have not been large enough or properly equipped and there has consequently been a good deal of overcrowding and great discomfort among the invalids. Much indignation, according to a correspondent writing in the *Daily Mail* on Aug. 2nd, was aroused in regard to the manner in which they were sent back to the States from Cuba in the steamer *Concho*, for example. This vessel left Santiago on July 23rd with 175 officers and men suffering from wounds and fever as well as a large number of other passengers. Five men died during the voyage, the sick on board became worse, and the healthy became ill owing to the bad sanitary arrangements and absence of any proper care and attention. The United States' Government has ordered a strict inquiry into all the circumstances of the alleged grave mismanagement. The complications in and around Manila are becoming serious, to say the least of it. The insurgent populations cannot be trusted to govern either in Cuba or in the Philippines, and the political situation may soon prove as embarrassing to the conquerors as to the conquered. American troops have already arrived, and are still arriving, to form a land force in aid of Admiral Dewey's fleet for the capture of Manila, about the speedy capitulation or fall of which city no doubt is entertained. The health reports of the men belonging to Admiral Dewey's fleet and of the soldiers composing General Merritt's force are fairly satisfactory. The President of the United States has shown himself to be a strong man and has greatly added to his reputation by his judicious and practical conduct of affairs during the war as well as by his moderation in dictating the terms of peace to Spain.

THE SOUDAN CAMPAIGN.

The health of the troops in the Soudan is good; there is now but little enteric fever and almost no dysentery amongst them. The men composing the force who have been occupying the Soudan have become well seasoned to the climate. They have throughout been well cared for in all respects—as regards food, water-supply, and housing—and their physical training has been maintained by route-marching and camp exercises of all kinds. The sick-rate has long been, and still is, under 6 per cent. Surgeon-General Taylor has reached the Sirdar's headquarters at Atbara camp. The railway is now completed to the headquarters' camp and has brought up large quantities of food and stores for the coming expedition to Khartoum. It is probable that no field army has ever been better supplied or looked after than the force about to advance against the Khalifa. It is expected that the capture of a fortified place like Omdurman, defended by a large force of fighting men, will be the toughest thing yet undertaken in our Soudanese warfare. We shall soon see. Meanwhile, Sir H. Kitchener has the merit of keeping his strategical intentions and military plans severely to himself. It will be an interesting and proud position to take part in an expedition which will avenge the death of Gordon—the most chivalric figure of this age—and liberate the native population from a grievous and cruel oppression.

Correspondence.

"Audi alteram partem."

THE VACCINATION BILL.

To the Editors of THE LANCET.

SIRS,—The Bill as amended by the Standing Committee on Law provides (section 1, subsection 2) that "the public vaccinator of the district shall, if the parent or other person having the custody of a child so requires, visit the home of the child for the purpose of vaccinating the child." As an old inspector of public vaccination (under the Local Government Board) in Lancashire, Yorkshire (East and West Riding), Lincolnshire, Nottinghamshire, Derbyshire and Cheshire, I can have no doubt that if the above provision becomes law the attendance of parents with their children at a public vaccination station will soon absolutely cease and that consequently the Local Government Board inspector will be unable to certify by actual inspection whether or not the Board's instructions to public vaccinators are duly observed. The public will thereby lose the protection which the law now gives them. The use of a rusty or foul lancet (with all its possible risks) is not an imaginary evil.

I am, Sirs, yours faithfully,

CHAS. I. BEARD.

Keith-grove, Shepherd's Bush, W., July 28th, 1898.

To the Editors of THE LANCET.

SIRS,—That a subject which involves the health of the community should be made a mere party question in the

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House of Commons clearly points to the necessity which exists for the official representation of the medical profession in that House. At present we are dependent on what may be termed accidental representation, a condition of things which, as we see, allows of tricks being played with public health.

I am, Sirs, yours faithfully,

Harley-street, W., July 27th, 1898. ARTHUR H. CHEATLE.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—There is a statement in the letter in THE LANCET of July 30th signed "M.D. Edin." to which I should like to call attention and which is as follows: "That the acceptance of contemptible fees for responsible professional service is degrading to the individual and derogatory to the dignity of a learned profession is abundantly evident." I should like, therefore, to be allowed to ask your correspondent who takes such high ground, What, in the event of his doctrine being universally practised, is to become of the vast majority of the class who require medical aid but who at the same time are ineligible as recipients of Poor-law relief? Surely it must be evident to your correspondent that only a minority (and probably a very small minority too) of those resident within the British Isles are in a position to remunerate a medical man in any adequate sense of the term remuneration. It is true that clubs, provident dispensaries, hospitals, and the Poor-law exist, and these may be regarded by some as a more or less refined method of covering up or disguising low fees; but as concerns the smallness of the fee I venture to state they are equally if not more "contemptible" in point of pecuniary equation than those derived from a so-called "sixpenny dispensary," and I venture to state further that even if the Government were to undertake the remuneration of our profession, as hinted at by another correspondent, the fees would continue "contemptible," and we have a specimen of this under the present Poor-law system.

I am, Sirs, yours faithfully,

Peckham, S.E., Aug. 2nd, 1898. CLEMENT H. SERS.

THE INDEXES TO THE REPORT OF THE ROYAL COMMISSION ON VACCINATION.

To the Editors of THE LANCET.

SIRS,—Permit me, in thanking Dr. Bond for his complimentary notice of my Index to the Report of the Royal Commission on Vaccination and of that to the report of the dissentient minority, to point out an error into which he has inadvertently fallen. The indexes are not to be had here, as I have made over the copyright to the league, but from the secretary, Mrs. Young, 50, Parliament-street, S.W. As a second edition may be called for I should be much indebted for any errata that may be discovered and notified to me.

I am, Sirs, yours faithfully,

Edgbaston, Aug. 1st, 1898. A. PHELPS.

HOSPITAL REFORM AND SANITATION.

To the Editors of THE LANCET.

SIRS,—Having been requested to read a paper on Hospital Reform at the forthcoming congress in Dublin I shall feel grateful if some of your Irish correspondents will communicate with me on the subject. At first sight there does not appear to be much connexion between hospital reform and sanitation, but on reflection it will be acknowledged that there are several points which are well worthy of discussion at a sanitary congress. For instance, the reception of infectious diseases in a general hospital and the overcrowding of persons suffering from all sorts of diseases in the limited space generally allowed to out-patients are well worthy of the attention of sanitarians.

I am, Sirs, yours faithfully,

T. GARRETT HORDER,

Cardiff, Aug. 2nd, 1898. Hon. Sec. Hospital Reform Association.

PIPERIDINE: A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In the general conclusions at the end of our paper on Piperidine as a Uric Acid Solvent contained in THE LANCET of July 23rd the dose of the tartrate is given as 15 gr. The dose in which we have employed the drug is 10 gr., as stated earlier in the paper.

We are, Sirs, yours faithfully,

F. W. TUNNICLIFFE.
OTTO ROSENHEIM.

Devonshire-street, Portland-place, W., July 27th, 1898.

THE CASE OF DR. REICHARDT.

To the Editors of THE LANCET.

SIRS,—It appears to me justifiable to ask for the support of the members of the medical profession when one of their fellows is attacked by a powerful body in regard to what he believes to be the proper conduct of his profession. I therefore write under the following circumstances.

Dr. Reichardt, of Ewell, who has had considerable experience in the treatment of nervous and insane patients, received into his house, at the suggestion of a leading consulting general physician, a young lady who was suffering from temporary mental depression, he having no other certifiable patient in his house at the time. After the lady had been with him a short time he called in a mental specialist to advise him as to whether the patient, who was still somewhat depressed, was in such a state as to require certification. The consultant decided that, in his opinion, she was not certifiable, and the patient began to improve in all ways till the reception of bad news seemed to upset her again, when she escaped from the house and drowned herself. Dr. Reichardt is now called upon to defend himself at the Old Bailey for alleged offences against the Lunacy Act, and it seems to me to be of the utmost importance to the profession generally that he should be placed in a position to justify the treatment in private of patients who are suffering from temporary mental disorders. I therefore beg to appeal to my medical brethren for pecuniary support.

I am, Sirs, yours faithfully,

GEO. H. SAVAGE.

3, Henrietta-street, Cavendish-square, W., Aug. 3rd, 1898.

THE EFFECT OF THE SOCIAL PURITY AGITATION AT GIBRALTAR.

(FROM A SPECIAL CORRESPONDENT.)

THE terrible prevalence of venereal disease at Gibraltar, accentuated by the interference of the Home Government, is a grievance which affects not only the colony itself but the Spanish towns of Linea, Algeciras, and other surrounding districts. If we read reports on the health of Gibraltar, whether written by the medical officers of health of the colony or by independent critics, a great number of complaints will be found concerning the difficulty of preventing the importation of disease from Spain. At one time it is typhoid fever, at another cholera or small-pox contracted in Spain and spread in Gibraltar; or else disease is imported by means of milk which is brought over from Spain and the distribution of which should be better controlled. Sometimes it may be due to the linen which is sent out from Gibraltar to be washed in Spain and is there dried or washed in dangerous proximity with cases of infectious disease. But if in Spain the sanitation and the drainage of the houses are bad and there are no efficacious means of disinfection, notification, and isolation for cases of infectious fever, very strict precautions are taken to prevent the spread of venereal disease. Undoubtedly some cases of zymotic disease are imported from Spain to Gibraltar, but these are few and far between as compared with the numerous cases of venereal disease spread in Spain from Gibraltar. It is surprising how patiently the Spaniards have endured this grievance, and it is a wonder that the Spanish authorities have not made strong protests against the dangerous neglect

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of the British authorities. In justice to the inhabitants of Gibraltar it must be said that the enormous majority bitterly regret that the interference of the home authorities has brought this shame upon them. They never desired the abrogation of the Contagious Diseases Act, and when this law was rescinded they very ingeniously contrived to continue its application for many years. There was certainly no longer any power to compel women to undergo medical examination, but as the women in question were all Spanish subjects, or at least foreigners, they were not allowed to reside at Gibraltar unless they obtained a special permission to do so. This permission was refused to the women who could not produce weekly a medical certificate of good health. As these women were all accustomed to such medical examination in their own country this regulation constituted no hardship and was willingly accepted.

In 1890 the Social Purity party in England got wind of this arrangement and in that and the following year sent delegates out to Gibraltar. As usual they obtained the support of some members of the clergy and other unpractical sentimentalists. The result is that the police have been ordered to employ no force—in fact, that nothing is to be done. Formerly they did not compel the women to be examined, but they insisted that they should reside in certain houses and produce a certificate every week. The women therefore paid a local practitioner to examine them and thus procured the certificates. Of course, a woman who was a British subject could have refused to show a certificate and the police would have been powerless; but fortunately all, or nearly all, of these women were foreigners and could therefore be sent away if they failed to comply. Indeed, the only measure which can now be taken is to send the women away. The practical result of this state of things is certainly not edifying. A great number of these women have paid Gibraltar British subjects to marry them. They have thus acquired the British nationality. They can therefore defy the police, no one can deny their right to reside in Gibraltar, and one of the first results of the Social Purity agitation has been to induce a number of men to marry prostitutes and to live on the prostitution of their wives. Then, again, as the legitimate wives of British subjects these women can live in any part of the town, whereas formerly they were relegated to certain districts high up on the ramparts where their presence remained unperceived by the more virtuous section of the population.

The Social Purity party have said a great deal about the dignity of women and have represented them as being enslaved and degraded by enforced medical examinations. It would seem, however, as if the women concerned do not appreciate very keenly these arguments. They recognise, on the contrary, that the abolition of the Contagious Diseases Act has proved detrimental to their interests. Disease became so prevalent that the women not only suffered physically but also financially. The men began to shun them and went over to the Linea and other Spanish places. So it has come to pass that the women at Gibraltar for whose sake the law and regulations enforcing medical examinations have been abolished are now seeking by voluntary means to re-establish the very practice which was denounced as so abominable. I was assured by the police authorities that at least half of the public women at Gibraltar at their own expense and every week obtain a medical certificate. Soldiers and sailors and the civil population also are better educated than they used to be and are consequently much more careful. They therefore prefer women who can produce medical certificates and often ask for these certificates. If these certificates, as is urged, encourage vice—a very doubtful and problematical statement—then the abolition of the law has not secured the abolition of the certificates. On the other hand, it must be acknowledged that the usefulness of these certificates is not as yet very great. For instance, when, as is often the case, a woman's name is not known, she can borrow and show the certificate of some other woman. Again, if on examination it is found that she is ill there is no force to compel her to undergo treatment. She can no longer produce other than a borrowed certificate, but there is nothing to prevent her spreading the disease she has contracted. Thus, in spite of the voluntary certificate system, there is still much disease prevalent. Nevertheless, and though the results so far are not very effective, it is most significant to find that the women themselves voluntarily seek to re-establish those regulations which they were supposed bitterly to resent.

According to the police, there are now in Gibraltar about a hundred of what are qualified as "professional" prostitutes and about sixty "clandestine" prostitutes. The civil population of Gibraltar for the year 1897 was estimated at 19,100. The garrison is under 5000. The average strength of the troops amounted to 4630 in 1896. But if the number of women is not larger it is because most of the men go over to the Linea, where they find a cleaner and better class of women. Under these circumstances the Spaniards would be quite justified in urging that the same precautions should be taken at Gibraltar as are taken at the Linea; and, in any case, while this state of things continues it is most inconsistent for us to complain that the same precautions are not taken on the Spanish side to prevent the spread of infectious fevers, &c., as are actually enforced in Gibraltar. The consequences of syphilis are quite as serious as those of scarlet fever or small-pox. We render notification, isolation, disinfection, and vaccination obligatory, thus totally disregarding the liberty of subjects against whose respectability nothing can be said. Yet we will not interfere with the liberty of women who are certainly not qualified as respectable and who are notoriously likely to spread a very terrible disease. This gross inconsistency should silence the complaints which the inhabitants of Gibraltar are in the habit of making as to the insanitary conditions which prevail on the Spanish side and which add to the difficulties of preserving the health of Gibraltar. It is notorious that there is a great increase of venereal disease at Algeciras during the summer months. Nor is it necessary to go far to find an explanation of this phenomenon. The climate of Algeciras is much pleasanter than that of Gibraltar during the heat of summer. Then there is a brilliant fête at Algeciras and bull-fighting. Consequently a great number of people go over from Gibraltar for the summer season, as it is barely half-an-hour's journey by the steamer which crosses the bay. It is these visitors from Gibraltar who spread venereal disease at Algeciras. The medical men who examine the women at Algeciras are unanimous in bearing witness to this fact. Further, they declare that nearly all the women who come from the Linea are found to be diseased; in fact, the women from the Linea have acquired a bad name and are studiously avoided by the Spaniards because of their constant relations with the English. The medical men at Algeciras explained to me that they were very careful to at once examine any woman who came from the Linea and they generally found such women diseased. The Linea was too near to Gibraltar to be anything else but an exceptionally dangerous residence for them.

The difficulty of obtaining permission to reside in Gibraltar has also a tendency to encourage immorality. If a Spaniard lives with a Gibraltar woman and has children the woman and her children can remain because they are British subjects. But if the Spaniard marries the woman then she and her children, legally speaking, become Spaniards and unless they succeed in obtaining a special licence to remain they are all sent away. If the man dies the widow is only allowed to reside three months in the colony; or, perhaps, this licence may be extended to six months. Under these circumstances, as there is money to be made in Gibraltar and in all probability none to be made in Spain, a Gibraltar woman who falls in love with a Spaniard had better, so far as her material interests are concerned, avoid contracting a legal marriage.

Of course there are no statistics showing to what extent venereal disease prevails at Gibraltar as well as these which relate to the garrison. The last published relate to the year 1896 and state that the average strength of the troops was 4630. The average number constantly sick was 246·74. The number of admissions to hospital was equal to 699·5 per 1000, the deaths to 4·10 per 1000, and the constantly sick to 53·29 per 1000. This is a reduction on the figures of the previous year. Taking out of this general total that which relates to venereal diseases it will be found that there were 27 admissions to hospital for primary syphilis, which is equal to 5·8 per 1000, a considerable reduction on the experience of the previous year, when the proportion was 8 per 1000. Then there were 302 admissions for simple venereal ulcer, and this is equal to 71·1 per 1000. For secondary syphilis there were 97 admissions, or 21·0 per 1000, as compared with 27·2 per 1000, the average for the last decennial period. For gonorrhœa there were 655 admissions, or 141·5 per 1000, which is a trifle less than the previous year, but more by 18·6 per 1000 than the last decennial average. Taking all forms of venereal disease together the proportion stands

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at 233·6 cases per 1000, as compared to 316·2 per 1000 for 1895 and 269·2 for the decennial average. The ratio of constant inefficiency was equal to 25·69 per 1000, which is lower by 5·96 than the previous year but 4·12 per 1000 higher than the average. Thus the inefficiency of the force in consequence of illness in 1896 was equal to 52·29 per 1000, and more than half of this loss—namely, 25·69 per 1000—was due to venereal disease. What this means with regard to the fighting capacities of the force is self-evident. It is not necessary to enlarge on this phase of the subject. It is only necessary to compare the above figures with similar statistics relating to any continental army to understand the manifest inferiority in this respect of the British as compared with any other army. If by thus weakening our forces any great moral good could be achieved then it might be worth while to endure this sacrifice. But experience acquired at Gibraltar shows that by abolishing the medical examination of women worse phases of immorality have resulted. We have encouraged men to marry prostitutes and to trade on their prostitution. The "social evil" has not been abolished, it has been accentuated.

THE SPANISH-AMERICAN WAR.

(FROM SPECIAL CORRESPONDENTS.)

On board Hospital Ship *Relief*, near Santiago, July 7th, 1898.

OUR voyage here was without incident and was broken only by a short stop at Fortress Monroe, where we met the Surgeon-General of the Army and took on board a number of surgeons for whom General Shafter had telegraphed on finding the casualties far in excess of what he had at first supposed. Among those who joined the *Relief* was Dr. Nicholas Senn, of Chicago, who goes to Cuba as chief of the operating staff with the army in the field. He will give naturally special attention to the perfecting of the newly-established system of division hospitals.

Dr. Senn expressed himself as delighted with the general arrangements of the ship, though he has made some suggestions for its improvement in certain details. The cots, for instance, are fitted with wooden fenders to prevent patients from being thrown out; these, Dr. Senn said, should without doubt have been of canvas.

The hurricane deck is to be used for typhoid or other infectious fever which may develop on board. Dr. Senn called attention to the fact that in all properly appointed hospitals the fever wards were on the lower floors, and not on the upper floor as in this ship. He is of the opinion, however, that under no circumstances should cases of infectious disease be allowed to remain on board ship; they should at once be removed to a shore hospital. We were shocked on arriving at Fortress Monroe to hear that there had been over a thousand killed and wounded in the first fight at Santiago. The painful fact was forced upon us that if the casualties continued in this proportion we should be woefully in need of more hospital space, which only goes to emphasise the necessity not of one, but of many such ships as this. The truth is that neither the powers that be nor the people appreciated for a moment what they had undertaken in this war. Then, too, the extraordinary freedom from casualties which characterised the operations of our fleets in the Atlantic and the Pacific led to the belief that the Spanish could not shoot and would not fight; in short, that we should have an easy time of it.

Santiago itself is a hotbed of yellow fever, and a high authority, whom I cannot quote by name, said that if we invest the town we are sure to have an outbreak of this dread disease, with a loss of 25 per cent. I asked Dr. Senn if the climatic conditions around Santiago were likely to lead to bad results after amputations and other operations. He replied that, other things being equal, heat and humidity did not militate against rapid healing; so that it will doubtless be a source of gratification to those who have loved ones in the field to know that the after-results of operations in this climate are, as a rule, so satisfactory.

We arrived at Siboney this afternoon to find that about 2000 men had been killed and wounded. The medical corps suffered severely. The Spaniards did not respect the Red Cross, having fired repeatedly upon the ambulances and at wounded men on stretchers. This is a severe charge, which I make unreservedly upon the authority of a dozen men, surgeons and officers who were at the front. Colonel Dickinson was shot twice, once while being carried to the tent, and a second time, and this time fatally, just as he was entering the tent. Two surgeons and a hospital steward were killed in the same way. When Dr. Torney and Lieutenant Gobbs went ashore they wore the Red Cross brassard. The first remark which the wounded men and the surgeons made to them was to advise its removal, for far from being a protection it but served as a mark for the Spanish. This conduct on the part of the Spanish was in the face of the fact that they had Red Cross flags flying all over Santiago.

The condition of the wounded on shore here is beyond measure wretched and excites the lively indignation of everyone. I content myself with mentioning this fact—it is not the fault of the medical corps. The quartermaster and commissary departments are to blame. We were distressed not to be able to take the sick and wounded on board this afternoon, but owing to some official red tape Dr. Torney was not given an anchorage—the shore, of course, had been prepared for the ship. Why this was not done when the wounded so sorely needed the comforts and attention which we can give them is a mystery officialdom will have to explain.

We begin to take on the wounded to-morrow morning at 4 A.M. I close this to catch the transport about to sail. There is no sickness on board the *Relief*.

Another correspondent writes:—

In Camp on the Hills, near Santiago, Cuba, July 6th, 1898.

I am glad to be able to write to you after the hot engagement we had recently with the Spanish. As regards the wounds inflicted, the Spanish are using two kinds of rifles, the one loaded with the Mauser steel-jacketed bullet similar to our bullet, but of slightly smaller calibre and more pointed, calibre 27.+; and the other with the Remington brass-jacketed bullet, calibre 44. The firing has been mainly at medium range, about 700 or 800 yards. The main thing noticeable was the slight amount of shock following injury by the Mauser bullet and the great amount of shock with the Remington. As my work was altogether that of first aid, I know nothing of the damage done internally, but in the cases handled by me which were many, the Mauser balls appeared to make nothing more than a clean punctured wound, that of exit being hardly if any greater than that of entrance. The amount of bleeding was practically *nil*, even in perforating wounds of the lung. The percentage of killed was small as compared with the number of wounded and in consequence of the small degree of shock the majority of the latter are doing well and some are already back on the firing line. There was very little shattering of bone; personally, I did not see a single case. Some men with brain-perforations lived forty-eight hours after reaching the division hospital. The penetrating abdominal wounds were necessarily serious and the shock severe. It will be interesting to follow their history when report can be had of their subsequent behaviour after reaching the hospital. A number of the wounded were hit several times before becoming disabled sufficiently to prevent fighting. The results from the larger bullets were more like those from our bullets during the late war: large wounds of exit, great shock, and probably considerable damage along the track of the ball. I saw several of these bullets with torn, jagged jackets, which made severe injuries. It is said that protest has been made against the use of the brass-jacketed bullet, both by our people and the foreign attachés here with us, as a violation of the article on projectiles in the Geneva Convention, for the reason that the brass jacket is an irritant to the tissues and the soft lead core in it is liable to make it spread and inflict injuries like those made by express bullets. It is believed that this bullet is used by the guerillas among the Spanish.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The "Weighting" of Textiles.

AT the meeting of the Manchester Chamber of Commerce held on the 27th ult. a matter came under discussion illustrative of the views which some manufacturers hold as to commercial morality and interesting to the medical profession from its bearing on health. Mr. W. Fogg called attention to a note in the *Manchester Guardian* of that morning in regard to the "weighting" of woollen blankets with moisture-attracting

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substances such as those employed in low-priced sheets made from cotton waste. He said that they were indebted to Mr. Carse for bringing this pernicious practice, which is believed to be growing, under the public eye. A manufacturer wrote to him as follows: "We have the same evil to contend with in the blanket trade that you have hit on the head in the waste twill sheet trade, and blankets will soon be as dangerous to sleep under as sheets if certain practices in filling are allowed to go unchecked." He says if they do not follow suit they will lose all their trade. We may hope the judgment and good sense of the people will come to the rescue. "Another manufacturer had been candid enough to say that he would not sleep under a pair of his own sheets for £100." Mr. Reuben Spencer said that "the mixtures of zinc and Epsom salts used for weighting purposes were very deleterious in the effects they produced, though it was to be said for them that they were fatal to insect life." The boasted integrity of the British merchant and manufacturer promises before long to become a legend incapable of belief. A resolution was passed unanimously: "That the president be requested to call the attention of the Home Trade Sectional Committee to the practice of 'weighting' textile fabrics used for clothing with moisture-attracting materials, with a view to devising the best method of dealing with the evil." It is discreditable to British trade that such a resolution—which will by no means disturb the minds of those who are wicked enough to endanger the health of all who use their goods—should have to be put on record.

Cotton Districts Convalescent Fund.

The almost forgotten cotton famine is again brought to mind by the meeting of the governors of the Cotton Districts Convalescent Fund, which was held the other day under the chairmanship of Lord Egerton of Tatton, who was supported by many noblemen and gentlemen of Cheshire and Lancashire. The report stated that during the half-year ending June 30th 1278 patients had been sent to the convalescent hospitals at Southport, Buxton, and Cheadle, at a cost of £2085 5*s.* 1*d.*, as against £2395 15*s.* 4*d.* in the corresponding period last year, when 1379 patients were admitted to the institutions through this fund. It stated also that the Convalescent Hospital and the Children's Sanatorium at Southport had been recently visited by several members of the Hospitals Committee, who found the patients comfortably quartered and attended to, while the day-rooms, dormitories, and administrative offices were clean and orderly.

The Stockport Union Workhouse.

The question of workhouse accommodation has exercised the minds of the Stockport Union Guardians for some time and the enlargement of the present workhouse or the building of a new one has been the subject of very animated discussions. That something should be done quickly is evident from the report of Mr. W. B. Bale, the medical officer, which was read at the meeting of the guardians held on July 28th. He stated that the female imbecile wards were so overcrowded that six of the inmates had to sleep in the body of the house, which was a cause of anxiety and danger. The floor of one ward is said to be so rotten as to be dangerous, but the difficulty is to find a place for the 40 women inmates during the necessary repairs. In the meantime, according to the newspaper reports, the guardians spend their time in wrangling over—or discussing in an animated fashion—the building of a new workhouse at Stepping Hill or acquiring property at Shaw Heath to permit of the extension of the present workhouse.

Aug. 2nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of the Very Rev. Principal Caird, D.D.

IT will be with very genuine regret that graduates of the University of Glasgow will read of the death of Principal Caird. But a few weeks ago the intimation of his resignation was accompanied by what were believed to be well-founded hopes that the most serious features of his illness had subsided and that there remained for him a period of quiet in the evening of his life. Unfortunately, these hopes have proved groundless and during the closing days of last week his strength rapidly declined and he died early on the morning of July 30th. Dr. Caird had been Principal of the University for more than twenty-five years. As a pulpit orator he stood in the very front rank and his annual address to the students—discontinued in recent years in consequence of failing health—used to be one of the features of the session. It is almost impossible to over-estimate the influence which he exerted on the life of the University, and many hundreds of former students will recall his dignified presence, lofty eloquence and sympathetic insight with pathetic and affectionate regret.

Queen Margaret College, Glasgow.

The University Court have appointed Mr. William MacLannan, M.B., C.M. Glasg., to be lecturer on Materia Medica and Therapeutics in Queen Margaret College.

Appointments under the Workmen's Compensation Act, 1897.

The following gentlemen have been appointed medical referees under the above Act:—Inverary: Mr. James Stewart; Oban: Dr. Dove M'Calman; Dunoon: Dr. John Ritchie; Campbeltown: Dr. John Cunningham; County of Berwick: Dr. John M'Watt; County of Linlithgow: Dr. J. C. Dunlop; Sheriffdom of Perth: Dr. Alex. Thom.

Memorial to the late Dr. Greig Smith.

A neat tablet in artistic brass has been placed on the wall of the lobby of the Aberdeen Students' Union. The inscription runs: "In Memory of James Greig Smith, M.A., M.B., C.M. Aberdeen, Professor of Surgery, University College, Bristol. This tablet is erected by his friends to commemorate his attainments as a surgeon and to recall his career to the students of the University of Aberdeen. Born 1854; died 1897."

Aberdeen University Buildings Extension.

The University authorities have every reason to expect at a very early date an additional donation of £15,000 to the funds for this scheme. A conference of various bodies is to be held soon as to the proposed retention of old Greyfriars Church which was made a condition of a gift of £10,000 offered by an anonymous donor.

History Lectureship, Aberdeen University.

Mr. Charles Sanford Terry, Clare College, Cambridge, has been appointed Lecturer in History by Aberdeen University Court. There were ten candidates. Mr. Terry is at present Lecturer in History in Durham College of Science, Newcastle.

Aberdeen Medical Volunteer Staff Corps.

Forty men of this corps left Aberdeen on July 29th for Aldershot for a week's training and for the purpose of taking part in the military manœuvres on Aug. 5th, along with detachments from the Universities of Edinburgh, Glasgow, and London. On finishing their training the men have the option of going home or of staying in the metropolis till October with the object of attending the large hospitals there.

Aug. 3rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Queen's College, Belfast.

AT the medical class examinations held at the close of the summer session in the above College the following prizes were awarded:—Botany.—Sydney Herbert George Blakely, Robert James Bethune, Henry Mulrea Johnston, John M'Clatchey, James Hamilton Campbell, and James Kennedy Small. Practical Chemistry.—Senior: William Rodgers, M.A. Junior: John Knox, Samuel Hugh Whyte, and Alexander M'Cloy. Systematic Pathology.—William Matthew Hunter, Robert Steen, and Annie Helen Crawford. Practical Pharmacy.—John Hope Retford, B.A., and Marion Braidfoot Andrews.

Death of Mr. A. C. McCutcheon, L.R.C.P. & S. Irel.

I regret to announce the death at Wakefield, Yorkshire, on July 23rd, of Mr. Andrew C. McCutcheon. About three weeks ago he was seized with acute inflammation of the stomach and on July 23rd a serious change set in and he sank that night. A native of Ballymena, where his father is well known, Mr. McCutcheon studied in Dublin and gained many prizes at the Meath Hospital and at the Dublin College of Surgeons whose diplomas he obtained in 1892. Eighteen months ago he settled down in practice in Wakefield, Yorks.

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where he was most popular with his patients. He was buried in Ballymena on July 26th, an immense concourse of friends following his remains to their last resting place. The greatest sympathy is expressed for his relatives in their sad bereavement.

Death of the Queen's Oldest Subject.

Mr. Robert Taylor, postmaster of Scarva, county Down, the oldest subject of Her Majesty the Queen, died at his residence Scarva, county Down, on July 25th. His age was problematical, but it is alleged that he was born in 1764, the date being arrived at by comparison of events current in his youth and with which he was more or less connected. It is based on statements made by himself many years ago, and those who in former times were intimately acquainted with him hold that he was 134 years of age. Others fix his birth year as 1780, which would make his age 118 years. Although latterly his physical strength was gradually decreasing his mind was clear until the end. A few months ago the Queen sent Mr. Taylor a beautifully-framed portrait of herself with the following inscription: "This picture is presented by Queen Victoria to Mr. Robert Taylor, postmaster of Scarva, on his having attained an almost unprecedented age, April, 1898." By his death the Queen has lost her oldest subject and county Down its grand old man. Those who are interested in centenarians may like the following, taken from the *Northern Whig*, a Belfast newspaper, for reference:—

County Down appears to be exceptionally favourable to longevity. Scores of centenarians have lived and passed within its borders during the last 300 years. We read of Adam Montgomery, who "lived so long in sound health (105 years) over in the Ards that he would play at hide-and-seek with his great-grandchildren." More remarkable was Alexander Bennett, who died in his 125th year at Downpatrick in 1745. Within a period of seven years (1749-56) died four such persons in Rathfriland—Jane M'Afee, 115; Isabel Laughlin, 118; Alexander Mackenzie, 120; Jane Mackenzie, 114. Doubtless the latter two were husband and wife. Two other Rathfriland men survived—to 106 Henry Cowe, 121 Samuel Malcolmson. The oldest of whom we have record was James Thomson, 131, who expired at Ballynahinch in 1796. James Martin, 112, and Mary M'Dowell, 118, also belonged to Ballynahinch, and others are associated with almost every town in the shire, the latest in the present century being Joseph Carnaghan, Warlingstown, 108, and Peter White, Loughbrickland, 106. All of these were notable examples of perseverance and the effects of a salubrious climate, but none of them bore the burden of life so well or so lightly as Robert Taylor has done.

Queen's College, Belfast, and the Royal University of Ireland.

At the recent examinations of the Royal University of Ireland, Queen's College, Belfast, obtained 18 first honours, 28 second, and 18 exhibitions, or a total of 64 high distinctions. For comparison's sake the corresponding figures for other colleges may be given. They are as follows: Queen's College, Cork: no honours and no exhibitions. Queen's College, Galway: 4 firsts, 7 seconds, and 5 exhibitions; 16 in all. Magee College, Derry: 2 firsts, 4 seconds, and 1 exhibition; 7 in all.

The Ulster Eye, Ear, and Throat Hospital.

At the twenty-seventh annual meeting of this hospital, held on July 26th, it was reported that the total number of patients for the past year was 1507, and of these 220 were admitted into the hospital. The total receipts for the year were £655 0*s.* 5*d.* and the disbursements amounted to £941 11*s.* £381 16*s.* 10*d.* were received from intern cases and £120 3*s.* 10*d.* at the extern department. The total debt of the hospital now on general account is £470 12*s.* 1*d.* The whole hospital buildings and furniture have been insured for £6400.

Aug. 1st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The International Congress on Tuberculosis.

THE fourth international congress on Tuberculosis opened in Paris on Wednesday, July 27th, at the Faculty of Medicine. The large theatre was entirely filled by a crowd of medical men, among whom were a large number of foreigners. The presidential chair was occupied by M. Nocard, Professor at the Veterinary School at Alfort, supported by M. L. H. Petit (general secretary) and Professor Brouardel, Professor Bouchard, Professor Potain, Professor Lannelongue, Professor Grancher, Professor Cornil, and others. M. Nocard delivered an opening discourse in which he eulogised Villemin and Verneuil, who were the original organisers of these congresses. He reiterated the assertion that contagion played a large part in the etiology of tuberculosis, giving it as his firm opinion that the complaint was one of those which were most easy to avoid and that out of 150,000 persons who yearly fell victims to tuberculosis in France 125,000 might have been saved if they had been protected from contagion. Next M. Petit, the secretary, gave an account of what had resulted from the application of the measures suggested by the congress of last year. The two first, which dealt with the question of providing spittoons in public elementary schools so as to train the children not to spit on the floor, have only just begun to be applied. The third measure, which declared that tuberculosis ought to be numbered among the infectious diseases and that its notification ought to be obligatory, has not been acted upon. The fourth measure, which related to the compulsory disinfection of places where tuberculous patients had died, is at present being carried out fairly completely, at least in Paris and the large towns. The last measure, which dealt with the question of receiving tuberculous patients in special hospitals, or of isolating them in general hospitals, has been acted upon in so far that at the Lariboisière Hospital, at the Laennec Hospital, and at the Boucicaut Hospital, wards have been set aside for the isolation of such patients. Six millions of francs (£240,000) have been reserved for the building of such wards in the hospitals of St. Antoine, Cochin, Broussais, Bichat, La Pitié, Tenon, and in a new hospital to be built on the right bank of the Seine. — The congress then commenced the hearing of papers and reports. Professor Bang, of the Veterinary School of Copenhagen, read a most important paper on the struggle which was going on against animal tuberculosis by means of prophylactic measures. He referred briefly to various measures taken in Europe for the inspection of meat exposed for sale which had been taken from tuberculous animals as well as the transmission of tuberculosis by milk. The most interesting statement he made was in reference to the regulations introduced this very year in Denmark, which absolutely forbid any dairy to sell separated (*écrémé*) milk without its being previously heated to a temperature of 85° C.; after this it is quickly cooled, which prevents it having any peculiar taste. Professor Storch has discovered a test to show that the heating to 85° C. has been really carried out, for milk treated in this way preserves its colour when there are added to it a drop of a solution of peroxide of hydrogen and 2 drops of a 2 per cent. watery solution of paraphenylendiamine, whilst milk which has not been heated to 85° C. turns blue.—Various papers followed, notably one by M. Letulle upon the Present Provision for Tuberculous People in Hospitals in Paris; one by MM. Arloing and Courmont upon the Employment and the Clinical Value of the Agglutination Test; and one by M. A. J. Martin on the Increase in Applications for Disinfection after the Death of a Tuberculous Patient, which were sent in by the public and which numbered 7000 for the first half of 1898.—The second matter for discussion on the programme was the application of the x rays to the diagnosis and treatment of tuberculosis. M. Claude read a very important paper on the subject of Diagnosis, and referred to the progress which had been made in the matter by means of the rays. M. Espina of Madrid related how he had made a very early diagnosis by this method. M. Bedard described how he had diagnosed a tuberculous hip-joint at its very commencement in the same way. Various members reported researches which they had made as to the action of the x rays on the vitality of Koch's bacillus both in living tissues and in cultures.—The third matter for discussion was the treatment of tuberculosis by serums and toxins. M. Landouzy gave a very complete account of the whole matter in a long paper. M. Maragliano detailed his method of treatment by toxins. Professor Hirschfelder of San Francisco has treated tuberculosis by the oxytuberculine obtained by heating tuberculine for 120 hours with oxygenated water. M. Arloing and M. Guinard have been studying the physiological effects of the different products obtained from cultures of Koch's bacillus.—Besides the actual meetings of the congress at the Faculty of Medicine various demonstrations have been given during its sittings. On the morning of July 27th members paid a visit to the Boucicaut Hospital, where M. Letulle showed the special appliances which they possessed for the treatment of tuberculosis. On the evening of July 28th an x ray demonstration as regards the diagnosis of affections of the chest was given in the physical laboratory at the Faculty of Medicine by Professor Gariel, and a similar demonstration was given on July 30th at the Charité Hospital by Professor Bouchard. On July 29th at the St. Louis Hospital in the dermatological clinic of Dr. Hallopeau, Professor

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Bang of Copenhagen gave a demonstration of Professor Finsen's method of treating cutaneous tuberculosis by coloured and concentrated luminous rays. Sunday, July 31st, was devoted to a visit to the environs of Paris, in the course of which the various special hospitals established for the treatment of tuberculosis at Ormesson and at Villiers-sur-Marne were inspected.

Medical Clubs.

A scheme for the organisation of a medical club in Paris has just been put forward by Dr. Doléris. Its object is to form a rallying centre for foreign and provincial medical men during the exhibition of 1900, and the idea has already been fairly well received. It is also announced that a medico-pharmaceutical club has just been founded at Lille, and that it now numbers eighty members.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Navy Full Diet Table.

THE medical officers of the United States Navy have adopted a new full diet table for one day as follows (the number after each article relating to the ounces):—Breakfast: coffee, 1; bread, 4; butter, 1; milk, 6; sugar, 1; oatmeal, 1; beefsteak, 6. Dinner: rice-soup, 8; bread, 4; roast beef or roast or boiled fowl, 8; other vegetables, 6; pickles, 1; bread pudding with sauce, 6; or custard, 8; fresh fruit, 6. Supper: tea, 1-4; bread, 6; butter, 1; milk, 2; sugar, 1; cold roast mutton or cold roast beef, 4; stewed dried fruit or baked fresh fruit or apple sauce, 4. The staples, as coffee, bread, butter, milk, sugar, and fresh and dried fruits are the same for each meal, but there is a daily variety in meat and other articles for breakfast, dinner, and supper.

Liquid Air in Medicine and Surgery.

It was an Englishman who discovered how to produce liquid air, but an American has carried the investigation a bit further and now tells us how this discovery can be put to practical use, stating that in medicine and surgery its possibilities are vast. It is claimed that by means of this process air absolutely free from germs could be furnished in any amount, and if the stimulating effect of an excess of oxygen were desired it could be had without trouble quite free from the impurities which now make this gas so often objectionable. The temperature of hospital wards even in the tropics could readily be cooled to any degree prescribed by the physicians in charge, and by keeping the air about yellow-fever patients down to the freezing point the nurses would be perfectly protected against contagion and the recovery of the patients themselves facilitated. Again, the cauterising cold which liquid air is capable of producing might be used in cases of cancer with great benefit as compared with nitrate of silver since while it absolutely destroys the flesh to which it is applied its action is perfectly under control and can be stopped in an instant. It is probable, also, that hay fever, asthma, and even consumption could be greatly relieved without change of climate by this pure, cool, germless air.

The Michigan State Board of Health.

This board is about to celebrate the quarter centennial anniversary, and an effort will be made to place before the citizens of Michigan accurate comparative statements of the conditions affecting the public health, and of the actual conditions of health in Michigan before and since the board of health was formed, especially exhibiting, if it be true, that there has been a very marked improvement of the health of Michigan in recent years; statements of the principal dangers to life and health at the present time; a discussion of different measures for the further promotion of the public health of that State, and to place before those who may visit Michigan on that occasion the beauties of the various summer resorts around the Great Lakes and at the numerous inland lakes and other sanitaria, the general healthfulness of the State, and its advantages as a summer resort State.

The Maritime Provinces of Canada as a Summer Health Resort.

The popularity of the maritime provinces of Canada as a holiday resort has been rapidly increasing during the last few years. In the warmer months tourists have been going there in larger and larger numbers, crowding the steamers and trains and overflowing the hotels. The increase in the number of tourists has really been so great of late that it was difficult to provide sufficient accommodation in many of the favourite localities, and in numerous places visitors have had to put up with inconveniences which almost amounted to hardship. Now that the people have become aware of the popularity of the provinces, the business instinct has awakened and every effort has been put forth by railway, steamboat, and hotel men to prevent a repetition of the uncomfortable overcrowding to which the tourists of the last two or three seasons have had to submit. The train and steamboat service is to be augmented, so as to provide for any contingency, and numerous hotels have already been, or shortly will be, completed in the localities where the congestion has been most marked in times past. All this is being done because of the assurance that future seasons will bring even greater numbers of visitors than in the past.

American Sanitation of Havana.

The Louisiana State Sanitary Association recommends that as nearly every epidemic of yellow fever which has ruined our commerce and ravaged our shores has had its origin in the colony of convalescents, Havana, our representatives in Congress be requested to lay before the proper Federal authorities the necessity of stamping out the yellow fever there, to the end that when the war now existing between Spain and the United States is ended and the articles of peace are drawn up it shall be nominated in that bond that "the sanitary regulations of Havana shall immediately commence under the surveillance of American sanitarians and engineers." The same association approves the plan of having medical inspectors attached to those consulates where yellow fever and cholera are epidemic with a view to securing for our protection definite information as to the exact sanitary condition and the presence or absence of contagious diseases in such consular districts and that congress be urged to make the necessary appropriation to carry the plan into effect. Also this association is of the opinion that it is a duty devolving upon all nations to take measures to eradicate any plague centre from their territory, and that the existence of such centres is a menace to all nations, and that our State department be requested to take measures through proper diplomatic channels for the conveyance of this opinion to the governments deemed obnoxious to the opinion herein expressed.

July 19th.

Obituary.

WILLIAM FRANCIS ADAMS, L.R.C.P. LOND., M.R.C.S. ENG.

MR. W. F. ADAMS, the senior assistant medical officer at the Cornwall County Asylum, Bodmin, was found dead in his bed on July 27th. He was the youngest son of Mr. Richard Adams, L.R.C.P. Edin., M.R.C.S. Eng., who a few months ago resigned the post of medical superintendent at the Cornwall County Asylum after having held the appointment for many years. The deceased, who was only twenty-six years of age at the time of his death, received his medical education at the London Hospital and obtained the qualifications of L.R.C.P. Lond. and M.R.C.S. Eng. in 1892. Shortly afterwards he was appointed junior house surgeon at the South Devon and East Cornwall Hospital, Plymouth. Mr. Adams had a lifelong connexion with the Cornwall County Asylum and his recent appointment on the medical staff was a very popular one. Much regret is felt at his early death and the deepest sympathy is expressed in Bodmin for his bereaved parents. At the inquest held on July 28th a verdict was returned of "Syncope resulting from fatty degeneration of the heart."

POOR-LAW CONFERENCE.—Lord Edmond Fitzmaurice, M.P., presided at the South-Western Poor-law Conference held at Plymouth last week. Dr. H. Rayner contributed an interesting paper upon the Treatment of Pauper Imbecile and Feeble-minded Children. A resolution was passed stating that it was imperative to make special provision for the treatment of these children and advocating the establishment of one or more central institutions in the south-western counties for the purpose,

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THE BRITISH MEDICAL ASSOCIATION.

MEETING AT EDINBURGH.

THE sixty-sixth annual meeting of the British Medical Association came to a successful termination on Saturday last.

Principal Sir William Muir, the President, and the other members of the Senatus Academicus of the University of Edinburgh held a reception on Thursday, July 28th, to which members of the British Medical Association were bidden. The guests were received in the library hall of the University and there was a large attendance. Sir William Priestley, the representative of the University in Parliament, has recently borne the expense of the redecoration of the library hall and his generosity has been well expended. The fluted pillars have been painted cream colour with white stone bases; the panels in the roof have been tinted light blue, and the carved mouldings and frieze have been gilded, the background being a deep red. The electric light was used for the first time in the building on this occasion.

A reception was also given on Thursday afternoon to the Association by the President and Fellows of the Royal College of Surgeons of Edinburgh in the Surgeons' Hall. There was a large gathering of guests, more than 300 ladies and gentlemen being present. The guests were received in the committee-room by the President of the College, Professor Chiene, with whom were Mrs. Chiene and several of the office-bearers of the College. There was a reception by the Royal Medical Society in their rooms at Melbourne-place on the same afternoon. The Presidents of the society, Dr. T. A. Ross, Dr. H. S. Ballantyne, Professor G. L. Chiene, and Dr. E. E. Porritt, received the guests, who numbered between 200 and 300, in the large hall, which was tastefully decorated for the occasion.

A reception was held also on Thursday afternoon by the Royal College of Physicians of Edinburgh in their premises in Queen-street to which the members of the Association were invited. Owing probably to the wet weather the attendance of guests was small compared to the number of invitations which had been issued. It had been arranged that after being received in the College the visitors should adjourn to the gardens opposite the building and enjoy the band and pipe music to be provided, but the weather caused this part of the programme to be departed from. The guests were received in the hall by the President, Sir John Batty Tuke. On the same afternoon a large number of members of the Association visited the Royal Hospital for Sick Children upon the invitation of the directors and medical staff.

Professor and Mrs. Bayley Balfour's garden party to the Association on Thursday also suffered from the effects of the weather. The host and hostess were at home from 4 till 6 o'clock at Inverleith House, within the grounds of the Royal Botanic Gardens and Arboretum, but only during an interval of half-an-hour, when the rain ceased, could the guests take an opportunity of visiting the botanic garden, the palmhouses, and the greenhouses. Over 200 ladies and gentlemen accepted Professor Balfour's kind invitation.

On Thursday afternoon a number of Sir John Struthers's old pupils met at his house in George-square to present him with an address of congratulation upon his having received the honour of knighthood. Sir John Struthers, who is President of the Section of Anatomy at the present meeting of the Association, had not been in sufficiently good health to attend the meetings, and acting under medical advice was compelled to refuse the invitation of his old pupils to a dinner in his honour.

Some 450 members and guests assembled in the Music Hall, George-street, on Thursday evening, when the annual dinner of the Association was held. The scene presented recalled that of the dinner held at the Queen's Hall, Langham-place, when the British Medical Association met in London in 1895, but on the present occasion the addition of scenery to the elaborate arboreal decorations which characterised the London gathering increased the effectiveness of this artistic treatment of the hall. The organ was screened off by a scene representing Edinburgh Castle, with the Argyll Tower in the foreground, whilst the back-gallery was transformed into a rural landscape. Professor Sir Thomas Grainger Stewart, the President of the Association, occupied the chair and he was supported on his right by Lord Provost Mitchell Thompson, the President of the Council (Dr. Saundby), Sir William Broadbent, the President of the Royal College of Physicians of Edinburgh (Sir J. Batty Tuke), Dr. Roddick, Montreal (ex-president of the Association), Professor Bowditch, Professor Osler, the Lyon King of Arms (Mr. J. Balfour Paul), Fleet-Surgeon Corrie, the Rev. Dr. Whyte, Colonel Rooney (principal medical officer on the Scottish Military Headquarters Staff), Dr. Constantine Holman, Professor Snellen, Dr. Henry Barnes, Professor Morisani, Professor Simpson, Professor Kocher, Sir William Stokes, and Mr. Bryant; while on his left were General Chapman, Sir William Priestley, M.P., Dr. Ward Cousins, Professor Chiene, Professor T. R. Fraser, Professor Gerhardt, Dr. F. T. Roberts, Dr. Howard Kelly, Professor Blanchard, Dr. Farquharson, M.P., the Rev. Dr. Blair, Dunblane; Mr. Macnamara, Professor Doyen, Mr. Wheelhouse, Professor Rosenstein, Sir Charles A. Cameron, Sir Andrew M'Donald, Professor Sir Henry Littlejohn, Professor Boeck, and Dr. Dawson Williams. The toast of "The Queen" was received with enthusiasm as was that also of "The Prince and Princess of Wales and the Royal Family," both proposed by the President, who said that everyone must sympathise most cordially with the Prince of Wales in the trying circumstances in which he was now placed. "The Navy and Army" was next on the list and in proposing the toast the President said that our navy had done so much for us, it kept us so safe, it grew so wonderfully, and it had such an amount of power of work in it, that all felt as secure as any nation could do which had to depend upon defences of that sort against possible enemies. They had present as a representative of the navy one of their own profession, Fleet-Surgeon Corrie, who had sailed under the Queen's flag in every clime and had served in every possible way. The army had done a good many things in its time and they were honoured that night with the presence of a distinguished officer, the officer commanding the army in Scotland, who from his long experience knew something about warfare and army organisation. Fleet-Surgeon Alfred Corrie, R.N., and General Chapman having briefly replied, Dr. Roddick (Montreal) proposed "The Lord Provost, Magistrates, and Town Council of Edinburgh," coupled with the name of the Lord Provost, who, in his reply, said that Dr. Roddick had alluded to Edinburgh having taken the lead (if he might put it in that way) in regard to the care of public health. For that distinction they were indebted to two gentlemen. First, his friend Sir Henry Littlejohn, who had been for many years medical officer of health; and secondly, the convener of the Public Health

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Committee, Bailie Pollard, who had been spoken of as an expert in the care of public health. He (the speaker) had no doubt that when the Association did them the honour to come back again to Edinburgh they would see in full operation a hospital for the treatment of infectious diseases second to none in the kingdom. Professor F. T. Roberts proposed "The Houses of Parliament," which was responded to by Sir William Priestley, M.P. The toast of the evening, "The British Medical Association," was proposed by Professor Bowditch, Harvard College, Boston, U.S.A. The fact that an American should have been selected to propose this toast he regarded with peculiar satisfaction, because it suggested a subject so much in their minds and on their tongues—the essential unity of the two nations. It was no new proposition to say that in all essential matters the interests of the English-speaking races were identical all over the world. This had been accentuated during the last few months owing to the war now rapidly approaching a termination and nothing had given him more satisfaction than to see the thorough appreciation of the gallant deeds of the American navy by everybody on this side of the Atlantic. The sentiment in America was as warm as it was in this country. There was a Continental Anglo-American Medical Association composed of medical practitioners from America and England practising in the cities of northern Europe and Africa, and this was another way in which nations might combine for common purposes. This Anglo-American idea was capable of being indefinitely extended. It was a plant which could be cultivated and he had no doubt it would be cultivated and would bear fruit in various directions. He saw no reason why they should not have an Anglo-American standard of medical education. A great deal might be done in this way and he commended the thought to the Association as the guardians of medical education. Dr. Saundby, President of the Council, in his reply said that with reference to what Professor Bowditch had remarked about Anglo-American relations he was sure they all reciprocated most fully what that gentleman had said, but he was not at all sure that anything like a really formal acknowledgment of American education and American degrees was, at the present time at any rate, within the range of practical politics. They had to thank the Lord Provost for his kindness in welcoming them to the city, in gracing by his presence their various meetings, and in showing them such splendid hospitality. They had also to thank the University for having placed its buildings at their disposal; the Royal Colleges of Physicians and Surgeons for the hospitality they had shown; and the local profession, and especially those gentlemen who had held office in the Executive Committee and as secretaries, for the work they had done in organising the present splendid meeting, which was certainly one of the very best meetings which it had been his privilege to attend—he would almost say one of the best meetings in the history of the Association. Professor Osler (Baltimore) gave the toast of "The President," who, he said, was a gentleman worthy of Edinburgh, worthy of the profession of a great Empire, and worthy to control the destinies of that great Association. The President having replied Professor Chiene proposed the toast of "The Guests." Professor Gerhardt (Berlin), Professor Howard Kelly (Baltimore), Professor Blanchard (Paris), and Professor Kocher (Berne) responded. The proceedings terminated with the singing of "Auld Lang Syne" shortly before the clock chimed the hour of 12.

In the rooms of the Royal College of Physicians of Edinburgh a reception and conversazione was given on Thursday night by the local Ladies' Committee. There was a great gathering of ladies and gentlemen in response to the 2000 invitations which had been issued. The company were received by Lady Grainger Stewart and Mrs. Argyll Robertson, the conveners, and Mrs. Underhill, the honorary secretary of the Ladies' Committee. The rooms, corridors, and staircases were decorated with palms and evergreens and coloured lights were hung among the trees skirting the upper walk of the eastern portion of Queen-street Garden. Music was supplied by Mr. Dambmann's band and a vocal concert was provided at which Miss Macdougal, Miss Pyatt, Mr. A. Bach and others assisted. This concert was held in Queen-street Hall.

The principal function on Friday, a much more fortunate day in respect of weather than Thursday, was the garden party at Hopetoun House given by the Earl and Countess of Hopetoun. A thousand invitations were issued to members of the Association and a thousand to the neighbouring gentry and military garrison and to the leading citizens of Edinburgh. A number of the guests went from Edinburgh by the North British Railway to Dalmeny and drove thence to Hopetoun House, but the greater part of the members of the Association drove the whole way and in so doing enjoyed an ever-changing series of splendid views. The gardens of Hopetoun House were looking their best and the splendid views of the Forth, combined with the warm reception of Lord and Lady Hopetoun, worked together to make the garden party a most pleasurable experience for all.

On the invitation of the President and Council of the Society of Scottish Artists a conversazione was held on Friday afternoon in the exhibition rooms of the society, 18, George-street, when a large number of members of the Association and others were present. Mr. James Cadenhead, R.S.W., chairman of the Council of the Society, received the guests.

Through the kindness of Dr. J. Cossar Ewart, Regius Professor of Natural History in the University of Edinburgh, 100 of the members of the Association spent a pleasant and instructive afternoon at Penicuik on Friday, July 29th. The party leaving the Waverley Station by special train at 2 P.M., arrived half an hour later at Penicuik, where they were met by Dr. Badger, medical officer of the burgh, and by him were conducted to The Bungalow, Professor Ewart's house. The visitors were first shown Professor Ewart's photographs bearing on the experiments which he has carried on at The Bungalow during the past four years. These included photographs of Matoppo, the Burchell zebra, whose progeny, Romulus, is believed to be the first cross obtained between an ordinary mare and a zebra stallion. Numerous photographs of the hybrid zebras were shown, as was also a valuable series of the embryos secured by Professor Ewart in the course of his investigations into the development of the skeleton of the limbs of the horse. Proceeding to the lawn the visitors found ranged round it cages containing pigeons, rabbits, dogs, &c., in evidence of the changes produced by cross-breeding. They then proceeded to the quadrangle at the rear of The Bungalow and saw all the horses and zebra hybrids in the extensive stud, while Professor Ewart gave a detailed account of his experiments. This was a very delightful afternoon for all.

The last festivity in connexion with the British Medical Association meeting at Edinburgh was a ball given in honour of the Association by the Edinburgh Corporation. The Corporation had no hall large enough to hold all the members of the Association, but the officials did their best in the circumstances to distribute the tickets at their disposal impartially and those who were present—and they numbered over 800 of the members—enjoyed a very pleasant

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evening. About 400 citizens had been invited, chiefly those who have been the hosts of the visitors during the week. The reception of the guests began at half-past eight o'clock by Lord Provost Mitchell Thomson and Mrs. Mitchell Thomson. With them, in their robes of office, were Sir James Russell, Bailies Mackenzie, Hay, Steel, Gulland, and ex-Bailies Dunlop, Grieve, and Gray. The hour was somewhat early and the guests at first came very slowly; but after the official reception was over and the dancing had commenced the Lord Provost and Mrs. Mitchell Thomson received the late comers in a less formal fashion under the gallery. Dancing was carried on simultaneously in the Music Hall and Assembly Rooms and was continued with spirit until early on Saturday morning. Two Scotch reels were danced to the edification of lowland and foreign visitors.

The summer graduation ceremonial of the University of Edinburgh took place on Saturday, July 30th, in the M'Ewan Hall, in the presence of most of the members of the British Medical Association, who had attended the meeting just concluded. Principal Sir William Muir presided and he was accompanied to the platform by Sir William Priestley, M.P. for the University, Lord Provost Mitchell Thomson, Lord Pearson, and a large representation of the Senatus Academicus. The honorary degree of LL.D. was conferred upon the following gentlemen among others: Dr. H. Pickering Bowditch, Professor of Physiology in Harvard University; Sir William Broadbent, M.D., F.R.S.; Dr. Lauder Brunton, F.R.S.; Dr. Eugene Doyen of Paris; Dr. David Ferrier, F.R.S.; Dr. Joseph Forster, Professor of Hygiene and Bacteriology in the University of Strassburg; Dr. Carl Gerhardt, Professor of Medicine in the University of Berlin; Mr. Hutchinson, F.R.S.; Dr. Theodor Kocher, Professor of Surgery in the University of Berne; Dr. August Martin, Professor of Gynæcology in the University of Berlin; Dr. Johann Miculicz, Professor of Surgery in the University of Breslau; Dr. Morisani, Professor of Midwifery in the University of Naples; Dr. William Osler, F.R.S., Professor of Medicine in the Johns Hopkins University, Baltimore; Dr. William S. Playfair; Dr. Thomas Roddick, Professor of Surgery in the M'Gill University of Montreal, ex-President of the British Medical Association; Dr. Siegmund Rosenstein, Professor of Clinical Medicine in the University of Leyden; Dr. Herman Snellen, Professor of Ophthalmology in the University of Utrecht; and Sir Richard Thorne Thorne, F.R.S. A number of graduates had conferred upon them the degrees of M.A., D.Sc., M.D., and M.B. The address to the graduates was delivered by Professor Bayley Balfour.

THE GENERAL MEETINGS.

THE THIRD GENERAL MEETING.

The third general meeting was held on Thursday afternoon, July 28th, in the M'Ewan Hall, under the presidency of Sir THOMAS GRAINGER STEWART.

Dr. SAUNDBY, President of the Council, announced that the Section of Tropical Diseases had asked the Council to bring before the general meeting the desirability of petitioning Government to send an expert pathologist to South Africa to investigate black-water fever. He moved that the general meeting should make a representation to Government to that effect.

Professor CHIENE seconded and the motion was agreed to.

Professor ANNANDALE then delivered the Address in Surgery which was published in our columns last week.

Mr. BRYANT, in moving a vote of thanks to Professor Annandale for his address, expressed his warm approval of the observations upon the moral aspect of the profession.

Professor BENNETT, in seconding the vote, spoke of the debt which the medical profession were under to Professor Annandale not only for his excellent address, but also for his surgical and pathological writings and for the beautiful series of examples of injuries to the elbow-joint which he had laid before the Association.

The vote of thanks, which was heartily accorded, was acknowledged by Professor ANNANDALE in a few words.

THE CONCLUDING GENERAL MEETING.

The fourth and concluding general meeting of the Association was held on Friday morning, July 29th, in the M'Ewan Hall, under the presidency of Sir THOMAS GRAINGER STEWART.

Sir JOHN BATTY TUKE, who was received with applause, delivered the Address in Psychological Medicine, which will be found printed in another part of this issue of THE LANCET.

At the close of Sir John Batty Tuke's eloquent and learned address, Dr. BLANDFORD proposed a vote of thanks to him, which was seconded by Professor MCDONALD of New York, who called attention amidst applause to the good feeling now existent and growing between his country and the mother-country.

The vote of thanks was passed unanimously.

Dr. SAUNDBY, the President of the Council, then proposed that the hearty thanks of the Association should be tendered to the Lord Provost, Magistrates, and Council of Edinburgh for the hearty welcome accorded to the Association; to the Lord Provost and Mrs. Mitchell Thomson for their reception in the Museum of Science and Art; to the Dean of the Chapel Royal for permission to hold Divine service in St. Giles's Cathedral; to Dr. Whyte for his sermon, and to Dr. Blair for his assistance in the service; to the University Court for the use of the splendid buildings of Edinburgh University; to the Senatus Academicus, to the Royal College of Physicians and Surgeons, Edinburgh, to the Royal Medical Society, to Lady Grainger Stewart, to the Duke of Buccleuch, to the Marquis of Bute, to the Earl of Hopetoun, and to the others who had entertained the members; to the managers of the Royal Infirmary and various hospitals for opening their institutions; to the committee of the Masson Hall and to the various clubs and to the Philosophical Institution and other bodies which had given the use of their premises to the Association; to the members of local branches of the Association for their hospitality; to the medical faculty of the University of St. Andrews; to the presidents of sections; to the chairmen and honorary secretaries of committees for their successful arrangements; to Dr. R. W. Philip and Mr. J. Shaw M'Laren, the local secretaries; to Dr. C. E. Underhill and Dr. P. A. Young, the treasurers, for their successful labours; and to their distinguished foreign visitors for their presence.

Dr. P. M. DEAS seconded and the resolution was agreed to unanimously and enthusiastically.

Dr. SAUNDBY then proposed a vote of thanks to Sir Thomas Grainger Stewart for the admirable manner in which he had presided over the session of the Association now drawing to a close.

This was seconded by Dr. HENRY BARNES, the President of the Association two years ago, who spoke of Sir Thomas Grainger Stewart as having "furnished by his example one of the greatest incentives to progress in medical study that any one could have," and who desired to include the name of Lady Grainger Stewart in the vote of thanks.

The vote was carried by acclamation.

Sir THOMAS GRAINGER STEWART replied in a few modest words, in which he attributed any success in administration to "those splendid fellows who had put their shoulders to the wheel and done the work," the honorary secretaries.

The meeting then terminated.

THE SECTIONS.

MEDICINE.

THURSDAY, JULY 28TH.

The Open-air Treatment of Phthisis.

A paper on this subject had been read and patients exhibited at the meeting on Wednesday by Dr. CAVERHILL, but the discussion on the matter had been adjourned until to-day.

Dr. CALWELL (Belfast) thought that the treatment of phthisis might be preventive and curative. The former we now know but do not sufficiently practise. No drug was specific, whereas, on the other hand, the open-air treatment, if carried out long enough, infallibly restored to health unless

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the cases at the outset were too far advanced. This treatment should be carried out in its entirety or left alone, without temporising, and it was far better done away from friends, who interfered too much. It consisted of continuous living in open-air night and day, great attention to diet, exercise regulated to the needs of the different cases, watching the temperature and pulse of the patient, absence of furniture in the room and anything else which could catch dust or diminish the cubic space.

Dr. BERNARD J. GUILLEMARD (Cape Colony) narrated his experience in South Africa on the high lands in the interior. The soil was sandstone. The winter season was perfect and the results of treatment were very satisfactory.

Dr. P. SIDNEY JONES (New South Wales) confirmed the advantages to be derived from South Africa. He also wished to draw attention to the value of the Australian climates. In both of these places the climate in different parts differed very greatly and physicians who sent patients out should bear this in mind.

Miss JANE WALKER, M.D. Brux. (London), had tried the open-air treatment of phthisis on a farm in Norfolk and had found the conditions there very satisfactory. She thought it unnecessary to go so far away from home.

Dr. BEZLY THORNE (London) spoke to the advantage of open-air treatment, mentioning Falkenstein as a favourite locality, but he wished to confirm the remarks of the previous speaker. He mentioned the case of a young woman in an advanced stage of phthisis who was, however, so reduced in circumstances as to be unable to go abroad. She spent all her time in Kensington-gardens in all weathers, lived with the window open night and day, took plenty of exercise and food, and in the course of six months was quite well again.

Dr. W. DENTON JOHNS (Bournemouth) thought that many cases might be treated just as well at home if we could only enforce discipline, diet, &c., and control the friends.

Dr. H. J. CAMPBELL (Bradford) thought the great source of fallacy lay in selecting the appropriate place for the particular case, both as to its variety and stage, and the coöperation of the local physician was much needed in this respect.

Mr. FREDERICK CHURCHILL (London) indicated by means of drawings what structural arrangements he thought should exist at all our south coast watering-places for the treatment of such invalids.

The Significance and Consequences of Different States of Vascular Tension with their General Management.

Sir WILLIAM BROADBENT (London), in opening this discussion, said he thought it wise to limit the debate to arterial tension—i.e., arterial blood-pressure, excluding the venous system. Nor did he propose to touch on the question of testing blood-pressure by different instruments. Vascular tension essentially depends on the force and quantity of blood delivered at each systole of the heart and also on the resistance in the small vessels—i.e., the peripheral resistance. Owing to the size of these, capillary attraction and the friction of their walls are important factors. The pulse is our means of estimating vascular tension, and about this there are four points to note:—(1) the size of the vessel, which varies in some individuals at different times and widely in different individuals; (2) the state of the artery between the beats—whether it is full and round or collapsing and flat; this is the best test of the state of the peripheral resistance; (3) the character of the rise of each stroke (the aortic wave) whether short and gradual or high and sudden; and (4) the degree of pressure required to obliterate the vessel and stop the pulse. Turning first to low vascular pressure, its causes and significance, it may be noted that low tension is often found in long-lived persons who will tell us, perhaps, that they always had a weak heart. But in all cases it is necessary to examine the heart as well as the pulse. Lowered vascular tension is also met with in fever and it may be the chief cause of the lowered nutrition, there being not sufficient pressure in the capillaries to ensure nutrient fluid exuding. Lower vascular tension is often associated with neurasthenia and is also met with in other conditions of debility. It is met with in epilepsy and may be one of the factors in the production of fits. Turning, on the other hand, to conditions of high arterial tension, it is to be remembered that this often runs in families and may then be found under these circumstances in very young persons. The effects of continuous high arterial tension are very important and include hypertrophy or dilatation of the heart, dilatation of the aorta, atheroma of the walls of the aorta and large vessels, fibroid condition of the heart, and thickening of the valves. Variations in vascular pressure are of universal application in all kinds of disease. In neurasthenia, for example, the speaker had always more hope of a case when the vascular tension was high, for in such cases it is possible for the impurity of the blood, which is the cause of neurasthenia, to be eliminated. It was in cases such as these that a dose of blue pill changed the whole aspect of the world. In melancholic conditions the vascular tension was usually high; in maniacal conditions it was usually low. If this fact be borne in mind it helps us to understand how it is that sometimes morphia increases maniacal conditions instead of producing sleep, by lowering vascular tension. Attention to the arterial tension will often enable us to foresee such untoward effects. In epilepsy we find the two extremes of vascular tension are associated with the convulsions; when the tension is low the prognosis is less favourable, because the fits are then less dependent on the vascular condition. Uræmic convulsions are directly associated with high blood-pressure and not the uræmic poisons in the blood. Convulsions occur in high arterial tension from other causes. In many cases of gouty bronchitis, recurrent attacks of bronchitis in a gouty subject are usually attended by a pulse of high tension, and consequently the treatment of these cases is more successful by eliminants than by climatic treatment. As regards Cheyne-Stokes respiration the speaker had never seen it without high vascular tension. By some this symptom has been attributed to irritation of the respiratory centre or the cerebral hemispheres, yet, strange to say, a patient may go on with his business while the symptom continues for months. But in the speaker's opinion it was usually associated with high tension and he had more than once been able to observe a direct association. Cheyne-Stokes respiration must not be confused with "cerebral respiration," in which there was a complete cessation of breathing and then a sudden start after an interval. Turning to the general management of variations of blood-pressure Sir William Broadbent first considered states of low tension. The essential origin of the condition must be ascertained, whether it be some vice of nutrition, some digestive derangement, or perhaps the absence of some internal glandular secretion, especially the suprarenal. In this connexion it had recently been shown that cancer may cause death by some toxin it secretes. The drugs most useful here are digitalis and caffein, which help by their diuretic action to eliminate. The chief cause of high tension is some toxic condition of the blood, which must be eliminated. Here diaphoretics, moderate exercises, baths, diuretics, and purgatives are useful. He attached the greatest importance to mercury. Other purgatives, dose for dose, were not nearly so valuable as calomel, which seemed to have almost a specific action. As regards the contra-indication of mercury in albuminuria he believed the old superstition was now quite exploded. At any rate, it was a fact that uræmic convulsions could be averted by calomel. Nitro-glycerine and erythrol tetranitrate were useful when other measures were inapplicable.

Professor J. B. BRADBURY (Cambridge) said that the question which interested him most was the general management of vascular conditions. This naturally raised the previous question of their significance and effects, though it would not be necessary to consider the conditions dependent on cardiac valvular disease. Of the opposite conditions of intra-arterial blood-pressure high tension is the more important. Low tension is mainly of prognostic and therapeutic value and is dependent upon some condition apart from the blood and blood-vessels. Palpitation is the most common symptom of relaxed arteries, but in most instances this is primarily of nervous origin. The treatment of low tension is that of its cause. High tension, on the other hand, is directly dependent on blood, cardiac, or vascular conditions—to a certain extent on hereditary and nervous influences—and it is an important causal factor in disease. Certain poisons—lead, alcohol, alimentary toxins, the poisons of gout, syphilis, influenza, &c.—seem to cause an arterio-capillary contraction, intra-arterial blood-pressure is raised, and apart from immediate symptoms changes in the heart and vessels and subsequently in other tissues occur. Owing to this, the treatment of high arterial pressure becomes an important measure, and much may be done to alleviate the condition. With care the patient may even live to a good old age. Thus at present the speaker had under treatment an old lady, aged eighty-nine years, who had been under his care for about ten years. She

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suffered from copious attacks of hæmatemesis when he first attended her and these gave her much relief. Latterly she had been less troubled with the "black-vomit," but had found relief from distressing head symptoms—including "word-blindness," &c.—by frequent doses of mercurials and saline aperients and a carefully-regulated diet. Her case might be regarded as a typical one of what his colleague, Professor Allbutt, had designated "senile plethora." From the point of view of treatment, cases of high arterial blood-pressure may be divided into the more or less curable and the incurable. In some conditions—e.g., pregnancy—it is merely temporary and passes away with this condition. In anæmia it is quite curable, but this is not so in other diseases. In these cases, especially after middle age, pathological changes occurred in the arteries (and other tissues), and these changes tend to keep up the high arterial pressure. In old people where the arterio-sclerosis is extreme complete cure cannot result. All grades of high arterial tension occur and in all some improvement may be expected. The essential object in the majority of cases is to rid the blood of its toxic substances, to prevent their reaccumulation, to keep down the arterial blood-pressure by careful dieting, judicious medicinal treatment, and moderate daily exercise. Potassium iodide and purgatives, mercurial and saline, are extremely useful, but often they are insufficient, especially if immediate relief—as when pain, dyspnœa, &c., are present (symptoms for which the patient usually seeks advice)—is required. Here vaso-dilating drugs are necessary, and amyl-nitrite, nitro-glycerine, chloroform, or, when a long-continued action is required, erythrol tetra-nitrate may be used. The last is especially adapted to those cases in which pain is not severe but of long duration, or in warding off expected attacks for a time—cases such as the speaker quoted in detail. A man, aged sixty-two years, complained much of oppression behind the sternum. There was no history of gout, but he had had intermittent fever and lumbago and tonsillitis. There was no cardiac bruit, but marked increased arterial tension. The condition had existed for about six months. The appetite was good, the bowels were costive, and he slept fairly well. The attacks usually came on in the early morning and lasted for about five minutes. Erythrol tetra-nitrate (1 gr.) gave great relief, nitro-glycerine very little. A course of blue pill and later potassium iodide with occasional purgatives was enjoined; but although considerable improvement occurred erythrol tetra-nitrate had constantly to be taken to ward off the attacks, which it did most effectually if taken the last thing at night. In the *British Medical Journal* of April 10th, 1897, the speaker had described a case of angina pectoris which erythrol tetra-nitrate (1 gr. every 4 hours) kept at bay. This patient also tried mannitol hexanitrate in 3 gr. tabloids at 10 A.M. and at 2 P.M. and 6 P.M., but the effect was not so satisfactory as with the erythrol tetra-nitrate. In fact, the patient at once gave it up for the latter drug. An interesting case simulating Raynaud's disease had recently come under his notice. This case was of interest as M. Huchard had endeavoured to show that spasm of the arterioles producing arterial hypertension is an early phenomenon of arterio-sclerosis and that it often long precedes the material lesion properly so-called. Dr. Duncan had sent to the speaker notes of a case of interstitial nephritis with uræmia in which he believed the patient's life was saved by erythrol tetra-nitrate. There were œdema of the lungs with very distressing dyspnœa and Cheyne-Stokes respiration, very high tension pulse, most irregular action of the heart, insomnia (in spite of hyoscine hydrobromide given hypodermically up to $\frac{1}{75}$ gr.) practically for six days—with the exception of fifteen or twenty minutes in each twenty-four hours—scanty urine and (for the two nights previously to taking the erythrol) delirium. Dr. Duncan had written on July 11th: "The patient a fortnight ago yesterday—i.e., June 26th—was apparently moribund, but erythrol tetra-nitrate was given as a last resource. The effect it had was really marvellous and the patient has steadily improved every day, so much so that on Saturday, July 9th, he was able to go downstairs. The pulse is now quite regular and soft, the œdema of the lungs has disappeared, and the amount of urine has greatly increased, amounting to nearly 80 oz. on some days." Charts were exhibited showing the comparative physiological action of several vaso-dilators.

Dr. T. D. SAVILL (London) wished to draw attention to what he regarded as far the most important and serious consequence of persistent high tension. In the years 1887–88 he was first struck by the much greater thickness of the arteries in some bodies than in others in the post-mortem room, especially in aged persons, and upon further investigating these cases he found that they had suffered from symptoms of high arterial tension during life. The increased thickness was mainly due to an increase in the middle or muscular coat—i.e., the functionally active part of the arterial system. He had proposed the provisional title "arterial hypermyotrophy" for the condition, and its frequency was evidenced by the fact that out of about 280 necropsies he had made during 18 months in 1891–92 he had found 39 marked cases (14 per cent.) of the condition without counting slighter cases. These cases had all revealed symptoms of high arterial tension in their past histories and there was no doubt it was the consequence of this. The majority of these 39 cases had been free from renal disease. Microscopic sections and photographs were shown and it was pointed out that the change was a true hypertrophy, though this hypertrophy might or might not be accompanied by senile changes such as atheroma, endocarditis, &c. A granular condition with swelling of the fibres was a very constant senile change, but the essential lesion was a true numerical increase in the fibres of the middle coat, and it was an illustration of the physiological law that increased function leads to increased growth. The condition "arterial hypermyotrophy" which he had discovered in the deadhouse corresponded with a clinical condition which Professor Clifford Allbutt had described under the name "senile hyperpiesis" or senile plethora. The disease could be recognised during life by symptoms he had already described.[1] "Senile vertigo" and "senile syncope" with headache and the thickened elastic cord-like feel of the arteries were the characteristic symptoms, and it was extremely important to recognise it in persons of advancing life, for these patients had perpetual high tension and were liable to apoplexy and other hæmorrhages, which could be prevented by timely treatment.

Dr. WATSON WILLIAMS (Bristol) thought that high arterial tension was not always to be regarded as pathological and evil in its consequences. Sometimes it represented a physiological effort to meet a temporary difficulty in the system and undoubtedly in renal disease it had a favourable prognosis.

Dr. DAVID DRUMMOND (Newcastle) adverted to the low arterial tension of longevity and the importance of low tension for health. He could not agree with Sir William Broadbent that Cheyne-Stokes respiration was always associated with high arterial tension and he mentioned several cases in point.

Dr. ALEXANDER HAIG (London) asked if the time had not come when the right name could be given to the toxin which caused high arterial tension—viz., uric acid. His own case was a case in point, for he used formerly to suffer severely from headaches and all the symptoms of high tension until he had discovered that uric acid was at the bottom of it and that by controlling this he could regulate his arterial tension and so procure relief.

Dr. HANDFORD (Nottingham), Dr. SAMWAYS (Mentone), Dr. TYSON (Folkestone), and Dr. HADDON (Denholm) also took part in the discussion.

In reply Sir WILLIAM BROADBENT said he was quite prepared to admit the value of high tension in some conditions. In renal disease, for instance, low arterial tension greatly added to the gravity of the prognosis. He had always regarded (with Dr. Haig) uric acid as a cause of high tension, but only one of the causes—there were many others. He mentioned a case of epilepsy which had been sent to him by Mr. Horace Sworder in which the fits disappeared when appropriate changes were made in the diet, showing the association of high tension, uric acid, and fits. He confirmed the value of erythrol tetra-nitrate so far as his experience went.

Dr. DAVID DRUMMOND (Newcastle) read a paper on two cases of

Ether-pneumonia.

which he had observed. Cases of death after operation were, he thought, often attributed to sepsis which were really due to pneumonia started by ether. He narrated a case in which, under ether, the operation lasted one hour. It was attended by severe cough and next day the temperature rose to 102°F., and the following day there was dulness at the bases which spread upwards. The patient gradually became somnolent

[1] Brit. Med. Jour., Jan. 23rd, 1897.

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and died in a few days. At the necropsy the right lung presented intense engorgement and œdema with consolidation below. There was a large excess of red blood cells in the alveoli. As to causation of ether-pneumonia, some had thought it microbic in origin, but he (the speaker) thought the ether was the sole cause. Previous pulmonary disease was a predisposing cause and it seemed more likely to arise after abdominal operations. Anders gave 1 in 3000 cases of ether administrations, but Dr. Drummond thought the disease was more frequent than this.

Dr. PARSONS (Dublin) read a paper on Some Remarkable cases of Obstruction of the Vena Cava and the other large Systemic Veins, illustrated by excellent lantern slides.

Dr. WILLIAM EWART (London) read a paper on the Treatment of Renal Diseases by means of massage and bandaging, careful diet, and medicine directed to supporting the heart.

Dr. J. STRACHAN (Dollar) read a paper on the Alcoholic Neurosis.

SURGERY.

THURSDAY, JULY 28TH.

Dr. DAVID NEWMAN (Glasgow) opened a discussion on

The Origin, Effects, and Treatment of Septic Infection of the Urinary Tract.

He commenced by saying that the subject was a very large one and therefore he intended to confine his remarks to the kidney. There are many conditions in the kidney, such as tuberculosis, which are not in themselves suppurative, but which suppurate later from pyogenic infection. These were not to be considered, but he would speak only of the conditions of the kidney which were strictly septic. The septic state of the kidney may arise through the blood-stream, "purulent embolic nephritis," or by the lymph-stream, "purulent interstitial nephritis," or there may be an "acute septic nephritis without suppuration." Here, again, the infection is through the lymph or the infection may come by the ureter and may cause a pyelitis or a pyelo-nephritis. The body has great power of resistance against infection and this is very noticeable in the bladder, and mere retention of urine or mere injection into the bladder of a "culture" will not cause cystitis, but if the two occur together then cystitis may result. The peculiar distribution of the lymphatics in the walls of the bladder, ureter, and kidney render it easy for septic infection to spread from the bladder to the kidney without the occurrence of any sepsis in the ureter itself. The chief point in treatment is prophylaxis, for we can do much more to prevent sepsis of the kidney than we can do to cure it.

Dr. T. ROVSING (Copenhagen) stated that there are two groups of bacteria which affect the urinary tract: (*a*) those which decompose the urea—namely, staphylococcus pyogenes aureus, staphylococcus pyogenes albus, proteus Hauser, and diplococci and bacilli, some of which are pyogenic and others not; and (*b*) those which do not decompose the urea, such as bacillus coli. In cases of bacteruria, in which the urine may swarm with bacteria and yet no cystitis be present, the microbe which predominates is the bacillus coli and the urine is acid, but in cases in which cystitis is present we have almost always to do with microbes which can decompose urea, such as the staphylococcus aureus. In cases of cystitis, in which both bacilli coli and urea decomposing microbes are present, treatment with nitrate of silver will cure the cystitis and the urea decomposing microbes will disappear, but the bacilli coli will remain. The importance and frequency of the bacilli coli have been over-estimated chiefly because by rapid growth they may hide the real pathogenic microbes. As to treatment, prevention is of the chief importance, and as it is impossible to sterilise the urethra the microbes which are necessarily introduced with every instrument must be killed and that is best done by injection of 50 c.c. of a 2 per cent. solution of nitrate of silver after every operation.

Mr. MANSELL MOULLIN (London) pointed out that males were less easily affected than females by sepsis from the exterior, but that they were also less easily treated. Rigors after any urethral or vesical operation were always a sign of absorption of bacterial toxins. He was inclined to ascribe much greater importance to the bacillus coli than did Dr. Rovsing.

Dr. M. MELCHIOR'S (Copenhagen) contribution to the discussion was a report on 50 cases of Septic Infection of the Urinary Tract with Bacteriological Examination. He considered that bacillus coli was by far the most frequent microbe in cystitis. In most cases it was introduced by means of instruments; all the five patients who had had no instrument passed were women. He was of opinion that the bacillus coli was also the most frequent cause of pyelitis and suppurative nephritis.

Mr. BRUCE CLARK (London) laid it down as essential that the mucous membrane of the urinary tract must be abraded or otherwise impaired before any micro-organism could set up an inflammation. He was inclined to think that in most cases cocci were the first to appear and that these were replaced in time by bacilli coli, and he quoted some experiments by Dr. Klein which showed that in a series of inoculation cases of peritonitis the bacilli prodigiosi of the first experiment was replaced by bacilli coli in the later. He considered that the marked and permanent contraction of the bladder which was found in cases of prostatitis was due to a streptococcic infection of the bladder wall with consequent formation of fibrous tissue.

Mr. W. H. BATTLE (London) related the particulars of three cases of infection of the urinary tract in which a remarkable enlargement of one or both kidneys took place, evidently due to septic infection, and yet, though no operation was done on the kidney itself, the enlargement gradually disappeared and the patients recovered.

Dr. NICOLL (Glasgow) had recently made a large number of very careful bacteriological examinations and cultures in cases of urinary infection, and up to the present no definite and trustworthy results had been obtained. An important point had been discovered, and that was that acid, neutral, and alkaline media had to be employed before any statement could be made as to the micro-organisms present. He was inclined to think that no known method existed of distinguishing the gonococcus from other forms.

Dr. D. MACEWAN (Dundee) said that it was most important in women to render aseptic the meatus urinarius before introducing any instrument. In all cases in which urinary sepsis was present regular and complete evacuation of the bladder was most important. Boric acid, the benzoates, salol, and methylene blue might be given by the mouth, and locally boric acid, nitrate of silver, and perchloride of mercury were the best antiseptics.

Professor KOCHER (Berne) was inclined to attribute more importance to the bacillus coli than Dr. Rovsing would allow.

Sir WILLIAM STOKES (Dublin) read a paper on a case of Exophthalmic Goitre Treated by Thyroidectomy. He had removed a portion of the enlarged thyroid gland in a case of marked Graves's disease and the result had been a complete recovery; the dyspnœa, palpitation, and exophthalmos had all disappeared. He then discussed the pathology of the disease and showed that the "toxin" theory was the only one admissible.

Professor KOCHER (Berne) complimented Sir William Stokes on the result of his case and remarked that the results were not always so good; he had operated on about 50 cases of exophthalmic goitre. He advised complete excision of one lobe and of half or two-thirds of the other. He spoke strongly against using either ether or chloroform in thyroidectomy and urged that only cocaine should be used.

Dr. L. CASPAR (Berlin) read a paper on Catheterism of the Ureters in Both Sexes. He thought that with care there was very little risk of injury, but that there was some risk of infection. He said that it should only be used in diagnosis or treatment when the ordinary measures failed.

Mr. EDMUND OWEN (London) read a paper on the Treatment of Cleft Palate. He pointed out the importance of making the mouth as aseptic as possible and advised that if the tonsils were enlarged or adenoids were present these should be treated at least ten days before the operation on the palate. A modified Smith's gag was exhibited and he recommended the position with the head hanging over the end of the table as the best; he preferred to have the child only slightly under the influence of the anæsthetic.

Dr. M. MELCHIOR (Copenhagen) operated on a girl, aged sixteen years, for a large sarcomatous growth at the back of the neck; it was found impossible to remove it, but by repeated electrolysis at a later date the whole of the growth sloughed away and no return had taken place though the operation was performed three years ago. 500 milliampères for five minutes was the best method and of course the patient was anæsthetised.

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Mr. STANLEY BOYD (London) doubted the value of the method unless it possessed a selective power over the malignant growth; this was perhaps the case.

Mr. A. NEVE (Kashmir) pointed out that in India the death-rate from chloroform was only about 1 in 8000 at the most and in one collection of 100,000 cases no death had occurred. This he attributed chiefly to the high temperature in India and he especially urged the importance of not piling on chloroform during struggling. At his suggestion the Section passed a resolution asking the Indian Government to publish yearly the statistics of cases of administration of chloroform and the deaths therefrom.

Mr. C. YELVERTON PEARSON (Cork) read the notes of a case of a Large Spina Bifida (Meningomyelocele) which he had treated successfully by the open method. The improvement in the paralysis which had been present was marked. A point of importance in the operation was that the head must be low.

In the afternoon Mr. MITCHELL BANKS gave a lantern demonstration on Surgery, Ancient and Modern.

OBSTETRICS AND DISEASES OF WOMEN.

WEDNESDAY, JULY 27TH.

Dr. CULLINGWORTH opened a discussion on

The Surgical Treatment of Pelvic Inflammation.

Referring to his address in Obstetrics and Gynæcology at the meeting of the Association held in Newcastle in 1893 Dr. Cullingworth considered that it was no longer necessary to adduce arguments in favour of a method of treatment which, although for a time vigorously opposed, has now been generally accepted. The following points having been selected for discussion debate could be confined within useful and manageable limits—viz., (1) the indications for operative interference in pelvic inflammation; and (2) the choice of time for operation. 1. Adopting the usual classification of pelvic inflammation into pelvic cellulitis and pelvic peritonitis the former class of cases is first dealt with. In pelvic cellulitis when the inflammation is unattended with suppuration no operative interference is necessary. When an abscess is formed the ordinary rule of surgery should be followed and the pus let out as soon as it is discovered and is within reach. The opening of a cellulitic abscess should always be performed without opening the peritoneal cavity. These abscesses in the great majority of cases point on the external surface of the body. More rarely they point in the vagina. Sometimes they are formed at the back of the pelvis beneath the posterior parietal peritoneum. In that case the pus does not easily make its way to a surface and is apt to burrow. It thus may become necessary, even when the presence of pus is as yet only a matter of inference, to dissect down in the direction in which the supposed abscess is situated, commencing with an incision similar to that employed in the operation for tying the external iliac artery and carrying on the dissection from without inwards along the floor of the iliac fossa, lifting up the reflexion of peritoneum and dissecting beneath it. Circumscribed abscesses limited to the upper part of the broad ligament must be of extreme rarity, if they exist at all. Most of the cases so described have probably been examples of pyosalpinx or suppurating ovary in which the broad ligament has been drawn over the inflamed organs in the form of a hood. The indications in pelvic peritonitis cannot be stated so categorically. The personal experience of Dr. Cullingworth has led him to regard the following signs and symptoms as being strongly suggestive of the need for operative interference. (*a*) The presence of a definite, more or less fixed, irregular swelling in one or both posterior fossæ of the pelvis, larger in size than would be accounted for by the matting together of a merely thickened tube and a normal or slightly œdematous ovary, and accompanied with pain and fever. If such a swelling is found to be increasing in size in spite of rest and the local application of warmth the suspicion that pus is present in appreciable and dangerous quantity almost gives way to certainty. (*b*) The occurrence during an attack of acute inflammation of the uterine appendages of a tense globular cystic swelling in the pouch of Douglas. Whether this proves to be an intra-peritoneal abscess or a tense encysted collection of serum the indications for surgical relief are equally positive. (*c*) The outbreak of recurrent attacks of pelvic peritonitis in a patient known to have had an acute salpingitis, in whom there has remained a quiescent but obvious swelling in the posterior part of the pelvis. In such cases there is generally a pyosalpinx or an ovarian abscess. (*d*) The sudden appearance of symptoms of general septic infection in a patient with a more or less definite history of pelvic inflammation and a localised swelling above the vaginal roof. Such cases urgently need surgical intervention. They will often be found to be examples of tubo-ovarian abscess. The above are instances of suppurative inflammation of the appendages. In cases of non-suppurative inflammation gradual recovery may usually be expected to take place without operation. But operative interference is indicated even here if there is reason to suspect complications such as incipient cystic disease of the ovary, or if the circumstances of the patient being such as to render it highly important that she should be restored to health quickly, and the alternatives having been frankly explained to her, she should decide in favour of operation. 2. With regard to the choice of time for operation it is no doubt wise, in the majority of cases, to defer operation until acute symptoms of localised peritonitis have subsided. This has been adopted as a general rule of practice in the surgery of the appendix vermiformis and is equally applicable in the surgery of inflamed uterine appendages. Exceptions to this rule frequently occur, as, for example, where a rapidly increasing elastic swelling in Douglas's pouch or in the lower part of the abdomen indicates acute suppuration and again where the symptoms point to septic absorption.

Dr. E. DOYEN (Paris) laid down the following rules as a guide to intervention in the different varieties of pelvic suppuration. First (extra-peritoneal suppuration), phlegmon of the broad ligament: (*a*) by iliac evolution—classical iliac incision; (*b*) abscess of the inferior portion of the broad ligament—lateral colpotomy. Secondly (intra-peritoneal suppuration): (*a*) the inflammatory mass remains intra-pelvic and does not reach the brim—vaginal operation; (*b*) the suppurating tumours pass the brim of the pelvis and reach the level of the umbilicus—laparotomy. By each one of the above methods, vaginal or abdominal, three distinct operations may be performed: (1) simple incision of the purulent focus; (2) ablation of the annexa, leaving the uterus; and (3) total castration.

Dr. JACOBS (Brussels) made some observations based on an experience of 713 operations. In cases of bilateral disease of the appendages he thought that the vaginal route should be chosen in cases of old-standing pelvic suppuration, with fistula adhesions, peri-uterine abscess, &c., whilst the abdominal way was preferable in relatively recent cases in which there was no evidence of injury to surrounding organs. Operating on these lines he had had the following results:—vaginal route—432 cases, 424 cures, and 8 deaths; abdominal route—98 cases, 95 cures, and 3 deaths. Although all suppurative inflammations were of infectious origin it was seldom that the pus was very virulent at the time of operation and it was of less virulence in proportion as the case was of longer standing.

Dr. LANDAU (Berlin) contributed to the discussion a paper on

Vaginal Cœliotomy

based on 58 cases operated on during the last three and a half years. All the patients recovered. He concluded from his experience that those patients who were operated upon by vaginal cœliotomy for true, genuine—not inflammatory—tumours and for extra-uterine pregnancy without severe inflammatory symptoms had been permanently cured. On the other hand, of the patients in whom inflammatory conditions led to the operation only 20 per cent. at best had been cured. This was generally due to the operation being performed when the indications were against it and in most cases the vaginal radical operation should have been performed. As regards the choice between the vaginal and abdominal route there was much in favour of the former. He dwelt briefly on the technique involved, but for full particulars he referred his hearers to the translation, by Dr. Eastman and Dr. Arthur Giles, of "The History and Technique of the Vaginal Radical Operation." The points he further discussed were: (1) when is the anterior or the posterior incision to be chosen? when the combination of both? (2) which anterior section is better, the longitudinal or the transverse? (3) how is the uterus to be luxated? (4) shall and must the peritoneum be specially closed? and (5) shall the uterus after vaginal cœliotomy be fixed to the vagina or not? He could not advocate the extirpation of inflamed adnexa, unilateral or bilateral, by means of vaginal cœliotomy; even if the operation were

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successful the majority of cases were not benefited. When performed for certain precise and clearly-defined indications vaginal cœliotomy gave excellent results but on account of its relatively small danger it had a tendency to be overdone.

Professor FEHLING (Halle) agreed with Dr. Cullingworth that they had to separate pelvic suppurations into those arising in the parametrium and pelvic peritoneum and those of the adnexa. In many cases of tubal suppuration the history and temperature gave no indication of the presence of pus, yet it was found on operation. As to the vaginal or abdominal route he agreed with Dr. Doyen that there was no fixed rule; every case must be dealt with on its merits. When the diagnosis was uncertain and when the disease was unilateral he preferred the abdominal route.

Dr. A. MARTIN (Berlin) said that, like Dr. Cullingworth, he laid great stress on the anamnesis, for in cases of gonorrhœa an expectant treatment was indicated, since in many instances such patients recovered without operation; but in septic cases operation was almost always required; and, indeed, these were the cases in which an operation might have to be performed even while an acute feverish condition was present. A difficulty often arose in the differentiation of these cases from extra-uterine gestation; often this was the condition found when gonococci or streptococci had been thought to be the cause of the illness. There was a cause of pelvic inflammation which had not obtained sufficient recognition, viz., the presence of the bacillus coli. This was responsible for many cases in quite young women; and the onset of menstruation not infrequently marked the commencement of the pelvic trouble, whilst a few years later definite swellings were found, and then, on operation, adhesions were generally present uniting the appendages to the intestines. In his earlier cases he sometimes regretted not having taken away the uterus as well as the appendages, but experience had taught him that in the long run those patients were generally the best off in whom the uterus was left.

Dr. MACAN (Dublin) thought that the two special points raised by Dr. Cullingworth had been rather lost sight of. The indications for operation depended almost entirely on accuracy of diagnosis, and this again on the knowledge of the bimanual examination. To carry this out properly the patient should be examined in the dorsal position, the right hand being used for the right side and the left hand for the left side. As to the time of operation, he would put this off as long as possible so as to get all possible advantage from the efforts of nature. He thought that when the vaginal route was employed for operation an estimation of the difficulties to be met with was much greater than by the abdominal method, since in the former the sense of touch had to be almost exclusively relied on.

Professor BYERS (Belfast) said that many points yet required to be cleared up. The greater one's experience the fewer no doubt were one's mistakes in diagnosis, but they all came across cases where it was impossible to determine before operation the *locale* of the pus. As to the method to be employed they had had the advantage of hearing the views of French and German experts; perhaps they in the British islands were apt to be too conservative in keeping to the abdominal route and there were cases better managed by a vaginal incision, as a palliative measure or as a means of tiding a very exhausted patient over a time until her strength was equal to an abdominal operation. What they wanted was more explicit information as to the indications for the respective methods.

Dr. HEYWOOD SMITH (London) related a case illustrating the two points on which Dr. Cullingworth had mainly dwelt. He thought the term "laparotomy" was philologically incorrect and scientifically misleading and ought to be replaced by the more correct term "cœliotomy."

Dr. WARD COUSINS (Portsmouth) observed that the various forms of pelvic inflammation ran so much into one another that a correct diagnosis of these complex disorders could seldom be made in the early stages, but all of them could be traced to some infective process. Many got well with very simple treatment, whilst in acute cases of suppuration the dangerous stage might often be relieved by simple incision and careful drainage. The position of the incision must be determined by the special features of each case. When distinct swellings were found and the organs were clearly diseased he thought the abdominal route was generally the best for dealing properly with them.

Dr. TAYLOR YOUNG (Sydney) agreed with Dr. Macan that British gynæcologists often handicapped themselves in making a diagnosis by adhering to the lateral method of examination. Removal of the uterus should be practised only in cases of bilateral suppuration and destruction of the adnexa. In the others simple incision might first be tried, as even if unsuccessful it would not interfere with future operation. But conservatism was not to be carried too far; a partially destroyed uterus was of no use after both the adnexa had been removed. The question to keep in mind was the patient's ultimate condition and from this point of view he thought the best results were obtained by the vaginal route.

Dr. LAPTHORNE SMITH (Montreal) endorsed the remarks of Dr. Cullingworth as to the immunity which the peritoneum acquired after one or more attacks of pelvic peritonitis. His experience was that these cases had a much smaller death-rate than those operated upon during a first attack. As to the route to be employed he had come to the conclusion that the abdominal plan was the best for all cases of large tumours of any kind, for pus tubes, hydrosalpinx, tubo-ovarian abscess, and tubal pregnancy; he would, on the contrary, employ the vaginal route for growths and collections situated low down in the pelvis. The advantages of the vaginal route were inestimable—no scar, no bugbear of hernia, and no buried sutures, while the mortality was almost *nil*. He was strongly in favour of removing the uterus when the tubes were full of pus and both ovaries had to be removed. This should usually be done through the abdomen and Trendelenburg's position was of great value.

Dr. AMAND ROUTH (London) agreed with Dr. Cullingworth that cases of perimetritis should not usually be dealt with during the acute stage, but this was not the case with puerperal septic parametritic abscess, which should be opened and drained through the vagina as soon as pus was suspected, and not be allowed to drift on till pus pointed above Poupart's ligament, as it only did in neglected or long standing cases.

Dr. HANDFIELD-JONES (London) agreed with Dr. Cullingworth that (1) large size of the pelvic tumour, and (2) recurrence of pelvic inflammation were the principal indications in deciding in favour of operation. In making a diagnosis it was most important to examine under full anæsthesia, since in cases of pus collections high up and situated posteriorly it was often impossible to map out the mass with certainty until the muscular parietes were fully relaxed. There could be no doubt as to the wisdom of waiting to operate until the acute symptoms had subsided. He failed to see the antagonism between the vaginal and abdominal methods: both were useful and suitable under different conditions.

Dr. AUST LAWRENCE (Bristol) remarked that when the vaginal swelling was most marked it was often wise to aspirate through the vagina, as some cases got well by this means even when no pus was found.

Dr. E. T. DAVIES (Liverpool) said that as to the route of operation the abdominal was generally the safer, as hæmorrhage and adhesions were more under control. Delay till the acute stage was often wise, but it was possible to delay too long, for if dense adhesions formed they made a subsequent operation much more difficult. The use of the aspirator as a means of diagnosis was a dangerous procedure and should never be employed unless immediately followed by operation.

After a few remarks by the PRESIDENT Dr. CULLINGWORTH replied.

Dr. F. J. MCCANN (London) read a paper on Clamp and Ligature in Vaginal Hysterectomy for Malignant Disease, which was discussed by Dr. HEYWOOD SMITH, Dr. E. T. DAVIES, and the PRESIDENT.

THURSDAY, JULY 28TH.

The second day's session was opened by a discussion on

The Use and Abuse of the Midwifery Forceps,

introduced by Dr. MILNE MURRAY (Edinburgh), who said that the selection of this subject arose out of the able address of Dr. Japp Sinclair at the Montreal meeting. He began by asking: "What is the special value of the forceps as a surgical instrument?" and his reply to this was that it enabled them to shorten the suffering and diminish the risk of childbirth. As to the indications for its use he considered that this was found whenever and only whenever they were assured that the danger of interference had become less than that of leaving the patient alone; this, of course, implied that the use of the forceps was in practically every case a matter of individual judgment and definite rules could not be laid down. A fœtal head and an ovarian

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tumour could not be dealt with on the same lines. It was good practice to remove the latter as soon as it was detected, but the mere presence of a fœtal head in the pelvic cavity was not an adequate reason for its summary removal. It was on these grounds that a certain number of instances of improper use or abuse of forceps were due to errors of judgment; the instrument was employed when it should be left alone or else it was not used in cases where it was indicated. In addition, a large part of what might properly be called the abuse of forceps was due to faulty technique. He would sum up the matter thus: (*a*) the forceps were often used at the wrong times; (*b*) they were sometimes not used at the right times; and (*c*) they were often badly used at both times. The dangers of the forceps operation apart from the risk of septic infection (which was common to most operations) might be summarised thus:—1. The mother's parts might be bruised, lacerated, or otherwise injured by mechanical violence. 2. The too sudden emptying of the uterus might be followed by imperfect retraction and consequently dangerous hæmorrhage. 3. The fœtal head might be unduly compressed, lacerated, or otherwise damaged. He had met with an objection to the use of forceps due to the fact that there seemed to be a lingering doubt in the minds of some whether the abolition of the pain and suffering of labour would be an unmixed blessing. This seemed to be a survival of the same barbarous instinct which prompted the so-called religious objection to the use of chloroform in labour and was as unworthy of respect. For his part he had no such scruple and were he able to do so with safety he would gladly abolish every pain after the first and reduce the duration of labour to a bare minimum. As to the application of forceps at the wrong time, he wished specially to protest against their use before the os was dilated except under quite exceptional circumstances. Sometimes the fact that the os was not yet dilated properly was not recognised, owing to an examination being made in the absence of a pain, and if then the forceps were applied and a contraction came on the os might be found spasmodically contracted round the head and forceps, and if traction were persevered in disastrous results might follow. As an example of the harm which might result from not applying the forceps when they were required he mentioned an injury once common enough and now rarely seen—viz., vesico-vaginal fistula; but, short of this, an undue amount of maternal bruising and other damage might result from carrying to an extreme the reasonable reaction which had shown itself in many schools against the too frequent use of the forceps. In this connexion he mentioned the fact that in the Rotunda Hospital report for 1896-97 there was a record of 56 cases, in 45 of which the indication given was "delay in the second stage of over four hours." He thought it was a mistake that the element of time should be a primary determining factor. He saw nothing to be gained but much to be lost in waiting a minute after he was certain that progress was at an end, and the danger of interference was less than the danger of waiting. There was no wiser obstetric aphorism than the one: "Wait till you see what nature can effect, not what she can endure." If he were asked when he would apply forceps he would reply in the words of their distinguished President: "When the passages are in a fit state and nature fails to advance the head, then I should apply forceps." He directed attention to a class of case in which he thought the forceps might be used with greater discrimination than was commonly the case—viz., in occipito-posterior presentations of the vertex. His own view was that when flexion was deficient, as shown by the ease with which the bregma could be reached, the sooner the forceps was applied after the os was dilated the better. The forceps were sometimes abused by being badly used, and among these faults of technique he included the failure to use the most efficient instrument. The most efficient instrument was undoubtedly the one constructed on the principle first laid down by the late Professor Tarnier of axis traction. He thought a man who had used this would be as likely to revert to the old instrument as a man would be to give up a cycle of 1898 for a "bone-shaker" of the early seventies. To object to the axis-traction that it was complicated was an argument with which he had little patience. That a couple of rods and a handle-bar should present a serious difficulty to the acceptance of an immensely more efficient instrument was an argument scarcely worthy of a grown man; to hear it soberly raised as an objection made him wonder whether obstetrics had fallen into the hands of hemiplegics or general paralytics. He pointed out the advantage of the axis-traction forceps in procuring rotation and combated the view that it unduly compressed the fœtal head, while as to removing the forceps when the head had reached the perineum, he would as soon think of leaving the patient in the third stage of labour as of removing the forceps before complete delivery of the head. He maintained that by means of the forceps they were able to avoid laceration of the pelvic floor in cases where this would unavoidably occur if left to nature. As to the mode of applying the forceps to the child's head, he thought this should always be done so that the blades grasped the biparietal diameter of the head wherever situated. Extensive damage to the lower part of the vaginal canal, especially internal laceration of the perineum, was often caused by oblique position of the head or of the forceps at the outlet. The application of the forceps to the side of the head might require more care than the other methods, but they were there to take what care was necessary for the benefit of the patient. Lastly, to protect the perineum traction should be made in the intervals of the pains, under fairly deep anæsthesia, and using the left hand to control the uterine retraction. He never under any circumstances "supported the perineum."

Dr. W. S. PLAYFAIR (London) said that the day's discussion was the direct result of the address by the President of the Obstetrical Section at the Montreal meeting, and for his part he must take exception to the main thesis laid down by Professor Japp Sinclair that "gynæcology had become so largely developed as the direct result of surgical intervention in midwifery; the obstetrician provided material for the gynæcologist." Much of the development of gynæcology was due to abdominal surgery and this could have no relation at all to obstetrics. The bad results which were seen after the use of forceps were mainly due, not to the use of forceps *per se*, but to their faulty use. The forceps were rather to be regarded as a most beneficent instrument; it was the want of this which caused so much injury and loss of life in former times and it required the object lesson of the death of the Princess Charlotte to convince the profession that the prevailing practice was wrong. The forceps had obviated many cases of vesico-vaginal fistula—a complication hardly seen nowadays—and it had enormously lessened the use of the craniotomy forceps.

Dr. SMYLY (Dublin) observed that a point to be borne in mind was that whereas the forceps might at one stage be unsuccessful and the perforator might seem necessary, on waiting for time for a certain amount of moulding to occur it was sometimes possible to deliver easily by forceps. On the other hand, too long delay was inadvisable for this among other reasons, that if delay has been allowed till the patient's condition is grave delivery must be hastened. If it be done earlier proper care can be taken. Safety in the use of forceps lay in adhering as closely as possible to their employment under favourable circumstances—that is, where the head presented and had passed the brim by its greatest diameter, the os fully dilated or dilatable, and the membranes ruptured. When less favourable conditions were present the indications must be more definite, such as danger to mother or child, but under the conditions indicated they were often employed merely to save suffering.

Professor FEHLING (Halle) said he must confess that he was of those who preferred the old forceps, and he felt that they were often used too much; the tendency among students especially was to use the forceps in many cases where the proper treatment was to wait. He quite agreed with Dr. Milne Murray's rule that the forceps were to be used in those cases where the danger of using them was less than the danger of waiting. He believed much improvement would result from the teaching of the use of forceps by means of better phantoms than they possessed at present. He concluded by giving statistics of the use of forceps in his own clinic at Halle.

Sir WILLIAM PRIESTLEY (London) contended for a moderate and reasonable use of the forceps; he agreed with Dr. Smyly that in many cases waiting for a short time would allow the head to be moulded sufficiently for delivery to be accomplished either naturally or with ease by the forceps.

Professor STEPHENSON (Aberdeen) said that use and abuse must be taken together and the second term made to limit that intended to be included in the first. He could not accept the rule adopted by some that instrumental aid was to be used only when there were symptoms of danger to mother or child. It was the old cry: "Wait till nature begins to fail." The true principle was to aid whenever they

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could without deranging the mechanism so as to avert symptoms of danger. But Dr. Milne Murray had fully vindicated the present frequent use of the forceps against the fallacies and strictures of those who would have them return to the custom of a hundred years ago.

Dr. MACAN (Dublin), referring to Dr. Milne Murray's direction that the forceps should be applied when the danger of delay was greater than the danger of delivery by the forceps, said that this seemed quite simple and at once gained assent. But when they tried to translate this into practice they found that it required great skill and experience to know when the danger of the operation was less than the danger of delay. He therefore always impressed on his students that the chief danger of delay lay in the want of antiseptics. Personally he considered that the greatest triumphs of the forceps were the cases which required least traction. If the force of resistance were the least greater than the driving force there could be no progress and here the slightest traction with the forceps would effect delivery. He could not agree that the forceps should not be applied till after the greatest diameter of the head had passed the brim, for it was when the head was fixed there that the indications for delivery were most urgent.

Dr. MUNRO KERR (Glasgow) said that it was the general teaching that the forceps should be applied without reference to the diameter of the child's head and he considered this to be very bad teaching because it involved a lack of exactness. If the head were high it was more difficult to grasp the head high, but it could be done with care; the more transversely the head was seized the better, especially in cases of contracted pelvis, because a slight departure from such a grasp readily resulted in injury to both mother and child.

Professor BYERS (Belfast) agreed with the dictum, "Wait until you can see what nature can effect; don't interfere until she fails"; but there were other cases in which no danger threatened and in which, other conditions being favourable, the use of the forceps was nevertheless justifiable. He was in accord with those who said that full dilatation of the os was necessary before using forceps; but an exception was to be made for certain cases of eclampsia and sometimes in the case of aged primiparæ. As to forceps at the brim, he preferred their use to turning in flat pelvis. When the head had been brought down to the perineum he preferred to complete delivery before removing the forceps.

Professor JAPP SINCLAIR (Manchester) expressed modified approval of the axis-traction forceps, but could not imagine a time when the ordinary long forceps would be discarded in favour of the axis-traction instrument. His address at Montreal had been misunderstood to some extent; he reiterated his statements that the use of the forceps was excessive and that the teaching of midwifery was inadequate. There was at least sufficient ground for reconsidering their positions.

Dr. ROBERT JARDINE (Glasgow) spoke of the use of the forceps in contracted pelvis. They had many cases in Glasgow and he believed that the forceps gave better results than turning. He had delivered 8½ lb. children alive through a true conjugate of 3 in. He wished to emphasise the danger of turning after axis-traction had failed; the result was not to save the child but sometimes to rupture the uterus. Craniotomy was then the proper procedure. Theoretically transverse grasp of the child's head was right, but practically it was often impossible.

Dr. HANDFIELD-JONES (London) thought it was unwise to teach students that the forceps must always be applied in the transverse diameter of the child's head; in attempting such an application it was often very difficult to lock the blades and much harm might be done by rough efforts in this direction. He was strongly in favour of axis-traction forceps and related cases to show their value.

Dr. SLOAN (Glasgow) observed that the old Sir James Simpson forceps were axis-traction forceps; the tractors were the man. In the so-called axis-traction forceps of modern days the tractors were there, but the man might not be. As to their use at the outlet of the pelvis, it seemed to him to pass the wit of man to know what service they could be there.

Dr. LAPTHORN SMITH (Montreal) said that nearly all day in his practice he was busy repairing injuries caused by the too early use of forceps or he was taking down the histories of women who had been injured by them. He saw tears of the cervix up to the internal os and tears of the perineum into the rectum caused by hurry on the medical attendant's part, perhaps because he had another case on hand or because some old gossip had remarked that some other patient was confined in two hours. His remarks applied to perfectly normal cases.

Dr. BRASSEY BRIERLEY (Manchester) said he was glad to hear Professor Sinclair apologise for the remarkable and misleading statements made at the Montreal meeting. He thought that the fault of the improper use of forceps was due to the way in which men learnt their midwifery; in Manchester they were mostly taught by old midwives. He maintained that practical midwifery should be taught efficiently by qualified men and women in hospital or district practice.

Dr. JOHN MOIR (Edinburgh) thought that the practice of the present day was not quite so successful as in the days when he was a student. He maintained that the secret of success was to keep a steady watch on the condition of the cervix, pushing it up when it seemed likely to become jammed down in front of the advancing head. If forceps were then required all danger of injury to the cervix was obviated. He earnestly advised that no interference should be resorted to as long as the case was progressing satisfactorily.

Mr. DRAPER (Huddersfield) endorsed the view expressed by Dr. Lapthorn Smith that it was very wrong to use the forceps merely to save the medical attendant's time; the delay allowable before applying the forceps in the second stage was not to be measured by hours but should depend on the condition of the patient. He also emphasised the importance of proper antiseptic precautions.

Dr. CONNEL (Peebles) confessed himself a convert to the axis-traction forceps; as a general practitioner, trained in the school of the elder Simpson, he could say that there was no comparison in the efficiency of the two instruments. The preservation of the perineum was among the not least important of their functions.

Dr. MORE MADDEN (Dublin) contributed to the discussion a short paper on the Use of the Midwifery Forceps and some Modifications in its Mechanism, after which Dr. MILNE MURRAY briefly replied.

Mrs. SCHARLIEB, M.D. (London), read a paper on a Case of Missed Labour which was verified by operation and by necropsy.

Dr. ROBERT JARDINE (Glasgow) contributed a paper on Aseptic Midwifery, with which the morning's session concluded.

STATE MEDICINE.

WEDNESDAY, JULY 27TH.

A discussion upon

The Pollution of Rivers and its Prevention

was opened by Dr. H. M'LEAN WILSON in the following words:—

There were, he said, five points which were offered for consideration—namely: (1) Who should administer the laws for the prevention of pollution of the rivers? (2) Are the present laws sufficient? (3) Is treatment of sewage on land to be required in all cases? (4) Should manufacturers' refuse be purified by the manufacturers themselves or by the sanitary authorities? (5) Should any standard of purity be adopted for effluents from sewage works or purified trade refuse? Probably all present agreed that the cause of the failure of the Rivers' Pollution Act of 1876 was the want of provision for proper administration. The sanitary authorities, to whom enforcement naturally belonged, were nearly all themselves offenders. The county councils created in 1888 in England and in 1889 in Scotland had the power of enforcing the Act committed to them. The county councils were naturally somewhat chary of dealing with pollution within the limits of county boroughs, and in Scotland other burghs within which the greater number of polluting manufacturing processes were usually carried on, and the county boroughs themselves have been chary of exercising their powers against individuals in their districts. The same Acts gave power, therefore, to the Local Government Board of England and to the Secretary for Scotland to constitute a joint committee representing all the administrative counties concerned in any river for the purpose of enforcing the Act of 1876. Such joint committees have been formed in three cases only—that of the

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Ribble in Lancashire, where in 1891 a committee was formed representing the County Council of Lancaster and the four county boroughs of Blackburn, Burnley, Preston, and Wigan; that of the Mersey and Irwell, also in 1891, where the committee consists of members elected by the County Councils of Lancaster and Chester and the seven county boroughs of Manchester, Bolton, Bury, Oldham, Rochdale, Salford, and Stockport; and that of the West Riding in 1893, upon which were represented the County Council of the West Riding and the five county boroughs of Bradford, Halifax, Huddersfield, Leeds, and Sheffield. The foundation of the Water of Leith Commission in 1889 by special Act was on somewhat similar lines, but that body was armed with powers far in advance of those given to the joint committee. The formation of joint committees was a great advance, and may well be regarded as the key to the position. Some people advocate, with no little show of reason, that the preventive powers should be entrusted entirely to a central authority. 2. Are the present laws sufficient? The special rivers authorities have found the Act of 1876 faulty in many ways, and in 1892 the Mersey and Irwell Joint Committee, and in 1894 the West Riding Rivers Board applied to Parliament for further powers. In England there are two ancient bodies with special powers for dealing with river pollution—namely, the Thames and the Lee Conservancies, each armed with a special Act giving them powers very similar to the Lancashire and Yorkshire authority but having the additional power of carrying out actual works of conservancy and purification. The special Act of 1889 imposed upon the Water of Leith authorities the duty of carrying out the necessary purification works. Similar increased powers are being sought by the Middlesex County Council by a Bill now before Parliament. They ask to be empowered to improve the bed of a stream, to remove obstructions, to straighten the channel, to construct weirs, to regulate the discharge of compensating water, and to prevent the occurrence of any new pollution. A general Bill having a similar extension as its basis is also now before Parliament. From the foregoing it is clear that the Act of 1876 is generally found to be insufficient. The proposed Bill as it stands is weaker in some respects than either of the two special Acts on which it is founded. The points left undecided are the right of a manufacturer to discharge his trade refuse into a public sewer or of a sanitary authority to refuse to allow him so to discharge it, the prohibition of the sludging of mill dams, the power to remove obstructions to the stream, the absolute prohibition of any new pollution, and the proper supervision of the discharge of compensation water. It would be a great misfortune if the Bill were allowed to pass into law in its present state, as it would postpone indefinitely the solution of the whole question. 3. Is treatment of sewage on land required in all cases? It is not necessary to discuss this point where sewage is discharged into the sea or tidal waters, although even then solids should be removed. Land filtration is undoubtedly the best plan where sewage effluent has to be discharged into a stream—that is, where enough land of a suitable nature can be obtained for the purpose. Since the reports of the Rivers Commissioners unsuitable land is now less often laid out for sewage farms. The Massachusetts Board of Health plan of artificial treatment appears to offer a promise of satisfactory results. It is still uncertain, however, how any of these plans will affect trade pollution. Biological methods alone, it is generally admitted, can deal efficiently with sewage matter. While land is advisable, then, for sewage disposal, yet in special cases better results are likely to follow artificial filtration by biological methods. If a sufficiency of clean ground be secured round a surface well casing will be superfluous. The exceptional cases show the powerful effect soil-filtration has in removing impurities from water, so that villages which have from time immemorial obtained water from shallow wells have not actually gained a reputation for unhealthiness. 4. Should manufacturers' refuse be purified by the manufacturers themselves or by the sanitary authorities? In England the matter remains in doubt, but in Scotland it seems definitely settled by Section 110 of the Public Health Act of 1897. It is worthy of notice that the provisions of Section 116 do not include the preliminary treatment of trade refuse for the purpose of removing from it anything which would interfere with the treatment of combined sewage. Sections framed for that purpose have been inserted in a Wolverhampton Act of 1869, in a Bilston Act of 1896, and in a Bradford Act of 1897. It is not clear, however, and the fact that there are these private Acts of 1896 and 1897 renders it more doubtful, whether the proviso in Section 7 of the Rivers' Pollution Act enables an authority to compel a manufacturer to remove from his trade refuse any such injurious matters. 5. Should any standard of purity be adopted for effluents from sewage works or for purified trade refuse? If it were possible to have a fixed standard such as that recommended by the Royal Commission the labours of reformers would be easier. Such a standard would have to be regulated by chemical analysis alone. Throughout the discussion of these questions it must be borne in mind that the subject may be looked at from two different points of view. Sometimes the river to be purified is so offensive that the first aim of the reformer is to end the nuisance. Some rivers are used for drinking-supply and their purity requires to be jealously guarded, and in regard to others the question of fish becomes one of importance. Our object, however, in all cases must be to put a stop to the gross abuse of the rivers now so common and to bring them back as nearly as possible to their natural state.

Professor GLAISTER (Glasgow) desired to consider the question with regard to Scottish rivers. In 1896 from inquiries made among medical officers of health and other sources he dealt exhaustively with the subject before the Philosophical Society of Glasgow. In that address (copies of which were distributed) he showed that the result of twenty years' experience of the Rivers' Pollution Act was absolutely negative and that the state of the rivers was no better to-day—if not, indeed, worse—than in 1868, when the Commissioners made their inquiry. It could be said without fear of contradiction that practically every river in Scotland was polluted in a degree varying from a small addition of sewage up to every conceivable kind of trade and organic and inorganic filth. The machinery available against that state of things lay in the Rivers Pollution Act of 1876; in certain sections of the Public Health (Scotland) Act of last year; in certain clauses of the Gasworks Act, of the Salmon Fisheries (Scotland) Act, 1862, and at common law. The direct Act is probably the least useful on account of its cumbrous, costly, and inefficient nature. Differences of opinion exist with regard to the value of a legislative impurity standard. No doubt much difficulty surrounded the application of one set of standards for all rivers, but Professor Glaister would be glad to revert to the standard laid down before the Commissioners—namely, "Whenever water was so affected by a town or manufacture as to become unfit for supporting the life of fish and of green plants the pollution, from whatever cause, should be considered as an unsupportable nuisance to the riparian population." If any permanent improvement was to be effected in Scottish rivers it could only be done by amended legislation, and he would suggest a resolution from the Section to that effect calling for amendment of the Act of 1876 in the direction of the Lancashire and Yorkshire amended Acts of 1892 and 1894.

Dr. G. REID (Stafford County Council) said that with regard to joint boards he thought local conditions should largely determine their formation. There were numerous overlapping local authorities with different interests—the county boroughs, for instance, who as a rule were the great sinners, might be able to defeat the efforts of other bodies, such as county councils, by combination. He suggested county councils as the more suitable central authorities, except possibly in special cases. As to constructing works of sewage disposal he thought that it would not be wise to entrust anything but supervisory powers to county councils. He concurred with Dr. Wilson that it was impossible to fix any standard of purity of effluents in face of varying local conditions. In the case of populations on large streams it might be perfectly reasonable to admit a less highly purified effluent than in the case of small streams.

Dr. BRUCE LOW (Local Government Board) approved, in England at any rate, of the formation of joint committees to take charge of a watershed. He had known good paper schemes wrecked by the jealousy of interested counties. The assistance of Parliament appeared to be needed to substitute a certain amount of compulsion for permissiveness in the formation of joint rivers boards to protect rivers from pollution.

Dr. J. C. MCVAIL (Stirlingshire) observed that medical men were best fitted to inspect factories and rivers. A good deal of expense was involved in the purification of rivers, but the time had long since passed away when folk thought there

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was no need for such a proceeding. The county councils wanted the district councils to take the matter up and the larger area seemed preferable. The smaller the local authority the more likely the introduction of undesirable influences. The election for school boards was entirely distinct from other things, why should it not be so in health matters? The central authority must keep a firm hand and compel, if necessary, the carrying out of the present Act, which he regarded as exceedingly weak. For instance, it was an offence against the Act to allow solid matter to flow into the river, but solid matter in suspension is not allowed at all. Now, unless solid matter is in suspension it cannot flow at all, so that the reading is absurd. He did not agree with Professor Glaister that the Act had done no good; in fact, it had achieved a good deal. By inspection and meeting with owners, without going to law, much had been done. Knowing that the matter is engaging constant attention causes much to be done. One manufacturer did a great deal to abate a nuisance while another did little or nothing.

Dr. HILL (Birmingham) observed generally that the subject of pollution of rivers was varied by such complicating conditions as volume and variety of polluting material and became one of great difficulty. In such a town as Birmingham it was hopeless for any sanitary authority to expect to cleanse the small stream which carried off the sewage of three-quarters of a million of people. Then there was the refuse of many factories, not only of Birmingham, but also of other towns higher up the stream. Birmingham got some £25,000 out of its sewage-farm while it spent about £35,000 or more. Precipitation and suitable land were both requisite for the treatment of mixed or complex sewage. In the Thames they had the sewage of many towns mixed with a large volume of water, and under exposure to light, aeration, and other conditions it apparently underwent a process of self-purification, for the sewage-polluted water of the Thames was drunk with apparent impunity by the Londoners. The presence of fish appeared to be no test as to the fitness of water for drinking, for some fish lived and fed round the mouths of sewers, while oyster-beds improperly placed had been known to spread typhoid fever. Large towns situated on small streams could never hope to keep such streams sufficiently pure for drinking purposes; they must necessarily go for their supply—like Liverpool, Manchester, and Birmingham—to a water-shed uncontaminated by a population.

Dr. BOND (Gloucester Combined District) said with regard to the new process of septic tank filtration the results are too convincing to leave much room for doubt as to the wide applicability of the system. At Exeter, in a small space of the size of that lecture-room, the sewage of 1500 persons was treated and left the tank a clear and bright-looking water. Far more could be done under common than under statute law. In the former the judge acted under the influence of equity rather than of mere law and was usually in favour of the plaintiff. Legal proceedings, however, were costly and attacked the interests of manufacturers. Private persons therefore fought shy of embarking upon costly litigation to control pollution of rivers. We wanted to give aggrieved persons the opportunity of acting through public bodies by a procedure analogous to that known in England as proceeding by "information" through the Attorney-General, as the matter was one in which the public was interested and should pay the cost. Harassing prosecutions could be avoided by making the consent of the Attorney-General a necessary qualification. He asked the opinion of the meeting as to the desirability of the following motion:—

That in view of the greater facilities for dealing with river pollution which are offered by action at common law than under existing statutes, it is desirable in the opinion of this Section that county councils and other river authorities should be empowered to proceed in this matter of common law whenever they may consider it desirable to do so, under such restrictions against undue exercise of this power as may appear advisable.

Sir HENRY LITTLEJOHN (Edinburgh) proposed the formation of a sub-committee to look into the matter and draw up a series of resolutions to lay before Friday's meeting and to include Dr. Bond's proposition among them.

Dr. HOPE (Liverpool) then read a paper upon

The Value of the Present Method of Estimating the Populations of the Great Towns in England.

The reasons for believing that the present estimate of the population of Liverpool is very much below what it actually is may be summarised in the following manner: (*a*) The natural increase of the population—namely, the increase in the number of births over deaths since the last census—exceeds 40,000; (*b*) the increase in the number of registered voters since the last census exceeds 26,000; (*c*) since the last census the number of inhabited houses in the city has been ascertained by special investigation to have increased by 14,448, and the number of houses which have been built in excess of those which have been demolished since the last census is close upon 2500. Each one of these considerations adds to the belief that the actual increase has been greater than the estimated increase. (*a*) sufficiently explains itself. With regard to (*b*) the number of inhabitants to a voter, taking the census average, is 6·9, but if only 6·5 be taken, and the increase in the number of voters be multiplied by this figure, it gives an addition to the population of 171,346, including the incorporated areas, which, added to the census population of the old city makes a total of 689,326. With regard to (*c*) the number of inhabitants to a house, taking the census estimate, is 5·6, and taking the occupied houses of the present extended city as a basis of estimate of the population it makes an addition of 80,908 since the last census and raises the total to 710,351. The mere addition of the births over deaths would raise the population to upwards of 670,000. These figures have reference to Liverpool as it now is, the estimate of the city being made as for one whole, but it will be remembered that an incorporation of Liverpool with its suburbs took place in 1895. If this incorporation had not taken place, and the city and suburbs had been dealt with by the Registrar-General separately, as would have been the case except for incorporation, the totals so obtained would have been greater by 23,000 than they are now. This shows one obvious fallacy of the method of estimation adopted. Assuming the underestimation of the population of the city to be about 50,000 the consequences, taken as a whole, are trifling. It merely causes relatively unimportant errors in the birth-rate and in the death-rate, making both of them too high; but the consequences in certain districts of the city of obvious errors in the estimate of the population are very grave. Vauxhall ward in Liverpool formerly was a notoriously unwholesome district, but for some years past great efforts have been made to ameliorate the conditions of the district, and yet, year by year, thanks to the gross errors in the population as estimated by the Registrar-General's method, the rate of mortality appears to be steadily going up. But erroneous estimates are no new thing: at the close of the last inter-censal period the Registrar-General's estimate of the population of the City of Liverpool showed an error of 100,000. With regard to London a quinquennial census is employed and the evidence that a quinquennial census is necessary is abundantly proved by the errors of estimate which arise even in five years, amounting in 1891 to no less than 241,000. Clearly what is wanted is a more frequent census for the whole country, certainly not less frequently than every five years. It is singular that the Registrar-General is satisfied, week after week and year after year, to publish, under the imprimatur of his office, figures which everyone conversant with the subject must hesitate to accept as correct. No doubt a quinquennial census would go far to correct these mistakes and tend not only to prevent the waste of time involved by the compilation and issue of fictitious returns, but also to put an end to the mischief which such returns give rise to. But, pending such a census, it is eminently unsatisfactory to find that the Registrar-General regards the subject as of so little importance as to decline to discuss it, preferring to leave the matter for his successor to deal with. Numerous tables were given to prove the various propositions advanced by the speaker.

Professor SALTET (Amsterdam) found the same difficulty attending the ten-year census in his own country. They had a register of changes of address which was not possessed in England. That register enabled them to make a more accurate estimate of the population.

Dr. SPOTTISWOODE CAMERON (Leeds) advocated the establishment of a quinquennial census which need not be of the same detail as that of the longer period. Sex and age statistics would be almost sufficient. Even an accurate estimate of the number of houses would effect much. A census should be taken in every place. Meanwhile, we should demand a quinquennial age and sex census throughout the country.

Dr. SYMONS (Bath) also drew attention to the necessity of having the details published for each district. The details were given of Plymouth Lighthouse population of 5 persons,

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whereas details as to sex and age were not obtainable of 30,000 populations except by special application to the Registrar-General.

The PRESIDENT remarked that the time to obtain detailed particulars was while the returns were in the hands of the local authorities; a little outlay would then secure information regarding each alley and street.

PSYCHOLOGY.

WEDNESDAY, JULY 27TH.

After the Presidential address from Dr. CLOUSTON, which we published last week, a discussion was opened by Dr. JOHN SIBBALD, Senior Commissioner of Lunacy for Scotland, on

Suicide, its Social and Psychiatrical Aspects.

Dr. Sibbald's contribution to the debate was a paper dealing with the statistics of suicide as gleaned from the Government Bluebooks for England and Wales and for Scotland and he selected the figures bearing upon the alleged increase of suicide. According to the statistical returns the suicide rates per annum per million of population had risen during the past thirty years from 67 to 86 in England and from 40 to 54 in Scotland. The tendency to conceal the occurrence of death by suicide had diminished since insanity had become more recognised as a disease. He next referred to the statistics of the methods of suicide and considered that the most trustworthy were those of suicide by hanging; in the forms of death by firearms, drowning, &c., there was more difficulty in deciding whether the death was by suicide or by accident. In the cases of suicides by hanging the annual figures per million during the past 30 years were remarkably constant, being 25 for England and 16 for Scotland; they varied in particular localities in Scotland, but remained constant for each locality. In the forms of death by firearms, stabbing, cutting, poisoning, and drowning, in all of which it was more difficult than in the case of hanging to determine whether the death was by suicide or by accident, the total number of deaths in each form remained constant, but more of them were now attributed to suicide than to accident. For example, the total number of deaths by firearms was much the same to-day as 30 years ago, but more of them were registered as suicides and fewer of them as accidents; the rise in "suicides" was balanced by the fall in "accidents." Dr. Sibbald concluded that the increase in suicides by firearms, &c., was thus probably dependent on their mode of registration and was therefore apparent, not real. The constancy of the deaths by hanging, which were almost invariably suicidal, was a strong indication that suicides as a whole were not increasing as statistics apparently led one to believe.

Dr. A. HAIG (London) followed with a paper on the Causes of Suicide and limited his remarks entirely to

Suicide as the Result of Error in Diet.

His thesis was: mental depression and suicide are due to errors of circulation in the nerve centres, the errors of circulation are due to excessive uric acid in the system, the excessive uric acid is due to errors of diet. He referred to the daily, annual, and life fluctuations of uric acid, and maintained that the incidence of suicide tallied with the periods when uric acid was most abundant in the blood—namely, in the mornings, in spring and summer, and in childhood and in the full prime of life. Suicide was commoner in England than in Scotland because the English eat more meat and drink more beer, while the Scotch eat less meat and drink whisky instead of beer. Suicide increased with civilisation probably because of the more injurious diet. Suicide was commoner in men than in women probably because men were more exposed and ate more meat and because women excreted uric acid freely at each menstruation. Many drugs—e.g., cocaine—and tea and tobacco led to suicide because they interfered with the excretion of uric acid. Uric acid, in Dr. Haig's opinion, was thus the immediate cause of suicide and proceeded from errors in diet.

Professor MORSELLI (Genoa) had forwarded to the meeting a paper (in French) on

The Characteristics of Suicide by the Insane as compared with those of Suicide by the Sane.

The paper was translated and read to the members by Dr. JOHN MACPHERSON, one of the honorary secretaries. The characteristics of suicides by the insane were the painful methods used, the reiteration of the attempts, their sudden and impulsive nature, and the existence of heredity and precocity.

Dr. BLANDFORD (London) opened the discussion. He did not accept *in toto* Dr. Sibbald's explanation of the statistics of suicide and doubted that the reluctance to acknowledge suicide as a cause of death was diminishing. Contrarily to Dr. Haig he thought that if all attempts at suicide were registered as well as the actual suicides it would be found that women were as often suicidal as men.

Professor BENEDIKT (Vienna) was of opinion that many suicides might be prevented were we able to at once place under care and control members of the public as soon as they were recognised to be suicidal. He thought that misery and privation had not been sufficiently referred to as causes of suicide and he referred to suicide amongst women before marriage and during pregnancy.

Dr. YELLOWLEES (Glasgow) thought that misery as a cause of suicide was increasing.

Dr. MACDONALD (New York) said that in his country the recent legislation for the punishment of persons who attempted suicide had—through the agency of the press, which took a delight in recounting the details of the methods attempted—given an impetus to suicide.

Dr. URQUHART (Perth) said that he had tried the dietetic regimen suggested by Dr. Haig for melancholia but without success.

Dr. JOHN MACPHERSON (Stirling) considered that the uric acid diathesis was not so much a cause of insanity as a sign of degeneracy. Suicide was due either to a blind impulse to die, as in the degenerate, or to a conscious desire to escape pain.

Dr. MERCIER (London) was of opinion that suicide was due to an exaggeration and perversion of the instincts of reproduction and duty.

Dr. NICOLSON, Lord Chancellor's Visitor in Lunacy, thought that suicide was a question of the balance of motives in relation to one's environment or supposed environment.

Mr. HAYES NEWINGTON (Ticehurst) referred to suicide in children from spite or ill-temper.

Dr. J. F. SUTHERLAND, Deputy Commissioner in Lunacy for Scotland, thought that the misery of the people was not increasing and that possibly this was the reason why suicide was not increasing. He agreed with Dr. Haig's views and suggested that the greater number of suicides in England as compared with Scotland might be due to the institution of the coroner's inquest.

Dr. SIBBALD, in his reply, said in the case of a topic of discussion such as suicide general statistics were of much more value than individual experience.

Dr. HAIG, in his reply, said that degeneracy of the race, if it existed, was due to errors of diet.

Dr. J. F. SUTHERLAND read a paper on

The Insanities of Inebriety from the Legislative and Medico-Legal Standpoints,

in which he mentioned several clauses which it was very essential should be added to the Bill at present before the country in order that it should deal with the inebriate effectively.

Dr. G. R. WILSON thought that this meeting was a good opportunity to bring pressure upon the authorities. It was agreed that a recommendation be made to the Council to bring the desirable clauses before the authorities.

Dr. IRELAND, Dr. TEMPLEMAN, and Dr. YELLOWLEES also spoke.

Mr. C. A. BOIS and Dr. N. T. KERR of Hartwood Asylum contributed a paper on

Clinical Studies with Spleen and Thyroid Extract,

in which they described the actions which they had observed to occur in patients taking splenic extract—e.g., an increase in weight, some degree of poikilocytosis, diuresis, an increased action of the bowels, and sometimes mental excitement. Therapeutically splenic extract was most beneficial in adolescents, especially in stupor cases. It aids the action of thyroid and is most effectual in the form of capsules of liquid extract given half an hour before meals.

Dr. C. C. EASTERBROOK (Morningside Asylum) read a paper on

The Action of Thyroid and Parathyroid Extracts upon Metabolism in the Insane.

He first referred to the conflicting results of the removal of the thyroids and parathyroids and to the very diverse

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views which had arisen therefrom. The idea occurred to him that light might be gained from the pharmacological side by the administration of parathyroid extracts which had never previously been exhibited in the human subject. The patients were kept at rest in bed and upon a fixed mixed diet in order to control metabolism. The external parathyroids of the ox were employed. They were at first administered by the mouth, both in the fresh form and after being dried in a sulphuric acid chamber, but in both cases with negative results. They were next given in the form of hypodermic injections of extracts in glycerine, in sulphuric ether, and in 10 per cent. sodium chloride solution, and in relatively enormous doses. No actions comparable to those of thyroid were produced, and the only effect observable was a slight rise in pulse-tension similar to that which follows the injection of many other organic extracts. Dr. Easterbrook next made some observations on the action of thyroid based upon an experience of nearly 100 cases of treatment amongst the insane. In nearly all the cases the drug was given in doses sufficient to produce thyroidism, and the phenomena observed proved indubitably that thyroid is a profound katabolic stimulant. With the patient at rest in bed and on a fixed mixed diet, there is a great increase in all the excreta, especially in the water and carbonic acid and to a less extent in the urea and other products of nitrogenous metabolism. Thyroid thus greatly accelerates the splitting up and oxidation of the tissues, the fats suffering most severely, the carbohydrates next, and the proteids least. The anabolic reaction which sets in after thyroid treatment is explainable on Hering's theory of the internal self-adjustment of bioplasm. The changes in the blood during thyroidism probably indicate that the drug is conveyed by the blood to the tissues, but the early prominence of nervous symptoms during large doses of thyroid, the signs of central nervous hyperactivity followed by those of exhaustion, and the early increase of the phosphoric acid in the urine (which is probably derived from the excessive oxidation of the "phosphorised constituents" or "azotised fats" of the grey matter) indicate that thyroid specifically stimulates the central nervous system and through it the metabolism of the tissues. Dr. Easterbrook finally drew attention to the similarity between the "tetanic" symptoms of parathyroidectomy, the acute "neurotic" symptoms of thyroidectomy, and the toxic phenomena of thyroidism. He suggested that the essential result of thyroidectomy was an artificial myxœdema and that the acute or "neurotic" effects of thyroidectomy were accidental and, like the symptoms of parathyroidectomy, might be accounted for (1) by the youth of the animal operated upon; (2) by the interference with the very full nervous connexions of the thyroid; and (3) by the wounding of the thyroid, in consequence of which the spilt colloid is more rapidly absorbed and so gives rise to symptoms of thyroidism.

THURSDAY, JULY 28TH.

Mr. WALTER BERNARD (Londonderry) read a paper on

Defective Children and the Early Training of the Mentally Afflicted.

He commenced by saying that in 1888 Conolly urged that the early recognition of the mentally abnormal in the child should give the impetus to remedial treatment. He (Mr. Bernard) had only studied the subject as an ordinary practitioner, but he was sure that much might be done if they only began early enough. He would not trespass on the time of the meeting, but submit his views in a few general propositions: (1) is not the first manifestation by an infant of mental deficiency capable of being met by such methods of correction, suggestion, and appeals to imitativeness that the pathological in the child may gradually be guided to the physiological? may not the adoption of domestic treatment begun early prove ameliorative and abidingly effective? (2) the special treatment of the separate faculties has not received enough attention from medical men; (3) medical councils and examining bodies ought to insist upon practitioners being educated in the earlier recognition of abnormal mental states in the child; (4) it is most necessary to remember that early mental sanitation has a most important effect upon the recurrence of insanity; and (5) the Association should devote itself to a thorough examination of this subject. A table should be drawn up somewhat as follows: (1) rules for guidance before dentition; (2) rules during and immediately after this season; and (3) rules up to the third and fourth years; ages after this will be found in books on mental diseases. Departures from the normal may be recognised very early by the way in which the child laughs or cries or sucks. The process of growth, muscular, physical, or mental, must be observed. Is there normal progress in all these? If not, is any one overshadowed by the others?

Dr. SHUTTLEWORTH (Richmond, Surrey), who apologised for his absence during the reading of most of Mr. Bernard's paper, was happy to say that the education of defective children was spreading far and wide. He himself held office under the London School Board on purpose to look after this very subject. The children were taught in special classes and so had more individual attention than was possible in other classes.

Dr. FLETCHER BEACH (London) followed. He quite agreed with the necessity for early diagnosis. He wished to draw attention to the good work done by the National Association for the Protection of the Feeble-minded. This body provided for the care of children, especially girls, born of feeble-minded parents, and so minimised the chances of the same type being illegitimately produced in a future generation. Children were taken in as early as four years old. The subject was a most important one, and he was glad to say it was every day receiving more attention.

Other papers followed, notably one by Dr. W. R. DAWSON (Finglas, Dublin) and Dr. D. F. RAMBAUT (Grangegorman, Dublin) upon the Ocular Phenomena in General Paralysis, which we hope to publish in a future issue.

FRIDAY, JULY 29TH.

Hypnotism, its Phenomena and Theories.

Dr. CLOUSTON opened a discussion upon this subject. In his introductory remarks he said that he thought they had better consider the subject from the following points of view: (1) the phenomena of hypnotism and their explanation both from a physiological and a psychological view; (2) the employment of hypnotism in medical practice; and (3) its uncertainties and dangers—did it leave any residuum in the brain? why are only certain people hypnotisable? He would only say further that the two gentlemen who were to introduce the discussion were Dr. Milne Bramwell, a physician and a practical hypnotist, and Mr. F. W. H. Myers of Cambridge, one of the most learned psychologists in the kingdom. He now called upon Dr Milne Bramwell to read his paper.

Dr. MILNE BRAMWELL (London) said that hypnotic theories were very conflicting and it was impossible to eliminate the personal element from the equation. He had been led to take up hypnotism owing to the case of a personal friend and patient of his own who suffered from traumatic perineal fistula. He was in a very miserable state owing to his having constantly to empty his bladder and though no stricture existed he fancied he could not pass a catheter. Dr. Bramwell in trying to think of some remedy short of a surgical operation remembered the work of Braid and determined to try hypnotism. He therefore hypnotised his patient for three days and then, when in the hypnotic trance, made curative suggestions, such as that there was no need to micturate every 15 minutes, that the catheter could easily be passed, and that the patient should sleep. All these suggestions were acted upon when the patient was in his normal state. The fistula soon closed and the man recovered his health and spirits. Another remarkable case was that of a woman suffering from pruritus vulvæ and eczema in addition to some uterine retroflexion. He attempted to hypnotise her at her own request after she had been treated in every possible way. He failed altogether sixty-seven times. The sixty-eighth time he succeeded in hypnotising her and made suggestions that the pruritus should cease, that she should sleep and generally be well. All these things came to pass and the eczema very soon disappeared. This was three years ago and she had never had a relapse. Dr. Bramwell related other medical cases, notably one in a very neurotic girl with ciliary spasm who, after hypnotism, became strong, well, and happy. The ciliary spasm persisted for some time but eventually ceased. Passing to the surgical side of the question, Dr. Bramwell gave a *résumé* of his trials of hypnotism for surgical operations at Leeds. (An account of them appeared in THE LANCET of April 5th, 1890, p. 771.) In Dr. Bramwell's opinion the patient is not at the mercy of the operator; as for possibility of criminal suggestion, he had found patients to refuse suggestions—e.g.,

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putting arsenic in tea—which they would refuse in a normal state. He had never seen any bad results or residua, or the formation of an hypnotic habit.

Mr. F. W. H. MYERS (Cambridge) then delivered a most interesting speech upon The Psychological Side of Hypnotism. He began by thanking the officers of the British Medical Association for permitting a layman to intervene in their debates. He understood that what was desired was some attempt at a coherent psychological presentation of the multifarious and perplexing facts now commonly grouped under the name of hypnotism, which facts physiology was not as yet able to explain. If a somewhat closer approach could be made on the psychological side this must needs be by bringing into comparison a great mass of cognate life-phenomena, such as hysteria, ordinary sleep, and somnambulism. The analogies and differences between hypnotism and hysteria were particularly instructive. Both in hypnosis and hysteria there were disaggregations of the personality, at first apparently similar, afterwards seen to be governed by quite different laws. To understand what happened in either case it was convenient to picture to oneself human personality as in a certain sense stratified, part of it lying above and part of it below the threshold of consciousness, the level above which thought or sensation must rise in order that it may enter into our waking life, or become subject to our voluntary control, or find a place in our chain of memories. Now, the characteristic trouble of hysteria was that fragments of faculty, of power, of sensation or motion, which it was desirable to retain *above* the conscious threshold, were apt to sink down *below* that threshold and thus to become useless to the hysterical patient. For instance, the patient would suffer from hysterical paralysis, say, of one leg or from a diminution of her field of vision while yet there was no perceptible organic injury to brain or leg or eye. What was thus lost could not be recovered at will, but might nevertheless be suddenly restored for a time or permanently by some shock, as when an hysterical paralytic patient recovered the use of her limbs in the terror of a fire, or was able to discern a terrifying object such as a stuffed mouse when it was brought into that part of her normal field of vision of the use of which hysteria had deprived her. With the hypnotised subjects, on the other hand, the case was quite different. They were able to recall at will from beneath the threshold any faculty or sensation which they might have lost through hysteria, so that in just the ways in which hysteria could destroy, hypnotism could fulfil, and they were able also to send down beneath the threshold and dismiss from consciousness sensations which they wished to get rid of, even such insistent sensations as the pain of an operation or of childbirth. The next point of great psychological importance was the analogy between hypnotism and sleep. The essential fact of sleep was the shutting-off of the supraliminal life—the life concerned with facts above the conscious threshold and the consequent increase of inward subliminal recuperative power. Hypnotism in the first place made our entry into this regenerative phase of our personality easy and certain. It did more than this, for in hynotic trance the subliminal plasticity was more marked than in ordinary sleep and the subliminal control intenser, so that hypnosis sometimes seemed to be to sleep what sleep was to waking. Indeed the leading facts of hypnotism, both for physician and for psychologist, the facts which called most pressingly both for explanation and for development, were those profound sanative regenerations which had now so often transformed the dipsomaniac and the morphinomaniac into self-controlled and useful members of society. But how, after all, was this further control over subliminal plasticity—over the *vis medicatrix naturæ*—actually reached? The consensus of hypnotists now declared that the secret lay in suggestion. But what was suggestion? Did the hypnotiser infuse power or merely evoke it? The speaker believed that in some cases there was actually a transmission of power, of some subliminal power akin to what he had termed "telepathy." But in many cases there was manifestly no such transmission: the hynoptiser merely taught the subject to start self-suggestions of his own. What it was that made those self-suggestions effective, that helped him to take hold, no theory could at present tell us. We might learn something by observing prevalent forms of self-suggestion outside the doctor's consulting-room altogether. One of these popular self-suggestions was the fountain of Lourdes, another was so-called Christian science or Mind-cure. Both of these took advantage of deep-rooted beliefs, although expressed with a superstition or an extravagance repulsive to the scientific man. It was, however, the duty of science to clarify, to utilise, to interpret whatever of real self-suggestive efficacy might lurk in any superstition, in any extravagance. By some means or other—and only wide experiment could show what means were best—science must subject to her own deliberate purposes that intelligent vital control, that reserve of energy, which lay beneath the conscious threshold and worked obscurely for the evolution of man.

Dr. YELLOWLEES (Gartnavel, Glasgow) considered that the hypnotic power did not so much lie in the operator but that it was a question of special receptivity in the subject. He found that he could not always succeed even when both he wished to hypnotise and the subject was willing to be hypnotised. As to the question of crime, Dr. Bramwell had cited the instance of putting arsenic in tea, but supposing it had been a matter of merely signing a document would not the subject have agreed to that?

Professor BENEDIKT (Vienna) said that he was quite certain that hypnotism did enfeeble the will. He maintained that if you make an instrument of a man he became attached to you—in fact, haunted you. Professor Benedikt then related a case illustrative of this.

Dr. ROBERTSON (Murthly) detailed his visit to Nancy at the instance of a Commission of the British Medical Association. Luy's results had been discredited and the Commission reported that they must be received with caution. He had seen wonderful results in relief of pain in sciatica and the like in Bernheim's clinic and cited some examples from his own practice where he had used hypnotism with great success in lieu of hypnotic drugs.

Dr. DERCUM (Philadelphia) followed. He quite agreed that hypnotism had its dangers and related the case of a girl in whom he had cured an hysterical joint by hypnotic suggestion. She, however, regularly haunted him afterwards and he had to transfer her to a hydrotherapeutic establishment, having previously suggested to her that this form of therapy was the one for her condition.

Other speakers followed and the debate terminated.

NEUROLOGY.

WEDNESDAY, JULY 27TH.

Dr. FERRIER (London) opened a discussion on

The Treatment, Curative and Palliative, of Intracranial Tumours.

He remarked that the problem of the treatment of intracranial tumours was one of very great interest and one which showed remarkable divergence in the opinion of those who had specially studied the problems involved in it. The percentage of operable cases, if one took into account the extreme views, varied between 2 per cent. and 15 per cent. His opinion was that only 7 per cent. were capable of being dealt with surgically. There were difficulties attending the operation and cases had to be looked at from two points of view—(1) in reference to recovery; and (2) in reference to relief from the symptoms which were present before operation. In 55 cases of which he had particulars operated on between January, 1896, and the present date, 20 died after a few days (37 per cent.); 16—i.e., 29 per cent.—died within a year; 12—i.e., 22 per cent.—passed out of the surgeon's hands; and 7 were alive a year after operation—i.e., 13 per cent. of what may be regarded as complete recovery. Further, of 38 cases treated surgically at the National Hospital for the Paralysed and Epileptic 15 per cent. died in a few hours, 35 per cent. died after some weeks, in 20 per cent. the result was uncertain, and in 6 cases life was prolonged over a year or more. On the whole, cerebral surgery was beneficial in its results. The immediate mortality was not greater than in other severe operations, and the mortality could be appreciably diminished by operating, as Mr. Horsley had recently recommended, in two stages, thus lessening the effects of shock, which were apt to be severe. Most tumours, however, were infiltrating and therefore not easily to be extirpated, and on this account there was a greater tendency to recurrence than after the removal of tumours elsewhere; and it was most desirable, if possible, to find some way of checking the growth of the tumour. Another difficulty which had to be faced was that of deciding whether the tumour was cortical or subcortical. Yet in such doubtful cases exploratory

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operation was not only justifiable but desirable, for it was found that even trephining relieves the symptoms of cerebral tumour, and more especially has an influence on the optic neuritis. One question of great importance arose in reference to those cases—viz., should trephining be done in indefinite cases or even in cases in which it was known or suspected beforehand that the growth was not capable of being completely removed? The decision of this difficult question must, he thought, depend upon the particular case and it was perhaps better to put the responsibility of deciding upon the patient after explaining to him and his friends all the risks of the proceeding. In reference to cerebellar tumours, which were regarded by some as indefinite in their symptoms and undefinable in their position, he was of opinion that the risks of operation had been somewhat exaggerated, for experiments show that extensive interference experimentally with the cerebellum was not attended with any fatal effect. On the whole it could be shown that operative interference was followed in a certain number of cases by what might be regarded as complete recovery—i.e., immunity from symptoms for at least a year after operation—and in another class of cases by much relief to all the serious symptoms even if permanent cure did not ensue. Operation was probably to be recommended in a large number of cases. The relief of symptoms by medicinal measures must also be kept in mind and it was now recognised that iodide of potassium and mercury often relieved the symptoms and presumably influenced the growth of tumours which were non-specific and might be even malignant.

Dr. DERCUM (Philadelphia) agreed with Dr. Ferrier in his statement that tumours other than syphilitic, especially gliomata, were, as had been some years ago pointed out by Seguin, very manifestly influenced as regards their symptoms by anti-syphilitic treatment. In reference to the possibility of influencing the growth of brain tumours he related a recent unsuccessful attempt of his own to influence by means of tuberculin the symptoms apparently arising from a tumour of the brain associated with otorrhœa of many years' standing. A large tuberculous mass was afterwards found present in the brain, apparently due to infection from the middle ear and erosion of the temporal bone. He quite agreed with Dr. Ferrier's views as to the great relief afforded in many cases of indefinite or non-localisable tumour by simply trephining the skull.

Dr. COLLINS (New York) expressed surprise and gratification at the large percentage of cases in which not only relief but actual recovery had followed in Dr. Ferrier's cases and associated these results with the matchless surgical skill of Mr. Horsley. He was in the heartiest accord with Dr. Ferrier as to the relief afforded by operation and as to the accessibility to operation of some cerebellar tumours. He strongly advocated lumbar puncture, even carried out daily, for the purpose of relieving optic neuritis (choked discs), and he thought that the use of toxins such as Coley's fluid, &c., in cases of intracranial tumour offered prospects of relief which were by no means small. But many tumours must remain, for some time at least, unlocalisable. These, he thought, should be operated upon—i.e., trephining should be carried out in the hope of obtaining at least relief, perhaps even arrest of the symptoms. And although every syphilitic case should be energetically treated with mercury and iodide of potassium delay in operating in any case in which this treatment was ineffective or inadmissable was almost criminal.

Sir WILLIAM BROADBENT (London) remarked that his experience was small and not very favourable of operation in cases of intracranial growth, but he was of course delighted to have the more sanguine view of Dr. Ferrier, and looking back on the early difficulties which he could remember associated with ovarian operations, &c., he was not inclined to despair of cerebral surgery. His experience was that in cases of intracranial tumour the neuritis was greater on the side opposite the tumour. As regards the effect of iodide of potassium he had many years ago treated a patient in whom there was a negative history of syphilis and who had all the symptoms of cerebral tumour with iodide of potassium, relieving all his symptoms. Quite recently he had again seen him with a recurrence of his symptoms and he mentioned this as a case of intracranial tumour, almost certainly non-syphilitic, in which anti-syphilitic treatment had relieved the symptoms.

Dr. JOHN M. MACCORMAC (Belfast) said he was inclined to be optimistic, although results now only indicated hope in the future. He found phenacetin useful for the headache and hyoscin for the vomiting of cerebral tumour.

Dr. BEEVOR (London) mentioned four cases upon which he had operated which were now alive after two years or more. He was in favour of operation for palliation of the symptoms in cases of non-localisable or non-removable tumours. In such cases if no relief followed trephining he would advise puncture of the ventricles.

Mr. WATERHOUSE (London) had trephined in ten cases, four of them cases of infiltrating growth. In three of these all symptoms—headache, vomiting, &c.—disappeared at once; in the other case occasional headache persisted, but was easily relieved. Optic neuritis also disappeared in these cases, so that much relief was afforded.

Dr. E. F. TREVELYAN (Leeds) doubted whether tuberculous tumours so frequently became obsolescent as was supposed and in his experience such tumours were usually multiple.

Dr. MICHELL CLARK (Bristol) thought that hardened gummata not removed by anti-syphilitic treatment were usually found in cases in which the anti-syphilitic treatment had not been adopted in the early stage and he called attention to a class of case of cerebral tumour in which spontaneous recovery occurs.

Mr. J. PAUL BUSH (Bristol) spoke of the difficulty of the surgeon had in deciding at an operation whether he had to deal at the margin of a growth with healthy brain tissue or morbid growth.

Mr. COTTERILL (Edinburgh) thought that in spite of success operative treatment of cerebral tumours was not satisfactory. Yet exploration and removal of pressure seemed important and desirable and he detailed various important points as to the technique of operation.

The PRESIDENT cordially endorsed Dr. Ferrier's view and gave details of his own cases. Out of 123 of his cases however, examined post mortem only 5 could have been successfully treated by removal of the tumour. He referred to the spontaneous subsidence of symptoms in certain cases and expressed the view that such cases were possibly not cases of tumour but of hydrocephalus associated probably with meningitis. He expressed surprise at the favourable results furnished by Dr. Ferrier's cases and attributed them to the careful consideration of cases, by which certain cases were not submitted to operation, and to the care and skill with which the operations were conducted. He had not been so much impressed as some speakers apparently were with the palliative results of operation.

Dr. FERRIER, in reply, said that in his experience optic neuritis as a result of frontal tumour most often occurred on the same side as the growth, and he hesitated to express a definite opinion on the efficacy of lumbar puncture. His views, of course, as to "recovery" were necessarily modified by the fact that he regarded cases living a year after operation as cases of recovery, and also he regarded cases as recovered even if paralysis remained—paralysis the result of destruction caused by the growth before the operation had been undertaken.

THURSDAY, JULY 28TH.

Dr. BUZZARD (London) opened a discussion on

The Influence of Micro-organisms and Toxins on the Production of Disease of the Cerebral and Peripheral Nervous System.

He began by stating that he could not expect to do more with such a subject to discuss than throw out fragmentary suggestions which might be useful to other workers at this highly interesting aspect of neurology. Micro-organisms probably acted in two different ways—directly by the actual effect of the organisms themselves on the nervous tissues and indirectly through the agency of chemical substances produced by the action of the micro-organisms on the blood or other tissues of the body. Diphtheritic paralysis was probably the most striking and undoubted condition showing the effect of a chemical substance probably resulting from the action of the bacilli. The ordinary acute anterior poliomyelitis had always seemed to him to be a disease of infective character, and the fact that as a rule cases occurred sporadically did not seem to him to militate against such a view. Basic meningitis had lately been distinctly shown by Still to be microbic in origin, yet all the cases in the Hospital for Sick Children during the last ten years had been sporadic cases. So the fact that infantile paralysis usually occurred in isolated cases was evidently no argument against its bacterial origin. Further, it was not uncommon to find that in a family in which a case of infantile paralysis occurred one or more of the other children were ill with

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similar symptoms, their illness, however, not resulting in paralysis. He also referred to epidemics of the disease which had been described by several observers. The poison usually falls with greatest force on the anterior nerve cells, but is not always confined to them, for convulsions occasionally occur, pains in the limbs are not infrequent, and spasticity may result. He then referred to another disease—insular sclerosis—and said the view enunciated by Pierre Marie was apparently gaining ground—viz., that this disease is really an infectious one. Patches of myelitis undoubtedly do occur as a sequel to infective fevers. But while not claiming that this was the same condition he thought that the periods of remission in disseminated sclerosis, so similar to those occurring in constitutional syphilis, indicated the infective character of the disease. Tabes was another disease the close connexion of which with syphilis no one could doubt. It was an interesting question how far tabes was a result of specific infection and he suggested that not syphilis merely but also chancroids might be the infection preceding tabes. We know that neuritis may follow different kinds of microbic infection and probably myelitis also may do the same. There seems no reason why tabes should not similarly follow different kinds of microbic infection.

Dr. DERCUM (Philadelphia), after thanking Dr. Buzzard for his suggestive address, remarked that the action of toxins was probably a general one on all the tissues, with a local expression at some very susceptible part.

Dr. JOSEPH COLLINS (New York) had found in the examination of cases from the Vermont epidemic that the nervous system generally was affected, yet no specific organism was found. He did not agree with the view that disseminated sclerosis is infective. He thought a more probable explanation was that it was a result of congenital abnormalities. The nutritional balance of the cells of the nervous system was also of much importance in reference to nervous disease.

Dr. F. J. SMITH (London) related two cases of apparently some infective nervous affection after a septic wound and suggested that in such cases where the symptoms pointed to peripheral rather than central affection the transference of symptoms from one side to the other should be regarded as the result of nerve influence.

Dr. JOHN M. MACCORMAC (Belfast) remarked on the great divergence of opinion as to the connexion between tabes and syphilis and expressed the opinion that the changes in the nervous system in disease are chemico-physical in nature.

Dr. J. A. ORMEROD (London) thought that in tabes there must be more than mere microbic infection, probably personal susceptibility. For it is well known that tabes occurs ever so much more frequently in men than in women and cases of Friedreich's ataxy became much worse after an illness. Indeed, in some cases the illness seems to evoke the first symptoms and he would be inclined to think the microbic origin of disseminated sclerosis and even of infantile paralysis was "not proven."

Dr. R. A. FLEMING (Edinburgh) thought that in peripheral neuritis the vaso-motor nerves probably suffer and so there is exudation into the sheaths with pain and paralysis.

Dr. MOTT (London), in detailing the changes which he had found in two cases of beri-beri, remarked on the direct effect apparently exerted on the cardiac muscles by the poison of this disease and on the severity of the clinical symptoms as compared with the amount of change found in the nervous system.

Dr. FERRIER (London) remarked on the great suggestiveness of Dr. Buzzard's address, but was inclined to regard the infective theory of the origin of disseminated sclerosis as seductive but not proven. Of the close connexion between syphilis and tabes dorsalis and also general paralysis of the insane he had no doubt.

Dr. ALEXANDER BRUCE (Edinburgh) had found in a case he had examined recently, in fresh foci of disseminated sclerosis, a blood-vessel in the centre and he thought that the change probably spread from this vessel and was caused by some toxic substance which had the effect of dissolving the myelin. The change occurred symmetrically round the vessel and evidently spread from it.

Dr. E. F. TREVELYAN (Leeds) described a condition of disseminated myelitis found by him in dogs which died after canine chorea and distemper and he described a case in which death occurred eighteen days after exposure to cold. There was suppuration in the back muscles, empyema, and myelitis.

The PRESIDENT thought that toxins in many instances gave rise to changes, but he thought that toxins were not always of microbic origin but were produced sometimes inside the body. He referred to the fact that second attacks of infantile paralysis were practically unknown as evidence of infective character. He thought herpes zoster was probably microbic and facial paralysis seasonal. He referred to muscular atrophy (myopathy) with little change in the nervous system as occurring as a sequel to sprue and he was inclined to regard disseminated sclerosis as a result of intoxication.

Dr. BUZZARD replied on various points raised, and the PRESIDENT, in conclusion, thanked him for his introductory address.

Dr. BEEVOR (London) read a paper on

The Action of the Latissimus Dorsi in Hemiplegia.

He said that this muscle had three different actions—in moving the arm, in coughing voluntarily, and in coughing reflexly. In hemiplegia the voluntary action in moving the arm was usually lost on the paralysed side, the voluntary action and the reflex action in coughing both usually remaining. Sometimes, however, the voluntary action in coughing was also lost but the reflex action remained. He remarked on the possible usefulness of the condition as a diagnostic sign.

PATHOLOGY.

WEDNESDAY, JULY 27TH.

Dr. G. SIMS WOODHEAD (London) read a paper on

Post-Diphtheritic Paralysis.

He began by quoting statistics from a large number of cases of diphtheria or suspected diphtheria in which a bacteriological examination had been made at the Conjoint Laboratories, with the object of showing the large proportion of cases in which paralytic phenomena developed. The distribution of the primary paralysis was as follows. Out of 494 cases 185 were primary paralysis of the fauces, 197 of the oculo-motor muscles, 10 of other muscles, and 102 of primary paralytic heart failure. In regard to the time of onset important observations were made. Of the paralyses of the palate the great majority occurred between the fifth and fifteenth days; none before the fourth. Of the oculo-motor paralyses the bulk occurred between the fourth and seventeenth days; none before the fourth. Of the paralyses of other muscles about one-half occurred between the tenth and fourteenth days; none earlier than the tenth. Of the cardiac paralyses the bulk occurred between the fifth and tenth days, and in a few instances as early as the second day. In each of these groups the onset of the paralytic symptoms might be delayed for many days. It was obvious, however, that in the human subject the bulk of the paralyses occurred at a comparatively early date and cardiac paralyses earliest of all. The fact that the heart might be affected so much earlier than the other muscles appeared to indicate that the primary lesion probably occurred in the nerve-cells. These lesions were easily overlooked, because the changes were transient except in those cells which were completely degenerated. Sidney Martin, Meyer, and others had described segmental degeneration of the motor nerves, but in all probability such changes were of a Wallerian type. The toxin acted primarily on the nerve-cells which either degenerated or recovered at an early date; later the nerves for which these cells acted as trophic centres showed secondary degenerative changes, and only then was the paralysis revealed. After experimental inoculations of guinea-pigs for the purpose of testing antitoxins, paralyses occurred more frequently than before, probably owing to the larger doses of toxin and antitoxin now employed. Madsen, who used the original method of testing—i.e., neutralising with one-tenth of an antitoxin unit—found that most of the cases of paralysis in guinea-pigs developed at the end of the third week. He pointed out that the paralysis, when it did occur, followed the local infiltration which resulted from the injection of an incompletely neutralised dose of toxin. It began in the posterior part of the trunk and in the hind limbs. Later the symptoms became more pronounced and the paralysis gradually extended forwards to involve the fore limbs also. The muscles of the head and neck were the last to be affected. In spite of the extreme muscular weakness the animals were still very lively and continued to eat as long as there was food within reach. Ehrlich, on the

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other hand, observed that the bulk of the paralyses in guinea-pigs appeared at the end of the second week, but his observations were made on animals in which the neutralising amount of serum was one unit. In this connexion it was important to note that the diphtheritic poison was a highly complex body and appeared to include several substances possessing different properties: (*a*) a substance possessing lethal activity; (*b*) a locally irritating body; (*c*) albumoses which produced a marked reaction on the body temperature; and (*d*) a substance which had a special action on nerve-cells. Now, some of these substances combined with the antitoxin only after the lethal and locally acting toxins had been neutralised, and this was especially the case with the substance which produced paralysis. Hence the larger the total doses of toxin and antitoxin employed the greater would be the risk of some of the paralysis-producing substance being left over. In other words, there were more cases of paralysis when a theoretically ten times lethal dose was neutralised by the corresponding amount of antitoxin than when unit doses were used, and still more cases of paralysis when 100 times the theoretically lethal dose was used. The author's observations also showed that the amount and severity of the local swelling was no indication either of the probability of the occurrence of paralysis or of the rapidity of its onset.

Dr. MOTT (London) congratulated Dr. Woodhead on his valuable contribution to a subject of great interest and importance. He suggested that the diphtheria toxin acted in the first instance on the most vulnerable parts of the neuron—i.e., on the fine branching filaments of the dendron and on the terminations of the axis cylinder process. These parts were bathed in lymph and therefore specially exposed to the action of irritants diffused throughout the body. He had examined cases of diphtheritic paralysis in man and had found degenerative changes in the heart without degeneration of the vagus nerve. He thought the early cardiac failure was due to the effect of stress. The weaker the heart became the faster it had to work and it would therefore more readily succumb to the action of the toxin.

Professor BAGINSKY (Berlin) said that he had been led by his own observation to believe that cases of post-diphtheritic paralysis were less common than before. He had found advanced degenerative changes in all parts of the nervous system, including both nerve-cells and nerve-fibres. The muscular tissue of the heart and diaphragm showed also extreme degeneration. He thought that cerebral embolism was the most common cause of post-diphtheritic hemiplegia and said that such cases should not be included among the true diphtheritic paralyses. He thought that antitoxin treatment should be practised as early as possible in order to reduce the number of cases of paralysis in diphtheria.

Dr. GOODALL (London) said that cases of post-diphtheritic paralysis were undoubtedly more common than before, because under the antitoxin treatment the patients either recovered or lived longer. The number of fatal cases, however, had greatly diminished. Moreover, if antitoxin be given at a sufficiently early stage, the number of cases of paralysis would be lower instead of higher than before. In a number of cases of post-scarlatinal diphtheria in the Metropolitan Asylums Board's Hospitals the proportion of those affected by paralysis was considerably less than among the diphtheria cases admitted from outside in the same time. The former series of cases were under skilled observation from the beginning and in them the antitoxin treatment was commenced at an early stage.

Dr. SIMS WOODHEAD, in reply, said that he was now convinced that antitoxin by itself had no power of producing paralysis even in large doses. He believed that the heart failed most readily and earliest because it was the organ which had least rest. He had advocated this cause in his article on Tetanus in Clifford Allbutt's "System of Medicine." Overwork and malnutrition were the great factors even in those paralyses which appeared later. The poison did its work, but it was only when muscle and nerve were called into functional activity that the full extent of the damage was revealed. The practical outcome of the whole discussion was that the antitoxin should be used early, before degenerative changes had occurred, and that a sufficient dose should be given to neutralise not only the lethal action of the toxin but also its local and its paralysis-producing action.

Dr. J. LORRAIN SMITH (Belfast) read a paper on the

Pathological Effects of Breathing Oxygen at a High Tension.

Previous observers had noted that when animals were compelled to inhale oxygen at a greatly increased tension a series of changes were produced which were partly functional—e.g., respiratory and circulatory disturbances—and partly of the nature of tissue degeneration. Bert in particular found that special effects might be produced in the nervous system resulting in well-marked convulsive or tetanic symptoms. In his own experiments on mice and small birds Dr. Lorrain Smith investigated the tissue changes which develop prior to the strychnine effect. At an oxygen tension between 70 and 80 per cent. of an atmosphere about 50 per cent. of the animals died in about a week. At 130 per cent. mice invariably died after an average exposure of 64 hours with a pneumonic condition of the lungs characterised by intense congestion and an exudate into the alveoli which was either fluid or granular, but not fibrinous, and which affected the whole lung simultaneously. At 180 per cent. death occurred very uniformly in about 24 hours, and at 300 per cent. the duration of life might be reduced to 5 hours. It was also noted that the absorptive power of the lungs was seriously impaired by exposure to high oxygen tension. At 300 per cent. small birds became very excited and in about ten minutes showed violent tetanic symptoms. It was found that this convulsive effect was not produced in birds by an oxygen tension of less than 270 per cent., whereas mice did not begin to show it until a tension of 450 per cent. was attained. The strychnine effect in birds was further found to depend upon the integrity of the lung tissue; for birds with damaged lungs react like normal mice, so that the onset of tetanic symptoms did not appear until a tension of 450 per cent. was reached. That this effect depended entirely on the tension and not on the quantity of oxygen in the blood was also shown by mixing carbonic oxide with the oxygen at different tensions, when it was found that the tetanic symptoms developed at the same tension as before. Hence it was concluded (1) that an oxygen tension of 80 per cent. and upwards would produce a pneumonic condition in the lungs of small birds and mammals and (2) that tetanic symptoms were developed at a tension of 270 per cent. in birds and at 450 per cent. in mice, and that their onset was independent of the quantity of oxygen in the blood but depended on the tension alone.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, JULY 27TH.

Diseases of the Stomach.

After Dr. AFFLECK'S introductory address (which was published in THE LANCET last week) a discussion was commenced upon the Treatment of Diseases of the Stomach as relating especially to—(*a*) general treatment and diet; (*b*) the influence of drugs upon the gastric chemical processes; (*c*) the influence of the treatment of coexisting maladies; and (*d*) the indications for surgical treatment. It was opened by Dr. HERSCHELL, who mentioned that perhaps the most difficult disease to treat was atony. The indication was to improve nutrition. Electricity was valuable especially if employed as shocks from an induction coil having a very thick primary wire and a very slow make and break. Hydrotherapy was useful, and so was lavage and douching of the stomach with alternately hot and cold water. Care must be taken in washing out or douching the stomach to avoid over-distension. This was to be attained by using a double tube with the efferent tube of much larger calibre than the afferent. The douche should be continued for 5 minutes, varying the temperature from hot to cold every 60 seconds. As for dietetics in hyperchlorhydria theoretically a proteid diet was indicated, but it did not succeed in practice, for the very fact that hydrochloric acid was necessary for the digestion of proteids in the stomach seemed to increase the already too free secretion of that acid. Therefore he recommended a carbohydrate diet predigested and neutralisation of the acid with alkalies. He did not much believe in artificial digestive ferments, with the exception of taka-diastase. As to drug treatment he had found very weak solutions of tannin useful in hyperchlorhydria.

Professor EWALD (Berlin) followed. After thanking the Association for the honour they had conferred upon him, he said that rational therapeutics were impossible without exact diagnosis. Purely local treatment was not enough. Referring to modern methods of diagnosis he mentioned the gastro-diaphane as being of great value. In cases of neurasthenic dyspepsia he relied chiefly upon treatment calculated to improve nutrition generally, such as electricity and massage. Passing to the subject of gastric ulcer he said that on the

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whole it was a most satisfactory disease to treat. Rest in bed was paramount if acute symptoms were present. Nutrient enemata were to be given with a little ice by the mouth for five days or so. After this a small quantity of food might be given by the mouth, and if this did not cause pain it might be continued. As to hysterical vomiting in that form which depended upon cramp of the pylorus and which was very intractable, the only thing to be done was a gastric enterostomy. Speaking of the surgical treatment of malignant disease Professor Ewald said our results were better than formerly because the disease was diagnosed earlier, but the mortality was still too high.

Dr. SAUNDBY (Birmingham) urged the necessity of rest in even slight degrees of gastric disease. It should be accompanied by massage to prevent weakness and to keep up the nutrition of the muscles. He wished to enter a protest against the indiscriminate prescribing of whisky in dyspepsia. It was an irritant and did more harm than good. With regard to gastric ulcer diagnosis was impossible in the absence of hæmorrhage. He did not use rectal feeding unless there were hæmorrhage, but kept the patient in bed on a liquid diet for the first day or so, gradually making it more and more solid.

Dr. LAUDER BRUNTON (London) said that one remark of Dr. Herschell had cleared up for him what had long been a difficulty—namely, why sometimes a bitter like calumba seemed to do good and at other times infusion of gentian. He now supposed that in cases of hyperchlorhydria the gentian would succeed better because it contained tannin. The giving of bicarbonate of soda might in some cases help in the diagnosis of gastric ulcer. If the patient were told to put a drachm of bicarbonate of soda in a tumbler of water and sip it slowly many cases of gastric pain would be relieved. If the pain were not relieved the case was not one of ulcer. It was as well to administer the bicarbonate of soda in lime water to lessen the chance of provoking hæmorrhage.

Professor F. B. TURCK (Chicago) read a short paper upon his method of diagnosis and treatment of gastric disorders. He advocated what he termed pneumatic gymnastics—i.e., distending the stomach with air, hot or cold, moist or dry, or mixed with some nebulised drug such as oil of cloves. The alternate distension and contraction of the stomach on escape of the air was of service in improving the muscular tone of the viscus. The stomach must be thoroughly cleansed and the best way to do it was by means of the gyromele or revolving sponge-brush.

After the discussion was over Dr. TURCK gave a demonstration of the various instruments and methods which he employs. The demonstration, which was very interesting, was largely attended.

THURSDAY, JULY 28TH.

The subject for discussion was

The Treatment of Chronic Renal Diseases,

which was opened by Dr. NESTOR TIRARD in a paper of which the following is an abstract.

For the purposes of the present discussion it may be convenient to divide the subject of chronic renal disease according to broad pathological lines under the headings of chronic nephritis, renal cirrhosis, and lardaceous disease. In chronic nephritis there is a tendency to the occurrence of subacute attacks with small provocation. Patients who have been passing a fairly large amount of albumin in urine of almost normal specific gravity may from time to time pass blood, and the appearance of the urine might, in the absence of history, lead to a diagnosis of acute nephritis. Hygienic treatment, therefore, has largely to be directed towards diminishing the risk and frequency of these subacute attacks, and there is very little doubt that these risks may be diminished by the avoidance of exposure to sudden alterations of temperature, and much may be done by clothing in non-conductors which readily absorb moisture and from which evaporation proceeds slowly. Patients should, so far as possible, guard against business anxieties and worries, and against late hours and other forms of excess. In considering the dietary of patients with chronic nephritis or with renal cirrhosis it must not be forgotten that patients frequently suffer from dyspepsia and distaste for food. A small quantity of alcohol, preferably in the form of a pure spirit, is useful, while for diet milk, fish, or fowl may be given. Of all diuretics the very best is water. Hæmaturia requires rest in bed and warmth. Astringents, though sometimes useful, are very liable to interfere with the digestion. For dropsy we have diaphoretics, diuretics, and hydragogue purgatives. In the first class are the various forms of hot-air baths and wet packs and pilocarpine. This last must be used with the greatest caution in cases of weak, dilated, or fatty heart, and if used at all under such circumstances must only be so as the starting-point for diaphoresis. In cirrhosis of the kidney treatment has to be almost entirely symptomatic, but the nitrites are useful in relieving tension. For sleeplessness opium may be given with caution, though hyoscine is to be preferred. Sulphonal is also useful. For acute attacks of uræmia nitrite of amyl is often efficacious; chloroform must be given with great caution. In uræmia occurring in acute nephritis purgatives and diuretics are useful, but in the uræmia of chronic nephritis they are not so useful as there is so little kidney substance to work upon.

Professor EWALD (Berlin) read a paper on the Benefits to be obtained by Venesection and repeated Tappings. He used rather larger tubes than is customary in this country. Venesection, however, must not be used for those patients who had a weak pulse.

Dr. J. BARR (Liverpool) considered that the amount of albumin did not matter much. What was important was the amount of effete matter retained. He advocated an exclusively milk diet and considered pilocarpin most dangerous.

Dr. D. C. MCVAIL (Glasgow) said that the estimation of the urea was very important. *The* diuretic was water, aerated for choice, and if patients exhibited a distaste for it salines were to be given, and the best saline was common salt. He allowed milk, fish, and chicken. Opium might be given with safety, and pilocarpin was most useful.

Dr. SAUNDBY (Birmingham) also considered that the diet need not be strictly confined to milk. For uræmia he employed a brisk purge, the hot-air bath, and large enemata of cold water. For uræmic dyspnœa erythrol tetra-nitrate was often useful.

Dr. C. J. MACALISTER (Liverpool) wished to draw attention to the use of oxygen inhalations in uræmia. They seemed to increase both the amount of urine and the amount of urea. Pilocarpin was a dangerous drug if the patient was unconscious owing to the risk of setting up œdema of the lung. Opium and its preparations were, he thought, quite allowable in cases of uræmia where the pupils were dilated, but if they were contracted hyoscine must be employed.

After the discussion Professor EWALD and Dr. HERSCHELL gave a demonstration of Intra-gastric Instruments, and Dr. TURCK repeated his demonstration of Wednesday.

LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, JULY 27TH.

Introductory Remarks.

Dr. PETER MCBRIDE (Edinburgh), President of the Section, said the best literature on Laryngology came from journals from Germany and France. New remedies are too often praised by the inventor in whose hands only they are successful. Laryngologists are human. It is necessary for every specialist to keep pace with the literature of his subject. It falls most hard upon lecturers and writers of text-books to do so. Abstracts of papers are a great help, but they are not always correct representations of what the author wishes to convey. A leading specialist can hardly accept one single author as his guide. Only papers of great use ought to be abstracted and published in English or French from foreign journals. Specialists are apt to magnify the importance of their speciality. He referred to an undue therapeutic credulity and to the glut of literature. Although there is much that is good there is more that is valueless. The amount of literature bears heavily upon conscientious readers. He suggested that a committee should be formed by the best-read men in the literature of the subject; they should decide which papers ought to be abstracted, and that there should be a staff of younger men working under their direction as abstractors and their abstracts should be supervised by the committee in this way.

The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology, Rhinology, and Otology.

This discussion in its particular bearing on laryngology was opened by Sir FELIX SEMON (London), who began by describing the discrepancies of opinion concerning this question at present existing amongst laryngologists and humorously

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depicted the gradual shades of opinion, from the extreme right wing, the "stern unbending Tories," representing those clinical laryngologists who did not believe in the value of experimental research at all, to the radical left, or the "stalwarts" of experiment, who looked upon clinical experience as mere "bag and baggage." He himself confessed to belong to the "centre" party—i.e., those who from experience of their own had arrived at the conclusion that methods properly applied are extremely valuable. This thesis the speaker supported by a rapid survey of the achievements, the failures, the applicability, and the sources of error of each method. It was first shown by a series of illustrative examples that the clinical method, whilst usually most successful in determining not merely the nature of most local affections of the larynx, but also of grave constitutional disease in distant parts, yet in not a few instances did not suffice for the establishment of a positive and certain diagnosis, and that in other cases even when showing the nature of the disease it did not give an explanation of its causation. It was further pointed out that even the employment of all modern accessory methods of investigation (microscopy, electricity, bacteriology, &c.), did not afford guarantee of an absolutely reliable conclusion in many instances. Hence the desirability of further help in that respect was unreservedly admitted, and the importance of experimental research in view of thé progress obtained by its employment in so many other branches of medicine was duly emphasised. At the same time the question was asked whether its results so far as obtained with special regard to laryngology had been of so universally reliable a character as to justify its laying down the law to clinical laryngology. In reply to this the principal experiments referring to special laryngological subjects were passed in review, and it was shown (1) that the applicability of experimental research in laryngology had been so far very limited; (2) that in certain instances its results had undoubtedly been decisive and of great importance to clinical progress—e.g., in the question of extirpation of the larynx, of the special representation of the larynx in the cerebral cortex, of the existence of the reflex-tonus of the dilator muscles of the glottis during quiet respiration, &c.; (3) that, on the other hand, its employment had in various questions not only not cleared up previously existing difficulties, but had on the contrary increased them; and (4) that the experimental method had so far failed in elucidating some of the fundamental laryngological problems—e.g., the question of the ultimate origin of the recurrent laryngeal nerve, the question whether this nerve contained centripetal fibres, &c. In continuation of this argument it was pointed out that in purely pathological experiments—i.e., in the imitation of pathological processes by experimental research—the results had been even less satisfactory, inasmuch as in the two most important attempts of the kind which have so far been made —Krause's attempt to experimentally imitate the pressure of a growth upon the recurrent laryngeal nerve and Klemperer's injection of pathogenic micro-organisms into the laryngeal areas of the cerebral cortex—the results had caused an augmentation rather than a diminution of the discrepancies of clinical observers on these important points. The speaker endeavoured to explain this by enumerating the various and grave sources of error in experimental research with which he had become personally acquainted and from this drew the conclusion that there were four general principles which ought always to be remembered when experimental research was resorted to for the solution of laryngological problems—viz: (1) what was the question to be solved? (2) what was the method of the experiment undertaken for its solution? (3) what were its possible or probable sources of error in the individual case? and (4) who was the experimenter? In support of these propositions he pointed out (1) that not all questions in which the help of experimental research was invoked were equivalent and equally suitable for experimental investigations; (2) that there were enormous differences between the methods of various experiments; (3) that the sources of error encountered in certain experiments were so manifold and so great as to entirely spoil the application of their results to apparently analogous conditions in man; and (4) that a rare combination of qualities was required to make a successful experimenter. The conclusion ultimately arrived at was a reaffirmation of the speaker's conviction expressed eight years ago in the *Virchow-Festschrift* and couched in the following terms:—"Many years' clinical and experimental investigation leaves no doubt in my mind that in these questions experiment cannot lay down the law to clinical observation or clinical observation to experiment. I feel equally certain there is no incompatibility between them, that the one completes the other, and that whenever a contradiction seems to arise the conflict is only *apparent*. With sufficient patience and care it can always be traced to defective clinical or pathological anatomical observation, to faults in the experimental method, or to an incorrect way of stating the problem."

Dr. MILLIGAN (Manchester) dwelt at some length on streptococci and pathogenic infection and also referred to the value of Dr. Koch's researches. He touched on the importance of purulent discharge from the ear, otorrhœa and diseased bone, and said that we should go carefully into the exact etiology, whether lymphatic, vascular, or tuberculous, or by direct means of infection. He dealt at some length on adenoid growths being tuberculous, the frequency of tuberculosis in them being, he found, 7 per cent.; others had reported 3 per cent. He thought it pointed to the fact that adenoid masses gave rise to and spread tuberculosis. We knew too little of the spread of tuberculosis from adenoid masses and catarrhs of the upper air-passages. We should have (1) a knowledge of the production of disease from these sources, and (2) of the ultimate result of mastoid circulation suppuration. (He showed a specimen illustrating tuberculosis from adenoid masses.)

Dr. DUNDAS GRANT (London) remarked upon the unanimity of opinion of all who had listened to Sir Felix Semon's and Dr. Milligan's observations, and referred to Cheyne's work as a perfect monument to his fame and to his experiments on rabbits; by stopping up the nose of young animals he produced growths, atrophy, and curvature of the spine. He referred also to Dr. Cresswell Baber's case before the Laryngological Society of London touching on these experiments. Dr. Grant had also found that the atrophy, &c., took place on the wrong side. He thought the discussion was good and well worth being brought forward.

Dr. ST. CLAIR THOMSON (London) agreed with Sir Felix Semon and Dr. Milligan. He himself had had a case which did not come up to Sir Felix Semon's observations. He mentioned the experiment of an American authority on animals exposed to very bad air, who explained his results as proving that "individuals" were not any the worse for inhaling sewer air. He referred to Dr. Schaffrey's experiments with bacilli in a test-tube exposed to sewer air, the bacilli were not rendered more or less virulent by exposure to sewer air. He also referred to infections of the Eustachian tube and to the fact that the serum of the nternal ear was sterile prior to perforation of the tympanum.

DISEASES OF CHILDREN.

WEDNESDAY, JULY 27TH.

Spinal Caries.

Mr. VICTOR HORSLEY (who was unable to be present) sent a paper on the Treatment of Spinal Caries. He said that the question of the best treatment of the lesion of the bones was more important than that of subsequent deformity. He held that vertebral caries should be treated in the same way as tuberculous disease of bone elsewhere and advocated early operation. There was no special risk attaching to aseptic operations on the spine. He himself had only seen severe shock after operation in the case of one child, and it could be entirely avoided by performing the operation in two stages. Some considered that operation might arouse quiescent tubercle, or the dissemination of tubercle. This he sought to prevent by free flushing with dilute perchloride lotion (1 in 5000). He took away laminæ freely and tried to remove the whole of the disease. Deformity might be altogether prevented if the operation were done early and subsequent elastic traction were maintained. The extension should be made from anklets, and from the head as well as the axilla. It was often very difficult to tell whether there were an abscess, as pain and fever were often absent. The best guide was the degree of collapse of the bodies indicated by displacement of the spines. Post-pharyngeal abscesses should be opened from the side of the neck; never through the mouth. Any inflamed lymphatic glands around the carotid could be removed at the same time. In the dorsal region it was often difficult to get at all the diseased bone and to follow up an abscess, and many laminæ should be freely removed if necessary. He had no personal experience of Calot's operation, which did not provide for treatment of an abscess, and

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there was no guarantee that it would permanently relieve the deformity.

Mr. ROBERT JONES (Liverpool) said that if it were possible to get at all the diseased bone he would be able to accept Mr. Horsley's conclusions. But the examination of pathological specimens showed that this would often be impossible. He did not approve of elastic extension, as if it were strong enough to produce rigidity it would be insupportable to a small child. He strongly insisted that any support should be convex so as to produce some lordosis to prevent falling in of the bodies. Patients were quite comfortable in such a position provided that the legs were not on the convexity but lay on a flat surface. Sayre's jacket was unsatisfactory. It merely acted as a ferule, either too tight or too loose. Whatever apparatus was applied the shoulders must be well pulled back. If caries were treated by an extensive open operation there was considerable risk of septic infection subsequently. He had performed the Calot operation 93 times with 7 deaths at periods of from six weeks to nine months after operation, the same proportion of deaths as in a number of cases which were not submitted to this procedure. He believed there was a future for the operation.

Mr. R. W. MURRAY (Liverpool) had performed Calot's operation 14 times and he was bound to say that he did not approve of it. Although no accident had occurred owing to the immediate reduction the cases had not done well, and in the case of two who died subsequently it was found that there had been no attempt at repair.

Mr. NOBLE SMITH (London) thought that if patients were in good health and properly treated deformity did not often occur. Fixation by extension was unsatisfactory, and in the position of lordosis advocated by Mr. Jones there was risk of bringing inflamed surfaces of bone together. He preferred support by apparatus. Removal of the whole disease was often impossible, and that it was not necessary for recovery was shown by the progress of many cases of hip disease.

Mr. A. H. TUBBY (London) said that the treatment depended on the stage of the disease. If treated with recumbency in a position of partial lordosis till pain passed off most cases would recover without deformity. When deformity had occurred Calot's operation, although still on its trial, promised to be of great service. He himself had performed it in 29 cases.

Mr. THOMAS (Birmingham) emphasised the importance of being constantly on the look-out for signs of caries, as its onset was often insidious. The most important factor in treatment was fixation of the spine by whatever means secured. He thought that the opening of abscesses should be left as long as possible. With reference to Calot's operation he mentioned that he had trouble in one case from tendency to sores on the skin which had been formerly stretched over the boss.

Mr. F. CHURCHILL (London) spoke in favour of conservative treatment.

Mr. LUCKHAM (Salisbury) thought that when patients had the advantage of good country air operation was rarely called for. If an abscess formed he aspirated once or twice and injected iodoform emulsion. Incision was often thereby avoided, and if necessary the wound was more easily kept aseptic.

Dr. E. E. DYER (Alloa) also spoke.

Mr. H. J. STILES (Edinburgh) read a paper on the Treatment of Mastoid Disease in Infants, and pointed out that while intracranial complications are relatively less frequent in children than in adults, mastoid abscess was more frequent. He showed that the operation of clearing out the mastoid antrum in infants differed in one or two important points from that in the adult in consequence of the anatomical peculiarities of the temporal bone in the infant. On account of the absence of the mastoid process the stylo-mastoid foramen and therefore the facial nerve which leaves it is exposed to injury by the incision to expose the antrum. To avoid the nerve this incision must not extend too low down and the lower part of it must not extend down to the bone. The root of the zygoma must not be taken as a guide to the antrum, because if the bone be penetrated below this ridge the middle fossa of the skull will be opened immediately in front of the antrum.

Mr. R. W. MURRAY read a paper on Harelip and Cleft Palate, containing the results of 125 sutures. The various methods of operating were shown on the screen. Mr. Murray emphasised chiefly the value of the button suture and the desirability of closing the soft palate before the child tried to learn to talk.

Mr. MURRAY also read a paper, with many illustrative lantern slides, on the Treatment of Club Foot by Tenotomy and Tarsectomy.

Mr. A. H. TUBBY read a paper on the Occurrence of a Dorsal Pad on the Feet and occasionally in Rickets. In some the prominence was subcutaneous and semi-fluid and in some bony according to the duration of the condition.

Mr. STANSFIELD COLLIER (London) read a paper on Dislocation of the Hip-joint occurring in the Course of Infectious Diseases. Mr. Collier held that there were two types: (1) those associated with arthritis and (2) those where the dislocation was due to relaxation of ligaments with loss of tone of some muscles and over-action of their antagonists.

THURSDAY, JULY 28TH.

Mr. HUTCHINSON (London) opened a discussion on

Certain Aspects of Congenital Syphilis

and dealt chiefly with affections of the bones and the organs of special sense. He referred to the occurrence of a rare form of bone disease closely simulating osteitis deformans which sometimes occurred as a late development of the disease. He said that keratitis might occur during the first months of life, after that it was most frequent at the age of twelve, but that it might occur from the age of twenty to forty. In the latter cases there was often simultaneous syphilitic synovitis. Deafness, on the other hand, occurred solely in comparatively young patients. Arrest of mental development and partial idiocy might come on in adolescence in congenital syphilitics who had been brightest children. As regards prognosis Mr. Hutchinson thought that after showing symptoms of congenital syphilis in childhood patients usually enjoyed excellent subsequent health. He did not believe in transmission to the third generation, and thought that these patients might marry without any risk. He was still of opinion that two years was long enough for a man to wait before he might marry without risk of transmitting the disease, but it was possible that the duration of transmissibility was longer in the case of women.

Dr. HENRY ASHBY (Manchester) spoke chiefly on affections of the brain. He showed specimens in which (1) microcephaly had been the result of arrest of development from syphilitic arterial disease, the brain after hardening weighing less than 4 oz.; and (2) a brain in which idiocy was produced by syphilitic meningo-encephalitis. Syphilis was, however, by no means a common cause of idiocy.

The discussion was continued by Dr. HUDSON (New Zealand), Dr. FINLAYSON (Glasgow), Dr. JOHN THOMSON (Edinburgh), Dr. SYMES (Dublin), Professor BAGINSKY (Berlin), Professor COMBY (Paris), Dr. TELFORD-SMITH (Lancaster), and Mr. J. HUTCHINSON, jun. (London).

The following papers were read:—

Mr. ROBERT JONES (Liverpool): On the Short Leg of Hip-joint Disease and its Treatment (with lantern demonstration).

Dr. JULES COMBY (Paris): On Moveable Kidney in Children (with lantern demonstration).

Professor BAGINSKY (Berlin): On Hospitalism and Atrophy of Children (with lantern demonstration).

Dr. F. E. BATTEN (London): On Diphtheritic Paralysis (with lantern demonstration).

Dr. G. F. STILL (London): On the Micro-organism of Simple Posterior Basic Meningitis in Infants.

Dr. G. A. SUTHERLAND (London) and Mr. WATSON CHEYNE (London): The Treatment of Hydrocephalus by Intracranial Drainage.

FRIDAY, JULY 29TH.

Rheumatic Heart Disease in Childhood.

Dr. DAVID LEES (London) opened a discussion on this subject. He drew particular attention to the occurrence of dilatation in all forms of rheumatic heart disease in children. In many long-standing cases it was to the dilatation rather than the valvular lesion that the impediments of the circulation were due. He showed from extensive clinical and post-mortem records that transient dilatation was frequently to be demonstrated in children suffering from chorea or from a first attack of rheumatism without endocarditis. Tracings were shown on the screen illustrating these points. The dilatation was not due to myocarditis secondary to the pericarditis, which was so frequently present in juvenile rheumatic heart disease, for it only occurred in rheumatic

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cases and was not present in pneumococcal and tuberculous pericarditis. With reference to prognosis Dr. Lees held that this depended on the amount of permanent dilatation, but that if compensation was good and the child was guarded from subsequent attacks of rheumatism the prognosis was not very unfavourable. Successive attacks of rheumatism further damaged the heart and were the most serious danger in the future.

The following members took part in the discussion: Sir WILLIAM BROADBENT (London), Dr. EWART (London), Dr. W. OSLER (Baltimore, U.S.A.), Professor BAGINSKY (Berlin), Dr. FINLAYSON (Glasgow), Dr. THEODORE FISHER (Clifton), Dr. F. J. POYNTON (London), Dr. LINDSAY STEVEN (Glasgow), and Dr. SAMWAYS (Mentone). General agreement was expressed with Dr. Lees's conclusions except by Dr. Ewart, who held that the alterations in the area of cardiac dulness were due to ephemeral effusions rather than to dilatation.

The following papers were read:—

Dr. JAMES H. NICOLL (Glasgow): The Radical Cure of Spina Bifida treated by Open Operation.

Dr. R. MARTIN (Manchester): On the Effects of Tobacco Smoking in Children.

Dr. J. KAY TOMORY (Caithness): Note on a Case of Supernumerary Testicle.

Dr. JAMES CARMICHAEL (Edinburgh): Types of Infantile Pneumonia.

DERMATOLOGY.

WEDNESDAY, JULY 27TH.

This Section was opened under the presidency of Dr. W. A. JAMIESON (Edinburgh). There was a good attendance, including several foreigners of distinction, amongst whom may be mentioned Dr. P. G. Unna (Hamburg), Professor Boeck (Christiania), and Dr. Janowsky (Prague).

The PRESIDENT, in opening the Section, after welcoming the members and visitors, sketched the history of dermatology in Edinburgh from the time when Professor Hughes Bennett first had charge of special wards devoted to diseases of the skin in the old Royal Infirmary and referred to the great changes which had taken place in the treatment of skin diseases since then. The chief part of his address was devoted to the subject of

The Application of Rest in the Treatment of Diseases of the Skin.

He inquired what is meant by "rest," which really indicated comparative rest, and referred to the views of Horace and Sophocles. Why is rest necessary? formed the text of the next part. The very term "eruption" indicates disturbance of function and hence it calls for rest. Various states of unrest as regards the skin were referred to and the demand for rest in states of over-action of the glands and appendages of the skin. Ichthyosis, seborrhœa, and hyperidrosis were considered in this relation. Hyperæsthesia and pruritus served as illustrations of another group of irritative skin lesions. The inflammatory diseases provided exemplifications from another side, such as eczema, acne, &c. Exaggerated sensibility to light might be seen in such diseases as xeroderma pigmentosa, which needed rest and protection. Lastly, ailments due to parasitic agencies were dealt with and the different modes in which rest could be procured for various forms of irritability were described.

After the presidential address the Section adjourned to the Royal Infirmary, where a clinical meeting was held for the exhibition of patients and informal discussion of the cases. The cases, which were for the most part under the care of Dr. Jamieson or Dr. Norman Walker, consisted of the following. Xeroderma pigmentoum in a girl, aged six years, which was improving under a soothing ointment and a veil and other protective measures. A sister, two years younger, had lately been developing a few freckles which looked suspicious of the disease arising in her. Two cases of sclerodermia in young women under treatment by Unna's ointment of perchloride of mercury. In one of the cases this had been combined with massage. Another case of sclerodermia round the mouth had been under treatment for a whole year by potassium iodide, 5 gr. thrice daily, without improvement. Two of these cases were undoubted cases of sclerodermia and had the characteristic lilac border which had not spread; but Dr. UNNA (Hamburg), remarking on the case of scleroderma of the lip, thought it was a more localised disease, a kind of acne keloid—i.e., a fibroma around the hair follicles of the moustache. A case of that rare condition, infective angioma, or lupus lymphaticus of Hutchinson in a man, aged twenty-six years. About fourteen years ago, while practising gymnastics, he had noticed little reddish spots on the forearm. Ten years ago, when he first came to Dr. Jamieson, the eruption presented precisely the same appearance as now. The spots consisted of dilated capillaries situated on the flexor and extensor aspects of the arm. Microscopic examination showed them to consist of thrombi at the top of the dermal papillæ. The patient had suffered no inconvenience or subjective symptoms of any kind. A case of ulerythema sycosiforme on the beard and scalp in which the eruption consisted of a keloidal condition with baldness and pustules affecting the beard. A case of adenoma sebaceum in a lad, aged seventeen years, who had been under observation for many years, was combined as usual with arrested mental development. The treatment adopted had been repeated application of the thermo-cautery, doing a small area at a time. Very great improvement had taken place both in the skin and the mental condition. Two cases of dermatitis herpetiformis; the patients had suffered for eight or nine years from vesicles arranged in groups, leaving stains and pigmentation on the arms, trunk, and legs. Both were regarded as characteristic specimens of the disease. Three cases of a condition described as an unusual variety of lichen ruber planus (of Wilson) gave rise to considerable discussion. One of them, a man, aged fifty years, who had been affected for about eight years, presented some of the characters of the lichen ruber of Hebra, and in his case some of the spots had been excised and presented the typical appearance of that disease under the microscope. The other cases appeared to present earlier stages of the same condition, whatever it might be. All three presented a universal eruption and in the most severe case the entire integument presented a crimson appearance formed of red spots which had become confluent, with small spaces of what appeared to be atrophy between.

Dr. UNNA (Hamburg), remarking on these cases, thought that they corresponded with what he had described under the name parakeratosis variegata; the distribution of the rash, the crimson colour, and the ring-like appearance of some of the spots suggested this, but the small islets of atrophy did not correspond.

Professor BOECK (Christiania) confirmed this view. He had met with similar cases which could not be classed quite with lichen ruber. He thought the atrophy was more apparent than real by reason of the swelling of the affected skin leaving healthy areas depressed.

Dr. J. F. PAYNE (London) had seen cases like these and though he had included them provisionally under lichen planus he felt that they were something different as a whole, and though the anatomy might be the same as lichen planus it did not follow that they belonged to that group.

Mr. MALCOLM MORRIS (London) thought possibly these cases might be a kind of lichenification or they might be an early phase of mycosis fungoides. A slowly progressive inflammatory condition of the skin of this kind might go on to several other maladies.

Dr. RADCLIFFE CROCKER (London) believed that these cases might probably be a variety of lichenification. Certainly their characters and distribution did not exactly resemble lichen planus, but they might be a sub-variety of that disorder as Dr. Unna had suggested. On the other hand, they might be an early stage of mycosis fungoides, though in that condition there were acute exacerbations of lymphangitis, such as these cases had not exhibited, although the patches in one case were like the premycosic stage. He was inclined provisionally to put them in a separate group, such as Dr. Unna had suggested.

Dr. ALFRED EDDOWES (London) thought much could be learned from the history of such cases and he referred to a case of "gouty eczema" which much resembled one of the cases.

A case was exhibited for diagnosis in the person of a young woman, aged twenty-one years, in whom the disease had existed ever since she was six months old. The face, legs, and trunk, but especially the legs, presented raised hypertrophic patches closely set, more or less circular or ovoid in outline, of a livid purple hue, and presenting a warty surface. Microscopic examination of the lesion showed a great overgrowth of the mucous layer of skin—a sort of acanthosis. It presented an appearance of a tuberculous

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lesion in some respects and Dr. T. D. SAVILL (London) suggested that it might be a widespread lupoid growth. The age of advent and the long duration were in keeping with this. A series of cases of lupus erythematosus was exhibited presenting types of the different varieties such as the telangiectatic form undergoing improvement, an example of the exanthematic type, and several cases illustrating the difficulty of coming to a conclusion between lupus erythematosus or lupus vulgaris. A case of vitiligo in a child, aged ten years, who had had the disease for seven years. A case of elephantiasis in a girl aged fifteen years. The disease began many years ago as lupus vulgaris of the foot; it had spread up the leg and by producing lymphatic obstruction it had resulted in elephantiasis. A case of mild degree of ichthyosis in a girl, aged thirteen years, was shown to illustrate the President's remarks on the application of rest. The girl had been washed daily with resorcin-salicylic soap, and a zinc and starch paste, and had made considerable improvement.

Dr. J. M. H. MCLEOD (Dundee) showed a case of Symmetrical Paronychia in a man aged seventy-five years.

Dr. J. MACDONALD (Cupar, Fife) brought up a case of Mycosis Fungoides in a man, aged forty years, which had come on during the last two years.

MEDICINE IN RELATION TO LIFE ASSURANCE.

WEDNESDAY, JULY 27TH.

Dr. CLAUD MUIRHEAD (Edinburgh) (the President of this Section) said: For the first time in the history of this Association a section has been instituted for the consideration of

Medicine in Relation to Life Assurance,

and I think our President deserves the congratulations of the members of the Association for the happy inspiration which prompted the formation of it. For to him, I believe, the idea is entirely due. And, indeed, when one considers the matter, it is rather a surprise that the formation of this Section has been delayed so long and that only now it is taking the position in the Association to which it is fairly entitled. Before proceeding further permit me to thank those gentlemen who have the arrangement of these matters in their hands for the honour which they have conferred upon me in inviting me to assume the position of first president of this new Section. We have also to congratulate ourselves on the good fortune of having many of the leading men in this city and elsewhere who are connected with insurance offices of the first rank conjoined with us in our deliberations and discussions on the subjects which are to be brought before us. The Faculty of Actuaries have also kindly responded to our invitation to give us the benefit of their rich experience, an experience which as it is commonly built up on a statistical basis is at once final and irrefutable. I think that from such a combination of persons, whose minds are daily engaged in weighing evidence, in close reasoning, and in deducing practical results from the premises submitted to them, in conjunction with the more practical experience of our own profession, there cannot fail to arise most valuable conclusions as the outcome of our conference, which will prove of much service in guiding us more equitably perhaps, and certainly more satisfactorily to adjudicate upon the merits of cases which in future may come before us as proposals for life assurance. And if this turn out to be a correct surmise it will prove the most ample justification for the formation of this new Section, and lay the foundation for its acceptance as a permanent branch of our Association. As you are all probably well aware the business of life assurance has of late years made enormous advances, and huge sums of money are now and again set aside in this way not merely for the original humane and beneficent purpose of securing to the widow and her children on the death of the head of the house some means by which they may be saved from the terror of actual poverty, but it is also largely used for commercial purposes and more lately as a method by which to meet the demands of the Chancellor of the Exchequer when he claims the estate duties. It may astonish some of you, as it certainly amazed me, to learn that in the United Kingdom the liabilities of life assurance companies amount to no less than £263,829,625. In the statistics given in the last Insurance Companies' Bluebook it is stated that nearly one-half of the population of the United Kingdom (exactly 42·70 per cent.)—men, women, and children of all ages—is insured in some form. Now what relation to this vast enterprise does the medical profession hold? What is our position in regard to life assurance? Apart from this purely personal relation to life assurance the medical profession is and has for long been associated with the companies in enabling them to make judicious selection of lives proposed for assurance. Not much before the commencement of this century were the services of a medical man asked for. On reference to the first proposals of the Scottish Widows Fund Society in 1814 I find that the applicant had to appear before a medical man and produce a certificate to this effect—I quote the words:—"I, ..., do hereby certify that ..... mentioned in the written declaration [application form] did appear before me this day, and that I have known ..... for ..... years, and that to the best of my knowledge he hath never been afflicted with gout, asthma, or any disease which tends to the shortening of life, and that I do believe ..... present state of health to be good and his habits of living not such as to endanger ..... life. Given at ..... this ..... of ....., 18.... Signature ..... Note appended: This, or any other form adapted to the case, to be used." This not very elaborate report continued in use up to the year 1830, and it will be observed that most attention was paid to the general appearance of good health without apparently any examination of the applicant whatever. It is curious to note how concerned the directors were at that early date to ascertain if the applicant had suffered from gout. It does not appear how they dealt with a case where the man confessed to having been afflicted with gout, but evidently they were impressed with the fact that gout tended to the shortening of life, a fact which was later lost sight of and has only recently been recognised as a condition calling for a surcharge on the premium and for which our friend Mr. Meikle will at a later stage bring forward ample justification. In the year 1830 these perfunctory reports were no longer considered satisfactory, and a certificate was required from the private medical attendant, to whom a series of specific questions were addressed with regard to the general state of health of the applicant, the nature of any serious illness, suspicion of any organic affection, any injury, his habits and constitution. This report was returned to the manager or *medical officer of the society*. About this time vouchers as to character and health were required from friends. This is apparently the first time the society deemed it prudent to retain the services of a physician to aid them in the sifting of cases. And in 1835 they went a stage further and required applicants to appear before their own medical adviser, as well as to produce answers to a more elaborate set of questions as to health and family history, addressed to the private medical attendant. A report from the agent and two private friends were also called for. It would thus appear that coincident with the advance in medical science and the spreading of the knowledge of more precise means of physical diagnosis the companies sought for and obtained more exact information as to the actual condition of proposers before admitting them to the benefits of their societies. And so the process of selection of the most healthy lives has gone on to this day, each company trying from time to time to improve upon the medical forms which are placed before their examiners, in order to obtain as complete and faithful an account of the proposer as possible, both as to his family and personal history, as well as to his physical condition at the moment of application. There exists a popular belief that all this care is of little use, and that the benefits of selection are entirely lost after the first five or six years. Acting on this assumption, companies have been started to accept lives without any medical examination. But, so far as I am aware, they have not proved a success, as one would naturally predicate. For to them all the rejected of other offices would as a matter of course repair, and the healthy would equally as a matter of course carefully shun such offices. But the fallacy of this has been repeatedly exposed and by none more effectively than by our two friends Dr. Sprague and Mr. Meikle of this city, who have shown that after elimination of the voluntary withdrawals the advantages of selection diminish at all ages with duration of the policies—rapidly at young ages, slowly at middle life, while in the older it probably never entirely disappears. Mr. Edgar Holden thus defines selection:—"Of any number of persons we know how many will attain a given age, how many will

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die each year, and the mathematical value of the chance of any to attain his expectancy; but to know which ones will do so is impossible. To decide which are most likely to do so is selection." And it is to the credit of the medical profession that they by their careful examination of candidates for insurance largely contributed the data which enabled the actuaries to formulate their tables of expectation of life for healthy males and thus to estimate the mathematical value of the chance of man attaining his expectancy. 'But infinitely more difficult is the problem which is constantly submitted to us—viz., how equitably to assess the value of under-average lives, how sufficiently to protect the societies against loss, and how, at the same time, not to overcharge such candidates for assurance. Here we have no fixed and mathematically correct data by which to guide our decisions; we have no aggregated groups of persons suffering from the same disorder, though perhaps differing greatly in form, which might supply a basis by which to adjudicate upon the special case before us. And if the extra rates recommended by medical officers have, in the past, saved the offices from loss, I am bound to admit that this happy result has been arrived at without the aid of any scientific formula and by merely empirical methods. Now, gentlemen, it appears to me that one of the most important functions of this Section is by our discussions, our interchange of views, the communications brought before us, and by stimulating medical officers to investigate the records of their various companies, to endeavour to devise some more scientific —I shall not say more equitable—principles to guide us in our estimate of extra risks. Our good friends the actuaries have already calculated for us the after-life of groups of *healthy males;* and if we can only supply them with sufficient data by which to calculate by how much the expectation of life of unhealthy men is diminished in special groups of disease, they would quickly provide us with a table of the expectations of *unhealthy males*, and thus our task would be immensely simplified. I do not doubt that the discussions and papers already announced to be dealt with in this Section will do much to advance and stimulate this much-to-be-desired end, and in this way to perhaps extend the boon of life assurance to those who may for the present be reckoned to be outside its pale.

The Prognosis of Cardiac Disease in its Bearings upon Life Assurance.

Sir WILLIAM T. GAIRDNER (Glasgow) in opening the discussion said: It was from the experience of general practitioners that we might hope to get the best information as to the longevity of persons suffering from heart trouble, they having the best opportunity of following cases. As time went on heart disease had come to be regarded as of less serious import than formerly. He instanced two cases—that of a practitioner known to have suffered from rheumatic affection of the heart in youth who had had attacks of angina pectoris and who died between sixty and seventy years of age of a non-cardiac disease and that of a boy who in 1862 had a very loud systolic murmur all over the base of the heart and who became a keen sportsman and is now alive and, as far as a recent casual examination went, free from murmur. In this matter the insurance medical officer was in an entirely different position from the medical adviser. The former must be on the alert for any signs indicating a flaw in the constitution of the applicant, the latter on the look-out for signs which may make an encouraging prognosis justifiable. It is always difficult in heart cases to know how to deal with the applicant directly; it is painful to refuse the man, especially if you have to give reasons. It is best to put him off with hopes that at a future time he may be accepted. What are required at present most of all are data from which to judge of cardiac cases. Cardiac cases resolve themselves into eight classes. Class 1. Where there is a well-defined abnormality of doubtful significance; roughness of sounds or prolongation and various sounds heard over the right ventricle. These are apparently often pericardial and sometimes have reference to what are found in post-mortem examinations as white patches producing no symptoms during life. The question here arose whether cases of acute pericarditis ever so far resolved themselves as to be of no consequence. There was every reason to believe this was so. Class 2. Lesions involving organic changes without disturbance of cardiac functions discovered only after examination. Delay was the only course here admissible. They should be told they were more likely to be insurable later. Class 3. Lesions of limited significance belonging to senile changes. Such cases should be told to withdraw their application with reassuring remarks or be loaded up to an almost prohibitive extent. Class 4. Cases of organic lesions producing concomitant symptoms. These must be declined. Class 5. Lesions, probably functional, with no concomitant symptoms. For instance, irregularity of rhythm. Some people exhibit this from childhood. One case of this kind was instanced which had gone on very well for thirty years. Then there are cases when the heart beats become too rapid or too slow under emotion. Even when this occurs without emotion no important lesion is necessarily indicated. A too rapid pulse was probably less important on the whole than a too slow one. Sir William Gairdner as a boy had a pulse between 100 and 120. It is now 80 at the utmost and of good quality. A rather slow pulse would appear to be a sign of good health—say as low as 60. There are no data for judging of pulses lower than this. Sir William Gairdner had counted a pulse of 18, but its owner died suddenly at forty years of age in the pulpit. He had counted lower pulses in a patient who had entirely recovered. Then there was the tobacco heart and the senile heart. The former should be deferred and the latter should be told that he showed some signs of advancing age and should be declined. Class 6. Hearts with choreic murmurs. The nature of these was not yet entirely settled. Even if they get well they were organic. Choreic patients dying had always fringes on the valves. Class 7. Large or small hearts. Of these large hearts are usually considered of greater importance than small ones. Class 8. Angina or pseudo-angina. It is often impossible to distinguish between these. Angina in the family was difficult to estimate. A case was instanced of a lady, two of whose brothers had died suddenly, who took nine months to die from senile gangrene.

Dr. SYMES THOMPSON (London) said it was easy to decide cases of definite lesions but difficult when it was not clear that serious disease existed of the heart or other parts. It would appear that a pulse as low as 32 or even 28 could go on for many years if accompanied with a quiet disposition. Slowness of pulse would appear to make a high order of activity impossible. A case, however, on the other hand, was quoted of 26 to 28 in a man who could take his part on the mountains or grouse moors. The rapid heart was very difficulty to estimate, especially under examination, an ordinary heart often simulated a dilated palpitating heart.

Dr. TYSON (Folkestone) said the condition of the heart's walls and of the apex beat was of more importance than mere murmurs. It was impossible to have a healthy heart with an abnormal beat. He quoted in respect to slowness of pulse a group of eleven men with average pulse-rate of 30 whose average age was seventy years. He complained that patients who were told that they had murmurs seldom returned for re-examination. The rate of pulse sometimes fell in healthy women after confinement. He had difficulty in estimating the value of accentuated second sound in hard-worked men.

Mr. LOW (actuary) said he was struck with the frequency of the use of the expression "I don't know" in this debate. He did not remember seeing it in any reports of applicants. Statistics only would afford a definite conclusion. He thought a good way of dealing with proposers who were not accepted was to advise them to consult their own medical men; this was usually well received. Slow pulse he did not remember seeing on the records of any insurance office.

Mr. POINTON (Liverpool) quoted 150 cases of deaths from heart disease after chorea in which 149 had multiple but slight valvular disease.

Dr. MACFIE insisted on the difficulty of prognosticating mitral disease and advocated taking the applicant into confidence.

Dr. GLOVER LYON (London) advocated the formation of classes into which medically doubtful cases might be placed, heavily loaded, with the option of from time to time presenting themselves for re-examination. In case of the doubtful signs having cleared up the insurers might be placed amongst the ordinary raters.

Dr. JAMES RITCHIE (Edinburgh) mentioned the importance of age in estimating irregularity of pulse. He pointed out that the absence of slow pulse from insurance records might be explained by the excitement of examination causing acceleration of pulse.

Mr. EASTES (London) described some varieties of irregularity of heart caused by tea, coffee, and tobacco, and advocated deferment in these cases.

Sir WILLIAM GAIRDNER, in reply, said his experience did

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not extend to anyone in ordinary health with a pulse under 50 or 60 or so. It would be well in cases when there was something abnormal, impossible to explain, to make a large addition, to be taken off at a future time if the case admitted of such a course; this would be an equitable way of meeting such cases. Aortic accentuation in a labouring man indicated over-exertion which if persisted in would shorten life. In telling applicants of their diseases the truth should never be departed from, but this should not be blurted out in a manner which would give an exaggerated notion to the applicant.

Does Evidence of Limited Family Vitality call for an Advanced Rate of Premium?

Dr. JAMES RITCHIE at the outset deprecated the custom of putting small extras on account of slight defects in family history. The inherent causes of death had a structural existence, and the same structure in different individuals had a different degree of vitality. This vitality was a complex quality. Decay is hereditary both in effect and time. It was pointed out that a large proportion of the early deaths in the office with which Dr. Ritchie was connected and which was founded twenty years ago, was amongst insurers one or both of whose parents had died fairly early. The significance of the death of the parents from similar diseases was shown by instances even when these diseases were not of the specific nature of consumption—for instance, diseases of the heart or blood-vessels, kidney disease, cancer, nervous diseases, diabetes, or alcoholism. In the case of a family history of consumption it often indicated a special vulnerability to diseases other than consumption. In estimating the vitality of a family it would appear that not much importance should be attached to death in infancy, the surviving members of the family often developing into robust subjects. The usual motive for insurance is important in this relation. Not infrequently a man as he advances in years feels a failure in his powers; if, then, his parents by an early decease give evidence of an early degeneration it makes it probable that a like failure may be in progress in the applicant. The principle the speaker wished to enforce was that if there be in any families evidence of impaired vitality, whether it be in consequence of early decay of vital organs or of the liability to succumb to infectious ailments, the risk is increased and should be covered by extra premium.

Sir WILLIAM GAIRDNER said that pathology tends to prove that we have underestimated the value of flaws in family history. The offices used not to make them a bar to insurance. There is now a tendency to underrate family history. In some cases the history of grandparents and even of great-grandparents might be valuable.

THURSDAY, JULY 28TH.

Dr. CLAUD MUIRHEAD, the President, being in the chair, a discussion on

Middle-ear Disease in Relation to Life Assurance

was opened by Dr. P. M'BRIDE (Edinburgh), President of the Laryngological Section, before a conjoint meeting of that Section and the Section of Medicine in relation to Life Assurance.

The PRESIDENT in a few introductory remarks said he was of opinion that too much was made of middle-ear disease in life assurance.

Dr. M'BRIDE said the subject was limited to consideration of chronic suppuration of the middle ear. Schwartze's clinic gave only 13 deaths out of 2032 cases, or 6·4 per 1000. These statistics can be relied upon as following through the greater part of the cases. Potletzer had recommended the refusal of all cases of suppurative middle-ear disease. This would appear to be too severe. Several points were of importance in this subject. The occurrence of pain should give rise to great suspicion. The presence of granulations or polypi should entail rejection, so also should necrosis, true cholesteatoma, or occlusion of the meatus from other causes when suppuration is present and when this condition is complicated with facial paralysis. In absence of this condition we must consider: (1) the perforation is of greater importance if it be small and high up; (2) the discharge—if this is copious and fetid the case must be declined; and (3) the social position is of great importance. A favourable sign was the following: a slight not fetid discharge, care being taken to find out by probing if this condition is only apparent and that deeper-seated mischief did not exist.

Dr. THOMAS BARR (Glasgow) said the Registrar-General's reports were not reliable as to deaths from ear disease and gave no information as to the mortality amongst otorrhœal subjects. Otorrhœa, too, usually occurred in subjects younger than the generality of assured lives. If treatment did not stop the discharge the case should be declined or rated up heavily. If treatment stopped the discharge the case should be passed even if a perforation of good position and size remained, also if after operation a dry cavity remained.

Dr. PRITCHARD (London) said statistics from foreign countries were of doubtful importance. The opinion of specialists was apt to be too lenient, as fatal cases seldom came under their care. Cases for rejection were cases of pyæmia or mastoid mischief, necrosis, caries, or granulation, collections of epithelium occluding the meatus, facial paralysis, also pain referred to about 1½ in. above the meatus as indicating mastoid mischief, tuberculous otorrhœa, or malignant disease. The addition of extras could not be done by rule. Some perforations were very serious, others could be taken without extras. The question of fœtor must be settled by passing a mop. As to the age of the patients a perforation occurring in a man between forty-five and fifty-five years of age, and especially after influenza, was very serious. So also was the occurrence of a large amount of fœtid discharge. The effect of treatment was of great importance. Uncomplicated cases might be taken in careful patients.

Mr. MARK HOVELL (London) pointed out the importance of the presence of exostosis blocking up the meatus.

Dr. MACKENZIE JOHNSTON (Edinburgh) said that even a simple perforation meant a hole in a patient's armour, though it might be a very small one. A simple perforation existing in a man over thirty years of age was of less importance than one in early life.

Dr. HERBERT TILLEY (London) called attention to the probability of some mischief being left behind after operation.

Mr. CRESSWELL BABER (Brighton) urged the difficulty of deciding upon a fair extra in these cases.

Dr. WILLIAM MUIR said that out of a large experience he had only known of one death from ear disease and he thought occasional slight discharge from an ear without any complication did not call for an extra.

Mr. LOW (actuary) said the small proportion of deaths registered from ear disease compared with other diseases was important. He thought the principle of every case being taken on its own merits was unsatisfactory, as no separate case is insurable.

Dr. GLOVER LYON said that as the extra risk from these cases as a whole was so small as to call for no extra it would be best to refer all cases to specialists, and decline only the more serious, accepting the others at ordinary rates.

Dr. RITCHIE said that those cases where only a slight discharge existed without complications need not be declined.

Mr. JAMES CHATHAM alluded to the necessity of appealing to the records of the offices.

A paper was read by Dr. JOHN PLAYFAIR (Edinburgh), written conjointly with Mr. J. WALLACE (actuary, North British and Mercantile), upon

The Bearing of Pregnancy upon Life Assurance.

The chief object of the paper was to show that the extras charged at present for pregnancies were quite inadequate. The Edinburgh Royal Maternity Hospital with an experience of ten and a half years and 10,038 cases and 87 deaths shows a high death-rate under twenty years of age, a minimum death-rate at ages ranging from twenty-five to twenty-nine years, and then an increasing rate. The death-rate for married alone is least at ages under twenty years and increases steadily with age. The mortality amongst multiparæ—low at twenty-five years of age—falls slightly at from thirty to thirty-four years, and then increases. The mortality of primiparæ is much higher at all ages than of multiparæ and increases more rapidly with age. Instead of, as at present, charging a fixed extra for all ages, this being for primiparæ double that for multiparæ, the following suggestions are made: (1) an extra according to age should be charged; (2) the extra for first pregnancy should be about three times that for subsequent ones; (3) a proposal for insurance from women aged thirty years and upwards should be delayed; and (4) a proposal for

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insurance from pregnant women aged forty years or upwards should be delayed in all cases.

Mr. LOW raised the question whether confinements in maternity hospitals were comparable with those amongst insured lives.

Mr. MACANDLISH pointed out the necessity of inquiring carefully into the motives of insurance in pregnant women.

Mr. EASTES suggested that the advance in antiseptics might vitiate the statistics given for application to the present day.

TROPICAL DISEASES.

WEDNESDAY, JULY 27TH.

The room placed at the disposal of the newest section of the Association proved none too ample to accommodate the large number of members interested in tropical diseases. Professor Blanchard of Paris, Dr. Osler of Baltimore, U.S.A., and representatives of many British colonies and dependencies, and of the army, navy, and colonial services, evidenced interest in the subject by their earnest attention to the papers read and by taking part in the discussions.

The PRESIDENT (Dr. Patrick Manson, London) congratulated the Association upon taking cognisance of the requirements of some 6000 of our medical brethren living abroad whose interests were centred in diseases not met with in the United Kingdom. He stated that the institution of this section dealt with work which might be divided into three classes. Firstly, the affiliation of medical men directly interested in the diseases of warm climates; secondly, the education in tropical disease of practitioners before they went abroad to commence their profession; and thirdly, the study and discussion of the diseases of the tropics.

Brigade-Surgeon-Lieutenant CROMBIE, I.M.S., read a paper of considerable length upon the

Unclassified Fevers of the Tropics

and dwelt upon those of an anomalous character.

The following members joined in the discussion: Surgeon-Major BAKER, Captain HUGHES, Captain DAVIDSON, Brigade-Surgeon-Lieutenant-Colonel ARNOTT, and Surgeon-Lieutenant-Colonel THORNHILL, Dr. SAMBON (Rome), Dr. CHARLES (Rome), Dr. COUSLAND (Edinburgh), and Dr. CANTLIE (London). The general drift of opinion was in favour of recognising ulceration of the intestine as typical of typhoid fever and the recognition of the plasmodium as the test for fevers of a malarial nature. With these excluded, however, there were many fevers as yet unclassified which were peculiar to the tropics and which deserved the closest attention. The subject of ardent fever claimed considerable attention from all who took part in the discussion, and there was a distinct inclination to doubt the fact of infection playing a part in this form of disease. It is necessary to get information from even a wider field than India before authoritative statements can be made either one way or the other.

Dr. ANDREW DAVIDSON'S (Edinburgh) paper on

The Malarial Problem in its Epidemiological Aspects

was listened to with great interest. The fact of the inhabitants of Sweden being subject to outbreaks of malaria even as far north as 66° showed how widespread is the possibility of infection by the malarial parasite. Dr. Davidson also stated that even a temperature of 13° F. below zero was not incompatible with attacks of malaria. In temperate climates it was during spring that malaria chiefly showed itself.

Dr. MANSON read a short paper on

Appearance of Pigmentation in Lymphocytes in relation to the Diagnosis of Malaria.

Dr. Manson warned observers in the tropics against mistaking the normal for the adventitious pigmentation. According to Vincent[1] the phagocytic function, as regards the malarial parasite, is performed almost exclusively by mononucleated leucocytes. With this opinion, however, Metchnikoff disagrees and explicitly states that the lymphocytes are completely passive in this respect and never phagocytic. With Metchnikoff's statement Dr. Manson agreed and holds that the lymphocytic pigmentation described by Vincent and others is a normal or physiological condition to be met with in the blood of persons in good health in temperate climates.

[1] Annales de l'Institut Pasteur, Dec. 25th, 1897.

Dr. SAMBON read a paper on

Black-water Fever

as met with in Central and West Africa. He pointed out that this fever was met with in the Southern States of America, in Venezuela and Cuba, in Sicily, Java, and various parts of Asia. Dr. Sambon is of opinion that black-water fever is a specific non-malarial fever, although it is met with in districts where malaria is likely to occur. In the blood of persons suffering from melanuria crescents and other forms of the malarial parasite are to be met with, but in Dr. Sambon's opinion the diseases are not identical. Nor, on the other hand, is melanuria due to the exhibition of quinine. This opinion is rather firmly held, more especially by the New Orleans physicians, but no convincing proof has ever been brought forward to establish the dictum.

After the paper two members of the Church of Scotland Missionary Society testified to the enormous mortality caused by black-water fever more particularly in the neighbourhood of Blantyre (Africa).

The members of the Section present unanimously agreed to a resolution to the effect that the attention of the Foreign Office should be drawn to the high mortality amongst Europeans from black-water fever in Africa, and urged the Government to send experts to investigate the disease and to make suggestions as to its prevention.

Dr. THIN exhibited a Microscopic Specimen illustrating the

Parasites of the Pernicious Malarial Fevers of British Guiana.

Dr. THIN also read a paper on the

General Characteristics of Pernicious Fevers in British Guiana

and dealt exhaustively with the pathology of the disease. He also drew attention to a feature which is rare if not new—namely, two spores attacking and becoming incorporated in a single red blood corpuscle.

Major YARR, R.A.M.C., communicated a paper on

Malarial Affections of the Eye.

This little known and much-neglected subject was handled by Major Yarr in a paper which showed an intimate knowledge of the subject and is the most earnest attempt in British medical literature to call attention to what is frequently a serious disease. Malarial eye affections, according to Major Yarr, all originate in circulatory troubles and may be conveniently classified under the following headings: (1) neuritis; (2) retinal hæmorrhage; (3) retino-choroiditis; and (4) effusions in the vitreous. Repeated attacks of malaria constituted the usual antecedent, although the development of neuritis is not unknown in pernicious attacks. Photophobia, night-blindness, and supra-orbital pain are more or less constant. Of all symptoms, however, the variations in the visual acuity form the most characteristic. It is satisfactory to know that this loss of function is in most instances restored and the passage from well-nigh total blindness to normal vision in a few weeks is a gratifying result. Retinal hæmorrhages are met with in the course of malaria in two varieties—minute and large. Microscopic examination shows these retinal apoplexies in malaria to be due to infarcts of parasites followed by extravasation. Quinine amaurosis was referred to by Major Yarr. A slight degree of amaurosis with some amblyopia is frequently present in quininism without any alteration in the normal appearances, but in severe cases, with persistently contracted fields, pallor of the disc and thready vessels are found.

Surgeon-Major J. H. TULL-WALSH, I.M.S., dealt with

Clinical Aspects and Treatment of Malarial Fever

in a lengthy paper of considerable importance.

A paper by Surgeon-Captain W. J. BUCHANAN, I.M.S., gave an account of

Epidemic Cerebro-Spinal Fever in India,

with a clinical account of three cases. Surgeon-Captain Buchanan's work was conducted with great thoroughness and care. He made preparations of the purulent matter from the brain and spinal membranes, stained some six specimens with a watery solution of gentian violet and found in all a diplococcus within the pus cells answering in all particulars to that of the diplococcus intracellularis of Weichselbaum. The paper placed on record the history of

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cerebro-spinal fever as met with in the gaols of Bengal and ended with the following remarks: "Two diseases—cerebro-spinal fever and Malta fever—have thus been rescued from the *cloaca maxima* of the remittents as seen in tropical countries. That yet another as yet undifferentiated fever of a continuous type exists is my firm belief, but so far the evidence in favour of this view is too indefinite to do more than allude to the belief here. That the disease here called cerebro-spinal fever, in accordance with the "Nomenclature of Diseases," is identical with the epidemic cerebro-spinal meningitis of continental and American writers is clear, but the diagnosis of isolated sporadic cases will always be doubtful without bacteriological examination."

THURSDAY, JULY 28TH.

Mr. CONOLLY NORMAN (Dublin) read a valuable paper on

Beri-beri in Temperate Climates.

His experience of the disease was gained in the Richmond County Asylum, Dublin, where he was superintendent. In 1894 an epidemic of what proved to be beri-beri attacked the inmates of the lunatic asylum of the institution. The disease disappeared in 1895, but during 1896-97 it recurred with great virulence. In all some 534 cases are recorded and 44 deaths. Mr. Conolly Norman recounted the symptoms met with and showed that they corresponded in every way with beri-beri as met with in tropical countries. He then proceeded to state that this disease was by no means confined to the tropics, but was known to have existed in North Germany, in England (Suffolk County Asylum), in Dublin, and in the States of Alabama and Arkansas, U.S.A. On the Newfoundland coast also it had been known for some time. Mr. Conolly Norman proceeded to discuss the cause, and after combating the rice and fish theory admitted that in the year 1894 the diet of the asylum was improved, amongst other articles, by the inclusion of dried ling, imported from Newfoundland most likely. Here was a loophole for stigmatising the diet, as Newfoundland was an infected district. One peculiar circumstance was that in England, Ireland, and America it was in lunatic asylums the disease occurred, and there seemed no explanation of the circumstance. It may have been that in asylums the people were watched more carefully and therefore the disease was readily recognised, but Mr. Norman pointed out that the number of cases under treatment were so numerous that had a similar occurrence taken place elsewhere attention must have been drawn to it. He agreed with Grimm that there was an initial fever and an exaggerated knee-jerk. The latter symptom soon passed off, leaving the usual paralytic phenomena. The question of parasitic infection was also discussed, but after careful investigation only negative results were obtained. No specific treatment was known; change of residence, however, was essential. A number of illustrative photographs were shown.—Dr. OSLER, Dr. MANSON, and Dr. CANTLIE joined in the discussion.—Dr. OSLER stated that cases of beri-beri were still met with amongst the Newfoundland fishermen, and that at the United States ports patients suffering from beri-beri were imported from Cuba.—Dr. MANSON believed that many cases of so-called peripheral neuritis in Britain were really beri-beri and that as the disease became better known no doubt what at present were obscure paralytic illnesses might prove to be beri-beri.

Dr. SANDWITH (Cairo) gave an account of pellagra as it occurred in Egypt. It was only in recent years that it had been recognised as existing in Egypt although no doubt it had existed previously. Dr. Sandwith claimed that it was the same disease as the Italian pellagra and that it arose from the same cause—diseased maize. The time of year during which it mostly prevailed was after the crops had been gathered, from November until March, when the new meal was consumed. Although the name pellagra meant "rough skin," still it was by no means a skin disease, but rather a general or blood disease which, commencing with erythema, goes on to hypertrophy and then atrophy of the exposed parts of the skin. It is accompanied by bald tongue, intense dyspeptic symptoms, loss of weight, and a mental and physical depression of marked intensity. Amongst other noticeable phenomena were pronounced backache and a localised deep-seated pain in the neighbourhood of the sixth dorsal vertebra. Many cases of pellagra end their days in the lunatic asylum, becoming melancholic, demented, or suicidal. Pathological evidence showed general emaciation, atrophy of most organs, and a sclerosis of Goll's column and the posterior pyramidal tract. In regard to treatment Dr. Sandwith recommended: rest, mixed diet, avoidance of even good maize, cod-liver oil fresh bone marrow, and zinc ointment for the skin.

Dr. SANDWITH also read a paper on Acute Dysentery. He advocated treatment by the sulphate of magnesia plan, and strongly urged the efficacy of an enema of sulphate of copper, 15 gr.; tincture of opium, 15 min.; starch, 1 oz.; and water to 2 pints.

Dr. OSLER (Baltimore) spoke of the benefit at times derived from rectal injections, but pointed out that the pain and exhaustion, sometimes induced, annulled its use in many cases. The great element in treatment seemed to be to keep the intestine clean, whether by rectal injections or by intestinal antiseptics administered by the mouth.

Dr. BENTLEY (Penang) advocated salol as a powerful agent in the treatment of acute dysentery.

Dr. OZANNE (British Guiana) gave it as his opinion that no two cases of dysentery required the same treatment, but that each case had to be considered separately.

Dr. PRENTICE (Central Africa) stated that in his experience ipecacuanha in large doses answered well in the part of Africa in which he resided.

Major DAVIDSON, R.A.M.C., considered that no one system of treatment was wholly efficacious at all times and that the first essential in the study of this disease was its pathology.

Brigade-Surgeon-Lieutenant-Colonel CROMBIE held that there were many cases of catarrh of the bowel with dysenteric looking stools which were not true dysentery and in these ipecacuanha was useless; but in cases of dysentery with ulceration extending as high as the cæcum ipecacuanha was most efficacious.

Sir JOSEPH EWART (Brighton) said that he was in India at the time when the paper written by Dr. Docker recommending the treatment of acute dysentery by large doses of ipecacuanha was commenced. It fell to his lot to compile the statistics of the European and native armies of India with a view to testing the results of the ipecacuanha treatment. The figures showed a remarkable reduction in the death-rate of the disease by the administration of this drug. Ipecacuanha, he considered, relieves congestion, diminishes peristalsis, and allows of rest to the injured mucous membrane. He also claimed, as one of the chief advantages gained by the exhibition of ipecacuanha, that sequelæ, such as chronic dysentery and liver abscess, were largely prevented.

Inspector-General TURNBULL, R.N., read a paper on Insanitary Environments the Cause of the Spread of Yellow Fever and the Bubonic Plague. From numerous sources, chiefly derived from naval medical reports, Inspector-General Turnbull argued that environment was the immediate cause of yellow fever, and that whenever improved sanitation supplanted a wholly insanitary state yellow fever disappeared. As an illustration of how environment acts the following instance was cited by Inspector-General Turnbull. H.M.S. *Bristol* at Sierra Leone on Dec. 28th and 29th, 1865, detailed a party of 112 men and 4 officers to unmoor and shift H.M. storeship *Isis*, a notoriously yellow fever infected ship. 38 cases of yellow fever resulted with 23 deaths; all were treated on board the *Bristol*, but no medical officer or attendant contracted the disease which was strictly confined to those who worked on board or visited the infected storeship *Isis*.

THE PATHOLOGICAL MUSEUM.

FIRST NOTICE.

The ordinary medical school museums contain in many instances admirable and varied specimens, but it is on occasions such as this that the opportunity arises for collecting a series in illustration of one topic, such, for instance, as was done at Edinburgh in connexion with cerebral tumours, injuries to the elbow-joint, and diseases of the appendix vermiformis. Since the Association met in London never has there been such an excellent collection of museum exhibits. Exhaustive and up to date in a high degree, this collection has been arranged with the greatest judgment and care and much praise is due to the energy and knowledge which Dr. Alexander Miles and Mr. C. W. Cathcart, under the chairmanship of Sir John Struthers, have brought to bear on their task. The exhibits are classified into six groups or series—educational, surgery and allied sections, medicine and allied sections, obstetrics and gynæcology, bacteriology and pathology, and drawings and photographs. It will be impossible to do justice to this exhibition in one notice so we propose to discuss the educational and surgical series

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on this occasion, leaving the medical and other exhibits—which include a remarkable series of specimens of intracranial tumours—to be noticed hereafter.

NEW METHODS OF PREPARING CASTS.

One of the interesting features of this museum consisted of the fact that several new methods of making casts or models for educational or surgical purposes were introduced to the profession, and the results of several methods for the preservation of the colour in wet specimens were made known. For the new methods of modelling we are indebted chiefly to Mr. Cathcart (Edinburgh) and Dr. Peters (Toronto). The first-named uses new materials for the model and the last-named new material for the mould. Mr. Cathcart, to whose ingenuity is due one of the handiest and cheapest of the microtomes in general use, has employed as a basis for the casts three different compounds: 1. A mixture of pipeclay and glycerine in proportions to form the consistence of putty. A cast in plaster of Paris is first taken of the limb in the usual way and into the mould thus formed the pipeclay-glycerine compound is poured after being melted by gentle heat, and it is wonderful what a lifelike model is thus procured. Vermilion and other pigments can be used. 2. Papier-maché may also be used in place of the pipeclay mixture. For this process Robosal blotting-paper is torn in pieces, thoroughly softened with thick ordinary flour-and-water paste, and worked into the mould (previously covered with paraffin or vaselin) with the fingers or a dry brush, each piece overlapping the preceding one. 3. The gelatin compound simply consists of No. 1 gelatin mixed with a minimum of water to soften it and then glycerine is added ounce for ounce of hard gelatin. It forms an elastic material of lifelike consistence and appearance. Still experience makes us doubt whether the gelatin will not shrink in process of time; but we saw a model of a foot made by Dr. Miles some five or six years ago which had not contracted at all. All these three materials are very simple in their preparation and use and teachers will doubtless find them very useful. The gelatin models can be coloured with various pigments and the addition of a little oxide of zinc gives a truly lifelike representation of the human skin, as might be seen in a cast of the thorax taken in a case of dislocation of the sternal end of the clavicle.

Several very beautiful plaster-of-Paris models, made by Dr. Peters by an entirely original method, were exhibited. As a rule plaster-of-Paris casts only exhibit the gross outline of parts, but by this method the minutest details of the feathers of a bird, the veins of the back of the hand (which are generally emptied by the weight of the plaster when employed in the ordinary way as a mould), the viscera of a rabbit laid open, and all the smallest details can be seen. The novelty consists in making the mould of hard paraffin. The process is as follows. First, the parts are spread with a mixture of starch and alcohol, to which a trace of glycerine is added; then, by means of a special apparatus for melting hard paraffin wax, and ejecting it in the form of a spray while liquid, the whole is sprayed first with the melted paraffin and then with a mixture of paraffin and water. Over the top of this plaster of Paris is spread and pressed on to the outside. This forms a mould, the inner surface of which consists of hard paraffin which has taken all the fine details. It is removed in the usual way and wet plaster-of-Paris is spread or poured upon the inner surface so that a very perfect model results.

Among the educational series are specimens on a gigantic scale of the embryo and its development and some dissections of the latter.

Dr. Dawson Turner exhibited x ray photographs of brains, hearts, and kidneys, which had been injected with opaque material (? mercury) and thus the whole circulation in the organ could be seen at one time by means of an arrangement for binocular or stereoscopic vision.

PRESERVATION OF COLOUR IN WET SPECIMENS.

It has long been a desideratum to preserve the colour in wet pathological specimens. One method shown was that of Sir John Struthers, by means of glycerine and carbolic acid. The specimen is soaked in this and then simply laid in a glass case exposed to the air. An example of transposition of the viscera thus prepared in 1889 was exhibited by Dr. Harvey Littlejohn (Edinburgh) and it has in a great measure preserved its post-mortem colours. Mr. James Simpson exhibited some useful methods for mounting specimens on coloured glass, adjusting the label or a description cut out of the catalogue within the jar, methods of casting in gelatin, and preserving the colour of wet specimens. Dr. Shennan exhibited an excellent series of specimens to illustrate Joré's formalin method for preserving the colour of wet preparations. Kidneys seem specially adapted for this method, but some beautiful preparations of acute miliary tuberculosis, ulcers of the intestine, intraventricular hæmorrhage, and septic abscesses in the kidney prepared in June and July, 1897, prove that this is undoubtedly a most successful process. The wonderful way in which the natural appearance is preserved was to be seen in a series of exhibits by Dr. Littlejohn of 9 cases of cut-throat and 3 stomachs taken from cases of carbolic-acid poisoning. These specimens had simply been soaked in the formalin solution and then placed upon cotton-wool in a glass jar, at the bottom of which was a small quantity of glycerine and formalin to preserve the moisture. The jar was then loosely covered.

SURGICAL EXHIBITS.

A series of 24 vermiform appendices removed by Professor Annandale and 13 by Dr. Miles, all for inflammatory conditions, were interesting as showing once more the usual history of appendicitis and emphasising again the apparent uselessness of this little structure. The frequency with which cherry-stones, toothbrush bristles, and other foreign bodies lodge there is surprising. Six specimens of excision of the cæcum and colon were shown by Dr. F. M. Caird. All were for carcinoma and all recovered from the operation. Several are still living; some have died from other maladies. It is worthy of note—at a time when, as one of our facetious American colleagues once remarked, "Murphy's button is in everybody's mouth if it is not in his abdomen"—that an end-to-end or anastomosis operation was done in all of these cases without button or bobbin of any kind. This is a feature of the Edinburgh School.

The surgical exhibits were extremely numerous and interesting and we cannot mention them all, but a collection of over 60 cases of various injuries in or around the elbow-joint merit special notice. Nearly every kind of injury and disease in this region found a place. One lesson which they teach is this, that in resection of the joint after injury the bones should be more liberally removed than is generally done. The subject was under discussion in the Surgical Section and was reported in THE LANCET of July 30th, p. 294. A collection of 418 calculi removed from the bladder (404 by crushing and 14 by lithotomy) during 11 months in Hyderabad, Sind, exhibited by Surgeon-Major Richard Baker, show the extreme frequency with which this condition is met with in India. The cases from which they were taken have been analysed in the columns of THE LANCET. 36 skulls showing the extreme variation in the anatomy of the frontal sinuses in different ages, sexes, and races give the results of an investigation by Dr. Logan Turner. It is surprising what wide variations exist in size, shape, position, and symmetry of these cavities.

BACTERIOLOGY.

Dr. Sims Woodhead, an old Edinburgh student, now director of the conjoint laboratories in London, exhibited specimens illustrating his experimental inoculation of animals with tuberculosis, glanders, plague, anthrax, diphtheria, and pyogenic microbes. He also showed a beautifully prepared educational set of cultures of all the well-known micro-organisms and photographs of the same. Dr. Shennan and Dr. Muir exhibited similar specimens, altogether making a wonderfully complete series. We have mentioned the foregoing only as samples of this museum in its educational and surgical aspects. There are many others to which we would gladly have accorded space had it been possible. The medical and other exhibits will be noticed in a future number.

THE ANNUAL MUSEUM.

(Continued from page 304).

I.—DRUGS—*(Continued).*

SANOSE is the name given to a compound of casein (80 per cent.) and albumose (120 per cent.). It was recently the subject of analytical notice in our columns. There can be little doubt of its high nourishing power. Together with this interesting substance Messrs. A. and M. Zimmerman (9 and 10, St. Mary-at Hill) showed specimens of eucain

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hydrochloride (Schering), piperazine, urotropine, and Kalle and Co.'s orexin hydrochlor, orexin being a useful stomachic, stimulating the acid secretion and muscular coats of the stomach. Messrs. Alfred Bishop and Sons (48, Spelman-street, Mile End New Town, E.) occupied with their well-known granular effervescent preparations a well-planned stall. The effervescent compressed tablets known as "varalettes" are worthy of mention as presenting in a very convenient form many of the drugs employed in the treatment of gout, such as lithia and piperazine, in an effervescent and agreeable form. There were some very elegant specimens of pharmacy on the tastefully-arranged stall of Mr. John T. Coats (105, 107, Broughton-street, Edinburgh). Amongst these may be mentioned a carefully-prepared petroleum cream with the hypophosphites and glycerites (solutions of medicaments in glycerine), as, for example, hypophosphite of lime in glycerine, iodide of iron, and so on. Novelties might be expected on the stall of the Elberfeld Fabriken Co. (19, St. Dunstan's-hill), and as a matter of fact the following were submitted for inspection: iron-somatose for chlorosis and anæmia, milk-somatose, a compound of albumose with milk proteids, protargol, a silver albumen compound of value in gonorrhœa, and, lastly, iodo-thyrine, the active principle of the thyroid gland. "Sol iodi" was a preparation of interest shown by Messrs. Brooks and Co. (136, Lower Baggot-street, Dublin), which, while not causing irritation or vesication, is freely absorbed by the skin; it has been employed with excellent results, it is said, in the treatment of indurated glands and swollen joints.

II.—FOODS AND FOOD PRODUCTS.

Special foods and food products proved to be an important feature of the exhibition and it was a section which attracted considerable interest. Enormous progress has been made of late years in the preparation of special foods, more particularly of diabetic foods, infant foods, predigested foods, concentrated meat foods, and so on, all of which have a special interest for the medical practitioner. It is remarkable how in regard to taste and appearance certain articles are now made to resemble ordinary food, at the same time providing an article of diet suited to special conditions. For example, the starchless and sugarless foods for the diabetic are now so cleverly prepared as to be hardly distinguishable from the ordinary farinaceous substances. At least, such is the impression gained, for instance, from an inspection of Messrs. Callard and Co.'s exhibit (65, Regent-street, W.). Here was displayed a wonderful variety of foods, bread, biscuits, cakes, savoury sandwiches, all of which by the iodine test showed no starch and yet were palatable and afforded no evidence in regard to taste and appearance that starch and sugar were absent ingredients. Similarly, G. Van Abbott and Sons (6, Duke-street Mansions, Grosvenor-road, W.) had a stall crowded with foods suitable for the diabetic, dyspeptic and invalid. The exhibit included "dietetic bran biscuits," "Kalos" biscuits for obesity, gluten bread, soya flour biscuits and bread, hypophosphite of lime biscuits, digestive biscuits. The collection was simply replete with foods for special purposes. There were some excellent innovations in the same direction in the exhibit of Mr. Robert McVitie (23, 24, and 25, Queensferry-street, Edinburgh). Amongst them may be mentioned peptonised bread, gluten and almond rolls, imitation oatcake containing bran and almond, cocoanut almond, gluten and bran loaves and rolls. A food of undoubted merit is Nutroa food (Nutroa, Ltd., 54, Chiswell-street, E.C.). It contains active diastase, so that in the course of preparation the starch is largely converted into dextrin and maltose. In other respects it presents a well-balanced composition containing fat, carbohydrates and proteids in satisfactory proportions. "Albene" is described as a pure and highly-refined vegetable fat. Examples of its many applications were given at the stall of Messrs. Broomfield and Co. (83, Upper Thames-street, E.C.). It seems an excellent substitute for butter in cookery, it keeps sweet, and is especially good for frying purposes. Albene is used also as an ointment. Close by there were the great number of specialities of the Bovril Company (30, Farringdon-street, E.C.), who were the pioneers in enabling the public to obtain at refreshment bars a good, cheap, and palatable nutrient and stimulant. The exhibit included the special emergency foods similar to those prepared for the Nansen, Jackson-Harmsworth, and similar expeditions. Under the section of foods may be included the excellent malt products of the Distillers' Company, Limited, Edinburgh. As is pointed out the company are large buyers of grain and in the preparation of Malt Extract great care is exercised to employ only the finest barley. Besides the powerfully active Malt Extract they also make a good compound of malt and cod-liver oil. A comparatively new food product is "Protene," of the Protene Company, Ltd. (36, Welbeck-street, Cavendish-square, W.). It is essentially proteid prepared from milk and may be used very profitably for enriching certain foods. Protene is soluble in hot and cold water and is practically tasteless. It contains the mineral salts (chiefly phosphates) of milk. It is a powerful nitrogenous food.

Cocoa was represented by two well-known makers. Messrs. Cadbury Brothers (Bourneville) had a well-arranged stall in which their pure cocoa was displayed in packets and cases and many visitors were glad of the opportunity of partaking of the refreshing and nutritious cup. A special feature of the cocoa of Messrs. Rothwell (Wigan) is the small proportion of indigestible fat which it contains, as we have already pointed out in our analytical columns, while solubility is none the less an important property of this pure preparation. We have already alluded to the fine pharmaceutical preparations of Messrs. Parke, Davis, and Co., (21, North Audley-street, W.), and the exhibit included the food products associated with the name of Mosquera. These are not mere meat extracts but contain the sustaining and nourishing constituents derived from meat as represented in peptone, albumen, and fibrin. The beef jelly contains the fibrin in a peptonised state, effected by the digestive ferment of pineapple juice. It contains also the stimulating extractives of beef. The beef meal (Mosquera) is a predigested powdered meat and is a very highly concentrated and powerful meat food. Analyses have shown the nutritive power of Mosquera's beef preparations. Lipton's fluid beef and extract of beef have so recently been the subject of analysis and report in THE LANCET Laboratory as to need no further comment. The stall was well arranged and the visitors were offered the opportunity of making practical inquiry into the merits of both preparations in a cup of beef-tea or soup. A very useful departure has been made by the Valentine Extract Company, Ltd. (St. George's House, Eastcheap, E.C.) in enclosing meat essence in capsules of various sizes. Consequently upon not carrying the concentration of the extract to excess the flavour is particularly good. The "valtine" globules are very handy for preparing soup or beef-tea. They contain no flavouring materials, these being put up separately in the form of "peloids." Hovis bread is a very good example of the attention which has of late years been directed to this important branch of dietetics. As is well known Hovis flour contains the wheat germ, with the result that it produces a highly nutritive and palatable bread. The stall of the Hovis Company (Hovis Flour Mills, Macclesfield) was an imposing one and in a commanding position. An important food adjunct is Cerebos Salt which is a great improvement on ordinary table salt. It is a fine dry powder enriched with a certain proportion of phosphatic salts. This company (Cerebos, Ltd., Newcastle and London) also exhibited Pepsalia, a refined table salt containing a digestive agent. Messrs. Carnrick & Co. exhibited a fine series of food products, including their liquid and beef peptonoids, the former being also combined with erythroxylon coca. They are each and all excellent nutrients consisting of digested beef, milk, and gluten. The addition of coca-leaf to the preparation contributes, of course, tonic properties. The soluble food for infants is also a very successful preparation, being made from cow's milk, dextrinised wheat flour, and malted barley. The composition of the Allenburys foods for infants (Allen and Hanbury, Plough-court, Lombard-street) is based on a knowledge of physiological requirements, as we have previously shown, and the evidence of experience justifies the claims made in regard to them. They consist of No. 1, No. 2, and No. 3, each adapted to the various stages from birth upwards in infant life. The widely known specialities of Messrs. Brand and Co., Ltd. (11, Little Stanhope-street, Mayfair), were well represented. The beef, mutton, veal, and chicken peptones call especially for notice as admirably adapted to the wants of invalids and others suffering from enfeebled digestive function. Messrs. Fairchild Bros. and Foster (Snow-hill-buildings, E.C.) have long been honourably associated with "digestive products," and quite recently we have placed on record the results of some satisfactory trials

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which we have made in THE LANCET Laboratory of "panopepton," a predigested beef and wheat preparation, "pepsencia," a clear palatable solution of the active digestive agents of the gastric glands, and "peptogenic milk powder," for the extemporaneous preparation of fresh humanised milk. Besides these there were exhibited pepsin in scales, glycerinum pepticum, and the zymine tabloids and peptonising tubes and trypsin, for the excellence of all of which the firm is well known. Amongst other prepared cereal foods was Mellin's food (Marlborough Works, Stafford-street, Peckham, S.E.), which contains a large proportion of maltose and dextrin as the result of the action of diastase on the cereal grain. When combined with fresh cow's milk the preparation is known as lacto-glycose. In addition to these were Mellin's food biscuits, containing 50 per cent. of the food with wheaten flour; and Mellin's cod-liver oil emulsion free from alkali, and a permanent cream-like emulsion. Concentrated milks were represented at the stall of the Anglo-Swiss Condensed Milk Co. (10, Mark-lane, E.C.), who have done a great deal towards perfecting this product and keeping it up to a satisfactory standard of chemical and physiological composition; and by Henri Nestlé (48, Cannon-street, E.C.), who claims for his Swiss milk that it is the richest in cream. Both sweetened and unsweetened products were shown. Vimbos fluid beef (Vimbos, Ltd., 130, Queen Victoria-street, E.C.) maintains its character and keeps satisfactory pace with its powerful competitors. Its flavour is pleasantly beefy and it serves unquestionably as a powerful meat food. The exhibit included also Vimbos lozenges, which are said to be free from gelatin and contain finely divided muscular fibre. One of the first dry malted milk preparations was Horlick food, which is composed of the soluble portions of wheat and barley combined with fresh cow's milk and evaporated and dried to a crisp mass. The stall of the company (Horlick and Co., 34, Farringdon-road, E.C.) was tastefully arranged. Lastly, meat preparations formed a feature of the exhibit of Messrs. Armour and Co.'s (59, Tooley-street, S.E.), whom we have mentioned in another section in connexion with their preparations of animal substances. The extract of beef is a concentrated preparation, one part representing forty parts by weight of lean beef. It is reduced *in vacuo* by gentle heat. It retains the pleasant beefy flavour of the fresh meat unimpaired. "Vigoral" is prepared in a similar way, but it contains more albuminous constituents as well as the muscular fibre of beef. It is thus a powerfnl nutrient as well as invigorant.

Medical News.

UNIVERSITY OF LONDON.—The following candidates were successful at the intermediate examination in Medicine in July:—

EXAMINATION FOR HONOURS.

Anatomy.—First class: Thomas Copeland Savage (exhibition and a gold medal), University College. Second class: Sidney Herbert Bown, University College. Third class: Walter Fedde Fedden, St. George's Hospital; and Alec Leslie Matthews and Alfred Bertram Soltau, London Hospital.

Physiology and Histology.—First class: Arthur Edmunds, B.Sc. (exhibition and a gold medal), King's College; and William Henry Wynn, B.Sc. (gold medal), Mason University College. Second class: Julius Meyer Bernstein, Owens College; Arthur Eastwood, Cambridge University and Owens College; and Alfred Bertram Soltau, London Hospital. Third class: William Osborne Greenwood, Yorkshire College; and Stanley Hodgson, Guy's Hospital.

Organic Chemistry.—Second class: Howard Welles Reynolds, University College.

Materia Medica and Pharmaceutical Chemistry.—First class: Arthur Eastwood (exhibition and gold medal), Cambridge University and Owens College; Arthur Edmunds, King's College; and Oskar Cameron Gruner, Owens College. Second class: Jas. Fredk. Edmund Bridger and Arthur Falconer Hayden, St. Mary's Hospital; William Payne, Westminster Hospital; and Alfred Bertram Soltau, London Hospital. Third class: Thos. Henry Bourne Dobson, Owens College; and Friedrich Grönc, St. Bartholomew's Hospital.

PASS LIST.

Entire Examination.

First Division.—Hermann Balean, London Hospital; Frederick Charles Carlé, King's College; and Florence Elizabeth Willey, B.Sc., London School of Medicine for Women.

Second Division.—Samuel Herbert Lee Abbott, Oxford University; Ernest Gilbert Bark, Mason University College; Felix Anthony Boissière, King's College; Sidney Bree, University College; Charles Hildred Brodribb, St. Mary's Hospital; Amy Jane Burgess, London School of Medicine for Women; William James Butcher, Owens College; Frank Challans, London Hospital; Katherine Chamberlain, London School of Medicine and Royal Free Hospital; Geoffrey Clarke, Owens College; Ernest Langsford Clay, Mason University College; Alfred Coleridge, University College, Bristol; Hector Alfred Colwell, St. Bartholomew's Hospital; Walter Robert Dunstan, London Hospital; Benjamin Gregory Fiddian, University College, Cardiff; Frederick Goulburn Gibson, Guy's Hospital; Joseph Strickland Goodall, Middlesex Hospital; Herbert Hallilay, Westminster Hospital; John Abbott B. Hammond, Guy's Hospital; Charles Dainty Hatrick and Lionel Gordon Hopkins, University College; John Frederick Jennings and Alfred Ernest Jones, University College, Cardiff; Helena Gertrude Jones, London School of Medicine and Royal Free Hospital; Ernest William Julius Ladell and Edward Vaughan Lindsey, St. Bartholomew's Hospital; John Wishart Little, St. Thomas's Hospital; John Allden Lloyd, St. Bartholomew's Hospital; Charles Alfred March, London Hospital; Zebulon Mennell and Robert Ellis Roberts, B.Sc., St. Thomas's Hospital; Ellen Mary Sharp, London School of Medicine and Royal Free Hospital; Charles Cecil Connock Shaw, St. Mary's Hospital; Harold Weightman Sinclair and Hugh Stannus Stannus, St. Thomas's Hospital; Claude Tessier, Guy's Hospital; Arthur Hitchings Thomas, University College, Cardiff; Kenneth Vincent Trubshaw, Guy's Hospital; Herbert Septimus Ward, University College, Cardiff; Frederick Norman White, St. Bartholomew's Hospital; Alfred Carleton Williams, King's College; Arthur Gordon Wilson, Owens College and Manchester Royal Infirmary; and Edith Louisa Young, London School of Medicine and Royal Free Hospital.

Excluding Physiology.

Second Division.—Edward Walter Bain, London Hospital; Robert Macpherson Barron and Frederick Alexander Beattie, Guy's Hospital; Francis Joseph Birks, University College, Sheffield; John Dell Bridger, Guy's Hospital; Adrian Caddy, St. George's Hospital; Norman Carpmael, St. Thomas's Hospital; David Ellis, London Hospital; David Forsyth, Guy's Hospital; Sydney Balch Green, St. Bartholomew's Hospital; Arthur Charles Haslam, St. Thomas's Hospital; Robert Archer Lloyd and Ernest Charles Mackay, St. Bartholomew's Hospital; Thomas Arnold Matthews, Sidney James Ormond, Alan Carpmael Ransford, and Morgan James Rees, Guy's Hospital; Charles Haldane Denny Robbs and James John Sheat Scrase, St. Bartholomew's Hospital; Douglas Wilberforce Smith, Edinburgh University and School of Medicine; James Henry Stormont, Mason College; and Arthur Stanley Woodwark, St. Bartholomew's Hospital.

Physiology only.

Second Division.—Noel Charles Beaumont, St. Bartholomew's Hospital; Anthony Birch, St. Mary's Hospital; Robert Harrison Birtwell, B.A., London Hospital; Allen Bathurst Brown, St. Bartholomew's Hospital; William Collings Dawson, Mason University College; Alice Debenham, London School of Medicine for Women; Edward Percy Hughes Dudley, St. Bartholomew's Hospital; Alexander Fraser, Guy's Hospital; David Thomas Cadvan Jones, University College; Ernest Williams Jones, Mason University College; Elizabeth Knight, London School of Medicine for Women; John Tyley M. McDougall, Arthur Moon, and Daniel Leigh Morgan, Guy's Hospital; Eugene Michael Niall and Thomas Massey Pearce, St. Bartholomew's Hospital; Mary Elizabeth Phillips, University College, Cardiff, and Royal Free Hospital; Mary Ariel Stewart, London School of Medicine for Women; Ernest Wethered, St. Bartholomew's Hospital; Percy Walter White, Bristol Medical School; and Gisela Wilmersdoerffer, London School of Medicine for Women.

THE VICTORIA UNIVERSITY.—In July the following candidates were successful in the subjects indicated:—

FACULTY OF MEDICINE.

First Examination.

Part II. Biology.—J. W. Anderton and J. H. Bateson, Owens College; J. P. Bligh, University College; L. R. Braithwaite, Yorkshire College; Walter Briggs, C. H. Bromhall, and G. H. Brown, Owens College; Stanley Brown, University College; Thomas Brown, Yorkshire College; John Brunskill, Owens College; Alexander Burkhard and L. T. Chadwick, Yorkshire College; A. G. Christian and W. E. Cooke, University College; E. H. Cox, Owens College; E. H. Crawley, Yorkshire College; J. A. Davenport and A. J. Edmunds, Owens College; Douglas Elder, University College; A. H. Gregson, Owens College; H. E. Heapy, University College; E. W. Henstock, Benjamin Herald, G. R. Hitchin, C. H. Hopwood, Arthur Howard, Ernest Hulme, J. R. Hutchinson, Hamilton Irving, and A. E. Johnson, Owens College; J. A. Johnson, University College; J. A. Jones, Owens College; G. W. N. Joseph and R. E. Knowles, University College; F. H. Lacey, Owens College; R. G. M. Ladell, Yorkshire College; A. W. Latham, Owens College; George Laurence, University College; G. H. Leigh, Owens College; J. T. Lloyd, University College; J. A. Longley, Yorkshire College; Joseph Longworth and T. H. Lund, Owens College; J. F. McCann, University College; Harry Maffin, Yorkshire College; H. E. Moore and J. H. Nichol, Owens College; A. H. Radcliffe, Yorkshire College; W. E. Rothwell, J. A. C. Roy, S. H. Ryan, and F. W. Schofield, Owens College; J. O. Sergeant, Yorkshire College; J. M. Skinner, Owens College; P. K. Steele, Frank Sugden, and Bertram Suggit, Yorkshire College; A. F. Thompson and Leonard Thorp, Owens College; A. B. S. Todd, Yorkshire College; A. E. Townley, F. E. Tylecote, and David Walker, Owens College; G. F. C. Walker, University College; S. A. Winstanley and T. B. Wolstenholme, Owens College; H. F. Woolfenden, University College; and W. S. Wrigley, Owens College.

Second Examination.

A. Anatomy and Physiology.—M. B. Arnold, Owens College; J. H. Billing, C. W. Budden, and Robert Burnet, University College; Daniel Cowin, C. W. Crawshaw, R. F. Ferris, and F. H. Flack, Owens College; A. H. B. Fletcher and R. T. Forster, Yorkshire College; Walter Garstang, W. D. Hamer, E. C. Hulme, and W. C. Johnson, Owens College; R. J. Jones, University College; H. S. Lister and William Parker, Owens College; Percival Pollard,

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Yorkshire College; Albert Ramsbottom, Owens College; E. C. Roberts and E. E. Roberts, University College; C. W. S. Saberton, W. R. N. Smithard, J. H. Stephens, and George Taylor, Owens College; Ernest Tinker, Yorkshire College; George Unsworth, J. W. Watson, and H. W. Whiteley, Owens College; S. C. Wilkinson, Yorkshire College; and H. M. Williamson, Owens College.

B. Materia Medica and Pharmacy.—John Acomb, Yorkshire College; D. M. Alexander, University College; F. H. S. Ashworth, Owens College; H. M. Berry and J. H. Billing, University College; G. G. Buckley, Owens College; R. N. Butterworth and W. H. Canter, Yorkshire College; J. B. Cook, J. F. Corson, W. J. Cox, and E. N. Cunliffe, Owens College; S. W. Davies, University College; Tom Eastham, D. J. Ferris, R. B. Fletcher, J. E. Floyd, and F. W. Gatenby, Owens College; G. W. Gelderd and V. J. Glover, University College; P. H. Green, Godfrey Heathcote, Rowland Heathcote, James Hindshaw, and W. S. Holmes, Owens College; A. R. Jackson, University College; S. J. C. Johnson, Owens College; C. O. Jones and W. G. Lloyd, University College; W. L. Maccormac, Yorkshire College; Charles Mackey, Owens College; A. F. Martin, C. T. Matthews, and R. V. A. Mosley, Yorkshire College; J. S. W. Nuttall, University College; T. F. Okell, Owens College; W. V. Pegler and Sydney Platts, Yorkshire College; H. H. Rayner and Arthur Richmond, Owens College; Edwin Saville, Yorkshire College; F. R. Sawdon, G. H. Shaw, W. R. N. Smithard, and H. G. Tansley, Owens College; J. C. Teasdale and Ernest Tinker, Yorkshire College; and H. C. Waterhouse, Alwyn Wharton, B. M. Wilson, and J. G. Woolham, Owens College.

Final Examination.

Part I.—G. P. Alderson, University College; T. P. Allen, Owens College; W. J. W. Anderson and J. D. Andrews, Yorkshire College; H. N. Bridge and J. P. Brown, Owens College; P. A. Browne and J. S. Byrne, University College; H. H. Bywater, A. H. Capamagian, Walter Crabtree, and C. H. Dawson, Owens College; R. J. Ewart, University College; E. W. Falconer, Owens College; C. H. Ferguson and H. M. Fletcher, University College; Charles Garner and Archer Greenwood, Owens College; C. H. Greenwood and H. C. R. Hime, Yorkshire College; J. C. Hindley, Owens College; J. A. Howard, University College; W. A. Illingworth, Hugh Lett, and E. O. Libbey, Yorkshire College; C. J. N. Longridge, Owens College; J. W. Miller, University College; Joseph Moreton and F. A. Morrison, Owens College; Armitage Morton, Yorkshire College; A. H. Priestley, A. E. Rayner, and T. E. Regan, Owens College; J. E. H. Scott, Yorkshire College; Harry Scholefield, C. E. Silvester, and Harold Snape, Owens College; T. J. Thomas and Harry West, University College; and A. G. Wilkins and J. D. Windle, Owens College.

Part II.—D. A. Alexander and J. W. Anderson, University College; Godfrey Carter, Harry Dunk, and Arthur Firth, Yorkshire College; †E. W. Floyd and J. P. H. Greenhalgh, Owens College; H. F. Hart, University College; E. M. Hime, Yorkshire College; Frederic Hoyle, Owens College; F. W. Inman, University College; Alfred Lomas and H. H. McNabb, Owens College; W. F. Oyston, Yorkshire College; Stanley Pickering, William Sankey, and A. T. Sissons, Owens College; †Ambrose Spong, Harry Stansfield, *Edward Trotter, and †Edward Turton, Yorkshire College; G. C. Walker, University College; T. H. Wignall, Owens College; Joshua Williamson, Yorkshire College; and J. D. Windle, Owens College.

* Awarded first-class honours. † Awarded second-class honours.

FACULTY OF SCIENCE.

Intermediate Examination.—F. W. Hunt, Yorks; and Arthur Law and Maude E. Young, University College.

Diploma in Public Health.—A. E. Brindley, David Ligat, R. W. Marsden, G. E. Scholefield, and H. A. Scott.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

—At the July conjoint examinations of the three Scottish medical colleges held in Glasgow the following candidates passed the respective examinations:—

First Examination, Four Years' Course.—Angus Macleod, Stornoway; Thomas Taylor Smith, Halifax; Ernest James Nichols, Northamptonshire; and John Lindsay, Edinburgh.

First Examination, Five Years' Course.—Donald Grant Dingwall, Aultbea, Ross-shire (with distinction); John O'Regan, Mitchelstown; William Bates, Partick; Harry Anderson Lunn, Jedburgh (with distinction); Walter Paton Scott, Glasgow; James Henderson Milne, Glasgow; Andrew Young, Langholm (with distinction); George Logan Clark, Glasgow (with distinction); Robert John Roberts, Bala; Richard Augustine Hegarty, Kinsale; Timothy Foley, Killeagh, co. Cork; Stanley Lister George Donald Maclaine, Mountainash, Glamorgan; David Roberts Williams, Borth, Portmadoc; and Thomas Ernest Harty, Cork.

Second Examination, Four Years' Course.—John Francis Dwyer, Cork; Charles Spencer Buck, London; John Wiglesworth, Liverpool; James Herbert Spray, Leeds; Nelson Johnstone, Dunmanway; Joseph Vincent Usher Somers, Tipperary; and Thomas Alexander Chalmers, Ayrshire.

Second Examination, Five Years' Course.—Albert Edward Ward, Partick; George Kee, Greenock; George Johnstone Campbell, Greenock; Frank Hannah, Lancashire; Geo. Russell Jarvie, Cambuslang (with distinction); Robert Wardlaw, Crofthead; John Allan, Glasgow; Henry Ayrton Chaplin, London; Donald Duff, Glasgow (with distinction); Archibald Macqueen, North Wales; William Hendry Ferguson, Yorkshire; Eyre William Powell, Mount Prospect; John Thomson Malloch, Glasgow; Charlotte M'Crea, Glasgow; Ernest George Dryden Benson, Durham; Harold Ruby Parkinson, Manchester; Jane Mary Louisa Foley, County Cork; and Daniel Michael Donovan, Cork.

Third Examination.—Rupert Edward Moorhead, Mauritius; Thomas Blane Adam, Glasgow; Robert Elwell Naish, Devonport; George Brownlie M'Kendrick, Wishaw; Evelyn John Evatt, Liverpool; John Thomas Bradley, County Clare; Thomas Stratford Logan, Yorkshire; Frederick William Newcombe, Victoria, Australia; William Patullo, Alyth; Timothy Joseph O'Donovan, Dunmanway; John George Grant, London; and Richard Nason Woodley, County Cork.

Final Examination (and admitted Licentiates).—David Campbell, Taynuilt; Arthur Bulleid, Glastonbury; John Glen Parker, Meiklerigg, Paisley; Thomas Buchanan Whitelaw, Glasgow; Samuel Vernon Robinson, Ulverston; Reginald Storrs, Doncaster; Richard Maddern Powell, Liverpool; John Dick, Greenock; John Joseph Aloysius Sherry, Dublin; Harold Chaffer, Todmorden; David Richard Edwards, South Wales; Henry Arthur Marquis, Padiham; William Arthur Clayton, Manchester; Henry Stewart Anderson, Dunmurry, County Antrim; Claud Herbert Lucien Bellot, Edinburgh; Dewan Gaupat Rai, Edinburgh; Benjamin Samuel Reyhardt, Ceylon; and Peter Aitken, Glasgow.

BRUSSELS UNIVERSITY.

—The following British practitioners obtained the M.D. degree at the June examination, viz.:—

E. S. Bell, A. D. Cowburn, C. J. Glasson (Honours), J. S. Hudson, C. Lamplough, W. McCall, J. Persehouse, W. Reeve, and Spencer Cox.

FOREIGN UNIVERSITY INTELLIGENCE.

—*Barcelona:* Dr. Francisco Millán y Guillén has been appointed to the chair of Anatomy and Embryology.—*Berlin:* Dr. Friedrich Kopsch has been recognised as *privat-docent* of Anatomy and Dr. Hugo Michaelis and Dr. Wilhelm Zinn as *privat-docenten* of Internal Medicine.—*Budapest:* Dr. Paul Kuzmik has been recognised as *privat-docent* of Surgery.—*Erlangen:* Dr. Richard Fleischer, Extraordinary Professor of Internal Medicine, has been appointed to the chair of Medical Propædeutics and the History of Medicine. Dr. Ludwig Heim, Extraordinary Professor, has been appointed Director of the Institute of Hygiene and Bacteriology.—*Giessen:* Dr. Hans Köppe has been recognised as *privat-docent* of Physiology.—*Innsbruck:* Dr. Ludwig Kerschner, Extraordinary Professor of Histology and Embryology, has been promoted to be Ordinary Professor.—*Leipsic:* Dr. Otto Schwarz, *privat-docent* of Ophthalmology, has been promoted to be Extraordinary Professor.—*Munich:* Dr. Philipp Schech, Extraordinary Professor of Internal Medicine, is giving up his lectures on Balneo-therapeutics and Climatology and will devote himself to Laryngology. Practical instruction in hydro-therapeutics, electro-therapeutics, and other mechanical methods of dealing with disease will be given by Dr. Hermann Rieder, who has been appointed to an Extraordinary Professorship.—*Naples:* Dr. Carlo Gangitano has been recognised as *privat-docent* of Operative Medicine.—*Prague (German University):* Dr. Ludwig Waelsch has been recognised as *privat-docent* of Dermatology and Syphilis, and Dr. A. Velich as *privat-docent* of General and Experimental Pathology.

PRESENTATIONS TO MEDICAL MEN.

—The members of the Ilfracombe Choral Society have presented Mr. John Twiname Gardner, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., with a 70-guinea grandfather's clock in recognition of his services as honorary conductor. The presentation was made by Mrs. Bassett of Watermouth Castle in the presence of a large gathering of ladies and gentlemen.—On July 12th Sir James Laing, in the lecture hall of the Sunderland Infirmary, presented to Mr. G. B. Morgan, L.R.C.S. Irel., L.S.A., the senior surgeon of the institution, a testimonial consisting of his portrait, a brass tablet to be placed in the Morgan Ward, a silver bowl, a silver candelabrum, silver candlesticks, and a silver tray. These presents were subscribed for by the president, vice-presidents, members of the General Committee, and the medical board of the infirmary. Mr. Morgan has been connected with the Sunderland Infirmary for upwards of 40 years and during that long career has done, perhaps, more than any other individual to promote the interests of the charity. Mr. Morgan is not retiring from the staff and it is to be hoped that he may be able to retain his position for many years to come. There is no member of the profession in the neighbourhood more universally respected than Mr. Morgan and no one better deserves the position he enjoys.—The members of the Rotherham Borough Police ambulance class, on the occasion of the distribution of the certificates and medallions for efficiency on July 15th, presented to Mr. F. B. J. Baldwin, M.R.C.S. Eng., of Rotherham, a silver and ebony inkstand as a memento of his appreciated instructions on first aid.—On July 16th at a meeting of the members of the Hull Railway Goods No. 1 Ambulance Class Mr. James Stothard, M.R.C.S. Eng., of Hull, was the recipient of an ivory-handled malacca cane

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mounted in silver and bearing an inscription, in recognition of his honorary services to the class. — Mr. S. Macaulay, L.R.C.P. Edin., L.F.P.S. Glasg., who has been on the surgical staff of the Newcastle Throat and Ear Hospital for 17 years, has, on the eve of his departure to South-Western Australia, been presented by his colleagues and other officials of the institution with an illuminated address expressive of their esteem. Mrs. Macaulay was at the same time presented with a diamond and ruby ring. — Mr. C. F. France, M.R.C.S. Eng., L.R.C.P. Lond., was the recipient on July 23rd from the members of the Great Central Railway (Wigan Centre) Ambulance Class of a silver-mounted walking-stick as a mark of esteem.— Mr. B. J. Adam, M.B., Ch.M. Glasg., who has practised for the past ten years at Beaufort, Victoria, Australia, has been presented by the inhabitants of the town and district of Beaufort with an illuminated address and a piece of plate on his leaving the locality.—On July 16th Mr. P. B. Stoney, L.R.C.P. Edin., M.R.C.S. Eng., of Millom, Cumberland, was the recipient from the local ambulance class of an umbrella bearing an inscription and a new edition of an important medical work, as tokens of thanks for his first aid ambulance lectures.

VACCINATION GRANT.—Mr. George Stevens, of Norton, Bury St. Edmunds, public vaccinator of the Stow Union, has been awarded the Government grant for efficient vaccination for the tenth time in succession.

THE DISAPPOINTMENTS OF A WORKHOUSE NURSE. —At the meeting of the Keynsham board of guardians held on July 26th the chairman announced that the candidate whom they wished to appoint as nurse to the workhouse had withdrawn her application as there was no sea view at Keynsham. She was also disappointed because there was no tennis court for her use. Some considerable discussion took place upon the bill for travelling expenses which the candidate had incurred, but the guardians eventually decided to allow them.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.— The deaths of the following eminent foreign medical men are announced:—Dr. Wilhelm Lohmann, one of the representative members of the Hanover Medical Council, at the age of sixty-three years. His views on medical politics were what is called Liberal, as he was opposed to all measures directed against quackery.—Dr. Alfred Obalinski, Professor of Surgery in the University of Cracow, at the age of fifty-five years. He was a voluminous writer on many subjects of a surgical character and was recognised as one of the first of Polish surgeons.—Dr. Dufay, formerly Senator for Loir-et-Cher.— Dr. Resario Pugliatti, Extraordinary Professor of Midwifery and Gynæcology in the Messina Medical School.—Dr. Carlo Giacomini, Professor of Anatomy in the University of Turin.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Food Products Adulteration.

THE Bill on this subject introduced in the House of Commons by Mr CHAPLIN was withdrawn on Thursday, July 28th, without any attempt being made in the House to read it a second time.

Vaccination Bill.

The House of Lords received the Vaccination Bill from the Commons on Monday, Aug. 1st and at once read it a first time, and on Tuesday, Aug. 2nd, after a short speech from Lord HARRIS, read it a second time, fixing the committee stage for Thursday, Aug. 4th.

HOUSE OF COMMONS.

THURSDAY, JULY 28TH.

Experiments on Living Animals.

Mr. SAMUEL SMITH asked the President of the Board of Agriculture whether he had consented to a vivisectional laboratory being attached to the Department of the Board of Agriculture at which experiments may be made on horses, dogs, and other highly organised animals; and whether such experiments were allowed there without the use of anæsthetics.—Mr. LONG replied: Our veterinary officers are at present engaged in an investigation into the curative and other properties of mallein, and they have also to diagnose suspected cases of rabies. For these purposes inoculation is requisite and the officers in question have therefore obtained certificates under the Act of 1876. There has been no new departure in this respect, it having been customary for many years past for my veterinary advisers to obtain such certificates for investigations connected with the suppression of contagious diseases amongst animals. Anæsthetics are employed in connexion with the work under the second head above referred to, but not in cases under the first head. No experiments have at any time been made by my officers upon dogs.

Colonel LOCKWOOD raised this question in connexion with the vote for the Home Office on Friday, suggesting that the laboratories where the experiments are carried on should be open to the inspection of University graduates and medical men as representing the public.—Sir MATTHEW WHITE RIDLEY assured the House that the Act is very strictly enforced. He could not admit, however, that University graduates representing the public should have the right to be present whenever an experiment was made. It was provided that the experiments should be real experiments, and should be performed in a proper place, that the experimenters should be recommended by competent scientific men and that a return should be made of what was done. All these requirements were strictly enforced. If the number of experiments had increased in the last few years the increase was due to inoculation experiments. The surgical experiments had very much decreased. He should be ready to meet any reasonable suggestion as to the better working of the Act.

The Vaccination of Pupil Teachers.

Mr. LABOUCHERE asked the Vice-President of the Committee of Council on Education whether it was his intention to maintain in the Education Code the article which requires probationers for pupil teachership to show proof of vaccination before the department assents to their indentures.—Sir JOHN GORST replied that the Committee of Council had no intention of changing the rule which requires pupil teachers to be vaccinated before admission.

Rabies in London

Mr. TRITTON asked the President of the Board of Agriculture if he was now in a position to withdraw the order relating to the muzzling of dogs in the metropolitan area south of the Thames.—Mr. LONG, in reply, said: The fact that an outbreak of rabies occurred at Bow so recently as June 8th last shows, I am afraid, that although the position has so substantially improved, there is still reason to believe that the disease lingers within the metropolitan area. My hon. friend will understand that I am very anxious to avoid the necessity of reimposing any of the muzzling orders now in force when once they have been withdrawn, and under existing circumstances there would be a great danger that this would be the case, so far as South London is concerned.

FRIDAY, JULY 29TH.

Vaccination

Mr. TALBOT asked the President of the Local Government Board whether he would consider the advisability of circulating to the various boards of guardians throughout the country information on the subject of vaccination which might be distributed by them in leaflet form so as to carry out the intention of Parliament to encourage the general use of vaccination though no longer enforced by law.—Mr. CHAPLIN replied that he was quite prepared to consider the proposal, though he must not be understood as giving any pledge on the subject.

Medical Service at the Army Manœuvres.

Captain NORTON asked the Under Secretary of State for War whether he could state the number of field hospitals and bearer companies as well as the number of medical officers and men of the Army Medical Corps required for the forces to be employed at the forthcoming manœuvres.—Mr. BRODRICK replied that there would be 4 field hospitals and 2 bearer companies; 72 officers and 301 men of the Royal Army Medical Corps would be employed at the manœuvres.

Woolsorters' Disease in Bradford

Mr. FORTESCUE FLANNERY asked the Home Secretary whether his attention had been called to recent deaths from woolsorters' disease in Bradford occurring from alleged infection in the carding-room as distinguished from the sorting-room; whether the recently adopted woolsorters' rules had been extended to the carding-room; and whether he could see his way to hold an inquiry, through the factory inspectors or otherwise, as to whether or not the rules should be extended to carding-rooms.—Sir M. WHITE RIDLEY replied: My attention has been called to this matter. The reports I have received showed that in the most recent case, though the man was employed in the card-room it was not from his own work that the infection reached him. The rules do not apply to the process of carding and as they deal with dust as the medium of infection could not be applied *en bloc*. The matter is a serious one and I propose to institute inquiries.

Lead and Phosphorus Poisoning.

In connexion with the vote for the Home Office there was long debate at this sitting on lead-poisoning in the Potteries and "phossy jaw" in the match industry. Speeches were delivered by Mr. Tennant, Sir John Stirling-Maxwell, Sir Charles Dilke, Mr. Asquith, and others calling attention to the state of affairs and inviting action on the part of the Home Office to deal with it.—Sir MATTHEW WHITE RIDLEY, in his reply, explained what has been done by his department, and the inquiries which are being made. He said they were beginning to find out that the special rules are not likely to be sufficient to meet the case, and he intimated that when the proper time arrives he would not be averse to undertaking further legislation. He also expressed his readiness to consider what advantage is likely to accrue from sending a lady inspector to reside and carry on her work in the Potteries district.

SATURDAY, JULY 30TH.

The Vaccination Bill.

The House occupied several hours of this sitting with the consideration of the Vaccination Bill. Members on the Ministerial side of the House put forward a motion for the recommittal of the Bill, mainly on the ground that the question of conscientious objection required reconsideration. The Government met the motion by saying that this subject had been sufficiently discussed and that the House must either accept the Bill as it stood or abandon it altogether. Several members

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referred to the attitude of the medical profession towards the Bill, and in regard to the declaration of the Royal College of Physicians of London Mr. CHAPLIN said that while he agreed with every word in it he could not help thinking that it would have been a more useful and practical declaration if it had been said whether or no the Royal College agreed with the unanimous recommendation of the Royal Commission for the insertion of a conscience clause. When the issue was brought to a vote only 29 Members voted for recommittal and 133 members voted against it. The motion thus disposed of, the House gave a third reading to the Bill.

MONDAY, AUG. 1ST.

Vaccination Prosecutions in Scotland.

Dr. CLARK asked the Lord Advocate whether his attention had been called to recent vaccination prosecutions at Aberdeen and at Dundee; whether he was aware that in the latter case the sheriff stated that the procedure was oppressive in view of the English legislation which proposed to give relief to persons with conscientious scruples; whether there had been a recent order by the Scottish Local Government Board in favour of more rigorous prosecutions; and whether the majority of the parish council of Abbotshall, in the county of Fife, had resigned in consequence.—The LORD ADVOCATE: My attention has been called to the cases referred to. The case at Dundee was tried before the sheriff substitute, not the sheriff. I have no knowledge of what he said except from the newspaper reports. The answer to the third paragraph of the question is in the negative. On the contrary, I am informed by the Local Government Board for Scotland that they have not departed from the line which they have all along adopted—namely, that parish councils are bound to carry out the existing law. It is the fact that on being called upon to carry out the existing law in regard to first prosecutions, 6 out of 11 of the parish councillors of Abbotshall resigned their seats at the parish council.

TUESDAY, AUGUST 2ND.

Accommodation for Pauper Lunatics in Devon.

Mr. SEALE-HAYNE asked the President of the Local Government Board whether he was aware that for some time past the Devon County Asylum at Exminster has been overcrowded; that the Newton Abbot Board of Guardians has been compelled to send several patients to other asylums, involving a great increase of expense; and that a patient certified by a justice of the peace for removal to an asylum is at the present time unable to be removed as there is no room for her reception either at the Devon County Asylum or other local asylums, or suitable accommodation in the Newton Abbot workhouse. Whether it was true that the Devon County Council are prepared to give increased asylum accommodation, but owing to the great delay which has arisen in consequence of a dispute with the Lunacy Commissioners in regard to the water-supply they had not yet done so; and whether he would take steps to impress upon the authorities the necessity of meeting without further delay the urgent want of increased asylum accommodation for pauper lunatics in the county of Devon.—Sir M. WHITE RIDLEY read this reply, viz.: It is the case that this asylum has for some time past been overcrowded and that on account of difficulties attending the supply of water approval of plans for the enlargement of the asylum was delayed until an adequate and wholesome supply was obtained. These difficulties have now to a great extent been surmounted and I approved in February last of plans of an extension which will provide for additional patients.

Hospital Accommodation at Malta.

Mr. BRODRICK, replying to a question by Dr. Tanner on this subject, said: In view of the increased garrison of Malta the hospital accommodation requires revision and the erection of a new hospital is under consideration. Those hospitals now in use are as sanitary as it is possible to render buildings in Malta which were not built specially for the purpose to which they are now devoted.

Report of the Army Medical Department.

Mr. BRODRICK, in answer to Dr. Tanner, explained that the Report of the Army Medical Department had been presented formally in order to allow its issue during the Parliamentary recess. It would not be ready for publication until late in the year as the returns for India had not yet reached this country.

The Supply of Artificial Limbs in the Navy.

Sir ELLIOTT LEES asked the First Lord of the Admiralty what were the regulations in the service with reference to the supply of artificial limbs to seamen who whilst on duty met with accidents entailing the amputation of a leg or an arm; and whether it would be practicable in all such cases to supply the injured seaman on his discharge from hospital with the best artificial limb procurable free of charge to himself.—Mr. MACARTNEY answered the question in the following terms, viz.: It is the practice to supply in such cases, free of charge to the man, the substitute either for arm or leg which is considered to be most suitable to his requirement. The "best artificial limb procurable" is often an elaborate apparatus which frequently gets out of order and would often not be so useful to the recipient.

BOOKS, ETC., RECEIVED.

ALCAN, FÉLIX, Paris.
Physiologie. Travaux du Laboratoire de M. Charles Richet. Tom quatrième. 1898.

AL-MUKTATAF PRINTING OFFICE, Cairo.
Lectures on Asepsis in Surgery. By H. Milton, M.R.C.S. Re-written in English by Habib Khayatt, M.B. Edin. 1897.

ARNOLD, EDWARD, Bedford-street, Strand, London.
Suggestions for a Scheme of Old-age Pensions. By L. Holland, M.P. 1898. Price 1s.

BAILLIÈRE, TINDALL, AND COX, London.
Atlas and Essentials of Pathological Anatomy. By Dr. C. Bollinger. Vols. I. and II. Illustrated. 1898. Price 12s. 6d. each.
Diseases of the Stomach. By Max Einhorn, M.D. Second Edition. 1898. Price 12s. 6d. net.

BALLIERE, J. B., ET FILS, Paris.
Les Actualités médicales: La Diphtérie. Par H. Barbier et G. Ulmann. 1898.

BLISS, SANDS, AND CO., Burleigh-street, Strand, London.
Health-giving Waters. Being an account of the Waters of Pouges. By Dr. J. Janicot. With Plans and Views. 1898. Price 3s. 6d.

CARRINGTON, CHAS., Paris.
The Sexual Instinct. By Dr. B. Tarnowsky. Translated by W. C. Costello, Ph.D., and A. Allinson, M.A. 1898.

CASSELL AND CO., London.
Elements of Histology. By E. Klein, M.D., F.R.S., and J. S. Edkins, M.A., M.B. Illustrated. New edition. 1898. Price 7s. 6d.

CHURCHILL, J. & A., Great Marlborough-street, London.
A Simple Method of Water Analysis. By J. C. Thresh, M.D. Vict., D.Sc. Lond., D.P.H. Camb. Second edition. 1898. Price 2s. 6d.
Ovariotomy and Abdominal Surgery. By Harrison Cripps, F.R.C.S. 1898. Price 25s.

F. A. DAVIS CO., Philadelphia.
Conservative Gynæcology and Electro-Therapeutics. By G. B. Massey, M.D. Third edition. 1898.

HAHN, J. W. & GEO. H., East-street, New York.
Ear Records: a Method of Recording Ear Cases. Arranged by J. C. Lester, M.D., and V. Gomez, M.D. 1898.

HEYWOOD, J., Manchester.
Buxton: its Baths and Climate. By S. Hyde, M.D. Fourth edition. 1898.

KIMPTON, H., High Holborn, London.
Operative Gynæcology. By H. A. Kelly, A.B., M.D. Illustrated. Vol. ii. 1898.

LEWIS, H. K., Gower-street, London.
Practical Organic Chemistry. By Samuel Rideal, D.Sc. Lond. Second edition. 1898. Price 2s. 6d.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
The Essentials of Histology, Descriptive and Practical. By E. A. Schäfer, LL.D., F.R.S. Fifth edition. Illustrated. 1898. Price 8s.
A Manual of Chemical Analysis, Qualitative and Quantitative. By G. S. Newth, F.I.C., F.C.S. 1898. Price 6s. 6d.

MASSON ET CIE, Paris, et CAMILLE COULET, Montpellier.
Consultations Médicales sur quelques Maladies fréquentes. Par Dr. J. Grasset. Quatrième édition. 1898.
Les Défenses Naturelles de l'Organisme. Par A. Charrin. 1898.

MEDICAL PUBLISHING COMPANY, 22½, Bartholomew-close, London.
The Surgical Affections of the Stomach and their Treatment. By A. E. Barker, F.R.C.S. 1898. Price 2s. 6d. net.

NICHOLS AND CO., Oxford-street, London.
The Cerebellum. By H. Davies, M.D. 1898. Price 2s.

OFFICE OF "MUSIC," Wardour-street, London.
The Voice. By C. E. Rowley. 1898. Price 2s.

OLIPHANT, ANDERSON, AND FERRIER, Paternoster-square, London.
Sir Thomas Browne: An Appreciation. By Alexander Whyte, D.D. 1898. Price 2s.

PHILIP, GEO., AND SON, Fleet-street, London.
Rhodes's Steamship Guide. Edited by Thos. Rhodes. 1898-9. Price 5s.

REBMAN PUBLISHING COMPANY, 129, Shaftesbury-avenue, Cambridge-circus, London.
A Text-book of Diseases of Women. By C. B. Penrose, M.D., Ph.D. Second edition, illustrated. 1898. Price 20s.
Atlas of Clinical Diagnosis and Internal Diseases. By C. Jakob. Edited by A. A. Eshner, M.D. Illustrated. 1898. Price 12s. 6d. net.

SANITARY PUBLISHING COMPANY, Fetter-lane, Fleet-street, London.
The Removal and Disposal of Town Refuse. By W. H. Maxwell. Illustrated. 1898. Price 15s. net.

SCIENTIFIC PRESS, Southampton-street, Strand, London.
Physiology, Experimental and Descriptive. By B. C. Colton. 1898. Price 6s.
The Burdett Series, No. 7: Care of Consumptives. By W. H. Daw, L.R.C.P. Lond., M.R.C.S. Eng. 1898. Price 1s.

SMITH, ELDER, AND CO., Waterloo-place, London.
St. Bartholomew's Hospital Reports. Edited by N. Moore, M.D., and W. J. Walsham, F.R.C.S. Vol. xxxiii. 1898.
The Mineral Waters and Health-resorts of Europe. By H. Weber, M.D., F.R.C.P., and F. P. Weber, M.D., F.R.C.P. With a Map. 1898. Price 10s. 6d.

SWAN SONNENSCHEIN AND CO., London.
Natural Hygiene; or, healthy blood the essential condition of good health, and how to attain it. By H. Lahmann, M.D. 1898. Price 4s. 6d.

VOSS, LEOPOLD, Hamburg und Leipzig.
Atlas der Syphilis und Syphilisähnlichen Hautkrankheiten für Studirende und Aerzte. Von Dr. Martin Chotzen. Hefte 9 und 10. 1898.

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WASHINGTON GOVERNMENT PRINTING OFFICE.
Public Health Reports. Issued by the Supervising Surgeon-General, Marine Hospital Service. Vol. xii. Nos. 1 to 53. 1898.

WATERLOW AND SONS, London-wall, London.
Third International Congress of Dermatology, held in London, August, 1896. Official Transactions. Edited by J. J. Pringle. 1898.

Royal Societies Club, St. James's-street, London. Its Foundation and Objects. Rules and By-laws and List of Members. 1897.—Magazines, &c., for August: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, St. Peter's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ANDERSON, A. R., F.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Nottingham, Newark, and Bingham, County-court Circuit No. 18.

BARCLAY, J., M.D., C.M. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Banffshire.

BARTLETT, R. C., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for the Borough of Romsey.

BEATTIE, G. W., M.D., C.M. Aberd., has been re-appointed Medical Officer of Health by the Failsworth Urban District Council.

BENSON, J. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Ashover Sanitary District of the Chesterfield Union.

BENSON, J. R., F.R.C.S. Eng., has been appointed Sambrooke Surgical Registrar and Tutor in Surgery at King's College Hospital, London.

BROWNING, B., L.R.C.P. Lond., M.R.C.S., D.P.H. Edin., has been re-appointed Medical Officer of Health by the Weymouth Urban District Council.

CAMPBELL, J. A., M.D., F.R.S. Edin., has been appointed an Honorary Consulting Physician to the Counties Asylum, Carlisle.

CHADWICK, C. M., M.D. Oxon., F.R.C.P. Lond., M.R.C.S., has been appointed to the Professorship of Materia Medica, Pharmacology, and Therapeutics for the Department of Medicine of the Yorkshire College.

CUFF, A. W., M.B., B.C. Camb., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, to act generally for the Northern Division (Retford, Doncaster, and Thorne), County-court Circuit No. 18, although appointed a Referee for Circuit No. 13.

DARLEY, A. R., M.D., B.Ch. Dubl., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County-court Circuit No. 22 (Rugby Division).

DAUNT, ELLIOT, L.R.C.P. Lond., M.R.C.S., L.S.A. Lond., D.P.H., Conjoint R.C.P. & R.C.S. Dubl., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Kent District of Circuit No. 48.

FARQUHARSON, W. F., M.D., C.M. Edin., has been promoted to the office of Medical Superintendent of the Counties Asylum, Carlisle.

FINNY, J. M., M.D. Dubl., L.R.C.P., L.R.C.S. Irel., has been appointed to the vacant seat on the Board of Superintendence of the Dublin Hospitals, vice S. Gordon.

GEOGHEGAN, A. V., M.D., B.S. Dubl., has been appointed Medical Officer for the Mickleton Sanitary District of the Shipston-on-Stour Union.

HALL, E. F., M.D. St. And., L.R.C.P. Edin., M.R.C.S., has been appointed a Visiting Physician and Surgeon for the Workhouse of the Prescot Union.

KANDFORD, H., M.D., C.M. Edin., M.R.C.P. Lond., M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Nottingham, Newark, and Bingham, County-court Circuit No. 18.

HEDGES, C. E., M.B., B.C. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Workhouse and the First Sanitary District of the Newport (Salop) Union.

KENNEDY, A. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Plaistow Sanitary District of the West Ham Union.

KENNEDY, D., L.R.C.P., L.R.C.S. Irel., has been appointed a Visiting Physician to the Waterford County and City Infirmary.

LLOYD, EDWARD J., M.D., Ch.M. Aberd., M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County-court Circuit No. 29; and to act for the Bangor, Conway, Llandudno, Llangefni, Holyhead, and Menai Bridge County-court Districts.

MCMANUS, GEORGE, L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Meath.

MILNE, THOMAS, M.D., C.M. Aberd., has been appointed Medical Examiner for the Iron Trades Employers' Insurance Association for the Aberdeen District.

MILROY, J. A., M.B., C.M. Edin., has been appointed a Demonstrator of Physiology for the Department of Medicine of the Yorkshire College.

OGSTON, ALEX., M.D., C.M. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Aberdeenshire.

O'MEARA, T. J., M.B., C.Ch. Irel., has been appointed Medical Officer for the Dispensary District of Tullagh, in the Skibbereen Union.

PYE-SMITH, R. J., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, to act generally for the Northern Division (Retford, Doncaster, and Thorne), County-court Circuit No. 18, although appointed a Referee for the Circuit No. 13.

PHILLIPS, HUGH R., M.B., Ch.B. Edin., has been appointed Assistant House Surgeon to the County Hospital, York, vice R. H. Ashwin, resigned.

PITT-TAYLOR, F. S., M.B., B.Ch. Vict., has been appointed House Surgeon to the Birkenhead and Wirrall Children's Hospital.

SNELL, S., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Retford, Doncaster, and Thorne County-court Circuit No. 18, *pro tem.*, and for ophthalmic cases only.

TAYLOR, JAMES, M.D., C.M. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Banffshire.

THRESH, J. C., D.Sc. Lond., M.D. Vict., D.P.H. Camb., has been appointed Lecturer on Public Health at the London Hospital Medical College.

TRIBE, P. C. E., M.B. Lond., L.R.C.P., has been appointed Sambrooke Medical Registrar and Tutor in Medicine at King's College Hospital, London.

WHITE, C. P., M.B., B.C. Camb., F.R.C.S. Eng., L.R.C.P. Lond., M.R.C.S., has been appointed a Demonstrator of Pathology for the Department of Medicine of the Yorkshire College.

WHITE, V., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Holy Ghost Hospital, Waterford, vice T. J. Tobin.

WILL, J. C. O., M.D., C.M. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Kincardineshire.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BETHLEM ROYAL HOSPITAL, Lambeth-road, London.—Second Assistant Medical Officer. Salary £130 per annum, apartments in the hospital, complete board, and washing being provided. Applications to the Clerk, Bridewell Hospital, New Bridge-street, E.C.

BOROUGH OF DERBY.—Medical Officer of Health. Salary £500 per annum, increasing by £50 per annum to £600 at intervals of two years. Applications to the Town Clerk, Town Hall, Derby.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £70, with board, residence, and washing.

BRADFORD ROYAL INFIRMARY.—Honorary Physician.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE, Chelsea, S.W.—A Teacher of Hygiene.

CARNARVONSHIRE AND ANGLESEY INFIRMARY AND DISPENSARY, Bangor. House Surgeon. Salary £70 per annum, with board and lodging in the house.

CUMBERLAND AND WESTMORELAND ASYLUM, Carlisle.—Senior Assistant Medical Officer. Salary £120 a year, with board. Applications to Dr. Farquharson, Garlands, Carlisle.

DERBY COUNTY ASYLUM, Derby.—Second Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with board, lodging, and washing.

DEVONSHIRE HOSPITAL, Buxton.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E. — Unqualified Clinical Clerkships, tenable for three months.

HUDDERSFIELD INFIRMARY.—Senior Assistant House Surgeon. Salary £50 per annum, with board, residence, and washing. Also Junior Assistant House Surgeon. Salary £40 per annum, with board, residence, and washing.

KING'S COLLEGE HOSPITAL, London.—Assistant Physician.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150, respectively.

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PARISH COUNCIL OF EVIE AND RENDALL.—Medical Officer. Salary £45 a year and a free house. Apply to the Inspector of Poor, Evie.

PARISH OF FULHAM.—Public Analyst. Salary £200 per annum. Applications to the Clerk to the Vestry, Town Hall, Walham-green, S.W.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing.

RURAL DISTRICT COUNCIL OF CHESTERFIELD.—Medical Officer of Health for one year. Salary at the rate of £500 per annum, which includes all expenses, stationery excepted. Travelling expenses outside the district will be allowed. Applications to the Clerk to the Council, Union Offices, Chesterfield.

ST. ANN'S HILL HYDROPATHIC ESTABLISHMENT, County of Cork, Ireland.—Resident Medical Superintendent, married.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon. Salary £50 per annum, with board and residence.

SOMERSET AND BATH ASYLUM, Wells, Somerset.—Junior Assistant Medical Officer, unmarried. Salary £110, rising to £130, with board, lodging, washing, and attendance.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees. — House Surgeon, non-resident. Salary £200 per annum.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Board, washing, and lodging in the hospital provided.

UNIVERSITY COLLEGE, Bristol, Faculty of Medicine.—Demonstratorship of Physiology. Stipend £125.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer to the Provident Dispensary attached to the hospital. Salary £80 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

COMBE.—On July 30th, at Brockley-road, S.E., the wife of Charles E. Combe, L.D.S., of a daughter.

HEWLETT.—On July 18th, at Rosebery-villas, Southfields, S.W., the wife of Richard T. Hewlett, M.D., M.R.C.P., of a son.

LEFTWICH.—On July 30th, at Kennington-park-road, the wife of Ralph W. Leftwich, M.D., of a daughter.

MINTER.—On Aug. 2nd, at Sussex Lodge, Uxbridge, the wife of L. J Minter, M.D., M.R.C.S., of a son.

ORMEROD.—On July 30th, at Liphook, Hants, the wife of Charles E. Ormerod, M.D., of a daughter.

RENTZSCH.—On July 29th, at The Firs, Waltham Cross, Herts, the wife of Sigismund H. Rentzsch, of a daughter.

SMITH.—On Aug. 2nd, at Hillbank, Monifieth, Forfarshire, the wife of R. Sinclair Smith, L.R.C.P., L.R.C.S. Edin., of a son.

SUMPTER.—On July 26th, at Denton Hall, Northumberland, the wife of W. J. Ernely Sumpter, L.R.C.P. Lond., M.R.C.S., of Sheringham, Norfolk, of a son.

MARRIAGES.

COCK—EVANS.—On July 27th, at St. Stephen's, Westbourne-park, W., Frederick William Cock, M.D., son of the late Frederick Cock, M.D., to Frances Louisa Evans of 83, Inverness-terrace, Hyde-park.

HEMSTED—MUNN.—On July 28th, at St. Mary's, Laverstoke, Hants, Rustat Henry Hemsted, M.R.C.S., L.R.C.P. Lond., eldest son of Henry Hemsted of Haverhill, Whitchurch, Hants, to Gertrude Mary (Meemee), daughter of Winchester Munn.

SETON-ORR—FLOWER.—On Aug. 3rd, at St. Peter's Church, Cranley-gardens, A. B. Seton-Orr, M.D., of 37, Alfred-place West, South Kensington, to Henrietta Laura Owen (Lollie), daughter of Major Lamorock Flower of Cornwall-mansions, Queen's-gate.

WHITE—WYMAN.—On July 28th, at St. John's Church, Putney, by the Rev. J. White Horne, assisted by the Hon. and Rev. R. Henley, Edwin Francis White, F.R.C.S., of Westlands, Putney, only son of the late Edwin White and grandson of the late Samuel White White of Charlton Marshall, Dorset, and Farnecombe, Surrey, to Mabel, only daughter of Dr. and Mrs. Wyman of Putney. At home Sept. 12th to 14th.

DEATHS.

BEATSON.—On July 29th, at Cromwell-road, Earl's-court, Surgeon-General John Fullarton Beatson, M.D., C.I.E., aged 81 years.

MURRAY.—On July 27th, at Claughbane, Sheringham, John Murray, M.D., Surgeon-General, aged 88.

PECK.—On July 28th, at Malta, William Godfrey Peck, Surgeon R.N. (H.M.S. *Anson*).

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
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Three Months	0 8 2	Three Months	0 8 8

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A FAMOUS CENTENARIAN PHYSICIAN.

ACCORDING to *Le Temps*, Dr. Mavrogenis, the last survivor of the Grecian War of Independence, has just completed his 100th year. Born at Paris in 1798 he prosecuted his medical studies at an Italian university, but in 1821, before his education was quite complete, he returned to his native country, where he greatly distinguished himself in several battles. The numerous wounds he then received have not, however, prevented him from attaining to centennial honours, and he is said to be at the present time in the enjoyment of robust health. Dr. Mavrogenis comes of a family famous for longevity and a sister who is ten years his senior lives with him.

"MR. MOULD FAILS TO FIND MR. JOBLING."

To the Editors of THE LANCET.

SIRS,—There seems to be no limit to the audacity of advertisement nowadays. Some time ago a patient of mine stopped me in the street. "Doctor," she said, "as you always do your posting with our people perhaps you would do us a further favour? Just let your patients know, *when you think you can*, that my husband has invested in a beautiful brand new glass hearse. It looks much neater than the other people's old black one, and we can do it cheaper, too!" This was said quite in the way that a business person discusses business and I am sure was not meant as an insult. I think some of these things are said to us members of the profession because our suasive powers are regarded with high esteem. Gruesome as the subject seems, a moment's reflection will convince one that there is more of a normal and healthy tone in the above than in that of the carneying insurance agent who comes with an idea of getting the doctor's help in "getting through" a proposal on "the life of another," and asks him to "let the case through as easy as you can," when some servant girl is going to speculate 1s. a week on somebody else who "doesn't know nothing about it"—a procedure that such insurance offices openly encourage!

I am, Sirs, your faithfully,

July 27th, 1898. VERITAS.

TUMOURS CAUSED BY PATHOGENIC YEASTS.

AT a meeting of the Greifswald Medical Society, reported in the *Deutsche Medicinische Wochenschrift* of July 21st, Dr. Busse said that although pathogenic yeasts have only been known since the year 1894 a great number of pathogenic species of blastomycetes have been recognised. Their behaviour in the animal body is very interesting, for the naked forms then become surrounded with a capsule which often shows concentric layers. This capsule is very characteristic and gives to the blastomycetes a great similarity to many of the forms which have been described and figured as aggregations of cells enclosed in tumours, and have been regarded as parasites and as the exciting causes of the tumours. There is, in fact, a certain amount of excuse for regarding the yeasts as the causes of the tumours, for when they make their way into the animal body they actually do produce formations resembling tumours. Both at the place of the injection and also in remote organs there occur in the course of weeks or months proliferations which have a glassy-white appearance like myxosarcoma, are very soft, and may ulcerate. Under the microscope, however, the seeming tumours do not present the characteristics of any of the recognised varieties of tumours but are found to be giant colonies of saccharomycetes in the animal organism. Giant cells have appeared in the lungs in great numbers. It is certain, however, that sarcoma has not yet been artificially produced by means of blastomycetes, although it is not impossible that if the virulence of the yeasts could be increased formations might be obtained resembling sarcoma.

MEDICAL ETHICS.

THE *Australasian Medical Gazette* of June 6th reproduces the appended advertisement which appeared in a lay Australian paper: "Dr. A. Crosbie Dixey, Member Royal College Physicians, Edinburgh, wishes to announce he has started a Consulting Practice in New Norfolk. Specialities—Typhoid and other Fevers, and Diseases of Women and Children. 'Woodbridge,' New Norfolk." The Royal College of Physicians of Edinburgh would probably remonstrate with Mr. Dixey if the matter were brought officially to their knowledge.

"THE ARTHUR JEFFARES BARLOW FUND."

To the Editors of THE LANCET.

SIRS,—Kindly acknowledge in your next issue the following subscription to the fund for the widow of the late Mr. Barlow: Dr. W. Alex. Hearnden, £1 1s.

I am, Sirs, yours faithfully,

619, Holloway-road, Aug. 2nd, 1898. J. AGAR MATSON, M.D. Dub.

POISONOUS MUSTARD.

PROFESSOR CARLES, of Bordeaux, draws attention to the dangerous character of mustard as manufactured nowadays for wholesale consumption. Formerly, he says, our fathers used to prepare the condiment for themselves, making use exclusively of fine mustard flour and grape must, but gradually the process became more and more complicated and less wholesome. The first downward step was the utilisation of mustard-seed from which the oil had been extracted, but *factitis descensus Averni*, and eventually "mustard came to be manufactured without any mustard flour at all, its place being taken by any ordinary leguminous flour flavoured with pepper, allspice, ginger, and other pungent matters. Mustard, as manufactured at present in France, is usually sold in jars closely corked by the aid of machinery and further protected by means of a metallic capsule which for the most part is highly plumbiferous. As long as the jar remains unopened the contents do not sensibly deteriorate, but once the cork has been extracted a distinct source of danger arises. The cork having been originally inserted under pressure is difficult to replace and, generally speaking, the housewife discards it, contenting herself with the protection afforded by the capsule. The latter thus directly exposed to the acetic vapour quickly grows oxidised, a more or less basic acetate, amorphous or crystalline, being formed which adheres so loosely to the metal that at the slightest shake it falls back into the jar. The acetate of lead is white and sweetish, so there is nothing to draw the consumer's attention to its noxious character. He swallows it heedlessly and should he be a habitual mustard-eater runs a considerable risk of lead poisoning. Professor Carles's advice in conclusion to all mustard-eaters is to reject the brands the capsules of which become lined either with minute crystals or with a white powder.

FORBEARANCE RECOMMENDED.

To the Editors of THE LANCET.

SIRS,—I should very much like your opinion on the ethics of the enclosed letter which was written to the board under which I hold the parish appointment. The facts of the case are shortly these: A man was attended by Mr. ——. The man then got a parish order and sent for me. I went and saw him and recommended removal to a hospital and said that I would treat him till the removal was arranged. They never fetched the medicine and they never sent me any word whether he had gone to the hospital or whether he was better or worse. The next thing I heard about the case was when the letter enclosed was sent me. Of course I did not visit him a second time as they had not sent for any medicine, or requested me to do so.

I am, Sirs, yours faithfully,

July 30th, 1898. THE POOR LAW MEDICAL OFFICER.

[ENCLOSURE.]

The Chairman of Board of Guardians ——. July 5th, 1898.

DEAR SIR,—I wish to move a complaint respecting —— —— of ——. A fortnight ago the medical officer for the parish saw —— —— and has not seen him since. The man is in a serious condition. It was a hospital case and the man ought to have been admitted before, at present he is in too serious a condition to be moved. I have been attending the poor man, but I do not see why I should attend parish cases without fee. If the parish is too large for one medical officer why not divide into districts? I am on the border of the parish and could do the work in this district.

Yours faithfully,

(Signed) —— ——.

*** The suggestion should not have been made by the practitioner that he would be happy to supersede the parish officer in part of his work. He was probably in ignorance of the circumstances and it would be unfortunate if the occurrence led to any personal ill-feeling between neighbouring gentlemen of the same profession.—ED. L.

ATTENDANT OR ADVISER.

To the Editors of THE LANCET.

SIRS,—The words "medical attendant" have been applied to medical men for many years by medical journals as well as by the public. Why medical men have allowed themselves to be addressed in this manner I am at a loss to understand. The word "attendant" is generally used in reference to servants in lunatic asylums and other establishments and is most confusing to the public who do not know whether it is the doctor or the servant to whom the term "attendant" has been applied. We never hear of clergymen or lawyers being addressed as attendants; they are called advisers. We cannot expect the public to respect us if we do not respect ourselves.

I am, Sirs, yours faithfully,

July 25th, 1898. MEDICAL ADVISER.

"A POINT UNDER THE EMPLOYERS' LIABILITY ACT."

To the Editors of THE LANCET.

SIRS,—With reference to the query of "A Hospital Surgeon" in THE LANCET of July 30th, *re* the power of entry to a hospital or private house by the employer's surgeon for the purpose of examining the injured person, &c., and your comment thereon which states that there is no obligation upon the patient to submit to it, there seems to be considerable confusion in the minds of your correspondents as between the "Employers' Liability Act, 1880," and the new Act, the "Workmen's Compensation Act, 1897." These are very different Acts both in title and working. If in your reply you mean the former Act "the Employers' Liability Act, 1880," no doubt your reply is correct enough. True, neither of the above, nor any other Acts, confer the power of entry into a hospital or private house for the purpose of such an examination without the occupier's consent, but with reference to the medical examination under the Workmen's Compensation Act, 1897, the patient "*(d) must submit to medical examination.* In order to prevent a fraudulent claim or as far as possible any malingering on the part of the injured workman it is enacted by the First Schedule that any workman who has given notice of an accident shall, if required by the employer, submit to an examination by a duly qualified medical man provided and paid by the

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employer. If he refuses to submit to such an examination or obstructs it his right to receive compensation is to be suspended until such examination takes place. Schedule 1 (3). A similar readiness to submit to medical examination in this case either at the request of the employer or at the request of any person by whom the employer is entitled to be indemnified under the Act, is required from the workman from time to time whilst he is in receipt of weekly payments under the Act, subject to a like penalty in case he refuses or obstructs the examination. In this latter case if the workman objects to the employer's medical man or is dissatisfied with his certificate he may submit himself to one of the medical men appointed by the Government for the purposes of this Act, whose certificate is to be final and conclusive. Schedule 1 (11)." ("Ruegg's Employers' Liability and Workmen's Compensation," third edition, 1898. Butterworth & Co., Fleet-street, E.C. Price 10s. 6d.) A copy of the above Acts may be obtained for a few pence at any law stationer's.

I am, Sirs, yours faithfully,

Ilford, July 31st, 1898. MURTAUGH HOUGHTON, M.R.C.S. Eng.

"INCARCERATION OF THE PENIS."

To the Editors of THE LANCET.

SIRS,—A case almost precisely similar to that recorded by Dr. Theodore Floras (vide THE LANCET of July 23rd) came under my notice in the Bedford General Infirmary some three years ago. A man, aged forty-five years, had slipped the iron ferrule of a hoe or some such agricultural implement over the whole length of his penis "early in the morning." He was brought to the infirmary about 9 P.M. the same day in great distress, the organ enormously elongated, tense, blue-black in colour, and so suggesting a piece of strangulated intestine. The constricting iron band would not yield to any such instrument as bone-cutting forceps on account of its thickness and its situation prevented the employment of a file. Finally with difficulty a broad-grooved director was forced through the ferrule, and with the aid of a friend, a practical engineer from a neighbouring foundry, the metal was divided posteriorly with a keyhole finger saw. This done we found the ring too rigid to be bent back upon itself and so we had to continue the sawing anteriorly. After three hours' work the ferrule was removed in two halves. There was considerable loss of skin, especially over that part of the urethra which had been indented by the iron, and the resulting ulcer was a month in healing; no catheterism was necessary and the organ returned to its natural size in ten days' time. No stricture followed. The ferrule was 1¼ in. long, the same in diameter, ⅛ in. thick, and weighed nearly 2 oz.—I am, Sirs, yours faithfully,

Bedford, Aug. 3rd, 1898. G. H. GOLDSMITH, M.B. Cantab.

THE COLOUR OF NEGRO CHILDREN WHEN BORN.

IN the editorial columns of *Pediatrics* of July 1st it is remarked on the authority of Dr. Farabery, "whose statement will doubtless be supported by many medical practitioners who have had experience in negro obstetrical practice," that the negro baby at the time of its birth is of exactly the same colour as its white brother, and it shows signs of colour only after an interval usually of several days but often extending to many weeks. The evidence of a French physician, founded on experience obtained at a Soudanese village exhibited in Paris, was to the effect that the negro baby comes into the world a pale pink colour, the second day it is lilac, ten days afterwards it is of the colour of tanned leather, and at fifteen days it is chocolate-coloured.

THE PRINCE OF WALES'S TRAVELLING COUCH.

THE special carrying couch for the removal of the Prince of Wales from Marlborough House to the Royal yacht *Osborne* stationed at Portsmouth was constructed by Mr. John Carter, of New Cavendish-street, to whom it must be a great source of pleasure to learn that his appliance gave every satisfaction to the Royal patient.

A. B. C.—Since the researches of Döderlein and others have demonstrated the important part played by the vaginal secretion in the prevention of septic infection the tendency has been to limit the number of midwifery cases in which it is either necessary or desirable to employ vaginal or uterine douches. But a certain number of cases will be met with from time to time in which it may be advisable to use a douche; such cases, for instance, as are attended by some abnormality or in which the patient likes the sensation of comfort and cleanliness afforded by a daily vaginal injection. In these cases an irrigator should always be employed and it will be found if the can be suspended at a height of 3 ft. or so above the level of the patient's body that the pressure will be ample without being at all excessive. A metal Budin's intra-uterine tube should be employed. It admits of ready cleansing by boiling, and by its horseshoe shape allows of a free reflux of fluid from the uterus. A safe and at the same time efficient antiseptic to use is a solution of liq. io li of the strength of from 1 or 2 drachms to the pint of water. If perchloride of mercury be preferred the rule never to use it stronger than a solution of 1 in 1000 for the external genitalia, 1 in 2000 for the vagina, and 1 in 3000 for the uterus must be strictly adhered to, and care must be taken by compressing the uterus and by retracting the perineum to ensure that none of the solution be retained. Other antiseptics which may be employed either for the vagina or the uterus are carbolic acid solution of the strength of 1 in 80, or creolin of the strength of half a drachm to the pint of water.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (13th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 4th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 29	29·95	N.	...	98	61	55	55	59	Cloudy
,, 30	30·21	N.E.	...	111	65	53	51	56	Cloudy
,, 31	30·29	W.	...	116	81	50	58	64	Fine
Aug. 1	30·09	W.	...	127	81	55	59	64	Cloudy
,, 2	30·02	W.	...	120	80	57	58	62	Cloudy
,, 3	29·90	W.	0·03	120	76	59	60	65	Fine
,, 4	29·99	N.W.	...	106	70	54	57	61	Fine

During the week marked copies of the following newspapers have been received: *Dewsbury Reporter, East Essex Times, Hull Daily Mail, Derby Daily Telegraph, Times of India, Pioneer Mail, South Wales Daily News, Todmorden Advertiser, Lancaster Guardian, Architect, West Middlesex Herald, Brighton Gazette, Sussex Daily News, Ayrshire Post, Scotsman, Warwick Advertiser, Builder, Yorkshire Post, East Anglian Times, Portsmouth Times, Citizen, Dundee Advertiser, Cheltenham Mercury, Leeds Mercury, Driffield Observer, Hampshire Post, Cambridge Chronicle, Yarmouth Advertiser, Bristol Mercury, Wigan Examiner, Lowestoft Standard, Lynn Advertiser, Liverpool Daily Post, Luton Reporter, Leicester Post, Birmingham Gazette, Manchester Guardian, Tunbridge Wells Courier, Boston Guardian, Morning Leader (London), Shrewsbury Chronicle, Beverley Guardian, Batley News, Bridgwater Independent, Blackpool Gazette, Le Courrier de la Presse, Sanitary Record, Mining Journal, City Press, Local Government Chronicle, Hertfordshire Mercury, Reading Mercury, Surrey Advertiser, Local Government Journal, Longton Weekly Herald, Bideford Weekly Gazette, Dunstable Borough Gazette, Guernsey Star, Ulverston Advertiser, Poole Herald, Banffshire Advertiser, Elgin Courant, Crowle Advertiser, Pembroke Dock Gazette, Public Health, &c. &c.*

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Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; "Amiral" Soap Syndicate, Lond., Secretary of; A. J.

B.—Dr. J. Buchanan, Watford; Messrs. Bulley and Son, Liverpool; Messrs. Burroughs, Wellcome, and Co., Lond.; Bristol Royal Hospital for Sick Children, Secretary of; Messrs. Burgoyne, Burbidges, and Co., Lond.; Messrs. Barber and Co., Derby; Mr. C. Birchall, Liverpool.

C.—Mr. W. H. Cooke, Sutton; Messrs. F. Comar and Son, Lond.; Cantab, Lond.; Cortland Wagon Co., Lond.; Cumberland Infirmary, Carlisle; Dr. J. Collier, Lond.; Dr. J. B. Coleman, Dublin; Carnarvonshire, &c., Infirmary, Bangor, Secretary of; Mr. T. Cooke, Lond.

D.—Devonshire Hospital, Buxton.

F.—Messrs. Fletcher, Fletcher, and Co., Lond.; Messrs J. Feeney and Co., Birmingham; Dr. A. Foxwell, Birmingham; Messrs. Fannin and Co., Dublin.

G.—Dr. J. T. Grant, Edinburgh; Miss L. E. Groom, Bridgenorth.

H.—Dr. J. B. Henderson, Waltham Abbey; Dr. H.; Dr. C. Holman, Lond.; Mr. J. Heywood, Manchester; Dr. W. S. Hedley, Farnham.

J.—J. B.

K.—Messrs. R. A. Knight and Co., Lond.

L. Dr. E. E. Laslett, Bolton; Mr. A. J. Lappin, Gilford; Dr. G. M. Lowe, Lincoln.

M.—Dr. W. J. McCardie, Birmingham; Metropolitan Hospital Fund, Lond., Secretary of; Mountjoy Brewery Co., Dublin; Messrs. Major and Co., Hull; Medical Society of Victoria, Melbourne, Secretary of; Mr. J. J. Murray, Lond.; Dr. J. Ross Macmahon, Lond.

N.—Mr. D. Newman, Glasgow; Messrs. Neyroud and Son, Lond.

O.—Dr. T. Oliver, Newcastle-on-Tyne.

P.—Mr. O. F. Paget, Grantham; Mr. F. Passmore, Lond.; Lieutenant-General Arthur Phelps; Parish of Evie and Rendall, Inspector of Poor of; Mr. T. B. Parker, Philadelphia, U.S.A.; Mr. Y. J. Pentland, Edinburgh; Dr. W. H. Price, Hebburn-on-Tyne.

R.—Mr. J. Ritchie, Lond.; Royal College of Physicians, Lond., Registrar of; Mr. W. Reeve, Manchester; Mr. F. A. Rogers, Lond.; R. C.; R. B.

S.—Mr. G. Stocker, Lond.; Mr. J. Stewart, Edinburgh; Dr. Stephen Smith, New York; Mr. H. S. Smith, Bulawayo; Dr. J. Shardlow, Lond.; Mr. L. Stephens, Emsworth; Salford Royal Hospital, Secretary of; Mr. H. S. Stranger, Penmaen; Surgical Supply Association, Manchester; Mr. G. H. Salter, Ballan, Victoria, Australia; Dr. W. L. Smyth, Bournemouth; Society of Trained Masseuses, Lond.; Mr. J. Snell, Gargrave; *St. Louis (U.S.A.) Medical Gazette*, Editor of; Dr. P. B. Smith, Aberdeen; Messrs. Sykes, Josephine, and Co., Lond.; Surgeon, Edinburgh; Scientific Press, Lond.; Stockton and Thornaby Hospital, Stockton-on-Tees, Secretary of.

T.—Taunton and Somerset Hospital, Secretary of; T. J. F.

U.—University of London, Registrar of.

W.—Dr. R. F. Walters, Lond.; Mr. W. A. Webb, Edinburgh; Dr. J. Wilson, Haverfordwest; Mr. W. Southey Wright, Carshalton; Dr. H. W. Webber, Plymouth.; W. T. A.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. Altschul, Lond.; Messrs. Arnold and Sons, Lond.; Messrs. J. and R. Archibald, Tillicoultry; A. V. W.; Dr. J. P. Aitchison, Blackburn; A. G.; Apollinaris Co., Lond.; A. M. St. J. W.; A. L.; Mr. J. W. Arrowsmith, Bristol.

B.—Dr. W. H. Bishop, Wylam-on-Tyne; Mr. J. L. Bond, Ukiah City, California; Mr. H. Butterfield, Northampton; Bradford Children's Hospital, Secretary of; Bury Dispensary Hospital, Secretary of; Mr. G. F. Burd, Saddleworth.

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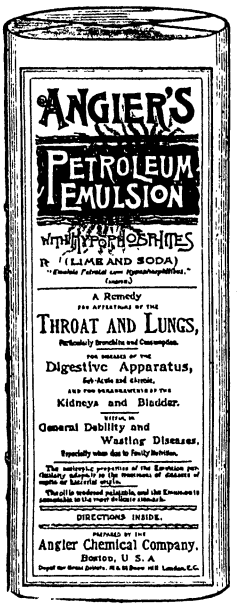
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An Address

ON

TONE SENSATION WITH REFERENCE TO THE FUNCTION OF THE COCHLEA.

Delivered at the Opening of the Section of Physiology at the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY WILLIAM RUTHERFORD,
M.D. EDIN., F.R.S.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF EDINBURGH; PRESIDENT OF THE SECTION.

GENTLEMEN,—There are few chapters in physiology so interesting as that in which Johannes Müller in his "Elements of Physiology" discusses certain preliminary considerations relating to the general physiology of the senses, and expounds his classical theory of the specific energies—or, as we should now rather say, specific activities—of the sense organs. No doubt we are all agreed that the immediate cause of the specific sensations of the different sense organs must be referred to the different modes of activity developed in the several sensory centres, but how it comes about that the activity of cells in the auditory centre impresses our consciousness with a sense of sound, while that of cells in the vision centre impresses us with a sense of light is, as Müller stated, a "problem incapable of solution."

I am not going to discuss the production of specifically different qualities of sensation, but the production of different qualities of the same kind of sensation. This aspect of the question presented itself to Müller in the early years of this century (1826), as it had done to Newton a century earlier (1704). Although Newton was an opponent of the undulatory theory of light, strange to say he suggested an undulatory theory of nerve action in attempting to explain the production of different colour sensations. He supposed that light induces vibrations in the retina that are transmitted to the brain and there give rise to colour sensations that differ according to the length of the incoming vibrations. In referring to Newton's idea Müller observed that "such a hypothesis if at all tenable would find its first application in accounting for the different sensations of which a single sense is susceptible; for example, in explaining how the sensorium receives the different impressions of red, yellow, and blue and of acute and grave tones," but "that it is only with this application that the hypothesis is worthy of regard."[1] These thoughtful words of Müller were set aside and his theory of specific activities extended to the hypothetical explanation of different qualities of the same kind of sensation, first by Natanson in 1844, then by Helmholtz[2] in 1862, and afterwards by Hermann. The extended theory was so well stated by Hermann[3] in the edition of his "Physiology" published in 1878 that I cannot do better than quote his words: "It is necessary to ascribe to the stimulation of different nerve-fibres the different qualities of any given sensation; for example, the sensations of red and blue, of high and low tones, and hence to suppose that the specific energy of certain fibres aids in the perception of red, while that of others aids the perception of blue, for if it were not so we would be compelled to assume that one and the same nerve-fibre is capable of states of excitement that differ in quality, an assumption hitherto unsupported by facts. There must therefore be at least as many sensory fibres as there are simple qualities of sensation." Although this extension of Müller's theory originated with Natanson its general acceptance and persistent vitality is mainly due to the great influence of Helmholtz.

I had thought that we might perhaps on this occasion discuss the production of different qualities of the same kind of sensation as regards the senses generally, but I became convinced that the subject is too extensive to be taken up at one meeting. I therefore propose to confine myself to the sensations of tone. At the meeting of the British Association held in Birmingham in 1886 I gave a popular evening lecture on the Sense of Hearing in which I proposed a new theory of tone sensation in opposition to the well-known theory of Helmholtz. A short abstract of my lecture appeared in the *Journal of Anatomy and Physiology*[4] at that time, but although my theory has been accepted by a few physiologists, the majority, if I may judge from all the German textbooks and some of those by British and American authors, still adhere to the Helmholtz theory, although there are evident signs that the implicit faith so long prevailing is gradually growing weaker. I deem this a suitable opportunity for submitting my views on this subject to those who have specially studied anatomy and physiology and are able to criticise the opinions I may express. In so doing I must bear in mind that I may be addressing some who are engaged in the practical departments of medicine and who are on that account scarcely so familiar with anatomical and physiological detail as some of us are. I shall therefore endeavour to be as explanatory as may be compatible with brevity in discussing a complicated subject. Although our auditory sensations are highly complex we know that the physical agent by which they are induced is simply the increase and diminution of pressure characteristic of the waves of sound; and happily we now know that in all animals the peripheral mechanism adapted for the reception of sound essentially consists of modified epidermic cells with hair-like processes by which the sound vibrations are transmitted to the cells and the auditory nerve impressed.

STRUCTURE OF THE COCHLEA.

We are all deeply indebted to Gustav Retzius[5] for the splendid illustrations and elaborate descriptions he has given of the structure of the ear. I have found his work of the greatest value in the study of this subject. All are agreed that the cochlear canal, or scala media of the cochlea, is the terminal organ that enables us to appreciate musical sounds. In transverse section the canal is somewhat triangular and is bounded on one side by bone and on two sides by thin membranes—the membrane of Reissner, through which the sound waves enter the canal, and the basilar membrane, through which they leave it. The sound therefore crosses the canal. The basilar membrane supports the organ of Corti; I believe the membrane is nothing but a mere supporting structure, but another function so very different has been ascribed to it that I had better describe its structure minutely. Its main body consists of connective tissue fibres extending from the periosteum covering the osseus spiral lamina to that lining the outer wall of the cochlea. In all cases the chief fibres of the membrane are tense, closely adjacent, and directed across the cochlea. In man and some animals they form a single layer. In the reptile and bird there are two layers of fibres, with a narrow interval between them through which some fibres pass obliquely from the one layer to the other. In the rabbit there are two layers of fibres with connective tissue cells between them. We shall presently see how this complicated arrangement of fibres affects Hensen's theory of the peculiar function he has assigned to them. The fibres are completely covered on both surfaces of the membrane by epithelial cells. Those on the lower or tympanic surface are undifferentiated squamous cells, while those above it are in part differentiated into the organ of Corti.

We can best understand the organ of Corti by comparing its simpler structure in reptiles and birds with its more complex structure in mammals. In the crocodile, as described by Retzius, it consists of hair cells at its free surface, supported by a large number of ordinary columnar epithelial cells planted on the basilar membrane. The fibres of the auditory nerve are distributed to the air cells. Corti's membrane (membrana tectoria) covers the whole organ and the endolymph fills the remainder of the canal. In birds the structure of the Corti's organ is essentially similar to that of reptiles. That fact is of special interest because the power of appreciating musical sounds is so conspicuous in some birds. In mammals the much greater length of the cochlear canal permits of a far larger number of hair cells. Most of the supporting cells are specially modified into the pillar cells of Corti and cells of Deiters, each of them containing a stiff elastic fibre that gives a comparatively firm

[1] Elements of Physiology, Baly's Translation, London, 1842, vol. ii., p. 1072.

[2] Die Lehre von den Ton-Empfindungen, &c., 1862.

[3] Elements of Physiology, translated by Gamgee, second English edition, 1878.

[4] Vol. xxi., p. 166.

[5] Das Gehörorgan der Wirbelthiere, Stockholm, 1884.

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support to the lamina reticularis, through which the hairs of Corti's cells project. The hair cells do not reach down to the basilar membrane, but rest on the shoulders of Deiters's cells and inner pillar cells of Corti, by which they are individually supported.

Since Corti's hair cells are the true auditory terminals through which the nerve fibres are impressed their structure is of special importance. Each cell has a thin envelope enclosing a nearly fluid protoplasm with a large nucleus deeply placed near the inner end of the cell and a clear-looking body termed Hensen's corpuscle near its free end. About twenty short, stiff, rod-like hairs project from the free extremity of each cell, their inner ends passing a very short way into the cytoplasm. Nerve fibrils terminate around the inner ends of the hair cells. Retzius was unable to trace them into the cells, but there must at all events be physiological continuity between the cell substance and the nerve. Since the sound waves reach the hair cells through Corti's membrane the nature of that membrane and its relation to the hairs are therefore important. At the apex of the bird's cochlea Corti's membrane has been shown by Retzius to be simply an otolith consisting of a soft organic matrix laden with calcareous particles. But throughout the completely developed portion of the cochleal canal the membrane contains no calcareous matter and is therefore better adapted for the transmission of vibrations. Retzius describes it as "homogeneous and semi-gelatinous" and states that the auditory hairs either project into or are in contact with it. If that be their anatomical relation the membrane and hairs must vibrate as one mass, like the membrane and ossicles of the tympanum. In the mammalian ear Corti's membrane consists of laminæ of homogeneous fibrils. In the cat a hem runs along the lower surface of the membrane next the hair cells. The inner margin of the membrane is firmly attached to the epithelium covering the spinal lamina, while its outer margin is loosely attached to Corti's organ external to the hair cells. The outer attachment is so slender and easily ruptured that the membrane is most commonly detached from Corti's organ in making sections. It is therefore difficult to be certain of the anatomical relation between the membrane and the hairs in the mammal, but probably they are in close relation, so that membrane and hairs may vibrate as one.

STIMULATION OF THE AUDITORY NERVE.

When the sound wave in its phase of condensation arrives in the scala vestibuli it is transmitted through Reissner's membrane to the fluid in the cochlear canal, thence through Corti's membrane, Corti's organ, the basilar membrane, to the fluid in the scala tympani and membrane of the fenestra rotunda. All these parts oscillate back again in the rarefaction phase of the wave. It is admitted that the wave arrives at Corti's organ throughout the whole length of the cochlear canal at practically the same moment. The short, stiff, auditory hairs probably transmit the vibrations of Corti's membrane to Corti's cells in the same manner that they are transmitted by the columella of the bird's tympanum from the membrana tympani to the membrane of the oval fenestra.

What is the precise function of Corti's cells? Do the sound vibrations induce chemical discharges within them that stimulate the nerve ends? If such were their mode of action we may reasonably suppose that they would have required a liberal blood-supply to maintain active chemical change, like the visual terminals in the retina. But, as a matter of fact, there is not a blood capillary in Corti's organ. Its lymph-supply is obtained from capillaries at some distance and its renewal probably takes place slowly. It therefore seems reasonable to dismiss the idea of any special chemical action in Corti's cells and to assume that their action is probably mechanical. Since the terminals of tactile nerves in the cutaneous touch corpuscles are stimulated by pressure without the aid of any intervening cells it is reasonable to suppose that in the ear the sensory apparatus is stimulated mechanically by the alternations of pressure in the sound waves. This view is supported by the observations of Ewald[6] that after complete destruction of the labyrinth and tympanic apparatus on both sides of the head in the pigeon the animal still gives signs of hearing sounds made at a distance, although care is taken to obviate any effect on the nerves of touch. But all signs of hearing disappear if the auditory nerve is destroyed on both sides by the local application of arsenical paste or croton oil. The inference, therefore, is that the fibres of the auditory nerve can be stimulated directly by sound conducted by the bones of the head. But although the auditory nerve detached from its terminals can be stimulated by sound, are we to conclude that Corti's cells are superfluous and that the sound may stimulate the nerve fibres in the organ of Corti directly? We might as well say that touch bodies in the fingers are superfluous because the ulnar nerve can be stimulated by pressure at the elbow. Hair cells appeared as the auditory terminals at so early a stage in the evolution of the animal kingdom that their intervention between the sound vibrations and the nerves must be essential for their proper stimulation. But one cannot tell whether they are simply transmitters of sound vibrations to the nerves or whether the sound vibration, as we know it, is within the protoplasm of Corti's cells translated into that unknown form of molecular vibration termed a nerve impulse.

TONE SENSATIONS.

Our auditory sense excels all others in the power of distinguishing different qualities of sensation. It can distinguish tones varying in pitch from 16 or 20 vibrations to 40,000 or even 60,000 vibrations per second. A good violinist can detect about 50 differences of pitch within the range of a semitone, implying that he can feel a difference due to half a vibration. But in some highly-trained ears the sensitiveness is even greater, so that differences of pitch due to a quarter or even one-sixth of a vibration can be felt throughout the ordinary scale (Luft).[7] How are we enabled to appreciate differences of pitch? As we all know, Helmholtz supposed that the same nerve-cell cannot give us two different sensations even of the pitch of tone and therefore a separate nerve-fibre and cell must be impressed to enable us to hear tones differing by, it may be, only the fraction of a vibration. This was his extension of doctrine of specified activities to explain the different qualities of tone sensation. To render his theory feasible he supposed that the cochlea must contain an immense number of minute resonators capable of severally responding by sympathetic vibration to all the tones we can hear. Each cochlear resonator was supposed to stimulate its own special nerve-fibre and this in turn its own cell in the brain. When he advanced that theory in 1862 the structure of Corti's organ was so imperfectly understood that Corti's pillars were supposed to be the nerve terminals. They increase very slightly in length from base to apex of cochlea (from 0·06 mm. at the base to 0·1 mm. at the apex), yet Helmholtz deemed that small difference sufficient for his theory. But when it was ascertained that no pillars of Corti occur in the bird's cochlea, and that in the mammal they are mere supporting structures apparently unconnected with nerves, the theory of their function as resonators had to be abandoned.

But the resonance theory was not allowed to drop. Hensen came to its support with a new suggestion. He showed that the fibres of the basilar membrane increase slightly in length from base to apex of cochlea and that they may play the part of resonators for tones of widely different pitch, although the shortest fibres are only about ⅛ mm. and the longest about ½ mm. in length. But the fibres are so heavily damped by layers of cells cemented to them on both surfaces of the membrane and along their whole length that they are ill-adapted for resonance. Hensen thought that the basilar fibres run parallel with each other and that they lie in a single layer like piano strings; but in the bird's cochlea there are two layers of fibres and irregular fibres running between them. It is impossible that systems of fibres so arranged can severally act as resonators. A nightingale would scarcely be able to learn its songs if it had to rely on the individual vibration of basilar fibres to enable it to appreciate tones of different pitch. But another argument strikes me as cogent against Hensen's theory. If Corti's membrane had consisted of a single layer of tense parallel fibres, each cemented to the hairs of a series of Corti's cells and varying much in length throughout the cochlea, Helmholtz and Hensen would not have been so unreasonable in ascribing stimulation of Corti's cells to a segmented vibration of the superjacent fibres. But the sound waves first encounter the comparatively lax membrane of Corti and after affecting the hair cells reach

[6] Der Acusticus Stamm ist durch Schall erregbar, Berliner Klinische Wochenschrift, 1890, Band 32, p. 721.

[7] Ueber die Unterschieds-empfindlichkeit für Tonhöhen, Wundts Philosophische Studien, Band iv., p. 511.

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the heavily damped subjacent basilar membrane, which is surely in a most unfavourable position for sound analysis.

I have observed in Ziehen's "Physiological Psychology"[8] that Corti's membrane is substituted for the basilar membrane in alluding to Hensen's theory. No one, so far as I know, has ever ascribed a power of sympathetic response to the fibrils of Corti's membrane. It is not a tense membrane; its fibrils are in laminæ and in the bird it is semi-gelatinous. Nor has anyone ascribed to the short rod-like hairs of Corti's cells the power of selective and sympathetic vibration. I believe they are the mere transmitters of all vibrations, whether simple or complex, to Corti's cells. I submit, therefore, that the minute structure of the cochlea places insuperable difficulties in the way of Helmholtz and Hensen's theory and I cannot but think that if Helmholtz had known the structure of the cochlea in mammals, but more especially in birds as described by Retzius, the resonance theory would never have been proposed.

But there is a physical defect in the theory of Helmholtz which he entirely overlooked; for example, if we sound three tuning-forks, giving the notes of a common chord—say C, E, G—each fork produces a simple tone due to a series of simple vibrations. The three sets of vibrations are compounded and enter the cochlea as a compound vibration. But although we have the compound sensation of a harmony we can discriminate its three constituent tones. Helmholtz inferred that the cochlea must analyse the compound vibration and that three sets of terminals and at least three different sensory cells in the brain must be affected. Harmony, however, depends on the relative frequencies of vibrations. It is strictly determined by the mathematical ratios of numbers. In the common chord of C, E, G, the numbers are 264, 330, 396 vibrations per second. Helmholtz never supposed it possible for the cochlear resonators to send these or any such numbers of impulses along their respective nerve-fibres. He abandoned the mathematical cause of harmony at the cochlea and imagined that it could be accounted for by the specific activities of cells in the auditory centre. When he published his book on "Tone Sensations" in 1862 he cannot have been impressed by a passage in Fechner's "Psycho-physics"[9] published two years previously (1860), containing these significant words: "The first, the fundamental, hypothesis is that the activities in our nervous system on which the sensations of light and sound functionally depend are—no less than the light and sound themselves—to be regarded as dependent on vibratory movements."

Helmholtz, in his book on the "Sensations of Tone," gives no evidence that he ever sought to determine how many impulses per second can be transmitted along a nerve; on the contrary, he shows quite clearly that he dismissed the subject without experiment. You can readily verify my statement by examining page 253 of the third edition of his work translated by Ellis and published in 1875.[10] Yet eight years before that edition appeared, his own assistant, Bernstein,[11] had made his researches on the nerve impulse by means of his differential rheotome and had ascertained that the electrical change which accompanies the transmission of a nerve impulse lasts only $\frac{1}{1000}$th of a second (0·0007 second) even when the nerve is powerfully stimulated. Therefore, even when tested in that manner 1400 perfectly discrete impulses can be transmitted per second in a frog's sciatic nerve. But Bernstein's method of experiment, though highly ingenious, is far too crude to inform us of the limit to the frequency of the impulses that a nerve is capable of transmitting. The question is, if a nerve can transmit, say, 1400 perfectly discrete impulses per second, is there any reason why it should be supposed incapable of transmitting 14,000 or even 40,000 per second to produce the highest audible tones? I imagine that if Bernstein had made his experiments before Helmholtz published the first edition of his book he could not have abandoned the mathematical cause of harmony at the cochlea, but must have believed that the vibrations produced by the several tones of a chord are continued into the brain. I believe he would have adopted this view of the matter even though he adhered to his theory of cochlear analysis.

THEORY OF HEARING SUGGESTED BY THE TELEPHONE.

Eighteen years ago (1880), while thinking over the great difficulties that beset the resonance theory, it occurred to me that the telephone might by analogy help us to better understand the action of the cochlea. The telephone transforms sound vibrations, however complex, into electrical currents of corresponding frequency, amplitude, and wave form, and these in turn are re-transformed into sound vibrations similar to those received. The theory of hearing which I was led to propose is that there may be no analysis of sound in the cochlea; that all the hair cells may be affected by every sound, simple or complex, and through them the sound waves translated into nerve vibrations of corresponding frequency, amplitude, and wave form; that in the sensorium the nerve vibrations give rise to sensations varying in quality with that of the incoming impulses. My theory has been termed the telephone theory of hearing, and no doubt it is a convenient term to distinguish it from the resonance theory, but I wish it to be understood that I never regarded the hair cells as transforming the mechanical vibrations of sound into an entirely different mode of motion analogous to electricity. The essential point in my theory is simply this, that there is no analysis of sound waves in the cochlea. Theoretically a single hair cell, nerve fibre, and sensory cell should suffice to give us all the different sound sensations; but probably the great number of auditory terminals and sensory cells renders us far better able to feel slight differences in the quality of sounds. My theory of tone sensation has the advantage of carrying the physical cause of harmony into the auditory centre, and the validity of the argument I advanced in 1886 was afterwards proved by Hermann by experiments on the production of differential tones.[12] When two discordant tones are simultaneously produced a beat is heard, and if the vibrational difference between the two primary tones be sufficiently great the successive beats give rise to the sensation of a third tone whose pitch is the vibrational difference between the two primary tones; for example, if the primary tones have respectively 880 and 1056 simple vibrations—namely, notes A^1 and C^2—the pitch of the beat tone is 176 simple vibrations—namely, the note F.

Hermann produced the two primary tones from two tuning-forks, with a third fork at rest, but capable of consonating to the beat-note if it had been produced objectively, but the third fork remained unaffected, although the observer heard the beat-tone loudly. He therefore concluded that if the beat-tone failed to excite a resonator outside the ear it could not affect any supposed resonator in the cochlea; consequently it must be a purely subjective phenomenon arising from the conflict of vibrations in the auditory centre. That experiment, which has been fully confirmed, proves that the auditory nerve transmits to the sensorium vibrations of the same frequency as the sound waves and that they produce in the auditory centre harmony or discord, according to their relative numbers. Hermann's conclusion from these experiments is "that there is no alternative but to drop the Helmholtz hypothesis of resonators in the ear, although so elegant."

Although the telephone theory of the action of the cochlea enables us to understand the production of sensations of harmony and discord it still leaves much that is in the highest degree obscure. The discrimination of pitch is a great difficulty. We all know that it varies greatly in different persons. Those who have little or no ear for music have been found unable to observe any difference of pitch between C and E of the scale, although there is an interval of 66 vibrations between them. On the other hand, a musician with an extremely good ear may by practice become so sensitive to pitch that he can detect a difference due to one-fifth of a vibration even when the vibrational frequency is 1000 per second. That fact is all the more remarkable, because when the vibrational frequency rises above 500 per second we cannot detect the individual vibrations, although we can readily feel a change in the sensation. The accurate and refined appreciation of pitch seems therefore to imply an exceptionally perfect molecular state in the cells of the auditory centre; but how it is that the consciousness is so sensitive to changes in vibrational frequency when the

[8] Leitfaden der Physiologischen Psychologie, third edition, Jena, 1896, p. 75.
[9] Element der Psychophysik. 1860. Second edition, 1889, Part ii., p. 282.
[10] On the Sensations of Tone, &c., translated from the third German edition by Ellis, London, 1875.
[11] Über den zeitlichen Verlauf der negativen Schwankung des Nerven Stroms, Pflüger's Archiv, 1868, Band i., p. 173.
[12] Zur Theorie der Combinations-töne, Pflüger's Archiv, 1891, Band xlix., p. 499.

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individual vibrations are no longer perceptible must remain a mystery.

Galton's whistle is now frequently used by aurists for testing the upper limit of tone sensation. The pitch of its note can be readily varied by a screw which alters the length of the tube of the instrument by very fine degrees within a range of 12 mm., by which a series of high tones can be obtained with vibrational numbers from nearly 6500 to 84,000, making a range of three and a half octaves above G^4, its lowest note. In using the whistle I find it best to hold it about 2 feet away and somewhat in front of the meatus, for if held too near the puffs of the air produced by squeezing the elastic bag distract the listener during the production of very high tones. In an experiment on three persons with very acute hearing I found that A. heard the pitch of the note rise until the tube was shortened to 1·5 mm., but heard no higher tone. B. could detect changes of pitch until it was shortened to 1·45 mm., but when shortened below 1·4 mm. he heard no tone. C. could detect changes of pitch until the tube was shortened to 1·4 mm., but heard no note when shortened below 1·3 mm. According to the scale accompanying the instrument made by Spiller, London, 56,000 vibrations are produced when the tube is 1·5 mm. in length and at least 60,000 when it is shortened to 1·4 mm. I was surprised at the accuracy with which the listeners detected changes of pitch produced by turning the screw only 0·01 or 0·02 mm. when tones so excessively high were produced. The highest appreciable tone has been stated by Luft to be 41,000 vibrations, but Galton's whistle shows that far higher tones can be accurately distinguished.

Another difficulty is the discrimination of the constituents of complex auditory sensations. How are we enabled to distinguish the several tones of a harmony, since their vibrations are compounded and so arrive at the auditory terminals? Helmholtz believed it impossible to explain our discrimination of the three tones of a chord unless the cochlea analyses the compound vibrations into its three component sets of simple vibrations and transmits their effect to at least three different nerve fibres. But I have argued that the theory of cochlear analysis is attended by insuperable difficulty. It seems to me that we are compelled to entertain the theory that there can be no cochlear analysis and that sound waves, however complex, are translated into nerve vibrations of like complexity which produce in all the cells of the auditory centre a sensory impression that is, so to speak, the representation of the complex vibration. By education and experience we have acquired the power of recognising complex tone impressions such as the vowel sounds without being able to discriminate their components. We all know how laborious it has been for the mathematician to analyse the phonographic curves of the vowel sounds and show what their constituents really are. And we know also that, although our auditory sense has been supposed to have the help of a marvellously perfect instrument of sound analysis in the cochlea, it has not enabled us to discriminate the constituents of the vowel tones, which I think it ought to have done if each constituent tone were, so to speak, ringing up its own nerve cell.

The power of discriminating the components of complex tone sensations such as we receive from an orchestra is, I believe, acquired by practice, and the very fact that it is so difficult to acquire and so rarely acquired to any remarkable degree appears to me opposed to the theory of cochlear analysis and favourable to the theory of tone sensation which I have proposed.

PRESSURE PATTERN THEORY OF THE ACTION OF THE COCHLEA.

A somewhat different theory of the action of the cochlea was proposed by Dr. Waller[13] in 1891. He is disposed "to regard the basilar membrane as a long narrow drumhead repeating the complex vibrations of the membrana tympani and vibrating in its entire area to all sounds—although more or less in some parts than in others—giving what we may designate as acoustic pressure patterns between the membrana tectoria (Corti's membrane) and the subjacent field of hair cells. In place of an analysis by consonation of particular radial fibres (of the basilar membrane) it may be imagined that varying combinations of sound give varying pressure patterns comparable to the varying retinal images of external objects." I own that I have had great difficulty in seeing how the action of the cochlea is to be explained in Dr. Waller's theory. If the hairs of Corti's cells are to be subjected to different pressures in different parts of the cochlea dependent on the unequal vibration of a tense membrane it seems to me that such a membrane ought to be undamped and placed in contact with the hairs of Corti's cells on the side of the entering sound. But the basilar membrane is heavily damped and is reached by the sound wave only after having traversed Corti's cells. I have already used this argument against Hensen's theory and it seems to me to be no less applicable to that under consideration. But all our theories are open to criticism on a subject so obscure; none of us can say that we have a theory capable of explaining all the facts which have been ascertained regarding the cochlea, and this will become very evident when I have alluded to the results of experiments on animals and pathological observations on man.

[13] Human Physiology, third edition, 1896, p. 474.

EXPERIMENTS ON ANIMALS.

An elaborate series of experiments was performed on dogs by Baginsky[14] of Berlin. His method was to render the animals completely deaf in one ear by destroying the cochlea on that side. He then, in one series of experiments, destroyed the apical portion of the remaining cochlea and in a second series he broke away part of the promontory and destroyed the adjacent portion of the spiral lamina. The inflammatory processes which followed the operation caused many experiments to fail, but in some cases he succeeded in obtaining results that seemed to him reliable. The sensitiveness of the animals to tones of different pitch was tested by air conduction of the tones of pipes. They were completely deaf for some days after the operation, but most of them recovered their hearing to some extent. Their audition was minutely studied for several weeks, after which they were killed and microscopic sections made of the cochlea to determine the extent of the lesion and the condition of the uninjured portion. When he destroyed the apical turn and the greater part of the middle turn of the remaining cochlea the animals after being totally deaf for five or six days gave signs of hearing the very high tones C^5 and C^4. In the course of the second week they were affected by somewhat lower tones, such as C^3, but seldom by C^2, so that they were deaf to all the tones of a bass voice and all the chest notes of an ordinary tenor voice. The necropsy showed that in these animals the basal portion of the cochlea was apparently uninjured and Baginsky's conclusion is that the basal turn of the cochlea is devoted to the audition of the very high tones which lie quite above the ordinary scale, while the apical and middle turns enable the dog to hear all the ordinary and the deeper tones of the voice, thus supporting the theory of Helmholtz.

The cochlea can be reached far more easily in the guinea-pig than in the dog and experiments on that animal have been made by Corradi[15] and also by Stepanow.[16] Both observers took the reflex movement of the outer ear as an index of hearing. According to Corradi destruction of the apical portion of both cochleæ abolishes all response to deep tones, but the animal is still affected by high tones. His results, therefore, agree with Baginsky's; Stepanow, however, obtained entirely different results. In a large number of guinea-pigs he destroyed the apical portion of both cochleæ. Although many experiments failed owing to permanent deafness or other cause he had seven successful cases in which low as well as high tones caused the animal to move its ears. He found no evidence that the animals failed to hear tones of low pitch. Stepanow's results are therefore a complete contradiction of those obtained by Corradi on the guinea-pig and by Baginsky on the dog, and we shall see that Stepanow's conclusions are borne out by his observations on man. Baginsky[14] also made experiments on the basal portion of the dog's cochlea, but with results so uncertain that he would have done well to have deduced no conclusions from them. The anatomical conditions are such as might well render any such experiments futile. He desired to open the scala tympani in the basal turn of the cochlea and destroy the membranous spiral lamina there without permanently interfering with transmission of sound to the apical portion. After completely destroying the cochlea of one ear and injuring the basal portion of spiral lamina of the other many of the animals remained permanently deaf. Of those

[14] Zur Physiologie der Gehörschnecke, Sitzungsberichte der Akademie der Wissenschaften, Berlin, 1883, Band xxviii., p. 685.

[15] Uber die functionelle Wichtigkeit der Schnecke, Archiv für Ohrenheilkunde, 1891, Band xxxii., p. 1.

[16] Experimenteller Beitrag zur Frage über der Function der Schnecke, Monatsschrift für Ohrenheilkunde, Band xxii., 4, p. 35.

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that recovered hearing, some appeared to be as much affected by high as by low tones; others seemed less affected by high tones; while in a small number of cases they seemed at first to hear only low tones, but after two or three weeks they were also affected by high tones. In some of these cases he found the membranous spiral lamina completely disorganised at the seat of injury, yet from results so variable and unsatisfactory he concluded that the special function of the basal turn of the cochlea in the dog is to enable it to hear high tones, which is, of course, in accordance with the Helmholtz theory.

PATHOLOGICAL OBSERVATIONS ON MAN.

Observations on tone sensation in speechless animals must always be unsatisfactory; one therefore turns to pathological observations on man in the hope of finding data of greater value, but here also the evidence is contradictory. Stepanow[17] has recorded the case of a young man who had received a severe blow on his left ear which eventually led to exfoliation of the apical portion of the cochlea to the extent of one and a half turns of the tube. When Stepanow became aware of the nature and extent of the exfoliation he perceived that if the Helmholtz theory of tone sensation be true his patient ought to have become deaf in his left ear to tones of low pitch. He had the man's hearing tested in the presence of several colleagues, amongst whom were a physicist and a physiologist, and all were satisfied that the man could hear tones as low with his left ear as with his right ear. Indeed, the appreciation of pitch by his left ear seemed unimpaired. The observers agreed that the case gave no support to the Helmholtz theory as regards the apical portion of the cochlea. Gruber[18] has reported the case of a boy, aged fourteen years, from whose left meatus he removed a sequestrum consisting of the two upper turns of the cochlea. Notwithstanding the loss of so much of the cochlea the tones of tuning-forks, if sounded loudly, were still distinctly heard by air conduction when held near the left meatus. Gruber states that the pitch of the notes made no difference and that the boy could correctly imitate the note. Unfortunately the range of pitch of the tuning-forks used is not stated, so that we have no means of knowing the depth of pitch of the tones heard by the left as compared with the right ear, in which the hearing was normal.

There are, however, other cases by no less eminent observers who regard them as favourable to the Helmholtz theory. A case reported by Moos and Steinbrügge[19] is referred to in the books as showing that extensive nerve atrophy limited to the basal turn of the cochlea is associated with loss of the audition of high tones. I shall not trouble you with the complicated details of that case because the examination of the precise limits of tone sensation in the two ears appears to have been incomplete, and although the deafness to high tones was nearly as great on the one side as on the other the observers examined the cochlea on one side only instead of on both sides for comparison. The books, in referring to this case, assume that the nerve atrophy in the basal turn was the cause of the deafness to high tones; but singularly enough the two eminent aurists whom I have quoted regarded the nerve atrophy as possibly the result of inactivity owing to non-transmission of the vibrations of high tones through the labyrinth, because of the high pressure of the lymph which they were satisfied had been of long standing. In support of this hypothesis they refer to experiments made by Bernett under the direction of Helmholtz, who found that high artificial pressure of fluid in the labyrinth diminishes the transmission of the vibrations of low but more especially of high tones to the membrane of the round fenestra, and that when the pressure is greatly increased the vibrations of high tones are abolished. The possible lowering of the upper limit of tone sensation by increase of intra-labyrinthine pressure must therefore be kept in mind in the study of this subject.

Two important cases have been recently reported by Bezold[20] which appear to have been very carefully observed. One of the cases was that of a woman, aged sixty-five years, whose hearing was defective on both sides. The scale of audible tones was shortened at both ends, the lower tone limit for air conduction was raised to B in each ear, but there was apparently no shortening of the lower end of the scale when the tones were conducted to either ear through the bones of the head. Her upper tone limit was lowered on both sides about two octaves below the highest audible tone of Galton's whistle. The highest note heard by the right ear was given by the whistle at 6·4 mm., by the left ear at 6·3 mm., implying that with both ears she could hear very high notes of from 13,000 to 14,000 vibrations. Three weeks after the aural examination the patient died from pneumonia and the necropsy revealed complete immobility of the foot of the stapes from ossification of the orbicular ligament, which may have accounted for the deafness to low tones by air conduction. Bezold examined the cochlea and found "no nerve-fibres in the spinal lamina near the fenestra rotunda; and in the further course of the first turn there was a moderate increasing atrophy of the nerve-fibres. There was a trace of atrophy even in the second turn. The remaining nerve-fibres stained well with Weigert's method and Corti's organ was well preserved except in the first turn." He concluded that the atrophy of the nerve in the basal turn explained the deafness to the high tones.

Bezold's second case was that of a woman, thirty years of age, whose hearing had long been defective, especially in the left ear, through which she was unable to hear conversation. The sound of a tuning-fork (A^1) placed on the vertex of the head and on either mastoid process was not heard, showing that bone conduction of sound had no apparent effect on the labyrinth and auditory nerve of either side. The range of tone sensation in the left ear was shortened at the lower but especially at the upper end of the scale. She could only hear tones in the middle register extending from D to B^1, a range of nearly two octaves. The sound vibrations that affected her left ear therefore extended from 148 to 990 vibrations and there were no gaps in the scale within that range. On the right side the lower tone limit was C, almost the same as on the left side, but the upper limit reached to 2·2 mm. of Galton's whistle. Her right ear was therefore affected by vibrations varying from 132 to about 38,000. In both right and left ears the scale was shortened at its lower end by about two octaves and the diagnosis was "nerve deafness." The patient was seized with severe illness and died shortly after these observations were made. The left temporal bone was removed and prepared for microscopic examination, but the organ of Corti was not well preserved. The foot of the stapes moved normally. "There was extensive and well-marked nerve atrophy in the basal turn, less marked in the second turn and scarcely noticeable at the apex." Bezold regards the nerve atrophy in the basal turn as the cause of the deafness to high tones, which of course is in accord with the Helmholtz theory. He makes no allusion to the fact that there were no breaks in the scale of audible tones, although there was evident nerve atrophy in the middle turn. He expected to find nerve atrophy in the apical turn to account for deafness to tones at the lower end of the scale, because in this case their defect could not be due to ankylosis of the stapes. Failing to find any definite lesion there he surmised that "possibly there were changes in Corti's organ in the apical turn, which owing to its poor state of preservation escaped notice," or that "there might have been a central lesion to account for the defect in the lower register." He therefore assigned what he regarded as a definite cause for deafness to high tones, no apparent cause for the deafness to low tones, and no defect of tone sensation resulting from the atrophy of fibres in the middle turn. I think it unfortunate that in this case the right cochlea was not examined, since there was deafness to low but not to high tones in the right ear and an examination of its nerve fibres would obviously have been important.

The cases to which I have referred are sufficient to illustrate the great difficulty attending the problem of tone sensation, the mobility of the stapes, the pressure of lymph in the labyrinth, and the state of the sensory nerve apparatus are all capable of affecting our tonal sense. In the first case quoted from Bezold deafness to low tones conducted through the meatus was apparently due to ankylosis of the stapes. I have referred to the effect of high lymph pressure on the transmission of low but more especially of high tones through the labyrinth and the possible production of deafness to these tones from that cause. I have now, in the last place, to ask you to consider the conclusions which appear to be indicated regarding the function of the cochlea in aiding our perception of pitch. I believe I was justified in arguing twelve years ago that our sensations of harmony and discord cannot be reasonably explained unless we believe that the

[17] Stepanow, Zur Frage über die Function der Cochlea, Monatsschrift für Ohrenheilkunde, 1886, p. 116.
[18] Ein Fall von Austossung der oberen zwei Windungen, &c., Monatsschrift für Ohrenheilkunde, Berlin, 1885, p. 225.
[19] Ueber Nervenatrophie in der ersten Schnecken Windung, &c., Zeitschrift für Ohrenheilkunde, 1887, Band x., p. 1.
[20] A Case of Ankylosis of the Stapes and a Case of Nerve Deafness, Archives of Otology, New York, 1894, vol. xxviii., p. 48.

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auditory nerve transmits to the brain impulses of the same frequency as the sound vibrations. The proof of that has since been furnished by the experiments of Hermann on differential tones already referred to. But it by no means follows that the theory of cochlear analysis is thereby disproved; on the contrary, it merely compels the upholders of the Helmholtz theory to admit that if certain cochlear terminals are affected by vibrations of a certain frequency they must transmit to the brain impulses of the same frequency as the sound vibrations. Although the validity of my argument on this point be granted it still remains an open question whether certain auditory terminals are impressed by tones of a certain pitch or whether they are all impressed by audible tones of every pitch. If the observations made by Gruber, but especially those by Stepanow, are reliable and free from fallacy we should be obliged to conclude that the loss of the apical half or so of the cochlea does not involve deafness to tones of low pitch. The results of their observations are therefore hostile to the resonance theory and favourable to the telephone theory. On the other hand, the two cases observed by Bezold and that by Moos and Steinbrügge show that deafness to tones of high pitch may be associated with nerve atrophy in the basal turn of the cochlea. It is very difficult to look upon that association as a mere coincidence and apparently more reasonable to regard the basal portion of the cochlea as necessary for the appreciation of tones of high pitch. But if a corresponding relation cannot be shown between the apical portion of the cochlea and tones of low pitch the upholders of the resonance theory must feel that they are supported by only one of the two legs that are necessary in this case.

But if it appear impossible to harmonise the resonance theory of the cochlea with anatomical structure and with certain pathological observations how does it stand with the telephone theory? If it be true, as Gruber and Stepanow would have us believe, that the basal turn of the cochlea can enable us to hear all tones, notwithstanding destruction of the apical half, it seems reasonable to expect that the apical portion should still enable us to hear all tones, notwithstanding nerve atrophy in the basal portion. Bezold's cases, however, appear to show that the basal portion is necessary for the appreciation of high tones. We are therefore landed in the dilemma that pathological observations on the apical portion of the human cochlea are opposed to the resonance theory and favourable to the telephone theory, while those of the basal portion favour the resonance and oppose the telephone theory. In Bezold's second case only about two octaves of audible tones remained in the middle register; the loss of high tones was ascribed to nerve atrophy, but no cause could be assigned for the loss of low tones. On the telephone theory one is compelled to ask why there should have been deafness to many low and so many high tones, although nerve fibres enough remained to enable the patient to hear two octaves of the middle tones. If evidence of high tension in the labyrinth had been recorded in that case an explanation could have been found on the lines of Bernett's experiments, but in absence of that evidence I am bound to say that I do not at present see how that case is to be explained on the telephone theory.

Whatever be the true theory it is important to note that tone defects are far less common at the lower than at the upper end of the scale and that in the middle of it they are exceedingly rare. Politzer states that in cases of apparent tone defects in the middle register the use of resonators generally shows that there is only diminished sensitiveness instead of total deafness to the particular note. At first thought one might be inclined to regard gaps in the scale as evidence in favour of the theory that each auditory fibre is concerned in the sensation of a particular tone, but in the well-known case reported by Magnus, where the tones F, F sharp, G, G sharp, A sharp and B were inaudible, ankylosis of the stapes and calcification of the orbicular ligament were found after death and assigned as the cause.

I think I have said enough to show the difficulty of arriving at a definite conclusion regarding the extension of Müller's doctrine of specific activities to the several fibres of the cochlear nerve. The writing of this address has been to me a grateful task, for it has compelled me to see the strength and the weakness of the theories hitherto advanced in explanation of the function of the cochlea. The study of theories stimulates thought and I trust that my necessarily rapid and imperfect sketch of a complicated subject may serve to induce discussion of the difficult problem of the qualities of tone sensation.

ON THE

OCCURRENCE OF CARTILAGINOUS AND BONY NODULES IN THE TONSIL.

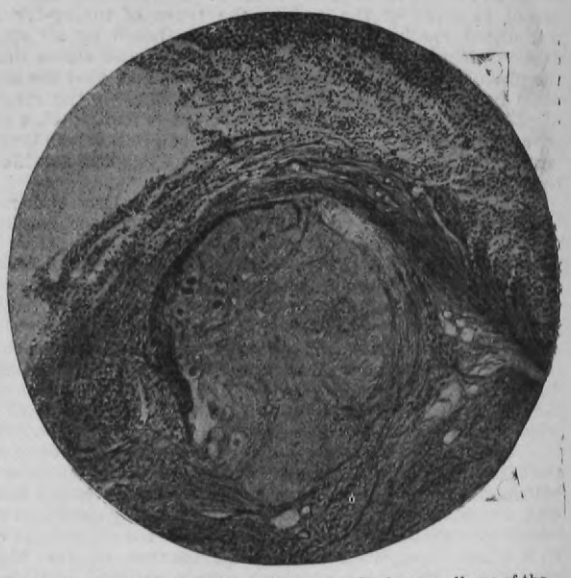
BY HUGH WALSHAM, M.A., M.D. CANTAB., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN (FORMERLY PATHOLOGIST) TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST; CLINICAL ASSISTANT TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

WHILE making some observations on the occurrence of tubercle in the tonsil other interesting points connected with their histological structure came under my observation, such as the number and distribution of the tonsillar crypts, the varying amount of adenoid tissue, and the gradual disappearance of the closed lymphatic follicles with advancing life; the occurrence of the so-called epithelial pearls so well described by Professor Kanthack[1] and their relation to the formation of the tonsil calculi, &c. But in two instances examined by myself the microscopical structure of these organs was so peculiar that I venture to regard them worthy of record, especially as I am unable to find any description of such a condition in medical literature, at least in this country.

The first case which came under my observation was that of a man, aged fifty years, who died from acute pulmonary

FIG. 1.



From the man aged twenty-seven years. It shows well one of the cartilaginous masses in the adenoid tissue of the tonsil.

tuberculosis in the City of London Hospital for Diseases of the Chest. The post-mortem examination was made on Oct. 3rd, 1895. Both tonsils had undergone considerable atrophy or perhaps may more properly be said to have retained their infantile conformation. The tonsillar crypts were extremely few and wide. The squamous epithelium lining the crypts was normal. The closed lymphatic follicles had for the most part disappeared, but this is perhaps only a senile change described by Retterer.[2] Scattered throughout the organ, at the base of the crypts, were numerous small masses of bone in the form of trabeculæ, rings, and solid nodules. These nodules and trabeculæ of bone did not encroach on the proper adenoid tissue of the organ. They were just discernible with an ordinary pocket lens in the stained section as small yellow nodules. In one section a small cartilaginous nodule was still to be seen, having apparently not yet been converted into bone (see Fig. 2).

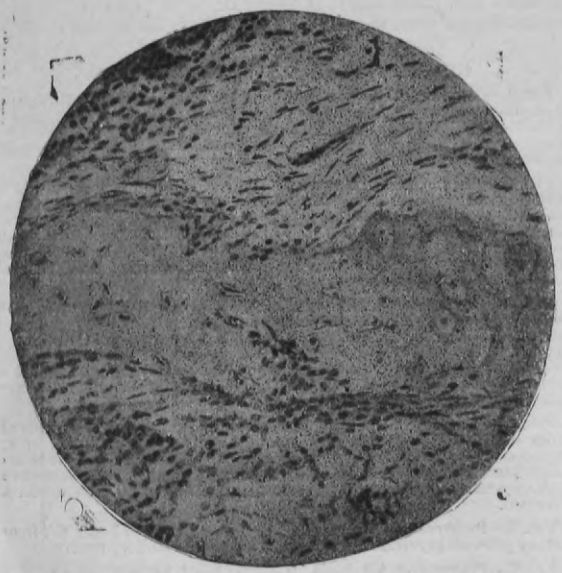
As at this time I was working exclusively at the occurrence

[1] Kanthack: Illustrated Medical News, 1889, vol. v., p. 124.
[2] Retterer: Journal de l'Anatomie et de Physiologie, 1888, vol. xxiv., p. 1.

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of tubercle in the tonsil this peculiar histological structure was merely noted for investigation at some future period. My interest in the subject was, however, again aroused in the following month by the occurrence of another example of a somewhat similar condition. The post-mortem examination of this case was held on Nov. 25th, 1895. The subject was a man, aged twenty-seven years, who died in the hospital from chronic pulmonary tubercle. Both tonsils were somewhat atrophied. The crypts with their lining epithelium were normal. Most of the closed lymphatic follicles had tumbled out during the process of mounting. In this instance there were scattered throughout the adenoid tissue of the organ large masses of cartilage which could be very easily distinguished with a lens magnifying about four diameters (see Fig. 1). In places the cartilage had been converted into bone. The matrix of the cartilage appeared in some places to be of the hyaline variety, but in others it could only be described as fibro-cartilage. The cartilaginous nodules were surrounded by strands of dense fibrous tissue which formed a kind of perichondrium. Some of these cartilaginous nodules, unlike the former case, penetrated the adenoid tissue of the organ and in one part they nearly reached the epithelium lining the free surface of the tonsil. I was at first much

FIG. 2.



From the man aged fifty years. It shows one of the cartilaginous nodules passing into bone.

puzzled with this condition of the tonsil and at first supposed I had to do with a new growth—in short, with an enchondroma of the organ, a rare condition no doubt, but one that has been described by pathologists. But on thinking over the matter I came to the conclusion that this supposition was untenable as the cartilage and bone trabeculæ occurred on both sides. On reflection it appeared to me that there was a close analogy between these cartilaginous masses in the tonsils and those small cartilaginous growths which develop in the lines of the branchial clefts and which are found in the neighbourhood of the ear, or lower down in the neck, sometimes only on one side, but more rarely symmetrically placed on both, or enclosed in the so-called branchial cysts and also to the masses of cartilage that are found in the parotid gland. The tonsil, according to Professor His,[3] is developed very early in intra-uterine life—about the fourth month—by a simple folding in of the mucous membrane at a spot situated between the second and third branchial arches, and the remains of which are visible in the adult tonsil as a fold, the plica triangularis. As development proceeds this primary infolding of the mucous membrane or primary crypt splits up at its base into numerous secondary crypts and by the swelling of the meso-blastic tissue lining the invagination and by the early appearance of lymphoid follicles the rudimentary tonsil is formed. Remembering then the position in which the tonsil is developed, I think we may assume that these cartilaginous nodules are of fœtal origin, that is, they are cartilaginous rests derived from the second branchial arch.

After a search through foreign medical literature I have been able to discover three similar examples. Two of these were observed by Professor Roth[4] and one by Dr. H. Deichert[5] and all of them from the Pathological Institute of Göttingen. The first of Professor Roth's cases occurred in a man, aged fifty-nine years, who died from fracture of the skull; the tonsils were found to contain bony trabeculæ. The other case was that of a child, aged two years, sex not stated, who died from diphtheria. It is unfortunate that these two cases are only very shortly reported; but it is stated that the tonsils of the child contained mostly cartilage, although a little bone was also found. The third case, reported by Dr. H. Deichert, was that of a man, aged seventy-seven years, who died from aneurysm of the aorta. Large cartilaginous and bony masses were scattered throughout the organ. This peculiar fœtal inclusion is no doubt rare, but perhaps commoner than one would at first suppose. My two examples occurred in 34 consecutive post-mortem

FIG. 3.



Also from the same man. It shows one of the bone trabeculæ at the base of the tonsil.

examinations and Dr. Deichert says in a footnote to his paper that he had heard of two other similar cases after his communication had gone to press.

I think there can be no doubt that the enchondromata that have been described as occurring in the tonsil must have their origin in these cartilaginous rests which from some unexplained reason begin to grow and proliferate. Clinically it is, I think, important to remember that this condition may occur in the tonsil as a congenital peculiarity. The bony trabeculæ, it will be observed, were principally found in persons of advanced age, and at first one would be disposed to look upon the presence of bone as a mere senile change; but it was also found to a less extent in the younger persons. I think it probable that these centres of ossification may be present from the first, as a small amount of bony material was found in the tonsils of the child aged two years observed by Professor Roth.

Professor Kanthack, to whom I showed the microscopical specimens, dissents altogether from the above theory. His view is that in these cases there is no embryonic inclusion, but merely a metaplasia of fibrous tissue into bone or cartilage. The accompanying micro-photographs show clearly this peculiar structure of the tonsil.

Harley-street, W.

[3] His: Anatomie der Menschlichen Embryonen, dritte Partie, p. 82.

[4] Roth: Festschrift zu Virchow's fünfzigjähriges Doctorjubiläum, Göttingen, 1893.

[5] Deichert: Virchow's Archiv, 1895 l. cxli., p. 435.

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THE BACTERIOLOGY OF PROGRESSIVE CIRRHOSIS OF THE LIVER.[1]

WITH ILLUSTRATIVE PLATE.

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IT is needless for me here to enter into a discussion of the various theories which have been adduced to explain the causation of cirrhosis of the liver. I need only say that the experience of a large number of investigators who for weeks and months have inoculated or treated animals with various alcohols have shown that alcohol itself induces at most the fatty liver with, it may be, a very slight amount of fibroid change in the portal areas and that not a single observer has been able by this means to produce anything at all resembling the extreme deposit of fibrous tissue which we meet with in the hobnailed liver. Alcohol in the main leads to the fatty liver, while, on the other hand, the evidence has steadily accumulated, notably in India, that extreme cirrhosis may attack children and adults who have never taken a particle of alcohol either medicinally or otherwise.

Within the last few years the French school of pathologists headed by Hanot have regarded the enlarged cirrhotic liver with jaundice as being of infectious origin, and it is common nowadays to speak in France of *le foie infectieux*, but to the best of my knowledge no one has as yet described any one micro-organism as being found frequently associated with these cases of so-called infectious liver. At most Levi[2] from a case of cirrhosis in a seventeen-year old male, with marked periportal fibrosis and enlarged spleen, obtained a diplococcus pathogenic for guinea-pigs. The age of the patient, the proliferation of the bile-ducts and the absence of ascites would indicate that this case was one of what is termed "Hanot's cirrhosis," but the bacteriology is rendered somewhat doubtful in that there was also present bacterial endocarditis of the pulmonary valve and suppurative meningitis. Unfortunately I have not been able to obtain the original paper; nevertheless, this brief statement of the main features of the case makes it at least possible that the endocarditis and meningitis and the presence of diplococci in all the organs may have been due to a complication. On the other hand, there is a somewhat suggestive relationship between these cases of Hanot's cirrhosis and epidemic jaundice, in some of which observers have noted the presence of a diplococcus or bacillus with polar staining. To the best of my knowledge no one has as yet recognised the frequent presence of any form of micro-organism in the commonest form of hepatic cirrhosis, the so-called portal cirrhosis tending to the production of the hobnailed liver with or without marked atrophy of the liver.

On behalf of the Government of the Dominion of Canada I spent the summers of 1894 and 1895 in Nova Scotia investigating a very remarkable disease affecting the cattle in a limited area of the country—the so-called "Pictou" cattle disease—of which the main lesion is a singularly extensive cirrhosis of the liver. The disease is only found in a district spreading along the northern coast of the peninsula, in a tract of country about forty miles long by from five to twelve miles broad. There apparently it has been noticed for some forty years, now at one end of this area, now at the other. The disease would seem to be very chronic and not to affect all the cattle upon the farm simultaneously, but unless due precautions are taken in the course of three or four years most of the cattle will one after the other be affected. It would seem further that the disease does not spread directly from animal to animal, for there appears to be no special incidence of the cases following upon the long winter sojourn of the animals in the byres, which, with rare exception, are miserably dark and ill-ventilated, the attempt being made to keep these as warm as possible in consequence of the severity of the winter. One or two cases are on record in which the disease has broken out in a neighbourhood after the body of a cow affected with the disease has been washed down by one of the streams and stranded upon farm lands. The gradual extension of the disease from farm to farm through any given district seems to be largely brought about by the fact that each farm has at the back of it a belt of woodland in which the cattle roam during the summer. These belts are badly fenced off from each other and if an animal is affected it attempts to wander off into the woodland and there die in a remote corner. Thus unless precautions are taken the carcasses of these animals remain uninterred and appear to act as centres of infection. Under the present Government regulations notification is given of every suspicious animal, and the Government inspector if satisfied that it is a case of the disease immediately destroys the beast and burns the carcass or has it buried in quicklime. By this means the number of animals affected is steadily being reduced, so that within the last few years the number of cases occurring annually has sunk from 150 to under 30. As for the symptoms of the disease the first which is to be noticed is that the milk acquires a peculiar bitter taste and has a distinctly acrid odour upon boiling. Within a few days the animal becomes dry, it is weak and listless, the coat stares, the limbs are dragged, the bowels are loose, the abdomen is a little swollen, the eyes are staring, and the conjunctivæ are subicteroid. The weakness deepens and the animal dies apparently in a condition of complete exhaustion. In some few cases death is preceded by a period of intense excitement, almost maniacal in character, the animal rushing about charging at obstacles and then falling into a condition of paresis followed rapidly by death. I killed and made post-mortem examinations upon some 30 animals during the two years and found, as Dr. Osler and Dr. Wyatt Johnston previously determined, that the main lesions are an extreme condition of generalised cirrhosis, not only periportal but pericellular, the organ being somewhat enlarged and having a smooth or more rarely a finely granular surface. There is evidently an abundant production of thin bile, for with scarce an exception the gall-bladder was found to be very full and the fæces well stained. The periportal and abdominal lymph glands in general are large and succulent, there is a moderate amount of ascites, the fluid being particularly clear and limpid, and together with this there is a rather remarkable condition of gelatinous œdema of the mesenteries and intestinal walls. A further constant lesion is the presence of numerous follicular ulcers in the fourth or true stomach. These, save in the very acute cases, are found in a cicatrised condition giving strongly the impression that the earliest lesions of the case are gastric and are followed by the infection of the abdominal lymphatic system and the portal area. The spleen is not markedly enlarged. From all the animals which I killed I was more fortunate than my predecessors in gaining a characteristic micro-organism. This may have been due to the fact that I employed a somewhat different method of making my cultures. Instead of taking the media

[1] A paper read for the author by Professor William Osler in the Section of Medicine at the meeting of the British Medical Association at Edinburgh, July, 1898.

[2] Archives Générales de Médecine, March and April, 1894.

DESCRIPTION OF ILLUSTRATIVE PLATE.

FIG. 1.—Microbe of Pictou Cattle Disease from isolated colony upon glycerinated agar roll tube inoculated from bile of diseased cow; stained with Ehrlich's gentian violet. Photograph under Reichert's $\frac{1}{12}$ in. immersion. The bacteria are seen, some as ovoid bacteria, the majority as diplococci surrounded by a faint halo.

FIG. 2.—Pictou Cattle Disease. Section of liver of cow killed while suffering from the disease, stained with carbol fuchsin for 24 hours, bleached in sunlight for six weeks after mounting. Photograph under Reichert's $\frac{1}{12}$ in. immersion. A few of the diplococcus forms can be well seen surrounded by a faint halo. These appear to be largely within the liver cells. With a magnifying glass the position of several others not in focus can be made out.

FIG. 3.—Pictou Cattle Disease. Section of liver of rabbit inoculated intraperitoneally with pure cultures of the microbe and dying 21 days later. Treated like the preceding and photographed under the same magnification. Innumerable diplococcus forms in the main within the liver cells, some, not perfectly in focus, seen as ovoid bodies, others as dots (end on ?). The varying size apparently is due in part to polymorphism, in part to unequal bleaching.

FIG. 4.—Progressive Cirrhosis in Man. Section of liver from case of more diffuse cirrhosis than the preceding; treated similarly. *a.a.* Diplococcus forms within degenerating liver cells. *b.b.* The same in the immediate neighbourhood of what appears to be fusiform connective tissue nuclei. *c.* Group of diplococcus forms obscurely seen within a liver cell.

FIG. 5.—Progressive Cirrhosis in Man. A culture, 48 hours old, from kidney juice on glycerinated agar showing diplo-bacillary form.

FIG. 6.—Progressive Cirrhosis in Man. Slide preparation, 24 hours old, isolated colony on agar glycerinated and inoculated from liver juice. Preparation shows transitional forms, bacterium (ovoid), diplococcus, and bacillus.

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and inoculating on the spot I employed a series of sterilised glass pipettes in which I collected relatively large amounts of the juices of the various organs, ascitic fluid, blood, &c., and then when back in my temporary laboratory, either upon that or the following day, I inoculated my media. By this means, constantly from the lymph of the abdominal glands and from the liver juice and more rarely from other organs and fluids, I obtained in each case growths of a characteristic micro-organism, small and polymorphous, at times appearing as a diplococcus, at other times as a stumpy bacillus or diplo-bacillus. This by its polymorphous character gave me a considerable amount of trouble until I found that employing the same broth or agar tube at the end of twenty-four hours I obtained the one form and at the end of forty-eight hours the other, while also the depth of the stain employed altered the appearance. Further study showed me that this micro-organism was in reality a short bacillus with polar staining, in this resembling to some extent the micro-organisms of hæmorrhagic septicæmia in the lower animals, but unlike them possessing a slight capsule. I was able to grow this upon all the ordinary media of the laboratory (Fig. 1). Into the characters of this micro-organism I will not here further enter, beyond stating that I found it pathogenic for rabbits, guinea-pigs and mice, rabbits dying in from 15 to 25 days and guinea-pigs in from 30 to 35 days on an average. The characteristic features of this disease, the ascites without jaundice, the gastric and intestinal disturbances, and the condition of the liver led me seriously to consider the similarity between the clinical history in these cases and that present in portal cirrhosis in man, and though it may seem a small matter I was especially struck that the first post-mortem examination which I performed upon a case of atrophic cirrhosis upon my return from Nova Scotia exhibited the same gelatinous œdema of the mesenteries and intestinal walls which was so prominent a feature in the Pictou cattle disease.

Thus on and off for the last three years my attention has been directed towards the possibility of discovering bacteria in ordinary progressive portal cirrhosis, and, indeed, upon three occasions I have thought that I had gained specific micro-organisms. In two, unfortunately, the growth became contaminated with the colon bacillus, and as they occurred on the eve of my vacation I was unable to continue the search further. In the third, which occurred in June of the present year, the growth was very slight and, although pure, it had apparently died out by the fifth day and I was unable to gain any further cultures. The difficulty which has pursued me in this search has been that which has prevented me from publishing so far any extensive report upon my studies on the Pictou cattle disease—namely, the extraordinary difficulty in staining the micro-organisms in the tissues. I have tried a very great number of methods and while with many I have been able to recognise the bacteria the results obtained have been so inconstant that I have felt that others following my steps might possibly have negative results. Thus I have been unwilling to make any full statement until I should be able to state clearly how to recognise the micro-organisms.[3] While this micro-organism stains deeply it appears to lose its stain even more rapidly than does the tissue. Sometimes Gram's or Weigert's method shows the micro-organisms brilliantly, but while the iodine appears to have a deterrent effect upon the decolourisation of the microbes the stain is not properly fixed by this means; and while, again, I have obtained good results by staining in methylene blue dissolved in anilin oil, momentarily passing the sections so stained through a mixture of anilin oil and xylol, through xylol into Canada balsam, even here the colour appears to fade out rapidly, so that in a few days the micro-organisms are unrecognisable. Eventually the thought struck me that bleaching in the sunlight might be a possible means. By this process there would be no diffusion currents set up and if, as my previous work had shown, the bacilli took up the stain with rapidity then the deeply-stained sections would have so much of the dye in the bacilli that upon bleaching out the bacilli would be left stained when the tissue itself had become colourless. My laboratory assistant, Mr. E. W. Hammond, prepared a large series of sections in this way and obtained some excellent results. He found that, as I had suggested, strong staining with carbolised fuchsin followed by bleaching for a short time each day for a period of a fortnight or more demonstrated the bacteria admirably.[4] While the process is a slow one it is one which has the undeniable advantage of allowing the mounted sections to be examined each day so as to determine how far the process of bleaching has progressed. By this means I was able to find out that in the Pictou cattle disease the micro-organisms while present scattered through the new fibrous tissue are present also in large numbers within the liver cells, and in the liver of a rabbit which had been inoculated with the micro-organism isolated by me, although the animal died before any marked cirrhosis had developed, the liver cells were seen to contain these microbes in very great numbers (Figs. 2 and 3). As to how the micro-organisms enter these cells, or whether truly they are within the cells or in the minute biliary canaliculi which permeate them (and so truly outside the liver cells), is a point upon which at present I can throw no light, but the appearance given, which will be seen in a specimen under the microscope in the pathological exhibit, is that these cells contain large numbers of extremely minute diplococci.

Only quite recently a remarkable case of cirrhosis with pigmentation unaccompanied by diabetes has again drawn my attention to the bacteriology of atrophic cirrhosis. Dr. Maude Abbott, who is working in my laboratory at the Royal Victoria Hospital, showed me some sections of the abdominal lymph glands stained by Weigert's fibrin stain in which under a high power I noticed a peculiar fine granulation, and upon examining with $\frac{1}{8}$ in. immersion these fine granules resolved themselves into minute diplococci. Examining the liver stained similarly I there noted large numbers of the same micro-organism and since then I have gone through all the five cases of cirrhosis which I have had during the last three years, through specimens of five most characteristic cases of hobnailed liver received from Professor Hektoen of the Rush Medical College, Chicago, and through a series of sixteen livers, some of well-marked atrophic cirrhosis and others of milder stages of cirrhosis, courteously sent me by Dr. Flexner from the Johns Hopkins Hospital. So far in every case of well-marked portal cirrhosis, whether of the small shrunken type or the large hobnailed type, whether associated with jaundice and without ascites or with ascites without jaundice, I came across constantly one characteristic form of micro-organism, obtaining the best and most permanent results by the method I have already mentioned of staining in carbolised fuchsin and bleaching or partially bleaching in the sunlight. Here I gladly acknowledge the assistance I have received from Mr. W. M. Abbott and Mr. C. Nicholson in preparing and staining this material. Mr. Nicholson, who will demonstrate illustrative specimens in the Pathological Museum, finds that he obtains the surest results by using Ziehl-Nelsen carbol-fuchsin, either pure for five hours or diluted with an equal bulk of water for from twelve to eighteen hours, washing in absolute alcohol, then through xylol into xylol Canada balsam. Mr. Hammond's method was very similar. The time necessary to bleach of necessity varies. Working in winter Mr. Hammond required from a fortnight to a month. In the powerful sun of Montreal in July Mr. Nicholson found two days sufficient, and even then the process had gone too far, the microbes being decolourised. On the whole, therefore, sections cut frozen gave surer results than those prepared in paraffin, the irregularity in thickness of the former ensuring that some portions are bleached to the desired extent. This micro-organism is extraordinarily minute. By the trained eye in well-stained specimens it can be just recognised under the $\frac{1}{12}$ in. immersion lens, but for satisfactory work it is absolutely necessary to employ the $\frac{1}{8}$ or $\frac{1}{5}$ in. immersion lens. According to the depth of the stain so does it appear either as an ovoid bacillus, which might easily be mistaken for some stained deposit in the liver cells, or as a minute diplococcus surrounded by a distinct halo, the explanation being that with strong staining the bacillus and capsule are stained throughout, and with weak staining the body of the micro-organism and the capsule are decolourised, leaving simply the polar staining. Even in the tissues these micro-organisms are somewhat polymorphous—that is to say, at times one sees the two stained portions so close together as to resemble a minute edition of the

[3] Reports upon my observations are given in the Reports of the Dominion Department of Agriculture for the years 1894 and 1895.

[4] It is but simple justice to Mr. Hammond to state that, while I suggested this method, the carrying out of the process was wholly his. But for his zeal my investigations would be far less advanced.

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gonococcus, at other times they are farther apart and appear rounded like the coccus form of the pneumococcus, while in the same specimen a rare form may be seen in which the two stained portions are even slightly elongated. These are present in greatest numbers within the liver cells but occur also in the new connective tissue, sometimes in cases where there is much small-celled infiltration in localised patches, where they are present in great numbers, sometimes along fine channels which I can only regard as lymphatic capillaries. So far I have not recognised them in the bile-ducts, although by analogy with the Pictou cattle disease, in which I not unfrequently gained cultures from the bile, it is not improbable that some at least escape from the liver by this means. In one liver received from the Johns Hopkins Hospital Mr. Nicholson tells me that he recognised them definitely within the smallest bile-ducts. One remarkable feature about them, one which years ago I noted in connexion with the Pictou cattle disease, is that whether they be seen in the lymph glands or in the liver they have in the unstained condition a distinctly brownish tinge, so that in the liver especially these bodies may at first sight be mistaken for minute granules of precipitated bile pigment. They vary in number; in two cases in which the disease appeared to be of very slow progress but few were present; in those cases in which the bands of portal connective tissue showed an abundance of small round cells and in which the disease according to all indications was active and progressive the number was remarkable—in fact, so great that it was impossible for me to arrive at any other conclusion than that there is a distinct association between the presence of these micro-organisms and the development of the disease. So minute are these micro-organisms that it is extremely difficult to focus them and I would strongly urge those attempting to confirm these observations to take from twenty minutes to an hour studying an individual field of the microscope before arriving at any conclusion. Indeed, I know of no form so minute save that recently described by Nocard and Roux as being the causative agent in the contagious pleuro-pneumonia of cattle, and the strain upon the eyes in studying these microbes is most severe. This adds greatly to the difficulty on photographing the micro-organisms.

I am indebted to Dr. Patrick, the photographer of our hospital, for the accompanying lantern slides, in which, despite great difficulties, he has managed, I think successfully, to demonstrate the organisms in the tissues, but with regard to this I may say that where he shows one micro-organism the slightest change of focus would bring others into view, so that his slides show but about 1-20th of the number recognisable in any given field. The drawing, made under the camera lucida from the centre of the field reproduced as Fig. 3 in plate, will give an idea of the frequency of these microbes.

As to whether the micro-organisms in the human and in the bovine liver are identical it is impossible for me to affirm. At the Johns Hopkins Hospital as in our own hospital and in a large number of foreign hospitals, not to mention the leading hospitals in the old country, it is now the custom to obtain cultures from half-a-dozen or more regions, including the liver, in every necropsy performed within fifteen hours after death. And while the methods employed for obtaining cultures are in many cases faulty, to the extent that an insufficient amount of tissue juice is taken, it seems to me unlikely that had this form been cultivable upon the ordinary media it would not before now have been isolated. Nevertheless there is this to be said, that very frequently the colon bacillus grows upon cultures made from the liver; isolated colonies of the micro-organisms from the Pictou cattle disease, while growing more slowly, are not unlike those of the colon bacillus, and thus possibly the micro-organism, if growing in a manner similar to that of the Pictou cattle disease, might be neglected on account of this similarity in appearance.

It so happens that in Montreal cases of the disease are few and far between; five cases only have come under my notice in four years, and in a series of 934 necropsies made during twelve years at the Montreal General Hospital and indexed by Professor Wyatt Johnston, I find that altogether 31 cases of cirrhosis of the liver are recorded and 14 of the cirrhotic and fatty liver, with 1 recorded as "hypertrophic cirrhosis." I have thus thought it wise to publish these observations, even though I can at the present moment make no absolute statement with regard to the isolated micro-organism and its characters beyond the statement that, as already mentioned, in one agar tube made from the liver juice I was able to recognise the form although in not very great numbers and with the absence of any visible growth.

Lastly, as to the cases in association with which I have found this micro-organism. If future observers confirm the observations given above then we must conclude that many of the divisions and distinctions attempted to be drawn between the forms of advanced cirrhosis of the liver must be broken down; for, in the first place, I have found the same appearances in the large liver with moderate granulation or slight hobnailed condition which some would speak of as "hypertrophic cirrhosis"; as again in the small contracted typical hobnailed liver; in cases frankly multilobular with sharply defined bands of connective tissue cutting off relatively large areas of liver substance and showing relatively few bile-ducts; as again in cases of the more unilobular type with ill-defined edges to the lobules and abundant bile-ducts; in cases which have shown jaundice without ascites, ascites without jaundice, and again both jaundice and ascites; and, lastly, in cases with a pronounced alcoholic history and others in which no history of alcoholism could be obtained.

I am far from wishing it to be understood that I am here laying down that all cases of fibroid change in the liver present these minute micro-organisms; to make any such suggestion would be absurd. Nor, again, am I prepared to say that Hanot's cirrhosis affecting the young adult and presenting an enlarged liver with smooth surface and, accompanying this, crises of icterus is identical with the more ordinary form of progressive cirrhosis affecting the adult. It may be so or it may not. After forty years of age cirrhosis is, according to my investigations, accompanied by the presence in the liver cells, as again in the newly-formed connective tissue, of an extraordinarily minute bacillus having a polar staining and resembling greatly in its appearance under the microscope a form which I isolated from cases of infective cirrhosis among cattle.

I cannot conclude without again expressing the debt under which I labour to several helpers. To Dr. Maude Abbott and to Dr. Patrick; to my laboratory assistant at the University, Mr. E. W. Hammond, who aided me very materially in Nova Scotia; to Mr. Howell, my assistant at the Royal Victoria Hospital, but for whose energy I should have been unable to prepare and examine all my material; to Mr. Nicholson, who has most gladly crossed the Atlantic to demonstrate my specimens during the course of the meeting; and, above all, am I indebted to a member of the McGill University, my predecessor not only in the chair of pathology, but also in the investigations in the Pictou cattle disease, than whom none, not even myself, could more willingly or more appropriately or better have brought this subject before you.

APPENDIX (*July 12th, 1898.*)

By a remarkable coincidence, upon the afternoon of the day upon which I completed the dictation of the foregoing paper in order that I might have it complete for Dr. Osler to take with him to Edinburgh I was called to perform a post-mortem examination upon a case apparently of heart failure which turned out to be one of atrophic cirrhosis of the liver. I should here add that a diagnosis of cirrhosis of the liver had been considered and had been left in doubt, while clearly, from the condition of the heart, death had resulted from failure of that organ. Not to enter too fully into the details of the case—for the clinical notes of which I am indebted to Dr. James Stewart—I may say that the body was that of a female, aged fifty-six years, who had always lived in Canada, and who, after the diseases of childhood, had until two years previously enjoyed good health. She had ten children with no miscarriages and there was no history of inherited disease. She gave a moderate history of alcoholism, stating that she chiefly drank beer, but if one may base any argument upon the frequent presence of minute whitish plaques scattered along the œsophagus she was a pronounced alcoholic. For the last two years she had not been well, dating her impaired health from a fall while out walking when she injured her back somewhat. For the last year her heart had been very weak and upon exercise her feet and legs became swollen. Since last April the weakness, swelling of the legs and abdomen, shortness of breath and palpitation had been much worse, and for three days before admission to hospital dyspnœa, sleeplessness, and weakness had been extreme, while for months she had steadily been losing flesh. Upon admission she was found to be sallow

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in appearance, with moderate anæmia of mucous membranes; the sclerotics were icteroid with distension of the superficial vessels; the face was emaciated and there was orthopnœa. The temperature was normal, the pulse was rapid and the respirations were 36. The skin, more especially of the face, neck and arms, was of a peculiar ashy colour. This, she stated, had been noticeable for some years; there was slight general œdema, marked œdema of the lower extremities, and definite ascites. The pulse was 100, very irregular in volume and rhythm, and the apex-beat was not recognisable; there were no murmurs. There was evidence of right-sided pleurisy and there were numerous coarse and fine râles with expectoration of frothy mucus. There was frequent vomiting and retching, though this had begun only a few days before admission to hospital. The urine was dark, amber-coloured, with flocculent sediment, a fine ring of albumin, and it contained some bile. For a week or more her condition improved; the heart became more powerful and the ascites diminished. Suddenly, upon July 6th, the patient died.

The necropsy was held six hours after death and showed the following conditions. The heart was large, full, with dilatation of the cavities, the muscle being somewhat atrophied and fibroid. The coronary vessels were atheromatous. All the valves were normal and in both auricles were puriform and breaking down ball thrombi indicating a very feeble circulation. Both lungs showed adhesions to the diaphragm and elsewhere and on section presented little beyond œdema save that the lower lobe of the right lung was almost completely compressed and airless as a result of a right-sided pleurisy. The right pleural cavity contained about 700 c.cm. of red-stained fluid without flocculi. The abdomen contained between 900 and 1000 c.cm. of turbid and greenish ascitic fluid. Neither liver nor spleen were visible. The stomach was long and narrow with mucosa thickened, the cardiac portion having a curious strawberry-like appearance with fine white dots standing out but not projecting from the generally reddened surface. This faded off in the pyloric portion of the stomach where there was a fair amount of mucus. The first three inches of the duodenum presented an identical strawberry-like appearance to that seen in the cardia. The small intestine in general was congested and the last 3 in. before the ileo-cæcal valve showed large prominent solitary follicles. The walls of the small intestine had a distinctly browish tinge as of von Recklinghausen's hæmochromatosis. The mesentery of the small intestine was not only fatty but markedly swollen and upon section abundant milky lymph poured out wherever it was cut. The abdominal lymph glands were in general reddened and succulent. The retro-peritoneal glands, especially those in the neighbourhood of the portal fissure, and of the pancreas, were markedly enlarged. The liver was distinctly small, weighing 1045 grammes or a little over 2 lb.; the two lobes were correspondingly diminished in size, the organ was pale and had a finely granular surface, and there were abundant old fine veil-like adhesions over the upper surface to the diaphragm. On section the organ cut fairly firmly, more especially along the lower half of the right lobe and the under surface. On the whole the appearance on section was more fatty than fibroid. Microscopically the organ presented along with fibroid thickening of the portal sheaths a somewhat diffuse cirrhosis, the bands of fibrous tissue not being sharply cut and being infiltrated with a considerable number of small round cells. The cirrhosis was very obvious, but not of the more usual type, and the diffuse nature of the change may explain why the surface was finely granular rather than distinctly hob-nailed. The gall-bladder had œdematous thickened walls. The spleen was of normal size and rather soft, although on section the trabeculæ were seen to be larger and more prominent than usual. The pancreas was voluminous and moderately firm. The suprarenals were of fair size. The kidneys were of the hog-backed type of mixed interstitial and parenchymatous nephritis. This so-called hog-backed appearance is that which, as I believe Formad of Philadelphia was the first to point out, is the more common form of alcoholic kidney in North America. The organs were large with a finely granular surface and full and firm cortex. There were white infarcts both in the kidneys and the spleen. The body was still warm at the time of the holding of the necropsy and I obtained numerous sterilised pipettes of tissue juice from the liver, spleen, kidneys, abdominal lymph glands, ascitic fluid, pleural fluid, pericardial fluid, blood, and lymph from the mesentery, and with these I made a series of inoculations on the surface of sloping glycerinated agar tubes as also some into broth. While I have not had time to examine all the organs microscopically for bacteria I have studied the liver and there found the same diplococcus forms which I have already described as being recognisable in the cirrhotic liver. Portions of the collected ascitic and pleural fluid were centrifugalised, the cellular débris dissolved by caustic potash, and after further centrifugalisation the deposit was examined under the microscope after staining with carbolised fuchsin. This deposit showed rather rare minute diplococcus forms with a slight halo round them similar in all respects to those recognised in the tissues.

A series of slide preparations was made from the various pipettes direct, fixed in the usual method and stained with carbol fuchsin, which was warmed until definite vapour was given off, then washed with water just cool enough to bear the hand in it, and mounted. As a result the characteristic diplococcus form was found in the preparations made from the liver, lymph from the mesentery, the ascitic fluid, the heart blood, the left kidney, and the mesenteric glands; they were not found in the pleural cavity, the bile, or the pericardial fluid. Next, using a fair amount of the fluid out of each pipette I allowed this to flow over the surface of slanting glycerinated agar tubes, my experience with the Pictou cattle disease having shown me that while the fluid in the pipettes could show numerous diplococci, apparently the majority of these are dead and only a few remain alive. By this means in 24 hours I obtained fairly frequent growths in tubes from the spleen and left kidney and rare growths in the mesenteric glands and heart blood. Two colonies only appeared upon the tube prepared from the liver and four from the ascitic fluid and this latter did not show clearly till the expiration of forty-eight hours. Subcultures made again directly upon the glycerinated agar surface showed a fine, rather thin growth at first of minute discrete colonies; later these ran together into thin waxy lines which, upon the expiration of four or five days, assumed a faint yellowish tinge.

Other tubes were made directly from the pipettes of the kidney and spleen into beef broth. This upon the following day showed a faint turbidity, which just, as in the case of the Pictou cattle disease, if anything lessened with further growth, while a whitish deposit formed at the bottom. Since then, using the remaining pipettes, I have obtained a great number of broth cultures, the growth being much more free upon this medium than upon the agar, and, further, yielding forms which are more characteristic and less liable to cause confusion, for the micro-organism is most remarkable in its characters.

Grown upon broth in 24 hours it is present in the form of minute diplococci surrounded with a faint halo or capsule. Often these tend to be arranged in irregular chains in which the separate couples of dots are not quite regularly arranged, the long axis joining the two dots not of necessity coinciding with the long axis of the chain. Grown upon glycerinated agar the appearance is most puzzling, and although I had a similar experience when working out the character of the micro-organism of the Pictou cattle disease these agar cultures have given me a week of profound anxiety until within the last 24 hours I have solved the problem. A 24 hour culture at 37° upon glycerinated agar reveals minute forms which upon careful staining with fuchsin, not too deep, are clearly formed of a diplococcus (Figs. 5 and 6). One gets every transition, from the frank diplococcus form through one in which only very careful focussing shows that the somewhat oval bacterium has at either pole a deeper stained mass (Fig. 6) to forms in which the polar staining cannot be made out so that one appears to deal with true short bacilli (Fig. 6). In addition to this a certain number of oval forms can be seen still smaller than the diplococcus in which the distinction between the two ends cannot be made out. In 48 hours, and still more in 72 hours, the same culture which had given this appearance at the end of 24 hours appears to be contaminated by the presence of long distinct bacilli—that is, if sections be well stained with fuchsin, while this is still more the case after staining with Löffler's methylene blue. At first sight a culture from this variety showing these bacilli of irregular length with rounded ends, often lying side by side, appears to be undoubtedly of the colon bacillus of some allied form. And here I gain an explanation of the contrary results obtained by a bacteriological *confrère* and myself made in London two years ago. I took to him cultures isolated from two cases of cirrhosis which on examination in Montreal seemed to be diplococci, and his statement that he found only colon bacilli made me cease my investigations for the time. I can now well understand his most pardonable mistake.

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Yesterday, upon examining the agar-plate culture from the spleen, which had been made upon July 7th, had been left for 24 hours in the incubator and there apparently yielded no growth, and it thus had remained for 4 days at the ordinary temperature in the shade, I recognised one form of growth extremely minute, the colonies well separated from each other. Upon removing one colony and making a coverslip preparation stained with fuchsin I found that I had to deal with long chain-like bacilli interspersed with some shorter forms of the same breadth. The appearance was so wholly unlike anything that I had previously made out in the broth cultures that I neglected this colony and made a culture from another identical in appearance and equally isolated, and in this case, after staining with fuchsin, and as I thought over-staining, I washed in absolute alcohol. The result obtained was most remarkable. The long bacillary forms could still be recognised in this as in the other specimen, and if anything they were longer, but each long filament showed a discoloured sheath in which, scattered at not perfectly regular intervals, were pairs of dots deeply stained. In some places individual dots could be clearly recognised, in others they were fused into short deeply stained lengths. These pairs of dots in size resembled the diplococcus-like forms seen in the broth cultures and in the tissues to which I have already so frequently drawn attention. I regret that time has forbidden that I should obtain photographs of this very curious appearance so that they could be demonstrated with the lantern. In the series of preparations which will be found in the Pathological Museum this form will be placed under the microscope and there will also be a series of sketches made by me under Zeiss's camera lucida showing this appearance. I touched the same colony with a platinum needle and inoculated a broth tube from it and eight hours later, the broth having in the meantime been kept at 37° F., it showed a faint turbidity, and now some specimens treated with carbolised fuchsin in the same way showed in place of the singularly long filament of the original colony numerous diplococcus forms, fairly large, in which the connecting, more colourless portion could be well seen, while here and there is a rarer form showing three instead of two dots along the course of the bacillus. These observations satisfactorily explain the curious condition of affairs. The microbe which is seen in the tissues as a diplococcus surrounded by a faint halo is in broth after twenty-four hours present also as a diplococcus of the same size, rather larger, showing or not showing the halo according to the extent of the stain. Upon agar-agar, while first present as a diplococcus form, it gradually extends and each day is seen as a longer bacillary form, but if stained and decolourised with carbolised fuchsin, and decolourised to the right extent, each long filament is seen to be made up of diplococcus-like members lying in a common sheath. I made out a similar condition of affairs in connexion with the Pictou cattle disease, but do not remember to have met with such long filamentous forms.

We seem thus to be dealing with a form totally unlike any which, to the best of my knowledge, has been described; the polymorphism is remarkable. It is most difficult, however, to determine how to describe the appearances seen, and I am at a loss whether to state that we are dealing with an encapsuled diplococcus or with a bacillus having inclusions taking a peculiar deep staining, just as in the ordinary cell the nucleus stains deeper than the surrounding protoplasm. The general appearance in the tissue is certainly that of an encapsuled diplococcus, but, on the other hand, grown outside the body and upon agar and then treated with Löffler's methylene blue the whole of that portion which plays the part of a capsule to the diplococci takes on a stain with as great intensity as do ordinary bacteria. On the whole, at present I am inclined to the latter view, because examining tubes in which proliferation is most rapidly proceeding I find upon staining with carbol fuchsin and decolourising with alcohol that one has in those youngest ovoid forms what is most suggestive of the polar staining such as one sees, for example, in the bacteria of hæmorrhagic septicæmia—that is to say, there is at either pole not a complete coccus form but a generally deep staining concavo-convex segment, the two parts being separated by a clear space, and the membrane joining the ends of the opposite crescents being clearly visible. If this form coincides in other respects with the micro-organism of Pictou cattle disease it will grow rather more easily upon slightly acid media, it will grow upon serum and very slowly in gelatin without marked liquefaction and will be fatal for animals of the laboratory at a relatively long period after inoculation. It so closely resembles the micro-organism of the Pictou cattle disease that I feel that I may safely prophesy this. The time taken in unravelling the mutability of growth upon agar-agar has prevented me from working out these points during the last few days.

The great similarity in appearance presented by growths upon agar-agar under ordinary staining to the colon bacillus may perhaps make it necessary to say a few words about the relationship of the micro-organism isolated by me to the bacillus in question. I have made growths side by side and find that in broth the colon causes a greater turbidity; it appears to grow more freely upon agar-agar and also to be endued with greater motility. Upon staining an 18-hour broth culture of my micro-organism by the Nicolle Morax method in order to demonstrate flagella I found the micro-organisms which are even more stumpy than the colon bacillus under similar circumstances to be possessed of either one or two terminal flagella, but not of lateral. This if it were necessary would seem distinctly to prove that the micro-organism is wholly distinct from the colon group. However, I make this statement provisionally and will give fuller details as to the characters of the micro-organism within the next few months, probably in the *Journal of Experimental Medicine*.

I trust, however, that I have said sufficient to prove:—1. That in at least a very large number of well-marked cases of progressive cirrhosis in man there is to be found largely within the liver cells and also in the lymph spaces in the newly formed connective tissue a peculiar and very minute form of micro-organism, presenting on staining to the proper extent the form of a diplococcus surrounded by a faint halo or when stained deeply being a rather obscure ovoid bacterium, which may easily be mistaken for stained deposits within the cells. 2. That in the infective cirrhosis of cattle a very similar micro-organism is recognisable, present in like positions within the tissues and showing similar appearances when stained. 3. That from at least thirty cattle affected with this disease I have been able to isolate the micro-organism from the liver, bile, abdominal lymph glands, and in some cases from the various organs in the body. 4. That the micro-organism isolated from these cattle is a polymorphous micro-organism, appearing as a small diplococcus when grown upon broth, and tends to assume a distinctly bacillary form when grown on solid media. 5. That this micro-organism is pathogenic for the animals of the laboratory, and that in them it is to be recognised within the hepatic cells as in other regions. 6. That from a case of distinct atrophic cirrhosis in the human being I have been able to isolate from various organs of the body a similar micro-organism, which grown in broth has a diplococcus form and grown upon agar is present as a short or longer bacillus according to the age of growth.

This is not the occasion for me to discuss at length the bearing of these observations upon the nature of progressive cirrhosis in man. It is only necessary for me to say that if they are confirmed, as personally I feel they must be confirmed by everyone who proceeds with sufficient caution to follow the methods employed by me, then cirrhosis of the liver assumes an entirely new aspect. We gain a satisfactory explanation at once of such phenomena as the enlargement of the spleen, which, as has already been noted, by more than one observer, may be made out before there is any sign of portal obstruction; we see why so frequently there should be right-sided pleurisy and may even find that the question as to whether a case is complicated with ascites or jaundice depends upon this micro-organism, depends upon whether it sets up a low inflammation of the peritoneum or whether it more especially affects the liver cells and the bile-ducts, while disturbances which may occur not immediately in connexion with the liver—in the pancreas and in the kidney, for example—would seem to gain a possible explanation from the fact brought out by me that this micro-organism, while frequent in the liver cells, is in an advanced case to be gained from the heart blood and from the kidney. That the micro-organism only causes cirrhosis I do not believe; indeed, we may find that it is the cause of more than one disturbance in the liver and indeed in other organs. This I base upon the fact that in the case in which I have isolated this form from man the micro-organism shows itself capable of existing in several regions of the body; in fact, of setting up what bacteriologically we regard as a septicæmic condition.

Montreal, Canada.

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DIABETIC COMA SUCCESSFULLY TREATED BY SALINE TRANSFUSION; NO RELAPSE FOUR WEEKS AFTERWARDS.

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IT is the general experience of those who have had to treat diabetic coma by saline transfusion that while consciousness may be restored this is of short duration, for the individual after a few hours lapses back into coma, from which a second saline injection fails to arouse him. In putting the matter thus I believe that I am only stating what has been the experience of most physicians. There have of course been exceptions and I venture to record the following case because the notes relate rather an unusual experience—viz., that at the time of writing the patient has remained perfectly intelligent during the twenty-eight days which have elapsed since the transfusion.

A man, aged thirty years, was on June 25th, 1898, admitted into the Newcastle-upon-Tyne Infirmary under my care suffering from diabetes of fully eight months' duration. Nine months ago he became very thirsty and began to drink large quantities of water. He would frequently drink three large bottlefuls of herb beer at a sitting and his night's rest was broken by his being obliged to get up to assuage his thirst. Eight months ago, as he found himself getting weaker, he gave up work. For the previous eleven weeks he had been very constipated, a condition hardly relieved by aperient medicine. Since his thirst became established he had passed large quantities of urine and he had lost weight to the extent of 4 st. There was nothing of importance in the patient's family history. Beyond having had pleurisy five years ago and two mild attacks of influenza since, he had been a very healthy man, and although he had lost flesh he was still well covered. His skin was dry and lemon-coloured, his tongue was dry and covered with a white fur, and the saliva, which was acid, did not contain any sulphocyanic acid. Upon his thighs there were several brown patches, the remains of pustules which came out a few months before. The knee-jerks were absent, the heart and lungs were healthy, and the skin of the abdomen was at places chocolate-coloured. The liver dulness was normal and the splenic dulness was slightly more pronounced than usual. The patient was placed upon diabetic diet and codeia, and on the whole appeared to make fair progress. On the afternoon of July 12th he left the infirmary in order to go home by rail, a distance of thirteen or fourteen miles, but he was brought back to the infirmary the same evening in a state of coma. He had, it appears, reached the station all right, but there he must have become confused, for a few hours afterwards he was found in a railway carriage at Tynemouth in a state of unconsciousness and on a different line of railway from that by which he should have travelled. Dr. Rowell, the house physician, recognising the patient who had left the infirmary only a few hours previously and finding him comatose, at once transfused him with two and a half pints of saline solution, passing it slowly into the right median basilic vein, and also freely purged him. The saline solution was composed of one drachm of chloride of sodium to one pint of boiled distilled water, the temperature of which was reduced to 112° F. During the operation the patient became sufficiently revived to complain that he felt pain. Before the transfusion his pulse was beating at the rate of 45. By degrees consciousness was regained and has since been retained. For the first three days after the transfusion a very small quantity of urine was passed daily—only 21 oz. instead of from 140 to 200 ounces when he was first in the infirmary. As the patient was known to be suffering from diabetes it was unfortunate that his urine was not examined on his readmission during and immediately after the coma, but the day afterwards it was found to be free from albumin and acetone, although containing sugar. Since then the amount of urine passed has gone up by leaps and bounds until he passed daily 190 oz. On July 15th the skin on the back of his hands was rather more bronzed than usual, the pulse was 52, markedly dicrotic and compressible, the tongue was dry, and the saliva was acid. The pupils were slightly dilated. The urine on July 15th was acid and its specific gravity was 1025; it contained sugar, but neither albumin nor acetone. On July 18th the patient complained of slight numbness in the right hand, but while there was slight anæsthesia there was no analgesia, although there was quite distinct paresis of the extensor muscles of the wrist compared to those of the left hand. There was very slight wrist-drop.

The case is interesting mainly on account of the length of time consciousness has been retained since the transfusion, which is a cogent reason why in diabetic coma such a line of treatment should be adopted. Not only was the patient rescued from a condition which in all probability would have proved fatal, but he has been so restored that had he been a wealthy man with a will to make or business matters to arrange he would have been able, with his present state of health and clearness of intellect, to accomplish it. I regret that there is no mention on his clinical chart of the quantity and the character of the urine passed in the twenty-four hours for the two days prior to his leaving the infirmary. In most cases I have noticed that before diabetic coma supervenes the patient passes a very small quantity of urine compared to what he had passed previously and that usually this urine contains albumin. Sometimes, indeed, there is almost complete suppression of the secretion of urine. During diabetic coma if a catheter is passed into the bladder perhaps only a few drachms of urine are drawn off, which contains both sugar and albumin. Then for the first time we learn from the nurse that no urine has been passed for the previous twenty-four hours or more. While therefore I do not deny that diabetic coma may be due to acetonæmia caused by the presence of diacetic acid in the blood, I am disposed to regard it rather as the result of a mixed toxæmia in which uræmia plays not an unimportant part. Professor Bedson found albumin, sugar, and acetone in the urine of one of my own patients, but no trace of acetone or its congeners in the blood, which, considering the supposed relationship between acetonæmia and diabetic coma, is rather an interesting fact. I should like, in conclusion, to draw attention to a fact of therapeutical interest, and that is the influence which cocaine often has in overcoming the obstinate constipation of diabetes. Where aperients fail, cocaine in small doses (¼ gr. twice or thrice daily) will not only brace up the muscular system generally and remove the sense of fatigue so frequently present in these patients, but act so decidedly upon the musculature of the intestine that its peristalsis is increased and constipation is overcome.

Newcastle-upon-Tyne.

THE OCCURRENCE OF ERYTHROMELALGIA IN DISEASE OF THE SPINAL CORD; AN ACCOUNT OF TEN CASES.

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THE association of erythromelalgia with symptoms indicative of lesions of the central nervous system has been so frequently observed that the opinion of recent observers supports the opinion originally put forward by Weir Mitchell[1] in 1878 when he first clearly described the clinical picture of the condition. He said: "I believe the group of cases now described represent an unrecognised type of spinal or cerebro-spinal disease and that they may be found in the future associated with distinct lesions in definite regions." Lewin and Benda,[2] discussing a series of cases collected from various writers, consider that erythromelalgia was not a disease *sui generis* but generally a symptom of definite disease of the central nervous system or of functional disease. Auerbach and Edinger[3] last year published a case of tabes in which erythromelalgia confined to the right foot was a conspicuous symptom. After death degeneration of the posterior roots of the lower lumbar and sacral nerves

[1] S. Weir Mitchell: American Journal of the Medical Sciences, July, 1878.

[2] Lewin and Benda: Berliner Klinische Wochenschrift, 1894 Band xxxi., pp. 53, 87, 117, and 144.

[3] Auerbach and Edinger: Nervenheilkunde, Sept., 1897.

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almost confined to the right side was found. The spinal ganglia and peripheral nerves were thoroughly examined and found to be normal. The degeneration principally affected, in the spinal cord, the tract lying close to the septum on the right side usually described as rising from the upper sacral roots, which were in this case found totally degenerated; the erythromelalgia was confined to the skin areas supplied by the fifth lumbar and first and second sacral roots. Very few cases of erythromelalgia have been reported in this country and it is not recognised as a condition occurring in spinal disease. There seems reason to believe, however, that the condition would be found not infrequently if looked for and may be of great importance in the diagnosis and prognosis of nervous disease.

Erythromelalgia is characterised by acute vaso-dilatation over a definite area of the body. The skin assumes in marked cases an intense purple-red colour, swells a little and becomes tense and shiny. The superficial veins of the affected region stand out prominently. The skin can be felt to pulsate and the surface temperature is raised often as much as two degrees above that in the non-affected regions. Severe burning pain, often described as being like a strong galvanic current applied to the skin, accompanies the redness. When the affected area is analgesic patients experience intense tingling, but no pain. The attacks may appear spontaneously or may be induced by exertion, warmth, or emotion. The effect of position upon the affected region is remarkable, so that when the foot is affected an attack may be often brought on at once by merely allowing the foot to hang down, and during the attack that position always increases the pain and the vascular phenomena. Many cases have been reported in which patients have been entirely unable to stand on account of the pain the erect position produced. Elevation of the affected part always causes the pain and the state of vaso-dilatation to pass off so long as the elevated position is maintained. During the attack the application of warmth to the part affected increases the pain and cold greatly relieves it. The surface temperature of the erythromelalgic skin is raised when the part is dependent sometimes to a remarkable degree and lowered when the part is raised. In a normal limb the reverse is the rule. This effect of position upon the vaso-motor state and temperature of the limb is highly characteristic of erythromelalgia. Tender points are frequently observed over the affected area and hyperæsthesia is common. Localised sweating of the skin during the attack is common and thinning of the skin, with brittle, reeded nails, sometimes occurs. The distribution of erythromelalgia is generally peripheral upon the limbs. Rarely the face and trunk have been affected. The lower extremities are more frequently affected than the upper; the distribution is not that of nerve-root or nerve-trunk—it is often limited by a sharply marked circular line round the limb. As a rule the limbs are affected symmetrically, although frequently one limb is affected before the other. The condition shows a marked tendency to spread until the whole distal part of the limb is affected. The duration of the attacks varies from half an hour to several weeks[4]; it is usually three or four hours. Hæmoglobinuria has not been found associated with the condition. The patients rarely suffer with chilblains or "dead fingers."

I have observed ten cases showing erythromelalgia in different degrees of severity at the National Hospital for the Paralysed and Epileptic during the last six months and I am much indebted to my chiefs—Dr. Jackson, Dr. Buzzard, Dr. Bastian, Sir William Gowers, Dr. Tooth, and Dr. Colman—for permission to publish the following notes.

CASE 1. *Disseminated sclerosis.*—The patient was a woman, aged twenty-nine years, of healthy appearance. The symptoms of spinal cord disease began nine years before admission. On admission examination revealed pallor of both optic discs, slight weakness of both external recti, diplopia, and slight nystagmus. There was no speech defect. There were slight intention tremor of the hands, loss of control of both sphincters, severe spastic paraplegia with some ataxy of the legs, inability to stand, double rectus and double foot clonus, no sensory disturbance, and some hyperæsthesia of the feet. Seven years before admission she noticed attacks of burning pain in both feet associated with great redness and heat. These occurred spontaneously and whenever the feet became hot. The attacks lasted about three hours and were at once relieved during that time by the recumbent posture, but the pain and redness returned when she put her feet to the ground. A year later the feet gradually became permanently red and the dependent position of the legs became an active factor in producing the attacks. Sixteen months before admission the feet always became purple and painful when allowed to hang down. The redness, up to this time confined to the feet, extended as high as the knees. The feet swelled during the attacks and sometimes subcuticular hæmorrhages occurred. The feet and legs were then constantly red in whatever position they were placed. Since this time up to her admission the attacks continued, but less frequently than before. As she lay in bed the legs showed a red blush limited sharply above by a circular line just above either knee, which below the middle of the calves changed to a deep purple colour and over the feet showed some mottling. The feet were cold to the touch and pressure produced an intensely white mark which slowly became red. When the feet were hung over the edge of the bed or when she assumed the upright posture they became of a much brighter purple colour and became very hot to the touch. The skin became tense and shiny and the feet swelled but did not pit on pressure. The veins stood out and the whole foot and leg below the knee could be felt to throb. She had intense burning pain limited to the region of redness. A surface thermometer was applied to the dorsum of each foot for ten minutes, the feet being raised above the level of the body. A second application was made for a similar period, the legs being allowed to hang over the edge of the bed. The temperature in the raised position was as follows: in the right foot 94·8° F., in the left foot 94·6°; in the dependent position, right foot, 96°, left foot, 95·8°; the difference being—in the right foot, 1·2°, and in the left foot, 1·2°. On two occasions while she was under my care I was called to this patient in the night and found her crying out with pain in the legs, which presented a condition of erythromelalgia even more severe than that just described as the result of hanging the legs down and with similar distribution. She was relieved by the application of cold and by bandaging the feet tightly with Martin's bandage.

In this case the following points are of interest. The pain and vaso-motor disturbance always appeared simultaneously. The attacks were at first spontaneous only but subsequently they were often brought on by the dependent position of the lower extremities and lastly always induced by the dependent position. When this patient was wearing tightly applied Martin's bandages from the foot to the knee she could sit with the legs down in comparative comfort. The slow supervention of a gradually deepening permanent vaso-motor palsy, uninfluenced by the position of elevation of the limbs, and occurrence of acute spontaneous vaso-motor disturbance in its area of distribution may have a most important bearing on the pathology of erythromelalgia.

CASE 2. *Disseminated sclerosis.*—The patient was a woman, aged forty years, delicate-looking and sparely nourished. Ten years before admission she had transient amblyopia of the left eye. Her present symptoms dated from a chill seven months before admission. At the time of admission there were pallor of both optic discs, concentric contraction of both visual fields and slight nystagmus on extreme lateral deviation. Speech and the upper extremities were normal; the lower extremities were very weak in all movements. There was marked wasting of the muscles in the left thigh and calf; dorsiflexion of either ankle was impossible; the gait was peculiar and strongly suggestive of functional disease. There was loss of sense of position below the hips. There was no anæsthesia. The sphincters were natural, the knee-jerks were difficult to elicit, and the plantar reflexes were very faint. Four months before admission she noticed sudden burning pain in the feet as she was walking. The pain lasted some time and occurred on several occasions. Soon afterwards similar pain was noticed at night and she thought a very hot foot-warmer was in the bed and asked to have it removed. These attacks frequently recurred. A month before admission the feet became red and painful when she stood up. The recumbent position at once caused the pain and redness to disappear, as did the application of cold. As she lay in bed the feet presented a natural appearance. Directly the feet were lowered typical erythromelalgia was seen in either foot, limited by a sharply marked circular line just

[4] Two cases with attacks of very long duration are reported by Cristiani, La Riforma Medica, Torino, 1894, vol. iv., p. 4.

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above the malleoli. At times for days together no vaso-motor phenomena appeared when the patient stood up and at other times the erythromelalgia would appear in one foot only. When the feet were warm to the touch as she lay in bed the vascular phenomena always appeared if the legs were allowed to hang down or if a ligature were tied round the calves. There was no persistent vaso-motor palsy. The soles of the feet and the calves were very tender on pressure. There were no trophic changes. This patient had several spontaneous attacks when in the recumbent position. Subsequently she developed complete paraplegia, reflex flexor spasm, complete anæsthesia below the knees, and loss of control of the sphincters with cystitis. She became completely bedridden and since then the vaso-motor disturbances have not again appeared.

The aspect of this case at first was strongly suggestive of functional disease. The presence of erythromelalgia at that time was much in favour of organic disease. The diagnosis of disseminated sclerosis was fully confirmed by the subsequent course of the illness.

CASE 3. *Disseminated sclerosis.*—The patient was a woman, aged twenty years. Her symptoms began three years ago. When admitted to hospital she had slight weakness of the right arm with marked incoördination and intention tremor, slight incoördination and tremor in the left hand, spastic paraplegia with marked ataxy, no anæsthesia, and loss of control of the sphincters. The knee-jerks were exaggerated, there was double foot clonus, and the triceps and supinator jerks were absent. While in hospital she first noticed severe attacks of burning pain in both feet when they became warm in bed at night, lasting a variable time from a few minutes to several hours. There was well-marked erythromelalgia over both feet limited above by a circular line just above the ankle, that on the right foot being more intense. During the attacks the dependent position of the feet increased all the symptoms and raising the limbs above the level of the body alleviated them, but the dependent position did not seem to be a factor in inducing the attacks. A month after the appearance of the erythromelalgia a condition of permanent vaso-dilatation made its appearance over the same area and gradually deepened in intensity as the attacks went on. Nine months later the attacks became much more frequent; she became quite paraplegic. Since this time the vascular disturbances have gradually diminished and have now been absent for some months.

CASE 4. *Disseminated sclerosis.* — This patient was a married woman, aged twenty-nine years. Her illness began after a confinement three years before admission. On admission she had unequal pupils, transient diplopia, spontaneous rotatory nystagmus, and coarse nystagmus on deviation. Speech was halting and there were slight tremor of intent in the upper limbs and marked incoördination and intention tremor of both legs. All movement of the lower extremities was very weak. Romberg's symptom was present. There were no anæsthesia or girdle sensation. There was reflex incontinence of urine. The knee-jerks were exaggerated, R. > L. There was double foot clonus. The skin over the outer side of the left foot, including the two outer toes, not extending on to the soles and extending an inch above the external malleolus, was of a red colour, sharply marked off from the surrounding skin, which was pale. The whole left leg below the knee showed a curious *tache* not unlike urticaria scripta.[5] At times and for periods of twelve hours together when she stood up the red area above described assumed a condition of typical erythromelalgia and she had severe pricking pain confined to that area. Alteration of position had the usual effect upon the redness and pain. At other times the erythromelalgia could not be brought on by prolonged exertion or by immersing the feet in hot water or by placing a ligature round the limb. The soles of the feet and calves were tender to pressure. She had attacks of severe burning pain in both feet at night, but this occurred only twice while she was under my care and on neither occasion were the feet seen.

The noteworthy features of this case are the distribution of the permanent vaso-dilatation and the *tache*.

CASE 5. *Neurasthenia with (?) disseminated sclerosis.*—This patient was a single woman, aged thirty-four years. Six years before admission she had double oöphorectomy performed for the relief of dysmenorrhœa. The operation was followed by severe neurasthenia. For two years she had been unable to walk or sit up and for the last year there had been slight trouble with micturition. All movements of the limbs were executed feebly and languidly. There was no wasting, tremor or ataxy. She could not sit up in bed and when she attempted to stand she fell "all of a heap." There was distinct left hemianæsthesia and occasional slight delay in micturition. The plantar reflexes were absent and the knee-jerks were brisk. There was left foot clonus. The nails of the fingers and toes were thin, reeded, and brittle; the skin of the hands and feet was soft and thin and perspired profusely. Three years ago she began to have attacks of pain in the hands and feet; sometimes in the hands only. They occurred at night, lasting some hours, and she got into the habit of sleeping with the hands above her head to lessen the pain. Soon after this time she noticed that the dependent position of the limbs brought the attacks on and she had been unable to put her feet to the ground for weeks together on account of the pain. The attacks were accompanied by excessive tenderness and profuse sweating of the hands and feet. They were much better in the winter than in the summer; often in the winter she had gone months without any attack. On examining this patient one morning I discovered a slight degree of erythromelalgia in the left foot. This had passed off by the following day and for the next month she showed no sign of the condition, though I repeatedly tried to induce it. At the end of this time I was called to her one morning and found her crying out with pain, a severe condition of erythromelalgia being present, limited in the hands by a line round the forearm an inch above the wrist and in the feet by a circular line just above the ankle. The left foot was more affected than the right. The hands and feet were perspiring profusely and she complained of a pain as if she were being burnt in the balls of the fingers and toes. Pressure over the heads of the metacarpal and metatarsal bones on the ventral aspect gave great pain. The effect of position and of the application of cold was typical. The following was the surface temperature taken on the dorsum of each hand: hands straight up in the air—right 88·4° F., left 88·6°; hands hanging down—right 90·6°, left 90·8°; the difference being, right 2·2°, left 2·2°. During the remainder of her stay in the hospital these phenomena appeared unvaryingly when the feet and hands were dependent and some degree of vaso-dilatation was constantly present over the areas affected by the erythromelalgia. In this case the erythromelalgia was the earliest organic symptom to make its appearance and together with the sphincter trouble and foot clonus of later onset suggest strongly the presence of organic spinal disease. In connexion with the oöphorectomy it is interesting to note that in several published cases in males erythromelalgia has been associated with aspermatism.

CASE 6. *Disseminated sclerosis.*—The patient was a woman, aged thirty years. Her symptoms had been present for five years. On admission she had concentric contraction of both visual fields, slight left ptosis, some weakness of the right external rectus, nystagmus, slight tremor on execution of fine movements in the upper extremities, severe spastic paraplegia with ataxy, less of muscular sense in the lower limbs, partial anæsthesia of the legs, and loss of control of the bladder; the knee-jerks were exaggerated and there was double foot clonus. For the last two years she had had attacks of a burning and uncomfortable but not painful sensation in the neck and ears, associated with great redness and heat of the skin. The attacks always occurred when she was recumbent and were brought on by motion. The skin over the whole neck as low as the clavicle and over the whole head, excluding the area of distribution of the fifth nerve, during these attacks became of a red colour, very hot and slightly swollen. The attacks lasted about half an hour.[6]

CASE 7. *Tabes dorsalis.*—The patient was a man, aged thirty-one years. He had had syphilis nine years ago. The symptoms had been present for two years. He had unequal Argyll-Robertson pupils, incoördination of movements of the upper extremities and complete loss of muscular sense in the three ulnar fingers of both hands, tactile anæsthesia and partial analgesia below the sixth cervical root distribution, absolute analgesia below the third lumbar root distribution, lightning pains, girdle sensation, absolute loss of muscular

[5] A similar condition occurring in association with erythromelalgia is reported by Senator, Berliner Klinische Wochenschrift 1892, Band xxix., pp. 1125-9.

[6] A case of tabes with similar distributio is reported by Benda, Berliner Klinische Wochenschrift, 1894, Ba d xxxi., pp. 53, 89, 117 and 14

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sense in the legs, Romberg's sign, and absent knee-jerks; there was no sphincter trouble. He had noticed for two months that the feet and legs as high as the knee became red, swelled and tingled all over when he tried to walk or when he was sitting with legs down and that sometimes they became very red and tingled when he was in bed. There was a typical condition of erythromelalgia over both lower extremities, gradually becoming less marked from below upwards and ceasing just above the knee. This varied much from day to day, at times being more severe, at others hardly noticeable or absent. Surface thermometry gave the following results: legs horizontal — right foot 85·6° F., left foot 89°; legs dependent — right foot 86·6°, left foot 90°; the difference being, right foot 1°, left foot 1°. (A Hicks' thermometer was applied to the dorsum of the foot for ten minutes in each case.) There were no trophic changes, no sweating, no tender points, and no persistent vaso-motor palsy. Whilst under observation he had severe gastric crises; during several of them attacks of erythromelalgia in both hands limited sharply at the wrists were seen, but the attacks were accompanied by tingling and not by pain, the absence of which in both hands and feet during the vascular disturbance is to be explained by the fact that both regions were analgesic.

CASE 8. *Tabes dorsalis.*—The patient was a man, aged fifty-two years. He had had syphilis twenty-five years ago and had had two attacks of lead colic. On admission he had unequal Argyll-Robertson pupils, incoördination and loss of muscular sense in the arms and legs, Romberg's sign, marked anæsthesia and analgesia below the sixth cervical root distribution (the anæsthesia splitting the middle finger), which become almost absolute below the tenth dorsal level; lightning pains, girdle sensation, severe gastric crises, and delayed micturition. The knee, wrist, and elbow jerks were absent. There was alopecia over the fifth lumbar and first sacral root areas. The skin over the feet was thin and shiny and the nails were brittle and reeded. A history of erythromelalgia was carefully inquired for with negative result. After he had been under observation a month one morning he had an attack of severe gastric pain and went to bed. Immediately afterwards both hands assumed a deep purple colour and felt as if they would burst. They tingled all over, the veins stood out, and the whole hands throbbed. The skin became very tense and swelled slightly. The redness was sharply limited above by the flexure of the wrist on the radial side and extended for 2 in. above the wrist on the ulnar side. It was quite symmetrical. Raising the hands above the head caused the redness and tingling to disappear; lowering the hands caused the symptoms to reappear and become intense. The following are the surface temperatures. Hands raised above the head—right 89·5° F., left 89·5°; hands hanging vertically—right 92·5°, left 92·5°; the differences being, right 3°, left 3°. The attack lasted three hours and for six hours after it had passed off some degree of erythromelalgia could be produced by allowing the hands to hang down. Up to the present time this patient has had no further attack. In this case, as in the last, the vascular disturbance was situated in an analgesic region and tingling appeared in the place of pain. In both cases the vascular and gastric crises appeared simultaneously.

CASE 9. *Myelitis.*—The patient was a man, aged thirty-five years. His symptoms began gradually in February, 1896. When this note was made he had severe spastic paraplegia with ataxy and reflex spasms, partial loss of sensibility from the xiphoid cartilage downwards and delay in micturition; the knee-jerks were exaggerated and there was double foot clonus. At Christmas, 1897, he first noticed attacks of burning pain in the feet associated with redness and heat. The attack occurred almost every night and he constantly required injections of morphia to ease the pain. There was a condition of marked erythromelalgia over both feet limited sharply at the middle of the calf. It varied greatly in degree at different times. Subsequently this patient recovered such power in the legs as to enable him to walk. The attacks still occur when he walks about much but are much less severe than formerly.

CASE 10. *Traumatic neurasthenia.*—The patient was a man, aged twenty-five years. His symptoms followed a severe fall on to his back fourteen weeks before admission. On admission all movements of the lower limbs were performed feebly and with much coarse tremor; there was no rigidity and no wasting. He trembled all over when he tried to walk and frequently dropped on his knees. His gait was typically functional. There was intense tenderness over the last lumbar spine but no abnormality in the spine or pelvis. There was absolute analgesia and diminished tactile sensibility over the lower extremities below Poupart's ligament on either side. He had slight difficulty in starting the act of micturition. The knee-jerks were exaggerated and there was double foot clonus. While in the hospital this patient for the period of a fortnight had several attacks of erythromelalgia of slight degree, the distribution being from the knee downwards and quite symmetrical on the two sides. The redness was not sharply limited above but faded off gradually into the normal skin. The attacks, which occurred several times a day and lasted about two hours, became slighter and disappeared at the end of a fortnight. I have since heard that they have returned.

This case was without doubt chiefly one of traumatic neurasthenia, but the existence of slight sphincter trouble and persistent foot clonus suggested that there was some lesion of the spinal cord. The occurrence of erythromelalgia strongly supported the probability of this.

The occurrence of these cases within a short period of time argues that erythromelalgia is not a rare symptom of spinal cord disease. It has without doubt frequently been overlooked. In the absence of symptoms pointing to the disease of the nervous system erythromelalgia has been investigated as an entity and the earlier literature on the subject relates chiefly to "idiopathic" cases. Lannois[7] in a collection of cases published before 1880 states that nervous symptoms are only rarely coincident. The prevailing opinion at the present time among German writers is the opposite extreme to this. When a case presents as one of definite disease of the nervous system, erythromelalgia, if it occur, may not be recognised as such and may be simply noted as "vaso-motor paralysis," the accompanying sensations being set down to some of the many subjective peripheral sensations occurring in spinal cord lesions. One of its most characteristic symptoms—pain—may be absent if there be analgesia, as was the case in the two tabetic patients cited. Again, the variability of the occurrence of the symptoms—often absent for long periods together, especially in patients who are confined to bed—renders it easy to be overlooked. I would suggest that if the symptom be looked for with a knowledge of the peculiarities distinguishing it from other forms of vaso-motor paralysis it will be found not uncommonly in disease of the spinal cord.

In several of my cases there occurred at first only spontaneous attacks; afterwards the conditions became frequently induced by the dependent posture, and later a condition of permanent vaso-motor palsy of greater or less degree made its appearance; the attacks meanwhile continuing. This sequence suggests an irritative lesion of nerve structures governing the blood-vessels being the cause of the vascular crises and of the progress of this irritative lesion to a partially destructive lesion being the cause of the persistent vaso-motor palsy, these phenomena in vaso-motor nerve elements being parallel with pain followed by anæsthesia in sensory nerve elements and with spasm followed by motor paralysis in motor elements. Weir Mitchell used the term "vascular storm" in reference to this condition and the term "vascular crisis" would, I think, be very apt, occurring as it does in tabes associated with gastric and other sensory "crises." Probably the same fundamental pathological processes underlie both sensory and vascular crises. In all my cases the vascular change was never preceded by the sensory disturbance, but either preceded it or the two appeared simultaneously. It seemed as if the sensory disturbance was a local result of the altered vascular condition of the part. I would lay stress on the fact that erythromelalgia may be the first symptom of organic disease of the cord and may be of great value in diagnosis and especially valuable in the differential diagnosis between functional disease and disseminated sclerosis.

[7] Lannois: Sur Erythromelalgie, Paris, 1880.

DRAINS AT BODMIN.—At the meeting of the Bodmin (Cornwall) Rural District Council held on July 30th a complaint was made of an open drain at Port Isaac, whereupon a member remarked that personally he did not believe in drains, and added that there was no plague in Bombay before drains were made. Eventually it was decided to instruct the police to report persons throwing slops into the drain.

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VITALITY:
AN APPEAL, AN APOLOGY, AND A CHALLENGE ADDRESSED TO BROTHER PRACTITIONERS.

BY
LIONEL S. BEALE.

BIOPLASM.

(Continued from page 144, July 16th.)

ESPECIALLY in warm-blooded animals bioplasm loses its characters soon after death. It becomes liquefied, there being no doubt a minute coagulum at the moment which soon undergoes further changes. The fluid which constitutes the greater part soon permeates the tissues around and the water and dissolved constituents are diffused through the adjacent textures, which, of course, become flaccid and lose the firmness and resilience characteristic of them in the living organism and for a short time after death. Generally, the constructive and formative agency of bioplasm deteriorates if the bioplasm lives too fast—if the rate at which nutrition and multiplication proceed in the normal state of health is much exceeded—and if this increased rate of living does not soon cease all formative and constructive power is entirely lost, the rate of multiplication increases, and such is the intensity of the nutritive process that the living particles acquire yet increased powers of multiplication and may live at the expense of and destroy the very tissues which had been produced by the bioplasm from which they also traced their descent.

This same process of rapid growth and increased multiplication in low simple forms of life results in mere increase in numbers, though even in this case there may be some change —some deterioration in vital power. But generally in the case of the lower microscopic fungi and allied organisms favourable external conditions and plenty of nutrient matter cause greatly increased and more rapid multiplication only.

But in the case of man and many of the higher animals if the bioplasm of the tissues grows and multiplies at a rate which considerably exceeds that which is normal, as occurs in "inflammation and fever," it very soon loses its tendency to produce bioplasts having normal formative power and soon "pus corpuscles" may result. Thus the vital biological process is soon replaced by a vital pathological process. So numerous are the bioplasts produced that they may fill the surrounding spaces amongst the tissues. Such phenomena are of great interest to us and illustrate principles in action through nature that deserve more consideration in pathology and medicine than they have yet received. The living descendants of normal bioplasts which had living formative capacity are represented by "pus corpuscles" injurious to the organism in which they originated. Evanescent and short-lived, they soon become a prey to bacteria and other low forms of life and are lost.

When, on the other hand, the bioplasm of our tissues lives too slowly a low kind of formed material is produced which in many characters departs from the normal standard. This may gradually accumulate so as to interfere with action and in many cases with the removal of the substances formed during action; and, again, a pathological change of a kind very different from normal biological changes and also from those resulting from living too fast is the consequence, but slow deterioration and incapacity succeed.

In the lower forms of life, as in the case of the microscopic fungi, when the conditions are unfavourable and nutrition and multiplication proceed too slowly the bioplasm ceases to grow and much is converted into hard formed matter by which the speck of bioplasm that is left is protected from injurious influences and is thus enabled to live through a long continuance of adverse conditions. Not only so, but the living particle, however minute it may be, during its comparatively passive state seems to acquire and accumulate vast vital power of its low simple kind, for after living apparently dormant for months, when favourable conditions of temperature, moisture, &c., are established, the thick protective covering is soon softened and permeated by nutrient matter. The enclosed bioplasm soon increases, portions of it burst through the walls which enclosed it, pass out at any weak spots and soon gain the outside, when at once it lives freely, increases and multiplies exceedingly and in a wonderfully short time, and then growth and multiplication proceed in the usual manner.

Generally, the production of bioplasts which are to take part in the production of bioplasts which are eventually concerned in the formation of highly complex tissue and various formed substances, is a slow process. Vital phenomena requiring but a very small quantity of matter proceed in the bioplasm of every bud during a long time in the dark and cold part of the year, when as we say vegetation is at rest or asleep; but all this time the bioplasm is gaining in power—vital power is as it were accumulating or concentrating. The early vital changes, and the arrangement of the bioplasts of the plant bud from which the tissues of leaves, flowers, and fruit are eventually evolved, is a slow operation indeed compared with the growth of these; until the development of the bioplasts and their orderly arrangement are slowly completed active growth does not begin.

The evolution and development of the active part of the ovum and seed are slower and still more wonderful as regards the concentration of developmental and formative power not to be actively manifested until a considerable period of time has passed, the bioplasm of course being in living state and probably undergoing important changes during the whole time in preparation for the wonderful and often rapid increase and growth with which all are familiar.

According to the notions of our time we might say that we may hold alive in the palm of the hand the potential future forest. The potential part of the germ of animals and man having its wonderful powers of evolving many kinds of tissues and organs of great complexity and perfect action, is so minute that probably that of the largest organism that ever lived on earth or in the water was considerably less than the head of the smallest pin. Verily, it is indeed difficult to understand how anyone can regard matter and its physico-chemical changes as all in all, and almost ignore the existence and operation of vitality that governs, directs, and determines the changes which the matter is to undergo.

That throughout living nature, from the time of the first appearance of life, all arrangements and actions of tissue, however complicated or inexplicable, have been a direct consequence of the influence of the vital power of the bioplasm and have resulted from changes before the formed material was produced and manifested its characters, may be regarded as certain. The facts prevent the acceptance of any other conclusion. Surrounding conditions undoubtedly exert a modifying influence, and in more than in one or two characteristics, but are incompetent to give rise to any vital changes whatever. They may check, stop, or, on the other hand, may facilitate the activity of vital phenomena. They may interfere with the completion of the series of already arranged-for changes. As some would say, external conditions may affect the evolution of an individual, a species or a race, and in many ways; and, on the other hand, may stop and indeed often do stop evolution altogether and put an end to life.

By studying the growth and arrangement of a tissue we may mentally trace the different stages of its formation, as it were backwards, until we reach the colourless, structureless bioplasm in which it originated—nay, when we see impression of its structure we may sometimes decide the general nature of, if we cannot actually identify, the organism from which it was derived, just as from the footmarks upon a slab dug up yesterday after it had been lying buried undisturbed for ages we may feel sure as to the sort of foot which made the impressions at the time of a living world, very different from our life world, and of which but a few traces are still to be seen in a small number of living organisms of the living world of our time, so marvellously different from those referred to of past ages, though in unbroken continuity with it and at least certain forms of its far remote living matter. Not only so, but those familiar with anatomy and the structure of tissues may, from the character of the imprints, form some notion of the characters of the tissues of that primeval foot, of the muscles by which the toes were moved, the tendons by which they were connected with the bones, and the nerves distributed to the tissues. Further, the sort of legs, the body they supported, and even the habits of the creature and many other facts connected with its existence may be surmised. The minute structure of its tissues, the changes which occurred in their formation, the general character of its living matter, are now as certain as that the sun whose rays light our earth at this moment is the same sun that rendered possible those imprints made æons ago, and the reason becomes convinced that long ere those primæval times the same principles prevailed then as regards the vital phenomena of that

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so-called extinct living world as prevail now, and over all the same Infinite Power that was and is and is to be.

By the careful examination of the complex arrangement of nerve plexuses and networks in many parts of the organism we may form some idea of the movements of the bioplasts at a very early period of development long before a trace of the fibres and nerve trunks was to be discerned. For this purpose it is better to take a small animal than a large one—the little green tree frog, Hyla, a young white mouse, or a bat. The tissues of these animals are delicate but make beautiful specimens, and there is very little indefinite connective tissue to prevent us getting a clear view of the course and arrangement of the delicate nerve fibres in many parts and organs. That specimen showing the spiral arrangement of one of the fibres of a nerve cell from the Hyla figured in my drawings[1] and copied into many works demonstrates several general points connected with the arrangement of nerve fibres of great importance, though very different conclusions have been entertained with regard to the structure and action of such remarkable nerve cells. The fibres—one straight from the central part, the other spiral from the circumference of the body of the cell—may be traced to a point a short distance from the cell where one curves round the other fibre, so that they pursue *opposite directions* in the bundle of fibres with which they run. These and other points are referred to in my paper in the Philosophical Transactions of the Royal Society for 1863, Part II., p. 543.

Another example of the demonstration of a particular fact bearing upon important general questions, occurs in a specimen also from the Hyla in which a delicate nerve fibre can be followed from the fibre connected with it to its distribution on a capillary vessel, and its course may be traced for some distance near the outline of the vessel, which is also distinct. Upon comparing both these specimens with the drawings made on the wood blocks many years ago and afterwards engraved line for line, the correctness of the figures published in 1863 may be confirmed, and I think I am justified in saying that it is not easy to draw conclusions widely different from those I have arrived at concerning the arrangement depicted. These specimens were examined early this year by Dr. Alexander Morison.[2]

Now the facts alluded to do not accord with some of the first principles of nerve distribution and nerve action which are entertained. Both specimens it need scarcely be said have some bearing upon the questions of nerve distribution, nerve ends, and nerve circuits which lie at the root of the problem of nerve action.

Notwithstanding the thousands of miles of type being constantly set up an English biologist has, indeed, very little chance of gaining the attention of the numerous active students of biology of the last decade or two either here or in other parts. I may be permitted to remark with regard to many recent observations concerning the arrangement of nerve cells and nerve fibres that the general conclusions of some good observers appear to be coming rather near to some of those represented in my drawings published about forty years ago. In particular as to the connexion of at least two nerve fibres with every nerve cell, while "apolar" nerve cells seem at last to have been given up. Then the "nerve ends" seem to be gradually extending themselves farther and farther from the "nerve cells," both central and peripheral, and I begin to look forward in hope to the time of still more extensive fibre elongation, and even some day to the admission of nerve circuits, structural continuity between "cells" and fibres everywhere, and uninterrupted tissue communication between all seats of nerve action in distant parts and central nerve cells. I look forward to the exposition of the development of the nerve systems of all organisms which possess them, from structureless bioplasm, and the explanation of the mode of working of every part of the most complex and elaborate nerve tissue arrangements in living nature. Few observers seem to venture to give an opinion on the question of action of the arrangements they describe. The anatomical distribution of the fibres and the general anatomy and distribution of the nerve fibres—indeed, the whole nervous system of man—is gradually being reduced to form and order by dissection, by experiment and microscopical observation, and by careful investigation of various cases of disease, especially where the pathological changes are restricted to particular parts of the peripheral and central portions of the nervous system. But still many first principles remain undetermined and we have yet much to learn concerning the minute structure and action of the simplest central and peripheral nerve arrangement, of the precise action of nerve cells and the origin, nature, and mode of transmission of nerve currents. Criticism in this department to be of value to us must be careful and thorough. So far few attempts have been made to collate the multitudes of observations and views of the many workers and thinkers in this important department of knowledge so very closely connected with a knowledge of human action in health and disease.

I long to go further and think I could climb higher, much higher, and yet not reach the last rung of the strong ladder of observation and demonstration, particularly as regards this arrangement, development and action of nerve fibres and nerve "cells," but for the present forbear, for I fear I have already exhausted the patience of my readers with descriptions of minute anatomical details, their meaning and the manner in which they were produced, though so far I have described only what I have demonstrated and can show to others. The conclusions I have arrived at are, I believe, the only inferences that are reasonable and I believe the evidence to be convincing that all growth, all structure, all formation, are determined by vital action and depend in the whole living world upon vitality. Above all things, I desire that the attention of my readers should for the present be concentrated upon the consideration of this most important question—the existence of vitality as distinctive of the whole living world—peculiar to it and not representing or analogous to anything else in nature. If the conclusions at which I have arrived are wrong, scientific men who differ from me and teach totally different views ought to expose my errors and state the grounds of their objections. As regards all living matter being due to vitality, to the uninterrupted action of vital power operating in everything living, but in the living world only, I submit the following conclusions based upon facts of observation and expressed as clearly and in as few words as possible.

Everything living, the whole living world, past as well as present, was first in the state of colourless structureless living matter—bioplasm.

Some of the lowest forms seem to be structureless during the whole period of life; and all during the earliest stages consist of bioplasm with no discernible formed material or structure.

However complex and elaborate may be the structure of the highest organisms in the fully developed state, all were originally bioplasm or structureless living matter—were evolved from this. Without bioplasm evolution of any kind is impossible.

Every tissue, every structure, every organ is formed from and by the structureless bioplasm, and as far as is known there is no other mode of formation in living organisms.

Bioplasm manifests powers not possessed or exhibited by matter in any other state or under any other known circumstances or conditions—powers of directing, moving, governing, re-arranging material particles — powers of analysis and of preparing for synthesis—powers of preparing for and providing for, and as it were foreseen, future changes and developments. These wonderful powers, as it seems to me, can only be accounted for by attributing them to some power or influence operating in every living particle, but in the living world only—vital power, vitality—Biokraft—"a psychical factor, a factor which no physical research whatever can disclose or identify or get the remotest glimpse of" (Herbert Spencer).[3]

[1] Philosophical Transactions, 1863.

[2] See report of Dr. Alexander Morison's "Morison Lectures," Edinburgh Medical Journal, February, March, April, 1898, p. 228.

[3] Not a little confusion has of late years occurred in the use of the word "psychical," some having extended its meaning and so generalised it until it is made to include those phenomena in all life which distinguish it from all non-life, and which by me have been termed "vital," while by many the word is still restricted to *mental phenomena*. In my view all mental action is "vital" action, but I do not consider all vital action to be "psychical." The "psychical actions" of a bacterium, of a monad, of an entozoon seem hardly admissible unless the word is to be substituted for "vital" in all cases. It has been ingeniously suggested that mental psychical phenomena have a *physical* as well as a *psychical aspect*—a double-faced system, but whether the physical or the psychical begins it, or both begin together, has not been stated.

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If the ordinary phenomena of life can be explained without postulating any such "psychical factor," why have they not been so explained? What facts or laws, properties, processes, or energies expel vitality from living nature?

Every complex living organism consists of living matter or bioplasm and of formed material or tissue and other formed matters.

Every kind of structureless, colourless living matter in nature is associated with a large proportion of water. In the absence of water life exists not.

The living matter in fully formed organisms is inconspicuous and in specimens prepared by some methods is not seen at all.

Every particle that lives consists of: (*a*) living matter; (*b*) matter that has lived; and (*c*) matter which is about to live—matter about to be taken up by the living matter.

All growth, all formation, all structure and action, depend upon living matter.

Vital power is only imparted to non-living matter when it is infinitely near matter that lives and does not appear to exert any influence upon matter separated only by the very slightest space.

The "nutrient substances" dissolved in a large proportion of water seem to pass into the very centres of the particles of living matter where certain of the constituents are caused to live.

Bioplasm or living matter invariably proceeds from bioplasm that existed already.

Bioplasm cannot, as far as is known, come from the non-living and there is no gradual change from one state to the other.

All vital phenomena are absolutely different from any physical phenomena.

Bioplasm cannot be produced artificially.

It is probable that from the very beginning living matter exhibited the same general characters it exhibits to-day—always was and will be transparent, colourless, structureless, possessing spontaneous vital movements and analytical and formative power.

In all living matter then there is power or capacity of rearrangement of the constituents in a predetermined manner so that special substances and special structures shall result when the matter ceases to live.

I am quite ready to publicly admit mistakes if my observations can be proved wrong, but I have been so many times over the same ground and have examined the corresponding structures and their arrangement and studied their growth and formation in so many different organisms that I cannot believe my general conclusions as to vitality, the nature of growth and formation of tissue, are far from the truth.

I also hold strongly to the general arrangement that I have described of the finest nerve-fibres centrally and peripherally. I have been unable to satisfy myself of the existence anywhere of nerve ends or of central "cells" destitute of fibres or having the one fibre only. And surely by this time we ought to have been able to decide upon many such elementary questions of fact, involving as they do principles of the highest importance, not only to science, but to general knowledge—questions which now have to be referred to even in general education and are perhaps about to be subjects included in "secondary education."

Is it not extraordinary that even during the last half-century many trained scientific minds, notwithstanding the greatly increased advantages we enjoy of being able to penetrate far more deeply into, and to study with greater accuracy, the mysteries of the living world, should, like the natural man of old, have been more interested in the consideration of the tremendous destructive phenomena of the vast and remote non-living rather than in the wonderful if less conspicuous phenomena of living nature—of that living world in which we occupy the most important place, far apart from, if not above, and in a category distinct from, that which includes every other living form? This very small but beautiful and elaborate life-world even now seems to appeal to the general science of our time far less decidedly than the crashing, crushing, terrifying, life-destroying energies of non-living, unapproachable, ineffable immensity.

(To be concluded.)

A CASE OF COMPOUND FRACTURE:

ACUTE TRAUMATIC GANGRENE; AMPUTATION; INJECTION OF ANTISTREPTOCOCCIC SERUM; RECOVERY.

BY W. SOUTHEY WRIGHT, B.A. OXON., M.R.C.S. ENG., L.R.C.P. LOND., L.S.A.

THE following case may, I think, be of interest partly on account of the frightful rapidity with which gangrene came on and partly because of the undoubted efficacy of the antistreptococcic serum in helping to arrest its spread in the stump after removal of the limb.

The patient was a little girl, ten years of age, who fell from a swing near a disused fowl run, sustaining a compound fracture of both bones of the forearm. This happened on May 25th, 1898. I saw her about half an hour after the accident. The wound was not bleeding then although the cloths which had been put on and her clothes were soaked with blood. I washed the wound, through which both bones were projecting, with carbolic lotion and covered it with antiseptic dressings and put the forearm up in back and front splints and left it in the extended and supine position. The patient, a very nervous and excitable child, had borne the necessary manipulations well. On calling next morning I found that she had passed a very bad night. She had been feverish and sometimes delirious. Her temperature was 102° F., her pulse was very quick, and she was wandering. I took off the splints and examined the wound. It was apparently healthy and free from smell and the arm was in fair position. It was again put up antiseptically, but the same night I was called in about 9 o'clock when I found that she had been wandering all day and the bandages were soaked by a thin, bad-smelling discharge; the edges of the wound looked slightly ashy in colour and the wound seemed larger. The bones being very much out of position owing to her restlessness I thought it best to again apply the splints, having first thoroughly cleansed the wound. The next morning (the 27th) I was horrified to find the hand and wrist below the wound quite cold and black and crackling with foul gas, while the whole arm above was swollen and brawny and of a dusky redness which ended in a well-defined raised margin about on a level with the anterior axillary fold. I had the arm immersed in an antiseptic bath and I telegraphed for Mr. Tubby. He arrived in the afternoon and decided on immediate amputation. The difficulty was as to site. The red line was spreading fast and was then close up to the shoulder and it was a question as to whether an amputation through the arm below this point, necessitating as it would the use of flaps which had been already largely invaded, would be preferable to amputation at the shoulder-joint. As the case stood then either seemed a forlorn hope, and while the operation at the shoulder-joint would give a slightly greater amount of healthy tissue for flaps, yet the greater wound surface, the more serious nature of the operation, the infinitely greater deformity should the patient survive, and the very slight hope of survival determined Mr. Tubby to perform an amputation through the arm. We hoped that the tissues of the shoulder would have sufficient vitality to arrest the onward march of the microbes thus cut off from their bases of supply. The limb was removed by the circular method, Dr. Gripper kindly assisting us. We found the tissue slightly healthier than was expected. The artery was quite healthy but there was pus in the vein. The flaps were drawn together loosely to allow of free drainage and the stump was enveloped in iodoform dressings. At Mr. Tubby's suggestion we sent for some antistreptococcic serum, 60 c.c. of which were obtained, and at 12.30 on the same night I went down to inject it. I found the patient, who was taking brandy freely, quiet and rational. The temperature was 99°

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and the pulse was 108. On examination I found that the red line had advanced since the operation over the point of the shoulder and although perhaps not quite so prominent was yet well defined, while the redness in the axilla had crept down over the ribs. I injected 10 c.c. of the serum into the shoulder just outside the reddened area. On arrival next morning I was delighted to find that this edge had become ill-defined, blotchy, and irregular with rose-coloured processes, some of which extended beyond the point of introduction of the needle, but on the whole the advance seemed broken, while the shoulder itself was much more soft and elastic. The axillary redness was still spreading downwards, so another injection of 10 c.c. was made just within the margin of it. Altogether 50 c.c. of the serum were injected into the affected area and certainly seemed most potent in arresting the spread of the gangrene. No ill effects seemed to follow the injections, an irritable papular rosy rash around the points of insertion of the needle being the only reminder of them, while three or four days after the last injection a rash, consisting of large rose-coloured circular spots, not elevated, and disappearing on pressure, broke out over both buttocks but soon disappeared. The further progress of the case was most favourable, our only anxiety being caused by the passage of clay-coloured stools and bilious urine, but these symptoms soon passed off and no other complications ensued. The temperature never rose above 100° and the only discharge from the wound was a thick mucoid material, inodorous and easily removed, while the wound itself never gave me a moment's anxiety. The patient is now quite well and has no pain in the stump, which is at present quite healed.

The cause of the gangrene we attributed to the bacillus of malignant œdema picked up from the soil, but an examination of some discharge by the Clinical Research Association only revealed the presence of streptococcus longus. I am bound to say, however, that the specimen was sent to them rather late and that then the amount of discharge sent was not enough altogether to exclude the malignant bacillus as the prime cause of the evil. On the other hand, no one who closely observed the effects of the injections could, I think, have failed to notice how very marked they were. Whether the further progress of the gangrene in the stump would have been arrested without their aid it would be difficult to say, but I feel quite convinced that without them there would have been a far greater loss of tissue and that the fair length of stump which the patient now possesses would have been very much less, if not altogether destroyed.

Carshalton.

EXCISION OF THE CÆCUM FOR TUBERCULOUS DISEASE.

BY H. A. LEDIARD, M.D. EDIN., F.R.C.S. ENG.,
SURGEON TO THE CUMBERLAND INFIRMARY.

IN July of last year a man was admitted to the Cumberland Infirmary on account of a hard swelling in the right inguinal and hypogastric regions. The age given was sixty-three years, but the appearance suggested at least seventy years. Deafness and hebetude no doubt prevented much historical record beyond the fact that the patient had been ill for eight months and suffered from looseness of the bowels. The swelling was within as well as beneath the parietes and showed no mobility. The first impression was that a malignant tumour was present and no idea of surgical interference was entertained. A rise of temperature, however, occurred and the area of the tumour showed a reddened patch. On August 1st an incision was made and some pus was evacuated and at the same time a piece of the indurated abdominal wall was cut away for examination. The pus appeared to come from the direction of the cæcum, but the incision was made near the middle line and below the umbilicus. The wound was stuffed with gauze and the temperature fell, but in a few days fæcal matter soiled the dressing and it became clear that the tumour was connected with the bowel. Microscopic examination of the piece cut away threw no light upon the nature of the disease. A sinus now led from just below and to the right of the umbilicus towards the anterior superior iliac spine and pus, with occasionally fæcal matter, escaped. Towards the end of the year the patient suffered from chronic bronchitis, mitral disease, emaciation, and great prostration, so much so that further interference was not countenanced. On Dec. 29th the sinus was laid open and traced down to the cæcum, which organ was found adherent all round, and having thick and hard walls. The cæcum was liberated and cut away and the ileum was attached to the wound, whilst the lower end of the colon was closed up. The sinus was scraped out and stitched up. At the completion of the operation I was in doubt as to the nature of the disease, but the extensive ulceration of the mucous membrane of the bowel and the hard and thickened walls suggested malignant disease. Much collapse followed the operation, indeed the removal of the cæcum was somewhat questionable on account of the patient's frailty, but the wound healed easily enough in spite of the mess occasioned by the discharge from the artificial anus. Microscopic examination by experienced hands showed the disease to be tuberculous by reason of the presence of giant cells and areas of caseation. Contrary to expectation the patient lived until Feb. 20th, 1898, but his feeble condition never would have justified an effort to anastomose the small with the large bowel and so close the artificial anus. Nevertheless it would have been better to have tried to do this at the time of excision of the cæcum because the patient exhibited a remarkable tenacity of life even in his feeble condition.

My reason for contributing this brief abstract of the case is through my having seen in THE LANCET[1] reference to the surgical treatment of intestinal tuberculosis. The disease may be more commonly met with than I am aware of, but it is the first case which I have been called upon to treat; on the other hand, cases of cancer of the cæcum have been dealt with by excision by Bruce Clarke, Walter Edmunds, Marmaduke Sheild and others with success, and it is probable that similar results may be recorded in future for tuberculous disease. To others it may be somewhat encouraging to know that a most unpromising subject for surgical measures survived a resection of the cæcum for two months and might have done still better if sufficient courage had been forthcoming to unite the small with the large intestine immediately after resection.

Carlisle.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES OF A CASE OF ANGINA LUDOVICI; OPERATION; RECOVERY.

BY ARTHUR E. PHILIPPS, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, a man, aged forty-five years, of temperate habits, consulted me on May 8th, 1898. He gave the following history. During the previous week he suffered from what he described as the "jaws ache," accompanied with occasional stiffness in the submaxillary region on the left side. He was also subject to hot and cold sensations. On May 7th he noticed a swelling in the left submaxillary region and felt that his tongue was being pushed up towards the roof of his mouth. He applied a poultice to the swelling, which increased very rapidly indeed. There was no history of sore-throat. The next evening (the 8th) I was called to see him. There was an indurated brawny swelling filling up the left submaxillary region extending anteriorly to the middle line, posteriorly to about 1 in. beyond the posterior border of the sterno-mastoid, and superiorly to the malar bone, sharply bounded by entirely unaffected tissue. There were parts locally softened and pitting on pressure. Any attempt to open the mouth caused great pain and on this account it was quite impossible to examine the throat. The floor of the mouth consisted of hardened deeply congested tissue and there was a bolster-like swelling round the interior of the lower jaw. The tongue was normal. He

[1] THE LANCET, July 30th, 1898, p. 274.

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could not swallow anything whatever, being obliged to put milk into his mouth and allow it to run down his throat, and he had great difficulty in speaking. He stated that he was unable to sleep for more than a few minutes at a time. There was no albuminuria. The pulse was 96 and the temperature was normal. On the 9th I saw him early in the morning and found that the swelling had extended in all directions except downwards, almost closing the left eye superiorly and beyond the middle line anteriorly. I anæsthetised the patient with A.C.E. mixture and made a deep incision in the submaxillary region. The anæsthetic was taken very badly. The wound was plugged with carbolic gauze and dressed with hot fomentations. On the 10th, with the aid of an anæsthetist, I made deep incisions in the middle line and along the anterior border of the sterno-mastoid; a thin, dark serum exuded. Both wounds were plugged as before. The patient steadily improved, though suffering from bronchitis following the anæsthetics. On June 1st the median incision and that at the anterior border of the sterno-mastoid had almost healed up, but the tissue around the submaxillary incision had broken down and a large quantity of pus was discharged. A drainage tube was inserted and the wound granulated up. On July 19th the patient felt well, and returned to work.

Fulham, S.W.

A CASE OF MEMBRANOUS TRACHEITIS AND LARYNGITIS WITHOUT THE PRESENCE OF DIPHTHERITIC BACILLI.

BY L. A. GRIMES, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE PHYSICIAN, ST. GEORGE'S HOSPITAL.

A BOY, aged four years and nine months, who was recovering from an attack of measles, was admitted into St. George's Hospital on May 18th, 1898, with marked stridor and great sucking in of the episternal notch and of the lower thorax during inspiration. On examination nothing abnormal was found beyond slight injection of the tonsils. The symptoms becoming rapidly worse and the child being in great distress tracheotomy was performed within half-an-hour of admission. Immediately the tube was inserted a large piece of membrane was coughed up. This membrane was of a greyish-yellow colour and very tough. Dr. Ewart's method of introducing creasoted oil (1 in 20) into the trachea was at once adopted. Five minims every 2 hours had the effect of softening the membrane, thus enabling the child to cough it up more easily and a fit of coughing was usually brought on immediately the oil reached the trachea. After 24 hours the dose was altered to 10 minims every 4 hours. In two days the membrane became quite soft and muco-purulent looking. Bacteriological examinations were made by Dr. Slater on the first day and on three other occasions, but though there were numerous bacilli that of diphtheria was always absent. The membrane became gradually less from day to day and the tube was finally removed on the twelfth day. The child made an uninterrupted recovery and was discharged within the month.

Albert-street, S.W.

A CLINICAL ASPECT OF THE ORIGIN OF TYPHO-MALARIA AND TYPHOID FEVER.

BY OWEN F. PAGET, M.B., B.C. CANTAB.

HAVING been long separated from any centre of learning, the modern view taken by bacteriologists of the biology of the typhoid bacillus is unknown to me, but I would venture to place before the profession some clinical observations made both by others and myself in Western Australia and the Sandwich Islands, together with the deductions arising therefrom.

1. In Western Australia single men and parties went out prospecting, usually taking with them only tinned meats, condensed water, and flour. They necessarily preferred virgin soil and camped as far removed from others as possible. In such a spot they might locate themselves two or three or more months and then develop typho-malaria or typhoid fever. Concisely put, a man starts from a probably typhoid-infected centre well in himself with food supplies almost certainly uninfected; he does not develop the disease until some time after leaving, which negatives the possibility of his carrying the disease with him, but develops the disease at a time when from the nature of his food, his use of patent pills, and the necessity of using local water-supplies—usually mere pools—the three important factors—namely, constipation, catarrh, and an infective bacillus—have been furnished for the development of the disease. 2. In the Sandwich Islands epidemics (not typically typhoidal in character) occur among the labour hands on the plantations characterised by high temperature, diarrhœa, and hæmorrhage from the bowel, and apparently arising through the labourers drinking water from the streams. 3. True typhoid fever occurs both in Western Australia and the Sandwich Islands. 4. In Western Australia cases were far less typical at the commencement than at the close of the typhoid fever season.

The above-mentioned observations have led me to form the following hypothesis: (1) that the typhoid bacillus exists in virgin soil; (2) that the typhoid bacillus requires educating—i.e., transference through a series of hosts before it produces typical typhoid fever; and (3) that so-called typho-malaria is due to an uneducated bacillus. These three hypotheses appear to me to be reasonable, firstly, from their analogy to the biology of the diphtheria bacillus; and secondly, from the excellent results obtained in both diseases by the use of olive oil.

Melton-Mowbray.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

TWO CASES OF OVARIOTOMY IN WHICH THE BOWEL WAS TORN; RECOVERY.

(Under the care of Dr. LEWERS.)

PROBABLY the most dangerous complication of the operation of ovariotomy is wounding of the bowel and this most commonly occurs in the separation of adhesions. The presence of an adhesion to a piece of bowel is in itself sometimes sufficient to weaken the bowel wall at the point of attachment, for it tends to limit the action of the muscular fibres in the wall at that spot, and thus may lead to their partial degeneration; as a consequence the wall of the intestine is especially liable to tear when adhesions are being broken through. Nothing but the prompt and skilful suturing of the torn bowel can save the patient's life and those who operate in these cases must be prepared for some of the most difficult complications in abdominal surgery. The uneventful course which such cases may run if the injury is immediately recognised and remedied is well exemplified in the two cases recorded below.

CASE 1.—A married woman, aged twenty-two years, was admitted into the London Hospital under the care of Dr. Lewers on Dec. 18th, 1897, complaining of pain in the right side. She had been married ten months, and four weeks before admission she had a severe pain on the right side of the abdomen which "doubled her up." She at once consulted a medical practitioner who told her to go to bed and ordered poultices to be applied to the abdomen and at first the pain was relieved. Three days later she miscarried, having been six months pregnant. She lost a good deal at the time and continued losing for nearly three weeks after the miscarriage. The pain was still very severe and there was occasional vomiting after food. At the end of three weeks she was able to get up, but the pain returned and she was obliged to take to her bed again, where she remained until she went to the hospital. She has had no shivering fits, but at times she has felt very hot. She had always been delicate and has had scarlet fever and influenza. The catamenia had never been

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very regular. During her illness the bowels had been very constipated and two days before admission she had an enema. There had been some pain on micturition. In the abdomen there was a swelling rising out of the pelvis; it lay with its long diameter vertically, to the right of the middle line; it measured about 4 in. by 2½ in. The swelling seemed to have a certain amount of mobility and was only slightly tender on palpation. The sound passed seven inches, apparently into the swelling. Bimanually the uterus was fairly moveable and of about the normal size. On admission the temperature was 100·8° F., but by the morning of the second day it had fallen to normal. The patient remained in bed and the tenderness slowly diminished, and the tumour became more defined and more moveable; it was noticeable that the swelling appeared to be close under the anterior abdominal wall. On Jan. 3rd, 1898, there was a little more tenderness over the tumour, but the temperature was normal. On Jan. 15th Dr. Lewers examined the patient under an anæsthetic and found that the swelling could be pushed over to the right but not to the left. The uterus was not enlarged and was quite separate from the tumour; the sound entered 3 in. On Feb. 5th the swelling appeared to be slightly smaller, but otherwise the signs were unchanged. On the 10th the patient was put under the influence of the A. C. E. mixture and a vertical incision 3 in. long was made between the umbilicus and the pubes. The tumour was found to consist of the right ovary which had become converted into a mass as large as a hen's egg, containing pus, some of which escaped on manipulation. The tumour was adherent to the anterior abdominal wall, to a portion of the small intestine and to the vermiform appendix. The adhesions were separated, some being previously ligatured. In freeing some of the adhesions to the bowel a small tear was made through the wall of the intestine; this was closed with fine silk and the peritoneal coat was drawn together over it by Lembert's sutures. Another doubtful opening was similarly covered. The broad ligament and the Fallopian tube were ligatured with stout silk and the ovary and tube were removed. The wound was closed, an iodoform gauze drain being inserted at each end of it, and a dressing was applied. The patient passed a fairly good night after a hypodermic injection of morphine. She vomited several times and complained of much abdominal pain and of thirst. The abdomen was not tender or rigid. The dressings were changed, a little sanious discharge being present. The temperature was normal. The patient steadily improved, the pain disappeared, and the gauze drains were removed on the 16th. On the 24th the stitches were taken out, the wound having completely healed. She left the hospital wearing an abdominal belt on March 15th.

CASE 2.—A married woman, twenty-eight years of age, was admitted into the London Hospital on Feb. 8th, 1898, complaining of dysmenorrhœa and pain on coitus. Her health had on the whole been good. She had small-pox when she was twelve years old. She had been married for five years, but she had not had any children or any miscarriages. The catamenia were regular, but she had usually had a good deal of pain at the commencement of each period. For this she was treated in June, 1897, by a medical man; the cervix was dilated and "electrical treatment" was employed. This was followed by pelvic inflammation and she was laid up for five weeks. On examination a swelling could be felt in the left iliac region, rising about 3 in. above the pubes; it extended as far as, but not beyond, the middle line and it appeared to rise out of the pelvis. The uterus, which was distinct from the tumour, seemed to be very nearly fixed and the sound entered 3 in. The temperature on admission was 100° F., but soon fell to normal. By Feb. 24th the patient's condition had hardly changed; the temperature varied much, rising to 100·5° in the evening and falling to 97·5° in the morning; her general health seemed good. The patient having been anæsthetised, Dr. Lewers made a median incision, 5 in. in length, between the umbilicus and the pubes. The tumour was seen lying in the left iliac region and was of about the size of a fœtal head. It was extensively adherent to the pelvic structures and to the bowel. The mass was gradually separated from surrounding parts, the adhesions being seized with forceps, cut through and ligatured when necessary. Just as the tumour was completely freed and as it was being removed it ruptured and some pus escaped. This was quickly taken up with pads of iodoform gauze and it was then found that the sigmoid flexure had been torn where it had been adherent to the mass. The opening was about $\frac{1}{10}$ in. in diameter. Five silk (Lembert) sutures were inserted. The tumour proved to be a suppurating ovarian cyst; the left Fallopian tube was dilated to the size of the thumb, the walls were thickened and the fimbriated extremity could not be found; the liquid in the tube was blood-stained, but was not pus. The right ovary was slightly enlarged and adherent; this with the right tube was ligatured and removed and the tube was then seen to be dilated to the size of the middle finger and the walls thickened. The ends of two pieces of iodoform gauze were left in the peritoneal cavity, one at the place whence the tumour was enucleated and the other in Douglas's pouch. Five deep and five superficial sutures were inserted in the abdominal wound. Some vomiting occurred after the operation, but the patient slept fairly well, and on the next day the abdominal walls were rigid and only slightly tender, though she complained of much pain. The dressing was changed; there had been a good deal of discharge. The temperature was 98°. During the following night there was much sickness and she had less than an hour's sleep, but the wound looked well. There was slight tenderness at the lower part of the abdomen. By Feb. 27th the vomiting had ceased and milk was taken well. On March 1st the gauze drains were removed; the abdomen was quite free from rigidity. The temperature was 100° and a small piece of gauze was reinserted. The gauze was removed on the 2nd, and though for some days there was much exudation the wound finally closed by the 11th and the stitches were removed on the 15th. She was allowed to get up on the 21st and on the 26th she left the hospital perfectly well.

Remarks by Dr. LEWERS.—A point of some importance in both these cases is that during the greater part of the operation the Trendelenburg position was employed. I think that had it not been for the good view of the parts so obtained the laceration of the intestine might very probably have escaped notice, in the second case more particularly. In Case 1 it will be seen that when the patient was first examined the sound passed 7 in., although the uterus was felt bimanually to be only of about the normal size, and it passed up apparently into the tumour to the right of the umbilicus. On another occasion the sound could only be passed 3 in. At first sight the most probable explanation of such a discrepancy would be that the sound had perforated the uterus. But in the case in question the uterus was carefully inspected at the operation to see if there was any evidence of a perforation having been made and no sign of any such thing was discovered. My belief is therefore that in this case on the first occasion the sound passed along the right Fallopian tube. It is not often that an opportunity of getting fairly conclusive evidence of such an occurrence is afforded and no doubt in many cases where it has been supposed to have happened the explanation is that the sound has perforated the uterus. In the present instance the examination of the uterus during the operation showed conclusively that no such perforation had occurred, while, on the other hand, the right Fallopian tube could be traced from the uterus up to the situation of the tumour, the highest point of which was to the right of the umbilicus. The purely abdominal position of an ovarian tumour of only the size of a hen's egg is no doubt accounted for by it having become inflamed and adherent to the abdominal wall when it had been carried up to its position in the abdomen by the pregnant uterus. The patient had miscarried at the sixth month some three weeks before her admission to the hospital.

ANCOATS HOSPITAL, MANCHESTER.

A CASE OF RICHTER'S HERNIA; SLOUGHING OF BOWEL; SUTURE; RECOVERY.

(Under the care of Mr. STANMORE BISHOP.)

RICHTER'S hernia or partial enterocele was for a long time confused with Littré's hernia, or a hernia of a Meckel's diverticulum. The symptoms which may accompany a partial enterocele may vary within very wide limits. In some cases they are very severe, the vomiting is incessant and a fatal result follows within a short space of time; while in others no signs of interference with the lumen of the bowel are present, and there may be no suspicion of anything wrong until perforation occurs. These differences are probably to be explained by the varying extent of circumference of the bowel included within the constricting ring.

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In the more serious cases nearly the whole of the circumference of the piece of bowel is involved, and as at the same time the gut is sharply bent, the symptoms are severe; but if only a small proportion of the intestinal wall is nipped, there is very little interference with the lumen and the passage onwards of the intestinal contents, and as a result no vomiting may occur.

A man, aged forty-seven years, was admitted into Ancoats Hospital on Nov. 15th, 1897, for swelling of the scrotum. He had had no previous illness and had no idea of the cause of his present condition. He believed that he must have had a "strain," but remembered no special occasion. Seven years ago he first felt pain in the abdomen and recollected the occurrence of some swelling in the right inguinal region, and for this he wore a truss for three or four years. Since that time he had worn nothing and although having vague pains from time to time he had never been obliged to leave his work. On Nov. 8th, 1897, he had sudden pain, accompanied by great enlargement of the right scrotum. On the 15th, having tried fomentations and poultices in the meantime, he sent for a surgeon, who attempted taxis, and failing sent him to the hospital. He said that the bowels acted during this week but not every day. There had been nausea but no vomiting. When admitted his scrotum was of the size of a Rugby football. Taxis was again tried by Dr. Hartley, the house surgeon, who succeeded in reducing the swelling considerably but not completely. The sensation on taxis was that of reduction of a hernia, the last returned portion passing in with a "slip." On the day of admission the right side of the scrotum was tense, dark in colour, and of the size of a cocoanut. The patient was apathetic; this mental condition increased until after the operation. On the next day (Nov. 16th) a large black slough was found at the lower extremity of the scrotum extending upwards posteriorly. This was offensive in smell and crackled under pressure. On the 17th it gave way and thin fæces escaped. The scrotum was covered by a boric poultice, which was frequently renewed, and by the 25th the necrosed tissue was all removed. Fæces meanwhile escaped freely through the gap and the patient became more and more apathetic. The temperature during this time was very irregular, varying from normal to 100° F.

On Nov. 26th an incision was made through healthy tissues parallel to and 1 in. inside the right anterior superior spine. It opened into a cavity at the base of the scrotum and one continuous with the interior of the right side of the scrotum; both of these cavites contained fæces and were lined by granulation tissue. There was no trace of cord or testis unless these were represented by some strands of whitish fibrous tissue. Above and in the situation of the internal inguinal ring was a gaping opening in the extremity of a loop of intestine with projecting folds of mucous membrane. This opening represented the end of the descending limb, which lay vertically, and from it fæces could be seen escaping. Below and internal was a much smaller opening lying transversely to the former, the end of the distal limb. The two were continuous behind, but in front there was a gap 2 in. wide. An attempt was made to introduce a medium-sized Allingham's tube, but owing to the angle at which the two openings lay this was impossible without freeing the gut from its attachments to the tissues around, which seemed inadvisable, so the two were united by silk mattress sutures which were so applied as to bring the serous surfaces together. A second continuous silk suture was superimposed. The cavity of the scrotum was then laid open and the granulation tissue was removed with a sharp spoon. The raw surfaces were united by sutures, a drainage-tube being left at the lower end. At the upper part of the incision a Mikulicz gauze drain was placed, the deeper part being in contact with the re-united intestine. The wound was dressed on the 28th and 30th. On Dec. 1st the stitches were removed. The temperature had never been above normal. There had been no escape of fæces. The scrotum looked healthy. The tube was shortened and the gauze was removed. The united bowel could just be seen at the deepest point of the upper wound, which was quickly closing up. Urine had been passed regularly without requiring the catheter. For the first two nights 20 minims of nepenthe were required. The patient was much brighter and more sensible. On the 2nd some fæcal matter escaped from the upper wound. This continued and on the 3rd the fæcal discharge was large in amount, but the fæces were thin and unformed. On the 4th the drainage-tube was removed from the scrotum. The fæcal discharge was much less; the scrotal wound had opened up somewhat, but there was no swelling. The bowels acted regularly *per anum* with pulvis glycyrrhizæ compositus. The cavity was well washed out with boric lotion and kept as clean and as dry as possible. On the 5th the fæcal discharge ceased and the opening in the bowel had evidently closed by the rapidly growing granulation tissue. The temperature remained uniformly below normal. From this date to the 12th there was no fæcal discharge and on the 12th the bowel was not visible. The inguinal wound was rapidly closing and the scrotum was much shrunken, the wound being almost healed. He took food well and was cheerful and lively. Both wounds were dressed with iodoform gauze. The bowels acted regularly. On Jan. 8th, 1898, he was discharged well. The inguinal and scrotal wounds had rapidly filled up and no further leakage took place, but he was kept in the hospital partly to ensure safety and partly in order to feed him up. His weight steadily increased from 7 st. 2 lb. on Dec. 18th when he was first weighed to 7 st. 10 lb. when he was discharged.

Remarks by Mr. STANMORE BISHOP.—Three points in this case seem noteworthy. It was evident from the condition found at the time of operation that this had been a Richter's hernia—that is, the strangulated portion of gut which had been compressed with sufficient force to cause sphacelation had not included the entire lumen but only the apex of the involved loop. This has always been considered the most fatal form of hernia, yielding the most pronounced symptoms. In this case, however, the whole process appears to have been gone through without to any great extent producing any constitutional disturbance, since it seems evident that the gut must have yielded on Nov. 8th—the day when he first complained of severe pain and of sudden great enlargement of the scrotum. Sufficient local plastic peritonitis was set up around to block off perfectly the peritoneal cavity and yet no absolute obstruction or even vomiting was produced. The second point is the curiously false impression given as to the result of taxis. The third is the apparently total destruction of the testis. No satisfactory history could be obtained which would show in what manner this came about. Nothing which in any way resembled a testis escaped from the scrotum after its sloughing, yet at the operation nothing but a large cavity lined with granulations and filled with fæces was to be seen

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A STATUE AND A BUST OF MORGAGNI.—The following account of Morgagni's statue at Forli and his bust at Bologna is taken from an article in the *Gazzetta degli Ospedali* of July 14th. The medical school of St. Thomas's Hospital being desirous of obtaining a bust of Morgagni, an English committee, of which Mr. Shattock was chairman, entered into communication with the Italian medical men present at the Moscow Congress in August, 1897, and they on returning to Italy appointed a committee, with Dr. Soffiantini as its chairman, in order to take steps for the making of a bust on the model of the statue at Forli. This statue stands in the principal court of the Palazzo degli Studi at Forli, was unveiled on May 27th, 1875—that is, a hundred and four years after Morgagni's death at Padua—and was the work of Salvino Salvini, professor of sculpture at Bologna. It was erected at the instance of Camillo Versari, a fellow citizen of Morgagni and a professor at Bologna, who was at much trouble to procure old medals and portraits for the use of Salvini the sculptor, as well as of Pieroni the engraver who executed the medal bearing a likeness of Morgagni, which was presented to the company present at the unveiling of the statue. Professor Versari laid out 36,000 lire (£1440) on the statue and pedestal, which he presented to the town of Forli; his library he bequeathed to the Medico-Chirurgical Society of Bologna. Whilst the statue was in progress Professor Cesare Taruffi, who filled the chair of Pathological Anatomy at Bologna, ordered from the sculptor a copy of the bust and placed it in the upper gallery of the University of Bologna. It was evidently expected that the statue would have been unveiled in 1873, because the medal already mentioned bears that date, but in that year cholera was prevalent in Italy and in 1874 there was a failure of the harvest. The bust was unveiled on Nov. 16th, 1874.

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Reviews and Notices of Books.

A Century of Vaccination. By W. S. TEBB, M.A., M.D. Cantab., D.P.H. Swan Sonnenschein and Co.

THE name of the author of this volume is well known to anti-vaccinationists and the fact that he is the son of Mr. William Tebb, one of the fathers of the anti-vaccination crusade, will ensure the book an enthusiastic welcome amongst Mr. Tebb's followers. Moreover, the methods practised throughout its pages will commend themselves to the adherents of the cause. The volume as a whole contains nothing but the old, oft-exploded fallacies of the anti-vaccinationists, augmented to a certain extent by quotations from the dissentient report of the Royal Commission on Vaccination, which has been so destructively dealt with by Dr. J. C. McVail. All the old stock-in-trade is polished up a bit and exposed for sale in a well-got-up volume to which Dr. Tebb has seen fit to give the support of his degrees and qualifications. The author has obviously been at infinite pains to collect together every word which has been uttered against vaccination while carefully disregarding every argument which may be held to support it, and he has clearly worked himself into the mental attitude of a man so enamoured with the spots on the sun that he refuses to concern himself with the sun as a whole at all. It is apparent, however, that Dr. Tebb is fully alive to the existence of all which makes for the truth, but that some strong bias, hereditary or acquired, has led him to omit nearly the whole of it and to distort what he does not omit. To quote the Registrar-General when it suits the author's purpose and to omit all reference to him when it does not is certainly one method of controversy, but it is not one which we like to see a member of the medical profession adopting. And so too with all other authorities on the subject and with the medical profession as a whole. In one breath Dr. Tebb appeals to members of the profession and in another he infers that their opinions depend upon the state of their pockets. We cannot, however, occupy space in discussing in detail the manner in which Dr. Tebb demolishes, apparently to his own satisfaction, positions created in large part by his own imagination. We will, however, in justice to the author furnish one or two examples of his methods, and as affording on the whole the least threadbare material we select his remarks on glycerinated lymph, noting, however, by the way, that almost all other parts of the volume are equally open to criticism. As is now well known it is proposed to render calf lymph free from what have been termed extraneous organisms by *storing* it in dilute glycerine until it shall have been demonstrated by bacteriological processes to be free from such organisms. According, however, to Dr. Tebb, whom by the way we can hardly believe to be ignorant of Dr. Copeman's work in this direction, the method consists "in the addition of glycerine to the lymph." In thus representing affairs Dr. Tebb betrays no little ingenuity. The addition of glycerine to lymph as a diluent or vehicle just before the lymph is used has been a common practice for years, but as far as we are aware *storage* to render lymph pure and bacteriological examination to demonstrate its purity are of very recent date. But Dr. Tebb, assuming the new method to be identical with the old, although he has apparently read Sir Richard Thorne's report upon the new methods, states: "And hence we have abundant means of testing whether glycerinated lymph is so very innocuous after all." And now having paved the way with stones of his own construction he proceeds to relate certain instances where bad results are alleged to have followed the use of lymph to which what was alleged to have been glycerine had been added. Be it noted that all this relates to the simple addition of glycerine to lymph and not to the practice which it is proposed to adopt. Away goes the author to the past and to the Isle of Rügen in the Baltic, that happy resort of all anti-vaccinationists in the time of tribulation, where some 12 years ago certain cases of *impetigo contagiosa* occurred amongst children vaccinated with lymph to which glycerine had been added. In the Transactions of the Epidemiological Society (New Series), vol. v., Dr. Tebb has discovered an account of this outbreak from the pen of the late Sir George Buchanan, and in referring to the glycerine alleged to have been used on that occasion he states that "it has been suggested by the late Sir George Buchanan that this was the cause of the untoward occurrences." We have read the paper in question—our readers can easily obtain access to it themselves—and although we cannot discover that Sir George Buchanan definitely made the suggestion referred to by Dr. Tebb we have ascertained that Sir George Buchanan stated that the lymph was mixed with thymol and that there were indications that the lymph may have been potent for harm before the glycerine was added. Dr. Tebb has omitted to mention this point and curiously enough he has, doubtless quite inadvertently, overlooked Sir George Buchanan's opinion that "in the absence of dates and other information there is little to connect the prevalent disease with the operation that pretended to be vaccination." One more instance and we must leave Dr. Tebb's book to the judgment of those who read it side by side with the papers and works from which he has so freely quoted. It has been stated that glycerine added in certain proportions to calf lymph renders the mixture in course of time sterile *quâ* extraneous organisms. But Dr. Tebb has read that glycerine added in small quantities to certain culture media enhances the growth of the tubercle bacillus sown thereon. Here, then, cries Dr. Tebb in effect, is a new danger. Shall we not all die from tubercle? He must, however, know quite well that it is not proposed to use glycerine in such small proportions as are here in question, and he knows, too, that certain doses of arsenic or of mercury are good respectively for some skin diseases and some phases of syphilis. Does he, therefore, because too large doses of either of these drugs may produce a fatal result desist from employing them altogether? Surely, too, the author is cognisant of the fact that tubercle in selected calves is of extreme rarity, that tuberculin will detect even these cases, and that, furthermore, the calf can be killed and examined before the lymph which it yielded is distributed. Why does he not then, in common justice to his readers, place these facts before them?

A Text-book of Diseases of Women. By CHARLES B. PENROSE, M.D., Ph.D. Second edition. With Illustrations. London: Rebman Publishing Co. 1898. Demy 8vo. Pp. 515. Price 20*s*.

THE fact that this book has reached a second edition in a little less than one year shows that it has supplied a want. It gives a good representation of the views held by American gynæcologists at the present day and, as might be anticipated, some of the theories advanced and the practice advocated would not be unhesitatingly accepted by all gynæcologists in this country. It is, however, always as well to see what other people are doing and saying, and for this reason as well as for others the book will well repay perusal. In the chapter upon Injuries to the Perineum there is a good clinical account of the appearance presented by the perineum when the muscles of the pelvic floor are involved in the tear. The author does not apparently recommend the flap-splitting operation for repair of the perineum, but denudation of the parts and the removal of all cicatricial tissue before suturing. Emmet's operation for laceration of the

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vaginal sulci is well described with illustrations. The section upon the Position of the Uterus contains a clear account of the varying conditions of the intra-abdominal pressure and the effect they have in favouring prolapse. In considering anteflexion of the uterus we note that the author still adheres to the view that the dysmenorrhœa so often associated with this condition is due to the accumulation of blood behind the obstruction in the cervical canal—a view almost, if not entirely, given up in this country. There is a good account of trachelorrhaphy and amputation of the cervix illustrated by some very instructive figures. The curious condition known as congenital erosion and split of the cervix has a chapter specially devoted to it, giving it an importance which we hardly think it deserves. The chapter on Cancer of the Cervix is full and instructive, although we might take exception to the statement that the chief predisposing cause is a laceration of the cervix, a statement still unproved by facts. The views of the author as to the treatment of fibromyomata of the uterus may be gathered from the sentence on page 241: "The great majority of fibroid tumours demand immediate operation." As to the truth of this we fancy there still exists a great difference of opinion. He prefers hysterectomy to salpingo-oöphorectomy and considers that at the present time the danger of the two operations is almost the same if those cases only be compared in which either operation could be performed. The great importance of acute and chronic salpingitis is duly pointed out and Dr. Penrose is cautious about recommending the various conservative operations upon the appendages which have lately come into vogue. In most cases of tubal disease he considers it safest to perform a bilateral extirpation. The chapter upon Tubal Gestation, although short, is clear, and stress is laid upon the fact that operative interference is called for in almost all cases. Under Ovarian Cysts a very helpful table is given of the chief differences between oöphoritic, paroöphoritic, and parovarian cysts. The importance of gonorrhœa in causing pelvic disease is held by the author to be so great that he has devoted a special chapter to its consideration. There is a good account of the technique of gynæcological operations in general and the special details of operations upon the uterus and its appendages. These chapters will be found to be very full and instructive. The author devotes some space to pointing out the great advantage of ligaturing the vessels in the broad ligament with as little of the surrounding tissue as possible rather than *en masse*. With this all surgeons will agree and there can be little doubt that the use of mass-ligatures will be more and more given up. The book is furnished with a fair index and, as we have said already, is well worth reading by those who desire to keep abreast of the views held by one of the most distinguished of American gynæcologists.

The Essentials of Histology, Descriptive and Practical, for the use of Students. By E. A. SCHÄFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College, London. Illustrated by nearly 400 Figures. Fifth edition. London: Longmans, Green and Co. 1898. Pp. 359. Price 8*s*.

THE first edition of this useful compendium of histology was published in 1885 and in the thirteen years which have elapsed since that date to the present time Professor Schäfer has found occasion to add about 100 pages of letterpress and nearly 100 woodcuts which greatly increase the value of the work. The advances which have been made in the examination of the tissues and the interpretation of the appearances presented under the microscope are sufficiently evident on every page and are fully given. The very first drawing represents *in petto* the kind of progress which has been made. It is a drawing of a cell. The earlier woodcut shows only protoplasm with vacuoles and granules distributed through its substance—a nucleus with intranuclear network and nucleolus; the recent one, drawn on a much larger scale, shows the granular protoplasm of the cell as consisting of a network of spongioplasm containing hyaloplasm in its meshes. The distribution and variable size of the vacuoles are more clearly demonstrated, a double centrosome is shown, whilst the nuclear membrane, the intranuclear network, and the nucleolus complete the picture of the cell as far as is at present known. Several of the chapters—such, for example, as those on Cell Division, on the Structure of Muscle, on the Heart, and on the Central Nervous System—have been added or are greatly expanded, whilst every section seems to have undergone careful revision. The large personal experience of Professor Schäfer in the use of the microscope adds greatly to the value of the work by enabling him to select the good and reliable work of others and serves to render it the most authoritative work on histology in the English language.

Diseases of Women. By J. C. WEBSTER, B.A., M.D., F.R.C.P. Edin. With 241 Illustrations. Edinburgh and London: Young J. Pentland. 1898. Pp. 678. Crown 8vo. Price 14*s*.

THE author of this work might well have pleaded as an excuse for its appearance the success of his book on Ectopic Pregnancy, but he has not done so and indeed no such excuse is necessary. He has well fulfilled the aim he sets before himself in the preface of regarding his subject from a scientific basis, of considering the clinical features in their widest relationships, and of recommending due caution with regard to the adoption of therapeutic measures the usefulness of which is still undetermined. The book is one of considerable interest and gives a clear exposition of the subject of which it treats. It commences with a full description of the pelvic organs, the interest of the anatomical details being considerably enhanced by the addition of notes on development and in some places on comparative anatomy. The third chapter, one of the most suggestive in the book, as might be anticipated from the special work done by the author on this subject, contains a very clear account of the pelvic floor regarded from the point of view both of dissections and of frozen sections. In a chapter upon the Nervous System in Relation to Pelvic Diseases considerable stress is laid upon the importance of regarding many cases of chronic pain from the point of view of the general physician rather than from that of the specialist, a caution which cannot be too strongly insisted upon in any text-book of gynæcology. In considering the bacteriology of the pelvic tract the *rôle* of the gonococcus and of the tubercle bacillus in the production of pelvic diseases is fully discussed, and the reason why there exists a tendency at the present day to dispense with vaginal injections in connexion with labour is explained by the results of the researches upon the bactericidal action of the vaginal secretion. The section devoted to Operative Measures in General contains a full account of the various details necessary in the treatment of a patient before and after operation, and with its assistance the young practitioner should be enabled, as far as book-teaching can help him, to recognise any of the commoner complications likely to ensue, for instance, in the after treatment of a case of abdominal section. In connexion with pelvic hæmatocele the author recognises the possibility of its occurrence apart from ectopic gestation and calls attention to Gardner's two most interesting cases of pelvic hæmatocele associated the one with adenocarcinoma of the ovary and the other with tuberculous disease of the Fallopian tube. A good account is given of

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tumours of the ovaries and the chapter is illustrated by numerous outline diagrams which will be useful in enabling the student to remember the commoner tumours likely to be mistaken for ovarian cysts. The illustrations on the whole are fair, but it seems a pity, if the author thought it really necessary to insert an illustration of an ordinary trocar, that he did not choose a more modern type of instrument than the one figured on page 400. Under Inversion of the Uterus we notice that the author describes in some detail amputation of the inverted fundus, a mode of treatment which we imagine hardly anyone would adopt at the present day in preference to vaginal extirpation, surely a much better and safer treatment for an irreducible case of inversion. As might be expected in a modern text-book the operative treatment of fibro-myomata of the uterus is fully described and a considerable amount of space is given to a consideration of the various operations which can be performed. We fail, however to find any clear indications given as to what are the conditions justifying operative interference and we are left uncertain as to whether the author would agree with those who maintain that all fibroid tumours causing symptoms should be operated upon, or whether he would agree with those who still think, in spite of all that has lately been maintained to the contrary, that the great majority of fibroid tumours can be perfectly well treated without operation. In describing and criticising the various views held as to the mechanism of prolapse of the uterus Dr. Webster calls attention to the important part played by the pelvic fascia, and points out that many of the writers upon this subject have entirely neglected to take into account the support given to the pelvic floor by the fascial layer. In the chapter upon Affections of the Urethra and Bladder a good and clear account is given of the various operations employed in the treatment of genito-urinary fistulæ. As an appendix to the book the author has contributed a very suggestive and interesting account of menstruation, including a consideration of the various views held as to its nature, causation, and relationships. From biological considerations he is lead to regard the menstrual function as a highly specialised means of balancing the anabolic and katabolic factors of tissue metabolism, a function which has become established in the higher mammals by a gradual process of evolution.

The book as a whole is one which we can confidently recommend to the student and the practitioner.

LIBRARY TABLE.

Autour d'une Épidémie: Bayonne 1837-1897. (Epidemic Cerebro-Spinal Meningitis in Bayonne from 1837 to 1897). By Dr. C. DELVAILLE. Paris: A. Maloine. 1898. Pp. 38. To trace the course of an infectious disease which prevailed throughout an extensive district sixty years ago is a task of magnitude, and Dr. Delvaille of Bayonne is to be complimented on the industry with which he has consulted epidemiological treatises, obtained information from parish records and local *maires*, and collected the reminiscences of aged people at various places. At the beginning of his essay he gives clinical histories of four cases of cerebro-spinal meningitis which occurred among civilians in Bayonne in February, March, and May, 1897, two of them being fatal. During February there were also eight cases, with four deaths, and in the end of December six cases with three deaths among the soldiers of the garrison. The historical inquiry shows that there were twenty-four deaths of soldiers from the disease in Bayonne in 1837, and that its prevalence among the civilian population caused serious alarm in many parts of the adjacent department of the Landes in 1837 and 1838.

Journal of the Scottish Meteorological Society, with Tables for the Years 1895 and 1896. Edinburgh and London: William Blackwood and Sons. Pp. 248. Price 15*s*.—The current number of this journal, which is an annual publication, contains four original papers and about 170 pages of tabular matter. The observations for 1895 show that during the memorable frost in the early part of that year the temperature repeatedly fell below zero Fahrenheit at many stations in Scotland, the lowest temperature observed being −17·0° F. at Braemar, in Aberdeenshire, on Feb. 11th. "This exceedingly low temperature is further remarkable as being absolutely the lowest temperature hitherto observed in any month or anywhere in the British Islands with a properly protected thermometer." The reports made by the council to the general meetings of the society contain copious references to the value of the work done at the Ben Nevis Observatories, the expenses of which have unfortunately come to be in excess of the available funds. The observations made there from 1888 to 1896 are sufficient to fill two large quarto printed volumes.

Lectures on Asepsis in Surgery: Delivered in Arabic at the Cairo Medical School. By H. MILTON, M.R.C.S. Eng., L.S.A. Cairo: Al-Muktataf Printing Office. 1897. Pp. 113. Price 20 piastres (4s.).—One of the many benefits conferred on Egypt by the British occupation is the sound medical training provided for such native practitioners as may be willing to learn European methods. Mr. Milton's course of five lectures on asepsis, delivered in the vernacular and printed in English and Arabic arranged in parallel columns, is both a literary curiosity in consequence of its bilingual character and an excellent practical manual well adapted for students and nurses. The principal subjects treated of are as follows:—Elementary Bacteriology; Sterilization of Instruments, Dressings, Hands of Operator and his Assistants, and Patient's Skin; Application of Antiseptics to Operation Wounds; Changing of Dressings (in Cairo two days is the longest safe limit); Washing Out the Peritoneal Cavity; Drainage; Treatment of Compound Fractures. The lines of the English and Arabic printed columns are parallel to the back of the book.

Posological Tables of the British Pharmacopœia for 1898.—This useful little book compares the doses and strengths of official substances as given in the Pharmacopœia for 1898 with those given in that of 1885. It is published by Messrs. Jewsbury and Brown of Manchester, who will forward a copy to any medical man if he will apply to them for one.

JOURNALS.

Journal of the Sanitary Institute. Vol. XIX. Part II. July, 1898. London: Edward Stanford. Price 2*s*. 6*d*.—The "Purification of Water for Barrack Prisons and other Institutions" is the title of Lieutenant-Colonel Lane Notter's (R.A.M.C.) paper which was read at the sessional meeting in February. The question is approached with a view rather to the conditions which obtain in India and other places abroad than to those which prevail in this country. The proposal to render water sterile by the addition of bromine or calcium hypochlorite, though apparently effective, is hardly one which will commend itself to people accustomed to English methods. Still, under certain circumstances abroad, it might find its uses. Dr. C. Childs's paper on Water-borne Enteric Fever gave rise to a discussion at the Institute which was raised to a good level by a letter to the chairman from Dr. Sims Woodhead, who drew attention to the great importance of ensuring the purity of the soil through which water-mains and pipes are carried. The volume contains other papers and notices of interest.

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THE LANCET.

LONDON: SATURDAY, AUGUST 13, 1898.

AFTER a chequered career, full of startling episodes and reversals, the Vaccination Bill becomes virtually the Vaccination Act. In Parliament the hottest of the contest centred round the conscientious objector. First of all the Bill contained no conscience clause; then in the second reading debate Mr. CHAPLIN for the Government declared that he would resist to the death any such clause. In the Grand Committee he successfully maintained this attitude for a time and defeated by a very narrow majority Sir WALTER FOSTER'S amendment to the contrary. Later, however, Sir WILLIAM PRIESTLEY defeated Mr. CHAPLIN in so far as to obtain the acceptance of conscientious objection at four years of age as a substitute for a second penalty. In the House of Commons the Government once more, through the mouth of Mr. CHAPLIN, announced that it would never consent to recognise the conscientious objector; then, through the mouth of Mr. BALFOUR, it did consent and itself introduced and carried a clause. Next, on the third reading, it adhered to its new view and refused to recommit the Bill for the purpose of deletion of the Clause. "In another place," however, the Lords spiritual and temporal overcame the Government after a very close fight and expunged the added clause. In the Commons it was once more inserted and on the return of the Bill to the Lords they agreed by a majority of 55 to 45 to let the Government and the Commons have their way.

It is a curious point that some of those who, like Lord SALISBURY, fought most strenuously on behalf of the conscientious objector indicated at the same time that they entertained serious doubts as to his very existence, conscience in their opinion having little or nothing to do with the matter. Even a misnomer, however, is more convenient than no name at all, and to have given him his rightful title would have made his defence more difficult to those who felt it their political duty to defend him. While, therefore, they grumbled over the term "conscientious objector" they had not the courage to substitute the word "faddist" or to define the conscience clause as a clause for the relief of cranks. Not that we ourselves have objected to the recognition of the existence of anti-vaccination cranks. On the contrary, we have held that it is the duty of Parliament to look plain facts in the face, one of these facts being the increase in many parts of the country of the numbers of these cranks and of their evil influence on the general community. In our view, indeed, the "conscience clause" is to be regarded as a kind of asylum for the reception of such persons and for the prevention, so far as may be, of the injury which they are otherwise capable of doing to the public. Their posings as village HAMPDENS, their dearly loved imprisonments, and presentations, their processions, and brass bands, and baitings of auctioneers engaged in the disposal of impounded goods must now in great measure be given up. They themselves testify how loth they are to part with these delights and how anxious to retain some fragment of them. Regarding the passing of the conscience clause the official organ of the Anti-Vaccination League eagerly urges that "it by no means ends our struggle. It still remains true that a man must waste a day's work and expose himself to trouble and probably to insult at the hands of some ignorant upstart on the bench if he wishes to keep his children's blood unpolluted," and it vows that "there shall no court adjudicate on our conscience in respect to our children." If this means anything it means that there will now be refusal alike to procure the vaccination of the child and to take the steps provided for avoiding penalties for non-vaccination. In that event the law will take its course and refusal to pay a penalty will be followed by seizure of goods or imprisonment. But is the League quite sure in its own mind that seizure of goods and imprisonment will have the same desired results under the new system as under the old? Will it be possible to rouse the same prejudice and passion over JOHN SMITH'S refusal to go before a court in order to state his objections to vaccination as could be roused when JOHN was able to allege that he was suffering martyrdom in order to "keep his children's blood unpolluted"? We hardly think so; but it will certainly be interesting to watch during the five years to which the operations of the new Act are limited the struggles of the League to keep alive its hitherto comparatively easily maintained agitation.

For us the main feature of the later proceedings of Parliament regarding the Bill is the important statement by Lord LISTER, confirmed for the Government by Lord HARRIS, that we may expect a Revaccination Bill to be introduced next session. For the public weal this is, indeed, good news and in our estimation it should go far to allay the anxiety which the medical profession naturally feels as to the likely recrudescence of small-pox in this country as a result of neglected infantile vaccination. That Bill will be awaited with the greatest interest and will be heartily welcomed in so far as it makes a serious attempt to establish a national system of revaccination. It may be hoped that the Bill will not concern itself with revaccination alone, but will contain some of the more important of the other provisions which have been urged on the Government by the medical profession, but which have not found a place in the present measure.

One of the most satisfactory side-results of the introduction and discussion of the Government Bill in the session which is just closing is the elicitation of a huge body of usually silent public opinion regarding the value and essential importance of vaccination. In Parliament Mr. CHAPLIN complained that it was only anti-vaccination that gave voice to itself until his proposal for a conscience clause roused the other side into speech. So it has been in the country in connexion with the merits of vaccination itself. So long as the public believed that vaccination was in no danger they treated with sovereign contempt the orations and newspaper letters of the anti-vaccination crusaders, but when once they came to suppose that there was some sort of danger that under Government auspices vaccination might fall

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into desuetude they spoke out in quite an unmistakable fashion—in a fashion, indeed, which has no doubt had a very considerable share in inducing the Government to promise the legislation for revaccination which the profession has demanded so earnestly and up till now so unavailingly. If the introduction of the conscience clause has done nothing else it has done immense good not only in opening the way to revaccination, but in influencing the Government to step forward into the excellent path of duty thus opened before them. May their progress therein be unfaltering and persevering until the desired goal be attained.

THE Americans have been most successful in their war with Spain so far as any actual fighting has had to be done. The enterprise, audacity, and skill displayed by their naval service have been unmistakeable and attended with remarkably successful results, even if it has to be admitted that the Spaniards at sea have always been overmatched and their naval commanders have exhibited a lamentable want of those strategical and tactical qualities which certainly might have made their fleet most embarrassing, if not formidable and dangerous, to their American enemy. Great pluck and courage in facing defeat and death they have, however, undoubtedly displayed. The American troops have also shown, as might have been anticipated, of what splendid fighting material they are composed. But, despite the brilliant results at Cavite and Santiago and the dramatic successes hitherto attained by the American forces, there will be great rejoicing in the United States when peace with Spain has become absolutely assured and when the existing state of anxious tension is relieved in regard to the deplorable condition of General SHAFTER'S force in Cuba and the numerous outbreaks of typhoid fever elsewhere in the camps of the United States army.

We do not take any special credit for having from the very first dwelt upon the probability that the real enemies—more deadly than the soldiers of Spain—would turn out to be malaria, typhoid fever, yellow fever, and dysentery, for this was generally recognised. It has been the experience of most expeditions undertaken under similar conditions, even if the lamentable medical history of the Spanish losses of recent years in Cuba had not told the same story and clearly indicated the same moral. In spite of the firm belief that war was bound to occur with Spain on account of Cuba, which must have been long present in the minds of the Government and people of the United States, it found them quite unprepared when it did come—at least, as far as the land forces were concerned. Even if Spain has accepted the proffered terms of peace without any reservations the political and military difficulties which still remain to be settled are very great; but the serious health condition of the American army is now *the* emergent and pressing consideration. The troops in Cuba—at Santiago and in its vicinity—are, according to the official declaration of their generals and officers, in a deplorable condition. General SHAFTER'S report of July 6th states that the sick on that day numbered 3681, including 2638 fever cases, of which 421 were fresh cases. The number of men who returned to duty was 477. The deaths numbered seven, none of them being due to yellow fever, but on the 7th these numbered eleven, of which five were due to yellow fever. The American troops disembarked in Cuba were fine fighting material and full of enthusiasm, but they had to begin their campaign at the commencement of the unhealthy season; they had heavy marches and hard fighting in an excessively hot, enervating, and malarious climate; they were badly equipped; they had no change of clothing and no shelter during the campaign; the weather was very wet and stormy; they were rationed on bread, meat, and coffee, the provisions were probably mostly tinned or preserved, and what fresh meat was procurable was necessarily tough and innutritious. The men were greatly fatigued and exhausted by their work and hardships in the field and their want of rest and sleep. The outcome of all this was, as might have been confidently expected, harvested as soon as the excitement was over and nervous exhaustion began to follow. At least 75 per cent., it is alleged, contracted malarial fever, from which recovery is very slow. It is easy to understand that the troops were consequently in a state to contract any disease but in no condition to withstand any such attacks, especially those of yellow fever or dysentery. Very little is said of the field hospital service accompanying the troops or of their medical supplies, but from the nature of an expedition of this kind, with rapid marches in a difficult country, it is scarcely likely that these supplies were provided on a scale adequate to the requirements of the force or that, if such were the case, they could have accompanied it where the transport of ammunition, commissariat and other stores must have been most difficult. What now remains to be done is to remove as soon as possible the present force, exhausted by the effects of their campaign and enervated by malaria, from Cuba to well-selected positions in America and to replace it by fresh troops from the United States. The shipping transport to be employed for this purpose should be capable of affording ample accommodation and be well provided in every respect with everything needful for the physically enfeebled and fever-stricken soldiers, together with ample supplies of quinine and good fluid nourishment of all kinds suitable to men under such circumstances. The troops sent to replace those removed should be composed of strong, healthy, and matured men suitably equipped for the climate and service; everything should be prepared beforehand for their reception at Santiago and along the marching route, with rest-camps at intervals so that they can reach their destination leisurely and without undue fatigue.

The lessons to be learned from the breakdown of General SHAFTER'S force briefly comprise, in other words, the duties of a country to its army and of the medical service to the soldiers under their charge. Under any circumstances an expedition to such a climate—the soldiers being young and unacclimatised men unaccustomed to campaigning and newly arrived in a hot, malarious and insanitary country—must be prepared to encounter serious risks to health, but these may be in a large degree discounted by forethought in the provision and settling of all the requisite hygienic details

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beforehand. Time is here an important element of course. There is no royal road to the end in view. England, France, and other countries have had to learn by bitter experience that every sanitary detail has to be carefully thought out and, as far as practicable, provided for in view of escaping disastrous consequences. The nature of the climate and its diseases, the choice of the best season for military operations, the selection of the force, the food, the clothing, the best times for marches, and many other matters of military hygiene have obviously to be all most carefully considered. On all these points it falls within the province of the medical service to furnish their recommendations and suggestions for the information of the War Office and military officials, and we can only assume that this was done. General SHAFTER, it is alleged, blames the medical department and declares that it did not make adequate provision for the needs of the army and refuses to accept any responsibility for shortcomings attributable to the Surgeon-General and his service. The Surgeon-General, on the other hand, according to the special correspondent of the *Times*, has issued a printed statement in defence of his department and blames the service in control of the transport. The matter, which is a very serious one, calls for further investigation, which it will most certainly receive. Meanwhile the people of the United States are an eminently energetic, practical people, and we may be quite sure that they will recognise and do their very best to remedy any difficulties or defects which can be overcome. Everything points to the Americans having in future to make a large increase in their fleet and army of regulars and their medical services.

THE output of new synthetic remedies is becoming colossal—there is no other word for it—and so intimate a knowledge is the chemist gaining of the structure of compounds that it appears to be only necessary to indicate to him the kind of compound wanted when he immediately produces it in the form probably of a crystalline powder. Indeed, it is the rapid realisation of stereo-chemistry or structural chemistry which is largely responsible for the great number of complex compounds which the synthetic chemist is continually bringing before the notice of the profession in the form of new remedies. It is pretty safe to say that in general they are coal-tar derivatives, offspring of the benzene nucleus, belonging to the aromatic series or closed chain compounds. We have little to urge against the marvellous ingenuity of the modern chemist in thus elaborating an almost endless series of compounds which with few exceptions, be it remarked, are invariably tendered as belonging to one of three classes of drugs—namely, antiseptics, antipyretics, and analgesics. Nor would we belittle the importance of these synthetic processes considered as triumphs of our knowledge of architectural chemistry for we cannot help bearing in mind the great number of valuable additions to pharmacology which have thus been made. We need not give examples; they occur again and again in the new Pharmacopœia (1898).

One point, however, which to our mind is of the utmost importance in relation to the progress of therapeutics deserves at this juncture to be brought into notice. It is this. The rapid and apparently endless production of new synthetic compounds is such as to leave little or no time to determine their real pharmacology. No sooner is a substance discovered than it is put upon the market as a new remedy, an analgesic, antipyretic or hypnotic; it is soon superseded by another which is claimed to have a more reliable and more satisfactory effect. Well may the practitioner stand aghast, for no time is left to study the relation of the structure of the new compounds in regard to their precise therapeutic effects. And thus many of the so-called new remedies are administered blindly, sometimes with good effects, sometimes with an indifferent action and sometimes with bad sequelæ. Now from the point of view of the chemistry of compounds and more particularly their structure in relation to their action on the system this is distinctly retrograde. In other words, this multiplicity of organic compounds bewilders the physician, and, what is worse, tends to take him back to pure empiricism. There can be little doubt that a knowledge of the physical properties of the chemical composition and structure of substances will eventually enable us, if we pursue the study intelligently, to predict the nature and extent of the value of a substance in treatment—i.e., as a drug. We possess already sure and certain evidence that this may be so. The action of certain drugs, it is well known, may be so modified by the introduction of a new molecule as not only to lose their original properties but actually to become pharmacologically active in the reverse direction. It is upon this basis that there is promise of much progress being made in pharmacology and in treatment by drugs. The subject has recently been touched upon in a masterly style by Mr. CHARLES SYMES, Ph.D., on the occasion of his presidential address at the opening of the British Pharmaceutical Conference in Belfast on the 9th inst. As he pointed out—and there is an excellent moral connected with the observation—most of the synthetic remedies are produced in Germany, where the manufacture has become an extensive chemical industry, for the simplest of all reasons, that in that country there are less restrictions on experimenting with animals than in this country; the chemist and physiologist work together, the one altering the molecules and molecular arrangement in the chemical substance, and the other testing most carefully the effects obtained thereby. In another part of his address, for an advance copy of which we are indebted to the courtesy of the editor of the *Pharmaceutical Journal*, he adds that the chemist is now the architect and builder, using certain atoms and molecules to build up chemical structures to meet the wants of the medical profession in the treatment of disease. That may be so, but is not the tendency thereby induced more on the side of empirical than of rational treatment? Some proof of this surely appears in a later and, we think, very trenchant remark, in which, after giving a list of many of the new synthetic remedies together with their formulæ and scientific names (which are generally very long, as, for example, benzoylmethyl-tetramethyl-γ-oxypiperidine-carbonic-methylester, this being the expressive name of eucaine, a comparatively new anæsthetic), he says of the fifty substances enumerated: "It will be noted that a large percentage possess antiseptic, antipyretic and analgesic properties; *so that their rapid growth would seem to be due more to commercial enterprise*

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than to meeting a real want in medical practice." The italics are ours.

We appeal, therefore, for further research and more opportunities for such research, otherwise pharmacology will remain empirical instead of being based, as it should be, on the structure and constitution of bodies. If structure determines the action of a remedy, surely the only scientific course to pursue is to ascertain what are the exact changes which a modification in structure will produce. Then with the knowledge and skill of the chemist we may vary at will our remedy and so attain results in accordance with the necessities of the case. But with such an innumerable host of remedies announced as newly discovered substances day by day such a study is well-nigh impossible, at least if it is to keep pace with the number of compounds at present elaborated in this multiplex fashion.

Annotations.

"Ne quid nimis."

THE REPORT OF THE BOMBAY PLAGUE RESEARCH COMMITTEE.

WE have received a copy of the report of the Bombay Plague Research Committee which has recently been issued. Strictly speaking we ought to say that the report is only that of certain members of the committee—i.e., the reports of Surgeon-Major Lyons and of Surgeon-Captain L. F. Childe are given in full; of Mr. E. H. Hankin's report a summary only is given; and Dr. W. M. Haffkine has not yet arranged the material which he has collected in the form of a report. Surgeon-Major Lyons gives a very full account of the course and symptoms of an ordinary case of plague and in addition of the two "erratic" forms where, although most of the general features of acute plague were present, there was neither enlargement of the lymphatic glands during life nor was there found anything in these glands after death but slight enlargement and congestion. In one of these forms—septicæmic plague—the microbe grows in the blood; in the other it grows in the lungs, giving rise to primary plague pneumonia. The septicæmic form was very fatal and began with severe rigors; it was also characterised by severe nervous prostration and marked cerebral symptoms. The pneumonic form somewhat resembled an ordinary severe pneumonia except in three important points — firstly, the rusty sputum of ordinary pneumonia was absent; secondly, the pulse-rate in plague pneumonia became very frequent in direct ratio to the rate of the respirations; and thirdly, the physical signs were those of broncho-pneumonia rather than of lobar pneumonia. Plague in the pneumonic form is exceedingly difficult to diagnose in an early stage, and the importance of an early diagnosis is all the more to be insisted upon since the sputa from the first contain plague bacilli. In the Bombay epidemic no cases of glandular fever were met with. This disease has been considered as being plague and is characterised by the appearance of buboes with little or no constitutional disturbance. In Calcutta a number of cases have occurred, but up to the date of the report (November, 1897) no cases of true plague had occurred in that city. The treatment by antitoxin has not up to the present met with much success. Surgeon-Captain Childe deals with the macroscopic and microscopic pathology of plague together with the mode of exit and entrance of the plague bacillus from and into the body. It leaves the body by means of hæmorrhages or secretions which may contain blood—e.g., the urine. In the pneumonic type the bacillus is always present in the sputum. With regard to the mode of entry the bacillus generally finds admission through some slight lesion of the skin, it produces no local reaction at the seat of inoculation, and a bubo forms at the lymphatic gland nearest to the seat of inoculation in the direction of the lymph-stream. With regard to infection by food no evidence was found post mortem that the bacillus had entered by the stomach or intestines, but cases of cervical bubo might have resulted from infection through abrasions on the lips, tongue, or tonsils. The following is Surgeon-Captain Childe's account of a marked case of plague pneumonia:—

"The patient, a medical man, was in his usual health on Jan. 2nd and had a sudden rigor in the morning and felt fever coming on. During the day a bad headache developed, he felt nausea and vomited several times, and he had pains and a tired feeling in his limbs; his tongue remained clean and moist and his skin was slightly moist. At 2 P.M., temperature 103·4°, pulse 116, respiration 25, and there were but slight variations during the day. On Jan. 3rd had passed a bad night and felt worse, and all the symptoms persisted except the aching of the limbs, and he felt very ill. The temperature remained between 103·5° and 104·5°, pulse about 110, and respirations about 23 throughout the day. During the afternoon he felt some pain at the lower part of the left axilla just under the anterior fold, but there was no glandular enlargement or pain in the glands anywhere. On Jan. 4th had passed a bad night and felt very ill, temperature 104·6°, pulse 113, respiration 25, tongue still moist with a little fur behind, and no sordes about the lips or teeth; the other symptoms as before. During the night he began to cough and brought up some watery sero-mucous fluid, slightly blood-tinged, and the pain remained in the same place, only more diffused now, being felt over an area of a square inch. At this part some moist sounds could be heard like those of early pneumonia and they could also be heard just below the left clavicle; the rest of the lungs and other organs appeared to be normal, as did the lymphatic glands. Patient considered that he had pneumonia, but the symptoms were not like ordinary pneumonia.

"For the onset was different, the condition of the tongue and mouth different, there was no dyspnœa or pneumonic disproportion of pulse and respiration, and the sputum was not at all like rusty sputum, for it was loose and free, coming up with the slightest cough, it was watery, looking more like serum than mucus, and it was slightly pink, not rusty yellow at all. Also there was the striking fact that the patient's general condition was far worse than could be explained by the small amount of lung-disease present. So I examined the sputum under the microscope and found it full of bacilli looking like those of plague, and cultures were made from which a pure growth of the plague-bacillus was obtained. During 4th and 5th patient became steadily worse, his temperature remained about 104° and his expectoration became most profuse; the moist sounds were heard over a larger area as well as slightly at the bases; the respirations increased to 35 and then to 45 and the pulse to 120 and 135; and he ultimately died early on Jan. 6th."

The necropsy in another case showed patches of pneumonic consolidation together with general engorgement and œdema of the lungs. Mr. Hankin's report deals mainly with the best means of disinfection and he comes to the conclusion that the best disinfectant is a weakly acid solution of corrosive sublimate. The whole report is most interesting and shows a very large amount of work, most of which seems to have been done in the midst of very trying circumstances.

"A REASONABLE FAITH."

IN the *Victorian Independent*, an Australian paper, for June of this year appears a short paper by Dr. J. W. Springthorpe under the above title in which an attempt is made to give a rational basis of belief. A large number of medical men rank themselves as "Broad Churchmen"; their scientific

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training is the obvious explanation of this, and Dr. Springthorpe enlarges on this theme. His language is rather terse but he is evidently a deep thinker and his views will probably be supported by many scientific men. He points out that "to thinking men and women the question of questions still remains the purport of life and the destiny of man, and upon this vital issue the science of to-day has, perhaps, arrived at three great generalisations. The first is the ultimate unity of origin of all forms of matter. Far out into the infinitudes of space stretches the impalpable luminiferous ether. Admit simply that atoms can be formed by different aggregations of its ever-moving mass and upon this almost immaterial basis we can build up the grandeur of universe." The writer then proceeds to the second point—namely, that modern science has practically proved that development is the law of life and that all forms of life have an ultimate unity of origin, and he even ventures the further suggestion that life itself may, after all, be simply a new kind of movement in molecules of a certain complexity. "But this tale of glorified matter is only half its story. For apart altogether from other arguments of weight it seems in ultimate ontology more rational to place mind behind all manifestations of matter than to regard thinking and purposive mind as evolved from insensate mass. Thus the necessary antecedent to, and correlative of, an infinite ether is an omnipresent Supreme Mind, of which, indeed, the ether perhaps may be simply the first manifestation or obverse side. The modern conception of religion thus claims to start with an omnipresent Supreme Mind." It is difficult in a short abstract to follow the whole of Dr. Springthorpe's arguments. He finally considers Christianity. "One came from the Supreme; taught that amidst His infinite attributes there is a divine humanity; proclaimed the Gospel of the Fatherhood of God and the brotherhood of man; and lived a life in perfect accord with the Supreme Will even to the death. This is the supreme fact that Christianity offers for the acceptance of the race." Then comes the point to which we have already referred, that "in its interpretations we have still to follow that evolution which is the law of our progression." It is mainly because there are in the orthodox pale so many outgrown forms and phrases and so little provision made for their own developmental needs that so large a proportion of the progressive minds of our time find themselves unable to ally themselves cordially with any special religious denomination.

INCREASE OF EOSINOPHILIC LEUCOCYTES IN TRICHINOSIS.

IN the *Journal of Experimental Medicine*, vol. iii., No. 3, 1898, Dr. Thomas R. Brown has published some important researches on the pathology of trichinosis. He finds that there are marked changes in the number and character of the leucocytes in the blood—leucocytosis with great relative increase in the number of eosinophilic cells. Normal blood contains about 6500 leucocytes per c.mm., of which 4810 (74 per cent.) should be polymorphonuclear neutrophiles and 130 (2 per cent.) eosinophiles. Ever since Ehrlich discovered the different affinities of the granules in the various kinds of leucocytes for acid basic and neutral dyes the numerical variations in disease, especially of the eosinophilic leucocytes, have been studied. A constant increase of the latter has been found in certain diseases—viz., leukæmia, bronchial asthma, pemphigus, prurigo, psoriasis, eczema, &c. The largest percentages hitherto reported are 22 in bronchial asthma, 33 in pemphigus, 24 in eczema, 27 in ankylostomiasis, and 21 in anterior poliomyelitis. In a case of trichinosis Dr. Brown observed that the number of leucocytes at different periods was 15,000, 20,000, 27,500, and 11,000 per c.mm. With this leucocytosis the percentage of eosinophilic cells showed enormous relative increases; thus they amounted at different times to 37, 10, and 15 per cent. of the total leucocytes and once they reached as high as 68·2 per cent. This relative increase of eosinophilic cells necessarily involved a relative decrease of the polymorphonuclear neutrophiles, which from 80·4 per cent. sank as low as 6·6. Further, in the muscles, especially in the degenerating areas, he found a hitherto undescribed condition—a large number of eosinophilic cells, which suggested that these cells might be phagocytic. From the constant inverse relationship between the eosinophile and the neutrophile cells and the similarity in size and character of their nuclei he infers that the former cells may arise from the latter. This change possibly took place in the muscle, for both kinds, as well as transitional forms, were there found. All these facts suggest the theory that the polymorphonuclear neutrophiles wander out of the vessels and act as phagocytes on the degenerated muscle and that in so doing they become transformed into eosinophile cells which, returning to the circulation, cause the marked increase of the latter. It is of interest that Kischensky has come to a similar conclusion regarding the origin of eosinophiles in the sputum of asthmatics. Dr. Brown thinks that the marked increase of the eosinophilic cells may prove of value in the diagnosis of trichinosis, indeed he found it so in two cases. But the whole subject of leucocytosis in disease is still in an elementary stage.

A SPANISH MEDICAL OFFICER'S EXPERIENCES IN CUBA.

DR. GONZALEZ GRANDA, medical officer of the first class in the Spanish army, has published some interesting observations in the *Revista de Sanidad Militar* of Feb. 1st, 1898, on the wounds and injuries which came under his notice during the first phase of the Cuban campaign. The cases noted are full of professional interest and the results achieved prove once more the immense value of antisepticism in the field. One soldier recovered after an exceptionally trying experience. During the engagement at Palma Soriano he sustained three severe sabre cuts, two dividing the parietal and temporal bones respectively and exposing the dura mater, whilst the third, impinging on his left shoulder, severed the upper half of the scapula. While under treatment the patient was attacked by yellow fever, but eventually he recovered and was sent to Santiago to be invalided. At Parana an officer was taken prisoner who had been hit by three Remington bullets. Two of the wounds were situated close to each other in the left shoulder running downwards and inwards and both of the projectiles had lodged in the thorax. There were severe cough, dyspnœa, and hæmoptysis. The third wound was superficial but of large size, being situated on the inner side of the left knee. Under the influence of ergotine, rest, tonic mixtures and antiseptic dressing the wounded man had recovered sufficiently in a few days to undertake a journey on horseback to San Luis. At Ramon de Guaninao a sharpshooter was wounded by an explosive bullet. The projectile entered beneath the right inguinal fold, causing comminuted fracture of the upper part of the femur. There were two apertures of exit, one longitudinal under the hip and the other star-shaped on the inner aspect of the thigh at the juncture of the upper and middle thirds. Under chloroform Dr. Granda, having opened up the wound, was able to extract seven pieces of bone as well as two strips of metal from the projectile. Recovery to a certain extent took place under antiseptics and a silicated bandage, but good bony union could not be secured owing to the excessive mobility of the short upper fragment. In conclusion, the Spanish surgeon formulates his observations as follows: (*a*) The projectiles used by the rebels were, in order of frequency, the ordinary Remington bullet, an explosive bullet, the

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bullet used in the Mauser cartridge, and, finally, a repeating-rifle bullet. (*b*) Of all wounds the least dangerous were those caused by cold steel. Several moderately dangerous incised wounds are far graver than a single severe wound. (*c*) Of all gunshot wounds those due to the Mauser rifle were the least fatal. (*d*) The danger in a wound due to a Remington bullet depended chiefly on the range. Usually when a long bone was struck by a bullet the result was a comminuted fracture, but in many cases repeating-rifle bullets did not produce this effect; the leaden projectile, unenveloped by a metallic jacket, was easily deflected, causing damage to the soft parts alone. (*e*) The explosive bullets so freely employed by the rebels produced comminuted fractures of terrible extent, together with horrible crushing and laceration of the soft parts. These wounds are exceedingly grave "*quoad vitam et quoad functionem*." The range of an explosive bullet is short, but in the Cuban war this did not benefit the Spanish troops because the encounters always took the form of surprises or ambuscades, the shooting being invariably at close quarters.

BRITISH MEDICAL BENEVOLENT FUND.

IT is sad to find that the number of medical men who fail to secure any adequate income for their declining years is by no means small and that some at their death leave families quite unprovided for. Much, however, is done by the British Medical Benevolent Fund to relieve the hardships inevitable under such circumstances. The report of the committee for the year 1897 shows that the subscriptions and donations received during that period amounted to £1367, and that the sum paid out in grants was £1236, the grants ranging from £5 to £18, and being distributed to 167 applicants out of 216. Many of these cases had to be postponed from month to month for want of funds, and there was at the close of the year an unusually large number of very urgent cases waiting for relief. Besides the recipients of grants there were 107 annuitants who collectively received £2168, one of them being a widow who is sixty-one years of age and has eighteen children. The honorary financial secretary, to whom donations and subscriptions may be sent, is Dr. West, 15, Wimpole-street, W.

SIR HENRY ACLAND ON MEDICAL MISSIONS.

SIR HENRY ACLAND has published an Address on Medical Missions in their relation to Oxford. The address was delivered in December last to the Oxford University Junior Scientific Club. It shows that despite the imperfect health attaching to octogenarian years Sir Henry Acland still takes the greatest interest in movements which contemplate the well-being of the race and especially of such portions of it as are under the direct rule of Her Majesty Queen Victoria. The address was called forth by a letter from Sir T. Grainger Stewart, President of the old Medical Mission Institute of Edinburgh in connexion with the Edinburgh Medical Missionary Society, founded by the great Dr. Abercrombie. Sir T. Grainger Stewart describes its objects and dwells upon the efficiency of religious medical service as preparing the way for still more strictly religious work. He expresses the hope that the Universities of Oxford and Edinburgh might coöperate in this great work. The society aims at sending into the missionary field only men who have enjoyed the best medical and other training that Edinburgh can afford. There is a danger nowadays of fancying that a little smattering of medical and surgical knowledge in missionaries will enable them to meet their own wants and those of the people whom they seek to benefit. This conception has no encouragement from the Edinburgh Medical Missionary Society. Still less has it any favour in the address of Sir Henry Acland which carries the conception of the medical missionary further even than that of the Edinburgh Medical Missionary Society. He would embrace within its objects whatever will benefit men physically, socially, and morally. Medicine in its large sense—scientific, preventive, therapeutic, and administrative—has relation to all races, and to every individual. It has relation to education, and therefore, to some extent to the religious life of the individual and the community. The conditions of great cities, and in a less degree of rural communities, often incompatible with decency and even hotbeds of drunkenness and vice, are the chief care of medicine, which aims at their removal and their replacement by conditions favouring virtue and religion. Sir Henry Acland's enthusiasm waxes warmer and warmer, and carries him beyond the bounds of the objects of any mere church or denomination in his conception of the objects of Christian missions. "With the divisions of the Church of Christ medicine has nothing to do." Its essential services neither favour these divisions nor contemplate them, and we should gather from his address that he scarcely approves of medical institutions working as such for mere sectarian purposes. Undoubtedly, the rule in Edinburgh is to help only the education of medical students specially recommended by any Protestant body. Sir Henry Acland would have medicine bound by no such restrictions. He admits them to be natural in the present state of the world, but thinks them unnecessary. Nevertheless, he is practical enough to recognise the good done by those who are identified with particular churches and the burden of his address is to enlarge that good and to bring to the missionary service the very latest and the very best discoveries of medicine.

NERVE DISORDERS IN ZYMOTIC DISEASES.

Two cases illustrative of the nerve disorders which attend upon zymotic disease are described in the *Annales de Médecine et Chirurgie Infantiles* of Aug. 1st, 1898. The underlying fever in each case was measles. In both a maniacal delirium was the most marked symptom. This condition appeared in one case as a sequel on the twenty-first day of illness and was ushered in by mental depression and attended by hallucinations. This patient gradually recovered. In the other mental troubles appeared with the invasion of measles and were of similar character to those of the former case. With the appearance of rash, which was delayed till the ninth day, the nervous symptoms began to abate, but pneumonia supervened and proved fatal. The ages were thirteen and fourteen years respectively. If these data are worth anything—and they are supported by the experience of other observers — they teach the importance of the nervous element as a factor in the pathology and treatment of children's fevers. This is probably of more consequence at or about the period of puberty, though it can at no age be overlooked. It is likewise the more to be considered in connexion with cases of delayed or "suppressed" eruption. In its therapeutic aspect it must necessarily remind us of the paramount value of measures to hasten the appearance of the rash and frequently also of a judiciously sedative treatment.

THE SANITARY REDEMPTION OF HAVANA.

ONE good result which may be expected from the present war is that there will at least be a likelihood of yellow fever being stamped out in Cuba and of the town and harbour of Havana, the chief sources for spreading the infection, being thoroughly cleansed. The insanitary condition of Havana has been for many generations a serious menace to the health not only of the United States, but of all the trading nations of the world. Havana is the chief nursery of yellow fever and the principal centre for its dissemination to other

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countries. According to a paper read by Dr. George Homan before the Medical Society of City Hospital Alumni of St. Louis a few weeks ago, "the harbour of Havana is a land-locked bay, deep, spacious and well sheltered on all sides. With the exception of some arms or inlets that reach in different directions the main bay or harbour proper may be likened roughly to a bottle or narrow jug with the neck set on the shoulders in an oblique direction. There are no streams of large size flowing into the bay, the Gulf tides are inconsiderable, the sewage and surface drainage of a large population have been poured for centuries into this almost stagnant basin, and with a temperature seldom falling below 70° F., the conditions afforded for breeding and storing disease are wellnigh perfect." As regards a remedy for this state of affairs it is, in the opinion of experts, but a question of a little engineering skill; in fact, it is declared by those in a position to speak with authority that by the application of certain sanitary measures Havana, from being one of the most unhealthy may be transformed into one of the healthiest cities in the world. Two means of effecting this desired change have been suggested, either that some method shall be devised whereby the waters of the bay will be regularly and frequently changed, or else that the pollution now poured into it shall be diverted and safely disposed of elsewhere. To effect the former it has been proposed to cut a canal leading from the bay to a point on the north coast with a view to establishing a current towards the Gulf. The other alternative is the diversion of the sewage now delivered into the bay and its disposal elsewhere without prejudice to public health. This would involve the construction of an intercepting sewer along the water front to receive the outfall of drains carrying domestic and manufacturing waste, and is a measure so commonly resorted to that no novelty presents itself in connexion with the suggestion. One thing seems assured, that be the difficulties in the way of the sanitary purification of Havana great or small, once the island is in the hands of the Americans their sanitarians will set themselves to the task of successfully solving the problem.

DEATH IN THE SWITCHBOARD.

ELECTRICAL fatalities are happily of rare occurrence, but when they do occur they are always of interest to the profession and the following account exhibits some unusual features. It appears that a student named Alker, aged twenty-one, with a surveyor and two firemen, went down No. 1 pit at the Park Colliery at Ashton, near Wigan. After they had descended they entered the underlooker's cabin, where a switchboard was placed with levers controlling certain electric circuits. When the party left the cabin the two firemen went first. The surveyor and Alker followed, the latter being behind. The surveyor happened to look back and then saw that Alker had hold of the switch near the door and seemed to be in pain. The thumb and one finger "were round the handle, whilst the other three fingers were on the brasswork of the board." The switch was put off by one of the firemen. Alker was caught in the act of falling and found to be dead. An electrical engineer gave evidence before the coroner as to the installation, which he said was working at a pressure of 500 volts and he stated that he did not consider such a pressure dangerous to life. It may be remembered that at the Board of Trade Conference some three years ago, upon the question of low-pressure supply, similar opinions were expressed. One gentleman said that he had felt no ill effect from a 600-volt shock. As a comment upon this there appeared at p. 1572 of THE LANCET, Dec. 21st, 1895, the following passage: "In view of the fact that so much depends upon contact and the manner of taking a shock, and that little or no information was given on this point, it is difficult to form any opinion from such a statement. Did the gentleman in question touch one pole only of a 600-volt circuit? If so, what was the earth insulation of the other pole? Was his body in contact with the earth? Or, presuming that he simultaneously placed one hand on each pole of the 600-volt circuit, what was the surface area of skin contact, and what the condition of the skin? ..... Had the surface area and condition of the skin been favourable for a low resistance contact, it is more than possible that the gentleman in question might ere this have been 'put to earth' in a sense other than an electrical one." These remarks seem to apply to the recent accident at Ashton. In the absence of more detailed information no definite opinion can be expressed. But suppose that the deceased, perhaps standing on damp ground and thereby making a good electrical contact with earth, touched with his hand one pole of a 500-volt continuous current circuit—if the other pole was earthed it is evident that a circuit might be completed through his body. It might be that the electric lighting was in conjunction with electric haulage. In such a case one pole would be earthed through the rails. Certainly under ordinary circumstances fatal accidents to human beings are not likely to happen with 500 volts, but the conditions necessary to bring about a fatal result are not at all improbable ones. Speaking broadly, it is of course correct to say that, other conditions being the same, a current is fatal in direct ratio with the electromotive force used; but these "other conditions" are second only in importance to the electromotive force itself. The contact area, the resistance of the body, the state of health of the person, and last, but not least, the duration of the shock, have all to be considered. It is not improbable that in a considerable proportion, perhaps in a large majority of cases, the fatality or otherwise chiefly depends upon the last named point. In the case under review it was with the hand closed upon the switch handle, and remaining so closed, that the shock was received. It is easy to see that the resistance of the body might be quickly broken down both by burning of the skin and by electrolytic action. Thus three of the chief factors in determining a fatal effect might here be present—viz., large contact area, low resistance of the body, and long duration of the contact. But what of the switchboard? Controlling switches such as would doubtless be used are usually of considerable size, then handles are either themselves non-conductors, such as wood, ebonite, &c., or if of metal are insulated so as to prevent current passing. If insulation of the handles breaks down the result would be the same as touching the terminals which may have been exposed. It seems probable that in the hurry to switch off and to catch up the other members of the party the deceased's hand may have slipped and touched the terminals near the handles. The accident is noteworthy, not because it throws any light upon the current that kills or because it enlightens the medical man as to the physiological mechanism of death by electricity, but because it drives home the familiar lesson that every electrical installation should be controlled by some device which may be absolutely relied upon to prevent accidental contact with a live wire.

POLLUTION OF THE MANCHESTER SHIP CANAL.

IT is a difficult task to free the Ship Canal from pollution, but the Mersey and Irwell Joint Committee persevere in their work and deserve much praise for their patient efforts in the direction of cleanliness and public health. The experts called in recently by the Manchester Corporation recommended the putting down of four small test filters and wished for a short time to investigate the results of th

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treatment of the sewage by means of these filters, so that they will not be able to report to the corporation before the end of October. The corporation hope that this report when received will enable them to satisfy the Local Government Board that they can produce a pure effluent from artificial filters without having to buy additional land. If unsuccessful in this they will purchase the 200 acres required for treatment on the land which the Local Government Board has so far insisted on. The joint committee have therefore agreed to grant the corporation six months' further grace, and the summonses against the corporation have been adjourned for six months. About a month ago the Urmston and Flixton Joint Drainage Committee were summoned at the Manchester County Police-court for discharging untreated sewage into the Irwell and the Ship Canal on dates from June 15th to 29th. The joint drainage committee have a sewage farm and have allowed the farmer to take as long as he liked for cutting the grass and making it into hay, and while he was doing so the crude sewage was turned into the canal. Summonses were served on June 30th, but on July 4th the inspector found the same thing going on, and subsequently to this the local authority wrote to the Mersey and Irwell committee that they could not treat their sewage on the farm for six months, as the land was in the hands of contractors for the purpose of making additional works. Mr. Yates, the stipendiary, in the end fined the Urmston and Flixton authority, the imposed fines and costs amounting to £14 or £15, and advised them to apply to the joint committee for time in which to complete their works. Birch Park, perhaps the most beautiful of the Manchester parks, is traversed by a stream which should add to its beauties and attractions by the opportunities it gives for lake-like expansions and the ornamental cultivation of moisture-loving plants. But this brook, which sends its contribution of filth on towards the Ship Canal, has been a reproach and a by-word for years, and is, we may say, an ancient illustration of how Manchester sometimes, as in this case, allows an injurious and almost intolerably disgusting nuisance to remain unchecked. We should have supposed that every effort would have been made to prevent the air of this otherwise delightful recreation ground from being poisoned by the vile stench from this brook. In hot summer weather when the flow is diminished the nuisance becomes intensified. Perhaps the most promising way of obtaining its abatement would be to compel the Parks Committee to go under canvas on the banks of the brook for a few weeks every summer. Since the above was written the condition of the "Black Brook," as it is always called, came under the notice of the joint committee on the 8th inst., for which the corporation ought to be thankful. The pollution is said to be caused principally by drainage from houses and from a jam factory higher up the stream, within the district of the Reddish Urban District Council, who are to be informed that they must take immediate steps to stop the pollution or they will be proceeded against.

ARTIFICIAL ALBUMIN.

ALBUMIN has been described as being able alone, together with the water and salts invariably associated with it, to support the vital processes, and as the only alimentary substance which can do so. Its chemical composition is not a constant quantity, and its structure or constitution has been the subject of a great deal of speculation by physiologists. It must be accepted, at any rate, as a very complex body capable of being split up into several classes of substances. Thus the fact that it is able alone to sustain the vital processes is probably due to its being resolved or split up in the animal economy into nitrogenous waste substances, into fat and carbohydrates. This is why albumin can be substituted in nutrition for the fats and carbohydrates, but it is not adapted as an exclusive source of diet, since it presents material far in excess of the bodily needs, leading to considerable waste. A remarkable statement appeared in the daily press last week to the effect that albumin had been successfully "synthesised" by a professor at Vienna University from materials which would lead to the cheap production of albumin on a large scale. And so it has been assumed that the food problem will thus be solved. In the absence of further particulars it is difficult to set an exact estimate on the alleged discovery. If the synthesis of albumen has actually been accomplished that alone would be a fact of immense importance in physiological chemistry, but that such an accomplishment is going to revolutionise practical food questions no physiologist or sensible man will be prepared to accept in the slightest degree as probable. Pure albumin is already manufactured on a large scale and fairly cheaply too, and though the manufacture has been going on for years albumin pure and simple has not found any decided place in dietetics, nor has it been proposed to substitute it for ordinary articles of food. It is absurd to think that the time will come when we shall carry about a complete meal or dietetic outfit for the day in the shape of a thimbleful of powder. The animal economy requires other things and attributes besides the mere elements concerned in making good the waste of the tissues in the body. The importance of the discovery, however, if the announcement be correct, cannot be overrated as probably calculated to throw much valuable light on the processes of metabolism and nutrition.

INTESTINAL OBSTRUCTION BY ROUND WORMS.

THE well-known inconvenience and even danger arising from the presence of round worms in the alimentary canal receive additional confirmation from a case which is graphically described in the *Annales de Médecine et de Chirurgie Infantiles* of Aug. 1st, 1898. It is that of a child, aged nine years, who presented all the usual symptoms of intestinal obstruction with an area of dulness from 12 to 15 cm. in length, corresponding to an elongated swelling about the middle of the transverse colon. Laparotomy was performed and it was found that this swelling consisted of fæcal matter and that the colon at the junction of its left third with the other two-thirds was actually "corked" (*sic*) by a mass of cord-like substance which proved to be an entangled knot of round worms. Massage of the colon was successful in reducing the obstruction, the contents of which were pressed as far as possible towards the sigmoid flexure. The abdominal wound was then closed. The relief of symptoms was rapid and pronounced; on the third day, with the help of calomel and santonine, three round worms were passed by the anus and the child was well in a week.

AN Italian lady, Signorina Esther Bonomi, has obtained at the University of Genoa the first doctorate in medicine granted to a female student, in modern times at least, in Italy. Another lady, named Dr. Katharina van Tusschenbroek, has been appointed to the professorship of gynæcology in the University of Utrecht.

THE Home Secretary has appointed Dr. Thomas Morison Legge to the new post of Medical Inspector of Factories and Workshops. We congratulate Dr. Legge, who has done excellent work in public health and who was also Secretary of the recent Royal Commission on Tuberculosis, on his well-earned recognition.

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MR. FRANCIS MARPLES, of Sheffield, has made a donation of £20,000 to the weekly board of the Royal Hospital of that city. In 1893 he presented to the Free Hospital for Children a sum of £27,000 on certain conditions, so that he has proved himself a really splendid benefactor of Sheffield medical charities.

WE may remind our readers that the Congress of the Royal Institute of Public Health will be held in Dublin from Aug. 18th to 23rd, 1898, under the presidency of Sir Charles Cameron. The honorary secretary of the Congress is Mr. Henry Campbell, Town Clerk.

IT is proposed to entertain Professor Virchow on the occasion of his forthcoming visit to England at a public dinner. Lord Lister, we understand, will take the chair and may count upon the support of the leaders of the profession.

A TELEGRAM to the Colonial Office received on the morning of Tuesday, August 9th, stated that no cases of plague had occurred in Hong-Kong last week.

THE REPORT OF THE SELECT COMMITTEE ON PETROLEUM.

THE Report of the Select Committee on Petroleum, a copy of which we received last week, is unquestionably a valuable document and contains, we venture to think, a most fair and comprehensive statement of the present position of the subject. The difficulties of legislation being directed in one way or another are carefully weighed, and it would be idle to deny that the conclusions express a perfectly impartial view of the case as they are the product of enormous labour, time, and thought. A perusal of the Report in one place would appear to carry conviction in one particular direction; at another it would appear to convey just the opposite conclusion. In a word, it is not difficult to see how sharply contention has waged round the main points at issue.

Our interest in the labours of this Committee has been centred in the one great question of the accidents arising from the domestic employment of paraffin lamps, and as our readers will recollect, we instituted a practical inquiry during the latter months of 1895, the results of which were published in THE LANCET of Jan. 4th, 1896, in the Report of THE LANCET Analytical and Sanitary Commission on Dangerous Paraffin Lamps. Our commission expressed the opinion that if legislation could be directed to the construction of lamps all that was needed to avert further dangers would be done. It was shown very distinctly that the chief source of danger arose from cheap lamps or from lamps of defective design and construction. The evidence of experience, it was pointed out, was quite in agreement with this conclusion, for the disasters that have been reported have been in almost every instance in the houses of poor families where the cheapest possible lamp was in use. There is no similar record of accidents published in the case of those who use lamps and can afford to pay a reasonable price for those of sound and safe construction. Yet the class just referred to are great patrons of the oil lamp using the ordinary oil of a flash-point of from 73° F. to 85° F. This difference may be due to the exercise of greater care and intelligence in the latter case. Against recklessness and carelessness no legislation is possible. THE LANCET Commission attributed most of the accidents to the leakage of oil through imperfect connexions and fittings, to the fragile character of the reservoirs, and to the oil becoming ignited on the lamp being upset. No satisfactory evidence could be obtained from the series of experiments made that a real explosion was a likely occurrence. Not in a single instance did an explosion result. The evidence placed before the Select Committee on Petroleum pointed distinctly to the same conclusion. Thus on page 15 of the Report occurs the following passage: "The Committee have received a large amount of evidence as to the special causes of lamp accidents. A large number of lamp accidents are reported as lamp explosions which it would appear from the evidence are not explosions at all. There is very weighty scientific evidence to the effect that actual explosions in lamps are extremely rare and that the conditions necessary to cause an explosion very seldom occur. It appears from this evidence that vapour when produced in a lamp is only in an explosive condition when mixed with atmospheric air in nearly the proportion of two parts vapour to ninety-eight parts air. It can then only explode if, through defects in the lamp, by blowing down the chimney, through an ill-filling wick or from some other cause, it comes into contact with the flame of the lamp. When the proportion of 2 per cent. of vapour increases, say, to 4 per cent., the mixture is no longer explosive. This is given as an explanation of the statement that explosions in petroleum spirit lamps are practically unknown as the vapour is generated so rapidly that the explosive point is past almost immediately the lamp is lighted." If this be so the possibilities of an explosion happening with high flash-point oil are greater than with the low flash-point oil.

Statements have been made from time to time in the newspapers that England was the dumping ground of the refuse oil of the United States, where, it was asserted, that legislation absolutely forbade its use. On page 13 of the Report of the Select Committee we read: "The Committee have taken a large amount of evidence as to the statement so frequently repeated that this country is made the sole market for oil of such a dangerous character as would not be allowed to be used in the United States or elsewhere, and have come to the conclusion that the statement is unfounded. Petroleum of 73° (Abel) is not only largely used in the United States but is chiefly exported to the principal European and Eastern countries." A more complete refutation of such statements could not have been made. We have not space to deal with the mass of material embodied in the report, but it is a satisfaction to us to find that many of the vital points contained in the conclusions of THE LANCET Commission were correct and in an exact line with the findings of a Parliamentary Committee which has been holding an inquiry extending over several years and which held fifty-three sittings and examined no less than eighty-five witnesses, the latter including scientific experts, traders in, and manufacturers of, both oil and lamps, and public officials. Nor were we alone in taking the view that the remedy lay in the State insisting upon a standard of construction for lamps instead of interfering with the present flash-point of the oil. "The evidence of this branch of the inquiry," it is stated in the Report, "is most conflicting and contradictory both as to the efficiency of the proposed remedy and as to what should be the particular flash-point if one should be adopted. Many witnesses contended that lamp accidents would be largely diminished, if not entirely prevented, by the prohibition of the sale or use of petroleum below a certain flash-point for illuminating purposes." On the other hand, "From the evidence before them by witnesses who have had long experience the Committee have come to the conclusion that lamps reasonably well constructed and used with a fair amount of care are safe with all ordinary oils."

After all the conclusions summarised in the Report are in the nature of a compromise, for the Committee recommend in paragraph 2 not only the adoption of a flash-point of 100° (Abel close test) as the dividing line between petroleum oil and petroleum spirit, but in Section 7 that statutory powers should be created to enable the Secretary of State to issue orders affecting the manufacture and sale of lamps, and lastly, in Paragraph 8, that information should be spread among the public as to the nature of petroleum and the management of lamps. The effect of legislation on the lines thus suggested cannot be predicted, and the validity of these conclusions can only be judged when we are in a position to turn to the evidence of experience. In conclusion we may repeat a remark which we made in an article upon the subject in THE LANCET of July 2nd, 1898, viz.—"if our attitude (that adopted in the report of THE LANCET Commission) should ultimately prove to be wrong we shall none the less welcome any alternative proposal, should it be followed by a happy issue, from whatever lines of reasoning it may have sprung. Let the flash-point be raised by all means if that will protect life and limb, and if at the same time it will not engender other hardships in the every-day conduct of human affairs."

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A NEW SANITARY SERVICE AT BORDEAUX.

(FROM A SPECIAL CORRESPONDENT.)

THE town of Bordeaux has established a new system of sanitary control which seems likely to pave the way to a very great improvement in the condition of that important city. What is called the service of *l'inspection technique de la salubrité* was founded in 1897 by the new municipality elected in 1896. There was formerly a *médecin inspecteur de la salubrité*. He had no office at the town hall. His mission was to examine unhealthy districts, badly kept streets, and general causes of insalubrity. He was also the inspector of unwholesome industries. This function has now been suppressed and replaced by the *adjoint à l'hygiène* of the mayor, who must be a medical man, and by the new "technical service of salubrity" which must be under the direction of a sanitary engineer. The *adjoint* or substitute of the mayor thought it was necessary that he should be assisted by a technician knowing the detail of sanitary appliances, the cost of sanitary apparatus, the value of new patents, processes, &c. Hence the service of technical inspectors was organised. Its duties extend over many questions which were not included in the attributes of the *médecin inspecteur de la salubrite*. Apart from watching the causes of ill-health and inspecting unwholesome industries, which were the duties of the former medical inspector, the new service has organised an elaborate system of inspection over private dwellings. Throughout France there exists in all important centres an official "commission on unwholesome dwellings." But at present this commission only interferes when the householder will not carry out the improvements which have been suggested to him. If a complaint is made concerning the sanitary defects of some dwelling it is sent to the new service, which at once makes a report, indicates to the proprietor of the house in question what alterations are necessary and generally these suggestions are carried out. It is only in the event of refusal on the part of the proprietor that the matter is handed over to the "commission on unwholesome dwellings." This commission generally prescribes the same or similar remedies, and the measures thus recommended can then be presented to the municipal council. If they are approved by the council—and this is generally the case—then the proposed remedies can be enforced by law. Should the proprietor still refuse to comply he falls under the law of April, 1850, and a penalty can be inflicted. Unfortunately this penalty consists only of a fine, there is no power by which the sanitary improvements can be carried out in spite of the householder or proprietor. Therefore if the fine inflicted is less than the cost of the proposed improvements the house-owner pays the fine and the matter is allowed to drop. A project of law is now under consideration by which when such sanitary measures are approved by the municipal council the mayor will have the right to carry out the works himself and recover the costs from the proprietor by summary proceedings. In consequence of the arrangement just described the number of cases referred to the "commission on unwholesome dwellings" has been very much reduced, and this is only fair, as the members of that commission are not paid for the work which they perform.

Then there are many causes of complaint which come under the existing laws and it is not necessary to refer to the "commission on unwholesome dwellings" to have them rectified. Thus, for instance, if there is a heap of manure or there are some poultry in a backyard the police inspector can at once interfere. The "commission on unwholesome dwellings" has now therefore only to attend to cases where a recalcitrant house-owner refuses to comply with instructions given him or when some very serious measure is proposed such as the total evacuation and demolition of dwelling-houses. Then when sanitary works have been ordered there must be an inspector capable of seeing that they are properly carried out. With a service technically competent many questions which would lead to much debate and dispute can be settled at once.

Apart from the houses which already exist there is the question of the new houses which it is proposed to build. The plan of all new structures has to be sent to the town hall. These plans were formerly examined so as to see that the new building should be in harmony with the street and its surroundings, but no note was taken as to what would be its probable sanitary condition. Thus it sometimes happened that two or three years after a house had been built it was condemned by the "commission on unwholesome dwellings." It is true that the law of 1852 says that plans of proposed buildings shall be examined from the health point of view but the law does not state who shall be held responsible for the accomplishment of this duty. Therefore what was no one's business was never done; besides, there was no recognised authority technically capable of carrying out this clause of the law. The creation of the new technical service of sanitary inspection provides the machinery by which this long dormant law can at last be enforced. The plans for new buildings are now examined from the sanitary as well as from other points of view.

Another important duty devolving on the new sanitary service is the control of the emptying of cesspools. The company which has contracted with the municipality to do this work is bound by a set of regulations drawn up and accepted in 1874. But it was very urgent that there should be municipal officials ever on the watch to see that these regulations were strictly enforced. Then it is not only necessary that a cesspool should be properly emptied: it must be carefully examined to see that it is thoroughly water-tight. When a cesspool is reported to be leaking an inspector is sent from the town hall to verify the fact. When only solid matter is drawn out of a cesspool it is evident that the liquids have escaped. The inspector indicates what repairs must be done, and when they are completed the cesspool is closed in the presence of the inspector. He then affixes the municipal seal on the cement. Otherwise some householder would be tempted to reopen the cesspool so as to damage the walls and render them porous. The liquids would then escape and a long time would elapse before he would have to incur the expense of having the cesspool emptied again. At Bordeaux this is a particularly expensive operation. It used to cost nine francs per cubic metre, but now the charge has been reduced to six or seven francs. There is a project under consideration for the drainage of the town, and if this is carried out all the cesspools will be abolished. But a vast and costly scheme of this description is not likely to be promptly realised. Therefore it is very important that, in the meantime, the nuisance due to the cesspool system should be reduced to a minimum. Fortunately, in many parts of Bordeaux the landlords are as anxious as the municipality that their cesspools should be water-tight. In these districts the cesspools are below the underground water-level; therefore if they were not water-tight they would drain the surrounding subsoil, fill rapidly, and have to be constantly emptied.

The new technical sanitary service has under its charge the management of the municipal disinfecting station. This has been admirably organised. In a spacious, well-aired building there is a very large Geneste and Herscher stove. It measures 1·90 metres in diameter and 4 metres in length. Of course, the side for the admission of the infected linen, &c., is completely walled-off and separated from the side where the linen is taken out of the stove. The disinfectors wear a sort of uniform consisting of white overalls and a cap with hood covering the back of the neck. When they have placed everything in the stove they take off their uniform and put it in also. After this a side door admits them to a bathroom and disinfecting room where they change their other clothes and wash thoroughly. A very effective check is kept over each operation. On a printed formula the blank spaces are filled in and indicate accurately what has been placed in the stove, where it came from, and the nature and result of the illness of the patient. Attached to the disinfecting stove there is a registering thermometer. The slip of paper fastened to the drum of the thermometer bears the same date and number as the formula containing the list of the objects to be disinfected. The drum revolves by clockwork and on the paper is inscribed minute by minute the temperature prevailing in the stove during the operation. The two sheets are then pinned together. If any question arises or complaint is made these two documents are produced and it is at once seen to what temperature the objects have been exposed and for how long. By this means, also, it is easy to verify if the steam under pressure has been occasionally let off and the pressure reduced. If this is not done there is always the danger that a layer of compressed and cooler air will form within the stove and unless this is broken up by a sudden change of the surrounding pressure the same amount of heat will not

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be evenly distributed over all the objects to be disinfected and the operation may not prove entirely successful. The clockwork thermometer is therefore a very practical and necessary adjunct to a stove for disinfecting by steam under pressure. The disinfecting is done gratuitously for the poor and a moderate charge is made where the persons concerned can afford to pay. A great many private families send things to be disinfected and sometimes even when this is in no wise necessary. Thus the bedding, &c., of a person who had died from diabetes were sent to be disinfected. The practice of disinfecting for cases of phthisis is also much on the increase, and as these patients often live a considerable time disinfecting for them brings in a small regular income. The *Mont de Piété*, or State pawning establishment, has likewise entered upon a contract with the municipality by which it pays £60 a year to have all the bedding pledged disinfected before it is stored away. Hopes are entertained that a by-law will be enacted at no distant date by which all auctioneers will be compelled to have all bedding disinfected before they take it to public sale-rooms. As it is, some auctioneers have already taken time by the forelock and voluntarily bring the bedding they have to sell to be disinfected. Of course they do not fail to boast of the precaution they have taken, produce the municipal certificate of disinfection and charge a heavier price accordingly. The public has, on its side, the intelligence to appreciate this proceeding and is willing to pay more for greater security. From these various sources, the income derived for disinfecting during the first month of this new service amounted to £28, so that the cost the municipality has incurred is likely to be covered by the receipts.

Cheap lodging-houses are under the supervision of the police; but now when the police are asked to authorise the opening of such a house they first consult the sanitary technical service. It is only when the recommendations made by this service have been carried out that the police authorise the taking in of lodgers. Unfortunately there is no precise law on this subject. The custom is to insist that there should be 20 cubic metres of space per head per night, but the whole matter is left to the discretion of the local authorities. A Common Lodging-houses Act, similar to Lord Shaftesbury's Act of 1851, is much needed in France. If Zola or Daudet could have written a novel something like Dickens's "Bleak House" such an Act might now be in force among our neighbours.

The new "technical sanitary service" has also to control all subsidised localities—such as theatres, *crèches*, schools, &c. In these establishments it insists on greater cleanliness than has as yet been observed; the walls are more frequently whitewashed and the drains more carefully looked after. The new service has likewise to report on all sanitary questions interesting the municipality, and for this purpose occasionally deputes a delegate to attend sanitary congresses and to visit foreign towns.

Somewhat after the model of what is being done for the Paris Municipality by Dr. A. J. Martin and M. Masson the Bordeaux "technical sanitary service" is seeking to establish a sanitary record for every house in the town. Some confusion has arisen as to what this means. The danger is that a house once visited and reported upon may be considered as having obtained a sanitary certificate and this may lead to a false sense of security. The persons employed to make these inspections are municipal agents or beadles. They are called *appariteurs* and their function is to report all defects in the public services. If the dust is not satisfactorily removed, the street is insufficiently watered, or any by-law is not properly carried out, complaint must be made to the *appariteurs* of the district. These men have no special knowledge of sanitary questions, but they have an intimate practical knowledge of the district in which they work, and some of them have worked in the same district for more than ten years. Bordeaux is divided into twelve districts. There are two *appariteurs* for each district and they are expected to inspect two houses per day. 2000 houses have already been inspected. There are about 36,000 houses in Bordeaux, so that it is anticipated that the work will be completed in some two years time. It is urged that these men, though not technically instructed in matters appertaining to sanitary engineering, are quite competent to answer the questions put down on a printed formula which they have to fill up whenever they visit a house. They must state when the house was built, what is its size, its frontage on the street its depth; the size and number of gardens or courts, the state of the soil, their ground level as compared with that of the street; what trades, shops, or businesses are carried on; the stables, their number, and the number of horses contained; the number of separate tenements, on what floor they are situated, whether they give on to the street or on to a court or garden, whence they derive their air supply and the number of inhabitants. These questions complete the first or white folio that has to be filled up. The second or pink folio deals with the sanitary conditions of the house. It is first necessary to state whether the house receives the town water supply, whether the supply is direct or whether there are cisterns, whether there is a meter and if so the duration of the subscription. Secondly, and in case the house does not receive the town supply, it is necessary to state at what distance is the nearest public fountain, whether there are any wells, where these are placed, what use is made of them, whether the waters have been analysed, and what decision was taken in consequence of such analysis. Then it is necessary to state how many closets there are in the house, whether they are private or used by more than one family, where they are placed, what is the nature of the seats and basins, the water-supply, the flushing apparatus; the soil-pipes, their situation, nature and condition; the ventilators, their origin and dimensions; the cesspools, whether water-tight, automatic or moveable, or whether the closets drain direct into the sewers. The methods of draining off the slop and rain-water have likewise to be described, and an account has to be given of the stables, the animals living in the house, and the manure heaps that may be on the premises. On the back of this sheet there is a space where diverse causes of insalubrity may be more fully detailed, together with the measures of improvement prescribed, and finally there is space for a record of what has been done as the result of these recommendations. The third folio is blue and deals only with lodgings recognised as insanitary and serves to tabulate the improvements ordered and the consequence of such action. The fourth folio is yellow and deals only with infectious diseases, the nature of such diseases, the date at which they were notified, the methods of disinfection employed, the death or otherwise of the patient. A fifth and green folio is devoted exclusively and in more detail to the disinfecting operations. All these five sheets are pinned together in a stiff wrapper but are sufficiently small to be carried about and filled up on the spot. It is maintained that when the above questions have been fully answered a very complete record of the house has been obtained. Such a record is not a certificate of efficient sanitation, but it is a basis on which further inquiry may be made when the occasion arises. By giving a different colour to the folios, according to the subject with which they deal, a question is quickly answered not only with regard to one house but with regard to a whole series of houses. With such a record at their disposal it will be much easier for the sanitary authorities to connect the outbreak of epidemics with the internal conditions of the dwellings concerned. The sanitary history of each house will thus be gradually built up and its value as a sanitary dwelling ascertained. The advantage of employing the *appariteurs* for this service is that they know every one. It is their business to distribute the voting cards to all the electors. They attend to all questions relating to water-supply, complaints as to the condition of the streets, the tables of cafés encroaching upon the causeway, dust removal, the numbering of houses, the registering of horses for the military reserve, the dog tax, accidents, flower-pots falling into the street, &c.; in a word, the *apparitour* is the man who always *appears* when anything goes wrong. From the sanitary point of view the great advantage rests in the fact that he is the representative of the mayor, and, therefore, carries the tricolor scarf and the silver medal with him. On an emergency he can put on these insignia of office and then he has the right of entrance both day and night into private houses as well as into public places. Sanitary inspectors have no such right for they are not recognised as agents of the law.

The new technical sanitary service has also to look after the disposal of house refuse. This is placed in boxes which are put out into the streets at night and collected in carts in the early morning. The carts are taken to the banks of the Garonne and emptied at a spot which is comparatively isolated though not far from the centre of the town. The carts are ranged in order on a landing stage

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and tilted up so as to be emptied into barges below. There is also an embankment where other carts empty into railway trucks beneath. As the contents are raked out of the carts and pushed so that they fall into the trucks or the barges the men pick out the hard core, which they place in bags or hampers, and it is used for road-mending, &c. The soft core is then conveyed either by rail or by boats to agricultural districts where it is readily disposed of as manure.

Such are the principal functions of the "service of technical sanitary inspection" recently established at Bordeaux. Much of this organisation is due to the ingenious conceptions and activity of Monsieur E. d'Esménard, civil engineer and founder of the Society of the Sanitary Engineers and Architects of France. It may be remembered that in July, 1895, THE LANCET gave at some considerable length an account of a Congress on Hygiene held by this society at Paris. M. d'Esménard was the general secretary of this congress and it seems that the discussions which he was instrumental in bringing about have borne fruit. In any case the town of Bordeaux may be congratulated upon having taken an important step in the right direction and in having appointed M. d'Esménard as the chief of its "service of technical sanitary inspection."

LORD LISTER ON THE VACCINATION QUESTION.

THERE can be no doubt that Lord Lister's words upon the Vaccination Bill were awaited with much attention by the country and that his opinion has been an important factor in the passage of the Bill through the House of Lords under circumstances that are familiar to all our readers. We reproduce Lord Lister's speech in full that medical men may see exactly why the representative of medicine in the House of Lords voted as he did. Details of the different debates will be found in the columns usually devoted to Parliamentary proceedings.

Happily, said Lord Lister, it is not necessary to advocate the cause of vaccination. The great majority of the Members of the House of Commons—and I trust every Member of your Lordships' House—are aware of the enormous benefits which vaccination confers. The only question is, What are the best means of promoting vaccination in the country? It is to be observed that if the amendment to omit the clause is passed the result will not be the passing of the Bill without the clause objected to. The Bill will inevitably be sent back to us from the Commons with that clause re-introduced and the consequence will be that the Bill will be thrown out for the session. Not only so, but I am given to understand that if this Bill, which is framed very much on the lines of the Report of the Royal Commission, is thrown out this year it is not likely that the Government will introduce another Bill next session dealing with the subject, and very probably not in the year after, nor perhaps for many years to come. Therefore what we have to consider is whether it is better for us to pass this Bill in the form in which it is sent to us from the Commons, or be content to let the subject of the administration of the vaccination laws remain in the position in which it is. After giving the subject the best consideration in my power, my impression is that it would be better to pass the Bill as it is sent to us than to have no Bill at all. If after the long labours of the Commission and the endeavours of the Government nothing whatever were done by Parliament in regard to vaccination I think the result would be to cast discredit upon the whole subject. It is not as if the present compulsory system were working well. The appalling fact is that at the present time about one-third of all the infants born in England and Wales are at present not vaccinated. It is also true that nearly one-quarter of all the guardians throughout the country fail to put the vaccination laws into operation. This is a highly unsatisfactory state of things and it is undoubtedly the result of the anti-vaccination crusade. The anti-vaccinationist has two weapons. One of these is the supposed possible dangers of vaccination and the other is the martyrdom which it is thought is endured by persons who are subjected to fines and imprisonment for disobeying a law which, rightly or wrongly, they believe subjects their children to danger. Now, as regards the former of these weapons—the supposed dangers of vaccination—the glycerinated calf lymph will remove it. With arm-to-arm vaccination the danger does exist, though a very very remote one, of introducing into a child the terrible contamination of syphilis. Now, this danger is absolutely done away with by the use of calf lymph, since syphilis cannot occur in the calf. Then, the introduction of tubercle by vaccination is equally prevented by the use of the new lymph. Tubercle can, indeed, affect the cow, and, though very rarely, the calf; but it has been found that if tubercle bacilli are actually mingled with the glycerinated lymph in the course of a time far short of that at which the lymph would be issued for use the bacilli have lost their vitality. There remains the possible danger of communicating erysipelas. This cannot be done by the lymph as such, for the microbes which are the essence of erysipelas are as effectually disposed of by the glycerine as are the microbes of tubercle. But there is the possibility of the communication of erysipelas to the incisions made in vaccinating, just as there is the possibility of communicating it to any scratch or sore in a human being. That is a possibility, and it would undoubtedly be diminished by having the children vaccinated at home as is proposed in this Bill, instead of having them crowded together at the vaccination stations. But I trust that before very long any possibility of the communication of erysipelas by subsequent contamination will be done away with. The medical officers of the Local Government Board have now under consideration what would be the best, simplest, and most effectual means of using antiseptic measures for the treatment of the scratches—measures which will be simple and efficacious from the antiseptic point of view, and, on the other hand, not interfering with the efficacy of the lymph. I feel certain that the thing can be done. In the medical journals papers have been published by gentlemen who show that they have used antiseptic measures with perfect success in regard to vaccination. When this is accomplished there will be absolutely no objection to the vaccination of children on the ground of possible danger. But the conviction of the absolute safety of the process will take a long time to establish itself in the country. At the present time there is a deep-rooted idea, derived from the propaganda of the anti-vaccinationists, that serious danger exists; and it will take a long time before that idea is dissipated. The second weapon of the anti-vaccinationist—namely, the martyrdom of the honest objector—would of course be struck out of his hand at one stroke by the present Bill. It has been said that this conscience clause introduces a new and dangerous principle into our legislation. It may be so; but when I see that such a conscience clause was unanimously recommended by the eminent men who constituted the Royal Commission, including so distinguished a lawyer as Lord Herschell, I feel that I am free to consider this proposal on its merits otherwise. What is likely to be the effect of the Bill if passed into law? On this point we find the utmost discordance of opinion among medical men themselves. Some feel sure that the result will be an enormous diminution of vaccination throughout the country and a consequent increase of small-pox. Other men of high position and large experience in sanitary matters are equally confident that the Bill would greatly increase the amount of vaccination. As to which of these opinions is really correct I confess that I am hardly prepared to give an opinion. Those who hope good from the passing of the Bill think that when the conscientious objector has been so amply provided for, the guardians who now object to enforce the vaccination law will not hesitate to prosecute persons who, from mere idleness and without any real objections, neglect to have their children vaccinated. That this hope is not altogether without foundation we have a good illustration in a letter which appeared in the *Times* the day before yesterday from Sir Walter Foster. I will read to the House an extract from this letter—

In 1897 the Barton Regis Board of Guardians, in face of difficulties in enforcing the vaccination laws, adopted (of course without legal sanction) the recommendation of the Royal Commission. They informed the parents who had not submitted their children for vaccination that they (the guardians) would not proceed against them for default if a declaration of conscientious objection was made before a magistrate. In the Barton Regis Union in the last half of 1897 there was a population of over 200,000, and the number of births was 2,944. The defaulting parents were 350, and the actual number of declarations 130. Major Rumsey, the ex-chairman of the board, writes me:—

"The number of declarations (130) bore about the same proportion to the defaulters as the prosecutions under the Vaccination Acts did prior to the form of statutory declaration being adopted. The Barton

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Regis Guardians (44) were nearly equally divided in opinion upon the vaccination question, but from the time of the adoption of the declaration the anti-vaccinationists offered no objection to the prosecution of those who did not furnish a declaration and a most disturbing element to the harmonious working of the board was removed. I may add that, had not the statutory declaration been adopted, a resolution would have been passed refusing to order prosecutions, and so the whole 350 would have escaped vaccination in place of the 130 referred to, the remaining 220 having no objection to vaccination, but being simply negligent or careless and requiring pressure."

In other words, the announcement of the remission of penalties for those who made a declaration of conscientious objection, together with the threat of their enforcement for others, induced nearly two-thirds of the whole number of defaulting parents to submit their children to vaccination. So far as one case can go, this seems to me most encouraging. It is to be observed that this Bill by no means entirely does away with compulsion, though it is commonly spoken of as if it did so. Those parents who refuse to make a declaration of conscientious objection before the magistrate may be fined or imprisoned as under the existing law for not having their children vaccinated; but, beyond that, the fact that the parent is obliged to appear before the justices is a mild form of compulsion. It gives the parent trouble and it will be a question with him whether it is more trouble to go before the magistrates or to have his child vaccinated under the very much less troublesome form provided under this Bill—namely, having it done by the vaccinator at the man's own house. If it turns out that the results are not so satisfactory as regards the behaviour of the guardians as may be hoped, it would be very easy by a simple Bill to arrange that the administration of the vaccination laws should be transferred from the guardians to the sanitary authorities, or at any rate to arrange that the vaccination officers shall have the expenses of prosecution which are now refused by the guardians paid to them either through compulsion of the guardians or by the State. Therefore I must confess that I am disposed to be hopeful as regards the effect the Bill in its present form is likely to have. But there is one serious omission from the Bill, and that is that it neglects to deal with revaccination. It is a matter of bitter disappointment to the medical profession of this country that revaccination is not dealt with by the Bill. The immense value of revaccination has been shown by the splendid results obtained from it in Germany, in the army, and more recently throughout the population. The value of revaccination is also indicated by the figures quoted by the Commission as to its effects in diminishing death from small-pox in our army and navy and postal service. The immunity of nurses in our small-pox hospitals, who are always revaccinated before admission as nurses, is another most striking proof of the efficacy of revaccination. The Royal College of Physicians of London have lately made the following declaration:—

> The Royal College of Physicians, having learnt that certain changes are likely to be made in the laws relating to vaccination, think it their duty to reiterate their conviction that vaccination, properly performed and *duly repeated*, is the only known preventive of small-pox.

In the *Times* this morning there is published a declaration of the Royal College of Surgeons of England, in which the following passage occurs:—

> We are, moreover, firmly convinced that revaccination is an additional safeguard and should be universally practised.

It is true that several members of the Commission considered that compulsory revaccination was so surrounded with difficulties that they were not able to recommend it, but two of the most influential members of the Commission, Sir William Guyer Hunter and Mr. Jonathan Hutchinson, thought that in spite of those difficulties revaccination ought to be made compulsory. And those Commissioners who were of the opposite opinion made this significant declaration:—

> Again, it is impossible to leave out of sight the effect that such an extension of the present compulsory law might have in intensifying hostility where it at present exists and even in extending its area, though if our recommendations, especially that which exempts from penalty those who honestly object to the practice, were adopted, this objection would be much diminished.

In the present temper of the House of Commons and of the country it would indeed be hopeless to attempt to introduce compulsory revaccination on the lines on which infant vaccination is now compulsory. But the conscience clause of the present Bill opens the door for very valuable legislation on this subject. It could be arranged, with a little assistance from the Education Department, that every master or mistress of a school where children of the age of ten years attend should keep a list of the names and addresses of those who had reached that age. Then the vaccinator could look in from time to time, at whatever periods it might be thought desirable, to see from the mere inspection of the arms of the children, which of them had not been recently vaccinated and the parents of these would be dealt with as this Bill proposes to deal with parents who have neglected to have their infants vaccinated, including the offer of doing the operation at home. This would ensure the revaccination of the vast bulk of the population, except the children of the so-called conscientious objectors, who, under the new system, would, I believe, be a rapidly diminishing quantity. Another effect of this arrangement would be that many children who had not been vaccinated in infancy would be dealt with at the age of ten. Personally, I should like if the Bill could be withdrawn this year and brought in again next year with this question of revaccination attended to, and also some other matters which the Commission recommended, but which are not dealt with in this Bill. But I fear that is a hopeless suggestion. However, as regards revaccination, the members of the Government who have been approached on the subject have given us good reason to hope that a Bill dealing with revaccination may be brought in next session. Such a Bill would, I think, be sure to pass the House of Commons, the great majority of which, however they may differ on other questions, are at one as regards the importance of revaccination. The medical Members of Parliament are certainly at one on this point. The Bill would therefore readily pass, and by introducing it the Government would do untold benefit to the community. The confident hope that the Government will see their way to take this course next session makes me the more readily acquiesce in what I confess is a tremendous experiment.

ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD.

FIRST NOTICE.

IT cannot be said that year by year as we take up this report and read of the isolation accommodation of the county of London that the problems connected with the isolation of infectious disease seem nearer solution. Indeed, as we peruse its pages and discover the enormous provision which has already to be made we cannot help reflecting on what the future may bring forth. Suppose, for instance, that what may be called the public health conscience turns itself to deal seriously and adequately with such diseases as measles and whooping-cough, and suppose still further that it were to set itself the task of isolating in special hospitals persons whose sputum yielded on examination the tubercle bacillus. However, progress in this direction will at least be gradual and we shall have ample time, as step by step is taken, to reflect on the situation. It is, however, otherwise with another disease, namely, small-pox, and it may be, with the House of Commons in its present frame of mind *quâ* compulsory vaccination, that the near future may have in store for us a demand upon the isolation accommodation—not only of the metropolis but of the country as a whole—which the provision at present existing will be utterly inadequate to meet. So far we profess, in London at least, to provide accommodation for a relatively well *primarily* vaccinated people and we have already had indications of the difficulties of doing even this when a wave of small-pox of at all an epidemic type visits us. The tale which may be told in the future when a similar wave passes over a much less well vaccinated people may, however, be very different, and we could well understand it if the Metropolitan Asylums Board considered it a duty, both to the ratepayers and to the public health of the metropolis, to utter a solemn protest against this prospective sacrifice of human life and against this prospective increase of expenditure which is likely to occur unless some better provision is made for revaccination. It is satisfactory, however, to know that the Government intend to introduce a Revaccination Bill next session.

In the volume before us the Statistical Committee commence their report by a reference to the increased responsibility which during 1897 has been placed upon them in being constituted the authority for dealing with poor children suffering from contagious diseases of the eye and skin or who are suffering from physical, mental, or moral deficiency;

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and as to their duties in this direction they will doubtless have more to tell us next year.

Coming now to infectious diseases we find that out of 45,417 cases notified during 1897 as many as 39,251 were eligible for admission to the managers' hospitals. Out of this total 58·5 per cent. were actually admitted, a percentage considerably in excess of that of any previous year. Up to about the middle of July all scarlet fever *applicants* were admitted, but from the middle of June to the middle of December a certain percentage of the applications had to be turned away.

Of the admissible cases of each of these diseases isolated by the Board there were actually admitted during the year 1897 of scarlet fever 66·99 per cent., of diphtheria 51·64 per cent., of enteric fever 30·36 per cent., and of typhus fever (4 cases only) 50 per cent. Spot maps are furnished with the report showing the distribution of each of these diseases during 1897, and it is of some interest to note that around none of the hospitals is there any such special incidence of any of the diseases isolated as has so often been the case with hospitals used for the isolation of small-pox. Why should we not around ordinary fever hospitals see some evidence of what is alleged by some to be maladministration? As regards the age and case distribution of scarlet fever and diphtheria the figures for the year show nothing new—i.e., two-thirds of the total cases were among children under ten years of age, scarlet fever being most prevalent at ages from five to ten and diphtheria at ages under five.

Now with regard to the fatality-rate of the several diseases admitted. The 15,115 scarlet fever cases yielded a fatality rate of 4·06 per cent. as against one of 4·2 per cent. in 1896, the rate amongst the males being as usual in excess of that amongst the females. The highest fatality-rate was amongst children under five years of age, the first and second years of life being the most dangerous periods. The figures relating to diphtheria are obviously of especial interest just now and it is most encouraging to find that the fatality-rate for 1896 was the *lowest on record*—i.e., 17·4 per cent., or 3·6 per cent. below that of 1896. The figures for the years 1888 to 1897 show that the maximum mortality occurs in the first two years of life, the minimum (3·84 per cent.) being reached at the age-period twenty to twenty-five. The fatality-rate amongst the 664 cases of enteric fever was 18·7 per cent., or 2·5 per cent. higher than in 1896,

There were but 70 cases of small-pox admitted either into the hospital ships or at South Wharf in 1897 and of this number 13 died. Amongst 53 vaccinated cases there were 5 deaths, none of persons under ten years of age. Amongst 4 cases having "no evidence as to cicatrices" there were 3 deaths, all of persons over ten, while of the 13 persons whose vaccination cicatrix was "absent" there were 5 deaths, 4 of which were of children under ten years of age. Of the 82 members of the staff—such as medical men, nurses, wardmaids, and laundrymaids—who were brought more or less in direct contact with infection not one contracted the disease, and the same remark has to be made as to 114 other members of the staff employed about the premises either permanently or temporarily. Of the 70 cases of small-pox above referred to 47 were, it appears, to be traced to a previous case of the disease which occurred on board a Peninsular and Oriental steamer, and which, it is presumed, was the indirect cause of conveying the disease to an unvaccinated child who was subsequently removed to the Camberwell Infirmary, where the disease was not recognised until this case had been instrumental in conveying the disease to others.

The cases of mistaken diagnosis which figure in the reports of the Asylum Board are always of interest and it must be said that the figures for 1897 are not as encouraging as we might have hoped with the clinical teaching now available at the fever hospitals. No less than 5·3 per cent. of the patients were, after admission, found not to be suffering from the diseases for which they were admitted. Of 466 cases certified as suffering from scarlet fever 62 had measles, 115 tonsillitis, and 66 "no obvious disease," while of 643 cases certified as diphtheria 31 had measles and 551 tonsillitis. Of 293 cases certified as enteric fever 4 had bronchitis and 61 lobar pneumonia. The most startling figures have, however, concern with small-pox, and we learn that of 121 cases certified as suffering from that disease and removed to the wharves for transmission to the hospital ships no fewer than 52, or 42·9 per cent. of the cases, were not small-pox. Fortunately the vast majority of these mistaken diagnoses were intercepted at the wharves and did not find their way to the ships. In connexion with the valuable ambulance work done by the Asylums Board it may be noted that within recent years three new ambulance stations have been opened. The Park Hospital began to receive patients on November 8th of last year and the Grove Hospital will add 520 beds to the accommodation available. It will then remain to complete the erection of the Southern Convalescent Hospital and the carrying out of certain works at two of the existing hospitals, when there will be provision for over 6000 fever and diphtheria cases exclusive of the 740 beds at the Gore Farm Hospital. In spite of all this the statistical committee observe almost in a tone of despair that although the accommodation has now reached a magnitude of which no one dreamt even as recently as five years ago, nevertheless, for the fifth year in succession it has failed to meet the demands made upon it. In the matter of the proportion of staff to patients we learn that in the acute hospitals the proportion ranged from one *nurse* to 3·0 patients at the Western Hospital to one to 4·0 at the North-Western Hospital, the total staff at the former hospital being one to 1·4 patients and at the latter one to 1·9 patients. In addition to their fever and small-pox hospital accommodation the managers now possess asylums and schools for 6097 imbeciles as well as the control of the training ship *Exmouth*.

In our next notice we propose to deal with the "Medical Supplement" of the report.

Public Health and Poor Law.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Stirling County District.—Dr. J. C. McVail has embodied in his current annual report an interesting and instructive paper on dairy sanitation, a paper which comes very opportunely with the recently published report of the Royal Commission on the Control of Tuberculosis. After setting forth succinctly the fundamental principles governing the prevalence of bovine tuberculosis he points out that the real question at issue is by what means the temperature of the byre is to be kept at about 60° F. (the temperature most conducive to a full flow of milk from a cow) and at the same time to prevent the air from becoming impure. This condition can, he observes, be satisfactorily procured only by means of artificial heating, and he proceeds to discuss how this may best be carried out. To apply to the case of cows the standard which in man necessitates 3000 cubic feet of air per hour is clearly impracticable, and it is estimated that even if the space per cow were as much as 1000 cubic feet the air would need to be changed no less than 16 times per hour, a state of affairs which would not be pleasant in practice. Coming, then, to what is practicable, Dr. McVail furnishes some diagrams prepared by Mr. James Chalmers showing how existing byres may be heated. In one instance in the case of an existing byre it is proposed to lay hot-water pipes beneath the cow's manger, the fresh heated air being admitted by a series of Tobin's tubes, there being also in a well-arranged place some means for extracting foul air through the roof. The cost of carrying out this proposal for a byre of 20 cows is estimated at about £40 and the cost of fuel for six months at about 12*s.* per cow. The heating of new byres is, as Dr. McVail remarks, a comparatively simple matter, as they can easily be constructed with a due regard to the necessities of the apparatus. The cows could be arranged to stand either face-to-face or tail-to-tail with, of course, a proper interval between them. Dr. McVail, while describing the methods of artificial heating, is careful to insist upon the fact that even without this much good may be done by adequate ventilation and proper lighting, and he urges on his readers the paramount importance of the greatest cleanliness in all operations connected with the drawing, storage, and sale of milk. The paper was written before the report of the Royal Commission was issued, but the advent of the report does but accentuate the value of the paper, inasmuch as it develops in detail some of the Commissioner's recommendations.

St. Olave's (Southwark) Sanitary District.—There is a large trade hereabouts in hides and skins and during 1897 Dr. W. A. Bond, the medical officer of health, was informed of 7 cases of anthrax which were admitted into Guy's Hospital; there was also a case of a somewhat doubtful nature. After

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operation all the patients but one recovered. Of 11 cases of enteric fever notified in this district during 1897 one was attributed to the consumption of oysters at Southend.

Maidstone Urban Sanitary District.—The remarkable epidemic of enteric fever which occurred recently in this district seems to be passing away into history and yet the Local Government Board report of the public inquiry which was held into its origin has not yet been issued. It is to be regretted that it should be thus delayed. In his current annual report Mr. M. A. Adams, the medical officer of health of Maidstone, refers but briefly to the subject and we can well understand why this should be so. He gave most valuable assistance to the three inspectors who held the inquiry and doubtless a full account of his evidence will be forthcoming in their joint report. Mr. Adams tells us that in this outburst, which will probably figure in most works on hygiene as an instructive instance of water-borne enteric fever, there were 1888 cases notified, 859 of these being referred to East Maidstone and 1029 to West Maidstone. The fatality-rate in the former district was 5·93 per cent. and in the latter 7·68 per cent. There was a large number of deaths from diarrhœa at a time just antecedent to the outbreak and Mr. Adams regards these cases as having arisen from causes other than those to which autumnal diarrhœa is usually attributed.

Poplar Sanitary District.—A watercress-bed in this district has recently been receiving attention at the hands of Mr. R. M. Talbot, who after demonstrating that water taken therefrom was contaminated with sewage succeeded in persuading the owner to close the bed. In the consumption of watercress we have not, as Mr. Talbot observes, the protection which in the cases of many articles of food is afforded by boiling.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 5742 births and 3932 deaths were registered during the week ending Aug. 6th. The annual rate of mortality in these towns, which had increased in the three preceding weeks from 14·7 to 17·2 per 1000, further rose last week to 18·3. In London the rate was 18·4 per 1000, while it averaged 18·2 in the thirty-two provincial towns. The lowest death-rates in these towns were 10·2 in Brighton and in Huddersfield, 10·9 in Oldham, 11·9 in Burnley, and 12·0 in Hull; the highest rates were 23·9 in Sunderland, 24·2 in Plymouth, 24·4 in Liverpool, and 25·6 in Salford. The 3932 deaths in these towns included 794 which were referred to the principal zymotic diseases, against 487 and 572 in the two preceding weeks; of these, 574 resulted from diarrhœa, 71 from whooping-cough, 52 from diphtheria, 45 from measles, 29 from "fever" (principally enteric), and 23 from scarlet fever. No fatal case of any of these diseases occurred last week in Brighton, Burnley, or Huddersfield; in the other towns they caused the lowest death-rates in Halifax, Swansea, and Gateshead, and the highest rates in Portsmouth, Liverpool, Sheffield, and Plymouth. The greatest mortality from measles and from scarlet fever occurred in Plymouth; from whooping-cough in Sunderland and in Preston; and from diarrhœa in Portsmouth, Birmingham, Leicester, Liverpool, Salford, and Sheffield. The mortality from "fever" showed no marked excess in any of the large towns. The 52 deaths from diphtheria included 30 in London, 6 in Leeds, 5 in Birmingham, and 4 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and only one small-pox patient was under treatment in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, the 6th inst., was 2326, against 2314, 2355 and 2321, at the end of the three preceding weeks; 224 new cases were admitted during the week, against 265, 276, and 232, in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 148 and 173 in the two preceding weeks, further rose to 174 last week, but were 7 below the corrected average. The causes of 55, or 1·4 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Leeds, Hull, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·1 and 18·6 per 1000 in the two preceding weeks, rose again to 20·0 during the week ending August 6th, and exceeded by 1·7 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·4 in Leith and 16·7 in Dundee to 30·0 in Paisley and 34·0 in Greenock. The 604 deaths in these towns included 77 which were referred to diarrhœa, 30 to whooping-cough, 20 to measles, 4 to scarlet fever, 2 to diphtheria, and 1 to "fever." In all, 134 deaths resulted from these principal zymotic diseases, against 118 and 113 in the two preceding weeks. These 134 deaths were equal to an annual rate of 4·4 per 1000, which was 0·7 above the mean rate last week from the same diseases in the thirty-three large English towns. The 77 fatal cases of diarrhœa showed a further increase upon the numbers recorded in recent weeks and included 45 in Glasgow, 7 in Paisley, and 6 in Dundee. The deaths referred to whooping-cough, which had been 29 and 20 in the two preceding weeks, rose again to 30 last week, of which 16 occurred in Glasgow, 5 in Edinburgh, and 5 in Aberdeen. The fatal cases of measles, which had been 19 and 25 in the two preceding weeks, declined again to 20 last week, of which 7 were recorded in Dundee, 5 in Glasgow, and 5 in Edinburgh. The 4 deaths from scarlet fever showed a further decline from recent weekly numbers and included 2 in Greenock. The 2 fatal cases of diphtheria occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 75 and 79 in the two preceding weeks, were again 79 last week, and slightly exceeded the number in the corresponding period of last year. The causes of 25, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the three preceding weeks from 18·5 to 23·9 per 1000, was again 23·9 during the week ending Aug. 6th. During the past four weeks the rate of mortality in the city has averaged 22·3 per 1000, the rate during the same period being 16·2 in London and 19·1 in Edinburgh. The 160 deaths registered in Dublin last week corresponded with the number in the preceding week, and included 27 which resulted from the principal zymotic diseases, against 12 and 14 in the two preceding weeks; of these, 18 were referred to diarrhœa, 5 to "fever," 2 to diphtheria, 1 to scarlet fever, but not one either to small-pox, or measles. These 27 deaths were equal to an annual rate of 4·0 per 1000, the zymotic death-rate during the same period being 3·7 in London and 2·8 in Edinburgh. The fatal cases of diarrhœa, which had been 4 and 9 in the two preceding weeks, further rose to 18 last week. The deaths referred to different forms of "fever" which had been 1 and 3 in the two preceding weeks, further rose to 5 last week. The mortality from scarlet fever and from diphtheria corresponded with that recorded in the preceding week. The 160 deaths in Dublin last week included 46 of infants under one year of age, and 31 of persons aged upwards of sixty years; the deaths of infants showed a marked increase, while those of elderly persons showed a decline upon the number in the preceding week. Two inquest cases and 2 deaths from violence were registered; and 55, or more than a third, of the deaths occurred in public institutions. The causes of 11, or nearly 7 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JULY, 1898.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during July in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 8·1 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 7·1, 7·2, and 7·1 per 1000 respectively. Among the various sanitary

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ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1898.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1898.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	**4,504,766**	**2**	**1372**	**911**	**—**	**154**	**6**	**17**	**342***	**2**	**2806**	**8·1**	**—**	**96**	**31**	**115**	**150**	**—**	**25**	**—**	**281**	**698**	**2.0**	**5083**	**14·7**	**143**
West Districts.																										
Paddington	127,480	—	29	24	—	3	—	2	5	—	63	6·4	—	2	1	8	3	—	—	—	1	15	1·5	115	11·8	95
Kensington	172,174	—	51	9	—	3	—	—	10	—	73	5·5	—	2	1	—	9	—	1	—	12	25	1·9	193	14·6	208
Hammersmith	107,370	—	45	14	—	3	—	—	12	—	74	9·0	—	2	1	4	4	—	—	—	7	18	2·2	114	13·8	148
Fulham	125,275	—	61	47	—	3	—	2	7	—	120	12·5	—	2	—	3	4	—	1	—	16	26	2·7	165	17·2	210
Chelsea	96,713	—	35	27	—	4	—	2	9	—	77	10·4	—	—	1	3	4	—	1	—	5	14	1·9	94	12·7	169
St. George Hanover-square	80,608	—	36	8	—	2	—	—	4	—	50	8·1	—	1	—	—	1	—	—	—	3	5	0·8	69	11·2	70
Westminster	52,574	—	8	6	—	4	—	—	5	—	23	5·7	—	—	—	3	1	—	—	—	2	6	1·5	81	20·1	198
St. James Westminster	22,200	—	3	8	—	—	—	—	1	—	12	7·0	—	—	—	1	1	—	—	—	2	4	2·3	35	20·6	200
North Districts.																										
Marylebone	140,483	—	42	18	—	9	1	1	11	—	82	7·6	—	3	1	2	2	—	2	—	7	17	1·6	161	14·9	131
Hampstead	78,755	—	13	10	—	6	—	—	5	—	34	5·6	—	—	—	1	—	—	—	—	—	1	0·2	47	7·8	36
St. Pancras	243,416	—	94	30	—	11	—	3	22	—	160	8·6	—	4	5	3	10	—	1	—	18	41	2·2	226	15·3	160
Islington	344,616	—	93	40	—	13	—	—	17	—	163	6·2	—	7	—	1	9	—	3	—	8	28	1·1	315	11·9	104
Stoke Newington	34,660	—	12	4	—	—	—	—	1	—	17	6·4	—	—	—	—	—	—	—	—	2	2	0·8	34	12·8	38
Hackney	219,630	—	72	40	—	15	—	—	26	—	153	9·1	—	4	2	6	4	—	1	—	19	36	2·1	225	13·4	128
Central Districts.																										
St. Giles	37,519	—	2	4	—	2	—	—	5	—	13	4·5	—	—	—	1	1	—	—	—	—	2	0·7	52	18·1	132
St. Martin-in-the-Fields	12,424	—	1	1	—	1	—	—	1	—	4	4·2	—	—	—	1	1	—	—	—	—	2	2·1	14	14·7	63
Strand	23,284	—	3	2	—	—	—	—	1	—	6	3·4	—	—	—	1	1	—	—	—	—	2	1·1	36	20·2	135
Holborn	30,056	—	6	6	—	—	—	—	3	—	15	6·5	—	1	1	—	—	—	—	—	1	3	1·3	41	17·8	216
Clerkenwell	66,120	—	15	36	—	4	1	—	6	—	62	12·2	—	5	1	8	3	—	—	—	4	21	4·1	100	19·7	163
St. Luke	41,076	—	13	18	—	—	—	—	1	—	32	10·2	—	—	—	4	1	—	—	—	6	11	3·5	56	17·8	89
City of London	29,088	—	8	4	—	—	—	—	2	—	14	6·3	—	1	—	—	—	—	—	—	1	2	0·9	35	15·7	100
East Districts.																										
Shoreditch	121,485	—	17	13	—	3	—	—	10	—	43	4·6	—	2	—	5	2	—	—	—	19	28	3·0	181	19·4	190
Bethnal Green	129,027	—	32	21	—	3	—	—	12	—	68	6·9	—	5	—	—	2	—	1	—	7	15	1·5	135	13·6	132
Whitechapel	80,559	—	26	23	—	2	—	—	8	—	59	9·5	—	5	1	3	1	—	1	—	7	18	2·9	113	18·3	147
St. George-in-the-East	48,241	—	9	13	—	3	—	—	6	—	31	8·4	—	1	—	2	1	—	—	—	9	13	3·5	78	21·1	215
Limehouse	58,661	—	19	8	—	2	—	—	5	—	34	7·6	—	4	1	1	5	—	—	—	4	15	3·3	104	23·1	204
Mile End Old Town	112,528	—	36	26	—	4	—	—	7	—	73	8·5	—	3	—	2	3	—	1	—	13	22	2·5	144	16·7	176
Poplar	170,220	—	49	60	—	9	—	1	15	—	134	10·3	—	9	1	11	4	—	2	—	16	43	3·3	236	18·1	184
South Districts.																										
St. Saviour Southwark	24,562	—	9	7	—	2	—	—	5	—	23	12·2	—	—	1	1	1	—	—	—	—	3	1·6	36	19·1	131
St. George Southwark	60,466	—	37	15	—	1	—	1	6	—	60	12·9	—	1	2	2	4	—	1	—	4	14	3·0	98	21·1	224
Newington	123,183	—	62	40	—	2	1	1	9	—	115	12·2	—	—	5	2	5	—	1	—	15	28	3·0	163	17·2	177
St. Olave Southwark	11,288	—	12	2	—	—	—	—	3	—	17	19·6	—	—	—	1	1	—	—	—	—	2	2·3	21	24·2	43
Bermondsey	85,738	—	53	12	—	3	—	1	9	—	78	11·9	—	5	—	—	6	—	1	—	6	18	2·7	106	16·1	105
Rotherhithe	40,849	—	8	2	—	1	—	—	11	—	22	7·0	—	3	1	1	1	—	—	—	1	7	2·2	47	15·0	129
Lambeth	304,073	—	77	81	—	8	—	1	13	2	182	7·8	—	6	—	13	18	—	—	—	23	60	2·6	340	14·6	140
Battersea	171,921	—	44	56	—	7	—	—	12	—	119	9·0	—	1	1	2	7	—	1	—	16	28	2·1	196	14·9	191
Wandsworth	202,526	—	54	46	—	6	—	—	12	—	118	7·6	—	9	1	3	7	—	1	—	5	26	1·7	178	11·5	98
Camberwell	261,189	2	86	49	—	3	2	—	10	—	152	7·6	—	—	1	5	7	—	—	—	4	17	0·8	233	11·6	107
Greenwich	180,441	—	41	33	—	8	—	1	21	—	104	7·5	—	4	1	5	8	—	1	—	7	26	1·9	186	13·4	121
Lewisham (excluding Penge)	88,562	—	10	33	—	1	—	—	2	—	46	6·8	—	1	—	4	2	—	—	—	—	13	1·9	82	12·1	117
Woolwich	41,478	—	7	3	—	—	—	—	2	—	12	3·8	—	—	—	1	2	—	1	—	1	5	1·6	35	11·0	129
Lee	39,717	—	9	8	—	1	—	—	5	—	23	7·5	—	—	—	1	1	—	3	—	3	8	2·6	47	15·4	149
Plumstead	62,531	—	32	4	—	1	1	1	5	—	44	9·2	—	3	1	—	3	—	—	—	1	8	1·7	56	11·7	101
Port of London	—	—	1	—	—	1	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 14 cases of membranous croup.

† Including deaths from membranous croup.

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areas the rates were considerably below the average in Kensington, Hampstead, St. Giles, St. Martin-in-the-Fields, Strand, Shoreditch, and Woolwich; while they showed the largest excess in Fulham, Clerkenwell, St. Saviour Southwark, St. George Southwark, Newington, St. Olave Southwark, and Bermondsey. Two cases of small-pox were notified in London during July, against 4, 1, and 6 in the three preceding months; these 2 cases occurred in Camberwell sanitary area. No small-pox patients were under treatment during the month in any of the Metropolitan Asylums Hospitals. The prevalence of scarlet fever in London during July showed a marked increase upon that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, St. George Hanover-square, St. Pancras, St. George Southwark, Newington, St. Olave Southwark, Bermondsey, and Plumstead. The Metropolitan Asylums Hospitals contained 2255 scarlet fever patients at the end of July, against 2270, 2147, and 2146 at the end of the three preceding months; the weekly admissions averaged 242, against 218, 223, and 208 in the three preceding months. The prevalence of diphtheria in London during July showed a slight further increase upon that recorded in recent months; this disease was proportionally most prevalent in Fulham, St. James Westminster, Clerkenwell, St. Luke, Poplar, Newington, Battersea, and Lewisham sanitary areas. There were 1014 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of July, against 923, 917, and 971 at the end of the three preceding months; the weekly admissions averaged 146, against 134 in each of the two preceding months. The prevalence of enteric fever in London showed a marked further increase upon that recorded in the two preceding months; among the various sanitary areas this disease showed the highest proportional prevalence in Westminster, Hampstead, Hackney, and St. Saviour Southwark. The Metropolitan Asylums Hospitals contained 87 enteric fever patients at the end of July, against 59, 54, and 53 at the end of the three preceding months; the weekly admissions averaged 16, against 8 and 11 in the two preceding months. Erysipelas was proportionally most prevalent in Hackney, St. Giles, St. Olave Southwark, Rotherhithe, and Greenwich sanitary areas. The 17 cases of puerperal fever notified in London during July included 3 in St. Pancras, 2 in Paddington, 2 in Fulham, and 2 in Chelsea sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, July 30th, the deaths of 5083 persons belonging to London were registered, equal to an annual rate of 14·7 per 1000, against 18·1, 15·7, and 14·6 in the three preceding months. The lowest death-rates in the various sanitary areas were 7·8 in Hampstead, 11·0 in Woolwich, 11·2 in St. George Hanover-square, 11·5 in Wandsworth, 11·6 in Camberwell, 11·7 in Plumstead, and 11·8 in Paddington; the highest rates were 20·1 in Westminster, 20·2 in Strand, 20·6 in St. James Westminster, 21·1 in St. George-in-the-East and in St. George Southwark, 23·1 in Limehouse, and 24·2 in St. Olave Southwark. During the four weeks of July 698 deaths were referred to the principal zymotic diseases in London; of these, 281 resulted from diarrhœa, 150 from whooping-cough, 115 from diphtheria, 96 from measles, 31 from scarlet fever, 25 from enteric fever, and not one either from small-pox, typhus, or any ill-defined form of continued fever. These 698 deaths were equal to an annual rate of 2·0 per 1000; among the various sanitary areas the lowest zymotic death-rates were recorded in St. George Hanover-square, Hampstead, Stoke Newington, St. Giles, City of London, and Camberwell; and the highest rates in Clerkenwell, St. Luke, Shoreditch, St. George-in-the-East, Limehouse, Poplar, St. George Southwark, and Newington. The 281 fatal cases of diarrhœa were as many as 505 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Fulham, St. Luke, Shoreditch, St. George-in-the-East, and Newington sanitary areas. The 150 deaths referred to whooping-cough were 13 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Kensington, Clerkenwell, Limehouse, St. George Southwark, Bermondsey, and Lambeth. The 115 fatal cases of diphtheria were 42 below the corrected average number; this disease showed the highest proportional fatality in Paddington, Westminster, Clerkenwell, St. Luke, Shoreditch, Poplar, Lambeth, and Lewisham sanitary areas. The 96 deaths from measles were 131 below the corrected average number; among the various sanitary areas the mortality from this disease was highest in Clerkenwell, Whitechapel, Limehouse, Poplar, Bermondsey, and Rotherhithe. The 31 fatal cases of scarlet-fever were less than half the corrected average number; the mortality from this disease showed no marked excess in any of the sanitary areas. The 25 deaths referred to enteric fever were 9 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Lee. In conclusion, it may be stated that the aggregate mortality last month from these principal zymotic diseases was less than half the average, the deaths from each of the diseases being below the average.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to registered births, was equal to 143 per 1000, and was considerably below the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in St. George Hanover-square, Hampstead, Stoke Newington, St. Martin-in-the-Fields, St. Luke, and St. Olave Southwark; and the highest rates in Kensington, Fulham, Holborn, St. George-in-the-East, Limehouse, and St. George Southwark.

THE SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced:—Fleet-Surgeon Edward W. Luther to the *Thunderer*, additional for Pembroke Dockyard. Staff-Surgeon William M. Lory to the *Repulse*. Surgeon W. L. Martin to the *Vivid*.

ROYAL ARMY MEDICAL CORPS.

Colonel William A. Catherwood, to be Surgeon-General, vice J. W. Maxham, retired. The under-mentioned Captains to be Majors:—John S. Davidson, James Will, James Moir, James Fallon, John V. Salvage, Arthur R. Aldridge, Joseph Fayrer, Charles P. Walker, Charles J. MacDonald, Charles J. W. Tatham, Thomas H. T. Clarkson, Herbert W. Austin, Cathcart Garner, Robert W. Wright, Edwin Eckersley, Reginald J. C. Cottell, James R. Burrows, John Keatly, Daniel Hennessy, David M. Saunders, William Kiddle, Dennis M. O'Callaghan, Michael J. Whitty, Henry A. Cummins, James F. Donegan, John Donaldson, Hugh B. Mathias, George Bent, George H. Barefoot, Foster R. Newland, Reginald J. Windle, Robert J. D. Hall, Edward S. Marder, Charles W. Allport, John J. Russell, John S. Edye, George Scott, Thomas Browning, Andrew Hosie, George F. H. Marks, Ralph Holyoake, Robert N. Buist, John J. C. Watson, Thomas Du B. Whaite, Henry T. Knaggs, and Ferdinand S. Le Quesne, V.C. The following Lieutenants to be Captains: Lionel Fergus Smith, Robert J. Blackham, Septimus H. Fairrie, George T. K. Maurice, Rupert Fawssett, John V. Forrest, Henry W. Grattan, Francis E. Gunter, John H. Campbell, and John Grech. The under-mentioned surgeons on probation to be Lieutenants: William Henry Snyder Nickerson, George Snyder Nickerson, George Bedford Crisp, Robert Strickland Hannay Fuhr, Walter Jagger, Alexander Bremner MacCarthy, George Johnston Stoney Archer, Robert Selby, Sydney Octavius Hall, Alfred Edmond Weld, James Stuart Gallie, Francis Joseph Christopher Heffernan, Arthur Edward Thorp, Cecil Wilmot Mainprise, Henry Herrick, Edwin John Dobbin, James Cowan, Austin Romuald O'Flaherty, Henry Beckles Gall Walton, and Edmund Philip Hewitt.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Surgeon-Captain Thomson (Bombay) are replaced at the disposal of the military department. The services of Surgeon-Lieutenant-Colonel Macdonald (Bengal), Senior Medical Officer, Port Blair, are placed temporarily at the disposal of the military department. Surgeon-Major Hudson (Bengal) is appointed to officiate as Senior Medical Officer, Port Blair. The services of Surgeon-Captain Hall (Bengal) are placed temporarily at the disposal of the Chief Commissioner of Assam. The services of Surgeon-Captain Williams (Bengal) are replaced at the disposal of the Government of Burmah. Surgeon-Captain Moir, First Resident Surgeon, Presidency General Hospital, Calcutta, is allowed furlough for one year.

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Surgeon-Captain O'Kinealy, Second Resident Surgeon, Presidency General Hospital, Calcutta, is appointed to act as First Resident Surgeon of that institution during the absence on leave of Surgeon-Captain Moir, or until further orders. Surgeon-Captain Oldham, Civil Surgeon of Backergunge, is appointed to act as Second Resident Surgeon, Presidency General Hospital, Calcutta, or until further orders. Surgeon-Lieutenant Sealy has been appointed Chief Medical Officer, Railway Inspection duty, Kalyan. Surgeon-Lieutenant-Colonel F. Street, D.S.O., and Surgeon-Captain J. B. Smith have respectively delivered over and received charge of the office of the Deputy Sanitary Commissioner, Central Registration District. To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel Arthur Mudge Branfoot, Madras Establishment. To be Brigade-Surgeon-Lieutenant-Colonel: Surgeon-Lieutenant-Colonel Arthur Henry Cole Dane, M.D., Bombay Establishment.

VOLUNTEER CORPS.

Artillery: 1st Norfolk (Eastern Division, Royal Artillery): Surgeon-Lieutenant H. M. Evans to be Surgeon-Captain. *Rifle:* 2nd Volunteer Battalion the Northumberland Fusiliers: Surgeon-Major H. F. Hurst to be Surgeon-Lieutenant-Colonel. 1st Volunteer Battalion the Worcestershire Regiment: Surgeon-Captain A. R. Waddell resigns his commission. 1st Wiltshire: Brigade-Surgeon-Lieutenant-Colonel F. F. Lee resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the corps on his retirement, vacating at the same time the appointment of Senior Medical Officer to the Western Counties Volunteer Infantry Brigade. 9th Lanarkshire: Surgeon-Lieutenant-Colonel J. Lindsay resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the corps on his retirement.

VOLUNTEER OFFICERS' DECORATION.

The Queen has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force: *North-Eastern District: Rifle:* 2nd Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant-Colonel Thomas Alexander McCullagh. *North-Western District: Rifle:* 2nd Volunteer Battalion the Lancashire Fusiliers: Surgeon-Lieutenant-Colonel Charles William Thorp. 2nd (Earl of Chester's) Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant-Colonel Alexander Hamilton. 6th Volunteer Battalion the Manchester Regiment: Surgeon-Lieutenant-Colonel Thomas Fort. 1st Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Surgeon-Lieutenant-Colonel James Charlesworth. *Scottish District: Artillery:* 1st Aberdeenshire Volunteer Artillery: Surgeon-Major Robert John Garden. *Rifle:* 3rd Lanarkshire Volunteer Rifle Corps: Surgeon-Lieutenant-Colonel Alexander Napier. 2nd Volunteer Battalion the Gordon Highlanders: Surgeon-Major Sir James Reid, Bart., K.C.B. 2nd (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant-Colonel William Goldie Stevens and Surgeon-Lieutenant-Colonel Matthew Hamilton Taylor. *Southern District: Artillery:* 2nd Hampshire Volunteer Artillery (Southern Division, Royal Artillery): Surgeon-Lieutenant-Colonel Gordon Sparrow. *South-Eastern District: Rifle:* 2nd Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant Adolphus W. W. Caudle, retired. *Western District: Rifle:* 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: Acting Surgeon Talfourd Jones, retired.

THE FOOT-GEAR OF INFANTRY SOLDIERS.

This important subject continues to excite attention among continental military and naval hygienists. In the course of a general report on his charge, Surgeon-Major Prat of the 1st Regiment of Marines, at present quartered at Cherbourg, devotes considerable space to a disquisition on the soldier's boot in ancient and modern times, showing conclusively by examples from Xenophon downwards how largely the fate of armies depends on their mobility and how entirely this depends upon an effective foot-gear. If his best is required of him a foot-soldier should be provided not only with a pair of boots which have been made to fit his individual foot, which are impermeable to dust and moisture though not to air, and which are constructed of the best and most durable material known to science tempered by experience, but also with a comfortable pair of shoes, likewise constructed from the best material, for him to rest his tired feet in at the end of the day's march. This principle is fully recognised and acted upon in the German and Austrian armies, but apparently the French Ministry of War has not yet gone beyond the stage of experiment. The boot of the French *fantassin*, according to the latest pattern, has no strap and is double soled, the inner sole being three millimetres thick and the outer four. In length the boot varies from 26 to 33 centimetres, and it is made in no fewer than 32 sizes. The reporter likewise reviews the question of socks, which it seems do not form part of the *fantassin's* regulation kit, although generally worn at his own expense. Viry in his *Principes d'Hygiène Militaire* recommends the "Russian sock," which consists of a cloth band wound round the foot and ankle, but unless very skilfully applied it is apt to ruck up and form creases. On the whole a woven or knitted sock is far preferable, provided its fit is accurate. In the English army, we are told, after an exhaustive trial unsewn or seamless socks were served out to the infantry, but for some unexplained reason the next issue was reduced by one-half to make way for socks with seams. Surgeon-Major Prat concludes this portion of his report with a very accurate description of an English pedestrian's running shoe of which he highly approves. In this connexion the following short extract from a paper on Naval Hygiene, by Principal Medical Officer Dr. Danguy des Desert, in the *Archives de Médecine Navale* for July may be worth quoting: "The sailor's footgear leaves much to be desired; the shape could not possibly be more unsightly or the construction more defective. The sewing is so coarse that it injures the foot, and the ends are so pointed that there is no room for the toes. It is made in four sizes only. Without asking for eight different lengths, with four separate sizes to each length, as in the English navy, I think our sailors may reasonably claim a better made boot, less weighty and not so clumsy. The article which they now receive is so heavy and so cumbersome that the men are for ever injuring themselves by slipping down the iron gangways, and whenever they can, even in the coldest weather, they prefer to go barefoot."

BRIGADE-SURGEON-LIEUTENANT COLONEL D. D. CUNNINGHAM, F.R.S., C.I.E.

The retirement of this officer has led the Government of India in the Home Department to address a very handsome and highly appreciatory letter to the Director-General of the Indian Medical Service in regard to the very eminent scientific services rendered by Brigade-Surgeon-Lieutenant Colonel Cunningham to the State. After setting forth a history of the valuable work performed by this officer over a number of years as Professor of Physiology at the Medical College, Calcutta, and as Special Assistant to the Sanitary Commission with the Government of India, together with a list of his various published researches and reports, some of which were in collaboration with the late Dr. Timothy Lewis, the Government of India finally add: "By the retirement of Dr. Cunningham the Government of India lose the services of one of the most distinguished of the scientific men who have served them, the Indian Medical Service one of its most eminent members, and yourself an invaluable adviser. He carries with him on his retirement the warmest thanks of the Government of India for his long and distinguished services." We may add that Brigade-Surgeon-Lieutenant-Colonel D. D. Cunningham has the reputation of being one of the most able, conscientious, and laborious workers not only in India but in the medical profession, and many of his scientific researches are of a very original kind and based upon honest and independent inquiry.

DEATHS IN THE SERVICES.

Surgeon William Godfrey Peck, R.N., at Malta, on July 28th. He received his appointment as Surgeon in November, 1894.

Fleet-Surgeon Charles Albert Macaulay, at Wei-Hai-Wei, China. He entered the Royal Navy in 1875, was promoted to Staff-Surgeon in 1887, and made Fleet-Surgeon in 1896. He served as Surgeon of the *Alexandra* at the bombardment of Alexandria in 1882; landed with the Naval Brigade at Alexandria, and was also at the seizure of Port Said. He was with the Naval Brigade at Ismailia, and was present at Tel-el-Kebir and subsequent advance to Zagazig (Egyptian medal, Alexandria and Tel-el-Kebir clasps, Khedive's bronze star, and the Fourth Class of the Order of the Medjidie).

Surgeon-General John Fullarton Beatson, C.I.E. (late

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Bengal Army), on the 29th ult., at his residence in London, aged eighty-two years.

Inspector-General of Hospitals John Murray, at Sheringham, Norfolk.

OUR INDIAN FRONTIER.

The latest news received at Simla regarding our Indian frontier is not altogether satisfactory. It points to possible future troubles in this direction and in the Tochi valley. There has been some fighting among the tribesmen and their chiefs. The Afridis are quiet as far as the Indian Government is concerned but are quarrelling among themselves.

THE ROYAL ARMY MEDICAL CORPS FOR INDIA.

The *Pioneer Mail* of the 22nd ult. states that in consequence of the publication in this country of the new warrant reconstituting the Army Medical Service the Indian Government have been asked to submit proposals in regard to the Indian Medical Service. This is only what might have been anticipated.

THE SOUDAN CAMPAIGN.

The Anglo-Egyptian Expeditionary force will soon be starting for Khartoum. The troops are in good health and fettle and all the necessary preparations for the campaign have been made.

Correspondence.

"Audi alteram partem."

THE BATTLE OF THE CLUBS.

To the Editors of THE LANCET.

SIRS,—Mr. Cecil Aloysius Corke of Wem, Salop, has been elected surgeon to the Court Vale of Evesham, No. 4648, of the Ancient Order of Foresters in lieu of my partner and myself who resigned, as you are aware, in consequence of our salary being reduced after twenty-five years. Six other medical men, so I am informed, made inquiries, but finding how we had been treated refused to have anything to do with a society which had behaved to us in such a manner.

I am, Sirs, yours faithfully,

Evesham, July 31st, 1898. A. H. MARTIN.

*** There is no law, written or unwritten, to prevent Mr. Corke from putting his own value on his services. Perhaps Mr. Corke did not know the circumstances under which the vacancy occurred.—ED. L.

"PIPERIDINE AS A URIC ACID SOLVENT."

To the Editors of THE LANCET.

SIRS,—We say in the conclusions which terminate our article in THE LANCET of July 23rd that the dose of piperidine tartrate is 15 gr. three times a day. We think it wiser, however, to state that we have for the most part employed it in 10 gr. doses as stated earlier in our paper and should suggest this as a dose for the commencement of treatment.

We have read with interest Dr. Luff's letter on "The Treatment of Gout by Piperidine" in THE LANCET of July 30th. We are afraid, however, that the differences between us, both with regard to technique and results, are too extensive to be adequately treated in letter form. We are perfectly acquainted with Dr. Luff's paper in THE LANCET of June 11th. It was not mentioned in our paper because although the latter only appeared on July 23rd it left our hands at the end of April. This later paper of Dr. Luff will be considered fully elsewhere.

We are unable to follow Dr. Luff's calculations. In THE LANCET of June 11th he says that in order to have a 0·1 per cent. solution of any drug in the blood 600 grains must be introduced into the circulation at once. If the figures in his letter of July 30th be calculated back it will be seen that he now says that 750 grains are necessary to produce this result. For our part the one statement is as extraordinary as the other. The blood in a man of average weight weighs about 5 kilos.[1]; if 750 grains, that is, 50 grms., of any drug be introduced into the circulation at once the blood must contain 1 per cent. of it, not 0·1 per cent.; if 600 grains were introduced the amount would be 0·8 per cent.—that is, about ten times the figure given by Dr. Luff. We made experiments with standard solvent exactly similar to the ones described, adding amounts of the respective drugs down to 0·01 per cent. In each case we found that the drug exerted a solvent action directly proportional to the results given in our table on p. 202 of THE LANCET of July 23rd, as also was the case in urine for uric acid and urinary sediments (pp. 200 and 201). When worked out this amounts to the fact that piperidine in 0·01 per cent. solution increases the solvent power of standard solvent for sodium biurate one and a half times.

With regard to the question of uric acid in bullock's serum. We maintain that our experiments show that this substance is contained in bullock's serum to the extent of 0·00029 per cent.; the manipulations to which we submitted the serum constituted not only a quantitative but a qualitative test for uric acid and rendered the murexide test unnecessary. The use of the murexide test would have cost us a certain quantity of serum and has already been applied with a positive result by Abeles. We are quite aware of the work of von Jaksch, Klemperer, and Sir Alfred Garrod. The consensus of opinion seems to us to be that there is uric acid in very small quantities in the blood of man and animals under normal conditions. This is stated in the following text-books: Neumeister,[2] Hammarsten,[3] and Schäfer,[4] in addition to those mentioned in our original article.

We are, Sirs, yours faithfully,

F. W. TUNNICLIFFE.

Devonshire-street, W., Aug. 3rd, 1898. OTTO ROSENHEIM.

[1] Schäfer: Textbook of Physiology, p. 142.

[2] Lehrbuch der Physiologischen Chemie, 1897, p. 587.

[3] Ibid., 1895, p. 425.

[4] Text-book of Physiology, page 160.

"THE RECTAL INJECTION OF THE SERUMS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 30th, p. 279, a letter by Dr. J. E. O'Connor draws attention to the value of rectal injections in serum therapeutics, a plan evidently supposed to be original. A reference to the *Medical Digest and Appendix*, Section 886, 4, will enable those interested to obtain a large amount of information upon the subject, and in THE LANCET of Feb. 8th, 1896, p. 389, and of March 7th, 1896, p. 641, a paper published since the last issue of the *Medical Digest* enters fully into the subject.

I am, Sirs, yours faithfully,

RICHARD NEALE, M.D. Lond.

Hampstead, N.W., Aug. 3rd, 1898.

"ON FAILURE OF BRAIN POWER."

To the Editors of THE LANCET.

SIRS,—I am well aware that in general critics must not be criticised, because if this were allowed it would often go very hard with them. At the same time, an author who finds his views materially misrepresented in a review of his book is unquestionably justified in protesting against palpably erroneous statements.

Such a one I find in the review of my book "On Failure of Brain Power" in THE LANCET of Aug. 6th, where I am credited with the opinion that the affection which I am discussing is due to *definite disease* of certain special areas of the brain. "Definite disease" is equivalent with "organic disease" or "structural lesion." Now I have been at particular pains in my book to show that no organic lesions occur in the affection under consideration, but that the malady is owing to the finer nutrition of the neurones of the brain being impaired through insufficient supply of blood and intracellular oxygen (p. 215). If my critic had used the word "disorder" instead of "disease" he would have more accurately represented my meaning.

I am really quite sorry to find he does not consider my teaching on the nature and treatment of the malady "well founded"; but surely an author must sometimes be a little in advance of his time, for why should otherwise books be written? I do not entertain the slightest doubt that in five or ten years time, if not sooner, my views on this subject will be generally accepted by the profession, as I find in practice every day fresh proofs for their correctness.

I am, Sirs, yours faithfully,

JULIUS ALTHAUS, M.D. Berlin.

Queen Anne-street, Cavendish-square, W., Aug. 7th, 1898.

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THE PUBLIC CONTROL OF WATER-SUPPLIES.

To the Editors of THE LANCET.

SIRS,—For some six months past we have had the subject of "Public Water Analysis" before the Tunbridge Wells Borough Improvement Association for consideration, and in March we took some action with a view to moving in the direction which your able article[1] upon the same matter touched upon. We have arranged with Maidstone, Crowborough, and other associations to form a deputation and to urge upon the Government the desirability of an Act being passed to carry out such an important proposal. Mr. Cornwallis (the Member for Maidstone) has been interviewed upon the matter and the result you may have seen. Mr. A. S. Griffith-Boscawen, M.P. for Tonbridge division, has also been assisting, and I should think if we could form a strong deputation it might have some weight in helping on the idea. I shall be glad if you could kindly again draw further attention to what is being done and state that the honorary secretary of the Tunbridge Wells Borough Improvement Association would be glad to hear from any society interested in the question, or from any individual prepared to support or willing to join as a representative to assist in augmenting the deputation being formed so as to make it as important as possible. Arrangements are in hand in order that some public and definite expression of opinion may be placed before the proper quarters.—I am, Sirs, yours faithfully,

D. G. CORNWELL, Hon. Sec.

Grove Hill-road, Tunbridge Wells.

THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

To the Editors of THE LANCET.

SIRS,—The following is a copy of a letter addressed to the General Secretary of the National Deposit Friendly Society in answer to an application for observations on the medical tariff of the Society.

I am, Sirs, yours faithfully,

Cardiff, Aug. 6th, 1898. T. GARRETT HORDER.

To F. Letchfield, Esq., General Secretary, National Deposit Friendly Society.

DEAR SIR,—In accordance with your wish I have examined the pamphlets, &c., you were good enough to send me some little time since. I may remark before I enter into details that I have had considerable experience with friendly societies, and that long since I came to the conclusion that it would be a good plan to pay the medical officers of such societies for actual work done in attendance on the sick members. Of course, in arranging the fees to be paid, two things had to be taken into consideration—namely, the proper and sufficient remuneration of the medical officers and the position in life of the members of the society. I freely admit that it is not an easy matter to settle the amount of the fees to the entire satisfaction of both these parties.

According to your rules the following are the fees paid for medical cases in your society:—

	s.	*d.*
One visit with medicine for two days	2	6
Ditto beyond three miles, extra per mile	0	6
Members entitled to over 5*s.* daily sick pay, extra for every 1*s.* above 5*s.* per visit	0	6
Intermediate visits in dangerous cases, extra per visit	1	0
Attendance at surgery and medicines for two days ...	1	6
Fresh supply of medicine for two days	1	0

I notice that some alterations have been made in the above and that now an extra fee of 6*d.* is allowed for cases outside the two-miles radius, that 1*s.* extra is allowed for visits paid between the hours of 9 P.M. and 8 A.M., and that 6*d.* extra is allowed for attendance at the surgery between these hours.

I candidly confess that I do not think the terms offered are sufficiently liberal. To ask a medical man to travel four miles, and supply medicines in addition for a fee of 2*s.* 6*d.*, is hardly reasonable or fair. Neither is the allowance of 6*d.* per mile for visits paid outside the two miles radius nearly sufficient. Again, the extra allowance for night visits and night attendances is far too small. Supposing a member sent for the medical officer in the middle of the night, and the member lives nearly two miles from the doctor's house, do you think the fee of 3*s.* 6*d.* would be a fair and reasonable one for such a journey? With respect to "intermediate visits in dangerous cases" it is not quite clear to me whether the medical officer would receive 3*s.* 6*d.* or 1*s.* for such visits. If it is the latter sum, then I must say it is altogether inadequate.

As it is of the highest importance that candidates should be properly examined by the doctors before being admitted I would suggest that the fee for such an examination should be raised from 1*s.* to 2*s.* 6*d.* That a stricter examination is more necessary in your society than in the ordinary friendly societies is evident from the fact that you admit members up to fifty-five years of age.

I am, dear Sir, faithfully yours,

Cardiff, Aug. 5th. T. GARRETT HORDER.

[1] THE LANCET, April 23rd, 1898.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—I have read with great interest the correspondence in THE LANCET under the above title. Now, Sirs, I am sure that anyone who has read the correspondence cannot fail to see that there is something seriously wrong with general practice, as undoubtedly the letters represent the opinions of the majority of general practitioners. Speaking personally, although a young man I have had experience as an assistant in several practices and have a father and two brothers all in separate practices as well as having been intimately associated for many years with general practitioners. The result is that I have never yet known one who *cæteris paribus*, and presuming that he fulfils his duties properly, has not what "Practitioner"[1] describes so aptly as "a life of hardship, a scanty income, constant harass," &c., and I am so disgusted with the life of the ordinary medical man that had I the opportunity I would even now make a fresh start at another calling, although I love the work *per se* and the study of medicine. As regards the question of employer and assistant I think there is a lot to be said on both sides. My first assistantship produced £80 per annum, indeed, and was not a happy one. Although well treated as far as board and lodging and courtesy went, the life was wretched, as I was so tied down—always on duty, except perhaps for an hour in the day and after 8 P.M., when one was just as likely to be called out as not; no opportunity for games, and as my employer generally went out every night I had to be in, and if allowed a few hours to run up to town once a month to visit a theatre it was considered sufficient. But I do not think the salary was inadequate, as I am sure the expenses of a practice *at present* are so heavy, owing to poor fees, clubs, and underpaid appointments, that any practitioner doing less than £1000 a year cannot afford to pay more to an assistant than £100 a year indoor, if he wants to put by anything at all, although the average salary of a qualified assistant, which I should put as £70 per annum, is indeed what one would pay a *first-class butler*. And now let me consider why the general practitioner is so hard pushed and if a remedy can be pointed out.

In the first place, thousands of pounds which ought to go to medical men go to quacks—i.e., herbalists and bone-setters—and prescribing chemists. And, as "Assistant"[2] says, the General Medical Council ought, in the interests of the public as well as in those of the general practitioner, to immediately suppress them, and I am glad to see the Home Secretary promised recently in Parliament to give the matter his attention. Let us hope he will do so. And here I may mention that in Denmark at any rate prescribing by chemists is illegal.

Secondly, we have medical fees, and, as "M.B., B.Ch. Dubl."[3] suggests, these should be fixed by law. I daresay this would be difficult, but suppose that the General Medical Council obtained powers to maintain a proper standard of professional etiquette. I take it that to attend people at starvation fees is or ought not to be etiquette. The Council can erase a man from the Register for advertising, why not for taking halfpenny fees, as this is degrading? Supposing they enacted that any man who took midwifery under £1 1*s.* a head, and who visited under 2*s.*, and supplied medicine and prescribed under 2*s.* a head, and who engaged to attend anyone in a club under 7*s.* 6*d.* per annum—which is only 1¾*d.* per week—would be guilty of unprofessional conduct what a difference it would make. And I consider that all men earning over 15*s.* a week are able to pay 1¾*d.* per week for medical attendance. All those who could not afford to pay this should be treated by the parish or hospital and consequently the Local Government Board would have to raise their salaries. These, again, are a great grievance, as all the Poor-law medical appointments are underpaid. My father, for example, has five parishes under him with a total of about 100 paupers some five miles distant, and others two or three, and he is expected to attend and provide them with medicine for about £30 a year. This is disgraceful, and why should it be so seeing that solicitors holding Poor-law appointments are at any rate fairly paid?

I cannot think the Local Government Board can be aware how underpaid these posts are or they would try to remedy the evils. And medical officers to clubs should all

[1] THE LANCET, July 9th, 1898, p. 104. [2] THE LANCET, July 2nd, 1898, p. 53. [3] THE LANCET, July 23rd, 1898, p. 229.

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unite in seeing that the clubs are not abused by people well able to be private patients. Lastly, there is the question of hospital abuse, which is assuming alarming proportions and demands immediate legislation.

To sum up, who is responsible for this state of affairs? The answer is apparent—the General Medical Council. Why do they not adopt more stringent remedies? Because that body consists almost entirely of consultants with scarcely any general practitioners and these men do not know and cannot understand what hardships the general practitioner has to contend with and remain satisfied with a few trifling reforms. I am sure that if they had an equal number of consultants and general practitioners on their staff a great deal more would be done for professional etiquette. I commend their recent action with regard to unqualified men, hard though it may be on some, for is it not a case of "the survival of the fittest"? and we are the fittest.

Our only chance is to immediately agitate to get the same number of general practitioners on the Council as there are consultants, or even more, as we are undoubtedly the body of the profession and therefore ought most certainly to have our own representatives in sufficiency, and then the Council will obtain from Parliament more extensive powers to enable them to raise the standard of, to mitigate the evils affecting, and to remunerate more properly the body of the profession.

I call therefore on all those who have written on this subject recently and all those who are interested in and approve of this scheme to join with me and at once enrol ourselves into an alliance of general practitioners, call it what you will, and to invite all other medical improvement associations to join us in one great body and let us start a journal devoted to the subject or ask permission to inaugurate our society in the columns of THE LANCET—that journal which has already done so much to raise the dignity of the profession; and, in the first place, petition the General Medical Council to allow us to be more fitly represented on their rolls and then urge upon our representatives to take immediate action to reform the state of the profession.

I am, Sirs, yours faithfully,

ASPIRATOR.

ADDRESSES AT MEDICAL CONGRESSES.

To the Editors of THE LANCET.

SIRS,—The Presidential Address of Sir Thomas Grainger Stewart at the recent meeting of the British Medical Association in Edinburgh was more than a *résumé* of medical progress during modern times, but not so much more that it would be very unfair so to describe it. Professor Fraser, in his Address in Medicine, gave a brief history of pure medicine during the twenty-three years which had elapsed since the last meeting of the Association in Edinburgh. Professor Annandale recorded the advances of modern surgery in the first part of his Address in Surgery. All three learned gentlemen gave thoughtful and informatory addresses, but I question whether their hearers would not have preferred that a more personal note should have been struck. It has lately become the invariable custom for the addresses at medical congresses—I refer in particular to those delivered in plenary assembly, but the Presidents of Sections often do exactly the same—to assume the form of stocktaking. This sort of address is disappointing to the general practitioner. Eminent physicians and surgeons are wasted in delivering such speeches, for the subject matter lies within the ken of their audience beforehand. What the medical public desires to get from its leaders is a personal expression of opinion upon something; they seek a sign, not a summary. It must not be supposed that I do not recognise the pains and the erudition which have gone to the making of the addresses which you published last week and the week before. I recognise their value, but, the speakers being the men that they are, I cannot but regret that their audience did not have from them something more distinctive.

I am, Sirs, your obedient servant,

Aug. 8th. M.B.

VENESECTION IN CHRONIC BRIGHT'S DISEASE.

[DR. SAUNDBY requests us to publish the following letter which he has addressed to Professor Ewald.]

DEAR PROFESSOR EWALD,— the Section of Pharmacology and Therapeutics at Edinburgh, during your speech on the treatment of chronic Bright's disease you expressed surprise that in the last edition of my lectures on Renal and Urinary Diseases I had omitted all reference to the value of bleeding in uræmia. I could only reply that if that were the case it was an undoubted omission, although it was rare for me now to have recourse to bleeding in these cases. On returning home, however, I have turned to the place in my book and find you were mistaken, as on page 177, under the heading "Treatment of Uræmia," are these words: "In obstinate convulsions 12 to 16 ounces of blood may be taken from the arm. Hemiplegia and coma call for bleeding to the like amount, but the hot-air bath recovered one patient from coma after the attempt to bleed had failed."

I am sending this correction to the press.

Yours faithfully,

ROBERT SAUNDBY.

Edmund-street, Birmingham, Aug. 6th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Probable Duration of the Plague Epidemic.—Lessons from History.—Hope from further Scientific Investigations.

NOW that the plague has so greatly subsided in nearly every place which has been attacked speculation is rife not only as to the recurrence of further outbreaks but as to the probable duration of the plague. That its apparent extinction in a district is no guarantee against a re-importation or a recrudescence has unfortunately been proved by many instances. The gradual spread of plague over a larger and larger area is also an additional source of danger for the perpetuation of the scourge. The clearest indication as to its further continuance seems to be derived from the history of plague in former times. It is generally recorded to have attacked districts or towns for a number of years in more or less regular succession. In Central India it existed from 1813 to 1821, in Kathiawar from 1816 to 1821, in Gharwal from 1849 to 1854, again from 1875 to 1877, and a third time from 1884 to 1897. In Hong-Kong it has lasted since 1894. Older writers describe what was probably plague as existent in the Punjaub from 1618 for eight years, in Ahmedabad from 1683 to 1689, and in Surat from 1684 to 1690. Short intervals of apparent freedom have characterised nearly all these outbreaks. In most cases it appears that the larger the population of a town or village the greater seems to be the virulence and intensity of the outbreak and the longer its duration. The older records, while obviously incomplete, seem to show that a much larger proportion of the population was carried off by the disease in former epidemics than has been recorded anywhere during the present visitation of plague. While there is some comfort from the latter observation there is very little hope of escaping from a further series of outbreaks for perhaps many years to come. On this point Dr. Roux has expressed his opinion that plague in India "would remain with us in Bombay for a long time." He affirmed his belief that it would be several years before we should see the last of it. Dr. Yersin has also stated that plague would be a recurring epidemic for many years. It must be admitted that all our sanitary measures have failed to eradicate the disease. While we stick to all sorts of repressive sanitary measures which were exceedingly difficult and almost impossible to apply, and have proved over and over again almost complete failures, we have amongst us several foreign *savants* who are working on quite different lines — for prophylactic inoculation, M. Haffkine; for curative serum, Dr. Simond, as representing Professor Roux and the Pasteur Institute; and Dr. Gallioti, representing Professor Lustig of Florence. As there is no difficulty in the manufacture of either the prophylactic fluid or the various kinds of curative serum, and as both offer some hope of success, it seems extraordinary that the Government does not engage English men of science to pursue further investigations in these directions. Both systems are capable of very considerable improvement. It is impossible that the expensive methods of sanitary control as hitherto adopted can go on for years. Every city would be bankrupt and perhaps India in insurrection, so that either plague will have to be left almost entirely to take its own course or experimental science must step in and supply

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the antidote. Prophylactic inoculation is attended by the practical difficulty that we can only get a small proportion of the people to be inoculated. Like vaccination for small-pox it can only prove really successful when performed on a large scale. On the other hand, a curative serum if successful would rob the disease of its terrors and make the early discovery of fresh cases possible. Hope from this quarter is engendered by the better results from the most recent experiments. If it were possible to reduce the mortality to 20 or even to 30 per cent. plague would be almost disregarded. By these scientific means and by these means alone conquest over the plague seems possible.

July 16th.

THE SPANISH-AMERICAN WAR.

(FROM A SPECIAL CORRESPONDENT.)

Camp Cuba Libre, Jacksonville, Fla., July 26th, 1898.

MEDICAL officers as well as line officers are all anxious to go to the front. My experience is limited to one army division, but in this one division hospital, the medical wards of which are under my charge, many interesting problems are continuously presenting themselves. The hospital of the Second Division of the Seventh Army Corps is in a pine-grove near the division camp. It consists entirely of tents. A central circular thirty-foot tent forms a convalescent ward, and radiating from this the floored army hospital tents are arranged in rows of six, the six being broken into groups of twos by arbors which admit air and permit of separation of the patients. There are additional single isolated tents for the treatment of the acute or noisy cases, and for a surgical operating-room, clinical office, and dispensary. The medical officers' tents face the hospital at a distance in its front, and the hospital corps nurses and stewards are encamped in the rear. Each hospital tent contains six large and comfortable canvas-covered cots. Over each cot, pinned into the seam of the canvas, is a curtain-hook pin on which hangs a printed clinical chart bound in pad form. These forms I devised and they were printed for me by the Red Cross Society.

The sickness in this command, though not excessive, is already so great as to have increased this hospital beyond its regulation size. We have now about 250 patients, in great part medical—indeed nearly all are fever cases. The fevers are typhoid and malarial, nearly all of the fatal cases being typhoid fever. There were from May 29th to July 22nd 808 patients admitted to the hospital, with 13 deaths, in a command of 13,000 men.

The one great favourable feature of this camp is its most excellent water-supply. Artesian water in unlimited quantities is piped to the entire camp. This water is above the suspicion of germ contamination and its properties are of the best. The source of supply is constantly guarded, to prevent poison being added to the water, though the poison which could be used to contaminate such great quantities of water I have found no one able to suggest.

This, in brief, is the situation with this army division. We have good water, hot sun, heavy rains and dews, the intemperance usual in armies, and some necessary work. The result is much typhoid fever and more of the shorter continued malarial fevers, of which I may write you more.

We have had in all three interesting epidemics of typhoid fever. First, nearly all our cases came from the Virginia regiments. The men reported bad water at the Richmond camp. Post-mortem examinations showed the most pronounced lesions. The second epidemic occurred in Company F of the Second Illinois Regiment. On May 30th the members of this company were severely poisoned by the meat served them. Nearly all the men suffered with severe abdominal pains, vomiting, and diarrhœa, some even becoming unconscious. Two weeks later we had very many men sent to the hospital from this company with typhoid fever. Three of these patients died, two with perforation, one with meningeal symptoms. Did the beef contain the typhoid bacilli? Last week our third epidemic began. From the First Wisconsin Regiment we have had 60 admissions, many of which are developing typhoid fever. One unexpected fact is presented by a study of our records. In June, the six Northern regiments in this division sent 172 men to the hospital, while the three Southern regiments sent 216 sick men to us—the South thus, with half the number of regiments, sending 25 per cent. more patients. One would have thought that Southern men could stand the Florida climate better than Northerners.

I believe the hospital corps is the hardest worked part of the army, even without any other battle than that with disease germs. We volunteers find the regular army surgeons most pleasant. They overlook our lack of knowledge of military forms and facilitate our work in other respects. All realise the difficulty of hastily meeting the needs of so great a military force at once and attach little importance to hastily made and unjust criticisms of the medical department of the army.

But no one should write from the front without giving great credit to the Red Cross Society for the great work it is doing. Without the aid of this society it would have been difficult to care for the sick in this hospital. Each day the Red Cross gives us 50 gallons of milk, 2000 pounds of ice, 30 dozens of eggs. Besides this it has built for us storehouses, floored our tents, given us hundreds of night shirts, pyjamas, pillows, sheets, buckets, bedpans, and dozens of other articles necessary for the care of the sick. In military channels the stream of supplies flows slowly and with many stops and much formality, but Dr. Kent, who represents the Red Cross here, gives freely and without delay. He has no regulation that prescribes how many bed pans one division must use, but gives all which are needed. This week, with the people of Jacksonville furnishing the motor power, he is going to put electric fans in all the tents.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Prosecution under the Factory Act at St. Helens.

A PROSECUTION was instituted at St. Helens Police Court under the Factory Act, 1891, against Richard H. Twist for a breach of the Act in not providing the workpeople in his factory with suitable overalls and headpieces as a protection against lead-poisoning in the manufacture of china and earthenware, such as pans, mugs, &c., which have to be glazed by means of the use of lead. Mr. Grant, the Government inspector under the Factory Acts, visited the works on July 1st and found a man and a woman engaged in the process of preparing the china for dipping. He found that they had no overalls and never had had any. The man had worked there for some years and owing to a serious illness which was pronounced by Dr. Casey to have been due to lead-poisoning was laid up for six months. The defendant controverted the statement that his employé was suffering from lead-poisoning and said that his illness was due to the effects of drink. He stated that he used very little red-lead, but mainly lead-ore, and that he did all the mixing himself; that the girls and men had merely to wash the pails round. He also stated that there were no dust and no brushing. The inspector pointed out to the magistrates that the danger to individuals engaged in these works arose from actual contact with the lead. They got the lead over their hands, and it got under their finger-nails and through the pores of the skin. As the defendant had fairly observed the rest of the rules as regards the manufacture of his special wares the magistrates decided not to convict in this case, but cautioned the defendant against a similar breach of the regulations of the Factory Act in the future.

Revocation of the Appointment of a Medical Referee under the Workmen's Compensation Act.

The appointment of Mr. J. D. Crawford as one of the medical referees under the Workmen's Compensation Act to Circuit No. 6, which was notified in THE LANCET of July 16th, has been cancelled by the Home Secretary. Dr. Thomas Clarke, the chairman of the hospitals committee of the Liverpool City Council, has been appointed in Mr. Crawford's place.

Liverpool Consumption Hospital.

Lady Willox, the wife of Sir John Willox, the member for the Everton Division of Liverpool in Parliament, has been the means of raising the sum of £200 towards the new building fund through a bazaar promoted by her ladyship at the hospital.

Liverpool Assizes: False Charge against a Wigan Surgeon.

The grand jury threw out the bill in the case of Mr. James

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Brown, who had been indicted on the inquisition of the coroner for the wilful murder of a Mrs. Sharples by performing an illegal operation upon her at Ince. The charge rested upon such slender foundations that the case had been dismissed at the usual magisterial inquiry previously held. The grand jury had no hesitation in ignoring the bill, believing the charge to have been groundless. Mr. Brown is to be congratulated upon the result and at the same time deserves much sympathy for having been placed in such a terrible position.

Low Death-rate at Southport.

The death-rate at Southport during the month of July was exceptionally low. Locally it was only 7·82 per 1000 of the inhabitants. The gross death-rate was 9·48 per 1000. These figures compare favourably with those of the corresponding period of last year which were 10·21 and 12·88 per 1000 respectively.

August 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Congress of the Royal Institute of Public Health in Dublin.

THE Lord Mayor and corporation of Dublin have agreed to the request of the Exhibition Committee of the Congress to be present in state on the occasion of the opening of the Health Exhibition at Earlsfort-terrace on Aug. 18th and the High Sheriff has sent out numerous invitations to a luncheon at the Royal University Buildings for the same day. The hon. secretary of the Congress Hospitalities Committee has reported that in consequence of the large number of applications which have been received for tickets for the banquet at which His Excellency the Lord-Lieutenant will be present on Aug. 20th, the committee have been compelled to direct the attention of the public to the fact that the accommodation at the Royal College of Surgeons in Ireland is of a limited character. The following is a list of those who previously to Aug. 5th had signified their intention of attending the banquet:—General Dunham Massy, C.B., the Right Hon. the Lord Chancellor of Ireland, Professor Armstrong (Edinburgh University), the Right Hon. the Lord Mayor of Belfast, the Right Hon. Viscount Bangor, Mr. A. C. Cope (Board of Agriculture), Baron De Robeck, Sir George Duffey, the Right Hon. Baron Emly, Mr. John Kells Ingram, LL.D., Mr. Thomas Stafford (Local Government Board), Mr. Henry Jones (hon. secretary to the Royal Institute of Public Health), the Hon. Mr. Justice Kenny, the Right Hon. the Lord Mayor of Liverpool, the Right Hon. Viscount Monck, the Right Rev. Gerald Molloy, D.D., D.Sc., Dr. James Creed Meredith, LL.D. (secretary to the Royal University, Ireland), the Right Hon. Viscount Powerscourt, Dr. Salmon (Provost of Trinity College), Sir Andrew Reid, K.C.B., LL.D., Hon. Mervyn R. Wingfield, Mr. T. W. Russell, M.P., Professor W. R. Smith, M.D., D.Sc., the Mayor of Huddersfield, Mr. J. J. M'Grath, LL.D. (secretary to the Royal University), Baron de Brault, the High Sheriff of Dublin, Professor Shaw (Trinity College, Dublin), Mr. J. C. Thresh, M.D. Vict. (Chelmsford), Lord Rosse, and Mr. Thomas A. Mooney, LL.D. (secretary to the Local Government Board). At a meeting of the Hospitalities and Excursions Committee, held on Aug. 5th, Sir Christopher Nixon stated that a number of the members would be invited to inspect the Mater Misericordiæ Hospital, where light refreshments would be provided. Many other entertainments, &c., have been announced for the guests, including those which are noted in the following abridged list: Thursday, Aug. 18th.—A luncheon by the High Sheriff of Dublin at the Royal University Buildings. In the afternoon Surgeon-General and Mrs. Preston will give a garden party at Moncktown, while in the evening a dramatic and musical entertainment will be arranged by the Corinthian Club at the Lyric Hall, and a promenade concert at the Health Exhibition. Friday, Aug. 19th.—Organ and pianoforte recitals at the Royal University and luncheon at the Mater Misericordiæ Hospital, and a garden party at Clonskeagh, where Sir Christopher and Lady Nixon will entertain the guests. In the evening the Lord Mayor will welcome all the visitors at a ball in the Mansion House. Saturday, Aug. 20.—Alderman the Right Hon. J. M. Meade and Mrs. Meade will give a garden party at Merrion, and there will be a banquet at the Royal College of Surgeons in Ireland, at which the Lord-Lieutenant will be present. On Monday the Lord Mayor of Belfast will receive visitors there at a luncheon, while excursionists to the county Wicklow will be entertained by Sir Henry and Lady Cochrane at a garden party at Bray.

The Apothecaries' Hall of Ireland.

The first examination by the Apothecaries' Hall of Ireland, in conjunction with the Royal College of Surgeons in Ireland, which has been held since the decision of the General Medical Council and the appointment of the new board of examiners has just concluded. Two candidates are announced to have passed the final examination.

The Surgeoncy to the Dublin Metropolitan Police.

Dr. Henry Oulton has just been appointed chief surgeon to the Dublin Metropolitan Police.

Sanitary Condition of Magherafelt.

The Local Government Board have written to the Magherafelt Board of Guardians drawing their attention to a report of Mr. Vesey, medical officer of health, relative to the insanitary state of that town and giving their opinion that a large portion of the place was much in need of improved sewerage and that the guardians would incur grave responsibility should an outbreak of infectious disease occur in consequence of their failure to remedy the defects pointed out by Mr. Vesey. The matter has been referred to the Magherafelt Dispensary Committee for further consideration.

Queen's College, Belfast.

Her Majesty's Commissioners for the 1851 Exhibition have intimated to the President of Queen's College that they have nominated that institution to a science research scholarship of the annual value of £150 tenable for two years. The person nominated must be an alumnus of Queen's College, Belfast.

The Belfast District Lunatic Asylum.

At a meeting of governors held on Aug. 8th it was decided, in reply to a letter from the Board of Control, that notwithstanding the urgency for the building of the new asylum at Purdysburn it would be wise to fall in with the suggestion of the Board of Control and postpone the matter for a few months until the Local Government Bill becomes law. The committee appointed to examine into the sewerage system at Purdysburn reported that they endorsed the statement of their medical superintendent that it was inadequate and uncertain in its action. I am afraid that eventually the sewers of the asylum will have to be connected with the main town drainage system. The committee of governors report most favourably of the way in which Dr. Graham (the medical superintendent) has carried out his plan of a dairy and tillage farm at the asylum. They found every department in a most satisfactory condition, but they regret that the most valuable portion of the tillage ground will be taken from them for the site for the new Infectious Diseases Hospital, as it is in this part the test crops have been grown and it is better adapted for cultivation than any other portion of the farm.

The British Pharmaceutical Conference at Belfast.

The thirty-fifth annual conference of this association opened in Belfast on August 9th, the meeting being held in Queen's College, when the members were welcomed on behalf of the city by the Lord Mayor (Alderman Henderson, M.A., J.P.) and by the President of the College (Dr. Hamilton). The chairman and members of the Ulster committee gave a reception and conversazione in Queen's College on the same evening, and the Lord Mayor is to entertain the members and his friends at a garden party on Aug. 10th. Thursday is to be devoted to a coast trip in county Antrim. The President of the society this year is Mr. Charles Symes, Ph.D., F.L.S., of Liverpool. Nineteen papers are announced on the business programme.

August 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Results of Suprapubic Cystotomy in Cases of Enlarged Prostate.

AT the meeting of the Academy of Medicine, held on August 2nd, M. Poncet of Lyons read a paper treating of the results obtained by creating an artificial opening into the

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bladder, of either a temporary or a permanent nature, the opening being above the pubes, in cases of prostatic trouble. Since 1895, M. Poncet has performed or caused to be performed 81 suprapubic cystotomies, and the total number of cases to which he referred was 114. Of these 114 patients 87 recovered and 27 died. M. Poncet divided the 114 cases into three groups. Group 1 comprised 39 patients who presented no symptoms of uræmic or other toxic affection and of these 37 were cured. Group 2 comprised 29 patients suffering from acute uræmia at the time of operation, and of these 12 died. Group 3 comprised 46 cases of chronic uræmia, and of these operations 33 were successful and 13 patients died. These figures show that success in the operation of suprapubic cystotomy is in direct relation to the gravity of the patient's condition as regards the general condition and the degree of uræmic poisoning, from which M. Poncet argued that early intervention was essential. The operation entirely does away with urinary retention and all its accompanying effects which are so generally fatal. In support of his arguments M. Poncet brought forward many cases, among which were the two following: A patient aged seventy-eight years, who was suffering from uræmic coma, and had a rectal temperature of 40·6° C., was operated upon. At present, four years and a half after the operation, he is well, and can hold his urine for three or four hours during the day and for even longer at night. All the urine passes by the hypogastric opening. Another patient operated upon six years ago to-day follows his occupation of a blacksmith. He can retain his urine for from three to five hours. It is passed by the hypogastric opening, and the jet is projected for a distance of thirty or forty centimetres.

The Nantes Congress.

On Aug. 5th the annual meeting of the French Association for the Advancement of Science commenced at Nantes. The medical section revealed some features of great interest and the meetings passed off by no means quietly. Sundry disturbances occurred in the town owing to the choice as president of the meeting of Professor Grimaux, who is extremely unpopular among the townspeople on account of the part which he took in the recent Zola trial. The inhabitants of Nantes have held several demonstrations in the streets demanding his withdrawal from the presidentship. Three or four times has the venue of the meetings been changed on account of its being impossible for the president to obtain a hearing. Finally they had to be held in a room at the College only capable of holding very few listeners and from which the public were rigorously excluded. The most interesting discussion was that upon Diabetes, introduced by Professor Lepine of Lyons. By means of a statistical statement drawn up with great care from the civil registers and the hospital reports of the city of Lyons M. Lepine was enabled to give with very fair accuracy the proportion of diabetics in the large urban districts, and the figures seem to show that this disease is actually increasing, this being in accordance with the researches of M. Bertillon. The number works out in the proportion of about 5 per 1000. M. Lepine in examining into the distribution of diabetes was struck by the frequency with which it occurred in the same communes, so that he was compelled to allow that the cause must be an hereditary one, or contagion, or due to some local influence. Dr. Loin of Tunis thought that a hot climate had something to do with it. He found diabetes to be very common in the colony of Tunis, especially among the Jews. As to its etiology, he was inclined to give the first place to errors in diet—namely, a diet very rich in starch and therefore in sugar. Want of exercise and sedentary occupations also appear to be a cause, for diabetes is very rare among working men and soldiers. There would seem to be no relation between diabetes and venereal excess or between diabetes and malaria, and the influence of alcohol is very doubtful. Climate is not sufficient to explain it altogether for diabetes is rare in the hotter countries. The commonest cause of death is gangrene but sometimes it is due to a diffuse carbuncular inflammation. Death from tuberculosis is very rare in Tunis, even among the military. Treatment by drugs is of little use but strict attention to hygienic details is everything. According to M. Leduc the principal cause lies in errors of diet and more especially of drink. The white wine so commonly drunk is very prone to produce fatty degeneration of the liver, and this is probably the principal cause. The question as to whether diabetics should be allowed potatoes brought out a variety of opinions. M. Mosse of Toulouse by dint of making many and careful analyses has arrived at the conclusion that the sugar shows a marked diminution when potatoes are substituted for bread. M. Rappin considered that the contradictory results arrived at with regard to potatoes were due to the observers not having sufficiently taken into consideration the various kinds of potatoes, variations which are shown to exist by the different ways in which cultures of bacilli develop upon different kinds of potatoes chosen as a culture ground.

August 9th.

Obituary.

WILLIAM SAVAGE SPEER, M.D., M.CH. R.U.I.

THE death is announced of Dr. Speer, which took place at his residence, Clifton-street, Belfast, from meningitis, on Aug. 3rd, after a short illness of a fortnight, during ten days of which he was confined to his bed. Born in the neighbourhood of Castledawson, co. Derry, fifty years ago, Dr. Speer received his medical education at Queen's College, Belfast, and graduated M.D. in the old Queen's University, 1874. For the past twenty-four years he had practised in Belfast, and during the early part of his career he assisted his brother-in-law, Dr. David Johnston, who died a month ago. Dr. Speer was an extremely busy man and he had one of the largest middle-class practices in Belfast. Possessed of good abilities and being most conscientious and anxious to do his utmost for his patients, Dr. Speer was greatly respected and liked by his very large *clientèle*. Apart from his position as a skilful practitioner of the healing art Dr. Speer was a deeply-religious man and he took the warmest interest in all matters concerning the church to which he belonged and for a great many years he conducted a religious service for men in connexion with one of the Belfast church associations every Sunday morning. Dr. Speer leaves a widow but no family. He was buried on August 5th at the City Cemetery, the immense concourse of patients and medical men present indicating the marked respect in which he was held. By the death of Dr. Speer Belfast and the medical profession have lost a man of great ability and of the highest honour, who spared neither time nor pains in the interest of his friends and his patients.

WILLIAM HENRY ACKLAND, M.D. ST. AND., M.R.C.S. ENG., L.S.A., J.P.

DR. W. H. ACKLAND died at Plymouth on Aug. 7th, at the age of seventy-three years. The deceased received his medical education at University College, London, obtaining the M.R.C.S. Eng. qualification in 1847 and the L.S.A. a year later. In 1862 he was admitted M.D. at St. Andrews University. Dr. Ackland was for many years a well-known and highly-esteemed practitioner at Bideford. He was formerly physician and senior medical officer to the Bideford Infirmary and medical officer of health of the Bideford Urban District, and at the time of his death was senior magistrate for the borough. Dr. Ackland took the greatest interest in the development of Bideford and the district and was an intimate friend of the late Canon Charles Kingsley. A few years after the appearance of Kingsley's "Westward Ho!" Dr. Ackland was one of the directors of the Westward Ho! Hotel and Villa Company, and he it was who suggested the name for the place after his friend's book, for Westward Ho! in those days consisted of a farmhouse and a cottage. He was for several years President of the Devon and Exeter Medical Benevolent Society. He retired from practice a few years ago and removed to Plymouth.

FLEET-SURGEON CHARLES ALBERT MACAULAY, M.D., M.CH. R.U.I.

NEWS was received in Plymouth on July 27th of the death at Wei-Hai-Wei, China, of Fleet-Surgeon Charles A. Macaulay of the flagship *Centurion*. He was taken ill on June 14th and he died on the following day. The funeral took place on June 16th, the deceased being the first to be buried at Wei-Hai-Wei. Fleet-Surgeon Macaulay joined the Royal Navy on Sept. 30th, 1875, and reached the rank of fleet-surgeon on

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March 5th, 1896. He was surgeon on the battleship *Alexandra* at the bombardment of Alexandria on July 11th, 1882, and landed there with the naval brigade. The deceased was also at the seizure of Port Said and was senior medical officer of the seamen and Royal Marines who landed there. He was also with the naval brigade at Ismailia and was present at Tel-el-Kebir, receiving for his services the Egyptian medal, the Alexandria and Tel-el-Kebir clasps, the Medjidie of the fourth class, and the Khedive's bronze star.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—In Leopold von Dittel, Austria, and indeed all Europe, loses a great surgeon. He was born in 1815 and took his degree in Vienna in 1840. At first he was in general practice and it was not until he was approaching his fortieth year that he took up surgery as his special subject, becoming assistant to Professor von Dumreicher. In 1856 he was himself appointed one of the surgeons of the Vienna General Hospital and some nine years later extraordinary professor. His most important papers had reference to the surgery of the urinary organs, but his name is perhaps most generally known in this country in connexion with the method of excising tumours by means of an elastic ligature. He was very popular amongst his medical brethren and was President of the Vienna Medical Society.—Dr. Francesco Trombetta, Professor of Clinical Surgery in the Messina Medical School.—Dr. Du Mesnil, physician to the Vincennes National Asylum.—Dr. Louis E. Livingood, Assistant Professor of Pathology in the Johns Hopkins University, Baltimore.

DIPHTHERIA IN LONDON.—In the four weeks ended on July 16th the amount of diphtheria in London differed but little in the aggregate from that recorded in the preceding period of like duration ended on June 18th. In the June period the total of notifications of the disease in London, corrected for duplicates, was 828, yielding a weekly average of 207 cases, while in the July period the total was 849, giving a weekly average of 212 cases. In June two districts of London escaped invasion by diphtheria, but in the July period every sanitary area yielded cases, although in three instances only single cases were recorded, nine cases being notified in all in six districts. In June only one district had upwards of 50 cases, but in July there were five such districts, with an aggregate of 290 notifications. In the matter of mortality the 106 registered deaths of the June period, being 26 weekly on the average, gave place to 116, or 29 as a weekly average in July; and the case mortality of 12·8 per cent. of June became 13·7 per cent. in July. Thus alike for amount and fatality the two periods were not dissimilar. In the Outer Circle the 45 deaths from diphtheria in June were replaced by 41 in the July period, the weekly numbers of 11, 11, 10, and 9 making the latter total, showing an evenness of death record throughout the period.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on July 22nd, Dr. Dundas Grant, the President, being in the chair.—Dr. Furniss Potter showed a case of Subacute Myringitis affecting both membranes in a man, aged thirty-seven years, who stated that he could hear perfectly well up to the onset of his present trouble three months ago.—The President narrated a case of Thrombo-Phlebitis of the Sigmoid Sinus following Chronic Suppuration of the Middle Ear, in which recovery followed evacuation without ligature of the jugular vein.—Mr. George Stoker showed cases of Lupus and Rodent Ulcer treated with inoculations of staphylococcus pyogenes aureus previously exposed to the action of oxygen, by which Mr. Stoker thought an antitoxin was produced.—The President showed a case of Rhinoscleroma in a native of Russia, and Mr. St. George Reid showed a Culture Tube and Microscopic Specimen of the Capsuled Bacillus of Rhinoscleroma from the President's case.—Dr. Middlemass Hunt described a case in which he had performed Thyrotomy for Malignant Disease of the Larynx in a man over eighty years of age. He also described a case illustrating the effects on growth and development of removing nasal obstruction; the patient, a girl, aged seventeen years, had in seven months after the removal of nasal polypi grown 3½ in. and had gained 3 st. in weight.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT EDINBURGH.

THE SECTIONS.

SURGERY.

FRIDAY, JULY 29TH.

DR. ROVSING (Copenhagen) read a paper on Some Obscure Hæmorrhages from the Kidney and their Treatment by Nephrotomy. He pointed out that cases of hæmaturia occurred in which the blood was derived from only one kidney, as shown by the cystoscope, in which no definite cause could be assigned for the hæmorrhage. He narrated several cases of this kind in which nephrotomy had been followed by recovery. In two of the cases bacterium coli was present in the urine, but Dr. Rovsing was inclined to think that this had nothing to do with the hæmorrhage. He considers it possible in some cases that the bleeding is caused by displacement of the kidney giving rise to some venous congestion.

Dr. T. H. MORTON (Sheffield) described the chief conditions preventing replacement in dislocation of the shoulder and exhibited a Working Model of an apparatus he had designed to assist in replacing the head of the humerus. It consisted essentially of a hinged pad by which pressure was brought to bear on the bone close to the head.

Mr. R. H. PARRY (Glasgow) described three cases of spasmodic torticollis in which the deformity was persistent and long lasting and was entirely due to spasm of the muscles and not to their permanent contraction. He effected a cure in all the cases by resecting a portion of the spinal accessory nerve on one side and dividing the cervical plexus on the other, in this way removing the spasm of one sterno-mastoid and the opposite occipital muscles. The recovery was complete in all the cases (one of which was shown) and no permanent paralysis was left.

Mr. NOBLE SMITH (London) said he had treated 16 cases by this method and he looked upon the operation as well established. He had found movement return early.

Professor KOCHER (Berne) said he had frequently seen recurrence of the deformity in these cases and now he always divides the sterno-mastoid on one side and the occipital muscles on the other.

Mr. J. HUTCHINSON, jun. (London), read a paper on Removal of the Gasserian Ganglion for Trigeminal Neuralgia, illustrated by the notes of a successful case. He pointed out that there were two routes by which the ganglion might be approached: (*a*) one by resecting (temporarily) the zygomatic arch and trephining around the foramen ovale (this might be called the "pterygoid" route); and (*b*) by opening the skull through the squamous plate and raising the temporal lobe from the middle fossa without piercing the dura mater. He showed that it was not necessary to ligature the middle meningeal artery. He expressed the opinion that the temporal route would be always preferred in future, as, though difficult, the operation was accompanied by less risk than the other and much less deformity resulted.

Mr. MAYO ROBSON (Leeds) had had three cases which were not perfect successes. By the pterygoid route he thought some beneficial effect could be made on the ganglion by pulling forcibly on the third division of the fifth nerve.

Dr. W. BRUCE (Dingwall) read a paper on the Nature and Treatment of Sciatica. He attributed sciatica always to disease of the hip-joint, occurring especially in those possessing the uric acid diathesis, and he had met with success in treatment of sciatica by acting on this theory of its causation.

Dr. J. CRAWFORD RENTON (Glasgow) contributed a paper on the Surgical Treatment of Sciatica. He had found in many persistent cases that extensive adhesions existed around the nerve and recovery had followed their division. He urged the advisability of cutting down on and freeing the nerves in all cases which did not recover rapidly.

Dr. ROBERT KENNEDY (Glasgow) gave the details of Four Cases of Traumatic Musculo-spiral Paralysis in which the palsy followed fracture of the humerus. In all the cases rapid improvement followed the operation of freeing the nerve. The delayed return of muscular power in some of

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these cases he was inclined to attribute to the muscles rather than to the nerves.

Mr. MAYO ROBSON (Leeds) thought that however long the time since the injury every case of traumatic paralysis should be operated on. He had seen sensation return in twenty-four hours.

Professor DOYEN (Paris) exhibited some Instruments which he had invented for Operations on the Skull. Most of them were of great ingenuity and were worked by electricity. With the use of these instruments it was possible to remove a flap of bone four inches in diameter in eight minutes. He further described a method he had devised for Resection of the Bowel. The end of each portion of intestine is closed by a "purse" suture and then lateral anastomosis is performed. Professor Doyen also gave an account of his Operation for Congenital Dislocation of the Hip. The head of the femur was freed from its attachments, a new acetabulum was made by an ingenious circular chisel, and the head was replaced. A plaster splint was then applied by special apparatus. He mentioned that the operation had proved very successful.

Mr. E. MUIRHEAD LITTLE (London) read an interesting paper on Coxa Vara. He had found twenty-nine specimens in museums and mentioned that there were two varieties, one in children caused by rickets, and the other in youths, and caused probably by carrying heavy weights. He insisted on the very great value of Roentgen rays in diagnosing this condition, and showed by some skiagraphs how frequently other deformities are mistaken for coxa vara. He considered that the best treatment was subtrochanteric osteotomy.

Mr. NOBLE SMITH (London) described a case of excessive coxa vara for which he had done osteotomy with success.

OBSTETRICS AND DISEASES OF WOMEN.

FRIDAY, JULY 29TH.

The third day's session began with the reading of a paper by Dr. R. C. BUIST (Dundee) on

Two Symphysiotomies in Domestic Practice.

The two cases were offered as evidence of the suitability of symphysiotomy for domestic practice. The first case was that of a woman aged twenty-five years. Her first and second children died in labour, the second after difficult forceps extraction; the third died sixteen hours after induced premature labour. Pelvic measurements were as follows: 21·3, 25·2, and 32 cm.; diagonal conjugate 9 cm. At seven and a half months the pelvis was enlarged by Frank's method of chiselling an anterior lamella from the pubic bones. The absolute rest induced torpidity of the bowels and tympanites, and labour came on after a week. The eight months' child was easily delivered with forceps in the right occipito-posterior position. The pegs fixing the pubic bones dragged during labour and the wound broke down. Apart from a phlebitis progress was satisfactory; the patient was walking about in six weeks and was now well. The pelvis was firmly healed and had gained 2 cm. in its transverse measurement. The second case was that of a woman aged twenty years; a primipara, rachitic; pelvic measurements being 21·5, 23, and 29 cm.; diagonal conjugate 10 cm. After two days' labour and five hours after rupture of the membranes the child's heart sounds becoming weak and irregular, and there being no descent of the head, symphysiotomy was performed by Ayers' subcutaneous method, operation and delivery occupying less than an hour. The child was nursed from the first, and in less than three months the mother was at work. The child in the first case died from bronchitis at two weeks; the second was at present well and the head was nearly normal. As premature children in this social station were practically never reared the result must be deemed satisfactory.

Professor MORISANI (Naples) said that he had not invented symphysiotomy, but had remained faithful to it since 1863, when he read a short note on the subject at the London Congress. The point to remember about symphysiotomy was that it had no scope at all with a conjugata vera of less than 70 mm., for the utmost increase obtainable by symphysiotomy in this diameter was from 18 to 20 mm., which with 70 made about 90 mm.—i.e., about the diameter of the fœtal head. He proceeded to describe the method of operation which he adopted. Some used the open incision; he preferred a quite small incision from 2 to 3 cm., opening up the articulation sub-cutaneously. The risk of hæmorrhage was sometimes made much of, but it was quite exceptional. The operation was very free from after-pain; and if antiseptic precautions were good the results were excellent for the mother. As to the child, it might die during extraction; and here the question arose whether forceps should be used or the case left to nature. This treatment had an advantage over induction of premature labour, which often resulted in weakly children.

Dr. JOHN MOIR (Edinburgh) called attention to the satisfactory results which he had obtained from the induction of premature labour in cases of contracted pelvis; he thought this procedure was preferable to symphysiotomy.

Dr. AMAND ROUTH (London) read a paper on

The Treatment of Cystocele.

He divided cystocele into primary and secondary—primary, due to injury during childbirth, and secondary, due to prolapsus uteri, &c. Primary cystocele usually leads to supra-vaginal elongation of the cervix. The treatment depended upon whether the cystocele was primary or secondary. In all cases where retroflexion or prolapsus coexisted anterior vaginal fixation of the uterus was required. For the cure of the cystocele itself he considered that whatever the form of incision adopted in the performance of the anterior colporrhaphy, the essential part of the operation was the complete stripping off of the bladder from the front of the uterus and from the anterior vaginal wall. The bladder could then be turned up out of the way and the supra-vaginal part of the uterus fixed, if need be, to the anterior vaginal wall. In cases of primary cystocele with resulting supra-vaginal elongation of the cervix amputation of that structure was also required. Dr. Routh claimed no novelty for the steps of the operation which was practically involved in anterior vaginal fixation of the uterus, but in his paper he advocated its particular applicability to the cure of severe cases of cystocele.

Professor SÄNGER (Leipsic) said that for about eight years he had been doing an operation similar to that of Dr. Routh but more extensive. Having fixed the uterus and urethra with volsella, to expose the field of operation he made a median incision and reflected two vaginal flaps; into the exposed vesical wall one or more rows of buried silk sutures were inserted, after which the flaps were resected and the edges brought together with silk. It was almost always necessary to do a posterior colpo-perineorrhaphy at the same time because the perineum was always deficient in these cases. The mistake generally made, both with the anterior and with the posterior operation, was that they were not carried high enough.

Professor FEHLING (Halle) did not think that excision of a portion of the cervix was sufficient in these cases; it was necessary to do in addition a ventro-fixation or vesico-fixation of the uterus, otherwise there was a tendency to recurrence.

Dr. ARTHUR GILES (London) divided cases of cystocele into two classes, those in which the uterus was in normal position but the vaginal wall elongated and prolapsed, and those in which the cystocele was only a part of a general hernia of the pelvic floor. In the first kind, removal of a portion of the anterior vaginal wall might suffice; in the second kind, which was due to a separation of the vaginal wall from its pubic attachments during labour, removal of part of the vaginal wall would only have the effect of fixing the uterus in a low faulty position. The real desideratum was an operation which would restore the vagino-pubic connexions. Failing this, ventro-fixation combined with colporrhaphy answered best.

Professor MARTIN (Berlin), basing his remarks on an experience of over 1000 operations, advised repairing the defects of the uterus as well as of the vagina for the restoration of displaced pelvic organs. He first did an excision of the cervix, if necessary, then curetting; then anterior colpotomy was performed, which gave the opportunity of fixing the uterus up to 2 cm. over the internal os; this was quite safe in eventual pregnancy. Next an anterior colporrhaphy was performed, and at all events a posterior colporrhaphy must be added at the same sitting. The particular method employed seemed unimportant seeing that so many good results were obtained from different procedures.

Dr. LAPTHORNE SMITH (Montreal) emphasized the view expressed by Professor Sänger and Professor Martin that it was quite useless to do an operation for cystocele alone. His practice was as follows: (1) dilatation; (2) curetting of the uterus; (3) amputation of the cervix if necessary; (4) anterior colporrhaphy; (5) posterior colporrhaphy; (6) removal of diseased ovaries and tubes when

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required; and (7) ventro-fixation of the uterus. All this could be done at one sitting; and if neither the operator nor anyone else talked could be finished in an hour and ten minutes. From this practice he had got very good results.

Dr. AMAND ROUTH, in reply, said that his main contention was that it was useless to attempt to cure cystocele unless the bladder was first completely stripped off from both the uterus and vagina and turned up out of the way. At the same time vagino-fixation could be effected if the uterus was displaced. It might be necessary to also amputate the cervix if supra-vaginal elongation had secondarily occurred. In primary uncomplicated cystocele he had found the operation he had described successful after two years.

Dr. W. J. SMYLY (Dublin) read a paper on

Extirpation of the Myomatous Uterus per Vaginam.

He said that the mere presence of a myoma was not an indication for operation, but in cases of small uteri which did require operation vaginal hysterectomy with morcellation was the best method in most cases. Out of the 17 cases in which he had extirpated the uterus in this way he had lost one in which the myoma had sloughed, and the patient died on the third day from septicæmia. The mortality, therefore, was 6 per cent.

Dr. THEODOR LANDAU (Berlin) held that in most cases it was not wise to wait too long before operating. The risks were: (1) sarcomatous degeneration of a simple myoma (of this he had seen three examples); (2) necrosis of the tumour owing to obliteration of the vessels by pressure, with resulting sepsis; and (3) exhaustion of the patient from loss of blood and consequent increased shock when it came to operation. It was a mistake to suppose that most fibroids became smaller at the menopause. He was pleased to find that Dr. Smyly was operating by the vaginal route and congratulated him on his results. If the surgeon wished to go in for a conservative operation and save the uterus, the vaginal route was well adapted for this and a speedy operator with thorough asepsis need not fear going on to do a ventral laparotomy if he were not able to finish by the vagina.

Dr. J. P. FARRAR (Gainsborough) read a paper on

A New and Speedy Method of Dilating a Rigid Os in Parturition.

He enumerated a series of cases on this subject of a very interesting nature. The new method was first brought to the notice of the profession at a meeting of the Obstetrical Society of London three years ago and the present paper was concerned with a detail of other fresh cases showing equally striking and remarkable results. Shortly, it was the application of a 10 per cent. solution of cocaine to the tin and unyielding os. In four minutes' time the physical change in the condition of the os was quite remarkable. Instead of a thin sharp margin—not unlike a piece of tin plate with a round orifice in it—the os became in four minutes' time widely open and as dilatable and distensible as a rubber bag.

Dr. JARDINE (Glasgow) had tried two-grain cocaine pessaries, but his results had not been very satisfactory. A solution might answer better.

Dr. ALICE KER (Birkenhead) spoke of the advantages of douches of very hot water in securing dilatation of a rigid os; they not only shortened the duration of labour, but also caused great diminution of the patient's sufferings.

Dr. A. DONALD (Manchester) read a paper on

Vaginal Section.

He gave the results of 60 cases in which he had opened the peritoneal cavity or operated for diseased conditions of pelvic organs by means of vaginal incision. The cases were classified as follows: exploratory incision, 18 cases; incision for pelvic abscess, 11 cases; incision for ectopic pregnancy, 8 cases; vaginal ovariotomy, 20 cases; and vaginal myomectomy, 3 cases. In 30 cases the incision was made in the anterior fornix and in the remaining 30 it was in the posterior fornix. Gauze packing or drainage was used in 25 cases. There were 2 deaths directly due to the operation, a mortality of a little over 3 per cent. The various conditions which might be treated by vaginal section were discussed in detail. The advantages of vaginal over abdominal section were summarised as follows: (1) absence of shock; (2) less risk of septic peritonitis; (3) quicker recovery and less troublesome convalescence; (4) avoidance of abdominal scar; (5) more perfect drainage; (6) better control of oozing of blood from pelvic cellular tissue or peritoneum; and (7) simplicity of procedure in some cases. All these points were considered in detail. The objections to the operation were then discussed. Narrowness of the vagina and pelvic adhesions occurring together formed a contra-indication to the operation, but either of these singly did not necessarily render vaginal incision very difficult. Mere bulk of a tumour, so long as it is cystic, was not a contra-indication, but a large tumour with adhesions at its upper portion could not be dealt with by vaginal section. The troublesome after-effects which were said to ensue through weakening of the pelvic floor had not been observed in any of Dr. Donald's cases.

Dr. W. E. FOTHERGILL (Manchester) contributed a paper on

The Function of the Decidual Cell.

Whilst investigating the ultimate fate of placental tissue retained *in utero*[1] Dr. Fothergill observed appearances which led him to believe that under certain conditions the enlarged connective tissue cells of the uterine mucosa—namely, the decidual cells—had a phagocytic action upon the fœtal epithelium covering the chorionic villi. The connective tissue cores of the villi also appeared to be destroyed by decidual cells, but much more slowly than was the chorionic epithelium. This action of the decidual cells under morbid conditions suggested to him that under normal conditions also the decidual cells might have a destructive action upon certain fœtal structures. He therefore examined a number of specimens of decidual and placental tissues obtained under circumstances as normal as possible in the hope that the above-mentioned pathological action of the decidual cells might afford a clue for the discovery of their physiological action. Villi which penetrated the decidua serotina were found to be without epithelium or to show only traces of it, while they were, as a rule, surrounded by numerous decidual cells; indeed, the tips of villi which had reached to and entered the surface of the decidua were found in all stages of disappearance, the stroma shrinking and vanishing more slowly than the epithelium. Sections cut through the membranes so as to show amnion, chorion, and decidua showed similar appearances. Those chorionic villi which were not in contact with decidual tissues retained their epithelium in a degenerated condition, while those embedded in the decidua were entirely without epithelial covering, the stroma also in many cases being reduced to a mere trace. Dr. Fothergill pointed out the importance of careful microscopic examination in every case in which the pregnant uterus was removed by operation, the main difficulty in settling questions of placental structure and function being the rarity of healthy specimens from the early months of pregnancy. It was generally admitted that at an early stage of development the chorionic epithelium had a destructive action upon the surface of the decidua. Dr. Fothergill's observations pointed to the conclusion that the decidual cells had in their turn, at certain stages of development, a destructive action upon fœtal structures. Thus in the formation of the placenta and membrane there occurred what may be broadly described as a struggle between fœtal and maternal elements which resulted in the destruction of both in considerable degree. The relation might be expressed in intelligible though somewhat inaccurate form by saying that the fœtus was a parasite and that the decidual cells prevented it from being an injurious parasite by attacking those fœtal structures which penetrated the maternal ones enclosing them. Viewed in that light invasions of the maternal organism by fœtal elements would be regarded as due to a failure to perform their duty on the part of the decidual cells. Dr. Fothergill's hypothesis thus possessed a general pathological interest as bearing upon the origin of certain neoplasms, besides giving an explanation of the existence of the decidual cell.

Dr. A. LAPTHORNE SMITH (Montreal) read a paper on

The Best Operation for the Cure of Displacements of the Uterus.

The conclusions to which he had come in his paper were based first upon his own personal experience of 111 ventro-fixations and 89 Alexander operations; secondly, upon the experience of 40 first-class operators, all Fellows of the American Gynæcological Society, who had had among them about 2500 ventro-fixations or suspensions of the uterus; and thirdly, upon his recent visit to the leading gynæcologists of Europe,

[1] Brit. Med. Jour., Jan. 29th, 1898.

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whom he had seen performing vaginal fixation. His own experience with Alexander's operation was all that could be desired. There was no difficulty in finding the ligaments, no hernia, only one relapse, and no trouble in subsequent labours. With ventro-fixation the cases had been much more severe, because he had only done it when there were diseased tubes causing fixation of the uterus. One patient had died; 1 had relapsed; 1 had a hernia; 2 had had miscarriages, and 3 had had normal labours; in 7 cases a buried stitch had required removal subsequently. Out of the cases reported by other operators above mentioned there had been 146 pregnancies, in 36 of which there had been pain, miscarriages, or difficult labour requiring obstetrical operation, and two or three women had died. Most of these operators had abandoned fixation and now performed suspension by stretching round ligaments to the abdominal wall. As a result, however, of what he had recently seen on the continent he would now abandon both Alexander's operation and ventro-fixation and treat all these cases in future by vaginal shortening of the round ligaments which had the following advantages: (1) it was very easy; (2) it could be done very quickly; (3) it should have no mortality; (4) it was free from subsequent pain; (5) it would do as well for cases of retroversion with fixation as for those in which the uterus was freely moveable; (6) it did not interfere at all with subsequent labour or pregnancy; and (7) it did not leave any painful wound or unsightly scar, women being more willing to have an operation in the vagina than on the abdomen.

Mr. CHRISTOPHER MARTIN (Birmingham) read a paper on

The Conservative Surgery of the Ovary.

He pointed out the physiological value of the ovaries and urged the importance of saving even half an ovary in certain pelvic operations. In cystoma affecting only one ovary the other should not be removed. In sarcoma of one ovary, however, both should be removed. In inflammatory disease of the appendages on one side it was unnecessary to remove both sides. In cases of double pyosalpinx the diseased tubes with the uterus should be removed *per vaginam*, but one or both ovaries should be left behind. The section of the ovary was advised in some cases of fibroma, dermoid tumour, and cystic disease of the ovary. In cases of chronic and cystic ovaritis ignipuncture was recommended. In cases of parovarian cyst and cyst of the broad ligament the cyst should be shelled out of the broad ligament and the ovary preserved. Lastly, in cases of vaginal or abdominal hysterectomy one or both ovaries should be left behind.

STATE MEDICINE.

WEDNESDAY, JULY 27TH.

Dr. MACMARTIN CAMERON (Newton-Stewart) read a paper on

Surface Wells as a Source of Water-supply.

The Rivers Pollution Commissioners hold up the shallow or surface well to execration. In respect of wholesomeness, palatability, and general fitness for drinking purposes they form the time-honoured classification of potable waters into wholesome, suspicious, and dangerous, ranging from spring water in the top place to shallow well in the bottom place. But there are shallow wells and shallow wells—good, bad, and indifferent. He (Dr. Cameron) did not defend cesspools such as the Commissioners had in view, where the best title to the name of well consisted in the possession of a pump. Fortunately, such wells were less in evidence now than formerly. Subsoil water laboriously pumped or lifted by buckets from wells is being fast replaced by upland surface water distributed by gravitation. The main purpose of that paper was to ask whether that drastic and in most cases costly change was altogether reasonable, more especially when thrust upon unwilling and impoverished communities. It was only in the hope of eliciting the views of others that he had acted on the assurance of his friend Professor Hunter Stewart that such a subject would be likely to give rise to an interesting discussion. Reverting to the old classification of potable water Dr. Cameron maintained that the proper place of surface well water, if reasonably safeguarded, should be in the "wholesome" list, and that the list should read, "spring water, deep well water, upland surface water," with the addition of surface well water either before or after the third of those names. Everything depended on where the wells were situated and how the surroundings were protected. The fourth place on the Commissioners' table was allotted to "stored rain-water," but they would not have arrived at that conclusion solely from an inspection of backyard water-butts, with their customary mass of pollution. To place surface well water below that from cultivated lands was to neglect the essential difference between those waters—namely, that the well water underwent a more or less prolonged ground filtration. That fact was strongly insisted upon by Dr. Vivian Poore, the champion of surface wells, who maintained that contamination of such wells has always resulted from direct inflow of pollution from the neighbouring ground or by cesspool or sewer subsoil leakage. In some cases a farm is supplied with drinking water from a well in the centre of a pasture-field, and everything goes well. If, however, the field is then ploughed up and manured then the well becomes polluted. The danger arises when the turf is destroyed and an easy way made by the plough for the direct influx of polluting matter into the pipes or into the well itself. In two instances he had traced outbreaks of typhoid fever to the breaking up of the soil in that way. It is no uncommon thing for farmers to spread manure and dig potatoes on the very tops of these wells. In no single instance had he traced typhoid fever to any surface well situated in a decently clean locality. Typhoid fever was rare in his district, notwithstanding the fact that it contained outside the town a population of 40,000 or 50,000 persons dependent on surface wells. There appear to be an unreasonable distrust of surface wells and a blind faith in gravitation water. In the latter great attention was always bestowed on the sources, whereas surface wells are often placed in bad sites and under the worst possible conditions. Curiously enough, it is not uncommon to find a surface well yielding a pure water although uncased and exposed freely to contamination. With the approval of the Local Government Board a village in the county of Wigtown containing a population of nearly 1000 inhabitants will shortly be supplied with water from new surface wells dug in clean ground outside the village to replace polluted ones within. The alternative was a supply by gravitation from a burn three and a half miles away, a plan which would have entailed five or six times as much expense.

Professor HUNTER STEWART (Edinburgh) remarked that Dr. Vivian Poore's experiment with a 6 ft. well carefully cemented at the sides gave water which contained 7 micro-organisms to the cubic centimetre and bacillus coli was conspicuous by its absence. A part of the supply of the city (Edinburgh) was from wells near the Pentland Hills not more than 8 ft. deep, situated in highly manured land and exposed to pollution from neighbouring middens. From the water of these particular wells of a maximum of 8 ft. in depth he found a maximum of micro-organisms of 11 to the cubic centimetre and a minimum in 3 out of 8 wells of absolute sterility. These observations abundantly supported the observations of Dr. Poore.

Dr. NASMYTH (Cupar) said a surface well might be pure for instance on a hill side, but on the other hand it might be fouled. It was not the well but the circumstances which must be considered. The well would be right enough if we could get a pure zone round it.

A paper was read by Dr. R. SYDNEY MARSDEN (Birkenhead) on

Filaria Strongylus or False Tubercle in the Pig, Sheep and Goat.

This is a zoo-parasitical disease of frequent occurrence in the animals mentioned. Its description, however, was not to be found in any text-book on meat inspection. Dr. Marsden believed that lungs so affected were constantly seized and condemned as tuberculous. On examination the affected lungs might be slightly congested or even appear normal. The surface was covered with small light-brown or grey patches of from the size of a pin's head to that of a pea in the midst of small zones of congestion. The patches formed little raised tumours or granulomata resembling those of tuberculosis, but softer and more hyaline. They were scattered through the lungs and formed growths in section of the size of a farthing or a halfpenny. On taking them between the finger and thumb they were less firm and resistant than tubercle, and their size was not so great as a rule. On section they looked like tubercle with their hyaline grey appearance and the opaque yellow of their older and retrograde stages. On passing the finger over these growths a gritty feeling could be detected much resembling that of tubercle,

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but less harsh. They appeared to be formed wherever an egg of the strongylus was arrested and became the centre of a granuloma. The structure exactly resembles that of tubercle—namely, giant cells, epithelioid zone, and small-celled external zone, but the distinguishing feature was the presence of one or more ova. The commonest sites of infection were the lungs, kidneys, and liver, and the best description of the disease is that given by Professor Boyce, its discoverer. As a practical conclusion Dr. Marsden pointed out that affected organs should be seized and destroyed, but the flesh of the animals was not affected. There was no emaciation and the brightness and "setting" qualities of the meat were not altered.

Dr. J. MCNAUGHTON (Australia) then read a paper on

An Epidemic of Typhoid Fever in Wimmera District, Australia.

The Wimmera district, north-west of Victoria, Australia, in 1893 suffered from an epidemic of typhoid fever. The water-supply was obtained chiefly from rain-water and ground tanks. Reservoirs were formed by impounding streams which supplied the tanks by gravitation. In 1888 Dr. McNaughton reported enteric fever to the authorities for the first time. At first the cases were mild but became more serious as the epidemic progressed. The chief preventive method was that of destruction by fire of all infective material.

THURSDAY, JULY 28TH.

By previous arrangement the Section of Psychology joined the Section of State Medicine in discussing two subjects.

Sir WILLIAM GAIRDNER, K.C.B., opened the debate on

Aphasia in Relation to Testamentary Capacity.

He said that aphasia had been little regarded from the physiological point of view, although from a clinical standpoint it reckoned an enormous literature. Besides Broca's convolution there were at least four other centres concerned in speech, to say nothing of a fifth or "ideation" centre, the location of which is still obscure. He would concede that a man who had never been otherwise than aphasic could never reach a higher level of reasoning than that of the dog or the horse, when a man became aphasic by accident, "lamed," as it were, theoretically he suffered some damage to his already developed reasoning faculties, but he was not prepared to admit that he suffered any derogation to his higher faculties. Pasteur had a right-sided lesion and made the short will, "I leave all my goods to my wife." Was his mental capacity diminished, or if the lesion had been on the left side would his will have been less valid? His (the speaker's) own view was that the existence of aphasia interfering with graphic or auditory speech threw the *onus probandi* upon those who wished to prove the genuineness of the will.

Dr. ELDER (Leith) believed an aphasic was necessarily on a lower mental and intellectual level, and in answer to a question said he believed Pasteur came under that general rule. It was difficult to say precisely where testamentary capacity ended. If the auditory centre were destroyed a person was unfit to make a will. Destruction of the graphic centre did not disqualify; the difficulty there was the legal formality; simple infra-pictorial visual and infra-pictorial motor aphasics are capable of valid will-making. In certain contingencies a will might be drawn up by "mirror-writing."

Dr. CLOUSTON (Edinburgh) said a vital point was whether the will was that of the patient or had been suggested to him. Aphasic patients would assent to anything, but it was the duty of a doctor invariably to put the alternative case to the aphasic testator.

Dr. MERCIER (London) opened the second subject by a paper on

The Plea of Insanity in Criminal Cases.

Medical men had no standard as to the mental condition which should exonerate a criminal from punishment. On the other hand, the principle was accepted that insane persons should not be punished with a severity equal to that inflicted upon the sane. While every insane person might commit offences for which he ought not to receive punishment, yet there were very few lunatics who were wholly irresponsible. He advanced the propositions that it was right and just to punish the insane for wrong-doing, and that to a greater or less extent that view was acted upon in every asylum, either directly or by the withdrawal of privileges. He urged medical witnesses not to shrink from asking total immunity for some criminals and partial immunity with mitigated punishment for others. To establish a plea of insanity proof of one or more of the following mental conditions should be demanded: delusions; such confusion of mind that the accused was incapable of appreciating in their true relations the circumstances under which the act was committed or the consequences of the act; marked inadequacy of motive; extreme recklessness and the non-concurrence in the act of the volitional self.

Dr. J. F. SUTHERLAND (Lunacy Commissioner, Scotland) said that in Scotland there was no desire among experts for an alteration in the law. He did not know any case in which injustice had been done where the plea of insanity had been advanced, but he knew instances of grave injustice where the offender was intoxicated. If any alteration of the law were required it was not as regards the delusional man but the intoxicated man who committed a crime of which he had little or no recollection. Intoxication was insanity of the purest kind and the habitual drunkard was not a voluntary drunkard. Such persons should not suffer for their crimes, although within the past five years in Scotland one such person had been executed.

Dr. BLANDFORD (London) urged that a lunatic's knowledge of right and wrong was that of an insane person, comparable to the recognition of the same kind by a child or a dog.

Professor GLAISTER (Glasgow) thought that the tendency was to do injustice not so much to insane persons as to the general public.

Sir WILLIAM GAIRDNER agreed with Dr. Mercier's propositions. To the two existing verdicts of "Guilty" and "Not guilty on the ground of insanity" he would add a third—"Guilty but insane."

Dr. MERCIER pointed out that there was another verdict in England—"Guilty, but strongly recommended to mercy"—which always influenced a court of law.

Dr. NASMYTH (Cupar) introduced a discussion upon

The Hygienic Control of Milk Supplies.

He first gave a summary of existing laws and of the systems in force in foreign countries. In view of the recommendations of the Tuberculosis Commission we might hope for better regulations. Legislation in Scotland was ahead of that in England since the Act of 1897 was passed and the notification of infectious disease became universally applicable to Scotland. It was now possible to localise outbreaks of infectious disease spread through the agency of milk and to take steps to prevent further spread. The great questions for the future were tuberculosis with reference to meat and milk and how the owners of tuberculous animals were to be compensated. The use of sterilised milk until tuberculous cows were eliminated was almost a necessity. The Legislature ought to take into account the fact that British farmers were forced to compete with dairy products produced in many instances under lax conditions. The home farmer might readily be placed in harassing competition with Danish and other producers who were not hampered with regulations.

Dr. SPOTTISWOODE CAMERON (Leeds) pressed strongly upon the Section the desirability of a sort of right of search or examination of milk farms even outside the city boundaries by the medical officer of health of the town into which the milk was brought. Enlargement of boundaries, to include largely the contributing farms, did something. Farms outside the borough might be as dirty as possible, but medical officers of health, although of course they visited such farms, yet had no right to do so. The authority should be able to act rapidly in the case of suspected dairies. In Leeds every infectious case was at once entered opposite the name of the supplying dairyman.

Sir CHARLES CAMERON (Dublin) said that twenty years ago he traced an extensive outbreak of typhoid fever in Dublin to the milk-supply. Recently they had ascertained the names and addresses of workers in dairies. The personal hygiene of such persons was insisted upon by such means as washing the hands and wearing blouses. The hawking and the storage of milk in rooms they attempted to check by registration. Compensation was given where milk was destroyed. Dairies should not be allowed to exist in crowded parts of towns.

Professor FORSTER (Strasburg) said that many pathogenic organisms could be killed by one minute's exposure to a temperature of 150° F. The bacillus typhosus was destroyed

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by fifteen minutes' exposure to the same temperature, which did not spoil the flavour of the milk.

Principal DEWAR (Edinburgh) maintained that byres should be distinct from dairies or milk-houses. Scotch farmers would be willing if Government would offer full compensation to stamp out tuberculosis as they had done rinderpest. He did not imagine that any plan of notification of disease in animals would meet with any full results. He thought that the periodical inspection of dairies by veterinary surgeons must follow upon the reports of the Royal Commission.

Professor AITKEN (Edinburgh) advocated the use of milking machines which avoided the exposure of milk to air and to dirty hands. The personal hygiene of the workers should be looked after. Contamination of milk was in the main due to uncleanliness of environment of the milkers and their efforts should therefore be turned in those directions. It would be practical to have milking stalls close to, but separate from, the byres, fully exposed to light and kept perfectly clean. In such a place one would be able to obtain all the accompaniments which would enable milkers to extract the milk with the least contamination from air and other sources.

Dr. CHALMERS (Glasgow), without suggesting any doubt of the value of sterilising milk, raised a query as to its value as a recommendation to the general consumer. If, on the one hand, the consumer was told that by general control a pure milk-supply could be maintained was he not more likely to insist upon that being accomplished than by trusting to pasteurising which assumed an impure supply? With regard to the recommendation of the Tuberculosis Commission that certain diseases should be notified he thought affections of the teats should be included. In presence of so many unrecognised varieties of infectious disease he advocated the notification by the dairyman of all diseases whatever in the persons of his workers.

Dr. JOHN ROBERTSON (Sheffield) then read a paper on

Soil as a Factor in the Spread of Certain Diseases.

The renewed interest in soil as a factor in the spread of disease recalled the attention early given to that point by Budd, Simon, Buchanan, and others. With Dr. Gibson he had noted an upward growth towards the surface in bacillus typhosus. He had been led to believe that during the winter months the organism disappeared from the surface and remained sheltered in the deeper layers until it sallied forth again in the warmer season. From an examination of many yearly mortality maps some years ago he concluded that the disease constantly prevailed at a high rate in some districts and a low one in others. He had published elsewhere the observation that the typhoid organism died out during the cold months except when the soil was artificially fed with organic matter. That, in his opinion, explained to a great extent the local prevalence of enteric fever. The attention paid to the water-carriage of typhoid infection seemed to have distracted attention unduly from other methods of infection. He felt certain that dust was the chief agency in conveying the infection to man from the soil. The relative heaviness of bacteria was inferred from certain observations and experiments. If true, this fact goes far to explain why only persons coming within a certain area are affected, for it presupposes that such heavy particles will not travel great distances and is a further argument against aerial spread.

Dr. NEWSHOLME (Brighton) pointed out the extreme value of Dr. Robertson's experiments because they were carried out under natural conditions in the open field and not on sterilised earth.

FRIDAY, JULY 29TH.

Dr. REID (Stafford) presided in the unavoidable absence of Sir HENRY LITTLEJOHN.

Dr. F. T. BOND (Gloucester) opened the discussion upon

Vaccination, with Special Reference to Prospective Legislation.

There was no need, he said, in such an assembly to assume that all were convinced that vaccination was in some degree a protection against small-pox. Further that when properly performed it was free from serious risk, and that it was nearly, if not quite, as efficient a protection as an attack of the disease itself. In all legislation they must face facts and allow for differences of opinion. They had a right to ask Government to provide for revaccination, about which the present Bill was absolutely silent. There need be no question as to compulsory revaccination if a conscience clause were inserted. A parent objecting to have a child vaccinated at six months of age should have the opportunity of going before a court when the child was four months old to satisfy the justices of a conscientious objection. Any penalty then would be not for neglecting vaccination, but for failing to register the objection; and so it might be with revaccination. When an unvaccinated child, aged four or five years, was about to enter school the parents should attend a court and reassert the objection and again at the age of twelve years, acting on returns that could be obtained from the School Board. Parents who objected to having an infant vaccinated might consent in the case of grown children. These three attempts, however, would leave a certain percentage of unvaccinated cases, as would happen in this democratic country under any system. He suggested that private practitioners should be obliged to bring their standard up to that of the Local Government Board. Inspection might take the form of a few surprise visits and a prosecution here and there if necessary. Under the present Bill the sanitary authority would have as little power as now to promote vaccination and the medical officer of health would continue to have neither responsibility for, nor official connexion with regard to, one of the most important branches of his sanitary work. At the same time he (Dr. Bond) thought that there should be a public prosecutor to take up cases, which should be done judiciously. The Vaccination Bill was one of many illustrations of the increasing unfitness of Parliament, with its present antiquated regulations, to deal with the legislative requirements which the ever-augmenting complexity of our social organisation demanded.

Dr. MONCKTON COPEMAN (London) said that his experimental work, which was now accepted by the Government, had been in connexion with the purification and preservation of vaccine lymph. The use of glycerine was originated by an Englishman, W. Cheyne, in the year 1854, and was employed by Dr. Stephen Mackenzie and others during the epidemic of 1870–71, with the intention merely of increasing the stock of available lymph. He found large numbers of extraneous organisms in samples of human, and particularly in calf, lymph, some of them being indistinguishable from forms capable of setting up suppuration. In the course of work on the bacteriology of vaccine lymph he discovered a means of freeing lymph from such organisms. After many experiments he found that glycerine had the power of killing out those extraneous organisms after a certain definite time and if used under certain definite conditions, while at the same time the efficiency of the lymph was uninjured. It was proposed to use lymph only which had been shown by the method of plate cultivation to be free from micro-organisms. In the future possibly something better than glycerine might be found. At present when rightly used it was the only substance which was capable of giving results of value in the purification of lymph. Unfortunately vendors were now selling "glycerinated" lymph which did not answer to his own definition of a carefully tested and aseptic vaccine lymph.

Dr. NEWSHOLME (Brighton) hoped for the withdrawal of the Bill for a time in order to get a fuller expression of popular opinion. He moved the following resolution:—

That in the opinion of this Section the Vaccination Bill before Parliament should be withdrawn in order that the Government might have the opportunity of fully considering the views and facts which have emerged in the discussion upon the Bill on the part of the profession and the public and that a new Bill should be introduced next session.

Dr. C. R. DRYSDALE (London), in seconding the resolution, held that vaccination and revaccination should be carried out by animal, and not by humanised, vaccine. During the last century small-pox was a children's disease and rarely killed adults. Nowadays in this country it was fatal almost entirely in adults over the age of twenty years. Since 1875 Germany had vaccinated every infant and revaccinated every child before the age of thirteen years. The success of that experiment was shown by Gerhardt, who wrote in 1896 that the disease had almost died out in Prussia.

Dr. G. C. FULTON (Middlesboro') and Dr. C. SMITH addressed the meeting and Sir WILLIAM PRIESTLEY announced that the Bill would come before the House on the following day (Saturday).

The resolution was carried and copies were directed to be sent to the leaders of both Houses of Parliament and to Lord Lister.

Sir CHARLES CAMERON (Dublin) in opening the discussion on Dr. J. Robertson's paper on

Soil as a Factor in the Spread of Certain Diseases,

said that in Dublin a close relationship existed between the soil and the existence of typhoid fever.

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Sir RICHARD THORNE (London) remarked that two years ago he asked the Government to take steps in that direction because of the constant recurrence of typhoid fever when it had once entered any particular spot. Experiments showed that the bacillus typhosus flourished well in soils which contained the bacillus coli but infinitely better in the presence of bacillus enteriditis sporogenes. He hoped that the question of tuberculosis and soil would be investigated. He trusted that in this country they would never fall into the error of regarding the bacteriological laboratory as the *summum bonum* of public health work. Much of our best preventive work had been effected in pre-bacteriological days. Bacteriology was a precise and scientific science, but it was by its practical application that the medical officer would hold his own.

Dr. H. SCURFIELD (Sunderland), who came from a town in which typhoid fever was very prevalent, had noticed how year after year the disease had clung to infected houses.

Dr. F. J. ALLAN (London) read a paper on

Formaldehyde and Sulphur as Disinfectants,

which contained the following conclusions:—1. Sulphur dioxide killed the diphtheria bacillus easily, the shortest exposure being 4½ hours to air in which 1 lb. of sulphur per 1000 cubic feet had been burned. Cholera bacilli were killed in the dry state in air by the combustion of 2½ lb. of sulphur to 1000 cubic feet. Anthrax and typhoid fever bacilli were not killed by this gas. 2. Formic aldehyde. Trillat's autoclave proved unsatisfactory. The Alformant lamp gives good results and kills diphtheria and typhoid fever organisms, moist or dry, after 6 hours in air charged with 10 "paraforms" per 1000 cubic feet.

Dr. KENWOOD (London) was glad to hear that Dr. Allan's experiments agreed with his own. One important fact was that if the Alformant lamp was to be effectual it would be necessary to employ more of the paraform tablets than were recommended by the manufacturers. He found that ten "paraforms" simply inhibited organisms of slight resistance. He concluded that twenty-five should be used per 1000 cubic feet to ensure disinfection.

Dr. LESLIE MACKENZIE (Leith) stated that for over two years he had used formalin spray and that he had ceased to use gaseous disinfection because he found that the spray was more simple and more rapid. He had disinfected many houses for various infections and never in one single instance had he found any case traceable to the disinfected room. The chief practical objection that at first caused him to delay the adoption of the spray for general disinfection was its possible effect on walls and wall-papers. He exhibited specimens of variously coloured papers which had been pasted on boards and then sprayed to saturation. None showed the slightest damage.

Dr. F. A. DIXEY (Oxford) read a paper on

Diphtheria in London.

His main conclusions were that the interruption to the usual course of diphtheria mortality coincidently with the two chief school holiday periods was apparent both in 1896 and 1897. This tended to confirm the importance of school infection. A considerable number of cases were still returned as croup. The marked diminution in the case mortality which began in 1894 had been maintained and was coincident with the introduction of the treatment by antitoxic serum.

Dr. MILLARD (Birmingham) read a practical and interesting paper on

"Return" Cases of Scarlet Fever.

Sir CHARLES CAMERON, chief medical officer of health of Dublin, read a paper on

The Incidence of Private Improvement Expenses in relation to Rack-rent.

He pointed out that the improvements in the sanitary conditions of houses involving structural alterations had to be paid for by the immediate rack-renter. This rent was defined in the English Public Health Act to be the bare rent of premises, minus the sum necessary to keep the premises in repair and some other deductions, the whole to be determined by the Court. The Irish definition was more simple and was a better one—namely, two-thirds of the valuation of the premises for rateable purposes. If a house was valued at £90 a year and was let at £60, then the latter was a rack-rent. Sir Charles Cameron pointed out that it was often unfair that the person who received a rack-rent should pay the cost of the improvement. He might have let the house on a lease for ever, or he might pay a rack-rent greater than the rack-rent which he himself received. He quoted the case of a man who let his house for twenty-one years and who eighteen years afterwards became the yearly tenant of his own tenant. He complained of the bad drainage of the house and on the sanitary authority intervening the immediate rack-renter was obliged to pay the cost of improved drainage and sanitary accommodation, though in three years the house would revert to the present yearly tenant. After describing several cases of injustice Sir Charles Cameron suggested an amendment of the law so that all the persons having an interest in sanitary improvements should contribute proportionately to the cost.

Dr. H. SCURFIELD (Sunderland) then read a paper on

The Necessity for the Amendment of Part I. of the Housing of the Working Classes Act, 1890.

He thought that Part I. of the Act would be of much greater value if the preliminaries of a scheme were simplified and powers were given to the local authority to decide on the type of buildings which were to be erected on the "unhealthy area." At present the preliminaries were so drawn out as to exhaust the energies of the most ardent sanitary reformer. In Sunderland it was proposed to deal with an area of about half an acre, with 480 inhabitants. A representation was made by the medical officer of Health in August, 1893. The scheme was completed and advertised in October, 1893, and forwarded in November to the Local Government Board, who held an inquiry in January, 1894, and issued a provisional order in May, 1894. In September, 1894, the same board held a second inquiry. In 1896 the purchase of properties was so far completed as to warrant an advertisement for designs for workmen's dwellings. The prizes for that competition was awarded in January, 1895. The accepted plans were then slightly amended and provisionally approved in March, 1897. Various transactions with the Local Government Board, including an extension of the original scheme, ended in a deputation to the latter in December, 1897. Further amendments were approved by the council and were forwarded in February to the Local Government Board, who asked for further plans, which being approved they ordered a further local enquiry in July, 1898. Four years and eight months had thus elapsed since the original petition was made, and there was still no prospect of an early start. Dr. Scurfield advocated an amendment of the Act by leaving the kind of buildings to be erected to the discretion of the local authority, and by simplifying and shortening the preliminaries of such improvement schemes.

Resolutions.

Dr. M'LEAN WILSON (Wakefield) proposed the following motion:—

That in the opinion of this meeting (1) further legislation for the prevention of river pollution is urgently required, lengthened experience having shown that the Act of 1876 is in many respects defective; (2) that the Bill at present before Parliament is insufficient and unsatisfactory; and (3) that the parliamentary Bills Committee of the British Medical Association should take action in the matter.

Dr. ALFRED HILL (Birmingham) seconded the motion, which was adopted.

Sir CHARLES CAMERON proposed a second motion which was as follows:—

That in the opinion of this Section a standard percentage of fat should be fixed for milk, but it should not go so far as to say what that percentage should be.

Dr. ALFRED HILL seconded the motion and it was adopted.

Dr. SCURFIELD proposed the following motion:

That it be a recommendation to the Council that in future meetings of the Association there be a separate section for public health.

Dr. KENWOOD seconded the motion, which the section adopted.

A vote of thanks was then passed to the President, Sir Henry Littlejohn, and the proceedings came to a close.

NEUROLOGY.

FRIDAY, JULY 29TH.

Demonstration of Specimens.

The meeting on this occasion was devoted to the demonstration of specimens.

The first was by Dr. I. C. DUNLOP (Edinburgh) and Dr. GEORGE MACKAY (Edinburgh) to illustrate the condition found in the Brain of a patient who had suffered from Defect in Colour Vision.

Dr. JAMES TAYLOR showed with the lantern specimens

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illustrating the Changes in the Spinal Cord associated with Anæmia and Allied Conditions.

The PRESIDENT showed Photographs of the Brain of a patient who had lost the Naming Faculty.

Dr. A. W. CAMPBELL also demonstrated with the lantern various interesting Conditions occurring in Brain and Spinal Cord, among others the sclerosis found in some cases of anæmia.

Dr. E. F. TREVELYAN (Leeds), Dr. MICHELL CLARKE (Bristol), Dr. A. BRUCE (Edinburgh), Dr. R. A. FLEMING, and others also showed collections of very interesting pathological specimens.

PATHOLOGY.

THURSDAY, JULY 28TH.

Dr. HERBERT E. DURHAM (London) read two papers on: (1) an Inquiry into an Epidemic caused by a Variety of the Bacillus Enteriditis of Gärtner by Means of Sero-diagnosis (Gruber's Reaction) and Bacteriological Examination; and (2) on a Simple Method of Demonstrating the Formation of Gas by Bacteria.

Dr. LAZARUS-BARLOW (Cambridge) read a paper on Irritation of the Pleura and Pleurisy and showed a number of lantern slides in illustration of his results.

Professor GREENFIELD (Edinburgh), Dr. WOODHEAD (London), Professor MCFADYEAN (London), Dr. MUIR, and Dr. D. A. WELSH (Edinburgh) criticised the paper, and Dr. LAZARUS-BARLOW replied.

Dr. DURHAM then opened a discussion on

The Agglutinating or Sedimenting Properties of Sera and their Relation to Immunity.

He said that the importance of the agglutinating principle had been greatly enhanced by the observation that the blood serum of typhoid fever patients might acquire the property of clumping cultures of the typhoid bacillus. This observation was first made in the Hygienic Institute of Vienna by Dr. Grünbaum working at the suggestion of Professor Gruber. As the known varieties and species of bacteria were steadily increasing it became more and more difficult to find criteria by which the different kinds might be distinguished. The principle of specific immunity thus became of the greatest importance and might be applied in three ways: (1) in respect of the protective power of a serum; (2) in respect of its lysogenic power; and (3) in respect of its agglutinative power. Many writers have denied the existence of any relation between agglutinative and protective action, and it was well known that certain forms of protective sera had no agglutinating power—e.g., diphtheria antitoxin serum. Agglutinating properties were therefore not essential to protective sera. The problem, however, was rather in the opposite sense—viz., whether the agglutinating property was always associated with some degree of protective power. Pfeiffer endeavoured to discredit the existence of any relation between these two properties on very insufficient grounds. He found that several months' after a Haffkine cholera injection the agglutinating power had fallen to the level present in many normal sera, while the protective power was still considerably increased. His results showed that a complete lysogenic action occurred only in those cases in which a dose of serum approaching the limit of clumping effect was given; unfortunately the condition of the vibrios immediately after injection was not stated. His other experiments with old sera merely showed that low protective and destructive (lysogenic) powers were associated with low clumping power. Pfeiffer's test reaction was not necessarily associated with a complete protection. In reality the destruction of the bacteria introduced was only partial at the end of the time limit, for if the animal be killed when all the organisms in the peritoneal fluid were degenerated numerous untransformed individuals were found on the omentum. In all probability the previous agglutination of the bacteria was an important factor in the production of the degenerative process in the free peritoneal fluid. According to Dr. Durham's own observations on sixteen different vibrios a positive Pfeiffer's reaction (lysogenic properties), a complete sedimenting effect and permanent protection were invariably associated. Other observations made by Dr. Durham on the action of sera obtained from patients in an epidemic associated with the presence of a variety of the bacillus enteritidis were in harmony with the view that protective and lysogenic properties were associated with agglutinins. It was interesting to note that even with a non-pathogenic organism an agglutinative serum might be obtained. Thus after injection of the bacillus megatherium a serum might be obtained which had the power of sedimenting this bacillus and typical degeneration occurred when tested by Pfeiffer's method. The question arose whether there was any evidence of a proportional relation between the protective and the clumping power of a serum. It was essential to note that the less virulent races of vibrios were more susceptible to the agglutinins produced by the use of virulent varieties than were the virulent varieties themselves. Moreover, the serum obtained by means of the less virulent, though highly effective on them, had slight influence on the more virulent kinds. Again, everyone who had watched the process of agglutination under the microscope must have observed that some individuals were affected long before others, while a few might escape altogether. If, then, the agglutinating power of a serum be measured by the limit dilution at which a visibly recognisable effect was produced in a given time we got some idea of the action upon the susceptible individuals, but the resistant and less susceptible organisms were not heeded. Hence in contrasting the protective and clumping efficiency of sera we must take into account the effect produced upon the more resistant as well as that upon the more susceptible individuals. When bacteria were grown in the presence of even small quantities of efficient agglutinating serum they exhibited departures from their normal habit of growth—e.g., the reducing power of a cholera vibrio might be checked, the phosphorescence of a luminous vibrio might be stopped, the production of the pigment pyocyanin by the bacillus pyocyaneus might be inhibited, and there might be a tendency to grow in threads or chains by microbes which did not naturally present this feature. No one had yet succeeded in separating out a pure agglutinin, so that it was impossible to say whether these inhibitory actions were due to the agglutinins themselves or to substances associated with them. The fact of this association, however, was extremely suggestive.

Professor MCFADYEAN (London) congratulated Dr. Durham on the extremely able manner in which he had dealt with a difficult subject. He thought that it was not only of laboratory interest but it had a wide clinical interest as well.

Dr. GRÜNBAUM (London) said that he had worked chiefly on sera from the human subject, the agglutinative action of which was often small. He thought it was important to note that in low dilutions the agglutinative property did not necessarily go hand in hand with the protective power. He suggested that a fourth specific property of the serum of an immunised animal might be added to those mentioned by Dr. Durham—viz., a paralysing action. This was especially noticeable in the case of motile organisms, but even non-motile organisms might show loss of Brownian movement—probably by a swelling of their envelope in the specific serum.

Professor MCWEENEY (Dublin) said that he, too, had worked only on human sera. He suggested that a fifth serum reaction might be added—viz., a concatenating action. He had come to the following conclusions from a study of typhoid bacilli grown in broth containing typhoid serum: (1) there occurred loss of motility; (2) there was a tendency to the formation of short chains of bacilli; (3) this method was suitable for clinical diagnosis; and (4) it was of special value in those cases in which the ordinary Gruber-Widal clumping reaction was delayed or uncertain.

Dr. SIMS WOODHEAD (London) said that in these sera there appeared to be a number of actions which ran parallel to a certain extent and later diverged. He had already stated in this section that the toxins were by no means such simple bodies as were at one time supposed and they had just heard that the sera were equally complicated. He pointed out that the sera which were most highly protective—e.g., tetanus and diphtheria—were less agglutinative; and he regretted that the highly agglutinative sera—e.g., cholera and typhoid—could not be raised to such a degree of immunising activity. He agreed, however, with Dr. Durham, as against Widal, that a high agglutinative power in either cholera or typhoid could hardly be associated with a low immunising power.

FRIDAY, JULY 29TH.

Dr. ALFRED G. LEVY (London) read a paper on the

Blood Changes after Experimental Thyroidectomy.

He said that his experiments had been performed on the dog so that the parathyroids and thyroids were removed together, and suggested that the variations which occurred in his

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results might be due to the presence of small accessory thyroids in the region of the aorta. He found that there occurred after thyroidectomy a certain degree of anæmia, which, however, was neither very intense nor very constant. The red corpuscles and the hæmoglobin were diminished together, but the total fall did not exceed 25 per cent. of the normal. In the more pronounced cases the liver gave a slight iron reaction. Leucocytosis was a very constant feature, but the degree varied enormously. Increase of the fibrin of the blood invariably occurred and was often very considerable. The proteids and the total nitrogen also underwent diminution. The total solids were always reduced. In most instances the loss of solids was greater than the loss of proteids, but sometimes the loss of proteids was the greater. These facts appeared to point to a varying loss of some and a varying gain of other non-proteid material. Throughout these experiments careful attention was given to the housing and feeding of the dogs so that no fallacy might thereby be introduced. In conclusion, he referred to the striking want of interdependence among the various blood changes and to the fact that they bore no relation to the rapidity of onset or the severity of the symptoms.

Dr. D. A. WELSH (Edinburgh) said that although he had never examined their blood during life he had observed in animals dying from removal of the parathyroid glands alone that the tissues and organs were often anæmic and showed evidence of commencing fatty degeneration.

Dr. MOTT (London) suggested that the tendons and the connective tissues of the body should also be examined in relation to these blood changes.

Dr. MUIR said that he had examined the blood in cases of myxœdema in man and had found a slight degree of leucocytosis, but the condition of the leucocytes was variable.

Professor RALPH STOCKMAN (Glasgow) read a paper on

The Pathological Effects of Dead Tubercle Bacilli.

He said that he had had three objects in view—(1) to compare the effects of dead with those of living bacilli; (2) to see if fibroid changes were especially produced by the dead organism; and (3) to find whether animals injected with dead bacilli would still react to tuberculin. His first experiment was on a healthy dog; it was injected with tuberculin and no reaction occurred. An injection was made into the jugular vein of about 50 c.c. of a glycerine broth culture of tubercle bacilli which had been sterilised at 110° C. A rapid rise of temperature occurred, which continued for some days. Seventeen days later, when the temperature had subsided, tuberculin was injected, but the reaction was slight and indefinite. When the animal was killed, four months after the intravenous injection, the pleura was found to be studded with small fibroid nodules and the liver showed a large number of small tuberculous masses in its substance. His second experiment was on a pony. Having been tested with tuberculin with a negative result it received into its jugular vein a similar enormous dose of dead tubercle bacilli. The immediate effect was a marked rise of temperature for about a week. Three weeks later the tuberculin test gave a distinct reaction. The animal was then killed and the lungs were found to contain very numerous small tuberculous nodules, which consisted chiefly of a connective tissue overgrowth with few giants cells and no distinct caseation. Numerous bacilli could be demonstrated in these nodules by the ordinary method of staining. The other organs showed no tubercle. The third experiment was on a number of cats which were fed on dead tubercle bacilli in order to see if any lesion could be produced through the alimentary tract. No tuberculous lesion, however, was found in any organ, though the animals had been allowed to live from one to two months.

Professor J. R. MCFADYEAN (London) said that these experiments were of considerable interest, but he did not think that they had any intimate relation to the processes of tuberculosis naturally occurring in animals. He had never experimented with such colossal doses of bacilli and he believed that no lesions followed the injection of dead bacilli unless enormous doses were given. He did not think that the formation of giant cells was so closely related to processes of caseation as Professor Stockman had maintained, for caseation was a result of living organisms alone.

Dr. SIMS WOODHEAD (London) said that he had investigated the effects of injecting dead bacilli and had found that dead bacilli locally injected produced a local lesion in which the bacilli could still be stained but from which no secondary infection could be obtained. Intravenous injection of dead bacilli produced numerous fibroid nodules chiefly in the lungs. He pointed out that similar injections of living bacilli in guinea-pigs produced caseous tubercles in the lungs, but that with devitalised bacilli fibroid non-caseating lesions occurred. He had also found that if the injection were made into the thigh then fibroid tubercles might appear not only in the lung but in the liver.

Professor GREENFIELD (Edinburgh) said that all the previous speakers seemed to have acknowledged a possible flaw in their experiments and he suggested that it was just possible that some of the bacilli injected as dead might be still living. Undoubtedly, however, dead bacilli seem to be capable of producing elementary tubercle follicles with giant cells. In regard to the occurrence of nodules in the liver after intravenous injection he thought it quite possible that dead bacilli might pass through the pulmonary capillaries and so reach the liver.

Professor MCWEENEY (Dublin) suggested that the virulence of the organisms should be determined before they were devitalised. He thought that the same result could hardly be expected to follow the presence in the tissues of virulent and of attenuated organisms even though they had previously been devitalised.

Dr. MOTT (London) suggested that inoculation of the fibroid nodules produced by the action of devitalised bacilli should invariably be performed.

Dr. J. J. DOUGLAS (Edinbugh) read a paper on the Local Action of Crude Diphtheria Toxin and illustrated his results by a series of lantern slides from photomicrographs. Dr. MUIR and Dr. LAZARUS-BARLOW spoke.

Dr. S. R. CHRISTOPHERS (London) read a paper on the Action of Normal Serum in Relation to the Diagnosis of the Typhoid Bacillus.—Professor MCWEENEY described some work he had done on the same subject.

Dr. ALEXANDER HAIG (London) gave a Demonstration of the Granules precipitated in the Blood by Chloride of Ammonium. He maintained that the number of these granules varied with the quantity of uric acid passing in the urine.

PHARMACOLOGY AND THERAPEUTICS.

FRIDAY, JULY 29TH.

Professor RALPH STOCKMAN (Glasgow) introduced a discussion upon the

Therapeutic Value of Recent Synthetic Analgesics: Their Benefits and Later Attendant Risks.

Most of these preparations, he said, had been introduced to us not so much as analgesics but as antipyretics. But long experience had demonstrated that medicines which merely reduce temperature had comparatively little beneficial effect on the course of a continued fever such as typhoid, and as a routine treatment they had practically been abandoned. The direct antipyretic treatment of feverish conditions had also to a great extent gone out of fashion owing to the more specific treatment by serum therapeutics. But in diseases marked by great pyrexia, such as acute rheumatism and malaria, the combination of an analgesic and antipyretic with a specific such as salicylate or quinine respectively was of great value. It was more directly to their value as analgesics that Professor Stockman directed attention. No one member of the group acted in an ideal way either in reducing temperature or in relieving pain. The drawbacks and dangers had been exaggerated. Still, no one was without more or less serious drawbacks for general and frequent use in practice. Their chemical genealogy was studied as being the best way of leading up to their remedial and poisonous actions. All were closely allied to phenol and to anilin. By a chemical modification of these two bodies we were able to lessen their toxicity and to increase their analgesic action. But we could not yet prophesy what the value or action of a combination would be without long trial. Tables of graphic formulæ were exhibited illustrating the close chemical relationship of these bodies. In doses ordinarily given phenol had very little effect on the blood or nervous system, but large doses had poisonous effects. The toxicity of salicylic acid in ordinary doses was almost *nil*, but very large doses set up skin eruptions and other undesirable symptoms. When we came to anilin we found its medicinal use was dangerous, its action on blood causing cyanosis and dyspnœa. Phenylhydrazin caused thrombosis in vessels and was a strong poison. Pyrodin was impossible

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as a therapeutic agent. All had the same kind of action on the grey matter of the spinal cord: conduction of painful impressions was lessened and perception of impressions in the grey matter of the brain was lessened. To these actions was the analgesic effect due. Because of the absence of their action on the motor centres the person could go about his business and herein lay their great value over opium and chloral. We were in want of two drugs, one to act on the pain-conducting paths of the cord and another to act as a hypnotic on the cerebrum. Drugs, like men, had the defects of their qualities. Their depressing effects might lead to respiratory and cardiac embarrassment. Collapse from a direct action on the nervous system was extremely rare and only occurred in the debilitated. We should never get a drug quite free from this, for it depended on the sensibility and reaction of the individual. We could diminish the chance of collapse by using a drug which was not too active. In seeking an analgesic drug from amongst the enormous number of candidates for therapeutical favour we should reject those which had destructive action on hæmoglobin. It is fortunate that in practice they had these poisonous qualities only in small degree. Professor Stockman had given up the use of acetanilid because of its action on the blood and because of the small range of its dose. There was no doubt that when it was introduced it was given in much too large doses. Antipyrin was much safer, but he seldom gave it now. Phenacetin was equally powerful and much less apt to be attended by danger. It was much the safest and best and he had never seen the slightest degree of faintness or unpleasantness result. The only other member in which he placed confidence was lactophenin, which was practically identical in composition with phenacetin. Antithermin was distinctly poisonous and was not a substance to be used at all. In conclusion, Professor Stockman said that if given with care any ill effects were infrequent and that it was a matter largely of dosage.

A paper by Dr. C. D. PHILLIPS (London) (read by the SECRETARY) followed in which he classified synthetic analgesics into three main divisions—viz., those derived from: (*a*) chinolin; (*b*) anilin; and (*c*) salicylic acid. Analgen, a chinolin derivative, was not a powerful analgesic agent. Its great evil was its destructive action on the red blood corpuscles. Euphorin was a powerful analgesic; it tended to interfere with the respiratory process, it did not affect the kidneys, and it was valuable in the pain of orchitis. Methylene blue was a useful analgesic in all forms of headache; it often, however, caused cystitis and strangury. Pyoktanin was of little value. Agathin was unreliable and even increased pain; it was unworthy of a place. Pyramidon, salipyrin, tolipyrin, tolisoll, and ferripyrin were harmless, but were not sufficiently powerful for the relief of urgent pain; they were, therefore, unimportant. Malakin was slow in action and was much inferior to antipyrin; it was of service in acute rheumatism and was free from risk. Neurodin was feeble and harmless, but it was uncertain and inferior to phenacetin and antipyrin. Lactophenin was sedative more than analgesic; it was inconstant and often failed. The action of citrophen was much the same as that of phenacetin, but the risks were greater and the benefits were less; it ranked much below phenacetin. Apolysin was more toxic and more soluble than phenacetin, it was of great value in migraine and was well tolerated in large doses. If taken on an empty stomach, however, its toxic effects were specially liable to occur. Phenocoll was a powerful analgesic but not so safe a remedial agent. In children and in adults with phthisis it caused alarming cyanosis; in the future it might, however, take a place. Salocoll caused no gastric irritation. Salophen was probably the best of recent synthetic analgesics. Like salol it was not decomposed till it reached the intestine, its toxicity was very slight and in medicinal doses it did not produce tinnitus. It was good in neuralgias of children and was as effective and as safe as antipyrin and phenacetin. Salophen was thus of high value and of great promise. Agathin was to be avoided. One should hesitate to use analgen, citrophen, euphoren and lactophen. Pyoktanin, pyramidol and salocoll were unnecessary.

Dr. LOCKHART GILLESPIE (Edinburgh) pointed out the great benefit to be derived from adding caffein to these analgesics to prevent depression of the heart.

Professor LEECH (Manchester) said that a list of analgesics like that given afforded hope that we might yet obtain a substance better than any of those and so be able to relieve pain without doing any harm. He believed there was very little good in many of them and that dreadful mistakes were made in the dosage. Some of the evils put down to the drug were simply the result of accident and were not due to the drug at all. Professor Leech had no fear of antipyrin; he considered it useful in relieving pain and that it was harmless. Pyrodin was a most fatal drug. As to exalgin, much evil was seen in large doses but not in moderate ones. Antipyrin and phenacetin were so far, he considered, the best yet introduced.

Dr. LIDDELL remarked that he used exalgin without unpleasant symptoms and that antipyrin added to the great depression of influenza. He said there was great need for a local anæsthetic for the skin for the use of the dermatologist and that there was a field open to experimentalists in that direction.

Dr. HAMILTON (Hawick) had never used phenacetin or antipyrin without citrate of caffein. He considered that the deaths of many patients who died from heart-failure in influenza were actually due to the action of phenacetin and antipyrin. Much of the fear in many was due to want of knowledge of doses and most of the list of analgesics should be expunged.

Dr. GORDON did not agree with Professor Stockman in throwing cold water on antifebrin and exalgin. He advocated the use of small doses to begin with and by gradually increasing them danger was prevented. We were apt to attack pain from one specific point and forget that neuralgia might depend on more than one condition. He found antifebrin in doses of from ½ to 1 gr. give splendid results in painful malaise in children and from 1 to 2 gr. doses of exalgin he used with benefit in localised neuralgia such as toothache, also in locomotor ataxia. Antipyrin should always be guarded by caffein citrate in 2 or 3 gr. doses. He had seldom seen any untoward effects from the use of antipyrin, but the promiscuous employment of this drug by the laity did much harm. Phenacetin he considered distinctly beneficial and he thought that this drug and antipyrin were our most important remedies for pain.

Dr. FREW used antipyrin largely in children's diseases and antifebrin also very extensively, because its action was not more dangerous than that of antipyrin, while for working-class practice it had the advantage of being much cheaper than antipyrin. The knowledge of the dose he thought the chief point in preventing injury; the condition of the patient ought always to be considered before giving large doses. The combination with caffein might do harm in cases of high tension.

Dr. AFFLECK (Edinburgh), President of the section, said the frequency and importance of the use of these remedies was a sufficient reason for a discussion of them. Unfortunately they were largely used by the public irrespectively of medical advice. At the beginning of an acute illness these drugs were often taken by patients without consulting a medical man and thereby a bias in a wrong direction was given to the course of the illness. He thought there was really no danger in these remedies if given with due care and that it was largely a matter of individual experience, prejudice, and liking. Untoward effects appeared occasionally—e.g., in advanced phthisis. Of their value as pain-relievers there was no doubt—e.g., exalgin in cancer of the stomach. As regards analgesic effects he was apt to favour phenacetin because he had seen no ill-effects after its use. Much depended on the directions given; the sedative effect was largely increased by repose; the patient should not go about. The most important effect of salicylic acid and its compounds was the relief of pain; the delirium which sometimes followed its use was probably due to idiosyncracy and therefore great watchfulness should be exercised.

Professor STOCKMAN, in reply, said that when any of these new bodies containing phenol and anilin were introduced they should be regarded with great suspicion till they had been well tested. As to caffein, it produced high tension and a stimulation of the cerebrum and probably of the cord and should not be employed in routine practice. There were many complaints in the profession as to the large number of analgesics thrown on the public. Acetanilid must be given in small dose and carefully. It was not a drug to be given freely and frequently in practice. As a local analgesic we must still be content with ethyl chloride and cocaine.

Mr. J. C. MCWALTER (Dublin) read a note criticising the

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New British Pharmacopœia and deploring what he termed the "secrecy" maintained in its production.

Professor LEECH (Manchester) and Dr. TIRARD (London), both members of the Revision Committee of the Pharmacopœia, replied, alleging that the criticism was based on an imperfect appreciation of the law under which the Pharmacopœia had to be issued.

LARYNGOLOGY AND OTOLOGY.

FRIDAY, JULY 29TH.

The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.

A paper on this subject was read by Dr. W. JOBSON HORNE (London), and a lantern demonstration of microscopic specimens was given which showed how the larynx became infected, the origin and formation of giant cells, and the changes which occurred in the blood-vessels and muscles in the commencement of the disease. The lantern photographs left no doubt as to the accuracy of the explanation offered. Dr. Horne indicated the signs and symptoms which he regarded as the clinical counterpart of the morbid changes noted in the tubes, and which he considered of value in arriving at an earlier diagnosis, not only of laryngeal tuberculosis but also of pulmonary tuberculosis.

A discussion ensued, in which Dr. TILLEY (London), Dr. ST.CLAIR THOMSON (London), and Dr. MILLIGAN (Manchester) took part.

The following papers were also read and discussed in this Section:—

Dr. WALKER DOWNIE (Glasgow): Three cases of Foreign Bodies in the Throat, in which the position of the body was determined by the Roentgen rays. Illustrated by skiagraphs.

Dr. ADOLPH BRONNER (Bradford): A Plea for a more efficient Sterilisation of Nose and Throat Instruments. Dr. Bronner indicated the danger of infection from case to case, and demonstrated an apparatus he had designed for sterilizing throat-mirrors and other throat instruments.

Dr. HAMILTON BALLANCE (London) reported a case of Lateral Sinus Pyæmia occurring in a young married woman during her first pregnancy, the clinical features of which were rigors, operation, jaundice, delivery, and tonsillitis (the tonsillar abscess was opened under cocaine), attended with severe symptoms of cocaine poisoning; further rigors, facial erysipelas (which was treated with injections of 20 c.c. of streptococcus serum antitoxin), pyæmic abscesses in calf, shoulder and kidneys; serum repeated; recovery. Dr. Ballance attributed the recovery in some measure to the streptococcus serum. In the discussion which followed, Dr. BARR, Dr. MILLIGAN, and Dr. HORNE took part and mentioned the importance and value of rigors in arriving at a diagnosis in this form of ear disease.

Dr. ST.CLAIR THOMSON (London): Nasal Hydrorrhœa. The paper went to show that several reported cases of nasal hydrorrhœa were not such. The diagnosis could in great measure be decided by the nature of the fluid.—A discussion ensued and supported this view.

Dr. J. MIDDLEMASS HUNT (Liverpool): Fibrinous Rhinitis. Owing to pressure of time this paper was handed in to the Secretary.

A vote of thanks to the President and Secretaries completed the business of the Section.

MEDICINE IN RELATION TO LIFE ASSURANCE.

FRIDAY, JULY 29TH.

A paper was read by Mr. J. M. M'CANDLISH, late President of the Faculty of Actuaries in Scotland, upon

The Medical Advisers of Life Assurance Offices: Some of their Duties and Difficulties.

Mr. M'Candlish began by referring to the time when life insurance was conducted without medical examination and without reference to age. Life insurance was founded upon the principle that longevity in the individual is uncertain, in the mass certain, so that the loss entailed in the early death of individuals can be spread over a class, those surviving paying for those dying early. But amongst a group of persons taken haphazard even of the same age some individuals are almost certain to die before the rest and medical examination is the chief means of excluding these and so obtaining a group of cases which might be equitably placed in one class. The duty of the medical officer was not to cure disease, but to detect those diseases and conditions which would be likely to shorten life. Mere ill-health was often of no consequence in life assurance. In the case of annuitants it was found that self-selection acted in favour of the annuitant and probably also it would in the case of life assurance if not corrected by medical and other office selection. Persons were sometimes tempted for monetary reasons to conceal defects in their constitution leading to early death to detect which was often very difficult and sometimes impossible, and here the chief means of detection was the medical examination. Allusion was made to the great social value attached to the subjects of this section.

The PRESIDENT (Dr. MUIRHEAD) said medical examiners sometimes manufactured difficulties for themselves by the abrupt way in which they asked questions. The applicant's trepidation was thus increased and he was apt to answer wildly and even inaccurately. A just estimation of extras for under-average lives was dependent upon the highest faculty of medicine, prognosis, and could only be acquired by long experience and study. It was gratifying to find that the extras, although fixed empirically, had up to now on the whole met the extra risk. Sometimes, however, they had been too high. The actuaries could settle the question equitably by reference to the records of their offices.

Dr. SOMERVILLE, speaking as an examiner, regretted that the reason for deviating from their advice by the chief medical officer was not communicated to the examiners, who were thus left in the dark.

Dr. DAWSON WILLIAMS (London) urged the importance of the medical examiners being acquainted with the working of insurance offices.

Mr. LOW, Actuary and Manager of the Edinburgh Life Office, read a paper on

Extra Rating as a Statistical Problem.

Extra risks must be measured in the same way as ordinary risks by comparing lives at risks with deaths. Allusion was made to the investigations by this method made by Mr. Manly and Dr. Glover Lyon into the extra mortality amongst insurers giving a family history of consumption. From these results it would appear that there was an extra risk more marked in the case where parents had died from consumption than where brothers and sisters had died from that disease. But the paucity of numbers involved in the investigation prevented the results from being accepted as final. The advisability of combined investigation undertaken by all the offices was urged. Mr. Low referred to an investigation made by the statistical methods in the mortality of obese insurers which proved that a considerable extra obtained after five years' insurance chiefly observable between the ages of fifty and sixty, also to that of some Scotch offices on the high mortality amongst liquor-sellers. Their actual deaths exceeded the expected by 83 per cent., 430 against 235. In conclusion, Mr. Low advocated a joint inquiry by actuaries and medical officers into this and kindred questions by means of the records of the life offices. He pointed out, however, that the inquiry now in course of completion into the general experience of the offices stood in the way of such an inquiry for the moment.

The PRESIDENT insisted upon the necessity of attention to individual cases as well as to average, instancing the unfairness that would ensue if all cardiac cases were treated alike.

Dr. GLOVER LYON (London) pointed out a similar injustice involved in putting in the same class all cases, robust and delicate, giving a family history of consumption. He looked forward to a complete inquiry into these points by actuaries and medical officers, and suggested a joint action between American and British offices to meet the expense involved.

Dr. SPRAGUE (actuary) said that in an inquiry not yet published they had found that, amongst 1000 policies whereon an extra had been charged for consumptive family history, the extra charge was about twice as much as it should be.

Dr. RITCHIE (Vice-President) referred to the importance of sometimes considering individual cases on their own merits.

Mr. JAMES MEIKLE (actuary of the Scottish Provident Institution) read a paper upon

Gout as a Factor in Life Assurance.

He gave the mortality experienced amongst 525 cases which had been rated up for gout. There had been 184 deaths amongst these against 111 expected deaths. The mortality amongst gouty publicans was shown to be very high. The

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extra rates charged had covered only about half the real extra risk.

The PRESIDENT urged the necessity of offices combining to make a uniform extra rate for gout.

Dr. SPRAGUE (actuary) advocated independent action in the matter, remarking that in the long run it would be better not to interfere with the action of offices willing to take unfair risks.

Dr. BALFOUR GRAHAM (Leven) thought the extra risk due to gout had been reduced of late years on account of the discovery of medicinal solvents of the gouty products.

Mr. CHATHAM pointed out the fallacy of rating up endowment policies in the same way as all life policies.

Mr. LOW raised the question as to the value of the figures, relating as they did to old experience; he thought the condition then designated gout might be different from what is now understood by gout.

General Report.

This first meeting in connexion with the Association on the subject of Medicine in relation to Life Assurance was, on the whole, exceedingly successful. This was due largely to the fact that the meetings took place at a centre of life assurance. It is the first occasion on which actuaries have met medical officers in debate by formal invitation and the experiment has proved very satisfactory. The attendance was good at all the meetings, though slow to collect on the first day; during the last two days exceptionally so. The papers were all short, giving ample time for discussion. There was a total absence in the papers and discussion of tedious references to medical points of common knowledge sometimes introduced into such debates; all that was said had a direct bearing on life assurance. The figures submitted were object lessons of statistical science. The conference arranged between the Section of Laryngology and Otology and the above Section by Dr. McBride, in reference to the question of middle ear disease, was a happy thought and proved most successful and instructive. The only flaw in the arrangements—and this was a serious one—was that the meetings took place at the same time as those of Medicine and Surgery. Several members expressed their regret at not being able to be present as they were obliged to be at other sections. Life assurance is not in the ordinary sense a specialty but a special application of medicine carried out by general physicians and surgeons, and meetings to discuss the subject should be arranged so as not to clash with the meetings on general subjects. This might be done by holding the meetings in the afternoon, the other sections being held in the morning. It is scarcely likely that when the Association meets at places not the headquarters of life assurance this section will hold so important a position as in the present instance, nor could a like attendance of actuaries be obtainable. One or two papers, therefore, read in the afternoon on questions of special importance would probably meet the circumstances, if, indeed, it would not be better to omit this subject from the programme except when the meetings are at insurance centres. The predominant note through all the meetings was a desire to get more accurate knowledge of the value of aberrations from the normal by means of a joint inquiry by medical officers and actuaries through the records of life offices.

TROPICAL DISEASES.

FRIDAY, JULY 29TH.

Dr. ANDREW DAVIDSON, LL.D. (Edinburgh), Vice-President, in the chair.

The attendance at this section was very gratifying to the organisers, for up to the very end of the meeting, at 1.30 P.M., on Friday a large number still took an active part in the proceedings. The whole meeting on July 29th was given up to a discussion on Plague.

Dr. W. J. SIMPSON, late medical officer of health of Calcutta, read a paper on

Plague in India.

Dr. Simpson paid a graceful tribute to the excellent work and the heroism displayed in India by medical men, nurses, civil and military officers, missionaries, and native assistants. In India plague was not an endemic disease but an exotic with long intervals of mostly over one hundred years. In 542 A.D. accounts of plague were met with in Indian annals. Some 800 years ago a Hindu writer gave instructions to his fellow-countrymen as to what steps to take in the event of an outbreak of plague and laid stress upon the point that whenever a mortality amongst rats was observed they were to leave the locality. The rat infection was therefore very old as even in Biblical history we found the same animals or rather mice named as sources of infection. In remarkable confirmation of the behaviour of plague in Hong-Kong was the evidence given by Fryer, who stated that the great city of Surat in India was visited by plague in 1684 and that the disease continued for six years. Hong-Kong was now in the fourth year of its infection and there seemed no certainty that the visitation was over. Dr. Simpson was of opinion that the Levantine plague, although allied to the Indo-China plague, was a species that was dying out and different in the acuteness of its powers of infection and destruction from the deadly disease now raging in India and China. He was of opinion that the pandemic form in India might invade countries where the more attenuated form of the disease now existed, and that as plague was a slow traveller it behoved Western Asia and Eastern Europe to keep a careful watch on the spread of the disease. Dr. Simpson discussed the prevalence of fever with glandular enlargements which occurred in the Shropshire regiment, which went from Hong-Kong to Calcutta, after being engaged in cleansing duties in Hong-Kong during the 1894 epidemic there. In January, 1895, the regiment went to Calcutta and this disease was first diagnosed as syphilis, then as malarial fever with bubo, and finally the cause was declared to be unknown. In June, 1896, one of the medical officers to the regiment was attacked with fever and the glands of the neck, axilla, and groin were all enlarged. A goodly number of similar cases were met with in the town; moreover, the rats became sick and the grain stores swarmed with diseased and dead rats. In spite of opposite evidence it was well-nigh certain that plague in a sporadic form had been in Calcutta since 1895 or 1896. Even in the spring of 1898, when plague was in evidence, it was held by some that it was "only malarial fever accompanied by buboes." Dr. Simpson advocated a proper sanitary service for India and gave in detail the essentials of such a service. He continued: "I divide the medical part of a sanitary service into three branches—(1) the administrative, (2) the investigative, and (3) the scientific—which should be in close connexion with one another and in large towns should form parts of one large department. Broadly, in England the administrative is represented by the local health officers and their subordinates, the investigative by the medical inspectors of the Local Government Board, and the scientific by the laboratory researches made into the causes of disease in connexion with special investigations of either the medical inspector or local health officer. The Government of India has always been imbued with the great importance of establishing laboratories in India, but the state of finances has invariably blocked the way. This difficulty, however, disappeared in a most charming and unexpected manner in 1897, when a number of the Princes in India expressed their desire to commemorate the sixtieth year of Her Gracious Majesty's reign by establishing a Health Institute for India, which should have M. Haffkine as its first director. The spontaneity of the offer and the generosity with which it was made were enhanced by the peculiar appropriateness of this Royal memorial to our beloved Empress Queen, whose reign has been so distinguished for the advances made in scientific and preventive medicine. The Princes were anxious that the site should be chosen and the foundation of the Health Institute laid on the day of the Jubilee. Owing to delays over which possibly the Government of India had not full control, in consequence of its plague and famine work, the auspicious day was allowed to pass and no foundation-stone was laid. Everyone acquainted with India will know the importance of an auspicious day. It is the symbol of success and good fortune."

Professor W. M. HAFFKINE, C.I.E., and Surgeon-Major BANNERMAN, I.M.S., communicated a paper on

The Testing of Haffkine's Plague Prophylactic in Plague-stricken Communities in India,

which was read by the HONORARY SECRETARY. A series of experiments upon animals was recorded and the immunity conveyed and the powers of recovery of protected persons by inoculation with plague serum were stated. It

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would appear from undeniable testimony that the protection afforded was most pronounced and that the possibility of recovery of inoculated persons when attacked was highly satisfactory. As examples of protection the following statements were given: 1. Half the inmates of the Byculla House of Correction were inoculated with Haffkine's serum on Jan. 30th, 1897. From this date the inoculated and uninoculated lived together under exactly similar circumstances during the time plague prevailed. Of 173 unprotected persons 12 were attacked by plague and 6 died; and of 148 protected persons 2 were attacked and none died. 2. During 1897 8200 persons were inoculated in Bombay, of whom 18 (all natives) were attacked and only 2 died, and these two developed plague symptoms within twenty-four hours after inoculation. 3. In Lanowlie, a small hill station near Poona, with a population under 2000, a recrudescence of plague occurred. The officers of the Research Laboratory took charge of two wards of the town most severely attacked and made a house-to-house visitation, carefully noting the effects of previous inoculation. Of 323 protected inhabitants 14 were attacked and 7 died; whilst of 377 unprotected persons 78 were attacked and 58 died—a reduction in mortality by inoculation of 85·7 per cent. 4. Of a section of the Mussulman community of Bombay 5184 were inoculated and 8146 remained unprotected. Amongst the former 7 deaths and amongst the latter (the unprotected) 177 deaths occurred from all causes. Altogether inoculation lessened the mortality by 86 per cent.—a result which was sufficient to establish inoculation as a preventive and remedial agent in plague of high value.

Brigade-Surgeon-Lieutenant-Colonel DIMMOCK, I.M.S., gave a brief outline of

The Measures Adopted for Dispelling Plague in Bombay.

It would appear that the city was carefully watched, inspected and disinfected by well-organised bands of workers from almost the very commencement of the epidemic, and that unceasing endeavours were made to induce the native population to accede to the requirements of sanitation.

An abstract of Surgeon-Captain L. F. CHILDE'S report to the Plague Research Committee in Bombay on the

Pathology of Plague

was read by Brigade-Surgeon-Lieutenant-Colonel ARNOTT. Plague, according to Surgeon-Captain Childe, is met with in three varieties. First, the bubonic form. In this variety the main glandular lesion was met with at the seat of the primary bubo and but slight signs of disease were found in other glands. Associated with this engorgements and petechiæ or hæmorrhages were found in nearly all viscera. Second, the septicæmic form. Glandular enlargement in this phase of the disease was general in all parts except in the mesenteric glands. Here evidences of change were less distinct and the necropsies showed that the plague bacillus had not reached the stomach or intestines by the food. Third, the pneumonic form of plague. Whilst the lymphatic glands and other organs were scarcely affected the lungs were engorged with pneumonic patches here and there, or occasionally half the lower lung was found in this state. The bronchial glands were either swollen or œdematous or quite normal.

Surgeon-Major BAKER, I.M.S., referred to the great danger to which workers at house-cleaning in plague were subjected when infected materials were handled or moved by them before disinfectants were applied.

Mr. CANTLIE (London) referred to the excellent work done by Yersin, but wished to discredit the notion that Yersin's name should be associated with Kitasato's in the discovery of the plague bacillus. Kitasato was demonstrating plague bacilli a week before Yersin had his preparations ready. Mr. Cantlie stated that he believed India was only commencing her plague troubles and that the urgency for a sanitary service for India as suggested by Dr. Simpson was imperative.

After the business of the meeting was over Dr. ANDREW DAVIDSON, the chairman, proposed that the section should send a message of congratulation to Surgeon-Major Ronald Ross at Calcutta upon the brilliant work he has done in connexion with the extra-corporeal life of the plasmodium malariæ and that a vote of thanks be accorded to Dr. Patrick Manson for his exposition of and share in Surgeon-Major Ross's work.

The proposition was unanimously carried, as was also a vote of thanks to the honorary secretaries.

PHYSIOLOGY.

WEDNESDAY, JULY 27TH.

Professor WILLIAM RUTHERFORD (Edinburgh), the President of the Section, delivered an address on

Tone Sensation with Reference to the Function of the Cochlea.

This address is published in another part of our present issue.

Dr. AUGUSTUS D. WALLER (London) read a paper on

The Action of Anæsthetics on Vegetable and Animal Protoplasm.

This was an extension of previous work on the action of anæsthetic gases on living matter in which nerve and muscle were used as representative examples. In the present research other protoplasmic tissues, such as spinal cord and retina, and vegetable protoplasm in the form of cells of vallisneria, *Elodea Canadensis* (the Canadian duckweed), and nitella were investigated. Dr. Waller then gave a brief explanation of his method of experiment by a series of lantern slides, showing the arrangement of the nerve upon the stimulating or "questioning" electrodes and the electrodes connected with the galvanometer or "answering" electrodes. He then described an apparatus by which the effects of a stream of an anæsthetic gas could be studied on a vegetable cell (e.g., of elodea) and a frog's nerve simultaneously, the stream of gas passing through a moist cell in which the vegetable cell was examined by a microscope and then through a moist chamber in which the frog's nerve was arranged in the usual way. The effect on the vegetable cell was studied by watching the rotation movements of the protoplasm and counting the number of chlorophyll bodies which passed a given spot per minute; the effect on the nerve was studied in the usual way by the galvanometric response. The results were as follows: nitrous oxide had little or no action on nerve, and the same result was obtained with vegetable protoplasm. Carbon dioxide caused a diminution of the electromobility of the nerve and an arrest in the movements of the plant protoplasm, followed in each case by a return to and beyond the normal as the effect passed off. Ether caused a diminution or arrest of these functions followed by a return to the normal both in the case of the nerve and of the plant. Chloroform caused complete and permanent abolition in both cases. Dr. Waller had also studied the effect of anæsthetics on the electrotonic currents obtained in a long cell of nitella—e.g., carbon dioxide caused a temporary abolition of these currents which returned as the carbon dioxide passed off. He had also studied the effect of anæsthetics on the retinal currents obtained by illuminating the eyeball of a frog with standard amounts of light at regular intervals and found the same difference between the action of ether and chloroform as he had previously found for nerve. In confirmation of these results he had also investigated the effect of ether and chloroform on the reflex excitability of the frog's spinal cord. A slight dose of strychnine was given and the frog arranged in a bell jar and a slight touch applied to its hind limb at a definite rate, say once a minute, yielding a reflex jerk. He found that ether abolished this reflex response, but only temporarily; chloroform, on the other hand, abolished it completely and permanently. It was of interest to note that these effects occurred with weaker strength of ether and chloroform than was the case with nerve or the heart. On the whole, however, nerve was by far the best living tissue to use in these investigations.—In the discussion which followed Professor WAYMOUTH REID objected that since the frog was suspended in a bell jar—the air of which was impregnated with the vapour—a possible fallacy existed in that the results might have been primarily due to the action of the anæsthetic on the endings of the nerves in the skin.

Dr. CORSAR STURROCK (Edinburgh) then read a paper on the

Selective Power of Tissues,

especially as illustrated in the mammary gland, in which he first briefly discussed the process of selection in general and then pointed out that no tissue possessed this power in so striking a degree as the mammary gland, since it produced a material, not for the nutrition of its own cells or of the organism of which it is a part, but of an entirely different organism. It selected from the blood a food, milk, resembling in the proportions of its constituents the freely-chosen diet of an adult, from which it, however, differed in the

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following particulars: (1) the suckling required more proteid and salts than an adult for purposes of building up its tissues, since anabolism was in excess in the growing animal; (2) the suckling required more fat as heat-producing material since it had not developed to such an extent as the adult the muscular source of heat-supply; and (3) the adult required more carbohydrate because he performed more work. A study of the milk of various animals showed that their mammary glands selected the constituents of milk in proportions adapted to the diverse conditions of life under which the animals were placed—e.g., animals which grew rapidly were supplied with milk containing more proteid and salts than the milk of animals which grew slowly. Animals living under different conditions of temperature were provided with milk containing constituents more or less useful for the maintenance of body heat. Animals compelled to early muscular exertion received milk adapted to supply the material for the production of muscular energy. A chemical investigation of the cells of the mammary gland proved the existence in them of a nucleo-proteid which was of a highly complex constitution, containing a nuclein, a carbohydrate, and a proteid radicle. It might be the antecedent of caseinogen and of lactose. It contained a true nuclein, whereas caseinogen was a pseudo-nucleo-albumin. The nuclein bases which it contained were not excreted, but seemed to remain in the gland, probably in the nuclei of the cells as active agents in the formation of more mother-substance. Phosphocarnic acid—described by Siegfried as a constant constituent of milk—was present in the mammary gland in considerable quantities. It could also be split off from caseinogen by the action of rennet. It was more abundantly present in human than in cow's milk.—In discussing Dr. Sturrock's paper Professor WAYMOUTH REID remarked that an excellent example of the relation existing between the chemical nature of milk and the growth of the young was found in the case of "pigeon's milk." While the young birds were fed by their parents on this substance (a secretion from the crop containing nucleo-albumin, fats and salts) they grew at about ten times the rate which obtained during the subsequent period of grain-feeding.

THURSDAY, JULY 28TH.

Professor WAYMOUTH REID (Dundee) opened a discussion on

Intestinal Absorption.

The object of the discussion was to determine to what extent experimental evidence justifies the view that the absorption of aliments could be explained on physical grounds. The two main views held by physiologists on this subject were—(1) that osmosis and filtration were sufficient in themselves to account for the absorption of dissolved food substances; and (2) that the cells covering the villi took an active though unknown part which may be referred to as "cell action." To speak of cell action does not necessarily imply a belief in vitalistic action. He then illustrated by diagrams the effect of the partial osmotic pressures of the substances dissolved in the gut and in the blood and of the hydrostatic pressure on either side of the membrane on the process of absorption, from which it could be inferred that in the case of a substance to which the gut wall was permeable being in solution in the gut a suitable mechanism for absorption on simple physical lines existed. If the special case be considered in which the fluid in the gut was identical with that in the blood-vessels—i.e., when the serum of an animal was introduced into its own intestine—osmotic phenomena need not be taken into consideration and the only physical factor to consider was the difference of hydrostatic pressure. Professor Reid then gave a brief record of the results obtained by other observers by this method and then referred to his own experiments, in which, after the introduction of a measured quantity of its own serum into a loop of a dog's intestine and withdrawal after a given time, it was found that absorption occurred in spite of the fact that the hydrostatic pressure in the gut was well below that in the veins of the loop of intestine. This could not be explained by *ad*sorption or imbibition, but pointed to "cell action." This is confirmed by the results of removal of the epithelium of the gut. This was done more or less completely by various methods such as by producing a temporary anæmia of the gut-wall by clamping its vessels before the experiment or by the use of weak solutions of such drugs as sodic fluoride or osmic acid. In these cases absorption was much lessened and the absorption of water sometimes completely abolished in the case of sodium fluoride experiments. He therefore concluded that the epithelial cells are agents in the process of absorption of solutions from the gut, though not of necessity the sole agents. Certain experiments with peptone and glucose were then recorded which he regarded as suggestive of epithelial action in the absorption of these substances, though not conclusive—e.g., whereas glucose was more diffusible than peptone it was actually absorbed rather more slowly. Professor Reid had found in the serum experiments that the absorption of organic solids was much slower than that of the water while the salts were taken faster. He had found no evidence of nerves exerting an influence on the activity of the epithelial cells comparable to that of secretory nerves on gland cells.

Dr. NOEL PATON (Edinburgh) asked whether Professor Reid had considered or experimented upon the possibility of the rate of absorption being different in different parts of the intestine, to which Professor REID replied that he was investigating this point, the results of other observers being discordant.

Dr. DAWSON TURNER (Edinburgh) then demonstrated an experiment by Mr. Shelford Bidwell on the production of complementary colour sensations. The apparatus consisted of a disc, of which one sector was blackened, another was white, while the third sector was cut away. This open sector was arranged so as to succeed the blackened portion when the disc was rotated. A coloured object, strongly illuminated, was then looked at through the open sector of the revolving disc; if a proper speed of rotation were maintained no trace of the original colour was seen, but only the complementary colours, thus showing that a very short stimulation of the retina (rendered hyperæsthetic by the black sector) was sufficient to produce a strong negative after-image.

Professor G. N. STEWART read two papers: (1) On the Relation between Molecular Concentration (as Determined by the Lowering of the Freezing-point) and the Electrical Conductivity of certain Animal Liquids, with Special Reference to Blood; and (2) On the Changes which take place in the Electrical Conductivity and Molecular Concentration of certain Animal Liquids and Artificial Nutrient Media with the Growth in them of Putrefactive Pathogenic Micro-organisms. The red corpuscles of blood were practically non-conductors, but if blood be "laked" by distilled water electrolytes were set free and its conductivity was increased. However, if it was allowed to "lake" spontaneously its conductivity was unaltered. In that case it was probable that the electrolytes remained in the "shadows" of the red blood corpuscles, from which they might be set free by the addition of distilled water. If blood was allowed to putrefy its conductivity at first increased, but after a time became constant. A similar result was obtained with serum. This was due to the fact that the proteids which were not electrolytes had been broken down into simple bodies which were electrolytes, as shown by the progressive depression of the freezing point of the solution. Similar experiments were carried out with nutrient fluids such as peptone solutions in which various micro-organisms were grown with interesting results, the resistance getting less as the growth increased, and the freezing point being lowered owing to the breaking up of the peptone into simpler substances.

Professor MACALLUM read a paper on

Some Points in the Micro-Chemistry of Nerve Cells.

The object of the research was to elucidate the origin and nature of Nissl's granules. Their arrangement in the normal nerve cells of the anterior horn of the spinal cord of the dog was first described. These were often zones free from granules, especially round the nucleus and at the periphery of the cytoplasm. Since it had been suggested that these granules were precipitation products their genesis was studied in pig embryos, and diagrams were shown illustrating the cells at different stages, at first containing no granules and a nucleus very rich in chromatin; later a cap of substance taking the stain was found outside the nucleus, the nucleus containing less chromatin; later still this staining material increased in quantity and became granular. These experiments carried out by Mr. Scott suggested that Nissl's granules were probably derived from the nucleus, and this view was supported by their micro-chemical reactions, since they did not digest with pepsin-hydrocloric acid but they dissolved very

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slowly in weak alkalies and were therefore probably nucleo-proteid in constitution. They were rich in iron, like the chromatin of nuclei, and contained phosphorus as shown by Professor Macallum's modification of Lilienfeld and Monti's micro-chemical reaction, in which phenylhydrazine was used to fix the colour.—In answer to Dr. MILROY, Professor MACALLUM stated that these granules gave the phosphorus reaction after treatment with pepsin-hydrochloric acid.

Professor W. H. THOMPSON (Belfast) read a paper on

The Influence of Peptone and its Precursors on the Work of the Kidney,

in which he gave a brief account of the physiological effects of albumose and peptone on the vaso-motor system and showed that none of them produced much effect on the vaso-motor apparatus of the kidney as compared with that on the splanchnic vaso-motor system generally. Tracings were shown of the effect of injection of peptone on kidney volume and general blood-pressure. He then described the influence of albumoses and peptone on the flow of urine as collected by cannulæ in the ureters. There was a great increase in the flow of urine in the second hour after the injection reaching a maximum in the third and becoming less in the fourth and fifth. By a study of the total nitrogen and the nitrogen excreted as urea, and allowing for the extractive nitrogen, it was found that a considerable amount (from 28 to 57 per cent.) of the injected albumose or peptone appeared in the urine, and this within the first 45 to 50 minutes.

Dr. FRASER HARRIS (Edinburgh) read a paper on

The Physico-chemical State of Caseinogen,

in which he gave a summary of the views held as to the relation of the caseinogen to the fat. He then described the relative amount of fat and caseinogen in the globules and the particles of milk, in cream, in centrifugalised milk, &c., and showed that caseinogen did not exist in solution in the milk plasma and that Ringer's solution of caseinogen was not a true solution. Caseinogen always occurred in company with the fat, though neither the "solution" nor the "envelope" theories would explain the amount of caseinogen in cream. The globules of milk were richer in fat, the particles richer in caseinogen. Caseinogen was to be regarded as part of a complex oleo-nucleo-proteid formed by the mammary gland cells.—Professor WAYMOUTH REID pointed out that proteids did not form true solutions and referred to the mechanical precipitation of egg albumin by Ramsden.

FRIDAY, JULY 29TH.

Dr. NOEL PATON (Edinburgh) read a paper on

Protoplasm and Zymin Action,

in which he recorded experiments with post-mortem livers and alcohol-hardened livers respectively which tended to show that the change of glycogen into sugar in the liver post mortem was due to katabolic changes in the liver protoplasm rather than to the action of a zymin such as hæmodiastase.

Dr. NOEL PATON also exhibited for Mr. MAHALANOBIS an Electrical Key for Physiological Experiments which could be used as a reverser or for sending currents alternately in different directions or to eliminate the make-or-break shocks.

Dr. W. BAIN (Harrogate) read a paper on

An Experimental Contribution to the Study of the Mechanism of Bile Secretion.

In this paper he first gave an outline of previous work on the influence of the nervous system on the flow of bile and then recorded experiments in which he had operated on dogs by Pawlow's method and then tied a graduated tube into the bile-duct. On stimulation of the vagi no effect on the bile flow was observed. With regard to the influence of cholagogues he had experimented by injecting the substance investigated into the external jugular vein and therefore regarded the effects he obtained as due to a direct action on the liver cells. He obtained a distinct increase in the flow with a solution of Plattner's crystals. 50 c.c. of strong sulphur water (Harrogate) produced a distinct and sustained increase. The action of the sulphur water was probably due to the sulphide of soda and barium chloride which it contained.

Dr. W. BAIN brought forward a second communication on

The Secretion of Bile in Man

in which he briefly referred to some conclusions to which he had arrived from the investigation of a case of biliary fistula. He had found no relation between the weight of an individual and the amount of bile secreted after a comparison of his own with other recorded cases. Diet exerted an influence on the flow, largely depending on the amount and nature of the food taken; the amount of liquid taken probably also exerted an influence. Exercise caused an increased bile flow provided perspiration was not too great at the same time. It was important in considering the bile flow to consider also the amount of bile solids. Bile and bile salts were almost universally admitted to be cholagogues.

Professor RUTHERFORD read a paper on

The Secretion of Bile in the Human Subject.

It was the result of a series of observations made on a patient (the subject of cancer) with a biliary fistula. The bile was collected every hour and the daily flow was found to be very regular. A chart showing the daily secretion of bile was shown; from this it was seen that after breakfast and dinner there was a rise in bile secretion which took place within an hour after the taking of food and was long maintained. A few observations were made on the influence of drugs. Morphia had no effect, as Professor Rutherford had previously observed in the dog. Salicylate of soda caused an increase, as did also salicin in one observation.

Dr. PATON showed for Dr. MONCKTON COPEMAN continuous tracings of the Daily Flow of Bile recorded by an apparatus devised for that purpose. The tracings were fairly uniform and presented very little variation. Dr. Paton himself regarded food as exerting very little influence on the flow of bile and suggested that the morning rise might be due to muscular activity. With regard to the action of drugs he regarded it as very difficult to determine whether any effect obtained was due to a direct action on liver cells or not.

Professor WAYMOUTH REID, quoted the experiments of Dastre on the dog, in which he found no direct effect from the ingestion of food but an increase from six to eight hours afterwards, which he suggested was due to the absorbed products acting on the liver or its nervous mechanism.

Mr. MAYO ROBSON had made observations on two cases of biliary fistula in healthy subjects and had found very little effect on the bile flow from the administration of drugs. He had obtained some slight increase with soda, soda-water, and iridin.

Professor G. N. STEWART also spoke. Dr. W. BAIN and Professor RUTHERFORD replied.

Dr. CARLIER (Edinburgh) read a paper on

Changes which occur in some Cells in the Mucous Membrane of the Newt's Stomach during Digestion.

The specimens were fixed by a corrosive method and double-stained. In newts which had fasted ten days the cells of the oxyntic glands of the stomach were seen to be large, with numerous large zymogen granules, which were not arranged in zones as in the pancreas. The nuclei were large and contained numbers of lanthanin granules. The changes at various intervals after ingestion of food were then described. 20 hours after food the cells appeared wasted and shrunken, the zymogen granules were few and small, and the nucleus was small and shrivelled, while the nucleoli had increased in size. 68 hours after food the zymogen granules were again large and present in greater numbers, the nucleus was clouded, the nucleoli were large and might be extruded from the nucleus. 144 hours after food the cells had returned to their normal condition. The changes in the cells were then described at shorter intervals after the taking of food, from which it was concluded that as soon as food was swallowed secretion began in the glands nearest the œsophageal end of the stomach and swept as a wave over the whole of the glands, reaching those near the pylorus last. This activity reached a maximum in from three to four hours and was then followed by a second period of rest and recuperation with the formation of fresh zymogen. Dr. Carlier then discussed the part played by the nucleus in the process and inclined to the view that the nucleus manufactured a prozymogen, which was subsequently converted into the zymogen granules. Professor MACALLUM corroborated Dr. Carlier's observations on prozymogens and stated that these bodies were rich in iron and phosphorus and were derived from the chromatin of the nucleus.

Dr. T. H. MILROY (Edinburgh) and Dr. J. MALCOLM (Edinburgh) brought forward a paper on

Metabolism of Nuclein under Physiological and Pathological Conditions.

The paper first gave a summary of the cleavage products of

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nucleo-proteids outside the body and then the results of gastric and pancreatic digestions of the nucleins. Experiments were then recorded describing the actions of the absorbed products of nuclein digestion upon the formation and destruction of leucocytes. The nature of the decomposition products of the nucleins which appeared in the urine and their significance as a measure of nuclear breaking down were then discussed, especial reference being made to the importance of a disturbance of the ratio of nitrogen to phosphoric acid excretion (N : P_2O_5) in the urine, and the care that was necessary in drawing conclusions as to nuclear breaking down from the amount of alloxuric bases in the urine. They then shortly referred to the conditions existing in medullary leucocythæmia with special reference to the relationship existing between the number of leucocytes in the blood and the decomposition products of nucleins appearing in the urine.

Dr. CARLIER read a short paper for Dr. LOVELL GULLAND (Edinburgh) on

The Presence of Nerves on Intracranial Blood-vessels.

Obersteiner described their existence in an old gold-stained preparation. Dr. Gulland at first failed to find them, but recently, using Cox's modification of Golgi's method, had demonstrated an open network on the blood-vessels of the pia mater.—Professor G. N. STEWART stated that he had seen preparations by Professor Huber demonstrating their existence.

Dr. T. H. MILROY read a paper on

The Chemical Changes in Pelagic Ova during Maturation.

The specific gravity of the unripe pelagic ova was much greater than that of the mature ova, which had a specific gravity only slightly greater than that of sea-water. This was due to the absorption of water as the process of maturation proceeded; at the same time there was an increase in the albumin, the salts, and an organic phosphorus-holding body closely allied to ova vitellin. There is no synthesis of inorganic phosphorus compounds to organic phosphorus compounds in these ova.

Dr. NOEL PATON (Edinburgh) had found such a synthesis in salmon ova.

The meeting of the section concluded with a vote of thanks to Professor Rutherford.

THE PATHOLOGICAL MUSEUM.

SECOND NOTICE.[1]

IN our former notice we referred to the excellence of the educational and surgical exhibits. We now propose to mention some of the exhibits illustrating clinical medicine and pathology, which are quite on a par with the others.

CEREBRAL TUMOURS.

The Museum at the Edinburgh meeting would be remembered if only for the unique collection of intracranial tumours which it contained. This was so complete, and the subject is, so to speak, so much the order of the day, that we propose to notice the specimens in some detail, taking them for convenience of reference in order of localisation, mentioning quite briefly the symptoms which were associated during life. It will be remembered that the symptoms are of two kinds, those which occur in all intracranial tumours (headache, giddiness, &c.) and those varying with the locality affected. It is the latter with which we are now concerned. No. 426 is a large Sarcoma springing from the dura mater and causing atrophy and destruction of the right motor area. The case was that of a female, aged twenty years; there was absolutely *no paralysis;* there were only optic neuritis and other general symptoms of cerebral tumour; the patient died with convulsions. No. 427 is a Glio-sarcoma causing destruction of the left motor area without producing any notable paralysis until four days before death during an epileptiform seizure. No. 430 is a large Glio-sarcoma occupying the right centrum ovale, specially involving the internal capsule and optic thalamus. The patient was a male, aged forty-six years; there were left hemiplegia and hemianæsthesia, afterwards right hemiplegia, also conjugate deviation of the head and eyes towards the affected side; coma and death occurred after a history of only four months' duration. No. 436 is a large Aneurysm of the right posterior cerebral artery projecting into the lateral and third ventricles with softening of the brain around. There had been partial left hemiplegia, defective articulation and deglutition, progressive amentia and drowsiness. Nos. 428 and 429 are two specimens of Glio-sarcoma involving and destroying the temporo-sphenoidal and other lobes, unattended in either case by word-deafness, although this centre was involved, or other localising symptoms. No. 432 is a case of Melanotic Sarcoma scattered throughout the Brain Tissue, the largest deposit occupying the left occipital lobe (cuneus). The patient suffered from paroxysms of flashes of light in the right eye. The history was interesting as showing that apparently innocent pigmented moles may become malignant, for the patient had a pigmented mole on the right shoulder which remained of the size of a three-penny-piece until it was injured at the age of ten years, when it started to grow. When the patient was twenty-one years it had enlarged to the size of half-a-crown and was removed by scraping, but it recurred and was again excised at the age of twenty-five years. The following year she manifested symptoms of intra-cranial tumour and she died at the age of twenty-six years. Nos. 434 and 435 are two specimens of Tumour of the Pituitary Body. The tumours were as big as a small and large plum respectively; one was solid throughout, the other appeared cystic in parts. No symptoms of acromegaly were present in either patient during life. The first was a girl, aged twenty-one years, and the only lesion found after death was a great enlargement of the pituitary body. The earlier symptoms of the illness, which lasted five years, were gradually increasing blindness, occasional headaches, and vomiting; the later symptoms consisted of atrophy of the optic discs, increasing headache (occipital), vomiting, and giddiness; the termination was by coma. Nos. 439 and 433 are two cases of Tumour of the Cerebellum without any paralysis or other localising symptoms during life. One was a female, aged sixty-four years, in whom there existed a sarcomatous tumour of the dura mater of the size of a plum, deeply indenting the left lateral lobe of the cerebellum. No symptoms of *any kind* referable to cerebellar tumour were observed during life except that she died from convulsions. She had mitral disease and dropsy and seven weeks before death had "a stroke" followed by right hemiplegia due to a small hæmorrhage in the left lenticular nucleus. The other case was that of a woman, aged sixty-one years, in whom there existed a cancerous nodule in the right lobe of the cerebellum and a smaller one in the left lenticular nucleus secondary to cancer of the breast. There had been no paralysis during life or other localising symptoms; only optic neuritis, headache, and the other general symptoms. No. 439A showed 4 Scrofulous Tumours in the Cerebellum, 3 in the left and 1 in the right lateral lobes; they occurred in a male patient aged seventeen years. There was very slight weakness of the right side, but no definite paralysis, no alteration of gait, or other localising symptoms; there were double optic neuritis, headache, giddiness, &c. He died after a six-months' illness. No. 437 represented a Perforated Sarcoma of the Skull in a boy, aged four years, in whom a lump had been noticed over the vertex only twelve weeks before death. The foregoing were all exhibited by Dr. Byrom Bramwell. Cerebral Tumours were also exhibited by Dr. Alexander Bruce, Dr. George Murray, Dr. W. G. Richardson, Dr. David Drummond, and others. It seemed a pity that no clinical records accompanied these specimens with the exception of the last-named exhibit, since more than half of the interest lies in the associated symptoms during life.

The general conclusions to be drawn from the preceding are most valuable: 1. It is clear that tumours may occupy the motor and other regions to which well-defined symptoms have been assigned without producing those symptoms. This is specially exemplified by the two specimens under No. 439, for in one a hæmorrhage occupying the left lenticular nucleus produced right hemiplegia, but a sarcoma in the same position, although apparently destroying the nucleus, was not so attended. In slowly growing tumours it can be readily understood that the adaptability of brain matter prevents its destruction; but in rapidly growing lesions such as many of these were it can only be presumed that the remarkable power of "substitution of centres" which the brain possesses came into operation. 2. Nevertheless, from an examination of these specimens it may be concluded that cerebral tumour rarely exists even in the frontal region without producing the general symptoms—headache, giddiness, vomiting, convulsions, and optic

[1] The First Notice was published in THE LANCET of Aug. 6th, 1898.

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neuritis—which have been regarded as significant of intracranial tumours.

It is appropriate that Scotland, which produced an eminent surgeon (Macewen) whose name is associated with cerebral surgery, should furnish such a rich collection of cerebral tumours; and now it is to two Scotch observers that we are indebted for the first really simple system of cranio-topography. It is perhaps strange that Chiene and Stiles's method is not better known. This Museum contained very complete series of specimens and photographs illustrating these observers' investigations and they showed conclusively how complete is the precision of their measurements for ascertaining the exact position in the cranium of any given centre in the brain. Their system is special (1) in depending on bony prominences from which straight lines are drawn, (2) without measuring angles and (3) without measuring in inches, for (with one exception) all the lines are halved to locate a convolution.

DRAWINGS AND PHOTOGRAPHS.

A very beautiful Series of Pictures illustrative of almost the entire range of clinical medicine is to be found in Dr. Byrom Bramwell's original plates (coloured and photographic), from which his "Clinical Atlas" was prepared. They occupied half the entire side wall of the Museum—a space measuring 50 ft. by 10 ft. Among the subjects illustrated are Ichthyosis, Lupus Vulgaris, Lupus Erythematosus (one of the most life-like representations imaginable), Anæsthetic Leprosy, Psoriasis of the Palms, Black Jaundice, Scurvy, Purpura Hæmorrhagica, Cyanosis, Thoracic Aneurysm, Myxœdema, the Clubbed Fingers of Congenital Heart Disease, Chlorosis, Addison's Disease, and the Expression in Various Forms of Mental Disease. In all a perfect type of the disease has been taken and the completeness of the collection is evidenced by two plates illustrating two patients affected with the epidemic skin disease which occurred in London in 1891 and occupied a good deal of professional attention at the time.

A radiograph measuring 30 in. by 18 in., by Dr. John Macintyre (of Glasgow), representing a case of Transposition of the Viscera, makes us hope once more that we may some day be able to detect hypertrophy of the heart and the outlines of other solid viscera by means of the x rays.

DERMATOLOGY.

Among the most notable changes which have taken place in this department of general medicine during recent years is the reclassification of bullous and vesicular eruptions. Formerly everything bullous was called pemphigus, but owing to the researches of Unna, Duhring, and others a new group, named Dermatitis Herpetiformis, has been sorted out of the pemphigus class, which is characterised clinically by the bullæ varying very widely in size and occurring in clusters. The most interesting of a set of pictures exhibited by Dr. Allan Jamieson illustrate the 3 principal varieties in which this disease occurs—viz., (*a*) the Erythematous, (*b*) the Vesicular, and (*c*) the Bullous forms of Dermatitis Herpetiformis. Among the other subjects illustrated by this exhibitor are the following: Lichen Scrofulosorum; Angio-keratoma; a very curious warty, horny, or fungating condition on the arm which the exhibitor has named Paraffin Ichthyosis; Tinea Tonsurans around the anus simulating a mucous tubercle; and a case called Acanthoma of the Leg—an extensive warty or tuberculous thickening suggesting some strumous affection or granuloma fungoides. Dr. Radcliffe Crocker exhibited a remakable series of Ten Drawings showing the various stages (though not taken from the same case) of that rare condition Mycosis Fungoides. The first and most important stage of this disease may often take a form resembling psoriasis or eczema or pityriasis rubra, each of which is here represented. In any case it is purpuraceous and may have a raised scurfy edge. This is followed by the tumour stage, which the exhibitor likens to pityriasis rubra, and finally the stage of ulceration. Mr. Malcolm Morris and Professor McCall Anderson also exhibited sets of Dermatological Sketches and Dr. Norman Walker showed a series of Microscopic Sections in the same subject.

GENERAL PATHOLOGY.

From the Museum of the Hospital for Diseases of Children comes an admirable collection in illustration of Hydrocephalus; Gummatous, Tuberculous, and Rachitic Lesions; and Congenital Heart Disease. Perhaps the most interesting specimens in this series are the gastric ones, which include three stomachs, the seat of congenital hypertrophy of the pyloric and stomach wall, taken from children aged twenty-eight days, forty-eight days, and nine and a half weeks respectively—a rare and interesting condition. Unfortunately the associated symptoms are not mentioned.

Dr. Alexis Thomson (Edinburgh) exhibited Shoulder-joints almost totally disorganised from a case of Locomotor Ataxy, and another from Syringomyelia. It is only of late years that we have learned the last-named association and our readers will recollect a very remarkable case of extensive disorganisation of the shoulder-joints which was regarded by a committee of the Clinical Society as the result of chronic pyæmia, but which was proved post mortem to be due to syringomyelia.

Apparatus for Serum Diagnosis were exhibited by Dr. H. E. Durham and Dr. Robert Muir (Edinburgh). A neat little contrivance for Vidal's Sero-sedimentation Test for Typhoid Fever was exhibited by Dr. D. H. Hutchinson (Edinburgh). The test depends on the fact that if a patient be suffering from enteric fever some of his serum when added to broth containing enteric microbes cause the latter to agglutinate into little bundles and fall into a sediment. The apparatus exhibited is practically two U-tubes cemented together. In one the suspected blood is placed; the other contains some normal serum treated in precisely the same way. Thus we have a control experiment and the test side by side. Some excellent photographs of the experiments (which form the basis of the exhibitor's M.D. thesis) are also shown.

Microscopic sections illustrating the extremely minute microbe of the Pictou Cattle Disease,[2] a disease believed by the exhibitor[3] to resemble a form of cirrhosis of the liver in man, were shown by Professor Adami (Montreal). Dr. Graham Brown showed a series illustrating various forms of Cirrhosis of the Liver in the Human Being.

Dr. Greenfield exhibited a Series of Entire Sections of Organs of Microscopic Thickness. The sections are placed between two plates of glass measuring about 12 in. by 8 in. In this way the observer is enabled to study, either macro- or micro-scopically, pulmonary apoplexy, chronic phthisis in its various stages of deposit, softening, and cavitation, acute miliary tuberculosis, a chronic thickening of the pleura measuring about ¾ in. thick, supposed syphilitic interstitial pneumonia, septic nephritis, infarct of kidney, plastic cast of bronchitis, broncho-pneumonia, and miners' anthracosis.

That rare condition Achondroplasm was illustrated by Dr. Alexander Bruce (Edinburgh), who showed an excellent Plaster Statue. Photographs, skiagrams, and bottled preparations were also shown by Dr. John Thomson and Dr. Harry Rainy. The disease consists of a delayed ossification of the bones and delayed development of the muscles and soft parts. It resembles rickets in some respects and is probably the cause of dwarfism. The most characteristic feature of this disease is the face, by means of which it can be recognised—forehead broad, nose flat or undeveloped, and lips thin. Puberty is delayed and the body, strange to say, may continue to develope up to the age of thirty-five years. The celebrated Tom Thumb and his wife were probably examples of this condition.

THE ANNUAL MUSEUM.

(Continued from page 380.)

III.—SANITARY APPLIANCES, DISINFECTANTS, &c.

Under this heading we may deal with disinfectants, antiseptics, filters, and so forth. A special space was allotted in a small hall adjoining the Drill Hall to what was described as a sanitary department, but this related, with the exception of a working model of the septic tank system of treating sewage at Exeter, to the furniture of hospitals, illustrations of aseptic wards, operating theatres and dental operating accessories rather than to public sanitary matters. With this section we shall deal in Division IV. under the heading of Surgical Instruments and Appliances. The Working Model of the Tank System of Sewerage Treatment, which is shortly to be carried out on a scale applied to the whole city of Exeter, evoked considerable interest. Specimens of sewage before and after treatment were submitted for inspection. Turning to methods for

[2] See the paper by Professor Adami on p. 396 of this issue, as a special supplement to which reproductions of these sections are published.

[3] Vide Report of the Medical Section, THE LANCET, July 30th, 1898.

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combating organisms rather than encouraging their growth we may appropriately refer to the exhibit of Messrs. J. Defries and Sons (147, Houndsditch), whose representatives demonstrated the many industrial as well as scientific applications of the Pasteur (Chamberland) Filters. There was a Plan of the Waterworks Filter at Darjeeling of which the output is 250,000 gallons per day, and close by was a photograph illustrating the working of the Equifex disinfector as used in Bombay harbour, the temperature attained being 239° F., while a useful instrument in sanitary work was Dr. Scurfield's Ventilation Indicator, showing the ratio of carbonic acid inside and outside dwelling rooms. The stall of the Sanitas Co. (Bethnal-green, E.) was loaded with the great number of disinfectants, antiseptics, and disinfecting appliances now associated with this firm. In addition to the many excellent preparations of which the pleasant and active compound Sanitas is the basis there were shown also the convenient Sulphur Fumigating Candles, Mercuric Bactericide, and "Okol," a powerful and comparatively non-poisonous germicide and a coal-tar derivative. We have already referred in our analytical records to the somewhat remarkable claims put forward by the Amiral Soap Syndicate, Ltd. (28A, Basinghall-street, E.C.), in favour of Amiral Soap. Its application is said to lead to a distinct reduction of adipose tissue. It contains, as we have shown, the active physiological ingredients of ox-gall. The comparatively new antiseptic and disinfectant, Izal, the special medical preparation of which is stated to be four times as strong as absolute phenol, is increasing in favour. At the stall represented by Messrs. Newton, Chambers, and Co., Ltd. (Thorncliffe, near Sheffield), the following Izal specialities were shown: the izal vaporiser, pure izal oil, izal surgical dressings, and izal toilet preparation. Not the least advantage of izal is that though a powerful germicide it is practically non-poisonous. The interesting substance Formalin was exhibited in several forms by the Formalin Hygienic Co., Ltd. (9 and 10, St. Mary-at-Hill, E.C.). Paraform tablets are especially convenient for obtaining the formic aldehyde gas for disinfecting purposes. These are used in conjunction with the "alformant" lamp. For disinfecting on a large scale Trillat's autoclave may be employed, the gas being generated from a mixture of formalin and chloride of calcium (formochloral). Lastly, "glutol" is an antiseptic powder for dressing wounds and is described as the condensation product of formic aldehyde with gelatin. Some very useful Sanitary Soaps were presented for inspection on the stall of Messrs. Price's Patent Candle Co. (Belmont Works, Battersea, S.W.). Thus there were in addition to glycerine soaps combined with well-known antiseptics "Price's Surgeon's Soap" for use in gynæcology. It contains 2 per cent. corrosive sublimate combined with certain aromatic antiseptics, such as thymol and gaultheria, &c. The "aseptic soap" offered by this firm contains also aromatic antiseptics and is extremely pleasant to use. "Creolin" is a well-known disinfectant and antiseptic, the derivation of the word being obvious. The Jeyes' Sanitary Compounds Co., Ltd. (64, Cannon-street, E.C.), were the pioneers of this class of compound, which has now been applied to a great variety of useful purposes. Thus on the stall, which was admirably planned, were besides the ordinary creolin compounds, creolin surgical dusting powder, creolin capsules, and creolin gauze. "Antiseptic preparations" formed an important group in the exhibit of Messrs. C. J. Hewlett and Son (40 to 42, Charlotte-street, E.C), amongst them being a disinfecting fluid of powerful germicidal properties, which while more powerful than carbolic acid, is in comparison with it practically non-toxic. Further obviously useful preparations are also the Antiseptic Jellies, Pellets, and Cream. Not far off was the Ronuk Sanitary Polish (Ronuk, Ltd., 84, North-street, Brighton). This preparation was by no means out of place in the Museum, since it is admirably adapted as a sanitary polish for the flooring of hospital wards. It contains certain aromatics which impart a pleasing, wholesome odour to the surroundings. Lastly, under this section may be mentioned the exhibit of Messrs. Tidman and Sons, Ltd. (Bushell-street), which was devoted mainly to their well-known Sea Salt, which is said to have been the first offered to the public for bath purposes. In the same group was a soap which is compatible with salt or hard water and an antiseptic soap containing salicylic acid in conjunction with other agents as its antiseptic basis.

IV.—Surgical Instruments and Appliances.

This was a department which served eminently to illustrate the remarkable advances of surgery in recent years. The perfection of detail and of design in the instruments at the disposal of surgeons has helped in bringing to a successful issue some of the wonderful surgical achievements of the day. The excellent display of surgical requisites, besides offering a field of instruction, served well from the mere point of view of decoration to relieve the lines of bottles and packets on the other stalls. Considerable discretion had evidently been exercised in separating, as far as conveniently could be done, the exhibits of a like character; and steel instruments, chemical apparatus, electrical apparatus, and so on, were employed usefully and artistically in filling the gaps. A very interesting apparatus, and one which aroused considerable curiosity and attention, was that demonstrated by Dr. Robertson of Cincinnati at Messrs. Allen and Hanbury's stall (48, Wigmore-street, W.). It consists of what is called "the Pneumachemic Comminuter and Compressed Air Apparatus." A number of aspirating globes are situated upon the top of an air container, which is charged by means of an air pump. The globes contain various medicaments of value in the treatment of the respiratory organs. The apparatus effects the vaporisation of these as a very fine spray which is dry and under perfect control. By an ingenious arrangement of the valves a rapid intermittent current of atomised substances may be administered. Close by was a separate stall of the same firm devoted to an excellent assortment of surgical instruments. Amongst these should be mentioned Hoppe's patent Universal Adjustable Splint, Perforated Metal Splints, Scalpels, and Bistouries, the latter being supplied with plain handles or the improved fluted-edged handles. In the Sanitary Section Messrs. Down Brothers (St. Thomas-street, S.E.) exhibited their well-known Aseptic Furniture for Operation Theatres, including their patent Glass Tables and Operation Tables. On their stall in the main hall was a very large collection of Surgical Instruments, several novelties present securing considerable interest from the professional visitors. Aseptic Operating Tables and a Combined Dental Chair and Surgical Operating Table were the chief features of the exhibit of the Medical Supply Association (Edinburgh and 228, Gray's Inn-road, London, W.C.). An enormous Induction Coil was included accompanied by the usual accessories of x ray work and including some recent developments in practical detail. The Spring Bedsteads for hospital use designed by Mr. Lawson Tait were the special exhibit undertaken by Messrs. George Gale and Sons (Birmingham), while close by Messrs. Billington Brothers (Liverpool) had arranged for inspection several well-designed Beds for the Use of Invalids. Near the same space were examples of Theatre Furnishings by Messrs. Arch. Young and Son (Edinburgh). To return to the main hall the Walker Bed for Insomnia was bound to attract interest since at times it was kept in a very gentle rocking movement by means of simple and easily managed hydraulic machinery. It is said to have been employed with excellent effects in cases of insomnia and restlessness. It is the invention of Mr. J. H. Walker (Hartwood, West Calder). A very interesting collection of Hospital and Invalid Appliances was shown by Mr. W. Martin (121, George-street, Edinburgh). The working of an ingenious apparatus for the production of a purely dry heat by electric current for the alleviation of pain in the case of enlarged or stiffened joints, or in gout, rheumatism, and sciatica, was demonstrated by its designer, Mr. Greville (32, Upper Berkeley-street, W.C.). The apparatus is quite simple to manage and consists of a jacket adaptable to the limbs, abdomen, or neck lined with resistance coils. Any desired temperature may be obtained, that usually employed being near 300° F. Biological and Chemical Apparatus for laboratory use formed the subject of exhibit of Mr. B. H. Baird's stall, and also a variety of Glass Jars for anatomical and other specimens were shown. A large collection of similar appliances, such as preparation jars, pathological trays, botanical jars, and glass urinals, were displayed by Messrs. John Ford and Co., the well-known glass manufacturers and china purveyors, of Edinburgh and 33, Holborn-viaduct, London, E.C. Some excellent Designs in Medical Sprays and Atomisers were shown by Mr. Frank A. Rogers (late Corbyn and Co., 327,

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Oxford-street, W.) as well as Inhalers, Douches, and Several Pharmaceutical Preparations. Close by were the Optical Instruments and Spectacle Lenses which are a specialty of Mr. George Culver (White Lion-street, Pentonville N.). The Liverpool Lint Co.'s stall (Netherfield-road North, Liverpool) was replete with Lints, Bandages, Padding, and Cotton Wools, all of excellent service for surgical dressing, and as specialities may be mentioned the Carbolised Tow and the Surgeon's Tow. The stall of Messrs. C. T. Maling and Sons (Ford Potteries) was devoted to special hospital and private Nursing Requisites in Earthenware. The Sanitary Preparations of the Sanitary Wood Wool Co., Ltd. (26, Thavies-inn, Holborn-circus, E.C.), are well known and deservedly recognised as valuable absorbents. Amongst those shown were wood-wool wadding and tissue, antiseptic and absorbent, sanitary wood-wool sheets for accouchement, hygienic towelettes, antiseptic sponges, &c. A standard collection of Surgical Instruments (aseptic), Operating Tables, and Theatre Fittings was that of Messrs. John Weiss and Son (287, Oxford-street, W.), and the exhibitors were constantly assured of the interest taken in their exhibits by the attention given to them by medical visitors. What is described as a natural antiseptic and deodorant wool and called Bèraudine was shown applied to a variety of surgical dressings by Messrs. Brion, Paté, Burke, and Co. (15, Walbrook, E.C.). A most comprehensive assortment of special Surgical Appliances, all said to be manufactured in the latest aseptic models, were tastefully arranged on the stall of Messrs. J. Gardner and Son (32, Forrest-road, Edinburgh), and near was a collection of Listerian Surgical Dressings, Gauzes, &c., and Catgut Ligatures and Sutures by Messrs. J. F. Macfarlan and Co. (Edinburgh, and 9 and 11, Moor-lane, London, E.C.). The exhibit includes the well-known specially purified chloroform and ether of this firm. The stall of Messrs. Baird and Tatlock (Edinburgh, and 16, Cross-street, Hatton-garden, London) contained an interesting collection of Bacteriological, Chemical and Physical Apparatus. Amongst these were x ray apparatus and the vacuum tubes of helion and argon used by Professor Ramsay and Lord Rayleigh in their interesting investigations. Mr. Harry Cox, of 10 and 28, Cursitor-street, Chancery-lane, exhibited his well-known effective x ray outfit, including several powerful coils of exclusively English make, and improved fluorescent screens. He demonstrated also a means of intensifying the x ray negative. On the stall were some of the best x ray photographs we have seen. Mr. Cox personally superintends the winding and insulation of his induction coils with very satisfactory results. Moreover they are moderate in price and give a maximum spark length with a minimum of battery power. A novel Design in Hospital Construction was shown by Mr. Henry Greenway. The mode of construction is especially designed for the adaptation of the hospital to receive surgical, medical, or lying-in cases, or to be used as a fever hospital. Further, three kinds of infectious cases can be isolated from each other although admitted in equal or unequal numbers, or the entire range of wards can be used for the reception of patients suffering from one disease alone. The particulars of construction, mode of ventilation, heating, and the means by which the infected air may be rendered innocuous are well worth attention. The designer is the consulting medical officer of health of the county borough of Plymouth. The marvellous tensile strength of Longford wire as applied to a hospital bed carrying one ton weight was shown by the company (Warrington). On the same stall were specimens of Wood's Patent Galvanised Woven Wire Saddles, which are said to prevent saddle-soreness and to reduce vibration to a minimum. Close by were the microscopes and other optical apparatus of Messrs. Ross, Ltd., whose name has long been associated with excellence in manufacture of lenses. Similar apparatus was shown by Mr. J. Lizurs (2 and 4, Maitland-street, Edinburgh), one very interesting exhibit being the "Kromscop" for showing Ives's beautiful method of photography in colours. The Globe Nebuliser for producing a remarkably fine spray was shown in action at the stall of Messrs. Oppenheimer and Co. (Victoria House, Victoria-embankment), a new feature connected with it being a detachable aseptic pneumatic mask, which allows complete sterilisation and thus prevents the communication of infection when transferred from one patient to another. On the same stall was a Universal Vaporiser and a new Hypodermic Case with some important features in design and arrangement. Mr. Schall (55, Wigmore-street, W.) was constantly employed in demonstrating the working of his electrical apparatus for galvanisation, electrolysis, faradaisation, cauterising, &c. The batteries and instruments employed for illuminating the mouth, nose, ear, throat, rectum, vagina, urethra, and bladder were evidently highly appreciated by those interested. Messrs. Harvey Hilliard and Son (7, Nicolson-street, Edinburgh) showed a very wide range of Surgical Appliances, artery forceps (Wakley), craniotomy forceps and ovum forceps being amongst the exhibits. Next was the stall of Messrs. J. B. Hilliard and W. B. Hilliard and Sons (65, Renfield-street, Glasgow), worthy of particular mention being the Talipes Boot of Macewen, the Correcting Boot of McVail, and Hilliards' Spinal Evertor and Artificial Spine. Lastly, the well-known specialties of Messrs. Robinson and Sons (55, Fann-street, Aldersgate-street, E.C.), including their Special Tissue, Gamgee Tissue, Dressings, &c., may be taken as examples of the care which is bestowed by the manufacturers in affording the surgeon every chance of success that is possible as regards the treatment of wounds and suppurating surfaces.

Medical News.

EDINBURGH UNIVERSITY.—The following candidates were successful at the recent first, second, and third professional examinations in Edinburgh University for degrees in medicine and surgery:—

First Professional Examination.—R. G. W. Adams, Lewis Anderson, M. F. Anderson, R. G. Archibald, N. H. Beath, Edward Bennett, William Bennett, William Blackwood, E. A. Braine (M.A.), G. B. Brand, J. G. Briggs, J. E. M. Brown, H. H. Bullmore, C. M. Campbell (M.A.), K. A. Cappie, Alec Carruthers (M.A.), J. W. Cathles, A. M. Caverhill, P. D. Cremona, C. W. C. Crooke, H. L. Cumming, Sam Cunliffe, Jan Dommisse, John Dunlop (with distinction), Percy El-Karey, J. S. Elliott, S. C. Ellison, John Fairbairn, A. N. Fell, B. P. Ghose, C. M. Gillespie, E. C. Gimson, A. M. Gloag, R. G. Gordon, Andrew Grant, J. A. Grey (M.A.), T. B. Hamilton (with distinction), D. J. Hamman, Howard Harding, A. W. M. Harvey, A. W. Hauman, George Henderson (M.A.), Henry Herd, J. T. Hill, T. J. Hofmeyr, R. B. Hole, Matthew Holmes, J. M. Johnstone, J. N. Karma, J. P. Kennedy, Harold Kerr, R. D. Kidd, E. A. King, H. A. Knight, Hermann Kramer, G. I. Lecesne, Norah Lenwood (with distinction), William Lilico, J. C. London, R. C. Low, T. S. M. Lumsden, W. F. MacDonald, George M'Farland (with distinction), I. N. M'Keand, George M'Neill, C. E. Marshall, J. M. Marshall, R. J. Mayberry, E. L. Meynell, Thomas Mill, W. S. Milne, A. M. Moll, G. I. Moriarty, A. E. Morton, R. S. Munro, A. E. Nalborough, Charles Nelson, A. L. Nestor, Claude O'Flaherty, T. H. Osler, T. C. E. Parry, E. P. B. Phillips, J. H. H. Pirie, A. M. Pringle, J. A. Raubenheimer, J. J. Redhead, Charles Reece, A. B. dos Remedios, R. A. C. Rigby, H. H. Robarts, Alexander Rose, F. E. Ross, R. E. Russell, J. S. Sewell, J. J. Shannon, E. S. Sharpe, Meurice Sinclair, W. F. Smeall, J. M. Smith, E. W. Smyth, D. W. Standley, J. P. Steven, H. M. Stumbles, G. A. J. Tait, A. B. M. Thomson, Philip Vickers, J. F. van de S. de Villiers, Edwin Wells, W. C. P. White, Harry Whittaker, George Wight, S. A. K. Wilson (M.A.), and W. Y. Woodburn.

Second Professional Examination.—V. G. S. Adams, Robert Affleck, Henry Alexander, C. H. Allen, E. M. Anderson, M. S. Anderson, W. L. G. Anderson, B. H. S. Aylward, A. J. Baird, F. A. F. Barnardo, M.A., J. H. Bell, L. N. Biggs, Lancelot Bruce, G. B. Butt, Ewen Cameron, J. P. Campbell, G. S. Carey, H. L. Clift, W. J. Collinson, A. D. S. Cooke, Leonard Crossley, G. A. Davidson, Archibald Dods, J. P. Douglas, Edward Ewart, Charles Fraser, Yoshinobu Fukuda, A. W. Fuller, O. A. Gee, J. C. Gilchrist, Norman Glegg, J. L. Green, Robert Hamilton, Frederick Hardie, Eleanor Hodson, L. G. Hood, A. J. Hughes, D. B. B. Hughes, F. F. C. Jagger, J. G. S. Jamieson, M.A., John Jamieson, J. M. Jeffrey, J. C. Kennedy, F. K. Kerr, H. C. Keun, S. M. de Kock, A. C. Lennie, G. H. Lewis, G. A. Lowther, D. J. M'Adam, R. J. M'Clelland, J. G. M'Dougall (with distinction), W. J. M. M'Farlane, W. E. M'Farlane, J. H. M'Kee, J. G. Mackenna, D. M. Macleod, Elizabeth Macrory, K. D. Melville, H. C. Miller, J. B. Milne, M. C. Morgan, Florizel Myers, J. C. Parker, Peterswald Pattison, C. B. Paul, M. C. Pepper, D. E. Pratt, J. B. Primmer, J. R. Prytherch, Samuel Rattray, J. L. Rentoul, O. L. Rhys, C. M. Richardson, C. H. G. Ritter, D. J. Roberts, Alexander Robertson, John Ross, M.A., Richard Rutherford, L. S. Sandeman, J. B. Scott, B.A., S. R. Sibbald, William Sloss, J. A. Smaill, H. O. Smith, H. M. Speirs, A. D. Spence, Bernard Stracey, C. P. Strong, K. H. H. Uffman, N. N. Wade, William Wallace, P. D. Whiriskey, Garnett Wright (with distinction), and J. H. Wrightson.

Third Professional Examination.—F. A. F. Barnardo, M.A., L. D. H. Bough, J. A. Black, H. W. Boreham, J. M. Buist, E. A. Burroughs, G. J. R. Carruthers, Morden Carthew, C. S. Clark, H. E. Coghlan, W. J. Collinson, J. D. Comrie, M.A., B.Sc., S. L. Dawkins, Y. A. Djedjizian, D. R. Evans, D. J. Fergusson, B. K. Goldsmith, C. H. G. Gostwyck, A. N. de Gruchy, George Haddow, W. D. S. Harrison, P. H. Henderson, W. E. Herbert, John Jeffrey (with distinction), H. C. Keun, Clarence King, C. G. S. Leeds, George Lyon (with distinction), W. J. M. M'Farlan, E. W. Martin, E. G. D. Menzies, M. J. Menzies, James Miller, H. A. D. Moore, S. H. Morris, Alexander Mouat, A. C. Neethling, T. E. Richards, David Robertson, A. A. Robinson, William Rogers, J. M. Ross, A. B. Slater,

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W. C. Spooner, H. B. Sproat, Bernard Stacy, Koh Leep Teng, George Thomson, W. G. Thompson, J. B. Thorburn, Alexander Tweedie, and W. G. Williams.

APOTHECARIES' HALL OF IRELAND.—At the July Examination the following candidates passed in the subjects indicated:—

Chemistry.—William Long and E. A. Reilly.
Physics.—E. A. Reilly.
Anatomy. — First Examination: E. A. Reilly. Final Examination: W. P. Harding and Lewis J. Farell.
Physiology and Histology.—R. Tichborne.
Forensic Medicine.—Frederick A. Bass.
Hygiene.—Frederick A. Bass and Wm. P. Harding.
R. Tichborne and Wm. P. Harding have completed the second professional examination and Frederick A. Bass has completed the third professional examination.
Conjoint with the Royal College of Surgeons in Ireland.—Final Examination: Edward Patrick Eustace and Philip John Murphy.

At the annual meeting of the Governor and Council of the Apothecaries' Hall of Ireland convened by the Act of Incorporation on August 1st the following were duly ballotted and elected to hold office for the ensuing year ending July, 1899: Governor, Mr. James Raverty; Deputy-Governor, Mr. Hugh A. Auchinleck; Council, Mr. John Evans, Mr. W. Furlong, Dr. T. D. Finucane, Dr. J. A. Johns, Mr. R. Montgomery, Mr. Robert John Montgomery, Dr. Charles F. Moore, Dr. Christopher M. O'Brien, Dr. O'Flaherty, Mr. J. Shaw, Mr. Stritch, Mr. S. M. Thompson, and Mr. C. R. C. Tichborne; Representative on the General Medical Council, Mr. C. R. C. Tichborne; Secretary, Mr. Robert Montgomery.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bordeaux:* Dr. Lefour, *professeur-agrégé*, has been appointed to the chair of Clinical Midwifery.—*Cairo:* Dr. S. G. Toller has been appointed Professor of Medicine and Dr. Madden and Mr. Milton, Professors of Surgery.—*Granada:* Dr. Antonio Amor y Rico has been appointed Professor of General Pathology and Dr. Josó de Paso y Fernandez Calvo Professor of Hygiene.—*Lille:* Dr. Charmeil, *professeur-agrégé*, has been appointed to the chair of Clinical Dermatology and Syphilis; Dr. Calmettes has been appointed to the chair of Bacteriology and Experimental Therapeutics.—*Ohio Medical College:* Dr. B. K. Rachford has been appointed Professor of Materia Medica and Therapeutics in succession to Dr. Nieldes, who retires with the rank of Emeritus Professor; Dr. Poole, Professor of Chemistry, has been appointed to the Chair of Physiology.—*Philadelphia Medico-Chirurgical College:* Dr. G. M. Boyd has been appointed Professor of Clinical Midwifery.—*Siena:* Dr. Andrea Cristiani has been recognised as *privat-docent* of Psychiatry.—*Utrecht:* Dr. Katherina von Tusschenbroek has been appointed to the Chair of Gynæcology.—*Würzburg:* Dr. Richard Geigel has been appointed Extraordinary Professor of Balneology.

PRESENTATION TO A MEDICAL MAN.—Mr. J. J. McGrath, L.R.C.S. Irel., of Lower Mount-street, Dublin, was presented by his many friends on July 21st, on the occasion of his marriage, with an illuminated address setting forth the esteem in which he is held and also with a silver tea and coffee service.

LIME WATER.—At the Caerleon (Monmouthshire) Petty Sessions on July 29th a grocer was fined £4 10*s.*, including costs, for selling lime water deficient in lime. The county analyst stated that the water should have contained twice the amount of lime that he had found in it.

GREAT NORTHERN CENTRAL HOSPITAL.—Sir John Dickson Poynder, Bart., M.P., has been elected chairman of the Committee of Management of the Great Northern Central Hospital, in succession to the late Mr. C. T. Murdoch, M.P.

THE VACCINATION QUESTION.—At the meeting of the Plympton (Devon) Board of Guardians held on July 29th it was decided, by 15 votes to 9, on the motion of Mr. C. Aldridge, M.D., C.M. Aberd., L.R.C.P. Lond., that the board were in favour of the compulsory clause in the Vaccination Acts still operating.

EMSWORTH VICTORIA COTTAGE HOSPITAL.—On July 23rd this memorial of the Queen's Diamond Jubilee was opened by Sir Samuel Wilks, Bart., M.D. Lond., F.R.S., President of the Royal College of Physicians of London. Since 1887 the work has been carried on in a cottage with 4 beds, rented at £16 a year. Over 300 in-patients have been treated, 54 of whom were suffering from accidents, and 46 operations have been performed, and this without incurring any debt. For the last three years the average cost per head per day, including maintenance, nurse, and rent, has been 2*s.* The present hospital for seven beds, designed by Mr. John Birch, 8, John-street, Adelphi, has been erected at a cost of £1500 and is very convenient in its arrangements. It consists of a first floor on which are two wards of three beds each and the matron's bedroom, and a second floor with a small special ward of one bed, bathroom, servants' room, and operating-room, admirably lighted and equipped. The honorary consulting staff are Dr. Goodhart and Mr. W. H. A. Jacobson; the honorary medical officer is Mr. Lockhart Stephens. After a careful inspection Sir Samuel Wilks expressed his entire approval of the design and arrangements.

ASSAULT ON A MEDICAL MAN.—Mr. Richard Harding, L.R.C.P. Edin., L.F.P.S. Glasg., vice-chairman of the Radnorshire County Council and medical officer of health of the New Radnor Rural District Council, was violently assaulted on the evening of Aug. 1st. Mr. Harding was riding a bicycle to visit a patient, when the lamp went out and he went to a cottage to endeavour to get a light, but being unable to make anybody hear was turning away when he was attacked from behind and seriously injured. Medical aid was fortunately obtained. An arrest has been made.

THE Eleventh Universal Cookery and Food Exhibition will be held in the galleries of the Imperial Institute in the month of March, 1899. The exhibition will, as heretofore, be under the auspices of the Universal Cookery and Food Association, and the chairman of the Executive Council of the Exhibition will be Mr. J. C. Buckmaster, whose association with the cause of cookery is historical. The offices of the Executive Council are 329, Vauxhall-bridge-road.

LUNACY IN DORSETSHIRE.—Although the new county asylum at Charminster has only been completed about two years the Dorset County Asylum Committee has been informed by the Commissioners in Lunacy that owing to the increase of lunacy the available accommodation will be exhausted in five years, and the county is asked to take the matter into early consideration in view of making additional provision. During the past year the percentage of new admissions has been very high.

MR. J. A. CAMPBELL, M.D., C.M. Glasg., F.R.S. Edin., on his recent retirement after over thirty-one and a half years' service as a medical officer and upwards of twenty-five years as medical superintendent of the Counties Asylum at Carlisle, has been appointed an honorary consulting physician to the institution; and Mr. W. F. Farquharson, M.B., C.M. Edin., after seven years' service as a medical officer to the asylum, has been promoted to the office of medical superintendent.

MORETONHAMPSTEAD CONVALESCENT HOME.—The new wing of the Moretonhampstead Convalescent Home was opened on Aug. 3rd by Mrs. Mallock. This home, founded by the Misses Phillips in 1872, at first had only accommodation for 14 people, but it was enlarged in 1879. Last year 156 patients were admitted. The new wing has been erected at a cost of about £800, of which sum the Misses Phillips have subscribed £300. About £200 is still required to free the home from debt.

MONMOUTHSHIRE COUNTY COUNCIL.—At the meeting of the Monmouthshire County Council held on Aug. 3rd it was resolved, on the motion of Sir Henry Jackson, Bart., to appoint a committee for the purpose of acquiring the historic ruins of Tintern Abbey and Raglan Castle for the county.—At the same meeting it was stated that temporary buildings were to be added to the county asylum to accommodate 50 patients of each sex. The cost of the erection would be £3400 and the furnishing £1494 in addition.

CORPORATE AND MEDICAL REFORM ASSOCIATION, LIMITED.—At a recent local meeting at Oldham of this association, Dr. James Corns (Oldham) being in the chair, in addition to the chairman and Mr. Platt, J.P., Mr. Martland, Mr. Fort (honorary secretary), Mr. Kershaw, Dr. Lendrum, and Mr. W. B. Yates were appointed members of the Oldham Local Committee. It was resolved prior to the

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great Lancashire centres being approached in favour of the promotion of a County of Lancashire Branch of the Association to take active measures in Oldham and the neighbourhood to propagate the policy and extend the membership of the association and to hold a general meeting after the holidays.

CONGRESS OF HYDROLOGY, CLIMATOLOGY, AND GEOLOGY.—The fifth International Congress on Potable Waters, Mineral Waters, and Medical Climatology and Geology will be held at Liège from Sept. 25th to Oct. 3rd under the patronage of the Crown Prince of Belgium. There will be receptions by the municipalities of Liège, Spa, and Aix-la-Chapelle, and visits will be paid to various places, including Ostend, Middelkerke, and Wenduyne. The congress committee will be pleased to offer to all the foreign members a free railway-ticket throughout the whole of Belgium for this Ostend excursion from Liège. Members will obtain a reduction of 50 per cent. on all railway fares throughout Belgium. The subscription to the congress is 16*s.* for gentlemen and 8*s.* for ladies and university students. Communications intended for the congress should be sent before Aug. 25th to Dr. G. Jorissenne, general secretary, 130, Boulevard de la Sauvenière, Liège, Belgium.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, AUGUST 4TH.

The Preparation of Calf Lymph.

MR. HEDDERWICK asked the President of the Local Government Board whether the calves from which the lymph was to be derived, under the provisions of the Vaccination Bill, would be slaughtered after use and the carcasses exposed for sale in the meat markets.—MR. CHAPLIN replied: I have already stated more than once that every calf used for the preparation of glycerinated lymph will be subsequently slaughtered and no lymph will be issued until both the carcass and the internal organs have been inspected by the veterinary surgeon attached to the slaughtering establishment and have been reported to be in every respect healthy. In all countries in which calf lymph has been in use during the past quarter of a century such healthy carcasses are exposed for sale, and I am not aware of anything at present that would make a different course necessary in this case.

Nursing in Workhouse Infirmaries.

MR. TALBOT asked the President of the Local Government Board what progress had been made in carrying out the requirements of the Board expressed in their orders of August, 1897, urging boards of guardians to employ trained nurses only in their infirmaries; and whether it was within the knowledge of the Board that many boards of guardians had found great difficulty in obtaining the services of such nurses; and, if so, what steps the Local Government Board proposed to take to supply them.—MR. CHAPLIN replied: The order of August, 1897, provides that no person shall be appointed to the office of nurse without having had such practical experience in nursing as may render her a fit and proper person to hold the office. Since the issue of the order there has been a decided improvement in the nursing arrangements in many of the workhouses and of the nurses appointed an increasing number have been trained. I am aware that in consequence of the great demand for duly trained nurses many boards of guardians have found difficulty in obtaining the services of such nurses. The Local Government Board, however, have neither the duty nor the power to supply nurses for workhouses, but they are encouraging the training of probationer nurses at workhouses where adequate arrangements exist, who will increase the available supply in the future.

The Medical Officer of the Factory Department.

MR. TENNANT asked the Home Secretary whether he would inform the House what the duties of the new medical officer of the Factory Department would be and whether he would lay upon the table the instructions under which that officer would act and whether he had yet made the appointment.—Sir M. WHITE RIDLEY said in reply: I settled these instructions some weeks ago and shall be glad to state their effect. Briefly they are as follows. The medical inspector will reside in London and his services will be available throughout the country wherever they are required. He will conduct special and general inquiries into questions of health and safety as the chief inspector may direct; he will exercise general supervision over the work of certifying surgeons, especially where they have duties with regard to dangerous industries; he will deal with the notices of lead and other poisoning received under the Act of 1895; he will advise the staff generally on all medical questions connected with their work and will give evidence in proceedings when so directed by the chief inspector, though he will not himself institute prosecutions unless specially directed. In visiting factories, workshops, and other places he will give special attention to all matters affecting the health and safety of the persons employed; he will supply to the district inspectors particulars of any irregularities, defects, or infringements of the Acts which he may observe and also particulars of any recommendations he may make to occupiers, and he will call the special attention of the district inspectors to cases where he considers any structural alteration necessary or a prosecution desirable. He will also visit hospitals in places where industrial diseases prevail and, generally, he will act in coöperation with the other members of the staff, the certifying surgeons, and the local authorities. I have appointed to the office Dr. Thomas Morison Legge.

Water-supply of Deal.

MR. CHAPLIN, answering a question addressed to him by DR. TANNER, said that the local authorities of Deal and Walmer had recently acquired the waterworks undertaking and were extending their mains throughout the whole district. Notices had been given to all persons having wells on their premises to discontinue the use of the wells and to lay on the water from the waterworks. Where these notices were not complied with and where the water had been found to be impure the wells had been closed and the premises connected with the waterworks main.

MONDAY, AUGUST 8TH.

Tuberculosis Commission.

MR. CHANNING asked the President of the Local Government Board whether he had now considered the portions of the report of the Tuberculosis Commission dealing with the supply of milk and the urgent necessity for strengthening and facilitating the operation of the Dairies, Cowsheds, and Workshops Order, 1885-86, with a view to secure uniformity of action and for extending the powers of local authorities to inspect dairies and byres; and whether he would by administrative order effect immediately such administrative checks to the mischiefs now existing as were possible and proceed next session to ask for the extension of the powers of the department and of local authorities as were necessary to reduce the risk from tuberculosis in milk to a minimum.—MR. T. W. RUSSELL replied to the question, saying: The numerous questions which are raised by the report of the Royal Commission on Tuberculosis are now under the consideration of the Government, both with regard to administrative orders and to legislation if necessary.

TUESDAY, AUGUST 9TH.

The Vaccination Question in Scotland.

DR. CLARK asked the Lord Advocate whether he was aware that there had been a considerable increase of vaccination prosecutions in Scotland and that the Court of Session had decided that defaulters might be summoned every six months until the child was fourteen years old; and whether it was the case, as stated at the Dundee Sheriff's Court last week, that instructions were sent out in May by the Local Government Board, Scotland, directing prosecutions.—The LORD ADVOCATE replied: I am informed by the Local Government Board that they are not aware that there has been any such increase of vaccination prosecutions in Scotland as is suggested in the question. The Court of Session has decided that defaulters may be prosecuted so long as their names appear in the half-yearly lists transmitted by the registrars to the parochial boards (parish councils); but the Board have advised parish councils that they may use their discretion in repeating prosecutions in respect of the same child. The Local Government Board have issued no general instructions as to vaccination prosecutions. On May 28th last they inquired of the inspector of poor, Dundee, how his parish council proposed to deal with defaulters and were informed that the parish council had resolved to prosecute.—MR. DALZIEL asked the Lord Advocate whether, in view of the legislation which had been passed this session in reference to compulsory vaccination in England, the Government would consider the advisability of suggesting to the Local Government Board in Scotland the desirability of refraining from active prosecution of conscientious objectors.—The LORD ADVOCATE replied: As I have already stated in this House the system as regards vaccination in Scotland has hitherto worked successfully and the Secretary for Scotland does not consider that any special suggestion need be made to the Local Government Board on the subject.—MR. DALZIEL asked whether, in view of the fact that several persons were in prison in Scotland, the Government intended to allow the conscientious clause to prevail in England and at the same time to continue prosecutions in Scotland.—The LORD ADVOCATE replied: The Government intend to maintain the law in Scotland, as it is the law. Of course, if the law is altered it must be altered by Act of Parliament, but in the practical working out of the law there has never been any difficulty in Scotland, and I would hope that there would not be imported into Scotland an agitation which must be of an exotic character.—DR. CLARK asked whether there could be prosecutions in Scotland except by the Lord Advocate or his deputies.—The LORD ADVOCATE replied: Yes, there can be prosecutions by others.

Medical Aid for the Khartoum Expedition.

MR. H. J. C. MORTON asked the Under Secretary of State for Foreign Affairs whether Her Majesty's Government would advise His Highness the Khedive to grant permission to the British Red Cross Society and to members of the Order of St. John of Jerusalem to accompany the Khartoum Expeditionary Force at their own expense for the purpose of rendering medical aid to the wounded without distinction of race, colour, or creed.—MR. CURZON replied that the military authorities in Egypt had gladly accepted the assistance of the Red Cross Society for work between Cairo and Assouan. The difficulties of transport, any further call on which would diminish the numbers of the fighting force,

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made it impossible, in the opinion of the authorities, to accept any offers of assistance above Assouan.

WEDNESDAY, AUGUST 10TH.

Metropolitan Hospitals and Midwifery Cases.

MR. ARTHUR O'CONNOR asked the Home Secretary whether he was aware that a poor woman expecting confinement frequently applied to one or other of the general hospitals in London for a doctor to attend her in her confinement, and that frequently in such a case a student was sent to attend who had little or no experience, or might even never have been in a case before, and that no intimation was in such case given to the patient that the person sent was not a fully qualified medical practitioner; and whether the General Medical Council had prohibited the employment by private practitioners of assistants who, although they had taken out a full course of midwifery training, had not taken out a degree in medicine, surgery, and midwifery.—Mr. JESSE COLLINGS replied: The Home Secretary has no information on the subject, but he will communicate with the General Medical Council and make further inquiries so as to ascertain the facts of the case.—Mr. O'CONNOR: May I ask whether besides the inquiries he has promised to make the Home Secretary will further inquire whether among the members of the General Medical Council itself there are gentlemen who are medical officers attached to the hospitals from which these unqualified persons are sometimes sent and whether the Privy Council is in a position to require the General Medical Council to enforce its own regulations for all parties?—Mr. JESSE COLLINGS: There will be a full inquiry made.

PROCEEDINGS ON THE VACCINATION BILL.

HOUSE OF LORDS.

THURSDAY, AUGUST 4TH.

The Vaccination Bill was considered in the House of Lords at this sitting on the order for taking the Committee stage.

The Marquis of AILESBURY moved that the House do resolve itself into Committee on the Bill on this day three months, or, in other words, moved the rejection of the Bill. His lordship complained that the Bill was badly drafted, that it made no allusion to revaccination, that it contained no safeguards, and that it seemed to embody the open-door policy in the matter of small-pox.

Lord LISTER next addressed the House in support of the Bill. A verbatim report of his speech will be found on p. 426.

The Earl of PORTSMOUTH appealed to the Marquis of Ailesbury to withdraw his motion and allow the Bill to be considered in Committee.

Lord HARRIS said he had authority to intimate that the Government were prepared to consider during the recess whether it would not be possible to bring in next session a Bill dealing with revaccination.

The motion of the Marquis of Ailesbury was then negatived without a division and the House went into Committee on the Bill.

The Earl of FEVERSHAM moved to delete Clause 2, the clause dealing with the conscientious objector, arguing that with this clause in the Bill there was no security against small-pox.

Lord ALDENHAM spoke in support of the deletion of the clause.

Lord HARRIS defended the clause on the ground mainly that it embodied a recommendation of the Royal Commission.

Lord LOCH expressed the view that with the new form of lymph the objection to vaccination would disappear.

After a speech from the Marquis of SALISBURY in support of the clause a division was taken, when 40 members voted for the omission of the clause and 38 against that motion. The clause was accordingly removed from the Bill.

FRIDAY, AUGUST 5TH.

When their lordships met to-day they received the amendments made in Committee and read the Bill a third time.

MONDAY, AUGUST 8TH.

At this sitting a message from the House of Commons was read stating that the Commons had disagreed with the Lords' amendment striking out Clause 2, the reasons given being that unless some provision were made for those who conscientiously object to vaccination the enforcement of vaccination would be impracticable in many districts and that the amendment of the Lords was not in the interests of the promotion of vaccination.

Lord HARRIS moved that their lordships do not insist on the amendment.

Lord ROOKWOOD condemned the clause as subversive of good government.

Viscount GALWAY insisted that the Government had given no good reason for the clause.

Lord ZOUCHE advocated the postponement of the Bill until next Session.

Lord STANMORE argued that the Government had power to pass the Bill as they originally proposed it and urged them to exercise their power.

Lord GLENESK, the Earl of FEVERSHAM, Lord ALDENHAM, and the Earl of PORTSMOUTH also spoke against the clause.

The Marquis of SALISBURY then addressed the House. He reviewed the action of the House of Commons on the Bill and spoke at length on the indisposition of many local authorities to enforce the existing law and concluded with these words—viz.:—My lords, I do not look to the effect of this except in one direction; I ask, What effect will it have upon that willing adoption of vaccination which is the only healthy result which you can desire to accomplish? If you pass this Bill now there is nothing whatever, supposing the difficulties about the conscientious objector turn out to be real, to prevent your having another Bill to strengthen what may be thought to be too weak in this Bill. But, at all events, you will have offered an opportunity to those who say your coercion is a mistake and you will have given an experimental trial to those improved processes by which you hope the popular illusion will be dissipated; you will have had a truce and an armistice, the bitterness will have calmed, and the agitation will have gone down, and you will be able to induce local authorities to work with you instead of against you in carrying out this great enterprise for the health and welfare of the people. My lords, I think that the advice which has been given to you under all the circumstances—I do not look beyond that—to kill the Bill is very unwise advice; and for the sake of your own opinion, for the sake of the reform of the law, for the sake of the ultimate achievement of united action upon a matter in which union and concord are essential, you ought to forego the amendment which you only passed by a majority of two three nights ago and allow the Bill to pass into law.

When a division was taken the motion of Lord Harris was carried by 55 to 45 votes. The result is that the clause remains part of the Bill.

HOUSE OF COMMONS.

FRIDAY, AUGUST 5TH.

At a late hour at this sitting the Commons considered the amendments made by the Lords.

Mr. CHAPLIN moved that the House disagree with the Lords in striking out Clause 2, dealing with the conscientious objector.

Mr. GRANT LAWSON expressed his approval of the action taken by the House of Lords in this matter.

Mr. MONK spoke of the clause as practically repealing the Vaccination Acts.

Mr. GRIFFITH-BOSCAWEN recommended the Government to take this opportunity of repairing what he regarded as an unfortunate error.

Mr. CHAPLIN defended the action of the Government saying among other things that the state of opinion in the House of Commons left no other course open to the Government. He predicted that if the Bill were lost there would be a state of things bordering on chaos.

When the division was taken the motion of Mr. Chaplin was carried by 129 to 34 votes.

Accordingly the clause was reinserted in the Bill and a committee was appointed to draw up reasons for disagreeing with the House of Lords.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BURGES, F. A. L'ESTRANGE, L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Handsworth and Great Hampton-street Division of the Post Office.

DOWNMAN, C. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Burnham-on-Crouch Urban District Council.

DUNCAN, WILLIAM, M.B., C.M. Glasg., has been appointed Medical Officer of Health for the Clay Cross Urban District, vice Angus Mackintosh, deceased.

FORBES, D. McD., L.R.C.P. F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health by the Eastwood Urban District Council.

FRASER, D., M.D. Glasg., F.F.P.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Burgh of Paisley.

FREER, J. H., L.R.C.P. Lond., M.R.C.S., has been re-appointed a Medical Officer by the Rugeley Urban District Council.

GRAHAM, T., M.D. Glasg., L.F.P.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Burgh of Paisley.

HAYDON, H. W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Wadebridge Sanitary District of the Bodmin Union.

JONES, T., M.R.C.S. has been appointed Medical Officer for the Middle District of the Whitechapel Union, vice J. Sequeira, resigned.

LEGGE, T. M., M.D., B.Ch. Oxon., D.P.H. Camb., has been appointed Medical Inspector of Factories and Workshops.

LUNAN, C. S., M.B., C.M. Edin., L.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheriffdom of Perth.

MASTER, GEO., M.B., B.C. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Suffolk General Hospital, Bury St. Edmunds, vice J. S. Hinnell.

OULTON, H. W., M.D. Dubl., L.R.C.S. Irel., has been appointed a Surgeon to the Dublin Metropolitan Police Force, vice T. Nedley.

PARSON, WM., M.R.C.S., has been re-appointed Medical Officer for the Godalming Sanitary District of the Guildford Union.

PLUMMER, H. B. W., M.D. Durh., M.R.C.S., has been appointed an Honorary Consulting Surgeon for the West Bromwich District Hospital, vice H. Sutcliffe, resigned.

ROBERTSON, J. F., M.D. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Shetland.

SHACKEL, G. A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Ludlow Rural District Council.

VERNON, C. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Ashford Urban Sanitary District.

WHITE, H. E., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary of the Parish of Birmingham.

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WILLIAMSON, J., M.R.C.S., L.R.C.P., has been appointed a House Physician for the General Infirmary, Leeds.

WILKINSON, GEO., B.A., M.B. Cantab., F.R.C.S., has been appointed an Honorary Surgeon to the Royal Hospital, Sheffield, vice Sinclair White.

WILKS, T. H., M.B., B.C. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Medical Officer for the Sheffield Children's Hospital, vice J. B. Milne, resigned.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £70, with board, residence, and washing.

CARNARVONSHIRE AND ANGLESEY INFIRMARY AND DISPENSARY, Bangor. House Surgeon. Salary £70 per annum, with board and lodging in the house.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, increasing £10 yearly to £120 per annum, with board, lodging, washing, and attendance.

COUNTY ASYLUM, Gloucester.—Locum Tenens for about two months. Salary £2 2s. per week and all found (except liquors).

CUMBERLAND AND WESTMORELAND ASYLUM, Carlisle.—Senior Assistant Medical Officer. Salary £120 a year, with board. Applications to Dr. Farquharson, Garlands, Carlisle.

CUMBERLAND INFIRMARY, Carlisle.—Assistant House Surgeon for seven months from Oct. 1st to April 30th. Salary at the rate of £40 per annum, with board, lodging, and washing. Also House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing.

DERBY COUNTY ASYLUM, Derby.—Second Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with board, lodging, and washing.

DEVON COUNTY ASYLUM.—Medical Superintendent. Salary commences at £800 per annum, with other emoluments. No domestic or other servants provided. Applications to the Clerk to the Visiting Committee, 9, Bedford-circus, Exeter.

DEVONSHIRE HOSPITAL, Buxton.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E. — Unqualified Clinical Clerkships, tenable for three months.

GUEST HOSPITAL, Dudley.—Resident Medical Officer. Salary commencing at £100 per annum, increasing by £10 a year to £120 (conditionally), with board, residence, attendance, and washing.

HUDDERSFIELD INFIRMARY.—Senior Assistant House Surgeon. Salary £50 per annum, with board, residence, and washing. Also Junior Assistant House Surgeon. Salary £40 per annum, with board, residence, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the institution.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road. — House Surgeon. Salary £80 per annum, with apartments and board.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House Surgeon. Salary £120 per annum, increasing by £10 per year (conditionally), with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £180, increasing to £200 by £10 a year. Subject to boarding arrangements. All other expenses—wages, coal, gas, furnished apartments, &c.—are found by the Institution. Also Clinical Assistant for six months, unmarried. Salary £60 for that period.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150, respectively.

PARISH COUNCIL OF EVIE AND RENDALL.—Medical Officer. Salary £45 a year and a free house. Apply to the Inspector of Poor, Evie.

POPLAR UNION.—Assistant Medical Officer for the Workhouse. Salary £100, with furnished apartments and rations in the workhouse. High-street, Poplar. Subject to statutory deduction. Applications to the Clerk to the Guardians, Union Offices, 45, Upper North-street, Poplar, E.

ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £80 a year, with residence, board, attendance, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Residence, board, and washing provided, and an honorarium at the rate of £30 per annum will be given.

ST. ANN'S HILL HYDROPATHIC ESTABLISHMENT, County of Cork, Ireland.—Resident Medical Superintendent, married.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees. — House Surgeon, non-resident. Salary £200 per annum.

THREE COUNTIES ASYLUM.—Second Assistant Medical Officer, unmarried. Salary commencing at £125 per annum, with board, apartments, washing, and attendance. Applications to the Clerk to the Committee of Visitors, St. Neot's, Hunts.

UNIVERSITY COLLEGE, Bristol, Faculty of Medicine.—Demonstratorship of Physiology. Stipend £125.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £60, with board and residence.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Board, lodging, and washing provided, and an honorarium at the rate of £50 per annum will be given.

Births, Marriages, and Deaths.

BIRTHS.

CURRIE.—On Aug. 5th, at Edinburgh, the wife of Oswald James Currie, M.B., M.R.C.S., Maritzburg, Natal, of a son.

GODDARD.—On Aug. 6th, at Pentonville-road, N., the wife of Bertram Goddard, L.R.C.P. Lond., &c., of a son.

HARPER.—On July 29th, at Grosvenor-place, Bath, the wife of J. Maurice Harper, M.R.C.S. Eng., of a daughter (stillborn).

REID.—On Aug. 5th, at Thirlmere, Watford, the wife of A. Lestock Reid, M.R.C.S., L.R.C.P., of a daughter.

STEPHENS.—On July 30th, at The Lindens, Doddington, Cambs, the wife of Cecil Edward Stephens, M.B., of a son.

TINLEY.—On July 28th, at Thorsgrif, Whitby, the wife of W. E. F. Tinley, M.B. Durh., M.R.C.S., of a son.

MARRIAGES.

ATKINSON—EASTMOND.—On Aug. 3rd, at St. John's Cathedral, Hong-Kong, by the Rev. R. F. Cobbold, M.A., John Mitford Atkinson, M.B. Lond., Principal Civil Medical Officer, Hong-Kong, son of the Rev. S. Atkinson, M.A., of Portland, to Clara, eldest daughter of James Eastmond, of Puddyngton, Devonshire.

MACDONALD—STEWART.—On Aug. 8th, at Kenneth-street, Stornoway, Catherine Mary Stewart, daughter of the late John Stewart, of Holm, Stornoway, N.B., to John Smyth Macdonald, B.A. Cantab., L.R.C.P., L.R.C.S., of University College, Dundee, son of George Macdonald, of Chester.

PILLOW—WRIGHT.—On Aug. 10th, at St. Mary Abbott's, Kensington, Henry Pillow, M.D., Pembridge-gardens, W., to Marie Helen Wright, youngest daughter of the late James Wright, Aughantaraghan, co. Armagh.

WARD—JEFFERIES.—On Aug. 4th, at St. Helen's, Ipswich, Francis Ward, M.D., eldest son of Colonel A. E. Ward, late Bengal Staff Corps, to Elizabeth Lilian, second daughter of John Robert Jefferies, J.P., of St. Helen's Lodge, Ipswich.

DEATHS.

ACKLAND.—On Aug. 7th, at Fairhaven, Upper Compton, Plymouth, William Henry Ackland, M.D., J.P., in his 73rd year.

MILTON.—On Aug. 3rd, at Sion House, Chelsea, John Laws Milton, M.R.C.S., of Suffolk-street, Pall-mall.

ROBERTS.—On Aug. 5th, of tubercular meningitis, John Hamilton Roberts, a medical student of Charing-cross Hospital, the only son of J. T. Roberts, L.R.C.P. Edin., 65, Park-road, Crouch-end, in his 20th year.

SMITH.—On Aug. 10th, at "Yew Tree," Lewisham, Frederick Henry Smith, M.D., aged 62 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

STERILISATION OF ELASTIC CATHETERS.

IN the current number of the *Deutsche Medicinische Wochenschrift* Dr. Oscar Ehrmann of Mannheim describes two pieces of apparatus which he has devised for the sterilisation of elastic catheters by passing a current of steam through them. He states that for good elastic catheters sterilisation by steam is less injurious than any other equally efficient method, but the apparatus for this purpose described by Posner and Kutner is complicated and costly. He has therefore designed an appliance which may be worked in connexion with any ordinary steriliser. It consists of a boiler provided with several steam jets for insertion into the open ends of the catheters which lie on a perforated tray and are surrounded by the steam filling the closed steriliser so that they are thoroughly exposed to the steam both inside and out. The other apparatus, which is intended for the use of patients, is on the same principle, but is heated by a spirit lamp and takes in only one catheter at a time. The whole of it can be packed into a space 3¾ in. high and 2¾ in. in diameter. The maker is Mr. Walb of Heidelberg.

ANTI-RHEUM.

A CORRESPONDENT sends us the following circular which he has received and which we think registers a high level of impudence:—

Strictly Confidential.

51, Glasshouse-street, W., 5th August, 1898.

My dear Sir,—We are collecting testimonials from the medical profession for a valuable specific for rheumatism. ANTI-RHEUM has been tried at all stages of this distressing complaint and has in all cases proved an undoubted success. We send you a sample under separate cover.

Testimonials should be sent in before the 12th inst. to secure priority in a special allotment of founders' shares reserved for the faculty. We are, dear Sir, your obedient servants,

STONEFIELD PRATT AND CO.

INSTRUCTIONS FOR USE.

Dissolve in hot water and use as a fomentation.
Packet containing 2 oz. price one shilling.

Our readers will note the suggestion that the medical man should hurry up with his testimonial if he wants to get a special allotment of shares!

AN OPERATION IN A HOSPITAL BY AN UNQUALIFIED PERSON.

THE French press reports a somewhat curious action in the civil courts in which the plaintiff was the father of a child who had been circumcised in a Bordeaux hospital and the defendant the surgeon in whose service the operation was performed. The complaint was that it had been unskilfully carried out, so that "an infirmity" had resulted, and damages were claimed against the surgeon, who, it appeared, had not actually performed the operation himself, but had allowed a person who was not even a medical student to perform it in his presence. This person was a Jewish official, a candidate for the office of circumciser, who had applied to the defendant for a certificate of competency. The defendant had examined him and had seen him operate on the dead body. In addition he arranged to allow him an opportunity of operating on a living child—not a Jew—in the hospital, with the result of landing himself in a somewhat unpleasant position in a court of law. The view of the court was apparently that by delegating his functions as surgeon to an unqualified person who was not even a medical student he had acted illegally. A committee of experts was, however, appointed to examine the child as to the alleged "infirmity."

A WARNING TO MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—As a protection to the members of the medical profession, I beg to inform your readers that the General Accident Assurance Corporation, Limited, has no agent or person of any kind authorised to appoint medical referees, all such appointments being made by my board and from this office direct. The necessity for this letter has arisen through medical men in Gateshead, Hull, and other towns having written us that a man, or men, giving various names have called upon them offering the appointment of medical referee for our company and taking the medical men's accident proposals, and with them, a deposit, usually £1, and they, the medical men, have heard nothing further of the matter. It seems to me that this is one man who is travelling from town to town under various names, or a gang of men, who are thus victimising the medical men in various towns, and as it appears they have the prospectuses of this company they must have called on our agents or our branch offices, and asked for copies of our prospectuses for purposes of insurance.

I am, Sirs, yours faithfully,

F. NORIE MILLER,
Manager, The General Accident Assurance Corporation, Limited.

Chief Offices, 42 to 44, Tay-street, Perth, N.B.; 115 and 117, Cannon-street, London, E.C., Aug. 3rd, 1898.

"SANOSE."

BY an obvious printer's error this interesting compound was described in our notice last week of the exhibits at the Annual Museum of the British Medical Association as containing 80 per cent. of casein and 120 per cent. albumose. The last figure should, of course, have read 20 per cent.

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IRELAND FUND.

MRS. JOHN IRELAND writes to us from Bourne End, Bucks, to say that she has the pleasure to forward the result of the appeal on behalf of the Misses Ireland with many thanks. Some donations being promised next month she has been asked not to close the list till the end of September so that any sums received up to that time may be added.

	£	s.	d.
Mrs. S. Stanley Brown...	5	0	0
Mr. S. Stanley Brown ...	5	0	0
Miss Jay	5	0	0
Mrs. Rider...	5	0	0
Mr. C. H. Gale...	1	0	0
Mr. E. C. Morley	1	1	0
Mr. W. Shirreffs	1	1	0
Mr. A. de Lande Long...	2	0	0
Per Mr. F. Fenner:—			
Mr. S. le Blanc Smith	2	2	0
Mr. F. G. Gladstanes...	2	2	0
Mr. J. Alcard	1	1	0
Mr. A. C. Stretton ...	2	2	0
Mr. J. Farrell	2	2	0
Mr. F. Fenner	1	1	0
Mr. R. Gale	5	0	0
Mrs. Gale	1	0	0
Mr. F. R. Gale	0	5	0
Misses E. F. Gale ...	0	7	6
Mrs. Bowyer	5	0	0
Misses A. and M. Doughty	0	10	0
Mr. H. N. Custance ...	2	2	0
Mr. C. Outram	1	1	0
Mr. T. Rouse Ebbetts	1	1	0
Mr. C. E. Innes	1	1	0
Miss Davidson	2	0	0
Mr. George Dunnage	1	1	0
Mr. A. Price...	3	3	0
Miss F. Price	1	1	0
Miss A. Price	1	1	0
Per Mrs. Rider—			
Mr. Hayward	5	0	0
Mr. F. P. Rider	1	1	0
Mr. E. S. Rider	0	10	6
A. H.	0	5	0
Mr. G. R. Cox	5	5	0
Mr. W. Dunnage ...	1	1	0
The Proprietors of THE LANCET	5	5	0
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Mr. A. Hodgson	1	1	0
Mr. W. Stout	1	1	0
Per Miss A. Doughty ...	2	7	0
Mr. E. D. Brickwood ...	2	2	0
Per Mr. J. L. Jones:—			
Mr. Chant	1	0	0
Mr. Fiddon	0	5	0
Mr. Caink	0	5	0
Mr. Reeve	0	5	0
Mr. Smithson	0	5	0
Per Mr. E. D. Brickwood:—			
H. S.	2	2	0
Per Mrs. Rider:—			
Mr. Pepkin	1	1	0
Mr. T. F. Rider	5	0	0
Miss Jay (second donation)...	50	0	0
H. B.	2	0	0
W. S. D.	5	0	0
Mr. J. D. Harrison... ...	5	0	0
Mrs. Kimpton...	0	2	6
Per Mr. and Mrs. Stanley Brown:—			
General and Mrs. Parsons	1	1	0
Captain C. Parsons ...	2	0	0
Mrs. Round	1	0	0
Mr. Domett Stone ...	1	1	0
Mr. H. Chapman ...	5	5	0
Mr. L. Salomons... ...	5	5	0
Mr. R. Milburn	5	5	0
Mr. C. T. Room	5	5	0
Mr. P. H. Waterlow ...	2	2	0
Mr. H. W. Maynard ...	2	0	0
Dr. Goddard...	2	2	0
Per Miss Elsden	1	0	0
Mr. John Elsden ...	1	0	0
Anonymous	2	15	0

WANTED A HANDBOOK ON HYPNOTISM.

To the Editors of THE LANCET.

SIRS,—I should feel obliged if any of your readers could recommend a good work on Hypnotism, one giving practical details as to the production of the hypnotic state would be preferred.

I am, Sirs, yours faithfully,

Aug. 7th, 1898. INQUIRER.

J. D. S.—A correspondent who has personal knowledge of Port Erin and Port St. Mary (Isle of Man) informs us that they are naturally both very healthy towns. They both belong to the peninsular parish of Rushen. Port Erin looks straight towards the west (having Ireland, in the shape of the Mourne mountains, in front of it), whilst Port St. Mary looks out on the sea towards the east mainly, but a large portion of the best new part looks to the south-west over the bay. The populations of these two towns would dominate the death- and birth-rates of the parish of Rushen in which they lie. During 1896, according to the last annual report of the Manx Registrar-General (the one for 1897 will now soon be published), the death-rate for the Isle of Man was 19·2 per 1000 and that for Rushen 19·6. In his inaugural address on Medical Geography, delivered before the Isle of Man Medical Society, and published in THE LANCET of July 31st, 1897, Mr. Alfred Haviland stated that the phthisical death-rate of the island is higher than that of England and Wales. At certain times of the year, when the equatorial winds are strong, phthisical cases cannot stand the Rushen coast and soon fall victims. The water-supply is good in both towns, coming from springs on elevated moorland. In 1896 only two deaths from zymotic disease (one from scarlet fever and one from measles) were registered in Rushen. It must be remembered that the sanitary regulations in the Isle of Man are very different from what they are in England. An Act for notifying disease is in operation and there is an isolation hospital about two miles from Douglas. Aberystwith can be recommended as a health resort.

Medical Referee.—It is undesirable that a medical referee should attend anyone whose case may hereafter come before him in his capacity as medical referee. This ruling, however, would not apply in the case of a patient treated in a hospital gratuitously by a medical officer of the hospital who also may be a medical referee.

S. H. S.—For full information see numerous articles in our columns. Consult the index of vol. 1 of THE LANCET for the current year. THE LANCET of April 23rd, 1898, contains the official memorandum of the Home Office on the subject.

Acute Sufferer should consult his medical man.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (20th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 11th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 5	29·99	S.W.	...	120	76	58	59	62	Cloudy
,, 6	29·80	S.W.	0·02	82	70	61	64	66	Overcast
,, 7	29·83	N.E.	0·78	68	57	55	53	56	Raining
,, 8	29·72	E.	...	87	62	51	53	55	Raining
,, 9	30·04	N.	...	108	70	52	54	58	Cloudy
,, 10	30·15	S.W.	...	87	68	54	56	60	Cloudy
,, 11	30·21	W.	...	116	76	60	60	63	Cloudy

During the week marked copies of the following newspapers have been received: *Glasgow Herald, Huddersfield Chronicle, Newcastle Chronicle, Sheffield Telegraph, Lancashire Express, Colchester Mercury, Builder, Warwick Times, Pioneer Mail, Times of India, Western Morning News, Architect, Scotsman, Citizen, Worcester Echo, Eastern Morning News, Dundee Advertiser, Leeds Mercury, South Wales Daily News, Sussex Daily News, Liverpool Daily Post, Malvern Advertiser, Bedford Standard, Southern Times, Birmingham Post, Manchester Guardian, Kidderminster Shuttle, Bury Free Press, Bradford Mercury, Bristol Mercury, Morning Leader, Hampshire Independent, Portsmouth Times, Yorkshire Post, Brighton Gazette, Sanitary Record, Montgomery Express, Nottingham Daily Guardian, Nature, Madras Times, Caterham Free Press, Public Health Inquirer, Science Siftings, Family Doctor, Wheels, Hertfordshire Mercury, City Press, Mining Journal, Local Government Chronicle, Reading Mercury, Observer and Chronicle (Bournemouth), Surrey Advertiser, Admiralty and Horse Guards Gazette, Westminster Gazette, The Morning, Ceylon Standard, Fife Herald, Kelso Mail, East Kent Times, Epsom Herald, Isle of Ely Advertiser, Sunday Chronicle (Manchester), Torquay Times, Craven Herald, &c., &c.*

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AWARDS.

GOLD MEDAL, International Health Exhibition, London, 1884.
FIRST ORDER OF MERIT AND MEDAL (Highest Award), Adelaide, 1887.
HIGHEST AWARD, Medical and Sanitary Exhibition, London, 1882.
FIRST ORDER OF MERIT AND MEDAL, Melbourne, 1888.

Liquor Pancreaticus (Benger).

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Simple directions for use enclosed. In 4 oz., 8 oz., and 16 oz. Bottles.

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An exceedingly active fluid pepsine, without disagreeable taste.

DOSE.—One or two teaspoonfuls with meals. In 4 oz., 8 oz., and 16 oz. Bottles.

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A delicious quick restorative for Invalids and the Aged. In patent glass jars, no metallic contamination possible. Retail, 2s. each.

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TELEGRAPHIC ADDRESS—"Benger's, Manchester."

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Can only be obtained at the Company's

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An Address
ON
SOME CLINICAL EXPERIENCES.

Delivered before the Torquay Medical Society on June 15th, 1898,

BY PAUL SWAIN, F.R.C.S. ENG.,
CONSULTING SURGEON TO THE SOUTH DEVON AND EAST CORNWALL HOSPITAL.

GENTLEMEN,—As you have done me the honour to ask me to give an address to your society I propose to make some remarks on cases which have occurred in my practice; and I shall first call your attention to some conditions connected with the stomach requiring surgical interference. I cannot refrain from recalling to your recollection a very remarkable gastrotomy which I reported in full in THE LANCET of June 22nd, 1895. The case was that of a young woman, aged twenty years, from whose stomach I removed by gastrotomy a mass of hair weighing 5 lb. 3 oz. This was the third case recorded, the mass of hair removed exceeding in weight the other two, which respectively weighed the one 2 lb. and the other 10 oz. The curious fact about the condition of this patient antecedent to the operation was that during the time she was in hospital she exhibited no symptoms of stomach disorder and was able to eat and digest the ordinary hospital diet. The incision made in the stomach was 6 in. in length, which was afterwards closed with twenty-six Lembert's sutures of fine silk. I heard of her a short time ago. She went to America, married, and has a child. The operation of gastrotomy is not often called for. It is principally required for the removal of foreign bodies. It is very generally believed that most bodies which can pass into the stomach by the cardiac orifice will pass out again through the pylorus. Those which are retained are generally long bodies, such as knives, forks, &c. But it is hardly to be expected that the hoop of a barrel 15 in. long would pass out of the stomach. The only wonder is, like the fly in amber, how it got there. Such a case is reported by Fournier. Then, again, a number of small bodies may become agglutinated together and remain in the stomach. Mr. Mayo Robson removed from the stomach of a girl, aged twelve years, the following digestible items: 42 cast-iron garden nails, 1⅛ in. long; 93 brass and tin tacks from ½ to 1 in. long; 12 large nails, some brass-headed; 3 collar studs; 1 safety pin; and 1 sewing needle.

It is quite possible to reach foreign bodies impacted in the lower portion of the œsophagus through an opening made in the stomach as near the cardiac end and as high as possible. But the difficulties in removing them are greater than might be supposed and Mr. Jacobson records a case in which he failed to dislodge a toothplate even after he had opened the stomach sufficiently to introduce his whole hand. On the other hand, Professor Richardson[1] of Harvard University removed a tooth-plate, which had been impacted eleven months, from the œsophagus through the stomach. I have twice performed Loreta's operation for dilatation of the pylorus through a stomach incision. I regret to say they were both fatal. In the first case the pylorus was reduced to the size of a goose-quill and it was found with considerable difficulty. The little finger was at first forced through the constriction and it was then dilated up so as easily to admit the fore and middle fingers. The patient lived for five days and then died from the result of constant vomiting. At the post-mortem examination the stomach wound was found firmly united. In the second case the pylorus was not so constricted and was dilated up to four fingers. The patient died from collapse four hours after the operation. At the post-mortem examination the duodenum was found to be very thin and at its junction with the pylorus at the back the mucous and muscular coat was torn through so that blood and gas were extravasated into the subperitoneal tissue. She had also a very extraordinary hour-glass constriction of the stomach caused by the cicatrices of old ulceration. The constricted portion formed a tube 2 in. long and was at first supposed to be the œsophagus. Both these patients were in a very weak state and the fatal results were not surprising. This reference to Loreta's operation would not be complete unless I called your attention to another procedure which, although I have never had an opportunity, I should certainly have recourse to in any case of pyloric stenosis which required operation. I refer to the operation of pyloroplasty. Mr. Pearce Gould[2] has described this operation and I give you a condensation of his description. The abdomen being opened by a median incision an incision one inch long was made into the stomach close to the pylorus and in the long axis of the stomach. The little finger was then inserted and the pyloric orifice found contracted to the size of a crowquill. The incision was then prolonged into the duodenum until it measured rather over two inches. The opening was then widely stretched with blunt hooks and sewn up transversely. The mortality following this operation is said to be about 25 per cent., whilst that attending on Loreta's operation is at least 40 per cent. Non-malignant strictures of the lower end of the œsophagus may also be treated through a gastrotomy. Two such cases are recorded, in both of which the strictures were dilated with instruments, the results being most satisfactory.

I now pass on to another operation on the stomach—gastrostomy. Up to quite recently I have been in the habit of performing this operation by drawing up a portion of the stomach and attaching it to the parietes by a number of fine silk sutures, so that a portion of the stomach of about the size of a shilling is presented in the wound. Then subsequently, three or four days after, a very small opening was made with a sharp tenotomy knife and a catheter introduced for feeding purposes. In my own experience and in the results which I have seen in the practice of others I have not been impressed with the success of this procedure. When, therefore, a short time ago I was called upon to perform gastrostomy I adopted another method—that of Albert's. I have twice performed this operation and have seen it done twice by other surgeons and the results in all four cases have been so satisfactory that I shall not hesitate to adopt this method in the future. I will now describe the operation in detail. An incision about four inches long is made parallel with the left costal cartilages and about one inch to their inner side. The peritoneum is opened to the same extent. The stomach is then sought for and a central portion of the anterior wall seized and drawn out of the wound for some three or four inches; a stout silk is passed through the apex of the cone thus formed, including the peritoneal and muscular coats only. This silk is for holding purposes. The peritoneal coat of the stomach is then attached to the parietal peritoneum by a continuous suture of fine silk. There is some little difficulty at this step of the operation. The stomach is so contracted that the upper and lower borders approximate, and it is difficult to pass the needle without wounding the large plexus of vessels passing from the omentum on to the stomach above and below. When, however, the suturing is completed the peritoneal cavity is effectually closed. The next step in the operation is to raise a portion of skin from the outer edge of the wound for about two inches over the ribs. This can easily be done by separating the cellular tissue with the finger. At the upper end of this wound a counter opening is made. The silk attached to the stomach is passed up through this opening and the apex of the stomach-cone drawn a little way into the counter opening. It is then attached to the edge of the wound by four silk sutures. The parietal wound is closed with silkworm gut sutures. Before the patient leaves the table the stomach is opened, a catheter is introduced and four ounces of milk with some brandy are poured by a funnel and tube into the stomach. The first case in which I performed this operation was in a lady, aged seventy-three years. She was somewhat emaciated, but had only quite lately been unable to swallow a sufficient amount to sustain her and had been for about a week kept going by nutrient enemata. The operation was performed on Jan. 18th at a private home. She had no bad symptom and lived in great comfort until May 21st. She then died from extension of the disease to the trachea, which had been gradually encroached on. The second case was in a lady, aged sixty-six years. I operated on her also at a private home on March 18th. Unlike the first case, she was very sick for some hours after the operation, but on the second day feeding by the stomach was resumed. Since

[1] THE LANCET, Oct. 8th, 1887, p. 707.

[2] THE LANCET, May 20th, 1893, p. 1187.

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then she has gone on quite well. I have seen this patient to-day; she is perfectly comfortable, has gained flesh, and is able to go out and walk about. She takes about two quarts of fluid nourishment with Benger, sago, &c. In both these cases we may feel satisfied that the operation has been most beneficial and has saved the patients from one of the most distressing terminations to life—death by slow starvation. This operation we have been considering is called for to alleviate those distressing conditions which ensue upon the obstruction of the entrance of food into the stomach. But there are other conditions equally painful which prevent the exit of the contents of the stomach through the pyloric orifice. I allude to malignant growths either in the pylorus itself or external to it but occluding the passage by pressure. I shall not speak of the excision of these growths by pylorectomy because I wish to limit my observations as much as possible to my own personal experience and I have never performed this operation. But there is another method of relief, much less severe than pylorectomy, which in well selected cases is calculated to prolong life and ease suffering. I allude to gastro-jejunostomy or lateral approximation between the wall of the stomach and the jejunum. The following is the description of this operation. A median incision not less that 3 in. long between the ensiform cartilage and the umbilicus is made and the peritoneum being opened the jejunum is sought for. It is rather difficult to find, and portions of small intestine have been attached to the stomach not far from the ileo-cæcal valve—a very fatal mistake to make. The pancreas and the transverse meso-colon are the two landmarks. The great omentum having been either turned up or pushed well over to the left side the hand is passed down to the spinal column and sliding over the pancreas it comes on the jejunum just below it. The characteristic of this jejunal commencement is that it is the only portion of the small intestine which is fixed. If, then, on drawing on the bit of bowel held by the fingers you find it fixed you may be sure that you have jejunum. A point a foot further on should be selected for approximation, so that there shall be no drag upon the loop. The question as to whether the anterior or posterior wall of the stomach should be selected is a moot point. The anterior wall is the more easy, but it involves a greater drag on the jejunum, which has to be carried over the transverse colon, and it does not afford so good an exit for the contents of the stomach. On the other hand, it has been asserted that the intestine is more likely to kink if attached to the posterior surface. Besides which the operation is more complex, as it involves the displacement of the stomach and the perforation of the gastro-colic omentum. In the two cases in which I have performed this operation I selected the posterior surface of the stomach and in neither case had I any reason to regret the selection.

The next point to be considered is the method of union, whether by stitching, by one of the various bobbins, or by Murphy's button. There is no doubt that, as far as rapidity goes, the latter method is the best, as I believe it to be in all cases of lateral approximation. I used the button in both cases and found it satisfactory. In one case the patient made a good recovery, passing the button on the eighteenth day. She was immediately relieved from all sickness and lived in comparative comfort for eight months. The second case was equally satisfactory as far as the immediate results went. But on the fifth day, as Rider Haggard says, "a curious thing happened." She was attacked by severe and constant stercoraceous vomiting and died in a few hours. At the post-mortem examination we found it was not a case of malignant disease of the pylorus at all, but an epithelioma of the hepatic flexure of the colon matting all the parts together and occluding the pyloric orifice by pressure. Perforation had taken place into the stomach—hence the stercoraceous vomiting.

We now leave the surgery of the stomach and pass on to consider some of those conditions of intestinal obstruction requiring operative measures. It is obvious that I cannot within the compass of this address range over the whole question, very interesting as it is to all of us, of intestinal obstruction. I propose, therefore, to select some typical cases for your consideration. The first case I refer to is particularly interesting to myself, for it was the first occasion in which I used Murphy's button. I have reason to think it was one of the first cases in which this method had been adapted in England. A boy, aged nine years, some eighteen months before had received a severe blow on the abdomen which set up a general peritonitis. He recovered, but soon after began to get recurrent attacks of obstruction accompanied by pain, distension, and sickness. These attacks at last became so frequent that I advised an abdominal section. He was removed to a private home. As I expected I found a portion of small intestine tightly constricted by the products of inflammation. I removed about 8 in. of bowel, uniting the cut edges with Murphy's button. The boy made a most satisfactory recovery, passing the button on the ninth day. From that time to this he has been perfectly well. Quite recently, on Dec. 31st, 1897, I operated on a man with a very similar condition arising from a different cause. Some months before he had been operated on in the country for a right inguinal hernia. As far as the operation went all was well, but three weeks after he began to develop symptoms of chronic obstruction. We came to the conclusion that in all probability the portion of bowel involved in the hernia had become matted together by bands and that this was the source of his symptoms. I opened his abdomen and found this to be the case. A long portion of bowel was removed, and a Murphy's button was inserted, which was not passed for three weeks. The man made a good recovery and I have just heard from his medical man that he is in perfect health and working as a navvy. The anxious part about this case is that when the intestine removed was cut open a large granular growth was found on the mucous surface. There were also some enlarged glands in the mesentery. It looked very like a malignant growth and was afterwards pronounced by the pathologist to be an epithelioma. The after history of the case does not bear out that opinion.

A word as to the merits of Murphy's button. One is always inclined to speak well of the bridge that carries you over and certainly I have had sufficient success with this method to enable me to express a high opinion of its utility. I have never had a case in which the button has been retained except one. That was a case in which I attached a huge bile cyst to the duodenum by the button. It is now some four years ago; the button has never appeared, but the girl is none the worse for its retention. As I have before said, for lateral approximation I believe it is unequalled; but there is one difficulty attending its use in end-to-end union. Where you have a stricture of the bowel it must needs be that the portion of intestine above the stricture is largely distended, whilst that below is contracted. The result is that the dilated end of the bowel is with difficulty included in the button. I am inclined to think that Allingham's or Mayo Robson's decalcified bobbin are better adapted for this purpose, although as a rule it cannot be so rapidly applied, and saving of time in these cases is of paramount importance.

My next clinical experience is one of very great interest, partly from its rarity and also from its very successful termination. In October of last year I was asked to see a man in the country in conjunction with Mr. Lucy and Dr. T. E. Smyth of Tavistock. He was fifty years of age. For two years he had suffered from constipation. For two months he had had tenesmus with passage of blood and mucus. This became acute and for a week no fæcal matter was passed. On examination under chloroform the rectum was found to be ballooned and occupied by a rounded tumour, the posterior part was hard and nodulated, the anterior portion was soft and velvety, the lumen of the bowel being here detected. This tumour could be reduced by forcible injections, but immediately recurred. The diagnosis was intussusception of the sigmoid flexure into the rectum caused by the presence of a malignant growth. I performed the following operation. The patient was placed in the lithotomy position and the sphincter was widely dilated. The intussusception was then seized by two strong vulsella and drawn down through the anal aperture until about 6 in. protruded. The forefinger of the left hand was then passed up the bowel well beyond the growth, the thumb steadying the gut outside; care was taken to ascertain that no small intestine had slipped down between the layers of the gut. With a curved needle a fine silk ligature was passed parallel to the longitudinal axis of the gut through all the coats of the intussusception and fully one inch above the growth. When the point of the needle was felt on the forefinger it was turned outwards and brought out about a quarter of an inch below the point of entrance and the ligature tied. This process was repeated until the whole circumference had been ligatured with fifteen sutures. As the sutures were applied the bowel was gradually opened and

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divided about half an inch below the ligatures. One of the great difficulties of the operation was the protrusion of the appendices epiploicæ, which were with difficulty replaced and retained during the tying of the sutures. In fact, after all the sutures had been placed it was needful to apply many superficial ones in order to cover in these protruding bodies. When the entire mass was removed an attempt was made to reduce the stump, but this could not be accomplished. However, the next day the bowels were opened spontaneously with the passage of large quantities of scybala, but no blood and without tenesmus. The rectum was examined and no trace of the intussusception could be discovered. From that time the patient made an uninterrupted recovery and is now in perfect health. The growth was reported to be columnar epithelioma. This is the seventh recorded case of intussusception caused by malignant growth operated on. Three were fatal.

Remarks
ON
THE TREATMENT OF FRACTURED BONES BY OPERATION.

Delivered at University College Hospital,

BY ARTHUR E. BARKER, F.R.C.S. ENG. & IREL.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY AND PROFESSOR OF CLINICAL SURGERY AT UNIVERSITY COLLEGE; SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—The question as to the propriety of treating fractures by surgical operations by wiring is one which at the present time is engaging a good deal of attention. As yet the majority of surgeons appear to be agreed that for most ordinary fractures other and simpler mechanical modes of treatment are quite adequate and involve less risk, and with this view I entirely agree. There are, however, a considerable number of fractures which proverbially give but indifferent results if treated by mechanical appliances, and to these surgeons are beginning to apply operative treatment in ever increasing numbers. To this class belong fractures of the patella and of the olecranon, whether recent or old, and fractures of the long bones of the leg or arm in which union is long delayed or totally absent. Hitherto the great bugbear in the operative treatment of such fractures has been the risk to limb or life involved in the operation. The nature of these risks we all know and in the past they have very properly checked and limited operative undertakings. But how far this ought to be the case now with our greatly improved technique is a matter which appears to me to be open to discussion. With a view to clear my own impressions upon this subject I have for some time past been collecting those cases in which I have operated for fractured bones and studying the results in order to see whether the series appears to justify such interference or not. As these results will probably interest others who are speculating on the same subject I venture to publish them here. I have only to remark, in reference to them, that they include all the cases, without any exception that I am aware of, in which I have operated for injury of bones recent and old. If they have any value it lies in the fact that they form an unbroken series and have been operated on by the same surgeon, with almost identical precautions in each case against surgical accident. From the notes in the abstract which are now before me, but which are too voluminous for publication, I find that in all there are 46 cases, including some cases in which bones have been divided for various reasons and subsequently sutured, such as, for instance, where the patella or olecranon has been sawn across to explore a joint or reduce a dislocation but not including excisions. Of the latter it may be said that though their fate would materially and favourably influence the question of the justifiability of interfering extensively with bones they belong to a somewhat different category. I will only add that of all my excisions, for instance of the knee, amounting to some scores, I have lost none and only 2 have subsequently required amputation—the case of an old woman whose knee I tried to save and a young woman who came to me for amputation but whose leg I tried to save first by excision. The 46 cases alluded to arrange themselves thus: subcutaneous suture of patella for fracture, 19; suture of patella (open method), 10; suture of olecranon for fracture, 6; suture of olecranon for dislocation, 2; suture of bones of forearm (ununited fracture), 2; suture of bones of leg (ununited fracture), 4; suture of clavicle (ununited fracture), 1; suture of patella after division, 2; total, 46.

Of the first group it need only be said that all have recovered well from the operation without any accident. I have made every effort to follow these cases up to date and have seen the majority a long time after operation. The results have been excellent. In some few a little limitation of movement has remained, but the limb has been firm and as far as could be made out the union of the fragments was osseous. In none so far has the wire appeared to give any trouble. Of several I possess skiagrams. These show that though the union is bony the adjustment of the fragments to one another was not always symmetrical. This has not appeared to unfavourably influence the movements of the joints, as, indeed, could hardly be expected, as little irregularities in the patella in rheumatoid arthritis do not always do so we know. Several of the patients were absolutely restored to as good use of the injured limb as though it had not been damaged at any time. Those cases in which stiffness was noticed to any extent were past middle life and it was seen even in cases which had healed without reaction. On the whole I am very well satisfied with my subcutaneous method of suture for recent cases at any age. For fractures which have remained ununited, for months of course the open method will be required, but such cases will, I venture to think, become rarer and rarer as the simplicity and freedom from risk of the subcutaneous method is more fully recognised.

Of old fractures of the patella there are 10 cases and of these 8 healed by first intention without any suppuration. Cases 2 and 7 suppurated but not very seriously. The first was one of my earlier cases treated long ago and the suppuration was in the peri-articular structures. I saw the patient years later with an excellent moveable knee and removed the knot of wire which was giving him some trouble. Case 7 was one of comminuted fracture of the patella, almost compound, with loose fragments which had to be removed. Those which remained were surrounded with a "purse-string" suture and thus drawn together. Some swelling followed and effusion into the tissues above the knee, but though I made incisions only serum escaped. The main cavity of the joint appeared to be quiet all the time, though the suture wound opened and the wire had to be removed in part. I have put this down as one of suppuration as there certainly appeared to be some, and the wound yielded pus, though not to a large extent. I have lately seen the patient, who is well satisfied with the result. There is much stiffness in the knee, though I think this will pass off to a great extent in time. One of the last cases operated on was particularly interesting; it was one of transverse fracture by very slight muscular action. But the joint was enormously swollen and looked as if about to suppurate. I opened the joint by a curved incision with the convexity upwards—a method I have already published—and found a great deal of broken-down blood-clot, almost purulent, as one of my colleagues remarked. This was removed and the bone fragments brought together with one silver wire. The wound healed absolutely by first intention and the patient left the hospital. Before he went he was discovered to have ataxic symptoms. Two months later he was admitted to the medical wards as a case of Charcot's knee, the joint having become greatly distended. As there appeared to be pus in it it was opened by a colleague during my absence and much broken down purulent material was evacuated. It was then found that the wire had worked through the lower fragment and was loose. It was removed and the joint was drained. The man soon left the hospital healed but with all the signs of ataxy and has not since been seen. Had the condition which probably favoured the fracture been recognised at the outset I should not have operated. But the man was young and the symptoms were not well marked at first. In all the 8 cases where there was no trace of inflammation after the operation the results were admirable and in the other 2 the state of the patients or their joints did not appear to be critical at any time.

Six recent fractures of the olecranon were wired and with the exception of one which was compound

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and comminuted the results as to movement were admirable. All healed *per primam*, even the compound case, but here there remained great stiffness. The woman was fifty-three years of age and when the adhesions were broken down under an anæsthetic about a month after discharge from hospital the line of union in the fragments gave way in spite of the "purse string" silk suture. In the other cases the results were almost or absolutely perfect. And I have recently seen a blacksmith's hammerman whose broken olecranon I wired two and a half years ago with as strong and moveable an arm as if it had never been broken. The method employed for some years has been to make an oval flap, drill the fragments transversely, and use wire, making the knob on the outside. In only one case so far has the wire given trouble. It irritated the skin and had to be removed. In 2 cases I divided the olecranon as a preliminary to reducing old dislocations of the elbow. In one, a boy aged twelve years, though firm union resulted there was considerable stiffness of the joint when he left hospital. He has not been seen since. In another, a woman aged fifty-six years, whose dislocation dated from four months back, I divided the olecranon, reduced the dislocation, and primary union resulted. When last heard of the result bade fair to be perfect. In 2 cases the radius was cut down upon and wired for old ununited fracture. The first I have not seen since the operation; the last, a middle-aged woman, recovered with primary union and with good use of her arm. The clavicle united perfectly under one dressing and all the symptoms were relieved.[1]

In 2 cases I divided the patella for access to the joint and wired at once. The union was primary in both without reaction and the patients left for the colonies, much relieved in 1 case; the other was a private case and was quite relieved.

Of the 4 cases in which the bones of the leg were wired for ununited fracture primary union took place in all and the functional result was perfect in 3. But in the first union had not taken place in the bones when last seen and the patient cannot be traced.

These results appear to me to be encouraging, especially as they were achieved in an old hospital now happily being rapidly rebuilt. With care and experience the result ought to be better in the future, but as far as they go they appear to justify the belief that such operations if done with extreme care do not involve such risk as to forbid them.

VACCINATION: WITH SPECIAL REFERENCE TO PROSPECTIVE LEGISLATION.[2]

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As the precise title of this paper has not been selected by myself, but is one on which I have been asked to open a discussion, I feel it necessary to give it a certain latitude of interpretation. By the term "prospective" I propose to understand not simply the legislation which is now imminent as the result of the consideration of the Vaccination Bill by Parliament, but such provisions as it has been found impossible to get incorporated into the Bill and as it is to be hoped may be placed on the statute-book at no very distant period, unless this country is to lag behind most others in the march of sanitary progress.

The vaccinist position. — It is superfluous in such an assembly as this to assume that we are all convinced that vaccination is in some degree a protection against small-pox. I have no doubt also that the great majority of us are thoroughly convinced that when properly performed it is free from serious risk and that it is nearly, if not quite, as effective a protection against small-pox as an attack of that disease itself is. I may probably go still further and may assume that there are few, if any, now present who would undertake to maintain that apart from the absolute separation of the infected person from all who are likely to take the disease—an almost impracticable condition—there are any other means of protection against small-pox which are approximately comparable with vaccination. It goes without saying that we all know very well, what is so generally ignored on one side of the controversy on this subject, that the term "vaccinated," unlike that of "unvaccinated," has no meaning which can for purposes of comparison be definitely estimated and that in using it for controversial purposes we labour under the disadvantages which inevitably attach to the employment of ambiguous terms.

The medical vaccinist as a critic.—It may be well also to refer at the outset to an objection which may be taken to the discussion by a purely professional meeting such as this of a question in the decision of which many of those present may be said to be personally interested. There are two answers to this objection, either of which is of itself sufficient. The first is that however much those who are engaged in the practice of vaccination may be assumed to be interested in the maintenance of it—and for my part I do not admit that the pecuniary interests of the medical profession as a body lie in this direction—this does not exclude them from the right—nay, does not absolve them from the duty—of discussing a matter which affects them in their individual capacity as citizens as much as it does other people. It may give a bias to their opinions, but that must be estimated by those who care to consider them. The second answer is that assuming, as is so often done, that medical men are prejudiced in favour of vaccination and therefore are not impartial judges of what is right and expedient in this matter, their opinions are entitled to the more respect if it should turn out that they are less enthusiastic in favour of the coercive promotion of vaccination than they are often assumed to be—less so, in fact, than many non-medical enthusiasts have shown themselves to be. In illustration of this view of the matter it may be pointed out that an unsuccessful proposal to absolve determined objectors to the compulsory vaccination of their children in infancy was made by a leading member of the medical profession on one side of the House of Commons in Grand Committee on the Vaccination Bill, whilst a more successful effort in the same direction at a later stage of childhood was made by an equally distinguished member of the profession on the Ministerial side of the House. This is a fair answer to the charge so often made by anti-vaccinationist controversialists that in maintaining compulsion Parliament is led by the nose by the medical men.

Legislation as it affects the individual and community.—The legislative aspect of the vaccination question is of two kinds: as it affects the individual and as regards the community of which he is a unit. So far as the ethical basis of legislation is concerned it must be assumed that whatever may be our views of individual rights in matters of *opinion*, there is only one principle upon which the maintenance of society can be based and that is that the right of the individual in regard to *action* must be subordinate to the opinion of the majority. But whilst strictly insisting on the imperative character of this principle as a general safeguard of society we must fully recognise the right of protest on the part of the individual to any legislation of which he does not approve and also that in all cases in which the volume of such protest becomes considerable the correlative question of the expediency of modifying the law against which it may be directed must engage the attention of prudent legislators. So far as the individual is concerned it must be frankly admitted that the aphorism, *de minimis non curat lex*, however unwise it may appear in conception and however harshly it may often operate in practice, is as unavoidable in vaccination as in all other matters of opinion which have to be embodied in a legal form. It is only when individuals can, from the force of their convictions or from the acuteness of their sufferings, succeed in associating their efforts so as to disturb the peace of the community or to impede the operation of the law that they can expect to obtain a hearing for their grievances, whether real or only sentimental. This may be considered as a somewhat cynical view of the matter, but it can hardly be disputed that it represents the real state of public opinion. It is obvious that this consideration applies in a still higher degree to the case of recalcitrant communities than it does to that of objecting individuals, since the difficulty of enforcing the law becomes proportionately greater as the number and solidarity of the protestants increases. Nor must we forget that in matters of opinion, as in pathology, infection often plays a very

[1] Vide Transactions of the Clinical Society of London.
[2] A paper read in the State Medicine Section at the recent meeting of the British Medical Association.

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important part, and if not judiciously treated is apt to spread with unexpected rapidity and to become unmanageable. That we have approached within appreciable distance of this state of things in regard to vaccination in this country can hardly be denied by any one who has an adequate knowledge of the real state of affairs. The unfortunate interregnum in vaccination administration necessitated by the prolonged inquiry of the Vaccination Commission has led to a crisis which can only be described as a state of administrative chaos.

How does the Vaccination Bill meet the crisis?—Looked at from this point of view there are two questions which, both as citizens and as medical men, we are called on to discuss. The first is, how far does the Vaccination Bill meet the agitation against the Vaccination Acts which has been steadily increasing in volume since those Acts, and especially that of 1867, were passed? The second is, assuming, as the Royal Commissioners unanimously recommended, that vaccination is to be promoted by the State, so far, at any rate, as the maintenance of the existing machinery is concerned, what provisions are necessary in order to carry out that object effectively?

The agitation against vaccination.—That the agitation against vaccination which commenced about thirty years ago has been since then steadily growing is a fact much less generally appreciated than it should be. The refusal by boards of guardians to enforce the compulsory sections of the Act of 1867, which was for some years unheard of, has during the last decade become a familiar occurrence. This may no doubt in some degree be attributed to the excuse which the protracted inquiry by the Royal Commission has offered to many boards who, though perhaps prepared to carry out the law as it may be modified by Parliament as the result of this inquiry, have been glad to avail themselves of this pretext for at least suspending action. Indeed, had it not been for the experience of Gloucester, followed so soon after by that of Middlesbrough, it is probable that the general dereliction of prosecutions would have been much more extensive than it has been. What has been the cause of this apparent unwillingness of vaccination authorities to carry out the law? It certainly is not attributable to any decline of confidence on the part of the medical profession in the efficacy of vaccination as a protection against small-pox when rightly and duly employed. If there were any question on this point it would be settled by the recent declaration of over 1100 medical officers of health that in their opinion vaccination is the only trustworthy protection against small-pox, both for the individual and the community. Every epidemic—nay, every isolated outbreak of small-pox—only adds fresh evidence to the huge mass which the experience of a century has accumulated. So huge, indeed, is it that only those who, like the Royal Commissioners, have had to wade through it, even with the assistance which their report affords, can form any idea of the weariness of the effort required. There is, of course, as we all know, a sufficient explanation of the enfeeblement of the law which has been thus steadily taking place.

Its causes.—It is to be found in three causes. The first of these is the natural intolerance of the ordinary Briton for compulsion in any shape, and especially for compulsion in matters which intrude within the domain of private opinion, of the relations of the family, or of the sacredness of the person. It is needless to discuss the reasonableness or the reverse of this feeling; we must accept it is as a fact. The second cause is the unquestionable occurrence of mischief which, whether rightly or wrongly attributable to vaccination, has certainly followed it. The third is the recognition of results connected with the spread of small-pox which appear at first sight, and when incorrectly represented, to be incompatible with the claims made for the protective value of vaccination. It is quite unnecessary to assume that the efforts which have been persistently made to appeal to the intolerance of control, which we all feel, and to parental sentiments, which are worthy of the highest respect, by an exaggeration or misrepresentation of the seriousness of this mischief have been actuated or even materially maintained by disingenuous motives. Bare justice demands the recognition of the fact that the great majority of those who have taken an active part in the agitation against vaccination have had more to lose than to gain in so doing, so far as their pecuniary interests are concerned. That paid advocacy has played a part in this, as it does in all prolonged agitations for the spread of new opinions, may be admitted without thereby reflecting on the good faith of those who have availed themselves of it. Paid advocacy may suggest caution in receiving the statements of the advocate, but it is in no way incompatible with their being true. We must look in a different direction for an explanation of the enthusiasm by which what we cannot but regard as the wrong-headedness of the anti-vaccination movement has been so persistently maintained. It is to be found in the tendency, largely unconscious, which we all have in matters of opinion to exaggerate everything which appears to support what we ourselves believe, to give undue weight to sentiment as opposed to reason, and to view in a false perspective the relative features of our mental landscape. It is only necessary to give the names of some of the men who have identified themselves with the anti-vaccination movement to appreciate the fact that this tendency is not confined to the illiterate or even to those who are destitute of scientific culture. The name of at least one of the protagonists of the anti-vaccination cause might be quoted to prove that it is consistent with the highest degree of mental training and originality.

The crude Bill.—How does the Vaccination Bill propose to meet this state of things? As is well known the Bill first laid before the House of Commons contained only three provisions which are material to this question. It proposed to limit prosecutions to two, or perhaps three, at the most; to compel the use of glycerinated calf lymph by public vaccinators, unless the parent or other person with whom the discretion lies prefers some other form of lymph; and to offer, and in many cases to personally present, this lymph at the home of the defaulter. It must be evident to anyone who has any acquaintance with the conditions which led to, and have so long maintained, the anti-vaccination agitation that those who are responsible for the Bill must either be singularly unacquainted with the history of this agitation or excessively sanguine as to the power of glycerinated calf lymph in dissolving it if they thought that the Bill in this form would put an end to it.

"Glymph" as a solvent of doubts.—One would almost fancy, from some statements which have been made on the subject, that we had never heard of glycerinated calf lymph, or "glymph," as it has been proposed for brevity to call it, until it was revealed to us by the Bill; whereas, as we all know, it has been in use by private vaccinators for years past. The best indication of its value as a solvent of anti-vaccinist doubts is that in Germany, where the combination of glycerine with human lymph was introduced more than twenty years ago, there is an increasingly active agitation against vaccination. And it is somewhat singular, as an illustration of the different points of view from which what may be called the controversial value of glycerinated calf lymph is regarded, that whilst in this country it has been thought sufficient to make it practically the *pièce de résistance* of our new vaccination law the official German handbook on the subject of vaccination, which deals mainly with its controversial aspects, makes absolutely no reference to it at all. The Germans have adopted this agent, as a valuable laboratory device, which enables calf lymph to be employed under the most favourable conditions at present practicable, but they do not seem to think it necessary, or perhaps even expedient, to depend on this provision alone as a means of relieving vaccination from all ground of reproach, nor to pin themselves by an Act of Parliament to the compulsory use of any single preparation, as the Bill in its original form would have tied down the Local Government Board. The German Government place their reliance in minimising the opposition to vaccination, not on glycerinated calf lymph alone, but upon a carefully devised administration by which the process of vaccination in all its stages is hedged round by precautions which we entirely ignore, as a sample of which it may be mentioned that any medical man who can be shown to have performed vaccination in such a way as to expose the subject of it to needless risk is liable to a very severe penalty. The real value of glycerinated calf lymph, of course, is—and I have no desire in any degree to minimise it—that it reduces to an incalculable zero the previously "insignificant"[3] pretext which there was for magnifying the dangers of vaccination. But reasonable people who are satisfied with the opinion of the Royal Commissioners on this point will hardly need the further assurance which the purveyor of official calf lymph will now be authorised to give, whilst it is to be feared that the unreasonable people by whom the anti-vaccination agitation is entirely carried on will be in no degree conciliated by it. Upon the great majority of defaulters, the

[3] See opinion of the Royal Commissioners in final Report.

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indifferent and the indolent, it will have no appreciable effect; they will not be induced to have their children vaccinated because they believe that calf lymph is any better with glycerine than it is without it, but because they know that behind the public vaccinator, with his lancet and his glycerinated calf lymph, stands the vaccination officer with a summons. The whole influence of the first of these two officials in diminishing the number of defaulters will depend on whether the sequence of the second of them can be certainly reckoned on or not. On this point still hangs, as it has hung for many years past, the vaccination problem. The mistake of specifying "glycerinated calf lymph" in the Bill has been corrected in Committee by the addition of the words "or such other lymph as may be issued by the Local Government Board." But it may well be asked why, with this alteration, the words "glycerinated calf lymph" should be retained in the Bill at all? The public must trust the Local Government Board in this matter, and the simpler provisions of this kind are made the better, in view of the handle which a superfluous word often affords to an astute lawyer for verbal strife. Surely the words "lymph as issued by the Local Government Board" would be sufficient for the purpose.

Need for the diffusion of knowledge.—But apart from the bigoted antivaccinist on one side, whom nothing will convince, and the indolent and indifferent parent on the other, who can only be compelled to face his responsibility by the strong arm of the law, lie the great body of the British nation, who know but little about vaccination, and for the most part, also, have at the outset no prejudices either for or against it, except so far as it may be likely to entail inconvenience or discomfort upon them. They are the ready prey of the casuistry and misrepresentation which the organised machinery of the Anti-vaccination League brings to bear upon them, and they will continue to be so in default of a corresponding effort to counteract this mischief. It is a striking paradox that whilst we have for 30 years been compelling parents to have their children vaccinated we have never thought it expedient to make any official or organised effort to explain to them the grounds on which this requirement is founded. And it is a fact which is scarcely credible that if a local vaccination or sanitary authority were to incur any expenditure in diffusing literature on this subject or in any other way promoting the spread of knowledge in regard to it—except, possibly, when small-pox might be actually prevalent in the neighbourhood—those members of it who might happen to sign the cheque for so doing would render themselves liable to be surcharged by the auditor and could only obtain relief by memorialising the Local Government Board.

The amended Bill.—The Bill, when it emerged from the ordeal of consideration by Grand Committee, was distinctly improved by the process. The provision which extended the age limit within which vaccination is required from three to twelve months was altered to six months. This alteration was made chiefly on the strength of recommendations to that effect by the Council of the British Medical Association, the Society of Medical Officers of Health, and other representative bodies, and though open to some discussion is probably on the whole, a judicious alteration. The clause providing that the public vaccinator shall visit the home of the child for the purpose of vaccinating it, if requested to do so by the parent, was the most valuable one in the original Bill, as it will remove a fertile source of discontent on the part of mothers who dislike, and with some reason, taking their children to public stations. The objection to this proposal on the ground that the home of the child may for sanitary reasons be an unfit place for performing the operation was met in Committee by an amendment giving the vaccinator a discretion to withhold vaccination for this reason if he saw good to do so. As a parent is under no compulsion to invite the public vaccinator to vaccinate his child no reasonable opposition could be offered to this clause. Others which are in the same category and which were mostly added as amendments in Committee, were Clause 2, which prohibits the repeated prosecutions which have been so largely responsible for the agitation against vaccination; Clause 4, which provides that persons committed to prison for vaccination offences shall be treated as first-class misdemeanants; Clause 6, enabling the Local Government Board to make special provision for opening public vaccination stations in case of any local outbreak of small-pox; Clause 7, authorising local authorities to incur reasonable expense in distributing literature explanatory of the advantages of vaccination; and Clause 8, requiring records of cases admitted into small-pox hospitals to be kept, and making them accessible to those who may wish to consult them.

Domiciliary visitation.—The Vaccination Bill in its original form contained three other provisions besides the prescription of the use of glycerinated calf lymph. One of these, to which reference has already been made, requires the public vaccinator to vaccinate children at the homes of their parents, if called on to do so. This course, which was recommended by the Royal Commissioners, is an eminently reasonable one, and simply involves the consideration of the cost of paying for such visits. Sir Walter Foster attempted to get a schedule of vaccination fees incorporated with the Bill, but for some not very evident reason it was not accepted. A more questionable provision is that which requires the public vaccinator to offer vaccination at the home of the parent in the case of every defaulter. This arrangement, which seems very simple in theory and which was justified by a somewhat misleading analogy drawn from Scotch experience, will probably prove to involve considerable difficulties in practice. It is certainly open to two grave objections. The first is that in urban localities where the feeling against vaccination is strong it will expose the public vaccinator to treatment which is likely to make the office a very thankless one. There can be no expectation that he will convert the objecting parent, and as these visits will have to be paid for, it is only imposing useless expense on the community to require them. If it be urged that they will help to make the case stronger against the recalcitrant when he may have to be summoned before the justices, the obvious answer is that it can be made quite strong enough by giving him the offer of vaccination in another way. This may be done by requiring the vaccination officer to serve the parent with notice at the appointed time that the public vaccinator will attend at the home of the child to vaccinate such child unless he shall have received before a specified date a notice signed by the parent that he does not wish him to come. This would give the parent the opportunity of having his child vaccinated by his own medical attendant if he preferred doing so; if he did not take this course but sent a note deprecating further attention, it would save a useless visit by the public vaccinator and would serve as *primâ-facie* evidence of his irreconcilable objection. If the public vaccinator received no such notice he would be justified in going to the home of the child, and if vaccination were then refused, the refusal under such circumstances would be a fact which the justices would probably take into consideration when inflicting a penalty.

The private vaccinator ignored.—The second objection is that it may very easily create friction between the public vaccinator and his professional brethren, into the houses of whose patients he will thus be licensed to intrude. This consideration naturally leads to another, and that is that the Bill entirely ignores the fact that so large a portion of the vaccination of the country is performed by private vaccinators. The public vaccinators have complained, and with reason, that they are heavily handicapped in being required to make four insertions as a condition of being paid for their work as efficient, whilst private vaccinators are allowed to underbid them by giving certificates of what is assumed to be satisfactory vaccination on the strength of a single insertion. On the other hand, the private vaccinators have a right to complain that the Bill handicaps them by containing no provision for their being supplied with lymph bearing the Government guarantee as the public vaccinators will be. Hence, instead of a healthy rivalry being established between these two sections of the profession by which both should be encouraged to do their work with the highest degree of efficiency, an antagonism is created between them which can hardly fail to be detrimental to vaccination and consequently to the public interest. The expediency of recognising the work of private vaccinators, and of putting them on the same footing with public vaccinators, which was recommended by the Royal Commission and was pressed on the Government from a variety of representative bodies, was embodied in an amendment proposed by Sir Walter Foster and supported by Sir William Priestley and Sir Charles Cameron, but was defeated. It was opposed by Mr. Chaplin (who admitted that it would promote vaccination) for two reasons: because it would entail a heavy burden on the rates and because there was no assurance that satisfactory results could be obtained without the appointment of a

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"whole army of inspectors." These objections seem capable of easy answer. The children who would be thus vaccinated would be mainly of the class who now are vaccinated at the charge of the ratepayers. All that would be done therefore would be to transfer to private vaccinators a portion of the fees now paid to the public officials. The burden on the rates would not be appreciably increased by so doing, except upon the assumption that those who are now competent to pay for vaccination would under the new regulations claim to have it done free. But this might be safely left then, as it is now, to the medical men themselves, who were prohibited by Sir Walter Foster's proposal from making any private charge if they took the administrative fee and who would scarcely accept 1*s.* 6*d.* from the rates if they could obtain more from the parent direct. As to the need for "an army of inspectors," this objection is equally susceptible of answer. The inspection of public vaccinators as now carried on by the Local Government Board can hardly be claimed to be a very effective one. A hasty inspection made once in two years, which is the amount of supervision bestowed on the bulk of public vaccinators, scarcely represents an adequate control, and it may be freely admitted that if arm-to-arm vaccination were to be maintained, any extension of this system of control to private vaccinators would be quite impracticable, except at the cost which Mr. Chaplin suggested. But he appears to have overlooked the fact that the change to glycerinated calf lymph will entirely alter the aspect of this question and that with a properly-devised form of certificate and a stiff penalty for misstatements, as proposed by Sir Walter Foster, those vaccinations by private vaccinators for which the public would be called to pay would be mainly a matter of inspection of registers, which might be well delegated to local officials.

Local option.—There is one aspect of the vaccination problem which the Bill will leave unchanged. It is this: there are unquestionably a large number of boards of guardians who at the present time are not enforcing the vaccination law. Admitting that a certain proportion of those authorities who have suspended action on the plea that they were waiting to see first what the report of the Royal Commission would be and then what Parliament would do will, when the Vaccination Bill has become law, resume the prosecution of defaulters, there will be a considerable number who are not likely to do so. In some cases these boards have ceased to take any action at all and the subject of vaccination is practically ignored by them. Others profess to consider the objections of defaulters and to deal with them on their merits. The result in this case also is much the same as in the other, for in one way or another every one who chooses to express an objection to vaccination is allowed to escape scot free. The position taken by these boards really amounts to a claim to exercise local option in a matter in regard to which Parliament has conferred no such right. The claim is founded on the assumption that boards of guardians possess a discretionary power in this matter which the law has certainly not given them. That this is the strictly legal view of the question is beyond doubt. And it is important to recognise also that this claim is only a phase of a much larger one by which some of these boards seek to emancipate themselves in all matters from any form of central control. Local option therefore in vaccination is the first serious manifestation of a revolt by local authorities, at first as boards of guardians, against the general opinion of the country as formally expressed by Parliament. As such it must be dealt with firmly, unless we wish to drift into general anarchy. Even if it cannot be checked it can be at least controlled. How is this to be done.

How to control local option.—The President of the Local Government Board has drawn attention to a fact which has escaped general observation—that Parliament has already provided in the Vaccination Act of 1874 a remedy for this state of things by investing the Board with powers in virtue of which they can directly instruct vaccination officers to carry out their duties in regard to the prosecution of defaulters where the boards of guardians, whose officers they are, refuse or neglect to take action of this kind. It is probable that many boards which had suspended prosecutions would be glad to be relieved of the disagreeable position in which they find themselves in this matter by having the responsibility of action thus taken off their shoulders by the central authority. But it is difficult to see how this can be done without a transference at the same time of all other duties in regard to vaccination from the defaulting board to some other body. The local administration of vaccination, if it is to be carried on with any energy or efficiency, must be vested in some body which is interested in so doing. Even where boards of guardians do not expressly refuse or neglect to carry out the law, they generally show little enthusiasm in regard to vaccination. And the reason is not far to seek. Vaccination is distinctly a branch of preventive sanitary action with which guardians, as such, have nothing to do. Their work is the administration of the Poor-law, and in looking after this they have quite enough to find occupation for all their energies. If, therefore, they are to be relieved of the duty of prosecuting vaccination defaulters they will not unreasonably expect to be relieved also of all other duties connected with vaccination. And it is very much in the interest of vaccination itself that they should be.

The divorce of vaccination from other sanitary work.—The fact is, and it is necessary distinctly to recognise it, that the whole of the difficulty connected with the vaccination question has largely grown out of the maintenance of boards of guardians as the vaccination authority after the creation by the Public Health Act of 1872 of sanitary authorities. Had vaccination then been placed, along with other sanitary work, in the hands of these latter bodies not only would there have been a better guarantee of its being carried out more efficiently than it has been, but there would have been much less opportunity for friction in so doing. And the reason for this is very obvious: it would in that case have become part of the work of the medical officer of health to look after it. He is officially interested in the promotion of vaccination because he is interested in the control of small-pox. It is a curious instance of the utterly illogical and fragmentary character of so much of our legislation that this divorce of vaccination from other branches of sanitary administration should ever have been perpetrated by which the medical officer of health is excluded from any connexion with one of the most important branches of preventive work. It is still more strange that although the blunder should have become increasingly evident during the quarter of a century which has elapsed since it was first made there should have been no effort to remedy it. But what is most singular of all is that at the present time, when the need for fresh legislation has been recognised by the Government to meet the official position in which vaccination has got, and notwithstanding the strong representations which have been made to them of the desirability of transferring vaccination from boards of guardians to sanitary authorities, they have not adopted this course. This would at first sight appear to be the more extraordinary because the proposal can scarcely be considered one of a contentious character, though it is only fair to admit that it would involve a good deal of legislative detail in the shape of amendment of existing Acts which, with the facilities at present available for obstructive tactics, might have been made an excuse for even greater delay than the Vaccination Bill has already experienced. It must also be admitted that so far as the majority of rural sanitary districts are concerned the variation of personality between the board of guardians and the sanitary authority is so trifling as to be unimportant. Still, with full allowance for these considerations it may be safely maintained that the Government would have been well advised to make the venture if only in the form of a provision giving the Local Government Board power to make such a transference in any case in which a board of guardians neglected or refused to carry out its duties under the Vaccination Acts. There are probably not many rural districts in which such a contingency would arise. It is in Poor-law districts which include urban populations that the transfer is most likely to be needed, and in many of these it would be as much welcomed as a relief by the board of guardians as it would be accepted without difficulty by the sanitary authority.

How to treat recalcitrant authorities.—There are no doubt towns where this would not be the case, in which the reluctance to enforce vaccination, so far as such enforcement will in future be possible, would be as great on the part of the sanitary authority as it has been on that of the board of guardians. How are such cases to be dealt with? Take Leicester, for example. The sanitary authority of Leicester professes apparently to believe that it can deal with epidemics of small-pox by means of isolation, without having recourse to vaccination. Those

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who are familiar with the facts of the outbreaks of small-pox which have taken place at Leicester of late years know very well that whatever may be the theory of Leicester on this point it does not represent the practice in that town. For in Leicester, as elsewhere, when small-pox is prevalent there is always a run upon vaccination, and the medical officer of health, who has never had any delusions of this kind, has always had a free hand to vaccinate all whom he could induce to undergo the operation, including those who were most exposed to infection, such as hospital nurses and attendants. But if the sanitary authority of Leicester or any other place were to refuse to promote vaccination with the very moderate amount of coercion which will in future be associated with it, why should they not at least be required to show that they have provided in an adequate degree the resources which they claim to be an effective substitute for vaccination? They, in common with other opponents of vaccination, allege that isolation and disinfection are sufficient weapons with which to meet an outbreak of small-pox. Well, we have had some experience both at Gloucester and at Middlesbrough of what is needed to meet possible contingencies of this kind. Why should not the Local Government Board lay down a general proposition as to the minimum amount of resources for hospital accommodation and disinfection which such a town as Leicester should provide, and then hold an inquiry as to how far it had met these requirements? If the Leicester sanitary authority could show that they had efficiently armed themselves in this way they would have some claim to be entitled to disregard vaccination, but if Leicester or any other place where vaccination is formally discountenanced were to refuse or to neglect to comply with reasonable requirements in regard to providing the alternative for vaccination which the anti-vaccinists themselves affect to consider a sufficient protection the force of public opinion would be so strong against them that the Local Government Board would be well justified in bringing all the powers of the law, whether by *mandamus* or otherwise, to bear upon them to compel them at least to make such provision. It is only by compelling defaulting sanitary authorities to spend money in doing their duty that they can be brought to book. Such procedure is on all fours with that by which individuals who refuse to do their duty are punished. They are fined, but with this difference, that in their case the penalty is applied for the benefit of the community at large, instead of being primarily devoted to meeting their own needs, as it would be where a sanitary authority was compelled to spend money in providing for its special requirements. Hedged round with these conditions there would be something to be said for allowing the principle of local option in vaccination to have some scope for experimental application. At any rate, it would be placed under some control, which would be better than the present state of anarchy.

The vexed question of compulsion.—The Bill as it entered Committee was so drafted, as has been already seen, as to remove a good deal of the grievance by which the agitation against vaccination has been largely maintained. Prosecutions, which have been hitherto unlimited and in some cases scandalously multiplied, would be in future limited to two or possibly three. This of itself was a great gain. But the framers of the Bill failed to avail themselves of the opportunity which presented itself to them to use the power of prosecuting defaulters in a much more effective way than has been hitherto done. The 31st Section of the Act of 1867 gives power to prosecute the parent or custodian of any unvaccinated child until the child is fourteen years of age. The Jenner Society have urged in various documents which they have issued on the subject that if the power of prosecuting defaulters thus conferred by the Act of 1867 is to be retained as a test of the solidity of objection on the part of a defaulting parent, it is not expedient to use it more than once in infancy and that a second or third application of it, if employed at all, should be applied at later periods of the child's life, when first entering and when about to leave school. The object of so doing is, in the first place, to formally revive at these periods the requirements by the State of the vaccination of the child, in the second, to put the same pressure upon the parent at these two stages of the child's life as was applied in infancy. Such a procedure is thoroughly logical and defensible. For if the penalty test is defensible in infancy it is equally so at these two later periods, when the danger against which vaccination is a safeguard is greater both to the child and to the community than it is in infancy. Sir Walter Foster took the sense of the Committee on the penalty question generally by proposing what is commonly called a conscience clause, which, after all, when enforced in the way he proposes is only a penalty in modified form. For it cannot be denied that anything short of the power of escaping vaccination by signing a simple form of declaration, which can be made without any trouble or expense, is a penalty, especially to a poor man. On the other hand, any form of exemption which does not go beyond such a declaration is so feeble a test of the solidity of a man's objection that it is practically no test at all. The Committee decided, though by a small majority, that it was not expedient to abandon the test which the law at present imposes limited in the way proposed in the Bill. Sir William Priestley then proposed and carried an amendment which adopts the course suggested by the Jenner Society of limiting the prosecutions in infancy to one, under the 29th Section of the Act of 1867, and reserving the use of the 31st Section until the child arrives at the age of four. To this Sir William Priestley himself added the provision that if a parent "satisfies the court that he conscientiously believes vaccination would be prejudicial to the health of the said child," he is not liable to any further penalty or molestation. Nothing is said in this provision about costs, and as prosecutions cannot be initiated without incurring costs of some kind it is doubtful who is to be left to pay them in case of successful evasion of the requirements of the law. Now, it cannot be denied that this clause is open to all the objections on the score of logic and consistency which have been urged against the adoption of exemption by declaration in infancy. It is true that it revives the obligation of the law once, but it does so in a very attenuated form. It prescribes a penalty as the price of exemption, but what that penalty is precisely to be is left somewhat obscure. It is, in fact, one of those compromises which are so often the price which has to be paid to buy off opposition.

Further amendments: rejection of Clause 7.—The foregoing notes on the Vaccination Bill were written before the recent debate on the report stage of the Bill. Only two material amendments have been made in it at that stage, but they are of some importance. The first was to strike out Clause 7, which was done by a majority of 270 to 49. The history of this clause is so curious and it throws such an interesting light on what may be called the internal economy of the Bill as to justify a little explanation of it. It was originally suggested by the committee of the Jenner Society, with other amendments, in a memorandum on the Bill which they issued. Sir William Priestley proposed it on behalf of Sir Walter Foster, by whom it was originally placed on the Orders of the Grand Committee. Mr. Chaplin accepted it without any demur and the Committee adopted it without any opposition. Its object was to enable local authorities to incur reasonable expenditure in diffusing information on the subject of small-pox and on the advantages of vaccination in preventing it. At the present time it is open to some doubt whether boards of guardians can incur such expenditure. By a liberal interpretation of a clause in the principal Vaccination Act it might be assumed that they could do so, but the point is not so clear as it might be, and it is quite certain that sanitary authorities, who are much more interested in preventing small-pox than boards of guardians are, have no such power. It appeared desirable that the doubts affecting the power of boards of guardians should be cleared up and that sanitary authorities should be distinctly empowered to diffuse information on a matter in which they are so greatly interested. On report of the clause Sir Charles Dilke moved its rejection on the plea that it might lead to friction between county councils and boards of guardians. How it could possibly do so he did not explain, and as there are numerous chairmen and other members of county councils in the House, none of whom supported this view of the matter, the fear may be dismissed as groundless. Sir Walter Foster, who had originally fathered the clause, strangely enough had nothing to say on its behalf and consented to its withdrawal. Mr. Gibson Bowles ingenuously objected to it because it would favour a "one-sided propaganda," and he appeared to be ignorant of the fact that the agitation against vaccination is maintained by a propaganda of a decidedly one-sided character. Mr. Chaplin repudiated responsibility for the clause but recognised its utility, and several members, chiefly on the Government side, protested against its rejection. Under these circumstances it might have been expected that it would easily pass, but to the general surprise Mr. Balfour pronounced against it and it

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was lost. Mr. Balfour's explanation of his objection to the clause was even more remarkable than that of Sir Charles Dilke. He said that for a consideration he would undertake to produce a defence of vaccination which would inspire doubts in anyone who read it, and that it was not desirable to give boards of guardians a chance of making vaccination ridiculous. That Mr. Balfour, who is an admitted master of the art of clothing philosophic doubt in the garb of conscientious conviction, could travesty a defence of vaccination which would breed doubts in the mind of an unprejudiced reader is quite possible. But whether he would equally bamboozle the auditor of the Local Government Board, who would ultimately have to decide as to whether his defence was a travesty or not, is a different matter. Moreover, if so little confidence can be placed in boards of guardians that they cannot be trusted even to circulate literature in support of vaccination, how can Mr. Balfour justify their retention as vaccination authorities? A lamer excuse for a foregone conclusion was never offered. The real explanation of the sudden change of front in regard to this clause is very simple. The anti-vaccinationists outside the House had discovered, under the inspiration of the *Vaccination Inquirer*, the organ of the Anti-vaccination League, that a mistake had been made in not opposing the clause in Committee. Pressure was at once brought to bear on such members as could be influenced to reject the clause. All the non-official members who opposed it represent constituences in which the anti-vaccinationists are strong. It was a small sacrifice for them to burke the clause. But they could not have rejected it without the connivance of the Government. This was not likely to have been afforded had it not been for the fear of a reduction of the Government majority. Jonah was therefore flung to the waves, and sanitary authorities will be still left helpless in meeting the agitation against vaccination by the only means by which it can be withstood. The matter is not one of vital importance, but it points a moral which is still further illustrated by the course which the debate took on the more crucial question of the enforcement of the law. On this subject it is only necessary to point out that if the the Government had properly appreciated the difficulties of their position at the outset they might have made a concession to the opponents of vaccination which, though it would not have satisfied the Anti-vaccination League, would have effectually cut the ground from under the feet of the organised propaganda against vaccination, and they might at the same time have secured solid compensations for this concession in the direction of revaccination and of the general improvements of vaccination administration. They have now capitulated in a panic and are no longer masters of the situation. It will not be long before they find out their mistake, but it will in all probability be a long time before they will find such an opportunity for statesmanlike legislation as they have thus lost. A few more experiences like those of Gloucester and Middlesbrough will hurry it on, but meanwhile the administration of vaccination will be demoralised and, like the Sibylline books, the price that will have to be paid eventually for the neglected opportunities will be proportionately heavy.

Provisions not in the Bill.—Having thus dealt at some length with what the Bill as amended contains, it is only necessary to refer briefly to some provisions which it does not contain. First of all, it is entirely silent on the subject of revaccination, notwithstanding the strong representations made to the Government on the subject and the statement by Mr. Chaplin in debate on the second reading of the Bill that he would favourably consider any proposal made by Sir Walter Foster, who thereupon proposed an amendment in favour of it. The Bill, also, as has been before indicated, altogether ignores vaccination by private practitioners, who are to be as uncontrolled in deciding what is "sufficient" vaccination as they have hitherto been. Moreover, the sanitary authority will have as little power as it has at present to promote vaccination even in times of epidemic small-pox, and the medical officer of health will continue to have neither responsibility for, nor official connexion with, one of the most important branches of sanitary work. With these important matters, which lie at the bottom of the efficient promotion of vaccination, altogether ignored it is unnecessary to specify other points which are scarcely less essential in building up a system of effective administration. Some of these, to which it is unnecessary to allude here, were indicated in the memorandum on the Bill issued by the Jenner Society. It is, of course, not to be assumed for a moment that the Government are insensible to the desirability of incorporating all these provisions if they could have seen their way to do so. But, with the facilities for factious obstruction which the forms of the House of Commons offer it is practically impossible to deal with a subject of such a contentious character in a Bill which has any chance of getting through Parliament unless by a vigorous exercise of the closure or by buying off opposition with large concessions. The Vaccination Bill is only one of many illustrations of the increasing unfitness of Parliament, with its present antiquated regulations, for dealing with the legislative requirements which the ever-augmenting complexity of our social organisation demands.

In conclusion, as this meeting is held in a part of the United Kingdom by the experience of which the provision in the Vaccination Bill on the subject of enforced domiciliary visitation has been justified, it would be interesting to learn what that experience is at the present day compared with what it was when the Royal Commission took evidence on it seven years ago. It was then reported that vaccination prosecutions were almost unknown in Scotland; that there was practically no agitation against vaccination; and that no difficulty was experienced by those medical men who officially correspond with the public vaccinators of England in obtaining the vaccination at their own homes of the comparatively small percentage of Scotch children who were not vaccinated by private practitioners. In these matters one is inclined to ask, "Stands Scotland where it did?"

THE PATHOLOGY OF A FIT OF GOUT (PAROXYSMUS PODAGRÆ).[1]

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APART from the sudden onset of pain the most striking phenomenon connected with a fit of gout is turgescence of the veins leading from the joint affected for some distance along the foot. Where there is inflammation there is always an unusual amount of blood passing through the part affected, and there is also considerable œdema, but the circulation is free and there is never any visible turgidity of the veins leading from it. When veins appear turgid and swollen we know that this must arise from some hindrance to the onward flow of the blood, from some pressure external to the vessel, as from a tumour, or from some internal obstruction as from a thrombus. Such obstacles are readily recognised and are not present in a fit of gout. In a gouty attack the turgid veins, after coursing a certain distance along the foot, empty themselves naturally into the contiguous vessels, and gentle pressure readily forces the blood onwards, though when the pressure is removed the veins at once refill by reflux from the neighbouring vessels. In a fit of gout there is no direct obstacle to the onward flow of the blood and the venous turgescence must be due to some other cause. But the only other possible cause of venous remora is the occurrence of a block in a terminal artery or in its arterioles or capillaries.

Now we know that gout may attack any part of the body, but an acute attack—a paroxysmus podagræ—is never found save in connexion with one of the smaller joints, and most commonly in connexion with the metatarso-phalangeal joint of the great toe, because it is only in these positions that the conditions necessary for its development are present. An attack begins with a sudden onset of pain of the most excruciating character, perfectly explicable by the theory of a sudden block in the circulation cutting off the supply of nutritious pabulum from the adjoining sensitive nerves. Pain, as Anstie has told us, is the prayer of the nerve for more and better blood, for better nourishment, and, indeed, the only pain which at all approaches gout in severity is that following the occlusion of an artery, either artificially, as in the treatment of aneurysm by compression, or naturally, as in the blocking of an artery by an embolus.

[1] A paper read before the Section of Medicine at the recent meeting of the British Medical Association.

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or a thrombus, or the pain which precedes or follows an attack of Raynaud's disease. A stasis of the blood within the joint affected, however produced, may therefore be accepted as a perfectly rational explanation of the pain of gout.

The earliest visible sign of a gouty paroxysm is the appearance of turgid veins arising in the neighbourhood of the joint affected and running for some distance along the foot.[2] But stasis of the blood within the metatarso-phalangeal joint of a toe sufficient to cause the excruciating pain of gout is certain to be accompanied by the formation of an anæmic area in and around the joint, and naturally the veins connected with this area of negative pressure get filled by reflux from the contiguous valveless veins. The turgescence of these veins is in the foot somewhat favoured by gravity and it continues very evident until the veins reach a part where normal conditions of the circulation prevail—that is, where there is no longer any reflux because the veins have ceased to be valveless. While the veins have been gradually getting turgid plasma has been slowly accumulating within the area of negative pressure, and as the corpuscular elements have also escaped by diapedesis into the tissue interspaces and the red corpuscles readily part with their colouring matter to the plasma the turgid veins have not been long visible before we have a swelling in and around the joint, which becomes increasingly tense, stretching the skin and giving it a glistening appearance, all the more striking from the dusky redness due to the colouring matter of the red corpuscles. After a fit of gout the cartilages and other tissues about the joint are found to be infiltrated with crystals of urate of soda, a condition which is trifling after a first attack, but which increases with each succeeding paroxysm. This has been regarded by some as the result of the peculiar character of the gouty inflammation.[3] But from beginning to end of a gouty paroxysm there is neither sign nor symptom of inflammation and the presence of these crystals is susceptible of a simpler explanation. For in gout we know that the blood-plasma contains urates[4] which are not very soluble, and when the plasma accumulates within the anæmic area surrounding a gouty joint the salts slowly crystallise out of the extravascular fluid and get left behind when the serous part of the fluid is reabsorbed, infiltrating the joint, the cartilages, and the surrounding tissues and gradually accumulating after each succeeding paroxysm till they form those tophaceous deposits we know so well as the result of repeated attacks of gout. All the objective phenomena of a gouty paroxysm are thus readily explicable on the supposition of a stasis (or block) in the capillaries of the affected joint, and so far as I can see they are not to be explained by any other theory whatever.

There are also other facts connected with a fit of gout which go to confirm the theory propounded. First, we know that though the general organism of a patient suffering from a fit of gout is in a state of moderate pyrexia (100° to 102° F.), yet the temperature of the distal extremity of the affected toe itself is always subnormal (95·5° to 97°).[5] This apyretic state of the distal extremity of the affected toe is quite inconsistent with the presence of inflammation and seems only to be explained by an arrest of the circulation in the joint implicated. Second, there are some curious facts connected with the prophylaxis and the cure of gout which seem wholly inexplicable except on the supposition that the circulation is mainly at fault and that the prevention or removal of a stasis is sufficient to ward off or to cure an attack. In regard to prophylaxis we have the story that Mr. Apperley—the "Nimrod" of old times—tells us of a friend who after a skinful of wine and other good things always walked off the soles of his pumps before going home to bed in order to ward off a gouty attack, and this he did successfully and without damage to the end of his days. Cullen also tells us of a man who on the first premonition of an attack took his dog and his gun and walked it off.[6] Sir William Temple narrates that the Rhynegrave, who was killed before Maestricht in 1676 and was his personal friend, on the first indication of a paroxysm went out immediately, whatever the weather, and walked as long as he was able, "pressing most upon the foot that threatened him; when he came home he went to a warm bed and was rubbed very well and chiefly upon the place where the pain began." If the attack continued or returned next day the same course was pursued, so that he was never laid up with gout, and he thought so well of his treatment that he strongly recommended it to his son should he ever be attacked in a similar manner.[7] Temple also tells us of one of his brother's gamekeepers very subject to gout, but who never laid himself up. When attacked he busied himself with his deer or his stud, walking about from morning to night in spite of the pain.[8] And the late Dr. William Gairdner of London was acquainted with a lively old gentleman of eighty-five, who, when seized with gout, always replied to the remonstrances of his family and his physicians: "I'll walk it off," quaintly adding, "go to bed with the gout and it will surely go to bed with you and be mighty bad company"[9]—a remark that recalls the statement of Sir William Temple that gout haunts chiefly those who treat it as a friend and not as an enemy, who "carry it to bed with them and keep it soft and warm, and, indeed, lay up the gout for two or three months while they give out that the gout lays up them."[10]

As a method of treatment we hear but little of massage in medical literature, yet it must have been occasionally employed, as when Boerhaave[11] in his 1275th aphorism, section 8, speaks of curing gout "*exercitio magno, continuato, equitationis in aëre puro, tum frictionibus, motibusque partium sæpe iteratis*," the context shows that he speaks of these as approved methods to employ in the cure of an acute attack, and not merely as means to be used for the removal of the rigidity of gouty limbs during the intervals of comparative health. Cullen has also recorded some curious instances in which enforced exertion—not exactly carried out with due professional care—was followed by the sudden cure of gout. One patient, long confined to bed with gout, rose and ran off as fast as he could when his neighbour's house took fire. Another patient's provoked antagonist dressed himself up as a spectre, threw the poor patient over his shoulder, and carried him downstairs with his feet bumping on each step. As soon as the ill-used man reached the bottom of the stairs he found his legs and ran upstairs fast enough. It may be readily supposed that such rough empirical treatment, however successful, was not likely to be much approved of by the patients submitted to it or to be adopted by more regular practitioners. When the trifling succussion caused by merely crossing the floor to the bedside is liable to provoke intolerable agony he must be a bold practitioner who would venture to propose the application of massage to the offending digit itself. Yet this has not only been proposed but actually carried out with the most surprising results.

During the first half of this century a namesake of my own—Dr. William Balfour—practised in Edinburgh,[12] and had a great reputation for his successful treatment of rheumatic affections by the various methods we now comprise under the term massage. Occasionally, also, he attacked more acute ailments with a boldness and success which were truly remarkable. In the *Edinburgh Medical and Surgical Journal* for October, 1816,[13] Dr. Balfour relates several cases of acute gout treated by compression, friction, and percussion. These cases are all remarkable and all perfectly successful. I shall only quote one, as this is sufficient to show his method and its result.

CASE 1.—The patient, a man aged forty-seven years, of a cholerico-sanguine temperament and full habit of body, woke in the morning of July 22nd with violent pain in the balls of both great toes, particularly at the flexures of the joints. "When I visited him at eleven o'clock forenoon the parts were swelled, red, tense, and shining. The inflammation and pain were confined almost exclusively to the balls of the great toes, except that in the left, which was by much the worst, the pain reached upwards about half-way along the metatarsal bone. The patient experienced continual excruciating pain even when at perfect rest; his countenance indicated considerable distress, and he complained of sickness, general uneasiness and oppression; pulse 82. When I entered my patient's room he told me that if I intended to

[2] Sydenham's Works, Translation of the Sydenham Society, p. 125.
[3] Garrod on Gout, third edition, p. 187.
[4] Garrod, op. cit., p. 84.
[5] Sir Dyce Duckworth: A Treatise on Gout, p. 248, also Edinburgh Medical Journal, June, 1898, p. 564.
[6] Cullen: First Lines, second edition, 1778-84, MS. notes in copy in the library of the Royal College of Physicians of Edinburgh, p. 369, &c.
[7] The Works of Sir William Temple, Bart., Edinburgh, 1754, vol. ii., p. 127.
[8] Temple, loc. cit.
[9] Gairdner: On Gout, London, 1849, p. 114.
[10] Temple, op. cit., p. 128.
[11] Boerhaave: Aphorismi de cognoscendis et curandis morbis, Lugd. Batavorum, 1727, p. 212.
[12] Vide Obituary Notice in THE LANCET of May 9th, 1846.
[13] Observations, with Cases, illustrative of a New, Simple, and Expeditious Method of Curing Gout, p. 432 of the journal quoted.

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apply friction to the parts affected, he was afraid he could not suffer it, for he had attempted that himself, but might as well have applied 'living fire.' I told him I knew that friction was quite inapplicable to his case as it then stood, but that I would, notwithstanding, employ mechanical means for moderating the paroxysm, and I hoped with complete success. I therefore grasped the ball of the toe in my hand, applying pressure gradually to a very considerable degree. Slight pressure gave pain; heavy pressure none. In this manner I compressed the parts, sometimes with one hand, at other times betwixt both hands, for about ten minutes, now and then interposing gentle percussion, and then applied a thin flannel bandage. Ordered a brisk purgative of senna and sulphate of magnesia. In the evening the patient said he had considerably less pain, or rather none at all, from the moment I left him, but he had a good deal of cold shivering during the day. His pulse was 100. The swelling and redness of the parts had much abated and motion of the affected joints was practicable. Compression and percussion were re-applied and were much better borne than in the earlier part of the day. Next morning the patient was found to have slept all night without interruption. His pulse was 80; pain, swelling, and redness of the parts almost entirely gone and he could suffer them to be handled with the utmost freedom. He walked very well. Compression and percussion were applied in the morning, in the evening, and again next morning, after which the patient went abroad in the prosecution of his business—on the third day of his attack."

The graphic account just given leaves no room for any doubt as to the nature of the disease or the success of the cure, and I am sure you will agree with me that any method able to cure acute gout in one or two *séances* is well worthy of the consideration both of patients and physicians. Not many, however, would have the nerve to apply such a cure or the courage to submit to it, and though Dr. Balfour has published several similar cases he has not, so far as I know, had many followers. Nevertheless I have recently heard that one old friend of my own, who saw a good deal of acute gout in the beer-drinking district in which he practised, was in the habit of benumbing the affected joint by painting it with Fleming's tincture of aconite and then rapidly completing the cure by massage.

The history of gout is not wholly comprised in a stasis of the circulation in the metatarso-phalangeal joint of the great or of any other toe, but if this is accepted as the explanation of an acute attack much is made plain which seems now mysterious and we obtain a clue sufficient to guide us through the labyrinth of symptoms presented by this protean malady. I am not desirous, nor have we time, to go deeper into the history of gout at present: I merely wish to bring before the profession for their consideration this simple theory of the cause of a paroxysmus podagræ as it seems to be the only explanation capable of interpreting the phenomena observed and also of adequately accounting for the success of the methods of prophylaxis and of cure which I have just described.

Edinburgh.

THE OPERATION OF GASTROSTOMY PERFORMED BY THE KADER-SENN METHOD,

WITH TWO CASES SUCCESSFULLY SO TREATED.

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So simple, so expeditiously effected, and withal with such excellent result, is the method of Kader-Senn for performing gastrostomy that its mode of execution needs only to be more widely known to be, I venture to think, almost universally adopted. This is high praise to accord to any particular method employed for whatever purpose, and yet I feel impelled to give it, although it is an opinion based upon its adoption in two cases only; but with simply these two cases it is difficult to see where success should fail to be obtained in an unlimited series. Every operation appeals to the surgeon in proportion to its simplicity, and when that simplicity ensures success in the object aimed at little else is required to commend it.

The numerous modifications which have from time to time been introduced all aim at the one object of preventing leakage from the stomach through the artificially established orifice. Some of these modifications have unquestionably attained this end. Thus those introduced by Frank, Witzel, Hahn, von Hacker, Gérard, and others have all more or less succeeded in this respect. But as contrasted with the Kader-Senn method they cannot lay claim to such simplicity and rapidity of execution. Whether this operation has been tried already by British surgeons I do not know, but so far as it has been practised in America those who have recorded cases speak unanimously in its favour. The following is the account of the operation as described by Senn[1]: "The operation consists of an abdominal incision of about 4 in. in length, and which can be made in any location deemed advisable, as no abdominal muscular structures are required for sphincter action. However, Fenger's incision, which is parallel to the left costal border left of the rectus muscle, is preferable. The stomach is seized as near the great curvature as possible and a cone is formed by an assistant who holds the apex with his fingers or a tissue forceps. Two puckering strings of heavy chromicised catgut are placed parallel to each other about 2½ in. below the apex of the cone. These sutures include the serous and muscular coats of the stomach. These sutures are next drawn taut and tied, forming a constriction or neck. ..... The stomach is now ready to be fastened into the parietal wound. This is done with interrupted silk sutures, which include ..... the peritoneal and muscular coats of the stomach and all the abdominal wall except the skin. The rest of the abdominal wound is now closed with silkworm sutures, leaving only that portion of the stomach visible which is to form the valve. This concludes the first stage of the operation. The second stage can be done at this time or can be deferred for forty-eight hours until adhesions have formed. This consists of an incision about half an inch in length in the centre in the portion of the stomach exposed. A rubber tube is inserted through the opening into the stomach. The stomach wall is now inverted, forming a circular valve. The inversion is secured by Lembert sutures of silk. The tube is now withdrawn and the operation is completed. If properly performed the valve should be below the level of the external integument. The retraction is greatly favoured by subsequent contraction of the wound."

The following is an account of the two cases upon which this operation—with some slight modification to be afterwards referred to—was successfully performed. The brief abstract given in each case is from the report taken by the resident assistant, Dr. Vost.

CASE 1.—A man, aged fifty-seven years, was admitted to the Victoria Infirmary, Glasgow, suffering from carcinoma of the œsophagus. His illness commenced about three months prior to admission, at which time he began to find difficulty in swallowing solids, and that every attempt was immediately followed by their ejection. Fluids he could always keep down. When he tried to swallow anything solid he was conscious of it sticking in his gullet and pointed to a place at the level of the ensiform cartilage where it caused severe pain. His bowels were regular, his tongue was moist and slightly furred. He had lost flesh and looked emaciated, with a dry rough skin. He was much troubled with flatulence. An olivary bougie, which passed down 16 in., could not be made to enter the stomach, but with a railway bougie the internal filament could be passed into the stomach. On Nov. 8th the patient was prepared in the usual way by the administration of an aperient. On Nov. 9th, immediately prior to the operation, copious water enemata were given, followed by a nutrient enema. With the assistance of Dr. Grant Andrew, Dr. Vost, and Dr. Fleming, gastrostomy was performed. A median incision was made between the umbilicus and the sternum. The stomach was sought for and found to be much contracted, lying well up under the liver to the left. A digital examination did not definitely reveal any growth towards the cardiac end, but some small suspicious nodules could be felt. The stomach was then pulled up by a fixation stitch and the circumference of a circle measuring about from 1½ in. to 2 in. in diameter carefully stitched to the parietal peritoneum. The wound was then closed above and below. The cone-shaped projecting portion of the stomach was then encircled at its base by two purse-string sutures, the ends of which came out at

[1] Journal of the American Medical Association, 1896, vol. xxvii., p. 1143.

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opposite points. The apex of the cone was then incised and the stomach was opened. A gum elastic catheter, No. 12, was inserted into the stomach for about 3 in. and secured by a stitch to the gastric parietes at the apex of the cone. By pushing in the catheter the cone was invaginated, and then by drawing upon the purse-string stitches the gastric parietes were puckered up and made to embrace the catheter so that it became secured in position. The catheter was cut nearly flush with the wound and a small plug was inserted. The operation lasted about an hour. The patient took chloroform well and rallied well. He proved in his convalescence a very restless patient and so retarded somewhat the healing of the wound. However, his recovery eventually was perfect. He left the infirmary about two months after the operation (Jan. 25th, 1898) and returned to report himself on Feb. 16th, when the fistula was found to be all that could be desired. There was no leakage and feeding was easily accomplished with the catheter attached to an india-rubber tube and a glass funnel or filler.

CASE 2.—A woman, aged sixty years, was admitted to the Victoria Infirmary on Nov. 9th, 1897, suffering from difficulty in swallowing solids. She stated that about two months previously her trouble commenced, when every now and again solid food which she took would be immediately returned. Fluids could be taken without difficulty. She experienced no pain except when endeavouring to swallow something solid and then referred the sense of discomfort to the neck about opposite the cricoid cartilage. She had usually to take aperient medicine to obtain a movement of the bowels. She stated that she had lost strength and flesh. In appearance she was much emaciated, with a pale, dry, rough skin. The passage of an olivary bougie encountered obstruction about 13 in. from the incisor teeth. After the usual preparation of the patient gastrostomy was performed on Jan. 1st with the assistance of Dr. Grant Andrew, Dr. Vost, and Dr. Fleming. The only difference in the method of operating from that employed in the above case was the use of a smaller size gum-elastic catheter (No. 8). The patient took chloroform well and rallied without any shock. The operation lasted thirty-five minutes. The patient made a rapid and uninterrupted recovery, leaving the infirmary on Jan. 20th, 1898. She was able to feed herself, as in the first case, by the aid of a catheter, rubber tube, and filler. There was absolutely no leakage of the contents of the stomach.

By referring to the illustration, which represents the method employed in these two cases, it will be seen that the

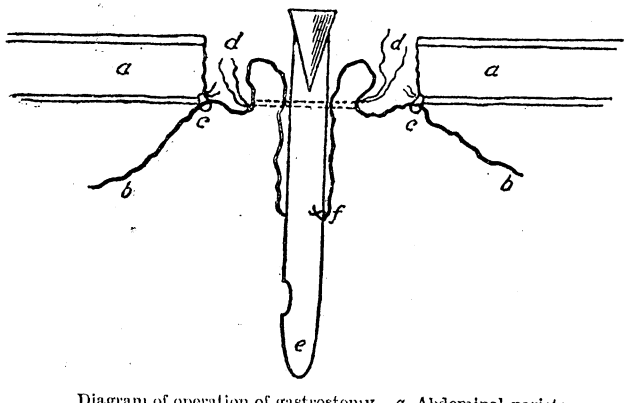


Diagram of operation of gastrostomy. *a*, Abdominal parietes. *b*, Gastric parietes. *c*, Fixation stomach stitches. *d*, Purse-string stitches. *e*, Catheter. *f*, Fixation stitch of catheter and stomach.

operation is in many respects simply a modification of that introduced by Witzel. Instead, however, of the tube being fixed in an oblique fold of the stomach wall it is secured in a direct channel. According to Senn, Kader of Breslau had anticipated him in the adoption of this modification, with only some slight difference in the mode of suturing, and if, therefore, a name should be applied to it it would be better to designate it the Kader-Senn operation. Senn himself in his original description calls it "a circular valve method"; but this, while it to some extent indicates the result obtained, does not wholly convey to the mind the practical mode of procedure, which is the inversion and fixation of a cone of the gastric parietes with a permanent orifice at its apex. Naturally this fixed cone tends to collapse upon its base when the supporting gum-elastic tube is removed, and in so doing acts as a circular valve inhibiting the escape of the gastric contents.

In reviewing certain features connected with these cases it will be observed that in neither was the patient *in extremis*. Both patients could take plenty of fluid nourishment and therefore from the aspect of necessity there was no need of the operation; but, on the other hand, in view of the certainty that sooner or later difficulty would arise in the ingestion of fluids and the patient's strength and general vitality become gravely impaired, it appeared at least expedient that the favourable opportunity afforded should not be missed and the operation therefore performed without undue delay. This particular aspect of the question becomes all the more feasible when we are able to ensure the extreme probability of no immediate ill effects from the operation and the almost absolute certainty that the patient's sufferings if relieved in one way would not be augmented in another, as by the frequently troublesome irritant after-effects dependent upon the escape of the acid gastric juice through the fistula. It has been suggested that the operation should be carried out in two stages, but I believe that when the stitching is all carefully executed there need be no fear regarding the opening of the stomach at the one operation. A properly fitted plug would effectually prevent any escape through the catheter, and it is quite impossible for any leakage to take place along its sides. If thought advisable in severe and advanced cases fluid nourishment can be safely administered by the catheter at the operation, but otherwise a day or two may elapse before making use of the artificial opening. While in such cases as those above narrated there is no necessity for the administration of fluids other than by the mouth there is a distinct advantage in doing so. For what we found was that in both instances the rest which accrued to the strictured part of the gullet from the temporary introduction of all food by the catheter allowed them to take nourishment subsequently by the mouth of a much more substantial consistency than they had previously been able to do and this, too, without the pain which, in the case of the man, had always been of a distressing character. Porridge, bread-sop, and farinaceous puddings were among some of the foods of a more solid nature which they were now able to swallow with relish and comparative ease.

As regards the size of the tube used and its period of removal I employed in the first case a No. 12 gum-elastic catheter and removed it on the fourth day. In the second I used a No. 8 and allowed it to remain in until it became sufficiently loose to be extracted, which was in about a fortnight. When the latter was withdrawn the intra-gastric portion did not seem to have undergone any digestion. Without going into the reasons I may say that I should prefer in future the larger size catheter and its retention until loosened.

Concerning the after-treatment some care is necessarily required to prevent closure of the fistula. In the second case, in which the No. 8 catheter was used, there was a distinct tendency in this direction. We at first found that the daily passage of a bougie or catheter sufficed to maintain its patency, but soon the difficulty so increased that often in the morning the orifice was found glued over and the patient was unable without assistance to insert the catheter. This, however, was easily obviated by using a small vulcanite shield with a bougie-like projection one and a half inches long attached to the centre of one surface. This was tied in like a tracheotomy tube and inserted into the fistula over night. By this simple contrivance the patient no longer had any difficulty in inserting her catheter for feeding purposes when she required to do so.

In summing up the advantages of this method of performing gastrostomy I think it may justly lay claim to the following:—(1) the extreme simplicity and safety of the operation and its rapidity of performance; (2) the almost practical certainty that no subsequent leakage of the gastric contents will take place; and (3) the safety of the operation and the absence of any remote ill effects renders its early performance advisable, that is, as soon as solids can no longer be taken. In connexion with this last clause there may be added the still further advantage gained by the patient in being able to take more substantial nourishment by the mouth and with less pain. This relief no doubt results from the rest which the diseased part of the gullet derives from all food being conveyed to the stomach by another channel. It

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admits of the subsidence of any irritative inflammation about the seat of the stricture so that exudates are absorbed and muscular spasm is lessened. It is therefore impossible not to conclude that though the operation of gastrostomy successfully executed is only palliative, it is nevertheless likely to be the means of prolonging life longer if performed early than when the period of necessity has been reached; in other words, before and not after difficulty in swallowing fluids has occurred.

Glasgow.

VACCINATION RASHES.

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IT is a question of some importance what precisely may be the influence of vaccination in the production of various skin eruptions. Has vaccinia such an effect upon the human organism as to render the skin more liable to become affected by rashes, or are we to regard as a mere coincidence the fact, which is undoubted, that children, and indeed adults, may after vaccination suffer from various forms of skin eruptions? The truth would appear to be between these two extremes. Vaccination is undoubtedly responsible directly for some forms of eruption, and indirectly in a remote degree for others; but it is manifestly unfair to ascribe to vaccination an eruption which appears weeks, or even months after the lesion produced by the operation has soundly healed. In my experience post-vaccinal rashes are uncommon—that is to say, such rashes as may occur within a period of time in which it may reasonably be supposed that the course of vaccinia has in some way or other been instrumental in causing their appearance. What this limit of time after vaccination may be at which eruptions of the skin may appear, due indirectly or directly to the operation, it is difficult to state precisely. Dr. Crocker states that in no case can an eczema be due to vaccination where the vaccine pustule has completely healed before the appearance of the eczema. Personally I should hesitate to ascribe any rash as due to vaccination except vaccino-syphilis, when after examination the site of the vaccination is found soundly healed, which may roughly be taken as occurring from 4 to 5 weeks after the operation. The results of recent researches have made it clear exactly what vaccination is and we are consequently better able to gauge its likelihood of causing skin affections as compared with other acquired diseases. That true vaccinia may result from the inoculation of a modified attenuated variolous lymph cannot now be questioned. Variolous lymph by its passage through a series of calves becomes so attenuated and modified that it can no longer produce violent constitutional effects with a generalised eruption, but only a slight constitutional disturbance and an eruption limited to the points of inoculation, and a condition of the organism is produced which renders it immune against variola or vaccinia for a variable period of time. How this immunity is produced, whether by the organisms of the vaccine virus multiplying in the body and by their life and growth producing complex chemical bodies, which by absorption produce a change in the human tissues, rendering them immune, or, as Dr. Cory suggests, whether the whole production of such chemical bodies takes place in the vaccine vesicles, may be an interesting speculation, but leads nowhere. What interests us more is the certain fact that for our purpose vaccinia may be practically classed amongst the other exanthemata, that it is a constitutional disease which more or less profoundly affects the whole of the tissues of the human organism in which it occurs. That some tissues in the same organism are affected more profoundly than others is a well-known clinical feature in every constitutional disease and it would appear quite easy to conceive that in certain individuals vaccinia may produce a condition of cell change and tissue alteration in the skin causing the appearance of a rash, the type of such rash varying with the individual peculiarity of the skin—a peculiarity not of texture, complexion, &c., but physiological and vital. These remarks only refer to what are termed "pure vaccination rashes," that is, due to the inoculation of pure vaccine virus and not to extraneously introduced germs. The connexion between vaccination and the eruptions due to extraneously introduced germs is absolutely one of cause and effect and requires here no further discussion. Owing to the enormous percentage of children vaccinated in the present day (practically in London over 90 per cent.) had vaccinia much influence as a causative agent in the production of skin affections surely they would have increased *pari passu* with vaccination. This I venture to doubt, for a reference to writers of the pre-vaccination days certainly leaves one with the impression that such a disease as infantile eczema was as common then as now. As far as I have been able to ascertain there are no published figures as to the possible frequency with which post-vaccinal rashes may occur and, in fact, the whole literature of the subject is very meagre. As a possible result of the paucity of such literature and references in standard works many rashes are ascribed to vaccination, not only by the parents of children, but by medical practitioners, which have absolutely no connexion with vaccination either near or remote. A case of generalised eczema wrongly ascribed by a medical practitioner to vaccination is a centre from which all kinds of anti-vaccinationist poison emanate. The possible dangers of vaccination are absolute and quite real enough without the invention of bogies to frighten weak-minded people about an operation, which is probably the most important to the community at large of any we are ever called upon to perform.

It is true that "from their rarity post-vaccinal rashes are unimportant," to quote the words with which one writer dismisses the subject, but it appears to be of the utmost importance that every medical practitioner should have a precise and definite knowledge of the subject so that he may successfully combat, on the one hand, the prejudices of the parents and the glaring misstatements of the anti-vaccinationists on the other, and to be able readily to demonstrate the fallacy of the *post hoc propter hoc* argument so often and so dangerously applied to vaccination and subsequent rashes.

Vaccination rashes have been variously classified. Dr. Crocker's modification of the one by Mr. Malcolm Morris would appear to be the most complete, and, with an addition of my own, is the one I shall use as a basis for my remarks.

CLASSIFICATION OF VACCINATION RASHES.

Group I.—Eruptions resulting from pure vaccine inoculation. *A*, Secondary local inoculation of vaccine. *B*, Eruptions before the vesicles form, urticaria, erythema multiforme, vesicular and bullous eruptions. *C*, Eruptions after formation of the vesicles due to the absorption of the virus: (*a*) morbilliform, scarlatiniform and diffuse erythema, erythema multiforme, vaccine lichen, purpura; and (*b*) generalised vaccinia. *D*, Sequelæ of vaccination, eczema, psoriasis, pemphigus, urticaria, and congenital syphilitic rashes.

Group II.—Eruptions due to the vaccine plus some other virus. *A*, Introduced at the time of vaccination: (*a*) producing local disease, impetigo contagiosa, or other form of superficial inflammation; and (*b*) producing constitutional disease, syphilis, leprosy, and tuberculosis. *B*, Introduced after development and rupture of the vesicles (about the eighth day), erysipelas, cellulitis, impetigo contagiosa, furunculosis, gangrene local or disseminate, pyæmia.

This classification shows how varied in character post-vaccinal rashes may be and that they are almost as numerous as there are rashes to which an individual is liable. What determines the precise nature of the skin manifestation is, as I suggested above, a physiological and vital peculiarity of the tissue, or what is more popularly called "the idiosyncracy of the patient." That this must be is evident from the fact that of several children vaccinated from one source only one may exhibit post-vaccinal rash, or if there be two the rashes are of a different nature. The fact also that post-vaccinal rashes are even more frequent (according to the authorities) after vaccination with calf lymph than with humanised lymph points in a similar direction. It is a well-known clinical fact that local irritations in susceptible individuals may produce generalised skin eruptions. The wet napkin in infants, a chronic nasal catarrh, profuse perspiration, the use of certain irritants for the purposes of trade, and many others may, and indeed do, produce an inflammatory reaction in the skin by no means confined to the point of contact. Equally, then, vaccination in certain cases, the local irritation in the arm having superadded to it

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the constitutional effects of vaccination, is liable to produce skin eruptions the exact type of which depends upon some peculiarity of the individual tissues, about which we know nothing and can surmise less We may now discuss more or less in detail the classification of post vaccinal rashes given above.

In Group I. under section *A* we have the secondary inoculation of vaccine. This may be auto-inoculation or accidental as apart from vaccination. As an instance of the latter some time ago I saw a female, seventy-two years of age, with a typical vaccine vesicle on the cheek. This was the result of nursing an infant whose vaccine vesicles had been opened on the eighth day, whilst on her cheek was a scratched papule which allowed the introduction of the lymph from the child's arm. Many such accidents have been recorded: vaccine vesicles on the eyelids, where their resemblance to primary syphilitic sores renders them important, on the tongue, and a remarkable case where a child suffering from eczema of the face and scalp sleeping with an elder child who had recently been vaccinated was inoculated by the latter, so that the whole eczematous area became the seat of vaccinal vesicles. It is a noteworthy point in secondary auto-inoculation that the secondary vesicles are more rapid in their formation than the primary and reach maturity almost as quickly.

Subsection B.—Urticaria may follow vaccination in infants just as in adults it may arise from apparently most trivial causes. It, however, differs from the urticaria of adults and presents the well-known clinical picture of urticaria papulosa, an affection most difficult to treat, resisting more or less effectually all therapeutic measures to yield at length to the lapse of time. Of the erythema multiforme, vesicular and bullous eruptions mentioned in the classification, but few writers even mention them, and then only by name; personally I have never seen such post-vaccinal rashes occurring before the formation of the vesicles.

Subsection C.—In this subsection the eruptions are due to the absorption of the vaccine virus and divide themselves naturally into two groups: (*a*) morbilliform, scarlatiniform, and diffuse erythema, erythema multiforme, vaccine lichen, purpura, and (*b*) generalised vaccinia. Under (*a*) it is curious to note that the morbilliform, scarlatiniform, diffuse erythema and purpura may all occur preceding the appearance of the exanthematic manifestation of small-pox. May not a peculiar condition of tissue in the organism reacting to the poison of variola react similarly to vaccinia? Certain it is that in both cases they occur but rarely. With the title roseola, erythema vaccinal (French), roseola vaccinia (German), occurs a fairly common erythematous eruption which some observers describe as the commonest form of post-vaccinal eruption. It appears about from the eighth to the eleventh day, but according to Hebra as early as the third or as late as the eighteenth day after vaccination. Kaposi describes it as the most frequent complication of vaccinia and states that it commences around the vaccine vesicle and gradually spreads over the body. In my experience it is a rosy red rash not unlike measles, the macules varying from a pin's point in size to the size of a five-shilling piece. It is not attended with any constitutional symptoms and fades after three or four days without any desquamation. Dr. Radcliffe Crocker describes a vaccine lichen which he considers the commonest post-vaccinal eruption. According to his description it may be papular, papulo-vesicular, pustular, rarely bullous, appearing on from the fourth to the eighteenth day, most usually on the eighth day. It commences on the arms and by successive crops may spread over a considerable part of the whole body, evenly distributed, sometimes becoming circinate. The papules are acuminate, pin's-point sized, bright red, and may remain so to the end, usually discrete, but occasionally coalesce into patches, often many of the papules are crowned with small vesicles or pustules and occasionally the whole eruption may be vesicular, such vesicles coalescing and becoming bullous, as recorded by Behrend. The rash lasts usually a few days, but occasionally successive crops appear attended by considerable itching, resembling Hutchinson's varicella prurigo. This account, taken from Dr. Radcliffe Crocker's book on Diseases of the Skin, corresponds closely with the vaccinal miliaria described by Dauchez in his work on vaccination rashes. Dr. Colcott Fox suggests that the different phases of vaccine lichen probably represent stages of the same inflammatory process. Both Behrend and Crocker have recorded cases of typical post-vaccinal erythema multiforme,

A purpuric rash may occur after vaccination in cachectic children. Cases have been reported by Gregory and Dauchez but are extremely rare. Under (*b*) generalised vaccinia is probably the most important of Subsection C. Under exceptional circumstances, chiefly after vaccination with calf lymph, the vaccine eruption, instead of being confined to the points of inoculation, is more or less widely spread over the body. It is still a debatable question whether these cases are due to general blood infection or whether the secondary vesicles are the result of auto-inoculation. According to the various writers the rash appears about the eighth day and its course resembles that of a vaccine vesicle. In the fatal cases inflammation and sloughing take place at the site of the vesicles, producing a condition exactly resembling varicella gangrenosa. In this country Mr. Hutchinson has seen and recorded several such cases. Dr. Cory, the Local Government Board Inspector, in his recent work describes cases similar to varicella gangrenosa as due to disseminated tubercle, but does not mention generalised vaccinia. Dr. Colcott Fox states that they are always the result of auto-inoculation. French dermatologists are generally agreed that there are two distinct kinds of generalised vaccinia (*a*) appearing spontaneously and (*b*) the result of auto-inoculation.

Subsection D comprises the sequelæ of vaccination—viz., eczema, psoriasis, pemphigus, urticaria, and congenital syphilitic rashes. Of these from its frequency eczema is important. Dermatologists differ in their opinions as to the frequency of eczema caused by vaccination, but all appear to agree with Dr. Crocker that no case should be ascribed to vaccination which has appeared after the vaccination has soundly healed. This consensus of opinion clears the ground and effectually disposes of the very large majority of infantile eczemas ascribed by parents to vaccination. A curious well-authenticated clinical observation is that vaccination sometimes cures an attack of eczema, and indeed has been recommended as a legitimate form of treatment not only in adults but in children. In the latter, however, when the eczema is acute it is attended with great risk owing to the possibility of auto-inoculation. There can be no doubt that in predisposed people eczema may follow vaccination, as it might any other form of dermatitis, however produced, but there is nothing in vaccinia *per se* which can cause an outbreak of the disease. What this predisposition to eczematous forms of dermatitis consists of, in the present state of our knowledge, it is impossible to say definitely. It has been explained as "a want of resistance in the epithelial structure" or as "vulnerable epithelium," but such explanations do not assist us much. Certain it is that in the predisposed any slight local irritation may give rise to a widespread attack of eczema. When following vaccination eczema may commence in the region of the vesicles and gradually spread, or, more rarely, a large area of the skin may become suddenly attacked. It usually appears on or about the tenth day of the vaccinal period and in its course and amenability to treatment would appear exactly to resemble eczema of other origin.

Post-vaccinal psoriasis is sufficiently rare to be a clinical curiosity. Chambard has described one case and Rohè two acute cases. Pemphigus is barely mentioned in French and English literature as following vaccination. The German dermatologists describe it, however, as occurring occasionally in weakly infants and they differentiate it from ordinary pemphigus due to cachexia on account of the fact that the prognosis in post-vaccinal pemphigus is distinctly favourable, physically their appearance being identical. Urticaria may occur as a sequela in point of time, but its association with vaccination would appear to be one of coincidence.

Congenital syphilitic rashes I place under the head of sequelæ, although apparently none of the various classifications published include them. In view of their extreme importance, both from a medical and lay point of view, their possible occurrence should be always borne in mind. That definite syphilitic rashes occur after vaccination it is impossible to deny, and it is of the utmost importance that not only should they be recognised as such, but that they should be attributed to their real source—namely, congenital infection. In Group II. syphilis occurring as the result of vaccination due to vaccine lymph plus the syphilitic virus will be treated, but in this group the clinical facts are quite dissimilar. The usual history obtained is that on or about the tenth day after vaccination an obviously syphilitic rash appeared. It hardly requires, except for the fact that so many misstatements have been made, that it should be

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pointed out that such a syphilitic rash is due, not to syphilis introduced at the time of vaccination, but to a congenital infection. No rash in the case of inoculated syphilis ever appears before, at the very earliest, fifty days after inoculation. Apparently in the case of a child suffering from congenital syphilis, vaccinia produces enough local irritation and general constitutional disturbance to cause the appearance of skin manifestations, vaccination simply determining the date of the appearance of the skin lesions. Notwithstanding the fact that calves are absolutely immune against syphilis, congenital syphilitic rashes much more frequently appear after vaccination with calf than with humanised lymph.

Group II. consists of post-vaccinal rashes more or less preventable. Certainly Section A, those due to a virus plus the vaccine virus introduced at the operation of vaccination, are, with the exercise of ordinary precautions, absolutely preventable, and when occurring indicate culpable negligence on the part of the operator.

Subsection (a).—As a result of the introduction of pus cocci impetigo contagiosa may occur. This is a very rare accident, accidental inoculation taking place much more frequently after rupture of the vaccine vesicles. Short of true impetigo contagiosa slight forms of superficial inflammation may occur as a result of the introduction of one or other of the organisms found in pus.

Subsection (b).—The occasional inoculation of syphilis with vaccinia cannot be denied and is the great weapon in the hands of the anti-vaccinationists, but it has happened so rarely as practically to become a clinical curiosity, and with the introduction into general use of calf lymph will disappear altogether. When syphilis is inoculated simultaneously with vaccine virus, according to Fournier three alternatives present themselves: (1) syphilis is not transmitted but vaccinia is; (2) syphilis is transmitted and vaccinia fails; and (3) both are transmitted, some points of inoculation giving rise to typical vaccine vesicles, whilst later a syphilitic chancre or chancres appear at a point of inoculation when vaccinia has failed. Hutchinson states that a syphilitic chancre may follow typical vaccine vesicles in the same site. Fournier gives an excellent table in his clinical lecture on the subject, as to the differential diagnosis of vaccino-syphilis which is too long to give here. Briefly, he points out that the syphilitic chancre is limited to one or two points of inoculation, inflammation is slight, loss of substance is superficial, and the parchment induration is typical, not inflammatory. The acquired syphilitic rash appears at the earliest from fifty to ninety days after vaccination and requires in every case the existence of a specific sore at the site of the vaccination. In fact, vaccino-syphilis is in no way different from syphilis acquired in other ways and follows precisely the same course.

In this country the question of the introduction of leprosy with vaccinia is purely academic and the reported evidence from other countries is very conflicting. Tuberculosis is a disease which is confidently asserted by the anti-vaccinationists as likely to be introduced by vaccination. In Germany many experiments have been made with lymph from tuberculous patients with uniformly negative results. Attempts to inoculate the skin of guinea-pigs—animals most susceptible to tuberculosis—have invariably failed. That the skin of the human organism, however, is susceptible to the inoculation of tubercle cannot be denied, as cases have been reported where a local tuberculosis has been produced from tattooing and the like. Recently at the Dermatological Society of London a case was shown in which, although there was no microscopical or bacteriological evidence, yet the majority of those present agreed that the appearance was that of a local tuberculosis the result of vaccination. The question, however, of the transmission of the three diseases, syphilis, leprosy, and tuberculosis, by vaccination is probably solved by the introduction of glycerinated calf lymph by the new Vaccination Act of the present Government and ought to go a long way towards disarming what might be a legitimate criticism of vaccination.

Section B of Group II. comprises rashes due to the introduction of a virus after the formation and rupture of the vaccine vesicles. Of these by far the most important is erysipelas. It is possible that the pathogenic organism of erysipelas may be introduced into the patient on the eighth day by the operator opening the vesicles, but the accident must be excessively uncommon. After the opening or rupture of the vesicles the introduction of the erysipelas organism is not so uncommon and in the large majority of cases occurs when the child is living in bad hygienic surroundings. The characteristic rash of erysipelas generally appears within 24 hours after inoculation around the vesicles and spreads rapidly. In young infants it is very fatal and it was on this account that in the new Vaccination Act it was first proposed to raise the age limit at which vaccination must have been performed from three months (as now) to one year, statistics showing that the death-rate from erysipelas gradually diminishes with each succeeding month of the first year of life. Cellulitis mentioned in the classification is probably erysipelas complicated with pus cocci. Impetigo contagiosa is not uncommon after the rupture of the vesicles, around which it spreads and by the child's fingers may be carried to other parts of the body. Furunculosis is described as occurring as the result of the absorption of pus cocci into the system, their dissemination and ultimate arrest in the skin.

Gangrene local or disseminate. A local gangrenous action the result of septic poisoning may sometimes be seen at the site of the vaccination. A large black slough forms, which when detached leaves a deep ulcer which takes weeks to heal. Clement Lucas has reported a fatal case in an infant three months old. Disseminated gangrene the result of vaccinia is an exactly similar condition to that described as varicella gangrenosa. The lesions commence as a pin's-head sized papulo-pustule generally on the vaccinated arm and appear all over the body in crops. The pustule ruptures, a scab forms with an inflammatory acrola, and the centre becomes a black slough. Barlow has pointed out that the majority of cases, whether occurring after varicella or vaccinia, are associated with tuberculosis.

Cases of pyæmia after vaccination have been reported. As clinical curiosities may be mentioned the case published by Diday where a growth of hair took place around the cicatrix of a vaccination performed on the anterior part of the thigh of an infant eleven months old, and the occasional occurrence of keloid in the vaccination cicatrix, two cases of which have been reported.

Acacia-road, N.W.

NOTES ON THE

LOCALISATION OF A CENTRE IN THE BRAIN CORTEX FOR RAISING THE UPPER EYELID.

BY W. HARTLEY BUNTING, M.D., F.R.C.S. EDIN.

ALTHOUGH most of the motor centres in the brain cortex have for some time been accurately defined the centre for raising the upper eyelid is as yet uncertain. The very existence of such a centre has indeed been doubted by some, who hold that the centre for the levator palpebræ superioris along with that for all the extrinsic muscles of the eyeball is intracortical and is situated somewhere in the region of the corpora quadrigemina. I think, however, that there is strong evidence to show that a cortical centre does exist and that it is situated far forward in the general motor area. There are some difficulties which present themselves in the way of experimentally localising this centre. In the first place, since the eyelids on the two sides under normal conditions act together, one finds that the centres in the two halves of the brain for raising the lid are so intimately associated that compensation after destruction of the centre on one side readily takes place and ptosis is frequently not observed at all, or, if noted, it is quite temporary, the opposite side taking on the function; this theory was first advanced by Wernicke. Horsley as the result of the study of a clinical case arrived at the same conclusion, and he says that when cortical ptosis exists from damage to one side only of the brain cortex the centres for the elevators of the upper lid are not so closely associated as usual. Again, fallacies have doubtless arisen from the fact that all the external ocular muscles, the levator palpebræ included, may be excited to coördinated movements by vigorous stimulation in many parts of the brain cortex; moreover, it is but rarely that one has the opportunity of making a necropsy in a case of cortical ptosis, or if such an opportunity does occur, the lesion is probably so extensive as to render the results in this direction negative.

Landouzy and Grasset advanced the theory that a centre for movement of the upper lid could be localised in the angular gyrus. The lesions, however, in Landouzy's case

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were, I think, too extensive to admit of the definite conclusions he draws. Lemoine also quotes a case of long-standing ptosis in which, at the post-mortem examination, he found a lesion in the angular gyrus, and he agreed with Landouzy as to the position of the centre. Hirt and others, more recent writers, also hold this opinion. Ferrier thinks that these conclusions are not warranted by experiment. He says, "Some such cases" (that is, of ptosis due to a small lesion in a definite area of the cortex) "have been observed in connexion with diseases of the cortex, and attempts have been made, but not, I think, successfully or in accordance with experimental lesions, to localise this centre in the angular gyrus. If a distinct volitional centre for the levator palpebræ superioris exists in the human brain I think it must be sought for at the base of the first frontal and extending partly into the second frontal convolution of the brain. Here is an area, irritation of which in the brain of the monkey causes elevation of the eyelids." Ferrier found, moreover, in applying stimulation to this area that if the stimulus were very faint elevation of the lids was the only movement that followed. Although movement of the eyelids can be seen on stimulating the angular gyrus the latent period, as pointed out by the same observer, is one-hundredth of a second longer than in the case of stimulation applied to the oculo-motor centre in the frontal lobe. Schäfer and Ferrier both found that when the angular gyrus was destroyed on both sides in the brain of a monkey, no ptosis was produced; and movements of the lids caused by stimulating this area are probably due to association with the frontal region. In one of Ferrier's experiments he extirpated the greater part of the frontal lobe in a monkey; ptosis with some disturbance of ocular movement was the only paralytic effect produced.

De Bono, as a result of the study of clinical cases, came to the conclusion that a cortical centre for the levator palpebræ superioris could be localised in the fore part of the brain. The two cases from which he chiefly drew his conclusions were both in young women affected with ptosis and subject to epileptiform attacks. In the one case the ptosis was congenital, and in the other it was of four years' duration. The epileptiform attacks in both cases began in the arms, and spread sometimes to the face and legs. De Bono thought that the lesion which caused the ptosis was also very probably the focus from which started the convulsions; and upon this he founded his theory that the centre for elevation of the lid must be closely associated with the centre for movement of the arm. Examination of the skull of the patient suffering from congenital ptosis revealed a depression about one finger's width in the zygomo-Rolandic line, 93 mm. from the external auditory meatus and 102 mm. from the orbital margin. This appeared to have resulted from an injury at birth, which was a difficult one, and it was considered by De Bono to be the cause of the ptosis. A study of similar heads showed that the depression corresponded to the anterior central (or ascending frontal) convolution at the junction of the middle with the upper two-fifths. Experiments on living dogs seemed to confirm this observation; and De Bono arrived at the conclusion that a centre for elevation of the lid of the opposite side could be localised in the anterior central convolution rather above the middle in front of the motor centre for the arm and above that for the face. These results of clinical observation are very similar to those arrived at by Ferrier's experiments.

Several cases of ptosis, as a result of blows upon the top of the head, have been reported. Thus Mr. Hulke, in the Reports of the Royal London Ophthalmic Hospital, gives such a case, which he thought was due to direct injury to the cortical centre, but it is more probable that such results are, generally at least, due to a lesion at the base. The following case, however, which is from the notes of a case which was under my own observation, points strongly, I think, to frontal localisation of the cortical centre for the levator of the eyelid.

A boy, aged twelve years, was swinging round a giant's stride when the iron wheel and arms on the top of the pole came off and fell, striking him on the top of the head above the right eye. When I first saw him, sixteen hours later, he was semi-conscious and lay quietly with both eyes closed unless irritated. He could, however, open both eyes widely and there was no paralysis of any muscle or group of muscles. On removal of the carbolic compress which had been applied a large spoonful of brain matter was seen protruding from the anterior extremity of a large jagged wound situated in the right frontal region. The wound extended about three inches back from the brow and was about one and a half inches in width, the middle line of the head being about one and a half inches from the upper edge of the wound. Beneath this the skull was crushed in like the broken shell of an egg, making a depression in which two fingers could lie. On giving chloroform and enlarging the wound the fracture in the outer table of bone was seen to reach to the coronal suture, and the fracture of the inner table about half an inch to one inch beyond. The membranes were extensively torn, and the depressed part of the skull was driven into the brain especially in front. Owing to the extensive fracture of the inner table of the skull I had some difficulty in elevating, having to remove three circles of bone with the trephine. About two or three drachms of brain matter, over and above what had escaped before, were lost during the operation chiefly from the posterior end of the wound. The bone removed by the trephine was replaced and the wound was dressed. The patient remained in a semi-conscious condition for twelve days, and then steadily recovered. There was never any sign of meningitis, and no paralysis occurred with the exception of the left eyelid. Here ptosis appeared directly after the operation, and persisted for ten weeks. It was never absolute and gradually passed off. At the end of twelve weeks it had practically disappeared. I saw the boy occasionally during the next five months. The ptosis entirely disappeared, and so far as could be seen there were no permanent evil results from the extensive head injury from which he had suffered.

Noting the position of the fracture and its relation to the coronal suture it is seen that the posterior end of the fracture, from which the brain matter chiefly escaped during the operation, just about reaches the ascending frontal convolution, and that the level is that of the second (or middle) frontal convolution and the sulcus between the first and second convolutions. I believe that in this case the monolateral ptosis was the result of destruction of the cortical centre, probably during the elevation of the depressed bone, and that recovery was due to the function being assumed by the opposite side. I think that one may exclude the possibility of the ptosis being a nuclear paralysis because there was no ptosis to be observed sixteen hours after the accident and before the operation, but immediately after the operation ptosis was observed, which, however, did not increase in severity.

After weighing the evidence I think that the following conclusions are warranted:—1. There is a distinct cortical centre for the elevator of the upper eyelid. 2. This centre is situated in the posterior extremity of the second frontal convolution, extending probably into the first frontal convolution; that is, above and in front of that suggested by De Bono, and rather lower than the position assigned by Ferrier. 3. There is a definite relation between this centre and the levator palpebræ superioris of the opposite side, and destruction causes paralysis, temporary or permanent, of the lid on the opposite side. 4. This cortical centre is distinct from the cortical centre or centres for the other eye muscles; and therefore, as a result of a cortical lesion, ptosis may occur as a solitary paralysis; or on the other hand, in cortical paralysis of the muscles of the eye, the levator may alone escape. It is interesting to note that the blood-supply of this cortical area is double, it being supplied both by the anterior cerebral and the middle cerebral arteries, which may account for the rarity of ptosis from cerebral embolism.

Edinburgh.

FRACTURE OF THE PATELLA.

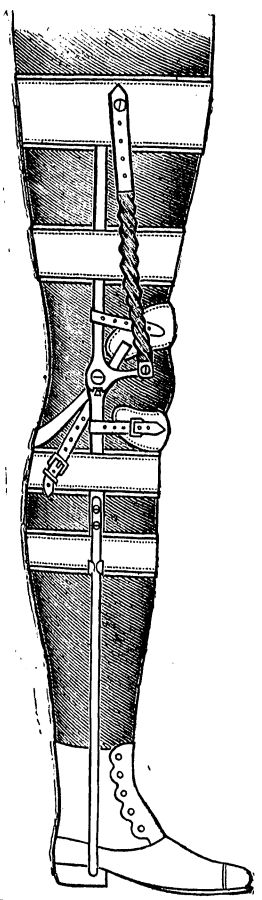
BY HEATHER BIGG, F.R.C.S. EDIN.

THE immediate result of transverse fracture of the patella is that the tibia is more or less completely severed from its connexion with the extensor muscles of the thigh and the natural object of all treatment must therefore be to reunite this connexion between the two parts with as much strength and completeness as possible so that the powers of the knee joint may be restored to their fullest ability in walking. In the present days o advanced surgery this end is frequently attained by the actual operation of suturing the fragments together. But this is not always admissible and the alternative method of apposing the segments by external

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means has to be adopted. My object is to show in what manner and by what apparatus not only may the closest junction be attained between the broken segments, but also how, by a graduated system of strain, the newly-laid material of junction may be cultivated into the greatest strength and endurance. Sir Astley Cooper in his "Treatise on Dislocations" lays down the proper laws of treatment in so clear a way that, although since his time the methods may have materially improved, the principles that underlie them remain classic and unchanged. "Confine" (he writes) "the leg quite straight with circular bandages above the knee for five or six weeks. Then a slight passive motion is to be begun and this must be done gently with much circumspection, that the ligament if not firmly united may not give way and the bones recede. If the union be found sufficiently firm to bear it then passive motion is to be employed from day to day until the flexion of the limb be complete. If passive motion be not used it appears that the action of the extensor muscles would never return." He goes on to write that after the passive motion has been duly used the patient should be placed on a high chair and directed to swing his leg in order to ensure under voluntary motion the gradual restoration of the powers of the muscle.

Now if the essentials of treatment be put into sequence they will be found to run as follow: (1) to approximate the fractured segments as completely as possible; (2) to maintain them in undisturbed apposition so that new material may be easily and reposedly laid down; (3) to submit this new material when formed to graduated strain in such a way as to provoke it to the greatest strength; (4) to passively and gradually renew the movements of the knee-joint from complete extension to complete flexion; and (5) to restore the extensor muscles of the thigh to active power and nutrition after their enforced atrophic quiescence. The way in which I have found all these essential conditions most perfectly satisfied is by an apparatus having the construction shown in the accompanying illustration. It consists of two lateral rods extending along each side of the leg; these are jointed at the knee and connected by four metal bands, two encircling the thigh and two the calf. A continuation of the rod on the outer side of the leg reaches to the sole of the foot where it fits into a socket in a bed-shoe if the patient is still recumbent, or a boot when the patient has started walking; this accessory rod is simply to localise the whole apparatus in a precise and fixed position on the leg. The rest of the special mechanism is at the knee. In the first place the joints of the lateral rods are "locked joints"—that is to say, they are made fixed and incapable of any movement at all when the instrument is first put on the extended and quiescent leg; but the lock is so arranged that it can by filing be cut away at will and flexion thereby be gradually introduced until at last the complete right-angle is reached. Next there are at the joints of the rods short levers to which are attached elastic "mock-muscles" with an extensor power fully equivalent to that of the quadriceps. Lastly, there are two semilunar pads for holding the segments of the patella. The lower pad is fastened to the lateral rods by transverse straps, its object being simply to hold the lower segment steady. The upper pad has two sets of straps, one set acting transversely so as to bring the pad directly home over its segment and the other set acting obliquely downwards in such a direction as to bring the upper segment down into apposition with the lower one.



The application of the apparatus is as follows:—At the outset, whilst the patient is still in bed, it is applied in perfect and rigid extension, and whilst the lower segment is steadied by its semilunar pad the upper segment is readily and without difficulty brought down and retained in proper apposition by its semilunar pad. When the new tissue of juncture between the segments is estimated (generally in about six weeks) to be sufficiently formed and to be capable of some incipient strain then the patient begins to walk with a stick, the instrument remaining rigid for a further week or so. Then the "locked joint" at the knee is released by amounts of about five degrees at a time every few days until the complete right angle of flexion is attained. All this while the extensor "mock muscles" are kept at their fullest tension, their object being to relieve the quadriceps of any work whatever. In every-day walking with the knee-joint mobile it is the quadriceps that flings the leg forward; the "mock muscles" of the apparatus do the same thing artificially and the quadriceps consequently has no need to come into action at all and therefore does not pull on the upper fragment of the patella, which is thus left undisturbed to follow its lower segment in apposition. When, however, flexion has been permitted to reach the right-angle then the "mock muscles" are loosened little by little and the quadriceps gradually begins to pull on the mended patella until it is allowed to do so in its full strength. Finally, the lower semilunar pad is removed whilst the upper one is slightly loosened but is left as a necessary safeguard for a few weeks longer after which the whole apparatus can be discarded.

The feature of this particular treatment is that not only are the segments safely held in apposition, but the reunited bone is submitted by controllable graduations to movement and to strain and the new tissue of union is thereby provoked into attaining perfect strength; for all tissues strengthen under graduated provocation and the fact is perhaps better illustrated in fractured patella than in any other instance. I have notes of close on 300 cases satisfactorily dealt with by this method and it may be added in conclusion that with some modifications of detail it is equally applicable to ruptured quadriceps and to ruptured ligamentum patellæ.

Wimpole-street, W.

REMARKS ON THE MORTALITY FROM CANCER.

BY W. ROGER WILLIAMS, F.R.C.S. ENG.

YEAR after year the Registrar-General's reports keep on repeating that the cancer death-rate is the "highest on record," and this has been going on continually for more than half a century. Yet, so far as I can see, no effect has been produced on the great mass of professional and lay opinion by these constantly reiterated warnings. We often hear of efforts being made to stay the progress of diseases like typhoid fever, small-pox, and tuberculosis—all of which are, and for many years have been, steadily declining; so that in the future we need only improve a little on what we have done in the past to ensure their eventual extinction. But with regard to cancer the case is very different, for the conditions of life are such that if no effort is made to check the progress of this disease it will ere long be as lethal as all the above-mentioned maladies combined. That this is no imaginative statement the subjoined table shows. Yet I have no hesitation in declaring my belief that there need be no more difficulty in mitigating the prevalence of cancer—and perhaps even in eventually extinguishing the disease altogether—than there is in the case of the maladies mentioned above. I believe that the tendency to cancer may be increased by unsuitable modes of living and *vice versâ*. We must therefore seek out those conditions which favour its development; and by avoiding them we shall be able to effect our object. In my opinion it is only by progress along such lines that the cure of cancer is ever likely to be effected.

In this connexion such influences as are comprised under the terms alimentation and domestication seem to

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me to be of paramount importance. Probably no single factor is more potent in determining the outbreak of cancer in the predisposed than high feeding. There can be no doubt that the greed for food manifested by modern communities is altogether out of proportion to their present requirements. Many indications point to the gluttonous consumption of meat which is such a characteristic feature of this age as likely to be especially harmful in this respect. Statistics show that the consumption of meat has for many years been increasing by leaps and bounds till it has now reached the amazing total of 131 lb. per head per year, which is more than double what it was half a century ago when the conditions of life were more compatible with high feeding. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective it seems probable that there may thus be excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors coöperate and among these I should be especially inclined to name deficient exercise and probably, also, deficiency in fresh vegetable food.

In 1840 cancer caused 2786 deaths, the proportion being 1 in 5646 of the total population and 1 in 129 of the total mortality, or 177 per million living. In 1896 the deaths due to it numbered 23,521, or 1 in 1306 of the total population and 1 in 22 of the total mortality, or 764 per million living. Thus the proportionate mortality from cancer now is four and a half times greater than it was half a century ago. In this respect its position is unique, for no other disease can show anything like such an immense increase.

In illustration of this subject I have compiled the following table:—

TABLE I.—*Showing the Prevalence of Cancer and its Increase in England and Wales since 1840.*

Year.	Total population.	Total deaths.	Cancer deaths.	Cancer death-rate per million living.	Proportion to population.	Proportion to total deaths.
1840	15,730,813	359,637	2,786	177	1 to 5,646	1 to 129
1850	17,773,324	368,995	4,966	279	1 to 3,579	1 to 74
1855	18,829,000	426,646	6,016	319	1 to 3,129	1 to 70
1860	19,902,713	422,721	6,827	343	1 to 2,915	1 to 62
1865	21,145,151	490,909	7,922	372	1 to 2,670	1 to 62
1870	22,501,316	515,329	9,530	424	1 to 2,361	1 to 54
1875	24,045,385	546,453	11,336	471	1 to 2,121	1 to 48
1880	25,714,288	528,624	13,210	502	1 to 1,946	1 to 40
1881	25,974,439	491,937	13,542	520	1 to 1,918	1 to 36
1882	26,413,861	516,654	14,057	532	1 to 1,879	1 to 36
1883	26,770,744	522,997	14,614	546	1 to 1,763	1 to 35
1884	27,132,449	530,828	15,192	559	1 to 1,786	1 to 35
1885	27,490,041	522,750	15,560	566	1 to 1,767	1 to 33
1886	27,870,586	537,276	16,243	583	1 to 1,715	1 to 33
1887	28,247,151	530,758	17,113	606	1 to 1,650	1 to 31
1888	28,628,804	510,971	17,506	610	1 to 1,635	1 to 29
1889	29,015,613	518,353	18,654	643	1 to 1,555	1 to 27
1890	28,762,287	562,248	19,433	676	1 to 1,480	1 to 28
1891	29,081,047	587,925	20,117	692	1 to 1,445	1 to 29
1892	29,405,054	559,684	20,353	690	1 to 1,445	1 to 27
1893	29,731,100	569,958	21,135	711	1 to 1,407	1 to 27
1894	30,060,763	498,327	21,422	713	1 to 1,403	1 to 23
1895	30,383,047	568,997	22,945	755	1 to 1,324	1 to 24
1896	30,717,355	526,722	23,521	764	1 to 1,306	1 to 22

Mere increase of population will not account for this continuously progressive augmentation of the cancer death-rate, as is evident from the fact that its rate of increase has proportionally been much in excess of this, and there is far too much uniformity in the variations of the increments of increase in the long succession of years to warrant its being ascribed to improved diagnosis or other casual error. Moreover, I have ascertained that the increase has not been confined to one or a few parts of the body, but that it has involved them all—on the whole without any considerable disturbance of the normal proportionate localisation ratios.

The attempt to explain the increasing cancer mortality as due to the average age of the population having advanced and the consequent liability to greater numbers of cases of cancer will not bear critical examination, for the saving of life in modern times has been mainly confined to early years. The death-rates of males over thirty-five years and of females over forty-five years have either remained stationary or increased, while the number of those who attain old age has decreased. This heavy mortality at post-meridian ages is no doubt largely due to the survival in augmented numbers of weakly lives artificially prolonged by improved conditions of existence, but not more than a small fraction of the increased cancer mortality can be thus accounted for. Besides, it is a mistake to assume that increased cancer mortality is a necessary corollary of the survival of augmented numbers to the cancer age; for instance, the average age of the population of Ireland is much higher than that of the population of either England or Scotland, owing to the large number of elderly people left behind after the younger ones have emigrated, yet the cancer mortality of Ireland is much less than that of either England or Scotland. In most civilised countries where statistical records have been kept similar increases, although less pronounced, have been observed.

A remarkable fact about the increasing cancer mortality is that it has affected males to a much greater extent than females. The following table illustrates this.

TABLE II.—*Showing the Relative Increase of Cancer among Males and Females.*

Period.	Cancer death-rate.		Sex ratio.
	Male.	Female.	
1851–60	195	434	1 to 2·2
1861–70	244	523	1 to 2·1
1871–80	315	622	1 to 1·9
1881–90	430	739	1 to 1·7
1891–95	47	868	1 to 1·6
1896	618	901	1 to 1·4

Thus while the cancer mortality for males from 1851 to 1890 has increased 167 per cent., the increase for females has been but 91 per cent. It seems to me probable that this undue incidence of the increasing cancer mortality in males may be ascribed to the fact that of late, as the result of urbanisation, the conditions of life for men have come to resemble more closely those for women than heretofore. Excess of food, with want of proper exercise and changed surroundings, are, I think, its chief causative agents.

Clifton.

SOME NEW FEATURES OF THE ACCESSORY CAVITIES OF THE NOSE.

BY ROBERT H. CRAIG, M.D.

IN the following notes I have briefly indicated certain features of the accessory cavities of the nose which have hitherto not received attention.

The growth of the antrum of Highmore depends upon the development of the superior maxillary bone. The deeper the canine fossa the smaller the antrum, and it is interesting to note that the canine fossæ of the white race are smaller than those of the negro. As a rule, elderly people have deeper canine fossæ than young adults and individuals with projecting canines have also deep fossæ. The size of the cavity depends greatly on the thickness of the walls. Large cavities have thin walls; on the other hand, the walls of a small antrum are always thick, the difference in size depending upon the amount of absorption during development. These anatomical facts have a special clinical bearing, for in inflammation of the mucous membrane of a large cavity with thin walls the inflammatory products press more closely on the branches of the trigeminus and this accounts for the frequent symptoms of referred pain in such cases. The antrum is often divided into two or more

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parts by bony partitions, as shown by Zuckerkandl's sections. According to the teachings of Tandler the dimensions of the cavity may be obtained by the three following external measurements: (1) *the heighth* from the infra-orbital floor to the alveolar process; (2) *the breadth* from the pyriform aperture to the zygomatic process, deducting from 1 to 2 millimetres to allow for tissue; and (3) *the depth* from the external angular process to the level of the upper part of the canine fossa. The normal opening of the maxillary antrum is situated in the posterior part of the hiatus semilunaris under the anterior end of the middle turbinated bone. According to Chiari, Hajek, and other authorities an accessory opening is found in every fifth case in the middle meatus posterior to and deeper than the normal aperture.

The frontal cavity.—The size of the cavity is inconstant; its upper limit is judged by the height of the superciliary ridge, the lower by the incisura orbitalis or fronto-maxillary suture; its outer boundary by a line drawn downwards from the supra-orbital notch. The opening of the cavity is situated in its most dependent part and leads into the naso-frontal duct.

The ethmoidal labyrinth.—According to the teaching of Hajek this is developed from four basal plates (sometimes one or more supernumerary plates are found between the middle and superior turbinal). The plates are: (1) the unciform; (2) the bulla; (3) the middle turbinated; and (4) the superior turbinated. Most of the anomalies which are so frequently found in connexion with this cavity are caused by variations in the evolution of these plates. Between the first and imperfectly developed unciform process and the bulla is the hiatus semilunaris, between the second and third plates the anterior ethmoidal cells are situated, between the third and fourth the middle ethmoidal cells are found, and behind the fourth plate the posterior cells. According to the latest views the relation of the anterior ethmoidal cells to the infundibulum is as follows. The cells are usually found only posterior to the hiatus semilunaris, but in some cases the whole hiatus is enveloped in the anterior labyrinth—a fact of great surgical importance. The fissures between the plates are known as inter-turbinal ways and every inter-turbinal way may have appendages supplied with ducts. Thus the hiatus semilunaris is to be regarded as an inter-turbinal way and the cells which lead from it as infundibular cells. Each ethmoidal cell usually communicates with the fissure with which it is connected and if the cells do not open directly into their respective fissures they open into other cells which do open direct; for example, if there are five cells in the anterior part of the labyrinth and only two open into one of the fissures the other three communicate with the two which open direct.

The relationship of the ethmoidal cells to the frontal cavity.—It is found that the plate of the bulla ethmoidalis separates the frontal cavity from the ethmoidal labyrinth and the size of the former cavity is more or less dependent upon the position of the bulla. Hajek's prefrontal cavity is placed between the anterior ethmoidal plate and the frontal sinus and is caused by a backward deviation of the plate of the bulla. The bulla is subject to anomalies, thus: 1. In some cases the bulla does not reach as high as the criboriform plate and the frontal cavity communicates with the anterior ethmoidal cells. 2. The median plate of the bulla may be defective and the whole anterior ethmoidal labyrinth then communicates with the frontal sinus. An ethmoidal cell is often found in the anterior end of the middle turbinal but this must not be regarded as an anomaly for it is only isolated from the rest of the labyrinth as described by P. Heymann. The duct of this cell frequently becomes occluded and gives rise to a prominent swelling on the anterior end of the middle turbinal. The most constant opening of the anterior ethmoidal cells is situated between the bulla and the anterior insertion of the middle turbinated bone, that of the middle farther back, behind and above the bulla, while the posterior opening is in the recessus spheno-ethmoidalis.

The sphenoidal cavity.—The size of the cavity is inconstant and its lateral walls are sometimes defective owing to an osteo-porosis. In such cases mucous membrane alone separates the cavity from the meninges. The size of the opening varies, but it is always situated in the anterior wall, the distance of the aperture from the anterior nasal spine being about from 8½ to 9 centimetres in the male and from 7½ to 8 centimetres in the female.

Montreal.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

MIDDLESEX HOSPITAL.

A CASE OF IMPERFORATE HYMEN; RETAINED MENSES; HÆMATOCELE; OPERATION; RECOVERY.

(Under the care of Dr. PASTEUR and Mr. ANDREW CLARK.)

IN different cases of imperforate hymen different portions of the genital canal may be dilated; in the vast majority of the cases the uterus is much distended; in others the Fallopian tubes, and in others again the vagina is the part most affected. When the uterus is dilated the tubes are often enlarged also, and this accounts for the regurgitation along them of the menstrual fluid which is very liable to occur. It is very rarely that abdominal section is required for retained menses, and very few cases are on record. Alexandroff[1] recommends that laparotomy should be performed if dilatation of the Fallopian tubes is diagnosed, and especially if one of the tubes has ruptured. A case in many respects similar to the one recorded below was reported by Webster.[2] It was found necessary to remove the distended left tube, but unfortunately the patient died six weeks later from septic peritonitis. In cases of imperforate hymen it cannot be rare for the retained blood to pass backwards into the peritoneal cavity and it is probable that in most cases no very serious results follow, though it is possible that the pelvic hæmatocele resulting may give rise to peritoneal adhesions, but when the hymen has been incised an easy passage is left for the entrance of septic organisms and then the effused blood will greatly facilitate their development.

A girl, aged fifteen years, well nourished but anæmic, was admitted into the Middlesex Hospital on April 27th of the present year under the care of Dr. Pasteur on account of abdominal pain and swelling. She had had a similar attack but not so severe about a year previously which cleared up after a few days' rest in bed, but beyond this she had always enjoyed excellent health and did not remember having been laid up, except with scarlet fever in 1896, from which she recovered perfectly. She had never menstruated nor had she had any indication of the commencement of that function. The present illness began with severe headache on April 23rd—that is, four days before her admission to the hospital. She passed a very restless night and had cramps in her abdomen and legs. On the next day she had pains in her back and the lower part of her abdomen and lost her appetite. The pain in her back got better, but that in the abdomen got so much worse that her mother took her to the hospital. The bowels had been regular. On admission her organs were normal. The pulse was 108 and the temperature was 100·2° F. She complained only of pain in the abdomen and the following is the note of its condition: "There is no uniform distension of the abdomen, but between the umbilicus and the right iliac crest there is a marked swelling with its edges more or less well defined and with a surface area about four inches across. It is resistant on palpation, dull on percussion and intensely tender." The condition of the patient on the next day was much the same; she had not been sick, her bowels had not been opened, she had no appetite, and her tongue was coated. The pulse was 100 and the temperature was 99° at 6 A.M. and 99·8° at midday. The abdomen was decidedly more tender, especially at the outer part of the swelling and by rectal examination a tumour could be felt pressing on the bowel. The next day the condition was practically the same. The temperature on the previous night had been 100·4° and the patient had been and still was very

[1] Nouvelles Archives d'Obstétrique et de Gynécologie. Paris August 25th, 1896.
[2] American Journal of Obstetrics, September, 1895.

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restless. Though the symptoms were not altogether those of appendicitis this was believed to be what she was suffering from and it was thought that an operation was desirable. Accordingly about 4 o'clock on the 29th the patient was anæsthetised, gas and ether being employed, and an incision was made over the most tender part of the tumour, which happened to be the usual spot chosen for appendectomy. On opening the peritoneal cavity a large quantity of dark-coloured fluid and clotted blood escaped from the wound. The finger was introduced and a soft tumour of about the size of a fœtal head was felt. This was drawn out of the wound and proved to be an enlarged ovary and Fallopian tube. The fimbriated extremity of the latter was congested and patulous and dark-coloured blood was issuing from it. Further manipulation showed that the uterus was much enlarged and that the left Fallopian tube was also much distended and the ovary considerably above the natural size. The vulval orifice was now examined and it was found to be closed, so the abdominal wound having been carefully covered the patient was put in the lithotomy position in order that the condition of the vagina could be properly made out, and it was found to be simply a case of imperforate hymen not bulging forward as usual in the least. An incision was made into it and a quantity of dark fluid blood escaped. This was found to have distended the vagina laterally as well as the uterine cavity. These were irrigated with a perchloride of mercury solution and a cyanide gauze plug was loosely introduced. The patient was then returned to the original position, the abdominal wound was sponged dry, the wall was sewn up with fine silk, layer by layer, a cyanide gauze dressing was applied, and the patient was returned to bed. Hot vaginal douches were ordered to be made every four hours and in the intervals the vagina was to be kept loosely plugged with iodoform gauze. On the next day the patient appeared to be comfortable and was in no pain. The only things to note were that the temperature was 100·2° and the pulse was 120, and the night temperature and pulse remained at this till the fourth day after the operation, when they came down to 99·2° and 102 respectively, below which they rarely went while the patient was in the hospital. The dressings were taken off on May 6th, when, the wound being quite closed, the stitches were removed and a collodion dressing was put on. There is nothing else to note about the case, there was no cause for any anxiety, and the difficulty was to keep the girl in bed. She was not, however, allowed to get up until the 27th, a month after the operation, and was sent to the convalescent home on June 2nd. She was again seen on her return from the convalescent home on the 27th and expressed herself as being quite well, but there had been no sign of another period. A vaginal examination was made with the patient under the influence of an anæsthetic and the aperture in the hymen, much thickened and very dense, was dilated. The pelvic organs were normal.

Remarks by Mr. ANDREW CLARK.—There are two points about the above case which induce me to put it on record. The first point is the rarity of the condition. An imperforate hymen is comparatively common, but in the majority of instances it shows itself by protrusion of the membrane from the vulva, the swelling getting larger and larger with each menstrual period, dilating the vagina to an enormous extent and pushing the uterus up into the abdomen. Sometimes the uterus becomes distended also, as happened in a slight degree in this case, but here, in addition to the distended vagina and uterus, there were dilatation of the right Fallopian tube and a back flow of the fluid into the peritoneal cavity, a hæmatocele forming there. This was probably due to the thickness and absence of elasticity in the hymen. The other point is the error in the diagnosis of the condition. I must confess that the idea of an imperforate hymen being the cause of the trouble never entered my head until I saw the blood, and though the history was perhaps not altogether typical of appendix abscess, still the one previous attack, the position of the swelling and its extreme tenderness, together with the age and appearance of the patient, and the absence of any history of monthly trouble, would, I venture to think, suggest to few surgeons the propriety of a vaginal examination, a rectal examination having already been made. Then, again, the importance of early operation and its practical safety and the risk attendant on the presence of a localised collection of pus in such a position make one resort to operation with little hesitation, for if there is a class of case in which the surgeon should act on the principle of "when in doubt, operate," it is that of appendix abscess. Had I looked at the vulva first no doubt I should have been contented with making a free opening through the hymen, but as the case has turned out, I think that what was done was best, for I doubt if the quantity of effused blood would have been absorbed anything like so quickly, and I do not think that the girl would have been convalescent and able to enjoy life again in so short a time as two months.

LEEDS GENERAL INFIRMARY.

A CASE OF INTUSSUSCEPTION; OPERATION; RECOVERY.

(Under the care of Mr. W. H. BROWN.)

WE have pointed out on several recent occasions in commenting on cases of intussusception that the tendency during the last two or three years has been to operate at an earlier period than formerly. At one time inflation or injection always preceded laparotomy, and the necessary shock of the operation often proved fatal to the child already much exhausted by the unsuccessful preliminary attempts. The statistics of these cases of "secondary" laparotomy are perfectly useless for estimating the value of operation in intussusception, but with the recent increase in the proportion of cases treated at once by laparotomy the percentage of recoveries has increased. It would be very desirable if all cases of intussusception treated by operation could be recorded and then the statistics would be of more value than at present. It cannot be too much insisted on that in a large proportion of the cases of this disease no inflation or injection could reduce the intussuscepted bowel. Mr Brown's case reported below is a good instance of this; the grasp of the ensheathing layer of bowel was so tight that even reduction by manipulation was difficult. In such cases as these inflation can only do harm and operation holds out the sole hope of a successful result. For the notes of the case we are indebted to Mr. E. J. A. Dodd, house surgeon.

A boy, aged three years, was admitted into the Leeds General Infirmary on March 31st, 1898, suffering from pain in the abdomen and tenesmus. The patient had been quite well until two days before admission, when he was seized with pain in the abdomen. He had vomited on several occasions and had passed blood *per rectum*. On admission the abdomen was found to be slightly distended and on palpation an elongated swelling could be felt in the region of the ascending and transverse colon. There was some tenderness of the abdomen. The child was in fairly good condition, the pulse was rapid but good, and as before admission attempts at reduction by means of injections had been made an operation was decided upon.

A couple of hours after the admission of the patient ether was administered and the abdomen was opened in the middle line below the umbilicus by an incision 4 in. long. On putting the hand into the abdomen an intussusception was found extending from the cæcum to the splenic flexure of the colon. The apex of the intussusception at the splenic flexure was then brought outside the abdomen and by means of gentle pressure with the finger and thumb the greater part of it was easily reduced, the bowel being returned to the abdomen. The intussusception in the last few inches was found to be folded upon itself in its longitudinal axis and had the appearance of a double intussusception. The bowel was brought further out of the abdomen and was with difficulty reduced by means of manipulation. This portion of the bowel was found to be very much swollen, especially where the two surfaces had been in contact, and was very much inflamed, but the serous coat had not lost its lustre. The wound was then washed over with carbolic lotion, the abdomen was closed, and a dry dressing was applied. The after treatment was simple. A small dose of nepenthe was given on the night after the operation, but it was not repeated. The wound was dressed on the seventh day and healed by the first intention. The bowels were opened on the sixth day by a simple enema and were subsequently kept open by small doses of castor oil. The patient was discharged on April 30th. He was seen two months later and was then quite well.

Remarks by Mr. BROWN.—In a recent number of THE LANCET there appeared notes of two cases of

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intussusception treated by early operation; as the details were very similar I venture to add the above case to the scanty records of successes. If more evidence in favour of early operation be needful I venture to think it would be forthcoming if surgeons were less reticent in publishing isolated cases. The condition of the bowel at the initial point of invagination showed that a few hours' more delay would have resulted in sloughing, for the swollen patches which were in contact were very suggestive of destructive pressure. I have only once seen an intussusception undergo spontaneous cure and this after weeks of great suffering. Unfortunately operation is resorted to only after a prolonged trial of palliative measures has failed. I think it would be a good rule to regard cases of intussusception in the light of strangulated herniæ and treat accordingly. If the risk of abdominal section is great the risk of leaving invaginated bowel is greater. I have on many occasions had to operate only to find sloughing intestine, and then the necessary manipulations, either to restore the continuity of the canal or the formation of the artificial anus, call for a prolongation of the operation which is rarely compatible with life.

Reviews and Notices of Books.

Anatomical Atlas of Obstetric Diagnosis and Treatment. By OSCAR SCHAEFFER, M.D. With 145 Illustrations. London: Baillière, Tindall and Cox. 1897. Crown 8vo. Pp. 230. Price 12*s.* 6*d.*

Atlas and Essentials of Gynecology. By OSCAR SCHAEFFER, M.D. With 64 Plates and 54 Woodcuts. London: Baillière, Tindall and Cox. 1897. Crown 8vo. Pp. 288. Price 15*s.*

IT may well be a matter for discussion whether an author is wise in attempting to combine an atlas with a text-book as has been done in these two books. One or other part must inevitably suffer and, although Dr. Schaeffer might perhaps say that his letter-press is mainly secondary to the plates, yet since he has given us more than a mere description of the plates we must regard the second part of these two works as of the nature of a text-book.

The "Anatomical Atlas of Obstetric Diagnosis and Treatment" consists of two parts. The first part is composed of some 145 figures, a large number coloured, illustrating anatomical conditions in connexion with pregnancy, types of various forms of contracted pelvis, and some of the pathological complications of pregnancy and labour. The drawings are of very unequal merit and interest and are very largely taken from preparations in the Munich Gynæcological Clinic, with which the author was for some time connected. They give a clear idea of the conditions which they are intended to represent, but cannot be regarded from the artistic point of view as wholly successful, nor indeed are they all strictly accurate. Fig. 110, Tamponade of the Bleeding Uterus, after Dührssen, would give a student an entirely erroneous impression as to how to plug a uterus for post-partum hæmorrhage. The most essential feature in the operation is to plug the uterus from above down, and great care should be taken to plug the upper part of the uterine cavity. In the figure mentioned—described as an original drawing after Dührssen's direction—the tampon is shown filling only the lower half of the uterine cavity, leaving the upper half entirely empty. A reference to Dührssen's own description of the operation in his "Geburtshülfliches Vademecum" will show that he particularly directs that the tampon should be carried up to the fundus of the uterus and that the uterine cavity should be completely packed from above down. The illustrations of contracted pelvis, of which there is a very complete series, would have been of much greater value had they all been drawn to scale. Fig. 107, representing a rupture of the fundus of the uterus from the Munich Clinic, is of very great interest, although, unfortunately, no history is available. The second half of the book consists mainly of a description of the conditions which are illustrated by the plates. Occupying as it does only about 180 pages it is of necessity very greatly condensed. For this reason some of the paragraphs on treatment can hardly be regarded as a safe guide to the student. As an illustration of this we may turn to the section giving the treatment of a case of accidental hæmorrhage. This is summarised as follows: "If the cervical canal is somewhat dilated, rapid delivery, perhaps by accouchement force, or by Cæsarean section in atony of the uterus after failure of hot injections, tamponade, and ergotin," no mention being made of rupture of the membranes and no details being given as to what is the correct treatment if the cervical canal be not somewhat dilated.

The "Atlas and Essentials of Gynecology" also consists of two parts, the first half of the book being made up of some 170 coloured illustrations, and the second half of letter-press further illustrated by woodcuts. The plates illustrating diseases of the external genitalia and of the cervix uteri are of considerable value and they are supplemented by drawings of some of the microscopical appearances met with in the various conditions figured. There is a large number of schematic diagrams illustrating the various displacements of the uterus and the methods of replacement, and these, no doubt, would be of value from a teaching point of view. Carcinoma of the cervix and of the body of the uterus is illustrated by a number of original water-colour drawings after von Winckel and from preparations in the Munich Clinic. The second half of the book consists of 5 parts; the first is concerned with Malformations and Arrests of Development, the second with Changes in Shape and Position of the Pelvic Organs, the third with Inflammation, the fourth with Injuries, and the fifth with Neoplasms. This portion of the work will be useful in helping the student to recall the most important facts connected with gynæcology, but it cannot be considered as complete, and like the second part of the Atlas of Obstetrics it suffers from the amount of condensation which has been found necessary.

These two books do great credit to Dr. Schaeffer's industry and observation, but at the same time we cannot but think that the result would have been of much greater value had the author been content to bring out either a pure atlas or a pure text-book, since in their present form the works are not so complete or useful as they might have been.

De l'Exploration externe en Obstétrique. (*External Examination in Obstetrics.*) Par Professor A. PINARD. Paris: G. Steinheil. 1897.

TEACHERS of obstetric medicine in this country have not been slow to appreciate the great value of abdominal palpation in the practice of midwifery, but in spite of this fact it is still a difficult matter to get students to recognise its great importance and to persuade them to bestow upon it the amount of practice necessary to enable them to acquire any degree of proficiency in its performance. This paper of Professor Pinard, read before the International Medical Congress held at Moscow in 1897, is an authoritative statement as to the possibilities and limitations of abdominal palpation and may be read by all engaged in midwifery practice with the greatest profit. It is not possible for all to become so expert as the author, but he very clearly states what may and what may not be felt if students will but bestow upon this valuable method of examination the requisite amount of practice. In considering the diagnosis by the abdomen of the existence of pregnancy and of its age Professor Pinard calls attention to the fact that after the third month of pregnancy the uterus is more an abdominal than a pelvic organ. With regard to the

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size of the uterus at the various months of pregnancy he states most explicitly that he has never seen a uterus the fundus of which did not reach above the umbilicus at the fifth month — this we would commend to the attention of some of the authors of English text-books of midwifery, in which the most erroneous statements are to be found as to the height of the fundus of the uterus at the various months of pregnancy. Professor Pinard points out that not only can normal pregnancy be determined by abdominal examination, but also that most of the complications of pregnancy, such as the presence of tumours, hydramnios, hydrocephalus, or hydatidiform mole, can only be diagnosed by this method of examination in the majority of cases. In the same way it is possible to diagnose most cases of multiple pregnancy and of death of the fœtus and to determine the relation between the size of the child's head and the size of the pelvis. He also shows the value of this method in confirming the diagnosis of extra-uterine gestation, but he does not believe that the position of the placenta *in utero* can be determined in any but a very small percentage of cases. During labour abdominal palpation must yield in importance to vaginal examination, and since the diagnosis of prolapse of the cord, of tumours of the pelvis, and of the necessity for rupture of the membranes cannot be determined by the abdomen vaginal examination can never be entirely dispensed with. Appended to the paper are notes of cases of multiple pregnancies, hydramnios, hydrocephalus, &c., in which abdominal examination enabled a correct diagnosis to be made.

LIBRARY TABLE.

Physiologie. Travaux du Laboratoire de M. CHARLES RICHET. Tome iv. Appareils Glandulaires; Nerfs et Muscles; Séro-thérapie; Chloroforme. Avec 57 figures dans le texte. Paris: Félix Alcan. 1898. Price 12 francs.—This volume, which is the fourth of the series, contains fifteen memoirs of which the authors are MM. C. Richet, P. Langlois, C. Beretta, Jotey-Ko, A. Chassevant, J. Héricourt, Saint Hilaire, André Broca, Carvallo, Pachon, Bardier, Athanasiu, and E. Vidal. These articles deal with various subjects of current interest and we propose to supply our readers with an abstract of the more important.

Sir Thomas Browne and his Religio Medici: an Appreciation. By ALEXANDER WHYTE, D.D. London and Edinburgh: Oliphant, Anderson and Ferrier. 1898. Price 2*s.*—The dedication of this little book sufficiently explains its scope and the occasion of its being written. "Dedicated to Sir Thomas Grainger Stewart, President of the British Medical Association, at whose request this appreciation was delivered as the Inaugural Discourse at the opening meeting of the Association in St. Giles's Cathedral on the 26th July, 1898, in great good-will and love by Alexander Whyte." Dr. Whyte thinks the Religio Medici to be Browne's best book, and that the others rank according to their affinity or otherwise with it. It is certainly the most important of his works and the one in which we hear most of the man himself, but to some minds there is a nameless, indefinable charm about the Urn Burial greater than anything in the Religio Medici. Dr. Whyte gives us a just and worthy appreciation of the noble character of Sir Thomas Browne.

Egyptian (Arabic) Self-taught. By C. A. THIMM, F.R.G.S. Second edition. London: E. Marlborough and Co. 1898. Pp. 70. Price 2*s.*—The principal feature of this little book is a very copious vocabulary of words and phrases requisite for travellers in Egypt and the fact of its being now in the second edition shows that it supplies a want. The Egyptian equivalents of the English words are expressed phonetically in ordinary English characters and not in Arabic letters, an arrangement which spares learners the perplexity of reading Arabic characters from right to left. A vocabulary, to be useful, must always give the English pronunciation, for Arabic words are usually written without vowels, as is done in English shorthand; but those who have mastered the alphabet are often helped by having the Arabic characters as well as the pronunciation, an arrangement adopted to some extent in the companion volume, "Arabic Self-taught," published by Messrs. Marlborough.

Annual Report on Meteorological Observations in the Straits Settlements for the Year 1897. By MAX F. SIMON, M.D., Principal Civil Medical Officer. Singapore: The Government Printing Office. 1898. — The greater part of this report consists of 71 pages of tabulated observations made at Singapore, Penang, Province Wellesley, and Malacca. For Singapore the figures show that the barometric extremes were 30·079 in. and 29·739 in., the mean height for the year being 29·89 in. The extremes of air temperature (Fahrenheit) were 92° and 69°, the mean for the year being 80°. The extremes of atmospheric humidity were 98 per cent. and 52 per cent., the mean for the year being 80 per cent. At the Kandang Kerbau Hospital Observatory the total rainfall was 103 in.; the greatest fall in twenty-four hours was 4·93 in. on Feb. 17th.

Bacillus Graminearum. By Dr. GIOVANNI MONTANO. Melfi: Giuseppe Grieco. 1898. Pp. 20.—In some parts of Southern Italy it is well known to the peasantry that if certain kinds of reed are cut, piled up, and left for a time, the opening or removal of these heaps generally causes great irritation of the skin of the workers. Dr. Giovanni Montano, of Lavello, an inland place about fifteen miles from Naples, has studied this subject and has published his results in the present pamphlet as well as in some previous treatises. The reeds in question are Arundo donax, Phragmitis vulgaris, and Calamogrostis epigeyos. When they are piled together until they become mouldy and dry there is an abundant production of a whitish-pink, very fine powder, consisting of spores and filaments of various species of hyphomycetes and schizomycetes, together with numerous spores of dendrochium microsorum containing colonies of a bacillus 5–6 μ in length and 1–2 μ in breadth, which Dr. Montano has called bacillus graminearum. The ill effects produced by these reeds are a violent smarting of the skin, which may even be described as an intolerable burning, cutaneous œdema, and eruption of papules, vesicles, pustules, and bullæ. The lymphatic glands, chiefly those of the neck and groins, are enlarged, the air passages may be seriously involved, and the temperature may reach from 38° to 40° C. (from 100·4° to 104° F.). The symptoms pass off entirely in from six to eighteen days. The same bacillus as that which was found in the powder on the reeds was to be seen in the contents of the vesicles on the skin of the patients.

Rhodes's Steamship Guide. Edited by THOMAS RHODES. London: George Philip and Son. Price 5*s.*—To all those who go "down to the sea in ships" much useful information is available in this book, which is well illustrated with maps, pictures of the better known "ocean greyhounds," portraits of the heads of the leading steamship companies, and coloured plates showing the flags of the various liners, code signals, &c. In addition there is an alphabetical directory of passenger steamers, giving interesting details concerning each; and also a well-written account in non-technical language of the marine steam-engine, placing the uninitiated in possession of some solid facts and figures. We learn, for instance, that a steamer using from 28,000 to 30,000 horse-power converts about half a million pints of water into steam every hour and that only 6 or 7 per cent. of the heat energy of the coal consumed is utilised in the actual forward movement of the ship. There

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is much that is valuable alike to the traveller, the merchant, and the exporter, and in calling his book the "Bradshaw of the Ocean" the editor is probably not claiming too much.

My Home, and Household Companion. By J. W. JARVIS and W. J. WOODS. London: Simpkin, Marshall and Co., Stationers' Hall Court, E.C. Price 2*s.* paper cover; 3*s.* limp cloth.—There are probably but very few householders who have any reliable idea of the value of their home. When the question of insurance against fire arises some sum is usually guessed at, and, thanks to the infrequency of the event itself, the public generally are satisfied with their haphazard calculations. But when the unlooked-for calamity arises and an inventory of the goods destroyed has to be provided to satisfy the requirements of the fire insurance companies, then the average householder, after laboriously compiling a list of his household furniture, &c. (in which he is tolerably certain to have omitted not a few items), is generally confronted with the fact that the total of his loss exceeds his insurance, and he expresses his surprise that his home was worth so much. "My Home, and Household Companion" is just the book to put these matters right, and it consists of a number of pages ruled off ready for filling in, showing the cost, the date at which acquired, &c., of the goods in each room in the house, not the least valuable part of the book being the detailed inventory of the articles in the various rooms, passages, &c., and the systematic manner in which they are treated. There are, in addition, some useful notes on fire, burglary, life, and accident, insurances, and on wills and death in the house, each containing something which is not generally known. For instance, with regard to fire insurance it appears that, unless specially detailed in the policy or included in a general covering clause, the property of a servant is not replaced when loss occurs under the policy held by the head of the family. Another item not generally known is that when a loss is paid by an insurance company the amount is deducted from the sum insured until the renewal premium is paid or a new insurance equal to the amount of the loss paid has been effected. That is to say, if A, who is insured for £500, has a fire in May, and recovers £400, and the renewal premium on his policy is due the following December, during the period from May to December he is covered for £100 only, unless he re-insures. Mr. Jarvis's and Mr. Woods's book should be of help to the majority of householders; and if, at some future time, they could add to it, or issue in a separate form, some hints on what to do, and what not to do, when some of the usual domestic inflictions occur—when, for instance, the electric light suddenly goes out and no mechanic is at hand to put in a simple fuse-wire; or when there is a smell of gas in the kitchen for the want of half-a-pint of water poured into the telescopic pendant; or when the house is being flooded with water through a burst pipe for want of screwing down the cock on the main supply pipe, or, if that be missing, flattening the pipe itself with a hammer; or when the householder is told by the domestic that the "telephone man" or "inspector of water fittings," whom she admitted half-an-hour previously and permitted to roam over the house without so much as having a shadow of doubt as to the *bona fides* of his errand, has walked off with one or more valuable articles,—well, if they can add a few chapters on similar points to these to enlighten ourselves and to teach our domestics wisdom, they will earn the gratitude of a large number of their fellow men.

JOURNALS.

The Middlesex Hospital Journal.—The *Middlesex Hospital Journal*, which is edited by Dr. Campbell Thomson and Mr. C. Reissmann, has devoted its July number almost entirely to historical matters connected with the hospital and school. The "Story of the Middlesex Hospital" is very ably told by Dr. Sidney Coupland in a manner which cannot fail to interest everyone who reads it. "The story" is to be continued in the future numbers of the *Journal*, and when finished it will form a valuable record of the history of the hospital from the time of its foundation to the present day. Dr. Coupland deserves the best thanks of Middlesex Hospital men for the labour and time which he must have spent in giving them such an interesting and authentic account of their hospital. Mr. Stephen Paget contributes a good article on Sir Charles Bell, which deals more especially with his early life in London—"the time of waiting before his prosperity became well-nigh burdensome to him." The account of the new cancer wing and the illustrations of the new school buildings show that the future, like the past, is to be one of continual progress, for the new school buildings, which are now almost finished, will put the hospital in possession of an admirably organised medical school. The illustrations are numerous and include an excellent picture of Sir Charles Bell and the hospital staff in 1865, and various views of the hospital at different stages of its career. The *Journal* is well got up and we wish it success.

In the *Phonographic Record* for August, Dr. Fletcher Beach continues his descriptions of mentally deficient children, and Dr. James Collier narrates a remarkable case of vesical fistula in a paraplegic patient under the care of Sir W. R. Gowers at the National Hospital for the Paralysed and Epileptic. After retention of urine for five months, during which the bladder was not relieved by the catheter, a lump appeared in the patient's right groin, burst in a few days, and through the opening left the patient voids all his urine nothing coming *per urethram* but a little pus.

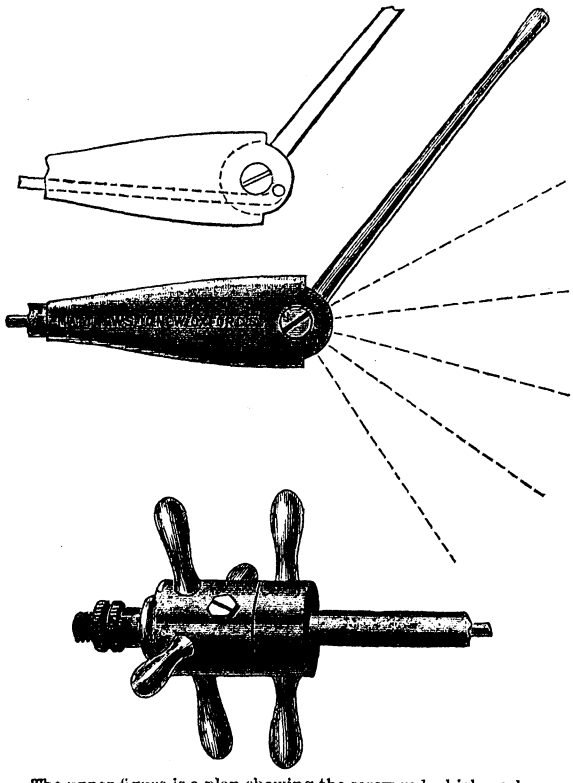
PRESENTATIONS TO MEDICAL MEN.—At a public meeting at the Drill Hall, Llandovery, on July 30th, his worship the Mayor of the Borough presiding, Mr. F. W. Lewis, M.R.C.S. Eng., L.S.A., medical officer of health of the borough and of the Llandovery Union, was the recipient of several gifts in recognition of his twenty-five years' services to the poor and rich alike. Over 800 persons subscribed and but for the collecting books being closed too soon more subscriptions would have been forthcoming. Nevertheless, about £250 were collected. The testimonial comprised chased and pierced fruit dishes, two pairs of silver Corinthian candlesticks, a silver fluted Georgian tea-kettle and stand, a silver fluted Georgian hot-water jug, a grand piano, and a secretaire in dark oak with revolving chair to match. On the kettle was engraved the following inscription: "Presented with four silver fruit dishes, two pairs of candlesticks, hot-water jug, desk, and chair to Dr. F. W. Lewis, Llandovery, by the inhabitants of the town and neighbourhood, as well as by the employés of the London and North-Western and Great Western Railway companies, as a mark of their appreciation of his long services amongst the poor and needy of the district and his unfailing courtesy to those amongst whom he lives. July 30th, 1898."—To mark the completion of some twenty-five years' practice in the Kintore district the friends of Mr. John Cameron, L.R.C.S. Edin., availed themselves of the opportunity to express in some tangible form an appreciative estimation of his services, both professionally and socially. The Oddfellows Society, with which Mr. Cameron has been associated as medical officer, took the initiative and opened a subscription list. A considerable sum was collected and on July 27th, at the public hall, Mr. Cameron was presented with a silver tea and coffee service. — At the meeting of the Committee of Visitors of the Joint Counties Asylum of Carmarthen, held on July 28th, the chairman (Mr. W. O. Brigstocke), on behalf of the committee, presented to Mr. Edwin Goodall, M.D., B.S., M.R.C.P. Lond., the medical superintendent, a silver teapot, cream jug, and sugar basin as a mark of their respect and esteem on the occasion of his recent marriage.

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New Inventions.

A NEW PATTERN OF UTERINE REPLACER.

THE instrument figured below was the outcome of difficulties occasioned by a case of uterine displacement caused some months previously by a severe fall which occurred abroad in a place some three or four weeks' journey removed from the help of any instrument maker. The patient, a married nullipara, had cessation of the menses without any symptoms pointing to pregnancy. Digital examination revealed the uterus completely anteverted. By curving an ordinary uterine sound to a right angle it was introduced to the fundus after much difficulty, but the angle to which the sound was bent prevented its being rotated, nor could any form of stem be introduced to help to replace the uterus, and chloroform was steadily refused. The instrument figured was devised and made in two weeks entirely by myself and has one or two important points. It is made entirely of metal—German silver; its parts are fixed together by screws, so that it can be readily



The upper figure is a plan showing the screw rod which works the probe through different angles. The middle figure shows the instrument itself. The lower figure shows the handle for working the screw rod.

taken to pieces, if necessary, for thorough disinfection; and also during its use, while the right forefinger retains its position at the os externum, it can readily be manipulated backwards or forwards by the left hand turning the screw nut, the length of the end of the screw projecting beyond the nut serving as an index to the position of the probe end of the sound. It is sufficient to say that in a week or two after its employment the uterus in this case was restored to its natural position, menstruation was re-established, and a month after all treatment had been suspended the uterus was still in its normal position. There is nothing new under the sun, but I do not know of any instrument which possesses the useful points of the above, and having served me well I trust it may be of use to others. Messrs. Matthews Bros., of 10, New Oxford-street, have undertaken its manufacture.

Madeira. F. J. HICKS.

THE *RÔLE* OF THE MOSQUITO IN THE EVOLUTION OF THE MALARIAL PARASITE.

THE RECENT RESEARCHES OF SURGEON-MAJOR RONALD ROSS, I.M.S.

AT the meeting of the British Medical Association in Edinburgh Dr. Patrick Manson, the President of the Section of Tropical Diseases, gave by special request and with the permission of the Secretary of State for India and of Surgeon-Major Ronald Ross, I.M.S., a lecture and exposition of the work done lately by the latter in the investigation of this subject. Surgeon-Major Ross has also sent us an advance copy of his recent report on the cultivation of Proteosoma, Labbé, in grey mosquitos. From this report we make the following extracts:—

"*A discovery of pigmented cells in grey mosquitos fed on larks with proteosoma.*—In February, 1898, I was placed by the Government of India on special duty to prosecute these researches and was given the use of Surgeon-Lieutenant-Colonel D. D. Cunningham's laboratory in Calcutta for the purpose. Steps were immediately taken to find again, if possible, the pigmented cells by feeding different species of mosquitos on blood containing different species of gymnosporidia. It was found that Calcutta abounded in the grey or barred-back species of mosquito, which is the filaria-bearing species, and with which I had already experimented. These had uniformly yielded negative results in Secunderabad when fed on blood containing crescents. Nevertheless, owing to difficulties in the way of obtaining other varieties, both of mosquitos and of malaria cases, numbers of this kind were again fed on a patient infected with crescents. Out of forty-one of these searched exhaustively for pigmented cells not one contained them. An unrecorded number, say fifty more, examined unfed, or, after feeding on healthy persons, gave similar negative results. As it was not the malarious season of the year, and as cases of hæmamœbiasis suitable for these experiments were not at all easy to procure, it was thought advisable to commence work on the so-called malaria parasites of birds. Accordingly a crow (*Corvus splendens*) and two tame pigeons infected with halteridium were obtained; and on the night of March 11th and 12th these, with four short-toed larks (*Calandretta dukhunensis*) and six sparrows (*Passer Indica*), whose blood had not yet been carefully examined, were placed in their cages, all within the same mosquito netting, and a number of grey mosquitos of the species I had lately been experimenting with were released within the net. Next morning numbers of these insects were found gorged with blood and were caught in test-tubes in which they were kept alive for two or three days.

"On March 13th I commenced to examine them. Out of fourteen of them pigmented cells were at last found in one. Believing as I did that these cells are derived from the gymnosporidia I judged from this experiment that the grey mosquito which now contained them had fed itself on one of the birds which happened to be infected by a parasite capable of transference to the grey species of mosquito. As all the birds had been placed together in the same net the question now was which of them had the mosquito fed herself upon. This could be easily ascertained. A number of mosquitos of the same species had meanwhile been fed separately on the crow and two pigeons with halteridium; but out of thirty-four of these examined not one contained pigmented cells. Hence I came to the conclusion that the mosquito with pigmented cells had not derived them from the crow and the two pigeons. The larks and sparrows remained. The blood of these had not yet been carefully searched. I now found that three of the larks and one of the sparrows contained proteosoma (Labbé) and therefore thought it possible that the mosquito had been infected from one of these. Accordingly, on the night of March 17th and 18th a number of grey mosquitos were released on the three larks with proteosoma and next morning it was found that nine of these had fed themselves. On the morning of March 20th—that is, from forty-eight to sixty hours after feeding—these nine insects were examined. Pigmented cells were found in no less than five of them. After the long-continued negative experiments with this kind of mosquito

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(and, indeed, I may say, after three years' doubtful attempts to cultivate these parasites) this result was almost conclusive. It indicated, as was surmised before, that when a certain species of mosquito is fed on blood containing a certain species of gymnosporidia pigmented cells are developed. Hence it would follow, as an easy corollary, that the cells are a stage in the life-history of the gymnosporidium in the mosquito.

"It was now necessary, however, to confirm and amplify this observation and obtain formal proofs of the theorem by repeating these experiments and by studying the pigmented cells themselves. Accordingly from March 18th to the present date (May 21st, 1898) many differential experiments have been completed by feeding grey mosquitos as follows: (*a*) on larks, sparrows, and a crow with proteosoma; (*b*) on crows, pigeons, and other birds with halteridium only; (*c*) on a lark and a sparrow with immature proteosoma only; (*d*) on a healthy sparrow. Only the insects fed on group (*a*) have contained pigmented cells.

"MacCullum had previously shown that in the case of the analogous parasite—the halteridium—the flagellum, of the flagellated phase, after breaking away entered certain spherical, pigmented halteridia, causing them to be transformed into little travelling pigmented vermicules, which, in virtue of their sharp beak and mechanical power, traverse freely red and white corpuscles. Analogy suggests that namely, the body cavity of the host—there appear to be no means by which they can escape from that host during its life to undergo sporulation in external nature, as is the case with coccidium oviforme. It would appear then that sporulation should occur either within the living host, as with eimeria, or within the dead host. The first would point to a completion of the life cycle by a direct infection of men and birds by the coccidium spores in the mosquito; the second to a more circuitous infection, perhaps by a second generation living free in water."

In the paper read by Dr. Patrick Manson at the Edinburgh meeting of the British Medical Association the speaker was able to quote from telegraphic communications with Surgeon-Major Ross which showed that the further researches spoken of have been undertaken. The next stage seems to be that the coccidia now burst and what Surgeon-Major Ross calls germinal vermicules which had formed in its interior are set free in the body, blood and tissues of the mosquito. Then came a step in the investigation of great consequence: it was no other than the discovery of these vermicules in the venemo-salivary glands of the mosquito. Surgeon-Major Ross during dissection of the mosquito found a couple of head glands with a duct leading towards the proboscis of the animal and traced the parasite vermicules into these glands. The climax of the discovery was now within his grasp and

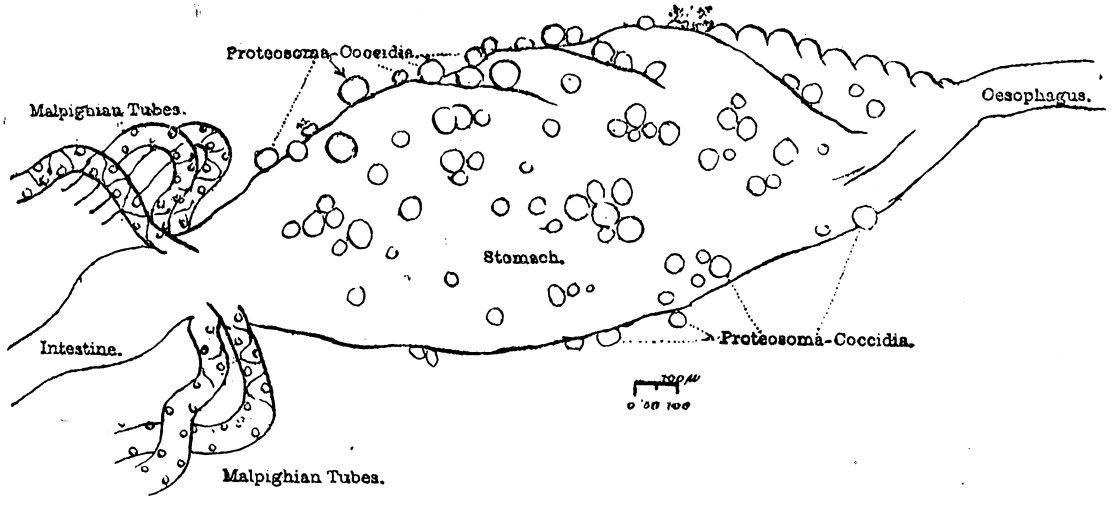


Figure reproduced from Surgeon-Major Ross's report and showing appearance of coccidia on the sixth and seventh day.

a similar thing occurs in proteosoma and that the travelling pigmented proteosoma vermicule enters the tissue of the mosquito's stomach and becomes Ross's pigmented bodies, in the same way as Manson has shown took place in the case of the filaria sanguinis hominis. Arrived in the stomach wall of the mosquito, the proteosoma increases rapidly in size until it projects beyond the stomach walls into the cœlom or body cavity of the mosquito as a rounded body, which he styles the proteosoma-coccidia. During its progress and growth various changes take place in size and in the appearance of the contents of the coccidia. Pigment diminishes and then disappears and as the parasite protrudes into the cœlom it is seen that the contents have a more or less granular appearance.

"I have said that after this point I have witnessed no further growth of the coccidia, even in mosquitos kept alive to the twelfth day. Hence we may perhaps expect that they have become ripe for sporulation. No such thing has, however, been observed; and we may therefore conjecture, unless I happened to have overlooked it, that it may occur either (*a*) in the living insect after twelve days, or (*b*) some time after the insect's death. Further research is therefore required on this which now becomes the most important and interesting period of the life-history of the gymnosporidia, because on it depend our chances of future progress. To plunge into hypothesis for a moment we may remark that since the mature coccidia find themselves in a closed cavity—he elucidated it thus: He allowed mosquitos to feed on birds infected with proteosoma; after a few days he fed the mosquitos on birds whose blood was void of any parasite infection. He found in due course that the parasite-bearing mosquito had infected the healthy birds and that their blood was charged with proteosoma.

Thus the analogy between bird and human infection has only to be proved to establish that the mosquito is a carrier of malaria and an infector of man. Much has yet to be done, however, before the full significance of the mosquito in malaria is worked out. Malaria, we know, multiplies without the intermediary of any vertebrate. Does it do so solely in mosquitos? If so, we have yet to learn how it passes from mosquito to mosquito. Does it multiply in other media? If so, what are they? There is here given merely the outline of Surgeon-Major Ross's work. Doubtless he or others will soon grapple with the other problems it suggests and show how to solve them. It is impossible in a short space to give in detail the multitudinous experiments and observations which he has carried out. Suffice it to say that they have been done in a masterly way. The practical applications of the discovery are immeasurable and the establishment of the fact that as the bite of the snake or the rabid dog inoculates the blood of the victims of these creatures so the mosquito conveys malaria, would open up a new and hopeful phase as regards the prevention of disease in the tropics.

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THE LANCET.

LONDON: SATURDAY, AUGUST 20, 1898.

A QUESTION of considerable importance to students, and one concerning the working of our medical schools, was asked by Mr. ARTHUR O'CONNOR in the House of Commons last week. The question was whether the Home Secretary was aware that a poor woman expecting her confinement frequently applied to one of the general hospitals in London for a medical man to attend her and that in such a case a student was often sent who had had little or no experience, or might even never have attended a case before, and that no intimation was given that the person sent was not a fully qualified medical practitioner, and whether the General Medical Council had not prohibited the employment by private practitioners of assistants who, although they had taken out a full course of midwifery training, had not taken out a degree in medicine, surgery, and midwifery. Mr. JESSE COLLINGS replied for the Home Secretary that he had no information, but that full inquiries would be made upon the subject. Before discussing the question at all we would call attention to the last paragraph of the General Medical Council's resolutions respecting the employment of unqualified assistants. It reads as follows: "The foregoing notices do not apply so as to restrict the proper training and instruction of *bonâ-fide* medical students as pupils, or the legitimate employment of dressers, midwives, dispensers, and surgery attendants under the immediate personal supervision of registered medical practitioners." It must be admitted that there is no specific mention made of the students employed in the maternity departments of all our large general hospitals, but that they are intended to be included under the generic term "dressers" there can be no doubt.

To anyone imperfectly acquainted with the true facts of the case it might appear as if the resolutions of the General Medical Council were being set at defiance under the circumstances mentioned by Mr. O'CONNOR, but a little consideration of the matter will show that this is far from being the case. It is, of course, quite true that when a poor woman applies at a general hospital for attendance at her confinement a student is sent to the case, but the patient and her friends, although they commonly dub him "doctor," know full well that he does not represent the whole of the medical assistance they can, if necessary, obtain. They know that if the labour is in any degree abnormal they will have the services of a gentleman whom they often call "the head doctor," a registered medical practitioner, the obstetric assistant, under whose direct personal supervision the students attend such cases and to whom they are directly responsible. Further, they know that in cases of extreme urgency they can have the benefit of the skill and experience of one of the obstetric physicians attached to the hospital at which they have applied for assistance. It is obvious that a student who is attending his first case has had no previous experience, but in a properly conducted maternity department due provision is taken to guard against a student being allowed to go to his first case alone, and until he has a satisfactory theoretical knowledge of his subject. One of the rules which should be always insisted upon—and in many places is so—in the conduct of an extern maternity department is that the student shall be accompanied to his first cases by one or other of the obstetric assistants. There is to our mind no comparison between the position of the patient attended by a medical student who is not even allowed to assume as much responsibility as an ordinary midwife, and who is working under the immediate supervision of a fully qualified medical practitioner, and that of the patient who is attended by an unqualified assistant. No doubt in many cases the unqualified assistant is a man of much skill and experience, and well fitted to deal with any of the complications of midwifery. The position he holds, however, in the mind of the patient is that of a private practitioner and not in the least that of a hospital medical officer, and although she is quite ignorant of the subtleties of qualifications, yet she knows well enough that there is a difference between the private practitioner with a brass plate or a surgery and the student who comes to attend her when she sends to the hospital. Then, again, the degree of responsibility assumed in the two cases is entirely different. The student, as we have pointed out, is not allowed to assume even as much responsibility as the ordinary midwife, while the unqualified assistant, in charge as he often was of a branch practice of his principal, assumed the entire responsibility of, and often conducted single-handed, cases of difficult and complicated labour. It would not be possible to carry on a large extern maternity department at any of our schools if the General Medical Council insisted upon the students being accompanied in every case by a qualified medical practitioner. It would entail the appointment of a large number of obstetric assistants, and although it would undoubtedly increase the value of the students' training in midwifery yet it would be impracticable under present conditions.

The training of our London students in midwifery is certainly deficient, but we are afraid that it will continue to be deficient. Even if the necessary lying-in hospitals at which students could be trained under the eye of experienced resident officers were built we doubt very much if the patients could be induced to enter them. Our own experience is that the women in the majority of cases find it more convenient and cheaper to be confined at their own homes; and it is often difficult enough to get them to go into a hospital even when they have been told that their confinement may be a difficult or a dangerous one. The practical inexperience of the student attending his first case cannot obviously be overcome. We think, however, that the rules laid down at most of our medical schools are amply sufficient to provide against the danger of any student attending a case without at any rate a good theoretical knowledge of his subject. It is, we gather, the general custom not to allow a student to take an appointment in the maternity department until he has

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attended the courses of lectures in midwifery, both theoretical and practical, or, as owing to the exigencies of working the department it is sometimes necessary to appoint a student before he has had time to finish his courses of lectures, until he has satisfied some responsible person—usually the obstetric physician in charge—that he has a sufficient amount of knowledge of the subject to admit of his being placed upon the roster for duty. Regulations of this kind, together with the rule that one of the obstetric assistants must always accompany students to their first cases, would seem to be amply sufficient to ensure that the student shall be able to recognise any abnormality in the cases which he attends, which is strictly all that he is required to do. We have no doubt that the General Medical Council will be able to assure the Home Secretary that the positions of the student and the unqualified assistant are not one and the same, and that the safeguards at present in vogue in our maternity departments are such as to obviate any risk of the contravention of their resolutions with regard to the employment of unqualified persons as assistants or otherwise.

WHILE it is highly proper to note the falling off in the amount of the Metropolitan Hospital Sunday Fund collection for 1898 it would be wrong to attach too much importance to it or to indulge in any hasty theory by way of explanation. The whole circumstances of the last two years have been such as to produce slight irregularities in the yield of the ordinary sources of hospital income, amongst which the Hospital Sunday Fund must always rank high. It is the greatest tribute to HER MAJESTY'S reign that it has stimulated humane and benevolent work in a degree unprecedented in any previous period. The multiplication of charities is enormous, and the number and variety of the demands for voluntary contributions towards all conceivable objects—some of them questionable, many of them excellent—have increased proportionately. No one can have failed to notice the increase of late both in number and insistence of requests for money to be allotted to the particular purpose of supporting hospitals. Changes in the economic conditions of the country have so profoundly affected the incomes of some of our principal metropolitan hospitals that special appeals on their behalf have had to be made and the response to such appeals by the public has been very generous. When memorials of HER MAJESTY'S reign were being devised nothing fitter could be suggested than a fund for the mitigation or removal of hospital indebtedness. The appeals for the individual hospitals and the organisation of the PRINCE OF WALES'S Fund have the powerful support of His Royal Highness and other members of the Royal Family, and the real matter of surprise, perhaps, is that these special circumstances have not affected the Hospital Sunday Fund more, rather than that they have affected it a little.

Sir HENRY BURDETT'S theory that the falling off in the Fund is largely due to the creation of limited companies is not to be dismissed hastily, but it was very well answered by Sir SYDNEY WATERLOW. Besides, it is scarcely consistent with the former gentleman's belief that the hospitals individually have been faring better. If the moral effect of limited companies is good for the individual hospitals it can scarcely be bad for the Hospital Sunday Fund. It would be lamentable, indeed, if the limited company system, which seems destined to play so great a part in the evolution of commerce, has the moral effect on individuals which is thus attributed to it. According to Sir H. BURDETT there are 10,000 of these companies now in England, and the operation of them is to weaken the sense of individual obligation to charities. It is difficult to reach individuals and to estimate their power to help charities when they are all mixed up together in commercial adventures. In that sense it is difficult to apportion their responsibility to the great charities of the land and those who like to shirk such responsibilities may take the advantage of their being, so to speak, in a crowd. But we are unwilling to believe that there are many individuals who would do so. The Hospital Sunday Fund owes its largest collection to a prosperous year on the Stock Exchange, and whatever may be the sins of the members of that body they have never been insensible to the cry of the helpless and the sick. We come to the conclusion that we must look in other directions for the causes of the slight decrease in the Hospital Sunday collection for 1898. Sir H. BURDETT is as confident in exempting the PRINCE OF WALES'S Fund from any blame for the diminished amount of the Hospital Sunday Fund as in his conviction that the growth of limited liability companies affords the explanation. He may be right. And we feel sure that neither the PRINCE OF WALES nor any one of his colleagues desires any injury to the Hospital Sunday collection. In this belief we do not permit ourselves to doubt that care will be taken next year to avoid the repetition of an unfortunate appearance of competition by the issue of a report and appeal from the PRINCE OF WALES on the very eve of Hospital Sunday. To our own knowledge this report, dated June 6th, was received by some persons on the day before Hospital Sunday.

The Council of the Hospital Sunday Fund will fail in its duty if it relaxes its vigilance or rests too much on its oars. Though it has refused any formal inquiry into the decrease it ought to take pains to ascertain exactly where the failure is and to prevent the recurrence of it next year. In one thing the Council of the PRINCE OF WALES'S Fund promises to set the older Council a good example: it intends to satisfy itself as to the merits and needs of the hospitals and to be guided by the results of its inquiry into these. The Council of the Hospital Sunday Fund has been apt to regard itself as a mere dispenser of gifts for hospitals without any corresponding responsibility for the efficiency of the hospital system and for the prevention of those abuses of it which hinder charity and demoralise unfit recipients. There have been indications of late of a larger view of its duties and obligations. If these are fulfilled the Fund will have a future of lasting prosperity. It has the religion of the metropolis for its foundation and that will not fail. Other influences must vary and must be more or less temporary, but this abides. The contributions of the wealthy should still be personal and distinctive. Our own belief is that with deeper religious views among those who are stewards of wealth large personal gifts will be "cast into the treasury," such as that of GUY himself, which will raise

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the committees of hospitals out of all petty cares—for instance those somewhat pathetically expressed by the Hon. SYDNEY HOLLAND, chairman of the London Hospital—about the balancing of income and expenditure. Half-a-dozen rich men have it in their power to do this great service and to redeem wealth from discredit and all the risks which attach to its possessors, and they can have no better medium through which to do it than the Council of the Hospital Sunday Fund.

THE answer of the Chancellor of the Exchequer to Dr. FARQUHARSON on July 19th with reference to the matter of a grant of public money to the General Medical Council contained, we are glad to see, no hint that Parliament would be unwilling to give the Council increased powers and we hope to see the question revived in a more definite form. The purification of the medical profession, to be thorough, would of necessity involve the prohibition of unqualified practice. For what happens at present in the medical and legal professions respectively? A solicitor is struck off the rolls and by that process he is debarred from following the profession of a solicitor. A medical man is struck off the Register and he abides in his own house, his plate is still on the door and he continues his practice as if nothing had happened because it is not against the law for an unqualified or unregistered person to practise. There is nothing more unfair than the position in which the medical profession stands to-day. A man may have gone through years of study, have passed several searching examinations, have held appointments involving very hard work and great responsibility while receiving little or no emolument for the same, and despite all this any ignorant swindler who has never seen the inside of a hospital, who knows no anatomy or physiology, and who is ignorant of the action of any drug, has similar rights with him to see patients or to prescribe and give away (not sell) drugs. The sole advantages which the qualified and registered man possesses over his unqualified competitor are those of being able to sign a legal death certificate, to sue for fees in a court of justice, to compete for certain appointments, and of exemption from certain civic duties. These are but a poor return for five years of hard study and the expenditure of at the very least £1000, and the only way in which the unqualified practitioner becomes amenable to the law is in case he "wilfully" and "falsely" pretends to be a registered person. The net of the Solicitors Act has a much smaller mesh. By it there need be no question of either "wilfully" or "falsely" pretending—the mere fact of such pretence having occurred is quite enough to secure a conviction.

That the position of the medical profession is as it is to-day is owing mainly to two factors. The one is the carelessness and want of cohesion among members of the medical profession themselves and this factor is by far the more important. Parliament never does anything for any body or persons unless they possess the power of annoying Ministries by their actions within the walls of the House, or, as was the case with the Dissenting community at the time of the Church rates agitation, can show a solid consensus of opinion outside the House. Now the medical profession at the present moment is not an organised nuisance either within or without the House of Commons and accordingly if any legislation affects it at all it does so adversely. The other factor, less significant than the apathy of the medical profession, but not without its evil influence, is the fatuity of the average British citizen in matters concerning his health. It is nothing new. To go no further back than the beginning of the century the notorious quack ST. JOHN LONG was able to bring plenty of witnesses, drawn from the upper classes of society and from those who had received a good education, to bear witness to the efficacy of his treatment. Numbers of persons of influence in their respective spheres are still of the opinion of Lady SOUTHDOWN, who it will be remembered remarked of a regular apothecary: "A most dangerous and ignorant practitioner ..... I have providentially been the means of removing him from several houses, though in one or two instances I did not arrive in time. I could not save poor dear General Glanders, who was dying under the hands of that ignorant man—dying. He rallied a little under the Podgers' pills which I administered to him; but, alas, it was too late. His death was delightful, however, and his change was only for the better." *Mutato nomine*, the same thing exists nowadays, only instead of Podgers we have the reverend specialist for this or that, the bone-setter, the herb-doctor, and the exponent of safe medicine or "natural" therapeutics.

The prohibition of unqualified practice is outside the sphere of practical politics. Parliament as a body would never move in the matter, first on account of prevalent ideas concerning personal freedom, and secondly because many of its members are enamoured of unorthodox medical practices themselves. But we can at any rate demand that no one who has not been through a recognised medical curriculum shall be able with impunity to delude the public into thinking that he is a medical man by assuming the title of "doctor," for the public as a whole considers that the term "doctor" applies solely to the profession of medicine. Again, in the case of a felon the body or bodies which have conferred upon him degrees or diplomas should have the power to remove his name from their rolls upon his conviction and to place him on a footing with persons of the FERNANDI type—to recall to the recollection of our readers a particular quack. The knowledge of the felon, of course, will be the same after his conviction as before, but he should not be allowed to practise, under a title which implies respectability, a profession which entails a keen sense of honour and responsibility. The monopoly at present enjoyed by members of the legal profession will never be ours, for it is of the very essence of codes of law that there should be no room for individual opinion. But liberty in the matter of irregular practice has degenerated into license, and the medical profession as a whole has a right to ask that some restraining influence should be brought to bear upon the ignorant and the criminal so as to prevent their reaping where they have not sowed.

IF there be one disease more than another concerning which the pathologist might well be entitled to say that he had complete knowledge it would be the condition

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known as portal cirrhosis of the liver. Constituting a well-marked variety of interstitial hepatitis, its characteristics are so well defined and its concomitant lesions so well marked that from the etiological standpoint it used to seem enough to refer it to a single antecedent—namely, chronic alcoholism. As knowledge has grown pathologists have been less inclined to accept so limited a conception of the manner of its origin and cases have not been wanting where it would seem that other toxic agencies, some of which have probably been due to specific infections, have operated to bring about those lesions which ultimately result in the familiar hob-nailed contraction of the organ with its accompanying obstruction of the portal circulation. Yet so far as we know the cases in which alcohol can have played no part are comparatively rare. It is otherwise with some other forms of progressive interstitial hepatitis, such as that which is associated with syphilitic infection or that where the general intercellular framework is involved, producing the variety known as "monolobular," "biliary" or "hypertrophic" cirrhosis. The last-named condition—which, it may be remarked, is not universally deemed to be specifically distinct from the multilobular variety—has been far more frequently referred to the action of infective agencies, so that less surprise may be occasioned by the discoveries made by Professor ADAMI, as described by him in the paper which we published in THE LANCET of August 13th, in respect to this form of cirrhosis than must necessarily be the case in regard to the more familiar type. For we venture to think that many clinical observers as well as pathologists will receive with something like amazement the announcement that micro-organisms have any share at all in the production of portal cirrhosis.

Let us very briefly summarise the observations which have led Professor ADAMI to a conclusion which, if correct, cannot but have important bearings upon the conception of the process of progressive inflammatory changes in all organs and not merely in the liver. The determining influence in his inquiry into hepatic cirrhosis in man was his discovery, after much patient labour and care in preparation, of a definite microbe in an infective disease of cattle, known as the Pictou disease, which for several years attacked the herds in Nova Scotia. The fact that this affection—obviously transmissible as it was—was characterised by a form of progressive hepatic cirrhosis was first ascertained by Professor W. OSLER and Dr. WYATT JOHNSTON and amply confirmed by Professor ADAMI, who was instructed to continue the investigations initiated by them. Professor ADAMI, however, also succeeded (in each of the animals which he examined) in isolating a definite micro-organism from the abdominal glands and liver-juice as well as occasionally from other organs and fluids. The microbe was of small size and exhibited a polymorphous character which added to the difficulties of its recognition. He succeeded, however, in cultivating it in various media and found that it was pathogenic for rabbits, guinea-pigs, and mice, and that it was essentially a short encapsuled bacillus somewhat resembling the organism of hæmorrhagic septicæmia in the lower animals. He does not appear to have given this organism a name, but he thinks that its characters are sufficiently definite and its appearance in the Pictou cattle disease sufficiently constant to warrant its being regarded as the pathogenic agent in that infective disorder.

Now we doubt not that many bacteriologists would have been content to have stopped here, for it would hardly enter into their minds that this special infective disease of cattle could possibly have any relations with so common and so chronic an affection as cirrhosis of the liver in man. Not so Professor ADAMI. He felt that in spite of superficial differences there were certain marked resemblances, both clinical and pathological, between the bovine and human diseases. He did not arrive at this opinion suddenly and when he did set out upon his search for microbes in the liver and other tissues of the subjects of cirrhosis he met with many difficulties, especially in the matter of staining. At length he was enabled to detect, with an uniformity which excludes the idea of accident or of external contamination, a minute microbe which evidently requires great patience and skill in its discrimination. Moreover, like the Pictou disease organism, it presented itself under more than one form, although we gather from his remarks that Professor ADAMI is inclined to attribute this polymorphism in part to differences in intensity of staining. He found, however, some purely coccal forms and some bacillary. The microbe occurred within liver cells and in the midst of the actively growing connective tissue, the small-celled infiltration which is so characteristic of cirrhosis, and he subsequently found it elsewhere in the body. He did not at first venture to identify the organisms thus detected in the human disease with those present in the bovine, but the case which he examined just as his paper had been completed seems to have possessed characters and yielded reactions so closely resembling those of the Pictou disease as to raise more than a suspicion of their identity.

In his paper, which must in truth be regarded only as a preliminary note, for the subject requires much working out, Professor ADAMI wisely refrains from speculating upon the bearings which his discovery must necessarily have upon our conceptions of the nature of the hepatic cirrhoses. We say "the cirrhoses," for he has found these organisms in more than one variety of these interstitial inflammations of the liver. Nor shall we venture to go further than he has done. We have such respect for his acumen and ability as a pathologist and a bacteriologist that we do not think it possible that he could have been misled by *ignes fatui* or have erred in describing as micro-organisms any inert particles of dead matter. Indeed, he has anticipated so obvious a criticism by his cultivations. We accept, then, fully the fact of his discovery, but we reserve the expression of any opinion as to its bearings on pathology, feeling that these are of far wider application than that of the etiology of common cirrhosis. For if these microbes be of pathogenic importance an extension will be given to the *rôle* of the microbe in disease which is well-nigh illimitable. It seems as if the bacteriologist would in time recast all our pathology. His sphere of "infectivity" is fast expanding to embrace conditions which we call "chronic" as well as those which we term "acute." The "trail" of the microbe "is over them all" and none can foretell what the future may reveal.

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Annotations.

"Ne quid nimis."

"DRUNK OR DYING?"

ANOTHER of those unfortunate errors in judgment which bring discredit upon hospitals and are indubitably most regrettable was investigated in the Rotherhithe Coroner's Court before the deputy coroner on August 15th. The inquiry was into the death of a carman named James Fisher, aged fifty-six years. At 10 P.M. on the night of August 10th he was thrown out of a van in the Union-road, Rotherhithe, and found lying unconscious on the pavement. A constable summoned a neighbouring practitioner, who gave evidence to the effect that Fisher was suffering from two scalp wounds and was bleeding from the nose and from the ear. Fisher was conveyed to Guy's Hospital on an ambulance. The house surgeon in his evidence said that he saw Fisher a few minutes after his admission; neither his nose nor his ear was then bleeding. He detained him for about one and a half hours—i.e., until 12.15 A.M. He (Fisher) was very drowsy and witness acknowledged that he wrongly attributed his condition to alcohol. As no fresh symptoms developed Fisher was sent to the police-station and charged with being drunk. Here he was visited many times up to 8 A.M., when he was found walking up and down. He said he felt "very queer" and fell down. The divisional surgeon was called and ordered him to be removed to the infirmary, where he died about 11 A.M. on August 11th. At the post-mortem examination a fracture of the base of the skull and two fractured ribs were found. Now we have no wish to conceal the fact that the house surgeon, as, indeed, he confessed, committed a most serious error of judgment, but what we do wish to point out is that the public and the glib newspaper paragraphist have no conception of the difficulties which encompass a house surgeon upon occasions such as the one upon which we now comment. To begin with, in many cases it is all but impossible to distinguish between the condition brought about by brain injury and that due to alcohol. In a great many cases a patient brought in with a scalp wound exhibiting signs of mental disturbance is partly drunk and partly drowsy from cerebral compression. On the other hand, he may be simply drunk and have a scalp wound in addition, which latter has nothing to do with his mental condition; or he may have a scalp wound and cerebral mischief without having taken any alcohol; or, again, he may have cerebral mischief, a scalp wound, and smell strongly of alcohol owing to some injudicious but kindly intentioned person having administered alcohol to him just before his admission. Out of all these varying conditions the unfortunate house surgeon has to make a fairly accurate diagnosis, generally late at night, after a hard day's work, and house surgeons and house physicians, too, are overworked to an extent which would not be tolerated for a moment in the case of a milliner or a factory hand. Cases of this description are brought to a big hospital to the number of about a dozen nightly. It is obviously impossible to take them all in and it speaks volumes for the care and good judgment of our young medical men that such lamentable accidents as the present do not occur oftener than they do. The only means of avoiding such in future is to lay down a rule that every patient with a scalp wound or any patient without a wound who shows signs of mental inhibition should be detained for 24 hours. This will involve an increase of staff and of accommodation, and if the public, as represented by the lay press, which is not unnaturally so ready to find fault, will provide the means for such no one would be more happy than the house surgeon or house physician. Only those who have held such posts know what the responsibility means, and though we offer our sincere condolences to the relatives of the deceased we are none the less sorry for the house surgeon in question.

PUBLIC ABATTOIRS FOR DUBLIN.

IN view of the Congress of the Royal Institute of Public Health, which commenced in Dublin on August 18th, Dr. C. F. Moore sent to the *Dublin Press* a letter putting forward some suggestions for the consideration of the said Congress. Briefly, they are as follows: that powers should be acquired to erect an abattoir and knacker's yard on the reclaimed ground near the Alexandra Basin; that similar powers should be acquired for the erection of like buildings on the Pigeonhouse-road; that compulsory powers should be sought for the use of these establishments, for the abolition of the sixty knackers' yards and slaughter-houses at present in the city of Dublin, and of the present most ill-placed abattoir outside the borough boundary. Dr. Moore goes on to say that these measures will be imperatively called for when the new scheme of main drainage is carried out. We quite agree with Dr. Moore and, in fact, would go further and say that private slaughter-houses should be done away with everywhere under all conditions. Their existence is a fruitful cause of cruelty, "nuisance," and disease, for meat-inspection cannot be properly carried on except in a public abattoir. As for knackers' yards, they must exist, but they should certainly never be allowed within the vicinity of inhabited houses, however carefully the business is carried on, and we do not imply that this is not the case in most instances. A knacker, it must be remembered, is not only one who kills healthy but disabled horses, but one who gets rid of hopelessly diseased horses and other animals, in addition to which he generally carries on the trade of boiling flesh and offal for cat's-meat. Such an occupation is most certainly one to be carried on at a distance from any collection of inhabited houses. We are far from saying that London is faultless in these matters, but it is gradually getting better, and it behoves Dublin, a city which being very much smaller can bring about reforms more easily, to take Dr. Moore's advice seriously to heart and to begin to set her house in order.

THE FUNCTIONS OF THE SUPRARENAL CAPSULES.

AN interesting memoir by M. P. Langlois appears in the recently published *Travaux du Laboratoire* of M. Charles Richet. M. Langlois' observations were made upon frogs, rabbits, guinea-pigs, and dogs. In frogs the presence of peculiar bodies was first noted by Swammerdam, who mentioned them under the name of corpora heterogenia, but it was only in 1842 that Gruby pointed out the analogy of these bodies to the suprarenal capsules of other vertebrates. Ecker, Pettit, and others described them at greater length. They form in these animals a mammillated band or tract of yellowish colour situated on the ventral surface of the kidneys, and are either seated on the veins or in the walls of these vessels. M. Langlois' first experiments were upon the effects of destruction of one or both of the capsules in the frog—the destruction being accomplished by means of red hot platinum wire—and he satisfied himself that death invariably follows destruction of both capsules, though not of one alone, and that the fatal issue is not due to the shock of the operation or to any inhibitory action being exerted, but to the suppression or abolition of organs essential to life. The grounds for this opinion are that no marked symptoms are observed during

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the first twenty-four hours after total destruction, secondly because the fatal result is postponed when the destruction is incomplete, and lastly because the subcutaneous insertion of fragments of the kidney with the capsules prolongs life, though such a proceeding would be without influence on the phenomena of inhibition. Although death is the invariable consequence of the destruction of both adrenals the duration of the survival varies. The average duration of life after the operation is about forty-eight hours, but in winter, and in the hybernating frog, life may be prolonged for twelve or thirteen days. The first symptoms observed after the operation are a kind of apathy and indisposition to move even when irritated; then ensued incoördination of the movements, especially of the hinder limbs, followed by complete paralysis, and succeeded by a similar succession of events in the forelimbs; the respiration became slower, the pupils contracted, the cardiac contractions became feebler, the circulation less active, and the animal died. Further experiments have led to the belief that the death of the animal is not due to any disturbance of the renal functions. The conclusion at which the writers arrive is that after the removal of both adrenals there is a true auto-intoxication, the animals generating poisons which are normally either destroyed or changed in the interior of the gland or by some material formed by the gland and poured into the blood. The poisons are probably the products of muscular activity and exert a special influence on the heart and circulatory system.

THE TREATMENT OF ARTERIO-VENOUS ANEURYSM OF THE ORBIT.

IN the *New York Medical Journal* of June 11th, 1898, Dr. J. H. Woodward has published the following case. A woman, aged thirty-nine years, noticed one day a noise in her head which became continuous and distressing and was soon followed by proptosis of the left eye. After six months the veins of the left eyelid and bulbar conjunctiva were dilated; the supra-orbital and infra-orbital vessels were greatly dilated; and especially in the former an aneurysmal thrill was perceptible. With the stethoscope a bruit could be heard above the eye. Compression of the left carotid artery checked the pulsations and stopped the noises. The retinal veins were tortuous and dilated and there were several small retinal hæmorrhages. In December, 1893, the left carotid artery was ligatured. The pulsations and noises were stopped and the proptosis diminished, but the noises reappeared in two months. In May, 1894, the proptosis was much less than before operation and the vessels were only slightly dilated and there were aneurysmal thrill and bruit. Dr. Woodward intended to ligature the right common carotid artery, but finding that compression of the arteries of the collateral circulation at the root of the nose stopped the symptoms he ligatured these. A complete recovery resulted from this operation, of which this is the first recorded case.

VACCINATION AND THE QUEEN'S SPEECH.

THE absence of any reference to the new Vaccination Act in the Speech from the Throne on the closing of Parliament is by no means without its significance. Her Majesty's example in matters affecting the health of her people has always been in the direction of encouraging everything which science and practice have proved to be of real benefit to them, and in no matter has this example been more marked than in the advocacy of vaccination as the real preventive of small-pox. When Parliament was opened the Vaccination Bill was announced by the Queen to the Houses of Parliament and through them to her people. The Bill has passed in a form which causes deep anxiety to a large portion of the more intelligent classes, and in dissolving Parliament no reference is made to it by Her Majesty. It is well known that the preparation of the Queen's Speech is no mere matter of form which is delegated to her Ministers. Hence the significance of this omission.

THE SPIRITUOUS STRENGTH OF ALCOHOLIC LIQUIDS.

THIS must be indeed an age of deception when the resources of the fabricator are directed towards making spirituous liquids appear in the estimation of the public to be stronger than they actually are. It is a common but erroneous idea that the strength of a spirit may be accurately judged by its pungency. This notion has given the adulterator an excellent opportunity. He has hit on the plan of adding to spirits an alcoholic extract of "paprika" or red Hungarian pepper. Thus a sharp taste is communicated to the liquid and though it contains less alcohol it produces on imbibition a greater sensation of warmth than do stronger spirits. The fraud, however, has been brought to light and confirmed by the result obtained after making up mixed spirits in the manner indicated. The method is not merely a fraud, but is likely to cause very serious injury to the health of the consumer.

AID TO DEEP-SEA FISHERMEN.

THE losses by death at Magenta and Solferino amounted to 25 per 1000 in the conquering army, and this, too, was the precise death-rate among the French fishermen who during the season of 1897 frequented the shores of Newfoundland and Iceland for the purpose of catching codfish. In the latter case the casualties, out of a total strength estimated at 14,000 men and boys, numbered 352, but only 64 deaths were due to disease. Shipwreck and drowning accounted for the remainder. It seems, according to Dr. Bonnafy of the French navy, who has just published an interesting pamphlet on the subject,[1] that each fishing vessel carries a series of light flat-bottomed boats which are constructed to fit each other like saucers so as to occupy as little storage room as possible. The vessels having cast anchor the unfortunate sailors go fishing in these frail "dories," of which every year a considerable number disappear with all on board, chiefly during fogs, never to be heard of more. It is in this way that much of the loss occurs, but there is also another source of fatality. In order to save a few hours the captains of certain liners between Europe and North America do not hesitate to cross the bank where the fishermen are at work, and as they do not moderate their enormous speed even in the thickest weather it is easy to imagine how disastrous the consequences may be to the stationary and comparatively minute craft. It is only of late years that attention has been directed to the wretched conditions, hygienic and moral, under which the deep-sea fishing of the North is carried on. As Dr. Bonnafy is careful to state, the credit of initiating reform is due to the British philanthropists through whose efforts the pernicious "Dutch copers" were to a great extent banished from the neighbourhood of the fishing fleets. Our Mission to Deep Sea Fishermen is accorded generous and richly earned praise; but, as the writer explains, there is still ample room for the Société des Œuvres de Mer, whose cause he so warmly advocates. As long ago as 1819 the outfitters of all fishing vessels had to provide medicine chests, and when the strength of the crew exceeded 40 a qualified medical man had to be carried. By degrees, however, the shipowners succeeded in nullifying these beneficent ordinances, until finally in 1864 the strength necessary to entitle a crew to a surgeon was raised to 100, the post being

[1] Secours aux Marins des Grandes Pêches. Toulouse: Imprimerie Lagarde et Sebille, 1898, pp. 22.

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thus practically abolished. In this unsatisfactory state matters remained up to 1892, when once more public attention in France was directed to the hard fate of the men engaged in the fishing industry. Several minor reforms were at once instituted, and in 1895, under the auspices of the above-named society, the despatch of hospital ships after the English model was decided on. Since then three sailing vessels have been equipped, each making up 30 beds, but the society has had to contend with a series of misfortunes which would have discouraged less strenuous workers. The first hospital ship, the *Saint-Pierre*, was totally wrecked in Placentia Bay. Her sister ship, the *Saint-Paul*, was driven on the rocks at Reykiavik; while the *Saint-Pierre No. 2* had a serious collision with a fishing smack soon after her arrival at the scene of operations. Happily no lives were lost in these deplorable accidents, and in spite of them the society, as Dr. Bonnafy puts it, is running fairly before the wind. In addition to the two renovated hospital ships "family houses" have been established on shore, in competition with the *cabarets* or grog-shops, and are a great success.

THE EARNINGS OF MEDICAL MEN IN FRANCE.

M. HENRI BÉRENGER discourses in the *Revue des Revues* more or less pleasantly, but apparently with authority, on the Intellectual Proletariat in France. Here are some of his observations referable to the medical profession. There are in the whole of France, inclusive of Corsica but excluding Algeria, between 12,000 and 13,000 practising medical men, of whom 2500 live in Paris, the remainder being distributed throughout the provinces. As regards the metropolitan practitioners the following is the approximate scale of earnings: 5 or 6 earn between £8000 and £12,000 per annum, from 10 to 15 earn about £6000, 100 earn £2000, 300 earn between £600 and £1200, 800 earn between £320 and £600, 1200 earn less than £320. Of the 10,000 provincial practitioners not more than half make a decent livelihood. Every year the various universities turn out about 1200 qualified doctors of medicine. The average duration of a practice may be set down as between twenty and twenty-five years; it follows, therefore, that the production is twice as great as the demand. M. Bérenger's statistics may be correct, but apparently he neglects to make allowances for the young medical men who are absorbed each year in the army, navy, and colonial services. 10,000 practitioners for the whole of provincial France seems, moreover, to be anything but a liberal estimate, seeing that the number on the British Medical Register is at least three times greater.

TOXIC EFFECTS FROM THE USE OF CARBOLIC ACID.

TOXIC symptoms have occasionally resulted from the use of carbolic acid as an antiseptic. At a recent meeting of the Société Médicale des Hôpitaux Dr. M. J. Comby related the following case. A child, aged five years, was treated for otorrhœa with carbolic acid. Injections of 1½ per cent. were employed six times a day; after the last injection in the evening five drops of glycerine of carbolic acid (5 per cent.) were instilled and in addition the ear was bathed with the first solution. This treatment was scrupulously carried out for ten days, when the otorrhœa ceased. But two days afterwards the child had persistent hæmaturia and headache. Careful physical examination revealed no other signs of disease and the general condition was satisfactory. Symptoms of acute nephritis—pyrexia, œdema, &c.—were absent; there was no evidence of tuberculosis and the microscope showed that the case was not one of hæmoglobinuria. Dr. Comby therefore concluded that the hæmaturia was due to poisoning by the carbolic acid which had been so sedulously used. The hæmaturia ceased in about a fortnight. Carbolic acid should be carefully used in the case of children, as they are especially susceptible to it.

THE TRANSMISSION OF DELETERIOUS MATTER BY POST.

THE following notice has been issued by the Post Office:—

Deleterious liquids or substances, though otherwise prohibited from transmission by post, may be sent for medical examination or analysis by registered letter post under the following conditions:—

Any such liquid or substance must be enclosed in a receptacle hermetically sealed, which receptacle must itself be placed in a strong wooden, leathern, or metal case in such a way that it cannot shift about, and with a sufficient quantity of some absorbent material (such as sawdust or cotton-wool) so packed about the receptacle as absolutely to prevent any possible leakage from the package in the event of damage to the receptacle.

The packet so made up must be marked "Fragile with care," and tendered at a post-office for transmission by registered letter post. It must on no account be dropped into a letter-box or sent by parcel post. These regulations will be rigidly enforced. Any postal packet of the kind found in the parcel post or any postal packet of the kind, whether registered or not, found in the letter post not packed as directed will be at once stopped and disposed of as the Postmaster-General shall direct.

Any person who sends by post a liquid or substance for medical examination or analysis otherwise than as provided by these regulations is liable to prosecution even if he be a patient sending something to his medical adviser for his opinion, or a medical practitioner sending something to a laboratory or elsewhere.

No liquid or substance of the kind may, under any circumstances, be sent by post to or from any place outside the United Kingdom.

We can ourselves testify to the need that there is for such regulations as the above. It is by no means unusual for samples of matters, both fluid and solid, to reach us packed in an exceedingly careless manner and more than occasionally the containing vessel has perished in the transit, not only to our loss, but also to the damage presumably of other parcels in charge of the Post Office. Many medical men have had the same experience, for specimens transmitted by patients for analysis or microscopical examination are, as a rule, ill-packed, but now that official notice is taken of the matter we have no doubt more care will be taken.

NURSING IN WORKHOUSE INFIRMARIES.

IF it be true that we have the poor always with us it is no less true that the question of their proper care and nursing is a perennial problem which so far seems incapable of solution. At the meeting of the Aylesbury Board of Guardians, held on August 10th, the medical officer, Mr. T. G. Parrott, attended to give reasons why trained nurses should be obtained for the workhouse infirmary. He gave it as his opinion that though he had no complaint to make against the present nurse, yet her standard of nursing was not very high and he considered that a trained nurse would be very desirable. He allowed that there were no cases at present under his care which required trained nursing and also that he knew the master had powers in case of emergency to secure better nursing. The chairman said he could quite understand the medical officer advocating trained nursing, it was only natural that he should be in favour of it as it afforded a good opportunity for someone to help him in his work. It was very kind of the Local Government Board to order things, but that body did not have to pay for them. After a great deal more discussion Mr. Locke moved the following proposition: "Considering that the present nurse has been nursing in the house for three and a half years, and as

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no complaint has been made, in the opinion of the board the nursing in the house at present is all that is required." This was carried by 16 votes to 5. We consider this a most unsatisfactory result. It is perfectly obvious that in any place where the sick are gathered together away from their friends or relations proper trained nursing ought to be provided for them. The treatment of the poor under the Poor-law has been more or less of a scandal ever since the Poor-law came into operation; the grosser evils have been removed to a certain extent but still much remains to be done, and until some practicable scheme of separating the deserving poor from the profligate, the idle, and the loafer is devised scandals will continue to exist. But sickness is the same and as hard to bear in every class and the sick must be carefully tended.

THE FUNCTIONS OF THE STOMACH.

IN a short article contained in the fourth volume of the *Travaux du Laboratoire* of M. Richet an account is given by MM. J. Carvallo and V. Pachon of experiments they have made with a view of determining whether some of the functions of the stomach, and in particular its chemical, peptic and antiseptic functions, can be vicariously discharged by other parts of the digestive apparatus without detriment to the organism generally. The view that such supplementary action could take place was held by various observers, as by Czerny and Kaiser, and by Filipi and Monari, for they found that dogs from which the stomach had been almost completely removed, survived. Ludwig, however, showed that at least in Czerny's dog an important part of the cardia remained. Ogata, however, endeavoured to demonstrate the correctness of Czerny's conclusion by occluding the stomach and introducing the food through a pyloric fistula but even this experiment is not quite satisfactory since the retention of the stomach in the organism may modify, directly or indirectly, the chemical activity of the intestine, besides which the animals do not long survive so serious an operation. MM. Carvallo and Pachon, finding that the anatomical disposition of the stomach in the dog rendered that animal inappropriate for the operation of complete ablation of the stomach, determined to try the cat, and have satisfied themselves that for this particular experiment the cat is to be greatly preferred to the dog. Nevertheless, a large proportion of the cats operated on died, many from lung troubles the cause of which was at first obscure but which careful examination demonstrated to be due to septic infection proceeding from the points of suture. They were, however, able to present to the Société de Biologie a young cat from which the stomach had been entirely removed, and which had not only increased in weight three and a half months after the operation but was able perfectly to digest proteids in the form of cooked meats, starches, and fats. The digestion of raw meat was less perfect. They specially draw attention to the indisposition of both the dog and the cat to take the trouble of feeding themselves after the operation and they believe that the stomach plays an important part as a peripheral sensory organ.

THE STANDARDS OF PURITY FOR SEWAGE EFFLUENTS.

A TIMELY and valuable contribution upon this subject has recently been communicated to the Society of Public Analysts by Mr. C. G. Moor. The paper is all the more valuable because it shows that the writer possesses a practical experience of the subject and an ability to deal with both the chemical and bacteriological sides of the question. As he very properly remarks, purification of sewage so far as it is contemplated by any existing scheme can only be regarded as a chemical process, and it is in terms of chemical determination alone that the results of any process for effecting it can be expressed. Though we are learning now how great is the power of bacteria not only to purify but to utilise sewage, still the bacteria so involved are merely means for applying biological energy in place of the chemical energy previously employed, and are used for the precisely identical purpose of altering the sewage in its chemical composition from a substance highly favourable to the growth of putrefactive and some other organisms into a substance not specially favourable and perhaps ultimately inimical to their growth. Hence the corollary that the only terms in which a standard of purification for a process or a standard of permissible impurity in an effluent can be expressed, are necessarily and solely chemical. This does not depreciate the function of bacteriological examination, which might be directed to the determination of the extent to which effluents favoured or impeded the growth of undesirable organisms, and in particular those which directly cause disease and those which produce offensive organic substances. Such investigations cannot be without value in throwing light on the sewage purification by bacterial agencies, but, as Mr. Moor maintains, it is, after all, in quantitative terms of the chemical products which varying bacteria and varying conditions produce that the results of bacteriological investigation must be expressed before they pass over from the domain of experimental science into that of practical application. He accordingly suggests the following standard as satisfactory for general use: total suspended matter (not to exceed), 2·0 parts; albuminoid ammonia, 0·2 part; oxygen absorbed, 0·75 part; total hardness, 25·0 parts; and nitrogen as nitrates (not to be less than), 0·75 part per hundred thousand. Mr. Moor insists upon this amount of nitrates as showing that true purification has begun and that there is a store of oxygen which could be drawn on as a guarantee against possible putrefaction. We believe these figures are based on the analytical results of a great number of effluents which being within these limits are satisfactory, but obviously it would be difficult to make such a standard universally applicable. So much depends upon the nature of the sewage to be dealt with and as to the fate of the purified effluent. It might be satisfactory to discharge an effluent of a high degree of purity into a stream which is a source of supply for drinking purposes, while it would not be essential for an effluent to be so far purified when it is to be discharged on land or into a ditch. The suggestion to supplement the tests by observing the effect of the effluent upon live fish is, we think, an admirable one and one which, if it prove satisfactory, would be convincing of the innocuous character of the discharge.

THE OCCURRENCE OF THE TYPHOID BACILLUS IN THE EXCRETA.

THE July number of the *Medical Chronicle* contains the results of a research undertaken by Dr. J. R. Carver at the suggestion of Professor Delépine, its object being to obtain additional evidence as to the presence of typical typhoid bacilli in the fæces and urine of typhoid fever patients and if possible to suggest some explanation of the apparent disagreement of writers on the subject. The investigations were conducted in the bacteriological laboratory at Owens College and most of the material was obtained from the Monsall Fever Hospital, Manchester. He examined 16 specimens of urine and 20 of fæces all from separate patients presenting typical symptoms of enteric fever. In the examinations of the fæces inoculations of two or three loopfuls were made from the liquid stools into peptone bouillon, and this served as a stock tube. From this inoculations were made into tubes of phenylated bouillon (Parietti's solution) of various strengths. From these cultivations were made into ordinary shake gelatine plates,

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while stroke cultures were made on potato gelatine. He afterwards adopted the method of direct inoculation from the stock bouillon tube into tubes of gelatine peptone bouillon which were then poured out into Petri plates. Some inoculations were also made on spleen gelatine prepared with fresh bullock's spleen. The result was that with the 20 specimens of fæces he found typical typhoid bacilli in only 2 cases. In 8 others he found a bacillus which gave some of the reactions both of the typhoid bacillus and of the bacillus coli and which he accordingly called the "intermediate" bacillus. In the 16 samples of urine he found only 1 colony of typhoid bacillus, and even this one was doubtful. On the other hand he found a coliform bacillus in 8 cases out of the 16. It was somewhat larger than the one usually found in the stools, but after some growths on agar they were indistinguishable and their reactions were similar.

THE NEW VACCINATION ACT.

A CIRCULAR has been issued from the Local Government Board to the clerks of the various boards of guardians pointing out that although the Act in its entirety does not come into force until Jan. 1st, 1899, the provisions of Section 2 became law on the passing of the Bill. This section contains the much-discussed conscience clause.

THE WORKMEN'S COMPENSATION ACT: A CIRCULAR LETTER TO THE MEDICAL REFEREES.

A CIRCULAR letter has been sent by the Home Office to the medical referees enclosing copies of the various official forms which will have to be filled up in the working of the Act and calling their attention to the dual nature of their duties. The first and most important function of a medical referee is to act as adviser to arbitrators or judges; but he has a second responsibility bringing him into relation with the injured workman rather than with any court or committee of arbitrators which it will require considerable tact and judgment properly to discharge. Schedule 1 (11) of the Workmen's Compensation Act runs as follows:—

"Any workman receiving weekly payments under this Act shall, if so required by the employer, or by any person by whom the employer is entitled under this Act to be indemnified, from time to time submit himself for examination by a duly qualified medical practitioner provided and paid by the employer, or such other person; but if the workman objects to an examination by that medical practitioner, or is dissatisfied by the certificate of such practitioner upon his condition when communicated to him, he may submit himself for examination to one of the medical practitioners appointed for the purposes of this Act, as mentioned in the Second Schedule to this Act, and the certificate of that medical practitioner as to the condition of the workman at the time of the examination shall be given to the employer and workman, and shall be conclusive evidence of that condition. If the workman refuses to submit himself to such examination, or in any way obstructs the same, his right to such weekly payments shall be suspended until such examination has taken place."

The Home Secretary in his letter reminds medical referees that he is not empowered by the Act to make any regulation as to the mode of carrying out this duty, but that care must be taken by the medical referee not to give the certificates in any circumstances other than those specified in the Act. The fee for the examination and subsequent certificate is payable not by the Treasury but by the workman himself, who, says the Home Secretary, "may be required to pay a reasonable fee before the examination is made"; but the referee is asked to remember in determining the amount of his fee that it is the workman who has to pay it and that only in some cases will he be able to recover it from his employer later. This second duty of the medical referee, if not so important as his main duty of acting as a judicial assessor, is certainly a very delicate one. He will be sitting in judgment, perhaps, upon the diagnosis of a professional brother.

MILK AND INFANTILE MORTALITY.

A PAPER by Dr. Lemière which is quoted in the *Journal de Clinique et de Thérapeutique Infantiles* discusses the relation long since recognised as existing between milk-supply and infant mortality. The statistics given are chiefly those of the city of Lille. Among other points of interest noted by the writer is the fact that the death-rate under two years of age in that city is 398·6, and in one parish it has risen to 520, for every 1000 deaths recorded. A large proportion of these is attributed to gastro-enteritis, which is most prevalent in districts inhabited by the working classes, the comparative mortality between a rich and a poor district selected for illustration being as 1 to 7. Gastro-enteritis is, as a rule, a preventable disease and this fact is fully admitted in the article to which we have referred. It is satisfactory to find that its explanation is sought for where it is most likely to be found—namely, in the diet administered. With regard to this Dr. Lemière makes two practical observations—one in which he accuses the employment of watered milk as a cause of malnutrition and the other in which he advocates efficient sterilisation and general care in feeding. Too much importance can hardly be attached to these remarks, especially during the present sultry weather. It is true that they teach nothing new, but they remind us of precautions which should never be but constantly are forgotten. We do not dispute the influence of subsoil water as a factor in the production of infantile diarrhœa, but we recognise as of equal and even greater importance the quality of the infants' milk-supply. The former consideration is in a great measure *ultra vires*, the latter is at all times within our control. If this control is applied with judgment and vigour the climatic and subterranean evils may often be entirely counteracted. Nothing, therefore, in domestic management is more important than care in the selection of the milk used and in its after-treatment. The health of the cattle producing it, of the people who sell it and the cleanliness of persons and vessels connected with its sale are as much the concern of a nurse or mother as is its actual preparation for the infant. As a rule mothers in this country understand the importance of cleanliness in all the manipulations of artificial feeding. Nevertheless they are frequently in error. They are very apt to under-estimate the value of fresh air, especially at night, and many an infant is poisoned with milk which has fermented in a close bedroom. We need hardly impress upon medical practitioners the necessity of instructing their patients in this matter and also with regard to the means adapted for the ready sterilisation not only of milk but also of the vessels in which it is contained and administered.

THE SILENT STRAND.

THE Strand without bustle and activity is no longer the Strand. By a ukase issued last week the Strand has been closed for traffic and sure and certain signs of the paviour coming along were evident to everybody by the accumulation of black wooden blocks upon the pavements of this thoroughfare. At the time of writing the Strand is "up" and those whose business is conducted within its precincts begin to enjoy a respite from vehicular clatter and also from sundry other street noises. The relief is perhaps most marked to those who, like ourselves, are engaged upon literary work. The appearance of the great historic street, however, in spite of its usual distracting condition, is somewhat depressing. One thing is

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clear and that is that the biggest factor in the vehicular traffic is the omnibus, and this is essentially the vehicle which carries people to and fro through London's great artery. Despite the drawbacks which result from the congested condition of a street by the enormous traffic passing along in both directions there can be little doubt that this fact, after all, possesses a hygienic importance. The air of the Strand is now quite stagnant, an observation which has been made by a good many who use the thoroughfare. The lumbering omnibus is a big vehicle and in proceeding down a street pushes a volume of air in front of it, thus establishing an important degree of circulation. Hence the much-abused omnibus serves, so to speak, like a plunger in a cylinder chasing air in front of it and inducing fresh air to take its place. This process going on in both directions must have an important influence on the air of London's streets, for so narrow are some of our thoroughfares that the air is hemmed in, but the voluminous omnibus in its onward course tends to stir this up and to obviate stagnation. So we have an important compensation, perhaps, for the evils arising from the employment of animal power in our streets. Oddly enough, the hundred-and-one other street noises seem to have disappeared with the diverted traffic, except, however, that perennial curse the newspaper boy, whose irritating cries are more in evidence than ever, being untempered by vehicular noise. But we are no longer worried beneath our windows with a most exasperating toy which is regarded as imitating the utterance of chanticleer. People in the country know well that when this is produced by the bird itself it is sufficiently disturbing, but when the cry of the early bird is imitated on a toy it is almost beyond human endurance.

LAWLESSNESS IN THE STREETS.

ON August 8th Mr. Massey Mainwaring asked the Home Secretary a question concerning lawlessness in the streets and received the following typical ministerial answer :—

"I have received representations from the vestry on this subject, but after making inquiries I was not satisfied that there was any such insecurity as was alleged or such a condition of lawlessness that the existing force of police in the district were unable to cope with it. In certain districts there is doubtless more street rowdyism than in others, due to the general character of the population, but as far as the police are concerned active steps are taken by them to suppress any disturbances and to arrest offenders. The matter is, of course, of some importance, and I shall not lose sight of it."

It used to be said that nothing would be done to prevent railway accidents until a director or two had been killed. Are we to wait until a Home Secretary has been garrotted or knocked down and severely kicked before the police are given some more valuable weapon than a truncheon and are authorised to use it or until magistrates can order some more suitable punishment than a paltry fine which is always paid by a whip round of the prisoner's friends? The one and only remedy is the "cat"; it is cheap and efficacious. It did away with garrotting in the "sixties" and everyone will remember how Mr. Justice Day broke up the "High Rip Gang" in Liverpool by the use of the same means. Fines are useless, and prison is far too comfortable for Hooligans. Gymnasia and "education" may affect the budding Hooligan but not the full-grown plant. Since the Home Secretary's Epicurean answer hardly a day has passed without a case of violent assault being reported in the daily press.

THE ADULTERATION OF COFFEE.

ON reflection we should not think that the method of adulteration about to be described is "new," for it seems to us that it offers some explanation of the wooden character of the coffee infusions which are commonly offered to the public in this country. Coffee affords a most excellent beverage, but nobody seems to be able to get it good, and this is probably the reason why the consumption of coffee is rapidly declining. But the material must, of course, be good and fresh, with all the aromatic oils preserved intact. We have heard that by coating the roasted berries with a thin film of gelatin the delicious aroma of freshly roasted coffee may be indefinitely preserved. But this step would be quite futile in view of the "new" adulteration. This consists in washing, colouring and drying the berries in centrifugal machines with sawdust, with the result that the crevices of the berries become filled with powdered wood which is said to make them of a fine white colour, and thus to enhance the market value of the product. This ingenious but immoral process is said to be carried on in Hamburg, Bremen, Antwerp, and Rotterdam, and we respectfully request our Customs authorities to keep a sharp look out on the consignments of coffee coming from these places in spite of the market value, as it is said, being thus enhanced.

THE DENTAL HOSPITAL OF LONDON.

WE are pleased to learn that the difficulties which have for some time hampered the action of the Committee of Management of the Dental Hospital of London have been overcome and that the contract with the builder for the new hospital is now signed. The building is to be finished in twenty months, and the fact that definite arrangements have at last been made must be very satisfactory to Lord Kinnaird and Mr. F. A. Bevan, the trustees, and Dr. Joseph Walker, the honorary treasurer, who have worked very hard to attain this end. We hope that the public will help forward the work by donations and subscriptions. So far the dental profession has contributed £7000 and the public about the same amount, while some £30,000 are still required to discharge the liabilities incurred. The Dental Hospital has a distinct claim on public generosity over and above the value of its work. Mortgage had to be incurred when the buildings on the new site were demolished two years ago by the order of the London County Council, while the hospital lost a revenue of £1200 a year, which sum the Committee of Management intended should accrue to help to pay for the new building.

NEW MEDICAL INSPECTORS OF THE LOCAL GOVERNMENT BOARD.

WE are informed that the two temporary medical inspectors to the Local Government Board who were sanctioned under the report of the Treasury Committee of August, 1897, have at last been appointed. The difficulties which have caused such long delay have been owing firstly to the fact that a permanent increase of work called for permanent and not temporary appointments, and secondly to the circumstance that when the appointments were at last offered it was naturally found that some of those nominated could not abandon permanent posts which they then held for the sake of temporary ones. At last, however, all difficulty has, for the moment at least, been removed. Dr. L. W. Darra Mair, the well-known medical officer of health of the Croydon Rural District, has obtained one year's leave of absence from his duties in order to accept one of the posts in question. The other post has been conferred by Mr. Chaplin on Dr. Ralph W. Johnstone. Both of the new inspectors hold the Diploma in Public Health.

A TELEGRAM from Hong-Kong was received on Monday morning last by the Colonial Office reporting that only one case of plague occurred last week.

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A FORTNIGHT ago it was our sad duty to offer our sympathy to Mr. Henry Power in his sorrow and to-day we are reluctantly compelled to recount another terrible accident affecting a prominent member of the medical profession—namely, Sir Walter Foster, M.P., whose daughter while bathing at Woollacombe, near Ilfracombe, was carried away by a wave and drowned. While offering our sincere condolences to Sir Walter Foster we feel obliged to remind the local authorities that this is by no means the first case of drowning off the foreshore which has occurred in this district, and we think that better precautions should be taken to ensure the safety of bathers, although it is said that the cove where the accident happened is not a recognised bathing place.

DR. GEORGE ROPER, whose death occurred at Southwold on Sunday last, August 14th, was at one time physician to the Royal Maternity Society. We hope to publish a few notes on his life and scientific career in an early issue.

WE have received Dr. Whitelegge's report for the year 1897 as chief inspector of factories. We shall deal with the report in an early issue, as it is made specially interesting by the new Workmen's Compensation Act.

WE shall publish next week the concluding article of Dr. Lionel Beale's series entitled "Vitality."

PLASTER MODELLING: A DEMONSTRATION BY MR. G. A. PETERS, F.R.C.S.

ON Wednesday afternoon, at the Examination Hall, Victoria-embankment, an interesting demonstration of an original and improved method of making plaster-of-Paris models of anatomical and pathological specimens was given by Mr. George A. Peters, F.R.C.S. Eng., of Toronto. The process consists of a rapid method of making a paraffin mould from which a finely-detailed and sharply-defined plaster-of-Paris cast of the specimen can be readily produced.

The mould is obtained by means of an ingenious spray devised by Mr. Peters, the apparatus consisting of two tin reservoirs, one being a simple can containing iced water and the other a can constructed with an inner and an outer compartment so arranged that paraffin placed in the inner compartment can be kept in a molten condition by a jacket of hot water in the outer one, each reservoir being connected by rubber tubing to a double-channelled spray nozzle, the conduit for the paraffin being completely jacketed by an outer tubing containing hot water. The spray is produced by a strong current of air generated in an ingenious pressure air-pump by electromotive force. By means of this mechanism a fine spray of pure paraffin can be instantly produced and its flow readily regulated by means of an adjustable nozzle.

The specimen demonstrated upon by Mr. Peters was a dissected guinea-pig, and the *modus operandi* was as follows. The paraffin reservoir was charged with paraffin having a melting point of about 125°F. and the other reservoir with iced water. The specimen, placed on a mackintoshed dissecting board, was first lubricated with a spray of alboline to prevent adhesion to the paraffin, the hairy regions for the same reason being also sprayed with an alcoholic emulsion of corn-flour. The paraffin spray was then put in action by switching on the electric current and a fine spray of pure paraffin was directed upon the dissected specimen, which was quickly covered with an even coating of the paraffin which immediately solidified on coming in contact with the surface of the specimen. The next stage was the application of a strong mixed spray of paraffin and iced water, which had the effect of accelerating the building up of a thick casing of firmly set paraffin. Over this a stiff paste of plaster-of-Paris, to which a watery solution of sulphate of potash had been added to promote setting, was spread to strengthen the mould. A few minutes were then allowed for the plaster to set, after which the cadaver was removed from the paraffin and the mould was ready for use.

Mr. Peters then showed several models which he had produced by this method, among them being a fine plaster cast of Dr. Sims Woodhead's head, a model of Professor Cunningham's hand obtained at the recent meeting of the British Medical Association at Edinburgh, and a model of a dissected guinea-pig obtained from a mould similar to the one made during the demonstration, which showed the fine anatomical features in minute detail, even to the blood-vessels of the mesentery. Other models were also demonstrated as examples of the applicability of the method to the modelling of furred animals and birds, the lecturer incidentally mentioning that a complete model of a living head could be obtained in about twenty minutes.

Among those present at the demonstration was Sir William Mac Cormac, President of the Royal College of Surgeons of England, who at the conclusion of the proceedings cordially thanked Mr. Peters for his demonstration and heartily congratulated him upon the excellence of his results.

ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD.

SECOND NOTICE.[1]

Medical Supplement.

THE medical staff of the Metropolitan Asylums Board includes many highly qualified men both as medical superintendents and as assistant medical officers, and it is of considerable importance that this should be the case since the circumstances of a fever hospital are very different from those of a general hospital. In this latter the visiting staff of leading physicians and surgeons guide and advise the resident medical staff, while in addition there is the stimulating influence of competition and publicity ever present. In the fever hospital, on the contrary, these influences are to some extent absent, and the institution is in large part self-contained. It is true that within recent years the admission of students into these hospitals has done something to modify this self-contained element; but nevertheless the officers are, by the very nature of their occupation, cut off in some degree from the outside world. It is for this reason, amongst many others, that we welcome the new departure which, commenced in the annual report of 1896, has become developed in the report for 1897 which is now before us.

The Statistical Committee have very wisely relinquished the task of editing the purely medical part of the report and have left it, we trust entirely, in the hands of the medical staff of the fever hospitals, who have appointed two of their colleagues, Dr. Caiger and Dr. Goodall, to edit the "Medical Supplement." We do not know precisely what is the method of compilation adopted; whether, for instance, certain members of the medical staff are invited each year to take up some subject and after having studied it to report thereon, or whether the contributions to the supplement are left in the main to the initiative of the medical officers and the revising control of the editors. But in all probability a judicious blending of these two methods is encouraged. Be this as it may, we welcome the supplement as a valuable innovation and as affording a great inducement to the medical staff to make more use than has been, perhaps, made in the past of the altogether exceptional opportunities afforded to them. It is to be hoped, too, that the committees of the several hospitals will themselves recognise the importance of encouraging original research amongst the medical staff and this they may do by satisfying themselves that the members of the staff are in no sense overworked. A medical attendant whose whole time is taken up in admitting cases and in attending too large a number of patients is not likely to be of the greatest use to the patients or to make the careful notes and observations calculated to add to our knowledge.

In the present supplement Dr. F. F. Caiger deals with the subject of complications and of the coexistence of infectious diseases as illustrated by the statistics of all the hospitals

[1] The First Notice was published in THE LANCET of August 13th, 1898.

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during 1897. On the 15,241 cases of scarlet fever the incidence of otitis was 14·39 per cent., of albuminuria 8·87 per cent., of the adenitis of convalescence 5·59 per cent., of rheumatism 3·32 per cent., and of nephritis 2·80 per cent. Relapse occurred in 0·72 per cent. of the cases, diphtheria in 5·22 per cent., and varicella in 3 49 per cent. Among the 5493 cases of diphtheria albuminuria occurred in 42·19 per cent. and paralysis in 20·55 per cent., while 6·99 per cent. suffered from scarlet fever. In enteric fever 13·06 per cent. of the cases had a relapse, 9·9 per cent. hæmorrhage, 3·10 per cent. perforation, 2·4 per cent. pneumonia, and 1·9 per cent. non-perforative peritonitis. Among the 21,400 cases of infectious disease admitted into the Board's hospitals for acute infectious disease no less than 596, or 2·78 per cent. of the total admissions, were suffering on admission from two separate infectious diseases. By far the greater number suffered from a combination of scarlet fever and diphtheria, scarlet fever and varicella and scarlet fever and whooping-cough being the other associations most frequently met with. Those of our readers who take interest in this subject of the coexistence of infectious diseases in the same individual will find a very complete paper on it, also from the pen of Dr. Caiger, in vol. xiii. (new series) of the Transactions of the Epidemiological Society.

The incidence during 1897 of post-scarlatinal diphtheria on the 15,241 completed cases of scarlet fever amounted to 5·22 per cent., or 0·58 per cent. above that of last year. Dr. Goodall is careful to point out that the bacteriological examination of all suspicious cases has probably had considerable effect in bringing about this high incidence rate, and for this reason it would, he adds, be unsafe to compare the incidence on hospital treated cases with that upon the home treated cases. The total fatality-rate of the post-scarlatinal cases was 3·7 per cent., that of the laryngeal cases 3·7 per cent., and of the remainder 2·9 per cent. In 1896 the three rates just given were respectively 5·1, 22·7, and 2·8; and it will be seen that an enormous reduction has been made on the laryngeal cases. As regards the onset of these post-scarlatinal attacks of diphtheria the majority occurred during the fifth and sixth weeks following the onset of the scarlet fever, and the greatest percentage incidence of the disease was during the first and third quarter of the year. The figures for 1897 do not, Dr. Goodall thinks, shed any fresh light on this question of post-scarlatinal diphtheria, and he is evidently inclined to regard the increase within recent years as but an expression on hospital treated patients and the increased incidence of diphtheria on the population as a whole. It is, in a way, unfortunate that we cannot institute any satisfactory comparison at present between the home treated and hospital treated cases in this particular, as we might in course of time learn something from such a study. Obviously, the question is whether there is an *undue* incidence on hospital treated cases.

Coming now to the results of the antitoxin treatment of diphtheria during 1897 we find some encouraging figures which show improvement upon those for 1896. Of the total number of completed cases (5459) 80·2 per cent. were treated with serum, as against 66·2 in the previous year, and of the serum treated cases 20·4 per cent. died, as compared with 25·9 per cent. in 1896. In the laryngeal cases the fatality-rate was 30 per cent.; in the cases upon which tracheotomy was performed 39·9 per cent. In the year 1894—that preceding the introduction of antitoxin—the fatality-rate of all cases was 29·6, of the laryngeal cases 62 per cent., and of the cases on which tracheotomy had been performed 70·4 per cent. Perhaps, however, the best index of the valuable results of antitoxin is to be found among the post-scarlatinal cases of diphtheria occurring in hospital which have naturally a high fatality-rate, but which being easily recognised can be subject to antitoxin treatment at once.

Most of the other contributions to the "Medical Supplement" are, we presume, from the assistant medical officers, whom we are glad to see contributing their share; indeed, these officers have, perhaps, a better opportunity for original work than have the medical superintendents, no small portion of whose time must of necessity, if they are to govern the hospital in a satisfactory manner, be taken up with important administrative duties. Dr. Arthur Stanley's paper on the Condition of the Heart in Diphtheria is of a high degree of merit and betrays considerable observation and care at the bedside. He finds, too, that in persons dying from that terrible complication of diphtheria, cardiac paralysis, very distinct signs of degeneration are constantly found in the cardiac muscles, while he has been unable to demonstrate anything abnormal in the "immediate extra-cardiac nerves or nerve endings." Dr. A. Miller's contribution on the date of onset of the various forms of diphtheritic paralysis follows appropriately the foregoing. Of 392 cases paralysis appeared first in the palate in 185, and in the ocular muscles in 197. In the remaining 10 it commenced elsewhere. Of 102 cases of cardiac paralysis no less than 91 proved fatal. Dr. Richards and Dr. Goodall describe a case of enteric fever where an endeavour was made to counteract the effects of an intestinal perforation by laparotomy and suture of the gut, and the result, though ultimately fatal, is by no means discouraging.

Of the other papers we have space only to refer to that by Dr. R. G. Kirton on the Serum Diagnosis of Enteric Fever. He feels as a result of his observations (1) that "Widal's reaction" is usually obtained in cases of enteric fever, whether they be mild or severe, but that it is not obtained from cases suffering from other diseases, unless perhaps in those who have recently recovered from enteric fever; (2) that this reaction is obtained earlier in some cases than in others (three cases gave the reaction only on the second attempt); (3) that the blood retains its power of yielding the reaction for a variable time—it may be for a few months, perhaps for some years; and (4) that the blood taken after death from a case which has yielded the reaction during life may still continue to react.

A PATENT FOR DIPHTHERIA ANTITOXIN RECENTLY GRANTED IN THE UNITED STATES.

PROFESSOR BEHRING'S action in applying for a patent in the United Sates as sole inventor of diphtheria antitoxin excited surprise, but the announcement that the authorities at Washington have recently decided to grant the patent has caused a feeling of something like consternation among the American manufacturers of antitoxin. The medical profession too are up in arms against Professor Behring's departure from recognised professional ethics and many of the medical journals condemn in strong terms his unaccustomed mode of procedure. It was in January, 1895, that Professor Behring—his assignees being the Höchst-Farbwerke, the manufacturers of the serum in Germany—first applied for a patent for his diphtheria antitoxin; the application was then refused and has been refused four times since on the apparently substantial ground that Professor Behring was not the sole inventor of diphtheria antitoxin and had consequently no right to claim a monopoly of the manufacture and sale of the same. However, in June last the patent officials at Washington overlooked their objections and granted the patent, not because they thought that Professor Behring had established his claim by right of priority or by originality in research, or even on legal grounds, but for the sentimental consideration that the treatment of diphtheria by antitoxin had yielded such satisfactory results and had greatly decreased the death-rate from this disease. This altogether unexpected decision on the part of the United States Patent Office has given universal dissatisfaction amongst both medical men and manufacturers of antitoxin throughout America, as it is contended that it is neither logical nor just. Its opponents assert that before granting the patent positive proof should have been forthcoming that Professor Behring was undoubtedly entitled to the credit of discovering the principle of serum immunisation and of inventing diphtheria antitoxin and that to grant a patent for any other reasons was absurd as well as unfair to those scientific men who assisted in the successful development of serum therapy. Among the American papers which contain articles deprecating alike the action of Professor Behring in applying for a patent and that of the Patent Office in granting it, *Pediatrics* of August 15th, in its editorial comments, perhaps treats the subject most exhaustively from the point of view of the medical profession and of the manufacturers. Referring to the question from a scientific standpoint the above-named journal says: "We will first consider the matter from a scientific standpoint and endeavour to show that although without doubt

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to Behring is due the chief credit for developing serum therapy, yet that this development has reached its present successful issue by progressive stages to which many earnest workers have contributed." A short sketch is then given of the discoveries of Salmon and Smith in 1886, Pasteur, Roux, Chamberland, Fox, and Bonhomme in 1887, and Frankel in 1890, tending to prove that much progress had been made in the development of the principle of serum immunisation before Behring and Kitasato published their results. *Pediatrics* concludes that Pasteur was undoubtedly the discoverer of the principle of serum immunisation, while to Roux and Aronson belongs the merit of first putting the serum to clinical uses, and comments on the fact that the French Academy of Sciences was so undecided as to which of the respective claimants was entitled to the credit of the invention of diphtheria antitoxin that they concluded that both Roux and Behring were equally deserving and awarded the prize jointly. Dealing with the ethical side of the question the same journal remarks: "Since Jenner introduced vaccination for the prevention of small-pox and thus rendered his name immortal there has been no discovery made in the realms of science more valuable than the principle of serum immunisation and no invention more efficacious in relieving and curing human disease than that of diphtheria antitoxin. ..... Although, as we have pointed out, no one man can lay claim with justice to the honour of the discovery for himself alone, nevertheless Behring has probably accomplished more than any other worker in the establishment of serum therapy. To him, too, has been accorded by far the largest share of the accompanying fame and it may be said that if he had not made this unfortunate departure from the accepted code of professional ethics his name would have been handed down to posterity linked with those of Jenner, Lister, and Pasteur. By his selfish attempt, however, to reserve to himself and the company with which he is connected the right to manufacture and profit by the sale of diphtheria antitoxin he has besmirched his reputation and lowered the dignity of the profession to which he belongs. That many of the pioneers in science do not reap a fair share of the harvest sowed and brought to maturity by the efforts of their brains and that they are often used as ladders by which unscrupulous men of superior business capacity ascend to position and fortune cannot be denied. A discoverer or inventor is most assuredly entitled to an ample portion of the rewards resulting from the success of the child of his intellect and we are certain that no one would begrudge Professor Behring the highest possible pecuniary rewards, but at the same time we cannot but think that by placing an invention of the nature of diphtheria antitoxin within the category of a patent medicine and by attempting to create a monopoly of a discovery which belongs by right to the whole human race he has deviated from the best traditions of scientific ethics and has pursued a course which he will live to regret." After making a brief reference to the spirit of commercialism prevailing in Germany at the present time *Pediatrics* ends by regretting that the patent laws of the United States are so criminally lax and says: "Before leaving the subject of Behring's patent it may be as well to make a few remarks in regard to the patent laws of this country. The fact is well known that any like application would meet with prompt and final refusal in every other country of the world. Indeed, no sane person would have the simplicity to apply for legal protection for an article of the nature of antitoxin in any land but the United States, convinced beforehand that the attempt would be useless. In France and Germany so strict and exclusive are the patent laws that even foods and medicines save on processes of manufacture cannot be protected. Does it not therefore seem an absurdity and injustice as well as a slur on the proverbial American cuteness that foreigners are allowed to enjoy privileges here which they are unable to obtain in their own countries? It should also be borne in mind that in this respect 'they manage things better on the other side.' We are too apt to think that all our institutions are superior to European ones, but there can be no doubt but that in matters of this kind we are far too lax and might with benefit to ourselves take a leaf from the book of our German and French friends. Reform in our patent laws is urgently called for." Although Professor Behring has succeeded in gaining a patent for his diphtheria antitoxin it is the intention of the American manufacturers of antitoxin and the several boards of health to contest his right to create a monopoly at every step.

THE SPREAD OF DISEASE THROUGH LAUNDRIES.

IN THE LANCET of August 18th, 1877, we published a report of a Special Commission on the Spread of Disease through Laundries. We then demonstrated in so conclusive a manner how linen was contaminated, more especially during the process of ironing and drying after washing, that the Press of the entire country took up the question. So much alarm was occasioned by this discussion that in the course of a few weeks five companies were founded so as to establish sanitary laundries in which the dangers which we had denounced might be avoided. Since then many other similar enterprises have been started and in almost every important centre in England there are one or more laundries which at least profess to wash linen on sanitary principles. We very much doubt whether the precautions which these establishments profess to take are always efficient. Still, it is a step in the right direction to find that the necessity of precaution is widely admitted. The agitation thus started in England has travelled abroad and in Paris and Berlin notably there are several large hotels which make it their boast never to give or to allow linen to be given out promiscuously to be washed. These establishments have their own steam laundries where the linen washed cannot come into contact with any outside linen. In a general way, however, the problem has been considered in France from the point of view of the laundresses themselves rather than from the standpoint of the public at large. During the recent prevalence of cholera in Europe several epidemics originated in laundry establishments and the first victims were washerwomen. Subsequently, at a sitting of the Paris Municipal Council held on Nov. 15th, 1896, M. Marsoulan brought forward the question of laundries and the diseases which laundry women contracted by manipulating foul linen. The council adopted a resolution in favour of studying the means which might be taken to mitigate this danger. Following upon this Dr. G. Deschamps, Médecin Inspecteur du Service des Epidémies, was appointed to draw up a report on the subject. On its side, the Council of Hygiene and Salubrity of the Department of the Seine, in its sitting held on Oct. 29th, 1897, elected a Commission consisting of Dr. Proust, Dr. Yangfleisch, Dr. Brousse, Dr. Le Roy des Barres, Dr. Dagnet, and Dr. Vallin to likewise investigate the matter. Dr. Vallin was the reporter of this Commission and he concludes in his report that laundresses obviously run considerable risk of contracting infectious fevers from the dirty linen. Where compulsory notification and disinfection for such complaints is strictly enforced this risk is of course in a great measure dissipated. But it is also acknowledged that there are still some families who conceal the presence of infectious disease. Though in Paris such linen would be disinfected gratuitously, still there are persons who will not apply to the sanitary authorities: they fear that the linen may be spoilt in the process of disinfection or it is so dirty that they are ashamed to show it.

At first linen soiled with blood, &c., was undoubtedly spoilt by the process of disinfection. The heat, by coagulating the albumin, fixed the colouring matter and the linen was permanently stained. But now, and indeed for some ten years past, all linen thus stained is rinsed and brushed before it is placed in the disinfecting stove. Dr. A. J. Martin, Inspector-General of this service, states that this preliminary operation is carefully supervised and quite successful both from the point of view of preventing stains and of preventing infection. But even if in regard to the more serious infectious diseases proper precautions are taken, there remain cases of measles, tuberculosis, septic suppurations, blennorrhagic discharges, syphilitic secretions, and premonitory diarrhœa, for which no notification is sent to the sanitary authorities and disinfection is not enforced.

The most dangerous operation is the sorting and marking of the linen before it is washed. In large model laundries this is, or at least it should be, done in a special separate department, room, or shed. But even then the germs are disseminated, infect the persons who sort the linen, and may be conveyed to some distance by the wind. Dr. Vallin suggests that the dirty linen might be sorted under an antiseptic spray. At the same time he doubts whether the laundresses

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would give themselves the trouble to take these precautions properly. In some large model laundries there is an automatic disinfecting washer. It consists of a revolving perforated case inside a cylinder. This case or drum is divided into several compartments. In each compartment a bundle of dirty linen as received from the customer is introduced without being sorted. The apparatus is now closed, the case made to revolve, and a current of cold water discharged upon it so as to remove the blood-stains, and this is followed by tepid water. When this has been done the linen can be purified by boiling water or jets of steam under pressure, the heat varying from 110° to 120° C. It is only after this process is terminated that the linen is taken out and sorted. Such an operation certainly reduces the risk to a minimum. The report of the Commission of the Council of Hygiene concludes by recommending that every effort should be made to induce families to send their linen to the public disinfecting stations, where it will be purified gratuitously and in no wise injured. Then it is urged that all dirty linen should be conveyed in air-tight special sacks, that the linen should be sorted under an antiseptic spray in a separate and special place or shed, and that in large laundries there should be a special apparatus for blood-stained linen where it can be soaked in tepid alkaline water before it is sorted.

Dr. E. Deschamps, in his report, deals particularly with the smaller laundries and the practical difficulties in the way of effective reform. He points out that in spite of the danger of infection to which they must be constantly exposed pulmonary tuberculosis is comparatively rare among washerwomen. This raises an interesting question as to whether this immunity is due to the deterring effect which the dampness prevailing in laundries may have on the tubercle bacillus or whether it arises simply from the fact that laundry-women must possess a certain amount of physical vigour to do their work. With regard to infection through linen amongst the poorer classes in Paris, many women wash their own linen, and if there is infectious disease in their family this operation does not add considerably to the danger to which they are already exposed. Others get their linen washed by a friend and neighbour who would certainly know if there was any illness and could take precautions. The greatest danger arises with the lower middle classes, who give out their linen to small laundry establishments in the immediate neighbourhood. In that case it is generally the mistress and not the servant who sorts and gives out the linen. The mistress would very likely conceal the fact that some member of the family was ill fearing that the laundress might charge extra for washing the linen on the ground that special precautions had to be taken. The linen is taken probably to a very small laundry shop in a crowded thoroughfare; it is sorted in the same room where later in the week it will be folded and ironed. These small laundry shops must be centres of infection and to expose clean linen in such places is certainly dangerous. On the other hand, to classify them as unwholesome industries and to decree that no linen shall be washed except in a large model laundry would throw out of employment an enormous number of very worthy people and make all laundry work a monopoly held by a few large capitalists.

Another point raised is the danger to the public due to the fact that linen stained with blood, pus, &c., must, first be soaked in cold or in tepid water. What becomes of this water? It must often contain pathogenic germs. In certain localities it may be a fruitful source of river pollution. The best protection, according to Dr. Deschamps, will be the strict enforcement of compulsory notification and disinfection in all cases of infectious disease. In this respect we are more fortunately situated in England, where both law and custom favour this practice. Nevertheless, the law is still too frequently evaded and, as already pointed out, there are cases which do not come under its provisions. Both Dr. Vallin and Dr. Deschamps repose far too much confidence in the effect of compulsory disinfection. Such laws as they desire are in force in England and were in force when our report on the spread of diseases through laundries was published. Nevertheless, we clearly demonstrated how linen was set out to dry close to cases of small-pox and that the law was constantly evaded. The only radical remedy is the abolition of pettifogging laundries. A private dwelling or a small shop in a street is not a place where a laundry business can be carried on under safe and wholesome conditions. On the other hand, and so that the trade should not be monopolised by large capitalists who alone can build model steam laundries, public washhouses should be so constructed as to serve the same purpose. Here those who do washing on a small scale should find all the necessary conveniences and be made to carry out those precautions which are best calculated to protect them and their customers from the danger of infection. The French reports confirm our report and show that laundry work as a home industry cannot be carried out safely. But the French reports only utilise this fact as an argument in favour of compulsory notification and disinfection wherever there is a case of infectious disease. This we are convinced will not suffice, and as we are, like our French colleagues, anxious not to ruin laundresses who have only small businesses we repeat that these small businesses should be transferred to improved public washhouses. In the meanwhile the most practical result of the reports published by the Paris sanitary authorities is a more extensive use of air-tight sacks in which the dirty linen is conveyed.

Public Health and Poor Law.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Halifax Urban District.—An instructive little milk-borne epidemic of scarlet fever occurred in this district in 1897. A sudden excess of notifications of this disease having been observed inquiries were set on foot as to the cause. All who were affected were found to be deriving their milk-supply from one or other of two purveyors, one being merely a dealer, the other a farmer who supplied milk directly and also through the dealer. At the house of the dealer no clue was discovered, but on visiting the farmer Mr. D. Ainley (the medical officer of health) found a boy with a well-developed rash and sore-throat moving freely about the premises and amongst the cows. The farmer himself was in bed with a sore-throat and his wife showed signs of desquamation, while an elder son, aged nineteen years, who took the milk into the town, had also a sore-throat. It was arranged that the milk should have no connexion with the farmhouse or with the infected persons, but it was not under the circumstances thought necessary to prohibit the supply. A list of customers was obtained from the two purveyors and the medical officer of health visited every one of them. By this means a considerable number of cases was discovered. It is to be inferred that the potency of the milk for harm was removed when the sources of infection were cut off.

Northamptonshire County District.—We heartily welcome the appearance of this, the first report of Mr. C. E. Paget, the first county medical officer of Northamptonshire. Mr. Paget, whose interesting reports on the health of Salford we have noticed for many years, only took up his new duties on Jan. 1st, 1898, so that, as he tells us, he knows little from personal observation of the sanitary condition of the county. The annual reports from the district medical officers of health were sent in with promptitude, but, as has been the case so frequently before when a county medical officer has entered on his duties, only four of those relating to the urban and six to the rural districts were printed. Doubtless, however, Mr. Paget will soon effect a change here. The estimated population of the county is 228,955, 99,878 of whom are living in urban districts. The birth-rate of the administrative county during 1897 was 29·5 per 1000 (urban rate 33·4, rural 26·4); the general death-rate was 15·5 (urban 14·7, rural 16·09). The infantile mortality for the county was 134 per 1000 registered births (urban 142, rural 125). Several of the sanitary districts are without the benefits of notification, and amongst these we notice the borough of Brackley, while some eighteen districts are without any hospital provision and others have it only "by arrangement." In short, Mr. Paget has an admirable field for his energies, and we shall watch the progress of the county with interest.

Huddersfield Urban District. — In investigating the circumstances attendant upon certain cases of puerperal fever notified to him during 1897 Mr. E. G. Annis, the medical officer of health, states that on visiting the midwife's home he generally finds the conditions "absolutely indescribable; evidences of neglect, dirt, filth, and a general squalid condition abound." He points out that about one half of the children born in Huddersfield are introduced into

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the world by midwives and he thinks it very necessary that some control over these women should be exercised. He has done well to call attention to the condition of their homes. New regulations as regards cowsheds, dairies, and milk-shops have been recently brought into operation in Huddersfield, a minimum of 500 cubic feet being the allowance for each cow. It is further suggested that every cowkeeper shall arrange with a veterinary surgeon for the periodical inspection of the cows. We also note that "no milkman with his can should on any account enter the houses of his customers."

Birkenhead Urban District.—The inhabitants of this borough will hear with satisfaction, in face of recent outbreaks of water-borne diseases, that their water-supply "is of exceptional purity and altogether most satisfactory from the public health point of view." It is obtained from the new red sandstone at three separate pumping stations, the average depth of the wells being 207 ft. The supply yields 17 gallons per head per day. Some interesting figures relative to tuberculosis in edible animals are furnished by Dr. Sydney Marsden in his report. Of 3655 cattle slaughtered in the Tranmere abattoirs from 1892 to 1897, 82 were affected with tuberculosis; and if we read the tables correctly, nearly the whole of those thus affected came from Cheshire and Wales. Of 4174 pigs killed, presumably in 1897, 57 had tuberculosis; but of 10,500 sheep and lambs slaughtered during the same period not one was thus affected. Of 626 calves killed 3 had tubercle. Out of 241,717 cattle *inspected* at the Woodside and Wallasey lairages during 1897 113 were affected with tuberculosis; 12 of these came from the United States, 18 from Canada, and 83 from South America. As an instance of the difficulty found in practice in carrying out an improvement scheme for the housing of the working classes we may refer to the case of Birkenhead. In 1896 a provisional order relating to the area in question was confirmed by Parliament, but up to the date of the issue of the report now before us not a stone had been touched.

Nottingham Urban District.—Amongst the Jubilee honours of 1897 the town of Nottingham occupied no mean position, and the bestowal on it by Her Majesty of the title of "city" evidently gave much justifiable satisfaction to the inhabitants. Despite the advance which has been made in the sanitation of Nottingham within recent years there are still, Dr. Boobbyer tells us, no less than 40,000 pail-closets to be dealt with, and he regards the danger to health from these receptacles as but little less than that from privies. As he points out, it is the abuse to which the pail is liable which in the main reduces it to a condition little better than the privy. As to the incidence of enteric fever in houses supplied respectively with privy, pail, and water-closet the figures presented by Dr. Boobbyer in his last report and repeated in the one now before us are well worth quoting. He found that for the years 1887–96 the figures yielded the following incidence of enteric fever. Midden-privy houses, 1 case in 37 houses; pail-closet houses, 1 case in 120 houses; water-closet houses, 1 case in 558 houses. He also supplies other figures in reference to these classes of houses tending to show that the danger of infection from a given case of enteric fever is much greater in privy and pail-served houses than in those with water-closets, while the risk of the recurrence of the disease is also greater. It is important to mention that the water-closets are scattered promiscuously amongst those of the conservancy type and hence no question of locality or class distribution is sufficient to account for the differences observed. In connexion with the Bagthorpe Isolation Hospital there were 14 "return" cases of scarlet fever and certain of these may have owed their origin in some way or other to 10 discharged patients. The average duration of stay in hospital had been over 12 weeks and we do not gather that any of the patients were suffering from chronic discharge. Isolation accommodation has been provided during the year for cases of enteric fever and good results seem to have been attained thereby. In an appendix to his report Dr. Boobbyer gives the report of a deputation of the sanitary committee which he accompanied to Essen and Cologne for the purpose of inspecting certain knackeries and abattoir buildings there. As Dr. Boobbyer aptly remarks, the report shows "that our rivals of the Fatherland spare no trouble and expense in safeguarding their meat supplies and organising upon the most sanitary and economic bases the very numerous subsidiary industries arising in connexion with their preparation."

Bristol Urban District.—In November of last year the limits of this city were so extended as to embrace a population of 318,042, but the statistics of the present reports, which are illustrated by means of a series of very clear diagrams, relate to the old population of 232,242. Bristol is apparently much to be congratulated upon its water-supply, despite the fact that the supply is in the hands of a private company. The water, according to Dr. Davies, "appears to be above suspicion" as regards its risk of excremental contamination. The bacteriological examination of cases of diphtheria and the application of Widal's test for cases of enteric fever are still pursued at Bristol, and we trust they will be continued. It is, however, easy to understand what a heavy task this laboratory work must entail upon Dr. Davies, more especially in presence of the increased work and reponsibility which the added area and the appointment of five additional inspectors must involve. It is to be hoped that this necessary bacteriological work will be provided for and that it will not be allowed to drop. Dr. Davies does not advise any alteration as regards sewer ventilation in Bristol. Our readers may remember that the Bristol sewers are not ventilated. Such ventilation can, he observes, be asked for either to prevent danger to health or to prevent nuisance, and there are no indications, he thinks, for action in either direction. He regards the "suggested danger of 'fever' outbreaks from the unventilated condition of the sewers as purely chimerical." In referring to small-pox a note of warning as to isolation accommodation is uttered. It is pointed out that it is the generally well-vaccinated condition of the infantile population which renders isolation possible as a controlling factor in small-pox, but were Bristol an unvaccinated town—and we fear that it is tending to become so—a thousand beds would, Dr. Davies observes, soon become full and what would be practically chaos would reign, assuming that small-pox of an epidemic type were to invade the city. There is included in the volume before us the report which Dr. Davies made upon the Clifton outbreak of enteric fever in 1897, but as this outbreak has received considerable publicity already it is hardly necessary to refer to it further here. A paper upon it was read before the Epidemiological Society. We are very glad to see that Dr. Davies has had "Bristol Health Report, 1897," printed on his report in such a fashion that it can be read when the volume is placed on the bookshelf. It would save some time and trouble to us if all volumes of sufficient size were treated in a similar fashion.

Croydon Rural District.—Considerable activity in respect of sanitary matters has obtained during recent years in this district under the judicious guidance of Dr. Darra Mair and the report for 1897 shows that great progress is being made. In referring to diphtheria the importance of notifying mild cases is insisted upon and it is pointed out that the proximity of this district to the metropolis involves frequent fresh introductions of the disease. In dealing with cases of this malady precautions are, as a rule, continued until the throat has been demonstrated to be free from the bacilli associated with the disease. We note that two persons were bitten by rabid dogs during 1897 and on both occasions the patients were despatched to Paris for treatment at the rural district council's expense. In connexion with the prevention of river pollution improvement is manifest and we see that an endeavour has been made to prevent the sale of watercress which has been grown in, or washed by, the effluent from the Croydon sewage farm—a precaution which will doubtless meet with approval.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 7055 births and 4410 deaths were registered during the week ending Aug. 13th. The annual rate of mortality in these towns, which had increased in the four preceding weeks from 14·7 to 18·3 per 1000, further rose last week to 20·5. In London the rate was 20·5 per 1000, and corresponded with the mean rate in the thirty-two provincial towns. The lowest death-rates in these towns were 13·7 in Blackburn, 13·8 in Burnley, 14·0 in Halifax, and 14·3 in Swansea; the highest rates were 27·7 in Liverpool, 27·8 in Wolverhampton, 29·0 in Salford, and 29·1 in Preston. The 4410 deaths in these towns included 1127 which were referred to the principal zymotic diseases, against 575 and 796 in the two preceding weeks; of these,

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902 resulted from diarrhœa, 74 from measles, 67 from whooping-cough, 43 from diphtheria, 25 from scarlet fever, and 16 from "fever" (principally enteric), No fatal case of any of these diseases was recorded last week in Halifax; in the other towns the lowest zymotic death-rates were recorded in Huddersfield, Gateshead, Oldham, and Blackburn, and the highest rates in Leicester, Liverpool, Preston, and Sheffield. The greatest mortality from measles occurred in Portsmouth and Plymouth, from scarlet fever in Norwich, from whooping-cough in Salford and Sunderland, and from diarrhœa in Wolverhampton, Birkenhead, Liverpool, Leicester, Sheffield, and Preston. The mortality from "fever" showed no marked excess in any of the large towns. The 43 deaths from diphtheria included 27 in London, 4 in Leeds, and 3 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and only one small-pox patient was under treatment in the Metropolitan Asylums Hospitals on Saturday last, August 13th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2293, against 2321 and 2326 at the end of the two preceding weeks; 201 new cases were admitted during the week, against 276, 232, and 224 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 173 and 174 in the two preceding weeks, declined again last week, to 171, and were slightly below the corrected average. The causes of 144, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bedford, Leeds, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·6 and 20·0 per 1000 in the two preceding weeks, declined again to 19·8 during the week ending August 13th, and was 0·7 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·7 in Dundee and 17·4 in Aberdeen to 20·8 in Glasgow and 26·4 in Greenock. The 598 deaths in these towns included 80 which were referred to diarrhœa, 17 to whooping-cough, 13 to measles, 12 to scarlet fever, 9 to diphtheria, and 5 to "fever." In all, 136 deaths resulted from these principal zymotic diseases, against 113 and 134 in the two preceding weeks. These 136 deaths were equal to an annual rate of 4·5 per 1000, which was 0·7 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had increased from 26 to 77 in the four preceding weeks, further rose to 80 last week, of which 46 occurred in Glasgow, 12 in Dundee, and 6 in Paisley. The 17 deaths from whooping-cough showed a decline of 13 from the number recorded in the preceding week and included 7 in Glasgow and 4 in Aberdeen. The fatal cases of measles, which had been 25 and 20 in the two preceding weeks, further declined to 13 last week, of which 4 occurred in Edinburgh and 4 in Dundee. The deaths from scarlet fever considerably exceeded the number recorded in any recent week and included 7 in Glasgow. The fatal cases of diphtheria, which had been 2 in each of the three preceding weeks, rose to 9 last week, of which 3 occurred in Glasgow, 3 in Greenock, and 2 in Dundee. Of the 5 deaths referred to "fever" 3 were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 79 in each of the two preceding weeks, declined to 71 last week, but exceeded by 13 the number in the corresponding period of last year. The causes of 26, or more than 4 per cent., of the deaths in these towns were not certified either by a registered medical practitioner or by a coroner.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·9 per 1000 in each of the two preceding weeks, increased to 25·5 during the week ending August 13th. During the past four weeks the rate of mortality in the city has averaged 24·0 per 1000, the rate during the same period being 17·8 in London and 19·3 in Edinburgh. The 171 deaths registered in Dublin during the week under notice showed an increase of 11 upon the number in the preceding week, and included 31 which were referred to the principal zymotic diseases, against 14 and 27 in the two preceding weeks; of these, 19 resulted from diarrhœa, 5 from whooping-cough, 3 from scarlet fever, 3 from "fever," 1 from diphtheria, and not one either from small-pox or measles. These 31 deaths were equal to an annual rate of 4·6 per 1000, the zymotic death-rate during the same period being 5·0 in London and 2·5 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 18 in the three preceding weeks, further rose to 19 last week. The deaths referred to different forms of "fever" which had been 3 and 5 in the two preceding weeks, declined again to 3 last week. The 3 deaths from scarlet fever exceeded the number recorded in any week since April last. The 171 deaths in Dublin last week included 42 of infants under one year of age, and 40 of persons aged upwards of sixty years; the deaths of infants showed a slight decline, while those of elderly persons exceeded the number in any recent week. Eight inquest cases and 5 deaths from violence were registered; and 53, or nearly a third, of the deaths occurred in public institutions. The causes of 15, or nearly 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Staff-Surgeons: A. G. Wildey to the *Hawke* and H. J. Hadden to the *Cruiser*. Surgeons: H. Hunt to the *Northampton*; John Grant to Malta Hospital; Beauchamp F. Parish to the *Ramillies;* George T. Bishop to the *Raven;* and Murray P. Jones to the *Vulcan*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Charles F. Pollock to be Colonel, vice W. A. Catherwood, promoted. The under-mentioned Majors to be Lieutenant-Colonels:—John Stevenson, William L. Lane, Patrick J. Dempsey, Kenneth S. Wallis, John W. H. Flanagan, Owen E. P. Lloyd, V.C., James G. MacNeece, Morgan D. O'Connell, Alexander S. W. Young, John J. Falvey, Horatio R. O. Cross (1st Life Guards), and Charles Seymour.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant John McMullen, M.B., 3rd Volunteer Battalion the King's (Liverpool Regiment) to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Engineers: 1st West Riding of Yorkshire (Sheffield): Surgeon-Captain G. Robinson to be Surgeon-Major. *Rifle:* 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment): Frederick Norman to be Surgeon-Lieutenant. 4th Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Major W. S. Limrick to be Surgeon-Lieutenant-Colonel. 5th West Middlesex: Surgeon-Captain H. C. C. Shaw resigns his commission. 5th Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Robert Taylor Halliday to be Surgeon-Lieutenant. 1st Tower Hamlets: Surgeon-Lieutenant A. C. Tunstall to be Surgeon-Captain.

CADET BATTALION.

1st Cadet Battalion the Manchester Regiment: Acting Surgeon E. Proudlove resigns his commission.

THE RED CROSS SOCIETY AND THE ARMY MEDICAL AUTHORITIES IN CUBA.

A correspondent writes: Much friction has prevailed since the commencement of the American campaign in Cuba between the army medical authorities of the United States and the Red Cross Society. Chiefly through the agency of the lay press this bad feeling has now come to a climax and some of the medical journals have taken up the quarrel. From the first Dr. Sternberg, Surgeon-General of the United States Army, has set his face against the employment of women nurses at the front, giving as his reason that they are an encumbrance to an army mobilised for active operations and also pointing out that the Army Medical Department was well able to cope with the needs of the sick and wounded. However, of late there have come grave complaints from the front of the inadequacy of the army medical and nursing staff. Public indignation has been

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greatly excited and has called forth replies both from Surgeon-General Sternberg and Lieutenant-Colonel Senn, chief of the operating staff with the army in the field, in which they defend the Army Medical Department from the attacks made upon it. Surgeon-General Sternberg draws attention to the fact that the deficiency in regular medical officers made it necessary to employ nearly 300 contract surgeons and that more are being employed every day. Most of these medical men from civil life are doing good service and many of them are thoroughly well-equipped physicians and surgeons with ample hospital experience, but it has been impossible to make a careful selection owing to the great pressure of business in the Surgeon-General's office and the urgency has been so great that it has not been practicable to have examining boards to verify their qualifications. General Shafter's army at Tampa, according to Surgeon-General Sternberg, was thoroughly well supplied with the necessary medicines, dressings, &c., for field service, but owing to insufficient transportation he left behind at Tampa his reserve medical supplies and ambulance corps. Surgeon-General Sternberg asks the medical profession in the United States to reserve its judgemnt until he has had the opportunity to receive full information regarding the efficiency of the medical service in the vicinity of Santiago. With reference to the overcrowded and dirty condition of the transports carrying sick and wounded it is understood that an inquiry has been ordered and steps will be taken to affix the blame to those responsible.

Correspondence.

"Audi alteram partem."

THE CLAIM OF MEMBERS AND FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND TO CHOOSE THE COLLEGE REPRESENTATIVE ON THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—As two of the Fellows and Members making the claim above mentioned, and as honorary secretaries of the subcommittee (F. and M.R.C.S. Eng.) of the Corporate and Medical Reform Association, Limited, which prepared the petition formulating the claim, and therefore intimately acquainted with the views of the petitioners and of the Committee, may we ask the favour of space for some explanations which your very powerful leading article in THE LANCET of July 23rd, 1898, on this claim appears to call for on our part? Your leading article in THE LANCET of April 2nd, 1898, p. 943, on the same subject frankly commended the terms of our influentially-signed petition, which the College Council has now rejected; and you say in that article: "In the end, however, the matter will possibly come before a court of law; for if the Council should come to the conclusion that they have acted rightly in appointing a person to be a member of the General Medical Council, then the petitioners and other Fellows and Members of the College who share their opinions will naturally endeavour to obtain an authoritative answer to the question 'to whom does the right of election belong?' On the other hand, should the Council of the College be of opinion that they have indeed usurped a function to which they have no legal right, it is probable that they would hardly feel justified in relinquishing the powers which they have already exercised for forty years except under the mandate of a court of law." We have been informed, we believe trustworthily, that the Council was equally divided on our petition; so that were Mr. Richardson Cross to act on the views submitted to him by Mr. George Jackson as a constituent and also by Mr. Horsley and other Fellows through us, though he is in no way pleged to do so, his single vote might turn the scale and secure a noble example of a new "self-denying" procedure. If this hope fails there remains that other hope which animates us, and which your suggestion so highly sanctions, of a "mandate of a court of law" to strengthen the hands of the conscientious "self-denying" members of the College Council. In that article you speak of "body corporate" as the "technical sense" of the word "body" used in the Medical Act. It is, we submit, the literal sense, and to show it to be technical some other sense should be adduced, which the very clear definitions of the College charters do not permit. In the more recent article (July 23rd) you give a list of the 20 "bodies," each of which should "choose" a member of the General Medical Council, and you state by whom the member is, in fact, at present sent to the Council in the case of each body. In only 3 instances out of the 20, it appears, is the member "chosen" by the corporation as a "body"—namely, by Oxford and Cambridge Universities and by the Apothecaries' Hall of Ireland. In all the other 17 instances the express terms of the Medical Act appear to be set aside. In the case of the 4 Scottish universities a two-line section of the Universities (Scotland) Act, 1889, amends, in effect, the Medical Act and vests the power of appointment in the several university courts. In all the other 13 instances the Medical Act is, it seems, violated and the franchise conferred by it unlawfully abrogated.

It is, therefore, very correctly you point out that Members and Fellows of the English College suffer whatever they suffer in this respect in common with the constituents of many other bodies. The insertion in the Universities (Scotland) Act, 1889, of the section we have mentioned affords fair inference that the Scottish universities were advised, and well advised as we maintain, that the Medical Acts vested the choice in the whole of each respective "body." Scottish graduates are already stirring in the matter, by means of their own select committee of the Corporate and Medical Reform Association; and Dr. James Myrtle of Harrogate has spoken to several Members of Parliament who fully admit the propriety of repealing that clause which furtively disfranchised 4 great constituencies—considerable sections of our profession. In the other 13 instances a favourable decision in the case of the Royal College of Surgeons of England would constitute a binding precedent, admitting to their rightful franchise all who are in fact constituents of the several "bodies." How greatly such a change would widen the present too narrow and oligarchic constituencies of the General Medical Council will at once be perceived. It would be contrary to every tradition of THE LANCET to question the expediency of such widening and unlike its practical common-sense views of medical politics to suggest that because this is not all the reform needed we should not endeavour to secure it, even though it may be within our reach. There is, we venture to submit, no evil which the profession at present suffers that is not to be traced to that narrow and selfish policy of the corporations which THE LANCET has consistently deprecated and censured. That selfish and narrow policy they could not have maintained for nearly half a century but for the control which their governing bodies obtained over the General Medical Council by the usurpation of this franchise to choose the members of that Council, and of that illegal control we believe we have the right, the power, and the opportunity to deprive them. A persual of the questions (Nos. 5 and 6) addressed in September last by certain electors—including Mr. George Jackson and Mr. Anderson, who are specially mentioned in your article of the 23rd ult.—to candidates at the recent election of a Direct Representative for England on the General Medical Council (which elicited favourable replies from Sir W. Foster, M.P., and from Mr. Victor Horsley, the rival candidates) will show that this claim was general and referred to the rights of all *de facto* constituents of all the bodies which should by law be represented on the Council.

These explanations, showing how far-reaching are our claims and how beneficial would be the effect of their establishment, may, we hope, more than satisfy any doubt on the score of expediency. Those who are actively asserting this claim are in full sympathy with the desire of the Members of the Royal College of Surgeons of England for a direct voice in the government of their own College, amongst them being Mr. Joseph Smith and Mr. W. G. Dickinson, the president and honorary secretary of the Society of Members of the College. But the College Council by its determined opposition has paralysed the Fellows; in the College the Members are absolutely helpless; and an agitation solely for the reform by Parliament of the College in this one particular would be so difficult in comparison with the measure under consideration that the advice to relinquish the easy assertion of a certain and possessory legal right in favour of the shadowy

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expectations from such an agitation would—except that it is given by you, Sirs—appear like the effort of the lapwing to withdraw the dangerous intruder from her treasure.

The suggestion that our claim is in any sense technical may, besides consideration of the far-reaching changes its successful assertion would effect, best be met by the statement that it is a claim to reform—into compliance with the statute—what you well describe in clear and convincing terms as "the present method by which the representative of the College upon the General Medical Council is chosen by the Council of the College, and not by the corporation as a body," whereas the Medical Act, Section 7, specifically requires that the representative shall be chosen by the corporation as a "body" and *not* by the Council of the College.—We are, Sirs, your obedient servants,

TOM R. TAYLOR, M.D. Lond., F.R.C.S. Eng.
R. B. ANDERSON, F.R.C.S. Eng.

August 10th, 1898.

THE AMERICAN RED CROSS AND THE SPANIARDS.

To the Editors of THE LANCET.

SIRS,—Some time ago it was stated in the daily papers that the duty of rationing the Cuban belligerents allied to the Americans in their attack on Santiago was handed over to the Red Cross Society. This statement may not have been founded on fact, but if it were ever brought to the notice of the Spaniards that the American Red Cross Society was undertaking the important belligerent duties of a commissariat department it is not difficult to understand the "severe charge" "unreservedly" made against them by your special correspondent on board the hospital ship *Relief* to the effect that "they did not respect the Red Cross."

I am, Sirs, yours faithfully,

W. G. MACPHERSON, Major, R.A.M.C.

London, Aug. 11th, 1898.

THE PLAGUE AT HONG-KONG: OVERCROWDING IN THE CITY OF VICTORIA, HONG-KONG.

To the Editors of THE LANCET.

SIRS,—The following table is interesting as showing the surface overcrowding in a city where more than 1000 persons have this year died from bubonic plague:—

District.	Chinese houses.	Floors.	Chinese population.	Non-Chinese houses.	Non-Chinese population.	Acreage.	Total number of persons per acre.
1	503	811	7,720	31	428	531	15·3
2	955	2,353	21,120	—	1,108	267	83·2
3	18	33	4,210	355	1,869	158	38·5
4	776	2,341	23,230	128	1,834	45	556·9
5	980	2,686	21,720	21	351	23	959·6
6	805	2,308	16,680	3	398	23	742·5
	722	2,227	16,010	7	179	27	599·6
8	732	2,231	18,540	5	129	2	444·4
9	1,023	2,457	23,860	19	160	40	600·5
10	564	1,213	7,370	47	296	258	29·7
—	7,078	18,660	160,460	616	6752	1,414	—

Health District No. 3 contains not only the great majority of the European residences of the city but also the more important of the European shops and mercantile offices, to which are attached in many cases quarters for the office coolies and caretakers; in the other districts many of the European and other non-Chinese residents are compelled to occupy the upper floors of the better-built Chinese houses. A single medical officer of health deals with this crowded mass of humanity and the sanitary inspectors are very few in proportion to the population.

I am, Sirs, yours faithfully,

"ONLY ONE THOUSAND DEAD."

"HYPERPYREXIA IN MALARIAL FEVER."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 14th just arrived I have read with exceeding interest a case under the above heading recorded by Mr. Charles Lloyd Worrall. It is of particular interest to me, as scarcely two weeks ago I had under my care a case which to my mind is almost similar as regards the symptoms and physical signs, but different as to causation. As the particulars of the case might prove of interest not only to Mr. Worrall but to your readers, I will with your permission record it.

On June 15th at 7 P.M. a woman consulted me about her child, aged one year, which she had driven in a buggy from a neighbouring district sixteen miles distant. She stated that her child had been in excellent health from the day of birth up to 11 A.M. that morning, when shortly after returning from the usual morning walk with the black nurse it suddenly became convulsed. She at once immersed the child in a tepid bath for a short time, then wrapped it up in a warm blanket and put it to bed, when the convulsions ceased, but unconsciousness remained and a twitching of the right side of the body started; she then gave a dose of castor oil which proved effectual shortly afterwards. Seeing no improvement in the child's condition she consulted a neighbouring chemist, who prescribed potassii bromidi gr. 1 in a mixture to be given every three hours, but as this seemed to be ineffectual she deemed it advisable to consult me. On examination of the child I found it unconscious, the face was pallid, moist and clammy, there was continual twitching of the muscles of the right arm and leg, the eyelids were wide open, the eyeballs were oscillating, the irides were vacillating, and the temperature under the axilla was 105°F. I ordered the mother to remain at an hotel for the night, to at once give the child a tepid bath and put it to bed wrapped up in a warm, dry blanket, and prescribed a diaphoretic and bromide mixture to be given every hour. I again examined the child in half an hour's time to note the effect of the treatment and found that the twitchings of the muscles had ceased, the eyelids were now closed, and there was a profuse diaphoresis, but, to my surprise, I found the thermometer to register under the axilla 107·6°. Seeing that the temperature was rapidly rising and knowing that to trust to internal medication by antipyretics to reduce the temperature would not only be fruitless, but losing valuable time, I was about to proceed to apply more immediate measures, as the cold pack, when the child's breathing became very slow and laboured and it died in a few minutes; the temperature was 108·4° before death. Anyone comparing Mr. Worrall's recorded case with this one I think will agree to their similarity. Mr. Worrall attributes malarial fever as the cause of the hyperpyrexia in his case. Now in my case, although occurring in a malarious district also, still from the fact of there not being any malarial cases either at the time of the occurrence of this case or at least two months previously, or now one month since (and an isolated case of malarial fever of such severity occurring is very improbable), rather disproves that the plasmodium malariæ was the cause. More inclined am I to believe that the child whilst out walking with the black nurse was permitted to have its head exposed to the intense heat rays of the sun, thus causing a form of sunstroke.

I am, Sirs, yours faithfully,

ERNEST S. HAWTHORNE, L.R.C.P. & S. Irel.

Georgetown, N. Queensland, Australia, June 29th, 1898.

"PIPERIDINE AS A URIC ACID SOLVENT."

To the Editors of THE LANCET.

SIRS,—I am obliged to Dr. Tunnicliffe and Dr. Rosenheim for pointing out what was certainly an erroneous calculation in my paper contained in THE LANCET of June 11th as to the number of grains of a drug which it would be necessary to introduce at once into the circulation of an adult man of average weight in order to have 0·1 per cent. of the drug in the blood. I find that the number of grains should have been stated as 100 instead of 600. The calculation is based on the amount of blood being one-thirteenth of the body-weight. This alteration does not, however, affect any of the results or the conclusions deduced from the results arrived at in the paper

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referred to. Dr. Tunnicliffe and Dr. Rosenheim state in their letter contained in THE LANCET of August 13th that the dose of piperidine tartrate should be 10 gr. instead of 15 gr. as originally stated by them. This would mean, on my revised calculation, that 0·01 per cent. of the drug would be introduced into the circulation if the whole of the ten grains were at once absorbed, and, as I previously pointed out, the only experiments described by the authors in their original paper as to the solvent effect exerted by piperidine on sodium biurate are with 0·1 per cent. solutions, or with 10 times as much as could be introduced into the circulation by the dosage they now recommend. In their letter of August 13th Dr. Tunnicliffe and Dr. Rosenheim, however, state that they experimented with 0·01 per cent. of the drug, though no mention of such experiments was made in their original paper, and that they found that such a percentage of piperidine tartrate increased the solvent power of the standard solution for sodium biurate one and a half times. This is the very evidence that was wanted, and, if such be the case, I shall welcome the drug as a most useful one for the removal of gouty deposits. With regard to the question of uric acid in bullock's serum I must still remain sceptical as to the proof of its presence until it has been identified by the murexide test.

I am, Sirs, yours faithfully,
ARTHUR P. LUFF, M.D. Lond.

Weymouth-street, W., August 17th, 1898.

"THE MUTUAL RELATIONSHIP AND RELATIVE VALUE OF EXPERIMENTAL RESEARCH AND CLINICAL EXPERIENCE IN LARYNGOLOGY, RHINOLOGY, AND OTOLOGY."

To the Editors of THE LANCET.

SIRS,—As the result of a series of inoculation experiments upon guinea-pigs with portions of naso-pharyngeal adenoid tissue removed by operation 16·4 per cent of the animals became tuberculous, and not 7 per cent., as stated by your reporter.—I am, Sirs, yours faithfully,

Manchester, August 15th, 1898. WILLIAM MILLIGAN.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Influence of Plague Inoculation on other Diseases.—Malaria and Plague.—The Health of Calcutta and Bombay.—Sad Accident to one of the English Lady Nurses.—The Need of a Pasteur Institute in India.—The Special Medical Officers.

IN a recent report upon inoculation among the Khoja community in Bombay M. Haffkine endeavours to show not only the protective value of inoculation against the plague, but that it influences also favourably the resistance to certain other diseases. The figures of mortality published certainly show a lower mortality from all diseases among the inoculated than among the uninoculated. This, however, does not prove his contention. Those who were inoculated may be well assumed to be the more enlightened and intelligent, they did not run away from the city like many others have done, they were not sick or weakly, and they did not consist of the very old or the very young. One would naturally look for a less mortality among the inoculated where inoculation is carried out with a naturally selected portion of a community. A difference of 89·7 per cent. in deaths from plague in favour of the inoculated part of the community is probably above the real value of the measure. However, inoculation has been shown to have considerable protective influence. A difference of 73·3 per cent. in deaths from what have been returned as "other causes" in favour of the same part of the community is too great to be trusted. That the occurrence of plague amongst a population has been associated with a diminished mortality from other causes has been recorded in many places and suggests either that the conditions which favour plague may in some unknown way be favourable to the general health of the population or that plague itself may in some unknown way affect the course of other diseases. It is an old observation that epidemics "clear the air," but the improvement or difference in mortality has never been anything approaching 73 per cent. I cannot help thinking that M. Haffkine has been trying to prove too much. It would probably have been more favourable to the cause of his prophylactic inoculation if he had limited his report to the confirmation of its plague-protecting influence.

There is one disease, at any rate, to which plague seems to have an antagonism. This is malaria. It is very suggestive that inoculation for plague should exert a favourable influence on the subject of malarial disease. Many persons who have periodically suffered from febrile attacks of malarial character have remained free from them after inoculation. The antagonism of one toxin to another, or to the development of certain forms of bacilli or other micro-organisms, is little known, but it is probably on these lines that some of the greatest achievements in experimental science have yet to be made known. This antagonism between plague and malaria may explain the practical escape of Calcutta and other places in the Lower Ganges from the present epidemic. I think it will be found that the most malarious districts have been free from plague or have suffered but slightly. It is certainly interesting to note the low general death-rate in Calcutta, Bombay, and Karachi while plague was existent in these cities and it is difficult to explain the sporadic character of the outbreak at Calcutta. Bombay at the present time has got an exceptionally low death-rate from fevers—equal to 50 per cent. below the normal. The deaths from plague exactly make up for the deficiency. The following figures show the gradual increase in the number of deaths from plague which is taking place and point to the probability of a third outbreak in Bombay. The general death-rate is about 33 per 1000.

Table showing the Number of Deaths from Plague.

For week ending May 31st ...	84	For week ending June 28th ...	53
,, ,, June 7th ...	44	,, ,, July 5th ...	38
,, ,, ,, 14th ...	26	,, ,, ,, 12th ...	53
,, ,, ,, 21st ...	15	,, ,, ,, 19th ...	63

An increase of plague has also occurred at Hubli, Bandra, and Thana, and in the Nizam's dominions.

Miss Harris, one of the lady nurses who were sent out by the Secretary of State for India on plague duty, has unfortunately been bitten by her own dog. The animal was ill and presented many suspicious symptoms, especially as it had been bitten by a stray dog a short time previously. More than ordinary caution was obviously indicated, but, unfortunately, in endeavouring to secure it Miss Harris was severely bitten on the hand. On this being reported she was advised to proceed by the next day's mail to Paris. The dog died from unmistakeable rabies the following day, but it must be ten days before Sister Harris can obtain the benefit of treatment at the Pasteur Institute. This is one more example of the necessity for the establishment of such an institute in India. Considering how prevalent rabies is, the difficulty of stamping it out in consequence of the wild animals, and the large numbers of half-starved pariah dogs everywhere continually scavenging about, the danger of hydrophobia is constantly present. The establishment of a Pasteur Institute has been talked about for five years and matters have proceeded as far as collecting over 77,000 rupees towards it, but what between the inadequacy of private support and procrastination on the part of the Government the project is still far from completion. The Supreme Government undertook a long time ago to provide the officer who would direct the treatment of the patients and the management of the laboratories. The question, however, is "still under consideration." It is not only for the treatment of hydrophobia that this scheme is required, there are many other ill-understood diseases which demand investigation. As natives of all classes have availed themselves of the benefits of inoculation against plague and cholera the serum treatment in general is hardly likely to receive further opposition.

Of the special medical officers sent out by the Secretary of State for India practically very few, except those of the last batch, remain. The authorities are now inquiring who will continue to serve with an increase of salary of 100 rupees a month. These appointments certainly give opportunities of seeing something of India, and the salary

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more than covers ordinary expenditure. The work, however, from a professional point of view is very unsatisfactory. The present lull in the incidence of plague gives almost a holiday to the medical men and nurses, but there are ominous signs in many places of an early recrudescence.

July 23rd.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Eye Hospital.

THE Birmingham and Midland Eye Hospital enjoys a wide reputation. It is the largest institution of the kind in the kingdom and its influence extends over a large area. At the annual meeting this year the report stated that the sum of £3778 19*s.* had been received in subscriptions, or upwards of £200 more than last year. The expenditure amounted to £6254 2*s.* 7*d.*, as against £5763 5*s.* in the previous year. The total number of patients treated during the year was 25,580, including 1140 in-patients. These figures show how extensive is the work done; 104 beds are nearly always occupied; 7019 cases were supplied with spectacles or artificial eyes during the past year; 384 cases of cataract were operated upon with success in all but 4; and 10 cases of extraction of steel or iron from the eye by the electro-magnet had been conducted to a successful issue. The committee regretted the resignation of Mr. Lloyd Owen, who for many years had been a member of the staff.

Overcrowding at the Gaol.

The report of the Visiting Committee of the city magistrates calls attention to the large increase in the number of prisoners at Winson Green Gaol and the urgent necessity for additional accommodation. A total increase in 1897 as compared with 1895 shows the number of 1167 more prisoners. The attention of the Home Office has been called to the matter by the chairman, but at present no definite response to the subject has been submitted. Serious difficulties must soon assert themselves if the present state of things is allowed to continue.

Training Institution for Nurses.

The death of the lady superintendent of this institution, Mrs. Diamond, has cast a gloom over those associated so long with her in this valuable work. For twenty-three years Mrs. Diamond had exercised an unusual amount of tact, courtesy, and success in the administration. With firmness and ability she ensured respect for the institution and gained the confidence of the public and of the nurses under her charge.

Ice-cream and Typhoid Fever.

Coseley, some few miles from Birmingham, is at present going through an unpleasant experience of an epidemic of typhoid fever. Close investigation has been made as to the causes to which this may be attributed. In at least 5 cases it has been traced to the consumption of ice-cream. This is sufficient to show that the indulgences of an early age are not free from risks and that the opportunity for the gratification of such tastes requires to be attended with precaution in the manufacture of this much sought-for dainty. Whether the authorities will be found equal to the occasion remains to be seen, though it is manifest that some intervention is strictly called for.

August 16th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Ptomaine Poisoning at Oldham.

A SERIOUS outbreak of ptomaine poisoning has occurred at Chadderton, Oldham. An inquest on one case, that of a boy aged thirteen years, was held by Dr. George Thomson, the coroner, at the Oldham Town Hall. It had been twice adjourned and was concluded on Tuesday, August 9th. On the day following Mr. Coroner Molesworth concluded an investigation at the Chadderton Town Hall as to the cause of death in three other cases, those of a man named Shaw, aged forty-five years, and two women, aged twenty-three and twenty-one years. Dr. Hodgson, who made a post-mortem examination in Shaw's case, deposed that he had died from diarrhœa, most probably set up by ptomaine poisoning. Dr. P. Bowes stated that he had attended 22 cases of illness, excluding the three deaths, in which the symptoms were all alike, and Police-sergeant Marsden deposed that he had made inquiries in 37 cases and in all but one veal pies from Mr. Baker's shop had been eaten; in the other case the patient had eaten a meat pie. At previous sittings and at the inquest on August 10th a number of witnesses said that they had eaten veal and pork pies purchased from Mr. Baker on Thursday, Friday, and Saturday, July 28th, 29th, and 30th. They spoke to the veal pies, which contained jelly, making them very ill, whilst the pork pies and some of the veal pies, which did not contain the jelly, were harmless. The butcher who supplied the confectioner, Mr. Baker, with the veal said that the calf was killed on July 26th at a licensed slaughter-house. It was ten or eleven weeks old and was healthy and the veal was sold at 8*d.* a pound. Similar evidence was given as to the sound condition of the pigs' feet, from which the jelly of the pies was made. Mr. Baker said that he made 160 veal pies on the Thursday and his wife said that she thought about 40 were sold that day. She and one of the children had one each that night and she believed another of her children had one on the Friday. She heard no complaints about the pies. Some details are given as to one of the victims, Elizabeth McConnell, who bought a pie on the Saturday night for supper. She had part of it and her father had a piece. Both became ill, but the latter recovered. The remains of the pie were thrown on the fire on Monday. In Mr. Molesworth's court the verdict in the three cases under investigation was that death had taken place from diarrhœa set up by the veal pies which had been overkept. "Under the special circumstances of the case they attributed no blame to anyone, but they wished to say that in future all meat pies during the hot weather should be baked and sold fresh daily"—an obviously sensible suggestion. George Coleman bought a pie on Saturday on his way to a cricket match, was very ill on the Sunday, and died on the Wednesday following. Like all the others, he had vomiting and diarrhœa. Dr. Thomson summed up the evidence and spoke at some length on ptomaine poisoning. He said that experience taught that these poisons "(1) develop almost invariably in cooked meat some hours after it is prepared; (2) pig meat is most prone to develop them; (3) that the jelly produced in cooking pig meat seems most to favour their development; (4) that one portion of a carcass may be infected while the rest remains sound; (5) that though infected the meat may be to sight, smell, taste, and touch apparently sound and good; and (6) that the infective germs may exist in the uncooked meat, may survive the cooking process and develop in the cooked meat." He put the following questions to the jury: Was death due to ptomaine? Was the veal supplied sound and good to all appearance when it left the hands of the butcher? Was it to all appearance sound when cut up and put into the pies? Were the pigs' feet used for making the jelly to all appearance sound and good when used? Did the ptomaine poison develop in the pies subsequently to the jellying process? To these questions the answer was, Yes. They also found that there was nothing in the appearance of the pies to indicate that any injurious change had taken place. They also found that the method of storing the pies after they were "jellied" was satisfactory, but they wished to add as a recommendation that the windows of all confectioners should be better ventilated by slides in the windows. It does not seem that any very fresh light has been thrown on the question of ptomaine poisoning, but the evidence certainly went to show that none of those suffered who ate the pies on the Thursday when they were quite fresh, while all those who bought them on the Saturday had attacks of vomiting and diarrhœa, many of them being of great severity and four being fatal. Dr. Bowes stated that "the malady was of so severe a type that the sufferers got into a state of complete exhaustion and that death in such a case would most likely be from collapse." No blame was attributed to the butcher or to the confectioner. There is still a good deal to be learned as to ptomaine poisoning.

Deaths from Diarrhœa.

As usual at this time of the year deaths from diarrhœa show a considerable increase. The week before last there

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were 32, more than twice as many as in the preceding week, while the average for the previous six weeks was 7. The variations in temperature have been very great and rapid.

Hospital Sunday and Saturday Fund.

The results of this year's collections for the Hospital Sunday and Saturday Fund show a little falling back which we may hope is only temporary. In the Sunday Fund there was a slight increase, but in the Saturday Fund, which depends mainly on workpeople, there was a considerable falling off, "attributable to exceptional causes," presumably the unfortunate occurrence of strikes, leading to loss of wages and the transfer of trade and manufacture to other countries. The amount distributed to local medical charities this year is £7200 as compared with £7500 last year.

August 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

New Hospital, Aberdeenshire.

THERE has just been completed for the Alford District Committee of the Aberdeenshire County Council a district cottage hospital for infectious cases. The wards are well lighted and ventilated and will be heated by "Antislow" combustion grates. The water-supply and drainage works are very satisfactory. The hospital, which is capable of extension, will at present accommodate 16 patients.

Epidemics in Aberdeen.

Last week there were notified to the medical officer of health for Aberdeen 138 cases of whooping-cough, being 8 more than in the previous week, and 20 cases of scarlet fever, being 6 more than in the week preceding, and there were also reported 6 cases of erysipelas, 5 of measles (as against 14 in the week before), 2 of diphtheria, and 1 of typhoid fever. Nineteen cases were removed to the City Hospital, 1 to the Royal Infirmary, and 2 to the Sick Children's Hospital.

August 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Charitable Lotteries.

ONE of the favourite methods of collecting money for hospitals and medical charities in Ireland has been the establishment of a bazaar or *fête* at which lotteries have frequently proved a prominent and most lucrative feature. Many poor hospitals have benefited substantially by those mammoth bazaars for which Dublin has achieved a reputation. The lottery system has, however, in the opinion of many, been altogether overdone, for nowadays, scarcely a week passes during which books of lottery tickets for various charitable purposes are not freely circulated through the post. This method of "raising the wind" has just received a severe blow in the public action of his Excellency the Lord Lieutenant of Ireland. The Roman Catholic Archbishop of Dublin, Dr. Walshe, made a public protest some months ago in connexion with the gambling seductions of a bazaar organised by some of his co-religionists for what was recognised, however, as a most deserving institution. The effect was entirely satisfactory in reference to that particular project, but the protest was soon more or less forgotten, so that many, both Protestant and Roman Catholic, institutions in Dublin have since made use of the lottery system for obtaining money for medical charitable purposes. The recent public pronouncement of the Lord Lieutenant and the refusal of her Excellency the Countess Cadogan to patronise or to be present at a bazaar or *fête* in which a lottery for £100 proved a feature will certainly have a most salutary influence, the Countess being well known in Ireland as a most generous benefactor of charities of every description. The following is a brief account of what has just occurred. An advertisement appeared in the daily papers for some weeks of a bazaar and *fête* to be held at the Park, Kingstown, for the purpose of collecting funds for the construction of schools in that neighbourhood, the festivities to be patronised and opened by her Excellency the Countess Cadogan. Quite recently public placards notified that a lottery for £100 was to be held in connexion with the garden *fête*. His Excellency the Lord Lieutenant had his attention drawn to the lottery, and refused on the part of the Countess Cadogan to patronise the bazaar. His decision was conveyed in a letter, published in the morning papers, from his private secretary to Sir Percy Grace, one of the committee of the entertainment, in which he stated that her Excellency would not patronise or be present at the bazaar unless the lottery was withdrawn. The lottery project has now been abandoned and the Æstiva *fête* will be opened by the Countess Cadogan at Kingstown on August 17th.

The Public Health Congress and Exhibition in Dublin.

The Public Health Congress and Exhibition which opens on August 18th promises to prove the most interesting and important feature of the Dublin medical year. The programme of events has recently undergone revision, and it is now announced that the offices of the Royal Institute of Public Health and the Health Exhibition will be opened at 9 A.M. on the 18th inst. in the front hall of Trinity College for the issue of members' cards and cards of invitation to the Lord Mayor's ball and the various other entertainments, excursions, &c.

Queen's College, Belfast; the President's Report.

From the published report of the President of Queen's College, Belfast, for the past year I find that there were 223 medical, 135 arts, 28 law, and 17 engineering, students in attendance. Ten ladies attended the medical classes. During the last ten years the council has not been called upon to inflict a single penalty for breach of college law. A large number of honours have been gained by old students of the College during the year, and 953 volumes and publications were added to the library during the past 12 months. The natural history museum has been augmented in its accommodation by the erection of a new gallery, and "Two Friends," who desire that their names shall not be divulged, have given an unsolicited donation for the purpose of commencing the establishment of a museum of sanitary science. It has been decided to add a library to the Students' Union in which there are 255 members and which was worked so well financially that there is a balance of £42 3*s.* 3*d.* to credit. The Literary and Scientific Society will attain its jubilee next year. Both it and the Medical Students' Association continue to flourish. In conclusion, while the president thinks that in his judgment the College is as vigorous, its aims are as noble, and its work, within the limits assigned to it, is as successful as in the palmiest days of its history, he deplores the present unsettled condition of Irish university education. He feels, as one cognisant of the evils of the present situation and as one called to deal practically with it from day to day, that the existing position of affairs is well nigh intolerable, and he believes that the statesman who will rid us of it will be entitled to the everlasting gratitude of the whole community.

Londonderry Lunatic Asylum.

The overcrowded state of this asylum is causing a good deal of anxiety, as there are now in it 460 patients while it was only built to accommodate 344. In one corridor, which is only capable of holding and properly accommodating 36, 60 patients are sleeping. It was decided at a meeting of the board of the asylum held on August 11th, that the medical superintendent should again write to the Board of Control urging at the earliest possible date the completion of the temporary asylum.

Omagh Lunatic Asylum.

Mr. Alexander N. McKelvey has been appointed Assistant Medical Officer of the Omagh Lunatic Asylum.

Death of Mr. W. Sproule Love, M.R.C.S. Eng.

The announcement of the sudden death of Mr. Love on August 13th was heard with the most sincere regret in Omagh, where, for almost half a century, he was known and respected by every person in that town. A few years ago he had an attack of paralysis, in consequence of which he was partially rendered unfit for duty but he held so completely the confidence of the public that in times of serious illness his services were often demanded. It was while attending a patient in this way with Mr. Todd, J.P., of

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Omagh, some distance from that place, that he was suddenly seized with symptoms of cardiac failure on August 12th and after being conveyed home he died on the next day at the age of seventy-two years.

The Campbell College.

This college, which was opened towards the end of 1894, was founded and endowed by a Belfast merchant, Mr. Henry James Campbell, who provided £200,000, his object being to furnish a superior liberal education. To carry out his purpose the original trustees purchased the demesne of Belmont, which is about 70 acres in extent, in the vicinity of Belfast, and erected under the guidance of their architect, Mr. W. H. Lynn, one of the best equipped scholastic edifices in the United Kingdom. The buildings are in the late Tudor style and contain a central hall surrounded by sixteen large class-rooms. A special feature is the science section, which contains a lecture theatre, two chemical laboratories, three physical and biological laboratories, instrument and balance room, detached workshops (wood and metal), and dark room for photography. The greatest care has been paid to the drainage, ventilation, and heating of the college, as well as to the construction of the infirmary and detached sanatorium. There is a cricket field (8 acres) and a football ground (10 acres). Until recently the government of the college was in the hands of the trustees, but it has been decided to form a new scheme for the Campbell College, and the governing body for the future will consist of the three trustees and twelve other members. The names of the new governors were published last week and amongst them are two members of the medical profession, Dr. Redfern and Professor Byers.

August 16th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Cadaver Humanum: its Conservation.

ONCE and again THE LANCET has drawn attention to the ingenuity shown by Italian surgeons in immunising the dead subject from decomposition, and the theme has acquired fresh interest from its recent handling by Signor Luigi Ferrara. Throughout the peninsula, whether in its anatomical museums or in the family vaults of its *campi santi*, wonderful specimens of such successful immunisation are to be seen; but none of these can approach the perfection attained by Dr. Efisio Manini in a *métier* which may well be called national. For forty years that Neapolitan surgeon has striven to improve on the methods hitherto in practice, and his results, as known to the profession, throw all previous successes into the shade. "Without incisions"—so I am informed,—"without injections, simply with a series of baths, he has succeeded in preserving the human subject from all risk of decomposition whatever." His *modus operandi* consists of three stages. 1. Provisional desiccation, the so-called "conservazione allo stato coriaceo transitorio" (preservation applied to the corium in its transition period). Bodies so prepared and immersed in a liquid of his own devising may regain their primary freshness and be thereafter subjected to anatomical operations or demonstrations like the ordinary cadavera of the dissecting-room. 2. Petrifaction of the body so prepared—a process which, in Dr. Manini's hands, is so effective that the density as well as the consistency of marble is attained, insomuch that a few hours after the completion of this stage a key brought in sharp contact with the surface elicits a true metallic ring from the body. 3. The restoration to this desiccated and petrified subject of the freshness, the softness, the flexibility, and even the complexion of the natural state. As described to me the bodies so treated come from Dr. Manini's hands as if asleep, or in a condition of temporarily suspended animation. Well-known Italians dead within the last decade—like Benedetto Cairoli and Sanfelice—have been thus "stereotyped," so to say, for posterity and become to the anatomist, the anthropologist, and the medical jurist an object-lesson in the prosecution of their respective interests. In the last of these—that concerned with the investigation of capital offences—the gain to the resources of justice would be immense when contrasted with the means it has to fall back upon in Paris for instance, where the laborious process of keeping the dead body continually under waves of fresh air exhausts itself in a few days' time. Dr. Manini has been sustained in his life-long work by the sympathetic encouragement of surgeons like Nélaton and Billroth, and of anatomists like Richard Owen and Sappey. It is well known that had Napoleon III. kept his throne for a few months longer he would have placed the Neapolitan surgeon at the head of an anatomical museum specially devoted to the products of his *métier* and his methods, while it is an open secret that Dr. Guido Baccelli had decided to signalise his tenure of the portfolio of Public Instruction by making Dr. Manini director of a sanitary institution, when the fall of the Crispi Administration frustrated his decision. The veteran Neapolitan surgeon is now well stricken in years and Baccelli's successors in office have little time to lose if their country is to be spared the chagrin of again seeing one of her scientific *bene-meriti* receive from abroad the recognition denied to him at home.

The Pope's Health.

"Il Papa continua a stare benissimo" (the Pope continues in very good health)—such is the bulletin just received from the Vatican—confirmed, moreover, by his having the same morning celebrated mass in his private chapel and his having thereafter resumed his official audiences. The bulletin is all the more gratifying as the "sturbi viscerali" or intestinal catarrh from which he has been suffering constituted the "sharpest curve" his health has yet encountered in its comparatively even tenour. Ever since His Holiness ascended the throne in the February of 1878 he has been subject, though in a mild form, to such attacks, and last spring, when influenza was epidemic in the Eternal City and numbered victims even in the Sacred College, the dread lest the prevailing malady should overtake him, supervening on this "point of least resistance," redoubled the anxiety and the care of his body-physician. Besides this chronic or intercurrent malaise there is another drawback to his successful treatment—the change of air indicated from time to time is denied him, "prisoner" as he is "in a palace and a garden," albeit with doors locked on the inside. His twenty years' confinement, indeed, has told on him all the more severely since by birth a mountaineer and by tastes enamoured of rural life he misses his native "monti Lepini" and even the hill-country around Perugia where for many years he relieved the cares of his archbishopric by field sports. On the other hand, His Holiness is endowed with "the pulse of longevity" and the "æquus animus" of his favourite poet, and this, coupled with the "plain living and high thinking" which have been his characteristic through life, greatly reinforces the watchful skill of his medical adviser the Commendatore Dr. Lapponi, whose aim it seems to be, with the help of his able colleagues, to achieve for his august patient the distinction attained by Pio Nono alone in the long line of Pontiffs—that of falsifying the prediction whispered in the ear of each newly elected Pope: "Non videbis annos Petri" (thou shalt not see the years of Peter).

August 15th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Queen Victoria Homes.

THE first annual meeting of subscribers to the fund for the establishment of the Queen Victoria Homes for Consumptives was held in Sydney on June 27th, Lady Hampden presiding. It was stated in the report that although numerous and varied methods had been adopted by the committee to raise funds the total amount subscribed (£13,543) was disappointing. It was found that the support solicited for other institutions of a cognate character more or less militated against the efforts of the committee and especially an impression which prevailed that the claims of the Queen Victoria homes conflicted with those of the Thirlmere Home for Consumptives. The committee had arranged to take over the Thirlmere Home, Mr. Goodlet having generously offered the home rent free. It was to be hoped that the public would continue subscriptions, not only to maintain this admirable institution, but to increase its usefulness and to add to the capital fund of the committee until it attained

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a sufficient magnitude to justify the committee in submitting a comprehensive proposal. Almost all the speakers expressed regret that the public had not responded more liberally and enthusiastically and urged that the necessity of providing for the phthisical patients must be brought home to the people's minds. The Hon. Dr. MacLaurin, in seconding the adoption of the report, gave some statistics as to the death-rate from phthisis. He said it was very satisfactory to know that during the last ten years a marked decrease had taken place in New South Wales in regard to the number of deaths from phthisis. Up to ten years ago the number had been increasing considerably. In 1885 there were 1095, when the population stood at 950,000, whereas last year, when the population stood at 1,320,000, the number of deaths was reduced to 964. For the years before 1885 phthisis had been increasing much more rapidly than the population, while now, although the population had increased 30 per cent., the number of deaths was very much less. The improvement which had taken place was even more marked with respect to the particular form of phthisis which mainly affected young children. In 1885 there were 271 deaths of young children from that disease in this country, whereas in 1897 the number of deaths was only 126. He thought the improvement which had taken place was attributable to the care taken to insure the purity of the milk-supply by the destruction of cows which were found to be suffering from tuberculosis.

The Sydney Hospital Saturday Fund Association and the Hospitals.

Reference was made last month to the complaint of the committee of the Hospital Saturday Fund Association that patients recommended by the officers of the association were not admitted to the hospitals without inquiry as to their financial position. The association authorities have now written to the hospital authorities demanding that the same privileges be extended to the subscribers to the fund as those extended to other corporate bodies. The board of directors of the Sydney Hospital decided to obtain legal opinion on the matter.

The Sydney Hospital and its Finances.

Some time ago a special committee was appointed to inquire into the financial working of the Sydney Hospital. The committee has now reported, the period over which its investigations extended being limited to the last three years. Most items of expenditure showed a considerable increase each year, but generally speaking this was accounted for by the increased number of patients treated and the increase in the prices of tradesmen's goods. The chief increase was in the out-patient department, where the number of patients had yearly increased and was now "inordinately large." The committee suggested: (*a*) that the number of out-patients treated each day should be limited except in urgent cases; (*b*) that after a patient has been under treatment one month he should be discharged and re-admitted if the medical officer deem it essential; and (*c*) as far as possible patients should be made to attend that hospital nearest to the place where they reside. The committee also suggested that the nurses' stipend should be reduced from £20 to £16 per annum in order to assimilate the training and pay of nurses at the Sydney Hospital with that at the Prince Alfred. The report was adopted with the exception of the proposal with regard to the nurses' pay. At a recent meeting of the board of directors a resolution by Dr. Freeman was carried "that no medical officer shall hold office after attaining the age of sixty years except as a consultant."

Austin Hospital, Melbourne.

The difficulties at the Austin Hospital, Melbourne, to which reference was made last month, have been satisfactorily settled. So much public feeling was expressed as to the retirement of Mr. Norcott that the committee had to give way and reinstate him. The honorary staff of the institution protested against the action of the committee, the patients presented an address, and the subscribers decided to hold a meeting and call the committee to account. The committee, however, forestalled the subscribers by reappointing Mr. Norcott before the meeting was held, at which its action in so doing was simply approved. It must be very gratifying to Mr. Norcott to find how highly his services have been appreciated and it is also satisfactory to find public sympathy accorded so freely to medical men in circumstances of the kind.

Medical Inspection of Vessels arriving at Port Phillip.

The Board of Public Health of Victoria recently decided to restrict the hours at which vessels would be cleared at Port Phillip Heads by the port health officers to from 6 A.M. to 6 P.M. in winter and to 7 P.M. in summer. The object of the change was to enable inspections to be made by daylight. A deputation from the representatives of the various shipping companies waited on the board to protest against the alteration and pointed out that great inconvenience would be caused both to passengers and shippers. It was observed that all the passenger ships were provided with electric light, which ought to be sufficient for medical inspection. The ship-owners also objected that the inspections are often unnecessary—in the case of vessels which have been already examined at other Australian ports and obtained "clean bills of health." The boats from China are overhauled by health officers six times in Australian waters before arriving at Port Phillip and in a period of sixteen days.

Tuberculin and Dairy Herds.

Mr. Cameron, veterinary inspector to the Board of Health, Victoria, has presented a report showing the result of his experiments with tuberculin as a test for tuberculosis in dairy cattle. If properly applied he believes it never fails. Characteristic experiments are made on the herds at the Leongatha labour colony. A number of cows reacted to the test and on being slaughtered were all found to have tuberculosis. Forty showed no reaction and fifteen months later were again injected and showed no reaction. Two were slaughtered and found to be free from tuberculosis. Mr. Cameron is satisfied that if the whole of the dairy herds in the colony were tested and the cattle affected condemned and slaughtered tuberculosis in cattle could be easily stamped out.

The Health of Tramway Employés.

The Commission recently appointed to inquire into certain grievances of the employés of the Melbourne Tramway Company has been taking medical evidence as to whether the gripmen and conductors suffer in health from their occupation or the hours of their service. The evidence was to the effect that they did not suffer more than other members of the community, and their health compared very favourably with that of other men working in the open-air—in fact, as a class they were healthier than men in other benefit societies and were not injured by the vibration of the cars, nor were they overworked.

Chronic Lead Poisoning in Queensland.

The Deputy Governor of Queensland has appointed the Hon. W. F. Taylor, M.D., D.P.H., M.L.C., W. W. Love, M.B.Edin., E. S. Jackson, M.B., C. J. Pound, F.R.M.S., and J. B. Henderson, Government Analyst, to be a board to inquire into and report upon the subject of chronic lead poisoning in Queensland.

Infectious Disease in Victoria.

The returns of cases of infectious disease for the fortnight ending June 25th show that typhoid fever and diphtheria were diminishing, but that scarlet fever is somewhat increasing in prevalence. The actual figures were: typhoid fever, 117 cases, 16 deaths; diphtheria, 72 cases, 11 deaths; and scarlet fever, 115 cases, no deaths.

Legal Actions by a Medical Man.

Dr. Gurdon, of Brighton, recently sued a patient for £17 6*s*. 6*d*. under somewhat unusual circumstances of interest to surgeons to friendly societies. Dr. Gurdon was medical officer to the local branch of the Ancient Order of Foresters and the defendant was transferred to his list from another lodge, as Dr. Gurdon supposed, of the same order. He found out, however, that defendant had been transferred from another order, the Protestant Alliance, and that the transfer was illegal. Dr. Gurdon returned the fees to the Lodge he had received on defendant's behalf and declined to attend him. He then charged defendant the ordinary fees for the attendance he had given him while on his Lodge list, amounting to £7 7*s*. The rest of the amount claimed was for previous attendance and for an accouchement for which he was engaged. The defendant declined to pay and Dr. Gurdon sued him. In his evidence Dr. Gurdon said defendant was well able to pay and not a suitable man to be in a Lodge. The bench struck out the fees charged while defendant was on the medical list, except for one visit given after Dr. Gurdon had given notice of his intentions, and also the accouchement fee, giving a verdict for £6 6*s*. and £1 6*s*. costs.

July 5th.

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Obituary.

WILLIAM PEPPER, M.D. PENNSYLVANIA,

FORMERLY PROVOST OF THE UNIVERSITY OF PENNSYLVANIA AND PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE IN THE UNIVERSITY.

IN Professor William Pepper, whose death is announced as having taken place on July 28th at Pleasanton, in California, the world of science has lost a distinguished exponent of medicine and the United States a most public-spirited citizen.

William Pepper was born in August, 1843, so that at the time of his death he was not quite fifty-five years of age. His father, Dr. William Pepper, was a prominent physician and Professor of the Theory and Practice of Medicine in the University of Pennsylvania. Young Pepper imitated his father's example and graduated in medicine at the University of Pennsylvania at the age of twenty-one. He devoted himself at once to the study of clinical medicine and practical pathology and in 1868 was made Lecturer on Morbid Anatomy in the Medical School of the University. Two years later he became Lecturer on Clinical Medicine; in 1876 he was elected Professor of Clinical Medicine, and finally, in 1881, he became Professor of the Theory and Practice of Medicine, thus following in the footsteps of his father. In the same year he was elected Provost of the University, a post which he held until 1894. As a medical teacher he was enthusiastic and eloquent, as a diagnostician he was both careful and acute, while he left his mark on American medical education by his persistent advocacy of a longer medical curriculum for the student. When he was elected Provost the compulsory course for the student was only two years in duration. He at once raised it to three years and on his retirement from office gave practical and munificent effect to his views by a donation of 50,000 dollars, with a promise of 1000 dollars as an annual subscription for five years, towards an endowment fund to pay for greater teaching facilities for science in the University. In the same year the course was extended to four years.

Professor Pepper is known to the medical profession chiefly by his contributions to, and able editing of, the System of Practical Medicine by American Authors. This System, which was published in 1885, did for medical knowledge in America what Ziemssen's Cyclopædia had done ten years previously in Germany. It systematised and correlated the varying scientific opinions of persons all chosen to write because of their position and claims to know, and thus presented to the student a comprehensive account of disease in a series of authoritative monographs. Professor Pepper's contribution to the first volume dealt with Relapsing Fever and is an excellent example of how such monographs should be written. Utilising to the full his experience gained at the Philadelphia Hospital he refused to dogmatise concerning the etiology, preferring to help his readers by presenting them with a faithful clinical description and summarising for them all the best-known literature of the subject.

As a benefactor to his beloved city of Philadelphia Professor Pepper's actions were almost innumerable. He gave to the University the William Pepper Laboratory of Clinical Medicine in memory of his father; he inaugurated a system of commercial museums, to be connected with other museums in different parts of the country, wherein people might see specimens of the produce of all parts of the world; he secured immense donations for the Philadelphia Public Art Gallery and he founded the Free Library. We have not exhausted the list of Professor Pepper's public works, but we have said enough to show that in him Philadelphia is deploring one of the most generous as well as one of the most distinguished of her sons, while the medical world has to mourn the loss of an enlightened man of science, a wise teacher, and a liberal leader.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. H. Endres, *privat-docent* of Histology in the University of Halle.—Dr. Evert Julius Bonsdorff, formerly Professor of Anatomy and Physiology in the University of Helsingfors, at the age of eighty-eight years.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT EDINBURGH.

OUR report of the sixty-sixth annual meeting of the British Medical Association is now completed in the following account of the proceedings in certain of the sections. In finishing our report we wish to record our sense of the great courtesy that was extended at Edinburgh to our representatives by the editor of the *British Medical Journal*, the secretary of the Association, and the local secretaries and other officials responsible for the arrangements of the Edinburgh meeting.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 29TH.

Professor WRIGHT (Netley) opened a discussion on

The Serum Diagnosis and Therapeutics in Infective Diseases

The problem, he said, to be discussed was the nature of serum reactions and the relation of those reactions to the therapeutics of infectious disease. There were certain fundamental facts established by different observers in this domain. Pfeiffer was the first to observe that the serum of an immunised animal conveyed to the blood or serum of an animal into which it was inoculated the power of: (1) spherulating; (2) dissolving the micro-organisms; and (3) the power of neutralising the toxins which are set free by the dissolution of bacteria. Then there were Durham's and Gruber's observations that the blood of an immunised animal possessed the specific power of agglutinating and sedimenting the bacteria which were causally associated with the disease against which the animal (which supplied the serum) had been immunised. This was the fundamental principle of serum therapeutics, preventive and remedial. Lastly, Widal and Gruber and Grünbaum have shown that this power of agglutinating bacteria existed not only in the blood of animals which had recovered from and acquired immunity against a disease, but also in the blood of animals which were still the subjects of the disease. These observations suggested several very interesting problems. What was the nature of these substances upon which these properties of blood serum depended and how did they originate? Also what was the *rôle* these substances played in the production of immunity and recovery? The speaker then proceeded to consider these problems in the light which Ehrlich and others had cast on the nature and origin of antitoxins in the body. It was necessary first of all to understand the meaning of the terms "toxin" and "antitoxin" and how they were related. A morphological theory such as that of Metchnikoff, that toxins were poisons which were taken up into and destroyed by white corpuscles did not seem to help us. What was the use of erecting a morphological theory to explain what was obviously a chemical process? It might reasonably be asked what were the chemical processes which were associated with poisoning on the one hand and resistance to poisoning on the other. Ehrlich's chemical theory was far more reasonable—viz., that a poison was a substance which was capable of entering into chemical composition with, and interfering with, the functioning of protoplasm. Just as an aniline dye injected into the blood or tissues stained the nuclei and protoplasmic substance of cells by entering into combination with them, and therefore altering the chemical composition of those cells, so a toxin acted by entering into and altering the composition of protoplasmic cells. Further, Ehrlich had classified poisons by their chemical affinities into neurotropic toxins which had an affinity for nerve tissues, hæmotropic toxins which had an affinity for the blood, and so on. Then as to antitoxins, before Ehrlich published his theory no one was able to form any adequate idea as to what was the real nature of an antitoxin. It was true that Calmette had previously shown by experiments with venin and antivenin—the latter of which was destroyed by heat though the former was not—that an antitoxin

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neutralised but did not destroy a toxin. Metchnikoff regarded an antitoxin as some property in the leucocytes which destroyed toxins (devoured them, so to speak), thus again starting a morphological theory to explain chemical facts. But Ehrlich's researches and observations had enabled us to define (and this was Ehrlich's theory reduced to its simplest terms) an antitoxin as a toxitropic substance which had a chemical affinity for a toxin and which joined itself chemically on to that toxin. Turning next to the origin of antitoxic substances it was not a substance specially manufactured for each occasion. Such an idea would endow the elaborative processes of the body with too great a power of "intellectual specialisation." It must be a normal constituent of the body of the animal which under special circumstances could be manufactured in greater quantity. Thus, as Ehrlich had put it, there were three steps in the process of elaborating an antitoxin when a poison or toxin was introduced into the body of an animal; first, there was loss or consumption of antitoxin, then replacement, then over-compensation. These were the three phases which took place in the manufacture of an antitoxin. In this way was the toxin rendered inert; firstly, by the chemical affinities of the antitoxin being satisfied and a neutral stable compound of antitoxin and toxin resulting, and then the animal was rendered immune by the over-formation of antitoxin. This had been proved by finding that if antitoxin be injected into an animal first and the toxin afterwards nothing resulted, no symptoms arose—they neutralised each other. These various steps had also been established beyond doubt by a series of experiments with ricin (a toxin found in castor oil seeds) and other poisons. The recollection of these facts was of the utmost practical importance. All these facts had had relation to toxins and antitoxins and their interaction one with the other. Turning to another set of experiments bearing on the relation of toxins to the different physiological systems, they had seen that tetanus toxin had a special affinity for the central nervous system. The first fact in time and importance in this connexion was that tetanus toxin had been shown to be partially neutralised by an emulsion of the central nervous system of a susceptible animal. If tetanus toxin were injected and at the same time an emulsion of this kind were also introduced the effects were considerably less severe. This showed that the central nervous system normally contained some substance which was antagonistic to a neurotropic toxin. On the other hand, snake venom and some other toxins were not rendered less toxic by the simultaneous administration of emulsions of brain and cord. This proved, extended, and confirmed the law that most toxins had their special affinities. Some toxins which had affinities for several of the physiological systems were known as polytropic substances. Another interesting fact in that domain was that one-fifteenth of the fatal dose of tetanus toxin, if applied directly to the nervous system, would be fatal. Professor Wright referred to the various attacks which had been made upon Ehrlich's theory and went on to consider whether that theory would account also for the production of anti-bacterial substances in the organism. The suggestion that the same theory which solves for us the problem of the production of antitoxins in the system was capable of solving for us also the problem of the production of anti-bacterial substances in the organism appeared at first sight to be eminently improbable. On closer examination, however, the matter wore a somewhat different aspect. For consideration showed that the neutralising effect which was obtained when antitoxins were incorporated into the body along with bacterial poisons was obtained in an equally marked manner in Pfeiffer's original experiment when anti-bacterial substances were incorporated along with bacterial poisons. They were almost certainly warranted in inferring from this fact that there was a close chemical analogy between antitoxins and anti-bacterial substances. In fact, they could infer from this experiment of Pfeiffer that antitoxins differed from the anti-bacterial substances only in this, that the antitoxins neutralised the biotoxins (i.e., the toxins which emanated from living bacteria), whereas the anti-bacterial substances neutralised the necrotoxins (i.e., the poisonous substances which emanated from the dead bodies of bacteria). It was obvious that the suggestion that Ehrlich's theory was capable of explaining the production of anti-bacterial substances in the body won support from the fact that there was a chemical analogy between these substances and antitoxins. Further analogies might readily be pointed out between the two classes of substances. But perhaps it would be better to come directly to the point and to ascertain whether the law which governed the production of antitoxins in the body was or was not also the same law as that which governs the production of anti-bacterial substances in the organism. They might begin by inquiring, as in the case of the antitoxins, whether anti-bacterial substances were already present in the normal organism. The answer to this question could not be doubtful for a minute. They had ample evidence that both bactericidal substances and agglutins were to be found in the normal blood and tissues. To take one example out of many, it was a matter of common knowledge that normal blood would agglutinate typhoid bacteria in all dilutions up to 1 in 4. They might next inquire whether the introduction of bacteria into the organism entailed upon the organism a loss of its normal bacteriotropic constituents. It would evidently be conformable to what occurred in the case of antitoxins if they were to find that such a loss of bacteriotropic substance actually occurred. It was certain, on *a priori* grounds, that such a loss of bacteriotropic substance did, as a matter of fact, supervene upon every bacterial inoculation. Further, it had been firmly established by experiment that when typhoid bacteria were grown in a culture medium which contained agglutins the agglutins disappeared from the culture medium *pari passu* with the growth of micro-organisms. Now, the conditions which obtained in such a culture medium were exactly reproduced when typhoid bacteria were cultivating themselves in the tissues of the invaded organism. Further, the conditions of the culture were reproduced in all their essential features when dead typhoid bacteria were inoculated hypodermically. They might thus infer from these experimental facts that both in case of typhoid infection and in case of anti-typhoid vaccination an appreciable quantity of bacteriotropic substance was withdrawn from the lymph and tissues. It followed from the foregoing: (1) that the conditions under which bacteriotropic substances were produced in the organisms were in all probability precisely similar to those under which antitoxins were produced; (2) they had seen in each case that a substance which was chemically identical with the immunising substance formed a normal constituent of the blood and tissues; and (3) they had also seen in each case that a substance which was chemically identical with the immunising substance was withdrawn from the tissues under the influence of an injection of bacterial substances. They need now only take a single step further and they would recognise that the production of the bacteriotropic substance in the organism was in all likelihood produced in the organism by just such a process of compensation and over-compensation for the loss, as takes place when toxitropic substances were produced in the body. Applying these facts to the therapeutics of infectious disease the issue of every infective disease depended upon two factors. It depended first upon the capacity of the bacteria for preserving their chemical integrity in the presence of the bacteriotropic substances which were normally present in the blood. It depended in the second place upon the capacity of the body-cells for preserving their chemical integrity in the presence of proto-plasmotropic bacterial toxins. The problem of therapeutics of infectious disease was the problem as to how we might intervene in these reactions in such a manner as to promote the disintegration of the bacterial protoplasm and prevent the disintegration of the cellular protoplasm. The disintegrating force which was brought to bear upon the bacterial protoplasm was represented by the affinities of the bacteriotropic substances for certain elements of that protoplasm. The primary object of our therapeutics must therefore be to give effect to those chemical affinities by increasing the quantity of available bacteriotropic substance. In like manner the disintegrating forces which were brought to bear upon the cellular protoplasm were represented by the chemical affinity of the protoplasmic tropic substances for the constituent elements of the cellular protoplasm. The secondary object of therapeutics must, therefore, be to diminish or nullify that disintegrating force by binding up the protoplasmic tropic substance which exerted that disintegrating force. With a view to doing this they must introduce antitoxic tropic substances into the blood. Here, however, an important point presented itself for consideration. This point had reference to the variety of antitoxin which was required. It had been customary, in consequence of the confusion of ideas which was traceable to the illogical state of the terminology, to assume that anti-bacterial substances could not possibly be of any avail against bacterial intoxications. Consideration would show that this was a capital error. It behoved them in every

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case wherever they were dealing with an intoxication process to begin by inquiring into the nature of the bacterial poisons which were being introduced into the system. And if it appeared on inquiry that the bacterial poisons which were being absorbed into the system were, as apparently they were in the case of cholera, poisons which had formed originally part and parcel of the bacterial protoplasm, it was obvious that the appropriate antitoxin to apply would be not an antibiotoxin—i.e., it would not be a substance which was capable of neutralising the poisons which emanated from a living bacteria. The appropriate antitoxin would be an antinecrotoxin—i.e., a substance which possessed the power of neutralising the poisonous substances which were contained in the dead bacterial bodies. The truth of these conclusions appeared to Professor Wright to be confirmed in a striking manner by the fact that the anti-bacterial substances which were produced in the blood under the influence of Haffkine's anti-cholera inoculations appeared to exercise a very favourable influence upon the choleraic intoxication process.

Dr. GRÜNBAUM (Liverpool) wished to say a few words on the practical aspect of the question of serum diagnosis. The typhoid test was at first thought to be infallible, but now several modifications had taken place in the general opinion on this test. There were certainly two important factors to consider. The amount of dilution requisite was a point on which opinions differed considerably. He thought that 1 in 10 was not sufficient; as much as 1 in 20 was often required. Then as to the time required for the reaction, which must be limited, he thought that it ought not to be more than two hours. On the whole the serum test in typhoid fever should not, he thought, be regarded as a mere routine procedure which any office-boy could do; it required as much care, skill, and experience as any other scientific experiment.

Dr. H. E. DURHAM (London) thought that the opener of the discussion had placed too much reliance upon Ehrlich's theory. This theory was useful as a working hypothesis, but it seemed to him too precise and too definite to be carried out in its entirety. Its chief novelty lay in the introduction of the word "bacteriotropic" for "anti-bacterial." One must also bear in mind the limitations of the word "toxin," for, strange as it might seem, some toxins are not toxic.

Dr. MITCHELL BRUCE (London) wished to confine himself to the clinical aspect of the subject and based his remarks upon two cases in which antistreptococcic serum had been employed. The first was a case of septic endocarditis occurring in a child among a household in which measles prevailed. Three days before the child was first seen he had been operated upon for some affection of the throat. He shivered and in the course of the next day developed diphtheria, for which diphtheritic antitoxin had been employed, and from this the child recovered. But subsequently the child developed malignant endocarditis. The temperature chart and other particulars were given. Antistreptococcic serum was injected and the patient made a complete recovery. The second case was also a child who was admitted with fever, delirium, and drowsiness. The patient had frequent rigors, pains in the head and down the spine, restlessness, and delirium, with epistaxis from time to time. The most striking feature about this case was the intermissions of apparently perfect health, lasting for two or three days, which were followed by an attack of all the symptoms just mentioned, lasting several days. Among the symptoms also was a systolic murmur over the cardiac area. The temperature, of which a chart was shown, ran a typically pyæmic course. On the nineteenth day of the illness some antistreptococcic serum was injected. This was followed by the ordinary intermission, but two days later the temperature again went up and all the symptoms returned. In view of the success of the previous case and thinking that the serum used might have been fallacious, some was procured from another source and 10 c.c. were injected. Immediate and permanent recovery succeeded this. Dr. Bruce thought that the inferences to be drawn from these two cases were: (1) that we might confidently look for success with antistreptococcic serum in a considerable number of cases of septicæmia; (2) that the favourable effect, if any, was produced with remarkable rapidity; (3) that antistreptococcic serum might, as in both of these cases, succeed where other remedies had failed; and (4) it was most important to bear in mind that success might possibly attend one kind of serum after another kind had failed.

Dr. CLAUDE KER (Edinburgh) thought that Dr. Bruce's contribution was one of great value. In reference to the serum diagnosis reaction he was in the habit of using a dilution of 1 in 30 and giving a four hours' time limit. He had employed it on from 60 to 80 occasions and had only had 8 dubious results.

Sir JAMES GRANT (Ottawa) reminded the audience that so long ago as 1860 he had introduced the use of serum in cutaneous diseases with success and had published his investigations and results in the *Medical Times and Gazette* of 1863.

Professor WRIGHT, in reply, said he could not agree that the term "bacteriotropic" had the same significance and limitations as "anti-bacterial." The far-reaching character of Ehrlich's researches was difficult to over-estimate, and especially the establishment of the chemical nature of the changes, the fact that we have normally bacteriotropic substances in the blood, and finally and most important of all, the steps of loss, compensation, and over-compensation in the manufacture of antitoxin. The facts (1) that bacteriotropic substances were normally present in the blood and (2) that they were also in the blood of animals who were still the subjects of bacterial infection were some of the most important and certain data which had been established.

Dr. BEZLY THORNE (London) proposed the following motion, which was carried by acclamation: "That the Medical Section invite the Council to take such means as may seem most appropriate to press upon the legislature the urgent necessity of providing each sanitary district with a bacteriological laboratory which shall be available for the gratuitous examination of expectoration and other products, for the purpose of the early diagnosis of disease, and for the gratuitous supply of materials for the serum treatment of infectious disease."

Dr. ALEXANDER HAIG (London) gave a demonstration of the granules precipitated in the blood by chloride of ammonium (process of Barker-Smith) and gave an account of the process of estimating them by the microscope and some of their variations in health and disease. His contention was that under all conditions the number of granules vary with the quantity of uric acid passing in the urine, and a diagram was shown to illustrate this point. He had found the following to be the common relations of the granules and red cells—viz., in the domain of physiology the proportion was 1 to 10 in the morning and 1 to 20 in the evening, but more in children than in adults. In the domain of pathology he mentioned as examples, Bright's disease and chronic gout, in which the relation varied between 1 to 30 and 1 to 40. Any of these quantities could be reproduced by the action of drugs. A specimen of blood from Bright's disease and gout was shown in contrast with normal blood.

Dr. W. F. SOMERVILLE (Glasgow) read a paper on

The Importance of increasing the Respiratory Capacity in the Anæmias of Young Adults.

He said that anæmia in young adults was frequently seen by the practitioner. Doubtless the common feature of all such cases was deficiency in the red blood colouring matter, which must be due to many different causes and produce a variety of symptoms. He alluded to the causes of the conditions among the poorer classes, among which were insufficient and unwise feeding, bad ventilation, and overcrowding. Those more fortunately circumstanced were subject to over-pressure at school, which prevented their taking enough open-air exercise, and they often attended social functions at late hours. He spoke of the symptoms which led to such subjects seeking advice, instancing breathlessness, palpitation, neuralgias, disorders of menstruation, and muscular fatigue with slight cause. He recommended iron in combination with arsenic. The increase of hæmoglobin was mainly of value in improving the respiratory activities of the tissues; there must be abundant opportunities for the union of the hæmoglobin with the oxygen. It was the failure to realise this which explained the lack of benefit in some cases after prolonged administration of iron. Only by the complete restoration of blood function in such cases could a total cure be attained. Medicaments should be combined with the education of the respiratory mechanism. He went on to detail the methods of recognising whether an individual were using his respiratory muscles aright and adequately, and spoke of the great improvement in chest measurement, breathing capacity, appetite, and general tone established by complete and intelligent respiration and by adopting the methods which he advocated.

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Dr. H. J. CAMPBELL (Bradford) read a paper on

Four Cases of Intracranial Disease.

The first case was that of a boy who had well-marked hemiplegia, but in whom the post-mortem examination only showed some distension of the lateral ventricle on the opposite side, together with some softening of the cerebral tissue; a few miliary tubercles were also present upon the basal vessels, the boy having died from acute general tuberculosis. The second case was regarded during life as one of a tumour of the pituitary body, but at the necropsy it was found that the symptoms arose from inflammatory deposit upon the dura mater in the sella turcica and on the optic groove and clinoid processes. The third case was one of hæmorrhage into the lateral, third, and fourth ventricles from rupture of vessels in the choroid plexus in a boy aged fifteen years, who had double congenital cystic kidneys. The last case was one of mitral stenosis with embolism of the posterior cerebral arteries in which the clot had blocked the openings of the arteries of the posterior perforated space without occluding the main trunks. From this there was partial recovery, but subsequently a second embolus occluded the basilar and caused death.

Dr. ALFRED P. HILLIER (South Africa) read a paper on

Chronic Dysentery.

The term "dysentery," he said, embraced a group of diseases affecting the large intestine, differing less in actual symptoms than in etiology and final pathological results. It occurred both sporadically and in epidemics; in the tropics and subtropics it ranked in malignancy and mortality with yellow fever, small-pox, and cholera as one of the four great epidemic diseases in the world. Dysentery was a very ubiquitous disease. Certain well-known predisposing causes so frequently produced it that one was compelled to believe that, if a micro-organism be indeed the cause, any condition setting up intestinal catarrh would provide a suitable soil for its growth and development, and that from the readiness of the onset of dysentery under this condition the micro-organism itself must be even more omnipresent than that of tuberculosis. Among the commonest predisposing causes were heat, exposure to wet and cold, impure water and food, starvation or irregular feeding. After dealing with the pathology, symptoms, and course of the disease Dr. Hillier referred to the line of treatment which his experience pointed to as most successful—the three chief remedies being opium, castor oil, and a milk diet used with discretion.

Papers were also read by Dr. T. R. FRASER (Edinburgh) on the Antitoxic Action of the Bile in relation to the Toxins of Diphtheria and Tetanus; by Dr. FAURE-MILLER (Paris) on the Use of Cold Baths in Typhoid Fever; and by Dr. A. STODART WALKER (Edinburgh) on Alcoholic Neurasthenia.

OPHTHALMOLOGY.

THURSDAY, JULY 28TH.

The discussion was opened on Mr. E. TREACHER COLLINS'S paper on

Cases in which Skiagraphy was effective for the Detection of Foreign Bodies,

an account of which was published in THE LANCET of July 30th.

Mr. NETTLESHIP (London) mentioned a case of a suspected foreign body in a child's eye which was on the point of being operated upon; skiagraphy gave rise to a negative result with regard to the presence of a foreign body. In this way the patient was saved from the inconvenience of an operation.

Dr. TATHAM THOMPSON (Cardiff) asked if the fluorescent screen was of any practical use in locating foreign bodies in the eye.

Mr. CARGILL (London) mentioned that he had had four cases which Mr. Mackenzie Davidson had skiagraphed and which had been operated upon with successful results.

Mr. MCHARDY (London) mentioned a case of injury to the eye which required the removal of the lens. A few days later irritation set in and Mr. Mackenzie Davidson located a foreign body behind the ciliary body; the electro-magnet was applied but failed to remove the piece of steel. The patient was advanced in years and the other eye being healthy the injured eye was removed; after removal the electro-magnet had to be applied several times before the foreign body was removed.

Dr. REEVE (Toronto) showed the apparatus which was used by Dr. Sweet in localising foreign bodies in the eye.

Mr. MACKENZIE DAVIDSON (London) replied that the use of the screen was only of service in the case of foreign bodies of considerable size, it being of no use in the case of small particles.

Dr. JAMES HINSHELWOOD (Glasgow) read a paper on

The Use of Holocaine.

A one per cent. solution when used gave rise to a burning sensation which in the course of from ten to twenty seconds passed into a state of anæsthesia which remained for one or two minutes. The drug when applied in this way did not affect the size of the pupil. It acted in half the time of cocaine and the effect was quite as marked and lasted longer. It also had no further effect on the eye. It did not affect the tension of the eyeball.

Dr. EDGAR BROWNE (Liverpool) stated that he had used the drug and had found it useful in cases of foreign bodies in the cornea.

The PRESIDENT (Dr. ARGYLL ROBERTSON) mentioned that he had been rather disappointed with its effects. He, however, explained that the solution might not have been well prepared.

Dr. HINSHELWOOD replied that the cases of failure were due to imperfectly prepared solutions; he stated that the solution should be freshly prepared every week, as it lost its effect after a time.

Dr. LESLIE BUCHANAN (Glasgow) read a paper on

Leuco-sarcoma of the Choroid.

He pointed out the rarity of this condition and described the structure of the tumour as being particularly vascular, consisting of a tubular arrangement of structure. The condition was even more malignant than glioma of the retina.

Dr. HILL GRIFFITH (Manchester) and Mr. NETTLESHIP made a few remarks and Dr. BUCHANAN replied.

Dr. C. H. USHER (Aberdeen) showed a case of Orbital Tumour with specimens.

Professor SNELLEN (Utrecht) gave an interesting historical review of

The Operations for the Treatment of Strabismus.

The first operation for strabismus was performed in 1839. He then described the various stages through which the operation had passed up to the present time. In the early operations the muscle was divided. These cases were followed by divergence and weakness of action. Then von Graefe cut the tendon and in this way controlled the amount of retraction by means of the attachment of the muscle to Ténon's capsule. Priestley Smith's operation by cutting out a portion of the tendon was next described. The condition of strabismus fixus (von Graefe) was alluded to; it was probably a congenital condition with adhesions between the eyeball and the orbit. These cases were difficult to operate upon.

Dr. WILLIAMS stated that the vast majority of cases of strabismus called for operation; in cases where there was very little refractive error correcting glasses had very little effect in removing the strabismus.

Dr. LITTLE (Manchester) mentioned that he frequently performed Snellen's horizontal incision with division of the tendon.

Mr. GEORGE BERRY (Edinburgh) described three cases of strabismus fixus in which he experienced great difficulty in finding the muscle. He also stated that in the advancement operation the stitches did not slip if they were introduced into the sclera; in that way they got a stronger pull upon the eye.

Professor SNELLEN replied by pointing out the great importance of correcting glasses in young children.

Mr. J. B. LAWFORD (London) read a paper on

The Operative Procedure for Cases of Incarcerated Iris.

He pointed out that the use of two knives in making the incision was a difficult operation, but prevented the loss of aqueous. The method he recommended was to pass a Graefe knife into the anterior chamber and straight across to the other side and draw the knife gently downwards and then remove; in this way two openings were made through which the iridectomies might be performed.

Dr. WILLIAMS and Mr. EDGAR BROWNE (Liverpool) made comments on the method.

Professor SNELLEN mentioned that he performed a small iridectomy to relieve the tension and that this was followed by a better cosmetic effect.

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Mr. TREACHER COLLINS, Dr. GRAINGER, Mr. GEORGE BERRY, and Mr. LITTLE took part in the discussion, and Mr. LAWFORD replied.

Mr. R. WILLIAMS (Liverpool) described a case of

Paralysis of Accommodation after Influenza.

The patient had an attack of iritis and had a tuberculous tendency.

The PRESIDENT pointed out that the question of coincidence had to be carefully taken into consideration.

Mr. JULER (London) stated that it was his experience that paralysis of the third nerve was pretty common.

Dr. GEORGE MACKAY (Edinburgh) mentioned that he had used eserine ($\frac{1}{100}$ gr.) in the form of lamellæ with excellent results.

Mr. EDGAR BROWNE and Mr. CARGILL described similar cases.

Mr. WILLIAMS replied, stating that the point which he wished to bring out was the importance of the period of slow recovery in these cases as compared with the few weeks of post-diphtheritic cases.

Dr. TATHAM THOMPSON (Cardiff) described a case of

Cyst of the Hyaline Canal producing a Double Lens.

The patient complained of defective vision in the left eye both for near and distant vision objects, with occasional diplopia and latterly headache. She had been conscious of the defective vision for fifteen or twenty years. The vision of the right eye was $\frac{20}{20}$, that of the left eye being able to detect fingers at 12 ft. with undilated pupil. The external appearances were normal and the pupils were equal and active. On examination with the ophthalmoscope a peculiar irregularity was seen to exist in the refractive condition of the central area, which was very similar in appearance to that met with in "keratoconus." The pupil was dilated with atropine and on further examination a small transparent cyst was found to exist, lying close behind the lens and being like a drop of oil suspended in water. When the pupil was fully dilated and the eye was slightly rotated a sort of tail could be made out projecting backwards for a short distance.

Dr. A. HILL GRIFFITH and Mr. MARCUS GUNN made remarks.

Dr. ANGUS MCGILLIVRAY (Dundee) read a paper on the Hyaloid Canal and its Relation to Cyclitic Exudation.

Dr. J. W. EYRE (London) read a paper on a

Clinical and Bacteriological Study of Diplo-bacillary Conjunctivitis.

He said that both sexes and all ages were susceptible to this disease, although it was most common in middle-aged women. It was definitely contagious and was transmitted through the medium of the discharge. The incubation period averaged five days. The subjective symptoms were slight and consisted of stickiness or gumming together of the lids in the morning, slight photophobia, lacrymation, smarting of the eyes, and the presence of a small quantity of whitish discharge. The most marked feature of the disease was its chronicity, when untreated lasting for many months. The objective signs were fairly characteristic. At first limited to one eye, the disease soon became symmetrical. Small masses of greyish mucus-like discharge were noted adhering to the roots of the lashes and collecting in the neighbourhood of the caruncle. Slight injection of the bulbar conjunctiva and marked injection of the palpebral conjunctiva were present, together with an erythematous fringe along the free edge of the lower lid and some congestion of the caruncle.

Mr. ARNOLD LAWSON (London) read a paper on

The Bacteriology of the Normal Conjunctival Sac and its Bearing on the Use of Antiseptics.

Of 200 cases examined 41 tubes were sterile and 159 were fertile. A platinum wire loop was used in all the cases, it being thoroughly passed over the conjunctiva and then introduced into suitable media for cultivation.

Dr. J. EYRE and Dr. MCGILLIVRAY made remarks.

Dr. A. HILL GRIFFITH (Manchester) described a case of Successful Removal of an Orbital Cyst.

Dr. JOHN HERN (Darlington) read a paper on

The Operations which are now usually substituted for Enucleation of the Eyeball.

1. Evisceration. He transfixed the globe with a Graefe knife entered about two lines external to the corneal margin passed through the anterior chamber, and made a counter puncture exactly opposite to the point of entrance. The knife was now brought out beyond the corneal margin. Another incision was made with the scissors in the opposite half of the globe corresponding exactly with the incision made with a Graefe knife; thus the whole cornea was removed. Whatever remained of the iris and ciliary body was now removed by the curette, the operator being careful to retain as much of the vitreous as possible. The gaping wound in the sclera was next carefully stitched up. This left a good freely moveable stump on which in about six weeks an artificial eye could be fitted. The cosmetic effect was extremely good. 2. Mules's operation. In suitable cases, if done without delay (on the day of accident if possible), with strict antiseptic precautions, and if a glass ball be selected which fitted loosely with the emptied sclera, results were obtained which left nothing to be desired.

Dr. MCGILLIVRAY pointed out that in Mules's operation it was much easier to remove all the contents intact.

Dr. A. HILL GRIFFITH mentioned that he never had sympathetic trouble after evisceration.

Dr. LITTLE stated that in some cases the operation gave rise to a large amount of irritation.

The PRESIDENT pointed out that the glass ball sometimes came out and gave trouble. He suggested that the surface of the glass ball might be made rough and in that way prevent the slipping and secure more accurate apposition.

Dr. HERN replied.

Dr. G. V. MILLER (Stockton-on-Tees) related three cases of Myopia in which the subjective and objective methods of testing refraction differed.

FRIDAY, JULY 29TH.

Mr. HENRY JULER (London) read a paper on

(1) *A Case of Gumma of the Ciliary Body with Recovery of Vision.*

He stated that intraocular syphilomata were rare lesions of the eye. When a gumma started within the eyeball it did so either in the iris, ciliary body, or the choroid. The case was that of a single man, aged twenty-five years, who was suffering from severe plastic iritis in both eyes. He had contracted a chancre on the penis, which was followed a month later by secondary manifestations of syphilis. He developed iritis in the right eye and a few days later the left iris became inflamed. There was much effusion of lymph and several orange-coloured deposits in both irides occurred. The right pupil was small and irregular with broad synechiæ; the left pupil was somewhat larger and also irregular. The pupillary area contained lymph. The tension of both eyes was normal. The outer part of the anterior chamber was shallow. The tension was, however, not raised. Vision could only detect fingers. There was intermittent pyrexia. A painless effusion into the knee-joint along with double orchitis and a gumma on the lower end of the right fibula occurred and somewhat relieved the eye condition. The subject of ciliary gummata had recently been brought to notice by Vernon Cargill. The lesion was a very destructive one and vision, if any be retained, was very bad indeed. The case was therefore unique in this respect and exemplified the possibility of almost complete restoration of sight. Mercurial treatment was given until salivation and stomatitis took place. Then potassium iodide was given and atropine throughout. Bull stated that choroidal gumma rarely or never occurred.

(2) *Case of Interstitial Keratitis with Acquired Syphilis.*

This case was that of a married woman who developed a sore on the genitals six weeks after marriage. The eyes were painful and the corneæ were cloudy. She could count fingers with difficulty. The pain increased and photophobia, anæmia, and despondency were also present. Iodide of ammonia was given. Then mercurial treatment was given in the form of inunctions. Blood began to appear in the corneal tissue. The punctate opacities commenced to disappear. The vision improved until it became $\frac{6}{9}$. Bull classifies four groups: (1) diffuse parenchymatous or interstitial keratitis; (2) true keratitis punctata of Mauthner; (3) keratitis punctata with general cloudiness of the cornea; and (4) gummatous keratitis.

Dr. HINSHELWOOD mentioned a similar case which had been treated as one of lupus of the nose. The patient was put upon mercurial treatment and she improved rapidly.

Mr. LAWFORD, Mr. JULER, and the PRESIDENT took part in the discussion.

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Mr. FALLOWS (London) read a paper on (1) a case of Polypoid Growth from a Meibomian Gland, and (2) the Use of Fluorescin in the Form of Tabloids in the Diagnosis of Corneal Abrasions.

Mr. H. E. JONES (Liverpool) read a paper on Irrigation for the Nasal Duct.

Mr. JULER and Dr. GEORGE MACKAY remarked on the instrument.

Mr. JONES replied that he used boric solution. He did not use corrosive sublimate owing to its effect upon the canaliculus.

Mr. CHARLES WRAY (London) read a paper on Extraction of Transparent Lens in High Myopia. Up to August last over 2000 patients with myopia over 10 D. had been submitted to operation. The immediate results were good but the ultimate results were bad.

Mr. JOHN GRIFFITHS related particulars of a case of Acute Exophthalmic Goitre.

Dr. GEORGE MACKAY described a case upon which he had operated.

Dr. A. HILL GRIFFITH mentioned a similar case in which he had used thymus extract.

Mr. MARCUS GUNN stated that electricity had been found useful.

Dr. A. BRONNER read a paper on Crystals of Cocaine in preference to Solution.

LARYNGOLOGY AND OTOLOGY.

FRIDAY, JULY 29TH.

Dr. JOBSON HORNE (London) read a paper upon

The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.

He said that it would not be possible for him to do more than touch upon the threshold of the disease and endeavour to demonstrate what appeared to him to be the portal of infection, the beginning and progress of tuberculous destruction, the origin and formation of the giant cell, and briefly indicate the clinical counterparts of the early pathological changes which he had learnt to regard as the earliest signs and symptoms, not only of laryngeal tuberculosis, but also of pulmonary tuberculosis. A lantern demonstration was given of photographs of microscopic sections on which the conclusions were based and some of the more important sections were shown under microscopes. The pathogenesis of the disease had been studied in larynges which post mortem presented to the naked eye none of the usual signs of laryngeal tuberculosis, but which had been removed from bodies of persons who had died undoubtedly from tuberculosis. In the examination of these larynges films were first prepared from the contents of the ventricles and stained for tubercle bacilli and the larynx was afterwards examined microscopically throughout. Dr. Horne dwelt upon the importance of the ventricle as a harbour for tubercle bacilli. The earliest changes noted in the lymphatics were a proliferation of the parenchyma of the acini and efferent ducts and the formation of masses of small round cells distending and choking the ducts and obliterating the glands, the adjacent and superficial structures remaining intact. These changes had been noted in the lymphatics situated in the walls of the ventricles when a careful microscopic examination of the entire larynx had failed to reveal changes in the lymphatics in other parts. The nature of this cell proliferation was next considered. Was it to be regarded as nothing more than an outcome of a traumatism or of some simple catarrhal process perhaps peculiar to tuberculous subjects? or was it to be attributed to one specific cause—namely, the presence of the tubercle bacillus? Dr. Horne said that although he was not prepared altogether to accept or reject the theory that these lymphoid masses were due to a simple catarrhal process, he was now able to demonstrate the tubercle bacilli in the midst of some of them and was of the opinion that once having gained an entry into the lymphatic ducts they acted as an irritant and caused a cell proliferation. The *fons et origo* of the giant cell in tuberculosis next came under consideration and by a series of lantern photographs of microscopic specimens its development from the wall of a lymph space was demonstrated. The series showed first the tubercle bacilli lying amongst the endothelial cells forming the wall of the lymph space; secondly, the division and fusion of the adjacent and divided cells; and thirdly, the separation off of this plasmodial mass as a giant cell. Reference was made to the researches on lepra laryngis by Dr. Paul Bergengrün of Riga, in which he had shown that the so-called "globi" were bacillary thrombi lying in dilated lymphatics and that the lepra giant cell developed from the lymphatic endothelium. If, then, as would appear to be the case from the foregoing, the tuberculous process commenced in the lymphatics it would be natural to suppose that those parts which were rich in lymphatics would be the more common sites for infiltration and ulceration, while such parts as were without glands would escape ulceration except by continuity. This was clinically verified. The inter-arytenoid region, the posterior third of the cord, the ventricular band, and the epiglottis, especially the petiolus, were the parts more richly endowed with glands and these were the parts more commonly ulcerated in laryngeal tuberculosis. The cord, the functionally more important part of the cord,—namely, that part lying between the two small cartilaginous bodies—being free from glands escaped ulceration excepting superficial erosion and by continuity. A proliferation of the subepithelial blood-vessels was described as taking place side by side with this cell proliferation. With regard to the muscles, changes were described as occurring at an early stage in the fibres and as being clinically brought into evidence by an early functional failure which was mainly myopathic. The earlier clinical evidence of laryngeal tuberculosis, the clinical counterparts of these early pathological changes, were next described. Whilst clinically investigating these it was necessary, inasmuch as only slight departures from the normal were being looked for, to retain a control mental image of a normal larynx. This was done by constantly examining a large number—some hundreds in all were examined—of larynges in healthy subjects or at least presumably free from tuberculosis. And it was whilst in search of normal larynges that some important aids to the present research were stumbled upon. The larynx had been examined in 359 consecutive cases of pulmonary tuberculosis or cases in which there were reasons for suspecting pulmonary disease. The points to which attention was mainly directed were the following: (1) disturbances of sensation, hypæsthesia, hyperæsthesia, paræsthesia; (2) colour changes, anæmia, hyperæmia; (3) functional disturbances; (4) impaired movements of vocal cords apart from paralysis; and (5) changes in the contour of the larynx due to slight œdema. Inasmuch as disturbances of sensation were subjective too much significance could readily be attached to them if taken alone as a clue to pulmonary tuberculosis, but in regarding them only as evidence of "hysteria" one was apt to miss important clues to pulmonary tuberculosis. Hypæsthesia was not infrequently associated with anæmia of the soft palate, and it might be stated that unless the subject was wilfully hostile to laryngoscopy the more pallid the soft palate the greater the tolerance to laryngoscopy. And when in the course of the pulmonary condition the anæmia passed off the tolerance often went with it. Anæmia of the laryngeal mucosa was noted as present in varying degrees in 157 out of 359 cases. At times it was universal; when patchy it was confined to points where the mucosa was more easily exposed to tension, occasioned by a slight œdema in association with the proliferation of subepithelial vessels. It was as frequently met with in men as in women. Hyperæmia was noted in 117 out of 359 cases and rather more frequently in males. This hyperæmia must be regarded as a feature distinct from and not amounting to acute laryngitis. Acute laryngitis did not occur so frequently as one might previously have anticipated. The hyperæmia was often transient, within a few days giving way to pallor; but at times it was most persistent. These phenomena were also attributed to the proliferation of subepithelial vessels. Disturbances in the vocal function were most frequently met with, often transient, not amounting to more than a weakness of voice or loss of tone. The production of voice called for a greater effort, there was a forgetfulness of office, a sluggishness of one or both cords to act, so that there was phonatory waste before voice was produced, and in connexion with this required effort might be mentioned that in early tuberculosis when the speaking voice was weak the singing voice was quite clear. Then the singing voice might suddenly go; this caused the patient to seek advice, and the possibility of commencing tuberculosis should not be forgotten. Transient dysphonia was more commonly met with amongst women, and especially young married women, during pregnancy. Not infrequently in cases of so-called "hysterical aphonia" thoracic signs of pulmonary tuberculosis had been subsequently made out, and it was as well to bear in mind the possibility of diagnosing "hysterical aphonia"

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in the presence of pulmonary tuberculosis. Impaired movement of the vocal cords apart from paralysis was described and considered to be myopathic in origin and due to the changes noted in the muscle fibres. With regard to transient œdema of the laryngeal mucosa, the contour in a large number of larynges in early pulmonary tuberculosis when compared with that existing in a normal larynx was found to be partially lost, more particularly in the inter-arytenoid and arytenoid regions along the ventricular bands, and at the base of the epiglottis. A fine crenating or fringing occurs upon the folds of mucous membrane in the inter-arytenoid space, not sufficient to be called an excrescence, but met with sufficiently often in pulmonary tuberculosis as to be deserving of attention. An early but transient loss of symmetry in the outline of the arytenoid eminences occurred. The ventricles become less patent and this loss of patency was commonly associated with some œdema of the inner wall of the ventricular band, which was ascertained clinically in endeavouring to pass a curved platinum loop into the ventricle in search of tubercle bacilli. A slight œdema of this part of the ventricular band, together with an enfeebled action of the compressor sacculi laryngis, must effectually retain sputum laden with tubercle bacilli within the ventricle when once it had been lodged there in the act of coughing. Moreover, it was pointed out that the choking by a cell proliferation of the ducts of the muciparous glands opening into the ventricle, the closure of the ventricle by the œdema secondary to the proliferation of vessels, and the failure of the compressor sacculi laryngis through changes in the muscle fibres to discharge its contents, all combine to deprive the cords of the mucus necessary for their lubrication. The cords lose that semi-translucent mother-o'-pearl sheen and present an opaque pallor more approaching a dead ivory-white. With insufficient lubrication superficial erosions occurred; this did not amount to ulceration as met with elsewhere in the larynx inasmuch as the essential element was absent—namely, the lymphatics.

DERMATOLOGY.

THURSDAY, JULY 28TH.

Professor BOECK (Christiania) opened a discussion on the

Nature and Treatment of Lupus Erythematosus.

He first referred to the various forms in which the disease might be met with and then emphatically stated his belief that lupus erythematosus was a tuberculous disease. Out of a large number of cases which he had collected 28 had presented some internal tuberculous manifestations, 8 had developed tuberculous glands in association with the disease, and 23 had presented enlarged glands in some part of the body. Only one-third of the total number of cases had not presented any tuberculous manifestation. After describing the various diseases for which lupus erythematosus might be mistaken, he summed up the histological evidences which he regarded as supporting the view that the disease was of tuberculous origin, viz.—(1) the presence of giant cells in the lesion; (2) the presence of small migratory cell infiltration; and (3) the destruction of the intercellular tissue. He also thought that the presence of peripheral nerve disturbance favoured this view.

Dr. UNNA (Hamburg) took an entirely opposite view. He thought that the disease was wholly unconnected with tubercle, though clinically the condition had some superficial resemblance to lupus vulgaris, which was universally admitted to be a true tuberculous process. He emphasised the value of thorough histological investigation of every case and adduced the histological features as against the tuberculous view. Not only had there never been found any evidences of tubercle bacilli in the lesion, but the characters of the process did not accord with those of tuberculous lesions of the skin. The overgrowth downwards of the horny processes of the epidermis should not, he said, be confused with comedones. There was a peculiar moisture which was quite characteristic of lupus erythematosus, accompanied by a cellular overgrowth which was not found in dry scaly conditions, and it was this which led him to prefer desiccating remedies. As regards internal treatment he favoured alkalies, carbonate of ammonia, ichthyol, and salicylates, all of which were useful but unable to cure without external remedies. On the other hand, external remedies could often cure without internal remedies. He exhibited a valuable table classifying external remedies in the treatment of lupus erythematosus. Group 1 consisted of desiccating remedies, such as powder of oxide of zinc, powder of calamine, powder of bismuth, &c., or sulphur zinc paste or washes consisting of lead lotion, lime water, &c. These soothing remedies were very valuable but were very tardy in their action. Group 2 consisted of compressing remedies for the removal of the œdema of the skin—collodion with ichthyol or salicylic acid, zinc, gelatin, compressing bandages, masks, &c. Group 3 consisted of anti-hyperæmic remedies such as plaster mulls or pastes of chrysarobin, ichthyolsulfon, and mercury. Among these he had tried pyraloxin, which he believed to be a very dangerous remedy. The micro-cautery (with tiny points) might be classed in this group, and he recommended a platino-iridium point in preference to a point of platinum. Group 4 consisted of necrotising remedies which were of two degrees: (*a*) peeling remedies such as salicylic soap, plaster mull, zinc, resorcin paste, &c., and (*b*) ulcerative remedies such as pyrogalol in strong doses, sublimate, and the Pacquelin cautery. Group 5 were inflammatory remedies. Of all these the anti-hyperæmic remedies were, he believed, best for cure, the compressing remedies coming next in order, and the desiccating or soothing group being also valuable.

Dr. MORGAN DOCKRELL (London) expressed the opinion that there was no evidence of lupus erythematosus being tuberculous, and urged that the name was very misleading. The term "lupus," he thought, should be given up and a term like "atrophic erythema" or "ul-erythema" used in its place. It was true that lupus erythematosus occurred sometimes on a tuberculous soil and led to a compound condition, but he was persuaded of its non-tuberculous origin. In reference to the treatment of the condition he quite supported Dr. Unna's remarks on the value of the soothing treatment, and found that he could always stamp out the disease without the use of irritants.

Dr. EDDOWES (London) narrated a case of lupus erythematosus which he thought might have some tuberculous origin on account of the circumstances under which it arose. He had taken pieces of skin from the patient and inoculated guinea-pigs in the laboratory at St. Bartholomew's Hospital, but with negative results. As regards the treatment he recommended lead and calamine lotion as a daily application, and generally applied a solution of ethylate of sodium to obstinate cases. Scarification was sometimes useful and so was acid nitrate of mercury, though this was severe. These remedies were the best with which he was acquainted. Quinine, as recommended by Dr. Payne, was often very beneficial but apparently did no permanent good.

Dr. MAAR (Copenhagen) mentioned the results of the treatment suggested by Professor Finsen of Copenhagen, who had employed in the treatment of lupus vulgaris and lupus erythematosus the chemical rays of electric light or sunlight by the exclusion of heat rays. In the few cases in which that treatment had been tried a successful result had been obtained by persevering with it for a long time.

Dr. LESLIE ROBERTS (Liverpool), Dr. STOPFORD TAYLOR (Liverpool), and others took part in the discussion.

Mr. MALCOLM MORRIS (London) then opened a discussion on

What do we Understand by Eczema?

The nature of eczema, he said, was a subject which had engaged the attention of dermatologists ever since the time of Willan; but although a great deal was known about eczema they were not agreed as to what it really was. Was it a special process following certain laws in its evolution and manifesting itself by definite characters, or was it a clinical expression denoting results of several forms of morbid action? His own conception of eczema was expressed in the following definition, which he had given five years ago: "A catarrhal inflammation of the skin originating without visible external irritation and characterised in some stages of its evolution by serous exudation." The terms of this definition excluded all forms of artificial dermatitis—i.e., inflammation of the skin produced by chemical or mechanical irritants. Lesions due to such causes might be exactly like those of genuine eczema, but there was the fundamental difference that they appeared in response to a visible cause and began to disappear when the cause ceased to operate. On the other hand, true eczema arose without obvious cause; the skin might be healthy or there might be some pre-existing abnormal condition. The older dermatologists, following Bateman, regarded eczema as a vesicular eruption caused by an external irritation, "by the rays of the sun or the irritation of various substances applied to the skin, or by mercury taken internally, though it was found

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associated with gastro-intestinal inflammation without any mercurial preparation having been taken." Bazin, whose influence long dominated the French school, saw in eczema an expression of various constitutional conditions such as scrofula, arthritism, or herpetism. In that way various forms of eczema were easily accounted for by their dependence on some real or hypothetical dyscrasia. This constitutional theory gave place in turn to Hebra's doctrine that eczema was nothing more than a superficial inflammation of the skin due to some external cause—i.e., the effect of a local irritation. At the present time, under the influence of Unna, many dermatologists are coming to look upon eczema as a parasitic disease; and another view which had many supporters in the present day was that it had its origin in some disordered action of the nervous system. There were facts in favour of each of these agencies, and Mr. Morris himself was inclined to the view that in many, if not all, cases they were combined — a view which seemed to explain the facts better than any other which had hitherto been suggested. In considering the parasitic view he referred to the researches of Unna, who had found parasites which he regarded as specific both in vesicular and in seborrhœic eczema, namely, cocci, which were often found in clusters resembling mulberries, and therefore he proposed the name morococci for these micro-organisms. They could be found in the cellular protoplasm of the elements of the vesicle. In seborrhœic eczema Unna had found morococci, "flaschen" bacilli and other bacilli of indeterminate character in the crusts and scales. Unna had cultivated the morococcus and by inoculation of the cultures had succeeded in producing acute eczema. Every practitioner was familiar with the auto-inoculability or transmissibility of the disease from one part of the patient's skin to another, and there was also clinical evidence of its contagiousness. Jameson, for instance, had pointed out that in nurses who carry children affected with eczema of the nates the disease was often inoculated in the arms, and instances of the transmission of seborrhœic eczema by contagion have also been recorded. In reference to seborrhœic eczema Leredde, though fully supporting the parasitic theory, held that Unna's description of it was too comprehensive, including as it did seborrhœa, numerous lesions of the pityriasis type, and other lesions called by Unna "yellow spots," which neither on bacteriological nor histological grounds should be classed as eczema. Stripped of these extraneous elements seborrhœic eczema was, in the opinion of Leredde, still a parasitic disease, but not a pure eczema. Leredde believed this malady to be a mixed infection due to the association of a variety of microbes, such as those of fatty seborrhœa, of pityriasis of the scalp, and of certain micro-organisms which were agents in the production of acne, together with a morococcus which was the parasite of eczema. Nevertheless, in view of the facts mentioned Mr. Morris held it proved that parasites were capable of producing eczema, even if it were not actually a parasitic disease. The fact that the most effective remedies against it were of the parasiticide class was of itself a strong argument in favour of that view, but whether the morococcus or some other parasite or combination of parasites was the sole cause of the mischief was another question. In any case the parasite must have a suitable soil to grow in; it could not strike root on a perfectly normal skin. In fact, therefore, predisposing conditions played a very important part in its production, among which might be mentioned certain hard, dry, ichthyosis-like conditions of the integument, the textural changes of old age, previous affections of the skin of long standing (notably the prurigo of Hebra), seborrhœa, and varicose veins, &c., and other causes of inflammatory conditions of the skin, such as irritation caused by certain secretions. Finally, there was undoubtedly in many cases a nervous factor in the causation, a nervous condition which seemed to lessen the resistance of the integument, instances of which were mentioned. This view was also supported by the value in treatment of nerve sedatives such as opium. The statement was generally made by writers on dermatology that eczema was hereditary. This was only true in the sense that phthisis was hereditary, and if the disease existed in one member of a family the others would be favourably placed for receiving infection. As regarded the relation of the general health to eczema the eruption was still regarded by many people as a kind of safety-valve, and patients were often warned that they must bear their skin trouble with such fortitude as they could lest a worse disease befall them in the shape of some other formidable internal disorder. Mr. Morris believed this fear to be absolutely without foundation, though he was prepared to admit that gout, diabetes, Bright's disease, and chronic dyspepsia might be aggravating circumstances, but they were nothing more. They make a case more troublesome to treat but do not cause the disease, or even modify its manifestations in any way which he could trace. In reply to the question what they were to understand by eczema, broadly his reply was as follows: it was a disease the chief clinical character of which was the infinite variety of lesion by which it displayed itself. It originated in the action of parasites on a skin the resistance of which had been enfeebled by pre-existing disease or structural abnormality or by disordered innervation, sometimes made more intractable by gout and other constitutional states, but having no direct relation to the general health.

Dr. COLCOTT FOX (London) said that since the promulgation of Unna's ideas on eczema he had determined to study again the condition known as eczema, unbiased as far as possible by the leanings of his early training. In offering a few observations on the disease in children he said he did so because in them the problem was in a measure free from some of the complications met with in later life. In infants and young children he saw two phases of eczema. The first was the state commonly known as eczema, which began most frequently in infancy on the scalp and descended thence over the face to cover in some instances the greater part of the surface. This eczema was in dry patches at first. Any vesiculation and weeping might, possibly be due to the intensity of the process, but most frequently it appeared to be induced by rubbing and scratching. The second phase consisted of dry, reddish areas, with scanty adherent scales separating along the lines of flexion, but these patches might also when irritated take on a vesicular form indistinguishable from the first phase. This was also a descending inflammation, beginning on the face or scalp as a rule, which he used to call seborrhœa, but that was no doubt a bad term. This was the common affection described by Savill as epidemic amongst children. These phases ran into one another so much that he had constantly the greatest difficulty in separating them. In the next place he could find no cause whatever in the majority of children, for the patients were apparently in excellent health. He did not deny the influence of constitutional disturbance, such as rickets or gastro-intestinal trouble, in increasing the irritation and secondarily spreading and intensifying the inflammation, but the phases of eczema seemed to him to be essentially of local origin. It was possible that the future might disclose varieties caused by various parasites. In studying the disease in adults he was more and more astonished at the number of cases which conformed to the above phases. He did not deny the existence of eczema from constitutional causes, but he seldom met with cases which seemed likely to have such an origin. There was no confirmation of such a theory derivable from the study of eruptions produced by the ingestion of drugs or the circulation in the blood of various serums, or uræmia. At the same time a constitutional state predisposed to the disease, for in a laundry only one woman might have eczema set up by the soda, and this woman might herself be free for years. The soda only set up eczema under certain conditions. He therefore hardly knew on what grounds these occupation eczemas could be separated from the others. Lastly, he thought it extremely likely that the eczematous type of eruption could be produced under the influence of the nervous system. Chemically and anatomically we knew what an eczematous influence was, but no further conclusions seemed possible until further progress was made with the bacteriology of these affections.

In the discussion which followed Dr. WALLACE BEATTY (Dublin), Professor MCCALL ANDERSON (Glasgow), Dr. UNNA (Hamburg), Professor BOECK (Christiania), and others took part, and a general agreement with the views of the opener of the discussion was expressed.

FRIDAY, JULY 29TH.

Dr. P. G. UNNA (Hamburg) gave an interesting demonstration of the various Micro-organisms which he had detected in Impetigo Pustules and of the various Methods he had employed for Staining and Culture of the Organisms.

Dr. COLCOTT FOX (London) and Dr. BLAXALL (London) exhibited a collection of Endothrix Ringworm Fungi. The fundamental classification of the fungi which produce ringworm into the small-spored fungi (microsporon Audouini)

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and the large-spored fungi or trichophytons is now generally admitted. The former are far more frequently met with in England than the latter and give rise to the most intractable form of ringworm of the scalp, while the latter, though of less frequent occurrence, possess many varieties. Dr. Fox and Dr. Blaxall grouped all trichophytons or large-spored fungi into (*a*) endothrix and (*b*) ectothrix, and the demonstration was given in order to explain the special characters of the former. They also brought forward a paper embodying their Further Researches on Ringworm and its Fungi, with especial reference to the invasion and method of attack of the fungi on the hair. Drawings of stained specimens were shown which demonstrated that the method of attack was essentially similar in all three forms of fungi—viz., the microsporon Audouini, the endothrix, and the ectothrix. This tended to confirm the conclusions formulated by these authors from a study of the fructifications—namely, that all these fungi belong to the same botanical family and that the numerous groups into which they are divided by some foreign authors only constitute them as sub-varieties of one great natural class.

Dr. MORGAN DOCKRELL (London) read a paper on

The Treatment of Skin Sarcoma by Coley's Fluid.

The paper was based on a series of cases, and in general terms the results obtained went to support those of other English observers that the effects of this method of treatment were not so favourable as had been claimed for it by American observers. Up to the present time it was contended removal by the knife or by cautery was the only reliable method, and valuable time might he lost by the use of other means.

Dr. ALFRED EDDOWES (London) read a paper on

The Principles involved in the Treatment of Infected Follicles.

He stated that the hair follicles of the skin might be regarded as elastic tubes guarded by funnel-shaped valves composed of prolongations of the horny layer of the cuticle into their mouths. He had obtained very satisfactory results from the application of a strong solution of phenol when the follicles were inflamed—i.e., in conditions of the follicles characterised by redness at their orifices and a slight tendency to bulge in the form of a minute vesicle, though it was useless for superficial or slack vesicles or for deep infection such as occurred in indurated acne. It was obvious that the larger the amount of fluid contained in the follicle the greater would be the interval between the living tissue and the hair forming the plug and the better would be the opportunity for diffusion to take place. Following this principle in practice Dr. Eddowes attempted in the first place to excite rapid effusion by the application of various liniments and ointments, and before the vesicles had a chance of giving way and thereby releasing the back pressure into the follicle, he applied phenol or other powerful antiseptic.

Dr. DAVID WALSH (London) read a paper on

The Excretory Irritation of the Skin and other Organs.

By "excretory irritation," he said, was meant a directly adverse action upon the epithelium of excretory organs by blood-borne irritants in the process of their excretion. In 1897 he enunciated a series of conclusions,[1] of which the principal were: 1. That some forms of dermatitis were due to the irritation set up by the excretion from the blood of certain specific substances (called by the writer "internal irritants") in the process of their elimination through the skin. 2. That the skin suffered as one of a group of excreting organs and that all these excretory outlets might be similarly affected by internal or blood-borne irritants. 3. That the internal irritants sometimes inflamed the serous and synovial membranes. 4. That proof was afforded, by means of chemical and biological tests, of the frequent passage of some of the internal irritants from the blood into the excretions and into serous and synovial effusions. 5. That any drug which inflamed the skin should be administered with great caution owing to the possibility of damage to other organs. 6. That it might be possible at times to guide the action of a remedy to the particular organ which it was wished to act upon. 7. That conversely any particular organ might be relieved of the stress of elimination. 8. That the law of excretory irritation had a wide application in general pathology. The object of the present communication was to show that recent research had afforded much additional evidence in favour of Dr. Walsh's theory. Arloing[2] had shown the toxicity of the normal sweat. Salter[3] had proved the presence of tuberculin in the sweats of phthisical patients. Hallopeau[4] regarded toxins as the immediate cause of the great majority of cutaneous eruptions—that is, apart from obvious traumatic or hereditary origins. Neumann of Vienna[5] attributed many rashes to the direct action of toxins on the skin and claimed that drug eruptions are due solely to their chemical action upon the skin. Kaposi[6] said that many toxic erythemata were due to the cutaneous excretion of toxins. Bouchard attributed certain rashes associated with dilated stomach to direct toxic elimination. Queirolo of Milan and von Eiselberg of Berlin supported the theory of toxic irritation. The elimination of the actual microbes by the skin had been asserted by Leloir, Singer, Gaertner, Brunner, Babès, and others. Dr. Walsh contended that the foregoing views afforded strong testimony in support of his theory advanced in 1890[7]—namely, that some forms of dermatitis might be due to the excretory irritation—(*a*) of micro-organisms; (*b*) of bacterial products; (*c*) of drugs; and (*d*) of the chemical virus of various specific diseases—e.g., gout.

Mr. THELWALL THOMAS (Liverpool) read a paper entitled Notes of Three Cases of Syphilis communicated by Tattooing.

[1] Walsh: Excretory Irritation, p. 48.

[2] THE LANCET, Sept. 4th, 1897.
[3] THE LANCET, Jan. 15th, 1898.
[4] Annales de Dermotologie, 1897.
[5] British Journal of Dermatology, January, 1897.
[6] Diseases of the Skin, p. 225.
[7] Medical Press and Circular, Oct. 22nd, 1890.

THE ANNUAL MUSEUM.

(Concluded from page 457.)

V.—MINERAL WATERS, BEVERAGES, ETC.

This interesting section of the museum now comprises table waters, artificial and natural mineral waters, and natural waters of the purgative saline type. One of the most prominent exhibits, and one which was very tastefully and attractively arranged, was that of the Kronthal Company (66, St. James-street, S.W.) near the exit door. There were three types of water shown, all drawn from the Kronthal valley in the Taunus. The table water distinguished by a blue label is a pure, sparkling liquid which contains a trifling proportion of alkaline carbonates and salts, both of which, however, are natural constituents of the water of the spring. We have already reported upon this water in our analytical columns. It is very palatable and brisk and has distinct acid neutralising properties. It is a valuable and natural product possessing pleasing characters which are missing in artificially prepared carbonated water. The Kronthal water distinguished by a red label is decidedly alkaline and saline, so that the statement that it is of benefit in gout and uric acid tendency is not without probability. Experiments are mentioned showing that this water dissolves six times as much uric acid as the purest distilled water. Lastly, Kronthal water distinguished by a yellow label is ferruginous and, moreover, contains the iron in a permanent form notwithstanding the ferrous condition. Most natural waters have a tendency to deposit the iron contained in them, but this water is apparently an exception to the rule, and considering the form in which the iron occurs the water should be valuable in bloodless conditions. Messrs. Ingram and Royle presented a well-arranged exhibit of waters for which they hold an agency. Amongst these was the now well-known Barium Water from the Llangammarch Wells, Wales, which has already been analysed in THE LANCET Laboratory and reported upon, but it is interesting to note that this water has been found to be very distinctly diuretic and of value in gouty tendency and in cases of an excessive quantity of uric acid in the urine. Specimens of the water were presented for inspection and trial both in the still and the aerated form. Connected with the spring at Llangammarch are a well-appointed hotel and baths with accommodation for patients, and there is a resident physician. As is now well known barium water has been employed with very encouraging results in certain cases of cardiac disease. On the same stall were the well-known waters of the State Springs, Vichy, comprising "Celestine" used in kidney disease, diabetes, and gout; "Grande-Grille," useful in hepatic diseases; and "Hôpital," a sedative in gastric disorders. The natural Carlsbad salts prepared from the

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Sprudel spring formed another feature of this exhibit, while the rest of the space allotted was devoted to the now well-known natural bitter aperient water Hunyadi János. Evidence of the enterprise which has recently been shown in connexion with the development of the Royal Leamington Spa, Warwickshire, was afforded in the interesting series of specimens exhibited at the stall representing this Midland health resort. The display consisted chiefly of bottled, aerated, and concentrated waters from the natural mineral springs. In presenting some important differences in composition from many other natural aperient waters Condal Water is of interest. It contains, as we have previously shown in our analytical columns, sulphate of soda and sulphate of magnesia, the proportion of the former to the latter being as 10 is to 1. The Condal Water Company, 38, Walbrook, E.C., take every measure to guarantee that the water bottled is exactly the same as the spring yields. A great number of various artificially aerated waters was shown on the well-arranged stall of Messrs. Jewsbury and Brown (Manchester). In addition to the ordinary mineral waters there was Effervescing Kola and, as medicated waters may be mentioned Lysidine Water, Piperazine Water, Aerated Lime Water, and Carrara Water. Messrs. Alexander Riddle and Co. (36 and 38, Commercial-street, E.) found space mostly for the exhibition of Stower's Lime Juice Cordial and Lemon Squash, both of which afforded satisfactory results on analysis on the occasion of a laboratory examination which we made some time ago. In addition they offered what is described as "a perfect table water," while specimens of the Marie and Elisabeth springs of Vichy were also shown. An exhibit which attracted considerable attention was that of Aerators, Limited (Broad-street-avenue, E.C.). We have described the invention before, but so interesting and important is its application likely to become that we may append further particulars. A strong bottle is provided into the bulb-shaped neck of which is placed a "sparklet" or small steel bomb containing liquid carbonic acid gas. On screwing home the stopper the bomb is pierced and in a short time the water is thoroughly charged with the gas thus set free. This invention promises many useful applications amongst which may be mentioned the aeration of milk without dilution. A model of the methods of treatment at Harrogate was shown by the municipality of that town and the well-known natural waters of this well-known health resort were exemplified in bottled specimens of strong and mild sulphur water, chloride of iron water, and saline iron water. An interesting group of residual salts from the springs was also shown. The stall of the Apollinaris Company, Ltd. (4, Stratford-place, Oxford-street), was very large and well arranged, the space being crowded with the well-known natural waters now associated with the name of this company. Thus there were Apenta Water, a natural bitter magnesia water, Friedrichshall Water (which is also aperient, but which in addition is rich in alkaline chlorides), and Apollinaris Water and Johannis Water (the characters and properties of these table waters, as is well known, being similar to each other). Lastly, we may mention, as a convenient means of preparing an excellent, wholesome, and refreshing beverage, Specialité Lime Juice Cordial and Lemon Squash, possessing all the fresh aromatic flavour of the new and ripe fruit. An interesting addition to this exhibit was a Lemon Squash in the form of concentrated juice reduced to a crystalline residue. They are prepared by Messrs. Feltoe and Smith, 25, Augustus-street, Regent's-park, N.W.

VI.—PUBLICATIONS.

As might be expected in a city where there are several well-known publishers of medical books there was a larger display than has been usual on previous occasions of recent medical literature and publications. A complete list of books of comparatively recent issue occurred in the catalogue of the exhibition. We need only mention that the following well-known publishing firms were represented: Mr. Y. J. Pentland (Edinburgh and London); The Rebman Publishing Co., Ltd. (129, Shaftesbury-avenue, Cambridge-circus, W.C.) — this firm in addition exhibiting pure calf lymph in tubes and a system of rapid analysis by thermometer which is applicable to urea, ammonia salts and alcohol, according to the experiments of Mr. Barker Smith; Mr. B. Allsop (*Times* Office, Shipley Yorks) showed the A.B.C. system of medical book-keeping, a method now indispensable to the methodical and careful practitioner. Another system of medical book-keeping and one which presents distinct advantages was that shown by Messrs. G. C. Veale and Co. Further may be mentioned amongst booksellers Mr. W. Bryce (54, Lothian-street, Edinburgh); Messrs. Baillière, Tindall, and Cox (London); Messrs. Cassell and Co. (London); Mr. W. F. Clay (18, Teviot-place, Edinburgh); Mr. J. Craig (1, Pink-lane, Newcastle-on-Tyne), who represented Mr. H. Kimpton (82, High Holborn, W.C.); and Messrs. J. Wright and Co. (Bristol).

VII.—MISCELLANEOUS.

In this paragraph we may include those exhibits which it is difficult to classify except under the above heading. Perhaps the oddest thing in this connexion, though we are far from saying that it was not fully entitled to a place, was the improvement in domestic grates shown by Mr. David Melville (136, High-street, Edinburgh). There is certainly merit in these stoves, as while they effect an important economy in coal consumption they give a more satisfactorily distributed heat, consuming cinders, obviating dust, and promoting a uniform circulation of the air. The uses and application of the Ceres Automatic Letter and Card Files were explained to the visitors by the Ceres Depôt Co. (16, Brook-street, W.). The inventor and patentee is Mr. T. Bowater Vernon. The Edinburgh School of Shorthand and Typewriting (40, Shandwick-place, Edinburgh) took the opportunity of showing the Williams Typewriter (agency, 104, Newgate-street, London). It is described as giving visible writing, having no ribbons, being of simple construction, and a very good manifolder and very portable. Some excellent photographs were presented to view by Mr. A. Swan Watson, the official photographer to the exhibition, of New Park Studios, Bruntsfield Links. Under this heading also should be mentioned the Aseptic Glycerinated Calf Lymph of the Jenner Institute (73, Church-road, Battersea, S.W.), which is stated to be prepared in strict accordance with the methods advocated by the Local Government Board. This exhibit was instructive inasmuch as a series of plate cultures was shown illustrating the destructive influence of glycerine on adventitious microbes.

[Under the section of Foods and Food Products we omitted to mention the Invalid Specialities of Mr. Benoist (36, Piccadilly, W.), which were exhibited by Mr. H. Lawrence (47, Strand, London). The excellent Turtle Soup for invalids has, however, quite recently been the subject of favourable criticism in our analytical columns. The exhibit also included Soups and Potted Meats prepared by Mr. C. Shippan of Chichester.]

BRISTOL SEWAGE.—For several months the question of dealing with the sewage of Bristol has been under the consideration of a sub-committee appointed by the Bristol Sanitary Authority. The engineers who have been consulted recommend a scheme which provides for an outfall near Dunball Island and for the construction of storage tanks at Avonmouth so that the discharge may be effected at suitable states of the tide. A new sewer will be constructed following the course of the River Avon on the Gloucester side and a pumping-station will be erected to lift the sewage into the outfall sewer whence it will be conveyed to the Bristol Channel. The cost of the scheme will be between £300,000 and £400,000 and it is said to be sufficient for a population of 500,000. The formal report upon the matter has yet to be presented to the Sanitary Committee.

BOLINGBROKE HOSPITAL.—The annual report of Bolingbroke Hospital, Wandsworth-common, S.W., shows that during 1897 there were 300 patients treated in the hospital, comprising 49 medical cases (with 4 deaths) and 251 surgical cases (with 19 deaths); 97 surgical operations were performed. In the accident room 9138 patients were attended, of whom 179 were so seriously injured that they had to be admitted as in-patients. There were 291 cases of fracture. In the out-patient throat and ear department there were 717 attendances of patients sent with recommendations from medical men. The accounts show that the total ordinary income for the year was £3157, including £981 of in-patients' payments, while the total ordinary expenditure was £3184. The hospital premises were originally a private house which Canon Erskine Clarke, the vicar of Battersea, with the aid of subscriptions, bought and fitted up as a self-supporting hospital about 17 years ago. In 1897 it was incorporated and thus put on a permanent footing as a home hospital and a free accident hospital. The committee make an earnest appeal for financial support.

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Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations and conformed to the by-laws and regulations, have been admitted Members of the College, viz.:—

Bailey, Reginald Threlfall.
Baker, Clement John.
Barlow, Herbert William Leyland.
Barron, Henry Thompson.
Barrow, Harold Percy Waller.
Bates, George Llewllyn.
Batteson, Carol Luther.
Beddard, William Oliver.
Belilios, David Aaron.
Bensley, Vernon Cyril.
Briggs, George Frederick.
Brincker, John August Hermann.
Brown, Alexander.
Brown, Evelyn Kempson.
Browning, Paul Ransome.
Bruzaud, Alfred Sigismund.
Bullmore, Edward Augustus.
Bunbury, Edwin Garritt.
Burton, Percy.
Cammidge, Percy John.
Carron, Frederick Burke.
Cazaly, William Henry.
Charles, Godfrey Eustace.
Colls, Percy Cooper.
Coltart, Wilfred Henry.
Craig, James Andrew.
Cridland, Arthur Bernard.
Crompton, Sydney.
Dalebrook, John.
Dore, Samuel Ernest.
Douglas, Kenneth Harrington.
Dowding, William Frederick Charles.
Dowse, Thomas Alexander.
Dyer, Harold.
Eastman, Julis Daniel.
Ellis, Richard Thomas.
Elwes, Frederick Fenn.
Ennion, Octavius Roberts.
Fairbank, Harold Arthur Thomas.
Fegan, John Herbert Crangle.
Fenn, Charles Edward.
Fleming, John Kenneth Sprot.
Frazer, Ewan Richards.
French, Gilbert Edwin.
Fürth, Karl Joseph.
Galt, William James.
Gask, George Ernest.
Gates, Edward Alfred.
Goddard, Eugene Gilbert.
Graham, Howard William.
Groube, George Patrick Thomson.
Handson, Lionel Edward Charles.
Harmer, William Douglas.
Harvey, William John Saundry.
Hay, Kenneth Robert.
Herbert, George Heywood.
Hinde, William Cathcart.
Hislop, Walter John Henry.
Hodgson, John Edward.
Hogan, James Joseph.
Hood, Alexander Henry Morton.
Hughes, Robert.
Humphrey, Lawrence.
Hunt, Ernest Rivaz.
Jamieson, Robert.
Jenkins, Herbert Stanley.
Jones, George Horatio.
Jones, William Edmund.
Lambert, Ernest Charles.
Last, Thomas Clifford.
Leah, Thomas Noy.
Leslie, Lewis Francis.
Lewis, Frank Charles.
Lloyd, Francis Seymour.
Lucas, Stanley Arthur.
Maitland, Pelham Christopher.
Mason, John Harold.
Mason, Sidney Herbert.
Mayhew, Christopher John.
Milton, John Penn.
Milward, William Courtenay.
Myers, Bernhard Ehrenfried.
Newham, Hugh Basil Greaves.
Newman, Herbert Robert Cambridge.
Nicholson, Guy Berners.
Norris, Hugh Leigh.
O'Dowd, John Austin.
Palmer, Charles John Linton.
Palmer, George Edward.
Pares, Basil.
Pearson, Roland Wilfred.
Peatson, Joseph Clarence Stanhope.
Pegg, John Henry.
Percival, Beaumont Albany.
Phillips, James.
Plumley, Arthur George Grant.
Pope, Francis.
Price, Archibald Ainslie.
Pritchard, William Clowes.
Pywell, Percy Dodd.
Rawsthorne, Hubert.
Reid, Allen George.
Reid, Stuart Bathgate.
Reissmann, Charles Henry.
Roberts, Edward Hugh.
Roberts, George Augustus.
St. John, Winstan St. Andrew.
Saunders, Leonard Dimock.
Sawdy, Edward Charles.
Sheldon, Walter Sirr.
Shephard, Cyril.
Singer, Harold Douglas.
Smeaton, Bronte.
Smith, Sidney Maynard.
Straton, Charles Henry.
Taunton, John Godfrey Cresswell.
Tayler, George Padgett.
Thomson, Frederick George.
Tuckett, Ivor Lloyd.
Turner, Charles Ernest.
Van Rooyen, Charles Ellard.
Walker, William Walter.
Waller, Herbert Ewan.
Wedd, Gilbert.
Westcott, Edmund William Martyn.
White, Percy Stanhope.
Will, Henry Chrisholm.
Williams, Henry Thomas Hadley.
Williamson, Joshua.
Wills, Walter Kenneth.
Wroughton, Arthur Oliver Bird.
Young, Bertram Mitchall.

FOREIGN UNIVERSITY INTELLIGENCE.—*Budapest:* Dr. Hochhalt has been recognised as *privat-docent* of Internal Medicine, Dr. S. Gerlóczy as *privat-docent* of Infectious Diseases, Dr. Ludwig Nékam as *privat-docent* of Dermatology, Dr. L. Makara as *privat-docent* of Operative Medicine, and Dr. Heinrich Alapy as *privat-docent* of Diseases of the Urinary Organs.—*Cracow:* Dr. Vladimir Sieradzki has been recognised as *privat-docent* of Forensic Medicine.—*Giessen:* Dr. Hans Koeppe has been recognised as *privat-docent* of Physiology.—*Jena:* Dr. Ernst Hertel has been recognised as *privat-docent* of Ophthalmology.—*Munich:* Dr. H. Rieder has been appointed Extraordinary Professor of Hydro-therapy and Electro-therapy.—*Parma:* Dr. Gerolamo Gatti of Padua has been recognised as *privat-docent* of Surgical Pathology.—*Poitiers:* Dr. Malapert has been appointed Professor of Surgical Pathology and of Operative Medicine.—*Prague (Bohemian University):* Dr. Karl Svehla has been recognised as *privat-docent* of the Pathology and Treatment of Children's Diseases.—*Rome:* Dr. Alessandro Regnoli has been recognised as *vrivat-docent* of Midwifery and Gynæcology.

TEIGNMOUTH INFIRMARY.—The fifteenth annual report of the Teignmouth Infirmary has recently been published. It shows that during 1897 there were 162 in-patients admitted and 1662 out-patients treated, being an increase on the previous year. Unfortunately the receipts show a diminution of about £60.

THE LATE DR. A. P. SMITH OF BALTIMORE.—The *Maryland Medical Journal* of July 30th states that in the death of Dr. Alan P. Smith the medical profession of Baltimore has lost a surgeon who was the leading lithotomist of the country. He was born in 1840 and after receiving his academic education at Princetown he returned to Baltimore and entered on the study of medicine at the University of Maryland. In 1863 he was appointed adjunct professor of operative surgery in the University, and he occupied the chair of operative surgery from 1873 to 1877, when he retired to devote his whole time to private work. His surgical work included a series of 52 operations for lithotomy without a death.

THE FITZWYGRAM PRIZES TO VETERINARY COLLEGES.—The results of the open competition for the prizes given by General Sir Frederick Fitzwygram, Bart., M.P., for students in the four veterinary colleges of Great Britain, have just been announced. The first prize, value £50, has been gained by Mr. W. Jowett, M.R.C.V.S., a graduate from the New Veterinary College, Edinburgh, and the second prize, value £30, has been gained by Mr. T. Wolsey, M.R.C.V.S., a graduate from the Royal College of Veterinary Surgeons, London. The students of the New Veterinary College have been unusually successful in this, the most important examination open to veterinary graduates.

OPENING OF A NURSING INSTITUTE.—On August 9th the Bishop of Wakefield (Rev. Dr. Eden) opened a nursing institute at Cawthorne, a village about 4 miles from Barnsley. The building was formerly the chapel of the Wesleyan Methodists of Cawthorne and will henceforth be known as the Victoria Cottage Institute, an inscription over the doorway stating that it was appropriated to its present purpose in commemoration of the Queen's sixty years' reign. The district nurse will reside on the premises and it is intended that in winter time instruction in cookery will be given to the girls of the neighbourhood; a room has also been specially provided for the holding of mothers' meetings. The institute will be managed by a committee of ladies, presided over by Mrs. Montague Spencer Stanhope, the principal promoter of the undertaking.

RAILWAY EXTENSION TO BUDE.—The extension of the London and South-Western Railway from Holsworthy to Bude was formally opened on August 10th. The directors of the company were received at the station by Mr. John King, M.R.C.S. Eng., L.R.C.P. Edin., J.P., and the Rural District Council presented an address alluding to the beauties of the district. Bude is now easy of access from London and its advantages as a health resort ought to attract visitors.

MEDICAL MAGISTRATES.—The Lord Chancellor has added to the commission of the peace for the borough of Penzance the names of William Shepheard Bennett, M.R.C.S. Eng., and John Symonds, M.R.C.S. Eng., L.S.A. Lond.—Mr. James K. Kerr, M.D. R.U.I., of Glenaltans, Knock, Belfast, has been appointed a magistrate for the petty sessions district of Belfast.

VACCINATION AT FALMOUTH.—At the meeting of the Falmouth Board of Guardians held on August 11th it was stated that the vaccination returns for the Falmouth and Constantine districts for the first half year of 1897 showed that there were 184 births of children, of whom 154 were unaccounted for.

CARDIFF INFIRMARY.—At a meeting of the committee of the Cardiff Infirmary held on Aug. 10th it was decided that a gynæcologist to the institution should be appointed immediately.

LITERARY INTELLIGENCE.—Messrs. Macmillan and Co. have just ready for publication "A Clinical Treatise on Diseases of the Breast," by Mr. A. Marmaduke Sheild, senior assistant surgeon of St. George's Hospital.

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VACCINATION AT GLOUCESTER.—At the last weekly meeting of the Gloucester Board of Guardians it was stated that during the half year ended December last there had been 820 children born, of whom 81 were successfully vaccinated, 99 died unvaccinated, and 559 were defaulters.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Close of the Session.

THE session of Parliament which opened on Tuesday, Feb. 8th, was brought to a close on Friday, August 12th. For medical men the measure of most interest dealt with during the session was the Vaccination Bill brought in by Mr. CHAPLIN and passed with the important amendment giving those who entertain conscientious objections to vaccination an opportunity of stating their objection and taking certain proceedings and thus avoiding prosecution for default. In this connexion it is of some importance to remind our readers that while the Bill was before the House of Lords the Government undertook to consider the question of revaccination during the recess with a view to future legislation. Other measures of special interest to the medical profession passed during the session were a Bill to set up a teaching university in London, a Bill to provide for the better treatment of inebriates of the criminal class, and a Bill amending in one or two particulars the Pharmacy Acts. Late in the session the Government introduced a Bill dealing with the sale of poisons, but neither it nor Mr. Chaplin's Bill to put down the adulteration of food products was carried. The prorogation was performed as is usual by a Royal Commission consisting of Members of the House of Lords.

The Plague in India.

The Queen's Speech at the close of the session contained the following paragraph—viz.: "In certain portions of Western India, and in a small district of the Punjab, the plague, though it has abated during the hot weather, still exists, and a few cases have occurred in other parts of the country. My officers have done all that lies in their power to relieve the victims of the epidemic and to arrest its growth. I am thankful that bountiful harvests have been gathered throughout the greater part of India and that the internal and external trade of the country is rapidly recovering from the depression caused by the famine of the preceding year."

HOUSE OF COMMONS.

THURSDAY, AUGUST 11TH.

Bacteriological Investigation in India.

Mr. HERBERT ROBERTS asked the Secretary of State for India whether he was aware of the proposal to found a bacteriological institute in India; whether he would state whether the Government of India had sanctioned the project and if so to what extent were they committed; whether the funds for this project were being raised by subsciptions from Indian princes and to what extent had this been done; whether he would state whether it was intended that experiments on animals should be carried on under this project; whether the institute was designed as a memorial of the Diamond Jubilee of the Queen; and whether, having regard to the divergence of views in reference to such an institution, he was in a position to recommend as a memorial of Her Majesty's Jubilee in India some work of benevolence commanding general support.—Lord GEORGE HAMILTON replied: I am aware that the Government of India have had before them proposals for the foundation of a Pasteur institute to which a bacteriological laboratory would be attached. Such institutions have to be almost entirely supported by private subscription. Independently of this project the Government of India have had under their consideration the advisability of establishing an institution for the bacteriological investigation of certain diseases specially prevalent in tropical climates. No information has reached me which justifies the assumptions and suggestions of the last three questions.

The Preparation of Tuberculin.

Mr. CHANNING asked the President of the Local Government Board whether, having regard to the recommendations of the Tuberculosis Commission and the necessity of having a pure, uniform supply of tuberculin of uniform quality for those who might wish to use it for testing their herds or dairies, he would have arrangements made at the Local Government Board Laboratory for the preparation of a limited supply of pure tuberculin.—Mr. WALTER LONG, replying for Mr. Chaplin, said that the Local Government Board could not make any such arrangements as those suggested in the question.

Venereal Disease in the Army in India.

During the debate on the Indian Budget, Mr. JAMES STUART raised this question and got a reply from the SECRETARY OF STATE FOR INDIA, who said that the hon. member must recollect that when the present Government came into office they found a most remarkable and almost incredible state of things. A certain body of ladies and gentlemen, with the desire of promoting social purity and public morality, had actually contrived in their zeal that it should be enacted in India that venereal disease should be the only disease which should be exempted from the regulations and restrictions applicable to all other contagious diseases. The condition of things seemed to him absolutely intolerable. He had always looked on this not as a military but as a national question. They had to promote the health of the people. They had a magnificent army in India—an army capable of great performances. It must not be forgotten that during the past two years our soldiers in India had distinguished themselves on the frontier and elsewhere. These soldiers were all more or less young soldiers and when the *Warren Hastings* transport was in danger many of these young soldiers stood for hours in a sinking ship and not one of them moved until every woman and child on board was removed. Therefore, he said, they were young men full of chivalrous instincts towards the weaker sex, and he did think it was an absolute disgrace that a condition of things should be allowed to exist in India whereby this superb army should become a sewer for the transmission of the worst of contagious diseases. They thought it was necessary to try to do something to mitigate the ill effects which had existed, and what they proposed was simply to put venereal disease on exactly the same footing as other contagious diseases. He expressly laid down certain conditions which should not be infringed. As a natural consequence of their determination they had to repeal the Act which prevented this disease from being put on the same footing as other contagious diseases. He had taken the utmost care to test the accuracy of the figures relating to India and he could assure the hon. Member that there was indisputable evidence to show that the removal of all regulations had largely increased the disease in India and that its intensity had also been greatly augmented. Certain reforms had been suggested and adopted relating to inspection and to measures for preventing the concealment of disease. Again, memoranda had been issued by the Commanders-in-Chief, both in India and at home, impressing upon regimental officers the necessity of giving good advice to young soldiers, pointing out the evil consequences which ensued from giving way to vicious habits and directing that in the recommendations for promotion care should be taken to see that those selected were free from vicious habits. It would be seen, therefore, that not only had he kept faith in everything he had undertaken to do, but he had gone even beyond it. He looked upon this question as one of national importance and one which must not be looked at from a purely political point of view. He believed the regulations which had been laid down could, from every aspect, be justified, that they were in accordance with the Christian precept which exhorted them to heal the sick, and that they were dictated by the common principles of humanity.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

APTHORP, HUGH L., M.B., C.M. Edin., has been appointed Assistant House Surgeon for the Devonshire Hospital and Buxton Bath Charity, Derbyshire.

BALL, C. B., M.D., M.Ch., F.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Dublin and for the Borough of Dublin.

BARRIE, W. J., M.B., C.M. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Roxburgh.

BELL, J. B., M.B., C.M. Edin., has been appointed Medical Officer of Health by the Cults Parish Council.

BOWDEN, W. J., M.B., Ch.B. Vict., has been appointed Medical Officer for the Glossop Sanitary District of the Glossop Union.

BURBIDGE, J. W., L.R.C.P., L.R.C.S. Edin., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

BURY, E. C., M.D. St. And., M.R.C.S., has been appointed Medical Officer for the Workhouse of the Wisbech Union, vice J. C. Bury.

COLEMAN, M. O., M.D. Aberd., M.R.C.S., D.P.H., has been re-appointed Medical Officer of Health by the Surbiton Urban District Council.

CROSSKEY, W. F., M.D., C.M. Glasg., has been re-appointed an Honorary Consulting Surgeon for the Lewes Victoria Hospital.

DOW, W. A., M.D. Durh., L.R.C.P. Lond., M.R.C.S., D.P.H., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

FALVEY, F. J., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Kerry.

FAWSSETT, F., M.B. Lond., B.S., L.R.C.P., M.R.C.S., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

FLETCHER, J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Hoxne Sanitary District of the Hoxne Union, vice J. D. Phillips.

FRASER, H., M.B., C.M. Aberd., has been appointed Medical Officer of Health by the Harpenden Urban District Council.

HALL, F. A., L.R.C.P. Lond., M.R.C.S., has been re-appointed an Honorary Medical Officer for the Lewes Victoria Hospital.

HANLY, J. J., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Fifth Sanitary District of the Wells Union.

HARRISON, HERBERT, M.R.C.S. and L.R.C.P. Lond., has been appointed House Surgeon for the Devonshire Hospital and Buxton Bath Charity, Derbyshire.

HOOPER, C., M.R.C.S., has been re-appointed Medical Officer of Health by the Aylesbury Urban District Council.

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HOWE, A. F. A., L.D.S., has been re-appointed an Honorary Dental Surgeon for the Lewes Victoria Hospital.

JONES, T. E., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer, *pro. tem.*, for the Amlwch Sanitary District of the Anglesey Union, vice G. G. Jones, resigned.

KILLICK, C. R., M.B. Lond., L.S.A., has been appointed Medical Officer of Health by the Williton Rural District Council.

KINKEAD, R., M.D., L.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County and the Borough of Galway.

LOUD, F., L.R.C.P. Lond., M.R.C.S., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

MACDERMOTT, P. A., L.R.C.P., F.R.C.S. Irel., has been appointed an Assistant Surgeon to the Dublin Metropolitan Police.

MELDON, A., M.R.C.P., F.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Dublin and for the Borough of Dublin.

MOIR, J. M., M.D. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Inverness (main land).

PEARCE, J. P., M.R.C.S., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

PRATT, JOS. D., M.D., B.Ch. Dubl., F.R.C.S. Irel., has been appointed an Assistant Surgeon to the Dublin Metropolitan Police.

REVELY, JOS. S., M.D. Durh., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Tettenhall District of the Seisdon Union, vice F. J. Hawthorn.

RICHARDS, W. H., M.B., B.S., L.S.A., has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, S.W.

RUSSELL, J., M.B., C.M. Glasg., has been re-appointed Medical Officer of Health by the Brigg Urban District Council.

SMYTHE, L., M.D. Glasg., F.R.C.S. Eng., has been re-appointed an Honorary Consulting Surgeon for the Lewes Victoria Hospital.

SPICER, ARTHUR H., M.B., B.S., M.R.C.S., has been appointed Registrar to the Chelsea Hospital for Women, Fulham-road, S.W.

WILKES, E. M., L.S.A., has been appointed Medical Officer for the Second Sanitary District of the Parish of Battersea in the Wandsworth and Clapham Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

CARDIFF INFIRMARY. — Assistant House Surgeon for six months. Salary at the rate of £50 per a num, with board, washing, and apartments.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, increasing £10 yearly to £120 per annum, with board, lodging, washing, and attendance.

COUNTY ASYLUM, Gloucester.—Locum Tenens for about two months. Salary £2 2s. per week and all found (except liquors).

CUMBERLAND INFIRMARY, Carlisle.—Assistant House Surgeon for seven months from Oct. 1st to April 30th. Salary at the rate of £40 per annum, with board, lodging, and washing. Also House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing.

DEVON COUNTY ASYLUM.—Medical Superintendent. Salary commences at £800 per annum, with other emoluments. No domestic or other servants provided. Applications to the Clerk to the Visiting Committee, 9, Bedford-circus, Exeter.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon for six months. Board, residence, &c., provided, and an honorarium of £25 given conditionally.

GUEST HOSPITAL, Dudley.—Resident Medical Officer. Salary commencing at £100 per annum, increasing by £10 a year to £120 (conditionally), with board, residence, attendance, and washing.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the hospital.

KING'S COLLEGE, London.—Assistant Physician.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the institution.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road. — House Surgeon. Salary £80 per annum, with apartments and board.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NATIONAL SANATORIUM, Bournemouth.—Resident Medical Officer for five months, commencing the first week in September. Salary £8 per month, with board and residence.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per year, with board and washing free.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House Surgeon. Salary £120 per annum, increasing by £10 per year (conditionally), with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £180 a year, increasing by £10 a year to £200. Subject to boarding arrangements. All other expenses—wages, coal, gas, furnished apartments, &c.—are found by the Institution. Also Clinical Assistant for six months. Salary £60 for that period.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150, respectively.

PARISH COUNCIL OF EVIE AND RENDALL.—Medical Officer. Salary £45 a year and a free house. Apply to the Inspector of Poor, Evie.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £30 per annum, board and washing provided.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—House Surgeon, also Assistant, at the Dispensary, for one year. Salary of the House Surgeon £50, with board, &c., and of the Assistant (non-resident) £80.

ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £80 a year, with residence, board, attendance, and washing.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Board and residence provided, and an honorarium of £10 given.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton. — Assistant House Surgeon, for six months. Board, washing, and lodging in the hospital provided.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Secretary and Registrar, University College, Cardiff.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £60, with board and residence.

WEST RIDING ASYLUM, Menston, near Leeds.—Fourth Assistant Medical Officer. A qualified lady. Salary to commence at £100, rising £10 annually to £150, with board and apartments. Also a lady to act as Resident Clinical Clerk. Board and residence provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Board, lodging, and washing provided, and an honorarium at the rate of £50 per annum will be given.

Births, Marriages, and Deaths.

BIRTHS.

BOWDEN.—On August 8th, at University-square, Belfast, the wife of W. J. Bowden, D.D.S., L.D.S., of a son.

DALDY.—On August 16th, at Springfield-road, Kingston-on-Thames, the wife of Arthur M. Daldy, M.D., of a son,

ELLIS.—On August 13th, at Cedar Lodge, Lambridge, Bath, the wife of W. McDonogh Ellis, M.D., M.R.C.S., of a daughter.

GOODCHILD.—On August 8th, at Highgate, N.W., the wife of N. John Goodchild, M.R.C.S., L.R.C.P., of a son.

RABY.—On August 8th, at Craven House, Devizes, the wife of Leonard Raby, M.D., of a daughter.

WINGFIELD.—On August 12th, at Aubyn House, Moseley, Birmingham, the wife of J. Wingfield, L.R.C.P. and L.R.C.S. Edin., of a son.

MARRIAGES.

BUXTON—HAYWARD.—On August 17th, at St. Peter's, Dulwich-common, Alfred St. Clair Buxton, F.R.C.S.E., to Henrietta Blanche, elder daughter of Edward King Hayward, of Marmora-road, Honor Oak.

EDELSTEN—MUSKETT.—On August 10th, at the parish church, Corfe Mullen, Dorset, by the Rev. Eliott-Drake Briscoe, M.A., assisted by the Rev. R. Plumptre, M.A., rector of the parish, and the Rev. F. L. Schreiber, M.A., Ernest A. Edelsten, M.B., M.A. Oxon., M.R.C.S., L.R.C.P., of Brixton, S.W., eldest son of J. Malin Edelsten, Esq., of Grappenhall, Cheshire, to Catherine Helen, daughter of the late John Muskett, Esq., of Diss, Norfolk, and of Mrs. Moon, of Corfe Lodge, Wimborne, and granddaughter of the late John Gould, Esq., F.R.S.

DEATHS.

BAWTREE.—On August 13th, at Mistley Hall, Essex, Edward William Bawtree, M.D., Deputy-Inspector-General of Hospitals, aged 80 years.

HAWKEN.—On August 12th, at Coombe St. Nicholas, near Chard, Charles St. Aubyn Hawken, M.R.C.S., formerly of Wandsworth, Surrey.

LEWIS.—On August 13th, at Markham Lodge, Liverpool-road, Kingston-on-Thames, Deputy Surgeon-General John Riggs Miller Lewis, aged 77.

ROPER.—On August 14th, at Southwold, Suffolk, George Roper, M.D., formerly of Ovington-gardens, S.W., aged 75.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898, bound in cloth, gilt lettered, price 18*s.*, carriage extra; and Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*, can be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months ...	0 8 2	Three Months	0 8 8

Subscriptions which may commence at any time) are payable in advance.

"TUMOURS CAUSED BY PATHOGENIC YEASTS."

AT a meeting of the Society for the Cultivation of Medical and Natural Science in Cagliari, reported in the *Supplemento al Policlinico* of July 16th, Professor Sanfelice said that in his experience when dogs were inoculated with material obtained from malignant tumours occurring either in man or in the lower animals there was either no pathogenic action at all or else only inflammatory processes which had nothing in common with the tumours from which the inoculations were made. This could be easily explained on the ground of the alterations which the blastomycetes undergo in the production of chronic lesions such as tumours. He therefore abandoned the experimental inoculations with the products of morbid growths and applied himself to the study of saccharomyces neoformans, a blastomyces obtained from the atmosphere, using it for the inoculation of dogs and cats, as these animals are liable to become spontaneously affected with malignant tumours. After inoculations of pure cultures of saccharomyces neoformans, if the duration of the infection was long the "parasites" always assumed the typical forms described by Russell as fuchsin corpuscles and by other observers as coccidia, and nothing was found to support the views of those who maintain that Russell's corpuscles are due to a degeneration of the cellular elements. Among a great number of inoculations made specially on dogs two have recently yielded positive results and have convinced him that the saccharomyces neoformans is capable of producing in dogs tumours which both in their growth and structure are identical with adenocarcinoma in man. This view is in direct opposition to that expressed by Dr. Busse, quoted in THE LANCET of August 6th.

HOSPITALS IN ANCIENT TIMES.

THE *Scientific American* is responsible for the following:—

"A very interesting and pleasing discovery is announced from Baden, near Zürich. The learned have been discussing for ages whether anything in the way of hospitals was known to the ancients—it is not to be said that they have been disputing, for there was not material enough hitherto to support a lively argument. One might read the whole volume of Greek and Roman literature—carefully, too—without noticing one passage that might be interpreted as an allusion to a hospital. The works of Hippocrates could not fail to speak of them surely, if any existed; but nothing is there beyond a reference to the notes of 'cases' observed in the Temple of Æsculapius. So it is generally assumed that there were no hospitals in those days; the Aesclepia were 'baths' with massage treatment. Scholars who hold to the other opinion can adduce only hints in its favour. But now we hear that one has actually been discovered at Baden, containing 'fourteen rooms, supplied with many kinds of medical, pharmaceutical, and surgical apparatus, probes, tubes, pincers, cauterising instruments, and even a collection of safety pins for bandaging wounds'—but these things are familiar. 'There are also medicine spoons in bone and silver, measuring vessels, jars, and pots for ointment, some still containing traces of the ointment used.' The latest date of the coins found appears to be in the reign of Hadrian. Probably it was a military hospital, for this was the station of the Seventh and Eighth Legions. But the find is certainly not less interesting on that account, for the army medical service of Rome and Greece is one of the deepest mysteries of archæology. Cæsar refers only once to his regimental surgeons—is there a single distinct allusion elsewhere? We hail with puzzled gratitude the casual remark of Xenophon that the Spartans sent their doctors to the rear when a fight impended, but we look vainly for more information from him or anybody else."

THE CASE OF DR. REICHARDT.

DR. SAVAGE sends us the following list of subscriptions which have been received towards a fund for Dr. Reichardt's defence:—

	£	*s.*	*d.*		£	*s.*	*d.*
G. H. Savage	10	0	0	J. D. Rawlings...	1	1	0
E. C. Kingsford	5	5	0	G. H. Lang	1	1	0
John E. Ogle	1	1	0	E. B.	2	2	0
C. B. Lockwood	1	1	0	A. H. Tubby	2	2	0

WANTED A TRACT ON SIGHT-TESTING.

To the Editors of THE LANCET.

SIRS,—Can any of your readers tell me of a brief tract on the subject of spectacles which can aid me? For four years past I have used a double eye-glass (numbered 16) which suddenly appears unsuitable. Opticians have supplied me with others (No. 15, &c.), which, however, hardly appear to suit as well as my old one. I am aware I have been reading rather too much, but I feel convinced that I have not got the proper lens. It is difficult for me to visit an oculist. There ought to be some pamphlet, not of a mere catchpenny order, instructing a physician how to gauge his own sight or that of others, and if you personally know of such of real value I should be very much obliged for the information.

I am, Sirs, yours faithfully,

August 15th, 1898. FUNDUS OCULI.

THE GENERAL PRACTITIONER AND HIS FEVER PATIENTS.

To the Editors of THE LANCET.

SIRS,—As a general practitioner I am anxious to lay the following case before you. I was treating a patient who happened to be a great supporter and friend of mine, and finding he suffered from typhoid fever I reported the case to the medical officer of health, whereupon he had him removed to the sanatorium. A few days after I naturally thought of calling to see my former patient and friend, so I wrote letting the medical officer of health know that I was anxious to call and hoping he had no objection. To my surprise he wrote telling me he could not permit me to visit the sanatorium unless my patient got worse, when

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he would call me in consultation. In reply I expressed my surprise and explained that I intended calling, not in any professional capacity, but as a friend. To this, however, I got no reply, but the patient died, and I was not even called in consultation. Do you not think that the medical officer of health might have allowed me to visit the patient a few times as a friend, or if he so objected, might he not have offered me to accompany him on one or two of his morning visits, knowing that I was most anxious to see him, or, finally, as he suggested himself but did not carry out, should he not have asked me in consultation? I must apologise for taking up so much of your space, but I am anxious to give you full particulars as the above case and similar ones place me in a very awkward position, since when my patients are removed to the sanatorium many of them expect that I should call to see them a few times during their sojourn there.

I am, Sirs, yours faithfully,

August 15th, 1898. GENERAL PRACTITIONER.

*** The Local Government Board has always urged that the medical officer of health should be careful to regulate his conduct towards the general practitioner by the customs which usually govern the relations of medical practitioners towards each other. [See "Difficulties under the Infectious Disease (Notification) Act," a small pamphlet published at this office.] But a medical officer of health often finds it difficult to discharge his duties towards the public and comply at the same time with a rigid interpretation of the demands of medical etiquette. It seems to us unfortunate from the above account that our correspondent was not allowed to see his former patient, but we cannot express a definite opinion upon a one-sided statement.—ED. L.

THE NOMENCLATURE OF SKIN DISEASES.

To the Editors of THE LANCET.

SIRS,—In your account of the Dermatological Section at the Edinburgh meeting of the British Medical Association in THE LANCET of August 13th, p. 455, column 1, the following statement occurs: "Formerly everything bullous was called pemphigus, but owing to the researches of Unna, Duhring, and others, a new group named dermatitis herpetiformis has been sorted out from the pemphigus class ....." As a matter of fact, it was the late Tilbury Fox who first drew attention to hydroa herpetiforme, or dermatitis herpetiformis as it is more usually called, in 1880 (*vide* Diseases of the Skin by H. Radcliffe Crocker, second edition, p. 204). This point was well brought out at the discussion on Dermatitis Herpetiformis by the Dermatological Society of London (*British Journal of Dermatology*, March and April, 1898). I am, Sirs, yours faithfully,

GEORGE PERNET.

Upper Gloucester-place, N.W., August 15th, 1898.

Mr. E. S. Gooddy.—1. It is difficult to say when a cottage hospital becomes a general hospital. To put it shortly, we should say that a cottage hospital was (*a*) small—e.g., 20 beds; (*b*) strictly local; (*c*) that it had no staff of its own, but that each medical man who sent a patient to it had the right to attend such patient.—2. "Neale's Digest" may be consulted for full references. We may mention an article in the *Practitioner*, vol. ii., 1893, and another in THE LANCET, Oct. 13th, 1894, p. 847.

Chirurgus.—If there is any legal bond our correspondent is, of course, legally bound to abide by that bond. If there is no bond there are still considerations of honour to be looked to, but we should say that in a town of such a population as our correspondent mentions if he took care to avoid taking over any patients whom he knew had previously belonged to the practitioner whose work he had done there would be no harm in the course which he proposes to adopt.

E. P. N.—The General Medical Council issued separate summonses against the practitioner in question, one for calling himself a "physician" and another for calling himself a "surgeon," but the latter summons was not proceeded with. A holder of the diploma in question is entitled to compete for appointments in the navy, the army, or under the Poor-law.

Mr. James Downing.—THE LANCET has never recommended either the Mattei or Viavi treatments. With regard to them, however, we may refer our correspondent to our issues of Jan. 19th, 1895, p. 174, and Jan. 31st, 1896, p. 181.

F.R.C.S. Eng.—We do not consider the communication quite suitable to our columns and we cannot take the responsibility of advising that it should be sent to the eminent nobleman upon whose words it is founded.

Mr. G. Dundas Edwards.—No one can practise on French soil unless he possesses the degree of M.D. of a French faculty. All information as to the question will be found in THE LANCET, Sept. 12th, 1896, p. 769.

H. de B. D.—The circulation of such a card is contrary to professional etiquette, and the circumstances are made worse by the fact of the card being left at the house of the patient of another practitioner.

J. W. H.—The high centre of the county, the rigorous east and north coast and the marshy south and west borders differ entirely in their suitabilities for such patients.

Ablution.—There are several, and their tariffs vary considerably and not always directly as the comforts afforded. A list will be found in the Post-office Directory of London.

C. A. R.—We have no further information. The medical view is definite enough and our correspondent has expressed it correctly.

H. F. W. (Aldershot).—It would be an undoubted transgression of medical etiquette.

Religieuse should consult her medical adviser.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (27th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 18th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 12	30·05	S.W.	...	123	87	61	65	73	Bright
,, 13	29·95	W.	...	125	88	61	64	70	Bright
,, 14	30·01	S.W.	...	128	89	65	67	72	Bright
,, 15	29·98	E.	0·04	121	83	67	67	72	Hazy
,, 16	29·91	S.E.	...	113	83	63	64	67	Cloudy
,, 17	30·09	N.E.	...	109	79	62	60	63	Overcast
,, 18	30·12	S.E.	...	114	77	59	62	66	Bright

During the week marked copies of the following newspapers have been received: *Buxton Advertiser, Hereford Times, Warwick Advertiser, Eastern Morning News, Huddersfield Examiner, Walsall Advertiser, Liverpool Daily Post, Times of India, Pioneer Mail, Manchester Guardian, Scotsman, Citizen, Dundee Courier, Architect, Sheffield Telegraph, Builder, Norwich Mercury, Brighton Gazette, Cambridge Independent, Bristol Mercury, Glasgow Herald, Banbury Guardian, Newcastle Journal, Sussex Daily News, Leicester Post, Yorkshire Post, Beverley Guardian, Morpeth Herald, East Sussex News Midland Mail, Malton Gazette, Leeds Mercury, Birmingham Gazette, East Essex Times, Lynn News, South Wales Daily News, Sanitary Record, Belfast News-Letter, Hertfordshire Mercury, City Press, Local Government Chronicle, Reading Mercury, Mining Journal, Public Health, Engineer, Manx Sun, Chelsea Mail, Surrey Advertiser, Local Government Journal, Poole Herald, Dunstable Borough Gazette, West Briton Advertiser, Tunbridge Wells Courier, Newark Advertiser, Bucks Advertiser, Observer and Chronicle (Bournemouth), Hawick Advertiser, Todmorden News, Daily Express (Dublin), Devon Evening Express, Buxton Chronicle, Leighton Buzzard Observer, Oban Times, Woolwich Gazette, &c., &c.*

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Communications, Letters, &c., have been received from—

A.—Dr. Grant Arnott, Newcastle-on-Tyne; Australian Wine Importers, London; Messrs. Allen and Hanburys, Lond.; A. J. M.; A. H.; A. E. B.

B.—Mr. Heather Bigg, Lond.; Dr. J. B. Busdraghi, Madrid, Spain; Mr. L. Browne, Lond.; Mrs. E. A. Blackmore, Lond.; Dr. D. Bower, Bedford; Messrs. Bates, Hendy, and Co., Lond.; Mr. J. W. Bird, H.M.S. *Alexandra*, Portland; Mr. M. G. Bateman, Folkestone; Mr. J. R. de C. Boscawen, Truro; Dr. F. Blaxall, Lond.; Mr. R. Baker, Lond.; Dr. B.; Mr. S. Baxter, Lond.; Mr. C. Birchall, Liverpool; Mr. J. Briggs, Lond.; Dr. W. H. Bunting, Edinburgh; Mr. W. H. Browne, Ilfracombe.

C.—Mr. S. Cowes, Sandgate; Cortland Wagon Co., Lond.; *Correspondenz-Blatt für Schweizer Aerzte*, Basel; Mr. L. P. Casella, Lond.; Ceres Automatic File Co., Lond.

D.—Mr. J. A. W. Dollar, Lond.; Messrs. Down Bros., Lond.; Mr. J. Downing, Lond.

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Presidential Address
ON
THE PUBLIC HEALTH OF DUBLIN.

Delivered at the Congress of Public Health, held under the auspices of the Royal Institute of Public Health, at Dublin, August 18th to 23rd,

BY SIR CHARLES A. CAMERON, M.D. R.U.I., D.P.H. CANTAB., M.R.C.P. IREL., F.I.C.,

EX-PRESIDENT; PROFESSOR OF HYGIENE AND CHEMISTRY, ROYAL COLLEGE OF SURGEONS IN IRELAND; MEDICAL OFFICER OF HEALTH OF DUBLIN.

MY LORDS, LADIES, AND GENTLEMEN,—My first duty on this occasion is to express my warmest thanks to the Royal Institute of Public Health for the honour which they have conferred upon me in selecting me to preside at this important Hygienic Congress. It is by no means the only compliment which the Institute have paid me, for I gratefully bear in mind that four years in succession they unanimously elected me to be their President. I esteem this action of the Institute all the more from the circumstance that their headquarters are situated in London whilst I am a resident in Dublin. In the six millions of people in that vast city no difficulty would have been experienced in securing for the presidency of the Institute men of the highest repute in the domain of science. I rejoice to know that under the leadership of my distinguished successors, Sir Henry Littlejohn and Professor Smith, the career of the Institute has been one of uninterrupted success and that at this moment it occupies a high position amongst the many useful organisations in these countries which are supported by voluntary efforts and are without State aid.

My next duty is the pleasant one of welcoming most warmly, on behalf of the Reception Committee of the Congress—and I may, indeed, say on the part of the citizens of Dublin—the visitors who have come to this city from England, Scotland, Wales, and the Irish provinces to take a part in the proceedings of this Congress. Amongst them are the bearers of names known and respected in many lands. They have done noble work in devising and carrying into effect measures for the mitigation of human suffering in disease, for the prolongation of life, and for the amelioration of the conditions under which the lower and more dependent classes of the population exist. In our forthcoming conferences their voices will be heard earnestly and eloquently advocating the adoption of every means by which the moral and physical improvement of our race might be promoted. I use the word moral advisedly, for assuredly the strict observance of the laws of physical health cannot fail to exercise a beneficial effect upon our morals. Truly has it been said that cleanliness is next to godliness, and we cannot forget that the first code of sanitary laws came to us from a Divine source. The lessening of overcrowding in the tenement houses, the better care of the children of the poor, the multiplication of open spaces and recreation grounds, the provision of means of innocent amusements, cheap baths and washhouses, healthful dwellings at moderate rents, are all agents for improving the *morale* and *physique* of the people.

HIGH DEATH-RATES IN TOWNS.

The aggregation of a large number of people upon a limited area operates injuriously upon their health and lessens the mean duration of their lives. Many years ago Dr.—now Sir William—Gairdner of Glasgow pointed out that whilst the death-rate in England was 15 per 1000 persons living on every square mile it rose as the density of population increased until it became 27 and upwards when the population came to be 2900 per square mile. The death-rates in purely rural districts have not been very largely reduced since the beginning of the present century; in the towns the case has been different. Before the system of national registration of deaths was adopted there existed the means of closely approximating the death-rates in towns. From the "Bills of Mortality" of London we learn that the death-rate in that city during the period 1728 to 1780 was about 50 per 1000 persons living. The deaths therefore greatly exceeded the births, and were it not for the great immigration into the city from the country its population would have become extinct, as the mean age at death of the citizens was only 20 years. According to Sir William Petty, the deaths in London in six years of the seventeenth century exceeded the births by about five-eighths. He showed that at the same period the same relative proportions between births and deaths existed in Dublin.

For centuries the urban death-rates greatly exceeded the rural rates, in many cases by from 20 to 50 per cent.; but during the last 40 years they have been approximating, although a gap far too wide still divides them. In 1896 the estimated population of England and Wales amounted to 30,717,355, of whom 14,883,806 resided in 110 town-districts, each containing more than 35,000 inhabitants, and 15,833,549 in country districts and towns and villages having a smaller population than 35,000. The death-rate in the urban districts was 18 and in the rural districts 15·3 per 1000, the difference being 2·7 per 1000. The mean rates in the previous 10 years were 19·7 and 17·2, a difference of 2·5. Let us compare these figures with the statistics of the decade ended in 1860; in that period the urban rate was 24·7 and the rural 19·9, the difference being 4·8. Gratifying as it is to find the gulf between the urban and country death-rates narrowing, it is unsatisfactory to observe that the rate of mortality should be so much greater in some towns than in others. In 1897 the rate in Eastbourne was 8·2, in Bournemouth 10·1, in Croydon 13·62, and even in the manufacturing town of Darlington 15, whilst in Liverpool it was 26·76 and in Salford 26·88. Brighton, a most fashionable town with a well-to-do population, had a death-rate of 15·23; but Wakefield, Stockton-on-Tees, and Jarrow — all manufacturing towns—had almost the same rate.

CAUSES OF THE HIGH URBAN DEATH-RATES.

The causes which raise the urban death-rates so much above the rural ones are numerous and perhaps not fully discovered. The causes of the enormous difference between the bills of mortality of the healthiest and least healthy of the towns have not been fully investigated. The contagion of the fevers must clearly be more readily conveyed from the sick to the sound in towns owing to the closer contact of the people. The town atmosphere is less pure than the air of the country; its soils are generally contaminated with filth. In its narrow streets and courts the direct sunlight—so necessary to maintain the purity of the air—and thorough ventilation are wanting. The effete matter from dwellings and workshops and the sweepings of the streets are sometimes allowed to accumulate and to pollute the air by their noisome exhalations. Many of the occupations of townspeople are of a more or less unhealthy nature and the majority of them are sedentary. The outdoor life of the farmer and agricultural labourer is obviously more healthy than that of the town bakers, shoemakers, tailors, mill-workers, &c. The cabin of the peasant may be, and indeed too often is, a wretched dwelling, but it is at least surrounded by the pure and open atmosphere. In the towns a dozen families often occupy as many rooms in the same house, whilst hundreds of similar houses invest it on all sides. In the narrow back street and close court we see the children of the poor with bleared eyes, colourless lips, and pallid faces, pining for fresh air and a view of the wide canopy of the sky. How different is not the lot of the country child and young person. They see the hills resplendent with the sheen of the golden gorse, they inspire air fragrant with the perfume of the hawthorn and of many a sweetly odorous flower, they roam over fields of emerald green, through shady woods and by purling brooks and silver rivers, whilst the air is filled with the melody of the feathered warblers. With such environments the country child develops into a strong and healthy adult. We can hardly expect to make the conditions of infantile life so healthful in town as they are in the country, but much can be done to brighten the life of the children of our great towns, to give a roseate tinge to their pale cheeks, and to strengthen and develop their muscles. Their dwellings should be improved, and places for their recreation in the open air liberally provided. The Earl of Meath has generously established in Dublin two gymnasia and playgrounds for children and the corporation are providing a gymnasium on the open space formed by the removal of an old prison in Green-street. Gymnasia for children are, however, required in all parts of this city and of other cities. As the child is in one sense the father of the man every effort should be made in favour of the physical,

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moral, and intellectual culture of those who are to form the future men and women of the nation.

THE SANITARY CONDITION OF TOWNS IMPROVING.

The appalling high death-rates in towns which continued for many centuries have greatly decreased in the present one. The improvement is partly due to greater attention to personal hygiene and a higher standard of comfort, partly and chiefly to improved public sanitation. The "masses" are now, on the whole, better fed than they were formerly, their hours of labour are less, and they enjoy more holidays. The causes which rendered so many of the handicrafts unhealthy and even dangerous have been removed or their effects lessened. Before the second half of the present century the Public Health Acts enacted were few in number and, as a rule, were not mandatory on the local authorities. The English Public Health Act of 1872, amended in 1875, and the Irish Public Health Act of 1875, amended in 1878, were the most comprehensive and valuable sanitary laws ever put upon the statute-books of these realms, largely owing to the compulsory nature of many of their sections. Under the provisions of these and several subsequent Acts a great improvement has been effected in nearly all the large towns of these countries. During the ten years ended in 1850 the mean annual death-rate in London was 24·8 per 1000 persons living; in the decade ended in 1896 the rate was 19·9 or 4·9 per 1000 less than in the former period. In 1897 the rate was only 17·7, excluding the deaths of strangers in London. In Glasgow, where vast sums have been expended in the clearing of unhealthy areas and the erection of improved dwellings for the working classes, a great decrease has taken place in the general and zymotic death-rates. In the ten years ended in 1866 the deaths from all causes were in the ratio of 30·2 per 1000 of the population; in the five years ended in 1897 the rate was only 21·8. The death-rate in Liverpool in the years 1866 to 1875 was 31·3 per 1000; in the years 1887 to 1896 it was 25·7 and in 1897 24·4. The Manchester death-rate was 31 in 1866–1875; in 1887–1896, 25·3; and in 1897, 23·1. Similar statistics could be quoted in reference to almost every other large town.

THE INCREASE IN THE ENGLISH URBAN POPULATION HAS NOT CAUSED AN INCREASED DEATH-RATE.

In all parts of the world the mean duration of human life is decidedly less in the towns than in the country. In comparing the vital and mortal statistics of countries the relative proportion of their urban and rural populations is a factor of considerable importance. If in one country only 1 in every 10 of the inhabitants lives in a town, and in another country 1 in 5, then, *cæteris paribus*, a lower death-rate might naturally be expected as regards the former country. In England by far the larger proportion of the people are located in the towns. In the middle of May of the present year the population of the urban registration districts numbered 21½ millions out of a population of 31,397,078. What a contrast does not this enormous town population present to that of other countries, say to Russia? Of the population of that empire, which numbered last year 126,411,736, only 16,289,184 resided in the towns, some of which were indeed mere villages. Only 8 of the towns had a population exceeding 180,000 each. Notwithstanding the fact that an increase in the density of a population is unfavourable to health, the rapid increase in the English urban population has not sensibly counteracted the good effects produced by improved public and private hygiene. The density of the population of London has been doubled since 1851. It is truly wonderful that its vast population of 6,291,667, located on only 693 square miles, should have in 1897 so low a death-rate as 17·7 per 1000. This rate is not greater than that of a fairly healthy rural district. England well deserves the name she has received as the birthplace and home of sanitary science and practice. That the health of the English people continues to improve the following statistics prove:—

Mean Annual Death-rate in England and Wales.

1847–1850, 23·2; 1851–1860, 22·2; 1861–1870, 22·5; 1871–1880, 21·4; 1881–1890, 19·1; 1891–1896, 18·45.

The reduction in the death-rate has been chiefly effected by the improved state of the public health in towns.

Mean Annual Death-rate in the Towns.

1851–1860, 24·7; 1861–1870, 24·8; 1871–1880, 23·1; 1881–1890, 20·3; 1891–1896, 19·24; 1897, 16·84.

In the period 1851–1870 the deaths in the towns were 25 per cent. greater than the deaths in the country for equal numbers of the people; in the period 1871–1896 the excess was reduced to 13·5 per cent., or nearly one-half. *En passant* I may here remark that the death-rate is much lower amongst females than males. It may interest intending benedicts and strengthen their resolution to learn that the mean duration of life is greater amongst married men than is the case with celibates. No doubt the former are taken better care of. Attention has been called to the decided decline in the birth-rate not only in the United Kingdom but in most European countries; but it seems clear that such a decline must necessarily follow a diminished rate of mortality resulting in an increase of the numbers of the population upon which the birth-rate is calculated. The lowest birth-rates ever registered in England were in 1894 and 1896 and in these years the lowest death-rates were also recorded.

MORTAL STATISTICS OF IRELAND.

The death-rate in Ireland is for the whole country very low. In the ten years ended in 1896 it was only 18. In the same period the rate in Hungary was 35·6 and in Austria 30. The low rate in Ireland is largely due to the circumstance that by far the larger portion of the population reside in the open country. The urban bills of mortality are very high. In the decade ended in 1897 the death-rate was 24·65 per 1000 in the 23 largest towns. Their zymotic death-rate was 2·64. There is therefore a great difference between town and country death-rates in Ireland.

STATE OF PUBLIC HEALTH IN DUBLIN.

As this Congress is meeting in Dublin it seems fitting that some account of the sanitary state of the city should be given to it. Thirty-two years ago the sanitary staff of Dublin consisted of one whole man (an inspector of nuisances) and a small part of another man (the secretary to the Markets Committee). At present the staff consists of a superintendent medical officer of health, who holds also the position of public analyst and executive sanitary officer; 15 district medical officers of health, who hold that position *ex officio* as Poor-law medical officers; a sanitary engineer; a superintendent and assistant-superintendent of sanitary sub-officers—i.e., nuisance inspectors; 23 sanitary sub-officers; 3 inspectors of dairies; 3 food inspectors; an inspector of slaughter-houses; 2 inspectors (one a lady) under the provisions of the Shop Hours Act and about a dozen persons, exclusive of whitewashers and charwomen, engaged in disinfection operations and the removal of fever patients to hospital. The disinfecting premises have recently been improved and enlarged at a cost of £2000, and a large isolated house, the property of the corporation, has been fitted up at a cost of £500 as a refuge for persons whose dwellings are undergoing disinfection. Since 1895 no person has been appointed a sanitary inspector unless he proved his fitness for that position by a competitive examination. Sixteen of the sanitary inspectors hold certificates of competency granted to them after examination by the Royal Institute of Public Health. The estimated expense of the sanitary department, exclusive of the cost of making and maintaining sewers, was in 1897 £23,607. Salaries and wages amounted to £9068 10*s*. £1040 were, however, received as a Parliamentary grant in aid of the salaries of the sanitary officers and a considerable revenue is derived from the baths and washhouses and other sources.

Loans for the following purposes have been sanctioned and all but a small portion obtained and expended: for clearing unhealthy areas (on which the Dublin Artisans' Dwellings Company have since erected houses), £54,200; artisans' and labourers' dwellings, £137,323; new streets, by which slums were cleared away, £116,000; public abattoir, £16,700; baths and washhouses, £12,500; improvement in disinfection house, £2000; a refuge for persons whose houses are being disinfected, £500; a mortuary, £200; open spaces, £2900; offices for sanitary department and city laboratory, £10,000; underground sanitary accommodation, £2200 = £354,523. For the following purposes, which also tend to improve the public health, loans have been sanctioned and nearly altogether obtained: sewers and works connected with them, £62,107; works in connexion with public and domestic scavenging, £34,050; paving, flagging, and concreting, £421,988; fish and vegetable markets, £98,800; "private improvement"

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expenses, £12,628. All these make a total of £984,096. For another great sanitary improvement—namely, the main drainage of the city—a loan of £350,000 has been sanctioned and is being expended. Lastly, if we add the cost of the improved supply of water to the city—namely, £720,000—we have a grand total of £2,054,096 expended on purposes all of which tend to improve the health and comfort of the citizens. When the main drainage and sewage precipitation scheme is completed—probably in about two years more—the Liffey will no longer be polluted and the sewage, now impounded for many hours daily, will flow uninterruptedly through the sewers.

I hardly venture to claim that the large sum of money expended in sanitary works in Dublin and the exertions of the sanitary department of the Corporation have been the chief means by which the reductions in the death-rate have been effected. I have, however, no doubt that if the sanitary staff still consisted of only one individual and part of another there would be much more fever in Dublin than there has been for some years past. In the five years 1876–1880 the death-rate was 29·5; in the period 1881–1885 27·4; in the next five years 26·8; in 1891–1895 26·1; and in 1896–97 26·3. In 1897 the death-rate was raised by epidemics of measles, whooping-cough, and scarlet fever. In the ten years ended in 1885 the mean zymotic death-rate was 4·1; in the following ten years it fell to 2·62, or 44 per cent. In 1896 the rate was 2·4, but in 1897 it rose to 4·5 in consequence of an epidemic of measles and slight epidemics of whooping-cough and scarlet fever. Notwithstanding these epidemics, and one of small-pox in 1894–1895, the zymotic death-rate for the five years ended in 1897 was slightly below that of the English towns. The figures are as follows: 33 largest towns, 2·84; London, 2·82; Dublin, 2·80. In the first half of the present year the rate was 1·7 in Dublin.

I have given these figures in proof that Dublin is not the hotbed of fevers which even some of its own citizens believe it to be. The visitors at this Congress may rest assured that they are not more exposed to contagion than they would be in London or Manchester.

Peculiarities of the Dublin Death-rate.

If we considered only the zymotic death-rate and the infant mortality of Dublin, the sanitary condition of the city would appear to be as satisfactory as that of the English towns and even as that of London. Many sanitarians regard the infant death-rate to be as a measure of the salubrity of a district almost equal to that afforded by its fever mortality. In the following table I give the death-rate of infants under one year of age in the 10 years ended in 1897 in Dublin, London, and the 33 large English towns:—

Deaths of Children under One Year of Age in the Five Years ended in 1897.

—	Rate per 1000 of the estimated population under one year of age.	Rate per 1000 of the registered births.	Proportion per 1000 of the total deaths.	Rate per 1000 of the total population.
England and Wales	152·6	152·2	254·8	4·58
33 Largest English towns...	174·6	171·8	272·0	5·36
London	158·2	159·6	252·4	4·82
Dublin	171·0	169·8	166·4	3·92

In all Ireland the deaths of children under one year of age are, as a mean, about 99 per 1000 registered births. These figures prove that no larger proportion of the infants born in Dublin perish in the first year of their existence than is the case in the 33 largest English and Welsh towns. The small percentage of total deaths, which are those of infants, as compared with the English towns indicates a very high rate of mortality amongst those of greater age. Whilst the infantile mortality is less in Dublin than it is in the 33 largest English and Welsh towns, it is practically the same as that of the 67 smaller towns (with an aggregate population of 3,812,631)—namely, 169. In some of these towns the infantile death-rate was very high—in Wolverhampton it was 217; in Salford, 219; in Ashton-under-Lyne, 228; in Langton, 252; and in Preston, 262. The high infantile mortality is chiefly due to neglect and the physical evils arising out of poverty. Amongst the well-to-do classes about 6 per cent. of their deaths are those of children under five years of age, whilst out of every 100 deaths of persons belonging to the labouring classes 40 are those of children under five years of age.

The children of the poor suffer from the insufficiency and improper nature of their food. They are not adequately protected from cold in winter. It is melancholy to see tender boys and girls out in the streets in the depth of winter shoeless and with only the most scanty garments. Young persons offer less resistance to the influence of cold and wet than adults; yet even sometimes amongst the rich we see the naked legs and arms of young children exposed to a temperature which would make their parents shiver if they were not well protected by warm clothing. The Society for the Prevention of Cruelty to Children and the Police-Aided Society for providing clothing for poor children are associations which deserve the warmest sympathy and generous support of the humane public. They have done great good and could do much more if they were adequately supported. Deserving, too, of a great tribute of praise are the kind people who provide a day's "outing" in the country for the children of the slums and those, too, who secure for the pale seamstress and the tired shop or factory girl a few days in the country. The change may be all too brief, but it at least more than realises the earnest wish of the poor toiler expressed in one of Hood's most pathetic poems:—

> Oh, but to breathe the breath
> Of the cowslip and primrose sweet,
> With the sky above my head,
> And the grass beneath my feet,
> For one short hour.

Why is there a High Rate of Mortality in the Adult Population of Dublin?

Amongst the poorer classes there is in every town a higher death-rate than prevails amongst the affluent classes. I have long been of opinion that as compared with London especially, and with many other towns, there is a larger proportion of the poorest classes in Dublin. It is admitted that Ireland is a very much poorer country than either England or Scotland. It is highly probable that this comparison holds good for town as well as country. If that be the case we may to some extent account for the high mortality from non-infective diseases in Dublin, as compared with the English towns, from the circumstances of the larger number of poor people in the former. Dublin and London cannot be fairly compared, for, as Dr. G. V. Poore truly remarks,[1] "London is very largely a city of wealthy and well-to-do people, most of whom must be looked upon as sojourners rather than dwellers in the city. Amongst such as these, who command every luxury and necessary in life, including change of air, death-rates ought to be low." Mr. Sergeant, in a paper published in the *Journal of the London Statistical Society* for June, 1864, advances the opinion that in comparing the death-rates of London and Birmingham an allowance of 1·5 per 1000 should be made in favour of the latter on account of the comparatively small proportion of the affluent classes which inhabit it. To our distinguished Registrar-General, Dr. Grimshaw, is due the merit of being the first to publish the rates of mortality amongst the different classes of the Dublin community. When similar information is given in the reports of the English and Scotch Registrars-General we shall then be in a position to form some estimate of the relative proportions of the poorer classes in Dublin as compared with London, Edinburgh, and other cities.

Housing of the Very Poor.

The improvement in the viability of the working classes which has taken place within the last 30 years is to some extent due to the better dwellings provided for them. Owing to the benevolence of the late Mr. Peabody, Lord Iveagh, and other philanthropists a considerable number of healthful dwellings have been built for artisans and labourers. A still larger number have been erected by companies, some of which have been founded on semi-philanthropic, semi-commercial lines. In this city and its suburbs the Dublin Artisans' Dwellings Company own dwellings occupied by 2194 families, who pay from 1*s.* 9*d.* to 12*s.* per week. This company is now constructing 188 additional dwellings. The City and Suburban Artisans' Dwellings Company have provided dwellings for 284 families, who pay

[1] Dr. G. V. Poore: London, Ancient and Modern, From the Sanitary and Medical Point of View.

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from 2s. 6d. to 6s. per week; the Industrial Tenement Company own a block of buildings in which there are 46 separate tenements let at from 2s. to 4s. per week. Many employers of labour, such as railway companies, brewers, distillers, &c., have erected improved dwellings for their employés. Fourteen years ago I suggested to the corporation the desirability of putting in force the provisions of the Housing of the Working Classes Acts. The suggestion was acted upon and at the present time the corporation have provided 375 separate dwellings, let at the following rents—25 from 6s. 6d. to 10s. (with shops), 12 from 4s. 9d. to 5s. 6d., 84 at 4s. 6d., 98 from 3s. 6d. to 4s., 98 from 2s. 6d. to 3s. 3d., 47 at 2s., 14 at 1s. 9d., and 23 at 1s. 6d. Although so much has been done in providing improved dwellings for the working classes the vast majority of them are still lodged in wretched tenements. A few years ago I had a kind of census taken of the city and found that 32,000 families were located in about 7000 houses, affording 1½ rooms per family. On the other hand, the remaining 22,000 families of the city occupied 17,000 houses.

Whilst much has been accomplished in the way of providing proper dwellings for artisans and the better class of unskilled workers, practically nothing has been done to improve the miserable state of the homes of the very poor. In every large town there are, exclusive of beggars, thieves, and vagrants, &c., many honest people whose precarious earnings barely suffice to keep body and soul together. Amongst this class are to be found small dealers, pedlars, hawkers, charwomen, rag-pickers, night-watchmen, the inferior class of seamstresses, porters, and labourers, the miserable creatures carrying placards termed "sandwichmen," and men and women engaged in many other poorly remunerative employments. Besides these there are the dull-witted and the physically feeble people who are only capable of earning the merest pittance. It is in the wretched homes of the poorest of these poor that the seeds of fever are developed as in a hotbed. Their dwellings are a peril to the whole community, for their inmates carry contagious matter into the streets, shops, factories, and other places. The effluvia from them taint the atmosphere, in the purity of which all are interested. It is the dwellings of the very poor which demand nearly all the attention of the sanitary inspector. He finds it almost an impossibility to get their owners—who are often nearly as poor as their tenants—to keep them in even moderately good condition.

Since 1879 more than 3000 houses have been de-tenanted and closed in Dublin on account of their insanitary condition; of these not one-half have been rebuilt or rendered fit for human occupation. The closing of insanitary houses and the clearing of unhealthy areas have, however, been of little benefit to the poorest of the poor. The people who live on the unhealthy areas have not returned to occupy the neat dwellings which replaced their wretched tenements. The rents of the new dwellings were beyond their means. The unhealthy areas have been cleared, but the condition of the people who dwelt on them has remained unchanged. They have sought on other areas low-rented tenements as insanitary as those from which they had been ejected. If all the lowest rented and consequently least sanitary of the Dublin tenement houses were compulsorily closed, where, save in the workhouse, could their inmates obtain shelter? I feel convinced that the ordinary landlords of tenement houses, the majority of whom are leaseholders only or yearly tenants, cannot provide proper dwellings at from 1s. to 2s. per week, the rent which the very poor can only afford. Dwellings so low-rented can only be provided by the municipality or by philanthropic societies and individuals. They will pay very little if any interest on the money expended on their erection and maintenance, but every unhealthy dwelling which they replace will be a distinct gain to the whole community. The replacement of unhealthy by healthy habitations means less illness, longer duration of life, and diminished pauperism. It may be said that if you give a dwelling to a man at less than its market value you pauperise him. To this it may be rejoined that children are not pauperised by receiving their education free; the students in the State-endowed colleges and universities are not pauperised by acquiring, not merely a general education, but money making professions chiefly at the cost of the taxpayers. We already give the poor medical advice and medicine gratis; let us go a step further and provide the most dependent of them with dwellings in which they can live under reasonably healthy conditions. An attempt is now being made to raise a sum of money sufficient to erect a block of tenements which it is proposed to let at from 1s. 6d. to 2s. a week. It is to be hoped that generous support will be given to those who are engaged in this meritorious project.

THE MUNICIPAL AUTHORITIES SHOULD BE ENCOURAGED TO PROVIDE WORKPEOPLE'S DWELLINGS.

The borrowing powers of municipal authorities are limited to a sum equivalent to two years' valuation of the town for rateable purposes. Thus, if a town were valued at a million pounds its governing body would be empowered to borrow two millions. When this restriction was placed upon civic authorities the money borrowed by them was expended nearly if not altogether on what might be termed unproductive works, such as the paving, sewering, and lighting of the thoroughfares, &c. It seems to me to be unreasonable that the money expended by urban authorities in providing artisans' dwellings, baths and washhouses, abattoirs and markets, from which revenues are derived, should be included in the amount authorised to be borrowed. Mortgages on these buildings as well as the security of the rates is required by the Treasury for loans granted in connexion with them. It is evident that as the loans for the erection of artisans' dwellings are to be placed in the same category as loans for sewers and other non-revenue producing works the power of municipal authorities to provide dwellings for the working classes must be extremely limited. It is to be hoped that this disability will soon be removed. The market value of the artisans' dwellings in the possession of the sanitary authorities should be ascertained and the sum found added to the amount allowed to be borrowed on the two years' rateable valuation system. Thus, if a corporation could borrow a million for unproductive purposes and that it possessed artisans' dwellings valued at £100,000, then their borrowing powers should be extended to £1,000,000.

RACK-RENT IN RELATION TO PRIVATE IMPROVEMENT EXPENSES.

In the abatement of nuisances involving structural alterations in a dwelling the expense has frequently to be defrayed by persons having little or no interest in the benefits derived from the structural alterations. In order to prevent this injustice, as it may be termed, an amendment of the Public Health Acts of both England and Ireland is necessary. The cost of private sanitary improvements insisted on by the sanitary authority is borne by the person who receives the rack-rent of the premises. The definition of rack-rent in the English Public Health Act of 1875 is not so simple as that in the Irish Act, which defines it to be two-thirds of the rateable valuation of the premises. Thus, if a landlord lets a house for £60 a year which is valued at £40 he receives a rack-rent and must pay for the cost of sanitary improvements, although he may have let the premises on lease for 999 years. In such a case as this surely it is the leaseholder who ought to pay for the improvements, as he alone enjoys them.

A curious point in connexion with private improvement expenses is the liability of the person who receives rent from the occupier for the cost of the improvements although he himself may pay a rack-rent. He is termed the "immediate" rack-renter. I know of a case where a person who paid £80 a year for a house valued at £75 was obliged to sub-let it for £60 in consequence of depreciation of house property in the street. Although losing £20 a year by the house he was obliged to pay nearly £50 in providing it with improved drainage and sanitary arrangements, whilst the landlord, who received £80, was by law exempt from contributing to the expense of the improvements. It seems only fair that every person having a beneficiary interest—present, proximate, or remote—in a house should be obliged to contribute to the expense of its improved sanitation, the proportion to be determined by the magistrate who makes the order for carrying out the improvement.

THE WATER-CARRIAGE OF FILTH.

When, in 1879, the Department of Public Health was placed under my direction I commenced to wage a determined war against the system of storing filth in pits which had prevailed in Dublin for centuries, exclusively in the poorer quarters of the city and partially in the other districts. To this storage of filth must be ascribed the polluted condition of the soil which still has not yet been got rid of. It was no

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easy task to induce or compel the owners of houses to adopt the water-carriage system of filth removal, but the task has practically been accomplished. Unfortunately the occupants of the tenement houses too often do not take proper care of the improved sanitary conveniences supplied for their use and the landlords complain that they are constantly called upon to repair injuries to the sanitary arrangements due to the action or carelessness of their tenants. The Public Health (Ireland) Act provides that in the case of two or more houses having sanitary accommodation in common the tenants can be collectively proceeded against for the abuse of the sanitary arrangements. The law should be made to apply to single houses inhabited by two or more families. In this connexion I would like to express my strong opinion that every separate dwelling should be supplied with sanitary arrangements for its exclusive use. Those which are used in common by several families will never be kept in proper order. I may mention that in the corporation artisans' dwellings, Bow-lane, every tenement—and there are 24 let at only 2*s.* a week—has its own scullery and sanitary arrangements.

There are many persons, including medical men, who believe that the general introductiou of the water-carriage system of filth removal has not been a benefit to Dublin but the reverse. They are under the inpression that fever has increased since the old system of filth storage has been superseded. The statistics which I have brought before this Congress conclusively disprove the statement that fever has increased in Dublin; it has, on the contrary, decreased. In every town in the United Kingdom in which the water-carriage system has been adopted the public health has been improved. Dr. Scurfield, medical officer of health of Sunderland, shows in a report presented to the corporation of that town in 1897 that in 33 towns in which the water-carriage system of filth riddance prevails the deaths from enteric fever averaged 15 per 100,000 of the population; while in 33 towns in which the conservancy method remained the rate was 26 per 100,000. In the former the deaths from diarrhœa were in the ratio of 52 per 100,000, whilst in the latter the rate was 108. The deaths from all causes were 2·6 per 1000 more in the conservancy, than in the water-carriage towns. In Nottingham during the period 1887–1896 there was 1 case of enteric fever in every 558 houses from which filth was removed by the agency of water, whilst in every 37 houses having middens there was 1 case of this fever. At the International Hygienic Congress held in Madrid this year the following resolution was adopted: "That the general health of the population is improved and the spread of the disease prevented in towns and dwellings by the immediate removal of all foul matters and by a copious supply of pure water."

PREVALENCE OF TYPHOID FEVER IN DUBLIN.

The mortality caused by typhoid fever is greater in Dublin than in nearly every other town in the United Kingdom. In Ireland Belfast alone has a higher death-rate from this disease. On the other hand, diphtheria is very much less fatal in Dublin than in the English towns. I have come to the conclusion that both diseases have, to a great extent, a telluric origin; they seem to be in some way intimately connected with the soil. If, then, we take both and regard them as semi-malarial, Dublin will not occupy a worse position than the English towns. The deaths from enteric fever and diphtheria combined were in 1887–1896 in the ratio of 55 per 100,000 persons living in Dublin and 60 per 100,000 in London. In 1897 the rate was 54 in Dublin and 64 in London. In 1896 the mean diphtheria rate alone was 50 per 100,000 in London, Wales, Essex, Kent, and Worcestershire; in Dublin diphtheria and enteric fever combined caused 44 deaths per 100,000 inhabitants. Dublin has a supply of water of great purity; its street sewers can compare favourably with those of other towns; and the plumbers' work in its houses is as good as it is in the great majority of towns. Why, then, should there be so much enteric fever in Dublin? I have long been of opinion that the micro-organisms of this disease have an abiding place in its soils, which for so long a period were polluted by leakage from the filth receptacles and defective sewers of former times. I believe that, under certain conditions to which I have often referred in papers and reports, these malignant organisms escape from the soil into the atmosphere, from which they pass through various media into the bodies of human beings.

That there is a connexion between enteric fever and the soil is shown by the results of observations of the distribution of more than 4000 cases of the disease in Dublin. Where gravel forms the site of streets there is far more typhoid fever than in districts which rest upon the stiff boulder clay. This is clearly owing to the fact that the bacillus typhosus, which is aerobic—that is, requires oxygen—can get it more freely in the loose gravels than in the stiff clays. In the gravel, too, there is a much greater space for the development and movement of the bacilli. It has long been assumed that the soil of Dublin lying nearest to the river was always water-logged, and it was suggested that the drainage of this soil and its subsoil might lessen the prevalence of enteric fever. A few years ago I caused a number of wells to be sunk in the ground near the river and at the higher parts of the city. Long-continued observations of the height of the ground or subsoil water in those wells proved that in the higher parts the water came to within 4 or 5 feet of the surface of the ground, whilst near the river the water remained at from 12 to 18 feet from the surface. It seems strange that the surface of that part of the city from 50 to 70 feet above the level of the river at high water should be only 4 or 5 feet above that continuous sheet of subterranean water termed subsoil or ground water, whilst the low-lying districts have from 12 to 10 feet of dry soil. The explanation is, after all, a simple one. The low-lying districts rest on gravel, which permits the rain to sink into it very deeply, whilst the high grounds are stiff clays which retain the water. When a soil becomes infected by the *materies morbi* of typhoid fever it is difficult to eradicate it. The recent experiments of Dr. Sidney Martin, recorded in the supplement to the annual report of the English Local Government Board for 1896–97, show that typhoid bacilli put into soil multiply in it and ramify throughout it; at the expiration of 105 days they were quite lively. These experiments and the investigations of other scientists, especially those of Dr. Robertson, clearly prove that typhoid bacilli can live and multiply in soils containing organic matter. I feel satisfied that they are to be found in the soils of Dublin and other places. Now that the pollution of the soil in Dublin has almost ceased we may expect that the *pabulum* of the typhoid organism will gradually be used up, with consequent diminution of the amount of enteric fever.

OUR DAYS BETTER THAN THE OLD TIMES.

The belief that former ages were happier than the one we live in does not rest upon a foundation of fact. The "brave days of old" of the poet were too often days of pestilence and famine, of war and rapine, of might over right, of coarseness of language, of absence of public opinion as a censor of morals, and of sanguinary criminal laws. During many centuries Europe was periodically devastated by pestilences. In the fourteenth century the terrible "black death" carried off 25,000,000 of its inhabitants. Population stagnated; that of England remained stationary for three centuries, not so much owing to war as to pestilence and famine. In 1664–65 the plague almost depopulated London. In that long and gloomy period, so truly named the "dark ages," the towns were the hotbeds of disease from which their poisonous seeds were spread throughout the land. Their denizens were crowded into ill-ventilated houses in narrow, sunless streets. Their water-supplies were polluted by the oozings from cesspools which were almost as numerous as the houses themselves. There were no main sewers, no systematic removal of filth, no municipal sanitary organisations. Even as late as the last century Howard the philanthropist drew terrible pictures of the insanitary state of the prisons and even of many of the hospitals and orphanages. The wretched condition of the floating homes of sailors, even those of the Royal Navy, is graphically described in the humorous but truthful pages of Smollett. The present time is better than the old time. Leprosy and malarial fevers have vanished from these countries. Typhus fever, which once filled the wards of the Dublin Fever Hospital with patients, is now rarely met with. Fifty years ago people disfigured by small-pox might be seen in every street; now that loathsome disease is disappearing under the influence of vaccination and the improved hygienic conditions of towns and people. In this connexion I must express my satisfaction that vaccination is still compulsory in Ireland, although no longer so in England. I believe that the medical profession are practically unanimous in regretting that the Vaccination Act just passed permits in England and Wales the so-called "conscientious objector" to refuse to have his

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child vaccinated. In Ireland, if vaccination is sometimes neglected it is not from want of belief in its efficacy or contempt of the law—indeed, the complete absence of agitation in Ireland against compulsory vaccination is a proof of that respect for law and order so characteristic of the Irish people.

SANITARY EFFORTS SHOULD NOT BE RELAXED.

Although a great improvement has taken place in the state of public health in these countries and in most parts of Europe a further improvement is required and is attainable. So long as two or three out of every thousand of the population perish annually from diseases which are termed "preventable" so long must the efforts of the sanitary reformers and professors of preventive medicine be continued. Phthisis, which is as fatal as the "preventable diseases," ought now to be included amongst the latter, for its nature shows that it, too, might be eradicated. We require, perhaps, some additions to and amendments of our sanitary laws, but what is most required is the thorough enforcement of the laws such as they are—and they confer great powers upon the sanitary authorities. The notification of infective diseases and the laws relating to disinfection should be strictly enforced. The proper isolation of fever patients should be provided for. The speedy and complete removal of filth from houses and towns should be secured. Healthy dwellings and cheap baths and washhouses for the most dependent classes of the community should be multiplied. The "unhealthy occupations" should be rendered innocuous, or at least less unhealthy. The injurious emanations from certain kinds of works should be prevented or reduced to a minimum. These are only some of the measures required in order to assimilate our towns as nearly as possible to that ideal City of Hygeia which Richardson has described.

The efforts of a sanitary authority to improve the state of public health cannot attain to a full measure of success unless supported by public opinion and private practice. One of the objects of such associations as the Royal Institute of Public Health and the Dublin Sanitary Association is to educate the general public on the important subjects of public and domestic sanitation. Just in proportion as the citizen is convinced that his health and longevity are favourably affected by the operation of the sanitary laws will he respect and observe them, even at personal inconvenience and some expense. Let us hope that the Sanitary Congress which this day commences its deliberations in this ancient city will be able to prove that it is in the power of the citizens of Dublin to make it one of the healthiest cities in the world.

ABSTRACT OF

An Address

ON

IRELAND: ITS CAPITAL AND SCENERY.

Delivered before the Section of Chemistry and Meteorology at the Congress of the Royal Institute of Public Health held in Dublin, August 18th to 23rd, 1898,

By JOHN WILLIAM MOORE, M.D. DUB., F.R.C.P. IREL.,

DIPLOMATE IN STATE MEDICINE AND EX-SCHOLAR OF TRINITY COLLEGE, DUBLIN; FELLOW OF THE ROYAL METEOROLOGICAL SOCIETY.

[DR. MOORE opened his presidential address to the Section with some words of welcome to the members, after which he proceeded to consider the climatology of Dublin.]

Dublin, the metropolis of Ireland, stands at the extreme western end of the beautiful Bay of Dublin, close to the mouth of the River Anna Liffey, along both north and south banks of which the city extends for a distance of some two miles. It is 292 miles in a direct line W.N.W. of London, 138 miles W. of Liverpool, and 69 miles W. of Holyhead, and is situated in latitude 53° 20′ N., longitude 6° 17′ W. It comprises an area within the municipal boundary of 3733 acres, containing in 1891 25,764 inhabited houses and a population of 245,001. The Dublin Registration District consists not only of the city proper but also of the populous suburban districts of Rathmines Donnybrook, Blackrock, Kingstown, Clontarf, Howth, Coolock, Drumcondra, Finglas, Glasnevin, and Palmerston. The population of this "Greater Dublin" was, in 1891, 349,594, and its extent is 24,693 statute acres. The origin of the city is lost in the mists of antiquity. The Greek geographer Ptolemy, writing A.D. 140 speaks of a small tribe, the Eblani, as having established themselves at Eblana ("Civitas Eblana"), which was probably the site of Dublin. The dark peat-stained waters of the Anna Liffey gave its present name to the Irish capital, for the Celtic *Duibhlinn* signifies the "black pool." Among the Irish-speaking population of the west of Ireland Dublin retains its ancient name of Ath-Cliath. or more fully Baily-ath-cliath, the Celtic *Baile-atha-cliath* meaning the "town of the ford of the hurdles." From this name the obvious inference is that a wickerwork causeway stretched across the Liffey and that in its vicinity the town sprang into existence. The site of Dublin was originally not only beside a pool of dark water (*Duibhlinn*) but in a swamp, for the prefix "Anna" in the name Anna Liffey signifies literally a watery place, a marsh or swamp, annagh (*eanach*) being derived from *ean*, water. It is this untoward circumstance, perhaps, which in modern times has gained for Dublin so evil a reputation for the endemic prevalence of typhoid fever and diarrhœal diseases.

From a hygienic standpoint the meteorological factors of greatest importance in determining the climate of a given town or place are: (1) mean temperature; (2) extremes of temperature; (3) rainfall; (4) rainy days; and (5) relative humidity. Of somewhat less importance are: (6) mean atmospheric pressure; (7) amount of cloud; and (8) direction and force of the wind.

Mean temperatures.—Dr. Alexander Buchan has calculated the mean monthly and annual temperature of the city of Dublin on a mean of 40 years, from January, 1856, to December, 1895. His results are as follows:—

January	= 41·1°	July	= 60·3°
February	= 42·0°	August	= 59·4°
March	= 43·3°	September	= 55·6°
April	= 47·3°	October	= 49·4°
May	= 52·3°	November	= 44·5°
June	= 57·5°	December	= 41·6°

Year = 49·5°

Extreme temperatures.—Since January, 1865, the extreme readings of the thermometer in Stevenson's stand recorded in Dublin have been 87·2° on July, 15th, 1876, and 13·3° on Dec. 14th, 1882—a range of 73·9°F. The average annual range of mean temperature is not quite 20°.

Rainfall.—In the "Rainfall Tables of the British Islands, 1866–1890," published by the authority of the Meteorological Council in 1897, the mean rainfall at Fitzwilliam-square, Dublin, is given for the 20 years 1871–1890 as follows:—

	Inches.		Inches.
January	= 2·09	July	= 2·63
February	= 2·22	August	= 2·91
March	= 1·97	September	= 2·23
April	= 2·16	October	= 3·18
May	= 1·89	November	= 2·70
June	= 1·98	December	= 2·35

Total for the year = 28·31 inches.

February, 1891, was the driest month on record in Dublin. There were only two rainy days during the whole month, and the rainfall was but ·042 inch. September, 1865, also, had only three rainy days with a rainfall of only ·056 inch. An inch of rain—equivalent to a downpour of 101 tons of water on every statute acre—seldom falls within twenty-four hours in Dublin. On Oct. 27th, 1880, however, the measurement was 2·736 inches; on Aug. 13th, 1874, also, 2·482 inches of rain were registered; and on May 28th, 1892, 2·056 inches were recorded.

Relative humidity.—By this term is meant the percentage of saturation of the atmosphere with aqueous vapour. The relative humidity of absolutely dry air is 0, that of saturated air, when dew is deposited or fog forms, is 100. In Dublin the mean relative humidity in the twenty years, 1871–1890, was 82·5 per cent.

Mean atmospheric pressure.—Dr. Alexander Buchan calculates the mean monthly and yearly atmospheric pressure, reduced to 32° and mean sea level, in the City of Dublin during the 40 years—1856 to 1895 inclusive—to be—

	Inches.		Inches.
January	= 29·870	July	= 29·931
February	= 29·923	August	= 29·903
March	= 29·885	September	= 29·919
April	= 29·914	October	= 29·867
May	= 29·956	November	= 29·876
June	= 29·981	December	= 29·887

Annual Mean = 29·909 inches.

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The absolute extreme readings of the barometer at any time taken by me were—maximum, 31·020 inches on January 9th, 1896; minimum, 27·758 inches in December, 1886. These readings assuredly represent the extreme range of atmospheric pressure, reduced to sea-level in Dublin—namely, 3·262 inches.

Amount of Cloud.—This climatological element varied in the 20 years, 1871-1890, from 64·5 per cent. at 9 A.M. to 56·5 per cent. at 9 P.M., the mean being 60·5 per cent. February is the most cloudy month (67 per cent.), May is the least so (55 per cent.).

Direction of the wind.—As regards this element, 14,613 observations were made during the 20 years, 1871-1390, with this result—N., 870; N.E., 941; E., 1409; S.E., 1267; S., 1323; S,W., 2051; W., 4030; N.W., 1750; calm, 972.

During the twenty years gales were recorded on 413 occasions, thunderstorms on 176 days, snow or sleet on 408 days, and hail on 622 days. In common with the rest of the British Islands Dublin owes its mild, equable climate in great measure to the proximity of the North Atlantic Ocean and its surface current of warm water, usually called the Gulf Stream, because its head-springs arise in the Gulf of Mexico. This sets in a north-easterly direction, laving in its course the western shores of Europe, and carries even into the Arctic regions north of Scandinavia temperatures from 20° to 30° above those due to the latitude alone. Other obvious causes of the mildness of the climate are the prevalence of south-westerly and westerly winds and the fact that a few miles south of the city lies a range of mountains with summits varying in height from 1000 to more than 2500 ft., while the keen, dry, searching easterly winds of winter and spring are much softened in their passage across the Irish Sea, so that during their prevalence the thermometer occasionally stands some 5° or upwards higher in Dublin than it does at Holyhead, although this latter place is actually on the sea. It is true that the converse holds good during westerly and north-westerly winds when severe frost sometimes occurs in winter in Dublin, while the thermometer remains decidedly above the freezing point at Holyhead. Yet these latter winds are never so piercingly cold and parching as those from easterly points. Nor is it in winter merely that the Irish Sea confers a benefit upon Dublin. In calm, clear weather in summer time no sooner has the sun mounted high in the heavens than a cool, refreshing sea breeze sets in towards the land, so that consequently extreme or oppressive heat is rarely experienced. Indeed, an oppressive atmosphere happens only when a damp, warm south-west wind is blowing with a more or less clouded sky. Temperatures above 80° in the screen in Dublin nearly always coincide with winds off the land, from some point between south and west and a clear or only slightly clouded sky. Among climatic epiphenomena the infrequency of thunderstorms and the relative frequency of hail showers in Dublin are worthy of note. In winter fog and frost often prevail in the city when a northerly breeze is blowing along the coast accompanied with a higher temperature and perhaps showers of rain. Lastly, in summer, with a westerly wind, heavy showers fall at times in the valley of the Liffey while the neighbouring higher lands enjoy dry weather.

This may, perhaps, be a suitable occasion on which to direct attention to a much-needed reform in the keeping of time in Ireland. For many years the time-standard in this country has been so-called "railway-time," more strictly Dublin time, or rather the time of the meridian of Dunsink Observatory, co. Dublin. It is, however, a matter for consideration whether Greenwich time should not be adopted as the standard for Ireland as it already is for Great Britain. If an objection is raised that a national question is involved it is only necessary to point to Scotland and Wales, where the national sentiment runs as high as it does in Ireland and which have long since adopted Greenwich time. As a matter of fact, however, the question is that of West European time, which is applicable to a zone extending 7½ degrees of longitude both east and west of the Greenwich meridian. France has lately adopted this time, just as Switzerland and Germany have arranged to set their watches by Central European time, which extends from 7° 30′ E. long. to 22° 30′ E. long. For many years Greenwich time has been adopted in the Postal Department and Irish telegrams are despatched and received by it. As a matter of public convenience the principle should be extended, and so the existing confusion in time-tables and in telephonic communication between Great Britain and Ireland would cease. Let the secretaries of the various steamboat and railway companies agree upon so desirable a reform and the thing is done. It would, however, be necessary afterwards to amend the Statutes (Definition of Time) Act, 1880, which provides that whenever any expression of time occurs in any Act of Parliament or other legal instrument it shall be held in Great Britain to be Greenwich mean time and in the case of Ireland to be Dublin mean time.

[Dr. Moore here gave English renderings of many names of places near Dublin, acknowledging his indebtedness to the "Origin and History of Irish Names of Places," by P. W. Joyce, and concluded his address with an account of a ten days' tour which he made in the spring of the present year through the south and south-west of Ireland, from Waterford to Lahinch and Lisdoonvarna in county Clare.]

ELECTRO-MAGNETIC EXTRACTION OF FOREIGN BODIES FROM THE EYE.

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THAT the electro-magnet is of value in ophthalmic surgery is fully established by the record of successful cases which have been published from time to time; but there is still a considerable amount of doubt and divergence of opinion as to its exact *rôle* as a strictly conservative agent. For example, Hirschberg gave his favourable results as 10 per cent., while Mayweg's were 31 per cent.; Knapp's results were even less favourable than those of Hirschberg. This is a point which can only be established by the record of series of cases preferably drawn from the practice of one individual or institution. As such, the following series, which represents the electro-magnetic extractions at the Birmingham and Midland Eye Hospital during a period of about two years, will, I think, prove of some value. I have also endeavoured to present some of the dangers and complications, both immediate and remote, of electro-magnetic extractions. The later records of some of the cases are unfortunately incomplete owing to the fact that the patients have failed to report themselves. During a corresponding period there were 16 cases in which the electro-magnet was introduced into the eye, but no foreign body was found. These I shall not detail in full, but I will give a short analysis of the results. I would mention that the instrument used was that of Snell and the current was supplied from a secondary battery. Strict antiseptic precautions were observed in every case.

I will give first a short account of the cases in which the eye had to be excised or eviscerated. Of these there are 4, 2 only being due to suppuration.

A.—FOUR CASES IN WHICH THE EYE WAS LOST.

CASE 1.—A patient, aged eighteen years, was admitted to hospital on May 30th, 1896, having been "struck in the right eye by a piece of steel" on the day of admission. The foreign body (a piece of steel) was floating in the vitreous and was visible with and without the ophthalmoscope when the pupil was dilated. The wound of entrance was through the sclerotic about ¼ in. behind the corneal margin on the outer side. A large piece of steel, measuring about ¼ in. by ⅛ in., was removed by the electro-magnet from the lower part of the vitreous, the scleral wound being enlarged for its extraction. The foreign body was easily removed by one insertion of the magnet and with the least amount of disturbance of the vitreous. The eye at the time was perfectly quiet, the wound in the sclera and a slight hæmorrhage into the lower part of the vitreous being the only signs of damage to the eye. On June 2nd the eye showed signs of infection, there being conjunctival and ciliary congestion, haze of the vitreous, chemosis, and œdema of the lids. The suppuration progressed in spite of treatment and on the 8th the eye was eviscerated.

CASE 2.—A patient, aged nineteen years, was admitted to hospital on June 30th, 1896, with a perforating wound of the left cornea and traumatic cataract. There was a foreign body in the vitreous just behind the iris. The foreign body

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was removed by the electro-magnet on the day of admission. A small iridectomy was performed. On July 1st the anterior chamber was reformed; there was some muco-purulent discharge. On the 3rd there was congestion of the eye with discolouration of the iris. Haze of the media and suppuration set in and on the 8th the eye was eviscerated.

CASE 3.—A patient, aged fifteen years, was admitted to hospital on July 12th, 1897, with a perforating wound of the right lid and sclera. There was hyphæma. A foreign body was in the globe (?). The vision of the right eye equalled perception of light; there was no projection. On the 14th a large piece of steel was extracted by the electro-magnet. Recurrent hæmorrhages into the eyeball followed and the eye was excised on August 6th.

CASE 4.—A patient, aged twenty years, was admitted to hospital on Aug. 21st, 1897, with a perforating wound of the right cornea and sclera in the lower and inner quadrant. There were prolapse of the iris, hyphæma, and a traumatic cataract. A foreign body was in the globe (?). On the day of admission an iridectomy (of prolapse) was performed. A large piece of steel, measuring about ½ in. by ¼ in., was extracted by the electro-magnet through the wound. A slight escape of vitreous took place. The eye quieted down very gradually, but never regained normal tension. On Sept. 20th the vision of the right eye equalled perception of light feebly; there was no projection. Excision was advised. In January, 1898, the globe was shrunken, the tension being − 1. The pupil was occluded. Occasional attacks of pain and congestion occurred. The vision of the right eye equalled perception of light; there was no projection. The eye was excised on Jan. 18th.

B.—FOURTEEN CASES IN WHICH THE EYE WAS SAVED.

CASE 1.—A patient, aged twenty-five years, was admitted to hospital on Dec. 3rd, 1896, having been "struck in the left eye by a piece of steel" three days before admission. On ophthalmoscopic examination the foreign body was seen projecting through the sclera into the vitreous. The scleral wound was slightly enlarged and the foreign body was easily removed by the electro-magnet. On the 21st there were flaky vitreous opacities. The vision of the left eye equalled $\frac{6}{9}$ with + 2 D.

CASE 2.—A patient, aged forty-three years, was admitted to hospital on March 8th, 1887, having been "struck in the right eye by a small piece of steel" two weeks before admission. On admission there were some ciliary congestion and fine posterior synechiæ. Dense membranous vitreous opacities obscured the fundus, but a sharply-defined whitish mass of about twice the size of the disc and with an elongated blackish centre could be seen in the vitreous. The black centre was thought to be a foreign body (steel), and on applying the magnet over the surface of the eyeball the mass was seen to move about in the vitreous concurrently with the movements of the magnet. The tension of the right eye was minus. On the day of admission the foreign body with lymph adherent was removed by the electro-magnet through a meridional scleral incision. On April 28th there were vitreous opacities and the ciliary congestion had disappeared. The synechiæ all gave way under atropine. Pigmentary and atrophic changes occurred in the retina and the choroid where the foreign body had lain. The vision of the right eye equalled $\frac{6}{18}$. On June 11th, 1898, the vision and the fundus were the same as they had been on April 28th, 1897. The patient had no trouble with it and was able to work all day in front of a furnace fire.

CASE 3.—A patient, aged fifty-five years, was admitted to hospital on March 8th, 1897. "Whilst shoeing a horse fourteen days ago something struck him in the right eye." On admission a foreign body was seen in the anterior chamber. A small corneal scar was visible and there was some iritis. The foreign body was extracted by the electro-magnet through a peripheral corneal section. On the 22nd the vision of the right eye equalled $\frac{6}{9}$.

CASE 4.—A patient, aged twenty-five years, was admitted to hospital on March 12th, 1897, with a wound of the left cornea and sclera. A foreign body was in the globe. On the day of admission a large piece of steel was removed by the electro-magnet. Prolapse of the choroid and retina was removed. The sclera was stitched. On the 19th there was perception of light by the left eye on the inner side only, but on April 10th there was no perception of light. He had had recurrent hæmorrhages into the vitreous and anterior chamber. There was no red fundus reflex. The tension was normal. On July 10th, 1898, the left eye was shrunken and atrophied. The lens was opaque and there was slight ciliary congestion. There was a large depressed scar of the cornea and the sclera downwards and outwards. The vision of the left eye equalled no perception of light and the tension was minus. There was no pain or inconvenience. Excision was advised. The right vision equalled $\frac{6}{9}$.

CASE 5.—A patient, aged seventeen years, was admitted to hospital on July 30th, 1897, with a perforating wound of the right sclera above. A foreign body of the size of a small shot was visible in the vitreous. The wound in the sclerotic was enlarged slightly and the foreign body was removed by the electro-magnet. There was some reaction after this; the pupil contracted and the aqueous became hazy. On Aug. 18th the eye was fairly quiet and the pupil was nearly fully dilated. On Sept. 16th there were dense vitreous opacities and a patch of choroido-retinal atrophy with pigmented margins at the lower periphery. The vision of the right eye equalled $\frac{6}{18}$ with + 1 D. On June 11th, 1898, there were fine vitreous opacities and the patch of atrophy as above. The vision of the right eye equalled $\frac{6}{6}$ with + 0·50 D. The patient had been at work since November, 1897.

CASE 6.—A patient, aged twenty-five years, was admitted to hospital on Sept. 15th, 1897, with a perforating wound of the left upper lid and sclera; a piece of steel was supposed to be in the globe. On the day of admission a foreign body was extracted from the vitreous by the electro-magnet. On Oct. 8th there were dense membranous vitreous opacities extending from the wound in the sclera above, downwards across the pupillary area towards the lower periphery. Details of the fundus were not made out. The vision of the left eye equalled $\frac{6}{24}$ with $\frac{+\ 2{\cdot}5\text{ D. sph.}}{+\ 1\text{ D. cyl. }\phi\ 90^\circ}$ and that of the right eye $\frac{6}{6}$. On Dec. 15th the left vision equalled $\frac{6}{18}$ with $\frac{+\ 2{\cdot}5\text{ sph.}}{+\ 1\text{ D. cyl. }\phi\ 90^\circ}$.

CASE 7.—A patient, aged twenty years, was admitted to hospital on Nov. 26th, 1897, giving a history of having been struck in the right eye by a piece of steel. On the same day there were some congestion and chemosis of the eye and a small wound of the cornea extended slightly into the sclerotic below. There was a small triangular wound in the periphery of the iris opposite the corneal wound. Hyphæma was noted. The fundus was not visible. On applying the magnet a semicircular ring of steel, ⅛ in. in diameter and $\frac{1}{16}$ in. thick, was removed from the ciliary region. It was a little difficult to extract such a large body through the small wound, but after getting the piece of steel attached to the magnet by one end it came out, the magnet being gradually rotated as the ring emerged. There were some chemosis and iritis for a few days after the removal of the foreign body. On Dec. 14th the eye was quiet. A small detachment of the retina at the lower periphery had taken place and there were numerous vitreous opacities. The vision of the right eye equalled $\frac{6}{9}$ with + 3 D. The patient was discharged from the hospital. On the 21st the eye was quiet. There were membranous vitreous opacities and a detachment of the retina (lower and outer half) implicating the yellow spot. A semicircular ring of choroidal atrophy was observed at the site of the foreign body in the lower periphery. Fingers could be seen with the right eye at a distance of 1 metre. The patient refused to re-enter the hospital for further treatment and has since left the neighbourhood and is quite satisfied with his eye as it is.

CASE 8.—A patient, aged twenty-one years, was admitted to hospital on Nov. 27th, 1897, with a right traumatic cataract. A foreign body was in the lens. On the 30th the foreign body was extracted by the electro-magnet. On Jan. 3rd, 1898, the right lens was evacuated. On August 6th the eye was perfectly quiet and normal in appearance. The vision of the right eye equalled $\frac{6}{9}$ with + 12·50 D. sph.

CASE 9.—A patient, aged twenty-eight years, was admitted to hospital on Jan. 22nd, 1898, having been "struck on the right eye by a piece of steel" on the day of admission. On admission it was found that he had a perforating wound of the right lid and sclera. There was hæmorrhage into the vitreous and probably a foreign body was present in the globe. On the day of admission a triangular piece of steel, $\frac{6}{18}$ in. long and $\frac{1}{18}$ in. at the base, was extracted from the vitreous by the electro-magnet. No difficulty was experienced and no great disturbance of the vitreous was caused. On Feb. 9th the hæmorrhage into the vitreous was nearly all absorbed. There was almost

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complete detachment of the retina. The vision of the right eye equalled perception of movements of the hand. On August 3rd, 1898, the eye was quiet, there was no pain, and the detachment continued as above. With the right eye fingers could be seen at a distance of 2 metres.

CASE 10.—A patient, aged forty-one years, was admitted to hospital on Feb. 8th, 1898, with a history of having been struck in the right eye by a piece of steel on the previous day. A large ragged wound was found in the sclera above and there was in all probability a piece of steel in the vitreous. On introducing the magnet through the wound a considerable amount of blood-stained serum escaped. On withdrawing the magnet it extracted a ragged piece of steel, $\frac{1}{8}$ in. by $\frac{1}{4}$ in., covered with a layer of whitish puro-lymph. A stitch was inserted into the sclera and the conjunctiva. On the 9th the eye was quiet except around the wound. There was a slight sloughing of the edges of the wound and congestion of the conjunctival and scleral vessels around the wound. On the 21st there was slight bulging at the site of the wound. The eye was perfectly quiet. There never was any reaction in the deeper structures of the eye. Dense membranous vitreous opacities occurred but no detachment of the retina. The vision of the right eye equalled $\frac{6}{12}$ with + 1 D. The patient was discharged from the hospital.

CASE 11.—A patient, aged forty-four years, was admitted to hospital on Feb. 8th, 1898, with a perforating wound of the left sclerotic; there was hyphæma and a foreign body was on the iris. The foreign body, a small triangular piece of steel, was extracted through the wound by means of the electro-magnet. The iris was replaced. On the 16th the vision of the left eye equalled $\frac{6}{6}$ with + 2 D. The pupil was round. On July 8th, 1898, the left vision was $\frac{6}{6}$ with + 50 D. There was a small spot of discolouration of the iris at the site of the foreign body. The pupil was round.

CASE 12.—A patient, aged twenty-four years, was admitted to hospital on Feb. 24th, 1898, having been "struck in the right eye by a piece of steel" on the day before admission. There was a small wound of the upper lid near the margin and also a small perforating wound of the sclerotic about $\frac{1}{4}$ in. behind the corneal margin above. Marked chemosis was present around the wound and on the inner side of the globe. The cornea was clear and there was a good anterior chamber. The iris was active and well dilated under atropine. The lens was clear. A large triangular membranous hæmorrhagic mass was seen lying in the vitreous. Extensive detachment of the retina was visible on the outer side. The rest of the fundus was not visible. The vision of the right eye equalled perception of light and the tension was − 1. On the day of admission a piece of steel embedded in a clot of blood was extracted by the electro-magnet. The magnet had to be inserted three times before the foreign body was extracted. On March 3rd fresh hæmorrhage into the vitreous occurred. The tension was normal (?). On June 30th, 1898, there was perception of light in the right eye. The pupil and the iris were normal and the eye was quiet and painless. Complete detachment of the retina had taken place and there were streaky hæmorrhages over the retina. The lens was clear.

CASE 13.—A patient, aged fourteen years, was admitted to hospital on April 20th, 1898, with a foreign body in the left anterior chamber which was extracted through a peripheral corneal section by means of the electro-magnet. The iris came out slightly and was afterwards replaced. On the 28th under atropine the pupil was round. The left vision equalled $\frac{6}{6}$ with − 0·50 D.cyl. ⊖ 180°. On June 30th the pupil was egg-shaped owing to a small mass of rust-coloured lymph having become adherent to the cornea and the iris.

CASE 14.—A patient, aged forty-eight years, was admitted to hospital on July 6th, 1898, having been "struck in the left eye by a piece of steel" three days before admission. There was a small wound of the sclera close to the corneal margin downwards and outwards. There were slight conjunctival injection around the wound and slight hyphæma. The iris was active and the pupil was round. There was slight haze of the vitreous downwards and outwards. A glistening triangular body was seen projecting just behind the iris on ophthalmoscopic examination with the pupil fully dilated. On the 9th a piece of steel, $\frac{1}{16}$ in. by $\frac{1}{16}$ in., was extracted by the electro-magnet from the ciliary region through a meridional scleral incision. There was considerable difficulty in extracting this foreign body. The magnet had to be introduced five times before the piece of steel became attached. On the 19th there was considerable conjunctival and ciliary congestion, which was persistent, and there was an inflammatory deposit on the back of the lens. On the 22nd the eye was quiet; the deposit on the back of the lens was still marked. The left vision equalled $\frac{6}{36}$. On August 4th the left vision was $\frac{6}{18}$ and the deposit on the lens was much less.

An analysis of the above cases gives the following results: eyes lost (including Case 4, Group B) 5; cases in which the shape and appearance of the eye have been preserved but only a small though useful amount of vision has been retained, 3; and cases in which good vision (from $\frac{6}{18}$ to $\frac{6}{6}$) has been retained, 10. Of these 10 cases 4 were in the anterior chamber or lens and 6 were in the vitreous.

As regards complications: suppuration occurred in 2 cases; detached retina in 3 cases; shrinking of the globe in 2 cases; recurrent hæmorrhage into the globe in 1 case; and deposit on the posterior surface of the lens in one case. It is noteworthy that not a single case developed sympathetic ophthalmia.

C. SIXTEEN CASES IN WHICH THE ELECTRO-MAGNET WAS INTRODUCED INTO THE EYE, BUT NO FOREIGN BODY WAS FOUND.

Of these 16 cases the eye was lost in 3 (excision advised in 1 other case); there were 7 cases in which the shape and appearance of the eye were preserved but with little vision; and in the remaining 6 cases good vision (from $\frac{6}{18}$ to $\frac{6}{6}$) was retained.

In the 3 cases in which excision was performed the foreign body was found to be embedded in the choroid in 1 case and in the optic nerve and sclerotic in the other 2 cases.

Owing to the incompleteness of the records 7 does not represent accurately the number which ought to be included in the second category. 3 out of the 7 are noted as having traumatic cataracts when discharged. These, if they had been operated upon, would probably come to be arranged with the last group. The complications noted in these cases were as follows: detached retina occurred in 2 cases; deposit of rust-coloured spots in the lens capsule in 1 case; and iridocyclitis followed by synechiæ posterior and iris bombé in 1 case. Here, again, there is no record of sympathetic ophthalmia as a complication.

It remains to explain why there is such a large number of cases in which the electro-magnet failed to extract the foreign body which was presumed to be in the eye. Some of the cases probably did not contain a foreign body. Such as these one hopes in future to be able to eliminate by the adoption of additional and improved methods of investigation, such as the use of the sideroscope, Haab's magnet, and the Roentgen rays. Judging from cases already published and from recent cases of our own I think skiagraphy promises to supersede all other methods. More accurate localisation would also help to reduce the number of failures, as the magnet could then be passed towards the exact spot at once, and there would be less likelihood of the object being missed or of its failing to become attached when surrounded by lymph or blood. Thus the surgeon would also minimise that disturbance of the vitreous and other structures of the eye which proved so detrimental in at least one of the above cases. Skiagraphy employed on the lines laid down by Mr. Mackenzie Davidson has proved a most accurate localising agent. In a certain number of cases the foreign body was undoubtedly firmly embedded in the coats of the eye and in these cases a powerful magnet such as Haab's might have been more successful than the small magnet, or having carefully localised the object by the means above mentioned an incision could be made directly over its site and the foreign body extracted by magnet or forceps.

In conclusion, I wish to thank the honorary surgeons of the hospital for their kind consent to publish these cases and my predecessor, Mr. Minnes of Kingston, Ontario, for many of the notes.

Birmingham.

NORTH DEVON INFIRMARY, BARNSTAPLE.—The annual meeting of the North Devon Infirmary was held on August 16th. The report showed that during 1897 the out-patients numbered 2722 and the in-patients 677, the average daily number in hospital being 43 and the average stay 26 days. The total ordinary expenditure was £2515 and the ordinary income was £2008.

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THE CONSERVATIVE SURGERY OF THE OVARY.[1]

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THE physiological value of the ovaries may be best realised by noting the results of complete extirpation of both glands. (*a*) The woman becomes absolutely sterile; (*b*) menstruation ceases in about 95 per cent. of the cases; (*c*) the uterus and to a less extent the vagina and vulva undergo a process of atrophy; (*d*) the nervous symptoms of the menopause appear abruptly and violently—viz., heats and flushes, perspirations, palpitations, giddiness, depression of spirits, and a generally unstable condition of the nervous system; (*e*) in a considerable majority of cases there is a diminution or total abolition of the sexual instincts; and (*f*) the patient has a tendency to obesity. Now, if one ovary, or even only a portion of one ovary, be left behind none of these symptoms appear. There is physiologically no difference between a woman with half an ovary and a woman with two ovaries, while there is a great difference between a woman with half an ovary and a woman with none. It is remarkable how small a fragment of ovarian tissue is necessary to preserve the full influence of the gland on the body. Let me now very briefly direct your attention to certain operations on the uterus and its appendages, in which, by a little care, the surgeon may preserve the ovary and at the same time cure the patient.

In the first place, I need hardly point out that in cases of ordinary cystoma of one ovary—the other ovary being healthy—it is unjustifiable to remove both ovaries. If, however, the case be one of sarcoma of one ovary, then I think it is not only justifiable but that it is the surgeon's duty to remove both glands even if to the naked eye the other ovary appears normal. A sad experience of these cases shows that sarcoma is extremely apt to affect first one ovary and then the other. By taking away both I think we diminish the chances of recurrence. In cases of inflammatory diseases of the uterine appendages (salpingitis, pyosalpinx, ovarian abscess, &c.), if the disease be confined to the organs on one side only it is unnecessary to remove them on both sides. I have frequently removed the uterine appendages on one side only for inflammatory disease, leaving the appendages on the other side alone, or if adherent, merely freeing them. The results have been most satisfactory, and I have not in a single case had to remove the remaining appendages at a subsequent operation. The following is an illustrative case.

On Feb. 3rd, 1896, I operated on a woman, aged twenty-five years, with a large inflammatory mass to the right of the uterus. Her illness dated from her confinement several months previously. At the operation the mass proved to be an ovarian abscess, and I removed the diseased (right) appendages. The left appendages were buried in plastic lymph but not otherwise obviously diseased. I therefore contented myself with freeing them from adhesions. The patient made a good recovery, but for some time the pelvic roof remained fixed and indurated. Gradually, however, all signs of past inflammation melted away. Twelve months after the operation nothing abnormal could be detected on vaginal examination, and she was symptomatically cured. Early in July, 1898, she came to tell me that she was three months pregnant and in excellent health.

In cases of double pyosalpinx it is now my custom to perform vaginal hysterectomy and at the same time to remove the diseased tubes. In such cases I always endeavour to leave behind one or both ovaries unless they are obviously diseased. After removing a large fibroma of the ovary I was struck, when I came to examine the specimen, by the fact that the fibroma had developed in the medulla of the ovary and had spread out the glandular portion of the ovary (the cortex) as a thin sheet or capsule on its surface. It was quite easy to shell out the fibroma from this follicular capsule. The fibroma, in fact, was a mere foreign body growing in the substance of the ovary, displacing but not infiltrating its true glandular substance. In another case after I had removed an ovary of about the size of a hen's egg I split it open and found that I could easily shell out of its substance a small fibroma. In both of these cases it would have been easy to have saved the ovarian tissue proper by incision of the ovary, enucleation of the contained fibroid, and suture of the capsule. Since then I have examined numerous specimens of fibroma of the ovary, and in all of them I find the same relationship of the tumour to the gland.

Early in 1898 I had to operate on a young lady, aged twenty-six years, suffering from dermoid tumour of both ovaries. She was engaged to be married and was anxious, if possible, that one ovary should be saved. I found that the left ovary was the seat of a dermoid cyst of the size of a cocoanut, whilst the right ovary contained a dermoid cyst of the size of a hen's egg. I removed the left ovary entirely; but I found that I could easily shell out unruptured the small dermoid cyst from the substance of the right ovary and thus preserve about three-fourths of its glandular substance. I sewed up the incision in the right ovary with fine cat-gut. The patient made a good recovery. That the portion of ovary left behind was of physiological value is shown by the fact that since the operation she has menstruated regularly. Had I removed both ovaries she would have broken off her engagement to be married, whereas now there is no reason why she should not marry and become a mother. In a few cases where patients have been the subjects of cystic disease of both ovaries I have removed the ovary which was the more diseased and have performed resection of the ovary which was less affected. In these cases I found that the cystic disease affected only one pole of the ovary. I was able to remove a wedge which included all the diseased tissue and then to sew up the V-shaped gap by a fine continuous silk or catgut suture. The ovary seems to contain capillary blood vessels only; I certainly never had any trouble with hæmorrhage from the divided ovarian tissues. In this way I have now performed resection of the ovary in 5 cases and in all of them with the most satisfactory results. I have had the cases under observation for periods varying from four months to four years and in not one of them, so far, has there been any sign of recrudescence of the disease. 3 of the 5 cases were those of young unmarried women, aged respectively twenty years, twenty-five years, and twenty-six years; while 2 were married and were aged twenty-two years and thirty-three years. In all the 5 cases the preservation of even half an ovary was a matter of importance to them.

I know of no pelvic condition more troublesome to treat than that known as chronic ovaritis. It is associated with, if it be not the cause of, severe dysmenorrhœa, menorrhagia, ovarian neuralgia, hysteria, anæmia, and other disorders. The conscientious gynæcologist tries drug after drug and remedy after remedy with but discouraging results. Finally, in a considerable proportion of the cases he is driven to do something by way of operation to relieve the patient's sufferings. In the past in too many cases both the appendages have been removed, and in a large proportion of these I doubt if the patient has been much benefited by the operation. Menstruation usually ceases but the patient's sufferings continue. As an alternative the conservative operation of ignipuncture is well worth a trial. It may be done by vaginal section by either anterior or posterior colpotomy. The peritoneum having been opened any adhesions binding down the ovary are separated with the finger. The ovaries one after the other are then drawn into the vagina and punctured with the fine point of Pacquelin's cautery heated red-hot. Wherever there is an indication of a cyst in the cortex or an unusually thick portion of the capsule of the ovary the red-hot point is inserted. In this way from six to a dozen punctures, each about $\frac{1}{2}$ in. in diameter, are made in each ovary. The appendages having been replaced in the peritoneal cavity the vaginal wound is closed with catgut and the patient is put back to bed. I have now performed this operation of ignipuncture for chronic or cystic ovaritis 14 times. All the patients made an easy recovery from the operation. In 5 cases the operation failed to cure the patient, and in 3 of these I had subsequently to perform the operation of removing the appendages. One case has been operated on too recently for me to judge as to whether or not it will succeed. Of the other 8 I have been able to trace all but one patient, leaving 7 cases in which a cure has

[1] A paper read in the Section of Obstetrics and Diseases of Women at the meeting of the British Medical Association at Edinburgh, July, 1898.

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certainly resulted. One of these 7 was a woman who had been married for five years but had never been pregnant. She became pregnant three months after the operation, and was confined at the full term of a living child.

If a parovarian cyst be examined in its early stage it will be found lying in the substance of the broad ligament quite distinct from the ovary proper. In some cases it is pedunculated and in others it is more or less embedded between the two layers of the broad ligament. In these early cases it is very easy to remove the cyst without removing the ovary. Where it is pedunculated the pedicle can usually be tied without including the ovary; where it is embedded it is not difficult to split the peritoneal capsule and shell the cyst out from between the two layers of the broad ligament. The wound in the broad ligament is then closed with a fine continuous silk suture. In more advanced cases the ovary is often spread out as a thin sheet over a portion of the posterior surface of the growth. Even here it will often be found an easy matter to split the capsule of the cyst and peel off the ovary from its posterior surface. If the other ovary be quite healthy this attempt to save the ovary on the same side as the cyst is perhaps unnecessary, if by so doing the surgeon at all increases the gravity of the operation. If, however, the other ovary be absent or have to be removed, then the surgeon should endeavour to save the ovary in removing the parovarian cyst. In cases of embedded cysts of the broad ligament, the surgeon is compelled to enucleate the cyst from between the two layers of the broad ligament, and then, *nolens volens*, he preserves the ovary intact.

If the uterus be completely removed of course the patient becomes sterile and menstruation ceases, but if at the same time one or both ovaries be left behind the nervous symptoms of the menopause are slight and often entirely absent. If, however, both ovaries be removed with the uterus these symptoms appear. I have observed, however, that patients who have had the uterus removed as well as the appendages suffer from climacteric troubles less severely than do those who have had the appendages alone removed. In some mysterious fashion the uterus bereft of its appendages is a source of disturbance to the nervous system. I have come to the conclusion that if both ovaries and tubes have for any reason to be removed it is better at the same time to remove the uterus. On the other hand, if the uterus has to be removed we should endeavour to preserve one or both ovaries.

It would be out of place in this paper to discuss at length the relative merits of the various surgical methods of treating uterine myoma. In my own hands panhysterectomy and vaginal hysterectomy have proved themselves much safer than either the removal of the appendages or the old clamp operation. An important argument in favour of hysterectomy is that it is generally easy to preserve one or both ovaries, whilst, of course, the essence of the removal of the appendages consists in their sacrifice. In abdominal hysterectomy, either where the old "clamp" operation or the more modern method of "panhysterectomy" is performed, it is generally easy to pass the uppermost ligature between the ovary and the fundus. The ovary is thus left on the proximal side of the ligature and has its nutrition maintained by the intact ovarian artery and veins. Similarly in cases of vaginal hysterectomy the upper ligature should be passed on the uterine side of the ovaries in order that they may be preserved. I have now performed abdominal hysterectomy for various conditions 42 times; 13 of these were "clamps" and 29 were panhysterectomies. In 27 cases I removed both ovaries with the uterus and in 15 cases I was able to leave one or both ovaries behind. I have performed 40 vaginal hysterectomies for various conditions. In 13 cases I removed both ovaries with the uterus and in 27 cases I was able to save one or both ovaries. I have been able to trace the after-history of most of these cases and I do not know of a single instance in which this conservation of the ovary has led to any untoward result.

In conclusion I would urge gynæcologists to give a fair and unbiased trial to the conservative surgery of the ovary. The reckless way in which in the past uterine appendages have been removed without adequate justification is the opprobrium of our art. The profession owes therefore a debt of gratitude to men like Pozzi of Paris and Martin of Berlin for their pioneer work in conservative surgery as applied to these organs. The brief account I have given is a summary of my own endeavour to follow in their footsteps, and I trust that it will encourage other gynæcologists to give a fair trial to these conservative measures.

VITALITY:
AN APPEAL, AN APOLOGY, AND A CHALLENGE ADDRESSED TO BROTHER PRACTITIONERS.

BY

LIONEL S. BEALE.

(Concluded from page 407, August 13th.)

THE INNER LIFE OF THE BIOPLASM.

So far in this appeal I have kept pretty strictly to comments upon the results of actual observation—facts I have observed, things I have seen with my own eyes, that I can see now, and can show to others; or to appearances which I can very distinctly remember, many of which will remain in my memory as long as it may last; but under the above heading I pass towards another realm in which I cannot be entirely guided by fact and observation. At the entrance, perhaps, they only wait.

Of the existence of the inner life of the bioplasm I have no more doubt than I have of the ordinary growth of living things known to all, but to see the changes which take place in the matter of a minute particle of bioplasm is at present possible only to the mind.

Notwithstanding the increased facilities we enjoy of using high magnifying powers and the large experience of their value recognised by hundreds, very little, I regret to say, has been recently added to our knowledge concerning the minute changes which occur in the very substance of every kind of living bioplasm. Nor do I think that we should be able to see much more of the inner phenomena of the bioplasm itself even if our magnifying powers were increased to ten thousand diameters—that is, an increase which, if it were possible to effect in all parts of the body at once, would make the magnified man appear many miles high.

The study of bacteriology has familiarised students with the use of high magnifying powers, but as yet comparatively few observers have used these high powers for the study of the tissues of man and the higher animals and for the investigation of the changes occurring during development. Further experience in the use of glycerine for examining and preserving animal tissues will, I think, lead to many demonstrations of the greatest interest and importance, for in some such way only can the bioplasts and the more delicate tissue elements be saved from pressure, just as they are all protected and supported by the interstitial fluid in the natural state during life.

Bioplasm, as I have already endeavoured to show, is the only living matter in the organism, and by it all formative changes are effected. Healing processes can take place only through the agency of living matter. Not only do all vital "properties" and powers, all inherited characters, all modifications in structural details, whether arising anew or inherited, depend upon bioplasm, but every kind of evolution in living things is rendered possible only by the existence and activity of this living matter.

The matter of the universe which has never been in the living state and can never live is overwhelming, indeed infinite in proportion to that which might live. The quantity of matter that *may* form a part of living things is so minute as to be inappreciable in the mighty operations and changes in the mass of Cosmos.

Though the matter that actually lives in organisms is so inconspicuous in appearance and insignificant in quantity that it often passes unnoticed, its marvellous inexplicable powers by which the rearrangement of non-living matter and the unaccountable changes effected in its behaviour have been the cause of wonder and astonishment of all philosophical observers and thinkers. Vital power exists in relation with all the minutest particles of living matter and there cannot possibly be any quantitative relation between the matter and the vital power by which it is influenced.

Since a particle of living matter so minute that probably twenty such or more would not weigh down a single red blood corpuscle, and that very minute living speck containing more than 90 per cent. of water, may be the means of conveying vital power which may afterwards influence enormous quantities of matter and afford evidence of its derivation, I must firmly cling to the idea of vitality being a power

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belonging to the living world only—a power which, so far from originating in the non-living, actually controls it and causes it to exhibit structure, alters its composition, and brings about many changes that cannot be induced in any other way—changes that are known only in the living world where *Vital Power* reigns supreme.

A particle of living matter may, in fact, be far less than $\frac{1}{100,000}$ in. in diameter, the power of which may be handed down for ages, and make its presence evident by its effects upon the composition and action of such enormous quantities of matter that probably no one who thinks about the facts will again declare that it is the infinitesimal particle of *matter and not the mysterious scientifically (!) indefinable power temporarily associated with it* to which its so-called actions, consequences, or effects are due.

The positions and relations of the innumerable particles of living matter among the tissues of complex organisms have already been pointed out and attention has been drawn to the facts which have led me to conclude that the difference between every form of living matter and every form of non-living matter *is absolute*, and that there is no relation of degree between these two states of matter, while all the evidence obtainable at this time is opposed to the dogma that "the living and the non-living are one." The phenomena which characterise all living matter, among which *movement, growth, selection, analytical power, and arrangements for synthesis* are pre-eminent, must be attributed to Vitality, while the formation of tissue and other formed matters has been shown to result from the *cessation of vital action*—in fact, the death of the particles that were living.

But besides the living particles in all the tissues and organs of the body, there are suspended in the blood, lymph; and chyle continually circulating with these fluids extremely minute bioplasts whose office it probably is to take up various substances dissolved in the fluids and thus assist in regulating the composition of the nutritive juices as well as discharging other important offices. Similar minute bioplasts also exist in the interstitial fluid, which circulates in the interstices of all the tissues and in and around the particles of bioplasm. In certain abnormal conditions these may grow and multiply and cause serious departures from the healthy state.

The rate of increase, and necessarily the quantity of non-living matter becoming living, is not uniform, in every part of a particle of bioplasm, or within the same period of time. In some situations, probably towards the centre of centres already existing, new centres appear which do not mingle with the adjacent bioplasm. It is, I think, in this way, both in health and disease, that not only one but many "nuclei" and "nucleoli" make their appearance in already existing bioplasm.

The vital power acquired by a new centre which was developed very slowly may be far greater and more comprehensive, and farther, much farther reaching, than that possessed by the bioplasm in which it arose. If the conditions are favourable and the nutrient matter abundant, the processes of growth and multiplication of bioplasm proceed rapidly, while if the conditions be more or less adverse the increase and the development are correspondingly slow. In the first case, however, the higher, the formative, the constructive, the tissue-forming power of the bioplasm is slight or may be completely lost, and the rapid multiplication may soon result in the production of bioplasts in great numbers which are very shortlived; and the entire number may soon die. In the last case, in the new centres may subsequently arise others, the bioplasm of which goes on growing and in certain instances multiplying very slowly and after some time may give origin to bioplasts which will take part in the formation of complete tissues and organs and perhaps become the parents of important and complex living tissues or organisms. Thus it may, I think, almost be held that there is somehow either a new origin or a mysterious concentration or evolution of vital power.

Only consider the complex arrangements and the long period of time which elapses before their completion, required for the evolution of germ and sperm bioplasm, particularly of the higher organisms; yet how minute is the active bioplasm particle when at last its evolution is complete, and how wonderful is, as it were, the concentration of vital power! Have we not here an example of the maximum of vital potency associated with the minimum of matter? The power seems to have been acquired not from already existing living particles, but to have been evolved as centres appeared within centres, and the result of these wonderful processes—the end—seems to have been anticipated and provided for, foreseen, as it were, from the first. This wonderful example of a very minute living particle in which amazing vital power is associated with an infinitesimal amount of matter—"a product of secretion" formed according to physiological laws! But is it not time that we were allowed to contemplate a great biological fact without making ourselves physiologically ridiculous?

Supposing the successors of primitive living organisms to have been variously modified in the course of thousands or millions of generations to the extent conjectured by some naturalists, as their environment, food, &c., have undergone modification; it is, I think, nevertheless certain that the broad characteristics of the living matter, its mode of growth, the manner in which it takes up nutrient matters into its very substance, rearranging their constituents and gradually, perhaps, undergoing conversion into tissue and other formed matters—those wonderful vital actions, potencies, powers—call them what you will—absolutely and fundamentally differing from any phenomena, properties, tendencies, possibilities or potentialities, that have been shown to exist or have been ascribed to any form of non-living matter yet discovered or supposed to exist—are still retained. And are we any nearer to anything approaching a reasonable explanation of the formation of living things and their changes if when we carry our thoughts back to the remotest past the imagination can conceive—if you will, long ere the first amœba particle began to stir or cilium to vibrate? The gulf between the living and the non-living must have then been as wide and as unfathomable as it is to-day, and as unbridgeable as when the first infinitesimal living particle burst forth into vital activity alone (?) in the universe of everlasting cosmic matter, as it is now when almost every spot upon the surface of our earth is peopled with evanescent but never-ceasing infinite life of very different endowments and powers.

Guided by the results of actual observation and by reasoning, with regard to the inner vital phenomena of all bioplasm we now come to this: in all life there seems to be movement of matter, movement in a direction *from centres* where vital power is communicated, the matter before it began to live having been caused to move *towards* the centre where some of its constituents having come into contact with the actually living matter—live. Now movement takes place in the opposite direction *from* centre. If we are to conclude that the centripetal movement of the non-living matter is in obedience to a law, may I not—nay, am I not forced to—conclude that the centrifugal movement of the matter now living is independent of or overcomes that law? Living particles for the time not only move notwithstanding the influence of gravitation but seem unaffected by this and some other *laws* to which every form of non-living matter is subject.

The surpassing interest of the problem must be my apology for venturing to lay before the profession the views which have presented themselves to my mind in the attempt to learn as much as possible concerning that mysterious agency to which I would limit the term *vitality*, or *vital power*, or *life*. But these words have so long had a much more general signification that I should like to find a word which might be applied to this mysterious factor which I not only feel compelled to acknowledge but hope to convince many other observers of the existence. Though offending against etymology, may I venture to coin a convenient word by help of Greek and German—the most philosophic of ancient and modern languages—Biokraft—in the sense I use "vitality" and "vital power"?

From the bioplasm which constitutes the earliest speck which represents man or any animal to that of which the degenerate pus-corpuscle is composed—bioplasm which has for ever lost all formative constructive power, but may multiply exceedingly and rapidly—the inner life of the bioplasm, the wonderful vital changes in essential nature and characters alike, are carried on in centres so central as to be invisible to us with the aid of the highest powers at present obtainable. It is here that the communication of wonderful power from the already existing bioplasm to the new matter actually occurs.

Difficult indeed is it to discover, even to imagine, any *laws* already defined, which govern, regulate, or account for the phenomena of the matter concerned in the inner life of the bioplasm. What evidence can be advanced in favour of the operation of gravitation in these and other vital changes,—of cohesion, of affinity, of proportion? Are not

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heat, light, and electricity evolved in living organisms under conditions totally different from those which obtain when these are evoked in the non-living world—different indeed from those existing in any laboratory? Many facts connected with life are known and new facts are continually being discovered, but what is known concerning *laws* that govern the evanescent living state? The instant death has occurred the dead matter is subject to the operation of ordinary law.

The constitution of each living particle in nature is probably constantly changing, and even in the case of living particles which seem to retain their vitality for a long period it is more probable that vital changes are constant than that all change ceases even for a moment. Vital change continues without a moment's interruption in cases of extremely prolonged "hybernation." In a living particle sometimes much, sometimes little, of the nutrient matter is appropriated. In some cases if the products resulting from the death of living matter unduly increase to its detriment, and if not soon removed may cause its destruction. In the perfectly normal condition, however, neither the living matter, nor the non-living matters about to live, nor those that have lived disturb the balance.

Undoubtedly, as already remarked, while we contemplate the phenomena of the inner life of the structureless bioplasm or living matter we enter upon the consideration of what is at least at present beyond demonstration. It is here, if I mistake not, is hidden the mystery of mysteries of life and of all living nature. Though to my mind there seems but one conclusion possible, it is pretty certain that this conclusion will at present be accepted by few.

I therefore plead for free and open discussion of this great question of vitality from the point of view I have indicated, for whether what we have so far learned concerning the secrets and mysteries of living nature leads, or tends to lead, us towards the conclusion that all life is but a necessary outcome of everlasting matter, of the cosmos, of the universe, and is determined by eternal laws coeval with origin—or to the conclusion that the first creation of life is a comparatively recent introduction—an addition just limited to the external layers of our earth, and therefore bearing but a very insignificant proportion to the whole matter of which our world is made, the question is surely worthy of debate. It has been considered by the most thoughtful of many generations during thousands of years and cannot be regarded either as already determined or so sacred and so absolutely insoluble and so utterly beyond the comprehension of the best, the wisest, the most intelligent of men, as to be regarded as for ever beyond the capacity of the human understanding, and therefore an altogether impossible and hopeless inquiry. Again, let me press upon my readers' attention that during the last half-century the circumstances are wholly changed. Our knowledge of minute structures increases year by year. No one can compare the recent editions of standard works upon microscopic anatomy with a book published twenty years ago without being convinced of the great progress of minute anatomical investigation, though there is nevertheless much difference in opinion concerning many of the most important and fundamental questions which we ought to endeavour to determine by fresh investigations and other methods of preparation.

But if it were set aside by authority and the general concurrence of the thoughtful, or even forbidden by some law carried by a two-thirds majority, it would only be for a very few years that inquiry could be stifled or stopped or deemed by general consent to be wicked or declared illegal. It is certain that among us at least some few would still remain rebellious and as determined as hundreds and thousands before to study living nature in their own way, with the aid of the best instruments of research that could be obtained, and bring their observations, their conclusions, nay, their conjectures, before their fellow students of natural knowledge. On such grounds every real student would seem to have a right to ask for the patient consideration and discussion of the results of his investigations by his fellows, and a right of appeal against the dictation and authority of any party that happens to command for the time what has been called the general assent of all intelligent persons, nay, notwithstanding another doctrine had been accepted by an enormous majority and propagated as a new religion.

I appeal against the acceptance and absolutely decline to accept any mere physico-chemical hypothesis of life whatever, or the dogmas that life originated in matter, that life and non-life are governed by the same "laws," and that the living is but a form of the non-living. I plead, further, that scientific conjectures on both sides of a great question like this ought to be thoroughly considered.

Whatever may be the explanation, for more than thirty years past the views, the assertions, the working hypotheses, the conjectures, the assumptions of those who declare for purely physical doctrines of life have unquestionably been afforded advantages which have been most unreasonably and most unfairly denied to those who differ from them; not only so, but it has been shown that many doctrines now accepted on the ground that they are supported by reason are and have been absolutely opposed to reason from the first, and cannot be entertained by anyone whose views are guided by reason—such, for example, as the dogmatic assertion "man is a machine," "growth is a form of aggregation," and many, many more which have been collected and criticised in "Protoplasm." For nearly half a century there has been a dead set nearly everywhere in favour of purely physical doctrines of vital action, which from the very first have been scientifically untenable.

It is not known to what degree of minuteness the division of particles having all the vital powers and properties of the organism and infinite powers of growth and multiplication, might be carried without destruction. On the other hand, the undoubted fact of the vital influence of an excessively minute particle of parental bioplasm in causing vast quantities of matter to be so arranged that it assumes not only the general form and character of one or both parental organisms from which it was derived, but likeness in many minute details—likeness in form and colour, in feature, likeness in thought, in action, likeness extending even to the form and character of some of the less important organs and tissues—one would rather infer that at least in man and the higher organisms there was a point beyond which division would mean imperfection in subsequent vital processes or absolute destruction of life. But the degree of minuteness to which I refer is probably in many instances less than the $\frac{1}{100,000}$th of an inch. The nature and far-reaching influence of vital power carried and represented by so excessively minute an amount of matter is almost staggering and yet there seems little doubt that the conclusion ought to be accepted.

The evolution of centre within centre, the emanation of new centres in centres more central than has ever been seen, is, as I have said, not demonstrable. Nevertheless, various considerations render it highly probable that the new vital powers are communicated to the non-living material particles in a state of division so minute as at present to be far beyond our means of investigation, but the idea seems to be in accordance with reason. It is probable that here occurs the separation from one another and the rearrangement of the elements (?) of various substances which occur in all living—a rearrangement effected by that power which has so far eluded investigation—the impossibility of the existence of which has so often been confidently proclaimed.

It is in these invisible centres of living matter that vital power to which the natural characteristics of organisms made manifest long afterwards is active; also those new endowments which are the cause of the appearance of new characters visible at a later period in the fully-formed organism and powers inherited from pre-existing organisms are imposed. This, as it seems to me, is indeed the only situation where, and the only time when, the *evolution* of all developmental peculiarities, differences of form and structure, must be determined—long and long before the slightest evidence of any changes in character can be indicated, and it seems to me that it is not possible to conceive such a living centre without a circumference, and the idea therefore involves the occurrence of never-ceasing phenomena the very reverse of those which are presented to the mind of the astronomer.

Such are, I venture to suggest, the conjectures of what probably occurs in the unseen and so far invisible centres of living matter, which have presented themselves to my mind as reasonable. I have only ventured to consider them in the hope of lighting upon some hypothesis which may help us to pursue further the wonderful possibilities of the inner life of particles of living matter, the existence of which is almost forced upon the mind that tries to penetrate into the innermost mysteries of vital evolution.

Question of a vital unit.—Considering the above points one feels inclined to inquire whether or no there can be a physical or chemical atom incapable of further division or capable of infinite subdivision—by the agency of vitality; and to

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speculate as to the point when the subdivision of living matter begins to effect reduction, and at length destruction, of vital power. Though feeling almost hopelessly incompetent to attack so difficult a problem I cannot resist the temptation of again referring for a moment to the question of a vital unit. Of elementary organs there can be no doubt, for every complex organ is made up of such units, though we cannot anatomically separate one from its neighbours, and it is impossible to isolate one in an active state, but in some of the so-called lower forms of life they are so developed and can be examined—units concerned in function being demonstrable.

But the most important of all is not actually separable and demonstrable, though I consider it is established by anatomical evidence. In man and complex organisms in which the nervous system is highly developed nearly all such inseparable units extend without any solution of continuity rom nerve-centres to the ultimate peripheral distribution of the finest nerve-fibres and their bioplasts; and, as I think I have made out, *back again* to the central bioplast, the so-called nerve-cell. I have tried to prove ends and end-organs in which nerves end and have utterly failed. I therefore still must hold to the existence of complete circuits in every nervous system and believe the very simplest—the unit, the elementary nerve-organ, is a complete and *uninterrupted circuit*.

Although, as already stated, the division of living matter may in some cases be carried wonderfully far without any loss whatever in power, there must be a point beyond which division could not be carried without death. Looking at the structureless, colourless, moving, living matter, say, of an amœba or a mucus corpuscle, one would necessarily feel it difficult to regard a minute portion of a semifluid substance capable of movement in all directions almost like a portion of water, as a unit. It is quite impossible to form an idea of the size beyond which division without destruction is possible in all cases, and it is probable that the size would differ in different kinds of living matter, and perhaps in the same kind in different states, as, for example, during a period of active nutrition and growth, and at a time when these vital processes were very slowly performed. I incline, therefore, to the view that there is a vital element, a vital unit not mathematically fixed, but, like all living, capable within certain limits, of variation in size, and rate of growth, without detriment. From the chemical point of view I cannot imagine a living molecule of definite chemical composition or of definite atomic constitution; for all living matter seems to be the seat of incessant change, physical and chemical; governed, regulated, and determined by vital power.

A living atom is, to my mind, impossible in thought, for is not the idea of living without moving, without constant changing of the relative position of particles of matter to one another, impossible? It would seem that when a particle of matter bursts into life there would be something approaching absolute contact between elements or perhaps a sort of fusion—an incorporation of the non-living by the living. If this be so the idea of life being in any way derived from non-living can only be entertained by doing violence to reason in submitting to authority. It is by submission to authority only that anyone who thinks over the facts can look into a living organism and assert that it is like a machine he is able to make; that our tissues and organs by which we work, our very thoughts, are due to anything like a mechanism the various parts of which have been first made and afterwards fitted together before they begin to work. The body may be called a molecular complex machine for the transformation of energy—a laboratory without apparatus—without a chemist; and death regarded as a breaking down—a disintegration of the several parts of the machinery, but there is not a shadow of foundation in fact for such a doctrine.

The idea, then, of one single separate living particle is, I think, untenable, for it involves an unknown centre and unknown circumference—multitudes of particles or parts in constant motion, frequent contact, never-ceasing change while the living state lasts—particles of different sizes, different constitution, of different ages.

There is no evidence as far as I can ascertain in support of the proposition that vital power was directly or indirectly derived from anything upon or in the earth, water, or air. Nor has it been shown that at the death of any particle of bioplasm its vital power is resolved or changed into anything that belongs to a category in which matter, its forces or properties, can be included. Nor, I believe, has it been suggested that if life had never appeared on the earth the vast non-vital cosmic phenomena would have been widely different from what they are and have been, or that sun, planets, or other heavenly bodies at a distance from us would have been in any way different from what they appear to be. In short, that however many millions of ages we may postulate, no adequate reasons can be advanced in favour of the doctrine that the living has been derived from the non-living or that the living is in any way an outcome of the cosmos necessary or accidental. There seems to be no connexion between the state of our material world previously to the appearance of life and living nature.

I do not believe that anyone who has studied and pondered over the mere movements he has seen in clear, structureless, colourless bioplasm, to say nothing of the manner in which various kinds of formed material are, as it were, laid down by it, will dismiss these life movements from his mind, as examples of ordinary molecular or undulating movements, and tissue formation as an instance of accretion or aggregation or deposition from a fluid; for between such physical processes and growth there is a vital difference. Does not philosophy, and more than philosophy, separate all living from all non-living?

I feel grieved to think that one who has undoubtedly taught more of us to think than all other writers and thinkers of our time, and whose great intellectual achievements as well as his philosophical and systematic arrangement has benefited all thoughtful students of natural knowledge, should have adopted the views he enunciated in his chapter on Life. I have often desired to discuss with one of Mr. Herbert Spencer's disciples the facts and arguments advanced, but so far no opportunity of doing so has offered. The objections which must have occurred to many biologists appear not to have been considered. The doctrine is undoubtedly inconsistent with many facts of living nature and I do not believe it can be successfully defended in accordance with reason.

For long, indeed, have I been hoping to see some further developments and explanations of Mr. Herbert Spencer's views concerning Life, or at least articles in defence of his doctrines[1]; but, as far as I know, not a word of explanation or any expression of doubt, or promise of reconsideration has been vouchsafed—not an admission of the least possibility of his views upon life being inconsistent with actual vital phenomena, nor a suggestion as to the meaning or explanation of the real nature of what all may see in the microscope as now demonstrated in every course of biology.

Growth is certainly not in any way a modification of the process which occurs when carbon accumulates on the wick of an unsnuffed candle. This is not *growth*, and I maintain that there is no "community of nature between organic and inorganic growth," as affirmed by Mr. Herbert Spencer. *Growth* implies much that Mr. Herbert Spencer ignores, and, as I have often pointed out, he uses the word *growth* in two totally different senses ("Protoplasm," p. 154). Crystals do not *grow* as living matter *grows*, and as all living things grow. The processes are absolutely distinct and the "*growth*" of living things implies Life, and such growth never occurs in the absence of life.

Microscopical work with high powers.—When I began to work with the microscope like my teachers Todd, Bowman, and George Johnson, I seldom appealed to powers magnifying more than 250 diameters, but before long I found there was much more to be discovered in the minute arrangements of some of the simplest tissues than I could demonstrate with that degree of magnifying power, and I obtained from Powell and Lealand powers of about 500 and 700 diameters. As the plan of preparation of specimens became more perfect, new demands for successfully examining them arose, and about 1855 several $\frac{1}{16}$ths of good defining power were produced, and in 1860 they made for me a $\frac{1}{25}$th, by the aid of which glass several drawings of animal tissues were made and published in various memoirs between 1862 and 1870. In 1864 the same makers succeeded in giving me the advantage of $\frac{1}{50}$, which magnified nearly 3000 diameters. The "thin glass" difficulty was overcome and one soon became able to clean the glasses, mount the specimens and with care as regards illumination get some drawings on wood blocks for illustrating my investigations.

About this time my ardour was somewhat damped by the little notice German observers took of my work—a line or so and my name seemed to be all that the most distinguished

[1] See "Protoplasm," fourth edition, p. 143, *et seq*

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mong the minute anatomists considered I deserved, even before 1870, and since that date, perhaps because I became professor of medicine and was engaged in practice as a physician, some of my German anatomical friends seem to have regarded me as an extinct observer—a fossil.

A few months ago, however, I was delighted to receive from my old friend, Professor Dr. Albert v. Kölliker, his memoir, "Die Energiden von v. Sachs im Lichte der Gewebelehre der Thiere," in which to my "Germinal Matter (Bioplasm) and Formed Material"[2] have been assigned what I cannot but regard as pleasant places among the results of the labours of those for whom all observers have the highest respect and regard. Soon my spirits rose, my vitality improved, and some of the most important of my tissues seemed to regain some of their old elasticity. "Bindegewebe" and "Intercellular-Substanz" excite in me fresh emotions, and I almost long for further friendly contention as to their nature and origin, while I cannot for long resist the temptation of again attacking from my point of view the structure of the outer part of the cerebral convolutions. I hope some rising observers will at least contest with me the fundamental question of the central and peripheral general distribution of nerve fibres, say, for preference, in the little hyla, but I am equally ready for the investigation to be on the bat's wing, the white mouse, or on man himself. Nerve distribution just beneath mucous membrane, or to striped or unstriped muscle (mylohyoid muscle, bladder of the frog, are advantageous for the purpose). Any microscope, any power, any illumination, any method of preparation. I press my conclusion as to there being "no ends of nerves, and the continuity of a nerve fibre to and from its central origin, and peripheral distribution"; my specimens forcing me to this conclusion and, in my judgment, rendering no other inference probable.

Bioplasm undoubtedly receives and transmits impressions from without and from within and by continuous nerve fibres are nerve currents conducted to and fro. Nerves and nerve centres could not exist and could not have been formed but for their connexion with bioplasm or living matter.

With the utmost advantages I could obtain as regards illumination, the best object-glasses, and the most careful preparation of specimens for special examination with high powers, I could not get any farther towards the solution of the constitution of the bioplasm; and whatever may be done in later times I feel confident that no means yet discovered will enable us to make out any structural arrangement which will afford us a correct idea of the manner in which the colourless, structureless bioplasm effects the changes which are undoubtedly somehow achieved by it. Nor do I believe that if the living matter could be magnified many thousand diameters we should see more or learn more concerning this inner life of bioplasm.

In truth, so far I feel as regards the investigation of the ultimate constituents of living matter doubts and difficulties somewhat similar to those which astronomers experience in endeavouring to form an estimate of the contents of the universe. "We are to reflect that all objects which we can see constitute in all probability not one-thousandth, perhaps not one-millionth, part of the material heavens."[3]

However, as it seems not improbable that some new kind of glass may be discovered superior to any now used for optical instruments, and particularly for high-power objectives, great advantage may be gained as regards successful investigation of which at this time no idea can be formed.

It may surely be a question how far scientific workers are bound to obey scientific authorities or any authorities supposed to be supported by being placed at the head of those who work at science, whether superiors, equals, or inferiors. Few men who have long studied and worked hard simply because they loved to learn, to satisfy a right curiosity, a craving to know, will feel inclined to bow to dictators of any kind, not even if backed by what is called public opinion or a general consensus in favour of a particular view. Though scientific work and original thought may have a tendency to make men rebellious, of all tyrants a scientific tyrant may be not the least inconsistent, the least arbitrary, the least unreasonable, or the least inconsiderate.

Undoubtedly for a long time certain scientific men have been permitted and encouraged by the public to wield authority and have been generally spoken of as "authorities." But in science there is no authority (except reason). Some of these "authorities" have done their best in England to enforce the acceptance by the public of certain mechanico-chemical doctrines of life, and some of them have professed to be able to account for vital phenomena by the properties, actions, and interactions of ordinary matter. Undoubtedly any authority can prevent, destroy, degrade, ill-use, or kill in an instant, what it may seize among the living things it calls mechanisms, but he is as absolutely incapable of making, forming, causing to be evolved, the smallest particle of anything like the living matter of the meanest and lowest of the numberless living organisms around, as he is of influencing in the slightest degree the mighty phenomena of suns and worlds.

I challenge those who still insist that life is a form of, or in some way due to, physical and chemical change only to consider the changes of bioplasm and then to bring forward the evidence upon which their conclusion is based and also the facts upon which they rely to disprove the existence of vitality as a factor, a power distinct and not in any way emanating from, or originating in, ordinary matter, its forces, properties, or activities. Nay, I believe them to be unable to show that at this time any evidence justifies us in inclining ever so slightly in the direction they indicate, as to accept the notion that in some distant time the physico-chemical doctrine of life may perhaps be established. I challenge them to reasonably account for the facts of the simplest vital actions in the absence of some directing arranging selective agency unknown to science.

Who will prove that the *growth* of any living particle of any living thing in nature, its power of movement, its power of transmitting to matter, its analytical, its constructing, its formative capacity, depends upon any chemico-physical or other material properties or characteristics of any form of non-living matter known to science or likely to be discovered? Surely we might as well essay to discover good and evil, love and hate, truth and its opposite, or right and wrong in machines, in chemical compounds, crystals, or atoms, as to teach that the living and non-living are one.

The question is of universal interest and, in my opinion, so very important that it deserves much more consideration and thought than has yet been accorded to it, especially in its bearing upon our highest hopes and interests.

As biology is now receiving much more attention than heretofore and in all probability will soon be one of the subjects of general education and taught in most schools, teachers can hardly avoid referring to living and non-living, to life and death. I naturally feel anxious that the conclusions I have adverted to should now be submitted to the judgment of the thinkers and careful observers of our time, and I hope if my views should fall under the notice of observers and fellow workers in other parts of the world, particularly in America, Australia, and of microscopists of India and Japan, they will consider my views and publish facts adverse or favourable, as the case may be, but first from the observation side. To go into the general bearing will be premature until the question of Vitality is affirmatively answered, or again has to be dismissed as unscientific or impossible.

To the Editors of THE LANCET I feel greatly indebted for allowing me to bring these views before my brother practitioners and I hope that the following summary may be brought under the notice of readers likely to be interested by the editors of other journals.

A reprint will shortly be published by Messrs. J. & A. Churchill, 7, New Burlington-street.

CONCLUSION.

In conclusion, then, I shall venture to repeat that as far as I am able to judge the evidence to be adduced at this time in support of the view of the absolute separation of living from non-living matter is conclusive. The gulf between them has not been bridged or filled up and there is no sound reason for thinking that it will not for ever remain as wide and as deep as it is.

So, too, from life to death the change is absolute as regards any actual living particle. It seems to me there is no gradual or progressing change. Matter is either living or not living. It does not gradually pass from one state into the other. There is no half-life or half-death in the case of a definite particle or portion of bioplasm.

The exact seat of the operation of vitality—the exact matter which possesses vital power—has been determined

[2] Die Structur der einfachen Gewebe des Menschlichen Körpers. Translated by Professor Victor Carus. Leipzig, 1862.
[3] The Unseen Universe, Sir Robert Ball, LL.D., F.R.S., Cambridge, England. The Monist, vol. vi, No. 4, July, 1895. Chicago: Open Court Publishing Company.

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and pointed out in various living forms differing widely from one another. In what respects the matter which is the temporary seat of vital action—the bioplasm, which may undergo conversion into tissues and various other formed matters—absolutely differs from these as well as from products resulting from metabolic change has also been indicated.

The structural peculiarities of all tissues and the properties and chemical composition of many formed matters produced in living organisms I attribute to vitality. Further, the evidence which has convinced me that this vitality actually overcomes, but in some way we do not understand, the ordinary forces and properties of certain kinds of non-living matter is in my opinion conclusive. Certainly parts of a particle of living matter are during life placed, or place themselves, above other portions—in fact, over, under, or on either side, and, indeed, in any position, with equal facility. The matter may move in any direction and portions may move *into* and mingle with one another.

As far as can be ascertained Vital Power, Vitality, Biokraft, can only be conferred upon matter in one way by vital power always derived from already existing living matter.

Associated with vital movement and the other usual but inexplicable endowments of living matter we must not forget that in particular instances we have in addition the evolution of heat, light, and electricity, and perhaps other forms of energy,—but how the conversion of energy is effected by the bioplasm is still a mystery. It is difficult to see how, by denominating a specimen of soft, moist, structureless, colourless substance, a molecular mechanism or machine, or by speaking of it as an apparatus or a physical or chemical laboratory, anyone can help us to discover a solution of the mystery.

Every kind of living matter in nature, whatever may be the results or consequences of its living, whatever may be the characters, state, or properties of the particular particles to which vital power is about to be communicated, the matter in question is always associated with a very large proportion of water, and probably in all cases the matter about to live is actually dissolved before any vital change occurs.

Bioplasm is invariably devoid of form, colour, structure, at the moment of its production—characters which in all things living have been brought about by the influence of Vitality. In fact, colour, form, and structure are not manifest until all vital power has ceased to influence the matter. The results as regards these qualities vary according to the special powers with which the living matter was endowed and these were all derived from pre-existing living matter.

This *vital power*, this *vitality* in which I have been led to believe, exists in connexion with every form of living matter, it never undergoes conversion into any form of energy or, as far as can be ascertained, into anything else. It may cease at any moment and if it governs the changes which indicate that it is a transformer of energy, certainly so far, science has failed to establish even a probability that vitality itself can be transformed in any definite way. *Vitality* may direct, govern, rearrange, determine the movements of atoms or particles of matter. It has not been proved that vitality can act even through the least distance or in any way affect or influence particles to be made to live, separated from those that live by the very slightest interval. Matter to be made living must be infinitely near or perhaps must pass into the very substance of matter which already lives.

The very existence of vital power has been affirmed, denied, and re-affirmed over and over again, but a correct estimate of conclusions advanced by different investigators in the pre-Victorian age can hardly now be formed because in those days the means of examination of the various tissues and of the living matter by high magnifying powers was not possible. The general nature and origin of living matter had not been investigated—in fact, only during the last few decades have we been able to study the movements of various forms of bioplasm and trace the formation of tissues through the several stages of their development with the aid of high magnifying powers and much improved methods of preparation.

The beginning of the world of life—*our world of life*—was surely a very different beginning—a beginning of a nature, order, or kind different indeed from the beginning of any material world—of any lifeless cosmos—of the universe; and could not have occurred until immeasurable periods of varying conditions of matter all absolutely destitute of life had passed.

It is surely impossible to believe now that life of any kind was either an accident, a necessity, or a certain and necessary consequence of any material forces, actions, or influences which preceded its appearance; or that the first indications of the presence of life upon the earth could have been occasioned by any ordinary changes in matter or its properties, no matter how many æons may be allowed for the "working hypothesis" of creation. There seems no adequate reason for suggesting that some special or exceptional state or condition of the surface of our earth or its waters that preceded gradually led to the evolution of life and living nature, from non-life. Gradational or very pronounced divergencies from, or approximations towards, particular types, as may be suggested in certain cases, seem to have been transitory and in some instances to have disappeared. No reasonable explanation of the early changes or of the advent of contemporary forms differing widely from one another in structure and in vital powers seems yet to have been arrived at.

I earnestly appeal to all interested in this comprehensive and most important question, and beg them to consider whether the evidence adduced in favour of vitality is not justified by the facts and arguments brought forward—evidence of a wide and general character, as well as evidence derived from minute investigations in many organisms, general microscope evidence, and evidence from demonstration with the aid of very high powers of specimens from all kinds of tissues and organs.

All interested in the advance of natural knowledge will desire for instance that questions bearing upon the nature of nerve action and mind should be carefully considered from all sides, and that facts and arguments for and against given views should be thoroughly examined and sifted. Of these not a few have been accumulating during the last half century.

Must we not admit the constant operation in all living matter, bioplasm, of a power absolutely different from all forces, properties, energies, activities, principles that are known to belong to any form of non-living matter? I beg to challenge those who take the contrary view and meet this question of vitality with a direct negative to plainly state the grounds of their objection, and to explain how according to their views life facts, movements, origin, growth, production of structure—in short, how life and death are to be accounted for.

I hold that there is no evidence in favour of the doctrine that by the science of the future this vital power, this vitality, will be proved to have sprung from, or to have been in any way at any time connected with, to have belonged to or to have emanated from, ordinary matter, or the opinion that it has been communicated to anything non-living through the intervention of matter or agencies of any kind except the actually living.

And I submit that if all life were to cease in any part of our world it could reappear only by the re-importation, the re-introduction, of bioplasm that already lives, and that it is certain that a living thing—a living particle—that has once ceased to live cannot be restored to life. The same living particle once dead does not regain its life, though the substances formed at its death may be taken up by other kinds of living matter and some of their constituents converted into that particular kind of bioplasm.

To this influence of vital power—vitality—biokraft must, in my judgment, be referred the millions of forms, structures, and actions which characterise the living world and enable us to identify and name each different organism that now lives or that has lived in past time of which any imperishable remains have been discovered. Ever since vitality was first conferred upon certain kinds of matter there is reason to believe that vital action has proceeded upon precisely the same lines as obtain in our living world of to-day.

I cannot suppose a minute particle of living matter which does not consist of particles still more minute. In each particle there seems to be a general movement proceeding in a direction *from* centres. The new substances introduced acquire the living state in these centres. In consequence of the vital movements *from* centre, *centrifugal*,—currents of fluid holding in solution nutrient matters are produced in the opposite direction—*centripetal*. Here, where no eye has yet penetrated, the non-living becomes living, possibly according to the operation of some vital laws, but somehow independently of, and removed from, the operation or influence of laws physical and chemical.

According to law an apple fell, but are we never to be

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permitted to consider and inquire how the scaffold rose before the fall, and to remember that in their fall dying and dead apples drag with them to the ground many a new vitality from which stems and leaves, and flowers innumerable, and bounteous fruit, may spring and grow in all their glory, to benefit and delight the thinkers and workers of another age, who will think over and learn ever more and more about the life and growth and death of living things which may then be alive, as well as of those that lived and died in the ages long ago?

I claim, then, for all living nature a position of its own, apart from all non-living and maintain that this conclusion is proved by facts of actual observation, and is in accordance with reason. In short, I claim upon rational and scientific grounds for *Life*, for *Vitality* as manifested by all living nature, the whole living world, by everything that lives and that has lived,—absolute distinction from all non-living, on account of differences in essential nature, differences as regards the principles of *origin*, *multiplication*, *growth* and *action*, and in the manner in which life is influenced by external circumstances. So far from obeying laws by which the material universe is governed, Vitality seems to overcome, during the time of its operation, the influence of physical law. The laws of the living world, if laws there be, belong to an order or category different and apart from that in which physical law is included. The laws of matter and energy are not the laws of life. While matter lives the ordinary properties of the matter seem to be in abeyance and cannot be made evident. Can it be said of any form of vital power that it is indestructible like matter and energy?

From the first moment of existence of an individual organism, as an exceedingly minute living germ, to the production and death of the millions of bioplasts in descent from it, life might easily have ceased at any stage, at any moment, never to return. I claim for *Biology*, *the Science of Life*, its rightful place among the natural sciences, and a place in natural knowledge equal to that accorded to physiology, natural history, zoology, botany, though biology comes last in time. And for *Bios*, *Life*, *Vitality*, *Biokraft*, a place as far above all cosmic matter, its forces and properties, as the imprints of living things and thoughts we alone can understand, are above the passive stuff we make and mould and fashion as we design and will.

Do not even machines, appliances, structures, arrangements, and all the works we plan and make and cause to work, as well as the wonderful records of the past left by man and only to be read by his descendants, infinitely transcend the limits within which all forms and states of cosmic matter, with its energies, activities, properties, potentialities, physical and chemical phenomena, laws and orders, are, have been, and must ever be confined?

My earnest belief is that the evidence I have adduced in proof of the view that all life and living things are, and have ever been, absolutely marked off from all non-living is convincing and incontrovertible. There is, however, very much more to be said concerning this great problem, particularly as regards the wide general bearing and application of my views on the nature of vitality. But how far and for how long existing scientific authority and our reviewers who rule us all—and with a rod of iron—will permit me to go on I cannot tell.

'O *Bios Βραχύς*.

THE VALUE OF OXYGEN IN POISONING BY MORPHINE.

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THE following case of morphine poisoning cannot, I think, fail to be of much interest on account of the almost miraculous recovery the patient made after an enormous dose of the toxin and when death seemed certainly inevitable. Before entering into the details of the case I wish to say that if it had not been for the most kind, able, and energetic coöperation of my partner Dr. Scott and my friends Dr. Chatterton and Dr. Ilott the treatment could not have been carried out to its satisfactory termination. To them my sincere thanks are due.

The patient was a woman, aged thirty-seven years, healthy and of excellent physique. Her early breakfast was brought to her in bed as usual at 7.15 one morning this summer. She then appeared to be perfectly well and spoke cheerfully to the maid who attended on her. About 9.45 A.M. she was observed to be sleeping soundly and at 10.30 A.M. a friend finding her still asleep mentioned the circumstance to the lady of the house, who at once went to see why her guest had not risen. The appearances the latter presented immediately roused her suspicion that there was something wrong and she promptly summoned Dr. Scott, who happened to be not far off. On his arrival at 10.40 A.M. he at once diagnosed opium poisoning and on search being made it was discovered that a bottle in one of her toilet-table drawers—known to have held over two-thirds of an ounce of injectio morphinæ hypodermica, British Pharmacopœia 1885, thus containing over 30 grains of morphine acetate—was empty. The following were the appearances noted by Dr. Scott when he first saw the patient. She was lying on her back in a comatose state from which it was impossible to rouse her, although the interrupted current when applied to certain parts caused some slight muscular contraction and the conjunctival reflex was not absolutely lost. The face was livid almost to complete greyness and the fingers were ashy-grey as far as the second joints. The pupils were contracted and did not react to light, but neither then nor afterwards were they strikingly small or "pin-point." The breathing was very slow and shallow, not stertorous. The pulse was slow and fairly strong and muscular relaxation was complete. This condition very quickly passed into the most profound coma and the pulse rapidly got weaker. Steps towards resuscitation were immediately taken. While an œsophageal tube was got ready ether was hypodermically injected and the faradaic current was applied. With the assistance of Dr. Chatterton and Dr. Ilott, who had been sent for, the tube was passed into the stomach and that organ was thoroughly washed out first with water and then with a solution of permanganate of potash, a pint of strong coffee with 1 oz. of brandy being afterwards introduced. Before this had been completed faradaism was discontinued as it had failed to elicit any response. It was noticed that while the stomach was being washed out the breathing deepened and the colour became less livid, but soon after the completion of this operation the lividity returned and the breathing became more and more shallow and slow till it finally ceased altogether at 11.30 A.M. Two hypodermic injections of atropine with $\frac{1}{100}$th of a grain of strychnine had already been given and these were followed at intervals by two others of $\frac{1}{100}$th of a grain of atropine. A cylinder of oxygen had been sent for. Cyanosis was now intense and the pulse was exceedingly feeble. Artificial respiration, which had been begun, produced little or no alteration of colour or pulse. At 12.30 P.M. an enema of strong coffee and brandy was given and mustard was applied over the cardiac region and to the feet. Artificial respiration was steadily persevered with and at about 12.45 P.M. the inhalation of oxygen was commenced. In a very short time this rendered the cyanosis much less marked and distinctly strengthened the pulse. At 2.40 P.M. an enema of hot bovril was given. At 3.20 P.M. the condition was unaltered save that the pupils were widely dilated. There was still no indication of natural breathing. Another $\frac{1}{100}$th of a grain of strychnine was now injected and frequent injections of ether were kept up. At 4.20 P.M. 1 oz. of brandy was passed into the stomach. At 5 P.M. the patient's condition seemed utterly hopeless. There had been no sign of natural breathing for about five and a half hours, the pulse was getting much weaker and the cyanosis became intense if the oxygen were stopped. Some improvement, however, set in shortly after this and at about 6 P.M. the patient began to make an occasional slight inspiratory effort—about one exceedingly feeble gasp per minute—and the colour became lighter. At 7 P.M., however, the end again seemed to have come and we expected death to occur at any moment. Still the pulse could be detected and the treatment was uninterruptedly carried on. Half an hour later (at 7.30 P.M.) indications of respiration of Cheyne-Stokes character began to show themselves at intervals and the colour had much improved. At 8.10 P.M., very slow, shallow breathing having commenced, artificial respiration was stopped for twenty-five minutes, oxygen still being continued. At 8.35 P.M. natural breathing again threatened to

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cease and for five minutes artificial respiration was resorted to, a period of twenty-eight minutes of natural breathing following, at about 12 per minute. Again this ceased and artificial respiration was resumed for twenty minutes. At 9.50 P.M. natural breathing seemed tolerably established, though it was still of the Cheyne-Stokes type. The colour for the last hour or more had been decidedly improving, there being now distinct redness of the lips and cheeks. Application of the interrupted current at this period caused very considerable muscular contraction. At 10 P.M. the oxygen was stopped. The pupils were not so dilated and reacted slightly to light. At 10.15 P.M., the pulse again failing and lividity returning, oxygen was given for five minutes, the colour and pulse promptly improving. At 10.40 P.M., to our astonishment, she opened her eyes and spoke in answer to questions and at 10.50 P.M. she swallowed some black coffee. For two hours after this she could not be got to speak again, though on faradaisation she roused herself, moved her position in bed and looked about her, her colour and pulse keeping good. At 1 A.M. she again answered when spoken to and from that time to 3 A.M., when we left her in chargo of two nurses, she was conscious though dazed and drowsy. Shortly after 9 A.M. I again saw her and found her sitting up in bed and enjoying a breakfast of coffee, bread and butter and complaining of nothing save a bruised feeling about the chest and arms, doubtless due to our efforts in keeping up artificial respiration so long.

Among the remedies given a trial in the earlier part of the day were ammonia and amyl nitrite, but these seemed as useless as the others employed. Nothing but oxygen was apparently of any value. During the whole time good bodily heat was maintained and there was little or no diaphoresis and no vomiting occurred.

Cases of recovery after a larger dose than 30 gr. of a morphine salt have been reported. I am unable, however, to find more than the mere statement of this fact and I am unaware in any such instance how long the poison had been taken before treatment was commenced. A recovery such as in the present case, when so large a quantity was taken on an empty stomach, the patient's condition remaining undiscovered till more than three hours afterwards, must be exceedingly rare. My object in reporting the case is to add my experience of the immense therapeutic value of oxygen in opium or morphine poisoning to that of those who have already advocated its use, and to urge its employment in such cases. Most certainly without its aid my patient would have died. In THE LANCET of June 2nd, 1894, Dr. W. J. C. Merry noted a case where it proved of great value after 2 oz. of chlorodyne (containing probably about 8 gr. of morphine) had been taken, and Dr. C. J. Macalister in THE LANCET of Dec. 7th, 1895, details another instance where it was found of much service after eight pills, each containing ½ gr. of morphine, had been swallowed.

Fortunately for my patient supplies of the gas were able to be obtained without much delay. Artificial respiration by Silvester's method without oxygen quite failed to remove the intense cyanosis or to strengthen the pulse. The gas was administered by passing into the mouth a vulcanite nozzle attached to a tube leading from the cylinder, an india-rubber regulating bag intervening. At each inspiratory movement a stream of gas was allowed to flow, the tube being pinched close during the expiratory movement. This was kept up with the exception of the two intervals of natural breathing I have mentioned for about nine and a half hours. Altogether about 80 cubic feet of oxygen were used. During the very short intervals when the supply was stopped on account of a change of cylinder or when the œsophageal tube was passed the lividity rapidly deepened and the pulse as rapidly got weaker. In about half a minute after resuming the oxygen marked improvement took place as regards colour and strength of pulse.

I am much inclined to agree with the idea that oxygen not only acts as a heart stimulant but possesses some direct oxidizing effect on the poison. Considering the amount of morphine swallowed, the comparatively short time (ten hours) that elapsed between the commencement of the inhalation and restoration to semi-consciousness seems to me to indicate that some chemical change must have taken place by which much of the activity of the poison which had been absorbed had been destroyed.

In conclusion, I may say that my patient has never been addicted to the misuse of drugs and has never required to take any form of narcotic on any occasion.

THE ACTION OF THYROID AND PARATHYROID EXTRACTS UPON METABOLISM IN THE INSANE.[1]

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DURING the past two years the experimental work more particularly of Vassale and Generali in Italy, of Gley in France, of Blumreich and Jacoby in Germany, and of Welsh in this country, has drawn attention to the probable importance of the parathyroid bodies in the economy. Until recently most of us believed that removal of the thyroid gland is followed by characteristic symptoms, although even amongst the thyroidectomists there are some (e.g., H. Munk) who attribute the effects produced not to the removal of the gland substance but to an interference with adjacent nerve structures in the neck involved by the operation. More recently, however, the parathyroidectomists have appeared on the field, and although they are still a divided camp some of them (e.g., Blumreich and Jacoby) holding that one and all of the parathyroids may be removed without ill effects, the majority of them maintain that their experiments favour the view that the time-honoured acute effects of thyroidectomy are to be attributed to the removal of the parathyroids alone. The experimental removal of the thyroid and parathyroids has thus led to very conflicting views, and the work of the more recent parathyroidectomists would suggest that the parathyroids are physiologically more important than the thyroid and that possibly the activities of thyroid preparations might be due to an admixture of parathyroid. It therefore occurred to me that light might be thrown upon the matter from the pharmacological side by the administration of parathyroid extracts, which, so far as I am aware, have not previously been exhibited in the human subject. One would thus be able to compare the effects produced with those which occur during thyroid administration. Within the limits of this paper it will only be possible to consider the pharmacology of the thyroid and parathyroids; their therapeutics will not be referred to.

The patients to whom these extracts were administered were women suffering from insanity, either chronic and incurable or threatening to become so. Each patient was weighed, kept at rest in bed, and put upon a fixed mixed diet sufficient to maintain the body-weight and body temperature. By rest in bed one controlled more particularly non-nitrogenous metabolism and the excretion of carbonic acid and water. By maintaining a "fixed mixed diet" one controlled more particularly nitrogenous metabolism and the excretion of urea. We know that the food necessary for the life and work of the body must contain in suitable quantities proteids, carbohydrates, fats, salts and water; that the water and salts are largely eliminated unchanged, that the fats and carbohydrates are completely oxidised and escape as carbonic acid and water, and that the proteids, which alone enter into the formation of the living tissue or bioplasm of the body, are incompletely oxidised, two-thirds of every proteid molecule being excreted as carbonic acid, water, phosphate, and sulphate, and one-third escaping as urea. It is thus possible to gauge the metabolism of the body by controlling its food and work and by observing its elimination of water, carbonic acid, urea, and other metabolic products. When a patient is kept at rest in bed and upon a fixed mixed diet, metabolism "strikes a balance" which it is possible to upset by the introduction of drugs into the system. In the course of a few days, by which time the patient's metabolism under the conditions of rest and diet had become stable, a careful note was made of the state of the various bodily functions and organs, including investigations of the pulse, blood, and urine, and the drug was then commenced. During its administration periodical examinations were made as before. The drug was stopped in due course and a few days later the examinations were repeated for the last time, the patient was weighed, and finally she was allowed to be up and about and to return to ordinary diet and modes of living.

[1] A paper read before the Section of Psychology at the meeting of the British Medical Association at Edinburgh, July, 1898.

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PARATHYROID EXTRACT.

The parathyroids of the ox were selected, this being the most convenient animal from which to obtain a sufficient supply of these small bodies. Dr. Welsh of Edinburgh, who has recently given an excellent account of the anatomy of the parathyroids in man and of the effects of their removal in cats, was kind enough in the first instance to make me familiar with their appearance in the ox. In order to avoid any risk of removing thyroid tissue along with the parathyroids I employed only the external parathyroids, these being anatomically separate from the thyroid and not, like the internal bodies, incorporated with the larger gland. The external parathyroids of the ox lie one on each side just under cover of the free dorsal borders of the lateral lobes of the thyroid opposite about the lower level of the isthmus. They occupy the stratum of fat which separates the thyroid lobe ventrally from the pharynx-œsophagus dorsally. Not infrequently they are blended with islets of thymus tissue. They are usually somewhat flattened and pyriform, the sharp end, directed towards the middle line, being continuous with a stalk or pedicle which contains the blood-vessels and penetrates the deep surface of the thyroid. They measure from ¼ in. to ½ in. in length and weigh from ½ gr. to 1 gr. They have a smooth surface and a reddish-brown colour, and their cut surface is relatively dry and lacks the juicy appearance of freshly-cut thyroid tissue. Microscopically they consist of closely-packed groups or columns of cubical epithelial cells, with a delicate intervening stroma, and in places there is an appearance of a lumen in which there is sometimes colloid-like material. The parathyroids of the ox, like those in man, may thus exhibit what Welsh describes as the more highly specialised types of structure. The chemistry of the parathyroids is unknown.

In my first case of parathyroid treatment I commenced the drug on the fifth day of rest in bed with fixed diet. In the first instance the fresh glands were dried for twenty-four hours in a sulphuric acid chamber and administered by the mouth. In this way 1 dried gland was given by the mouth every morning for a week (fifth to eleventh days), 2 dried glands were given on the twelfth and thirteenth days, and 3 on the fourteenth day. No effects were observable. On the fifteenth and again on the sixteenth day 3 glands, dissected the same morning, were administered straight away in the fresh state by the mouth but without any apparent change in temperature, pulse, respirations, urine, or in metabolism generally. As mouth administration gave negative results, hypodermic injections were tried after an interval of three days (seventeenth to twenty-first). Extracts in glycerine were used and in this form 1 gland was given on the twenty-second day, 2 were given on the twenty-third and twenty-fourth days, and 3 on the twenty-fifth day. During the treatment by subcutaneous injections of glycerine extracts the patient was kept under careful observation, the temperature being taken every hour day and night. The only changes noticed were (1) a slight diminution in the red blood corpuscles; this quite probably was due to the interference with the patient's sleep involved by the taking of the temperature; (2) a slight increase in the predicrotic wave of the pulse-curve. A rise in pulse-tension, however, has been frequently observed to follow the subcutaneous injection of other animal extracts, so that one was not justified in inferring that this was a specific action of parathyroid extract. In my second case extracts were made in glycerine, in sulphuric ether, and in 10 per cent. sodium chloride solution. They were injected subcutaneously, the doses in the case of each extract being equivalent to from one to four fresh glands. The results were again negative, though the treatment was persisted in for seven weeks. In this case the glycerine extracts produced no diminution of red blood corpuscles, the ethereal extracts produced a transient quickening of the pulse apparently due to the ether, and the saline extracts produced no effect at all. In a third case glycerine extracts were given hypodermically, containing in each daily dose as much as nine fresh glands—that is, more parathyroid than would be found associated with two thyroid glands in the whole animal. No change occurred in temperature, pulse, or respirations; there was no increase in the output of water and carbonic acid; there was no change in the urinary nitrogen and phosphoric acid (which were estimated daily); and, in short, the patient exhibited none of the constitutional effects of thyroid feeding, but, on the contrary, she actually gained 2lb. in weight during the treatment. After a few days' interval she received thyroid treatment by the stomach in doses equivalent to one fresh thyroid daily and she at once exhibited the effects of the drug in a marked degree and lost 10lb. in weight in a week. This case proves conclusively that in a patient actively susceptible to thyroid, parathyroid, even in relatively larger doses, produces no effects comparable to those which occur during thyroid administration. And indeed, in my hands the external parathyroids of the ox when administered to the human subject, whether in the solid state (dry or fresh) by the mouth or in the form of glycerine, ethereal, or saline injections under the skin, seem to produce no effects at all except a slight increase in pulse-tension in common with various other organic extracts.

THYROID EXTRACT.

It is now established that the essential active principle of the thyroid gland is Roos and Baumann's thyroidin, which seems to be identical with the active constituent of R. Hutchison's colloid powder ("thyrocol"). I have been unable to obtain pure thyroidin for therapeutical purposes, but in 10 cases I have used "thyrocol" and in 85 cases the more familiar thyroid tabloids or dry extract of the gland. The actions of thyrocol I found to be the same as those of the tabloids, and the toxic and undesirable effects upon heart, stomach, and nervous system occurred equally with the one as with the other and are due, in my opinion, to the thyroidin contained in the preparation and not to the accompanying "useless" proteid and extractive matters. The sheep's thyroid contains on an average from 0·2 per cent. to 0·5 per cent. of thyroidin; this means that one gland may be twice as active as another. An average sheep's thyroid yields about 6 gr. (0·4 gramme) of "colloid powder" and about 60 gr. (4 grammes) of "dry extract," or 12 "tabloids." In the majority of the cases I employed, as originally suggested by Dr. Lewis Bruce in his "Thyroid Treatment of Insanity," doses large enough to produce thyroidism. Thyroidism is usually brought about in insane patients by daily doses of 60 gr. (20 gr. three times a day) of the "dry extract" continued for six or seven days; this is equivalent to giving one fresh sheep's thyroid daily for a week. In the case of "thyrocol" I found that daily doses of 15 gr. (5 gr. three times a day) repeated for a week were necessary to produce thyroidism. In some cases larger doses were given—e.g., 18 tabloids a day—and in other cases smaller doses—e.g., 1 tabloid or 3 or 6 tabloids a day. In all the cases the effects produced were the same in kind, but varied in intensity according to the size of the daily dose and the duration of the drug. The body weight was of little account as regards dosage, but the drug was badly tolerated by general paralytic and tuberculous patients, still worse by patients over sixty years of age, and worst of all by fat patients, especially those in whom, as Dr. Byrom Bramwell has pointed out, there was reason to suspect fatty degeneration of the heart.

The outstanding effects in my thyroid cases were as follows:—

1. *Body weight.*—The loss in weight was constant and usually amounted to 7 or 8 lb.—that is, a teaspoonful of dry thyroid extract given daily for a week produced a loss of weight at the rate of 1 lb. a day. This was followed after the drug was stopped by a gain in weight which was not so rapid as the previous loss but frequently exceeded it in amount.

2. *Body temperature.*—Pyrexia was not so constant as the loss in weight, and, indeed, a considerable loss in weight might occur without pyrexia. In 20 per cent. of the cases there was no pyrexia. In 66 per cent. the pyrexia was subfebrile—that is, a rise of from 1° to 2° F. above the previous average temperature of the patient, which in most cases was 1° below normal. Dr. Clouston drew attention thirty years ago to the relatively low temperature in dementia and chronic insanity generally—a fact which probably indicates the sluggishness of metabolism in the chronic insane, especially of their nerve-centres. The pyrexia was slightly febrile (a rise of from 2° to 3° F.) in 10 per cent., and moderately febrile (a rise of from 3° to 4° F.) in the remaining 4 per cent. of the cases. Usually the temperature began to rise on the second day of the administration of the drug, gradually reached its maximum, and began to fall again before the drug was stopped.

3. *Integumentary system.*—Perspiration was usually increased, in most cases giving rise to an increased moist feeling of the skin, but in 30 per cent. of the cases being visibly profuse. This means not only that much more water is lost by the body, but also, as Schierbeck has shown, that a considerable quantity of carbonic acid is lost in the sweat; and in addition, after carefully investigating the point,

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I am convinced that when the skin breaks into perspiration the urea in the sweat at once increases and no inconsiderable quantity of urea may be eliminated in this way. The skin during thyroidism was flushed from the hyperæmia which usually accompanies sweating; a fine desquamation was not uncommon and very frequently the skin became fresh, clear, and healthy-looking after treatment. The subcutaneous fat was obviously diminished in most cases and, indeed, the combustion of fat during thyroidism is probably the main cause of the loss in weight and the chief source of the increased output of carbonic acid and water.

4. *Locomotory system.*—No clinical changes were exhibited apart from nervous phenomena and an incapacity for physical exertion.

5. *Hæmopoietic system.*—The chief changes noticed in the blood during thyroidism, especially when large doses were used, were a diminution in the hæmoglobin and to a greater extent in the red blood corpuscles. The depreciation in the value or worth of the hæmocytes as regards their hæmoglobin was thus but slight. A slight degree of leucocytosis was not uncommon, and in films stained by Dr. Lovell Gulland's method the blood plates were slightly increased. No obvious changes were detected in the spleen or in the thyroid gland.

6. *Nervous system.*—Sensory symptoms in the form of headaches, pains, tinglings and pricklings in the limbs and body generally were common and usually occurred early. Motor phenomena in the form of tremors of the face, fingers, and limbs also set in early and were accompanied later by weakness and a feeling of great exhaustion. An exaggeration of the tendon reflexes was occasionally seen during the earlier stage of the drug. Some degree of mental excitement was frequently exhibited, varying from quiet talkativeness to noisy scolding, restlessness, and impulsive violence, and later the mental signs were rather those of the irritability of exhaustion. The sleep function was not specially affected except in cases where the sensory disturbances were very pronounced.

7. *Circulatory system.*—Tendencies to palpitation and syncope occurred in a few patients who tolerated the drug badly. The pulse was invariably increased in rate, usually by 40 or 50 beats per minute with large doses. Later the pulse became irregular, weak, and soft and in the majority of cases gave the signal when the drug had to be stopped. The pulse remained fast usually for at least a week afterwards and sometimes for a fortnight or even longer. An acceleration of the heart points to an excessive katabolism of its substance, and the fact that thyroid powerfully promotes the combustion of fat seems to me to explain the risk of cardiac failure in cases of fatty heart under thyroid treatment. There is excessive oxidation and disintegration of the heart-wall. Pulse-tracings showed distinct evidence of diminished tension, the predicrotic wave being diminished and the dicrotic wave increased.

8. *Respiratory system.*—The increase in the respirations during thyroidism was constant and amounted usually to six respirations per minute and not uncommonly to ten. As an increase of even one respiration per minute means 1440 additional respirations in the twenty-four hours, it is obvious that the marked increase in the respirations during thyroid feeding, the patient being at rest in bed, points to a remarkable increase in tissue oxidation and to an exaggerated ingress of oxygen and output of carbonic acid and water.

9. *Alimentary system.*—The thirst was commonly increased and the appetite diminished during thyroidism, but after the treatment the appetite was often prodigious. In about 25 per cent. of the cases the digestion was deranged by the drug, the symptoms being anorexia, furred tongue, nausea, vomiting, and in some cases biliousness and diarrhœa. In my opinion thyroid dyspepsia is due to a local irritation by the active principle of the drug (thyroidin), which, as is well known, is stable enough to resist gastric digestion, and so if supplied in sufficient quantity it will irritate the lining of the stomach, the duodenum, and even the lower bowel. Thyroid dyspepsia is a complication which sometimes necessitates the discontinuance of the drug and it renders observations upon metabolism useless. The action of the bowels was not notably improved by thyroid in my cases, but it will be remembered that amongst insane women constipation is a marked feature and is very intractable. The excretory nitrogen in the fæces was not estimated.

10. *Urino-Generative System.*—Menstruation was frequently more profuse than usual at the regular periods, in a few cases it appeared irregularly during thyroidism, and in one patient, an idiot, aged twenty-one years, with cretinoid features, it appeared for the first time in the patient's life after she had taken one tabloid for three weeks. The urine was carefully investigated, the twenty-four hours' discharge being collected, mixed, and measured and examined fresh the next morning. The daily amount during thyroidism was usually increased, but to some extent it varied inversely with the perspiration. The colour and specific gravity were frequently increased. Turbidity was common. The mucus deposit was not increased as is said to occur in myxœdematous cases under thyroid treatment. The chemical reaction was almost invariably acid but the total acidity was not estimated. Albuminuria was common. Glycosuria was not met with, although sugar was tested for in every case; in all probability the absence of sugar in my cases was due to the fact that the patients were on a fixed diet which did not contain an excess of sugar, for it is the tendency to "alimentary glycosuria" which, according to Bettmann, occurs during thyroid feeding. Uric acid and urates were commonly increased. Bile occurred only in cases in which the digestion was markedly disturbed. The chromogens of indigo-red and urorosein were usually increased. The urine-pigments were not investigated. The total dissolved solids were markedly increased during thyroidism and were estimated in the rough by multiplying the last two figures of the specific gravity by the number of ounces passed in the twenty-four hours. This formula gives the total daily solids in grains. The phosphoric acid was distinctly increased, especially during the earlier stages of the drug; it was estimated by the uranium method. The increase in the phosphoric acid in the urine is probably due mainly to an increased oxidation of the phosphorised constituents or azotised fats—e.g., protagons and lecithins—of the nerve centres. The urinary nitrogen also was much increased, especially in the later stages of thyroidism; it was estimated by the hypobromite method. It must be remembered that the thyroid tabloids consist largely of nucleo-proteids and so are rich in nitrogen and phosphorus, but the amount of proteid supplied in the drug is quite insufficient to account for the increase either of the phosphoric acid or of the nitrogen in the urine.

Conclusions.—The preceding facts show indubitably that thyroid is a profound katabolic stimulant. With the patient at rest in bed and on a fixed mixed diet there is a great increase in all the excreta, especially in the water and carbonic acid and to a less extent in the urea and other products of nitrogeneous metabolism. Thyroid thus greatly accelerates the splitting up and oxidation of the tissues. The fats of the tissues suffer most severely, and the reason is probably simply this—that the fats are the most fluctuating of the tissue substances, they are the most readily formed and the most easily lost of the body stuffs, and consequently when a powerful katabolic stimulant such as thyroid is introduced into the system the fats are the first to be burned up, and when the thyroid becomes eliminated from the system fat is rapidly laid on. Amongst the fats thus affected are probably the so-called "azotised fats," or phosphorised constituents of the central grey matter, and the early excess of phosphoric acid in the urine is probably derived from this source. The tissue carbohydrates are probably also considerably oxidised, and, although the clinical proof of this is not so clear, the great muscular weakness and incapacity for physical exertion during thyroidism may indicate that the glycogen in the muscles, which is the chief immediate source of muscular energy, has been largely burnt up and so is not available. The tissue proteids are also excessively wasted, the "unorganised" proteid being probably affected first and finally the living proteid or bioplasm itself. After the thyroid is eliminated from the system a gain in weight sets in and there are other evidences of a powerful anabolic reaction. The *rationale* of this change seems to me to be explainable by Hering's theory of the "internal self-adjustment of bioplasm," according to which the bioplasm, when it is being katabolised by some stimulus (e.g., thyroid) tends less and less towards katabolism and more and more towards anabolism which sets in with a rebound as soon as the katabolic stimulus is removed.

As to the channels by which the thyroid reaches the tissues, the changes in the blood during thyroidism probably indicate that the drug is distributed by the blood to the tissues, but at the same time the early occurrence of the sensory motor and mental phenomena during thyroidism, the evidences of hyper-activity of the central grey matter followed by the signs of its exhaustion, and the early increase of the

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phosphoric acid in the urine, all seem to me to indicate that the thyroid specifically stimulates the central nervous system and through it the metabolism of the tissues. In direct support of this view I may mention that I fed two rats upon porridge and water but to one of them was also given daily one thyroid tabloid. The thyroidised rat died with tremors and other nervous symptoms on the fourth day, and while the brain cells of the healthy rat were normal in appearance those of the thyroidised rat showed distinct chromatolysis, many of the cells being "ghost-like."

And, finally, a word in explanation of the conflicting results of the removal of the thyroid and parathyroids. There seems to be a strong similarity between the "tetanic" symptoms which follow parathyroidectomy, the acute "neurotic" symptoms which follow thyroidectomy, and the toxic phenomena of thyroidism. It would seem to me that the essential result of thyroidectomy is an artificial myxœdema (Horsley's "mucinoid" and "marasmic" stages), and that the acute or "neurotic" effects of thyroidectomy are accidental and, like the symptoms of parathyroidectomy, may be accounted for (1) by the youth of the animal operated upon—the "acute" symptoms are always most common in young animals and are usually absent in old animals; (2) the interference with the rich nervous connexions of the thyroid during the operation; and (3) the wounding of the thyroid, in consequence of which colloid is spilt and thyroidism is produced by absorption of the juice. Where surgeons meet with this mishap it is common for them to have a more than usually distinct febrile reaction and tetanic symptoms after the operation. In the removal of the internal parathyroids, which are usually incorporated in the deep surface of the thyroid, the thyroid cannot escape severe manipulation or even actual wounding.

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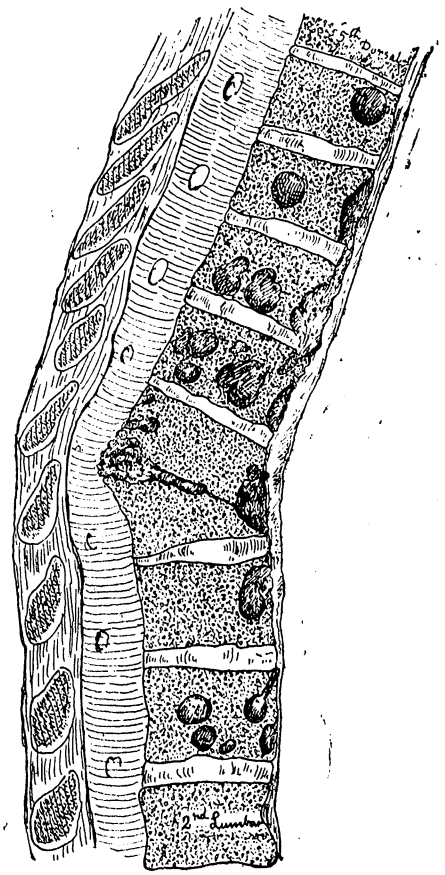
Edinburgh.

CARIES OF THE SPINE: MODERN METHODS OF TREATMENT.

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DURING recent years this disease seems to have been selected by surgeons for experimental and violent methods of treatment. The excitement produced among the public by the circulation in the lay press throughout the world of M. Calot's revival of "forced reduction of the deformity" has scarcely subsided when it is proposed that every case of caries should be operated upon with the view of removing the tuberculous bone. This suggested operation is based apparently upon the following assertions—firstly, that sufficiently good results cannot be obtained by other methods, and secondly, that it is desirable to remove every portion of diseased bone in tuberculous osteitis. I will endeavour to controvert both these contentions. First, if the spine be fixed thoroughly by means of an efficient apparatus such as I have frequently described, and gradually or rapidly extended in accordance with the comfort of the patient, the adjustments being made with careful accuracy by the surgeon himself and the health of the patient maintained by proper food and medicine, almost every case of caries of the spine will be cured. Operations are undoubtedly called for in a considerable number of cases and occasionally it may be desirable or necessary to cut down upon diseased parts and remove pieces of necrosed bone or give vent to the contents of a chronic abscess. Should an abscess appear it is desirable to open it up as soon as possible and to scrape it out and, in fact, to adopt the methods of modern surgery in the treatment of chronic abscesses as far as possible. If this plan of treatment be carried out it may be confidently expected that every patient whose health has not been already undermined by the disease, or, in other words, every patient who has not become the subject of general tuberculosis, will be cured. In no case where I have been able to carry out this treatment thoroughly has there been any increase in the deformity after the treatment has been commenced and in the large majority the deformity has been reduced. The experience of such results gives me reason for dissenting from the assertion that other methods than that of extended operation have not been successful. Secondly, with regard to the removal of the tuberculous bone it has not yet been proved that we can define with certainty the exact area to which the disease is limited, and even if we could define this area the operation would not prevent further occurrence of disease in other parts after we had removed that which existed. It is only necessary to examine pathological specimens of spines affected with this disease to realise the almost insuperable difficulty of removing even that portion of the bone which is obviously diseased, and as to taking away every part which may be involved the accomplishment is practically impossible.

The annexed illustration shows a specimen in St. Bartholomew's Hospital, No. 1064. It consists of a vertical



Section of spinal column from fifth dorsal to second lumbar vertebra inclusive. Destruction of part of the bodies of the tenth and eleventh dorsal vertebræ has taken place and the bodies of the other vertebræ are seen studded with tuberculous cavities.

section of a portion of the spine, including the fifth dorsal to the second lumbar vertebra. Between the tenth and eleventh dorsal vertebræ there is destruction of bone

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leading to angular deformity, but in other parts of all the vertebræ shown, hollow spaces, more or less cup-shaped, exist. This is doubtless an exceptional specimen, but even when there is far less implication of the bones the removal of the diseased parts may still be unattainable.

In dealing with tuberculous disease we have to conduct a contest between the nutrition of the patient and the disease, and it is of the first importance to render the soil unfit for the tubercle bacilli. Improvement in the patient's vitality will overcome the bacilli and perfect fixation will permit local repair to take place. This is surely a well-established doctrine and it has been proved to be true in practice. There can, of course, be no doubt, speaking generally, that in cases of degenerated and broken-down tuberculous bone the sooner and more completely it is removed the better. In caries of the spine this can be effected by the early opening of abscesses and their treatment as above referred to, and sometimes by more extensive operations for removal of bone, but to cut down upon every diseased spine and attempt to remove all affected osseous tissue is a plan of treatment which can hardly commend itself to cautious surgeons. Further, to remove the laminæ and pedicles for the purpose of approaching the diseased parts is to remove those portions of the vertebræ which are, as a rule, alone free from disease and upon which we should rely for maintaining the stability of the spinal column during the process of repair.

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THE TREATMENT OF CHRONIC ULCER OF THE LEG.

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THE treatment of chronic ulcers of the leg, especially in out-patient practice, is often so unsatisfactory that it seems worth recording the results I have obtained in a large number of these cases by adopting an old but comparatively seldom used method of treatment which I have found very successful in dealing with this painful condition. The method is that of careful and systematic strapping of the leg, the ulcer being completely covered in and no other local remedy being employed.

Some years ago, when house surgeon to the Metropolitan Hospital, I was requested by one of the visiting surgeons to strap a chronic ulcer on a patient's leg situated over the tibia. The man had been attending the out-patient department for six months and had been given the usual routine remedies with little or no benefit, but his ulcer soon improved when strapping was commenced and was well in a few weeks. The rapid healing of this ulcer induced me to give treatment by strapping a more extensive trial and I have now treated in this way between thirty and forty ulcers of the leg with very satisfactory results. I can only recall four patients, all elderly women, in whom this method of treatment failed. In these instances it had to be discontinued as it caused irritation of the leg, but it is probable that had these patients rested sufficiently and had the strapping been changed more frequently the treatment would have been as successful in their cases as it has been in all others in which I have regularly carried it out. The strapping used was the ordinary adhesive plaster spread on stout, pliable holland and supplied in 12-yard rolls, 16 in. wide. It must be cut into various lengths according to the size of the leg, each length being about 1½ in. wide and applied so that the strips overlap by ½ in. It is best to include the foot, commencing at the base of the toes and carrying the strapping up the leg to 3 in. or 4 in. above the ulcer, which is thus completely covered in. A strong calico bandage should then be applied over all, reaching from the toes to the knee, and this should be changed by the patient daily or as often as it becomes soiled.

Occasionally small vesicles and excoriations form beneath the strapping or the skin round the ulcer may become irritated by retained discharge. This is less likely to occur if the patient can rest, and is not of much importance, as the excoriations readily heal on the application of an ointment composed of equal parts of zinc ointment and soft paraffin, applied on small pieces of lint, the whole being then covered in with strapping. Care should be taken that the lint is not placed too close to the ulcer, as otherwise it may interfere with the firm pressure which should be maintained by the strapping on the healing edges. It is usually sufficient to change the dressing twice a week, but if the ulcer is large and there is much discharge it may be necessary at first to renew it more frequently and if there is much inflammation of the skin around the ulcer it is well to subdue this before commencing to strap in the first instance.

At the Hospital for Diseases of the Skin, Blackfriars, where many out-patients attend with ulcer of the leg, the surgeon to whom I was acting as assistant kindly allowed me to treat many of his cases with strapping. On referring to my notes of ten of these patients I find that their ages varied between thirty-three and sixty-three years, five of them being over fifty years. Several of the ulcers had an area of about the size of a crown piece, others were smaller. Nearly all had had months of hospital treatment up to the time strapping was commenced, but with little or no improvement, and in some instances the ulcers had latterly been extending. Many of the patients had varicose veins and œdematous legs and they almost invariably expressed themselves as much relieved soon after treatment was begun. The average number of strappings required in each case before healing was completed was twelve. After the ulcer has healed the patient should be directed to wear an elastic stocking or a Martin's rubber bandage. The latter is to be preferred for hospital patients and should be worn over a soft calico bandage which helps to prevent the irritation which sometimes arises when the rubber is immediately in contact with the skin.

The improvement which this treatment leads to is, of course, largely due to the support which the strapping gives to the limb. The pressure causes diminution of the œdema and a more satisfactory condition of the circulation of the leg, and, in consequence, the granulations become vascular and active, the ulcer becomes healthier, and new skin gradually spreads over it from the margin. This method of treatment is no doubt somewhat troublesome and requires more time than can usually be given to individual out-patients, but there is nothing to prevent its being carried out in private practice or by students under careful supervision in hospitals to which schools are attached. There is no special novelty claimed for the method, which has long been a recognised one, but an experience extending over many years in various out-patient departments in London has shown me how comparatively seldom it is tried and I venture to assert that for chronic non-specific ulcers of the leg of moderate size, where the patient is unable to rest, none of the usual methods of treatment yield anything like such satisfactory results as that which I have endeavoured to describe.

London.

A CASE OF OBSTRUCTED PREMATURE LABOUR.

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THE following case may probably be of some interest to the readers of THE LANCET.

On August 5th, at 7.30 A.M., I was called to see a woman, a multipara, aged thirty-eight years, who was about seven months pregnant. A certificated midwife who was present told me that the patient had had a fall three days previously and that the "pains" had set in at about 3 P.M. on the previous day and had gradually increased in severity. She added that they were typical labour pains but that they made no impression on the os, which was then of the same size as it had been on the previous night. I found the patient quite exhausted. The head was presenting, the membranes were intact, and the os was abnormally thickened and tough, barely admitting a finger. I ordered 15 gr. of chloral and left. I saw the patient again at about 12 noon—i.e., twenty-one hours after the pains had set in—and I found that the os was almost the same size as it was when I saw her previously. I learned that the patient had slept for a couple of hours and had awakened refreshed only to be soon prostrated with the

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pains, which came on with redoubled vigour. I then resorted to artificial dilatation with Champetier de Ribes's bag, and with some difficulty got it into position and retained it for about two hours, at the end of which time I was surprised to find that the os even then only admitted two fingers, and this with difficulty, there being thus hardly any appreciable increase in size. I ruptured the membranes, and, nothing else being at hand, made a couple of slight snips in the cervical tissues with a pair of scissors. I then performed bipolar podalic version and succeeded in bringing down a foot. The tough cervical band grasped the thigh so tightly that the leg in a few minutes became almost black from the obstructed circulation. After about half an hour the cervix showed signs of relaxing and the rest of the body up to the neck followed with difficulty. A further complication now occurred by the after-coming head being extended and much too large to get through the imperfectly dilated os. As it could not be extricated by the ordinary methods, forceps were tried but without avail. I was then preparing for craniotomy, when a strong pain, aided by stronger traction, succeeded at last in expelling the head. A further complication in this interesting case was a prolapse of the anterior vaginal wall containing the partially distended bladder (cystocele). The placenta was expelled soon after but was incomplete, there being numerous small islets of placental tissue wanting. I found it necessary to insert my hand four times to remove portions of the placenta with my fingers and also to introduce a curette—which was done by a colleague—to scrape away the remnants which had escaped the fingers. A hot iodine douche was then given and was ordered to be repeated once a day and a hypodermic injection of ergotin and strychnine administered. Hot-water bottles were placed to the feet and other precautions were taken to counteract the collapse of the patient. She soon rallied and at the time of writing, a week after the delivery, is quite well, not having had any hæmorrhage or offensive discharges whatever.

The interest of the case, to my mind, lies in the following facts: (1) an abnormally tough and thickened cervix; (2) the unsuccessful artificial dilatation; (3) the evidently diseased placenta; (4) the presence of cystocele; and (5) the value of strict antiseptic precautions, for notwithstanding the number of times that the above complications necessarily entailed manual insertion not the slightest indication of sepsis appeared. I used the pellets of perchloride of mercury specially designed for private use.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON AUSCULTATORY FRICTION AS AN ADJUNCT TO AUSCULTATORY PERCUSSION IN ABDOMINAL EXPLORATION.

BY WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND., AND A. C. PEARSON, B.A. CANTAB.

THE method which is briefly described in this note is not new, although it was recently re-discovered in the wards of St. George's Hospital.[1] Professor Bianchi had introduced it in 1894 in connexion with the Biazzi-Bianchi phonendoscope, but it does not appear to have come before the practical notice of the profession in this country. The expectations which had been raised as to its clinical value have not been fully realised; on the other hand, it is capable of so much precision within a limited range of use that it is worthy to be brought more prominently than has hitherto been the case before the notice of clinical workers. The principle and the procedure are analogous to those of auscultatory percussion. Any amplifying stethoscope, such as the phonendoscope, will have an advantage over the common stethoscope, but the latter is quite sufficient for all ordinary purposes. If the finger be drawn lightly over the skin away from the spot where the chest-piece is applied the otherwise inaudible sound will be loudly heard through the stethoscope, but only for a short distance, beyond which it will cease. The edge of the nail or the top end of a pencil or the like will answer the same purpose as the finger. If the chest-piece be applied over a hollow organ, such as the stomach, the intestine, or even the lung, the friction will continue to be perceived for a considerable distance without any diminution until it abruptly ceases to be heard. By repeating the operation in radiating fashion an outline can be drawn of the vanishing points all around, and on testing this it will be found to correspond exactly with the superficial outline of the organ. It was in mapping out a distended colon that the method was re-discovered at St. George's Hospital. No more striking illustration could be obtained of the fine localising power of the method, for in this case the boundary had to be drawn between the distended gut and the distended stomach. No other method can do this with the same definiteness, and the method also stands alone in the ease of its performance and the absence of any disturbance to the patient, whose state may forbid rougher means of examination. The method is applicable to the study of other regions and organs, but upon this we need not enter at present, as further reference will be made to it elsewhere.[2] The practical experience hitherto gained shows that the method is nowhere so successful as in mapping out the distended viscera in the abdomen, provided the abdominal walls themselves be not unduly tense. Excessive tension of the parietes puts a stop to its differentiating power. With this reservation the results are such as to deserve the attention of clinicians.

[1] Dr. Ewart states that to Mr. Pearson belongs the credit of having found out for himself this additional means of determining the boundaries of viscera and of having called attention in the case in which he had first applied it to the fine results which may be obtained by auscultatory friction.—ED. L.

[2] Clinical Journal, July to September, 1898: "On Practical Points in Auscultation and Percussion and in the Physical Examination of the Chest." Lectures to Advanced Students. By Wm. Ewart, M.D., F.R.C.P. Lecture iv.

SARCOMA OF THE SOFT PALATE, &c.

BY JAMES WILSON, M.D.R.U.I., F.R.C.S.ENG.,
SURGEON TO THE HAVERFORDWEST INFIRMARY.

THE following report may be of interest, as it is the subsequent history of a case, reported in THE LANCET,[3] of sub-parotid and retropharyngeal sarcoma successfully operated on.

It was noticed in January, 1897, that the growth had recurred and occupied the soft palate, invading the right pillars of the fauces, rendering swallowing painful and difficult, and causing considerable dyspnœa. It also involved the right side of the hard palate, especially the alveolar edge. The main central growth was of the size of a small hen's egg, but the edges were ill defined, though several little outlying lobules could be felt. After consultation with Mr. Jacobson it was decided to operate, and on Feb. 12th I, with the assistance of Dr. Stamper, Mr. Williams, and Mr. Mills, removed the growth. Chloroform was given and a preliminary laryngotomy was performed, the pharynx being plugged. Shortly after the patient became livid and apparent respiration ceased, the pulse remaining fair. On lowering the head and rubbing the epigastrium and performing artificial respiration for about five minutes colour returned and natural breathing began again. An incision was then made along the right side of the nose, round the ala, and through the middle of the lip; this flap was rapidly dissected from the bone and bleeding was stopped by pressure and torsion. The hard palate was sawn through in the middle line after removing the right incisors, and the upper jaw was cut through transversely just below the level of the nasal bones. The separated bone was then drawn forward and an attempt was made to separate the growth. To deal with it properly, however, the right cheek had to be slit back to the masseter and much trouble was experienced in getting it all away. The soft palate was removed on both sides and the buccal mucous membrane was dissected off from the masseter, leaving its fibres bare and glistening; all the soft parts were removed as thoroughly as possible. Hæmorrhage was stopped by Pacquelin's cautery and iodoform was dusted over the surface; the skin incisions were brought together by silver wire. The

[3] THE LANCET, June 27th, 1891, p. 1429.

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laryngotomy tube was removed before the patient regained consciousness. The temperature, which never rose above 101°F., became normal in three weeks. Four weeks after the operation the patient had a severe fall downstairs, resulting in partial paraplegia, which lasted seven weeks. This all ultimately cleared up. At present there is no evidence of recurrence, the only complaint being some stiffness of the jaw. Sections were taken of the main tumour and a neighbouring gland removed during the operation. Both resembled the original growth—"mixed glandular sarcoma resembling in structure the parotid gland"—with the addition of larger patches of chondrification than one usually gets in such growths.

Haverfordwest.

PYÆMIA DUE TO ALVEOLAR ABSCESS.

By JOHN EDMONDSON, M.B., C.M. EDIN.

IN THE LANCET of June 25th, 1898, Dr. F. Willcocks reports a fatal case of pyæmia following alveolar abscess which occurred in the Evelina Hospital for Sick Children. The following is another example of the serious effects which may result from this cause. A few years ago I attended a boy, aged fifteen years, who on account of a gum-boil had an incisor tooth extracted by a chemist. Two days later he began to complain of increased pain in the gum and also in the face. There was a quantity of pus in connexion with the socket of the canine tooth and with the three adjoining teeth, all decayed, of the same side. The cheek of the same side presented the typical appearance of a case of diffuse suppurative cellulitis. The general symptoms were those of slight jaundice, cough, pain in the chest, hæmorrhagic sputum (due to consolidation of the base of the right lung), delirium, and great depression and emaciation. There was no appreciable hepatic or splenic enlargement. The temperature was 105° F. and the pulse was 140. I extracted the three decayed teeth and made several incisions down to the cellular tissue of the face, and this was followed by gradual improvement which went on for about two weeks. An abscess then formed in the lower end of the humerus, which was opened and drained. A little later another abscess formed in the lower end of the radius, which was similarly treated. The patient continued to be ill more or less for several months but ultimately recovered, though he still suffers from stiffness of the elbow-joint and wrist-joint in consequence of the suppuration.

Dr. Willcocks says that pyæmia from alveolar abscess is rare, and he points out the uselessness of any treatment except the immediate extraction of the carious teeth in the case of abscess due to temporary teeth. This, I think, would apply equally well to the same condition when it is due to abscess caused by permanent teeth. In this case had all the carious teeth been removed early no doubt the patient would have been well in twenty-four hours. I am indebted to Dr. Kershaw of Farnworth, near Bolton, in whose practice this case occurred, for permission to report it.

Burscough.

SUPERSTITION IN SOMERSET.—The Wells city magistrates last week investigated a charge brought against a man named Elliott for unlawfully using "certain subtle craft, means and devices" to deceive a person on July 20th. It appeared that the defendant had informed a woman that somebody had been "at her child again and cast a devil into her," and ultimately he consented to drive the devil or witch out of the child for 7*s.* 6*d.* The child, however, became worse and eventually died. Defendant handed to the magistrates a number of testimonials from people who had asked his advice. The writer of a letter sent from Shepton Mallet said that her daughter was getting on "wonderful," another from a farmer expressed thanks for the cure of two cows and a mare whose illness was due to witchcraft. It was stated that the defendant had received £120 from 200 people who had consulted him in Bristol, Langport, Glastonbury, Shepton Mallet, and nearly all parts of the county. The magistrates sentenced Elliott to two months' imprisonment with hard labour.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

EAST LONDON HOSPITAL FOR CHILDREN.

A CASE OF LARYNGEAL STRIDOR: REMOVAL OF ADENOID VEGETATIONS.

(Under the care of Dr. EUSTACE SMITH.)

THERE are probably several distinct causes of laryngeal stridor in children and the following case, especially when considered in connexion with the others recorded by Dr. Eustace Smith, shows that the presence of post-nasal "adenoids" is no unimportant factor in its etiology. The area of the results produced by these troublesome vegetations is steadily growing, and they are now held responsible for many more symptoms than was the case a few years ago. For the notes of the case we are indebted to Dr. J. Shardlow, resident medical officer.

A boy, eight months old, was admitted to the East London Hospital for Children on May 18th, 1898, with a history of (1) having made a "crowing" noise and (2) of having difficulty in swallowing, both dating from birth. He was a full-term child and was said to have had "snuffles" when six weeks old. The parents were healthy; they had no other children. On examination the patient was found to be well nourished; he lay fairly comfortably in bed, the alæ nasi working slightly. He was evidently rickety—there being marked "bossing" of the frontal bones, thickening about the radial epiphyses, and "beading" of the ribs. The anterior fontanelle was large and the edges of the bones forming the boundaries of the fontanelle were greatly thickened. The lips were of a good colour and a distinct stridor was heard when the patient was lying quietly in bed, but when attempts at swallowing or crying were made he became extremely cyanosed and during expiration not a sound was heard, but in inspiration a very loud "crowing" occurred and was audible in any part of the ward. The mouth was kept constantly open and well-marked depressions were seen above the alæ nasi. Numerous adenoid vegetations were felt in the naso-pharynx on examination with the finger. The hair was rather profuse and the eyebrows were well marked. There was no sign of congenital syphilis. In the chest there was well-marked infra-mammary recession on both sides, and there was a depression at the xiphisternum. A few rhonchi were heard in the lungs, otherwise they were normal. The liver was enlarged and the spleen could not be felt. On May 19th, under chloroform, Dr. Shardlow removed the adenoid vegetations with the aid of the curette and the finger-nail. On the 20th no stridor was noticed when the patient was lying undisturbed, but when taking food he got attacks of dyspnœa and "crowed" in inspiration. The temperature was 101·4° F. and there was a considerable quantity of nasal discharge. On the 27th the temperature became normal and for the first time since admission a noise was heard during expiration when the patient attempted to cry. Inspiratory crowing was still present, but only when the patient cried. He had still a free nasal discharge. On the 31st the nasal discharge had entirely stopped under the influence of an application of ten minims of hazeline to an ounce of boric lotion. "Crowing" was still present; occasionally it was heard during the day, but frequently at night. The patient still had attacks of dyspnœa when food was being given. From May 31st to June 9th he had nasal discharge again. "Crowing" occurred until the 10th. Very little difficulty was experienced now in swallowing. On the 20th no "crowing" had been heard since the 10th, there was no difficulty in swallowing, and the patient was discharged from the hospital. The patient was seen again on July 20th and the mother stated that she had never once heard the "crowing noise" since the patient left the hospital. Thus the stridor disappeared just about three weeks

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after the operation—i.e., after the removal of the adenoid growths.

Remarks by Dr. SHARDLOW.—Dr. Eustace Smith pointed out in two papers which appeared in THE LANCET of May 25th, 1895, and March 19th, 1898, that there is a close relationship between some cases of laryngeal stridor and adenoid growths, so much so that if the vegetations be removed the stridor disappears. In this connexion the above case is very interesting and confirms the opinion expressed in the papers mentioned. I am convinced that recovery in the present case was delayed by the meteorological conditions which prevailed at the time, because when the weather was damp the patient seemed to be much worse and the nasal discharge was more profuse. The effect of the removal of the adenoids in this case, I take it, was very striking. Not only did a laryngeal stridor which had been present since birth disappear in three weeks, but also the child showed much more intelligence and improved in every way. For permission to publish the notes of the case I am indebted to Dr. Eustace Smith.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

A CASE OF ACUTE INTESTINAL OBSTRUCTION; LATENT HERNIA; LAPAROTOMY; REDUCTION OF HERNIA FROM WITHIN; DRAINAGE; RECOVERY.

(Under the care of Dr. ALEXANDER.)

IT can hardly be disputed that for strangulation of inguinal or femoral hernia the ordinary external incision is the best, as the hernia is situated comparatively superficially and so no deep dissection is required, but in the case of an obturator hernia the sac is so deeply placed that the dissection needed to reach it is difficult, and therefore an abdominal section is preferable, especially when we consider the slight local indications of the hernia. In cases of inguinal or femoral hernia, if the local signs of a hernia are wanting, owing to the small amount of bowel involved, a laparotomy offers the best chance of success, as the cause of the obstruction of the bowel will then certainly be discovered, though the dangers of sepsis are undoubtedly increased. For the notes of the case we are indebted to Mr. C. E. Morris, senior house surgeon.

A boy, aged fifteen years, was admitted to the Royal Southern Hospital, Liverpool, on the afternoon of March 2nd, 1898, giving the history that six days previously he had been, when dismounting from a pony, suddenly seized with very severe pain in the right side of the abdomen. He vomited and three loose stools containing a little blood were passed in rapid succession. From the onset of the attack up to the admission of the patient to the hospital no stools or flatus had been passed. All nutriment taken had been vomited. The pain had become less severe but was still greatest in the right side of the abdomen. There had been no tenesmus. On admission the patient's eyes were sunken and the features were drawn and pale. The legs were extended and the abdomen was found to be uniformly enlarged, firm, tympanitic on percussion, and not moving with respiration, but it was not hyperæsthetic. No special tumour could be found. The temperature was 98·4° F. and the pulse was 88 and small. It was decided to explore the abdominal cavity. Accordingly, a few hours later the patient was prepared for operation and anæsthetised. On further careful examination it was thought that a very small indefinite tumour could be felt near the middle of the right Poupart's ligament. The abdominal cavity was opened by an incision above, and nearly parallel to, the right Poupart's ligament and was found to contain much clear fluid; the small intestines were discoloured and distended. A little knuckle of bowel, just sufficient to occlude its own lumen, was found tightly grasped by the right crural ring. This was cautiously and easily withdrawn and as its condition, although very deeply congested, did not suggest gangrene it was not further interfered with. When the hernia was being withdrawn a quantity of dark sanguineous fluid came away from the sac and was prevented by sponges from entering the abdominal cavity. The wound was closed, a glass drain carrying a piece of double cyanide gauze being inserted into the peritoneal cavity. On March 3rd the drain was removed. The pulse ranged from 100 to 120 and the temperature was 98·4°. On the 4th ten soft stools were passed. The patient made a good recovery, with the exception that suppuration occurred along the suture tracks, and on the twelfth day after the operation left orchitis developed, suppurated, was incised and healed rapidly.

Remarks by Mr. MORRIS.—The points for consideration suggested by the case are as follow: 1. The difficulty of diagnosing a small femoral hernia (almost a Littré's hernia), especially when there is great distension of the abdomen. 2. Rarity of femoral hernia in boys. 3. The occurrence of *left* orchitis after a wound of the right side of the abdomen. Was this caused by the end of the tube impinging upon the left vas deferens or by sepsis travelling in an unusual path? 4. The dangers of peritoneal infection from the hernial sac by the intra-abdominal method of operating are well shown in this case. Had the fluid in the sac been septic or the bowel sloughing it would have been very difficult with sponges to prevent the possibility of peritoneal infection. Moreover, the sac would have had to be dealt with externally afterwards.

Reviews and Notices of Books.

Operative Gynæcology. By HOWARD A. KELLY, A.B., M.D. 2 vols., 1100 p.p., with 24 Plates and 550 Illustrations. Royal 8vo. London: Henry Kimpton. 1898. £3 3*s.* net.

THE announcement that Dr. Howard Kelly was writing a work upon operative gynæcology led us to anticipate its appearance with great interest. The book, which is in two volumes, has now been published and is undoubtedly the most important work upon this subject which has yet been written in the English language. Not only the great excellence of the letterpress, but also the artistic merit of the very numerous illustrations with which it is furnished, renders the work one well worthy of the American school of gynæcology and of the high reputation of its author.

The first two chapters consist of a very full description of the methods to be employed in attaining asepsis and antisepsis, both in hospital and in private practice. The difficulties which beset the perfect sterilisation of catgut has led many surgeons to give up this most convenient form of ligature. From 1890 to 1894 in the Johns Hopkins Hospital the catgut was prepared by soaking in ether and boiling in alcohol under pressure. At the beginning of 1894 an outbreak of sepsis occurred, which was almost certainly traced to the use of catgut prepared in this way. Since 1895 a modification of Krönig's cumol method has been employed with success. This method consists of several steps. First the catgut is heated in a sand bath at 80° C. for one hour, it is then placed in cumol at 100° C. and heated up to 165° C. (331° F.), this temperature being maintained for an hour, and finally it is dried at 100° C., for two hours in a sand bath or a hot air oven, and thence transferred to sterilised glass tubes until used. The process is somewhat troublesome, but as it appears to be efficient it should be of service to surgeons who wish to be certain of the asepsis of their catgut. Schatz's method of disinfecting the hands by immersing them in hot saturated solutions of permanganate of potassium and oxalic acid after a thorough preliminary scrubbing with hot water and soap is recommended, and the great importance of the preliminary washing for a definite length of time is insisted upon. The chapter upon the Topographical Anatomy of the Pelvis is remarkable for the great beauty of the illustrations, especially those illustrating the anatomy of the small intestine. The anatomy and action of the levator ani muscle are well described. Under Gynæcological Examinations the great value of photography is pointed out and the chapter is illustrated by a number of drawings obtained in this way of the various forms assumed by the abdomen when distended by tumours or other conditions. The examination of patients in the dorsal and other postures is fully described and the great value of rectal

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examination after distension of the bowel by air is drawn attention to. From our own experience we can fully endorse all that the author says as to the excellence of this method of examination in difficult cases. Examination of the rectum itself in the knee-chest position through a long straight speculum is recommended, this method being of special value when it is wished to localise the opening in cases where a pelvic abscess has burst into the bowel. Under Diseases of the External Genitalia a very interesting case of fibro-myoma of the round ligament growing within the inguinal canal is recorded. The author directs attention to the fact that negresses appear peculiarly liable to the curious condition known as elephantiasis of the vulva. He considers it to be the result of chronic inflammation and blockage of the lymphatics, the commonest exciting cause being syphilis. A case of adeno-carcinoma apparently beginning in the left vulvo-vaginal gland is figured, but, as is pointed out, Gottschalk and others have shown the presence of adenoid elements in the upper part of the labia majora and it is possible that the tumour rose from these rather than from the gland of Bartholin. In considering complete tear of the recto-vaginal septum the author recommends a denudative operation, the posterior vaginal column being as far as possible preserved, while Emmet's operation is recommended for the common condition, the result usually of much childbearing, known as a relaxed vaginal outlet. Dr. Kelly is inclined to agree with Bumm that cases of true gonorrhœal vaginitis are rare and that most cases of so-called gonorrhœal vaginitis arise from secondary irritation due to the stagnation of purulent discharges from an infected cervix. More than one-third of the first volume is taken up with the chapters upon diseases of the bladder, urethra, and ureters. An important section is that devoted to the topography of the bladder, the author laying down certain definite landmarks the general use of which in describing the appearances noted in cystoscopy would greatly facilitate their localisation. A very good and full account is given of cystoscopy as practised by the author, an atmospheric dilatation of the bladder being obtained by posture and a short, straight cystoscope being used. This method is of the greatest practical value and has placed the treatment of diseases of the bladder upon a more certain and scientific basis. It is easily practised, is not attended with any danger if due care be taken, and deserves to be more widely known and used than it is at the present time in the treatment of bladder and renal affections. It is quite impossible for us in the course of a review to notice all the points of interest alluded to in these chapters. They are well worth reading by all who are interested in the subject, and the cases and results quoted show how extremely useful this method of cystoscopy has proved to be in the diagnosis and treatment of diseases of the urinary tract. Under Vesico-vaginal Fistulæ the great advances which have been made in the treatment of the worst cases of this kind are noted and the various ingenious methods described which are now possible in place of the operation of colpocleisis, until recently the only resource in the treatment of many of these most distressing cases. The author has come to the conclusion as the result of his examinations of the bladder that in almost all the cases of a so-called irritability of the bladder there is some hyperæmia of the trigone. In cases of this kind which do not yield to general treatment he recommends topical applications to the congested region. A full account is given of the present views as to the bacteriology of cystitis, and the important fact is pointed out that the mere presence of bacteria is insufficient to cause cystitis in the absence of any predisposing cause. In the section on the treatment of chronic cystitis there is an account of Dr. Clark's method of employing a ubber balloon coated with various ointments and introduced into the bladder, and a case is quoted in which the use of this balloon covered with a 10 per cent. ichthyol and gelatin ointment gave marked and rapid relief. The unfortunate cases which occur from time to time in which a surgeon cuts down upon the wrong kidney should be greatly diminished in number by the more extended use of catherisation of the ureters, first practised by Simon, reintroduced by Pawlik, and carried to perfection by the author of this work. What a wide field has been opened up and how our knowledge has been increased is shown by the fact that no less than 80 pages are devoted to affections of the ureters. When we read that the author is in the habit of passing a catheter up to the kidney and washing out the pelvis of that organ we naturally look with some care to find what are the dangers of such an operation and what are the risks, if any, entailed upon the patients. Upon this point the results are quite reassuring. In only four of the cases in which the author has catheterised the ureters have the patients suffered from fever, and in all four of these cases the urine contained pus coming from the pelvis of the kidney. When we consider the readiness with which infection spreads from the bladder to the ureter it is obvious that these operations can only be practised safely with the strictest aseptic precautions, and this is a point upon which Dr. Kelly very strongly insists.

The cases recorded in which the diagnosis of stone in the kidney has been confirmed by the use of a wax-tipped bougie are of the greatest interest. A full account is given of the various methods available in the treatment of a damaged ureter, an accident which may happen even to the most skilful and experienced operator. The rest of the volume is taken up with the consideration of operations upon the cervix, inversion and prolapse of the uterus, vaginal hysterectomy, vaginal extirpation of submucous fibroids, and the uterus as a retention cyst.

The first three chapters in the second volume treat of the general principles common to abdominal operation, the care of the wound and the patient until recovery, and the complications arising after abdominal section. We would call special attention to the very full discussion of the difficult question of drainage after abdominal sections. After an extended experience of all forms of drainage Dr. Kelly has been slowly forced to the conclusion that it is rarely of value and often harmful and the extent to which he has abandoned its use is shown by the fact that 73 out of his first 100 abdominal sections were drained, and none of his last 100. He found while using the glass drain-tube that no less than 44 per cent. of the cases showed some form of organism present. The glass tube was therefore abandoned and gauze drains were tried, but these were found to be equally inefficient. In 1893 Schauta's plan was adopted of draining only those cases in which pathogenic organisms were found on making cover-glass preparations during the operation; later still a drain was employed only when colon bacilli or staphylococci were present in abundance or streptococci in moderate numbers. A further study of the drain when used only in these few cases led to the conclusion that it usually became infected after the operation and that this infection might give rise to serious and even fatal results. The author's present practice is this: when there is any serious contamination of the peritoneum, and therefore danger of infection, from 500 to 1000 c.c. of a normal saline solution are left in the peritoneal cavity and the patient is placed in bed with her feet elevated. A drain is used in abcesses which are walled off from the peritoneal cavity and which cannot be enucleated or drained from the vagina. A drain is also used in cases of widespread peritoneal suppuration where the patient is too feeble to be treated by other means, and it is used as a prophylactic measure in cases of suturing of the intestine where there is any doubt as to the accuracy of the

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suture or the ability of the tissues to hold the stitches. In performing the operation of hysteropexy the author recommends that silk sutures should be used, passing through the posterior surface of the uterus just below the fundus and including the peritoneum and subperitoneal fat. In 4 cases in which the abdomen was opened from one to three years after the operation had been performed the uterus was found lying in a position of anteflexion from 1¼ to 2 inches distant from the anterior abdominal wall, to which it was connected by slender bands or a thin sheet-like adhesion. The chapter upon Conservative Operations shows what conditions can be treated in this way, and the following remark of the author is we think worth quoting: "In the light of our present knowledge of the pathology of ovarian tumours the attempts to justify the removal of small 'cystic ovaries' must be denounced as unscientific and immoral." The author has had very good results in the treatment of pelvic abscesses, cases of pyosalpinx, and ovarian abscesses in suitable cases by vaginal incisions and drainage. Of 62 such cases 32 were cured and 2 died, of the remainder some were greatly benefited, while a small proportion were no better. In many cases Dr. Kelly recommends the removal of the uterus with the diseased tubes and ovaries. We cannot give his reasons for this in detail, but they will be found in the chapter devoted to this subject, as will also the reasons why he continues to prefer abdominal to vaginal hystero-salpingo-oöphorectomy. The chapter on Ovarian Tumours contains a particularly full account of the interesting class of papillary tumours of the ovary. The author's recommendation in complicated cases of ovariotomy not to hesitate to remove the uterus with the tumour is no doubt sound. For the last three years Dr. Kelly has been limiting the indications for vaginal hysterectomy in carcinoma of the uterus and now prefers, where possible, the more radical enucleation through the abdomen. In this way a wide dissection of the broad ligaments can be made, with a free removal of the pelvic connective tissue out to the pelvic walls together with any enlarged glands found in the pelvis or above the brim. The dangers of this operation are greatly diminished by previously placing bougies in the ureters as recommended by the author. A considerable amount of space is devoted to myomectomy and hystero-myomectomy for fibroid tumours, and the treatment of all the possible complications of the latter operation, of which the author has encountered some thirty-seven, is given in detail. In discussing the question of operations during pregnancy Dr. Kelly gives it as his opinion that this condition does not constitute a contraindication to the performance of necessary operations upon the uterus, ovaries, or tubes. Abortion does not occur as a rule unless the uterus is involved in the operations.

In the chapter on Ectopic Gestation an interesting table is given of the results during the last ten years of operations undertaken with a viable fœtus. 27 mothers have recovered out of 40, or 67·5 per cent., including 15 of the last 20 operated upon. We have no space to do more than mention the contents of the remaining chapters. They treat of the Radical Cure of Hernia, Intestinal Complications, the More Remote Results of Abdominal Operations, and the Conduct of Autopsies and the Making of Protocols. Of the plates and illustrations it is impossible to speak too highly. Many of them are triumphs of the illustrator's art, and the author is to be congratulated not only on his artists, but also upon his publishers who have reproduced the artists' drawings in such a remarkable manner.

We trust that we have given our readers some idea of our appreciation of these volumes. They are of the highest merit, will long remain the standard work upon the subject of which they treat, and should be in the hands of all gynæcologists and surgeons performing pelvic operations.

The Genesis and Dissolution of the Faculty of Speech: A Clinical and Psychological Study of Aphasia. By JOSEPH COLLINS, M.D. New York: The Macmillan Company. London: Macmillan and Co. 1898.

IT is nearly forty years since Broca made his famous discovery, which was at once the starting point of research into cerebral localisation and the origin of the study of the faculty of language. The intervening period has been filled with the records of clinical and pathological observations, the profound analyses and reasonings of some of the most gifted physicians and psychologists, for the problems to be solved have grown in intricacy as time has passed with its ever fresh accession of facts. There is, moreover, a fascination about this study of the distinctive faculty of the human race due to its special position in the sphere of mental physiology which accounts for the ardour with which it has been pursued and the treatises that have been written upon it. The latest of these contributions to its study is the work before us, for which its author received the Alvarenga Prize of the College of Physicians of Philadelphia in 1897. Its appearance is timely, in view of the contributions to the subject made last year by Dr. Bastian in his Lumleian Lectures and the recent clinical studies of Dr. Byrom Bramwell. The work itself is evidently the product of one who has carefully studied the subject and who has arrived at definite ideas concerning it—ideas which do not always coincide with those propounded by others. It is somewhat marred by the use of a phraseology which renders the perusal of the book rather irksome to the plain reader and may perchance interfere with the recognition of its undoubtedly high merits. Perhaps this is unavoidable in the treatment of a subject which is as much psychological as physiological, but it is just this which is making the study of neurology more and more the portion of a few specially trained minds. Nevertheless this book contains so much that is of general clinical interest and its author takes so much pains to clearly define his position that it is safe to predict that it will be read with interest even by those who are unable to follow every point in the intricate discussion of the higher cerebral mechanism. In an introductory chapter Dr. Collins gives his classification of the forms of aphasia—which has the merit of simplicity—and after a short historical review of the subject he enters in the third chapter into a discussion of the Genesis and Function of Speech, whilst in the next chapter he deals at length with the Conception of Aphasia, where he propounds his views with satisfactory fulness and apt illustration. Using the phrase "zone of language" to comprise that area of the cerebral cortex concerned in the mechanism of the intercommunication of ideas, he points out that this has no strictly defined limits, but that it varies probably with individuals and with races according to the degree of speech acquisition and the richness of language. The zone comprises the reception centres—where sensory impressions, mainly auditory and visual, are received—and the "emissive" centres in the frontal lobe and Rolandic region. In spoken speech the primary revival of the word to be uttered is probably in the auditory centre; whilst in written language this revival probably takes place in the visual centre. The language of signs, or pantomime, is regarded as a form of "internal speech," but we could have wished for a fuller discussion of this, perhaps the most primitive of all modes of language, than is given here. Dr. Collins adheres to the original view of Broca, which locates the speech-centre at the foot of the third left frontal convolution, to which he applies the physiological synonym of the "centre for articulatory kinæsthetic images." He refers to cases of limited subcortical lesion, especially one recorded by Elder, which go far to prove the accuracy of this view. He enters into an interesting discussion to show that there is no ground for assuming a distinctive "graphic motor centre," and

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shows that there does not exist on record any unequivocal case of pure agraphia, for such as have been reported can be explained by lesions in one or other regions of the zone of language or the subcortical pathways connected with them. Summing this question up, he says: "After taking all the evidence into consideration of whatever nature, that can be cited in favour of the existence of a specialised graphic motor centre, and carefully weighing it, the conclusion is forced upon us that, so far, the advocates of the existence of such a centre have furnished us with no absolute proof. It seems to me entirely contrary to all that we know of speech, from a study of its genesis and its dissociation to look for the existence of such a centre." The next chapters deal individually with motor aphasia and with sensory aphasia, the latter being defined as being due to "the loss of the understanding of words due to interference with the function of association necessary for complete perception." The contrast is clearly drawn and is excellently illustrated by records of well-selected cases. Chapters on Diagnosis, Etiology, Morbid Anatomy and Treatment complete a work which we venture to think will rank high as an authoritative exposition of an abstruse but very interesting subject the bearings of which are largely clinical and the interpretation of which is so intimately concerned with the higher cerebral activities.

Applied Bacteriology. By T. H. PEARMAIN and C. G. MOOR, Members of the Society of Public Analysts, &c. Second edition. London: Baillière, Tindall, and Cox. Pp. xvi.–464. 1898. Price 12*s.* 6*d.*

INASMUCH as a second edition of this work is forthcoming after the lapse of only two years, it may be presumed that it has been found useful by the students, sanitarians, and others for whom it has been written. It has, indeed, a good deal to recommend it, particularly in its chemical aspects, and chemistry is becoming more and more important in modern bacteriology. The chapter on Disinfection, for example, is an excellent one and contains a great deal of practical advice which should be valuable to the medical officer of health. Throughout the book it is evident that the authors' knowledge of chemistry is thorough and well applied. To take a trivial instance, Gram's method of staining is not merely described but explained. Bacteriology, however, has also its biological and pathological aspects, and we should strongly advise the authors, when in the fulness of time a third edition is called for, to secure the services of a competent pathologist to collaborate with them. They would thus avoid such very extraordinary statements as that matter derived from the middle of giant cells (in tuberculosis) will produce tuberculosis in the guinea-pig, although the bacillus is chiefly found at their periphery. We are not aware of the name of the conjuror who has performed this miracle of *technique*. Hitherto we had regarded Metchnikoff, who isolated a single leucocyte containing an anthrax spore and watched it grow in a hanging drop, as the greatest exponent in this line. On page 103, again, we note a table from which we gather that the poisons of leprosy, malaria, and scarlet fever are acquired by intestinal infection. This may be so, but we should like to know on what observations the statements rest. The authors do not appear to have much practical acquaintance with section cutting. The unwary student who follows their directions for the preparation of sections by ether freezing will, we fear, be disappointed in his results; tissues hardened in alcohol should be soaked in water before freezing. Embedding in paraffin is not "seldom employed" and it is quite easy to prepare admirable specimens of actinomycosis without embedding in celloidin. There are some errors in the book due to sheer carelessness, such as the statement that the "diplobacillus" of rinderpest is "from ·3 to ·6 mm. in length and about a third of this in breadth" Other mistakes are philological —e.g., "bacilla" on p. 7, and "one terminal flagella" on p. 206. Some misstatements might have been corrected by a competent physiologist—e.g., the average percentage of urea in urine is said on p. 336 to be 3 per cent. The book, in fact, requires very thorough revision to render it a safe guide. In many respects it is worthy of such revision, for there is a great deal in it which is excellent. The authors have evidently been at pains to bring this edition up to date and they have compressed into comparatively small compass a large amount of important bacteriological fact.

LIBRARY TABLE.

Fonctionnement de la Maison d'Accouchements Baudelocque. Année 1897. Paris: G. Steinheil.—The report of the Maison d'Accouchements Baudelocque is on the same lines as in previous years. There are, however, some points of interest to be noted; one of the most important is the installation of an x ray laboratory. It has been found possible by this means to obtain results of great value in cases of contracted pelvis, and these formed the subject of a discussion at the recent International Medical Congress held at Moscow. The injection of antistreptococcic serum as a prophylactic measure has been continued as in the preceding year in all cases where there was reason to suppose that the patient had been infected prior to her admission to the clinic as well as in cases of infection occurring subsequently. The results obtained have been published by Dr. Wallich in the *Annales de Gynécologie*, November, 1897. During the year the treatment of incomplete abortion has undergone some modification. Prolonged waiting for the spontaneous expulsion of the placenta has been to some extent given up, and now at the end of two to three days after the birth of the fœtus if the placenta is still retained it is removed by the fingers, the cervix when necessary being dilated either by bougies or by small Champetier de Ribes's bags. The rest of the report consists of the usual full tables of results and is a model of what such a report should be.

JOURNALS.

The Journal of Tropical Medicine. No. I., Vol. 1. August 15th, 1898. Price 17*s.* annually post free.—This is an excellent first number of a journal the object of which, as explained by Sir Joseph Fayrer in some introductory remarks, "is the consideration and discussion of tropical diseases and of questions of etiology, hygiene and preventive medicine, or any cognate scientific subjects affecting so large a part of our empire." The original articles in the present number are by Surgeon-Colonel K. MacLeod on Tropical Heart, by Dr. Patrick Manson on the Mosquito-malaria Theory, by Surgeon-Captain Buchanan on Epidemic Cerebro-spinal Fever in India, and by Dr. C. W. Daniels on Filariæ and Filarial Disease in British Guiana. Mr. James Cantlie and Dr. W. J. Simpson are the editors of the journal, which is published by Messrs. John Bale, Sons, and Danielsson, Ltd., Great Tichfield-street, W.

VACCINATION AT BOURNEMOUTH.—At the meeting of the Christchurch Board of Guardians, held on August 15th, it was reported that out of 444 children born in Bournemouth between July 1st and the end of December last year only 163 were successfully vaccinated, and that in the rural district only 129 have been vaccinated out of 222 born.

ROYAL CORNWALL INFIRMARY, TRURO. — The report which has recently been issued shows that during 1897 there were 369 in-patients admitted against 357 in 1896, and that 501 out-patients were treated against 557 in the preceding year. The committee referred in sympathetic terms to the death of Dr. Helm, their late ophthalmic surgeon,

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Analytical Records
FROM
THE LANCET LABORATORY.

HALOGENALBUMIN PREPARATIONS.

(LUDWIG WILHELM GANS, PHARMACEUTISCHES INSTITUT, FRANKFORT-ON-MAIN.)

SINCE first meeting with these interesting compounds at the recent exhibition at the British Medical Association in Edinburgh we have had an opportunity of examining them in the laboratory. They are known as halogen-albacids since they contain that part of the albumin molecule which lends itself to halogen substitution in the form of the soluble sodium salt. The halogens are described as being combined in intimate intramolecular combination. The halogen is not given up on treatment with dilute acids or alkalies, but on the approach of an oxidising agent the chlorine, bromine, or iodine is set free. Thus, when weak nitric acid is added to "iodalbacid" a spongy mass separates and the liquid turns a light brown. On shaking this liquid with chloroform it rapidly assumes a violet colour. Similar decomposition is produced when the other halogen compounds are treated in the same way. As is well known, iodine is very readily liberated from iodide of potassium, and this fact often leads to what is known as iodine poisoning after the salt is administered. But "iodalbacid" being an albumin derivative is less rapidly absorbed and is more slowly decomposed than iodide of potassium. In this interesting combination, therefore, iodine, bromine, or chlorine may be very favourably administered. It is probable that iodine acts on the thyroid glands after treatment with iodide of potassium by forming an albuminous substance of the nature of an iodoalbumin. The preparations are of great therapeutic interest and the application of the iodine preparation in syphilis promises to be one of the best means of administering iodine in this disease. An interesting clinical record in this connexion has been published by Dr. G. Zuelzer of the Dermatological Hospital of the University of Breslau.

"EUCRYL" PREPARATIONS.

(MAJOR AND CO., SCULCOATES, HULL.)

The name of these preparations suggests a combination of eucalyptus with the coal tar acids of the cresylic type. On examination of "eucryl" itself this proves to be so. It is a brown, somewhat syrupy liquid exhibiting a strongly alkaline reaction. It is miscible with water in all proportions. On the addition of acid the antiseptic oils are liberated. It is a pleasant and very powerful antiseptic compound. The same combination is contained in an absorbent powder which is guaranteed to contain "eucryl" in amount varying from 5 to 15 per cent. It is important that disinfectant powders should contain a standard quantity of the liquid disinfectant and we found this to be so in the present instance. The absorbent used is a powder resembling brickdust insoluble in water and in acids. "Bath eucryl" is a very pleasing combination of antiseptics and aromatics. It is a light-coloured fluid with an alkaline reaction, the active oils dissolved in it separating on the addition of an acid. On dilution with water, with which it is quite miscible, a very agreeable pine-like smell is evolved. Used in the amount specified it is admirably adapted for the bath, softening the water and exerting a healthful action on the skin. "Phenoforme" again suggests a combination of phenol with formalin and the analytical evidence obtained was quite in accordance with this surmise. It is a colourless fluid evolving on heating a pungent acrid odour characteristic of formaldehyde vapour. It is slightly acid in reaction. The combination must necessarily be a very powerful antiseptic and doubtless affords when diluted a convenient application for cleansing and sterilising surgical instruments.

CHLOROBROM.

(BURGOYNE, BURBIDGES AND CO., 12 AND 16, COLEMAN-STREET, E.C.)

The value of chlorobrom in sea-sickness, sleeplessness and hysteria has been asserted in many cases. Clinical contributions on the subject appeared in THE LANCET of Dec. 9th, 1893, and again in THE LANCET of April 24th, 1897. It is not a secret remedy, for the composition of its active ingredients is published and communicated to those who wish to prescribe the combination. The chief constituent is chloralamid of which it contains 30 grains in each fluid ounce. Chloralamid is a compound of chloral anhydride and formamide, and when used as a hypnotic is said to have no undesirable influence on the pulse, respiration, or temperature. The above firm, we believe, were the first to introduce the preparation "chlorobrom," which is a brown fluid with a strong taste of liquorice.

VIN URANÈ PESQUI.

(AGENCY: FASSETT AND JOHNSON, 31 AND 32, SNOW-HILL, E.C.)

This wine is prepared in Bordeaux and contains nitrate of uranium, bromide of lithium, pepsin and quinine. The essential constituent is uranium nitrate, which has been given with good effect in diabetes according to an article in THE LANCET.[1] According to a pamphlet before us cases are recorded where the reduction of sugar in the urine was from 80 grammes per litre to 1·70 grammes. The vehicle is said to be old Bordeaux wine (Medoc). It contains some sugar. We cannot regard the mixture as at all palatable, and the ingredients, if they are valuable at all in the treatment of diabetes, might with advantage be exhibited in another way. We do not think wine is a proper or suitable channel for administering the drugs indicated, which are said to be useful in obviating waste in diabetes. We obtained satisfactory evidence of the constituents enumerated and in addition the wine showed the following composition: alcohol, by weight 8·79 per cent., by volume 10·91 per cent., equal to proof spirit 19·11 per cent.; extractives, 8·24 per cent.; and mineral matter, 0·27 per cent.

PATENT NON-POISONOUS MATCHES.

(THE MERTON MATCH CO., MERTON ABBEY, S.W.)

We are quite prepared to admit that these matches do not contain any harmful ingredients. We could find neither phosphorus nor sulphur in the tips and hence on ignition no phosphorous or sulphurous fumes were evolved. This in itself is an improvement, but from the point of view of a satisfactory lighting match we cannot say much in their favour. To start with, the match frequently requires repeated rubbing before it ignites and when ignition does occur it is of the nature of a spiteful flare. The rubber on the box contains amorphous phosphorus. We have examined the tips and the only ingredients we found which are common to other matches were powdered glass, glue, and chlorate of potash. To say that they give pleasant fumes is a slight exaggeration. We should gladly welcome a match which is satisfactory alike to the user and to the persons engaged in its preparation, but we are not prepared to say that the matches under examination possess all the attributes claimed for them. These remarks apply also to the wax vestas, fusees, and "flamers" which have also been submitted to us.

[1] THE LANCET, August 10th, 1895, p. 356.

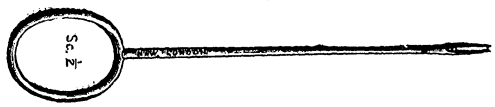
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New Inventions.

WIRE SUTURE-CASE.

To facilitate wire suturing I have devised a case containing in small compass all my instruments for suturing fractures, whether of maxillæ, patellæ, or long bones. It has been made to pattern by Messrs. S. Maw, Son and Thompson and has been so arranged that the inside tray may be lifted out and its contents boiled in the steriliser without disturbance. The case contains bayonet-shaped drills, silver sutures of varying

FIG. 1.



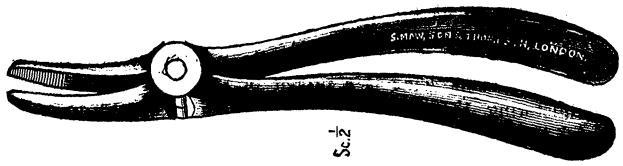
thickness, pliable needle, forceps, &c. The needle (Fig. 1) is made of plated copper-wire, with an eyelet at one end. This having been passed through the second drill-hole may be threaded for the purpose of returning the wire. Being of soft metal the needle is readily bent to any required angle. The spoon (Fig. 2) protects the tissues by receiving the point of the drill and also of the wire and

FIG. 2.



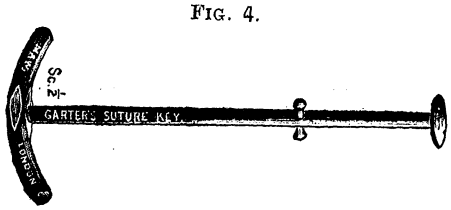
gives the latter a turn in the desired direction. The wire may then be seized and lifted from the floor of the mouth or depth of wound by the long-bladed forceps (Fig. 3).

FIG. 3.



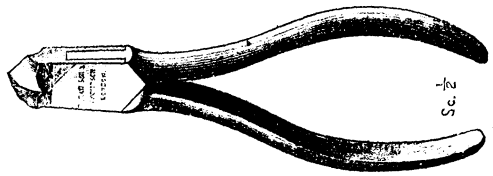
When the suture is ready for twisting the key (Fig. 4) may

FIG. 4.



be used in the manner described in THE LANCET of Feb. 26th, 1898, p. 571 (also Dec. 3rd, 1892, p. 1266). The side cutters (Fig. 5) sever the suture at any required point.

FIG. 5.



Hitherto there have been two great difficulties in the wiring of bones—(1) the drilling and (2) the return of the wire through the second channel made. The first I have overcome by using a dental engine and the second by devising the instruments described above.

T. S. CARTER, L.D.S.R.C.S. Eng.,
Honorary Dental Surgeon to the General Infirmary, Leeds.

EXHIBITION O ROENTGEN RAY WORK AT EDINBURGH.

AN interesting feature of the Pathological Museum at the meeting of the British Medical Association at Edinburgh was a collection of skiagrams which abundantly illustrated the wide range and usefulness of this new aid to diagnosis. Mr. Noble Smith sent a technically excellent series of congenital dislocations of the hip, together with a case of coxa vara, the exact nature of which could be established only by the photograph. Dr. Macintyre of Glasgow showed the transposition of viscera in a youth whose age was not stated. This beautiful photograph, about 16 in. by 24 in., was evidently taken with the patient in the prone position. One interesting point was that the ribs were clearly shown even in front of the liver.

Mr. Lynn Thomas sent eleven instances of Colles's fracture which showed that the styloid process of the ulna is often broken off in that injury. A child's arm with deformity like that of Colles's fracture was found to have a transverse fracture of the radius higher up than the site originally described by that surgeon. This latter point was also clearly brought out by Mr. Griffith Wilkin (London). Mr. Alexander Miles exhibited a characteristic skiagram of a case of double knock-knee which demonstrated how such a photograph of the bones might guide the surgeon before operation. He also showed an example of bad union of a femur fractured below the trochanter which revealed the exact state of affairs with striking effect. Dr. Walsh sent two instructive skiagrams taken in a medico-legal case where an unsuccessful attempt was made to detect an alleged fracture of the ribs over the liver. An aneurysm of the aorta was discovered, however, and a record obtained of extensive bronchiectatic cavities in the lung. Dr. Dawson Turner sent some beautiful stereoscopic Roentgen photographs of the injected blood-vessels of the principal organs of the body. His method is to inject in the ordinary way and then to take Roentgen photographs from different points of view. Either the object or the focus-tube must be displaced laterally in taking the second photograph. He used a displacement of 6·6 inches with the tube 12 inches from the sensitive plate. A Wheatstone stereoscope yielded a remarkable effect in liver, heart, and kidneys. This method would probably yield good results in the case of embedded foreign bodies. Dr. Harry Rainy and Mr. H. J. Stiles sent an excellent series of mercurial injections of the blood-vessels of the human body. These photographs had a distinct educational value and furnished a bird's-eye view of the arterial circulation. The same gentlemen contributed a set of skiagrams illustrating various diseases of bone and showing how, owing to rarefaction or sclerosis, it was possible to define many morbid processes which must have remained doubtful apart from operative interference. A gumma of the ulna showed the irregular erosion of the bone in the centre of the growth and a fresh formation (sclerosing osteitis) at the edges and presented a clear picture of the pathological changes which were taking place. An old Colles's fracture displayed wonderful bone texture and compared favourably with the best work shown at the societies. An interesting case revealed destruction of epiphyses in a child's hand injured by frost-bite. By contrast with the unaffected hand the epiphyses were seen to have gone more or less completely from the base of the first and second thumb phalanges and the base of the first phalanx of the forefinger. An abscess of the calf showed a large diffuse shadow in the substance of a greatly enlarged calf. The soft tissue of the boot came out admirably, so that even the stitches were visible. One remarkable photograph was that of a stunted hand of which the bones were greatly thickened and bossed. The bones of a male dwarf, twenty-three years of age, displayed little advance in ossification over those of a rickety girl ten years of age. A case skiagraphed by Dr. Thompson showed the character of a fracture in the upper part of the tibia, thereby affording valuable indications for treatment. Dr. Steven (Glasgow) exhibited a good and clear photograph of hypertrophic (non-pulmonary) osteo-arthropathy; there was subperiosteal new formation of bone in the radius and the metacarpal bones. Taken as a whole the collection afforded an excellent survey of the present position of Roentgen photography in the world of scientific medicine.

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THE LANCET.

LONDON: SATURDAY, AUGUST 27, 1898.

ABOUT three years ago it was announced that Professor BEHRING had applied in the United States for a patent for his "invention" of diphtheria antitoxin, then still on its trial as a therapeutic agent. The medical world at first refused to credit a rumour which pointed to a line of action so contrary to the first principles of scientific ethics and morality. It is the proud boast of the man of science that in all things concerning the health and well-being of humanity his researches are open to the world and that he neither seeks nor expects any other reward for his labours than the approbation of his fellows. But, alas, in these days of commercialism and the love of material riches such rewards as those may seem to be empty though honourable, and as a discovery becomes of value it comes to be regarded as a thing which can be bought and sold, something which can be made to yield a handsome profit provided a monopoly can be obtained for it. This view has hitherto been sternly discountenanced in medicine by all who desire that its practice should be kept free from personal greed, and it was with relief that the medical world learnt of the failure of the application to create an antitoxin monopoly in America. Unhappily, with a persistence worthy of a better cause, this application was repeated again and again, and last week we had the pain to announce that Professor BEHRING had at last gained what he had been so long seeking. We could have wished that he had been convinced by his previous failures of the futility as well as the foolishness of his embarking on a course so repugnant to the ideas which govern medical science. Besides, the claim for such a monopoly seemed on the face of it to be ridiculous, since every detail of the process for which the patent was sought has long been common property. No wonder that there is in the United States the expressed determination to contest the claim to monopoly on the part of those who have been for the past few years engaged in preparing the remedy. The only possible justification for the step would be that Professor BEHRING was so convinced that the process was one too intricate to be properly carried out by anyone else as to render it incumbent on him to prevent the market being flooded with inferior articles likely to bring discredit on the value of his remedy. But no one, not even Professor BEHRING himself, could be rash enough to advance such a plea in defence of his ill-judged action. The mode of preparation of the serum is well known, it is practised with great care in many quarters, and the efficacy of the antitoxins produced from other laboratories than those of the Höchst-Farbwerke has been amply proved. No; we fear that the patenting of the process can bear but one construction—namely, the desire to secure a monopoly in a remedy of proved value for which there will always be a demand. We would fain think that Professor BEHRING himself has had no active part in the proceedings to which his name is attached and that he is not really desirous of exploiting his admirable scientific researches to his own advantage. May not the manufacturing company which undertakes the preparation of the serum under his auspices have been the active party in the business, swayed thereto by the commercial instinct which has nothing in common with pure science? If, however, Professor BEHRING has been more than passive and is indeed responsible for these repeated applications to the United States Patent Office, then we can only express our deep regret that he should have persisted in a course which has no parallel in the annals of scientific medicine. It cannot fail—as indeed has already been the case—to evoke much scrutiny into the precise claims of Professor BEHRING to the discovery of the immunising serum. Such a claim on his part has been styled "preposterous," and it must be confessed that large as has been his share in the work many others have contributed to it, whilst the whole foundation of "artificial immunity" was laid by the genius of PASTEUR. With even more justice might claims have been made for patents for thyroid extracts, not to mention many other remedies which have been freely given to the world by those who first discovered their properties. No one desires to see pharmacology entangled in a maze of monopolies or therapeutics dominated by patent medicines.

The indignation aroused by the granting of this patent was typified in the article in *Pædiatrics* from which we quoted last week. There is before us as we write a similar protest in the leading columns of the *Medical Age* (Michigan) and, indeed, our exchanges show that many medical and pharmaceutical journals in the United States are contributing their quota to the outcry. The *Medical Age* asserts that Professor BEHRING'S "claim to be the exclusive inventor of antitoxin not only indicates a spirit of commercialism which does its possessor no credit, but it displays a disposition to assume credit for the labours of others and to make of these an occasion of personal gain which can only indicate a high degree of moral perversity." This is strong language and yet it is not unmerited, for, according to that journal, the following are Professor BEHRING'S "claims." 1. A process "of producing diphtheria antitoxin, which consists in inoculating horses or other animals capable of being infected with diphtheria with repeated doses of diphtheria poison or living diphtheria bacilli of gradually increasing quantity and strength so as to immunise them and form in the blood a counter-poison for destroying the poison secreted by said bacilli, drawing off the blood from said animals, separating the serum from the blood-corpuscles, and concentrating the former for use as substantially set forth. 2. As a new substance, diphtheria antitoxin, consisting of the concentrated serum of the blood of animals treated with diphtheria poison, and having the characteristic of immunising test animals against infection with diphtheria, and curing them when artificially infected with diphtheria, said serum containing a counter-poison having the property of destroying the poison secreted by the diphtheria bacilli as substantially set forth."

It is difficult to conceive how the United States Patent Office could after repeated refusals have been convinced

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that the applicants were entitled to be regarded as the sole discoverers of a method which was the outcome of slow and prolonged scientific investigation and reasoning pursued in all directions. Much less can it be understood what fresh facts could have been adduced to cause a change in policy and to create a monopoly in a remedy the production of which has for three or four years been carried on at several centres in the United States. The American critics deplore the laxities of their Patent Office and hint that it would be impossible for similar applications to be entertained in Europe. It is possible that such have been made, or else that advantage has been taken of the greater facilities afforded in the United States for obtaining patents. The pity of it is that any such application should have been made at all. Surely Professor BEHRING never dreamed of taking such a step when he revealed his process and gave it freely to the world. It must have been an afterthought, and it almost bears the appearance of having been deferred until the scientific worth of the discovery had been appraised and the commercial value of the remedy thereby heightened. After all, the award of the patent may prove a hollow triumph; it will be most difficult to determine in the courts as to its infringement and it may well happen that the gains of the monopoly will be illusory.

WE have already commented in part on the lessons of an error of diagnosis at Guy's Hospital in the case of a carman and pointed out how difficult it is in such situations to be always right.[1] The element of alcoholism in hospital cases is so frequent and enters so largely into their causation that the wonder is that such errors do not occur more frequently. But error must be treated as error and we have no wish to make excuses for it. The people have a right to expect at hospitals the elimination of all such risks and our object in returning to the subject is to extract from the case and from an equally significant case which quickly followed still further lessons for our readers' information. The second case was that of a child, of Honbury-road, Nunhead, aged ten years, who was taken to Guy's Hospital on August 10th with an injury to the eye from a piece of wood which had pierced it. He was not admitted, but Mr. STOEHR, a dresser, instructed the mother to bring the child to see him the next day at a quarter-past one. Then some unexplained misunderstanding occurred. The mother on the next day could not find Mr. STOEHR; Mr. STOEHR could not find the mother. The accounts given in the press and at the inquest do not allege the same reason for their having missed each other in the waiting-room at the hospital. The child was kept waiting and before admission had some sort of convulsive seizure. On the next day he died from meningitis, the initial injury having been of a far more serious nature than the dresser had been able to detect.

The people, we say, have a right to expect at hospitals the completest elimination of the chances of error which is possible. In such institutions there is, or there ought to be, the fullest convenience for checking errors. The accommodation for detaining cases should be complete. Twelve hours' detention would in itself be a great security against confounding fracture of the skull with mere alcoholism. In the case of the unfortunate carman such detention would have been sufficient to clear up the diagnosis, though it might not, and properly would not, have altered the sequence of events. Moreover, a hospital is supposed to be a place where in the multitude of counsellors there is safety. One resident medical officer may be gifted with more caution or more insight than another, and in all difficult cases the staff ought to be available for purposes of reference. It is creditable to the medical staff that at Guy's Hospital a severe tradition still insisted on by its surgeons requires the assistant surgeons to sleep in the hospital during their week of office, so that they are as ready to give counsel by night as by day. The fact that these cases have occurred in an institution so well governed as Guy's Hospital, in which the severe tradition to which we have referred obtains, only makes the lessons to be learned of prudence and circumspection more significant. To us it seems that these errors form only another illustration of the great abuse of hospitals which it is our weekly duty to expose and denounce. Treatment in hospitals may become hurried and hasty because the public will persist in attending for the gratuitous treatment of petty ailments. The really grave cases for which hospitals primarily and almost exclusively are meant are elbowed out by hundreds of cases which might just as well be treated at home by general practitioners. If once we could bring back hospitals to their primary use and restrict their services to the really necessitous as well as to grave cases which cannot receive proper nursing or adequate professional attendance at home we should do much to prevent these regularly recurring catastrophes. It is quite probable that both the patients whose stories have recently received such public notice would have fared better (possibly the result of one of the injuries might have been different, as the coroner suggested), if the patients had been kept at home and treated by the nearest practitioner. The fruitless and jolting journeys, the loss of time and the waiting, would all have been avoided. We hope that the authorities of Guy's Hospital will take in good part our implied suggestion that the great evil of hospital abuse may have been at the bottom of the errors of judgment. All friends of hospitals must rejoice that the governors of Guy's Hospital are beginning to realise recovery from the cares of hard times and attenuated income; but they will rejoice more if the governors will set an example to other hospitals of attempting to deal seriously with the admitted evils of indiscriminate hospital relief to all and sundry applicants so as to leave time and leisure for serious cases.

If any doubt is felt as to the urgency of these evils it must be removed by the universal feeling of the profession on the subject. At the recent meeting of the British Medical Association in Edinburgh various papers, an abstract of which we publish to-day, were read under the auspices of the Hospital Reform Association. Mr. GARRETT HORDER in his paper gives particulars of the out-patient system in Scotland. He shows that it threatens to assume in the north the same evil proportions as in England and

[1] We may add that we have since received from the house surgeon a very explicit statement of the matter, in which the difficulties revealed ully justify the extension to him of all sympathy.

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that there is a slowness in that provident division of the kingdom to guard against the subtle evils of hospital abuse. In Edinburgh alone the out-patients number 109,141. It is not credible that the great working-classes of the Kingdom whose trade organisation is so evident and so efficient, will think the less of the medical profession for organising itself for the vindication of its just claims or that they will always ask to obtain their ordinary medical attendance either gratis at hospitals or at the cost of medical men working night and day for the wages of farm servants. The really bad cases which require hospital treatment will be better cared for when the thousands of ordinary cases have been eliminated from the hospital out-patient department. The occurrence of such errors as those on which we have commented and which do great harm to our hospital system will then be much less frequent. One point was well brought out at the meeting of the Hospital Reform Association in Edinburgh, and that is the importance of the coöperation of the medical staffs with the general practitioners of the country. Their interests in the long run must be identical, and the sooner each class appreciates this the better for both.

THE unfortunate community supplied with water by the East London Waterworks Company are again undergoing the terrors of a water famine. Since the droughts of the summers of 1895 and 1896 the East London Waterworks Company have added considerably, we may say enormously, to their storage capacity. The Warwick East Reservoir, which was completed in May of last year, has an area at the top of the water-level of forty-five acres. The top of the water-level is 35·60 ft. above Ordnance datum and the reservoir is capable of holding 210,248,000 gallons of water. We probably do not exaggerate in stating that the storage capacity of the company is equal to over 1,000,000,000 gallons, while the necessary powers for further developments have been obtained. But although there is such excellent capacity for containing, contents are sadly wanted. By the end of last week only a seventh part of the possible storage was in hand, and now the regular supply has broken down. On Monday last the company announced to its clients that the water would be turned on for six hours *per diem* only and, to add to the inconvenience of these luckless people, gave them no full intimation of the hours during which the supply for the intervening periods might be drawn and, if their complaints may be believed, failed to ensure regularity in the delivery of the intermittent supply. We sympathise deeply with the clients of the East London Waterworks Company in the extreme discomfort which is thus entailed upon them, and must also point out that the matter is one of urgent importance to all the metropolis because of its sanitary bearing.

A letter in the *Times* of Wednesday last signed by twelve medical men practising in Ilford, one of the districts within the area supplied by the company, draws attention to the gravity of the situation with which they find themselves confronted. "We have already," writes Mr. MURTAUGH HOUGHTON and his co-signatories, "in our respective practices numerous cases of diarrhœa, and the proportion of these will no doubt enormously increase, nor apparently will the water company be content until they have been directly responsible for some hundreds at least of deaths both among adults and infants, for in our opinion the stoppage of the water-supply will as directly cause their deaths as if the patients had been actually poisoned." This, of course, is very strong language, but we doubt if it is in excess of the truth, save where the words imply that the company is actually striving to bring about the serious consequences which the medical men of Ilford predict. The company of course does not desire to be short of water; it does not work to bring itself into its present discreditable position. On the contrary, the officials of the company with the chief engineer at their head have made very strenuous efforts to alleviate the troubles of their *clientèle*. They have arranged with the Hackney Vestry for a house-to-house delivery of water by carts supplied by the vestry at the company's expense. This water is delivered free during the hours when the company's water is turned off and all persons failing to secure a supply are requested to communicate in writing with the Hackney Vestry, which body is doing admirable service to the public and deserves great credit for its energy and promptitude. The company has promised to attend at once to all requests made to it from hospitals and similar institutions and to do its utmost to guarantee that the work of such places will be carried on without the additional risk of a scanty water-supply. Stand-pipes have been erected in many of the most crowded districts of the company's area, to which the people can go with jugs and other receptacles to secure some small supply to keep in their houses. All these things the company have done, but the total inefficacy of such makeshift methods to cope with the mischief of a water famine need not be dwelt upon; nor does the company appear yet to have done all that is possible in its sad situation. We are told that the New River Company and the Kent Company will provide the East London Waterworks with an auxiliary supply. But readers of THE LANCET, by consulting the articles of our Special Commissioner published in our columns last year, will see that the East London Waterworks Company should be able to receive, through its Thames intake, assistance from at least two other companies. Has this assistance been applied for yet? And if not, why not?

The question of the water-supply of London is an exceedingly difficult one, and whoever should rashly draw general deductions from any small collection of facts would risk deceiving his hearers and writing himself down an injudicious person. Therefore we do not follow in the suit of those who claim that the condition of things in the North-east of London by itself absolutely condemns our present metropolitan water-supply in its source, its management, its conduct, its engineering, and its morals. The harm which has actually been done so far is, we believe, not very great, and the efforts of the company may avail to see that it does not become greater, while the drought this season has been extraordinarily persistent and should not be regarded as conforming to normal English weather. But there is no denying that this, the third consecutive water famine which has occurred in a part of the metropolis

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largely occupied by a crowded and poverty-stricken populace, furnishes a more convincing piece of evidence as to the necessity for reinforcing the water-supply of London as a whole than all the evidence which has yet been taken before Royal Commissions or than ever will be taken. The mid-summer relations between the East London Waterworks Company and the denizens of East London form an argument that is at any rate specious for the amalgamation of the companies under one authority, so that those with ample storage could come to the aid of their depleted brethren; while the same relations go far to justify the princely scheme of the London County Council for creating reservoirs of boundless capacity in the Welsh valleys.

Annotations.

"Ne quid nimis."

THE HEALTH OF THE PRINCE OF WALES.

WE are pleased to learn on the best authority that during the past fortnight the progress made by H.R.H the Prince of Wales has been very gratifying to his surgeons. Indeed, during the five weeks and a few days which have now elapsed since the accident nothing has occurred to interrupt the progress of the case. The local conditions are all satisfactory. There is but slight effusion remaining in the joint and but limited swelling in the surrounding parts. The fragments are maintained in close apposition, the amount of separation not exceeding a quarter of an inch, and the progress of union is proceeding in the ordinary way. Gentle massage has been daily practised with much advantage to the muscular tone and general nutrition of the limb, and recently slight passive movements of the joint itself have been accomplished without any pain or inconvenience. The upper fragment is kept under complete control during these movements, no undue stress is put upon it, and it shows no sign of yielding—a condition of things which augurs well for the future mobility of the joint. It is not possible of course at so early a date to say with precision how far the motion in the limb will be completely recovered, but every possible precaution against mishap will of course be taken. His Royal Highness has left Cowes for a cruise in the Channel and will visit Portland, Plymouth, Dartmouth, and perhaps other places. It is hoped that at some of these he may obtain carriage exercise, which would prove an agreeable and beneficial change. Four of the sailors on board the *Osborne* have been thoroughly drilled as a carrying party and so perfectly do they perform their duty that there need be no apprehension of accident when they are transporting His Royal Highness ashore. In two or three weeks' time a specially-made check splint will probably be worn in which the amount of knee flexion can be exactly controlled and the lack of extension power on the part of the quadriceps extensor compensated for by a spring apparatus. In this apparatus the patient will be able to walk, at first with the assistance of crutches and later with a stick. The Prince is fully aware of the long interval which must ensue before the repair of the injury he has so unfortunately sustained is thoroughly accomplished and is quite prepared to submit to all the restrictions which the need for incessant care entails. The fortitude, good temper, and patience that he has shown under circumstances so trying are admirable, and we feel sure he possesses the sincerest good wishes and sympathy of the entire community.

THE QUALIFICATIONS OF PUBLIC ANALYSTS.

FOR many years past the Local Government Board have only approved of an appointment to the post of public analyst on condition that the person nominated supplied documentary evidence to the effect that he was properly qualified in analytical chemistry and that he possessed such microscopical and therapeutical knowledge as was obviously necessary for the purposes of an Act dealing with the sale of foods and drugs. Thus, in the absence of the possession of a qualification in medicine the candidate has always been required to supply evidence signed by some authorised person to the effect that he possesses sufficient knowledge in microscopy and therapeutics to enable him to perform the duties of a public analyst; whilst, on the other hand, no registered medical practitioner has been accepted who did not produce separate evidence of his competency in analytical chemistry. We refer to this subject on the present occasion because of the issue of a circular by the Institute of Chemistry of Great Britain and Ireland which announces in the first place that the qualifications of the Institute are accepted as satisfactory by the Local Government Board in so far as chemistry is concerned; and, in the second place, that the Institute have decided to establish an examination for their Fellows and Associates which shall afford proof that they likewise possess the necessary knowledge in therapeutics, pharmacology, and microscopy. The announcement is satisfactory, for it must clearly be an advantage to all concerned to find in one single qualification evidence of the possession of all the necessary requirements. The circular issued by the Institute does not, of course, announce that the result which they desire to attain has already been achieved; indeed, it is clear that the Local Government Board could not in advance say of an examination which does not come into existence until October next that it will meet all their requirements. But it is equally clear that if the examination conducted by the Institute in therapeutics, pharmacology, and microscopy is of the same standard as that which has obtained official sanction in regard to chemistry the certificate of having passed the additional examination is likely to be regarded as affording evidence of competency in the subjects other than chemistry; and in this way it will be a distinct advantage to Fellows and Associates of the Institute seeking the post of public analyst. With a view to this end the Institute will probably bring under the notice of the Local Government Board such evidence as to the character, scope and standard of the new examination as will enable that Board to judge whether it fully meets their requirements. But even if it does so the possession of this special certificate or diploma will in no way be the only portal to the post of public analyst. Every medical practitioner who has sufficient competency in chemistry will be equally eligible, provided his other duties do not prevent him from that systematic laboratory attendance which is essential to the due performance of the duties of a public analyst. Apart from this consideration we are of opinion that a medical training combined with a good knowledge of analytical chemistry affords the highest evidences of fitness for the post of a public analyst.

THE SMOKE NUISANCE.

WE reproduce the following sentences which appeared in an annotation on the above subject in the columns of THE LANCET of July 9th, 1898: "The nuisance has doubtless been accentuated by the fact of the Welsh strike, Welsh coal being a hard, brittle coal, which burns without much smoke. But, as we have already pointed out, the clause in the Public Health Act was obviously aimed at securing certain structural arrangements of the furnace

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or fireplace which would deal with smoky coal. A deliberate evasion of the requirements of the Act is admitted, therefore, it seems to us, by those who plead in defence that the nuisance was created in consequence of the inability to get smokeless coal. In other words, now that only smoky fuel can be obtained the furnaces are found to be in fault and it has remained for the Welsh strike to bring this fact to light. ..... The electric lighting stations in the metropolis are amongst the worst offenders. We trust that we shall continue to hear of the unabated efforts of our sanitary authorities to suppress a nuisance for the continuance of which there is not a shadow of excuse." On August 4th the Metropolitan Electric Supply Company was summoned for causing a nuisance by allowing black smoke to be emitted from their chimney; also for using furnaces so constructed as not to consume their smoke, and also for using the furnaces negligently so that the smoke was not consumed. The case was adjourned to enable the magistrate, Mr. Hannay, to give a deliberate decision, the defence being the same story of being unable to get Welsh coal. After expressing the opinion that an offence had been committed this is what Mr. Hannay said: "I have no hesitation in saying that it is monstrous to urge, as has been urged in effect before me and other magistrates, that the metropolis of this country must continue smothered in smoke until the Welsh miners and their employers have settled their differences. My past experience convinces me that the smoke nuisance can be kept within reasonable bounds if the authorities only do their duty. It may cost the manufacturers something more to have their furnaces properly constructed and well attended to, but that is as nothing compared with the injury and damage caused to the general public by the reckless fouling of air which has long been going on unchecked." This is complete confirmation of the opinions which we have expressed again and again in THE LANCET and our view on the interpretation of the law upon the subject is thus emphatically endorsed by a well-known legal authority. We trust that this pronouncement will encourage our health authorities to persevere in the crusade against the wanton befoulment of London's atmosphere and lead to a permanent suppression of the intolerable nuisance.

THE STAGES AND FORMS OF SYPHILIS.

PROFESSOR J. G. ADAMI has an interesting article in the *Montreal Medical Journal* for June entitled "On the Stages and Forms of Syphilis, with more especial reference to the Hepatic Manifestations of the Disease." He commences by suggesting that it is remarkable how during past centuries syphilis has remained sharply distinguished from all other forms of human disease, constituting a class apart. He then draws attention to the fact that from the time of Ricord primary, secondary, and tertiary stages have been clearly distinguished, and not only this, but according as to whether the disease is acquired in post-natal life or has seized upon the individual while *in utero* so do we recognise two different types of the disease. With reference to these points Professor Adami lays down (1) that from analogy as from clinical history and absence of any indications of the same in sundry cases there may be an absence of the primary, cutaneous, or epithelial manifestations of syphilis; (2) that individuals may fail to present either primary or secondary symptoms which are recognisable and yet eventually develop definite tertiary lesions of the disease; and (3) that where the subject is relatively insusceptible it is possible that the disease may be limited to the primary cutaneous manifestation not followed by secondary lesions. The whole of this paper is of considerable interest, but we have only space for a brief summary. Professor Adami demonstrates that the lesions occurring in the congenital and acquired disease are identical and brought about by the same process or processes; that whether we have to deal with the disease in the secondary or in the tertiary stage the same processes are at work; and that, if we except those cases as truly tertiary in which we have to deal merely with the fibroid remains of absolute gummata and again those cases in which there is perihepatitis (which perihepatitis appears to be a complication rather than the genuine and direct result of syphilis), then we are bound to admit that the study of the liver alone would indicate that no sharp boundary line can be made out between secondary and tertiary syphilis. This is true anatomically and histologically—i.e., that there is no valid distinction to be drawn between secondary and tertiary syphilis. It may be asked, says Professor Adami, whether such a conclusion is not wholly at variance with clinical opinion and experience. Upon the face of it it is, but if the subject be looked at carefully he thinks that such a view will reconcile not a few of the divergencies existing among writers. "We have those (and they are the majority) who state that tertiary syphilis is non-infectious and those who bring forward clear examples of the production of infection five or ten years after primary inoculation of the disease. This difference can be reconciled if we agree upon the following points. 1. That under proper treatment syphilis, if not a self-limiting disease, is at least a disease which can be healed, so that many of the lesions recognised as being tertiary syphilis are truly the indications of the old healed syphilis and not signs of progressive or latent disease. 2. If the disease has not completely died out and remains latent the resistance of the tissues of the organisms is such that in the majority of cases if it does not tend to light up again there is so considerable a local reaction that the infection and consequently the spread of the process tend to remain strictly localised, and the germs (which are probably of bacillary nature) do not become disseminated through the blood. Thus neither the blood nor the secretions contain the virus. 3. In a very small number of cases, the reaction on the part of the tissues may be so lessened and the virus retain or gain so high a virulence that either it causes ulceration or in other ways becomes disseminated and capable of causing infection even later in the tertiary stage."

THE ADULTERATION OF CHAMPAGNE.

IT is at any rate a redeeming feature in these days that adulteration generally occurs in some wholesome form. For all that of course it is still a fraud, the public are swindled, but not poisoned thereby. Sophistication, in short, commonly amounts now to substitution. Margarine is an excellent food substance, but it is not butter; the potato is an excellent food also, but it should not be found in bread; and wheaten flour is good, but the fact of colouring it with turmeric does not make it mustard. Gooseberry wine, again, is an excellent beverage, but it cannot with the smallest degree of truth be called champagne, even though the name has been accepted for years by the public as a synonym for cheap champagne. We are inclined to doubt whether the gooseberry to any great extent was ever made to replace the grape in the way indicated. Lord Palmerston, it is said, once told a deputation of wine merchants who waited on him that there was never a good champagne year in France unless there was a good apple crop in Normandy. We should like to think that this was because the season which was favourable to the production of good grapes was also favourable to the production of good apples. It is also stated that many owners of large pear orchards in France are under contract to send their

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entire produce to a firm of wine merchants in the champagne district. It is evident, if this be true, that a large section of the public is beguiled into regarding cider, perry, and gooseberry wine as champagne. In other words, pears, apples, and gooseberries evidently afford abundant material for making a very popular, excellent, and palatable drink. In spite of this fact people are constantly asking the question, What shall we drink? But really good cider, perry, and gooseberry wine are not easy to procure except in the immediate neighbourhood of their production, as in Herefordshire, Devonshire, Somersetshire, and Norfolk. Perhaps, then, the proper names of these estimable beverages are not high-sounding enough. Under the falsely described and tempting title of champagne, however, the public eagerly drinks, smacks its lips, and says, "An excellent wine." And thus the immoral traffic in substitution is encouraged and sustained to the enormous profit of the dealer and greatly to the detriment of the purse of the consumer. It affords another instance of the public preferring, it would seem, to go on being gulled.

LOCUM TENENTS.

THE demand for locum tenents in the present season is said to be very great. At some hospitals it has been found impossible to meet the demand. This fact accords with the testimony of many correspondents as to the difficulty of getting qualified assistants and is doubtless largely to be explained in the same way. The action of the General Medical Council in requiring all responsible medical work to be done either by the principal or by a qualified assistant has added to the value of the qualified man as a locum tenent. It has probably also added to the financial value of such functionaries. It is to be hoped that the unusual demand for locum tenents is also partly to be explained by the fact of a greater number of medical practitioners taking a reasonable holiday. It would seem that there is a considerable number of medical men who never take a real holiday. An illness or an accident may suspend their work for a few weeks, but they never take a formal holiday of any length or only at an interval of several years. When holiday-taking has become almost universal this exception is remarkable and significant. Let us hope that without going to the other extreme of restlessness, which is too common, the members of our profession will recognise the wisdom of making an annual break of at least a fortnight in the prosecution of their arduous and exacting work.

INSANITARY AREAS IN BRADFORD.

IN May, 1897, the Sanitary Committee of the Corporation of Bradford adopted a report by the sub-committee on insanitary areas in which there was a recommendation that certain districts should be dealt with under the provisions of the Housing of the Working Classes Act. The medical officer of health, Dr. W. Arnold Evans, has made a representation to the committee concerning the question to the following effect: the district contains 7 streets and parts of 4 others and the total area is 22,650 square yards. It contains 284 houses with a population of 1357, the density of population being 301 persons per acre, as against 21 persons per acre for the whole city. The death-rate from all causes in this area has been, per 1000, in 1895, 45·6; in 1896, 42·7; and in 1897, 41·2. Dr. Evans divides the area into two parts, the first of which contains Longlands-street, Long-croft-place, Garden-place, and the north-east side of Chain-street. The remainder of the area is much less insanitary and in the opinion of the medical officer can be dealt with by the improving of certain single houses. But the first-named area is too bad for this and must be dealt with by an improvement scheme. Longlands-street contains a population of 386 with an average of people per house of 5·5, the closet accommodation being very sparse; the average of people per closet is 15. The death-rate for the street in 1896 was 69·9 per 1000, but in 1897 it sank to 36·2 per 1000. In Longcroft-place live 466 people, being 4·2 persons per house; the average of persons per closet is 9·9. Five of the houses in this delectable neighbourhood are cellar dwellings, one of which is used as a muffin bakery. Garden-place and Chain-street present much the same conditions. An analysis of air gave the following results: in air from Longcroft-place on a still day with temperature 71·5° F. there were found 6·6 parts of CO_2 per 10,000; air taken from a tenement house gave 8·8 parts of CO_2 per 10,000. We have little doubt but that the Corporation of Bradford will carry out the advice given by their medical officer of health, but we hope they will take care of one thing. It is generally found that in cases of "improvement" the improved dwellings are let at rents which are far too high for the dispossessed workers to pay; consequently they herd into, if possible, still more insanitary dens than the ones from which they have been ejected. Municipal enterprise has to step in in most cases if bad is not to be made worse.

A MICRO-CHEMICAL TEST FOR PHOSPHORUS.

PROFESSOR MACALLUM, in a paper recently contributed to the Proceedings (page 467) of the Royal Society, describes a method by which the phospho-molybdate test may be used with success for the detection of phosphorus in animal and vegetable tissues. He finds that the indefinite reaction given by the direct application of the test owing to the colourless character of the phospho-molybdate precipitate when occurring in the tissues or in the presence of a reducing agent (unless that agent be carefully chosen) may be avoided by the use of phenyl-hydrazine hydrochloride as the reducing reagent, which produces a green colour whenever the phospho-molybdate precipitate has been formed. The brown colour produced by the molybdate alone does not interfere with this reaction. Tissues which have been hardened in alcohol are the best for this treatment. The preparations were washed (after treatment), dehydrated, and mounted in the usual way. The paper concludes with an account of a demonstration by means of this method of the presence or absence of phosphorus in the various cell elements of diverse animal and vegetable tissues.

FOOD PRESERVATIVES.

CONSIDERABLE contention has waged round the legality or desirability of employing preservatives in perishable articles of food and the subject naturally comes to the front during a spell of hot weather such as that which we have been experiencing for the past three weeks. There is little doubt that some means of preserving food are absolutely necessary when the prevailing conditions are such as to "turn" food in a few hours. Otherwise milk, cream, meat, &c., become unfit for consumption, unpalatable and evil-tasting. To keep the articles somewhere near freezing point is obviously impracticable on any large scale, while sterilisation is similarly beyond application. This reduces our resources to the simplest of all expedients, the addition of an antiseptic in such quantity as to preserve, at any rate for a time, the article from objectionable change and yet in minimum quantity so as not to constitute a possibly harmful amount. We think the use in limited quantities of such mild antiseptics as borax to be justified at a time like the present when otherwise a considerable amount of valuable food substances would be wasted and lost. But, as we have urged before, the fact of an article being thus preserved against change should be always notified to the consumer, and we would have limits imposed by the State as to the amount of the preservative to be used; moreover, the nature of the preservative should also be declared. In other words, we would establish a system, recognised by the State, by which under

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certain circumstances the employment of preservatives with restrictions as to their nature and amount could be legalised. This is a view which we have expressed before and notably in the report of THE LANCET Special Sanitary Commission on the Use of Antiseptics in Food which was published in THE LANCET of Jan. 2nd, 1897. In that report were also embodied the views of several medical men who are accepted authorities on food questions. Quite recently we have received an important contribution on the subject by no less an authority than Professor Chittenden of Yale University. As the result of a series of very interesting experiments this physiologist reports that the results would appear to warrant the statement that in particular boric acid and borax when present in moderate quantities can have little or no deleterious effect upon the more important chemical processes of digestion. On the contrary it would appear that the presence of these agents may, in some cases at least, even accelerate the normal digestive processes of the alimentary tract. In regard to the effects of borax and boric acid on nutrition the same observer concludes that when borax is given in sufficient quantity to produce any effect its action is similar to that of common salt—i.e., it tends to increase proteid decomposition. Both borax and boric acid, he states, are without influence upon the putrefactive processes of the intestine, apparently because of their rapid absorption from the intestinal tract and quick elimination through the urine.

SERO-THERAPY IN NEOPLASMS.

AN article with this heading by M. C. Beretta appears in M. Richet's "Travaux du Laboratoire," the fourth volume of which has just been published. Two years ago MM. Richet and Héricourt communicated to the Académie des Sciences two cases which were extraordinarily successful and which seemed to show that *sometimes* cases of fibro-sarcoma might be cured, or at least benefited, by the injection of anti-cancerous serum. The mode of obtaining the serum was to reduce the cancerous tumour with antiseptic precautions to a pulp with powdered glass, to add distilled water, filter, and then by centrifugation separate the fluid into three portions, an upper layer consisting of emulsionised fat, a second layer of the cancerous juice, and a third layer of the organic débris and glass-powder employed. The juice thus obtained is an opaque, greyish-red liquid, exhibiting when examined under the microscope many more or less broken-up cells, white and red blood corpuscles, fat drops, fibrin, and a deposit of granules rich in nuclear particles. Micro-organisms are also visible which either proceed from the tumour itself or possibly from the air which has been in contact with the fluid during the manipulations. The animals used in M. Beretta's experiments have been the horse, the ass, and more particularly the dog, the cancerous juice being slowly injected into the vein of the foot in the case of the dog, into the nasal vein in that of the horse, and into the marginal vein of the ear in that of the ass. The quantity injected was in proportion to the size of the animal—from 20 to 40 c.c. in the case of the horse, from 10 to 20 c.c. in that of the ass, and from 5 to 10 c.c. in that of the dog. These inoculations were repeated from month to month, each injection being better borne than the last, as if a kind of toleration were established for the cancerous juice. At the end of a certain period the animal was bled in order to obtain the anti-cancerous serum. In the case of the horse and the ass 1 or 2 litres of blood were taken, but in the case of the dog the animal was sacrificed and the whole of its blood was collected and the serum obtained with the usual antiseptic precautions. The mode of using it was almost always by hypodermic injection at some distance from the seat of the disease. In some instances no benefit was observed, the patients became discouraged, and no further trial of the remedy was made. In other instances pain was notably diminished and the volume of the tumour underwent reduction, and it is to be observed that all the cases were taken in hand at a late period of the disease, the cachexia being well established. M. Beretta has collected no fewer than seventy-three cases, of many of which he gives the details, in which this plan of treatment has been followed by more or less success. Amongst these are cases of atrophic scirrhus of the breast, of cystic tumour of the breast, of ulcerated tumour and of cancer of the base of the tongue, of cancer of the rectum, stomach, and uterus, and of degenerated naso-pharyngeal polypus. The general results of M. Beretta's experiments and observations may be regarded from a physiological and pathological and from a clinical point of view. From the physio-pathological standpoint it would appear that anti-cancerous serum exerts a stimulating influence on the organism, rendering the circulation active and improving the general nutrition of the body. Its employment does not give rise to any special disturbance of the economy, though like all therapeutic serums it may occasion inflammatory troubles, such as redness, eruptions, painful swellings, fever, and more rarely phenomena of intolerance and toxic action. It induces at the seat of the disease a special influence accompanied by more or less lively inflammatory symptoms—which, however, are often altogether absent—which lead rapidly to softening and reduction in size of tumours and of the affected ganglions. From the very outset of these changes and as a consequence of the cessation of nervous and vascular compression, pain, spasms, œdema and hæmorrhages diminish or disappear. The functions of the body, and with this the general health, are improved. At a later period the work of reparation in ulcerated parts becomes more marked, the neoplastic outgrowths, tissue, and necrosed portions are sometimes thrown off, the aspect of wounds improves, and circulation may proceed to a considerable extent. But this anti-neoplasmic influence does not prevent new generations of specific elements from developing in opposition to the action of the serum, and this action seems to be soon exhausted, probably owing to tolerance of the cells. It is rare that the serum is wholly inoperative, but when all good effects have ceased, after an interval of some weeks a new series of injections will sometimes prove serviceable. It has not been proved up to the present time that the use of the serum after an operation can prevent a relapse, but it is a question whether it may not retard one. Anti-cancerous serum has produced similar effects in the most diverse forms of neoplastic growths. M. Beretta is not satisfied that its action is really specific, seeing that normal serum produces similar though less marked effects. From a clinical point of view it may be said that no unquestionable case of cancer in which a cure has been effected has been reported, but it is certainly useful in controlling such symptoms as pain, œdema, and hæmorrhage, in reducing the size of tumours and in improving the aspect of ulcers.

INSECT STINGS.

THE fact of death occasionally resulting from the sting of insects such as bees and wasps is no doubt largely responsible for the species of terror which the presence of these insects brings upon many persons. Only this week, for example, a case was reported of a labourer who placed in his mouth a gooseberry which proved to contain a wasp. The wasp stung him at the "root of the tongue; he went into his cottage, and medical aid was summoned, but death ensued in five minutes." In this instance, of course, death most probably supervened on suffocation due to intense swelling in the throat and was not due directly to the poison itself.

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Vomiting, fainting, delirium, and stupor strongly suggest a highly virulent substance of the nature of a toxin. The precise nature of the poison of wasps and bees is not known. They possess a poison bag and sting and the fluid secreted is as clear as water, exhibits an acid reaction, and, in fact, contains formic acid. But this acid can hardly account for the severity of the symptoms sometimes following a sting. Fatal results have, indeed, occurred which could only be attributed directly to the toxic action of the sting. Some persons, however, endure the sting with impunity, others develop alarming symptoms, such as blood poisoning, and undoubtedly the toxicity of the sting depends very much upon the condition of the "soil" into which it is implanted. One of the old-fashioned remedies, and we believe a good one, is to apply immediately to the part stung the juice of a raw onion. The *rationale* of this remedy is not clear, the sulphur oil in the onion possibly serving as a palliative. The sting, at any rate, if it remains in the wound, should be extracted and the puncture dressed with a little weak ammonia and afterwards a little bromide of ammonia may be added, which frequently serves as a sedative. Judging from the great number of wasps which have somewhat suddenly appeared in the country during the recent hot weather this seasonal pest promises to be of no small dimensions. The intense irritation caused in some persons by mosquito "bites" may be promptly relieved by the application of ipecacuanha, either the "vinum" or the powdered root, made into a paste with water or vinegar, being used.

JAUNDICE IN TYPHOID FEVER.

JAUNDICE is a very rare complication of typhoid fever. Murchison saw it in only four cases, but some observers have met it more frequently; Griesinger noted it in 10 of 600 cases and Liebermeister mentions that in the Basle Hospital it occurred 26 times in 1420 cases (1 in about 55). The *American Journal of Medical Sciences* for July, 1898, contains an exhaustive paper by Dr. Da Costa, based on 5 cases observed by him and on those previously recorded, making 52 in all. Jaundice does not generally come on until the middle of, or until late in, the disease. But in one of Dr. Da Costa's cases (so far unique) it appeared during the incubation period; in a case recorded by Andral it appeared on the third day; in one by Frerich on the fifth; in one by Murchison on the sixth day of a relapse; in one by Osler on the fourth day of a relapse; and in one by Sorel during convalescence. The stools are much like the ordinary typhoid or darker and greenish, very rarely clay-coloured. The liver is usually tender, especially at its lower border, and may be slightly enlarged. Parotitis has been observed in a number of cases and is not a mere coincidence, which bears out Mr. Stephen Paget's doctrine of a connexion between parotitis and abdominal disease. The liver when carefully examined shows granular or fatty degeneration; sometimes there is abscess (but typhoid abscess is not usually accompanied by jaundice); and sometimes there is pylephlebitis. The jaundice is usually of the toxæmic form and seldom depends on catarrhal obstruction (in the ordinary sense of the term). The prognosis is grave: 33 deaths occurred in the 52 cases. Atrophic cirrhosis was a sequel in one case. Hölscher's statistics of 2000 fatal cases of typhoid fever at the Munich Pathological Institute are instructive. Of 227 in which the liver or gall-bladder were involved there were 203 cases of disease of liver structure, 12 of abscess, 3 of acute yellow atrophy, 1 of amyloid degeneration, 5 of diphtheritic process or suppuration in the gall-bladder, 3 of œdema of the gall-bladder, while 22 are classed simply as jaundice without organic disease. The ordinary parenchymatous changes, not to be recognised clinically, presumably are represented by the 203 cases. Of 22 cases of typhoid abscess of the liver collected by Da Costa only 7 had jaundice. In typhoid fever[1] disease of the gall-bladder is more common than disease of the liver. Jaundice is not a frequent symptom in cholecystitis; it is mentioned in 17 out of 58 cases.

DRINK-FETCHING BY CHILDREN.

AT a recent meeting of the Manchester city justices it wa stated by the chairman of the licensing committee that where extensions of premises were made the committee had for several years stipulated that the drinking accommodation should not be increased and that a "private apartment" should be provided for children sent for their parents' drink, "so that they would not see and hear what was going on in other parts of the house." As drinking habits are in many cases acquired very early in life, and as the temptation to sip a little of the beverage which their parents find so indispensable is to many of the children irresistible, perhaps the magistrates will see that some one accompanies them from the public house to their homes so as to guard them from this danger. Some of the publicans who give sweets and presents to the beer-fetching children might spend their money in this more truly benevolent fashion.

PALPATION OF THE KIDNEY.

THE accessibility of the kidney to palpation is discussed at considerable length by Dr. Wolf Becher and Dr. Rudolf Lennhoff in the *Deutsche Medicinische Woohenschrift* of August 11th. They commence with the remark that during the last fifteen years it has been recognised that the kidney may occasionally follow the rise and fall of the diaphragm during respiration and may in this way admit of palpation without the case being one of moveable kidney in the ordinary sense. An exhibition, including a party of 24 Samoan women, visited Berlin in October, 1895, and afforded an opportunity for the investigation of the question whether any considerable influence on the position and displacement of the kidneys of females was brought about by the wearing of stays and the use of waist-bands for the support of the skirts. Almost all these Samoans had finely-developed figures. Their height varied from 57 in. to 70 in., the average being 65 in.; their chest measurement close under the armpits during expiration varied from 32 in. to 38 in., the average being 35 in.; their ages were from thirteen to twenty-six years. Their clothing consisted of a jacket and apron, which were fastened without any constriction of the waist; none of them had ever worn stays. In 6 of these 24 women the right kidney could be felt; 2 of the 6 had had one child each; in none of them had the kidney any passive motion apart from the respiratory displacement. It is therefore evident that the kidney may admit of palpation and may follow the respiratory movements quite independently of the habitual constriction of the waist by clothing. Of the other women 2 had had one child each and a third had had three children; their abdominal walls were very relaxed but their kidneys could not be felt. From observations made on hundreds of cases in Dr. Litten's poliklinik Dr. Becher and Dr. Lennhoff have come to the conclusion that palpation of the kidney is feasible much more frequently than used to be supposed, and that it is possible before examination, merely from inspection of the shape and conformation of the individual, to predict with a considerable approach to accuracy whether the kidney is accessible to palpation or not. The persons whose kidneys may be felt have usually a slender, graceful figure, long, narrow thorax, and a somewhat flattened, laterally retracted abdomen. Dr. Becher and Dr. Lennhoff

[1] THE LANCET, July 9th, 1898.

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also devised the following formula for the purpose of obtaining numerical expressions: the length from the supra-sternal notch to the upper border of the symphysis pubis is divided by the shortest girth of the waist and the quotient is multiplied by 100. In the 24 Samoan women this number averaged 75; for the 6 whose kidneys could be felt it was respectively, 69, 75, 78, 83, 83, and 91; while for the 18 whose kidneys could not be felt it averaged 73. With German women it was usually found that if the number was 77 or upwards the kidneys could be felt, but if it was less than 77 they could not be felt.

PHARMACOLOGY AT CAMBRIDGE UNIVERSITY.

CONSIDERING the few years that have elapsed since the Pharmacological Laboratory at Cambridge was established it may be congratuated on its success. In the main this is due to the investigations of Professor Bradbury and his assistant, Mr. Marshall; but the teaching in this department also seems likely to contribute to its reputation as a school. Thus one of the two gold medals awarded by the University of Edinburgh this year for the M.D. theses has been secured by Dr. Andrew Balfour for work done in the laboratory and the gold medal and exhibition at the Intermediate (M.B.) Examination of the University of London has been won by Mr. Arthur Eastwood, also a student in this department. As the teaching of pharmacology in England compared with that of some of its sister sciences is at a low ebb it is a pleasure to record successes of this kind from so youthful a department as that at Cambridge.

THE TREATMENT OF ELEPHANTIASIS BY ELECTRICITY.

IN *La France Médicale* of June 24th, 1898, Dr. Albert Weil has published a case of elephantiasis in which a remarkable result was obtained by galvanism. An obese washerwoman suffered from extreme elephantiasis of the legs which had developed gradually during twenty-seven years. The circumference of the left leg measured 57 centimetres and of the right leg 55 centimetres and the patient weighed 128 kilogrammes. Bandages were used, but without effect. A constant current to the left leg was then tried. Two metallic electrodes covered with chamois-leather measuring 16 by 26 centimetres bent into half cylinders were applied to the leg so as to cover more than the lower half, and connected with the negative pole of a battery. The positive electrode, which was 10 by 26 centimetres, was placed on the nape of the neck. A current of 20 milliampères was passed for a quarter of an hour and the leg was then compressed with a bandage. The right leg was similarly bandaged. This treatment was repeated at intervals of two or three days with currents ranging up to 50 or 60 milliampères. On the fifth day the left leg measured 54 centimetres, on the twelfth 53 centimetres, on the seventeenth 50 centimetres, and on the thirty-third 45 centimetres, when elastic bandages were substituted for the cotton ones and applied to both legs. In a fortnight the left leg measured 40 centimetres and the right 54 centimetres (a slight diminution). A constant current was then applied to both. After twelve days the measurements were 38 centimetres and 50 centimetres. Finally they were reduced to 38 centimetres and 40 centimetres, and the patient could walk and, except for some slight swelling at the external part of the ankles, was practically cured. Electricity in the treatment of elephantiasis has been recommended by several writers especially and in repeated publications by two Brazilian medical men—Silva da Aranjo and Moncorvo. But its use has not become general. Elastic bandages often give brilliant results. Though Dr. Weil appears to have produced quite cogent evidence of the value of electricity in his case it would have been more satisfactory if he had employed elastic bandages before resorting to that treatment. His explanation of its mode of action is that it facilitates the movement of lymph by exciting contractions of the lymphatic vessels. The interrupted current, which would seem more effectual than the constant for this purpose, is recommended (in addition to the latter) by the Brazilian writers, but for some reasons it was not employed by Dr. Weil.

PLUMBERS IN CONGRESS.

AT Glasgow on Aug. 18th the corporation entertained some 300 members of the Association for the National Registration of Plumbers on the occasion of the ninth annual Scottish Congress. In addition there were present several Members of Parliament, medical officers of health, and representatives of various sanitary and municipal authorities interested in the subject of sanitation. Ex-Bailie Crawford, D.L., President of the Congress, made in his address a startling statement, but one which, it is to be feared, was by no means exaggerated. As an argument in favour of the registration of plumbers he stated that during his chairmanship of the health committee of Glasgow the percentage of cases in which plumbing work when tested was found to be satisfactory was very small. As a matter of fact, from 60 to 70 per cent. of the cases tested were found to be in some way defective, although he did not attribute these defects in all cases to the faulty work of the plumber. He commended the work done by the Association for the National Registration of Plumbers since its foundation in 1884, and thought that the operatives had been stimulated to a higher sense of their responsibilities by the improved opportunities existing for technical education. He deplored that Parliament had not yet been able to give the effect of law to the Plumbers' Registration Bill which had for its object not only the legalisation of the diploma and title, but granted the necessary power for discipline in the cases of those who committed acts unworthy of the craft.

INTESTINAL TUBERCULOSIS.

THE *Journal of the American Medical Association* of June 4th, 1898, contains an important paper on the above subject by Dr. N. Senn, whose name is so well known in connexion with abdominal surgery. The knowledge acquired in the practice of this comparatively recently developed branch of surgery has thrown considerable light on the pathology of abdominal diseases. Intestinal tuberculosis is not often found as a primary disease. In 1000 necropsies on tuberculous subjects at the Munich Pathological Institute only one case was observed, whilst there were 566 secondary cases. Tuberculosis of the stomach usually occurs in connexion with disease of the intestines and lymphatic glands. It is rare; Letorey states in his thesis that he could find only 21 cases. The destructive action of the gastric juice on the bacillus protects the stomach against invasion. Intestinal tuberculosis pursues a more benign and chronic course in adults than in children. The lower portion of the ileum and the ileo-cæcal region are the most frequently affected. A number of cases of hernial tuberculosis have been reported. In 13 cases the sac was attacked 10 times and in 7 it was alone the seat of the disease. Hernial tuberculosis may be primary; generally, however, it is associated with peritonitis. Intestinal tuberculosis may run its course without any symptoms pointing to the alimentary canal. Thus an isolated lesion may cause no symptoms until perforation occurs. Of this a remarkable case is related by Baumgarten. A young soldier in almost perfect health died suddenly from perforative peritonitis. The necropsy revealed a solitary tuberculous ulcer of the size of a penny in

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the lower ileum and no evidence of tuberculosis in any other organ. Clinically this case is exactly parallel to cases of perforation in ambulatory or latent typhoid fever. In other cases the symptoms are misleading; thus one case assumed all the features of pernicious anæmia. In primary intestinal tuberculosis the symptoms are insidious and are usually mistaken for intestinal catarrh, but the presence of traces of blood in the stools should arouse suspicion. The healing of an ulcer of considerable size is usually announced by symptoms of chronic intestinal obstruction caused by the resulting stenosis. The formation of a chronic abscess in the ileo-cæcal region or in any part of the abdominal wall in connexion with intestinal symptoms of long standing always suggests the probable existence of tuberculous intestinal ulcer.

THE TREATMENT OF INFANTILE OPHTHALMIA.

DR. P. BAR, in a paper quoted by the *Journal de Clinique et de Thérapeutique Infantiles* of August 18th, 1898, discusses briefly the various modes of treatment which have been employed for the prevention of infantile ophthalmia. The writer's experience of iodoform dusted on the conjunctiva has not been more fortunate than that of other surgeons. Neither has he found that the use of boric solution, or even of perchloride of mercury from 1 in 1000 to 1 in 4000, is entirely satisfactory. The only remedy which he considers to be truly reliable is the time-honoured solution of nitrate of silver, and the mode of its employment by him, though not novel, is sufficiently unusual to merit a passing comment. The strength of the solution, 1 per cent., is somewhat weaker than that commonly advised and we are pleased to find that it is administered by instillation. This method, it is stated, has yielded excellent results and the statement, we believe, is justified by the experience of other practitioners besides the writer of the paper above mentioned. It possesses this great advantage over the more common practice of brushing a stronger solution over the conjunctiva—that it avoids an obvious cause of local irritation, and we believe the results obtained by the drop method will be found to be, at all events in cases taken reasonably early, not only more successful but more rapidly attained. Dr. Bar advises the routine use of the nitrate solution as a prophylactic for all newly-born infants. This is certainly suggestive of *nimia diligentia*, but as regards the value of this treatment for infantile ophthalmia in its early stage there can be no question.

THE REPORT UPON IRISH PRISONS.

THE twentieth report of the General Prisons Board for Ireland has just been published. With regard to local prisons, the number of committals for 1897 is 34,911 as against 32,916 for 1896. The number of local prisons has been reduced by one owing to the closing of Grangegorman Female Prison in August, 1897, and the prison has been utilised as a temporary lunatic asylum to relieve the overcrowded condition of the Richmond Lunatic Asylum. As regards juvenile prisoners there has been a slight increase over the numbers for 1896—i.e., 221 as against 207—but a decrease as compared with 1895, when the numbers were 257. During the year there were 81 cases of insanity; of these 59 were insane on admission and 4 were sane while in prison but were found to have been insane when the offences they were convicted of had been committed; only 8 became insane while in confinement. In convict prisons there were in custody on Dec. 31st, 1897, 311. Since the years 1883–1884 the number of convicts has been reduced by one-half. It has, we are glad to see, been arranged that Irish military convicts convicted outside the United Kingdom should serve their sentences in Ireland so that they will not be deprived of the privilege of visits from their relatives and friends. With regard to the employment of prisoners the most satisfactory form seems to be garden work, and this is specially undertaken at Belfast, Maryborough and Tralee. Other employments are washing for certain barracks and the Dublin Police and making mail-bags for the Post Office. The Prisons Board are "glad to be able to state that no unproductive mechanical employments, such as the treadmill or the crank, are in use in Irish prisons." This is a point upon which the Board is much to be congratulated. The various reports of the medical officers of the different prisons show nothing very noteworthy except that the sanitary condition of the prisons seems remarkably good. In both local and convict prisons there were only 9 deaths among prisoners during the year 1897.

THE second meeting of the Congress of Gynæcology, Obstetrics, and Pædiatrics will be held at Marseilles on Oct. 8th, 1898. Medical men who wish to read papers or to bring communications before the Congress are requested to send in their names with the subjects of their communications to the general secretary, Dr. Queirel, 20, Rue Grignan, Marseilles.

ON Saturday last, August 20th, Princess Henry of Battenberg, the President of the Victoria Society for Nursing the Sick Poor, attended a meeting at Gosport in support of the society, which was founded as a memorial of the Queen's Diamond Jubilee.

THE REPORT FOR 1897 OF HER MAJESTY'S CHIEF INSPECTOR OF FACTORIES.

THIS report, the receipt of which we acknowledged last week, is one of the most important publications which have issued from the Home Office for a considerable period. At the present time more than ordinary interest attaches to the chief questions dealt with in this report because of the radical and far-reaching changes in the conditions of factory labour which have been brought about by the exceptional and to some extent experimental legislation of the last few years. The Factory and Workshops Act of 1895 and perhaps in a greater degree the Workmen's Compensation Act of last year may be said to have revolutionised the relations of employers and employed in factories and workshops, and it is unquestionably true that many well-informed and experienced employers of labour in this country who are by no means indifferent to the health and safety of their employés are of opinion that unless the utmost vigilance be exercised the tendency of recent legislation, especially of that conceived on the lines of the statute last mentioned, will be to gradually but surely alienate from the factory and workshop interest a great part of the capital which is essential to success and thus in the long run to deprive, *pro tanto*, the industrial classes themselves of the very means of subsistence. The present report is from the pen of Dr. Arthur Whitelegge, who for many years before his promotion to the Chief Inspectorship of Factories was well known as an accomplished sanitarian. His long and exemplary administration of the vast area of the Yorkshire West Riding doubtless marked him out as being pre-eminently fitted to direct the factory system of the country from the point of view of the sanitary reformer. But even a superficial reading of this elaborate and careful report will suffice to show that whilst the real hygienic requirements of the factory and workshop will, under Dr. Whitelegge's guidance, be adequately and judiciously provided for, at the same time the interests of the employers of labour will not be allowed to suffer from the imposition of untried and costly experiments, although these may be clamoured for by ignorant faddists who assume to represent the interests of the workpeople.

Some idea of the amount of work done by the Factory Department may be gathered from the fact that no fewer than 200,000 factories and workshops came under inspection

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during a single year. Among the operatives in these establishments—four and a half millions in number—there occurred in the year 1897 as many as 40,000 accidents and 1200 cases of poisoning by lead. In the report under notice particulars are given of the nature of the accidents occurring and of the trade processes in which accidents are most frequent. A large proportion of the injuries, however, appear to be of but trifling severity and many of them are shown on inquiry to be exclusively due to carelessness on the part of the workers themselves. For example, we notice the case of a boy who was badly burnt by gunpowder in a factory, not while at work, but during the dinner hour when he was celebrating the 5th of November. Another case was that of a man who was severely bitten by a horse whilst working in a dock; and a third that of a dock-labourer who was injured by the overturning of a hansom cab. A very large proportion of the accidents recorded appear to be caused by the stupid practice of cleaning machinery whilst still in motion, and this notwithstanding the prohibition of the practice by authority. For instance, a boy is reported to have lost part of his hand by being caught in the gearing of a shoe-making machine. He began to clean the machine before it had come to a standstill because he wished to gain time to try a bicycle. Another boy had his hand severely lacerated whilst cleaning a leather-cutting machine in motion; this boy wished to get his cleaning done in order to attend a football match. It is obvious that no precautions by the proprietors can avail against foolhardiness such as this. In consequence of the representations of the inspectors the exposed and dangerous portions of machinery in factories are now being more and more effectually fenced. This has doubtless been brought about by the heavy responsibility incurred by owners under the Workmen's Compensation Act. In one case, where the instructions of the inspector to provide suitable fencing for a lathe had been disregarded and a boy had been badly lacerated in consequence the owner was fined £10, and that sum was, by order of the Secretary of State, paid over to the injured lad. According to the evidence of one of Her Majesty's inspectors, Mr. Tinker, it is probable that the Act first mentioned will indirectly cause a material reduction in the number of preventible accidents, since the use of precautions such as the fencing and guarding of dangerous machinery will ultimately affect the rates of accident insurance. Dr. Whitelegge remarks, on the strength of evidence supplied by various medical officers of health, that increased attention is now being paid by local authorities to the sanitary condition of factories and workshops. He quotes as specially worthy of imitation the action of a large manufacturing firm in Cardiff, who have issued a notice forbidding any of their workpeople in whose house a case of infectious disease exists to return to work until the medical officer of health permits them so to do. The firm urge upon their employés the advisability of promptly sending infected members of their families to the borough sanatorium, and if they comply with this advice the firm undertake to pay the wages of any employé who is kept away from work pending the disinfection of his house. Dr. Whitelegge gives important information which we can only notice briefly regarding the prevalence of lead, phosphorus, and arsenic poisoning and of anthrax in factories and workshops. The figures under this head compare unfavourably with those of 1896 and there is reason to fear that the numbers would be still larger if all the cases were known. Steps are being taken, by advertisement and otherwise, to call the attention of medical men throughout the country to their statutory duty of notifying all cases of this kind which occur in factories and workshops. At page 49 a list is given of the trade processes in which poisoning by lead, phosphorus, or arsenic is most likely to occur; from the two latter the cases of poisoning reported are but few in number at present. There was a great increase in the reported cases of lead-poisoning in 1897 as compared with the previous year, the increase being common to all the industries included in the list. Speaking of the dangers (including lead poisoning) incidental to the potter's or earthenware manufacturer's occupation Dr. Whitelegge says that during the last few years there has been a material improvement in "dust conditions" which may be expected to produce an effect upon the records of fatal phthisis and other diseases of the lungs. But of lead-poisoning, unfortunately, the same cannot be said, the number of grave cases reported, and particularly of cases of blindness, having ominously increased of late. Full investigation of the subject is now being made, with a view to better measures of prevention, and in this the Secretary of State has secured the assistance of Dr. Thorpe, F.R.S., the principal of the Government Laboratory, and of Dr. Thomas Oliver.

The reported cases of anthrax increased from 17 in 1896 to 23 in 1897. 14 of these were connected with the handling of hides and skins and 9 with wool-sorting. The former industry has now been certified as a dangerous trade by the Secretary of State. Special rules for wool-sorting have been served upon the occupiers of all works in which the sorting of the dangerous kinds of wool and hair is carried on.

A special feature of the present report is the prominence which is given to the work of Her Majesty's lady inspectors of factories, whose reports to the Chief Inspector are in many cases of unquestionable merit; they occupy a considerable portion of the volume. There seems to be great difficulty in controlling the employment of women in factories within a limited period after childbirth. There is considerable danger, according to the inspectors, that the section of the Act of 1891 dealing with this question, which is of such great importance to the rising generation of workpeople, will remain a dead letter because of the difficulty of proving the employer's knowledge of all the circumstances. It is suggested that the production of a medical certificate of fitness for employment in a factory should be made a condition of employment or of re-employment of any woman after confinement. An illustration is given in the report of the need of protecting witnesses from the intimidation, direct or indirect, of those who employ them. Hardly any infringement of the Factory Acts is more difficult to discover or proceed against than the employment of a woman within four weeks of her confinement, chiefly owing to the burden of proof resting with the inspector as to the employer's knowledge of the facts. In one case, the particulars of which are given in full, an unfortunate woman who had been employed within the prescribed period of her confinement was dismissed from her employment because she was called as a witness in her own case by Her Majesty's inspector. Happily, the poor woman obtained re-employment from one of the magistrates who heard the case and so her personal difficulties were surmounted for the time. This would do little or nothing, however, to counteract the effect on the worker's mind of the conduct of the employer, who by dismissing her showed his contempt for the law and indicated plainly the course he was likely to pursue in future with respect to any worker who admitted facts as to infringements of the statute to one of Her Majesty's inspectors. The new Truck Act of 1896 has added much to the work of the factory inspectors, bearing as it does upon all factories and workshops and upon all employers in the United Kingdom, and raising many complex questions which the inspectors are called upon to decide. In order to make clear to both masters and men the requirements of the Truck Acts, which were at first misunderstood, explanatory memoranda have been prepared and issued by the Home Office with good effect. Several flagrant cases of violation of the Truck Acts are mentioned in the report, in most of which convictions were obtained. In one case, a tailor, who was forcing his workers to spend nearly all their earnings in his own grocery store, was fined £10 and costs. In a second, a large bootmaker was charging his workmen an exorbitant price for materials and compelling them to buy more than they needed; he was fined £5 and costs. In another case, a grocer, acting as agent for a glove manufacturer, gave out gloves to be sewn and paid for the work in groceries, which the people had sometimes to sell again in order to obtain money for other necessaries. Armed with powers under the new Act the inspectors have been able to put a stop to many of these cruel extortions, which have now become for the first time apparent under the compulsory publicity which the Act demands.

TYPHOID FEVER IN BELFAST.

AT a meeting of the Public Health Committee of the Corporation of Belfast held on August 18th a very serious state of affairs was reported by the medical officer of health in reference to the prevalence of typhoid fever, for during the week ending August 13th 198 cases of zymotic disease were notified, and of these 143 were typhoid fever. The only

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comforting piece of intelligence in this most serious aspect of affairs is that the number of cases of infectious disease is 52 less than in the preceding week. There are over 200 cases of typhoid fever in the Union Fever Hospital and several members of the Fire Brigade have been attacked, due, it is said, in their case to eating cockles purchased from a hawker who had obtained them from the shores of Belfast Lough, which are polluted with sewage matter. It is a most noteworthy but sadly deplorable fact that a new city like Belfast is a hotbed of typhoid fever, the most preventable of the zymotic diseases, and the citizens must have read with sincere chagrin the fact noted in Sir Charles Cameron's presidential address at the Congress on Public Health in Dublin that while the mortality caused by typhoid fever is greater in Dublin than in nearly every other town in the United Kingdom, in Ireland Belfast alone has a higher death-rate from this disease. Belfast has now a new corporation, the great majority of the members of which when candidates for municipal honours placed the sanitation plank in a prominent position in their election platform; but so far nothing has been done to grapple in the least degree with the causes of the wide prevalence of a disease which every student of medicine is taught should be preventable. Before matters can be put right the causes of the prevalence of typhoid fever in Belfast must be known, and they may be placed under the following heads: 1. The long-continued pollution of the soil which the authorities allowed in spite of constant warning by permitting up to quite recently all over Belfast notices—"Rubbish may be shot here." Houses have been erected on such "made soils" without the least attempt to disinfect the material of the foundations. Hence, like Dublin, the soil of Belfast is full of the germs of typhoid fever. 2. Defective house drains, allowing pollution of soil by escape of sewage matter. It is found that this mischief generally occurs in the drains (in the yard) between the houses and the main city sewers. These pipes are sometimes only cemented on the top and sides, the lower part resting on the ground being untouched and so allowing leakage. Again, it has in Belfast unfortunately been a custom to allow the joints of these pipes to be made often with clay, which after a time washes out and so sewage escapes. The clay is used because it is cheap, a good example of the "penny-wise and pound-foolish" principle. Then too often in the "jerry" houses drain-joints are made, not as they should be by skilled men, but by those who are called "handy" men or labourers. A leading citizen of Belfast, in a letter to one of the daily newspapers of that city, says as a result of his most unfortunate experience with several houses in Belfast (and he relates a number of examples): "I would not allow any drain-pipes to be covered in without being tested by smoke and water in my own presence." 3. It often happens that in the poorer districts if there is a case of typhoid fever in a house all the dejecta are thrown into the ashpit, which is generally open and near bedroom windows. In this way the poison is wafted about and other persons become affected. It is said there are 20,000 houses of this type in Belfast, and as many of them have no back passages the horrible nuisance of the contents of such ashpits being carried through the house and out at the front-door (this being the only passage) can easily be imagined. 4. If the street gullies are to be effective the traps must be kept full of water. This during the present hot weather is not done and hence the water evaporates and the traps become open ventilators from the sewers. Anyone walking through Belfast must have in the present weather perceived horrible odours constantly emanating from the sewers through these dry traps. 5. As a result of the present main-drainage system of Belfast the whole of the sewage is emptied a short distance down the Lough, and, owing to the tidal currents, a great deal of it is spread over the sloblands on both sides of the Lough. During the present summer, to railway travellers on either side of the Lough the stench at many places is simply horrible, and as northerly winds have been blowing very often of late from these perfect culture grounds (pathologically speaking) towards the city germs of disease may in this way be carried to the inhabitants.

A few of the causes of the prevalence of typhoid fever in Belfast have been mentioned. Every thoughtful citizen is asking what is to be done. Some are crying out (and rightly so) against jerry-building and jerry-plumbing, but if the medical profession were to be asked their opinion they would say at once: remodel the whole public health department of the city and appoint a really sufficient staff, as it is at present altogether under-manned. Let the heads of that department tell the corporation plainly that the present cheap way of carrying on the health department must cease and that as much money must be spent in the care of the health of the citizens of Belfast as is done in other places. Let them point out clearly and fully what is done in Glasgow, in Birmingham, and in Edinburgh, and we are fully confident that the citizens of Belfast will support them and that the scandalous state of affairs at present existing (we mean the fact that a new city such as Belfast has a death-rate from a preventable disease like typhoid fever the largest in the United Kingdom) will cease for ever. Belfast has one of the finest tram systems in the world; it has (and all thanks to the corporation) one of the finest fire brigade systems in the world; why, then, does it lag behind all other cities in its care of the public health? These remarks are no whit too strong for the state of matters, and the results are well seen in a telegram from our Belfast correspondent dated August 24th. He says: "100 new cases of typhoid fever were admitted last week into the Union Fever Hospital and the total number of typhoid fever cases there is 307. No more cases can be admitted before additional accommodation is provided, and the board of guardians has decided to employ additional medical men and nurses. At a special meeting of the Public Health Committee held on August 23rd it was decided that Dr. Lorrain Smith should conduct a bacteriological investigation into the causes of the epidemic. The citizens were advised to boil all water and milk."

THE HOSPITAL REFORM ASSOCIATION AT EDINBURGH.

IN THE LANCET of July 30th we gave a short *résumé* of the proceedings at the meeting of the Hospital Reform Association which was held at Edinburgh on the morning of July 26th. We now supply our readers with an abstract of the various papers read and some figures concerning hospitals and dispensaries in Scotland.

Mr. GARRETT HORDER (the President), in his opening address, after a few introductory remarks, said: To those who are anxious to make themselves acquainted with what has been done for reform in the past I would refer them to the report of the proceedings of the Ethical Section which met for the first and apparently for the last time in the border city of Carlisle. As far as I can learn there has been no attempt at any time to deal with the Hospital Reform question in any of the Scotch towns. In Glasgow there are several medical men who have written on the subject, but beyond a series of articles in THE LANCET I have not heard of any systematic attempt to bring about a more desirable condition of things. You will have noticed that we are desirous of effecting three objects—viz., (1) the prevention of abuse of hospitals and dispensaries; (2) the formation of central hospital boards; and (3) the promotion of provident dispensaries. That medical charities are abused, and abused to a large extent, no one who has looked into the question can have any doubt whatever. From an educational point of view (and this is naturally of the highest importance in such a city as Edinburgh) the massing together of such large numbers of patients is not likely to lead to the advancement of medical knowledge. The medical officers have not the proper amount of time to teach the students and the students themselves become too wearied to derive much benefit from the clinical remarks of the medical officers. For educational purposes it is distinctly beneficial to limit the number of out-patients to be seen by each medical officer. Moreover, the herding together of large masses of peoples in rooms for many hours at a stretch must be condemned not only from a medical but from a sanitary point of view. Neither is this indiscriminate system fair either to the hospital subscribers or to the medical profession. Looking at the subject from an ethical point of view I would ask those who have had experience in dealing with the poor whether this indiscriminate medical relief is not likely to produce a loss of independence amongst the working classes and ultimately to tend towards pauperising them. It is perfectly evident that the managers of hospitals are too fond of boasting of the large number of people who patronise their institutions and I imagine that this is done mainly because of the difficulty experienced in

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raising sufficient money to support their establishments. Surely the time has arrived when the managers in our big towns should meet together and see whether some measures cannot be adopted to bring about a common understanding. In your large cities there would, I imagine, be little difficulty in effecting a closer relationship between all the medical charities than now exists; in a word, forming central hospital boards. May I be allowed to congratulate you that in this city and also in the city of Glasgow you have as managers of your Royal Infirmaries men representing in an official capacity the learned professions, the commerce, and the town authorities? With such able representatives it would be comparatively an easy matter to bring about a conference at which the whole subject could be threshed out to the satisfaction not only of the hospitals but of the sick and suffering poor. You may well ask what our ideal out-patient department is; it is briefly this, a place where persons who have been in-patients and who still require further treatment can obtain it, and also a place where general practitioners could either bring or send patients suffering from obscure or difficult diseases for the purposes of consultation. We feel that there should be a much closer intimacy between the hospital staff and the general practitioners than now exists. And now to come to the question of your system in Scotland. I have prepared a table showing the hospitals and dispensaries in the 8 principal towns, together with the number of in- and out- (or dispensary) patients attending during the year 1897. As these figures have been chiefly compiled from the reports you may I think, consider them as approximately correct. In several instances the figures refer to the year 1896, because the reports of last year had not reached me. I want you to clearly understand that the numbers referring to the out or dispensary patients are actually the number of patients and not the number of attendances made by them. [The tables showed the following results: Glasgow with 18 institutions giving medical relief, exclusive of the Barony (Parish) Hospital and the City Fever Hospital, has in-patients, 20,863, and out-patients, 78,302. Edinburgh with 23 institutions, 2 of which sent in no returns, has in-patients, 14,763; and out-patients, 109,141. Leith with 1 institution has in-patients, 1152; and out-patients, 18,312. Dundee with 3 institutions, 1 sending no return, has in-patients, 2687; and out-patients, 18,516. Aberdeen with 6 institutions has, in-patients, 3006; and out-patients, 19,384. Paisley with 2 institutions has, in-patients, 1086; and out-patients, 10,258. Greenock, 2 institutions, in-patients 1455; out-patients, 12,217. Perth, 1 institution, in-patients, 1163; out-patients, 1236. Mr. Garrett Horder continued:] I know that some patients come to your hospitals from places outside. But even allowing a deduction of 20 per cent. for such patients you will see that the figures remain very large indeed. And in passing I should like to make a remark about patients coming from a distance. It is flattering, no doubt, to the managers and to the medical staff to find their institutions patronised by strangers to the district, but is it quite fair to the subscribers to be called upon to pay for the treatment of people who reside in places so far distant from Edinburgh as Carlisle, South Shields, Sunderland, London, Newcastle, Birmingham, Middlesborough, Liverpool, Sheffield, and Leeds? One would naturally have thought that there are hospitals in those towns where diseases could be treated quite as effectually as they could in the Royal Infirmary of Edinburgh. This is an important point, as I notice during last year no fewer than 295 of the in-patients belonged to places outside Scotland. With regard to the administration of your hospitals as compared with those of England the chief points of difference seem to me to be as follows: in Scotland the out-patients are called dispensary patients and with few exceptions receive medicines and advice as they do in England. In the Edinburgh Royal Infirmary, in the Chalmers Hospital, and in the Ayr County Hospital only advice is supplied to such patients. I notice also that in many of your dispensaries a large number of vaccinations are performed. Apparently this seems an injustice to the general practitioners and to the Poor-law medical officers. I say apparently, because I am not sure whether any fees are received for such vaccinations. Touching on the question of provident dispensaries I can only find evidence of the existence of one in the whole of Scotland—the Edinburgh Provident Dispensary. It is gratifying to note that that one is very successful, having a membership of over 8000. There is just one point about that institution which is worth recording and that is that it has medical officers for the treatment of special diseases. I have given some attention to the subject of provident dispensaries lately and I have come to the conclusion that if we are desirous of seeing a greater number established we shall have to take steps to see them more fully equipped than they are at present. It is generally acknowledged that the special hospitals and the special departments of general hospitals are more abused than any other; and I think much could be done to lessen that abuse by attaching to provident dispensaries a certain number of specialists so that people would have no reasonable excuse for seeking gratuitous aid when they were in a position to pay something for it. I have occupied so much of your time that I cannot afford to dwell on the subject of provident dispensaries generally. I will content myself by saying that if the following regulations are adopted by the managers it is probable that the institutions would be more cordially supported by the profession at large than they are at present: (1) the adoption of a wage-limit and effective means to see that that wage-limit is adhered to; (2) the representation of the medical officers on the committee of management; (3) the prohibition of all canvassing for members; (4) the periodical revision of the list of members; (5) the placing of all medical men who wish it on the medical staff; and (6) the more economical administration: that is, with respect to establishment charges, official salaries, &c.

The Medical Control of Medical Charities.

Dr. DAVID WALSH read a paper under the above title After stating that various inquiries had been made into the question of the abuse of medical charities which had proved that such abuse does exist, to the detriment of medical men, he continued: The truth or otherwise of the allegation, however, does not materially affect the main proposition here advanced—namely, that medical men are entitled to a voice in the management of medical charities. In spite of the above-mentioned consensus of opinion nothing has been done, except in a few trifling instances, to abate the evil. The need of action has long been admitted on all hands; the question is how to bring the requisite leverage to bear upon the charities. What are the facts of the case as regards the executive management of the charities? In most cases they are under the control of laymen, who may or may not appoint a small proportion of the medical staff as *ex-officio* members of the governing committee—that is to say, the medical element, small as it is, does not represent the main mass of the profession, but individuals who, however honourable and distinguished, belong to a body whose interests are those of a section untouched by hospital competition. So that, as a matter of impartial statement, the charity that depends on the gratuitous services of the medical profession for its existence is managed by a body of persons who are out of touch with the wants, wishes, interests, and aspirations of the profession chiefly and vitally involved. The public is doubtless in sympathy with medical men and so are the lay committees, but they fail to realise the strictly utilitarian conditions under which the profession has to be followed. Humanitarianism is not allowed to interfere with the internal usages of other professions. For instance, imagine for a moment a charitable body for dispensing gratuitous law to needy folk and having organised such a body to demand that its executive should contain no lawyers. The absurdity and injustice of such an arrangement would be self-apparent, yet the cases of law and medicine, which are both necessities of civilised life, are to a great extent analogous and comparable. Obviously one remedy is to have on the executive of our medical charities medical men who can insist upon a fair and proper treatment of the general practitioner. By a well-considered scheme for securing such representation throughout the country it is likely that more practical good would be effected than by a generation of discontented and abstract discussion. If there be justice in the cry against the abuses of the out-patient departments of the hospitals what reasonable objection could be raised against the representation on the executive of the persons most closely affected by such abuses? The good that could be effected by such an arrangement has recently been fully illustrated in a hospital at Tottenham, where certain practices had crept in of a nature injurious and objectionable to the medical men of the district. However, on the executive there were fortunately two medical men who held permanent and *ex-officio* posts on the committee. In the end they compelled the management to arrange the conduct of

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the hospital in a way satisfactory to the medical men of the neighbourhood. If every medical charity in the country had its contingent of general practitioners on the management it seems likely that many of the difficulties which now surround the situation would be speedily settled, or indeed would never have arisen. The professional philanthropist who has hitherto held the reins has not made a distinguished success of hospital management in its relations to the main body of the medical profession. The question naturally arises whether medical men would not themselves be competent to manage the charities that depend upon their gratuitous professional services for their existence. At any rate, the proposition is one which may be discussed with advantage in a meeting of this kind.

Provident Dispensaries.

Dr. OTTO WUNDERLICH presented a report to the association on Provident Dispensaries. He said: Among the remedies for preventing hospital abuse the extension of the provident dispensary system is regarded with favour by many would-be reformers. Two questions arise: (1) do provident dispensaries prevent hospital abuse? and (2) is the remedy in itself an entirely satisfactory one? After pointing out that provident dispensaries were quite as much in need of reform as hospitals he continued: The fees which are paid to the medical officers of provident institutions are smaller even than the average fees paid by friendly societies. It does not necessarily follow that they ought to be raised, because it might be objected that a medical man gets his *quid pro quo* by the introduction the work gives him to other patients. This argument, however, is quite fallacious. There are many districts where everybody belongs, or might belong, to a provident institution. In such a district the criterion by which to fix the minimum subscription is the ability of a medical man to earn a living on provident subscriptions alone. We find that with this mode of reckoning even the fees of friendly societies work out unsatisfactorily. With an annual subscription of 4*s.* per patient a medical man attending his full complement of 2000 patients could only earn £400 per annum. It is scarcely necessary to point out that with this amount he could not make both ends meet. If it were only the pauper class who availed themselves of the privilege of paying these small subscriptions nobody would raise any objection. The very poor are those for whom hospital out-patient departments were designed and anything which will lighten the work by their voluntary efforts is altogether admirable. But those persons who are generally recognised to make an unjustifiable use of free hospital treatment are also those persons for whom the present rate of provident subscriptions is totally inadequate. If this is admitted it will follow that to endeavour to replace the hospital out-patient departments by a system of provident dispensaries as conducted under actual conditions will amount merely to replacing one form of abuse by another. The remedy which is usually suggested for these abuses is a wage limit. In the same manner as the medical tariff varies with the value of a patient's house, so the rate of provident subscriptions ought to vary with the wages earned. The moment the limit at which real poverty ceases is reached hospital abuse begins and the present rate of provident subscriptions becomes inadequate. The rate of 4*s.* a year is fair only for the pauper class and persons earning less than 20*s.* or 25*s.* a week. A rate of from 6*s.* to 8*s.* a year might be held sufficient for persons earning up to 30*s.* and 40*s.* a week, whilst a rate of 10*s.* a year would suffice for any person whosoever who did not mind putting up with the restrictions and inconveniences attendant upon provident work. How far such a scheme is from being realised in provident institutions is well known. Their great defect is a lack of elasticity; their fees are not adapted to the means of the members, but are only framed to meet the requirements of the very poor. The following points merit the attention of the Hospital Reform Association. The competition between free hospital out-patient departments and provident dispensaries tends to depress the rate of subscriptions. Only if free out-patient departments are abolished will it be possible to put them on a proper basis. Like most charities provident dispensaries bid for patients to swell the returns and for that purpose they reduce the scale of subscriptions. This would be impossible in the face of opposition from the medical profession except for the reason that they maintain an injurious control over their medical staffs by limiting their numbers. They compel them to work at impossible figures through fear of incurring a serious loss if they should resist. Any discrimination between medical men in a district leads to the formation of fresh dispensaries by those medical men whose services are not admitted. This competition between dispensaries is another cause for an undue reduction of the subscriptions. Dispensaries become regular "corners" in providence. All these considerations affect two points mainly—the subscriptions and the medical staffs—and the following recommendations in regard to them are herewith submitted to the Hospital Reform Association for their adoption. 1. Subscriptions: The provident subscriptions should vary with the income or wages of the members. In practice, and in order to realise a scale which would also take into consideration the ages and infirmities of the members, it is recommended that every medical officer should make his own terms with each of his patients. Although this has not been generally done the system is perfectly feasible. The ordinary competition among members of the staff would be sufficient to prevent any abuse. 2. Medical Staffs: Medical men should be adequately represented on the management committees. They should be irremoveable except with the consent of the majority of their colleagues. Every medical practitioner residing in the district, except such as are debarred for ethical reasons, should be at liberty to join in the work.

The Defence of the Profession against Provident Dispensaries.

Dr. W. RICHARDSON RICE, honorary secretary of the Coventry Public Service, read a paper under the above heading. He said: The profession has now for many years been in a state of agitation over the question of provident dispensaries and it is evident that the time is now ripe for some definite action to be taken in this matter. It is of such vital concern to many of us as medical practitioners to have this question settled on a rational basis that I venture to suggest some means by which a definite result may be attained. It may be taken for granted, I suppose, that the agitation in connexion with the provident dispensary at Coventry is well known to all readers of THE LANCET and the *British Medical Journal*. Since the year 1893 we have been directing a determined attack on this institution. It may serve as an object lesson in medical politics and the lessons to be derived from this conflict may throw some light on the best methods of attack. In the first place we may assume that it is useless to appeal to any sense of fairness in the minds of those who are mainly responsible for the evils incidental to the management of these concerns. To the observant critic one point is clearly demonstrated in these cases and it is this, that the so-called modern working man, though ardently attached to the principles of his trade union, bitterly resents any attempt at combination on the part of medical men. The most striking phase in this movement indicates that those most in evidence are men in easy positions, such as foremen in factories, small manufacturers and the higher type of artisan, men of push and intelligence, who appear to have more object in promoting their own interests than the welfare of their humbler workers. If the so-called working man is met on a committee he is always to the front, abundant in talk, fertile in suggestion. His object always seems to be to assert his own individuality rather than promote the good of the cause he is supposed to represent. What follows as a natural consequence of this spirit? It is simply this, that in institutions managed by this class of man the benefits go to those who assert their own position and the poor and destitute are crowded out. If any radical change is possible in this matter it must be started from within our own ranks. If it needs must be that offences come let us attack and ostracise those through whom they come. Having assumed this much, let us see what steps can be taken against those who hold office in these dispensaries. In the Ethical Section of the British Medical Association we have met, deliberated and passed resolutions concerning the abuses of hospitals and dispensaries. In due course they have been sent to the council. In all seriousness may I ask what has been done or appears likely to be done? These gentlemen sit in solemn conclave and deliberate in stately dignity on these matters. They deliver the usual official reply couched in diplomatic terms and there is an end of it. Gentlemen, the only remedy we have in the matter is agitation, constitutional agitation if you like, but agitation loud and strong. Let me give you in detail some of the steps we have taken in Coventry with the present results. We have reported the case of two practitioners to the Royal University

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of Ireland and the College of Surgeons of England. We have received no encouragement from them. Apparently they have no power at present or desire to inquire into the conduct of their graduates or licentiates. We are also attempting through the agency of the Association to attack the medical staff at the dispensary. They have made desperate efforts to defend their position as they dislike to confront the professional odium which this situation throws upon them. We have succeeded after much effort and persistent agitation in getting the institution condemned by all the leading organs of medical opinion. [Dr. Rice here quoted from the report of the Special Commissioner of THE LANCET, the *British Medical Journal*, and the *Medical Times and Hospital Gazette*. He continued:] We laid an indictment last year against the medical staff before the Ethical Committee of the Association. They referred the case to the Ethical Committee of the Birmingham and Midland Counties Branch, who reported to this effect: (1) that the dispensary medical staff hold appointments in an institution which has been condemned by the *British Medical Journal*; (2) the low scale of remuneration they accept seriously interferes with all medical fees in the town; (3) there is no proper attempt at enforcing what is known as a wage limit and the Public Medical Service has been established expressly to uphold the principle; (4) that the staff are in the hands of a lay committee; (5) that the dispensary touts for members; and (6) that they exploit the medical profession for pecuniary gain, as surplus funds are not all divided up among the profession. This report was published in February, 1897. The controversy has been going on with the Council of the British Medical Association since this time and it is our fervent hope that the members of the Association at this present annual meeting at Edinburgh will force the Council to make some definite pronouncement and if necessary declare that the position of this medical staff is not consistent with the dignity of the membership of the Association. This matter is more than of local importance to us at Coventry and may form a valuable precedent to guide future measures of reform. Pressure must be brought to bear on the Council so that stringent measures be adopted towards those members who defy, not only the opinion of the *Journal*, but also that of the Ethical Committee of the branch in which this work is carried on. It may be argued that men who are not amenable to the opinion of their professional brethren will care but little for expulsion from the Association. Possibly, however, the stigma rising from such an unenviable position would act as a powerful lever in some cases at least, causing these men to seriously reconsider the position in which they might be placed, and we could fain believe that some might be influenced by a strong condemnation from the representative Council of their profession. In addition to these measures of attack we must not neglect the effort at some means of constructive reform. In course of time we may thus be able seriously to undermine the strength and influence of these dispensaries. Medical men, as a rule, are not remarkable for their aptitude in transacting business; their early training and generous instinct unfit them for such work. In their efforts, however, to further the progress of their art they must take note of their opponents ever eager to pursue a commercial line of policy and organise their forces against the dismembered masses of an overcrowded profession. We must try to exterminate the middleman who comes between us and our patients. In the year 1893 we started in Coventry an organisation under medical control. We called it the Public Medical Service and established it on an ethical basis. This must be regarded as an essential feature in such movements, as it gives control over the conduct of its members and prevents the possibility of any practice infamous in a professional respect. We have at the present time a staff of 13 medical men. A few are not engaged in the active work but lend to it the support of their approval and sanction. Its chief object is to provide, for small weekly payments, medical relief to those whose weekly earnings are under 30*s*. The exigencies of professional life in Coventry rendered it inevitable that some movement of this nature should be started and it was resolved to inaugurate this service with a two-fold object; in the first place, to break down a most irksome monopoly, and in the second place to endeavour to carry out certain measures of reform. Its success, financially, numerically, and politically, has more than justified the anticipations then formed. An attempt was made to induce the dispensary medical men to coöperate with the rest of the profession in this movement but without success. We have now been able to enrol on our books at the end of our fourth year some 7500 members. The gross collections for last year amounted to about £1500, £916 of which was paid to the medical officers, £343 was paid to the chemists for drugs and prescribing, and £197 was paid to the collectors. It is claimed for the service that having a staff of 13 medical officers who see patients at their own houses at specified times the danger of large numbers collecting in one place is greatly obviated and greater individual attention can be given to each member, a higher tone of professional life is engendered, and greater opportunity given for the scientific treatment of disease. We continue to develop and reform the working of the scheme and are careful to limit the numbers under each medical man so that the charge cannot be brought against us of grinding out advice and medicine in wholesale quantities. The payment of a collector by commission on the number of entries must always form an objectionable feature in these schemes. There is an inducement to canvass which it is impossible absolutely to prevent, but we do our best to prevent it, and we have not been able to devise a different method of collection. In the event of any member selling his practice his vested interest is transferable to his successor and we find by experience that this works out well as we do not allow the patients to change their medical men except at the end of a quarter. Such is the skeleton of our scheme of attack on dispensaries managed by lay committees. If the medical men in every town will only band themselves together in some agency for the supply of medical relief to the working classes they will be taking the most important step in breaking the power of these irregular institutions. In course of time they must weaken their power by drawing from their numbers. If men will not act honourably towards their colleagues we must endeavour to compel them to do so with the help of our great Association, the licensing bodies, and, if possible, through the General Medical Council.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

THE Congress of the Royal Institute of Public Health was opened in Trinity College, Dublin, by Sir Charles Cameron on Thursday, August 18th, and in spite of the gloom of the weather the scene presented was a brilliant one. The Lord Mayor of Dublin drove in civic state to the Examination Hall, where he received the various delegates, after which Sir CHARLES CAMERON delivered the presidential address, which will be found on page 529 of our present issue.

The actual business of the Congress commenced on Friday, August 19th. At the conference of medical officers of health, over which Mr. T. J. Stafford, medical commissioner of the Local Government Board of Ireland, presided, an interesting debate on the Prevention of Tuberculosis took place. Mr. J. KNOX DENHAM, who introduced the discussion, said he hoped the conference would not close without a strong expression of opinion as to the imperative necessity of every sanitary authority in Ireland taking immediate steps to limit the depredations of this terrible enemy of nineteenth-century civilisation. In these islands one in eleven deaths were caused by it. If we wished to deal successfully with this scourge there were three points to be specially noted—(1) notification, (2) education, and (3) renovation. It was no uncommon thing for at least 100 patients to be treated in the morning at one of the dispensaries and it might be assumed that 20 per cent. of these were tuberculous. The waiting-rooms for out-patients at many of our hospitals and dispensaries left much to be desired, and it would be apparent that the crowding together of so many persons for any length of time might be a fruitful source for the dissemination of the tubercle bacillus. To meet this in a measure he advocated the establishment of a large central dispensary for the treatment of tuberculous diseases. The waiting-rooms would be large, well ventilated, and capable of complete daily disinfection and the consulting-rooms replete with all the appliances necessary for the study and treatment of such diseases, the staff to consist of a consulting medical board composed of representative members of the profession in Dublin, and the assistant staff of medical men, on whom the burden would fall, must necessarily be

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numerous—numerous in view of the number to be treated, numerous in order that a not too exacting tax be made on their time, that they would be expected to attend at only regular intervals in order that they might be able to devote the time necessary for adequate examination, advice, and treatment. Such an establishment would meet with much public support and would be a great boon to our myriad suffering brethren. Having by means of notification ascertained when and where cases existed the sanitary authority could insist when necessary upon the complete renovation of the rooms occupied by patients, not neglecting whatever sanitary defects might exist in the premises.

Mr. ANTONY ROCHE read a paper on the Housing of the Poor. Papers on the same subject were read in the Parliamentary and Municipal Section. In the latter Section on Monday, August 22nd, Mr. CHARLES PORTER contributed a paper on the Supervision by Sanitary Authorities of Public Water Services in the Hands of Private Companies. The following resolution was passed:—

That this Congress hereby records its warm appreciation of the enlightened efforts of the Right Honourable H. Chaplin, M.P., President of the Local Government Board, to protect the consumers of water supplied by water companies, and ventures to express the earnest hope that during the forthcoming session the Government will introduce a public Bill embodying the proposals submitted by Mr. Chaplin to the House of Commons on June 23rd last.

Professor J. W. MOORE, whose Address will be found on page 534 of THE LANCET, presided over the Section of Chemistry and Meteorology. The programme included papers on Kingstown as a Health Resort; Valentia as a Health Resort; Climatology of Valentia Island; Remarks in connexion with the National Hospital for Consumption for Ireland, with some Meteorological and other Statistics; and Meteorological Tables at Fassaroe.

At the Conference of Army Medical Officers Sir JOSEPH FAYRER, Bart., K.C.S.I., F.R.S., contributed a paper on Enteric Fever among British Soldiers in India. In 1895, he said, there were 71,021 British troops on service in Bengal, Madras, Bombay, and Punjaub respectively, of whom 1870 were admitted to hospital for enteric fever, 477 deaths taking place. Enteric fever was a great scourge of our young soldiers in India, and our army was essentially a young one. The susceptibility of the young soldier under twenty-four years of age was much greater than that of older men, and Sir Joseph Fayrer suggested the expediency of not sending men to India until after this most susceptible period has passed. Major J. BATTERSBY, R.A.M.C., dealt with the Probable Causes of Enteric Fever among our Indian Troops; and Major WESTCOTT, R.A.M.C., contributed some Observations on Etiology, Vaccination, and Serum Diagnosis in Enteric Fever.

In the Section of Preventive Medicine and Vital Statistics papers were contributed on "The Causes and Management of Outbreaks of Typhus Fever Occurring in Rural Sanitary Districts"; "Prevention of Measles in Rural Districts"; "On the Control of Infectious Diseases, with Special Reference to Measles and Whooping-cough"; "The Notification of Measles"; "The Methods and Appliances at our Disposal for the Suppression of Outbreaks of Scarlet Fever, Small-pox, Diphtheria, and Typhus Fever in Urban and Sanitary Districts, having a Population of 5000 and Under"; "Microbial Infection of Milk and other Food Materials"; "The Duties of the Community with regard to Tuberculosis"; "Rabies"; and "The Functions of a Bacteriologist in a Public Health Department." In this Section Sir WILLIAM STOKES on Saturday strongly advocated the treatment of infectious diseases in isolation hospitals. Dr. W. R. SMITH proposed the passing of a resolution condemning the practice of treating infectious cases in general hospitals. This motion, which pointed directly to Dublin, was indignantly objected to by Sir WILLIAM THOMSON, who suggested the substitution of "England and Ireland" for "Dublin." After a breezy discussion the words "in certain localities" were substituted. Among the resolutions passed on Tuesday, August 23rd, when the Congress closed, was one regretting that no steps have been taken in the Local Government (Ireland) Act to render the appointment of county medical officers of health obligatory upon county councils.

The Health Exhibition held in connexion with the Congress was opened in the Royal University Buildings on August 18th by the Lord Lieutenant of Ireland. To adequately describe its contents would be impossible in the space at our disposal, but it may be said to have been almost complete in every detail and should prove a powerful stimulus to the study of all questions relating to public health. As an educational factor the formation of such museums is invaluable.

The banquet was held at the Royal College of Surgeons in Ireland on Saturday evening, when Sir Charles Cameron presided. Among those present were his Excellency the Lord Lieutenant, the Lord Mayor of Dublin, Lord Iveagh, Lord Emly, Professor Smith (President of the Royal Institute of Public Health), the Lord Mayor of Belfast, Sir William Pink, the Right Honourable W. J. Pirrie, Sir George Moyers, Right Rev. Monsignor Molloy, Captain the Honourable C. Cadogan, Sir Henry Thynne, C.B., Sir Henry Cochrane, Dr. Grimshaw, C.B., Captain H. W. Vane, Sir Christopher Nixon, Sir Robert Sexton, the High Sheriff, General Sir Henry Prendergast, Mr. T. W. Russell, M.P., Sir Andrew Reed, K.C.B., Sir Wm. Thompson, Sir Henry Simpson, Mr. James Campbell, Q.C., M.P., Mr. William Field, M.P., Sir William Kaye, C.B., the Mayor of Derry, Mr. A. W. Mason, Sir William Stokes, Mr. T. J. Stafford, Sir George Duffey, P.R.C.P.I., Professor M'Call, Professor Sunderbery, Surgeon-General Preston, the Mayor of Folkestone, the Mayor of Huddersfield, Dr. J. C. Thresh, Baillie Pollard, and Professor McWeeney.

Too much praise cannot be bestowed upon the Executive Committee not only for the way in which they organised the Congress and made rough ways smooth for strangers, but for the delightful series of excursions, &c., which they provided for delegates and members. During the week a luncheon was given by the High Sheriff, Alderman T. D. Pile; a garden party by invitation of their Excellencies the Lord Lieutenant and the Countess Cadogan; a dramatic and musical entertainment by the Corinthian Club; a garden party by Sir Christopher and Lady Nixon; a ball at the Mansion House by the Right Hon. the Lord Mayor of Dublin; and a garden party by the Right Hon. Alderman and Mrs. Meade.

The following honorary Fellowships of the Royal College of Physicians of Ireland and Diplomas in State Medicine of the Royal College of Surgeons in Ireland were conferred on Saturday. Hon. Fellows: Dr. Alexander Crum Brown, F.R.S., Dr. Matthew Hay, and Sir Richard Thorne, K.C.B. Hon. Diploma in State Medicine: Dr. T. W. Grimshaw, C.B. (Registrar-General for Ireland), Sir Henry Littlejohn, Dr. John William Moore, Dr. W. R. Smith, Mr. T. J. Stafford (Commissioner of the Irish Local Government Board), and Dr. J. C. Thresh.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE Secretary of State for the Home Department has made the following further appointments of medical referees under the Workmen's Compensation Act, 1897:—

Circuit No. 15 (additional appointment).—Dr. James Ramsay, York.
Circuit No. 24 (additional appointment).—Dr. Thomas Wallace Cardiff.
Circuit No. 28.—Dr. Thomas Dalton, Llandudno.
Circuit No. 30.—Mr. Jabez Thomas and Mr. W. Frederick Brook, Swansea; and Mr. Martin Jones, Aberdare.
Circuit No. 37.—Mr. William Brown Holderness, Windsor; Dr. John Gordon Gordon-Munn, Bushey; Mr. William Lucknow Bradshaw, High Wycombe; Dr. William Collier and Mr. Horatio Percy Symonds, Oxford; and Mr. Robert A. Milligan and Dr. Frank Buszard, Northampton.
Circuit No. 47 (additional appointment).—Dr. Ralph Gooding, Blackheath, S.E.
Circuit No. 48.—Mr. Horatio Nelson Hardy, Dulwich-grove, S.E. Mr. Elliott Daunt, Sevenoaks; Mr. Norman Hay Forbes, Tunbridge Wells; Dr. Charles Pye Oliver, Maidstone; Dr. William Chatterton Bromley, Kent; and Mr. Charles John William Pinching, Gravesend.
Circuit No. 55.—Mr. Charles Henry Watts Parkinson, Wimborne Minster; Mr. William Rendall, Maiden Newton; Mr. Wm. Burrough Cosens, Dorchester; Mr. William George Vawdrey Lush, Weymouth; Dr. F. W. Ramsay, Bournemouth; Mr. H. Coates, Salisbury; and Mr. Edward Charles Garland, Yeovil.

THE LATE MISS FOSTER.—Dr. Slade-King held an inquiry at Morthoe on August 18th upon the death of Miss Winifred Foster. The evidence showed that the deceased was drowned by the ground-swell on August 14th, the body not being recovered until August 17th. Dr. Slade-King said that he had held office in the district for fourteen years and had never held an inquest on a case of drowning. A verdict of "Death by misadventure" was returned. Miss Foster was buried at Morthoe on August 19th.

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Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Sanitary Circumstances of the Bettws-y-Coed Rural District and on Prevalence of Enteric Fever and Diphtheria in the District, by Dr. S. W. WHEATON.[1]—The region of which Dr. Wheaton treats comprises hills, valleys, villages, and hamlets familiar to almost every holiday maker in North Wales. Bettws-y-Coed rural district, some 60,000 acres in area, contains the parishes of Bettws, Capel Curig, Trefriw, Penmachno, and Dolwyddelan. The census population of the district in 1891 was 5598, but in summer time, as Dr. Wheaton points out, the number of inhabitants is probably doubled. In each village and hamlet in the district Dr. Wheaton found a multiplicity of insanitary conditions. Certain of these conditions, such as the absence of public scavenging in the villages, nuisances from defective privies, or from keeping pigs close to dwellings, are common enough in scattered rural communities, and their abundance in the neighbourhood of Bettws can hardly be considered unexpected. But we are scarcely prepared to learn from the report that in this district of mountain streams nearly every village has a water-supply liable to dangerous contamination, or that to judge from the condition of cowsheds and dairies pure milk is as far to seek as pure water. Yet it appears that in the case of Bettws the water-supply of the village is taken from the Llugwy at a point just above the Swallow Falls. Between this point and Capel Curig, three and a half miles higher up the stream, Dr. Wheaton found "abundant evidence of gross pollution of the river by sewage from dwellings"; thus almost all the water-closet and other sewage from Capel Curig passes without treatment to the Llugwy, privies are built over small watercourses falling into the river above the intake, and cottagers living near the stream habitually empty their privy pails into it. Again, in Trefriw village, instead of taking the public supply from the large and unpolluted mountain lake Llyn Crafnant, the water is obtained from the River Crafnant at a point two miles below the lake. In the course of these two miles the pure lake water has received pollution from manured fields and by excrement and refuse from houses near the banks of the river. The public supplies of Cwm Penmachno and of Dolwyddelan are open to similar serious objections. Other defects pointed out by Dr. Wheaton in nearly all the villages in the district are defective sewers and improper means of disposal of sewage, unsatisfactory slaughter-houses, and cowsheds "filthy, overcrowded, and without drainage," in which when the cows are shut up "the crevices are plastered up with filth to keep the air out." Owing to the Infectious Diseases (Notification) Act not having been adopted in the district, information as to cases of infectious sickness was not easy to come by. Dr. Wheaton learned, however, of 13 cases of enteric fever in Bettws-y-Coed last autumn; of other cases of the same disease at Trefriw both in 1896 and 1897; and of 104 cases of diphtheria, 12 of which proved fatal, occurring in the village of Cwm Penmachno since the summer of 1897. As might have been expected from the state of things reported, sanitary administration by the rural district council is practically *nil*. The medical officer of health, Dr. Peter Fraser, has indeed drawn the attention of the district council to many of the sanitary evils of the place, and an inspector of nuisances, whose salary is but £60 for whole-time work, has done his duty in reporting a variety of unwholesome conditions. But the district council has in most cases neglected to apply any remedy, and even when moved to pass resolutions on sanitary matters it has taken no steps to see them carried out. It appears from the report that the Carnarvonshire County Council has now been successfully petitioned to create a separate Bettws-y-Coed urban district. Creation of such small urban districts is in any case doubtful wisdom. In this instance the rural council's neglect of its sanitary duties gives some plausibility to the demand for separation. But it is also a strong reason why that council should be made to do its duty rather than be assisted to shake off its responsibilities.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 2*d*.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Hastings Urban District.—Dr. Scarlyn Wilson reports a case of some interest *quâ* the infective power of desquamation in scarlet fever. On examining some school-children he found two members of one family peeling freely from an attack of scarlet fever contracted some six week previously. Apparently these two children had been attending school regularly since their illness, which was presumably not recognised. No other child, however, sickened from the disease in spite of the attendance of these two children until five weeks after the attack, when an outbreak occurred amongst the scholars. The question which occurs to us is whether the outbreak supposed to have been caused by these two desquamatory children was really so caused. Dr. Wilson also furnishes another interesting narrative, this time as to diphtheria. After an outbreak in a boys' school the scholars were sent home, and in eight weeks time, prior to the proposed reassembling of the scholars, a scraping from the throat of each child was examined. In some the bacillus of diphtheria was detected even although these children had never shown signs of diphtheria; nor did they do so subsequently.

Southampton Urban District.—Mr. Wellesley Harris reports an outbreak of pemphigus, apparently what is known as "pemphigus neonatorum." Fourteen infants were affected and the cases arose about the eighth or tenth day after birth. They did not all occur in the practice of one midwife though many of them did so. No satisfactory explanation of the cases was discovered. These bullous eruptions in newly-born infants are very frequently of syphilitic origin, but it is not apparent that this was the cause in the cases here in question. Mr. Harris calls attention to the large quantities of milk which are being imported into Southampton from France. The milk reaches Southampton in large cylinders and is from these despatched in the usual receptacles to its destination. Samples of this milk have been analysed and reported to be genuine milk of average quality; it, however, contains formaldehyde in large quantities. As Mr. Harris remarks, although this milk may in a sense be genuine we have no guarantee as to its being drawn and stored under satisfactory conditions, and it seems rather an absurdity to make stringent regulations as to our home supply and to admit foreign produce without demur—that is to say, unless we can enable the public to recognise what is of foreign origin and what is home produce. In connexion with foreign margarine, too, Mr. Harris has discovered a somewhat amusing, though none the less iniquitous, practice. Margarine from a French factory is taken on arrival at Southampton to a private house where it is worked up into half-pound pats, stamped to resemble butter, and finally hawked around the streets of Southampton by country-looking persons specially selected for this purpose. A question has been raised by Mr. Harris which presses for settlement in places other than Southampton. The fact that the details of house-drainage are so often settled in the surveying or engineering department without reference to the medical officer of health must frequently in such cases lead to friction between the departments and injustice to builders and householders. For the medical officer of health to condemn that which another department has sanctioned and approved is not an easy matter, and yet that is the position in which a conscientious medical officer of health must be frequently placed. Mr. Harris suggests that the building by-laws should provide that no new house shall be occupied until the house-drainage has been certified to be free from defect by the medical officer of health. Clearly some reform is necessary in this direction.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6510 births and 4727 deaths were registered during the week ending August 20th. The annual rate of mortality in these towns, which had increased in the five preceding weeks from 14·7 to 20·5 per 1000, further rose last week to 22·0. In London the rate was 23·4 per 1000, while it averaged 21·0 in the thirty-two provincial towns. The lowest death-rates in these

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towns were 8·6 in Halifax, 12·4 in Burnley, 12·7 in Oldham, and 13·7 in Huddersfield; the highest rates were 24·7 in Leeds, 26·4 in Preston, 26·9 in Sheffield, and 31·1 in Liverpool. The 4727 deaths included 1250 which were referred to the principal zymotic diseases, against 796 and 1127 in the two preceding weeks; of these, 994 resulted from diarrhœa, 74 from whooping-cough, 57 from measles, 53 from diphtheria, 42 from "fever" (principally enteric), 30 from scarlet fever, and not one from small-pox. No death from any of these diseases was recorded last week in Halifax; in the other towns they caused the lowest death-rates in Burnley, Huddersfield, and Gateshead, and the highest rates in Birmingham, Salford, Liverpool, Preston, and Sheffield. The greatest mortality from measles occurred in Portsmouth and Plymouth, from whooping-cough in Swansea, Salford, and Preston, and from diarrhœa in Croydon, Birmingham, Leicester, Liverpool, Preston, Sheffield, and Leeds. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 53 deaths from diphtheria included 26 in London, 4 in West Ham, 4 in Birmingham, and 3 in Leeds. No fatal case of small-pox was registered during the week under notice either in London or in any other of the thirty-three large towns; and only two small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2241, against 2321, 2326, and 2293 on the three preceding Saturdays; 187 new cases were admitted during the week, against 232, 224, and 201 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 174 and 171 in the two preceding weeks, rose again last week to 196, and were 30 above the corrected average. The causes of 45, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Salford, Leeds, Newcastle-upon-Tyne, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Wolverhampton, Birmingham, Liverpool, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·0 and 19·8 per 1000 in the two preceding weeks, further declined to 18·1 during the week ending August 20th, and was 3·9 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·7 in Edinbugh and 16·7 in Dundee to 20·4 in Leith and in Perth and 27·5 in Paisley. The 546 deaths in these towns included 70 which were referred to diarrhœa, 24 to whooping-cough, 9 to "fever," 7 to scarlet fever, 6 to measles, and 2 to diphtheria. In all, 118 deaths resulted from these principal zymotic diseases, against 134 and 136 in the two preceding weeks. These 118 deaths were equal to an annual rate of 3·9 per 1000, which was 1·9 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had increased from 55 to 80 in the four preceding weeks, declined to 70 last week, of which 32 occurred in Glasgow, 11 in Paisley, and 9 in Dundee. The 24 deaths from whooping-cough exceeded by 7 the number recorded in the preceding week and included 15 in Glasgow and 5 in Aberdeen. The deaths referred to different forms of "fever," which had been 1 and 5 in the two preceding weeks, further rose to 9 last week, of which 7 occurred in Glasgow. The 7 fatal cases of scarlet fever showed a decline of 5 from the number in the preceding week and included 5 in Glasgow and 2 in Aberdeen. The deaths from measles, which had declined from 25 to 13 in the three preceding weeks, further fell to 6 last week, of which 2 occurred in Dundee. The deaths referred to diseases of the respiratory organs in these towns, which had been 79 and 71 in the two preceding weeks, rose again to 80 last week, and exceeded by 18 the number in the corresponding period of last year. The causes of 25, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·9 and 25·5 per 1000 in the two preceding weeks, declined again to 21·8 during the week ending August 20th. During the past four weeks the rate of mortality in the city has averaged 23·8 per 1000, the rate during the same period being 19·8 in London and 17·8 in Edinburgh. The 146 deaths registered in Dublin during the week under notice showed a decline of 25 from the number in the preceding week, and included 28 which were referred to the principal zymotic diseases, against 27 and 31 in the two preceding weeks; of these, 22 resulted from diarrhœa, 3 from "fever," 1 from measles, 1 from scarlet fever, 1 from whooping-cough, and not one either from small-pox or diphtheria. These 28 deaths were equal to an annual rate of 4·2 per 1000, the zymotic death-rate during the same period being 6·3 in London and 1·2 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 19 in the four preceding weeks, further rose to 22 last week. The deaths referred to different forms of "fever," which had been 5 and 3 in the two preceding weeks, were again 3 last week. The mortality from scarlet fever and from whooping-cough showed a decline from that recorded in the preceding week. The 146 deaths in Dublin last week included 49 of infants under one year of age, and 30 of persons aged upwards of sixty years; the deaths of infants exceeded the number registered in any recent week, while those of elderly persons showed a decline. Five inquest cases and 4 deaths from violence were registered, and 43, or nearly a third, of the deaths occurred in public institutions. The causes of 5, or more than 3 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON ANTHONY GORHAM, M.D. R.U.I., has been placed on the retired list with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets. Surgeon Edward Cuffey has been allowed to withdraw from Her Majesty's Naval Service with a gratuity.

The following appointments are announced:—Staff-Surgeon B. C. E. F. Gunn to the *Severn*. Surgeon C. S. Bennetts to the *Halcyon*.

ROYAL ARMY MEDICAL CORPS.

Major W. E. Berryman proceeds from Portsmouth to Bulford Camp for duty during the manœuvres. Lieutenant-Colonel W. B. Allin officiates as Principal Medical Officer, Aldershot District, during the absence of Surgeon-General T. F. O'Dwyer with the Northern Army at the manœuvres. Lieutenant-Colonel W. T. Johnston is placed under orders for India. Captain R. J. W. Mawhinny is transferred to Dublin.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel A. S. Reid, Bengal Establishment, 38th Dogra Regiment of Bengal Infantry, is appointed Principal Medical Officer, Kohat-Kurram Force, vice Brigade-Surgeon-Lieutenant-Colonel Murphy, on leave. Surgeon-Captain Jordan, Officiating Deputy Sanitary Commissioner, Metropolitan and Eastern Bengal Circle, is granted furlough for twelve months. Surgeon-Captain Morwood, Civil Surgeon, Shahjahanpur, is appointed to hold Visiting Medical Charge of Hardoi in addition to his other duties. The services of Surgeon-Lieutenant-Colonel Mair (Bengal) are placed temporarily at the disposal of the Government of Bengal for employment as Officiating Inspector-General of Jails, Bengal.

The Queen has approved of the following admissions to Her Majesty's Indian Medical Service:—To be Surgeon-Lieutenants: Thomas Hunter, Walter Rothney Battye, Harold Budgett Meakin, George Hutcheson, William Glen Liston, Harold Boulton, Richard William Anthony, Ernest Frederick Gordon Tucker, George Edward Stewart, Frank Stuart Corbitt Thompson, Thomas Shepherd Novis, John William Watson, Herbert Joseph Richard Twigg, and Charles William McGillicuddy Orpen.—*London Gazette*.

ROYAL ARMY MEDICAL CORPS.

The following is the list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London:

	Marks.		Marks.
F. Warren	2538	G. W. G. Jones	2183
J. E. Hodgson	2617	J. W. H. Houghton	2117
H. P. W. Barrow	2602	H. S. Taylor	2101
M. H. G. Fell	2511	A. L. Scott	1991
T. C. Lauder	2415	J. W. Leake	1969
J. G. Gill	2292	R. H. Lloyd	1935
W. B. Winkfield	2266	D. E. Curme	1892
G. H. Goddard	2211	G. M. Goldsmith	1848

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THE INDIAN MEDICAL SERVICE.

The following is the list of candidates who were successful at the competitive examination for the Indian Medical Service, held in London on August 5th:

	Marks.		Marks.
J. C. H. Leicester	3179	L. E. L. Parker	2336
H. Innes	2888	T. S. Ross	2316
W. S. Willmore	2660	J. N. Walker	2278
L. T. R. Hutchinson ...	2604	D. E. Kemp	2274
A. C. Walter...	2553	V. H. Roberts	2259
C. Hudson	2523	J. E. Robinson	2215
A. M. Fleming	2469	G. P. T. Groube	2131
H. M. Cruddas	2460	G. King	2095
C. F. Weinman	2452	P. P. Atal	2091
E. L. Ward	2411	W. McM. Pearson	2027

MEDICAL HISTORY SHEETS FOR BARRACKS.

Acting on the recommendation of his medical advisers the French War Minister has decided on issuing orders that in future at all military stations a special sanitary register is to be kept up for each separate building occupied by soldiers, the object of the new ordinance being the accumulation of information likely to assist medical officers in their efforts to extinguish epidemic and contagious diseases. Each "barrack sanitary register" is to consist of two parts, the first part being devoted to a detailed description of the building, including general plan, altitude, style of architecture, aspect, material employed, cubature of rooms, date of erection, previous history of site, nature of soil, and subsoil, source and quality of water-supply, system of drainage with plans of drains old and new, sanitary condition of neighbourhood, &c., while in the second and more novel part of the register the medical history of each building is to be carefully kept up to date. Amongst many other things there are to be noted daily the number of occupants in each room, the number of men reporting sick together with the diseases they are found to be suffering from, the occurrence of epidemic or contagious diseases, the precise situation of the beds occupied by the affected soldiers, &c. The nature and date of all repairs are also to be recorded, as a full description is to be given of all sanitary measures which may be adopted. There can be no doubt that a register of this sort would afford valuable information in many doubtful cases and should similar records be deficient in our own barracks it would, we venture to think, be well to introduce them without delay.

THE SPANISH-AMERICAN WAR.

The Spanish-American war is happily a thing of the past. The Americans will now have to settle with the insurgents and natives of the places which they have already taken or which will be hereafter ceded to them. As far as Cuba is concerned there seems to have been a serious administrative failure on the part of the War Department at Washington. The state of things at Santiago, together with the alleged want of proper arrangements on board the transports conveying the sick and wounded from Cuba, the insanitary position and wretched condition of the sick camps at Montauk Point and other places in America whither the sick are being sent, have naturally given rise to very serious complaints. If the condition of things be as bad as is described it would seem that there was a state of unpreparedness on the part of the Americans which was as surprising as it was lamentable.

A FRENCH MEDICAL OFFICER ACCOMPANIES GENERAL KITCHENER'S ARMY.

Dr. Duval, surgeon-major of the 125th regiment of the line, has received permission to accompany the British and Egyptian forces in their advance on Khartoum. This officer, who is a Knight of the Legion of Honour, has already enjoyed an opportunity of making himself acquainted with the way in which our army medical affairs are managed on active service, having been present during the late operations against the Afridis on the Hindu Kush frontier.

DEATHS IN THE SERVICES.

Deputy Inspector-General of Hospitals E. W. Bawtree, Surgeon-Major (retired), at Mistley Hall, Essex, on August 13th, in his eighty-first year. He entered the Army in 1843, became Surgeon-Major in 1866, and retired with the honorary rank of Deputy Inspector-General in 1872. He served in the New Zealand War and acted as Senior Medical Officer in Taranaki from May, 1865, to April, 1866. He also served in the Abyssinian expedition as Principal Medical Officer of the British troops, 2nd Division, from March, 1868, to the termination of the campaign (medal).

Correspondence.

"Audi alteram partem."

BACTERIOLOGICAL LABORATORIES IN INDIA.

To the Editors of THE LANCET.

SIRS,—In a recent issue of THE LANCET I read the following:—

When the recent outbreak of plague occurred at Calcutta it was a matter of obvious importance that the exact nature of the disease should be determined with the least practicable delay. Happily for the Government of Bengal, the services of M. Haffkine were available and he was able to report, as the result of a bacteriological examination, that the outbreak was due to true bubonic plague. We have heard a great deal about the establishment of bacteriological institutes or laboratories in India; now here was an occasion in which a bacteriological laboratory in Bengal would have been of the greatest use, and we are glad to notice that the *Englishman* of Calcutta has called attention to the subject.

To the credit of the Municipal Commissioners of Calcutta be it said that, on the representations of the late medical officer of health, Dr. Simpson, they provided and equipped a bacteriological laboratory, so that I was able to work out my first case of plague bacteriologically. I obtained the bacillus in pure culture and sent two agar slopes to Professor Haffkine in Bombay for confirmation of my results, as I was advised that Government would not take the responsible step of declaring the city an infected area without the opinion of an expert. The post-mortem examination was absolutely typical of plague. I know of no other disease which produces such pathological features—huge hæmorrhages extending from an affected femoral gland up into the abdomen behind the peritoneum and half way down the thigh, and petechial hæmorrhages on the heart and other viscera. I made cultures from the gland, spleen and heart's blood. From the cultures I inoculated two guinea-pigs subcutaneously in the thigh. Both died four days later with buboes and hæmorrhages and I got the same bacillus in culture and under the microscope from them. I also obtained it growing in stalactites from ghee (clarified butter) floating on the surface of a flask of bouillon. So I had pathological, microscopic, and cultural proof, which was further supported by the clinical history I had obtained, before I heard from Professor Haffkine. I may add that my investigations were closely followed by Surgeon-Colonel T. H. Hendley, C.I.E., Inspector-General of Civil Hospitals, and Surgeon-Major H. J. Dyson, F.R.C.S. Eng., Sanitary Commissioner, who were satisfied with the accuracy of my results. I am, Sirs, yours faithfully,

J. NIELD COOK, D.P.H.,
Health Officer.

Municipal Office, Calcutta,
August 3rd, 1898.

BERI-BERI AND RICE.

To the Editors of THE LANCET.

SIRS,—*Apropos* of Dr. W. K. Hunter's very interesting report on two cases of beri-beri in the recent issue of THE LANCET[1] I would like to offer a criticism. Though beri-beri is not so common in India as is generally supposed yet it is frequently met with in Madras and Burma. In Calcutta and Bengal generally I only know of cases among Chinese in Calcutta. Till recently a lamentable confusion has existed in India about this disease. What is sometimes called beri-beri in Assam and Ceylon is now known to be ankylostomiasis. Cases of anæmic dropsy due to malaria have even been mistaken for beri-beri, whereas anæmia is neither a necessary nor important symptom of the disease. To return, however, to Dr. Hunter's paper. If his discovery of the white staphylococcus (identical with that of Pekelharing and Winkler) in rice be confirmed and found in other cases it will go far to prove Dr. N. Macleod's theory of beri-beri being not a "place" but a "food" disease. I have before me as I write Vordermann's elaborate report in Dutch on the subject of rice and beri-beri (*vide* also Dr. Eikjman's article in *Janus*, August, 1897); there it is shown that in many Javan prisons where "red" rice was used there was no beri-beri, whereas when "white" rice (i.e., rice with the red cuticle

[1] THE LANCET, June 25th, 1898.

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removed) was issued much beri-beri existed among the prisoners. No other factor, according to Dr. Vordermann's report, was of any importance compared with the distinction between "red rice" and "white rice." It is not easy to see how the removal of the red cuticle of rice could influence the incidence of a disease like beri-beri. The nitrogenous value of the rice would be practically equal in both cases, so the experience of the abolition of "kakkee" in the Japanese Navy does not help us. Moreover, in Bengal gaols, where the population is almost entirely a rice-eating one, we never get beri-beri, though the jail code insists most strongly on the issue of only thoroughly cleaned (white) rice (*vide* my "Manual of Jail Hygiene," p. 36). Can it be that the organism of beri-beri only attacks rice from the further East? I would ask medical officers of ships carrying Lascars to inquire the source of the rice issued to the crews. Is it from an Indian port or from Rangoon, Siam, or further East? There may be something in this suggestion. But no matter where the rice comes from how does the germ escape being killed by cooking? It is not easy to understand how any microbe could withstand the boiling which rice gets when cooked according to Indian methods. Has Dr. Hunter found the staphylococcus in cooked rice? Or if so, could the germ not have found its way into the food when exposed in plates on the theory that beri-beri is a *place* disease, as Manson holds? Manson, by-the-bye, in his Tropical Diseases Manual appears to have given up the organism of Pekelharing, and Glogner's amœba has so far little evidence. Surely the prolonged stay of beri-beri in the Richmond Asylum has given Dublin bacteriologists an opportunity of studying the organism of this disease. If so I have seen no accounts published. Perhaps Mr. C. Norman's paper at the Edinburgh meeting of the British Medical Association will afford the needed and expected light.—I am, Sirs, yours faithfully,

W. J. BUCHANAN, B.A., M.B., B.Ch., Dip. S. Med. Dub.,
Surgeon-Captain, I.M.S., Superintendent Central Jail, Dacca.

Dacca, Bengal, August 2nd, 1898.

BLOOD GRANULES.

To the Editors of THE LANCET.

SIRS,—May I be allowed to point out an error in the record of my demonstration of blood granules[1]? The relation of granules to red cells in Bright's disease and chronic gout is there given as from 1 to 30 to 1 to 40. It should have been from 1 to 1 to 1 to 5, as one of the chief points of the demonstration is that in pathology the granules are very numerous in Bright's disease and chronic gout, conditions in which all observers agree that there is much uric acid in the blood; and, on the other hand, are very scanty, from 1 to 30 to 1 to 40, in fever, in which observers again agree that there is little or no uric acid in the blood.

I am, Sirs, yours faithfully,

Brook-street, W., August 20th, 1898. ALEXANDER HAIG.

APOTHECARIES' HALL OF IRELAND.

To the Editors of THE LANCET.

SIRS,—Your Irish correspondent was in error in stating in THE LANCET of August 13th, 1898, that "the first examination by the Apothecaries' Hall of Ireland in conjunction with the Royal College of Surgeons in Ireland which has been held since the decision of the General Medical Council and the appointment of the new board of examiners has just concluded." Except in the cases of former candidates the Royal College of Surgeons in Ireland has ceased to examine in conjunction with the Apothecaries' Hall.

I am, Sirs, yours faithfully,

August 23rd, 1898. G. F. BLAKE.

"EUNATROL."

To the Editors of THE LANCET.

SIRS,—Messrs. Zimmer and Co. are obliged for the notice contained in THE LANCET of July 30th on their exhibits at the Edinburgh exhibition. With regard to the criticism on the part of your reporter about the name "eunatrol" they say: "These remarks we cannot but find very much out of place. Apart from the fact that the name of 'eunatrol' abbreviates the description of pure oleate of sodium by three words we have here an *absolutely* pure oleate of sodium. Oleate of sodium is by no means a new thing—its rancid and objectionable smell, however, made it practically useless. Our chemically pure oleate of sodium is a new invention, which we venture to say also deserves a special name."

We remain, Sirs, yours truly,

Pro W., B. AND CO.,
W. BREDT.

Lime-street, E.C., August 22nd, 1898.

*** The "reporter" in question was the chemist in charge of our analytical department. So far from finding his criticism out of place we consider it, on reflection, very apt.—ED. L.

[1] THE LANCET, August 20th, 1898, p. 515.

THE SOUDAN CAMPAIGN.

(FROM OUR SOUDAN CORRESPONDENT:)

SURGEON-GENERAL TAYLOR arrived a few days ago from England and the disposition of the various medical units was arranged. There are to be twelve field hospitals under the charge of Majors of the Royal Army Medical Corps, a 100-bedded hospital at the Atbara, and a 300-bedded one at Abadia. The hospitals on the lines of communication will be established on the various steamers which will run between the front and the base hospitals, and a medical officer will be on board the new gunboats which will play an important part in the bombardment of Omdurman. The troops from Darmali will be placed on board steamers there and taken up to Shatluka where the two brigades will concentrate, and from hence the general advance will be made. The cavalry and the Royal Artillery have each a field hospital allotted to them and this time there will be no want of medical officers or material. The Royal Engineers have been hard at work on the sun covers for the stretchers and a very good shaded stretcher has been made on the same plan as the Indian "dandy," on which severe cases can be moved with the minimum of jolting and exposure. Several new sets of capital instruments (aseptic) with sterilisers have been served out to the field hospitals and plenty of antiseptic dressings are available. The great difficulty will be the water for drinking purposes as we near Khartoum, as it is practically impossible to carry enough filters to supply the amount of filtered water needed for both brigades, but every precaution will be taken and the water will be boiled whenever practicable. It is intended to have a Pasteur filter for the field hospitals, but where transport is such a consideration it is not always possible to carry out good intentions. The health of the troops continues good and with the exception of a few scattered cases of enteric fever there is practically no sickness, but the men are getting weary of the forced inactivity and a move will do us all good. The one item which has not been decided on yet, so far as I know, is a hospital ship. This ought to be arranged for, as if we have any casualties and much sickness a properly equipped steamer at Alexandria with all necessary medical comforts and nursing appliances so that the patients could be put on board and taken straight to Netley would be of inestimable value. This ship should be entirely for the sick and wounded and should be ready at the close of the campaign. It is to be hoped that the general public will realise that upon this occasion the medical arrangements have been properly thought out and every item carefully looked after and that if there is any breakdown it will not be the fault of the officers or men of the Royal Army Medical Corps.

Fort Atbara, August 5th, 1898.

ABERDEEN HOSPITAL SATURDAY.—The balance at credit of the Aberdeen Friendly Societies' Hospital Saturday Fund has been allotted as follows:—Royal Infirmary, £600; Sick Children's Hospital, £150; Dispensary, £150; Convalescent Hospital, £100; District Nursing Association, £65; Ophthalmic Institution, £50; Hospital for Incurables (adults), £50; Hospital for Incurables (children), £10; total £1175. In virtue of these contributions the general committee have nominated 14 life managers for the Royal Infirmary, 6 for the Sick Children's Hospital, 6 for the Dispensary, and 1 each for the Ophthalmic Institution and the Morningside Hospital (Incurables).

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THE ABUSE OF NURSING CHARITIES.

(FROM OUR SPECIAL COMMISSIONER.)

FROM evil good sometimes springs, and it does seem as if the medical profession has every reason to felicitate itself on the action taken by the "Maternity Charity and District Nurses' Home" of Plaistow. But for the aggressiveness of this so-called charity the profession in the east London suburbs would have remained in its former condition of apathy. Now, however, the spirit of organisation has spread, the necessity of resistance and self-defence is recognised, and a strong medical union is in course of formation. In August last year the Bishop of Colchester addressed an appeal to the *Times* for subscriptions to aid in establishing a branch of the Plaistow Nurses' Home at West Ham. Thus the grievance, which was the cause of many complaints at Plaistow, threatened to spread over to other districts. To Mr. Charles Allen is due the credit of having taken the initiative in organising resistance. He sent out numerous circulars, called personally on many of his medical colleagues, drew up a protest, and succeeded in obtaining the signatures of 51 medical practitioners to this manifesto. Several meetings of medical men were held and finally it was decided to form a union which is known as the "East Suburban Medical Protection and Medico-Ethical Society, Limited." It is a pity that at its start in life this organisation should have encumbered itself with so unwieldy a title. The word "union" is the only word necessary and it is just the one word which has been left out. The society, it will be seen, is a union. It was only necessary to add that it was a medical union and to give its geographical limitation. The title East Suburban Medical Union would have better met the case. However, this is quite a minor matter, and when the society was first started no one seems to have foreseen how rapidly it would develop into a genuine union. Indeed this is the most instructive and hopeful phase of the whole question. A grievance concerning a nursing institution brings members of the profession together, and thereupon they at once discover that there are scores of other grievances, that the position of medical men is threatened from all sides, that resistance by the individual is impossible, and the formation of a strong union is the only policy offering any chance of success.

Of course, the first action taken related to the grievance which had brought members of the profession together. A deputation was appointed to wait upon the Plaistow Maternity Charity to explain, firstly, that this charity was breaking its own rules by charging fees and that its nurses, whether trained or only serving an apprenticeship, were competing with the medical profession. Many persons who were in the habit of paying guinea midwifery fees to their medical advisers now called in one of the nurses, who only charged 5*s*. The Plaistow Maternity Charity obtains premiums of from £15 to £40 from the women who join this institution to be trained as nurses, then fees are obtained from the patients, and, finally, on the pretext that this is a charity, large donations are collected from the public. Under such circumstances there is no reason why the institution should not in the course of time be converted into a paying commercial concern. How can medical men or trained professional nurses who have no other source of income but their fees compete against an institution which not only receives fees from the patients but premiums from its nurses and large subscriptions from the public? All the medical men complain of this competition. They even accuse the nurses of touting and of interfering with the treatment of their patients. Thus in a house let out in tenements there may be two families. A medical practitioner is attending one family and a nurse from the Plaistow Nurses' Home is attending the other family. In the medical man's absence the nurse will give advice gratuitously to the medical man's patients. This may be done from motives of kindness and good nature, but it interferes with the medical treatment and advertises the fact that the nurses cost less than the medical practitioner. Also this interference may at times injure the patients, for it must be borne in mind that these nurses are often raw girls recruited from the uneducated classes who have paid their premiums but have not yet learnt much about nursing. Of course, any help given gratuitously to the extreme poor is better than no help at all; but when fees are charged and fully qualified practitioners are driven away and replaced by nurses the question as to the ability and knowledge possessed by these nurses may very justifiably be raised. Ought untrained nurses who are just beginning their apprenticeship to be sent to private patients?

It was on Feb. 11th last that the deputation of medical men waited upon the committee of the Plaistow Maternity Charity. In answer to their protest they were subsequently informed that the nurses' midwifery fee would be raised from 5*s*. to 10*s*., and that everybody would be forced to pay unless upon inquiry it could be proved that the breadwinner of the family was not earning more than £1 per week, or if a clergyman or a medical man asked that the nursing should be done gratuitously. Thus the Plaistow Maternity Charity has deliberately set itself to work to tap the sources of income on which the poorer practitioners rely—namely, patients whose earnings are above £1 a week and who can therefore be made to pay a midwifery fee of 10*s*. It is true that a promise has been given not to allow touting, and that this is now against the rules of the Plaistow Maternity Charity. The zeal, however, of subordinates renders this rule ineffectual. Thus, for instance, a short time ago a medical practitioner arranged to take a midwifery case and the fee was to be one and a half guineas. The patient said she proposed to engage a nurse from the Plaistow Maternity Charity and went there for that purpose. After having made the necessary arrangements the attendant who took down the name and address inquired what the applicant proposed to do about a midwife. The lady replied that having engaged the services of her usual medical attendant she did not require a midwife. In spite of this, and just as the lady was leaving and going downstairs, the attendant called out after her, "Do you really think a doctor is necessary?" Here, then, was a deliberate effort made to replace a fully qualified practitioner by a nurse who was to undertake this midwifery case though her qualifications might well be open to question. It was an attempt to undercut a medical practitioner by offering a nurse who would take a much smaller fee. The acceptance of the smaller fee by the nurse is economically possible because the institution from which she comes is supported by charitable donations. Thus instead of helping the poor this charity is in such cases working to impoverish medical men. A nurse whose education as a nurse has cost her from £15 to £40 is sent to replace a medical practitioner whose medical education has cost him from £600 to £1000. No wonder that the nurse can take a smaller fee, particularly when she lives at the expense of a charitable institution.

At the same time it is freely acknowledged by the medical practitioners that the nurses from the Plaistow Maternity Charity and District Nurses' Home are very useful, that they do excellent work, and that they would be most worthy of general support if they would not go beyond their legitimate field of action. Their business should be to nurse the poor gratuitously, but to nurse the poor alone. If they nurse persons who can afford to pay then they are unfairly competing against professional nurses who depend for their livelihood on the fees which well-to-do persons can give. The position of a well-trained nurse is as worthy of consideration as that of any other member of the community, and it is gross abuse that money given for charitable purposes should be employed to ruin so estimable and useful a calling as that of a trained nurse. Yet many high-class, or at least wealthy, people in the eastern suburbs of London employ nurses from the Plaistow Maternity Charity for various kinds of illness. For this ordinary nursing the nurses are not allowed to take any payment, but when the people who employ them have means they generally make a donation to the charity. Such donations are payments in disguise. From every point of view this is a heinous system. A person is ill; he has means and he wants a nurse. The only honourable course to pursue is to employ a trained nurse and pay the full market value of her services. Instead of this the patient sends to a charity, takes a nurse away who ought to be attending to the poor—thus defrauding the poor of the help which this nurse could give them and for which charitable persons have subscribed their money. The rich man, after having been nursed gratuitously by the charity nurse, now steps forward as a philanthropist by making a donation to the charity, giving probably a sum inferior to that which an independent trained nurse would

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have cost him. Far from being a philanthropist, this man has been favouring a system of undercutting the market for trained nursing, thus helping to ruin the trained nurses. On the other hand, he has withdrawn from the slums of London one of the nurses available for the nursing of the extreme poor. He has saved a few shillings at the cost of the poor and at the cost of the trained nurses; and yet he appears on the list of donors to a charity, and those who are not acquainted with the inner workings of the transaction would look upon him as a philanthropist. This has happened over and over again, and it is quite possible that many who have committed this abomination are in no wise conscious of having done anything wrong. In this commercial community the instinct to buy in the cheapest market is so strong that it is done automatically and without reflection as to the moral consequences and responsibilities. But while it is thus scarcely surprising that some members of the general public should with thoughtless ignorance act in this manner it is most astonishing that a charitable and nursing institution should lend itself to the perpetration of such gross abuse. Here is the Plaistow Maternity Charity taking fees of from £15 to £40 to train poor girls as nurses, and yet it employs these very nurses to undercut the market and render the profession of nursing more and more precarious and ill-paid.

If from the question of ordinary nursing we proceed to the question of midwifery identically the same grievance will be found, only in this latter case the victim is not the trained nurse but the general medical practitioner. The charity nurse who assumes the functions of a midwife does for 5*s*.—now for 10*s*.—what the medical practitioner has been in the habit of doing for a guinea and upwards. Persons who formerly found no difficulty in paying the higher fee avail themselves of the charity to save their money. Donations given to the charity in order to help the extreme poor thus serve to economise the resources of the well-to-do and to impoverish the medical practitioners. But even with the poor there is no need of these midwives. In East London there are unfortunately many fully qualified medical men who are reduced to accepting half-guinea midwifery fees. Indeed, one or two have been known to take as little as 7*s*. 6*d*. Surely anyone who cannot afford such a sum for so serious a matter is justified in calling in the Poor-Law medical officer. Therefore where does the need of the midwife come in? Nursing and monthly nursing are often much needed and this is the proper field of action for a charity if the people are really poor. Instead of thus limiting their action to cases where charitable help is really needed the Plaistow Maternity Charity sends out its nurses to act as midwives to families who can afford to pay them 10*s*., thus taking the bread out of the mouths of the poorer practitioners and depriving the patients of the services of a fully-qualified medical attendant.

Such is the grievance which has brought the members of the medical profession together in east suburban London. It will be seen ultimately that as soon as they began to discuss this matter they discovered that there were various other complaints and difficulties which also required careful and energetic handling. Hence a union has grown out of this trouble and its action promises to be fruitful in the bringing about of many reforms which will be to the advantage of the general public and of the medical profession.

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Immediate Evacuation for Plague.—The Mortality in the Bombay Presidency.—The Enormous Plague Expenditure.

PALANPORE city was visited by plague in February, 1897, and a mild epidemic lasted until May. It became reinfected from Bombay in August. In the first outbreak few measures seem to have been adopted and during the second outbreak at first neither vigour nor thoroughness characterised the steps taken. On Nov. 2nd last the city was evacuated and by the end of the month the epidemic was practically at an end. House-to-house visitation had been a failure because of the objection to segregation and hospital treatment and also to the apathy of the search parties. Eight thousand people turned out into huts built by themselves. So far as the city is concerned the cessation of plague may be explained by the rapid subsidence occurring in the natural course of an epidemic, the outbreak having lasted about its normal period; but when every freshly-infected village in the district was dealt with on this plan the death-rate was reduced from 72·9 to 60·4 per cent. The proportion of cases to population is not given, but the lowered mortality is a distinct gain, and whereas previously 25 villages had recorded 465 deaths the 27 freshly-infected villages returned only 191 deaths. It is urged by the medical officer in charge that the cases were reduced by one half and that the mortality was lowered 12·5 per cent. The expenditure is said not to have involved the crushing liabilities which weigh heavily upon many cities and districts in the Presidency. The enormous expenses incurred by the plague operations have very seriously crippled the finances of many towns and cities. The municipality at Karachi have instituted a plague tax of 3 per cent. on house and land owners which will remain in force until 1901. In Bombay large sums have had to be borrowed—the expenditure having been over 30 lakhs of rupees—which will cripple the progressive work of the municipality for years. The expenses at every place having been so out of all proportion to the result achieved it may even be stated as doubtful, if plague had been left to take its course unchecked, whether it would have been attended by any greater disaster. The general unrest and the disturbance to trade would certainly have been avoided.

A recrudescence of plague has occurred in villages near Hyderabad; the mortality at places where plague still lingers is very high. For the past week Bombay records 82 cases, 70 deaths; Karachi 23 cases, 19 deaths; Surat 107 cases, 86 deaths; Sutara 59 cases, 56 deaths; Belgaum 338 cases, 262 deaths; Dhawar 164 cases, 129 deaths; the total for the Presidency being 1096 cases and 904 deaths—a percentage of 82·4, the total deaths recorded from plague being 93,183. In Calcutta the cases still continue to be sporadic. In Bombay the deaths from plague remain at an average of about 10 a day, one district alone, called Mandvie, maintaining it in anything like epidemic proportions. The great improvement scheme for Bombay involving several millions of pounds, is likely to be postponed.

August 5th.

THE SPANISH-AMERICAN WAR.

(FROM A SPECIAL CORRESPONDENT.)

Detention Camp, Egmont Key, August 9th.

Reception and Care of Sick and Convalescent.

SINCE I last wrote we have heard of a letter in the *New York Times*, from its correspondent here, in which strictures are made upon the direction of this camp and indirectly upon Dr. H. D. Geddings. The mere suspicion of any criticism of Dr. Geddings excited the liveliest indignation among the officers who have been detained here. The facts in the matter are briefly as follows. On the arrival of the steamship *Santiago* at quarantine on July 29th we were told we would be put on this Key for detention. It was found upon inquiry that Dr. Geddings was not at the camp, having taken a sick steward that very morning to Port Tampa. He did not expect any sick to be landed here, but, on the contrary, had received positive instructions that this camp was not to be used for any such purpose, so there was no reason why he should not have been temporarily absent. He did not receive our urgent telegram until 9 P.M. on Friday. After that late hour he made arrangements for stores and many necessary things, which the sudden call for provision for 186 men (mostly sick) demanded and he had also to obtain formal permission from Washington to allow us to land and occupy the camp. He was on hand early next morning. We were landed quickly without exposure or fatigue and in an hour or two at most the sick, convalescent and well were comfortably tented and given an abundance of good food. Dr. Geddings made constant rounds among the sick and well and saw that everything possible was done for them. In an incredibly short time he had a sufficient number of hospital stewards at work and things were running smoothly.

From the first the food has been plentiful and well cooked and many delicacies have been provided for both officers and men and dispensed with a liberal hand. The camp has been kept wonderfully clean and every little detail has been

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looked after by Dr. Geddings himself. After the storm he took the officers (it so happened that the tents which they occupied had suffered most) and some soldiers into his own place and tenderly cared for all. During the night of the storm the chief steward (Mr. Peck) was out the entire night attending to the sick and Dr. Geddings was up very late.

Both officers and men have improved greatly under Dr. Geddings's care and all are most thankful to him for his courteous and unremitting attention. I have shown this statement to the officers, including General Duffield, Major D. B. Wilson, Captain C. D. W. Wilcox, Lieutenant Mark L. Hersey, Major Thornton, Major Wessels, Lieutenant J. C. Reeves, and others, who heartily endorse what I write.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Bangor Cottage Hospital.

FROM the annual report of this seaside hospital and convalescent home I find that there were 60 patients during the past year. The addition of new bath-rooms and improved sanitary arrangements has proved of the greatest advantage. The Society for Providing Nurses for the Sick Poor, Belfast, has sent 28 patients. The local medical men are thanked for voluntarily giving their services.

Fever in Armagh.

At a meeting of the board of guardians of Armagh, held on August 16th, it was reported that a third outbreak of fever had occurred in the Irish-street Barracks of the constabulary within one year. It seems that repeated representations had been made to the authorities by the local sanitary bodies to have the condition of matters remedied, but so far no effectual steps have been taken. One of the guardians proposed a motion, which was adopted, that the attention of the authorities should again be called to the condition of this barrack and that they be requested to provide a proper sanitary building for the police stationed there.

Sanitary Condition of Armagh.

At a special meeting of the Town Commissioners of Armagh, held on August 19th, convened to take steps regarding the insanitary state of many parts of the city as disclosed by Mr. Gray's report, which was before the board at a previous meeting, Mr. Gray indicated a large number of houses as being unfit for human habitation. Other dwellings were insanitary but might be made fit for human habitation. Practically, the report meant the closing of at least 100 houses, leaving perhaps from 400 to 500 persons without a home. It was decided to adjourn the consideration of that part of the report dealing with houses unfit for habitation until the September meeting and the landlords of those houses which Mr. Gray believed could be made fit to live in were ordered to be served with a specification of the work which the Commissioners required to be carried out.

Belfast Royal Hospital.

At the quarterly meeting, held on August 22nd, it was reported that during the previous three months there had been 556 intern and 6571 extern cases. A sum of £315 15*s.* 10*d.* had been realised by Hospital Saturday. At the close of the previous quarter the debt against the hospital amounted to £1544 18*s.* 11*d.* Since then the receipts from all sources had been £2007 1*s.* 0*d.* and the expenditure had been £2334 0*s.* 10*d.*, thus increasing the debt by £326 19*s.* 10*d.*, making the amount now owing by the hospital at the end of the eleventh month of the financial year £1871 18*s.* 9*d.* Owing to the rapidly increasing population of the city the demands upon the hospital are becoming more pressing and call for greater support and generosity from every section of the community. Professor Whitla, Dr. O'Neill and Dr. A. B. Mitchell were all re-elected medical attendants of the institution.

Visit of Delegates from the Dublin Health Congress to Belfast.

On August 22nd a company of delegates to the Dublin Public Health Congress, numbering some 65, paid a visit to Belfast on the invitation of the Lord Mayor and Lady Mayoress of that city. They were met and cordially welcomed at the railway station on their arrival by the local reception committee and were taken round various parts of Belfast, visiting the fire brigade station, the shipbuilding works at Queen's Island, the filter works of the Belfast water commissioners, &c. The Lord Mayor (Alderman Henderson, M.A.) entertained the delegates most hospitably to luncheon at the Grand Central Hotel. They returned in the evening to Dublin.

Irish Academic Honours to Scotch Medical Men.

The Royal College of Physicians of Ireland has conferred honorary Fellowships on Dr. A. Crum Brown of Edinburgh and Dr. Matthew Hay of Aberdeen. The honorary diploma in State Medicine has at the same time been conferred upon Sir Henry Littlejohn of Edinburgh.

Death by Lightning in the County Cork.

Last Wednesday night and Thursday morning a singularly violent thunderstorm passed over the south of Ireland. The flashes of lightning were so vivid and occurred at such short intervals that many people believed their houses to be on fire. The heavens were repeatedly illuminated and the smallest objects could be clearly discerned on the thoroughfares. The loud thunderclaps reverberating in quick succession caused considerable alarm to the timid. In many places a stampede occurred amongst cattle and several were killed by the lightning. Farmers have also to bewail considerable damage to crops, which had been particularly promising. It is stated that a young man, twenty-five years of age, residing near Macroom, was struck by the lightning. He was sleeping with his brother and in the course of the night, being greatly alarmed, got out of bed and walked from room to room. After a time he returned to bed and soon afterwards his brother spoke to him, but as he received no reply he endeavoured to arouse him, and then found that he was dead. Later it was ascertained that the floor of one of the rooms had been torn up, apparently by a thunderbolt, and it was assumed that the poor young man was struck by the electric fluid whilst wandering through the house, but the innate probabilities of the case are that fear acting on a weak heart was the immediate cause of death.

Resignation of a Medical Officer.

Dr. Thomas Nedley has resigned his appointment of surgeon to the household of the Lord Lieutenant of Ireland.

August 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Avian and Human Tuberculosis.

A PERFECT wealth of communications dealing with this subject has been laid before the Congress now sitting, but perhaps the most interesting researches are those of M. Nocard. He reminded his hearers that at first sight tuberculosis in birds appears to be very different from that in human beings. The fowl cannot be infected by inoculation with tuberculosis from a human being any more than from a bovine. On the other hand, certain animals, such as the dog and the guinea-pig, which are most susceptible to infection from both human and bovine tubercle, are very refractory to avian tubercle. If, however, a guinea-pig be inoculated in its peritoneal cavity with tuberculous matter from a bird it often dies, showing a special kind of lesion. A rabbit becomes tuberculous in a very different way whether the tuberculous matter be taken from a bird or from a human being. But after the inoculation has been passed through a series of animals the resulting lesions become similar. Horses, which are very fairly resistant to experimental tubercle, contract under natural conditions, tuberculosis rather commonly. Two types of the disease exist which have for a long time been distinguished clinically as the abdominal type and the pulmonary type. Recently M. Nocard has been able to establish the fact that these two forms answer to the two different origins of the tubercle bacillus. The pulmonary form is set up by the bacillus of human tubercle and the abdominal form by the avian variety. He has also found that the sputum of a tuberculous patient will kill a rabbit by inoculation but only very rarely a guinea-pig. Cultures made after several passages through a rabbit were exactly similar to those obtained from a tuberculous bird. The eating of tuberculous poultry is therefore not without danger. M. Nocard recalled numerous instances where poultry-yards had been infected by tuberculous people employed to look after them, but it is known that fowls which pick up

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tuberculous sputa do not themselves become tuberculous. M. Nocard attempted to alter the bacillus of human tuberculosis by sowing it in the peritoneal sacs of poultry. He enveloped a glycerinated bouillon culture in a little bag of collodion and inserted it into the peritoneal cavity. After leaving it there for from five to eight months he withdrew it and found it to contain a sort of paste made up of bacilli. Cultures made from this paste grew extremely well, but a very interesting fact was observed. The bacillus had lost its human characteristics and assumed avian characters. It grew at high temperatures and the cultures did not present the characteristic frayed-out clumps. The bacillus was not yet fatal to fowls, and it was not until two or three passages through fowls and after from four to six months' time that it attained virulence enough to produce tuberculosis in these birds. In one case, however, a fowl suddenly contracted tubercle at the end of eleven months from the introduction of the collodion bag and at the post-mortem examination it was found that the bag had burst, thus showing that the development of the bacillus had proceeded far enough at the moment of the bag breaking to produce tubercle in the fowl. These experiments, M. Nocard considers, are a proof that human and avian tubercle are only two different varieties of the same disease.

The Congress of Neurology.

The Congress of Alienists and Neurologists now sitting at Angers have decided that the next meeting shall be held at Marseilles in April, 1899, with M. Doutrebente as President.

Transmission of Toxins from the Fœtus to the Mother.

At the meeting of the Academy of Sciences held on August 1st M. Charrin read a paper on the above subject. He stated that after a series of experiments he has succeeded in poisoning pregnant animals with diphtheria toxin by injecting this toxin into the fœtus while still *in utero*. He plans his incisions so as to avoid the placenta and distributes the doses among the various fœtuses. Abortion almost invariably takes place, but it is sometimes delayed long enough to allow the poison to circulate in the placenta. The nature of these microbial principles, the structure of animal membranes, and the difficulties of dialysis do not permit the question of transmission from the fœtus to the mother to be answered on merely *a priori* grounds. M. Charrin has not been able to obtain by this method a vaccine which is inimical to either diphtheria or tetanus, but in some few cases he has been able to augment the resistance of the mother to the bacillus pyocyaneus by using the corresponding toxin. The toxin employed, however, is very weak. He considers that by the process of dialysis or of selection the maternal economy absorbs weak doses of toxin or of certain portions of the toxin. From that time the maternal economy becomes resistant and Colles's law is founded on analogous facts. If in place of an artificial intra-fœtal injection it be supposed that things occur as they do in syphilis, if it be admitted that the fœtus receives a virus transmitted by the male parent, the toxins of this virus would at some definite period exist in the organs of the female parent after having during the intermediate stage existed in those of the offspring. These toxins bring about an immunity—that is to say, they confer on the tissues powers of phagocytosis or else of secreting bactericidal or antitoxic principles. To sum up, by means of the intermediary within the uterus the maternal cells acquire properties identical with those of the paternal cells. But the maternal organism transmits some of its properties to its descendants. When a new sire comes on the scene, the first one no longer having relations with the mother, and when a new impregnation takes place in the same mother she is able to impart to her new offspring characteristics which have been conveyed to her by the first sire. The phenomena of telegony may be explained in this way.

August 23rd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Professor Koch in Rome.

IN modification of his programme Professor Koch is now in Rome. At the instance of his Excellency the Prime Minister, General Pelloux, who is also (significantly enough, after the bread riots), Minister of the Interior, he was met at the station by the Commendatore Santoliguido and Professor Gozio, both representing the Department of Public Health and both empowered to afford him every facility in the prosecution of his study of malarial fever. Thereafter he had an interview at the Palazzo Braschi with General Pelloux, whence, attended by Professor Gozio, he proceeded in company with his senior assistant, Dr. Pfeiffer, to the Santo Spirito Hospital and began immediately to make the requisite preparations for his researches. He examined many of the patients in the malarial fever wards and on leaving took with him specimens of the blood of the more typical cases. He then repaired to the laboratories connected with the Public Health Department, of which Professor Gozio is director, and with that gentleman's assistance selected the *locale* in which to conduct his experiments. These, it is understood, he will commence immediately, and will prolong his sojourn in Rome for another thirty days at least, or until they are satisfactorily completed.

August 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Artificial Respiration.

DR. ANTON BROSCH, in an article published in the *Archiv für Klinische Medicin*, gives an account of thirty-one experiments he has made in order to prove the possibility of the gastric contents being drawn into the lungs during artificial respiration. The greatest quantity of fluid which can be aspirated by artificial respiration amounts to 1210 c.c. The difference between experiments on the dead body and the conditions met with in the living subject is that aspiration of the gastric contents during artificial respiration is more easy in the living subject than in the dead body. The methods of artificial diaphragmatic respiration are the sources of the greatest danger. An experiment made by Dr. Brosch proved that even in the living subject when the stomach is full its contents may be pressed into the pharyngeal cavity by massage and that the cardiac orifice offers but a trifling resistance. An elastic tube introduced into the œsophagus will prevent the contents of the stomach from finding their way into the air passages and Dr. Brosch recommends that this precaution should be taken before artificial respiration is commenced.

Largin.

The *Medicinische Presse* of August 14th contained an interesting report by Dr. Kornfeld on largin, a new remedy for gonorrhœa. It is a greyish-white powder produced by the action of an ammoniacal solution of oxide of silver on an alcoholic solution of the dry product of decomposition of the paranucleoproteids. In a solution even of the strength of 1 in 4000 it kills gonococci in five minutes and is therefore certainly superior to either nitrate of silver or protargol. Dr. Pezzoli, who first made use of it, came to the following conclusions. Largin is of at least the same anti-gonorrhœal value as the other silver-albumin compounds and in its power of killing gonococci it is superior to them; it penetrates more deeply than they do into dead organic substances. These properties show that largin fulfils the most important conditions of an efficacious remedy against gonorrhœa as given by Neisser, killing the gonococci at an early period and entirely without increasing the inflammation of the mucous membrane or injuring the tissues or adding to the pain. Treatment ought to be commenced at an early stage in order to prevent the immigration of the gonococci into the deep parts of the mucous membrane, the connective tissue, and the glands. Largin checks the further proliferation of the gonococci and as it forms no precipitate with albumin it penetrates the tissues, unlike nitrate of silver, which immediately after application produces a film whereby the further penetration of the solution is hindered. Dr. Kornfeld has employed largin in 29 cases of gonorrhœa, in the first group of which, consisting of recent acute anterior urethritis, its success was very marked; the secretion decreased, the gonococci and the filaments disappeared, and the average duration of the treatment was thirty days. In one instance, however, there was an occurrence of slight subacute posterior urethritis during the injections. In the second group, in which the disease had already extended to the posterior part of the urethra and to the urinary bladder, largin caused a decrease but not a complete disappearance of the gonococci.

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The third group comprised 6 cases of chronic forms of urethritis, some of which presented recent subacute exacerbations. The results showed that largin was superior to the other silver-albumin compounds. A valuable feature of the use of this remedy is the prevention of posterior urethritis.

Insurance against Sickness for Medical Men.

The German section of the Bohemian Medical Chamber is contemplating the formation of an association for providing financial assistance for medical men during illness. Members who are incapacitated by illness will be entitled to 4 gulden (about 8*s.*) daily during the first 140 days and to 3 gulden daily for the next six months. The preliminary circular remarks that the time has gone by when medical men earned enough by practice to make provision for their old age and that they must now be content to make a livelihood. The average income of the majority of medical men in that district is less than £90 a year.

August 22nd.

Obituary.

KAIKHOSRO NASARVANJI BAHADHURJI, M.D. LOND.

INFORMATION has been received of the death of Dr. K. N. Bahadhurji. The deceased, who was a young man at the time of his death, was M.D. of London and a very able physician. Some two years ago he worked in the most devoted way among the plague-stricken population of Bombay and was at the head of the first plague hospital erected in that city. He was an ardent advocate of Indian medical reform and was sent over here by his compatriots in 1896 to plead the cause of reform before the British Medical Association at Carlisle. He embodied his views in a pamphlet called "Medical and Sanitary Reforms in India," concerning which we said in a leading article[1]: "It seems reasonable, on grounds of justice and finance alike, that every effort should be made in the direction of enlarging the uncovenanted medical service, and we do not see why natives should not qualify in hygiene and public health and usefully fill many posts throughout the country." Dr. Bahadhurji was a master of fluent and easy English as well as being generally well read.

THOMAS FRANCIS I'ANSON, M.D. ABERD., L.R.C.P. LOND., M.R.C.S. ENG., J.P.

DR. I'ANSON of Whitehaven, who died at his residence there on August 19th, at the age of seventy-five years, was the oldest medical practitioner in West Cumberland. He was born in London, studied medicine at St. George's Hospital, and became qualified as M.R.C.S. Eng. and L.S.A. in 1846. In the same year he received the appointment of house surgeon to the Whitehaven and West Cumberland Infirmary, and in 1848 published in THE LANCET clinical reports of some of the cases which came under his observation in the fever wards. In due course he became consulting surgeon to the infirmary, an honourable office which he retained until the time of his death. Dr. I'Anson graduated as M.D. at King's College, Aberdeen, in 1848, received the diploma of L.R.C.P. Lond. in 1868, and was made a magistrate for Cumberland in 1888. His practice became very extensive and he held a prominent position among the medical men of the district. He was perpetual vice-president of the Cumberland and Westmorland Branch of the British Medical Association, and when the Association met at Carlisle in 1896 he was president of the Ethical Section and read a paper on the Better Management of a Provincial Infirmary.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board under the Five Years' Regulations in the subjects indicated:—

Part I., Chemistry and Physics:

Acres, George C. Johnstone.
Archer, Henry.
Archibald, Richard James.
Balme, Harold.
Bartlett, Edward Leslie.
Bateman, Ambrose Harold.
Battle, Charles John.
Beadnell, Herbert Owen Marsh.
Bellamy, Henry Francis.
Bent, Percy Claude Vincent.
Best, John Gordon de Graves.
Bishop, Thomas Henry.
Bourdas, John.
Bourns, Frank Grose.
Bradshaw, Gerald Arthur.
Bridges, Roland Harley.
Brown, Robert Dixon.
Bubb, Charles Henry.
Bush, William Henry.
Caton, John Wilfred.
Cheatle, William George.
Cleveland, John Wheeler.
Cole, Percival Pasley.
Corbin, John.
Cordner, Robert H. Lucas.
Couldrey, Thomas Reginald.
Cran, Hugh Rose.
Crozier, George R. Henderson.
Davis, Edward David.
Denyer, Clarence Hamul.
Dixon, Alban.
Dunkerton, Norman Edwin.
Eager, Mervyn.
Edwards, Kenelym Cobham.
Faulks, Edgar.
Featherstone, John Wilfred.
Fennell, Linton Albert.
Fiddian, Arthur Edwin.
Footner, Bertram Maughan.
Garrard, Edward Brown.
Glendining, Bryden.
Hallowes, Arthur.
Halsall, Cuthbert Murray.
Harris, Robert H. T. Penruddocke.
Harvey, Charles Walter Cowell.
Harvey, Frank.
Hawkins, William Lawrence.
Hesse, Harold William.
Hodgson, Ernest Charles.
Ingouville, John George.
Jays, Tom.
Johnson, Edwin Charles.
Jones, Hector.
Jones, Seymour Whitworth.
Lambert-Shea, William Albert.
Lister, Frederick Spencer.
Macphail, Frederick James.
Moon, Archibald Trevor.
Mummery, Stanley Parkes.
Neil, William Herbert.
Nettell, John Patten.
Nicholas, Cecil Francis.
Nicoll, Charles Vere.
Page, John H. Le Bouverie.
Palmer, Harold Thornbury.
Parsons, Edward Daniell.
Price, Ernest Anbrey.
Read, Harold William.
Redwood, Robert V. de Acton.
Reece, Charles Clement.
Roberts, Edmund Arthur.
Rudkin, Gerald Fitzgerald.
Sadler, Vyvyan Kendall.
Salt, Arthur Philip.
Scott, Harold Munro.
Segwin-Strahan, Stuart.
Sexton, Henry William.
Seymour, Charles Gibbons.
Smith, Thomas Morland.
Speechly, Alec John Lincoln.
Spencer, Sandy.
Stranger-Leathes, Hugh Ellis.
Tosswill, Leonard Robert.
Travers, Otho Boyle.
Turnly, John E. L. Alexander.
Walker, Frederick George.
Walker, Henry James Davey.
Walsh, George Delaval.
Welham, George Sydney.
Wickert, Jacob Hodgson.
Wilson, Norman Methven.

Part II., Practical Pharmacology:

Agar, Samuel Annesley.
Anthonisz, Alfred George Henry.
Arch, Arthur James.
Archer, Henry.
Aylen, Ernest Vaughan.
Bailey, William Arthur.
Ball, Charles R. Hamilton.
Bartlett, Ernest John Reeve.
Beane, Robert Leonard.
Beasley, Joseph Howard.
Bedford, Godfrey Henry.
Bellamy, Henry Francis.
Bennett, Henry Stagg.
Bennett, Kenneth Hugh.
Bond, Cecil William.
Brayne, Robert Edward.
Bridges, Roland Harley.
Burpitt, Harry Reginald.
Causton, Hubert Cyril.
Collins, Reginald Thomas.
Compton, Alwyne Theodore.
Crompton, Richard Henry.
Cronkshaw, John Alfred.
Davies, Walter E. Llewelyn.
Davis, Edward David.
Donaldson-Sim, Ernest Alfred.
Downton, Arthur Sydney.
Drabble, Percy Toplis.
Eastmond, Reginald Anthony.
Edwards, Thomas Henry.
Evans, George Jewel.
Ewen, Gerald Sydney.
Fiddian, Arthur Edwin.
Fitz-Henry, Roland S. Wyckham.
Fowler, Trevor Hayman.
Garrard, Edward Brown.
Gauntlett, Owen Binns.
George, Alexander Cosgrave.
Greaves, Herbert Stanley.
Grellet, Harold Rawdon.
Grenfell, Pascoe Beville.
Griffith, William Henry.
Griffiths, Edward Reginald.
Gromitt, John William.
Harris, Robert James.
Harrison, Gerald Woodforde.
Hawkes, Alfred E. Underwood.
Higgins, Hugh Arthur.
Hipwell, Harry.
Hughes, Guy.
Hughes, Edmund Octavius.
Humphrys, George Frederick.
Jackson, Francis Willan.
Jaques, Robert.
Jays, Tom.
Jones, Hector.
Jones, Reginald Lewis.
Jones, William W. Cadwaladr.
Keed, Charles Russel.
Kenderdine, Ernest Henry.
King, William Athol Desmond.
Kirkness, William Ronald.
Lambert-Shea, William Albert.
Lawry, Richard Coger.
Leclezis, George Joseph Alexis.
Lewis, David Thomas.
Lewis, Ivor.
Libby, Harold Samuel.
Lister, Frederick Spencer.
Lower, Charles Antony.
Luxmoore, Evelyn J. Hansler.
McIlroy, William.
Mason, Herbert Alfred.
Melhuish, Herbert M. Herny.
Miller, Arthur Alan.
Mills, Henry.
Morcam, Theophilus William.
Neville, Thomas Crofts.
Pallant, Santiago Luis.
Parbury, Frederick Denis.
Parsons, Wilfred.
Pearson, John Douglas.
Peel, Harold George.
Pierce, Frederick James.
Pierpoint, Harry.
Price, Clifford.
Redwood, Robert V. de Acton.
Row, Charlie Martin.
Sandiland, Digby Sayer.
Scatchard, Thomas.
Scott, Walter Henderson.
Sexton, Henry William.
Shenton, Edward W. Hine.
Smith, Edward Bertram.
Snoad, Francis George.
Stansfield, Walter.
Sykes, Walter.
Tetley, Thomas Walsh.
Thomas, Albert Edward.
Thomas, Robert John Percy.
Turner, Charles William.
Upcott, Harold.
Ward, Ernest Lewis.
Watson, Robert Nimms.
Webb, William Tudor.
Webster, James A. William.
Wenham, Herbert Victor.
Wetherell, Marmaduke C.
White, Cyril C. C. Kirke.
Wilshaw, Thomas Ratcliffe.
Winckworth, Harold Charles.
Winston, Gerold Denton.
Young, Alister Cameron.

[1] THE LANCET, Dec. 19th, 1896.

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Part III., Elementary Biology:

Abbott-Brown, Charles F. M.
Archer, Henry.
Bailey, Lionel Danyers.
Bain, William.
Bankes, John Herbert.
Bartlett, Owen Mortimer.
Bigg, Leonard Bolitho.
Bloxsome, Arthur Henry.
Booth, Lawrence Twemlow.
Buckeridge, Guys Leslie.
Camacho, Angelo.
Campbell, Thomas.
Canton, Claude Frederick.
Caton, John Wilfred.
Coltart, Charles H. Romer.
Cowper, Claude M. Lovell.
Crofts, Arthur Douglas.
Daniels, Frederick William.
Davis, Edward David.
Drabble, Percy Toplis.
Dunkerton, Norman Edwin.
Edmonds, Frank Rowe.
Elwood, William Henry.
Evans, George Jewel.
Everett, Hastings Footman.
Fennell, Linton Albert.
Footner, Bertram Maughan.
Griffith, William Henry.
Gunning, Charles J. Hope.
Hawkins, William L.
Hayman, George Atkin.
Hill, Ludovic.
Huggins, Hugh Morley.
Hughes, Guy.
Hunter, Mark Oliver.
Ibbotson, William.
Ireland, James Aubrey.
Jupp, Edgar Norman.
Kenderdine, Ernest Henry.
Lloyd, Robert.
Low, Allan Douglas.
McCoy, Patrick William.
Macphail, Frederick James.
McQueen, John Falconer.
Marett, Philip Jauvrin.
Nimmo, Wilfred Cowan.
Niven, William A. Cyprus.
O'Brien, Charles William.
O'Neill, Arthur.
Parsons, Geoffrey Owen.
Pick, Bryan.
Power, Thomas Costello.
Priestly, Harold Edgar.
Riviere, Bernard Beryl.
Shettle, Francis B.
Smith, Aaron Hoyland.
Snoad, Francis George.
Speechly, Alec. J. Lincoln.
Steele, Otho F. William.
Stewart, Howard Douglas.
Sutton, Harry Chamberlain.
Sykes, Joseph Harvey Kemp.
Taylor, Martin Bramley.
Tilley, James L. Octavius.
Vidal, Hugh Francis.
Wall, James Marsden.
Wallis, Harold Wishaw.
Walters, Arthur Leslie.
Welch, Samuel H. Rexford.
Williams, James Alexander.
Williams, John.
Wilmot, Reginald Cameron.
Wingent, Ralph Moignard.

The following gentlemen passed under the Four Years' Regulations:—

Part. I., Chemistry, including Chemical Physics:

Ewing, James.
Cooke, Percy Seymour.

Part II., Materia Medica:

Ewing, James.
Rooth, James Augustus.
Safford, Arthur Hunt.
Topham, Frederick Stocks.

SOCIETY OF APOTHECARIES OF LONDON. — In August the following candidates passed in the subjects indicated:—

Surgery.—H. A. Ahrens, King's College Hospital; M. E. Bennett (Section II.), Royal Free Hospital; E. Fryer, Guy's Hospital; J. E. W. McFall (Sections I. and II.), Liverpool; R. O. Jones and E. MacD. Judge, Guy's Hospital; and O. T. A. Phillips, Cardiff and London Hospital.

Medicine.—F. Atthill (Section II.), Charing-cross Hospital; W. H. I. Bathurst (Section I.), London Hospital; H. R. Cross, Leeds; J. J. Huey, Glasgow; J. Jones, Edinburgh; J. E. W. McFall (Sections I. and II.), Liverpool; R. G. W. Saint-Cedd, Guy's Hospital; W. J. Schuller (Section II.), London Hospital; N. Walmisley, St. Bartholomew's Hospital; J. Welsh, Dublin; and R. Le G. Worsley (Section I.), St. George's Hospital.

Forensic Medicine.—W. H. I. Bathurst, London Hospital; H. R. Cross, Leeds; H. Greenwood, London Hospital; J. J. Huey, Glasgow; J. E. W. McFall, Liverpool; R. G. W. Saint-Cedd, Guy's Hospital; D. C. M. Shaw, Manchester; N. Walmisley, St. Bartholomew's Hospital; J. Welsh, Dublin, and R. Le G. Worsley, St. George's Hospital.

Midwifery.—J. M. Anderson, Aberdeen; E. C. W. Beasley, St. Mary's Hospital; R. Brookes, Westminster Hospital; T. S. Elliot, London Hospital; D. Fletcher, St. Bartholomew's Hospital; H. Greenwood, London Hospital; J. E. Griffith, St. Bartholomew's Hospital; and J. Welsh, Dublin.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—H. A. Ahrens, F. Atthill, M. E. Bennett, E. Fryer, O. T. A. Phillips, and D. C. M. Shaw.

MEDICAL MAGISTRATES. — Mr. William H. Cocker, M.R.C.S. Eng., has been appointed a magistrate for Blackpool.—Mr. Chas. J. Kearney, L.R.C.P. Lond., M.R.C.S. Eng., of South Grafton, New South Wales, has been appointed a magistrate for that colony.

PRESENTATION TO A MEDICAL MAN.—Mr. David Collingwood, M.D. Lond., F.R.C.S. Eng., of Summer-hill, near Sydney, New South Wales, was on June 23rd last entertained at a dinner by his professional and other friends, and presented with a travelling bag, fitted with gold-mounted accessories, on his leaving the district.

THE INFANT LIFE PROTECTION ACT.—The value of the Infant Life Protection Act was tested for the first time in Bristol on August 18th, when a woman was sent to prison for six weeks for having in her custody two children to be nursed and maintained apart from their parents without notice of the fact having been given to the Bristol Board of Guardians.

CHARITABLE BEQUESTS.—The late Mrs. Howard of Blackpool, whose will was recently the subject of some remarkable litigation, left the following local bequests: to the Boys' and Girls' Refuges and the Deaf and Dumb Institute, each £100; to the Blackpool Hospital, £2000; and to the Devonshire Hospital, Buxton, £1000. She also left about £16,000 to religious institutions.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BARRINGTON, F., M.B. Edin., F.R.C.S. Eng., has been appointed an Honorary Surgeon for the Lewisham Hospital for Women and Children, Sydney, New South Wales.

BEESLEY, A. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Baschurch and Middle Sanitary Districts of the Ellesmere Union.

BELDING, D. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Mitford and Launditch Rural District, vice M. G. Dundas, resigned.

BONE, BERTRAM MAYHEW, M.B., C.M. Edin., has been appointed Medical Officer by the Towyn and Aberdovey (Merionethshire) Urban District Council, vice F. H. V. Grosholz, deceased.

CLOTHIER, HENRY, M.D. Lond., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health by the Hornsey Urban District Council.

COCKBURN, the Hon. J. A., M.D. Lond., M.R.C.S., has been appointed Agent-General for South Australia, vice the Hon. T. Playford, resigned.

DUNCAN, S. V., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for the Urban and Suburban Districts of Menzies, Western Australia.

ELLIS, R. K., M.B., B.Ch. Oxon., has been appointed Medical Officer for the Lowdham Sanitary District of the Southwell Union.

EVANS, J. JAMESON, M.B., C.M. Edin., M.R.C.S. Eng., has been appointed Honorary Surgeon to the Birmingham and Midland Eye Hospital, vice D. C. Lloyd-Owen, resigned.

FOX, S. C. GUNDRY, M.R.C.S., L.R.C.P. Lond., has been appointed Senior District Surgeon to the Perak Federated Malay States, vice J. L. Welch, deceased.

GILL, J. MACD., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed an Honorary Assistant Physician for the Hospital for Sick Children, Sydney, New South Wales.

GORDON-MUNN, J. G., M.D., C.M., F.R.S.E., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Watford, Barnet, St. Albans, and Chesham County Court Districts, and also to act for the Luton and Leighton Buzzard Districts.

HANDLEY, W. S., M.D. Lond., B.S., F.R.C.S., L.R.C.P., M.R.C.S., has been appointed Dental Anæsthetist and Anæsthetist for the Ophthalmic Department of Guy's Hospital, S.E.

HARDING, R. F., L.R.C.P., L.R.C.S. Irel., has been appointed, *pro tem.*, acting Medical Superintendent for the Hospital for the Insane at Toowoomba, Queensland.

HAWTHORNE, E. S., L.R.C.P. and L.M., L.R.C.S.I. and L.M., has been re-appointed Surgeon to the Etheridge District Hospital, and Medical Officer of Health for the District of Georgetown, Queensland, Australia.

HIRSCHFELD, E., M.D. Strasburg, has been re-appointed an Honorary Medical Officer for the Brisbane Hospital, Queensland.

JONES, MARTIN LLEWELLYN, F.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the districts of Merthyr Tydvil, Aberdare, and Pontypridd.

KENNEDY, J. M. P., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Referee for King's County under the Workmen's Compensation Act, 1897.

KITSON, F. P., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Marshwood and Netherbury Sanitary Districts of the Beaminster Union.

LAWSON, G. L. L., M.R.C.P. Edin., M.R.C.S., D.P.H., has been appointed a Public Vaccinator for the Urban and Suburban Districts of Yalgoo, Western Australia.

LEISHMAN, ARCHIBALD, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer for the Thorncombe District of the Beaminster Union, Dorset.

LETHBRIDGE, C. F., M.R.C.S., has been appointed Officer of Health for the North and West Ridings of Ripon Shire, Victoria, Australia, vice B. J. Adam, resigned.

LONERGAN, T. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for South Australia.

MAIR, L. W. D., M.D. Lond., L.R.C.P., M.R.C.S., D.P.H., has been appointed, *pro tem.*, a Medical Inspector under the Local Government Board.

MARKS, the Hon. C. F., M.D. Irel., L.K.Q.C.P., L.R.C.S., has been re-appointed an Honorary Medical Officer for the Brisbane Hospital, Queensland.

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MIDDLETON, W. H., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Westmeath.

MITCHELL, A. B., M.B., B.Ch. Irel., has been re-appointed an Assistant Surgeon for the Royal Hospital, Belfast.

MORGAN, C. W., M.D. Brussels, L.R.C.P. Lond., L.F.P.S. Glasg., has been appointed a Government Medical Officer and Vaccinator for the District of Eden, New South Wales.

MULLEN, W. L., M.D., Ch.B. Melb., has been appointed, *pro tem.*, acting Medical Superintendent for the Sunbury Lunatic Asylum, Victoria, Australia.

OLIVEY, W. J., L.R.C.P. Lond., M.R.C.S., has been appointed Health Officer for Lawlers, Western Australia.

O'NEILL, H., M.D., M.Ch. Irel., has been re-appointed a Surgeon for the Belfast Royal Hospital.

POWELL, H. A., M.B., Ch.B. Adel., has been appointed Medical Officer for Kadina, South Australia.

REYNOLDS, J. H., M.B., C.M. Edin., has been appointed Senior House Surgeon to the Miller Hospital, Greenwich.

SCHAUB, J. M., L.R.C.P. Lond., M.R.C.S., has been appointed Senior Assistant Medical Officer for the Infirmary and Workhouse of the Parish of St. Leonard, Shoreditch.

SMALLMAN, A. B., M.B., Ch.B. Vict., has been appointed a Junior House Surgeon for the Royal Hospital, Salford.

SPRIGGS, E. J., M.B. Lond., has been appointed a Demonstrator of Physiology, Guy's Hospital, S.E., vice F. G. Hopkins.

STREET, A. E., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer for the Dyffryn Aled branch of the Cheadle Royal Lunatic Hospital.

TAYLOR, the Hon. W. F., M.D. Kingston, Canada, M.R.C.S., has been re-appointed an Honorary Medical Officer for the Brisbane Hospital, Queensland.

TAYLOR, F. R. P., M.D. Lond., B.S., L.R.C.P., M.R.C.S., has been appointed Medical Superintendent for the Darenth Adult Asylum of the Metropolitan Asylum District.

WHITLA, W., M.D. Irel., L.R.C.P., L.R.C.S. Edin., has been re-appointed a Physician for the Belfast Royal Hospital.

WILLIAMS, J. C., M.B., C.M. Edin., has been appointed an Honorary Physician for the Church Army's Mission Nurses' Training Home, Nutford-place, W.

WILSON, G. B., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Officer for the Destitute Poor for the Township of Port Germein, South Australia.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £50 per annum, with apartments and board.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £60 per annum, with board and lodging, but no wine, spirits, or beer.

CARDIFF INFIRMARY. — Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARNARVONSHIRE AND ANGLESEY INFIRMARY, Bangor.—House Surgeon. Salary £80 per annum, with board, washing, and lodging in the house.

COSFORD UNION, Suffolk, Lavenham District.—Medical Officer and Public Vaccinator for the Lavenham District. Salary £52 2s. exclusive of the usual extra medical fees, but certain medicines and surgical appliances to be supplied at the cost of the officer appointed. Applications to the Clerk to the Guardians, Union Offices, Hadleigh, Suffolk.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon for six months. Board, residence, &c., provided, and an honorarium of £25 given conditionally.

GUEST HOSPITAL, Dudley.—Resident Medical Officer. Salary commencing at £100 per annum, increasing by £10 a year to £120 (conditionally), with board, residence, attendance, and washing.

KENT COUNTY ASYLUM, Chartham, Canterbury. — Third Assistant Medical Officer. Salary £120, with board, &c.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the hospital.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Residence in the hospital, board, and washing provided, and an honorarium of five guineas given conditionally.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per year, with board and washing free.

NORFOLK AND NORWICH HOSPITAL, Norwich. — Assistant House Surgeon for six months. Board, lodging, and washing provided.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House Surgeon. Salary £120 per annum, increasing by £10 per year (conditionally), with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY. — Clinical Assistant for six months (renewable), unmarried. Salary £60 for that period. Subject to boarding arrangement.

PARISH OF ST. GEORGE-IN-THE-EAST, London.—Assistant Medical Officer for the Infirmary and Workhouse. Salary £120 per annum, with rations and apartments. Subject to the provisions of the Superannuation Act, 1896. Applications to the Clerk, Guardians' Offices, Raine-street, Old Gravel-lane, E.

PARISH OF ST. GILES, Camberwell.—Assistant Medical Officer for the Workhouse, Gordon-road, Peckham. Salary £120 per annum, with furnished apartments outside the Workhouse, and an allowance of £1 1s. weekly in lieu of board and washing. Applications to the Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £30 per annum, board and washing provided.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon for one year. Salary £60 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—House Physician for one year, unmarried. Board (exclusive of wine and beer) and lodging provided, and an honorarium of 25 guineas given.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Board and residence provided, and an honorarium of £10 given.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon, and to act as Secretary. Salary £60, with board and lodging.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Secretary and Registrar, University College, Cardiff.

UNIVERSITY OF ST. ANDREWS.—Professor of Midwifery.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £60, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

BEVEN.—On August 23rd, at Balham-grove, Balham, S.W., the wife of Octavius Beven, M.D., D.P.H., of a daughter.

BRITTAIN.—On August 16th, at Triangle House, Hatfield, the wife of Percy M. Brittain, Surgeon, of a daughter.

DOVE.—On August 20th, at Parkside, Crouch-end, the wife of Augustus C. Dove, M.D., of a daughter.

PANTIN.—On August 20th, at Albert-terrace, Douglas, Isle of Man, the wife of C. S. Pantin, M.D., F.R.C.S., of a daughter.

RAW.—On August 19th, at Superintendent's House, Mill-road Infirmary, Liverpool, the wife of Nathan Raw, M.D., of a son.

SMITH.—On August 21st, at Dyne-road, Brondesbury, N.W., the wife of J. Anderson Smith, M.D., of a son.

SMITH.—On August 16th, at Orpington, Kent, the wife of A. T. Smith, M.D., of a daughter.

WILLIAMS.—On August 21st, at Brockley, S.E., the wife of Chisholm Williams, F.R.C.S. Eng., of a daughter.

MARRIAGES.

EDMONDSON—ROBSON.—On August 24th, at Egremont Presbyterian Church, by the Rev. James Muir, D.D., Charles Reginald Edmondson, M.B., C.M., of Wavertree, Liverpool, to Ethel, youngest daughter of Stephen Robson, Egremont, Cheshire.

GERRARD—REPTON.—On July 30th, at St. Joseph's Church, Rawul Pindi, Punjaub, India, Major J. J. Gerrard, M.B., Royal Army Medical Corps, to Mabel Kathleen, only daughter of the late Colonel Herbert Mills Repton, Bengal Staff Corps.

HAMLEN-WILLIAMS—RENWICK.—On August 22nd, at All Saints' Church, St. Helier's, Jersey, T. R. Hamlen-Williams, M.R.C.S., L.R.C.P., of Fairfield, Pontypridd, Glam., to Emily Sarah, youngest daughter of the late James Renwick of Bala, North Wales.

HELME—CROFTS.—On August 17th, at the Wesleyan Church, Alderley Edge, by the ex-President of the Conference, Rev. W. L. Watkinson, assisted by Rev. William George and Rev. A. L. Vine, T. Arthur Helme, M.D., M.R.C.P., F.R.S. Edin., of Manchester, son of the late James Helme, of Lancaster, to Florence Jane, elder daughter of the late James Crofts, of Tipton, and Mrs. Crofts, of Alderley Edge.

JACOB—DAY.—On August 18th, at Christ Church, Woburn-square, London, Archibald H. Jacob, L.R.C.S. and L.R.C.P. Ireland, third son of A. H. Jacob, M.D., F.R.C.S.I., Dublin, to Alice Maud, only daughter of Joseph Addison Day, Esq., late of Weston Manor, Corscombe, Dorset.

MAGUIRE—BLISSETT. — At St. Mary's, Bryanston-square, W., on August 14th, Robert Maguire, M.D., F.R.C.P., to Miss Mary Blissett, daughter of the late Thomas Blissett, Esq., of Oxton, Cheshire.

DEATHS.

BLACKMAN.—On August 23rd, at Mostyn, Streatham, Frederick Blackman, M.R.C.S., L.S.A., aged 66 years.

BARROW.—On August 20th, at Guy's Hospital, C. A. G. Barrow, L.R.C.P. Edin., M.R.C.S., of Sutton, Surrey, aged 47.

I'ANSON.—On August 19th, at Whitehaven, Thomas Francis I'Anson, M.D., J.P., aged 73.

SMITH.—On August 10th, at Lodge Park, Freshford, Kilkenny, Ernest Frederic Smith, Major R.A.M.C. retired, of Grove House, Lavenham, Suffolk.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 25th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 19	30·03	S.E.	0·02	111	81	62	65	68	Overcast
" 20	30·11	WSW	...	117	84	62	63	67	Fine
" 21	30·19	S.E.	...	118	82	62	66	70	Hazy
" 22	29·98	S.E.	0·03	125	90	64	66	68	Overcast
" 23	30·02	W.	...	116	80	62	62	66	Cloudy
" 24	30·13	N.E.	...	112	74	59	58	61	Fine
" 25	30·24	S.E.	...	107	70	58	56	61	Cloudy

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

NE SUTOR ULTRA CREPIDAM.

WE have received from a correspondent a small pamphlet published by a manufacturer of artificial limbs. The articles, if we judge by sundry testimonials, seem very perfect in their way, but there is a passage in the pamphlet to which we must strongly take exception. The passage in question is headed "Observations on Amputations from an Artificial Limb-maker's Point of View," and it goes on to suggest that "the less taken off the better" is not always the best policy. This is no doubt true from the limb-maker's point of view, but he has no right as he does in this pamphlet to say: "When a knee has to be sacrificed the amputation should if possible be performed about four inches above the kneejoint," and still more presumptuous ignorance is shown in the remark, "A portion of an injured hand should never be left, as it is perfectly useless to the patient." It is not the business of an instrument-maker to advise a surgeon how much or how little he shall remove, and such advice is merely a piece of impertinence.

ASSES' MILK.

PHYSICIANS of every age and nationality have commended the milk of the ass as an excellent succedaneum for woman's milk, but according to the following published opinion one eminent authority has come to a precisely opposite conclusion. "The asses' milk which I experimented on," says M. Duclaux, the Director of the Pasteur Institute, "was obtained from one of the droves which are taken round to patients' doors in Paris. It will be seen how little milk so obtained is to be depended on, notwithstanding its enormous price. The specimen which I analysed was very transparent and contained (*a*) substances in suspension: fatty matter, 1·00; casein, 0·99; phosphate of lime, 0·06; (*b*) substances in solution: sugar of milk, 6·54; casein, 0·34; phosphate of lime, 0·10; soluble salts, 0·27. Deducting the sugar, which in milk constitutes two-thirds of the dry residue, it will be seen that in spite of its ten-fold cost this milk is not more than one-third as valuable as cow's milk." Replying to this attack, M. Variot writes to the following effect: "Such a condemnation cannot be final but must admit of an appeal, being founded on one analysis only, which, with regard to butter and casein, is in conflict with the analyses of Féry and Gautrelet. And, moreover, if asses' milk is more easily assimilated than cows' milk by certain debilitated nurslings it is precisely on account of its lightness and poverty in casein. The excess of protein substances in cows' milk, which causes American physicians so much anxiety, is not to be dreaded in asses' milk. M. Duclaux may say, if he pleases, that as a cheese producer asses' milk is valueless by reason of its lack of casein, but the fact, nevertheless, remains that for puny children deprived of the breast it is the very best substitute for their natural food." Doubtless this view will obtain most suffrages. Such, at least, is the opinion of an anonymous commentator, who exclaims, "We are on the side of M. Variot and clinical experience against M. Duclaux and chemistry. Yes, asses' milk is unquestionably the proper succedaneum for maternal milk and that precisely because, like woman's milk, it is poor in casein."

A COURTEOUS SUGGESTION.

THE *Daily Mail* of August 24th publishes the following letter:—

"CHEMISTS AND DOCTORS.

"A subject that affects the interest of the public to a momentous extent is that of dispensing by doctors. At present it can be used in the hands of the unscrupulous to smother crime.

"There is not the division of labour between the doctor and the chemist there should be. The doctor should prescribe and the chemist dispense, and there ought to be no departure from this rule. At present, dispensing by the chemist is the exception, save in the West-end of London and fashionable resorts.

"In 1868 the Pharmacy Act came into force, wherein it decreed that before a chemist be permitted to dispense and sell scheduled poisons he must prove himself capable by passing a very stringent and searching examination in chemistry, pharmacy, materia medica, and dispensing. Since then 90 per cent. of the chemists have passed these examinations, yet the bulk of dispensing is done by the doctors, who have but a smattering of the art.

"The gravest point is this, that through inadvertence or by design the medical man may send medicine improperly dispensed, or containing some poisonous drug by which his patient becomes very ill or dies. In the one case he can explain his error away; but in the latter he can sign the death certificate and for ever hush up the true cause of decease. "JOSEPHUS."

We call this an infamous insinuation. Of course it is possible that a medical man may poison his patient either "through inadvertence or design"—anything is possible. For all we know "Josephus" may be a criminal of the deepest dye, but it is more probable that he is a struggling dispensing chemist.

NEWS FROM FRANCE.

(NOT FROM OUR CORRESPONDENTS.)

WE confess to being lost in doubt whether the articles from the *Journal de Médecine de Paris* translated extracts from which we subjoin are intended as examples of *esprit* or of "wut." They cannot be serious. Is it that the writers, after visiting the northern capital, have sought to combine the two—to serve up a s rt of humorous *gâchis*, as it were a haggis flavoured with absinthe?

"OUR DOYEN IN LONDON.

"The above headline does not refer to the *doyen* of the Faculty of Medicine, but to the gentleman who hails from Reims. The lay press informs us that M. Doyen, that Napoleon of surgery, was summoned to London in order to perform several operations of the gravest possible description. The illustrious surgeon was presented to the Princess of Wales and exhibited his operative procedure with the utmost success before numerous English surgeons and also before the students of St. Mary's Hospital. The patients he operated on are all progressing most favourably. The Queen of England sent to ask M. Doyen if he was willing to accept a post as Her Majesty's Surgeon in Ordinary with a salary of 10,000 'guignées' per annum; but our compatriot refused, being unwilling to deprive France of his services. Upwards of two-thousand English medical men made a point of accompanying M. Doyen when he left. He promised to take part in the Congress of the British Association at Edinburgh, and the moment the news became known the hotel tariff in the Scottish capital was trebled."

The following announcement is taken from the same source. Its humorous character is not so obvious:—

"*Necrology.*—Lord Playfair, Commander of the Legion of Honour, sometime Professor of Chemistry at Manchester, at Edinburgh, and at Saint-Andrews, one of the most distinguished of hygienists, has just succumbed at the age of 79 years. Formerly vice-president of the House of Commons, formerly Minister of Public Instruction in one of the Gladstone ministries, Lord Playfair was raised to the peerage in 1892. But this accoucheur was above all celebrated through the misadventure which befel him two years ago when he was condemned to pay a quarter of a million francs damages for having unduly disclosed the fact that one of his patients had had a miscarriage."

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THE BONE-SETTER AGAIN.

MR. A. T. SHEPHERD, deputy coroner, held an inquest at Gateshead on August 18th to inquire into the circumstances of the death of Isabella Keenan, aged thirteen years. It appeared in evidence that she had been ill for three weeks and was attended by Dr. Arthur Green. Then she was taken to a bone-setter, but she got worse. Dr. Green was sent for again on a Friday but the girl died on the following Wednesday. Clayton, the bone-setter, said that he found that the muscles of the right leg were contracting. He "eased them down" and put on a bandage. Her back had been blistered. Dr. Arthur Green said that when he first saw the girl she had severe bruising of the muscles of the back, and had been blistered over the loins. When next he saw her she had a large gangrenous patch upon the back and was crying; she had pneumonia as well. He considered the gangrene was due to the over-tight bandaging. The coroner said that Clayton had been negligent, though he did not think criminally negligent. Probably if Dr. Green had had charge of the case all through the poor girl would not have died. The jury considered that Clayton had been negligent and ought to have called in a medical man. The death was due to the causes enumerated in the medical evidence. We make no comment upon this case, for it is of no use. This is a free country and practices of this description are quite legal.

THE TITLE OF "DR."

To the Editors of THE LANCET.

SIRS,—I am a Bachelor of Medicine of the University of Cambridge, also a Bachelor of Surgery and Bachelor of Arts. Am I right in having inscribed upon my doorplate and visiting cards simply "Dr. X"? This has been called in question by some of my fellow practitioners, who contend that as I am only a Bachelor of Medicine I have no right to style myself "Dr." I know it is the custom of Cambridge and Oxford Bachelors of Medicine to style themselves "Dr.," but I should be very pleased to have your authority to point to, which would, of course, end the matter at once. I am, Sirs, yours faithfully,

August 22nd, 1898. X.

*** It is usual for a Bachelor of Medicine to style himself "Dr." and we have not before heard any objection to the custom from his professional brethren. Our correspondent is referred to THE LANCET of August 17th, 1895, where the subject is discussed at length in a leading article.—ED. L.

THE LATE ARTHUR JEFFARES BARLOW.

IT has been decided to keep the appeal on behalf of the widow of the late Mr. Arthur Barlow open for a short time longer. Mr. R. H. Capper, of Buckholt, Battle, Sussex, who will receive subscriptions, asks us to acknowledge the receipt of the following contributions:—Far away, £5 5*s.*; Mr. Snook, Weymouth, per Dr. Henry, £2.

PROSECUTION OF PECULIAR PEOPLE.

ON August 24th a carman and his wife, named Cook, were committed from the Lambeth Police-court for trial on a charge of the manslaughter of their child. The prisoners are Peculiar People and the child had been ill for six weeks with no medical attendance. An "elder" had, however, anointed the child and prayed over it. Medical evidence showed that the death was due to broncho-pneumonia.

A HERBALIST IN TROUBLE.

AT Norwich, on August 23rd, Mr. Samuel Matthews, a former member of the town council of the city, was fined £1 by the magistrates for unlawfully using the title of "Surgeon." On the following day Mr. Matthews, who was a medical herbalist, was fined £20 in the county-court at the suit of the Society of Apothecaries of London for illegally acting as an apothecary. Mr. Matthews's counsel called the prosecution "persecution," but was informed by his honour Judge Willis in giving judgment that he could see no persecution in the matter; it was most important that persons who undertook the care of other people's health should be duly qualified. We quite agree, but unfortunately the law does not. A summons for illegally using the title of "Doctor" was dismissed.

"ETHERION."

THE New York correspondent of the *Standard* announces the discovery by Mr. Charles Brush of an exceedingly attenuated gas to which has been given the name of "etherion." It would appear to invade all interstellar space and may prove to be the "matter" or "ether" by the vibrations of which alone can many physical phenomena be explained. It occurs in the atmosphere and its density is one-thousandth of that of hydrogen. If this announcement—which was made at a meeting of the American Association of Science—be correct we would appear to be approaching the discovery, or even isolation, of Crookes's "protyle," the primordial element.

A. J. G. entered into a bond and he must keep the terms thereof whether the other party to the agreement be a layman or not. We quite agree with him that it is inadvisable for a medical man to become a servant of these lay associations—we have said so over and over again—but we cannot advise that an agreement once entered into should not be kept.

Public Health is requested to send his name and address—of course not for publication—and also the name and date of the newspaper wherein the report appeared. We will then make a note of the matter if it seems to us that to do so will be useful.

Emigrant.—The regulations governing medical practice in America vary in the different States. Full information will be found in THE LANCET of Sept. 12th, 1896, page 769, and also in our issue o Oct. 3rd of the same year, page 969.

M. G. Y. E.—We do not as a rule publish letters which have already appeared elsewhere.

Percy.—We do not recommend treatment.

F.R.C.S. must verify his references.

H. S. should consult a lawyer.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.) St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received: *Birmingham Gazette, Nottingham Express, North Herts Journal, Luton Reporter, Walsall Observer, Torquay Times, Wilts Standard, Ilfracombe Chronicle, Times of India, Pioneer Mail, Warwick Advertiser, Architect, Citizen, Scotsman, Builder, Liverpool Daily Post, High Peak News, Driffield Observer, Leeds Mercury, Wigan Examiner, Derby Times, Ampthill News, Harrogate Advertiser, Bristol Mercury, South Wales Daily News, Eastern Morning News, Croydon Guardian, Bridgwater Independent, Yorkshire Post, Chester Chronicle, East Essex Times, Lynn News, Lancashire Express, Manchester Guardian, Western Morning News, Newcastle Journal, Cheltenham Mercury, Hereford Times, Lancaster Guardian, North Middlesex Chronicle, Worcestershire Echo, Sanitary Record, Mining Journal, St. Bartholomew's Hospital Journal, City Press, Reading Mercury, Hertfordshire Mercury, Observer and Chronicle (Bournemouth), Local Government Chronicle, Guy's Hospital Gazette, Surrey Advertiser, Redditch Indicator, Local Government Journal, Australasian Medical Gazette, Forres Gazette, Falkirk Herald, Brecon County Times, Buckingham Express, Freeman, Exmouth Journal, Seaford Journal, Market Rasen Mail, School Guardian, Aberystwyth Observer, Cromer Post, Grantham Journal, Harwich Chronicle, Kendal County News, Dover Express, Andover Advertiser, Loughborough Monitor, Western Daily Press, &c., &c.*

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THE LANCET.

LONDON: SATURDAY, SEPTEMBER 3, 1898.

ADDRESS TO STUDENTS.

IN the Students' Number it has always been our custom to offer a few words of advice to those who are about to enter on their medical studies and this we now proceed to do.

In accordance with the present system of education for boys destined to enter the medical profession, some of the preliminary subjects — chemistry, physics, and biology—have already been dispensed with before leaving school, and in the eye of the law those so grounded in the science of medicine are "medical students" for some little time before entering a hospital. But on actually joining a hospital they will be commencing a new stage of life, and it is at this point that counsel may prove of value. Many of our profession, now advanced in life, will doubtless look back with gratitude to the words uttered by some eminent physician or surgeon, long since dead, which have never been forgotten and which produced an effect on them influencing their whole medical career and more than possibly never passing off. The annual gathering at medical schools for the purpose of hearing such an address has been discontinued by some of the schools, while the habit is carefully preserved by others. There is much to be said for it. The first-year students feel that they have had a definite introduction to their fellows and to their future teachers; parents depart content that they have seen the staff and the school and we believe that, as a rule, the assembly disperses with a feeling of satisfaction at having been participators in an old custom conceived in a pleasant spirit of friendly welcome and carried out as a rule effectually. For the occasion need not reduce the lecturers to triteness or bald preaching, as their range of subjects is practically limitless, their audience not being confined to medical students.

Our audience, however, this week is by design confined to medical students, so that we shall make no apology for going over ground which we have previously traversed as we shall go over it in new company. The first word we have to say is one which has been said constantly and all our readers will hear it from the lips of their teachers for the next five years—or longer. The value of practical work is incalculable. Reading should supplement it and never be substituted for it. Anatomy can only be learned in the dissecting-room and not from books and plates; diseases, medical and surgical, can only be thoroughly studied by the bedside; and a knowledge of pathology and of the newly introduced science, bacteriology, can be only attained in the post-mortem room and in the laboratory. Such instances can be multiplied to any extent, but we need only refer to one development of the tendency to go to text-books rather than reality for information to show how unfortunate such a spirit is to its possessor. It is the man of text-books who regards the patients as so many cases rather than as individuals. He is concerned to make their symptoms fit his books rather than to make his medical knowledge and his knowledge of life explain their symptoms to him. Such a habit is apt to grow and to be carried subsequently into private practice, proving a fatal mistake for the young practitioner.

Not that we want to decry the value of text-books, but just to point out that they are to be employed as means only in whatever way will best assist practical work. The use that the student will be able to make of text-books will vary entirely with his order of mind. To one man the small elementary book may be well-nigh sufficient reading. He will be able to use it as the skeleton of his knowledge and will endow it with tissues and life from his personal observation, by practical courses in his school, by clinical work in the wards, and by thoughtful attendance at lectures. This is the student into whose work books do not largely enter. To other men the orderly arrangement of knowledge by their masters will appeal more strongly and they will be tempted to substitute books for practical work. And inasmuch as it is easy to examine fairly and thoroughly upon book work, while it is difficult to lay down proper standards and to discover adequate tests for the appraisement of practical work the result of examinations must more or less depend upon the ability of the student to answer somewhat in text-book language questions framed somewhat upon text-book lines. So that the man who knows his book work only may now and again pass an examination where his more practical and really better instructed comrade may fail. But this fact is no argument for the wrong use of text-books. Practical work at the laboratory bench, in the dissecting room, and in the wards is the essence of the medical student's training, and we beg all our readers to remember this.

We now come to another side of the medical student's life. During his school or college days he may have taken a prominent part in games; he may have been a shining light in cricket, football, or athletic sports. On leaving school or college he not unfrequently gives up such sports entirely. This may be due to various causes, either to enthusiasm for his new studies, or to a feeling that the time has come to put away childish things, or because he has the bad luck to make the acquaintance of elder students who are using their freedom from disciplinary restraints in smoking too much and playing certain indoor games. The young lad fresh from school may think it is "like a medical student" to live such a life and may quickly fall into similar ways and give up all forms of out-door exercise. But whatever may be the cause that he abstains from athletic pursuits, and equally whether that cause is worthy or unworthy, such abstention is a great mistake, and will probably be everlastingly regretted. Fortunately the idea that a medical student is necessarily a rowdy, undisciplined youth is becoming obsolete, and those who have close acquaintance with medical schools will confirm the statement that the idle, dissolute man is a rarity, nor, thanks to the watchful care exercised by the deans and wardens, does he long dishonour his school by his presence. The puerile desire to disturb the teachers has practically died out; the lecturer on chemistry conducts his demonstrations without fear of explosions and the botanical specimens are no

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longer hopelessly mixed. All these things show the signs of the times and indicate that the student who leaves off athletics to indulge in dissipation would be comparatively lonely as well as a person of no consideration among his fellows. But they also prove the existence of new temptations to a lad to cease to take the exercise which his young bones and lusty blood call for—the temptations of over-assiduity. Most medical men will be able to recall instances in which an athlete has forsaken the field, river, or running-path for his books, laboratory, and other sedentary occupations, and whose health has waned until he has become dyspeptic or falls a prey to some serious illness. It is usually a fatal error for anyone who has been accustomed to an active life to give up all forms of regular exercise. Still worse is it when the lassitude is due to indulgence in tobacco and late hours. At all the medical schools are various clubs for cricket, football, and rowing. We would strongly advise every new student to attach himself to one or more of these associations. If he has never been accustomed to such exercises previously, there is all the more reason why he should commence when extra study and the atmosphere of the lecture-room, laboratory and wards will make a call upon his strength and constitution. It is a recognised fact that a man can excel both in his studies and in athletic pursuits, and to encourage medical students to keep up their athletic attainments, numerous challenge trophies have gradually come into existence. There is another form of physical culture (to employ a term which has lately come to the fore) which is sadly neglected in the United Kingdom. In Germany the gymnasium is one of the most prominent institutions amongst all classes of the community, especially students. With us, however, after school life the gymnasium is a wholly unknown institution. And yet what can be more beneficial than daily exercise in some form of gymnastics? Few, if any, medical schools can boast of gymnasiums, but we believe their general establishment would prove a great advantage. An elaborate set of apparatus is not necessary, but if a room could be set aside for the purpose the needful bars, rings, and other accessories could be gradually added.

And now we must add a word of caution, said countless times before but which nevertheless must be said again. Any good thing may be abused and the tendency to neglect studies for sports cannot be denied to be as strong in some as the inclination to discontinue athletics is in others. That physical culture and mental education are perfectly compatible is proved every day, and the proper practice of athletics strengthens the mental faculties. Our desire is to warn men from becoming one-sided. We have no wish that the county cricket and football teams or the champions on the cinder paths of the London Athletic Club should be largely recruited from the medical schools, but if embryo physicians and surgeons would pay more attention to the study of physical improvement as exemplified by gymnastics and manly sports we believe it would be to the benefit of the community in general. A greatly improved tone has been apparent amongst the boys of public schools since "games" have been made compulsory and loafing sternly discountenanced, and in particular since (as has been wisely ordained by certain headmasters) those boys possessed of "doctor's certificates" have been made to appear at call-over at a spot three or four miles away from the school buildings. The continuance of some form of physical exercise after school-life is not sufficiently insisted on by medical men. Swedish Drill or some other similar exercises do an incalculable amount of good, and it would greatly benefit the individual if such practices were not entirely thrown on one side on leaving school. Ten minutes or a quarter of an hour earlier rising is no real hardship to anyone—though in the morning we are not all stern enough with ourselves to believe that this is so—and that time spent in one of the numerous forms of domestic gymnastics now introduced would be sufficient to preserve and in some cases to increase the physical development attained whilst under scholastic control.

All who follow the medical profession must be students for ever—students as much in the fifth year of their curriculum as in the first; students as much at the end of their life's work as when confronted with their earliest patients. From every case for the real physician and the real surgeon a lesson has to be drawn: perhaps a new point arises, perhaps only a point confirmatory of what has been previously familiar; but in either instance something worth knowing has to be learned. And this is at once the great difference between book-learning and the learning which is the outcome of practical observation. To a certain extent the need for book-learning may be finite, and to a great extent this need is modified by the idiosyncrasy of the individual. But no man from the moment that he places his foot on the lowest rung of the ladder of medicine can dispense with observation or the results of observation. This need is never finite. A certain quickness in the detection of, and a certain facility in the reading of, the meaning of symptoms and signs and the influence of family history and environment are given to some in an extraordinary degree; but most certainly, should any man, being gifted in this fortunate manner, presume to think lightly of, perhaps to forego, some of the routine of observation, in the end he will be the worse off for his talents. He will make errors, and will speedily know himself, and others will as speedily know him, to be a superficial adviser. For book-learning there is a substitute—practical work; for practical work there is no substitute.

The gist of our sermon this year to students, therefore, is that they should cultivate their habits of observation by wringing from their practical work every scrap of advantage that is possible; that they should read the best text-books as supplements to their practical work; and that they should resolve to give up a certain portion of their time to the due practice of athletics—that is, to the preservation of their healths. A weakly individual may exhibit good mental development for a short time; but whilst high physical powers judiciously maintained tend to prolong life and to protect their owner from many of the minor ailments to which weaker constitutions are liable, they at the same time increase the capacity of the brain. Moreover, the regular pursuit of some form of athletics greatly raises the moral tone of a young man. The individual who wishes to improve his physical powers must cultivate habits of temperance and self-control. Evil habits, which the self-indulgent and slovenly man so easily falls a prey to, are obnoxious to the athletic and healthy-bodied, for late

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hours and their numerous evil consequences will be perforce eschewed. Let the medical student learn to live that he may be able to draw from his personal experience when he is advising his patients what are the best ways of keeping well.

A TEACHING UNIVERSITY FOR LONDON: A HISTORICAL SKETCH.

IN 1864 suggestions for adding teaching functions to the University of London were made by Mr. BOMPAS and Dr. SANSOM, but were summarily rejected by the Senate. Dr. PYE-SMITH'S resolutions in 1878 met with a similar fate, as did also those adopted by Convocation in 1881 and 1882. The first important outside movement directed to this object began in 1884. Fourteen years have therefore elapsed between the starting of this movement for promoting a teaching university for London and the appointment of a Statutory Commission to arrange the details by which the university should be guided in carrying out the duties laid down in the Bill which has now passed through both Houses of Parliament. In association with the movement for promoting a teaching university, either as a new institution or by reconstituting the present University, the medical profession in London has been most anxious to secure for London medical students a degree on similar terms to those which are granted to the students in the Scotch and provincial universities.

The dissatisfaction which most educational experts in London felt with the attitude of the University of London towards higher education in London led in November, 1884, to the formation of an association for promoting the establishment of a teaching university for London under the presidency of Lord REAY and the vice-presidency of Sir GEORGE YOUNG, and the association immediately entered on an active propaganda in support of its principles and objects. These were defined by the association as follows:—

1. The organisation of university teaching in and for London, in the form of a teaching university, with faculties in arts, science, medicine, and laws. 2. The association of university examination with university teaching, and the direction of both by the same authority. 3. The conferring of a substantive voice in the government of the university upon those engaged in the work of university teaching and examination. 4. Existing institutions in London of university rank not to be abolished or ignored, but to be taken as the basis or component parts of the University, and either partially or completely incorporated with the minimum of internal change. 5. An alliance to be established between the University and the Professional Corporations, the Council of Legal Education as representing the Inns of Court, and the Royal Colleges of Physicians of London and Surgeons of England.

A sub-committee was appointed to draw up a scheme in accordance with these objects and it attracted much attention and support from the teachers of London. If this scheme erred it was in the direction of trying to bring together too many of the heterogeneous educational bodies existing in London. On Lord REAY being appointed to the Governor-Generalship of Bombay the late Mr. JOHN MARSHALL accepted the presidency of the association. This movement naturally alarmed the Senate and Convocation of the University of London, as it was directly aimed to fill up the gap in London education, which their institution had been formed to occupy, and which they had deliberately declined in order to become an Imperial examining board instead of a local university. Many of the graduates, however, were in favour of reforming the University on the lines laid down by the association, so on Jan. 6th, 1885, a special committee of forty members was appointed to consider its proposals. On Feb. 24th they reported to Convocation that the objects of the association would, if carried into effect by the University, add to its usefulness and importance. This report was carried by a large and influential majority and the committee was re-appointed. A scheme embodying these proposals was drafted by a sub-committee with Lord Justice FRY as chairman, but after a prolonged discussion on July 28th and Nov. 3rd of the same year was rejected by 43 votes in favour of an amendment of Mr. (now Sir) PHILIP MAGNUS to refer back the scheme for consideration and to increase the number of the special committee by 20 names. Most of the members of the special committee at once resigned. Mr. MAGNUS'S scheme, which varied but little in its general plan from that of Lord Justice FRY, was brought before Convocation of Dec. 8th, 1885, and was referred to a special committee of twenty-five members to work out the details and lay them before Convocation.

Meanwhile the question of degrees for London medical students had been brought before the profession by the late Dr. WALTER MOXON in a most lucid and powerful article in our columns on July 25th, 1885, entitled "The Demand for Equitable Graduation in the South of England, being a Study of an Unfulfilled Duty of the Royal Colleges of Physicians and Surgeons." He pointed out that these Colleges, if empowered to grant medical degrees, would at once constitute a teaching university in London and be the nucleus or centre of growth of a more general teaching university. A memorial in favour of this movement was presented to these Royal Colleges bearing the signatures of over 600 teachers, practitioners, and students of medicine. A committee of delegates of the two Colleges had already presented a report, which was fully considered in October, 1885, and a resolution moved by Dr. (now Sir) SAMUEL WILKS was adopted in the following terms: "That it is desirable that persons examined by the Royal College of Physicians of London and the Royal College of Surgeons of England conjointly, and found duly qualified, either by the ordinary or an additional qualification, should have a degree in medicine and surgery conferred on them." It is interesting to know that Dr. FINCHAM, Dr. S. O. HABERSHON, Dr. C. WEST, Dr. (now Sir) WILLIAM GOWERS, Dr. (now Sir) W. H. BROADBENT, Dr. SANSOM, Dr. BARNES, Dr. WILSON FOX, Dr. NORMAN MOORE, Dr. MOXON, Sir ANDREW CLARK, Sir HENRY PITMAN, and Sir WILLIAM JENNER, all spoke in favour of the movement. This preliminary report, having been referred to the Councils of the Royal Colleges and reported on, was further considered by the committee of delegates at very frequent meetings and they again reported in December, 1886, in favour of the granting of a degree in medicine and surgery to London medical students by the Royal Colleges and that an application for this purpose should be made to the Crown. A carefully drawn up statement giving the reasons for this step accompanied

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the report of the delegates. This final report came before both Colleges on Dec. 16th, 1886, after a most interesting discussion at the Royal College of Physicians of London as to whether the degree should be conferred by the Colleges acting by themselves alone or by some university outside the Colleges but on which they could be represented. This obviously was intended to include either a reformed London University or such a university as was contemplated by the Teaching University Association. On the 23rd an amendment taking the latter view was defeated by a large majority and the two Colleges were now definitely pledged to go on with their own scheme.

On June 29th, 1886, Mr. MAGNUS'S scheme, which differed but little in its essentials from that of Lord Justice FRY, was passed by Convocation but was no more acceptable to the Senate than the former one had been. The year 1887 was practically spent in conferences between the various bodies interested and three new schemes were ultimately brought forward, one by the University of London as representing the views of the Senate; a second by the Royal College of Physicians of London and the Royal College of Surgeons of England; and a third by University College and King's College, London. All these applications were put in for hearing before the Privy Council before January 16th, 1888, but in consequence of a multiplicity of petitions for and against them, and of the great importance of the question, Her Majesty's Government advised the appointment of a Royal Commission. In May, 1888, the Commission was formed and held its first meeting on June 2nd. Lord SELBORNE was the chairman, and the other members were Sir JAMES HANNEN, Mr. BRODRICK, warden of Merton College, Oxford, Sir WILLIAM THOMSON (now Lord Kelvin), Professor (now Sir GEORGE) STOKES, Vice-Chancellor BALL, and Dr. WELLDON, with Mr. J. L. GODDARD as secretary. The Warden of Merton College resigned after the first sitting on a question of procedure as to the limitation of the proposed evidence. After hearing most voluminous evidence the Commissioners issued their report on April 29th, 1889, in which the petition of the Royal Colleges to grant degrees in medicine and surgery was unanimously rejected. A reconstitution of the University of London mainly on the lines of the scheme of Lord Justice FRY was unanimously recommended to be tried, but in a separate note the members more immediately connected with education—viz., Sir WILLIAM THOMSON, Professor STOKES, and Dr. WELLDON—declared their preference for the establishment of a new teaching university in London without interfering with the work so ably done by the existing institution, although they would permit the existing institution to undertake the new duties if it could, which they doubted. If a proper scheme in full accord with the recommendations of the Commissioners were forthcoming from the University of London the petition of University and King's Colleges to be constituted into a university was not to be granted. Conferences between the various bodies interested and the Senate and between the Senate and Convocation as to the modifications required to meet the views of the Commission led to no result, so Lord CRANBROOK, as Lord President of the Privy Council, wrote to the University of London at the end of 1890 asking their intentions with regard to a new Charter. After many futile attempts a finally revised scheme "was drawn up" by the Senate and submitted to Convocation in 1891. This was too complicated to receive much support and was rejected by a large majority.

Two years of conferences had led to no result and Lord CRANBROOK at once gave notice that he would fix an early date for a meeting of a Committee of the Privy Council to take into consideration the petition of University and King's Colleges "to be a university in and for the London district, having power to grant degrees in the Faculties of Arts, Science, and Medicine, with power to add other faculties." The Lords of the Privy Council passed the Draft Charter of this new University leaving the two Royal Colleges to determine whether they would accept the representation offered to them in the new University. This was declined, but the alternative representation of the ten medical schools was accepted, and so they became, with University and King's Colleges, constituent colleges in the University. The University was to be called the Albert University, but afterwards, when the Joint Grand Committee of Gresham College had given their full support to the scheme, the name was by consent changed to that of "Gresham." The draft charter had to be laid on the table of both Houses of Parliament for thirty days. During the Parliamentary recess a most determined opposition was started by the authorities of the Victoria University and the provincial medical colleges, supported by many members of the Senate and Convocation of the University of London, by Bedford College, the Birkbeck Institute and similar bodies, and the University Extension Society. Many London professors, especially in science, urged the formation of a professorial university in opposition to a federated one. Parliament assembled in February, 1892, and on March 3rd Lord SALISBURY received a deputation representing these interests at which Vice-Principal RENDALL and Mr. CHAMBERLAIN were the principal speakers. On March 9th the Draft Charter was remitted by Mr. BALFOUR for reconsideration and on April 25th a new Royal Commission was appointed "to consider and if they think fit alter and amend the proposed Charter remitted in compliance with an address of the House of Commons, so as to form and report to us a scheme for the establishment under Charter of an efficient teaching university of London." The members of the new Commission were Earl COWPER (chairman), Lord REAY, Bishop BARRY, Lord PLAYFAIR, Vice-Chancellor RENDALL, Professor RAMSAY, Professor SIDGWICK, Canon BROWNE, Mr. ANSTIE, Q.C., Mr. R. C. PALMER, Sir W. S. SAVORY, Sir G. M. HUMPHRY, and Professor BURDON-SANDERSON, a well selected group of men representing practically all the interests involved in the solution of the question.

The sittings began on May 21st, 1892, and after hearing most lengthy, and in many respects contradictory, evidence, as well as a recapitulation of that put before Lord SELBORNE'S Commission, the new or COWPER Commission were not able to report before January, 1894. The chief recommendations then were that there should be one university with teaching functions confined to London and that the existing university should be reconstructed so as to carry on this work without interfering with its present duties, and that University College, King's College, Bedford College, the Royal College of Science, the City and Guilds of

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London Institute, certain theological colleges and colleges of music, and the London medical schools should be at once admitted as schools or colleges in the University. The students were to be divided into those attached to those institutions (internal or collegiate students) and those unattached (external or non-collegiate students). The examinations for the internal students were to be arranged by an Academic Council of the members, and those for the external students by a board specially appointed for that purpose. The final examination for the degrees in either were to be the same or to represent the same standard of knowledge, and "identical, so far as identity is consistent with the educational interests of both classes of students." The governing body was to be a Senate composed of the Chancellor and 65 other members. It was also proposed that these recommendations should be effected not by Charter, but by legislative authority and by the appointment of a Commission with statutory powers. These recommendations were accepted by the Royal Colleges and by University College and King's College after some modifications in favour of the latter. Deputations in support of and in opposition to the scheme were received by Lord ROSEBERY as Prime Minister and were told that the Government would "consult very largely the vote of Convocation, whenever it is taken." On Jan. 22nd, 1895, a meeting of Convocation took place, when 206 voted in favour of the scheme and 174 against. On May 14th, at the next meeting, Mr. BOMPAS endeavoured to get the resolutions which had been passed at the last meeting rescinded, but he was defeated by 238 votes against 116. As if to show the futility of consulting the graduates Mr. NAPIER, LL.D., a marked opponent of the scheme, was elected a Fellow of the Senate at the same meeting by 1231 votes, whilst only 738 graduates supported Mr. COZENS-HARDY, one of its most prominent and influential advocates.

On May 9th, 1895, Lord PLAYFAIR introduced a Bill in the House of Lords to carry out the recommendations of the Cowper Commission. The Bill was a very short one and the operative clause was as follows:—

1. The Commissioners shall make statutes and ordinances for the University of London in general accordance with the scheme of the report hereinbefore referred to, but subject to any modifications which may appear to them expedient after considering any representations made to them by the Senate or Convocation of the University of London or by any other body or persons affected.

2. In framing such statutes and ordinances the Commissioners shall see that provision is made for securing adequately the interests of non-collegiate students.

3. All such statutes and ordinances shall be laid forthwith before both Houses of Parliament and shall come into operation on the expiration of forty days after they have been so laid, and shall have effect as if enacted by this Act, but shall be subject to alteration in the manner provided by such statutes and ordinances.

The Bill passed its first reading, but its further progress was stopped by the resignation of the late Government. On the accession to office of the present Ministry an influential deputation waited on Nov. 28th, 1895, on the Duke of DEVONSHIRE, as Lord President of the Privy Council, asking him to introduce a similar Bill, but with a right of appeal to the Privy Council added. The deputation met with little encouragement and Sir JOHN LUBBOCK in his election address adopted the strange position that every graduate should be able to exercise the right of veto even by a proxy vote and without a personal attendance at Convocation, so that the prospects of the Bill at the end of 1895 were far from hopeful. The opposition of the graduates was further shown by the rejection of Sir JOSEPH LISTER (now Lord LISTER) as a Fellow in favour of the late Mr. WALTER RIVINGTON in June, 1896. Another amended Bill was introduced in the House of Lords, and it passed but was withdrawn in the House of Commons. Other tentative measures were tried in 1897. Some important points not in the former Bills were now introduced by way of compromise, and these satisfied a large section of Convocation which had formerly been actively hostile, although many graduates under the leading of Mr. FLETCHER MOULTON still continued a strenuous opposition. The Bill was, however, again introduced in the House of Lords by the Lord President on Feb. 21st, 1898, when it passed through the various stages without material alteration. It was then introduced in the House of Commons and passed the second reading on June 15th, when it was at once referred to the Standing Committee on Law. It was returned from this body practically unaltered and, although many obstructive amendments—formerly defeated—were again urged, it passed successfully through the Committee stage in July and received the Queen's assent on August 12th.

Sir JOHN GORST is much to be commended for the firm but courteous manner in which he piloted the Bill through the Lower House and the solution of the question will do the Government great credit. The Statutory Commission is composed of Lord DAVEY, the Bishop of LONDON, Sir WILLIAM ROBERTS, M.D., Sir OWEN ROBERTS, Professor JEBB, Professor MICHAEL FOSTER, M.D., and Mr. EDWARD HENRY BUSK, LL.B., and we hope that they will begin their important and laborious work as speedily as possible. Mr. T. BAILEY SAUNDERS has been appointed secretary to the Commission.

POST-GRADUATE INSTRUCTION ABROAD.

MEDICAL study is only nominally complete when a licence to practise is obtained, and all qualified men will acknowledge the importance of keeping themselves well informed in the various improvements in diagnosis and practice which are from time to time introduced. The opportunities afforded by post-graduate courses in this country are periodically referred to in the columns of THE LANCET; and with the object of treating the subject as fully as possible a short series of articles is now published, showing what has been and is being done in this direction at the great continental schools. In this connexion it is not necessary to remind our readers that Vienna, for instance, has for many years been a favourite place of study for medical men desirous of completing their education after having gained their diplomas, and the institution of special courses there, to be carried on in the vacation months, will be a further inducement to resort to this famous centre of medical learning.

FRANCE.

There is not in France any special institution corresponding exactly to the post-graduate schools of some other countries. Students who wish their medical education to be more comprehensive than that which is required for obtaining a diploma usually undertake the additional study before the presenting of their thesis, because they may present their thesis whenever it suits them best, and they usually wait

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until their class-work is over and they are about to enter on practice. In Paris there are numerous advanced courses of instruction in subjects which are not required at the qualifying examinations, and they are attended by the above-mentioned section of students as well as by foreign medical men, already qualified to practise in their respective countries, who come to Paris in great numbers every year. Such courses will be found at the Faculty of Medicine, at the College of France, at the Faculty of Sciences, at the Pasteur Institute, at the Museum of Natural History, in the free lectures delivered at the École Pratique of the Faculty, and in the polyclinics of individual surgeons. At the Faculty of Medicine a private course of bacteriology is given in a laboratory of the École Pratique; it is not official, because there is not as yet a chair of bacteriology at the Faculty; it is conducted by M. Chantemesse, and consists of demonstrations, the use of the microscope, and the making of cultivations, including the study of the most important micro-organisms. Many of the official lectures delivered at the Faculty are, either from the nature of the subjects or from the advanced style in which they are treated, more adapted to medical graduates than to students; lectures to students are the special province of the assistant professors (*agrégés*), who confine themselves to instruction of the usually accepted kind. It may almost be said that medical education in Paris is embodied in the lectures delivered by the assistant professors, and that the lectures of the professors form a kind of school of a higher grade, free from anxiety about examinations and not occupied with matters of common knowledge. All the lectures of the professors and the assistant professors are public, and fees are charged for attendance. The professors' lectures, which are most largely attended by foreigners, are those on general pathology (Professor Bouchard), on Experimental and Comparative Pathology (Professor Chantemesse), on Forensic Medicine (Professor Brouardel), on Hygiene (Professor Proust), on Pathological Anatomy (Professor Cornil), &c. In addition there are at the hospitals four extensive courses on Clinical Medicine, four on Clinical Surgery, four on Nervous Diseases, two on Clinical Obstetrics, one on Syphilis, one on Affections of the Urinary Passages, one on Ophthalmology, and one on Diseases of Children, each of them constituting a small school in which the same organisation is repeated on a reduced scale, the professor discoursing on unusual and difficult cases to advanced students and practitioners who wish to increase their stock of knowledge, whilst the assistants and the *chefs de clinique* deliver more elementary expositions to the students. Moreover, in the majority of the hospitals the physicians and surgeons have of their own accord arranged for an analogous organisation, independent of the Faculty, and some of these courses are very popular on account of the excellence of individual teachers. Under this head may be mentioned the course on Gynæcology given by Dr Pozzi at the Hôpital Broca, that given by Dr. Doléris at La Pitié, that on Diseases of the Heart and Vessels given by Dr. Huchard at the Hôpital Necker, that on Obstetrics given by Dr. Budin at the Maternité, and those on Surgery given by Dr. Terrier and Dr. Lucas-Championnière, that on Diseases of the Stomach given by Dr. Debove, &c. This constitutes the clinical instruction obtainable in the hospitals; it is free, but is given by physicians and surgeons attached to the hospitals.

At the College of France there are numerous courses in the higher branches of various subjects, some of which have a bearing on medical questions—such, for instance, as that on Experimental Medicine (Professor d'Arsonval), that on the Natural History of Organised Bodies (delivered by Professor François Franck and developed into a course on Physiology), and that on General Anatomy (Professor Rouvier). This last-mentioned chair is in reality an advanced School of Histology; the lectures of the professor are public and free; there is also a special course lasting two months.

At the Museum of Natural History will be found courses on Comparative Anatomy (Professor Filhol) on General Physiology (Professor Gréhant), on Comparative Pathology (Professor Chauveau), and on Anthropology (Professor Hamy). All these lectures are delivered three times a week; they are open to the public and are free.

At the Faculty of Sciences there are lectures on Physiology (Professor Dastre), on Biological Chemistry (Professor Duclaux), and on the Evolution of Organised Beings (Professor Giard).

To all these chairs there are attached spacious laboratories in connexion with an organisation which unites them all under the name of the École des Hautes Études. Admission to these laboratories is always granted on application being made to the professor; in general there is no fee for admission, but any outlay required for the work that is undertaken has to be paid for. The workers are under the control of the professor, whether they undertake original investigation or merely seek to increase their knowledge of recognised subjects; in almost all the laboratories lectures are delivered by the assistants.

At the School of Anthropology there are free public lectures on Prehistoric Anthropology, Medical Geography, Ethnography, Ethnology, Biological Anthropology, Zoological Anthropology, Physiological Anthropology, Sociology, and Comparative Ethnography.

The Pasteur Institute has an admirably organised school of Microbiology and numerous laboratories arranged in five services, with accommodation for fifty persons. In order to be admitted to this school it is necessary to send an application to the institute, together with a description of the investigations or the work contemplated. A person so admitted can remain at the institute for an indefinite time provided that his work is continuous. For working in the laboratories there is a fixed charge of 50 francs (£2) a month, which, however, is remitted in the case of a certain number of students selected by the institute. The five laboratory services above mentioned are as follows: (1) Rabies (M. Grancher, M. Charrin, and M. Chantemesse); (2) general microbiology (M. Duclaux); (3) technical microbiology (M. Roux), together with laboratory for diphtheria (M. Martin); (4) microbiology applied to hygiene, including vaccins (M. Chamberland); and (5) morphological and comparative microbiology (M. Metchnikoff). The department of technical microbiology presided over by M. Roux is devoted to teaching as well as to original investigation. The course of instruction lasts six weeks, and admission to it is obtained by merely entering one's name and paying a fee of 50 francs (£2). As the places assigned to workers are at present not very numerous it is necessary to enter one's name two years in advance.

Finally, there are in Paris numerous private hospitals and polyclinics which are well attended by both students and practitioners. At some there are lectures open to all-comers and free. In others the medical men who attend accompany the physician or surgeon on his visit, and clinical instruction is given on the cases which happen to be under treatment; such is the case in the celebrated ophthalmological clinics (Galezowski, de Wecker, Landolt, &c.), as well as in those of laryngology and gynæcology. The laryngological clinic of Dr. Castex has recently been incorporated with the School of Medicine, and a fee is charged for instruction. With this exception it is in all cases sufficient to apply to the physician or surgeon for permission to attend his clinic, and the request is immediately granted.

GERMANY.

Post-graduate lectures and demonstrations are given in most of the universities of Germany. As a rule, their duration is from three to four weeks, the university vacation being the usual period. They are delivered partly by the ordinary professors and partly by *privat-docents* or lecturers. These lectures and demonstrations are not included in the official course of university instruction, they are private undertakings; but those who attend them are none the less freely admitted to the university laboratories and hospitals. Medical men wishing to join these courses have no formalities to comply with beyond entering their names and paying the fees for the lectures or the practical work which they happen to prefer. In the event of their intending to study in Berlin they should apply to Mr. Anders, Registrar of the Association for Post-graduate Study, Langenbeck House, N.W. Ziegelstrasse, 8. Lists of the lectures may be obtained from this gentleman, and may also be seen in the advertisement columns of the leading German medical journals.

AUSTRIA.

Courses of lectures, the attendance on which is limited to medical men in practice, are delivered in Vienna, but not in any other Austrian University. They were introduced on the initiative of Professor Wagner, who appointed two months (August and September) during which they are delivered in two series by the most eminent *privat-docents* and assistants of the Faculty. Each course lasts four weeks, and the fees vary from twenty gulden (£1 17*s.*) to fifty gulden (£4 13*s.*), according to the subject. The first series comprised last year the following courses: Pathological Anatomy (Dr. Albrecht and Dr. Stoerk), Bacteriology

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(Dr. Ghon), Experimental Pathology (Dr. Biedl), Pharmacology (Dr. Hockauf), Internal Medicine (Dr. Hammerschlag, Dr. Czinner, and Dr. Türk), Neuro-pathology (Dr. Redlich), Diseases of Children (Dr. Franz), Ophthalmology (Dr. Topolanski, Dr. Hanke, Dr. Gruber, and Dr. Königstein), Laryngology (Dr. Grossmann, Dr. Rethi, Dr. Ebstein, and Dr. Koschier), Diseases of the Ear (Dr. Bing and Dr. Kaufmann), Dermatology and Syphilis (Dr. Rille and Dr. Spiegler), Obstetrics and Gynæcology (Dr. Wertheim, Dr. Woyer, Dr. Hink, Dr. Ludwig, Dr. Knauer, and Dr. Savor). The second series included the following courses:—Anatomy (Dr. Tandler), Pathological Anatomy (Dr. Kolisko and Dr. Albrecht), Bacteriology (Dr. Ghon), Experimental Pathology (Dr. Biedl), Forensic Medicine (Dr. Haberda), Internal Medicine (Dr. Pal, Dr. Schlesinger, Dr. Eisenschitz, and Dr. Sternberg), Surgery (Dr. Fraenkel), Dr. Schnitzler, and Dr. Friedländer), Ophthalmology (Dr. Bernheimer, Dr. Königstein, Dr. Sachs, and Dr. Wintersteiner), Diseases of the Ear (Dr. Bing, Dr. Pollak, Dr. Alt, and Dr. Kaufmann), Dermatology and Syphilis (Dr. Rille, Dr. Spiegler, and Dr. Zeissl), Obstetrics and Gynæcology (Dr. Lott, Dr. Braun, Dr. Herzfeld, Dr. Wertheim, Dr. Neumann, Dr. Woyer, Dr. Ludwig, Dr. Knauer, and Dr. Savor). These courses are likely to be preferred by medical practitioners to those delivered during the session from October to July, as they are not attended by students.

ITALY.

In many Italian medical schools special courses of instruction, clinical and theoretical, are now given to men who are already engaged in practice. Those who attend are mostly either on the one hand dispensary practitioners or divisional surgeons (medici condotti) or, on the other hand, graduates who take up special courses of study (particularly laboratory work) in order to become eligible for public health appointments under Government. For instance, at the University of Pavia a special series of lectures and demonstrations in hygiene has just been brought to a conclusion. The course was organised by Dr. Giuseppe Sormani, professor of the subject in the University, and was attended by graduates from all parts of Italy, attracted not only by the well-known expository power of the professor, but also by the preferential claim to sanitary posts conferred on all who have passed the examinations instituted by the Pavian school. Again, at Genoa, the post-graduate session of Dr. Maragliano, Professor of Clinical Medicine in that school, attracts an increasing attendance from other provinces besides those of the Alta Italia. In this course instruction is given in the refinements of sero-therapy, particularly as applied to pulmonary tuberculosis.

HUNGARY.

Foreign medical men who do not desire to obtain Hungarian qualifications, but merely to increase their knowledge by post-graduate study, will find no difficulty in pursuing their objects. They are allowed to enrol themselves among the "ausserordentliche Hörer" (students in special subjects) at a comparatively low fee, and are given every facility for practical study; vivisection, for instance, is amply provided for. All the lectures are delivered in the Hungarian language, but all the professors and teachers speak German, and some of them speak French and English as well. The cost of living in Budapest is nearly the same as in Vienna; the journey between the two towns takes five hours by railway

SOME OF THE CHIEF APPOINTMENTS HELD BY MEDICAL MEN.

Medical Officer to the Local Government Board.—This appointment is in the hands of the President of the Local Government Board for the time being, and has hitherto been filled by the promotion of one of the two assistant medical officers of that Board.

Medical Inspectors of the Local Government Board.—These appointments also are made by the President of the Local Government Board. Qualification and experience in public health are taken into consideration.

Medical Referees under the Workmen's Compensation Act, 1897.—This office was first constituted in the early part of 1898. The principal duties of the referees are to act as the advisers in medical matters of the committees, arbitrators, and county court judges who are empowered to decide all questions arising in proceedings under the Act. For this duty they are paid by the Treasury. The arrangement will eventually apply to the whole of the United Kingdom but at present arrangements have only been made for England and Wales. The fees payable by the Treasury vary from 1 guinea to 3 guineas and in addition occasions may arise where a workman will present himself to the medical referee for examination. Applications for the appointments should be addressed to the Home Secretary and sent under cover to the Private Secretary to the Secretary of State, Home Office, London, bearing on the envelope the words "Medical Referee," and should state the applicant's qualifications, age, &c., and the county court circuit to which he wishes to be attached. Preference, other things being equal, will be given to those applicants holding hospital appointments or to those who are not closely by the nature of their practice with the classes affected by the Act. (The full text of the circular from the Home Office will be found in THE LANCET of April 23rd, 1898, page 1137.)

Medical Officers to Poor-law Districts.—These appointments are made by the guardians of the union or parish in question, subject to the approval of the Local Government Board, which approval is primarily concerned with the medical and surgical qualifications of the persons appointed and the locality of their residences.

Public Vaccinators.—The conditions of appointment are the same as those already described for medical officers of Poor-law districts.

District Medical Officers of Health.—The appointments are made by the urban or rural district council in question, subject to the sanction of the Local Government Board, which sanction takes account of statutory qualifications, salary, area of district, &c.

County Medical Officers of Health.—The appointments are made by the respective county councils, with whom the question in all its details absolutely rests.

Lord Chancellor's Visitors in Lunacy.—There are two Visitors in Lunacy nominated by the Lord Chancellor. The appointments are usually bestowed on gentlemen who have distinguished themselves in the specialty.

Prison Medical Service.—Two medical officers are attached to each of the "first-class" prisons and one to several of the larger "second-class" prisons. They are required to devote their whole time to their official duties. The service is a small one and vacancies do not often occur. Forms of application can be procured from the Secretary to the Prison Department at the Home Office. The salary commences at £250 per annum, with free quarters, or an allowance in lieu thereof.

Medical Officers of the Mercantile Marine.—The Merchant Shipping Act, 1894 directs (Section 209) that every foreign-going ship having 100 persons or upwards on board shall carry a duly qualified medical practitioner. Ship's medical officers, however, are more often appointed under the part of the same Act relative to "emigrant ships." For the purposes of the Act an emigrant ship is defined as one which carries more than 50 steerage passengers, and a steerage passenger is defined as one who is not a cabin passenger. Section 303 provides that a medical practitioner shall be carried on board an emigrant ship where the number of steerage passengers exceeds fifty, and also where the number of persons on board (including cabin passengers, officers, and crew) exceeds 300. A medical practitioner shall not be considered to be duly authorised for the purposes of this Act unless (*a*) he is authorised by law to practise in some part of Her Majesty's dominions, or in the case of a foreign ship in the country to which that ship belongs; and (*b*) his name has been notified to the emigration officer at the port of clearance, and has not been objected to by him; and (*c*) he is provided with proper surgical instruments to the satisfaction of that officer. If any person proceeds or attempts to proceed as medical practitioner in any emigrant ship without being duly authorised, he shall be liable to a fine not exceeding £100. Surgeons in charge of passenger ships should keep a record of any sickness that occurs on the voyage, whether among saloon passengers, emigrants, or crew, and they are requested to report the same to the emigration officer at the end of the voyage. The remuneration for these appointments is extremely variable, ranging from a free passage to the port of destination to a salary of £10 a month during continuance in the service. The appointments are of course made by the various firms of shipowners and the applicants are sometimes numerous.

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SESSION 1898–99.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

Registration of Medical Students.—The following are the General Medical Council's Regulations in reference to the registration of students in medicine:—

Every medical student shall be registered in the manner prescribed by the General Medical Council. No medical student shall be registered until he has passed a preliminary examination as required by the General Medical Council, and has produced evidence that he has commenced medical study. The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned as dating earlier than fifteen days before the date of registration. The registration of medical students shall be placed under the charge of the branch registrars. Every person desirous of being registered as a medical student shall apply to the branch registrar of the division of the United Kingdom in which he is residing; and shall produce or forward to the branch registrar a certificate of his having passed a preliminary examination as required by the General Medical Council, and evidence that he has commenced medical study. The branch registrar shall enter the applicant's name and other particulars in the Students' Register, and shall give him a certificate of such registration. Each of the branch registrars shall supply to the several qualifying bodies, medical schools, and hospitals, in that part of the United Kingdom of which he is registrar, a sufficient number of blank forms of application for the registration of medical students. Applications for special exceptions are dealt with by the Students' Registration Committee, which reports all such cases to the Council.

The Preliminary Examination in General Education, required to be passed previously to registration as a Medical Student, shall be as follows:—

"1. English language, including grammar and composition. 2. Latin, including grammar, translation from specified authors, and translation of easy passages not taken from such authors. 3. Mathematics, comprising (*a*) arithmetic, (*b*) algebra, as far as simple equations, inclusive; (*c*) geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions. 4. One of the following optional subjects: (*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern language, (*f*) logic."

The Council will not in future accept any certificate of pass in Preliminary Examination in General Education unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been *passed at the same time.*

Professional Education.—For those who commenced study after Jan. 1st, 1892, the course of professional study after registration shall occupy at least five years. The Final examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

The following is a list of Examining Bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as a medical or dental student the applicant producing satisfactory evidence that he has passed them:—

I.—UNIVERSITIES IN THE UNITED KINGDOM.

University of Oxford.—Junior Local Examinations. Senior Local Examinations. Responsions. Moderations. Final Examination for a degree in Arts.

University of Cambridge.—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Previous Examination. General Examination. Final Examination for a degree in Arts.

University of Durham.—Examination for Certificate of Proficiency. Preliminary Examination in Arts for Graduation in Medicine and Science. Final Examination for a degree in Arts.

University of London.—Matriculation Examination. Final Examination for a degree in Arts or Science.

Victoria University.—Preliminary Examination. Entrance Examination in Arts. Final Examination for a degree in Arts or Science.

University of Wales.—Matriculation Examination. Final Examination for a degree in Arts.

University of Edinburgh.—Local Examinations (Senior and Junior). Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science.

University of Aberdeen.—Local Examinations (Senior and Junior). Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science.

University of Glasgow.—Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science.

University of St. Andrews.—Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science or for the diploma of L.L.A.

University of Dublin.—Public Entrance Examination. Examination for the first, second, third, or fourth year in Arts. Final Examination for a degree in Arts.

Royal University of Ireland.—Matriculation Examination. Final Examination for a degree in Arts or Science.

Oxford and Cambridge Schools Examination Board.—Lower certificate (to include all the required subjects at one time). Higher certificate (to include the required subjects).

II.—MEDICAL LICENSING BODIES.

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary Examination.[1]

III.—EDUCATIONAL BODIES OTHER THAN UNIVERSITIES.

College of Preceptors.—Examination for a First Class Certificate or Second Class Certificate of First or Second Division. Preliminary Examination for Medical Students.

Intermediate Education Board of Ireland.—Junior Grade Examination; Middle Grade Examination; Senior Grade Examination.

Educational Institute of Scotland.—Preliminary Medical Examination.

Scotch Education Department.—Leaving Certificates in Lower and Higher Grades and in Honours.

IV.—INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

The Certificates from Indian, Colonial, and Foreign Universities and Colleges must contain evidence "that the Examination has been conducted by or under the authority of the Body granting it, includes all the subjects required by the General Medical Council, and states that all the subjects of Examination have been passed in at one time; and copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose. In the case of Natives of India or other Oriental countries whose vernacular is other than English an Examination in a Classic Oriental Language may be accepted instead of an Examination in Latin."

H. E. Allen, LL.B., Registrar of the General Council and of the Branch Council for England, 299, Oxford-street, London, W.—James Robertson, Registrar of the Branch Council for Scotland, 48, George-square, Edinburgh.—S. W. Wilson, Registrar of the Branch Council for Ireland, 35, Dawson-street, Dublin.

REGULATIONS OF THE MEDICAL EXAMINING BODIES IN THE UNITED KINGDOM.

UNIVERSITY OF OXFORD.[2]

THERE are two degrees in Medicine, B.M. and D.M., and two degrees in Surgery, B.Ch. and M.Ch.

The B.M. and B.Ch. degrees are granted to those members of the University who have passed the Second Examination. Graduates in Arts (B.A. or M.A.) are alone eligible for these two degrees. In order to obtain the degrees of B.M. and B.Ch. the following examinations must be passed:—1. Preliminary subjects: Mechanics and Physics, Chemistry, Animal Morphology and Botany. 2. Professional. (*a*) First Examination: Subjects—Organic Chemistry, unless the candidate has obtained a first or second class in Chemistry in the Natural Science School; Human Physiology unless he has obtained a first or second class in

[1] The Council has recommended that this examination be discontinued.

[2] No returns until these sheets were in the press.

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Animal Physiology in the Natural Science School; Human Anatomy, and Materia Medica with Pharmacy. (*b*) Second Examination: Subjects—Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene. The approximate dates of the examinations are as follows:—Preliminaries—Mechanics, Physics and Chemistry, December and June; Animal Morphology and Botany, December and March; Professional (First and Second B.M.), June and December.

The degree of D.M. is granted to Bachelors of Medicine of the University—(1) who took the degree of B.M. previously to the end of Trinity Term, 1886, provided they have spent three years in the practice of Medicine after taking that degree, and have composed a dissertation on some medical subject approved by the Regius Professor of Medicine, before whom it must be read in public; (2) who took the degree of B.M. subsequently to the end of Trinity Term, 1886, provided they have entered their thirty-ninth term and have composed on some medical subject a dissertation which is approved by the professors in the Faculty of Medicine and examiners for the degree of B.M. whose subject is dealt with. A book published within two years of the candidate's application for the degree may be substituted for a dissertation. The degree of M.Ch. is granted to Bachelors of Surgery of the University who have entered their twenty-seventh term, who are members of the surgical staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for six months, and who have passed an examination in Surgery, Surgical Anatomy, and Surgical Operations. This examination is held annually, in June, at the end of the Second B.M. Examination.

The First Examination for the degrees of B.M. and B.Ch. may be passed as soon as the Preliminary Scientific Examinations have been completed. The subjects of this examination may be presented separately or in any combination or in any order, provided Anatomy and Physiology be passed together.

The Second Examination may be passed after the completion of the first. Before admission to the Second Examination candidates must present Certificates of instruction in Infectious and Mental Diseases, and of attendance on Labours, and of proficiency in the practice of Vaccination.

Scholarships, &c.—Scholarships in some branch of Natural Science (Chemistry, Physics, Biology) of the average value of £80 per annum, tenable for four years and renewable under certain conditions for a fifth year, as well as Exhibitions of a less annual value, are awarded after competitive examination every year by some of the Colleges. Notices of vacancy, &c., are published in the *University Gazette*. In February there is competed for annually, by those who, having obtained a first-class in any school (Moderations or final), or a Scholarship or Prize open to general competition in the University, have passed all the examinations for the degree of B.A., one Radcliffe Travelling Fellowship. It is tenable for three years and is of the annual value of £200. The examination is partly scientific, partly medical. The holder must travel abroad for the purpose of medical study. A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject including Physiology or Pathology.

More detailed information may be obtained from the University Calendar; from the Examination Statutes, 1894, which contain the official schedules of the several subjects of examination in both Arts and Medicine; from the Student's Handbook to the University; from the Regius Professor of Medicine; and from the Professors in the several departments of science.

The Lecturers for the various subjects are as follows:—Regius Professor of Medicine: J. S. Burdon Sanderson, D.M. Pathological Histology and Practical Bacteriology: The Lecturer on Pathology, J. Ritchie, D.M. Edin. Professor of Human Anatomy: A. Thomson, M.A. Waynflete Professor of Physiology: F. Gotch, M.A.; Advanced Course: the Lecturer on Physiology, J. S. Haldane, M.A. Practical Physiology and Histology: G. Mann, D.M. Edin. Lichfield Lecturer in Clinical Medicine: G. J. Wilson, M.A., D.M. Dub. Lichfield Lecturer in Clinical Surgery: W. L. Morgan, M.A. Organic Chemistry in Relation to Medicine, &c., followed by Practical Work: Aldrichian Demonstrator, W. W. Fisher, M.A., and J. E. Marsh, M.A. Lecturer in Materia Medica, J. E. Marsh, M.A. Linacre Professor of Comparative Anatomy, E. Ray Lankester, M.A. Elementary Animal Morphology (Practical): the Aldrichian Demonstrator, W. B. Benham, M.A., and assistants. Sherardian Professor of Botany: S. H. Vines, M.A. Waynflete Professor of Chemistry: W. Odling, M.A. Inorganic Chemistry: A. G. Vernon Harcourt, M.A. Laboratory Instruction: W. W. Fisher, M.A., J. Watts, M.A., V. H. Veley, M.A., and J. E. Marsh, M.A. Professor of Experimental Philosophy: R. B. Clifton, M.A. Instruction in Practical Physics: R. B. Clifton, M.A., J. Walker, M.A., W. F. S. Churchill, B.A., and J. C. Alsop, B.A. Elementary Heat and Light: R. E. Baynes, M.A. Elementary Mechanics: F. J. Smith, M.A.

UNIVERSITY OF CAMBRIDGE.

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms by residence in the University. He must pass the Previous Examination in Classics, Mathematics, &c., which may, and should if possible, be done immediately on coming into residence in October, or, what is better, obtain exemption through the Oxford and Cambridge Schools Examination Board or the Cambridge Senior Local Examinations before commencing residence. He may then devote himself to medical study in the University, attending the hospital and the medical lectures, dissecting, &c. Or he may, as nearly all students now do, proceed to take a degree in Arts, either continuing mathematical and classical study and passing the ordinary examinations for B.A., or going out in one of the Honour Triposes. The Natural Sciences Tripos is the most appropriate, as some of the subjects are practically the same as those for the first and second M.B. examinations.

For the degree of *Bachelor of Medicine (M.B.)* five years of medical study are required. This time may be spent in Cambridge or at one of the recognised Schools of Medicine. The first three or four years are usually spent in Cambridge, the student remaining in the University till he has passed, say, the examination for the Natural Sciences Tripos and the first and second examinations for M.B. Cambridge being now a complete School of Medicine, all the requisite lectures and hospital practice may be attended here, and many students remain to attend lectures and hospital practice until they have passed the first part of the third examination for M.B. The supply of subjects for Dissection is abundant and the laboratories for Pathology, Bacteriology, and Pharmacology are well equipped.

There are three examinations for M.B. The *first* includes Chemistry and other branches of Physics, and Elementary Biology. These parts may be taken together or separately. The *second* in Human Anatomy and Physiology and in Pharmaceutical Chemistry. These may be taken together or separately. The *third* may also be taken in two parts—viz., (1) Principles and Practice of Surgery (with Operative and Clinical Surgery) and Midwifery and Diseases of Women; and (2) Pathology, Principles and Practice of Medicine, including Pharmacology and Therapeutics, Elements of Hygiene, Medical Jurisprudence and Mental Diseases. The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting-room, and in the laboratories. An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic.

As Operative and Clinical Surgery now form parts of the third M.B. examination candidates who have passed both parts of that examination are admitted to the registrable degree of *Bachelor of Surgery (B.C.)* without separate examination and without keeping an Act.

The degree of *Doctor in Medicine* may be taken three years after that of M.B. or four years after that of M.A. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools, with *viva-voce* examination; and an extempore Essay has to be written on some subject relating to Physiology, Pathology, the Practice of Medicine, or State Medicine.

For the degree of *Master in Surgery (M.C.)* the candidate must have passed all the examinations for B.C. He is required either (1) to pass an examination in Surgical Anatomy and Surgical Operations, Pathology, and the Principles and Practice of Surgery, and to write an extempore Essay on a Surgical Subject; or (2) to submit to the Medical

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Board original contributions to the advancement of the Science or Art of Surgery. Before he can be admitted to the examination two years at least must have elapsed from the time when he completed all required for the degree of B.C.

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, and Pharmaceutical Chemistry may be obtained upon sending a stamped directed envelope to the Registrary, Cambridge. Full information is contained in the *Cambridge University Calendar*.

UNIVERSITY OF LONDON.

The *Matriculation Examination.*—Candidates for any degree in this University must have passed the Matriculation Examination. No exemption either from Matriculation or from subsequent examinations is allowed on account of degrees obtained at other Universities or of examinations of other examining bodies that may have been passed. The examinations take place twice in each year—on the second Monday in January and the second Monday in June; and may be held not only at the University of London, but also, under special arrangement, in other parts of the United Kingdom or in the colonies. Every candidate must, on or before April 25th for the June examination, and on or before Nov. 25th for the January examination, apply to the Registrar for a form of entry, which must be returned on or before May 1st or Dec. 1st respectively, accompanied by a certificate showing that the candidate has completed his sixteenth year and by his fee for the examination. A certificate from the Registrar-General in London or from the superintendent registrar of the district, or a certified copy of the baptismal register, is required in every case in which it can possibly be obtained. In other cases a declaration of the candidate's age, made before a magistrate by his parent or guardian, or by the candidate, if of full age, will be accepted. As candidates cannot be admitted after the list is closed, any candidate who may not have received a form of entry within a week after applying for it should communicate immediately with the Registrar, stating the exact date of his application and the place where it was posted. Every candidate must pay a fee of £2, and if he withdraws his name, or fails to present himself at the examination, or fails to pass it, the fee shall not be returned to him, but he shall be allowed to enter for any subsequent matriculation examination upon payment at every such entry of an additional fee of £1, provided that he comply with the other regulations. Candidates must show a competent knowledge of: 1. Latin. 2. English Language, History to the end of the seventeenth century, with the Geography relating thereto. 3. Mathematics (Elementary). 4. General Elementary Science. 5. Any one of the following languages or sciences: Greek, French, German, Sanskrit, Arabic, Elementary Mechanics, Elementary Chemistry, Elementary Sound, Heat, and Light, Elementary Magnetism and Electricity, Elementary Botany. (No credit will be given for more than one of these subjects, and candidates desiring to be examined in Sanskrit or Arabic must give two months' notice to the Registrar. The examination in Botany is only held in the United Kingdom. Candidates in any one of the optional Branches of Science will find it an advantage to have obtained some elementary instruction in the practical use of apparatus.) A pass certificate signed by the Registrar is delivered to each successful candidate after the report of the examiners shall have been approved by the Senate. The first six candidates in the Honours Division, of not more than twenty years of age at the commencement of the examination, shall respectively receive an exhibition or a prize. Any candidate obtaining a place in the Honours Division at the matriculation examination in January shall be admissible to the intermediate examination either in Arts or in Science in the following July.

Provincial Examinations for Matriculation.—These examinations are appointed by the Senate from time to time upon the application of any city, institution, or college desiring to be named as a local centre for one or more examinations, and are carried on simultaneously with the examinations in London under the supervision of sub-examiners also appointed by the Senate. Candidates wishing to be examined at any provincial centre must give notice upon their forms of entry to the Registrar of the University, who will then make all necessary arrangements. Besides the University fee, a fee usually varying from £1 to £2 is charged by the local authorities, and must be paid *at the local centre* immediately before the commencement of the several examinations. The answers of the candidates at the provincial examinations are reviewed by the examiners at the same time as the answers of the candidates examined in London, and a list of the candidates who have passed at each provincial examination is published, at the time fixed by the regulations, at the place where such examination has been held.

Preliminary Scientific (M.B.) Examination.—Professional studies pursued before the whole of this examination has been passed will not count towards the course required for the M.B. degree. Candidates must have passed the matriculation examination. The examination takes place twice in each year, once for Pass and Honours, commencing on the second Monday in July, and once for Pass candidates only, commencing on the third Monday in January. Every candidate must apply to the Registrar for a form of entry on or before May 24th for the July examination, or on or before Dec. 15th for the January examination, which must be returned on or before July 1st and Dec. 22nd respectively, accompanied by the candidate's fee of £5. The subjects of the Preliminary Scientific Examination are divided into two sections: (1) Chemistry and Physics, (2) General Biology. Chemistry includes a written examination in Inorganic Chemistry and a *viva-voce* examination in Qualitative Analysis. Physics implies a knowledge of acoustics, heat, magnetism, electricity, and optics. General Biology comprises a knowledge of the elements of zoological (vertebrate or invertebrate) and botanical morphology, physiology, and embryology. Candidates shall be allowed to enter for the whole examination or for either section. Candidates who present themselves for the two sections together shall be credited with either section in which they may have passed, although they may have failed to pass in the other, but no such candidate shall be placed in the Honours List. Candidates must bear in mind that the standard of attainment for the Honours examination is much higher than that for the Pass examination; and they should therefore exercise due caution in making their choice, to which they will be required to adhere. Candidates for Honours in Botany and Zoology must take the Pass examination in General Biology; in other respects no candidate may take both the Pass and the Honours papers in the same subject. The fee of £5 covers the whole of the examination, whether taken altogether or in sections.

Provincial Examinations for the Preliminary Scientific (M.B.) Examination.—Pass examinations are held in July only at nearly the same places as those appointed for the June Provincial Matriculation examinations. The practical examinations in chemistry are conducted at the provincial centres, but all candidates must attend at the University for the practical examinations in Physics and Biology.

Bachelor of Medicine.—Every candidate for the degree of Bachelor of Medicine will be required—1. To have passed the Matriculation Examination in this University not less than five years previously. 2. To have passed the Preliminary Scientific (M.B.) Examination not less than four years previously. 3. To have been engaged in his professional studies during five years subsequent to matriculation and four years subsequent to passing the Preliminary Scientific Examination at one or more of the medical institutions or schools recognised by this University, one year at least of the four being spent in one or more of the recognised institutions or schools in the United Kingdom. 4. To pass two examinations in Medicine.

Intermediate Examination.—The Intermediate Examination in Medicine takes place twice in each year—once for Pass and Honours, commencing on the second Monday in July, and once for Pass candidates only, commencing on the third Monday in January. The subjects of the examination are Anatomy, Physiology and Histology, Organic Chemistry,[3] Materia Medica, and Pharmaceutical Chemistry. The standard of attainment required for Honours is much higher than for a Pass. No candidate shall be admitted to this examination unless he have passed the Preliminary Scientific Examination at least two years previously and have produced certificates to the following effect:—1. Of having completed his nineteenth year. 2. Of having, sub

[3] In and after 1899 the Summer examination will commence on the first Monday in July.

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sequently to having passed the Preliminary Scientific Examination, been a student during two years at one or more of the medical institutions or schools recognised by this University, and of having attended a course of lectures on each of three of the subjects in the following list: Descriptive and Surgical Anatomy, Physiology and Histology, Pathological Anatomy, Materia Medica and Pharmacy, General Pathology, General Therapeutics, Forensic Medicine, Hygiene, Obstetric Medicine and Diseases Peculiar to Women and Infants, Surgery, Medicine. 3. Of having, subsequently to having passed the Preliminary Scientific Examination, dissected during two sessions. 4. Of having, subsequently to having passed the Preliminary Scientific Examination, attended a course of Practical Chemistry, comprehending practical exercises in conducting the more important processes of general and pharmaceutical chemistry, in applying tests for discovering the adulteration of articles of the Materia Medica and the presence and nature of poisons, and in the examination of mineral waters, animal secretions, urinary deposits, calculi, &c. 5. Of having attended to Practical Pharmacy and of having acquired a practical knowledge of the preparation of medicines. These certificates (as is the case also with all the certificates hereinafter mentioned) must be transmitted to the Registrar at least four weeks before the commencement of the examination. Fee for this examination, £5.

M.B. Examination.—The M.B. Examination takes place twice in each year—once for Pass and Honours, commencing on the last Monday in October, and once for Pass candidates only, commencing on the first Monday in May. The subjects of the examination are General Pathology, General Therapeutics, Hygiene, Surgery, Medicine, Obstetric Medicine, and Forensic Medicine. No candidate will be admitted to this examination within twenty-one months of the time of his passing the Intermediate Examination unless he be a registered medical practitioner of not less than three years' standing, in which case he must produce a certificate of having gone through the required course of training at some time previously. Every candidate must produce certificates:—1. Of having passed the Intermediate Examination. 2. Of having attended a course of lectures on each of two of the subjects enumerated above in the regulations for that examination for which the candidate had not on that occasion presented certificates. 3. Of having conducted at least twenty labours. Certificates on this subject will be received from any legally qualified practitioner in Medicine. 4. Of having attended the Surgical Practice of a recognised hospital or hospitals during two years, with clinical instruction and lectures on Clinical Surgery. 5. Of having attended the Medical Practice of a recognised hospital or hospitals during two years, with clinical instruction and lectures on Clinical Medicine, including Infectious Diseases and Lunacy. 6. Of having, after having attended Surgical and Medical Hospital Practice for at least twelve months subsequently to passing the Intermediate Examination in Medicine, attended to Practical Medicine, Surgery, or Obstetric Medicine, with special charge of patients, in a hospital, infirmary, dispensary, or parochial union during six months, such attendance not to be counted as part of either the Surgical or the Medical Hospital Practice prescribed in Clauses 4 and 5. 7. Of having acquired proficiency in Vaccination. Certificates on this subject will be received only from the authorised vaccinators appointed by the Privy Council. The fee for this examination is £5.

Bachelor of Surgery.—The examination for the degree of Bachelor of Surgery takes place once in each year and commences on the Tuesday following the first Monday in December. Candidates must produce certificates to the following effect:—1. Of having passed the examination for the degree of Bachelor of Medicine in this University. 2. Of having attended a course of instruction in Operative Surgery and of having operated on the dead subject. The subjects of the examination are Surgery and Pathology and Surgical Anatomy. Fee £5.

Master in Surgery.—The examination for the degree of Master in Surgery takes place once in each year and commences on the first Monday in December. Candidates must produce certificates to the following effect:—1. Of having taken the degree of Bachelor of Surgery in this University. 2. Of having attended, subsequently to having taken the degree of Bachelor of Surgery in this University: (*a*) to Clinical or Practical Surgery during two years in a hospital or medical institution recognised by this University; or (*b*) to Clinical or Practical Surgery during one year in a hospital or medical institution recognised by this University, and of having been engaged during three years in the practice of his profession; or (*c*) of having been engaged during five years in the practice of his profession, either before or after taking the degree of Bachelor of Surgery in this University. One year of attendance on Clinical or Practical Surgery, or two years of practice, will be dispensed with in the case of those candidates who at the B.S. Examination have been placed in the first division. 3. Of moral character, signed by two persons of respectability. The examination is conducted by means of printed papers and *vivâ-voce* interrogation, and the subjects are Mental Physiology (especially in its relations to mental disorder) and Surgery. Any candidate for the degree of M.S. may transmit to the Registrar, not later than Oct. 1st, a printed Dissertation, Thesis, or Commentary, written in view of candidature, or published within two academical years immediately preceding, treating scientifically some special department of Surgical Science; and if the Thesis be approved by the examiners the candidate will be exempt from the written examination in Surgery. The fee is £5.

Doctor of Medicine.—The examination for this degree takes place once in each year and commences on the first Monday in December. Candidates may present themselves for examination either in Medicine or State Medicine. Those presenting themselves for the M.D. Examination in Medicine must produce certificates to the following effect:—1. Of having attended, subsequently to having taken the degree of Bachelor of Medicine in this University: (*a*) to Clinical or Practical Medicine during two years in a hospital or medical institution recognised by this University; (*b*) or to Clinical or Practical Medicine during one year in a hospital or medical institution recognised by this University, and of having been engaged during three years in the practice of their profession; (*c*) or of having been engaged during five years in the practice of their profession, either before or after taking the degree of Bachelor of Medicine in this University. 2. Of moral character, signed by two persons of respectability. One year of attendance on Clinical or Practical Medicine, or two years of practice, will be dispensed with in the case of those candidates who at the M.B. Examination have been placed in the First Division. Candidates presenting themselves for the M.D. Examination in State Medicine must produce certificates to the following effect:—1. Of having attended, subsequently to having taken the degree of Bachelor of Medicine in this university: (*a*) to State Medicine during two years, including six months' practical instruction in a laboratory and six months' outdoor sanitary work; (*b*) or to State Medicine during one year, and of having held for a period of two years the position of medical officer of health in any sanitary district; (*c*) or of having held for a period of three years the position of medical officer of health in any sanitary district. 2. Of moral character. One year of attendance on State Medicine or one year of holding the position of medical officer of health will be dispensed with in the case of those candidates who at the M.B. Examination have been placed in the First Division. The examination is conducted by means of printed papers and *vivâ-voce* interrogation, and the subjects are Medicine (or State Medicine) and Mental Physiology. Any candidate for the degree of M.D. may transmit to the Registrar, not later than Oct. 1st, a printed Thesis, written in view of candidature, or published within two academical years immediately preceding, treating scientifically some special department of Medical Science; and if the Thesis be approved by the examiners the candidate will be exempt from the written examination in Medicine (or State Medicine). The fee is £5.

UNIVERSITY OF DURHAM.

One Diploma and six degrees are conferred—viz., the Diploma in Public Health and the degrees of Bachelor in Medicine, Bachelor in Surgery, Master in Surgery, Doctor in Medicine, Bachelor in Hygiene, and Doctor in Hygiene. These degrees are open both to Men and Women.

For the degree of *Bachelor in Medicine* (*M.B.*) there are four professional examinations.

The subjects of the First Examination are—Elementary Anatomy and Elementary Biology, Chemistry, and Physics.

The subjects for the Second Examination are—Anatomy,

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Physiology, Materia Medica, Therapeutics, Pharmacology, Pharmacy.

The subjects for the Third Examination are—Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology.

The subjects of the Fourth Examination are—Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children.

N.B.—It is required that at least one of the five years of professional education shall be spent in attendance at the University College of Medicine, Newcastle-upon-Tyne. Candidates for the First Examination who have passed the First Examination of the Conjoint Board in England will be exempt from the First Examination of the University, except in the subjects of Elementary Anatomy, Chemistry, and Physics, and candidates who hold a qualification from a recognised Licensing Body in the United Kingdom will be exempt from the First Examination of the University, except in the subjects of Chemistry and Physics. Candidates who have passed the First and Second Examinations of the University will be exempt from First and Second Examinations of the Conjoint Board.

For the degree of *Bachelor in Surgery (B.S.)* every candidate must have passed the examination for the degree of Bachelor in Medicine of the University of Durham and must have attended one course of lectures on Operative Surgery and one course on Regional Anatomy. Candidates will be required to perform operations on the dead body and to give proof of practical knowledge of the use of surgical instruments and appliances.

For the degree of *Master in Surgery (M.S.)* candidates must not be less than twenty-four years of age and must satisfy the University as to their knowledge of Greek. In case they shall not have passed in this subject at the Preliminary Examination in Arts for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.S. They must also have obtained the degree of Bachelor in Surgery of the University of Durham and must have been engaged for at least two years subsequent to the date of acquirement of the degree of Bachelor in Surgery, in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice.

The subjects of examination are :—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

For the degree of *Doctor in Medicine (M.D.)* candidates must be not less than twenty-four years of age and must satisfy the University as to their knowledge of Greek. In case they shall not have passed in this subject at the Preliminary Examination in Arts for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.D. They must also have obtained the degree of Bachelor in Medicine of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor in Medicine in attendance on the practice of a recognised hospital, or in the military or naval services, or in medical and surgical practice. Each candidate must write an Essay, based on original research or observation, on some medical subject selected by himself, and approved of by the Professor of Medicine and must pass an examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the Essay.

The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence. Candidates shall not be under forty years of age and shall have been in active practice for fifteen years as registered medical practitioners. They shall produce certificates of moral character from three registered members of the medical profession, and if they have not passed an examination in Arts previously to the Professional Examination in virtue of which they have been placed on the Register, they shall be required to pass in Classics and Mathematics. Candidates who have passed an examination in Arts previously to being placed on the Register are required to pass an examination in Latin. They will be examined in the Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics, the Principles and Practice of Surgery, Midwifery, and Diseases of Women and Children, Pathology (Medical and Surgical), Anatomy (Medical and Surgical), Medical Jurisprudence, and Toxicology. The fee will be fifty guineas, of which twenty guineas will be returned if the candidate fails to satisfy the examiners.

Candidates for any of the above degrees must give at least twenty-eight days' notice to Professor Howden, Secretary, College of Medicine, Newcastle-on-Tyne.

[4] This regulation will not apply to candidates registering as medical students on or after Oct. 1st, 1896. Such candidates must pass in all the subjects of the first examination.

VICTORIA UNIVERSITY.

Colleges of the University: Owens College, Manchester; University College, Liverpool; and Yorkshire College, Leeds.

Matriculation, which consists in signing the University Register, must precede entry upon any course of study in a College of the University, if that course is to be counted towards the required minimum of attendance for a degree. Those only can matriculate who are registered students of a College of the University.

Four degrees in Medicine and Surgery are conferred by the Victoria University—viz., Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

All candidates for degrees in Medicine and Surgery are required to pass an examination called the Entrance Examination in Arts, or to have passed such other examination as may be recognised by the University for this purpose.[5]

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Before admission to the degree of M.B. or Ch.B. candidates are required to present certificates that they will have attained the age of twenty-one years on the day of graduation and that they have pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in a College of the University, and one year at least having been passed in a College of the University subsequently to the date of passing the First M.B. Examination. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery are required to satisfy the examiners in the several subjects of the following examinations: the First Examination, the Second Examination, and the Final Examination.

The First Examination.—The subjects of examination are as follows :—(1) Chemistry; (2) Elementary Biology; (3) Physics. Candidates must have attended during at least one year courses both of lectures and of laboratory work in each of the above-named subjects. The Examination is divided into two parts: Part 1, Physics and Chemistry; Part 2, Biology; and the candidates may pass in these parts separately.

The Second Examination.—The subjects of examination are as follows :—A : (1) Anatomy; (2) Physiology, including Physiological Chemistry and Histology; B : (3) Materia Medica and Pharmacy. Candidates may pass in A or B separately.

The Final Examination.—The subjects of examination are as follows :—(1) Pharmacology and Therapeutics. (2) General Pathology and Morbid Anatomy. (3) Forensic Medicine and Toxicology, and Public Health. (4) Obstetrics and Diseases of Women. (5) Surgery, Systematic, Clinical and Practical. (6) Medicine, Systematic and Clinical, including Mental Diseases and Diseases of Children.

Candidates may either present themselves in all the six subjects of examination on the same occasion or may pass the examination in two parts, the first part consisting of *two* or *three* of the subjects (1), (2) and (3), the second part of the remaining subjects.

Candidates who fail to satisfy the examiners in the first part must either present themselves again in the subjects as

[5] The examinations at present recognised are:—1. The Preliminary Examination of Victoria University, provided Latin and Mechanics have been taken up. 2. The Matriculation Examination of the University of London. 3. The Previous Examination of the University of Cambridge. 4. Responsions of the University of Oxford. 5. The Leaving Certificate Examination (Higher) and Local Examinations (Honours) of the Oxford and Cambridge Boards, provided that they include Latin, English, Mathematics, and Elementary Mechanics. 6. The Final Examination for Graduation in Arts of any university in Great Britain and Ireland.

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selected or in all the three subjects of the First part or in all the six subjects of examination.

Candidates for the first part of the examination must have completed the *fourth winter* of medical study.

Candidates for the second part of the examination, or for the whole examination, must have completed the fifth year of medical study.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates for the degree of Doctor of Medicine are required to present a printed Dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine. No candidate will be admitted to the degree unless his Dissertation shall have been recommended by the General Board of Studies to the Council for acceptance. Candidates may be examined on any subject connected with their dissertations.

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The subjects of examination are as follows: (1) Surgical Anatomy; (2) Surgery; (3) Operative Surgery; (4) Clinical Surgery; (5) Ophthalmology; (6) Pathology and Bacteriology.

UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery.

Subject to regulations to be made from time to time by the University Court, the University may also confer diplomas in special branches of medical and surgical practice on graduates of the University in Medicine and Surgery.

Before commencing his medical studies each student must pass a preliminary examination in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek or French or German: Provided always that, in the case of a candidate whose native language is not English, an examination in the native language of the candidate may be substituted for one in either French or German, and an examination in any other classical language for one in Latin or Greek.

No one is admitted to the degrees of Bachelor of Medicine and Bachelor of Surgery who has not been engaged in Medical and Surgical study for five years. No course of lectures will be allowed to qualify unless the lecturer certifies that it has embraced at least one hundred lectures, or fifty lectures, as may be required by the regulations, and that the student has also duly performed the work of the class.

Candidates for the degrees of M.B. and Ch.B. must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than eighty patients and possesses a distinct staff of physicians and surgeons. They must have attended Clinical Surgery during a course or courses extending over not less than nine months. These courses may be conducted by the professor of clinical surgery, or by professors or lecturers appointed for the purpose by the University Court, or by the ordinary surgeons of the Royal Infirmary, Edinburgh, or of a general hospital defined and recognised as hereinbefore provided, and shall consist of regular instruction at the bedside, along with clinical lectures. A similar course of clinical medicine during a course or courses extending over not less than nine months is required. The candidate must have attended a course of instruction in Mental Diseases given by the University Lecturer, or by a recognised Teacher, consisting of not less than six Class-room meetings for lectures and demonstrations and ten meetings in the Wards of a recognised Asylum for the insane. The candidate must have attended a course of twenty-five meetings on Practical Pharmacy in a university or recognised school of medicine, or have dispensed drugs for a period of three months in a hospital or dispensary, or in an establishment recognised by the Pharmaceutical Society. The candidate must have attended for at least six months, by apprenticeship or otherwise, the out-practice of a hospital, or the practice of a dispensary, or of a physician or surgeon, or of a member of the London or Dublin Society of Apothecaries. He must have acted as clerk in the medical wards and dresser in the surgical wards of a public hospital for a period of six months in each case; and must also have availed himself, to such an extent as may be required by the Senatus, with the approval of the University Court, of opportunities of studying at a hospital or dispensary, Post-mortem Examinations, Fevers, Diseases of the Eye, Operative Surgery, and one of the two following, viz.—Diseases of Children, and Diseases of the Larynx, Ear, and Nose, or such other special departments as may from time to time be determined. The candidate must have attended, under the superintendence of a registered medical practitioner, twelve cases of labour, or such additional number as the Senatus, with the sanction of the University Court, may from time to time determine; or have attended for three months the practice of a lying-in hospital, or of the maternity department of a general hospital or other public charitable institution, and have conducted personally six or such an additional number of cases of labour as the Senatus, with the approval of the University Court, may from time to time determine. The candidate must have been properly instructed in Vaccination at a public vaccination station, by a public vaccinator, authorised by the proper Government authority to grant certificates of proficiency in vaccination.

Next, with respect to the places and institutions at which the studies of the candidate may be prosecuted, the following regulations have effect:—Two of the five years of medical study must be spent in the University of Edinburgh. The remaining three years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign university recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court. Of the subjects of study, sixteen in number—viz., Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, Practical Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Practical Pathology, Physics, Botany, Zoology, Medical Jurisprudence, and Public Health—not less than eight must be taken in the University of Edinburgh or in some other university of the United Kingdom, or in some Foreign or Colonial university entitled to confer the degree of Doctor of Medicine, recognised for the purpose by the University Court, or in a college incorporated with, or affiliated to, a university entitled to confer the degree of Doctor of Medicine, recognised for the purpose by the University Court.

Each candidate is examined, both in writing and orally, and clinically where the nature of the subject admits:—First, in Chemistry, Zoology, Botany, and Physics; second, in Anatomy, Physiology, Materia Medica and Therapeutics; third, in Pathology, and Medical Jurisprudence and Public Health; and fourth, in Surgery, Medicine, Midwifery, and clinically in Medicine and Surgery in a hospital. The examinations are conducted, as far as possible, by demonstrations of objects placed before the candidates. Candidates who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes. Candidates who have passed their examination in the first division of these subjects may be admitted to examination in the second division at the end of their third year. Candidates who have passed their examinations in the subjects comprised in the first and second divisions may be admitted to examination in the third division at the end of the fourth winter session. Candidates who have passed their examinations in the subjects comprised in the first, second, and third divisions may be admitted to examination in the fourth or final division when they have completed the fifth year of study.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £23 2s., and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz.: For the First

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Division of the Examination (Botany, Zoology, Physics, and Chemistry), £6 6s.; for the Second Division (Anatomy, Physiology, and Materia Medica and Therapeutics), £6 6s.; for the Third Division (Pathology and Medical Jurisprudence and Public Health), £4 4s.; and for the Final Division (Surgery and Clinical Surgery, Medicine and Clinical Medicine, and Midwifery), £6 6s. The fee to be paid for the degree of Doctor of Medicine is £10 10s., and the fee to be paid for the degree of Master of Surgery is £10 10s.

UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to examination only candidates whose course conforms to its own regulations. Within certain limits instruction given by recognised medical schools and teachers may be accepted, but eight of the subjects other than clinical must be taken in this or some other recognised university entitled to confer the degree of M.D., and at least two years of the course must be taken in Glasgow University. Under the new regulations four degrees, open both to men and women, are conferred: M.B. and Ch.B. (always conjointly), M.D. and Ch.M. A Preliminary Examination must be passed in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek, or French, or German, with possible options to students whose native language is not English in the case of the fourth subject, and on passing the Preliminary Examination candidates must register as medical students in the books of the General Medical Council. Candidates taking the University preliminary examination are not obliged to pass in all the four subjects at one examination but must do so at not more than two occasions. For the degrees of M.B. and Ch.B. a curriculum of five years is required, in each of the first four of which the student must attend at least two five months' courses, or alternatively one five months' course and two courses of two and a half months. The minimum of attendance in the first four years includes five months' courses in the following subjects:—Anatomy, Practical Anatomy (two courses), Chemistry, Materia Medica and Therapeutics, Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women and Infants, and Pathology; and courses of two and a half months in the following:—Practical Chemistry, Physics, Botany, Zoology, Practical Physiology, Practical Pathology, Medical Jurisprudence and Public Health. Candidates must attend at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least eighty patients and having a distinct staff of physicians and surgeons. At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted as clerk in medical and dresser in surgical wards, and must have had six months' out-door practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (twenty-five meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least twelve cases of labour, or three months of the practice of a Lying-in Hospital, six cases being personally conducted. The University also requires further study in Post-Mortem Examinations, Fevers, and Ophthalmology, and recommends study in other special subjects. If a candidate has completed in a University of the United Kingdom a course of study and passed an examination in Botany, Zoology, Physics or Chemistry, qualifying for a degree in Science or in Arts, he is held to have passed the examinations in such subject or subjects.

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry, to be taken after the completion of the included courses (candidates being at liberty to take two subjects at a time); the second comprising Anatomy, Physiology, and Materia Medica and Therapeutics, to be taken at the end of the third winter session; the third comprising Pathology, Medical Jurisprudence and Public Health, to be taken at the end of the fourth winter session; and the fourth or final, comprising Surgery, Clinical Surgery, Practice of Medicine, Clinical Medicine, and Midwifery, to be taken on completion of the fifth year of study.

The degrees of M.D. (Doctor of Medicine) and Ch.M. (Master of Surgery) are higher degrees in Medicine and Surgery respectively, and candidates (not under twenty-four years of age) who have previously obtained the double bachelorship may be admitted to either M.D. or Ch.M. on completing the after course prescribed, including an examination in Clinical Medicine for M.D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch.M.

Fees.—The fees for M.B. and Ch.B. are £23 2s. The class fee in each subject of the curriculum for M.B. and Ch.B. is £3 3s. and the present fees for hospital attendance are £21. The fee for M.D. is £10 10s. (stamp duty being now abolished), and for Ch.M. £10 10s.

The great majority of the students take their hospital course at the Western Infirmary, where clinical instruction is given by professors of the University and other physicians and surgeons. Clinical instruction on Fevers is given at Belvidere Hospital, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Eye, the Ear, the Throat and Nose, and Insanity. Queen Margaret College, hitherto conducted as a separate institution for the higher education of women, has now been made over to the University, and in it medical classes for women are conducted under University professors and other lecturers appointed by the University Court, whilst for clinical instruction female students are admitted to the Royal Infirmary.

Bursaries and Prizes to the annual amount of about £820 are appropriated to medical students, and Scholarships and Fellowships to the annual amount of about £1600 may be held by medical students who have gone through the Arts course.

Graduations under the regulations for the curriculum of five years introduced in 1892 began in July, 1897. Formerly, students graduated as M.B. and C.M. on a four years' curriculum under the old regulations, and such graduates may afterwards proceed to the degree of M.D. by Thesis after passing a somewhat more stringent preliminary examination, including Greek. Supplementary regulations passed in 1895 by the Scottish Universities Commissioners allow those holding the degrees of M.B. and C.M. under the former regulations to proceed to the new M.D. by Examination and Thesis in the same manner as those who obtain the double Bachelorship under the new regulations. Candidates electing to proceed in this way will be freed from the preliminary examination in Greek.

UNIVERSITY OF ABERDEEN.

The curricula for the several degrees conferred are nearly the same as in the Universities of Edinburgh and Glasgow.

Professional Examinations will be held twice in each year—namely, in March and July, directly after the close of the winter and summer sessions.

The fees for graduation are the same as in the University of Edinburgh. Matriculation fee, including all dues, for the winter and summer sessions, £1 1s.; summer session alone, 10s. 6d.

Besides the Royal Infirmary, students have the opportunity of attending the following institutions: General Fever Hospital; Sick Children's Hospital; General Dispensary, and Lying-in and Vaccine Institutions daily; Royal Lunatic Asylum; Eye Institution, in which is given clinical instruction on Diseases of the Eye, and on the application of the Ophthalmoscope for their diagnosis.

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom only, after a special examination. The diploma can be entered on the Register of the General Medical Council.

Application for further information should be addressed to the Secretary of the Medical Faculty.

UNIVERSITY OF ST. ANDREWS.

The following are extracts from the Regulations for Degrees in Medicine contained in Ordinance No. 45 (St. Andrews, No. 4) of the Commissioners under the Universities (Scotland) Act, 1889. These regulations came into force on April 19th, 1897. Four Degrees in Medicine and Surgery shall be conferred by the University of St. Andrews—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degrees of M.B. and Ch.B. shall always be conjoined. Before commencing his medical

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studies each student shall pass a Preliminary Examination in, (*a*) English, (*b*) Latin, (*c*) Elementary Mathematics, and (*d*) one of the following optional subjects:—(*α*) Greek, (*β*) French, (*γ*) German, (*δ*) Italian, (*ε*) any other Modern Language, (*ζ*) Logic. A degree in Arts or in Science in any of the universities of the United Kingdom and in some colonial or foreign universities shall exempt from the Preliminary Examination. The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St. Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects). Also the Final Examination for a degree in Arts or Science and the final examination for the Diploma of L.L.A.

Candidates for the degree of Bachelor of Medicine and Bachelor of Surgery must have been engaged in medical study for at least five years. In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months. During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court. The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz.: Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants, Pathology, Practical Chemistry, Physics (including the Dynamics of Solids, Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine and Public Health. The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than eighty patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court. Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery (twelve cases of labour), and Vaccination.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect:—1. Two of the five years of medical study must be spent in the University of St. Andrews. 2. The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court.

Women shall be admitted to graduation in Medicine, subject to the provisions of Ordinance No. 18 [General No. 9—Regulations for the Graduation of Women and for their Instruction in the Universities]: Provided always that every candidate for graduation shall produce evidence of having satisfied the conditions herein laid down with respect to the Preliminary Examination, and shall be examined in all the subjects necessary for graduation by the Examiners of the University of St. Andrews. All the classes necessary for graduation shall be taken in the University of St. Andrews, except in so far as instruction obtained elsewhere is allowed by the said Ordinance.

Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery.—Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz., First, in Botany, Zoology, Physics, and Chemistry: Second, in Anatomy, Physiology, and Materia Medica; Third, in Pathology, and Forensic Medicine and Public Health; Fourth, in Surgery and Clinical Surgery, Practice of Medicine and Clinical Medicine, and Midwifery.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 22 guineas, and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court. The fee to be paid for the degree of Doctor of Medicine shall be 10 guineas, exclusive of any stamp duty which for the time may be exigible. The fee to be paid for the degree of Master of Surgery shall be 10 guineas.

The following seven qualifying classes are now being taught at the United College, St. Andrews: (1) Physics, (2) Botany, (3) Natural History (Zoology), (4) Chemistry, (5) Anatomy, (6) Physiology, and (7) Materia Medica. These classes furnish two very complete Anni Medici—the period of university residence required by the four Scottish Universities for graduation in Medicine. Owing to the munificence of the present Lord Rector—the Marquis of Bute—an important addition to the existing Medical Buildings at St. Andrews is being made at a cost of £12,000. The three last years of the medical curriculum can be taken at University College, Dundee, or any convenient recognised Medical School in the United Kingdom. Qualifying courses in Medicine and Surgery are given at University College, Dundee. It is hoped that medical students who spend their two residential years at St. Andrews will return to their Alma Mater and graduate there.

Scholarships and Bursaries.—The following Scholarships and Bursaries for male and female Medical and Science Students are available at the United College, St. Andrews: One Scholarship of the annual value of £150, tenable for two years. A second Scholarship of the annual value of £100, tenable for one year and occasionally for two years. (The second Scholarship can be taken by students studying Physiology, Zoology, and Botany, in connexion with the Bachelor of Science degree.) Twelve Berry Bursaries for male Medical students of the annual value of £20 each, for two years. Fourteen Taylour Thomson Bursaries for female Medical students of the annual value of from £20 to £30 each, tenable for one or two years—viz.: Three Taylour Thomson Bursaries of the annual value of £30 each, tenable for two years; two of the annual value of £20, tenable for two years; four of the annual value of £25 each, tenable for one year; four of the annual value of £25, tenable for two years; and one of the annual value of £20, tenable for one year. The Bursaries are awarded in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Examination, and who are prepared to take two Anni Medici at the United College, St. Andrews.

For further particulars apply to the Dean of the Medical Faculty, University of St. Andrews, N.B.

UNIVERSITY OF DUBLIN (TRINITY COLLEGE).

Matriculation.—All students in the School of Physic intending to practise Physic must be matriculated, for which a fee of 5*s.* is payable. No student can be admitted for the winter course after Nov. 25th.

Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).—Candidates for these degrees must be of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of matriculation. The Arts course may be concurrent with the medical course, and the B.A. degree need not be taken before the final medical examination, but the medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Systematic, Practical and Applied Anatomy, Chemistry and Practical Chemistry, Surgery and Operative Surgery, Histology, Botany, Zoology, Physics, Physiology, Practice of Medicine, Midwifery, Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Dublin Hospital (one year at a recognised London or Edinburgh hospital before the commencement of the Dublin curriculum may be counted as one year spent in such Dublin hospital); (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months'; (5) Practical Midwifery with Clinical Lectures, including not less than thirty cases, six months'; (6) Ophthalmic Surgery, three months'. Two examinations have to be passed. The Previous Medical or Half M.B. Examination, including Physics and Chemistry, Botany and Zoology, Anatomy and Institutes of Medicine (Practical Histology and Physiology), may be passed when credit has been obtained for the corresponding subjects, and these may be taken separately if desired. The Final Examination is subdivided into five sections, comprising Applied Anatomy (Medical and Surgical), Applied Physiology, Jurisprudence

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and Hygiene, Materia Medica and Therapeutics, Medicine, Surgery, Pathology, Midwifery, Gynæcology, Obstetrical Anatomy, Clinical Medicine, Mental Diseases, Clinical Surgery, Operations, Clinical Ophthalmology. The first seven of these subjects may be passed in the fourth year and the last eight in the fifth year. Fee for the *Liceat ad Examinandum*, £10. Fee for the degrees, £17.

Doctor in Medicine.—A Doctor in Medicine must be M.B. of at least three years' standing, or have been qualified to take the degree of M.B. for three years, and must read a thesis before the Regius Professor of Physic. Total amount of fees for this degree, £13.

Master in Surgery.—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass an examination in the following subjects:—1. Clinical Surgery. 2. Operative Surgery. 3. Surgical Pathology. 4. Surgery. 5. Surgical Anatomy (on the dead subject), and one of the following optional subjects:—1. Surgery in one of the following branches—viz., Ophthalmic and Aural, Gynæcological, and Dental. 2. Mental Disease. 3. Medical Jurisprudence and Hygiene. 4. Advanced Anatomy and Physiology. 5. Comparative Anatomy. Fee for the degree of Master in Surgery, £11.

Master in Obstetric Science.—A Master in Obstetric Science must have passed the M.B. and B.Ch. examinations, and produce a certificate of having attended a summer course in Obstetric Medicine and Surgery.[6] He is then required to pass an examination in the following subjects:—1. Practice of Midwifery. 2. Gynæcology. 3. Anatomy of Female Pelvis and Elementary Embryology. 4. Clinical Gynæcology. Fee for the degree of Master in Obstetric Science, £5.

University Diplomas.—Candidates for the diplomas in Medicine, Surgery, or Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts and five years in Medical Studies. The Course and Examination necessary for the diplomas are the same as for the degrees, except that the candidate is not required to attend the Lectures on Botany and Zoology, nor to pass the Previous Medical examination in those subjects. A diplomate, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor by attending the Lectures on Botany and Zoology, passing the Previous Medical examination in those subjects, and paying the degree fees. Fee for the *Liceat ad Examinandum*, £10. Fee for the diplomas in Medicine, Surgery, and Midwifery, £11.

ROYAL UNIVERSITY OF IRELAND.

All Degrees, Honours, Exhibitions, Prizes and Scholarships in this University are open to students of either sex.

Candidates for any degree in this University must have passed the Matriculation Examination. Students from other universities and colleges are included in this rule.

The following degrees, &c., are conferred by the University in this Faculty:—Bachelor of Medicine, Doctor of Medicine, Bachelor of Surgery, Master of Surgery, Bachelor of Obstetrics and Master of Obstetrics; in Sanitary Science, a special diploma; and in Mental Disease, a special diploma.

The Medical Examinations, except that for the diploma in Sanitary Science, will be held twice yearly—viz., in April and in October. The examination for the diploma in Sanitary Science will be held in July.

The course for degrees in Medicine, &c., is of at least five years' duration.

The First Examination in Medicine.—Students may be admitted to this examination after the lapse of one academical year from the time of their matriculation. They must also have previously passed the First University Examination. The subjects of this examination are Natural Philosophy, Theoretic Chemistry, Zoology and Botany. The examination in each subject will comprise two parts:—1. A written examination. 2. Practical work and oral examination. For Chemistry the practical examination takes place at the close of the second year. Particular weight will be given to the practical part of the examination. Candidates at the First Examination in Medicine who at the First University Examination in Arts did not obtain 30 per cent. of the marks assigned to French or German will be required to present themselves for a qualifying examination in French or German. Failure to obtain 30 per cent. of the marks assigned to either of those languages will involve the loss of the examination.

The Second Examination in Medicine.—Students will be admitted to this examination after the lapse of one academical year from the time of passing the First Examination in Medicine, provided they have completed the second year of the medical curriculum. The subjects for this examination are Anatomy, Physiology, and Practical Chemistry.

The Third Examination in Medicine.—Students will be admitted to this examination after the lapse of one academical year from the time of passing the Second Examination in Medicine, provided they have completed the third year of the medical curriculum. The subjects for this examination will be Anatomy, Physiology, and Materia Medica (Pharmacology).

The Examination for the Medical Degrees.—Students will be admitted to this examination after the lapse of two academical years from the time of passing the Third Examination in Medicine, provided they have completed the course of medical studies prescribed for the fourth year. The examination consists of three parts or divisions:—(*a*) Medicine, including Therapeutics and Pathology, Mental Diseases, Medical Jurisprudence and Hygiene. (*b*) Surgery, Theoretical, Clinical, Operative; Surgical Anatomy, with Ophthalmology and Otology. (*c*) Midwifery and Gynæcology, with Diseases of Children. Each part of this examination must be passed as a whole. Upon completing satisfactorily his examination in all three divisions the candidate will, in addition to the parchment diplomas recording his admission to the Medical Degrees of M.B., B.Ch., and B.A.O., receive a certificate of having passed a qualifying examination in the subjects of Medicine, Surgery, and Midwifery. The fee for this certificate is £10, which must be paid prior to the candidate's admission to the Medical Degrees.

M.D. Degree.—Candidates may be admitted to this degree after the lapse of three academical years from the time of obtaining the degree of M.B. Every candidate will be examined at the bedside, and required to diagnose at least three medical cases, and prescribe treatment, and to write detailed reports on at least two cases to be selected by the examiners and to discuss all the questions arising thereon.

The M.Ch. Degree.—This degree will be conferred only on graduates in Medicine of the University of at least three years' standing. The examination for this degree will comprise Surgical Diseases and Surgery, both theoretical and operative; Surgical Anatomy; Ophthalmology and Otology; and will include—(*a*) a written examination; (*b*) a clinical examination; (*c*) an examination on Surgical Instruments and Appliances; and (*d*) an examination in Operative Surgery.

The Mastership in Obstetrics.—This degree will be conferred only on graduates in Medicine of the University of at least three years' standing. The examination will comprise the Theory and Practice of Midwifery and of Diseases of Women and Children and the Use of Instruments and Appliances and will include—(*a*) a written examination; (*b*) a clinical examination as far as practicable; (*c*) an oral examination, with practical illustrations; and (*d*) an examination on Instruments and Appliances.

[6] Existing graduates in Medicine of the standing of M.D. are not required to attend this course.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.[7]

Regulations relating to the several Examinations applicable to Candidates who commenced their Professional Education on or after Jan. 1st, 1892.

Any candidate who desires to obtain both the licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to complete five years of professional study at recognised Medical Schools and Hospitals and to comply with the following regulations and to pass the examinations hereinafter set forth. (One of the five years may be spent in

[7] The diploma of Member of the Royal College of Surgeons of England and the Licence of the Royal College of Physicians of London are no longer granted separately except to students who commenced their professional study prior to Oct. 1st, 1884.

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an Institution recognised by the Board for instruction in Chemistry, Physics, Practical Chemistry, and Biology.)

Professional Examinations.—There are three Examinations, called herein the First Examination, the Second Examination, and the Third or Final Examination, each being partly written, partly oral, and partly practical. These examinations will be held in the months of January, April, July, and October, unless otherwise appointed. Every candidate intending to present himself for examination is required to give notice in writing to Mr. F. G. Hallett, secretary of the Examining Board, Examination Hall, Victoria Embankment, W.C., fourteen clear days before the day on which the examination commences, transmitting at the same time the required certificates.

The subjects of the First Examination are—Chemistry and Physics, Practical Pharmacy, and Elementary Biology. A candidate may take this examination in three parts at different times. A candidate will be admitted to examination in Chemistry and Physics and Elementary Biology before registration as a medical student, and to examination in Practical Pharmacy on producing evidence of having been registered as a medical student by the General Medical Council, *or he may take Pharmacy* at any time during the curriculum. A candidate rejected in one part or more of the First Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and he will be re-examined in the subject or subjects in which he has been rejected. If referred in Chemistry or Biology he must produce evidence of further instruction at a recognised institution. Any candidate who shall produce satisfactory evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination conducted at a university in the United Kingdom, in India, or in a British colony will be exempt from examination in those subjects in which he has passed.

The fees for admission to the First Examination are as follows: For the whole examination, £10 10*s.*; for re-examination after rejection in Part I. £3 3*s.*, and for re-examination in each of the other parts, £2 2*s.*

The subjects of the Second Examination are Anatomy and Physiology. Candidates will be required to pass in both subjects at one and the same time. Candidates will be admissible to the Second Examination at the expiration of two winter sessions and one summer session (or fifteen months during the ordinary sessions) from the date of registration as Medical Students and after the lapse of not less than six months from the date of passing Parts I. and III. of the First Examination.

A candidate referred on the Second Examination will be required, before being admitted to re-examination, to produce a certificate that he has pursued, to the satisfaction of his teachers, in a recognised place of study, his Anatomical and Physiological studies during a period of not less than three months subsequently to the date of his reference.

The fees for admission to the Second Examination are: £10 10*s.* for the whole examination, and £6 6*s.* for re-examination after rejection.

The subjects of the Third or Final Examination are: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy, Therapeutics, Forensic Medicine, and Public Health. Candidates who have passed in Practical Pharmacy at the First Examination will not be re-examined in that subject at the Third Examination. Part II. Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances. Part III. Midwifery and Diseases Peculiar to Women. Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study, not less than one year after passing the Second Examination, on production of the required certificates. Candidates may take this examination in three parts at different times, or they may present themselves for the whole examination at one time. They will be required to produce the following evidence before being admitted to the several parts of the Third, or Final Examination—viz., in Medicine, of having attended Lectures on Medicine, Pathology including Bacteriology, Pharmacology and Therapeutics, Forensic Medicine, and Public Health; Practical Instruction in Medicine; Medical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post Mortem Room during twelve months; Clinical Lectures on Medicine during nine months; of having discharged the duties of Medical Clinical Clerk; Practice of a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum; in Surgery, of having attended Lectures on Surgery and Pathology including Bacteriology; Practical Instruction in Surgery; of having performed operations upon the Dead Subject; Surgical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post Mortem Room during twelve months; Clinical Lectures on Surgery during nine months; of having discharged the duties of Surgical Dresser, and Clinical Instruction in Ophthalmology; in Midwifery of having attended Lectures on Midwifery; Practical Instruction in Midwifery; Clinical or other Lectures, with Practical Instruction in Diseases Peculiar to Women; and of attendance on 20 Labours.

Fees for admission to the Third or Final Examination are as follows: For the whole examination, £15 15*s.* Part I. For re-examination in Medicine, including Medical Anatomy, Pathology, Therapeutics, Forensic Medicine, and Public Health, £5 5*s.*; for re-examination in Practical Pharmacy (if taken at this examination), £2 2*s.* Part II. For re-examination in Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances, £5 5*s.* Part III. For re-examination in Midwifery and Diseases Peculiar to Women, £3 3*s.*

A candidate referred on the Third or Final Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection and will be required, before being admitted to re-examination, to produce a certificate, in regard to Medicine and Surgery, of having attended the Medical and Surgical Practice, or the Medical or Surgical Practice, as the case may be, during the period of his reference; and in regard to Midwifery and Diseases Peculiar to Women a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognised teacher.

ROYAL COLLEGES OF SURGEONS AND PHYSICIANS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colleges have made arrangements by which, after one series of examinations, held in Edinburgh or in Glasgow, or in Edinburgh and Glasgow, the student may obtain the diplomas of the three Bodies.

The three Bodies grant their Single Licences only to candidates who already possess another and opposite qualification in Medicine or Surgery, as the case may be, recognised by them. Copies of the Regulations for the Single Licence of any of the Bodies may be had on application to the respective secretaries.

Professional Education.—1. Candidates who commenced medical study *before* Jan. 1st, 1892, must have been engaged in professional study during forty-five months from the date of registration as medical students by the General Medical Council, which period shall include not less than four winter sessions' attendance at a recognised medical school. 2. The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of instruction: Anatomy, during at least six months; Practical Anatomy, twelve months; Chemistry, six months; Practical or Analytical Chemistry, three months; Materia Medica, three months; Physiology, six months; Practice of Medicine, six months; Clinical Medicine, nine months; Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery and the Diseases of Women and Children, three months; Medical Jurisprudence, three months; Pathological Anatomy, three months. The six months' courses delivered in Scotland must consist of not fewer than 100 lectures. The three months' courses must consist of not fewer than fifty lectures. The number of lectures certified as attended at any school not situated in Scotland should not be less than three-fourths of the total number of lectures delivered in a course. 3. The candidate must also produce the following certificates:—(*a*) Of having attended not less than six cases of labour, three of these to be conducted personally under the direct superintendence of the practitioner who signs the certificate, who must be a registered medical practitioner. (*b*) Of having attended, for three months, instruction in Practical Pharmacy; the certificate to be signed by the teacher, who must be a member of the Pharmaceutical Society of Great Britain, or the

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superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of a class of Practical Pharmacy. (*c*) Of having attended for twenty-four months the Medical and Surgical practice of a public general hospital containing on an average at least eighty patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons. (*d*) Of having attended for six months (or three months, with three months' hospital clerkship) the practice of a public dispensary specially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital, or of having acted for six months as pupil to a registered practitioner who either holds such a public appointment, or has such opportunities of imparting practical knowledge as shall be satisfactory to the coöperating authorities; this attendance should be made after the student has passed the First and Second Examinations. (*e*) Of having been instructed by a registered medical practitioner in the Theory and Practice of Vaccination, and of having performed operations under the teacher's inspection, during a period of not less than six weeks.

Candidates shall be subjected to three Professional Examinations, and they may enter either for the whole of an Examination or for a division thereof.

First Examination.—The First Examination shall embrace the two divisions of (1) Chemistry and (2) Elementary Anatomy and Histology, and shall take place not sooner than the end of the first year, including the period of a winter and a summer session. For the whole Examination taken at one time the sum of £5 5*s.* must be paid to the inspector of certificates not later than one week preceding it, after which no candidate will be entered. After rejection, for re-entry in all subjects, £3 3*s.*; for re-entry after obtaining exemption from re-examination in one or two subjects, £2 2*s.*; for entering for one division of subjects separately, £3 3*s.*; and for each re-entry after rejection, £2 2*s.* Any candidate who shall produce satisfactory evidence of having passed an equivalent examination in any of the subjects of the First Examination before any of the boards specified in the Regulations will be exempt from examination in such subjects.

Second Examination.—The Second Examination shall embrace the three subjects of (1) Anatomy, (2) Physiology, (3) Materia Medica and Pharmacy, each of which shall constitute a division of the examination, and may be entered for separately. The examination shall not take place before the termination of the summer session of the second year of study, including two winters and two summers. The fees for admission to this examination, payable not later than one week before the day of examination, are as follows:—For the whole examination, £5 5*s.*; after rejection for re-entry in all subjects, £3 3*s.*; for re-entry after obtaining exemption from re-examination in one or two subjects, £2 2*s.*; for entering for one subject separately, £2 2*s.*; and for each re-entry therein after rejection, £2 2*s.* Any candidate who shall produce satisfactory evidence of having passed an equivalent examination in any of the subjects of the Second Examination before any of the boards specified in the Regulations will be exempt from examination in such subject or subjects.

Final Examination.—The Final Examination shall embrace the three divisions of—(1) the Principles and Practice of Medicine (including Therapeutics, Medical Anatomy, and Pathology) and Clinical Medicine; (2) the Principles and Practice of Surgery (including Surgical Anatomy and Surgical Pathology) and Clinical Surgery; (3) Midwifery and Gynæcology, Medical Jurisprudence, and Hygiene (which divisions may be entered for separately at different times); and shall not take place before the termination of the full period of study. The fees for this Examination, payable not later than one week before the examination day, are as follows: For the whole Examination, taken at one time, in the case of candidates who have passed the First and Second Examinations, £15 15*s.*, of which £10 10*s.* shall be returned to unsuccessful candidates. For entering for each of the three divisions of subjects separately, £6 6*s.*, and on re-entry after rejection, £2 2*s.* in respect of each division or part thereof. This rule will also apply to any subsequent rejection. Any candidate admitted to the Final Examination, on the footing of having passed in the subjects of the First and Second Examinations at a recognised board, shall, on entering, pay the full fee of £26 5*s.*

All candidates shall be subjected, in addition to the Written and Oral Examinations, to Clinical Examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical Use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface Markings, &c.

REGULATIONS FOR CANDIDATES WHO COMMENCED STUDY *after* JANUARY 1ST, 1892.

In addition to the courses above prescribed candidates are required to attend the following courses: Physics, three months; Elementary Biology, three months; Diseases and Injuries of the Eye, three months; Insanity, three months; Infectious Diseases, three months; and twelve months' Hospital Practice with Clinical instruction.

The curriculum lasts for five years; the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries. Six months of the fifth year may be passed by the student as a pupil to a registered practitioner possessing such opportunities of imparting practical knowledge as may be deemed satisfactory by the Committee of Management. The student's regularity of attendance in the wards and out-patient departments of the hospitals and at the post-mortem examinations should be duly ascertained and noted on the certificate.

Candidates shall be subjected to four Professional Examinations:

First Examination.—The First Examination shall embrace the following divisions of subjects—(1) Physics, (2) Chemistry, and (3) Elementary Biology. The fees payable for admission to the First Examination shall be for the whole Examination, £5; for each division separately, £2 10*s.*

Second Examination.—The Second Examination shall embrace Anatomy and Physiology including Histology; and candidates may be admitted to this Examination at the end of the second year of medical study. The fees payable for admission to the Second Examination shall be—for the whole Examination, £5.

Third Examination.—The Third Examination shall embrace Pathology and Materia Medica with Pharmacy. The fees payable for admission to the Third Examination shall be—for the whole Examination, £5; for re-entry in both subjects after rejection, £3.

Final Examination.—The Final Examination shall not be passed earlier than the end of the fifth year of study and shall embrace the following subjects:—Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; Midwifery and Diseases of Women and of New-born Children; and Medical Jurisprudence and Hygiene. All candidates shall be subjected, in addition to the Written and Oral Examinations, to Clinical Examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface markings, &c. The fees payable for the Final Examination shall be,—for the whole Examination, £15, for re-entry in all subjects after rejection, £5.

There are six periods of Examination annually, four in Edinburgh and two in Glasgow, and candidates may present themselves at either examining centre irrespective of the place of the previous examination. The Registrar in Edinburgh is Mr. J. Robertson, Solicitor, 48, George-square; and the Registrar in Glasgow, Mr. A. Duncan, LL.D., 242, St. Vincent-street, to whom fees and certificates must be sent.

Note.—In applying for copies of the Regulations students should state whether they commenced medical study before or after Jan. 1st, 1892.

ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS IN IRELAND.

Two sets of Regulations are at present in force, under which examinations take place for the conjoint diploma of these bodies. The following Regulations are obligatory on all students commencing on or after Dec. 31st, 1891, the date already mentioned:—

PRELIMINARY EXAMINATION AND REGISTRATION.

Every candidate for the Conjoint Examinations of the Colleges shall produce evidence—(*a*) of having, before entering on medical studies, passed a Preliminary Examination in general education recognised by the General Medical Council; and (*b*) of having been registered by that

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Council as a Student in Medicine. Each candidate before receiving his diplomas must produce a registrar's certificate or other satisfactory evidence that he has attained the age of twenty-one years.

Preliminary Examination.—The subjects for examination are identical with those prescribed for the Preliminary Examination by the General Council of Medical Education and Registration.

Professional Examinations.

Every candidate is required to pass four Professional Examinations—at the end of the first, second, fourth and fifth years of his professional studies. No candidate shall be admitted to the Final or Qualifying Examination within three months of his rejection at the Final or Qualifying Examination by any other licensing body. All examinations shall be conducted as far as possible by demonstration of objects placed before the candidates.

First Professional Examination.—Every candidate is required, before admission to the First Professional Examination, to produce evidence—(1) of having passed in the subjects of the Preliminary Examination; (2) of having been registered as a medical student by the General Medical Council; and (3) of having attended a course of—(*a*) Demonstrations and Dissections, (*b*) lectures on Theoretical Chemistry, winter courses; (*c*) Practical Chemistry, three months' summer or winter course; (*d*) Elementary Biology; (*e*) Physics. [*Note.*—Biology and Physics may be studied either before or after registration at institutions recognised for the purpose by the Colleges.] (*f*) Practical Pharmacy—(1) evidence of attendance for three months in the compounding department of a clinical hospital, which hospital shall have satisfied the committee of management that its means of instruction are sufficient, and shall return to the committee the names of its students at the commencement of the course, together with a record of their attendance at its close; or (2) evidence of attendance on a course of Practical Pharmacy in a recognised medical school, the course to consist of not less than twenty demonstrations; or (3) evidence of having served a full apprenticeship of three years, or of having acted as paid assistant for not less than one year, in the establishment of a Licentiate apothecary or of a registered pharmaceutical chemist. The fee for this examination is £15 15*s.*

The subjects of the First Professional Examination are the following:—1. (*a*) Chemistry; (*b*) Physics. 2. Practical Pharmacy. 3. Elementary Biology. 4. Anatomy—viz., Bones, with attachments of Muscles and Ligaments, and Joints. Candidates may take this examination as a whole at one time or in four parts, but no portion earlier than the end of the first winter session.

Second Professional Examination.—Candidates are not admissible to this examination before the end of their second winter session. Every candidate is required, before admission to the Second Professional Examination, to produce evidence of having passed the First Professional Examination; also certificates of having attended—(1) a medico-chirurgical hospital for nine months; (2) Demonstrations and Dissections for six months; (3) Practical Histology for three months; (4) Lectures on (*a*) Anatomy for six months; (*b*) Physiology for six months; (*c*) Materia Medica for three months. Materia Medica may be deferred to the third year. The fee for this examination is £10 10*s.*

The subjects of the Second Professional Examination are the following:—1. Anatomy: the anatomy of the whole human body; (2) Histology; (3) Human Physiology; (4) Materia Medica. The candidate must present himself, in the first instance at least, in Anatomy and Histology; if he pass in either of these subjects he may, at the discretion of the examiners, get credit therefor. Physiology and Materia Medica may, at the option of the candidate, be passed at the end of the second or during the third year.

Third Professional Examination.—Candidates are not admitted to this examination before the end of their fourth winter session. Every candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination; also, in addition to the certificates required for the Second Professional Examination, certificates of having attended—(1) a medico-chirurgical hospital for eighteen months; (2) a midwifery hospital or maternity for six months, including evidence of having been present at thirty labours;[8] (3) clinical instruction in Mental Diseases at an institution recognised by the Colleges[8] for three months; (4) Operative Surgery, including operations on the Dead Subject, not less than thirty meetings of the class; (5) Demonstrations and Dissections, for six months; (6) Vaccination;[8] (7) Practical Pathology, not less than thirty meetings of the class; (8) Lectures on (*a*) Medicine for six months; (*b*) Surgery for six months; (*c*) Public Health and Forensic Medicine for three months; (*d*) Midwifery, including Diseases peculiar to Women and to New-born Children, for six months. Nos. 2, 3, and 6 may be deferred to fifth year. Satisfactory evidence must be produced of attendance in fever wards in connexion with the hospital attendance in either the third or a subsequent year. The fee for this examination is £9 9*s.*

The subjects for the Third Professional Examination are the following:—(1) Medicine; (2) Surgery; (3) Pathology; (4) Therapeutics; (5) Public Health and Forensic Medicine. A candidate must present himself, in the first instance at least, in Medicine, Surgery, and Pathology. Should he pass in either Medicine or Surgery he shall get credit therefor, even if he have failed in other parts of the examination.

Final Professional Examination.—Candidates are not admissible to this examination before the end of their fifth year of medical study. Every candidate is required before admission to produce evidence—(1) of having passed the Third Professional Examination; (2) of having attended—(*a*) Clinical Instruction in Ophthalmic and Aural Surgery for three months; (*b*) a midwifery hospital or maternity, if not taken in the fourth year, for six months; (*c*) Vaccination, if not taken in the third or fourth year; (*d*) Clinical Instruction in Mental Diseases, if not taken in the fourth year.

The subjects for the Fourth Professional Examination are the following:—(1) Medicine, including Medical Anatomy and Mental Diseases; (2) Surgery; (3) Operative Surgery and Surgical Anatomy; (4) Ophthalmic and Aural Surgery; (5) Midwifery, including Diseases of Women and New-born Children; and (6) the Theory and Practice of Vaccination. Every candidate shall produce evidence of having acted as medical clinical clerk and as surgical dresser. Candidates may present themselves for examination in *all* the subjects of the Final Examination at the *same* time, or in one or more of the following groups:—(*a*) In Medicine, including Mental Diseases, Medical Anatomy, and Clinical Medicine; (*b*) Surgery, including Ophthalmic and Aural Surgery, Clinical Surgery, Operations, and Surgical Anatomy; (*c*) Midwifery, including Diseases of Women and New-born Children, and the Theory and Practice of Vaccination. Candidates must pay the full fee before being admitted to any part of the examination. Candidates may take the groups in any order they please. The fee for this examination is £6 6*s.*

[8] May be taken in either the fourth or fifth year.

SOCIETY OF APOTHECARIES OF LONDON.

There are three examinations—Primary; Final, Section I.; and Final, Section II. The Primary Examination is held quarterly, on the first Wednesday and on the Monday and Thursday of the same week, in the months of January, April, July, and October. Final Examinations are held monthly.

The Primary Examination consists of two parts. Part I. includes Elementary Biology; Chemistry, the Principles of the Science which bear on the Study of Medicine; Chemical Physics, including the Elementary Mechanics of Solids and Fluids, Heat, Light, and Electricity; Practical Chemistry; and Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. Part II. includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule for the Primary Examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Section I. of the Final Examination consists of three parts. Part I. includes the Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy. Part II. includes the Principles and Practice of Medicine, together with Therapeutics, Pharmacology, and Prescriptions; Pathology and Morbid Histology; Forensic Medicine, Hygiene,

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Theory and Practice of Vaccination; and Mental Diseases. Part III. includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments and Appliances. Part III. may be postponed to Section II. of the Final Examination, and candidates may enter for Parts I., II., and III. together or separately. Section I. of the Final Examination cannot be passed before the expiration of forty-five months after registration as medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society. Section II. of the Final Examination consists of two Parts. Part I. includes an Examination of and Written Report on Surgical Cases, and Operative Manipulation and Surgical Anatomy, Instruments and Appliances. Part II. includes an Examination of and Written Report on Medical Cases and Medical Anatomy. Section II. cannot be passed before the end of the fifth year.

The course of study for the Primary Examination is as follows:—Elementary Biology, not less than three months; Chemistry and Chemical Physics, six months; Practical Chemistry, three months; Pharmacy and Dispensing, three months; Anatomy, six months; Practical Anatomy with Demonstrations, twelve months; Physiology, six months; Histology with Demonstrations, three months. The study of these subjects must be pursued at a Medical School or at a place of instruction recognised by the Society. Evidence of having received instruction in the subjects of Part I. of the Primary Examination before registration as medical student will be accepted. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination or in a public hospital, infirmary, or dispensary.

The course of study for the Final, Section I., Examination includes attendance on the Surgical and Medical Practice (with Post-mortem Examinations) at a hospital connected with a medical school for a period of three winter and two summer sessions; lectures on the Principles and Practice of Surgery, six months; Practical Surgery, three months; Clinical Surgical Lectures, nine months; Dressership,[10] six months; Performance of Surgical Operations on the Dead Body; lectures on Principles and Practice of Medicine, six months; Pathology, three months; Clinical Medical Lectures, nine months; Clinical Clerkship,[9] six months; Forensic Medicine, Hygiene, and Insanity, three months; Midwifery and Gynæcology, three months; Clinical Instruction in the same, three months; a course of Practical Midwifery; attendance on twenty Midwifery cases. The course of medical study must extend over the above-mentioned period of forty-five months.

The course of study for the Final Examination Section II. includes either attendance on the Practice of Medicine and Surgery at a hospital or other institution recognised by the Society for a further period of twelve months, or six months as above and six months as a pupil of a registered practitioner holding a public medical or surgical appointment, or attendance at two special hospitals for six months (three months at each hospital), and for six months at a general hospital, all such hospitals to be recognised by the Society. Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects: Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children. These courses must be taken at a general hospital recognised by the Society any time after the student has held the post of Dresser and Clinical Clerk. No candidate is eligible for the Final Examination who has not completed the curriculum prescribed by the Society, in evidence of which a schedule, to be obtained of the Secretary, must be produced, signed by the Dean of the Medical School or other authority. Prior to Section II. of the Final Examination the candidate must produce certificates: (1) of being twenty-one years of age; (2) of moral character; (3) of the course of medical study; and (4) of proficiency in vaccination signed by a teacher authorised by the Local Government Board. Candidates intending to present themselves for examination are required to give fourteen days notice. A form for this purpose will be sent on application.

[9] These offices must be held at a hospital, or other institution recognised by the society.

The fee for the three examinations is 15 guineas, or 5 guineas for each examination, except in the case of persons holding a foreign diploma, who are required to pay the entire fee of 15 guineas. The Secretary to the Examiners attends at the Hall of the Society, Blackfriars, E.C., from 10 to 12 o'clock daily.

UNIVERSITY OF BRUSSELS.

British and other practitioners holding registrable qualifications are admitted to the examination for the Doctorate of the University of Brussels without further curriculum. It is essentially a *practitioner's* examination and is separate from that intended for the Belgian students who take up the medical curriculum of the University. Candidates should appear with their diplomas at the Secretary's office not later than 2 P.M. on the day preceding the examination. The fees are—For matriculation, £8 12*s.*; for 1st Part, £4 8*s.*; for 2nd Part, £4 4*s.*; for 3rd Part, £4 8*s.*; for legalisation of diploma, 8*s.*—£22. Unsuccessful candidates may present themselves again three months after rejection. Candidates who have paid in advance the fees for the three examinations, and are unsuccessful in the first, recover the fees paid for the second and third; those who fail in the second recover the fees paid for the third examination. There are three examinations, viz.—1st Part: Medicine, Pathology, and Morbid Anatomy; General Therapeutics; Materia Medica and Pharmacology; Special Therapeutics and Mental Diseases. 2nd Part: Surgery; Midwifery; Hygiene; and Medical Jurisprudence. 3rd Part: Clinical Examination in Medicine at the Hospital; Clinical Surgical Examination; Examination in Midwifery, consisting of obstetrical operations on the mannequin (model of pelvis); Examination in Operative Surgery, consisting of some of the usual operations on the dead subject, such as Amputation, Ligature of an Artery, &c.; Regional Anatomy on the Dead Body, with Dissections; and Ophthalmology. Great importance is attached to practical knowledge, but candidates must also possess sound theoretical knowledge, the standard required varying with the subject. Pathological and other specimens are not usually shown. The examinations, which are entirely *viva voce*, take place on the first Tuesday in November, December, February, May, and June. Candidates have the option of passing each Part separately or of taking the three together, and the latter is the usual course. The time required for the three examinations seldom exceeds ten days, and is usually less. They are conducted in English. There are in England at present over 600 graduates holding this degree, and an English Association of Brussels Graduates has been formed.

Further information may be obtained from Dr. Walter Reeve, 38, Manchester-street, Manchester-square, W.

THE ARMY, NAVY, AND INDIAN MEDICAL SERVICES.

Consequent upon the issue of the Royal Warrant published in Army Orders dated July 1st, 1898, the Army Medical Staff and the Medical Staff Corps have been formed into the Royal Army Medical Corps. The Royal Warrant states the officers below the rank of Surgeon-Major-General serving in the Army Medical Staff shall be formed into a corps, together with the warrant officers, non-commissioned officers, and men of the Medical Staff Corps. Medical officers also have been placed, as regards sick leave of absence on full pay, on the same footing as those laid down for regimental officers. By a Royal Warrant, dated Nov. 10th, 1891, Art. 1208*b* of the Pay Warrant was revised by inserting the words "an officer of our Medical Staff" after the words "combatant officer," thus giving medical officers an equal title with combatant officers to reckon time on half-pay towards retirement, when the half-pay has been due to ill-health contracted in the performance of military duty. Under the Royal Warrant of July, 1895, time on half-pay not exceeding a year may under similar circumstances also reckon towards promotion. In the New Royal Warrant it is announced that the Queen has been pleased to approve of the following alterations in the ranks of the officers of the Royal Army Medical Corps:—

Old Ranks.	New Ranks.
Surgeon-Colonel	Colonel.
Brigade-Surgeon-Lieutenant-Colonel ... ... / Surgeon-Lieutenant-Colonel	Lieutenant Colonel.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant...	Lieutenant.

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The Warrant also states that the Medical Staff of the Army shall in future consist of Surgeon-Generals (ranking as Major-Generals), and the title of Surgeons-Major-Generals now serving shall be altered accordingly. Officers of the Royal Army Medical Corps holding appointments in the Household Troops are to be borne as seconded officers on the establishment of the Royal Army Medical Corps. The substantive rank of the Director-General of the Army Medical Service is that of Surgeon-General.

Admission into the Royal Army Medical Corps and Indian Medical Services is gained as the result of competitive examination. Under special conditions the admission may take place by nomination under the authority of the Secretary of State for War. Candidates for both services must, before being admitted to examination, possess a double qualification to practise Medicine and Surgery, and be registered under the Medical Act. They are also now required to produce certificates of having acted as a medical clinical clerk for six months, as surgical dresser for another six months, and of having had not less than three months' instruction at an ophthalmic hospital or the ophthalmic department of a general hospital, including a course on errors of refraction. They must also furnish satisfactory certificates of moral character. A candidate for the Royal Army Medical Corps must be between the ages of twenty-one and twenty eight, in good mental and bodily health, and must sign a declaration upon honour that he is of pure European descent; for the Indian Service a candidate must be between twenty-one and twenty-eight, of sound bodily health, and a natural-born subject of Her Majesty. Both are examined as to physical fitness by a Board of Medical Officers. These conditions being satisfied, the candidate is admitted to the competitive examination, which is usually held in London twice a year, in the months of February and August. An entrance fee of £1 is required from each candidate admitted to the competition, and is payable at the conclusion of the candidate's physical examination, if he be pronounced fit. No candidate for the Indian Service will be allowed to compete on more than three occasions. The subjects of examination are divided into *compulsory* and *voluntary*. The former comprise Surgery (1200 marks), Medicine, including Therapeutics and the Diseases of Women and Children (1200 marks), Anatomy and Physiology (600 marks), Chemistry and Pharmacy, and a practical knowledge of Drugs (600 marks). The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. The eligibility of the candidate for admission into the service is determined by the result of this part of the examination. By an Army Order dated May 1st, 1895, no candidate shall be considered eligible who shall not have obtained at least one-third of the marks obtainable in each of the compulsory subjects, and at least one-half of the aggregate of marks for all the compulsory subjects. The *voluntary* subjects are French (200 marks), German (200 marks), and Natural Sciences: (*a*) Physics (300 marks); (*b*) Zoology (300 marks); (*c*) Geology and Physical Geography (300 marks); and (*d*) Botany (300 marks); and for the Indian service Hindustani (200 marks). A candidate may not present himself for examination in more than two of the subjects included under the term "Natural Sciences." A number less than one-third of the marks obtainable in each of the voluntary subjects will not be allowed to count in favour of a candidate who has qualified in the compulsory subjects. Although the results of the examination in voluntary subjects do not affect the question of the eligibility of the candidate for a commission, they influence his position on the list, which is determined by the numbers obtained under the two heads conjointly. It is understood that a scheme is now under consideration whereby the London examination will probably be modified in such a way that a good practical examination in Medicine and Surgery will secure a place on the list of successful candidates. It is hoped that a man who has held house appointments at hospitals will under the proposed scheme stand a better chance of securing a good place than the bookworm who has absorbed a smattering of the Natural Sciences and kept up his minute anatomy and physiology. After having passed this examination the successful candidates for both services are sent to the Army Medical School at Netley as "surgeons-on-probation," receiving a daily pay of 8*s.* and certain allowances, to go through a four months' course of instruction in the special duties required of them in the services. The staff of the school consists of four professors, all of them men of high standing in their special departments. The Professorship of Military Medicine is held by Colonel K. Macleod, M.D., I.M.S. Colonel W. F. Stevenson, M.B., is Professor of Military Surgery; Colonel J. L. Notter, M.D., of Military Hygiene; and Dr. A. E. Wright, of Pathology. There is an Assistant Professor for each of these subjects who is an officer of the Royal Army Medical Corps. The lectures on Military Surgery include gunshot and other wounds, transport of sick and wounded, duties of army medical officers in the field, on board troopships and transports, recruiting, and other duties incident to military service. Those on Military Medicine treat of tropical and other diseases to which soldiers are exposed in the course of their service, the mortality and invaliding by disease, in peace and war, at home and abroad, the management of lunatics under the conditions of military service, &c. The course of six lectures on Lunacy and Military Asylum work is delivered at the Netley Lunatic Asylum by Lieutenant-Colonel Chester, M.B. The course of Hygiene comprises the examinations of water and air, the general principles of diet, with the quality and adulterations of food and beverages, the sanitary requirements of barracks, hospitals, and camps, the consideration of the clothing, duties, and exercises of the soldier, and the circumstances affecting his health, with the best means of preventing disease, and instruction in the mode of preparing the various statistical and other returns required of the medical officer. The Pathological course includes bacteriology and demonstrations in physiological chemistry. The surgeons-on-probation are detailed for duty in the wards of the hospital, under the Professors and Assistant Professors of Medicine and Surgery. They spend two months in the medical and two months in the surgical division of the hospital, and there they are taught practically the details of the management of patients in a military hospital, the registration of their diseases, the duties of invaliding, the modes of filling up the regulation statistical returns and other service documents. The surgeons-on-probation are provided with quarters and are extra members of the mess at Netley. After having passed through the course of instruction they are examined on the subjects taught in the school, and their position on the list of those recommended for commissions is determined by the combined results of the competitive and final examinations. At the close of each session eight prizes are awarded: the Herbert Prize of £20 to the surgeon-on-probation who has obtained the highest number of marks at the Netley examination; the Parkes Memorial Bronze Medal to the one who gains the highest number of marks in the examination in Hygiene; the de Chaumont prize of books to the one who takes second place in Hygiene; the Martin Memorial Gold Medal for the highest number of marks in the examination on Military Medicine; the Montefiore Medal and £21, awarded for Military Surgery; the Montefiore Second Prize, a revolver to the surgeon-on-probation who obtains the second highest number of marks in this branch; the Maclean prize of books for Clinical Medicine and Surgery and for Ward Work; and a prize of books for the highest number of marks gained in Pathology.

At the close of the Netley Session those surgeons-on-probation who have obtained one-third of the possible total of marks in each subject are recommended for commissions as Lieutenants. The Lieutenants of the British Medical Service pass on from Netley to Aldershot, where they go through a systematic course of instruction in company and ambulance drill and equitation. The officers of the Indian Medical Service do not go to Aldershot, but undergo, whilst at Netley, a course of instruction in company and ambulance drill and in other military duties. The position of the officers of the Indian Service on the list of Lieutenants is determined by the combined results of the London and Netley examinations, and, as far as the requirements of the service permit, they have the choice of commands in India—i.e., Bengal, Punjab, Madras, or Bombay—according to their position in that list. All officers appointed to the Indian Medical Service are now placed on one list. Though ordinarily employed within the limits of the command to which they are posted, they are liable for employment in any part of India. In the *Gazette* dated India Office, August 26 h, 1898, it is announced that Her Majesty has deemed it expedient to alter the ranks of

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the officers of the Indian Medical Service, The same military titles as those conferred on the officers of the Royal Army Medical Corps are announced for the officers of the Indian Medical Service.

The Royal Army Medical Corps.—Lieutenants, if duly recommended, are promoted to be Captains on completing three years' full-pay service.

Captains, if recommended by the Director-General, are promoted to be Majors on completing twelve years' full-pay service, of which three must have been passed abroad. Before being promoted they will be required to pass an examination. This examination may be taken at any time after their seventh year of service. It will embrace the following subjects: (*a*) Surgery and Surgical Anatomy; (*b*) Medicine and Pathology; and (*c*) Hygiene, within the limits treated of in "Notter and Firth's Practical Hygiene," also the regulations regarding the sanitation of garrisons, quarters, hospitals, &c., as well as of camps and hospitals in the field, and of transports, troop and hospital ships; (*d*) duties of medical officers at home and abroad and at sea, as defined in the regulations, also hospital organisation and administration in peace and war, including the transport of sick and wounded by land and sea; (*e*) and the administration, interior economy, command, and discipline of the Royal Army Medical Corps, together with a knowledge of the principles of military law and their practical application (a certificate of proficiency in military law obtained at a garrison class will exempt the holder from examination in the latter).

A certificate will be required from a recognised teacher of surgery in any medical school, at home or abroad, in which operative surgery is taught, showing that the officer has gone satisfactorily through a complete course of operative surgery during the period within which the examination must be taken, and that he is a competent operator.

A report on any subject of a practical professional character, to be selected by the officer himself, and certified to be his own composition and in his own handwriting, will also be required. Considerable importance will be attached to the literary and scientific merits of this report, which must be furnished before the officer completes twelve years' service.

The examinations will be conducted by printed questions, which will enter so far into the subject matter of each head selected for examination as to show that the officer's knowledge has been fully tested.

The questions and answers will be forwarded, under a sealed confidential cover, to the Director-General for transmission to the examiners, who will report to the Director-General as to the competence of the officer examined.

The examination in Medicine and Surgery will be held by two gentlemen appointed by the Secretary of State; that in Hygiene by the Professor of Hygiene, Army Medical School, Netley; and that in Regulations, Duties, Military Law, &c., by an administrative medical officer, nominated for the purpose by the Director-General.

Any higher qualification, such as M.D., F.R.C.S., &c., or any diploma in Hygiene and State Medicine, taken after May 1st, 1890, will not exempt Captains from this examination.

Majors are, if duly recommended, promoted to be Lieutenant-Colonels on completing twenty years' full-pay service.

The selection of Lieutenant-Colonels for advancement to the grade of Colonel is made on the grounds of ability and merit (on the recommendation of the Commander-in-Chief), in determining which the following points will be considered:—The officer to be so selected must have been favourably reported on by the several military officers under whom he may have served, as set forth in their Annual Confidential reports. He must be physically fit for general service and have served abroad for at least eight years.

A Lieutenant-Colonel, to be eligible for selection as Colonel, must have served abroad at least ten years, of which three must have been in India. All promotions from the rank of Lieutenant-Colonel to that of Colonel, and from the rank of Colonel to that of Surgeon-General, shall be given for ability and merit, upon the selection of the Commander-in-Chief, with the approval of the Secretary of State, and the grounds of such selection shall be stated in writing. In all such cases the amount of service abroad shall be expressly stated. All officers under the rank of Colonel are placed on the retired list at the age of fifty-five, and those of that rank and of the rank of Surgeon-General at the age of sixty, except that in any particular case in which it may be considered necessary for the interest of the public service the age of retirement of a Surgeon-General may be extended for a period not exceeding two years. From recent promotions which have been made it is evident that Colonels who have passed the age of fifty-seven before being selected for the rank of Surgeon-General will be passed over in favour of younger officers who can, by reason of age, serve a full three years in the rank of Surgeon General.

Foreign Service.—Army Order 85 of June, 1897, states that the periods of service abroad, reckoning from the date of embarkation at home, will (except in the case of a Surgeon-General or Colonel) be five years for all stations abroad (except that on the west coast of Africa), unless such period should be incompatible with the interests of the public service.

Sick Leave.—An officer of the Royal Army Medical Corps may be allowed full pay during sick leave of absence on the same conditions as those laid down for regimental officers.

Service on the West Coast of Africa.—Officers who entered the Royal Army Medical Corps, or volunteered expressly for service on the West Coast of Africa on or after the 1st of March, 1873, receive double pay while actually serving on the coast. Candidates who present themselves expressly for service in the Royal Army Medical Corps on the West Coast enter under the same qualifications as other candidates, except that they may be admitted up to thirty years of age. After 3 years' actual service on the coast they are eligible for general service. If, however, it be certified by a medical board that any such officer is unfit for further duty on the coast he shall be eligible for general service, though he may not have completed 3 years' service there. For each year's service on the coast an officer is entitled to a year's leave at home. Each year or portion of a year served on the West Coast reckons double towards voluntary retirement or retired pay, provided that an officer has served 12 months on the coast.

Indian Medical Service.—Officers on appointment are, when possible, provided with passage to India by troopship; when troopship accommodation is not available passage at the public expense is provided by steamer, or a passage allowance granted if preferred. A charge for messing during the voyage is made at the rate of 2*s.* a day. This payment does not include the cost of liquors, which are charged for as extras. Any officer who may neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of leaving Netley will be considered as having forfeited his appointment, unless special circumstances shall justify a departure from this regulation. Lieutenants are promoted to the rank of Captain on completing three years' full-pay service, Captains to the rank of Major after twelve years' service, and Majors to the rank of Lieutenant-Colonel after twenty years' service. No examination to qualify for promotion is required. All promotions to higher grades are to be given by selection for ability and merit. In case of distinguished service in the field a medical officer may be at once promoted from any rank to the one next above it. The ages for compulsory retirement are the same as those for the Royal Army Medical Corps. Officers of the Indian Medical Service below the rank of Colonel may be granted: 1. Privilege leave under such regulations as may from time to time be in force. 2. Leave out of India for no longer period than one year, capable of extension to two years' absence from duty, on the following pay:—After arrival in India, on first appointment, £200 a year; after the commencement of the fifth year's service for pension, £250 a year; after the commencement of the tenth year's service for pension, £300 a year; after the commencement of the fifteenth year's service for pension, £400 a year; after the commencement of the twentieth year's service for pension, £450 a year; and after the commencement of the twenty-fifth year's service for pension, £500 a year. 3. Leave in India, but for the period of one year only, on full military pay and half the staff salary of appointment. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is specially granted an extension of leave without pay, is placed on temporary half-pay or the retired list, as the circumstances of the case

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may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India. Leave may be granted at any time, but solely at the discretion of the Commanders-in-Chief or of the Local Governments in India in the case of officers not under the direct orders of a Commander-in-Chief. Officers of the Administrative grades may be granted one period of leave not exceeding eight months during their tenure of appointment.

Naval Medical Service.—A candidate must be between the ages of twenty-one and twenty-eight, and must be the son of parents of pure European blood. He must declare his readiness for general service at home or abroad. Candidates will be examined by the Board in the following compulsory subjects: (*a*) Medicine, including Therapeutics and Diseases of Women and Children, 1200 marks; (*b*) Surgery, 1200 marks; (*c*) Anatomy and Physiology, 600 marks; and (*d*) Chemistry and Materia Medica, 600 marks. No candidate is considered eligible who does not obtain one-third of the maximum marks in each of the compulsory subjects. Candidates may be examined in the following voluntary subjects: Zoology, 300 marks; Botany, 300 marks; Physics, 300 marks; Geology and Physical Geography, 300 marks (no candidate will be allowed to present himself for examination in more than two of these subjects); French and German (200 each), 400 marks. A number less than one-third of the marks obtainable in each of these voluntary subjects will not be allowed to count in favour of a candidate who has qualified in the compulsory subjects. Successful candidates immediately after passing the examination will receive commissions as surgeons in the Royal Navy and will undergo a course of practical instruction in Naval Hygiene, &c., at Haslar Hospital. Surgeons are promoted to be Staff Surgeons after twelve years from date of entry, provided they pass the requisite examination after completion of eight years' service from the date of entry; and Staff Surgeons to Fleet Surgeons after twenty years' service if recommended by the Director-General. Deputy-Inspectors-General are promoted by selection for ability and merit from the Fleet Surgeons, and Inspectors-General from the Deputy Inspectors-General having three years' foreign service, or four years' mixed, of which not less than two must have been abroad, or five years' home service in such appointments as preclude foreign service, provided they have not refused to go abroad when called upon to do so. Inspectors and Deputy Inspectors-General are retired compulsorily at sixty (except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an Inspector-General on the active list, the age for retirement of such Inspector-General may be extended to sixty-two) and other grades at fifty-five years of age, and all ranks at any time if an officer has not served for five years. In calculating service for retired pay time on half-pay will be taken as equivalent to one-third service on full-pay. All retired officers are liable, till the age of fifty-five, to serve in time of declared national emergency in a rank not lower than that held on retirement.

The following tables, showing the rates of pay and half-pay of the three branches, will probably be acceptable to students who entertain any intention of entering the public service:—

ARMY.

Rank.	*Rates of Pay.*	*Gratuities.*	*With the Rank of*
	Daily.		
Surgeon on probation ..	£0 8 0	—	—
	Annual.		
Lieut. or Captain	200 0 0	—	—
Capt. aft. 5 years' service	250 0 0	—	Lieut. or Capt.
	Daily.		
Captain after 10 years' service	0 15 0	£1250*	Captain
Major or Lieut.-Col. ..	1 0 0	—	Maj. or Lt.-Col.
Major or Lieut.-Col. aft. 15 years' service	1 2 6	£1800*	Maj. or Lt.-Col.
Major or Lieut.-Col. aft. 18 years' service	—	£2500*	Maj. or Lt.-Col.
Lieut.-Col.:		*Retired-pay.* †	
aft. 20 years' service	1 5 0	£1 0 0	Major or Lieut.-Col.
25 ,,	1 7 6	1 2 6	Lieut.-Col.
30 ,,	—	1 5 0	Lieut.-Col.
(Brigade-Surg.) Lieut.-Col.	1 10 0	—	Lieut.-Colonel
aft. 5 years in rank	1 13 0	—	(but always
und. 30 years' service	—	1 7 6	senior to
aft. 30 ,,	—	1 10 0	Lieut.-Col.)
Colonel	2 0 0	1 15 0	Colonel
Surgeon-General	2 15 0	2 0 0	Major-General

Director-General of the Army Medical Service, £1500 yearly; retired pay from £1125 to £830, according to length of service as Director General.

Under Army Order 63 of May, 1897, officers of the Royal Army Medical Corps attached to a militia unit during preliminary drill and training are entitled to an allowance in aid of mess at the rate of 4*s.* a day.

* Applies equally to Lieutenant-Colonels, Majors, Captains, or Lieutenants, according to periods of service—i.e., ten, fifteen, or eighteen years.

An officer who, on voluntary retirement, has served for less than three years in the rank from which he retires is only entitled to the gratuity or retired pay assigned to the next lower rank.

† Half-pay is also applicable to officers having less than twenty years' service, as follows:—

Lieut.-Col., Major, Capt., or Lieut.:

	Daily.
Under 5 years' service	£0 6 0
After 5 ,, ,, ...	0 8 0
After 10 ,, ,, ...	0 10 0
After 15 ,, ,, ...	0 13 6

Pay of officers in India:

	Rs. per mensem.
Lieut.-Col.	1150
,, after 25 years	1093
,,	1056
Major, after 15 years	825
,,	789
Capt., after 10 years	500
,, ,, 5 ,,	450
,, or Lieutenant	350

ROYAL NAVY.

Rank.	Daily pay.	Half-pay.	Gratuities and retired pay. Rank.	Gratuity.
	£ *s.* *d.*	£ *s.*		
Surgeon	0 11 6	0 6	Surgeon and Staff	
aft. 2 years' f. p. in rank	..	0 7	‡Surgeon:	
4 ,,	0 13 6	0 8	aft. 8 years' f. p.	£1000
6 ,,	..	0 9	12 ,,	1500
8 ,,	0 15 6	0 10	16 ,,	2250
10 ,,	..	0 11		
Staff Surgeon:				
on promotion	1 1 0	0 12		
aft. 2 years' f. p. in rank	..	0 13		
4 ,,	1 4 0	0 14		
6 ,,	—	0 15		
Fleet Surgeon:			Fleet-Surgeon.	Daily.
on promotion	1 7 0	0 17	aft. 20 years'	£1 0 0
aft. 2 years' f. p. in rank	..	0 18	24 ,,	1 2 6
4 ,,	1 10 0	0 19	27 ,,	1 5 0
6 ,,	..	1 0	30 ,,	1 10 0
8 ,,	1 18 0	..		
Deputy Inspector-General:				
on promotion	2 2 0	1 5		1 15 0
aft. 2 years' f. p. in rank	..	1 7		
4 ,,	..	1 9		2 0 0
Inspector-General	2 15 0	1 18		

The half-pay, retired pay, and gratuities on retirement are liable to reduction in cases of misconduct.

The hospital allowances for Medical Officers at home and abroad in lieu of provisions for themselves and servants and for fuel and light, are as follows:—

Rank.	At home.	Abroad.
	£	£
Inspector-Generals of Hospitals	85	130
Deputy Inspector-Generals	67	112
Fleet Surgeons and Staff Surgeons	53	112
Surgeons	39	108

Medical officers serving afloat receive an allowance of 1*s.* 6*d.* a day in lieu of provisions, fuel, and lights, as laid down in the Queen's Regulations.

The allowance of 5*s.* a day, in addition to full pay, at present granted to the Fleet Surgeon of a flag-ship bearing the flag of a Commander-in-Chief on a foreign station, will be given to the senior medical officer of such ship, being a Fleet or Staff Surgeon; and an allowance of 2*s.* 6*d.* a day to the senior medical officer, being a Fleet or Staff Surgeon, of the ship of a Commodore or of a senior officer commanding a foreign station.

Candidates will do well to notice that the regulations issued to applicants do not put any limit on the amount of half-pay service which they may be compelled to undergo.

‡ If the health of a surgeon breaks down before he completes eight years' service, even if his disability be contracted in the service or be due to climatic causes, he is liable to be at once placed on the retired list, receiving a gratuity at the rate of £125 for each year of completed service.

INDIAN MEDICAL SERVICE.§

The rate of pay drawn by Lieutenants from the date of passing the final examination at the Army Medical School until arrival in India is 10*s.* a day.

Pay at the above rate is issued in this country up to the date of

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embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India.

The following are the rates of "Indian pay and allowances" which will be drawn by officers hereafter appointed to the Indian Medical Service:—

Rank.	Years' service.	Indian pay and allowance per mensem. When not holding an appointment carrying higher pay. Rs. a. p.	A. When not receiving any staff allowance. Rs. a. p.	B. When receiving staff allowance in addition. Rs. a. p.
Lieutenant-Colonel (Senior)		900 0 0		
Lieutenant-Colonel	25 and over	888 12 0		
Lieutenant-Colonel	20 ,,	852 8 7		
Major	15 ,,	677 6 11		
,,	12 ,,	640 14 6		
Captain	10 ,,		500 0 0	450 0 0
,,	5 ,,		450 0 0	400 0 0
Captain and Lieutenant	under 5		350 0 0	300 0 0

On first appointment they will only come into receipt of "Indian pay and allowances" from the date of their arrival in India.

Officers holding the principal administrative appointments and substantive military charges of the Indian Medical Service receive at present the following consolidated salaries:—

	Rs. per mensem.
Surgeon-General	2700 to 2200
Colonel ... from	2250
Colonel ... to	1800
Lieutenant-Colonel in substantive charge of a native regiment	1000 with Rs. 90 horse allowance in cavalry regiments.
Major in substantive charge of ditto	800 with Rs. 90 ditto.
Captain above 5 years' full-pay service in substantive charge of a native regiment	600 with Rs. 60 ditto.
Captain or Lieutenant under 5 years' ditto in substantive charge of a native regiment	450 with Rs. 60 ditto.

The salaries of other substantive medical appointments in the Civil and Military Departments are consolidated and vary from Rs. 1800 to Rs. 400 per mensem.

Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem.

Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

RETIRING PENSIONS AND HALF-PAY.

Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service:—

After 30 years' service for pension	£700 per annum + £350 after 5 years' active employment in India as a Surgeon-General, or + £250 per annum after 5 years' active employment as a Colonel.
,, 25 ,, ,, ,,	£500 per annum.
,, 20 ,, ,, ,,	£365 ,,
,, 17 ,, ,, ,,	£292 ,,

Officers not entitled to pension, when placed on temporary or permanent half-pay will be granted the British rate of half-pay of their military rank, as under:—

Rank.	Rates of Half-pay. ‖ Per diem. s. d.	Per annum. £ s. d.
Lieutenant-Colonel (Senior)	11 0	200 15 0
Lieutenant-Colonel		
Major	6	173 7 6
Captain	7 0	127 15 0
Lieutenant	8 0	54 15 0

INVALID PENSIONS.

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half pay, be granted an Invalid Pension on the following scale:—

	Per annum.
After 16 years' pension service	£272
,, 15 ,, ,, ,,	252
,, 14 ,, ,, ,,	232
,, 13 ,, ,, ,,	212
,, 12 ,, ,, ,,	192

§ No staff or regimental allowance can be drawn until the lower standard examination in Hindustani has been passed. As many lieutenants have been sent to the frontier immediately on arriving in India, they have found it impossible to study and pass this examination, and have consequently been doing regimental and other work for Rs. 350 a month. Lately a concession has been granted to medical officers so situated on the frontier, but the rule is still most illiberal and requires alteration.

‖ Officers cannot retire *in India* on half-pay (No. 45, Feb. 28th, 1865).

WOUND PENSIONS.

Officers are entitled to the same allowances on account of wounds and injuries received in action as are granted to combatant officers of Her Majesty's Indian Military Forces holding the corresponding military rank.

FAMILY PENSIONS.

The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India.

METROPOLITAN MEDICAL SCHOOLS.[1]

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—The clinical practice of the hospital comprises a service of 744 beds, of which 674 are for patients in the hospital at Smithfield and 70 for convalescent patients at Swanley. Ten house physicians and ten house surgeons are appointed annually. During their first six months of office they act as "junior" house physicians and house surgeons and receive a salary of £25 a year. During their second six months they become "senior" house physicians and house surgeons and are provided with rooms by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant and an ophthalmic house surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two assistant anæsthetists are appointed annually, and receive salaries of £120 and £100 respectively. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. Two assistant electricians are appointed every six months. The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the diligent students. All the appointments are now free.

A college is attached to the hospital, in which students can reside, subject to the college regulations.

The Medical School Buildings include three large lecture theatres, a large dissecting room, a spacious library (containing 13,000 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. There are laboratories for chemistry, physiology, pathology, pharmacology, physics, public health, and biology, giving ample accommodation in every department.

A recreation ground of ten acres has been purchased by the school committee at Winchmore-hill for the use of the Students' Amalgamated Clubs, and all students are expected to become members.

Instruction in Preliminary Science is given to University of London students in chemistry, biology, and physics throughout the year.

Laboratory Instruction for the D.P.H. is provided during the winter and summer sessions, and elementary instruction in Bacteriology is also given throughout the year.

CHARING-CROSS HOSPITAL AND COLLEGE.—Total fees, 110 guineas if paid in a single sum on entry, or 121 guineas if paid in five instalments; the sons of Registered Medical Practitioners pay 100 guineas in one sum or 110 guineas in five sums; for Dental students, 54 guineas, or 60 guineas in two equal instalments. General students pay proportionately lower fees, and are admitted without additional fee to the courses of Clinical Medicine and Surgery and to the practice of the Royal Westminster Ophthalmic Hospital. They alone are entitled to compete for the Scholarships, Gold Medal, Huxley, and Pereira Prizes.

Classes for the Preliminary Scientific Examination of the University of London are held at this Medical School. The fee for the whole course, which begins in October, is

[1] For Scholarships see p. 638 et seq.

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15 guineas. There are also special classes for the practical work for the Department of Public Health and a course in the subject of diseases of tropical climates.

A recreation ground has recently been presented to the Students' Club by Mr. E. J. Churchill.

ST. GEORGE'S HOSPITAL.—Students may become Perpetual Pupils by payment of £150 on entering, or of £160 in four annual instalments. Perpetual pupils are entitled to perpetual admission to lectures and demonstrations as well as to the entire medical and surgical practice of the hospital; they may compete for all prizes and exhibitions, may become clinical clerks during six months and dressers during another six months, or longer if required, without fee, may attend midwifery practice, and may compete for all hospital and school appointments without extra charge. Four house surgeoncies and four house physiciancies, and the salaried offices of obstetric assistant, senior and junior anæsthetists, medical registrars (2), surgical registrar, curator and assistant curator of the Museum, besides demonstratorships and a number of junior hospital appointments, are open to perpetual pupils. Students not being perpetual pupils are admitted to lectures, demonstrations, and hospital practice on payment of £50 annually for two years and £20 annually for succeeding years. Such students may become Perpetual in their third year if they wish and if their conduct has been satisfactory.

GUY'S HOSPITAL.—House physicians, house surgeons, assistant house physicians, and assistant house surgeons, obstetric residents, gynæcological assistants, clinical assistants, clerks to anæsthetists, surgeons' and assistant surgeons' dressers, surgical ward clerks, clinical clerks, post-mortem clerks, extern obstetric attendants, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the medical staff, according to merit and without extra payment. The house physicians, of whom there are four, hold office for six months each. The assistant house physicians, who hold office for three months, attend in the out-patient department four afternoons in the week, and see all the cases not seen by the assistant physician of the day. The house physicians have the care of the patients in the medical wards, and attend to all emergencies arising in the absence of the physicians. They are provided with board and lodging in the college free of expense. The house surgeons, of whom there are four, hold office for six months each, and are provided with board and lodging in the college free of expense. The Surgical Casualty Department is in charge of two assistant house surgeons. The surgeons' dressers are selected from those students who have completed their third winter session, and have been most diligent in the junior appointments. They hold office for three or six months. Six are attached to each surgeon, and during their weeks of special duty they are provided with board and lodging in the hospital free of expense. The obstetric residents, two in number, are provided with board and lodging in the college free of expense.

Higher Examinations.—Classes are held throughout the year for the Preliminary Scientific Examination of the University of London; and special courses of instruction in anatomy and physiology are provided for students preparing for the Primary Fellowship examination and the intermediate M.B. examinations of Oxford, Cambridge and London. Two courses of Laboratory instruction for candidates for a Diploma in Public Health are given annually.

The College.—The College stands upon a site fronting the east gate of the hospital, and is connected with it by a subway. The building serves as a Residential College for Students, and at the same time provides accommodation for the Students' Club. The Clubs' Union ground is less than twenty-five minutes' journey from the Hospital. The new school buildings are now open.

KING'S COLLEGE.—Resident medical officers have rooms at the hospital and commons free; they are selected by examination and hold their appointment for six months. There are two physician's assistants, two physician accoucheur assistants, and three house surgeons. Sambrooke registrarships, value £50 per annum, are tenable for two years. Clinical assistants senior and junior of the special departments—ophthalmic, ear, and throat. Senior dressers and dressers, clinical clerks, assistant demonstrators of anatomy and physiology, and prosectors are re-elected by examination, and in consideration of their former work in the medical school as matriculated students. Classes for the science subjects required by the University of London are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

Laboratories.—Bacteriology, State Medicine, Pathology, and Neuropathology have special laboratories.

Resident Chambers.—There are chambers at King's College available for a limited number of students; rent, including dinner during terms, £50 to £60 a year.

Athletic Club.—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubbs.

LONDON HOSPITAL AND COLLEGE.—The hospital has nearly 800 beds in constant use, and no beds are closed. Being the only general hospital for East London—i.e., for a million and a half people—the practice is immense. In-patients last year 11,146; out-patients, 161,033; accidents, 14,781; major operations, 2320. Owing to the enormous number of patients more appointments are open to students than at any other hospital. Receiving-room officers, house physicians, house surgeons, &c.: sixty of these qualified appointments are made annually and more than 150 dressers, clinical clerks, &c., appointed every three months. All are free to students of the college. Holders of resident appointments have free board. Twenty-seven scholarships and prizes are given annually. Five entrance scholarships are offered in September. Special classes are held for the University of London and other higher examinations. Special entries for medical and surgical practice can be made. Qualified practitioners will find excellent opportunities for studying the rarest diseases. Lectures and classes are held throughout the year to suit the requirements of candidates desirous of obtaining the diploma in Public Health. These courses are recognised both by the University of Cambridge and by the Examining Board in England. A reduction of 15 guineas is made to the sons of members of the profession. New laboratories and class-rooms for Bacteriology, Public Health, Operative Surgery, Chemistry, Biology, &c., will be completed by Oct. 1st. The Clubs Union Athletic Ground is within easy reach of the hospital. The Metropolitan and other railways have stations close to the hospital and the college.

ST. MARY'S HOSPITAL.—There are three house physicians and three house surgeons, each appointed for six months, and two obstetric officers, each appointed for six months. They board free of expense in the hospital, except that the obstetric officer resides outside the hospital for the first three months. These appointments are awarded after competition, without additional fee. Two demonstrators of anatomy are appointed annually, with a salary of £70 each; and a demonstrator of physiology, at £100 a year. All these officers are eligible for re-election. Two prosectors of anatomy, two or more assistant demonstrators of anatomy, biology and pathology are appointed annually, and receive an honorarium of £5 each. All students are required to perform the duties of clinical clerk and dresser during the last two years of their curriculum. Students of the third year and of subsequent years are also appointed as clerks and dressers to assist the physicians and surgeons in charge of the out-patients. The hospital contains 281 beds. Two wards are appropriated to the Diseases of Children, and one to those of Women; beds are also provided for Ophthalmic, Aural, and Cutaneous cases. There is an out-patient department for Diseases of Children. Special assistance is given to intending candidates for the final examinations of the Medical, Surgical, and Obstetric tutors.

Clarence Memorial Wing.—The foundation-stone of this important addition to the hospital was laid by H.R.H. the Prince of Wales and the new out-patient department in it is now open. The old out-patients' rooms have been given up to the school to make additional class-rooms, with a new museum, a new physiological theatre, and pathological and bacteriological laboratories. The new wing will present features of the greatest interest in the bearing it must necessarily have upon the future efficiency of the Medical School. The Lying-in Wards will be more especially noteworthy as the first-established within a metropolitan general

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The Medical Student's Class Guide.

TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1898-99.

LECTURES, &c.	ST. BARTHOL. HOSPITAL.			CHARING-CROSS HOSPITAL.			ST. GEORGE'S HOSPITAL.		
	LECTURERS.	FEES. One Course.	FEES. Unlimited.	LECTURERS.	FEES. One Course.	FEES. —	LECTURERS	FEES. One Course.	FEES. Perpetual.
		£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.
WINTER SESSION.									
PHYSIOLOGY	Dr. Klein	9 9 0	...	Dr. Pembrey	8 8 0	...	Dr. Buckmaster	8 8 0	10 10 0
							Ditto, *Phys. Chem.*	...	...
BIOLOGY	Dr. Shore	7 7 0	...	Dr. Pembrey	5 5 0	...		...	...
ANATOMY	Mr. Bruce Clarke	9 9 0	...	Mr. Waterhouse	7 7 0	...	Mr. Turner	8 8 0	10 10 0
	Mr. Lockwood.			Mr Cantlie (*Applied*)			Mr. Keyser		
ANATOMICAL DEMONSTRATIONS	Messrs. Bailey, Furnivall, Miles, Phillips, Christopherson	10 10 0	...	Mr. Gibbs	8 8 0	...	Mr. Grimsdale	7 7 0	...
							Ditto, *Osteology*	3 3 0	...
							Histology	...	...
CHEMISTRY	...	7 7 0	...	Dr. Morley	6 6 0	...	Mr. Gardner	8 8 0	10 10 0
							Mr. Addyman		
MEDICINE	Sir D. Duckworth	7 7 0	...	Dr. Bruce	7 7 0	...	Dr. Cavafy	8 8 0	10 10 0
	Dr. Norman Moore						Dr. Ewart		
SURGERY	Mr Marsh	7 7 0	...	Mr. Boyd	7 7 0	...	Mr. Bennett	8 8 0	10 10 0
	Mr. Walsham						Mr. Dent		
HOSPITAL PRACTICE:									
PHYSICIANS	Drs. Church, Gee, Sir D. Duckworth, Dr. Hensley, Dr. Brunton, Dr. Champneys (*Obstet.*)	3 mths. 13 2 6 6 mths. 19 19 0 12 mths 26 5 0	36 15 0	Drs. Green, Bruce and Abercrombie [*To out-patients:* Dr. Willcocks, Dr. Murray, Dr. Mott]	3 mths. 5 5 0 6 mths. 7 7 0 12 mths 10 10 0	Full period 21 0 0	Dr. Cavafy	12 mths	42 0 0
							Dr. Ewart	10 10 0	
							Dr. Owen	2 years	
							Dr. Penrose	21 0 0	
							Obst. Phys.:		
ASSISTANT PHYSICIANS	Drs. Norman Moore, S. West, Ormerod. Herringham, Tooth.	...	...	Dr. Arkle	...	...	Dr. Dakin		
				Pract. Midwifery:			Dr. Rolleston	...	...
				Dr. Routh	3 3 0		Dr. Lee Dickinson		
							Dr. Cyril Ogle		
	Dr. Griffith (*Obstet.*)	3 mths.					Dr. Stabb (*Obstet.*)		
SURGEONS	Messrs. Willett, Langton, Marsh, Butlin, & Walsham	13 2 6 6 mths. 19 19 0	36 15 0	Mr. Bloxam	3 mths.	Full	Mr. Haward,	12	42 0 0
				Mr. Morgan	5 5 0	period	Mr. Bennett, Mr.	months	
				Mr. Stanley Boyd	6 mths.	21 0 0	Dent, Mr. Turner	10 10 0	
ASSISTANT SURGEONS	Messrs. Cripps, Bruce Clarke, Bowlby, Lockwood. and D'Arcy Power	12 mths 26 5 0	...	Mr. Waterhouse	7 7 0	Full	*Ophth. Surg.:*	2 years	
				Mr. Wallis	12 mths.	Med. &	Mr. Frost	21 0 0	
				Mr. Gibbs	10 10 0	Surg.	Mr. Sheild		
	Ophth. Surgs.:					36 15 0	Mr. H. Allingham		
	Mr Vernon Mr Jessop						Mr. Jaffrey		
PRACTICAL SURGERY	Messrs. D'Arcy Power and Berry	7 7 0	...	Mr. Wallis	5 5 0	...	Mr. Sheild	5 5 0	...
		...	...	...	...	...	Dr. Lee Dickinson	5 5 0	...
PRACTICAL MEDICINE	Drs. West, Horton Smith, & Drysdale								
SURGICAL PATHOLOGY	Mr. Bowlby	...	...	...	...	...	...	...	...
CLINICAL MEDICINE	Drs. Church, Gee, Sir D. Duckworth, Dr. Hensley, Dr. Brunton	...	...	The Physicians and Assistant Physicians	...	...	The Physicians	...	...
CLINICAL SURGERY	Messrs. Willett, Langton, Marsh, Butlin, & Walsham	...	...	The Surgeons and Assistant Surgeons	...	...	The Surgeons	...	...
CLINICAL MIDWIFERY, &c.	Dr. Champneys	...	...	Dr. Routh and	...	...	Drs. Dakin & Stabb	...	...
DENTAL SURGERY	Mr. Paterson	...	...	Mr. Colyer	...	...	Mr. H. L. Albert	...	...
	Mr. Ackery	...	...						
PUBLIC HEALTH	Sir R. Thorne Thorne ¶	3 3 0	*	Dr. Whitelegge [*Pub. Health, Pract.:* Drs. Morley & Arkle]	3 3 0	...	Dr. Parkes [*Morbid Anat.:* Dr. Rolleston, £4 4 0] ¶	3 3 0	4 4 0
SUMMER SESSION.									
MATERIA MEDICA	Dr. Calvert	7 7 0	...	Dr. Willcocks	...	...	Dr. Penrose	4 14 6	5 15 6
PHARMACOLOGY	Dr. Brunton		...	Dr. Willcocks	4 4 0	...		...	...
MIDWIFERY, &c.	Dr. Champneys	7 7 0	...	Dr. Routh	4 4 0	...	Dr. Dakin	5 5 0	7 7 0
BOTANY	Rev. G. Henslow	...	...	Dr. Willcocks	...	...		...	...
MEDICAL JURISPRUDENCE	Dr. Hensley	4 4 0	...	Dr. Abercrombie	4 4 0	...	Dr. Owen**	6 6 0	8 8 0
				Dr. Morley (*Tox.*)					
THERAPEUTICS	Dr. Brunton	...	...	Dr. Willcocks	...	...	Dr. Penrose	2 2 0	3 3 0
PATHOLOGICAL ANATOMY	Dr. Andrewes	7 7 0	...	Dr. Murray	4 4 0	...	Dr. Rolleston	3 3 0	4 4 0
PRACTICAL CHEMISTRY	Dr. Chattaway, Dr. Orton, Mr. Reynolds	5 5 0	...	Dr. Morley	5 5 0	...	Mr. Gardner	4 4 0	...
				Mr. Richards			Mr. Addyman	4 4 0	
COMPARATIVE ANATOMY	Dr. Shore	2 12 6	...	Dr. Pembrey	...	...	Dr. Buckmaster	4 4 0	...
OPHTHALMIC SURGERY	Mr. Vernon Mr. Jessop (in Winter)	3 3 0	*	Staff of Royal West. Oph. Hosp.	...	...	Mr. Frost	...	...
							[*Tropical Medicine:* Dr. Manson]	3 3 0	
OPHTHALMOLOGY	...	...	...		...	...	...	...	...
PSYCHOLOGY	Dr. Claye Shaw	3 3 0	...	Dr. Percy Smith	4 4 0	...		...	...
DENTAL SURGERY	Mr. Paterson	2 12 6	...	Mr. Colyer	...	...	Mr. H. L. Albert	...	...
PRACTICAL SURGERY	Messrs. D'Arcy Power and Berry	7 7 0	...	Mr. Wallis	5 5 0	...	Mr. Sheild	4 4 0	5 15 6
PRACTICAL PHYSIOLOGY	Dr. Edkins, Mr. W. G. Clark, and Mr. T. J. Horder‖	10 10 0	...	Dr. Pembrey‖	6 6 0	...	Dr. Buckmaster	...	...
							[*Clinical Lunacy:* Dr. Alexander]		
PRACTICAL PHARMACY	Dr. Calvert	...	...	Mr. Pearce	2 2 0	...	[*Bacteriology:* Dr. Slater]	4 4 0	
	Dr. Horton-Smith								
OPERATIVE SURG. (DEMON.)	Mr. D'Arcy Power	6 6 0	...	Mr. Wallis	I	...	Mr. H. Allingham	6 6 0	...
	Mr. H. J. Waring						[*Pract. Midw.:* Dr. Stabb]	3 3 0	
	Mr. McA. Eccles‖								
DISEASES OF THE EAR	Mr. Cumberbatch	...	...	Mr. Waterhouse	...	...	Mr. Bull	...	...
DISEASES OF THE SKIN	Dr. West	...	...	Dr. Galloway	...	...	Dr. Cavafy	...	...
ORTHOPÆDIC SURGERY	Mr. Bruce Clarke	...	...	Mr. Wallis	...	...	Mr. Turner	...	...
DISEASES OF THE THROAT	Mr. Bowlby	...	...	Mr. Willcocks	...	...	Mr. Sheild	...	...
FEE for all Lectures and Hosp. Med. and Surg. Practice	£157 10s.; or, 1st yr., £42; 2nd yr., £42; 3rd yr., £42; 4th yr., £42.			£115 10s.; or, 1st Win., £34 13s.; 1st Sum., 2nd Win., 2nd Sum., 3rd Win., £23 2s. each.†			£150; or, 1st year, £50; 2nd year, £50; 3rd year, £40; 4th year, £20.§		

* Free to general students of the hospital. † The sons of registered medical practitioners pay 100 guineas in one sum, or 110 guineas in five instalments. Dental students £56 14s., or two instalments of 30 guineas each. A proportionate reduction in their fees will be made to students who have already commenced their education at institutions recognised by the Examining Boards on production of satisfactory certificates on joining the school. ‡ Included in Practical Surgery fee. § Fee for Perpetual Pupils. Reduction is made in the case of students who have already passed certain examinations before joining the school. ‖ And in Winter. ¶ In Summer. ** Including one course of Clinical Insanity.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1898-99—(CONTINUED).

LECTURES, &c	GUY'S HOSPITAL. LECTURERS.	FEES. First Course.	FEES. Subseqnt. Course.	KING'S COLLEGE AND HOSPITAL. LECTURERS.	FEES. One Course.	FEES. Perpetual
WINTER SESSION.		£ s. d.	£ s. d.		£ s. d.	£ s. d.
PHYSIOLOGY	Dr. Washbourn and Dr. Starling	10 10 0	10 10 0	Dr. Halliburton, Mr. Beale, and Mr. Lyle	8 8 0	...
ANATOMY, DESCRIPTIVE & SURGICAL	Mr. Clement Lucas and Mr. Lane	10 10 0	1 10 0	Dr. Hughes and Mr. Cadman	6 6 0 or 9 9 0 inc. Prac. Anatomy	...
ANATOMICAL DEMONSTRATIONS	Mr. Fripp, Mr. Steward, and Mr. Handley	10 10 0	10 10 0	Dr. Hughes and Mr. A. W. Cadman	7 7 0	...
CHEMISTRY	Mr. Groves	5 5 0	5 5 0	Dr. Thomson and Mr. Jackson	8 8 0	...
MEDICINE	Dr. Pye-Smith and Dr. Taylor	10 10 0	10 10 0	Dr. B. Yeo	8 8 0	...
SURGERY	Mr. Howse and Mr. Davies-Colley	10 10 0	10 10 0	Mr. W. W. Cheyne	8 8 0	...
PRACTICAL SURGERY	Mr. Fagge	4 4 0	4 4 0	Messrs. Carless, Burghard, Cheatle, and Beale	3 3 0	...
HOSPITAL PRACTICE					Summer	42 0 0
PHYSICIANS	Dr. Pye-Smith, Dr. Taylor, Dr. Goodhart, and Dr. Hale White	3 months 15 15 0 6 months 21 0 0	Perpetual 42 0 0	Dr. Burney Yeo	8 8 0	
	Dr. Galabin (*obst.*)	1 year 28 7 0		Dr. Hayes (*accou.*) Dr. Ferrier, Dr. Curnow	Winter 11 11 0	
				Dr. Tirard	1 year 18 18 0	
ASSISTANT PHYSICIANS	Drs. Pitt, Perry, Shaw, and Washbourn	...	...	Dr. Dalton	...	...
	Dr. Horrocks (*obst.*)			Dr. Phillips (*accou.*) Sir H. Beevor, Bart., M.D.		
SURGEONS	Mr. Howse, Mr. Davies-Colley, Mr. Lucas, and Mr. Golding-Bird	3 months 15 15 0 6 months	Perpetual 42 0 0	Mr. W. Rose, Mr. Cheyne, and Mr. Barrow	...	...
	Mr. Higgens (*oph.*), Messrs. Newland-Pedley, Maggs, & Badcock (*dent.*)	21 0 0 1 year		Mr. A. S. Underwood (*surg.-dentist*) Mr. McHardy (*ophthalmic*)		
	Mr. L. Purves (*aural*)	28 7 0				
ASSISTANT SURGEONS	Messrs. Jacobson, Symonds, Lane, Dunn, Brailey (*oph.*), and Rouw, Pillin, & Hopson (*dent.*)	...	...	Mr. Carless, Mr. Burghard, Mr. Cheatle, and Mr. Beale	...	...
CLINICAL MEDICINE	Drs. Pye-Smith, Taylor, Goodhart and White *In Summer:* Drs. Pitt, Perry, Shaw, and Washbourn	...	...	Dr. B. Yeo Dr. Ferrier Dr. Curnow	...	...
CLINICAL SURGERY	Messrs. Howse, Davies-Colley, Lucas, and Golding-Bird *In Summer:* Mr. Jacobson, Mr. Symonds, Mr. Lane, and Mr. Dunn	...	...	Mr. W. Rose [*Osteology:* Dr. Hughes & Mr. A. W. Cadman]	...	...
CLINICAL MIDWIFERY	Dr. Galabin & Dr. Horrocks	...	...	Dr. Hayes & Dr. Phillips	...	...
	[*Med. Classes:* Dr. Bryant] [*Surg. Classes:* Mr. Dunn] [*Obst. Classes:* Mr. Targett]			[*State Medicine Laboratories:* Dr. W. R. Smith & Mr. Moor]		
SUMMER SESSION.						
MATERIA MEDICA & THERAPEUTICS	Dr. Hale White	5 5 0	5 5 0	Dr. Tirard	5 5 0	...
MIDWIFERY &c.	Dr. Galabin	5 5 0	5 5 0	Dr. Hayes	5 5 0	...
BOTANY	Mr. Beddard, Dr. Stevens,	5 5 0	5 5 0	Mr. Bottomley, Ph.D.	4 4 0	...
BIOLOGY	and Mr. Steward	10 10 0	10 10 0	Dr. Halliburton, Mr. Beale, and Mr. Lyle	...	...
MEDICAL JURISPRUDENCE	Dr. Stevenson	5 5 0	5 5 0	Dr. W. R. Smith	5 5 0	...
DISEASES OF WOMEN	Dr. Galabin	5 5 0	5 5 0	Dr. Hayes	...	...
PRACTICAL CHEMISTRY	Mr. Groves, Mr. Wade, and Mr. Hopkins	5 5 0	5 5 0	Dr. Thomson and Mr. H. Jackson	6 6 0	...
PRACTICAL PHYSIOLOGY	Dr. Starling, Dr. Fawcett, and Mr. Hopkins	10 10 0	7 7 0	Dr. Halliburton, Mr. Beale, and Mr. Lyle.	5 5 0	...
NEURO-PATHOLOGY	...	...	...	Dr. Ferrier & Dr. Turner	1 11 6	...
PRACTICAL BIOLOGY	Mr. Beddard, Dr. Stevens, and Mr. Steward	10 10 0	10 10 0	Mr. Beale, Mr. Lyle	8 8 0*	...
NATURAL PHILOSOPHY	Mr. Reinold	5 5 0	5 5 0		2 2 0	...
COMPARATIVE ANATOMY	...	5 5 0	5 5 0	...	...	...
PATHOLOGY AND MORBID ANATOMY	Drs. Pitt, Perry, & Shaw	5 5 0	5 5 0	...	...	...
BACTERIOLOGY	Dr. Washbourn & Mr. Pakes	2 2 0	2 2 0	Dr. Dalton	3 3 0	...
OPERATIVE SURGERY	Mr. Dunn	5 5 0	5 5 0	Prof. Crookshank	3 3 0	...
MORBID HISTOLOGY	Mr. Higgens	3 3 0	3 3 0	Mr. Carless	2 2 0	...
OPHTHALMIC SURGERY	Mr. Bellingham Smith	5 5 0	5 5 0	Dr. Dalton	5 5 0	...
PSYCHOLOGICAL MEDICINE	Dr. Savage & Dr. Hyslop	3 3 0	3 3 0	Mr. McHardy	3 3 0	...
DENTAL SURGERY	Mr. Newland-Pedley	...	...	Dr. Ernest White	4 4 0	...
AURAL SURGERY	Mr. L. Purves	...	...	Mr. A. S. Underwood	...	...
DEMONST. OF CUTANEOUS DISEASES	Dr. Perry	...	...	Dr. Pritchard	...	...
PUBLIC HEALTH	...	...	...	Mr. Carless	...	...
PRACTICAL PHARMACY	Dr. Sykes and Mr. Pakes	3 3 0	3 3 0	...	1 1 0	...
	Mr. Collier	3 3 0	3 3 0	Mr. Fairweather	2 2 0	...
FEE for Lectures and Hospital Medical and Surgical Practice	150 guineas; or by 4 instalments of forty guineas each.			£135; or in two annual instalments of £70; or three of £48; or four of £37 each.†		

* Elementary Course, £5 5s.

† Students having completed their studies in Anatomy, Physiology, and previous subjects, £75.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1898-99—(CONTINUED).

LECTURES, &c.	LONDON HOSPITAL.			ST. MARY'S HOSPITAL.			MIDDLESEX HOSPITAL.		
	LECTURERS.	FEES. One Course.	FEES. Perpetual.	LECTURERS.	FEES. One Session.	FEES. Perpetual.	LECTURERS.	FEES. One Session.	FEES. Perpetual.
WINTER SESSION.		£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.
PHYSIOLOGY	...	7 7 0	...	Dr. Waller	7 0 0	...	Dr. Young	8 8 0	...
EXPERIMENTAL PHYSIOL.	Dr. Leonard Hill Mr. Hutchison	4 4 0	...	Dr. Waller	...	...	...	5 5 0	...
PATHOL. & MORBID ANAT.	Mr. F. S. Eve and Dr. Bulloch	3 3 0	...	Dr. Maguire Mr. Plimmer	4 0 0	...	...	...	...
ANATOMY, DESCRIPTIVE & SURGICAL.	Mr. T. H. Openshaw [*Pract.*: Dr. Keith‖]	7 7 0	...	Mr. E. Lane	8 0 0	...	Dr. Robinson	9 9 0	...
ANATOMICAL DEMONSTRATIONS.	DrLeaf DrRoxburgh	7 7 0	...	Mr. Ashdowne Mr. Sanders	...	...	Dr. R. Gladstone	5 5 0	...
CHEMISTRY	Mr. Page, Mr. Candy [*Pract.*: Mr. Page] [*Experim. Physics*: Mr. Page]	7 7 0 5 5 0 3 3 0	...	Dr. A. P. Laurie [*Bacteriology*: Mr. H. G. Plimmer]	6 0 0 2 2 0	...	Dr. Plimpton	6 6 0	...
MEDICINE	Dr. Percy Kidd	7 7 0	...	Dr. Lees Dr. Phillips	8 0 0	...	Dr. S. Coupland	8 8 0	...
SURGERY	Mr. Mansell Moullin	7 7 0	...	Mr. Page Mr. Pepper	8 0 0	...	Mr. A. Clark	8 8 0	...
PRACTICAL SURGERY	Mr. Roxburgh	5 5 0	...	Mr. Silcock Mr. Collier	4 0 0	...	Mr. Pearce Gould	8 8 0	...
PRACTICAL MIDWIFERY	DrsHerman&Lewers	5 5 0	...	Dr. Gow	3 0 0	...	Dr. Boxall	5 5 0	...
PRACTICAL MEDICINE	Dr. Percy Kidd	...	...	...	3 0 0	...	Dr. Pasteur	8 8 0	...
HOSPITAL PRACTICE:		3	26 5 0	Dr. Cheadle	3	24 0 0	Dr. W. Cayley	3	...
PHYSICIANS	Drs. Mackenzie, Sansom, Turner, Gilbart Smith, Herman (*Obst.*), Lewers (*Obst.*) [*Prac. Biology*: Mr. Mudge]	mths. 10 10 0 6 mths. 15 15 0 1 year 21 0 0 ...		Dr. Lees Dr. Sidney Phillips *To Out-patients*: Drs. Maguire, Luff, and Caley [*Phys. Accoucheur*: Dr. Handfield Jones *Phys. Accoucheur to Out-patients*: Dr. Gow]	mths. 4 0 0 6 mths. 7 0 0 1 year 12 0 0 ...		Dr. Coupland Sir D. Powell Dr. Fowler *To Out-patients*: Dr. Biss Dr W Duncan (*Obst.*) Dr. Pringle (*Skin*)	mths. 5 5 0	
ASSISTANT PHYSICIANS	Drs. Percy Kidd, F. J. Smith, Hadley, Schorstein, Dawson, and Head	...	...		...	...	Dr. W. Pasteur Dr. W. E. Wynter Dr. A. F. Voelcker Dr. Boxall (*Obst.*)	...	...
SURGEONS	Mr. W. Tay (*Oph.*), Mr. McCarthy, Mr. F. Treves, Mr. C. Mansell Moullin, Mr. Hurry Fenwick, Mr. Eve (*Oph.*), Mr. J. Hutchinson, jun., Dr. Woakes, & Mr. T. M. Hovell (*Aur.*) Mr. Cunningham & Mr. Dolamore (*Dent.*)	3 mths. 10 10 0 6 mths. 15 15 0 1 year 21 0 0	26 5 0	Mr. Owen Mr. Page Mr. Pepper *To Out-patients*: Mr. Silcock Mr. J. E. Lane Mr. H. S. Collier Mr. Critchett and Mr. Juler (*Oph.*)	3 mths. 4 0 0 6 mths. 7 0 0 1 year 12 0 0	24 0 0	Mr. Morris Mr. Andrew Clark Mr. Pearce Gould Mr. S. Bennett (*Dental*) Mr. Lang (*Oph.*) Mr. Stephen Paget (*Aural.*)	3 mths. 5 5 0	...
ASSISTANT SURGEONS	Mr. Openshaw, Mr. H. P. Dean [*Bacteriology*: Dr. Bulloch‖]	... 5 5 0	...	Mr. Field (*Aur.*) Mr. Morris (*Skin*) Mr. Morton Smale (*Dental*)	...	...	Mr. J. B. Sutton, Mr. J. Murray, Mr. T. H. Kellock, Mr. W. Hern (*Assist. Dental*)	...	...
CLINICAL MEDICINE	The Physicians and Asst. Phys.	...	...	Dr. Cheadle	3 0 0	...	The Physicians	...	...
CLINICAL SURGERY	The Surgeons and Asst. Surg.	...	...	Mr. Owen	3 0 0	...	The Surgeons [*Superintend. of P.-M. exam.*: Dr. F. Voelcker.]	...	...
SUMMER SESSION.									
MATERIA MEDICA	Dr. Warner and §Dr. Dawson	4 4 0	...	Dr. Caley	4 0 0	...	...	...	...
THERAPEUTICS				Dr. Caley	...	...	Dr. Biss	5 5 0	...
MIDWIFERY, &c.	Dr. Herman	5 5 0	...	Dr. Handfield Jones	5 0 0	...	Dr. W. Duncan	5 5 0	...
BOTANY	Mr. C. Mitchell	3 3 0	...	Dr. W. G. Ridewood	3 0 0	...	No lectures	...	...
MED. JURISPRUDENCE	Dr. Thresh	4 4 0	...	Dr. Luff	4 0 0	...	Dr. Wethered	5 5 0	...
TOXICOLOGY	Dr. F. J. Smith	4 4 0	...	Dr. Luff	2 2 0	...	Dr. Plimpton	2 2 0	...
PRACTICAL CHEMISTRY	Mr. Page	5 5 0	...	Dr. A. P. Laurie	4 0 0	...	Dr. Plimpton	5 5 0	...
ORGANIC CHEMISTRY	Mr. Candy	5 5 0	...	Dr. A. P. Laurie	2 2 0	...	†	4 4 0	...
BIOLOGY	Mr. Mitchell§**	4 4 0	...	Dr. W. G. Ridewood	3 0 0	...	Dr. Young§	6 6 0	...
PATHOL. HISTOLOGY	Dr. Hadley (And in Winter)	3 3 0 5 5 0	...	[*Tropical Dis.*: Dr. J. Anderson]	2 2 0 ...	...	Dr. Voelcker	3 3 0	...
PATHOLOGY AND MORBID ANATOMY.	Dr. Bulloch, Mr. Eve	...	...	Dr. Maguire Mr. Plimmer	2 2 0	...	Dr. Voelcker	5 5 0	...
OPERATIVE SURGERY	Mr. Dean	5 5 0	...	Mr. Silcock and Mr.	...	...	Mr. Pearce Gould	5 5 0	...
PRACTICAL PHYSIOLOGY	Dr. L. Hill and Mr. Hutchison (& in Winter)	4 4 0 ...	...	Dr. Waller [Collier [*Pub Health*: Dr Luff]	...	...		...	...
HISTOLOGY AND THE MICROSCOPE.		...	...	Mr. Symes †	...	...	Dr. Young	6 6 0	...
OPHTHALMIC SURGERY	Mr. Eve	2 2 0	...	Mr. Juler	3 0 0	...	Mr. Lang	...	...
ANÆSTHETICS	Drs. Hewitt & Probyn Williams	...	...	Mr. Davis	2 2 0	...	Mr. G. E. Norton	1 1 0	...
AURAL SURGERY	Dr. Woakes	2 2 0	...	Mr. Field	3 0 0	...	Mr. Stephen Paget	...	...
DENTAL SURGERY	Mr. Cunningham & Mr. Dolamore	2 2 0	...	Mr. Morton Smale	3 0 0	...	Mr. Storer Bennett (in Winter)	...	...
DISEASES OF THE SKIN	Dr. S. Mackenzie	...	...	Mr. Morris	3 0 0	...	Dr. Pringle	...	...
PSYCHOL. MEDICINE	Dr. Kennedy Hill ¶	...	...	Dr. Hyslop	3 0 0	...	Dr. Mickle	2 2 0	...
DISEASES OF THE THROAT	Mr. Mark Hovell	2 2 0	...	Dr. Spicer	3 0 0	...	Mr. Stephen Paget	...	...
PRACT. PHARM. & DISPENS.	Mr. Morris	3 3 0	...	Mr. Andrews	...	...	Mr. Fardon	3 3 0	...
				Bacteriology: Mr. H. G. Plimmer.]	2 2 0		[*Pub. Health*: Dr. Pasteur]		
FEE for all the Lectures required by the Colleges & Hall, and Hospital Medical & Surgical Practice	120 guineas; or 130 guineas, by 3 instalments.*			Perpetual studentship £139; or £144 by instalments; 1st year, £46; 2nd year, £40; 3rd year, £30; 4th year, £28.			120 guineas; or 130 guineas by 3 instalments.		

* London Hosp.: *Pub. Health and Hygiene*, Dr. Thresh, Mr. Page, and Dr. Bulloch; Summer and Winter. Fee for the whole course for D.P.H., including material and attendance under a medical officer of health, £21. Medical Tutor, Dr. L. A. Smith; Surgical Tutor, Mr. Roxburgh. A reduction of £15 15s. will be allowed from the Perpetual Fee if paid in full, or £5 5s. from each instalment to the sons of medical men. Instructors in *Elementary Clinical Medicine*, Dr. Dawson and Dr. Head.

† St. Mary's Hosp.: Med. Tutors, Drs. Caley and Harris; Obst. do., Dr. W. J. Gow; Surgical do., Mr. H. S. Collier—throughout year thrice weekly.

‡ Middlesex Hospital: Medical Tutor, Dr. Wynter; Surgical Tutor, Mr. J. Murray. § In Winter. ‖ In Summer. ¶ In Summer, Fee £3 3s.

** Including Practical Biology.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1898-99—(CONTINUED).

LECTURES, &c.	ST. THOMAS'S HOSPITAL.			UNIVERSITY COLLEGE AND HOSPITAL.			WESTMINSTER HOSPITAL.		
	LECTURERS.	FEES. One Course.	FEES. Perpetual.	LECTURERS.	FEES. One Course.	FEES. Perpetual.	LECTURERS.	FEES. First Course.	FEES. Subsqt. Course.
WINTER SESSION.		£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.
PHYSIOLOGY	Dr. Brodie	10 10 0	...	*Professor E. A. Schäfer	3, 5, & 7 gs.	...	Mr. Spencer and Dr. Gossage	6 6 0	2 2 0
PRACTICAL PHYSIOLOGY AND HISTOLOGY	Dr. Brodie	10 10 0	...	*Prof. Schäfer and Mr. B. Moore	2, 4, & 7 gs.	...	Mr. Spencer	3 3 0	...
PHYS. DEMONSTRATIONS	Dr. Brodie	...	...	...	...	...	*Histol.*: Dr. Gossage	6 6 0	2 2 0
ANATOMY, DESCRIPTIVE AND SURGICAL	Mr. Anderson Mr. Makins	10 10 0	...	Prof. Thane	10 10 0	12 12 0	Mr. Black	7 7 0	3 3 0
ANATOM. DEMONSTRATIONS	Messrs. Anderson & Makins, Messrs. Parsons, Robinson,* Stabb, & Fisher	12 mths. 10 10 0	...	Dr. P. Flemming and Mr. White Dr. W. J. Mickle (*Mental Phys.*)	8 8 0 2 2 0	...	Mr. Black and Dr. Marett Tims [*Morbid Histology*: Dr. Hebb]*	5 5 0 4 4 0	3 3 0 2 2 0
PATHOLOGICAL ANATOMY	Dr. Hawkins and Dr. Turney (*Practical Course*)	8 8 0	...	Prof. S. Martin (*Pract. Path.*)	3 3 0	...	Dr. Hebb	...	...
CHEMISTRY	Mr. Dunstan	7 7 0	...	Prof. Ramsay	7 7 0	...	Dr Wilson Hake	6 6 0	2 2 0
MEDICINE	Dr. Payne & Dr. Sharkey	7 7 0	...	Prof. F. T. Roberts	9 9 0	11 11 0	Dr. Donkin Dr. de H. Hall	6 6 0	...
SURGERY	Mr. Clutton & Mr. Pitts	7 7 0	...	Prof. Barker	7 7 0	8 8 0	Mr. Stonham	6 6 0	...
SURGICAL PATHOLOGY	Mr. Shattock	...	...	...	...	...	Mr. Paton	...	...
NATURAL PHILOSOPHY	Mr. Le Sueur	5 5 0	...	[*Chem. Physics*: Prof. Ramsay]	1 11 6	...	[*Physics*: Mr. Somerville]	...	...
HOSPITAL PRACTICE: PHYSICIANS	Drs. Payne, Sharkey, Acland, and Hawkins, Cullingworth (*Obst.*),	3 mths. 21 0 0 6 mths. 26 5 0 1 year	73 10 0	Drs. Ringer, Roberts, Poore, Barlow, Bradford, Spencer (*Obst.*), & Crocker (*Skin*)	12 mths. 21 0 0	36 15 0	Drs. Allchin, Donkin, Havilland Hall, Potter (*Obst.*), & Fox (*Skin*)	3 mths. 5 5 0 6 mths. 8 8 0	...
ASSISTANT PHYSICIANS	Drs. Mackenzie, Turney, and Perkins, Tate (*Obst.*)	36 15 0		Drs. Blacker (*Obst.*), Martin, and Risien Russell	...	...	[*Neur. & Alienism*: Dr. Mercier, £22 2s.] Dr. Murrell Dr. Hebb, Dr. Wills, Dr. Gossage Dr. Pollock (*Obst.*)	... ...	... ...
SURGEONS	Mr. Clutton, Mr. Anderson, & Mr. Pitts Mr. Lawford Mr. Fisher (*Ophthal.*)	...	...	Profs. C. Heath, A. E. Barker, R. J. Godlee, J. Tweedy, and V. Horsley Mr. Bilton Pollard Mr. Spokes (*Dent.*)	...	...	Mr. Bond Mr. Stonham Mr. Spencer Messrs. Glassington & Gardner (*Dent.*) Mr. Spencer (*Throat*) Mr. Hartridge (*Ophth. Prac.*)	3 mths. 5 5 0 6 mths. 8 8 0	...
ASSISTANT SURGEONS	Messrs. Makins, Battle, Ballance (*Aural*), & Robinson (*Throat*)	...	...	*Org. Chemistry*: *Prof. Ramsay Mr. R. Johnson Dr. P. Flemming (*Ophthal.*)	3 3 0 ...	...	Mr. Tubby (*Orthopædic*) [*Aural*: Mr. de Santi] Messrs. Cooke, Tubby, de Santi, and Turner	...	...
CLINICAL MEDICINE	The Physicians	...	...	The Physicians	...	...	The Physicians	...	...
CLINICAL SURGERY	The Surgeons in rotation	...	...	The Surgeons	...	...	The Surgeons [*Minor Surg. & Bandaging*: Mr. de Santi]§	...	...
CLINICAL MIDWIFERY, &c.	Sir W. MacCormac (*Special Course*) Dr. Cullingworth [*Obstet. Demons.*: Dr. Tate]	...	...	Prof. H. R. Spencer and Dr. Blacker [*Bacteriol.*, Dr. Greig]	... 4 4 0	...	Dr. Potter [*Path. Dem.*: Dr. Hebb, weekly]§	...	...
SUMMER SESSION.									
MATERIA MEDICA, &c.	Dr. Mackenzie	5 5 0	...	Prof. J. R. Bradford	6 6 0	7 7 0	Dr. Murrell	3 3 0	...
MIDWIFERY, &c.	Dr. Cullingworth	6 6 0	...	Prof. Spencer	6 6 0	7 7 0	Dr. Potter	4 4 0	1 1 0
BOTANY	Mr. A. W. Bennett	3 3 0	...	Prof. Oliver	4 4 0	...	...	...	...
MEDICAL JURISPRUDENCE	Dr. Cory & Dr. Turney	5 5 0	...	Prof. G. V. Poore	5 5 0	6 6 0	Mr Bond, Dr Pollock, Dr. Wilson Hake (*Tox.*)	3 3 0	1 1 0
PRACTICAL CHEMISTRY	Mr. Dunstan	6 6 0	...	Prof. Ramsay	5 5 0	...	Dr. Wilson Hake	4 4 0	2 2 0
STATE MEDICINE	Dr. E. Seaton	...	...	Prof. Corfield	...	...	...	...	...
MENTAL DISEASES	Dr. Rayner	3 3 0	...	Dr. Mickle	1 1 0	...	Dr. Mercier‖	2 2 0	...
HYGIENE AND PUB. HEALTH	Dr. E. Seaton	3 3 0	...	Prof. Corfield Dr. Kenwood	3 3 0	...	Dr. M. Copeman	1 1 0	...
CLINICAL MEDICINE	The Physicians	...	...	As in Winter	...	...	As in Winter	...	...
COMPARATIVE ANATOMY	Mr. Parsons (with Zoology)	2 2 0	...	†Prof. Weldon	6 6 0	...	Dr. Marett Tims §	2 2 0	...
PATHOL. & MORBID. ANATOMY	Mr. Shattock	8 8 0	...	Prof. S. Martin	6 6 0	7 7 0	Dr. Hebb	4 4 0	2 2 0
BACTERIOLOGY	Mr. Shattock	...	...	Prof. S. Martin	4 4 0	...	Dr. Bloxall	5 5 0	...
OPHTHALMIC SURGERY	§Mr. Lawford	3 3 0	...	†Prof. J. Tweedy	2 2 0	...	†Mr. Hartridge	1 1 0	‡
DENTAL SURGERY	Mr. Truman	...	...	†Mr. Spokes	...	...	Mr. Glassington	2 2 0	‡
PRACTICAL SURGERY	Mr. Ballance	6 6 0	...	†Mr Bilton Pollard	6 6 0	...	Mr. Stonham,	5 5 0	...
PRACTICAL MEDICINE	Mr. Battle Dr. Turney Dr. Perkins	3 3 0	...	Mr. Johnson ...	...	...	Mr. de Santi Dr. Wills	3 3 0	...
ELEMENTARY BIOLOGY	§Mr. Parsons	6 6 0	...	Profs. Weldon† & Oliver†	4 4 0	...	Dr. Marett Tims§	4 4 0	...
PRACTICAL OBSTETRICS	Dr. Tate	3 3 0	...	...	...	...	Dr. Rivers Pollock§	...	...
OPERATIVE SURGERY	Mr. Makins	5 5 0	...	*Mr. Pollard and Mr. R. Johnson	5 5 0	...	Mr. Stonham§	4 4 0	2 2 0
PRACTICAL PHARMACY	Mr. Battle Mr. White	3 3 0	...	Mr Elborne	3 3 0	...	Mr. Tanner	2 2 0	...
FEE for Lectures & Hospital Practice	£150; or by two instalments, £85 and £72 10s.; or by four instalments, £65, £50, £30, and £12 10s.			£141 15s.; or by instalments, £68 5s., £52 10s., and £26 5s.			100 guineas; or two instalments of 55 guineas each; or six instalments of 25 guineas and 15 guineas alternately.		

* In Summer. † In Winter. ‡ Free to students of the hospital. § Winter and Summer. ‖ Lectures, Winter; Demonstrations, Summer.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1898-99— (CONTINUED).

LECTURES, &c.	LONDON SCHOOL OF MEDICINE FOR WOMEN AND ROYAL FREE HOSPITAL. LECTURERS.	FEES. One course.	FEES. Unlimited.
WINTER SESSION.			
PHYSIOLOGY	Dr. Starling	11 11 0	...
ANATOMY, DESCRIPTIVE AND SURGICAL	Mr. Boyd	8 8 0	...
ANATOMICAL DEMONSTRATIONS	Miss Appel, Miss Stoney	8 8 0	...
CHEMISTRY	Miss Evans	8 8 0	...
PHYSICS	Mrs. Macdonald	4 4 0	...
BIOLOGY	Mrs. Macdonald	5 5 0	...
PRACTICAL BIOLOGY	Mrs. Macdonald		
MEDICINE	Dr. Donkin, Miss Cock	8 8 0	...
SURGERY	Mr. A. B. Barrow, Mr. James Berry	8 8 0	...
PATHOLOGY AND MORBID ANATOMY	Dr. Andrewes	5 5 0	...
PRACTICAL TOXICOLOGY	Mr. Bodmer	2 2 0	...
PRACTICAL SURGERY	Mr. Roughton, Mr. Evans	1 11 6	...
HOSPITAL PRACTICE:			
PHYSICIANS	Dr. West, Dr. Sainsbury, Dr. Hayes, Dr. Carr	...	£35, or in 3 instalments of £15, £15, £10.
ASSISTANT PHYSICIANS	Dr. Crawfurd, Dr. Fawcett	...	
SURGEONS	Mr. Barrow, Mr. Berry, Mr. Mackinlay, Mr. Battle	...	
ASSISTANT SURGEON	Mr. Roughton, Mr. Evans	...	Three months, £6 6s.
CLINICAL MEDICINE	The Physicians and Assistant Physicians of the Royal Free Hospital	...	...
CLINICAL SURGERY	The Surgeons and Assistant Surgeons of the Royal Free Hospital	...	...
CLINICAL MIDWIFERY	...	...	...
SUMMER SESSION.			
MATERIA MEDICA AND THERAPEUTICS	Dr. Sainsbury	5 5 0	...
MEDICAL JURISPRUDENCE	Dr. Dupré, Mrs. Dowson	5 5 0	...
TROPICAL MEDICINE	Dr. Patrick Manson	2 2 0	...
PRACTICAL CHEMISTRY	Miss Boole	7 7 0	...
PRACTICAL PHYSIOLOGY	Dr. Starling	...	...
BACTERIOLOGY	Mr. Roughton, Dr. Crawfurd	2 2 0	...
OPERATIVE SURGERY	Mr. Boyd	5 5 0	...
MORBID HISTOLOGY	Dr. Starling	...	...
OPHTHALMIC SURGERY	Mr. Mackinlay, Mr. Dodd	2 2 0	...
PSYCHOLOGICAL MEDICINE	Dr. Mercier	2 2 0	...
DENTAL SURGERY	Mr. Todd	...	...
AURAL SURGERY	Mr. Roughton	...	...
DEMONSTRATIONS OF CUTANEOUS DISEASES	Mr. Evans	...	...
VACCINATION	...	...	...
PUBLIC HEALTH	...	...	...
PRACTICAL PHARMACY	Mrs. Clarke Keer	1 1 0	...
FEES for School and Hospital Medical and Surgical Practice.	£135, or in four instalments: 1st year, £56; 2nd year, £40; 3rd year, £30; 4th year, £10.		

hospital. The prospectus may be had on application to Mr. F. H. Madden, the School Secretary, to Mr. G. P. Field, the Dean, or Dr. A. P. Luff, the Sub-Dean.

A residence for students, 33 and 35, Westbourne-terrace, W., in connexion with the hospital, is under the charge of a warden, Mr. H. S. Collier, F.R.C.S., who is prepared to receive applications from students desiring to enter upon residence during the ensuing session. Terms: £75 for the academical year.

Qualified medical men are admitted to attendance on hospital practice according to a conjoint scheme with other hospitals. Particulars may be had on application.

MIDDLESEX HOSPITAL.—The hospital contains 320 beds. There is a special department for patients suffering from cancer, consisting of four wards, containing thirty-four beds; here cancer patients are received and attended for a period limited only by the duration of their disease.

Hospital Appointments.—Clinical Clerkships and Dresserships in all departments are allotted to students without any extra fee. Eighteen Resident Appointments are annually filled from the pupils of the hospital, each appointment extending over six months.

The Curriculum is designed to meet the requirements of the Royal Colleges of Physicians and Surgeons and of the Universities of London, Cambridge, &c. Special Classes are held to prepare students for the Preliminary Scientific M.B. (Lond.) Examination and for the Primary Examination for the diploma of F.R.C.S. Eng.

The new school buildings to be opened next session will provide a much larger dissecting-room, a room for operative surgery, a complete physiological department, spacious pathological and bacteriological laboratories, and extended facilities for the teaching of Chemistry, Physics, Biology, &c.

A Residential College to accommodate about thirty students adjoins the hospital. The charge for residence is £10 10*s.* and £8 8*s.* per term, according to the position of the room. Breakfast, luncheon, and dinner are supplied in the College Hall at a very moderate charge.

Fees.—The Composition Fee for the entire curriculum is 120 guineas, or 130 guineas if paid in three instalments. The fee for the Dental Curriculum is 54 guineas, or 60 guineas if paid in two instalments. Students who have completed the study of Anatomy and Physiology or passed the London Preliminary Scientific M.B. Examination are received on special terms.

ST. THOMAS'S HOSPITAL.—The composition fee to Hospital Practice and Lectures may be paid in the following ways:—1. £150 on entrance in one sum. 2. £157 10*s.* in instalments: (*a*) by two payments, £85 on entrance and £72 10*s.* at the beginning of the second year; (*b*) by three payments, £75 at the beginning of the first year, £50 at the beginning of the second year, and £32 10*s.* at the beginning of the third year; and (*c*) by four payments, £65 at the beginning of the first year, £50 at the beginning of the second year, £30 at the beginning of the third year, and £12 10*s.* at the beginning of the fourth year. Gentlemen entering at St. Thomas's for Lectures and Hospital Practice of the second and subsequent years pay £130 on entrance, or three instalments of £52 10*s.*, £42, and £42. Students entering for Lectures and Hospital Practice of third and subsequent years pay a composition fee of £80, or £52 10*s.* on entrance and £31 10*s.* one year subsequently. The fee for attendance on the general subjects required of students in Dental Surgery is for the two years £65, or, by instalments, £55 for the first year and £15 for the second year. If certificates for Dental Practice are also required the special fee for that subject has to be paid. Qualified practitioners are admitted by a joint ticket to the practice of nine hospitals on terms which may be ascertained from the medical secretary.

UNIVERSITY COLLEGE, LONDON.—*Composition fees.*—1. For the entire medical education required by the Examining Board in England and the Society of Apothecaries, 135 guineas, if paid in one sum at the commencement of the course; 140 guineas if paid by instalments, as follows—first year, 65 guineas; second year, 50 guineas; third year, 25 guineas. 2. For those students who do not require to attend Chemistry, Pharmacy, and Elementary Biology at a medical school (under the regulations of the Examining Board in England) the fee will be—117 guineas, if paid in one sum; 122 guineas, if paid by instalments, as follows—first year, 55 guineas; second year, 40 guineas; third year, 27 guineas. 3. For the whole course of instruction for the Intermediate Examination in Medicine of the University of London, 55 guineas (paid in one sum). 4. For the course of instruction for the Final M.B. Examination of the University of London, 76 guineas, if paid in one sum; 78 guineas, if paid by instalments, as follows—first year, 45 guineas; second year, 33 guineas. 5. Composition fee for Dental Students, 65 guineas. 6. Composition fee for the whole course of instruction for the Preliminary Scientific (M B.) Examination of the University of London, 35 guineas.

Eight house physicians, six house surgeons, four senior and

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eight junior obstetric assistants are selected annually by examination from among the senior students. The house physicians and house surgeons reside in the hospital for a period of six months, and the senior obstetric assistants for three months, receiving free board and lodging.

Several professors and other gentlemen connected with the College receive students to reside with them; and in the office of the College there is kept a register of persons unconnected with the College who receive boarders into their families; among these are several medical gentlemen and clergymen.

WESTMINSTER HOSPITAL.—The hospital contains upwards of 200 beds. There are separate departments for Diseases of the Eye, Ear, Skin, Teeth, and Throat, for Orthopædics, and for Diseases of Women, and a special ward for Children. The Anatomical Museum is open to the students. There are also Pathological and Materia Medica Museums.

A curator of the museum and a pathologist, with salaries of £40 and £50 respectively, and a medical and surgical registrar, each with a salary of £40, are appointed annually. Two house physicians, two house surgeons, and a resident obstetric assistant are appointed for six months after examination, and are provided with rooms and commons; also two assistant house surgeons with commons only. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students of the hospital.

Preliminary Scientific.—Special classes are held in the subjects of this examination—Chemistry, Dr. Hake; Physics, Mr. Somerville; Biology, Dr. Tims. The extra fee to a general student is 12 guineas.

Intermediate M.B.—Advanced Physiology and Histology, Dr. Gossage; Advanced Anatomy, Mr. Tubby; Organic Chemistry, Dr. Hake; Materia Medica, Dr. Murrell.

D.P.H.—The course of Laboratory Instruction may now be taken. Physics, Mr. Somerville; Chemistry, Dr. Hake; Bacteriology, Dr. Blaxall. Fee 12 guineas.

Bacteriology.—A course in General Bacteriology is given by Dr. Blaxall. Fee £5 5*s*.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 30, Handel-street, Brunswick-square, W.C.—The winter session of this School will begin on Oct. 3rd, 1898, and will end on March 31st, 1899. The summer session will begin on May 1st, and will end on July 30th, 1899. No student will be admitted to the study of Medicine who has not completed her eighteenth year. The admission of students rests exclusively with the Executive Council. The opening address will be given on Tuesday, Oct. 4th, by Dr. J. Walter Carr, senior physician to out-patients, Royal Free Hospital, at 8 P.M. The prizes will be given on the same evening by Mrs. Charles Burt.

In addition to the list of Scholarships tabulated in another column three Evans Prizes of £3 3*s*., £2 2*s*., and £1 1*s*. are given in the Midwifery Class to enable students to take operative midwifery. Two Durham Prizes, value £5 and £3, are given on the results of the class examination in gynæcology. There is also a small fund from which assistance can occasionally be given to students and to graduates who specially require pecuniary help to obtain additional experience in operative midwifery, &c. The Evans Prize for Operative Midwifery, value £5 5*s*., will be offered at the end of the winter session, 1899. Two Singleton prizes are offered to students of the School who have held posts at the New Hospital for Women. Honoraria from the Royce Memorial Fund are given to the senior assistant anæsthetist at the Royal Free Hospital. Prizes and Certificates of Honour are awarded in each class at the end of the session. Secretary, Miss Douie, M.B., M.A.

A new block of buildings, opened on July 11th by the H.R.H. the Princess of Wales, has been added to the school, comprising large and well-equipped laboratories for chemistry, physiology, and anatomy. A second block is now in course of erection and will comprise three lecture theatres and a biological laboratory. The teaching of the school has been extended in several departments. More attention is now given to the subject of pathology and extra lectures and practical demonstrations have been added to the course. Dr. Andrewes has been appointed lecturer. A special class in Practical Toxicology is held in October in preparation for the M.B. Lond. examination. Dr. Patrick Manson has been elected lecturer on Tropical Medicine and a course of lectures on this subject will be given during the summer session.

COOKE'S SCHOOL OF ANATOMY.—The school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half-a-dozen students in the course of the year; that is to say that it does not receive more curriculum students than can each be supplied in the course of his studies with three entire "subjects."[1] Corresponding advantages are offered in regard to the physiology. The charges are but slightly in excess of current charges. The Bland Sutton Presentation, named after Mr. Bland Sutton, F.R.C.S., Sir Erasmus Wilson Lecturer at the Royal College of Surgeons, Surgeon to the Middlesex Hospital, &c. (a former pupil of the school), is intended to meet the case of specially earnest and deserving men of limited means. It confers the privilege of free medical education during the first two years of medical studies. Particulars will be forwarded on application. Gentlemen rejected at their Anatomical and Physiological Examinations (Second Conjoint, &c.) can get "signed up" from this school for the three or six months' supplementary work they are now required to put in before re-examination. This school is also intended to meet the requirements of qualified practitioners wishing to obtain some of the higher qualifications, and is recognised for the special dissections for the Fellowship of the Royal College of Surgeons. The school possesses a good collection of physiological apparatus. The operations of surgery are performed by the students on the dead body.

METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

BETHLEM HOSPITAL.—This hospital is open for the admission of two Resident House Physicians who have recently obtained their diplomas to practise Medicine and Surgery. They will be permitted to reside in the hospital for a term generally not exceeding six months, and will be provided with such apartments, complete board, attendance, and washing, as the Committee shall consider reasonable. They will be under the direction of the Resident Physician, and will be elected by the Committee from candidates whose testimonials appear to be most satisfactory. The students of certain specified London Medical Schools receive Clinical Instruction in the wards of the hospital, and qualified practitioners may attend for a period of three months on payment of a fee. Lectures are also given in connexion with the London Post-graduate Course.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Four House Physicians reside in the hospital for a period of six months. Pupils are admitted to the practice of the hospital: terms, £1 1*s*. for one month; three months, £2 2*s*.; perpetual, £5 5*s*. Lectures and Clinical Demonstrations are given throughout the year by members of the medical staff. The next course will commence in October. Clinical Assistants are appointed to the Assistant Physician in the out-patient department and Clinical Clerks to the Physician in the wards. The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards. The hospital contains 321 beds in the two buildings.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park.—During the past year 689 in-patients have been admitted, and the large number of 31,221 cases have been treated since the opening of the wards in 1855. The number of out-patients treated during 1897 was 16,994, and 585,038 since the commencement of the institution in 1848. Information as to medical instruction can be obtained on application to the Secretary of the Clinical Sub-committee at the hospital. Consulting Physicians: Dr. E. L. Birkett and Dr. J. C. Thorowgood. Consulting Surgeon: The Rt. Hon. Lord Lister. P.R.S. Physicians: Drs. Eustace Smith, G. A. Heron, Vincent D. Harris, E. Clifford Beale, Harrington Sainsbury, and T. Glover Lyon. Surgeon: Mr.

[1] The evidence given before the Parliamentary Committee which led to the passing of the Anatomy Act, was to the effect that three entire "subjects" ought to be considered the minimum that should be allotted to each medical student during the course of his studies.

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J. F. C. H. Macready, F.R.C.S. Assistant Physicians: Sir Hugh R. Beevor, Bart., and Drs. W. J. Hadley, E. H. Colbeck, Arnold Chaplin, Hugh Walsham, and J. J. Perkins.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's-inn-road.—The hospital contains accommodation for seventeen in-patients, and has a very extensive out-patient department, which is open to all medical practitioners and students for the purpose of clinical demonstration and instruction during the hours of the surgeons' visits. During the past year 7500 out-patients and 300 in-patients were treated. Fee for three months' attendance, 3 guineas; for six months, 5 guineas. A course of lectures on the special diseases treated at this hospital is delivered during the winter and summer months by members of the staff. As an evidence of the interest excited by these lectures, it may be mentioned that last year there were over a thousand attendances at the series with an average of eighty at each lecture. The date of these lectures is announced in the medical journals prior to their commencement. They are free to qualified practitioners and advanced students of medicine. Considerable attention is given to scientific work, particularly with regard to Bacteriology of the ear and respiratory passages, for which a special department has been inaugurated. Consulting Surgeon: Mr. Thomas Nunn. Surgeons: Mr. Lennox Browne, Dr. Arthur Orwin, Dr. Dundas Grant, and Dr. Percy Jakins. Assistant Surgeons: Mr. Wyatt Wingrave Dr. Holloway, and Mr. Heath. Bacteriologist: Mr. St. George Reid. Dental Surgeon: Mr. George Wallis. Defects of Speech: Mr. William Van Praagh. Registrar: Mr. Nourse. In addition the following appointments are open to qualified members of the profession:—Three Assistant Registrars and Anæsthetists, tenable for twelve months; and twelve Clinical Assistants, tenable for six months. Secretary: Mr. Richard Kershaw.

HOSPITAL FOR WOMEN, Soho-square, W.—In connexion with this institution there has been for some years a well-organised Clinical Department. This has been enlarged under the title of the London School of Gynæcology. To meet the want increasingly felt by medical men of an accurate knowledge of the ordinary diseases of women gentlemen are appointed every three months to act as clinical assistants to the physicians and surgeons seeing out- and in-door patients. The appointments are nominally "open to qualified medical men and to students of medicine after their fourth year," but in the selection of candidates preference is naturally given to gentlemen already engaged in practice. The large number of out-patients affords exceptional opportunities for practical instruction in the use of gynæcological instruments and for the study of diseases peculiar to women. Clinical instruction is also given in the theatre and the wards. Fee for the three months' course, £8 8s. Any further information can be obtained by letter addressed to the Dean at the hospital.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road. (Established 1814.)—This hospital has been enlarged by the addition of a very complete out-patients' department, and also by the erection of a new wing, which provides accommodation for 80 in-patients. Expenditure for 1897, £7675; income (including legacies, £900), £6176. The attendance of out-patients averages 24,000 annually.

ROYAL EAR HOSPITAL, Soho. (Founded 1816.)—Courses of six weeks' duration in Diseases of the Ear and Nose are given by the members of the staff throughout the teaching year. Students can attend one or more surgeons, the fee for each surgeon's course being one guinea. The teaching is of a practical character, and the number of students is limited. The next series of classes will commence on Oct. 3rd. For information address the Hon. Sec. of the Medical Board.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Consulting Physician: Sir S. Wilks, Bart., President of the Royal College of Physicians of London. Consulting Surgeon: Mr. W. Adams. Physicians: Drs. R. Burnet, E. C. Beale, C. E. Beevor, H. W. Syers, James Galloway, and A. Morison. Obstetric Physician: Dr. Blacker. Surgeons: Messrs. J. Macready, C. B. Lockwood, H. Allingham, P. T. B. Beale, and G. B. M. White. Ophthalmic Surgeon: Mr. A. S. Morton. Ear, Throat, and Nose Surgeon: Mr. W. R. H. Stewart. Skin Department: Dr. Whitfield. Dental Surgeon: Mr. P. Traer Harris. This hospital is now recognised by the Examining Board in England by the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the Medical Curriculum. The hospital contains 155 beds, of which 130 are at present occupied. The large rectangular and circular wards, each of which contains 20 beds, the operation theatre, out-patient, general and special, and the pathological departments, have all been erected since 1887. They are specially designed with a view of offering the greatest facilities for clinical work, and contain all the most recent and approved hygienic and antiseptic requirements for the proper care of the sick and for the treatment of disease. Medical practitioners are cordially invited to see the general and special practice of the hospital. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office. Further particulars from Peyton T. B. Beale, F.R.C.S., Hon. Secretary Medical Committee, 61, Grosvenor-street, W.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, N.W.—Physicians for In-patients: Miss Cock, M.D., and Miss Walker, M.D. Surgeons for In-patients: Mrs. Scharlieb, M.D., M.S., and Mrs. Boyd, M.D. Physicians and Surgeons for Out-patients: Miss Webb, M.B., Miss Macdonald, M.B., and Miss Aldrich Blake, M.D., M.S. Ophthalmic Surgeon: Miss Ellaby, M.D. Assistant Physicians for Out-patients: Miss Chadburn, M.B., Mrs. Wilks, M.D., and Miss Caine, M.D. Physician for Maternity Department: Miss Harris, M.B. Anæsthetist: Mrs. Keith, L.R.C.P. A considerable number of the students hold posts in the New Hospital under the visiting staff, and in return for much valued clinical teaching they do the work assigned to students in the wards of a general hospital. Secretary: Miss M. M. Bagster.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. (Established 1873.)—Physicians: Dr. Wilde, Dr. J. J. Ridge, and Dr. Fenwick. Surgeon: Dr. W. J. Collins, F.R.C.S. Dental Surgeon: Mr. A. Alexander. The hospital contains 110 beds. The in-patients in 1897 were 1175, and the out-patients and casualties numbered 18,387 new cases. The medical and surgical practice of the hospital is open to students and practitioners. Special departments for Ophthalmology and Gynæcology. Operations: Mondays and Thursdays, 3.30 P.M. Classes will be held during the winter and summer sessions for students preparing for the final examinations at the Colleges and the Universities. Appointments, vacancies for which are advertised in the medical journals: Registrar and Pathologist; Resident Medical Officer and Assistant Resident Medical Officer. For particulars as to hospital practice and classes apply at the hospital to Dr. W. J. Collins.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—The hospital, with the Finchley branch, contains 200 beds and cots. The physicians attend every Monday, Tuesday, Wednesday, and Friday at 2 P.M. In- and out-patient practice and electrical-room treatment at that hour. Physicians: Drs. Hughlings Jackson, Buzzard, Bastian, and Gowers. Physicians for Out-patients: Drs. D. Ferrier, Ormerod, Beevor, and Tooth. Assistant Physicians: Drs. James Taylor and W. S. Colman. Surgeons: Messrs. Victor Horsley and C. A. Ballance. Ophthalmic Surgeons: Messrs. R. Brudenell Carter and Marcus Gunn. Aural Surgeon: Mr. A. E. Cumberbatch. Laryngologist: Sir Felix Semon. Anæsthetist: Dr. R. T. Bakewell. Pathologist: J. Risien Russell. Registrar: Dr. A. J. Whiting. House Physicians: Drs. Stewart and Collier. The hospital has been recognised by the conjoint Board for England as a place where part of the fifth year may be devoted to clinical work. All communications concerning clinical appointments, lectures, and hospital practice should be addressed to the Secretary and Director at the hospital.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL AND MIDWIFERY TRAINING SCHOOL, Marylebone-road, N.W.—Consulting Physician: Dr. George B. Brodie. Consulting Surgeon: Sir William MacCormac. Physicians to In-patients: Dr. W. C. Grigg and Dr. W. S. A. Griffith. Physicians to Out-patients: Dr. W. Rivers Pollock and Dr. W. J. Gow. This hospital, which has been recently enlarged, receives over 1100 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly three-fourths of the total admissions. Clinical instruction is given on the more important cases which present themselves. Certificates of attendance at this hospital are recognised by all Universities, Colleges, and licensing bodies. Pupil midwives and monthly

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nurses are received and specially trained. Fees: Medical Students, £8 8s. for four weeks; Qualified Medical Practitioners £8 8s. for four weeks. Pupil Midwives, £26 5s. for three months (including board and lodging); Pupil Nurses, £15 15s. for twelve weeks (including board and lodging). There is a residence for students and qualified practitioners within fifty yards of the hospital, with which it is in telephonic communication. Terms for residence and partial board one guinea per week. For further particulars application should be made to Mr. Arthur Watts, Secretary, at the hospital.

SEAMEN'S HOSPITAL SOCIETY, Dreadnought Hospital, Greenwich, S.E. (225 beds). Royal Victoria and Albert Docks Hospital, E. (23 beds). Dispensaries: East India Dock-road, E., and Gravesend.—This institution is established for the relief of seamen of all nations. Casualties are received at all hours. Apartments are provided in the house of the Principal Medical Officer for students, and students are allowed to attend the general practice at either of the hospitals. Facilities are given for the study of Eastern diseases. Dreadnought Hospital:—Consulting Physician: Dr. Robert Barnes. Consulting Surgeon: Mr. J. N. Davies-Colley. Visiting Physicians: Dr. John Curnow and Dr. John Anderson, C.I.E. Visiting Surgeon: Mr. G. Robertson Turner. Ophthalmic Surgeon: Mr. D. S. Gunn. Principal Medical Officer: Mr. W. Johnson Smith. House Physician: Mr. A. Earnshaw. House Surgeon: Mr. Humphrey Allen. Branch Hospital at the Royal Victoria and Albert Docks:—Visiting Physician: Dr. Patrick Manson. Visiting Surgeons: Mr. W. Johnson Smith and Mr. W. Turner. House Surgeons: Mr. F. K. Wilson and Mr. J. W. E. Cole. East and West India Docks Dispensary:—Surgeon: Mr. J. R. Prior. Gravesend Dispensary: Surgeon: Mr. C. E. Robbs. Secretary: Mr. P. Michelli.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C., contains 186 beds, divided into 88 medical, 73 surgical, and 25 for special and infectious cases, besides 52 beds at the convalescent branch, Highgate. The hospital having been recognised by the conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students who have completed four years of medical study and also to qualified medical men. Appointments are made every three months to six medical clerkships and six surgical clerkships, which are open to students of the hospital. Lectures or demonstrations are given once or twice every week during both winter and summer sessions, which qualified practitioners are invited to attend free of charge. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 2 guineas; perpetual, 3 guineas. Prospectuses and further information will be forwarded on application to the Secretary, Mr. Adrian Hope, at the hospital.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields.—The hospital, founded in 1804 and considerably enlarged in 1876, now contains 100 beds for patients, which were occupied during last year by 1968 persons. In the same year the out-patients were 25,051 and the attendances, 129,950. Operations are performed daily from 10 A.M. to 1 P.M., and three surgeons attend on each day. Students are admitted to the practice of the Hospital. Fee for six months, £3 3s.; perpetual, £5 5s. Courses of instruction on the following subjects are given at the Hospital periodically: (1) the use of the ophthalmoscope; (2) errors of refraction; (3) external diseases of the eye; (4) surgical anatomy of the eye. Systematic instruction is also given in the laboratory of the hospital on the pathology of the eye. Perpetual students are admitted to the lectures free. Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants. Junior assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand.—The hospital contains 35 beds; and the patients, who number 11,000 annually, are seen at 1 P.M., and operations performed daily at 2 P.M. The following are the days of attendance of the surgeons: Mr. Hartridge and Mr. Dodd, Mondays and Thursdays; Mr. Frost and Mr. D. Gunn, Tuesdays and Fridays; and Mr. Juler and Mr. Griffith, Wednesdays and Saturdays. The practice of the hospital is open to practitioners and students. Fees for six months, £3 3s.; perpetual, £5 5s. Students of the hospital are eligible for the post of house surgeon and clinical assistant. Special demonstrations and lectures will be given during the session, commencing in October; for details see weekly journals. Clinical Assistants (who must be duly qualified) to the Surgeons are appointed for periods of six months. Secretary: Mr. T. Beattie-Campbell.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.—The out-patient practice is open to the medical profession at the following times: Every day, from 2 to 4 P.M., and Thursday mornings from 10.30 to noon. Specially selected Clinical Demonstrations, also demonstrations on the different diseases presenting themselves in the out-patient department, followed by Lectures, will also be given.

ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES, Henrietta-street, Covent-garden. Established 1860. New Hospital opened, 1882.—Consulting Surgeon: Mr. F. R. Heycock. Honorary Surgeons: Mr. F. Swinford Edwards, Mr. E. Hurry Fenwick, Mr. Reginald Harrison, and Mr. P. J. Freyer. Pathologist: Mr. E. Hurry Fenwick. The hospital contains 24 beds for men, 2 beds for women, and 1 private ward. Consultations are held and operations are performed each Wednesday and Friday at 2 P.M. Medical practitioners and students are invited to the clinical instructions which are given in the wards and out-patient department daily, and to the operations in the theatre on Wednesdays and Fridays at 2 P.M. Average beds occupied daily, 19; average out-patients seen daily, 100.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE (with which is amalgamated the COLLEGE OF STATE MEDICINE).—The winter session commences on Oct. 4th and the summer session on May 1st. The new building at Chelsea Bridge is now open for instruction and research. Courses in Bacteriology in relation to Medicine and Pathology and to Hygiene are given in the bacteriological laboratories and courses of instruction in Water and Hygiene Analysis for the D.P.H. examinations and research work are conducted in the chemical department. There is also a large biological-chemical laboratory for instruction and research and a photo-micrographical department. Every facility is given for original research work. Director and Hon. Sec.: Allan Macfadyen, M.D., B.Sc., to whom all applications should be made, assisted in the Bacteriological Department by R. T. Hewlett, M.D., M.R.C.P., and A. G. R. Foulerton, F.R.C.S., D.P.H., and in the Chemical Department by A. Harden, Ph.D., B.Sc. Photo-micrographic Department: J. E. Barnard. Assistant Secretary: G. Cooper.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Physicians: Dr. Eustace Smith, Dr. Horatio B. Donkin, Dr. J. A. Coutts, and Dr. Dawson Williams. Surgeons: Mr. R. W. Parker and Mr. L. A. Dunn. Assistant Physicians: Dr. T. H. Arnold Chaplin, Dr. J. A. Hayward, Dr. Morley Fletcher, and Dr. E. Graham Little. Assistant Surgeon: Mr. H. B. Robinson. Pathologist and Registrar: Mr. T. D. Lister. Medical Officer for the Casualty Department: Dr. F. W. Robertson. Resident Medical Officer: Dr. Joseph Shardlow. House Surgeon: Mr. W. Evans. House Physician: Dr. Elwin H. T. Nash. Secretary: Mr. Thomas Hayes. The hospital maintains 102 cots, and on an average 178 out-patients are seen daily. Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum. All particulars may be obtained on application to the Secretary. Practitioners and students are admitted to the practice of the hospital in both the wards and out-patient departments and clerkships and dresserships can be obtained. A special course of clinical lectures is delivered by members of the staff on Fridays, at 4 P.M., during the Medical Sessions, of which further particulars will be announced. Any additional information may be obtained on applying to Mr. H. Betham Robinson or to Mr. Thomas Hayes, the secretary.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Consulting Physicians: Dr. W. S. Playfair, Dr. J. F. Goodhart, and Dr. Frederick Taylor. Physicians: Drs. Nestor Tirard and Frederick Willcocks. Physicians to Out-patients: Drs. George Carpenter and W. Soltau Fenwick. Consulting Surgeons: Messrs. H. G. Howse and R. Clement Lucas. Surgeons: Messrs. F. S. Eve and A. H. Tubby. Surgeons to Out-patients: Messrs. F. C. Abbott and Walter Edmonds. Dental Surgeon: Mr. R.

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Denison Pedley. Senior Resident Medical Officer: Mr. J. L. Prain. Junior Resident Medical Officer: Mr. O. K. Williamson.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea, S.W.—The hospital contains 60 beds (10 beds were taken out as a precaution against infection by increasing superficial area) and has a large out-patient department (over 1000 weekly); the home at Broadstairs has 50 beds. Consulting Surgeon: Mr. Cowell. Physicians: Dr. Montague Murray and Dr. Walter Carr, Drs. Humphry D. Rolleston, Raymond Crawfurd, Arthur C. Latham, and William Cecil Bosanquet. Surgeons: Messrs. Pick and D'Arcy Power. Surgeons to the Out-patients: Messrs. Raymond Johnson and H. F. Waterhouse. Ophthalmic Surgeon: Mr. W. J. Holmes Spicer. Dental Surgeon: Mr. C. E. Wallis. Anæsthetists: Dr. Paul Frank Moline and Dr. C. J. Harrison. House Surgeon: Mr. J. A. Belcher. House Physician: Mr. Sydney Turner. House Surgeon to Out-patients: Mr. J. Stansfield. Consulting Physicians: Sir Wm. Broadbent, Bart., and Dr. Ridge Jones. Secretary: Mr. A. Cameron Skinner. Out-patients are seen as under:—Medical and Surgical Cases: Mondays and Thursdays, 9.30 A.M. and 1.30 P.M.; Thursdays and Fridays, 1.30 P.M.; Wednesdays, 9.30 A.M. Dental Cases: Saturdays, at 9 A.M.

WEST LONDON HOSPITAL, Hammersmith-road, W.—This hospital has 160 beds, of which 101 are at present in use. The remaining 60 beds will be opened in November. About 1700 in-patients and 32,000 out-patients, whose attendances number 75,000, are treated annually. Physicians: Drs. D. W. C. Hood, F. G. D. Drewitt, and J. B. Ball. Physician for Diseases of Women: Dr. J. A. Mansell Moullin. Surgeons: Messrs. C. B. Keetley, F. Swinford Edwards, and S. Paget. Surgeon for Diseases of the Eye: Mr. H. P. Dunn. Assistant Physicians: Drs. Seymour Taylor, W. A. Turner, A. Whitfield, and A. P. Beddard. Assistant Physician for Diseases of Women: Dr. G. H. Drummond Robinson. Assistant Surgeons: Messrs. L. A. Bidwell, G. L. Cheatle, and W. McAdam Eccles. Surgeon-Dentist: Mr. H. Lloyd Williams. Physician-in-Charge of Throat and Nose and Aural Department: Dr. J. B. Ball. Surgeon-in-Charge of Orthopædic Department: Mr. C. B. Keetley. Pathologist: Dr. A. P. Beddard. Dermatologist: Dr. P. S. Abraham. Administrators of Anæsthetics: Messrs. T. Gunton Alderton and Rickard W. Lloyd. Assistant Administrator of Anæsthetics: Messrs. E. W. Lewis and G. P. Shuter. Electrician: Dr. W. A. Turner. Secretary: Mr. R. J. Gilbert. Attached to the hospital is the West London Post-graduate College. The practice of the Hospital is reserved exclusively for qualified men, no junior students being admitted. Instruction is given in the medical and surgical out-patient rooms daily, and demonstrations are given in the wards on certain fixed days. Post-graduate lectures and demonstrations are given on Wednesdays and Fridays; notice of the commencement of each course is advertised in the medical journals. The accommodation for post-graduates consists of a large lecture room together with reading and writing rooms, &c. The hospital has a fully-equipped pathological laboratory at which instruction can be given in elementary bacteriology. The fees for hospital practice, including lectures, are £3 3*s.* for 3 months or £5 5*s.* for one year. Further information can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch, N.E. For the sick children of the poor under twelve years of age. Established 1867. City Offices: 27, Clement's-lane, E.C.—Fifty-seven beds. Last year 772 in-patients and 14,947 out-patients (representing 54,352 attendances) were relieved, 210 of the in-patients being under two years of age. Consulting Physicians: Drs. A. E. Sansom, W. Cayley, F. C. Turner and W. Pasteur. Consulting Surgeons: Messrs. Jonathan Hutchinson, Waren Tay, R. J. Godlee and Bilton Pollard. Physicians: Drs. W. A. Wills, James Taylor, J. H. Sequeira, and J. Porter Parkinson. Surgeons: Messrs. H. Percy Dean and A. B. Roxburgh. Resident Medical Officer: C. G. Burton; also a House Physician and House Surgeon. Ophthalmic Surgeon: Mr. Sydney Stephenson (Wednesday, 9.30 A.M.). Dental Surgeon: Mr. John W. Pare (Tuesday and Friday, 9.30 A.M.). Matron: Miss E. W. Curno. Secretary: T. Glenton-Kerr. The surgeons attend on Wednesdays at 2 P.M. and Fridays at 9 A.M.; the physicians daily at 2 P.M. Applications for permission to attend the practice of the hospital should be addressed to the secretary.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Consulting Physician: Dr. Donald W. C. Hood. Physician: Dr. Harry Campbell. Surgeon: Mr. Frederic Durham. Assistant Physicians: Drs. W. Knowsley Sibley, Leonard G. Guthrie, and G. A. Sutherland. Assistant Surgeons: Messrs. M. P. Mayo Collier, J. Jackson Clarke, and George Templeton. Physician for Diseases of the Skin: Dr. J. Herbert Stowers. Obstetric Physician: Dr. John Shaw. Ophthalmic Surgeon: Dr. W. J. Collins. Dental Surgeon: Mr. C. F. Rilot. The hospital, which was established in 1878, provides 53 beds. The average number occupied last year was 47. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 18 cots. There are two Resident Medical Officers—an honorarium at the rate of £50 per annum attaches to the senior post. Operation day, Thursday at 2.30 o'clock. Further particulars from J. Herbert Stowers, M.D., Hon. Sec., Medical Committee, 128, Harley-street.

ROYAL EYE HOSPITAL, St. George's-circus, Southwark, S.E.—There are 40 beds and 2 cots. There were upwards of 46,000 attendances in the Out-patient Department last year, and the new patients number over 16,000 yearly. Operations are performed and out-patients are seen daily at 2 P.M. The following are the days of attendance:—Mr. M. M. McHardy, Tuesdays; Mr. J. G. Mackinlay, Thursdays; Dr. W. J. Collins, Wednesdays and Fridays; and Mr. L. V. Cargill, Mondays and Saturdays. Qualified practitioners and students are admitted to the practice of the hospital upon the recommendation of the medical staff. Tuition is given daily in the out-patient department, beginning at 2 P.M. The students need not necessarily possess a registerable qualification. They work under the guidance of the surgeons and clinical assistants, and may become eligible for clinical assistantship, house surgeonship, and registrarship, as vacancies arise. Fees: £2 2*s.* for 3 months, £3 3*s.* for 6 months, and £5 5*s.* perpetual. Qualified students of the hospital are eligible for the offices of registrar and house surgeon, and may be appointed clinical assistants upon the recommendation of the medical staff for a term of 6 months, and are eligible for re-election. Courses are held on Ophthalmoscopy, Refraction and Diseases of the Eye, fee, £1 1*s.* for each course, but perpetual students may attend each course once without extra fee. Pathology Class, £1 1*s.* extra to cover cost of materials. Tutorial or coaching classes for the various examinations arranged as far as possible to suit candidates. The classes will begin in October, if there are sufficient applications.

VOLUNTEER MEDICAL STAFF CORPS (LONDON COMPANIES), Calthorpe-street, Gray's-inn-road, W.C. — Hon. Commandant: Surgeon-General Sir William Guyer Hunter, K.C.M.G., Q.H.S., V.D. Commandant: Surgeon-Lieutenant-Colonel J. S. Squire, V.D. The Volunteer Medical Staff Corps bears the same relation to the Volunteer Army as the Medical Staff Corps bears to the regular Army. The course of training has the great advantage of affording, in addition to a knowledge of ordinary military duties, special ambulance instruction useful in all ranks of life. All who have gone through the ranks of this corps are capable of rendering valuable aid in any accident, and in cases of emergency may be the means of saving lives which would otherwise be lost. In addition to the Company and Battalion drills of an ordinary infantry corps, the special training includes stretcher and waggon and cacolet drill; the use of improvised seats and stretchers; the use and application of bandages, splints, &c.; lectures by the officers on first aid to the injured, and on the elements of anatomy, physiology, hygiene, and nursing, which are so arranged as not to interfere with the lectures, &c. carried on at the various hospitals in London. There is also a Shooting Club in the corps, in which instruction in, and facilities for, the practice of rifle shooting are given. There is a Transport Section in connexion with the corps, the members of which go through a course of instruction in riding and driving and transport work with the regular troops. There are also sections of Cyclists and Signallers. A Gymnastic Class meets once a week at headquarters, under an instructor who teaches boxing and fencing. Lectures are delivered during the winter session. The new headquarters contain a fine drill hall, mess-rooms, canteen, &c., where dinners, suppers, dances, and smoking concerts can be held at any time. The Adjutant, Captain G. T. Rawnsley, will give any information respecting the above on application to the headquarters, Calthorpe-street, Gray's-inn-road, W.C.

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SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—Chemistry and Physics: J. Norman Collie, Ph.D., F.R.S. (Dean of the school). Botany: Professor Reynolds, Green, M.A., Sc.D., F.R.S., F.L.S. Materia Medica and Pharmacy: Professor Greenish, F.I.C., F.L.S. The session commences on Monday, Oct. 4th. Medical students, or pupils intending to enter the medical profession, are admitted to the lectures and laboratory work in any or all the courses. Certificates of instruction in this school are received by the Conjoint Board of the Royal Colleges. Application for admission to the school, or for further information, may be made to the Dean of the school, 17, Bloomsbury-square, London, W.C.

WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY, Trinity-square, Borough, S.E.—Principals, G. S. V. Wills, F.L.S., and H. Wootton, B.Sc. Lond. In addition to the ordinary courses for Pharmaceutical and other students for many years past ladies have been prepared for the Dispenser's Examination of the Apothecaries' Hall. Last session a number of them passed the examination. For further particulars, prospectus, &c., application should be made to E. Walden, Secretary.

ROYAL COLLEGE OF SCIENCE, London (with which is incorporated the ROYAL SCHOOL OF MINES).—Mechanics and Mathematics: Professor J. Perry, F.R.S. Biology: Professor G. B. Howes, F.R.S. (Zoology), and Professor J. B. Farmer, M.A. (Botany). Chemistry: Professor W. A. Tilden, F.R.S., and Dr. W. P. Wynne, F.R.S. Physics: Professor A. W. Rücker, Sec. R.S., and Mr. W. Watson, B.Sc. Astronomical Physics: Professor Sir J. N. Lockyer, K.C.B., F.R.S. Geology: Professor J. W. Judd, C.B., F.R.S. Metallurgy: Professor W. C. Roberts-Austen, C.B., F.R.S. Mining: Professor C. Le Neve Foster, F.R.S. The College re-opens on Wednesday, Oct. 6th, 1897. Communications should be addressed to the Registrar, Royal College of Science, South Kensington, S.W.

ELECTRICAL STANDARDIZING, TESTING, AND TRAINING INSTITUTION, Faraday House, 8 and 10, Charing-cross-road, W.C.—Principal, Mr. Hugh Erat Harrison, B.Sc. Lond., F.C.S., A.M.I.C.E., M.I.E.E. Instructor in Mathematics: Alexander Russell, M.A. Glasgow and Cambridge. Instructor in Chemistry: Chas. J. Wilson, F.I.C., F.C.S. This institution, in addition to its ordinary course of training in electrical engineering, which occupies two or three years, also arranges for special instruction in all branches of electricity and in Roentgen Ray photography, either by private tuition or by a specially arranged course at the college or at the works of the companies with which it is associated. There are Entrance Scholarships of the value of 80 and 50 guineas, and Exhibitions of 40 guineas. Particulars may be obtained on application to the Secretary, Mr. Howard Foulds, Faraday House, Charing-cross-road, W.C.

PROVINCIAL MEDICAL SCHOOLS AND HOSPITALS HAVING SPECIAL CLASSES AND FACILITIES FOR CLINICAL STUDY.[1]

MASON UNIVERSITY COLLEGE, BIRMINGHAM.—Two Ingleby Scholarships are offered annually after examination in Obstetric Medicine and Surgery and Diseases of Women and Children. The Scholarships are open to students who have completed two years of their curriculum in this college. One or more Sydenham Scholarships are offered annually of the value of 30 guineas each. The orphan sons of former students of the Birmingham Medical School have priority of election. No Sydenham scholars are elected whose age exceeds twenty-three years on the day of election. The Scholarships are held for three years, subject to good behaviour. A Queen's Scholarship is offered annually of the value of 30 guineas. It may be held for three years, one-third being paid each year, subject to good behaviour. A Sands Cox Scholarship is offered annually, of the same value as the last, and is held under similar conditions. The Russell Memorial Prize is awarded annually after examination in Nervous Diseases. There are Faculties of Arts, Science, and Medicine, and students are prepared for the various examinations of the University of London. The medical courses qualify for the diplomas of all Licensing Bodies and for the degrees in Medicine and Surgery of British Universities. There are various Scholarships, Entrance and otherwise. The Dental Department, in conjunction with the General, Queen's, and Dental Hospitals, affords a complete curriculum for all Dental diplomas. The Library contains upwards of 25,000 volumes. Syllabuses containing full information as to the various courses of instruction, lecture days and hours, fees, scholarships, &c., will be forwarded on application to the Registrar.

[1] For Scholarships see page 644 *et seq.*

THE QUEEN'S HOSPITAL, BIRMINGHAM. — Consulting Physicians: Sir James Sawyer, Knt., M.D., F.R.C.P., F.R.S.E., J.P., and Cornelius W. Suckling, M.D., M.R.C.P. Consulting Surgeons: Furneaux Jordan, F.R.C.S., and J. St. S. Wilders, M.R.C.S. Physicians: Alfred H. Carter, M.D., F.R.C.P., Arthur Foxwell, M.A., M.D., F.R.C.P., and O. J. Kauffmann, M.D., M.R.C.P. Surgeons: Bennett May, B.S., F.R.C.S., Jordan Lloyd, M.S., F.R.C.S., and Frank Marsh, F.R.C.S. Ophthalmic Surgeon: Priestley Smith, M.R.C.S. Obstetric Officer: C. E. Purslow, M.D., M.R.C.P. Physician for Out-Patients and Pathologists: J. Douglas Stanley, M.D., M.R.C.P. Casualty Surgeons: J. T. J. Morrison, M.A., B.C., F.R.C.S., J. Hazlewood Clayton, M.B., M.R.C.S., and C. A. Leedham-Green, F.R.C.S. Provision has recently been made for an increase in the number of beds to 132 for the reception of accidents and urgent medical, surgical, ophthalmic, and obstetric cases. The in-patients treated last year amounted to 1,913, the out-patients to 28,549.

GENERAL HOSPITAL, BIRMINGHAM.—Consulting Physicians: Sir Walter Foster and Sir Willoughby Wade. Physicians: Drs. Rickards, Saundby, Simon, and Wilson. Surgeons: Messrs. Chavasse, Barling, Haslam, and Heaton. Obstetric Officer: Dr. Malins. Assistant Physicians: Drs. Short and Russell. Assistant Surgeons: Messrs. Lucas and Gamgee. Assistant Obstetric Officer: Dr. Thos. Wilson. Beds, 308; average occupied, 270. Patients in 1897: in-patients, 4173; out-patients, 54,217.

UNIVERSITY COLLEGE, BRISTOL (Faculty of Medicine).—Students can complete in Bristol the entire course of study required for the Medical and Surgical degrees of the University of London, and for the diplomas of the Royal College of Physicians of London and the Royal College of Surgeons of England, the Apothecaries' Society of London, and the Army and Navy Boards. The lectures and instructions given in the Faculty of Arts and Science are adapted to the various Preliminary Arts Examinations above referred to, and also to the Matriculation and Preliminary Scientific Examinations of the University of London; whilst the Faculty of Medicine, the Royal Infirmary, and the General Hospita together provide for every detail of the professional curriculum required by the University of London and the above examining boards. All necessary information may be obtained from the Dean of the Faculty of Medicine, Professor E. Markham Skerritt, M.D., F.R.C.P.

UNIVERSITY COLLEGE, CARDIFF, MEDICAL SCHOOL.—The winter session will commence on Monday, Oct. 3rd. The annual address will be given by Dr. Robert Saundby in the chemical theatre on the evening of Oct. 7th, on Modern Universities. All classes are open to both men and women students who may spend three out of their five years of medical study at Cardiff. The courses of study are recognised as qualifying for the Preliminary Scientific and Intermediate Examination in Medicine in the University of London and for the corresponding examinations in the Universities of Edinburgh, Glasgow, Aberdeen, Durham, and the Royal University of Ireland. Students who are preparing for these examinations may compound for their courses by paying a fee of £57 10*s.*, while a composition fee of £35 includes all the necessary courses for the first and second examinations for the Diploma of the Conjoint Board or of the Society of Apothecaries, London. In all cases the composition fees may be paid by instalments. The attention of students about to matriculate is drawn to the numerous entrance scholarships and exhibitions, varying in value from £10 to £30 per annum, offered for competition at University College, Cardiff, in September next, most of which may be held by medical students. Full particulars of the examination for these may be obtained by application to the Registar. Physics.—Professor J. Viriamu Jones, M.A. Oxon., B.Sc. Lond., Fellow of University College,

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE PROVINCIAL SCHOOLS OF MEDICINE FOR THE SESSION 1898-99.

LECTURES, &c.	UNIVERSITY OF DURHAM COLL. OF MED., NEWCASTLE-UPON-TYNE.		UNIVERSITY COLLEGE, LIVERPOOL.		OWENS COLLEGE (VICTORIA UNIV.) SCHOOL OF MEDICINE.		UNIVERSITY COLLEGE, SHEFFIELD.	
	LECTURERS.	FEES. One Course.	LECTURERS.	FEES.	LECTURERS.	FEES. One Course.	LECTURERS.	FEES. One Course.
WINTER SESSION.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
PHYSIOLOGY	Prof. Oliver, Mr. Williamson	5 5 0	Prof. Sherrington Dr. Gullan	5 5 0	Prof. Wm. Stirling	5 5 0	Prof. Myers-Wa d	5 5 0
PRACTICAL PHYSIOLOGY	Prof. Oliver, Mr. Williamson, and Dr. R. A. Bolam§	5 5 0	Prof. Sherrington†† Dr. Gullan	...	Prof. Stirling	...	Prof. Myers-Wa d	§§7 7 0
ANATOMY, DESCRIPTIVE AND SURGICAL	Prof. Howden	5 5 0	Prof. Paterson, Dr. Armour	5 5 0	Prof. A. H. Young	5 5 0	Prof. Addison & Mr. E. Skinner	5 5 0
ANATOMICAL DEMONSTRATIONS	Prof. Howden [*Prac. Anat.*: Prof. Howden]	3 3 0	Prof. Paterson Dr. Armour	3 3 0	Prof. Young, Dr. Thompson, Dr. Smallman	1 1 0	Mr. Scott, Drs. Cuff and Giles	5 5 0
CHEMISTRY	Prof. Bedson	5 5 0	Prof. Campbell Brown,§ Dr. Kohn, Dr. Bailey	3 0 0	Prof. Dixon, Prof. Perkin [*Biology*: Prof. Hickson]	3 10 0 4 14 6	Prof. Williams	4 4 0
PHYSICS	Prof. Stroud	...	Prof. Lodge, Dr. Howard§	6 0 0	Prof. Schuster	...	...	...
MEDICINE	Prof. Philipson	5 5 0	Prof. Glynn	5 5 0	Prof. Dreschfeld	5 5 0	Drs. Dyson and Porter	5 5 0
SURGERY	Prof. Arnison, Mr. Page	5 5 0	Prof. Parker, Mr. Thomas	5 5 0	Prof. Jones, Mr. Thorburn	5 5 0	Mr. Pye-Smith	5 5 0
PRACTICAL SURGERY	...	...	Prof. Parker, Mr. Thomas	4 4 0	Mr. Wright and Mr. Collier	2 2 0	Mr. Atkin	3 3 0
PATHOLOGY	Dr. Drummond (*in Summer*)	...	Prof. Boyce, Dr. Abram	4 4 0	Prof. Delépine	5 5 0	Dr. Burgess (*in Summer*)	...
BACTERIOLOGY	Prof. Murray	6 6 0	Prof. Boyce	4 4 0	...	...	Dr. Andrew Walker	...
EXPERIMENTAL PHYSICS	Prof. Stroud	2 2 0	Prof. Lodge	6 0 0	Prof. Schuster	2 12 6	Prof. Hicks	2 2 0
PUBLIC HEALTH	Dr. H. E. Armstrong	5 5 0	Prof. E. W. Hope,†† Dr. Manby	4 4 0	Dr. Niven [*Zoology*: Prof. Hickson]	2 2 0		2 2 0
HOSPITAL PRACTICE:	ROYAL INFIRMARY, NEWCASTLE.		LIVERPOOL ROYAL INFIRMARY.		ROYAL INFIRMARY.		SHEFFIELD ROYAL INFIRMARY	
PHYSICIANS	Drs. Drummond, Oliver, Limont, and Murray	6 months 8 8 0	Dr. Glynn, Dr. Caton, Dr. Barr	6 mnths. 6 6 0 12 mnths. 7 7 0	The Physicians	Composition fee, full period, £42	Drs. Dyson, Porter & Cocking	6 m., £66s.; 3 m., £33s.; perp. (Med. & Surg.) £45; or by 2 instal-ments of £26 & £22.
SURGEONS	Mr. Williamson, Dr. Hume, Mr. Page, Mr. Morison	12 mnths 12 12 0 Comp.	Mr. Banks, Mr. Parker, Mr. Paul	6 mnths. 7 7 0	The Surgeons		Messrs. Hallam, Atkin, and Dr. S. White	
ASSISTANT SURGEONS	Mr. Walter Ridley Mr. A. M. Martin Mr. H. B. Angus Mr. J. H. Rutherford	†26 5 0 ...	Mr. R. A. Bickersteth Mr. Hamilton Mr. Thelwall Thomas		[*Dent. Mech.*: Mr. Tanner] [*Dent. Anatomy*: Mr. Hooton]†† [*Dent. Metallurgy.*: *Vacant.*] [*Pr. and Op. Surg. Dent.*: Mr. Whittaker]†† [*Dent. Hist.*: Mr. Headridge]††	4 4 0 4 4 0 4 4 0 4 4 0 4 4 0	ROYAL HOSPITAL. *Phys.*: Drs. Burgess, Arthur Hall, and Clapham *Surgs.*: Mr. Pye-Smith and Mr. H. Lockwood	
SUMMER SESSION.								
MATERIA MEDICA	Dr. McBean	5 5 0	Prof. Carter (*& Therapeutics*)	2 2 0	Prof. Leech	4 4 0	Dr. Cocking	2 2 0
MIDWIFERY, &c.	Dr. Nesham*	5 5 0	Prof. Wallace, Dr. A. Wallace‡‡ (*and Gynæcology*)	5 5 0	Prof. Sinclair Dr. Ashby (*Dis. Chil.*)	4 4 0 2 2 0	Mr. R. Favell and Dr. Martin	5 5 0
BOTANY	Prof. Potter	...	Prof. Gibson, Mr. Jones§	3 0 0	Prof. Weiss	2 12 6	Prof. Denny	3 3 0
BIOLOGY	Prof. Potter§	5 5 0	Prof. Herdman	6 0 0	...	...	...	...
MEDICAL JURISPRUDENCE	Dr. Murphy	5 5 0	Prof. Paul, Dr. Buchanan	4 4 0	Prof. Dixon Mann	3 3 0	Dr. Rhodes	3 3 0
MENTAL DISEASES	Dr. McDowall	5 5 0	Dr. Wiglesworth	1 1 0	Dr. Mould	1 11 6	...	...
PRACTICAL CHEMISTRY	Prof. Bedson	5 5 0	Prof. Campbell Brown	4 4 0	Prof. Dixon	4 4 0	Prof. Williams	3 3 0
PRACTICAL PHYSICS	Prof. Stroud	2 2 0	Prof. Lodge	...	...	...	P. of. Denny	2 2 0
COMPARATIVE ANATOMY	Prof. Brady	2 2 0	Prof. Herdman	...	Dr. Hickson‡ (*with Embryology*)	2 12 6	...	...
PATHOLOGY AND MORBID ANATOMY	Dr. Drummond	5 5 0	Prof. Boyce	2 2 0	Prof. Delépine	2 2 0	Dr. Burgess	4 4 0
OPHTHALMIC SURGERY	Mr. Williamson	...	Mr. Edgar Browne††	1 1 0	Dr. Brooke (*Skin Diseases*)	1 1 0	...	...
DENTAL SURGERY AND MECHANICS	Mr. Markham [*Dis. of Throat, Nose, & Ear*: Mr. Walter Ridley] [*Dis. of Skin*: Dr. Limont]	...	**[*Dental Surg.*: Mr. Phillips] [*Mechanics*: Mr. Councell] [*Dental Anat.*: Prof. Paul] [*Dental Metall.*: Dr. Bailey]	3 3 0 3 3 0 4 4 0 ...	Dr. Little Mr. G. G. Campion [*Dis. of Larynx*: Dr. Hodgkinson] [*Dis. of Ear*: Dr. Milligan]	3 3 0 4 4 0 1 1 0 1 1 0	Mr. Snell ... [*Med. Officer to Skin Department*: Mr. W. Dale James]	2 2 ... [*Pharm. & Ther.*: Dr. Cocking] 4 4 0
OPERATIVE SURGERY	Prof. Arnison, Mr. Page	5 15 6	Prof. Parker, Mr. Thomas	[Comp. fee, £50]	Mr. Southam	4 4 0	Dr. S. White	2 2 0
CLINICAL MEDICINE CLINICAL SURGERY	Physicians and Surgeons of Infirmary	...	Physicians and Surgeons of the Royal Infirmary		Physicians and Surgeons of the Royal Infirmary	...	Phys. & Surg. of Gen. Infir. & Royal Hospital	...
			[*Dis. of Child.*: Dr. P. Davidson] [*Dental Path.*: Prof. Boyce‡]	2 2 0 4 4 0	Prof. Whitehead [Comp. fee, Dental course, £50]		[*Prac. Pathol.*: Dr. Wilkinson and Dr. Arthur Hall]	5 5 0
FEE for all Lectures required by the College & Hall	...	73 10 0	[*Hum. & Mamm. Embryology*: Prof. Paterson]	60 0 0‖	...	70 0 0	...	63 0 0
Ditto for Hospital Medical & Surgical Practice	...	†26 5 0		42 0 0	...	42 0 0	...	45 0 0

* Diseases of Women and Children. † In addition to the above, £2 2s. yearly up to three years. ‡ In winter.
§ Winter and Summer. ‖ Except Chemistry, Biology and Fever, Ophthalmic, and Mental Hospital Practice. ¶ Diseases of Women. ** Complete Dental Course, £50. †† In summer.
‡‡ Midwifery in winter, Gynæcology in summer. §§ Practical Physiology: Winter, £3 3s. Practical Histology: Summer, £4 4s.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE PROVINCIAL SCHOOLS OF MEDICINE FOR THE SESSION 1898-99.

LECTURES, &c.	MASON UNIVERSITY COLLEGE, BIRMINGHAM.		UNIVERSITY COLLEGE, BRISTOL.		CAMBRIDGE UNIVERSITY.		YORKSHIRE COLLEGE, LEEDS.	
	LECTURERS.	FEES. One Course.	LECTURERS.	FEES. One Course.	LECTURERS.	FEES.	LECTURERS.	FEES.
		£ s. d.		£ s. d.		£ s. d.		£ s. d.
WINTER SESSION.								
PHYSIOLOGY	Prof. F. J. Allen	6 6 0	Prof. G. M. Smith	5 5 0	Prof. Foster, Dr. Gaskell, and Dr. Langley.	...	Prof. Birch and Demonstrator	10 10 0
ANATOMY, DESCRIPTIVE & SURGICAL	Prof. B. C. A. Windle	6 6 0	Prof. E. Fawcett	5 5 0	Prof. Macalister	...	Prof. Griffith and Mr. Robinson	10 10 0
ANATOMICAL DEMONSTRATIONS	Messrs. Manners-Smith and Haslam	5 5 0	Dr. Symes & Mr. Carwardine	5 5 0	Dr. J. Griffiths Prof. Macalister and Demonstrators	...	Prof. Griffith and Demonstrators	...
PRACTICAL PHYSIOLOGY	...	...	...	8 8 0	Prof. Foster (and in Summer)	...	Prof. Birch and Demonstrator	6 6 0
ELEMENTARY BIOLOGY	Prof. Bridge & Mr. W. E. Collinge	5 5 0	Mr. Reynolds	5 5 0	Mr. Seward and Mr. Sedgwick	...	Professor Miall	5 5 0
CHEMISTRY	Prof. P. F. Frankland & Dr. Baker	4 4 0	Prof. Young	5 5 0	Prof. Liveing	...	Prof. Smithells & Dr. Cohen	5 5 0
MEDICINE	Prof. Carter, Prof. Saundby, and Dr. Russell	6 6 0	Profs. Markham Skerritt and Shaw	5 5 0	Prof. Dewar and Dr. Rubemann Prof. Allbutt	...	Prof. Barrs	6 6 0
THERAPEUTICS	Prof. Foxwell	3 3 0	...	...	Dr. MacAlister Prof. Bradbury	...	Prof. Chadwick	3 3 0
SURGERY	Prof. Barling, Prof. B. May, and Mr. Morrison	6 6 0	Profs. Morton and Swain	5 5 0	Dr. J. Griffiths	...	Prof. Robson	6 6 0
HYGIENE AND PUBLIC HEALTH	Prof. B. Hill	3 3 0	Dr. Davies	4 4 0	Dr. Anningson	...	Mr. Ward (*Prac. Surg.*)	4 4 0
GYNÆCOLOGY	...	...	...	...	Mr. Stabb	...	...	...
HOSPITAL PRACTICE:	GENERAL HOSPITAL AND QUEEN'S HOSPITAL.	3 months 5 0 0	BRISTOL ROYAL INFIRMARY, AND BRISTOL GENERAL HOSPITAL.	...	ADDENBROOKE'S HOSPITAL.	Perpet. 8 8 0	Dr. Hellier LEEDS GENERAL INFIRMARY.	3 3 0
PHYSICIANS	(*See Additional Information on Schools.*)	6 months 7 0 0		...	Dr. Latham, Prof. Bradbury, Drs. MacAlister & L. Humphry	...	*Physicians:* Drs. Churton, Barrs, Chadwick and Braithwaite *Assist. Phys.:* Drs. T. W. Griffith and Trevelyan	...
SURGEONS	...	1 year 11 11 0	(*See Additional Information on Schools.*)	...	Mr. Wherry, Mr. Deighton, Dr. Griffiths, Mr. Higgins	...	*Surgeons:* Messrs. Robson, Ward, Brown, Littlewood, Nunneley, and Hewetson *Assist. Surgs.:* Messrs. Knaggs, Moynihan and Walker	...
	[*Ophthalmology:* Mr. Priestley Smith. No fee.]							
SUMMER SESSION.								
MATERIA MEDICA, &c.	Mr. Whittles and Mr. Kneale.	1 1 0	Dr. Prowse	3 3 0	Prof. Bradbury and Mr. Marshall		Prof. Chadwick	4 4 0
MIDWIFERY, &c.	Prof. E. Malins,	}	Prof. Aust Lawrence	4 4 0	Mr. Deighton		Prof. Wright and Mr. Croft	6 6 0
GYNÆCOLOGY	Prof. Savage and Dr. Purslow	5 5 0	...	...	...		...	...
PRACTICAL SURGERY	Mr. Jordan Lloyd	2 2 0	Dr. Lansdown	3 3 0	Mr. Wherry		Mr. Ward	...
OPERATIVE SURGERY			Mr. Bush	3 3 0				...
BOTANY	*Bacteriology and Pub. Health (D.P.H. Course):* Prof. Kauffmann and Mr Leedham-Green	...	...	3 3 0	Prof. Marshall Ward Mr. Darwin, Mr. Blackman		Prof. Miall	5 5 0
HYGIENE AND PUBLIC HEALTH		...	...	...	Dr. Anningson		Mr. Hartley	3 3 0
MEDICAL JURISPRUDENCE	Prof. Simon Dr. A. B. Hill	4 4 0	Dr. Eager	3 3 0	...		Mr. Scattergood and Dr. Campbell	5 5 0
MENTAL DISEASES	Prof. Whitcombe	1 1 0	Dr. Harrison	...	Dr. Rogers		Mr. Lewis	3 3 0
PRACTICAL CHEMISTRY	Prof. P. F. Frankland & Dr. Inness	3 3 0	Prof. Young	3 3 0	Prof. Liveing		Prof. Smithells	4 4 0
PRACTICAL PHYSIOLOGY & HISTOL.	Prof. Allen and Dr. Bolton	4 4 0	...	...	Prof. Foster and Dr. Langley		Prof. Birch	...
CHEMICAL PHYSICS	Prof. Poynting and Mr. Allan	3 3 0	...	...	Prof. Liveing, Prof. Thomson		Prof. Smithells	6 6 0
COMPARATIVE ANATOMY	Prof. Bridge	2 12 6	Prof. Morgan	4 4 0	*Prof. Newton (Winter, Mr. Sedgwick)		Prof. Miall	...
PATHOLOGY & MORBID ANATOMY	Prof. Kauffmann & Mr. Heaton	4 4 0	Prof. Clarke	5 5 0	Dr. Kanthack and Mr. Pigg		Prof. Trevelyan and Demonstrator	4 4 0
PRACTICAL HISTOLOGY	...	...	...	3 3 0	Dr. Hill, Dr. Barclay Smith		Prof. Birch and Demonstrator	...
DENTAL SURGERY	Mr. Huxley	3 3 0	Mr. Acland	3 3 0	Dr. Cunningham		...	...
DENTAL ANATOMY & PHYSIOLOGY	Mr. Humphreys	3 3 0	Prof. G. M. Smith	3 3 0	Dr. Cunningham		...	...
DENTAL METALLURGY	Mr. Melland	2 2 0	Mr. Hayman	3 3 0	...		...	...
DENTAL MECHANICS	Mr. Goffe	2 2 0	Mr. Hayman	...	...		...	...
CLINICAL MEDICINE	Physicians of the two Hospitals.	...	...	...	The Physicians		Physicians of the Infirmary	...
CLINICAL SURGERY	Surgeons of the two Hospitals.	...	...	...	The Surgeons to Addenbrooke's Hospital		Surgeons of the Infirmary	...
	Dental Pathology & Histology: Mr. J. D. Whittles. [*Dean of the Faculty:* Prof. Windle]		[*Pharm. & Ther.:* Dr. Prowse, £3 3s. *Pract. Medicine:* Prof. Shaw, £4 4s.]				[*Practical Pharmacy:* Mr. Branson]	
FEES for all the Lectures required by the College and Hall	...	70 0 0	...	68 5 0 or 57 15 0	...		[*Ophthal.:* Mr. Secker Walker]	3 3 0
Composition Fee for Hospital Medical and Surgical Practice	...	42 0 0	[*Pract. Midwifery:* Dr. Swayne, £1 1s.]	36 15 0	...		...	73 10 0
					*With Zoology		...	42 0 0

The fee for each course of lectures or demonstrations is one or two guineas per term.

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London, F.R.S. Assistant Professor: A. L. Selby, M.A., Fellow of Merton College, Oxford. Demonstrator and Assistant Lecturer: W. S. Hensley, B.A., Christ's College, Cambridge. Chemistry. — Professor C. M. Thompson, M.A., Trinity College, Cambridge, D.Sc. Lond., F.C.S. Demonstrators and Assistant Lecturers: E. P. Perman, D.Sc. Lond., and A. A. Read, F.I.C., F.C.S. Biology.—Professor W. N. Parker, Ph.D. Freiburg, F.Z.S. Lecturer in Botany.—A. H. Trow, B.Sc. Demonstrator and Assistant Lecturer in Biology.—H. S. Harrison, A.R.C.S. Anatomy.—Professor Francis Dixon, B.A., M.B. Physiology.—Professor John Berry Haycraft, M.D., D.Sc., F.R.S.E. Demonstrator and Assistant Lecturer.—S. C. Mahalanopis, B.Sc., F.R.S.E. Materia Medica: D. R. Paterson, M.D. Further information may be obtained from Professor A. Francis Dixon, Dean of the Medical Faculty. Hospital instruction is given at Cardiff Infirmary, which is within five minutes' walk of the College. This institution contains 200 beds and has a large out-patient department as well as special departments for the Eye, Ear, and Throat.

BRISTOL ROYAL INFIRMARY (Founded 1735).—270 beds. Honorary and Consulting Physicians: Dr. Edward Long Fox and Dr. William H. Spencer. Honorary and Consulting Surgeon: Mr. Edmund C. Board. Physicians: Dr. R. Shingleton Smith, Dr. Henry Waldo, Dr. John E. Shaw, and Dr. Arthur B. Prowse. Obstetric Physician: Dr. W. C. Swayne. Assistant Physicians: Dr. P. Watson Williams and Dr. F. H. Edgeworth. Surgeons: Mr. Arthur W. Prichard, Mr. W. H. Harsant, Mr. J. Paul Bush, and Mr. G. Munro Smith. Ophthalmic Surgeon: Mr. F. Richardson Cross. Assistant Surgeons: Dr. James Swain and Mr. Thomas Carwardine. Dental Surgeon: Mr. W. R. Ackland. Pathologist: Dr. Theodore Fisher. Bacteriologist: Dr. J. Odery Symes. House Surgeon: Mr. H. F. Mole. House Physician: Dr. E. H. E. Stack. Resident Obstetric Officer: Mr. A. L. Fleming. Anæsthetist and Junior House Surgeon: Mr. R. H. Chilton. Casualty Officer: Mr. S. V. Stock. Secretary and House Governor: Mr. E. A. Leonard.

Scholarships and Prizes.—Two Entrance Scholarships, 35 guineas and 10 guineas: examination third Saturday in October in general subjects; Surgical and Medical Suple Gold Medals, 5 guineas each, with 7 guineas added in money; Clark Prize, 11 guineas; Crosby Leonard Prize, 7 guineas; Tibbitts Prize, 9 guineas; Augustin Prichard Prize, 7 guineas; Midwifery Prize, 3 guineas in books or instruments; Four Pathological Prizes, 3 guineas each; Ophthalmic Prize, 3 guineas in books or instruments; Dental Prize, 3 guineas in books or instruments.

There are five resident appointments—viz., House Surgeon, House Physician, Resident Obstetric Officer, Anæsthetist and Junior House Surgeon, and Casualty Officer, the last two of which are intended specially for qualified students of the Bristol Royal Infirmary, who are elected after a practical examination. Medical Registrars and Surgical Registrars are appointed for periods of six months. The Dressers reside in the Infirmary in rotation, free of expense. The Maternity student also has rooms in the Infirmary. The whole of the clinical work is carefully arranged to meet the requirements of the five years' curriculum. There is class instruction in the wards by the physicians and surgeons on five days a week, in addition to the regular clinical lectures. There are special departments for Diseases of Women, the Eye, Ear, Throat, &c, with Clerkships and Dresserships attached, and there is a large Ward for Children only. Practical instruction in Dental Surgery on Tuesdays and Fridays. Clinical Clerkships and Dresserships, 5 guineas for each six months. Perpetual Medical and Surgical Practice, 35 guineas in one sum.

Further information can be obtained from Dr. Arthur B. Prowse, Dean of the Faculty.

BRISTOL GENERAL HOSPITAL.—200 beds. Physicians: Drs. Markham Skerritt, Harrison, and Michell Clarke. Physician Accoucheur: Dr. W. H. C. Newnham. Physician to Throat and Nose: Dr. Barclay Baron. Assistant Physician: Dr. Parker. Assistant Physician Accoucheur: Mr. D. C. Rayner. Surgeons: Messrs. Pickering, Barclay, Morton, and Lansdown. Ophthalmic Surgeon: Mr. Walker. Assistant Surgeon: Dr. Firth. Anæsthetist: Mr. Freeman. House Surgeon: Dr. Randall. Assistant House Surgeon: E. G. Bunbury. Casualty Medical Officer: R. F. P. Mackie. Clinical Clerkship, six months, £5 5*s*. Dresserships, six months, £5 5*s*. Obstetric Clerkship, three months, £3 3*s*. Special clinical instruction is given in Diseases of the Skin, Eye, Ear, and Throat, also in Diseases of Women and in Dental Surgery. Further information may be obtained of the Secretary, at the hospital, or from Dr. Michell Clarke, Dean of the Hospital Faculty.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are delivered at this hospital twice a week during the academical year; and practical instruction in Medicine and Surgery in the wards and out-patients' rooms is given by the physicians and surgeons daily, during the vacations as well as term time. Instruction is also given in all the special modes of medical and surgical investigation. Clinical Clerks and Dressers are selected from students according to merit, and without payment. The composition fee for pupilship is 8 guineas.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, Newcastle-upon-Tyne.—The following Scholarships and Prizes are awarded annually:— Four University of Durham Scholarships, value £25, tenable for four years, for proficiency in Arts, awarded to full students in their first year. The Dickinson Scholarship, value interest of £400, and a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700, for Medicine. The Gibb Scholarship, value the interest of £500, for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value the interest of £325, for Clinical Medicine and Clinical Surgery. The Luke Armstrong Memorial Scholarship, value the interest of £680 for Comparative Pathology. The Stephen Scott Scholarship in Surgery, value the interest of £1000. Heath Scholarship: The late George Yeoman Heath, M.D., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year; the next award will be in 1900. The Gibson Prize, interest on £225, in the department of Midwifery and Diseases of Women and Children. At the end of each session Prizes of Books and Honours Certificates are awarded in each of the regular classes. Assistant Demonstrators of Anatomy, receiving each an honorarium of £5, Prosectors, and Assistant Demonstrators of Physiology and Pathology are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Throat and Ear Department, and Skin Department, Clinical Clerks, and Dressers are appointed every three months.

NEWCASTLE-UPON-TYNE ROYAL INFIRMARY.—Physicians: Drs. Drummond, Oliver, Limont, and Murray. Surgeons: Drs. Hume, Page, Mr. Williamson, and Mr. Rutherford Morison. Assistant Surgeons: Mr. Walter Ridley, Mr. A. M. Martin, Mr. H. B. Angus, and Mr. J. V. W. Rutherford. Pathologist: Dr. Beattie. Dental Surgeon: Mr. R. L. Markham. Skin Department: Dr. Limont. Eye Department: Mr. Williamson. Throat and Ear Department: Mr. Ridley. Anæsthetist: Dr. W. D. Arnison. Surgical Registrars: Mr. J. D. Wardale and Mr. John Clay. The infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given by the Pathologist as opportunity offers. Practical Midwifery can be studied at the Newcastle Lying-in Hospital. Instruction is given in Psychological Medicine at the Northumberland County Asylum, Morpeth. A Special Course of Instruction is given in the City Hospital for Infectious Diseases by the Superintendent, the City Officer of Health, Mr. H. E. Armstrong.

LEEDS GENERAL INFIRMARY AND MEDICAL DEPARTMENT OF THE YORKSHIRE COLLEGE.—The Leeds General Infirmary has accommodation for 447 in-patients, medical and surgical, including forty-two beds at a "semi-convalescent home" in the country. During the last year 6116 in-patients and 37,623 out-patients were treated. Clinical teaching takes place daily in the wards, and Clinical Lectures are given in Medicine and Surgery by the Physicians and Surgeons. There are Medical, Surgical, Ophthalmic, Aural, and Electrical Departments, in each of which special instruction is imparted to students. A Gynæcological and Extern Obstetric Department, together with Laryngeal and

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Skin Clinics, are in operation. The Public Dispensary, the Hospital for Women and Children, the Fever Hospital, and the West Riding Lunatic Asylum are other medical institutions which are made use of by the Leeds students. Four years ago the new buildings of the Medical School were opened by their Royal Highnesses the Duke and Duchess of York. Erected on a commanding site, close to the Infirmary, the new School of Medicine contains complete accommodation for the training of medical students upon the most approved modern methods. A very fine dissecting-room, extensive laboratories for Physiology and Pathology, with the most recent improvements in fittings and apparatus, ample lecture-room accommodation, a large Library, and separate Museums for Pathology and Anatomy—these are some of the most striking features of the new buildings. Careful provision for the convenience of students, in the shape of a common-room, a refectory, &c., has also been made a feature of the school. The classes in Systematic and Practical Chemistry, Physics and Biology, are held in the Science and Arts Department of the College, in College-road. Two Entrance Scholarships are offered: one, of the value of 64 guineas, covering admission to all requisite lectures; and the other, of the value of 40 guineas, covering the cost of admission to the medical and surgical practice of the infirmary. Several valuable prizes are given at the end of each session. The following appointments at the infirmary are annually open to students (for some of them, however, a registered legal qualification is required); senior and 3 junior anæsthetists, pathological curator, resident medical officer, resident surgical officer, resident casualty officer, resident ophthalmic officer, appointed for twelve months, and eligible for re-election; resident obstetric officer and 4 house surgeons, for twelve months; 3 house physicians, for six months; 30 physicians' clerks, for six months; 32 surgeons' dressers, for six months; 16 ophthalmic and aural surgeons' dressers, for three months; 12 gynæcological ward clerks, for three months; 16 gynæcological out-patient clerks, for three months; 24 assistant physicians' clerks, for three months; 24 assistant surgeons' dressers, for three months; 8 out-patient ophthalmic and aural dressers; 32 dressers in the casualty-room, for three months; 32 post-mortem clerks, for three months.

There are appointments open to students in other medical institutions in the town and also in the West Riding Lunatic Asylum.

UNIVERSITY COLLEGE, LIVERPOOL: MEDICAL FACULTY.—The new Physiological and Pathological Laboratories are now in course of erection, and will be ready for occupation during the Winter Session (1898-99). The Chemical Laboratories have been extended at a cost of about £10,000, so as to provide *inter alia* more complete accommodation for medical students and those engaged in Laboratory work for Diplomas in Public Health. Steps are being taken for the extension of the Anatomical Department, and the first instalment of new Anatomical and Surgical Laboratories has been already erected at a cost of £2000 in the form of permanent Anatomical out-buildings and courtyard. The buildings include mortuary, store-rooms, museum work-rooms, and macerating room, along with lavatories, &c. The erection of new Anatomical and Surgical Laboratories will be commenced as soon as practicable. The dissecting-room and theatre have been provided with the electric light. The chair of Pathology has adequate temporary accommodation in Ashton Hall, an institute adjacent to the College, which contains ample class-room and laboratory accommodation for study and research in Pathology and Bacteriology. The museums of Anatomy, Pathology, Materia Medica, and Public Health are furnished with complete provision for the needs of students and have recently been reorganised and revised.

Fees.—The composition fee for lectures and classes is £24 15*s.* for Preliminary Science Classes; £60 for the Medical Classes required for the Victoria University degrees; £70 for all the classes required for the diplomas of the Conjoint Boards. The medical composition fees are payable in two instalments at intervals of twelve months. The fee for hospital attendance at the Royal Infirmary is 40 guineas, also payable in two annual instalments.

Appointments.—Three house surgeons, three house physicians, and one external house surgeon to the Thornton Wards are appointed for six months after (if necessary) competitive examination. Candidates must have a legal qualification. Three clinical clerks for each physician, three or more dressers for each surgeon, and two clerks to the Thornton Wards for Diseases of Women are appointed every three months. Post-mortem clerks are appointed for six weeks; all students are required to perform this duty before the schedule for the Final Examination is signed. Clinical assistants are appointed from among the senior students.

There is a School of Dental Surgery in connexion with the medical faculty. The curriculum includes Lectures and Demonstrations on all the subjects required for the Licences in Dental Surgery of the Royal Colleges of Surgeons of London, Edinburgh, and Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. In addition, Laboratory Courses are conducted in Dental Histology and Dental Pathology.

Practical instruction in Dentistry is given at the Dental Hospital in Mount Pleasant.

Fees.—A payment of £50 on entrance, or in two equal instalments (one-half on entrance and the remainder within twelve months), entitles the student to attendance on all lectures and demonstrations (medical and special) required for the Dental Licence of the Royal College of Surgeons. The fee for two winters' surgical practice is £10 10*s.*, and for two years' dental hospital practice, £12 12*s.* The total expenditure for the whole curriculum is £73 2*s.*

Further information can be obtained from the Dean of the Medical Faculty, Professor Paterson, University College, Liverpool.

SCHOOL OF PHARMACY.—A department of Pharmacy has recently been instituted, comprising the necessary courses for the minor and major examinations of the Pharmaceutical Society in Chemistry, Physics, Botany, Materia Medica and Pharmacy. The composition fee is £17, and the classes may be attended in one or two years.

Prospectus and further information may be had on application to the Registrar, University College, Liverpool.

MEDICAL DEPARTMENT OF OWENS COLLEGE, VICTORIA UNIVERSITY.—This medical school is located in a large building, which forms a part of Owens College. It is provided with large dissecting-rooms, physiological laboratories, private laboratories, and work-rooms, besides lecture-rooms, a museum, and a library. In order to give the fullest possible opportunities for teaching and investigation in the departments of Anatomy, Physiology, Pathology, and Materia Medica, an extension of the school buildings has recently been made. The greater part of the new buildings is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological department occupies more than half of the new buildings, and includes a large lecture theatre, accommodating 350 students, with preparation and diagram rooms adjacent to it, and a research laboratory fitted with the necessary apparatus for the use of advanced students, research scholars, or practitioners of medicine undertaking the investigation of some special subject. In the new pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. In the toxicological department there is a large laboratory, capable of accommodating fifty students, lighted from both sides and also from the roof, completely equipped with all that is necessary for the practical teaching of toxicology; also a small laboratory for private research, containing the apparatus and fittings necessary for investigations in toxicological chemistry. In the public health department suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology. A large room is provided in the new buildings for a museum of apparatus, models, plans, and other sanitary appliances for the practical instruction of the students, together with a special library of works on State medicine, hygiene, vital statistics, and sanitary engineering. In addition, a large lecture theatre for general purposes, accommodating 250 students, has been provided, and the existing accommodation for students is supplemented by the provision of a larger common room. The more strictly practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary, as well as in a fever hospital, a lunatic asylum, and a convalescent home. Medical and Surgical Clinical Classes are conducted in the infirmary, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Obstetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary. The following entrance

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scholarships are offered for award to persons proposing to enter a medical course of study at the College:—Seaton.—One of £40, tenable for two years. Subjects: Greek and Latin Translation at sight, and Prose Composition. Credit given for knowledge of Mathematics (Geometry and Algebra); Elements of English Language, Literature, and History; French and German. Rogers.—One of £40, tenable for two years. Subjects as in Seaton. Dalton.—Two of £40, tenable for two years. Subjects: Geometry (Euclid I.—IV., and VI., or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive). Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry; Conic Sections. Credit given for knowledge of Classics, Elements of English Language, Literature, and History; French and German. Cartwright.—£35 per annum, tenable for three years. Subjects as in Dalton. Hulme.—£35, tenable for three years. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an essay on some subject of English literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight, Grammar, and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). James Gaskill.—£40, tenable for two years. Subjects: Mathematics, Geometry (the substance of Euclid I.—IV. and VI.), Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles), Elementary Mechanics, Chemistry. Credit given for knowledge of Classics, Elements of English Language, Literature, and History, and French and German. Manchester Grammar School.—£18 per annum, tenable for three years. The examinations for all these scholarships are held in the month of May. Kay-Shuttleworth (Sir James Phillips). — £30 per annum, tenable for three years. Subjects: Mathematics, Elementary Mechanics, Chemistry. Dauntesey Medical Scholarships.—Two Scholarships of £35 each are open to all students preparing for a medical course who shall not have attended lectures or Laboratory courses on human anatomy or physiology, or a purely medical or surgical course in the Owens College or any other Medical School in the United Kingdom. Candidates will be examined in Zoology, Botany, and Chemistry. Medals are awarded on the results of the various class examinations at the end of each session. A Platt Physiological Scholarship of £50 a year for two years is offered annually to the student who, having studied for one entire session in the Physiological Laboratory of Owens College, has prosecuted the best original investigation in Physiology and has passed a satisfactory examination in Physiology. Two Platt Exhibitions, of the value of £15 each, to be competed for by first and second year students in the class of Physiology. A Dumville Surgical Prize of £15 is offered annually for proficiency in Clinical Surgery. The Turner Medical Scholarship of £20 is awarded annually. The John Henry Agnew Scholarship in Diseases of Children (£30) is also offered for competition each year. Medical and Surgical Clinical Prizes, each of the value of 6 guineas, are open to competition each year for the best reports (with comments) of cases which have occurred in the wards of the infirmary.

MANCHESTER ROYAL INFIRMARY (292 beds). — Consulting Physicians: Drs. Frank Renaud, H. Browne, Sir Wm. Roberts, and Henry Simpson. Consulting Surgeons: Messrs. George Bowring and F. A. Heath. Physicians: Drs. D. J. Leech, J. Dreschfeld, Graham Steell, and Thos. Harris. Assistant Physicians: Drs. J. S. Bury and A. T. Wilkinson. Consulting Obstetric Physician: Dr. Lloyd Roberts. Obstetric Physician: Dr. Archibald Donald. Surgeons: Messrs. Walter Whitehead, Thomas Jones, Jas. Hardie, and F. A. Southam. Assistant Surgeons: Messrs. G. A. Wright and Wm. Thorburn. Ophthalmic Surgeon: Dr. D. Little. Dental Surgeon: Mr. G. W. Smith. Pathological Registrar: Dr. T. N. Kelynack. Medical Registrar: Dr. R. T. Williamson. Surgical Registrar: Mr. H. W. Pomfret. Administrators of Anæsthetics: Mr. Alexander Wilson and Mr. J. W. Smith. Assistant Medical Officers for Home Patients: Mr. W. B. Pritchard and Mr. G. E. Fryer. General Superintendent and Secretary: Mr. W. L. Saunder.

BARNES CONVALESCENT HOSPITAL, Cheadle, Cheshire (in connexion with the Manchester Royal Infirmary; 136 beds).—Secretary: Mr. W. L. Saunder. Resident Medical Officer: Mr. A. R. Stilwell Freeland.

RADCLIFFE INFIRMARY, Oxford (120 beds).—At this infirmary instruction is given to medical students. Clinical lectures are given by the Lichfield Clinical Lecturers in Medicine and Surgery. Also tutorial instruction and demonstrations are given in special Regional Anatomy (medical and surgical), methods of Medical Diagnosis, and Surgical Manipulation. Demonstrations of Elementary Pathology are given in the post-mortem room and at the Pathological department of the museum by the Regius Professor of Medicine or his Deputy. Practical Pharmacy is taught in the Infirmary Dispensary. The whole course of study at the museum and infirmary combined is intended for students until they have passed the Second Conjoint Examination or the First Oxford M.B.

UNIVERSITY COLLEGE, SHEFFIELD—DEPARTMENT OF MEDICINE.—The Medical School has been incorporated by Royal Charter with Firth College and the Sheffield Technical School, under the title of University College, Sheffield. An entrance scholarship of the value of £110 is awarded annually to the best candidate (if of sufficient merit) in Mathematics, Elementary Physics, Inorganic Chemistry, Latin, and English. Prizes for Clinical Medicine and Surgery of 10 guineas are offered by the Clinical Committee. Prizes in books and certificates are awarded annually. The medical school is provided with dissecting-room, physiological laboratory, museum, library, and class-rooms. The physiological department has been entirely reconstructed and equipped in memory of the late President of the school, Mr. Wm. F. Favell, and will in future be called the Favell Laboratory. The department consists of a lecture and demonstration theatre, preparing-room, and galvanometer room. In addition to the usual fittings the theatre is provided with a projection lantern microscope for the demonstration of microscopic slides. Each student has his own laboratory bench, with gas, water, electric light, and the requisite apparatus. The department is lighted throughout by electricity. The course of lectures and instruction is adapted to meet the requirements of the various examining bodies. The Sheffield Royal Infirmary contains 240 beds, including Ophthalmic and Dermatological departments, a museum of Pathology, library, and post-mortem theatre, with microscopes and all the appliances for clinical research. New Ophthalmic wards have recently been erected. The Sheffield Royal Hospital contains 125 beds and Dental and Ophthalmic departments, and is recognised by the examining bodies. Perpetual fee for hospital practice £45 in one payment; or by two instalments: £26 on entering for hospital practice, and 22 guineas within twelve months afterwards. Composition fee for lectures and practical courses 60 guineas; or in two instalments: 35 guineas at commencement of medical study, 30 guineas at beginning of the second year. Students are also admitted to the practice of the Jessop Hospital for Diseases of Women, to the Borough Fever Hospitals, and the South Yorkshire Asylum. Mr. C. F. Myers Ward has been appointed Professor of Physiology in place of Dr. Arthur Hall, Mr. R. Favell Professor of Midwifery and Diseases of Women in place of Dr. Keeling, Dr. Arthur Hall Demonstrator of Practical Pathology in place of Dr. Somerville; Dr. Sinclair White has been appointed Honorary Surgeon to the Royal Infirmary in place of the late Mr. G. H. Shaw; Dr. Riseley has been appointed Ophthalmic Surgeon to the Royal Hospital.

JESSOP HOSPITAL FOR WOMEN, Gell-street, Sheffield.—The hospital is devoted to Diseases peculiar to Women. There is also an Obstetric Department for the admission of a small number of cases. A staff of midwives connected with the hospital attend lying-in women at their own homes, and, in case of need, are assisted by the members of the medical staff. Out-patients are attended daily. Students can attend the practice of the hospital and be supplied with cases of midwifery. Communications should be addressed to the Secretary, York Chambers, York-street, Sheffield.

DEVON AND EXETER HOSPITAL, Exeter.—Medical and Surgical Staff: Consulting Physician: Dr. Drake. Physicians: Drs. H. Davy and William Gordon. Consulting Surgeons: Messrs. A. J. Cumming, T. W. Caird, and James Bankart. Surgeons: Messrs. J. D. Harris, E. J. Domville, Charles E. Bell, and A. C. Roper. House Surgeon: Mr. P. H. Stirk. Assistant House Surgeon: Mr. W. Ashford. The hospital contains 218 beds (including special children's wards), and has a good library, museum, dissecting room and post-mortem room. Attendance on the practice of this

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hospital qualifies for all the examining boards. Arrangements can be made by which students can attend Midwifery. There is also a Nurses' Home attached to the Hospital. For further particulars as to fees, &c. apply to the Matron. A new wing has lately been added.

WEST OF ENGLAND EYE INFIRMARY, Exeter.—Physician: Dr. William Gordon. Surgical Staff: Messrs. Bankart and Tosswill. Assistant Surgeon and Registrar: Mr. Roper. Secretary: Ernest W. Toby. The infirmary contains fifty beds. Students of the Exeter Hospital can attend the practice of the Eye Infirmary. Patients for the year ending Michaelmas, 1897, 2432. Total number of patients since the opening of the Infirmary in 1808, 92,791. Days of admission: Mondays, Tuesdays, and Fridays, at 11 A.M.

KENT AND CANTERBURY GENERAL HOSPITAL.—Opened for the reception of patients April 26th, 1793. 57,245 in-patients and 101,510 out-patients have been admitted since the hospital was opened. The hospital contains 106 beds. Pupils of the staff are admitted to the practice of the hospital, and have the use of the library of the East Kent and Canterbury Medical Society for £7 7*s*. Operation day, Thursday, 11 A.M. Physician: Dr. Henry Alex. Gogarty. Consulting Surgeon: Mr. James Reid. Surgeons: Messrs. Frank Wacher, T. Whitehead Reid, J. Greasley, and Sydney Wacher. Dentist: Mr. R. S. N. Faro. House Surgeon: Mr. E. C. Frend. Assistant House Surgeon: Mr. H. C. Manning. Secretary: Mr. Arthur J. Lancaster. Over 700 in-patients, 2000 out-patients and casualties, and 357 dental cases are attended in a year.

LIVERPOOL NORTHERN HOSPITAL (160 beds).[2]—There is a special ward for the treatment of children. Clinical instruction is regularly given by the physicians and surgeons during the summer and winter sessions. Clinical clerkships and dresserships are open to all students without additional fee. Consulting Surgeons: Mr. W. H. Manifold and Dr. W. Macfie Campbell. Physicians: Dr. E. H. Dickinson, M.A.; Dr. Bushby. Surgeons: Messrs. Chauncy Puzey, Damer Harrisson, and A. H. Wilson. Fees for hospital attendance: Perpetual, £26 5*s*.; one year, £10 10*s*.; six months, £7 7*s*.; three months, £4 4*s*.; Practical Pharmacy, £2 2*s*. Students can enter to the medical or the surgical practice separately on payment of half the above fees. The foundation-stone of a new hospital of not less than 200 beds has been laid during the past year, in which there will be every facility for clinical teaching and accommodation for resident pupils.

LIVERPOOL ROYAL SOUTHERN HOSPITAL (CLINICAL SCHOOLS).—Honorary Consulting Surgeons: Mr. Robert Hamilton and Dr. Henry G. Rawdon. Honorary Physicians: Drs. John Cameron, Wm. Carter, and Wm. Williams. Honorary Surgeons: Dr. Wm. Alexander, Mr. Robert Jones, and Dr. Geo. P. Newbolt. Consulting Pathologist: Professor R. W. Boyce. Lecturer on Practical Medicine: Dr. C. J. Macalister. Pathologist: Dr. F. H. Barendt. Medical Tutor and Bacteriologist: Dr. H. R. Jones. Demonstrator of Chemistry: Mr. Herbert E. Davies. Honorary Ophthalmic Surgeon: Mr. R. Williams. Honorary Aural Surgeon: Mr. C. G. Lee. Honorary Laryngologist: Dr. W. Permewan. Honorary Photographer (the x Rays Photography): Dr. C. Thurstan Holland. Honorary Dental Surgeon: Mr. J. Royston. House Surgeon: Mr. C. E. Morris. Junior House Surgeons: Dr. John Owen and Dr. M. A. Archdall. The hospital is situated within convenient distance of the School of Medicine and contains 200 beds. There are special wards for accidents and Diseases of Children, and there are also beds appropriated to the Diseases of Women. Clinical teaching is given in the hospital, and arrangements have been made to render it both thorough and systematic. The members of the staff visit the wards daily, and clinical lectures are given every week. Tutorial classes are also held each day at which the junior students are instructed in the methods of diagnosis and the seniors are prepared for their final examinations. The pathological department has a good laboratory attached in which the students receive practical instruction. Recently a bacteriological laboratory has been added, where students are able to obtain a practical knowledge of bacteriology in relation to medicine. In connexion with the hospital a course of instruction for gentlemen desirous of obtaining a Diploma in Public Health is given, and with this object a chemical laboratory under Mr. Herbert Davies, M.A. Camb., B.Sc. Lond., has been opened. In addition to the usual clinical and post-mortem clerkships, which are open to all students, the resident post of Ambulance Officer is awarded every three months to the student whom the board may consider most suited to hold it. A Scholarship of £20 is competed for annually, which has attached to it some clinical and pathological duties; and three prizes of £5 each are yearly offered for the best series of clinical reports. Fees: Perpetual £26 5*s*.; one year £10 10*s*.; six months £7 7*s*.; three months £4 4*s*. A limited number of resident pupils can be received. Terms (exclusive of fees for Hospital Practice), £15 15*s*. per quarter. The practice of the hospital is recognised by all examining bodies. For further particulars apply to the Dean, Mr. Robert Jones, 11, Nelson-street, Liverpool.

[2] No returns.

ROYAL INFIRMARY, Liverpool.—The buildings of the new Royal Infirmary were completed and occupied in 1890. They stand on the old site, adjacent to the college, but enlarged by the purchase of a fine frontage in Pembroke-place and of the street known as Pembroke-gardens. Externally, they form a handsome and imposing group of buildings, the general arrangement of which may be gathered from the plan at the beginning of the prospectus. Every available open-air space has been taken advantage of to secure good airing grounds for the patients, and the beauty of the buildings has been not a little enhanced by the numerous balconies, colonnades, and flat roofs adapted to the same purpose for both patients and resident staff. Internally, no point in modern sanitary science has been omitted. There are 295 beds exclusive of the Lock Hospital. The wards—some parallelograms, some circular—have floors of waxed oak blocks laid on an iron and cement substratum. Three operating theatres and a clinical lecture theatre have been provided. There is an electrical room, and provision for special kinds of baths. The out-patient department comprises rooms for the treatment and study of minor medical and surgical maladies, for diseases of the eye, skin, larynx, nose, and teeth, as well as a gynæcological department. There is also a Lock Hospital. A room has been allotted to the clinical tutors, in which they may keep their records, whilst each surgeon and physician has a private room in connexion with his wards, where his dressers and clerks may write up and tabulate cases and investigate morbid products. The pathological department, which is daily becoming of more importance in medical education, has had much pains expended upon it, so as to give proper facilities for the study of morbid anatomy. It is hoped that the facilities for clinical work will be such as not merely to enable the present students to learn the practical parts of their profession thoroughly, but to attract students from over-crowded institutions where the number of pupils is far in excess of the opportunities for the bedside study of disease. In no hospital in the country are the resident physicians and surgeons so comfortably lodged. Each is provided with a bedroom and a private sitting-room in addition to the music-room and dining-room, where all the seven residents meet in common; a Students' Club Room is also set aside for their exclusive use. James Barr, M.D., Secretary of Medical Board, 72, Rodney-street, Liverpool.

NORFOLK AND NORWICH HOSPITAL (220 beds).—Fees: £10 10*s*. for six months', £15 15*s*. for twelve months' medical and surgical practice. Pupils: non-resident. Consulting Physicians: Sir P. Eade, M.D., and Sir Frederic Bateman, M.D. Consulting Surgeons: Mr. W. Cadge, F.R.C.S., and Dr. Beverley. Physicians: Dr. Barton, Dr. Burton-Fanning, and Dr. Long. Surgeons: Mr. Williams, Mr. H. S. Robinson, and Mr. S. H. Burton. Assistant Surgeons: Mr. D. D. Day and Mr. H. A. Ballance. Dental Surgeon: Mr. R. Wentworth White. House Surgeon: Mr. H. Wyllys. House Physician: Mr. F. W. Borris. Secretary: Mr. Poole Gabbett.

NORTHAMPTON GENERAL INFIRMARY (established 1743; rebuilt 1793).—The number of beds is 160. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in Anatomy and Materia Medica and Practical Pharmacy. Non-resident pupils are taken at a fee of £10 10*s*.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for over 200 patients, including Children's wards, special Ovarian wards, and a special department for the treatment of Diseases of the Eye. In-patients last year, 1912; out-patients, 10,069. The attendance of pupils at this infirmary is duly recognised by all the examining boards; and there are unusual facilities

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for acquiring a practical knowledge of the profession. Physician: Dr. A. M. McAldowie and Dr. S. King Alcock. Surgeons: Mr. W. D. Spanton and Dr. G. Stokes Hatton. Assistant Physicians: Mr. Hubert Nicholls and Mr. T. Treffry Cockill. Assistant Surgeons: Dr. Wheelton Hind and Reginald Alcock. Ophthalmic Surgeon: Mr. Herbert H. Folker. Assistant Ophthalmic Surgeon: Mr. J. F. Arlidge. Dental Surgeon: Mr. A. Baines. House Surgeon: Dr. W. C. Allardice. House Physician: Mr. W. E. L. Horner. Secretary: Mr. Ralph Hordley.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL (founded 1845; beds, 230).—A preparatory school of Medicine and Surgery. The pupils have the advantage of seeing the whole of the practice of the physicians and surgeons, and are trained in clinical work by the medical and surgical staff. The attendance of pupils at this hospital is recognised by all the examining boards.

SUSSEX COUNTY HOSPITAL (190 beds).—During the year 1897 1624 in-patients have been treated. The total number of out-patient attendances on the books during 1897 was 33,309. This hospital affords ample facilities for students, possessing a large out-patient department, a library, and a well-appointed museum. The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years on payment in advance of such a fee, not exceeding 20 guineas, as the Committee of Management shall direct.

MANCHESTER GENERAL HOSPITAL FOR SICK CHILDREN, Pendlebury and Gartside-street.—The hospital contains 140 beds. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. Out-patients are seen daily at 9 A.M. at the Dispensary, Gartside-street, Manchester. Physicians: Drs. Ashby and Hutton. Surgeon: Mr. G. A. Wright. Assistant Surgeon: Mr. Joseph Collier. Resident Medical Officers: L. W. Crowe, M.D., and J. C. Muir, M.B. Medical Officer at the Dispensary: C. G. Ashe, M.B. During 1897 there were 1275 in-patients, and 11,606 out-patients were under treatment at the Dispensary.

THE MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Cheetham-hill-road, Manchester.—The hospital is situated near the centre of the town and contains 70 beds. Out-patients are seen daily at 9.30 A.M. and the wards are visited at 11 A.M. Secretary, Mr. H. Teague, 38, Barton Arcade, Manchester.

SCOTLAND.

MEDICAL SCHOOLS WITH FULL CURRICULUM.[1]

EDINBURGH.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh.—The number of students varies much in the classes and subjects. It is within the limit to say that about 1300 students avail themselves each year of the opportunity of attending the school. The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of Edinburgh, London, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards.

In accordance with the statutes of the University of Edinburgh, one-half of the qualifying classes required for graduation may be attended in this school, in addition to the class of Practical Materia Medica and the classes of Clinical Medicine and Clinical Surgery. The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University. The whole education required for graduation at the University of London may be taken in this school.

The following Order of Study is recommended as a guide to the student for a five years' course, though not enjoined:—First Year: Biology, Physics, Anatomy, Practical Anatomy, Chemistry, and Practical or Analytical Chemistry. Second Year: Anatomy, Practical Anatomy, Physiology, Practical Physiology, Surgery, and Materia Medica—the last either in this or the Third Year—and Hospital. Third Year: Practice of Medicine, Clinical Surgery, Practical Pharmacy, Clinical Medicine, Pathology, and Hospital. Fourth Year: Surgery or Clinical Surgery, Midwifery and Diseases of Women and Children, Practice of Medicine or Clinical Medicine, Medical Jurisprudence, Practical Midwifery, Operative Surgery, and Hospital. Fifth Year: Classes on Special Subjects, Hospital, and Dispensary Practice.

The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open to those members of their clinical class who have clerked in their wards for at least six months. Six Residentships are appointed during the year for a period of six months each. Resident Surgeons are also appointed by the Ordinary Surgeons to the Hospital. In all respects the students are taught under regulations similar to those at the University of Edinburgh and the other Universities of Scotland, and they receive similar certificates at the close of each session. Moreover, the University and College authorities in Edinburgh and the governing board of the school call upon each recognised lecturer to supply them at the close of each session with a statement giving the number of students attending the class, the number of lectures or prelections delivered during the session, the class examinations held, and the general mode of conducting the class. The courses on special non-qualifying subjects have for the last quarter of a century formed a marked feature of the school. Indeed, such medical subjects could be studied in Edinburgh only in this school until lately, when the University of Edinburgh appointed from the school lecturers on Diseases of the Eye, Insanity, and Diseases of Children to take charge of classes intra-murally. A list of the classes and lecturers will be found below. Special courses of instruction for dental students and for women are also included in the curriculum of this school. The classes of the school are conducted in several separate buildings, such as at Surgeons' Hall, Minto House, Nicolson-square, New School and Surgeon-square.

Lecturers and fees.—Winter Session: Anatomy, Practical Anatomy, and Demonstrations, Drs. Ryland Whitaker and R. J. A. Berry (£3 5*s.* and £4 4*s.*); Chemistry (Practical, &c.), Dr. S. Macadam, Mr. King, Mr. I. Macadam, and Drs. Aitken and Readman*; Physiology (Institutes of Medicine), Dr. Noël Paton (£3 5*s.*); General Pathology, &c., Drs. Bruce, Russell, and Leith (£3 5*s.*); Botany, Mr. A. N. McAlpine;† Practice of Physic, Drs. James, Affleck, Bramwell, Gibson, Philip, Graham Brown, R. A. Fleming, and G. Lovell Gulland (£3 5*s.*); Surgery, Messrs. Caird, Hodsdon, Shaw Maclaren, Thomson, and Wallace (£3 5*s.*); Materia Medica, &c., Drs. Craig,† and Lockhart Gillespie (£3 5*s.*); Midwifery, &c., Drs. Hart, Murray, and Haultain (£3 5*s.*); Medical Jurisprudence, &c., Dr. Littlejohn and Dr. Aitchison Robertson (£3 5*s.*); Natural History, Mr. J. Arthur Thomson† (£3 5*s.*); Natural Philosophy, Dr. Turner (£3 5*s.*); Hospital Practice (Edinburgh Royal Infirmary): Physicians, Drs. Affleck, Smart, James, and Croom; Surgeons, Messrs. Duncan and Miller, Drs. Maclaren and MacGillivray (perpetual ticket, £12 12*s.*); Clinical Medicine, Drs. Affleck, Smart, James, Byrom Bramwell, and Croom (Diseases of Women) (£3 5*s*); Clinical Surgery, Dr. Maclaren, Dr. Macgillivray, Mr Cotterill, and Mr. Cathcart (£3 5*s.*); Diseases of Children, the staff of the Sick Children's Hospital (£2 2*s.*); Diseases of the Skin, Drs. Jamieson† and Stirling† (£2 2*s.*); Diseases of the Chest, Dr. Philip† (£2 2*s.*); Vaccination, Drs. Husband,† Buist,† and Cadell (£1 1*s.*); Diseases of Ear, Nose, and Throat, Drs. Kirk and Duncanson,† (£2 2*s.*); Diseases of the Eye, Dr. G. Mackay,† and Dr. Sym† (£2 2*s.*); Gynæcology, Drs. Croom (Systematic), Brewis (Clinical), and Berry Hart (Advanced) (£2 2*s.*); Summer Session: Practical Anatomy and Demonstrations, Drs. Ryland Whitaker and R. J. A. Berry (£2 2*s.*); Practical Physiology, Dr. Paton (£3 3*s.*); Biology, Messrs. Thomson and Turnbull‡ (£3 3*s.*); Botany, Messrs. McAlpine and Turnbull; Practical Chemistry and Analytical Chemistry, Dr. S. Macadam, Messrs. King, I. Macadam, Drs. Aitken and Readman§; Diseases of the Eye, Dr. Mackay‡ (£2 2*s.*); Diseases of the Skin, Drs. Allan Jamieson and Stirling (£2 2*s.*); Medical Psychology and Insanity, Dr. Macpherson (£2 2*s.*); Medical Jurisprudence, Drs. Littlejohn and Aitchison Robertson; Gynæcology, Drs. Brewis and Haultain (£2 2*s.*); Midwifery, Drs. Croom, Hart, Barbour, and Ferguson (£3 5*s.*); Operative Surgery, Messrs. Caird, Hodsdon, Shaw, McLaren, Alexis Thomson, and David Wallace (£3 3*s.*); Practical Pathology, Drs. Bruce, Russell, and Leith (£3 3*s.*); Physics, Dr. Turner‡ (£3 3*s.*); Practical Medicine and Physical Diagnosis, Drs. James, Gibson, Philip, Fleming, and Lovell Galland (£3 3*s.*); Practice

[1] For Scholarships se p. 646, et seq.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE MEDICAL SCHOOLS OF SCOTLAND FOR THE SESSION 1898-99.

LECTURES, &c.	ABERDEEN UNIV. PROFESSORS AND LECTURERS.	ABERDEEN UNIV. FEES. One Course.	ST. ANDREWS UNIV. PROFESSORS AND LECTURERS.	ST. ANDREWS UNIV. FEES. One Course.	EDINBURGH UNIV. PROFESSORS AND LECTURERS.	EDINBURGH UNIV. FEES. —	GLASGOW UNIV. PROFESSORS AND LECTURERS.	GLASGOW UNIV. FEES. One Course.	ST. MUNGO'S COLL. & SCHOOL of MEDICINE LECTURERS.	ST. MUNGO'S COLL. & SCHOOL of MEDICINE FEES. One Course.	GLASG., ANDERSON'S COLL. MED. SCHOOL. LECTURERS.	GLASG., ANDERSON'S COLL. MED. SCHOOL. FEES. One Course.	GLASGOW WESTERN MEDICAL SCHOOL. LECTURERS.	GLASGOW WESTERN MEDICAL SCHOOL. FEES. One Course.
WINTER SESSION.		£ s.		£ s.		£ s.		£ s.		£ s.		£ s.		£ s.
ANATOMY	Prof. R. W. Reid	3 3	Dr. Musgrove¶ / Prof. Mackay‖	3 3 / 3 3	Prof. Sir W. Turner	4 4	Prof. Cleland	3 3	Mr. Kent	4 4	Dr. A. M. Buchanan	4 4§	Mr. Edington	2 2
PRAC. ANAT. & DEMONS.	Prof. Reid	3 3	Dr. Musgrove¶	3 3	...	...	...	3 3	Mr. Kent	...	...	...	Mr. Edington	...
CHEMISTRY	Prof. Japp	3 3	Prof. Purdie¶ / Prof. Walker‖	3 3 / 3 3	Prof. Crum Brown (Adv. Class in Sum.)	4 4	Prof. Ferguson [*Chemical Lab.*: ...	3 3 / 10 10	Dr. Marshall [*Throat and Nose*: Dr. Fullerton]	2 2	Mr. J. R. Watson [*Physics*: Mr. Peter Bennett]	2 2 / 2 2	Mr. H. V. Craster	...
PHYSIOLOGY (INST. OF MED.)	Prof. MacWilliam	3 3	Prof. Pettigrew,¶	3 3	Prof. Rutherford	4 4	Prof. McKendrick	3 3	Dr. Barlow	2 2	Dr. Ernest Thomson (In Infirmary)	2 2	Dr. Ernest Thomson	...
GENERAL PATHOLOGY, &c.	Prof. Hamilton (*Syst. & Pract.*)	3 3	Miss Umpherston,¶ Prof. Reid‖	3 3 / 3 3	Prof. Greenfield	4 4	Prof. Coats	3 3	Dr. C. Workman	4 4	...	...	...	...
MEDICINE	Prof. D. W. Finlay	3 3	Prof. Stalker‖	...	Prof. Sir T. Grainger Stewart	4 4	Si. W. T. Gairdner	3 3	Dr. Robertson	2 2	Dr. Gemmell [*Zoology*: Dr. Todd]	2 2 / 1 11 6	...	...
SURGERY	Prof. Alex. Ogston [*Bacteriology*: Prof. Hamilton]‡	3 3 / 3 3	Prof. MacEwan (*systematic*)	2 2	Prof. Chiene [*Public Health*: Prof. Hunter Stewart]	4 4	Prof. Macewen [*Physics*: Dr. Maclean]‡	3 3 / 3 3	Mr. Clark - [*Histology*: Dr. Barlow	2 2 / 3 3	Dr. Dalziel	2 2	Mr. R. H. Parry	2 2
MATERIA MEDICA, &c.	Prof. Cash	3 3	Dr. de Wyttt	3 3	Prof. T. R. Fraser	4 4	Prof. Stockman	3 3	Dr. Dougall	2 2	Dr. R. B. Ness	2 2	...	...
MIDWIFERY, &c.	Prof. Stephenson	3 3	...	...	Prof. Simpson (*Dis. Wom. & Child.*)	4 4	Prof. Cameron [*Pub. Health Lab.*: Prof.	3 3	Dr. Stirton [*Bacteriology*: Dr. McCrorie]	2 2	Dr. Jno. Edgar [*Dis. of Throat & Nose*: Dr Macintyre]	2 2 / Free	Dr. Marshall [*Ophthalmology*: Dr. Fergus.]	1 1
MED. JURISPRUDENCE, &c.	Prof. Hay (In Summer)	3 3	Dr. Templeman	...	Sir H. D. Littlejohn (in Summer only)	4 4	Glaister	12 12	Dr. Glaister‡	2 2	Dr. Galt‡	2 2	Dr. R. M. Buchanan (in Summer)	2 2
NATURAL HISTORY	Prof. Nicholson	3 3	Prof. McIntosh¶ / Prof. Thompson‖	3 3 / 3 3	Prof. Ewart	4 4	Prof. Young	3 3	Dr. M. Laurie	2 2	[*Public Health*: Dr. Joseph Carroll]	...	...	...
NATURAL PHILOSOPHY	Prof. Niven (*Physics*)	3 3	Prof. Butler¶ / Prof. Steggall‖	3 3 / 3 3	Dr. Knott	3 3	...	...	Mr. Blyth (and *Physics*)	2 4 6	[*Dis. of Eye*: Dr. Meighan]	Free	...	...
HOSPITAL PRACTICE:	ABERDEEN R. INF.				EDIN. ROYAL INF.		GLASG. ROY. INF. AND WEST INF.				GLASGOW ROY. OR WESTERN INF.			
PHYSICIANS	Drs. A. Fraser, Finlay, and Edmond (Daily)	One year, £3 10s. Perpetual, £6.	...	...	...	Perpet. ticket, £12.	The Physicians and Surgeons of the Infirmaries (and in Summer)	1st year, £10 10s.; 2nd year & perpetual, £10 10s.	The Physicians & Surgeons of the Glasgow Royal Infirmary	Perpetual, including Clin. Lectures, £21	The Medical and Surgical Staffs.	1st year, £10 10s.; 2nd, £10 10s.; afterwards, free; 6 months, £6 6s.; W.I., £7 7s.; 3 months, £4 4s.	The Physicians & Surgeons in the Western Infirmary.	...
SURGEONS	Drs. Ogston, Garden, & Booth Williamson (*dent.*) Daily		...	...	...		... [*Dis. of Ear*: Dr. T. Barr,* £1 1]		... [*Hygiene*: Dr. Galt]		...			
ASSISTANT SURGEONS	Drs. Riddell, Sinclair, and Marnoch		...	...	...		[*Dis of Throat &c.*: Dr. J. W. Downie,* £1 1]		[*Diseases of Skin*: Dr. Alex. Morton]‡		...			
CLINICAL MEDICINE	Drs. A. Fraser, Finlay, and Edmond	3 3	The Physicians of the Royal Infirm'ry, Dundee	...	Profs. Sir T. G. Stewart, Fraser, Greenfield, & Simpson (*Dis. Wom.*)	4 4	Pfs. M'Call Anderson & Gairdner (and in Summer)	...	Dr. McVail and Physicians of Royal Infirmary	...	The Physicians [*Dis. of Ear*: Dr. Erskine]	... / Free		
CLINICAL SURGERY	Drs. Ogston, Garden, & Booth	3 3	The Surgeons of the Royal Infirm'ry, Dundee	...	Prof. Annandale	4 4	Profs. Buchanan and Macewen (and in Summer)	...	Mr. Knox and the Surgs. of the Royal Infirmary	...	The Surgeons	...	...	...
SUMMER SESSION.														
PRAC. ANAT. & DEMONS.	Prof. Reid	3 3	Dr. Musgrove¶ / Prof. Mackay‖	2 2 / 2 2	Prof. Sir W. Turner	3 3	Prof. Cleland and Demonstrators	2 2	Mr. Kent	2 2	Dr A. M. Buchanan‡‡	2 2	Mr. G. H. Edington	2 2
BOTANY	Prof. Trail	3 3	Mr. Robertson¶ †† / Prof. Geddes‖**	3 3 / 3 3	Prof. B. Balfour* [*Physics*: Prof. Tait]	4 4 / 3 3	Prof. Bower	3 3	Dr. Swanson	3 3	Mr. Cormack§§	1 11 6	...	...
HISTOLOGY	Prof. MacWilliam [*& Prac. Phys.*]	3 3	Dr. Harris	2 2	...	...	Prof. McKendrick [*Phys. Lab.*]	3 3 / 5 5	...	2 2	Dr. Ernest Thomson [*Physics*: Mr. Peter Bennett]	2 2	Dr. Ernest Thomson	2 2
COMPARATIVE ANATOMY	...	...	Prof. Purdie¶	2 2	...	...	...	...	Dr. M. Laurie	2 2	...	...	...	...
PRACTICAL CHEMISTRY	Prof. Japp	3 3	Prof. Walker‖	2 2	Prof. Crum Brown	3 3	Prof. Ferguson	3 3	Dr. Marshall*	2 2	Mr. J. R. Watson	2 2	Mr. Craster	...
DISEASES OF THE EAR	Dr. McK. Booth	1 1	...	...	Dr. McBride (*or Nose or Larynx, &c.*)	...	...	...	Dr. J. Kerr Love	1 1	...	...	...	...
PRAC. PHARMACY	Prof. Cash	3 3	...	...	...	...	Prof. Stockman	3 3	...	...	Dr. Ness	2 2	...	...
DISEASES OF THE EYE	Dr. Usher	1 1	...	...	Dr. G. A. Berry	3 3	Dr. T. Reid	1 1	Dr. Ramsay**	2 2	Dr. Meighan	Free	Dr. Fergus.	1 1
DISEASES OF CHILDREN	Prof. Stephenson	1 1	Prof. McIntosh¶	3 3	Drs. Carmichael &	2 2	...	...	Dr. Adams	2 2	[*Public Health*:			
NATURAL HISTORY	Prof. Nicholson	3 3	Prof. Thompson‖	3 3	Pr Ewart*[Playfair*	4 4	Prof. Young (*Lab.*)	3 3	Dr. M. Laurie*	2 2	Dr. Joseph Carroll]	2 2	...	...
MED. PSYCHO. & INSANITY	Dr. Reid	1 1	...	...	Dr. Clouston †	2 2	Dr. Yellowlees	2 2	Dr. A. C. Clark	2 2	Dr. Carswell	1 1	...	1 1
GYNÆCOLOGY	...	...	...	...	Prof. Simpson	4 4	Prof. Cameron	2 2	Dr. Kelly*	1 1	Dr. John Edgar	2 2	Dr. Marshall*	...
MIDWIFERY, &c.	[*Prac. Mid*: Dr. Stephenson]	1 1	...	...	[*Prac. Mat. Medica, Anat., Phys., & Path.*]	3 3	[*Embryology*: Dr. Gemmill]	... / 2 2	Dr. Stirton	2 2	[*Zoology*: Dr. Todd]	1 11 6	...	...
OPERATIVE SURGERY	[*Prac. Hygiene*: Dr. Hay]	3 3	Prof. MacEwan‖	2 2	Prof. Chiene*	3 3	Prof. Macewen	2 2	Mr. Whitson	2 2	Dr. Dalziel	... / 2 2	Mr. Parry	2 2

* Also in Winter. † With Clinical Instruction at an Asylum, £3 3s. ‡ In Summer. § This fee includes Practical Anatomy. ‖ Dundee. ¶ St. Andrews. ** In Winter. †† There is a Winter Session in Botany at St. Andrews, conducted by Mr. Robertson: Theoretical Course, £3 3s.; Junior Practical Course, £2 2s.; Senior Practical Course, £3 3s. ‡‡ With Osteology. §§ There is a Winter Session in Botany in Anderson's College Medical School, Glasgow, £1 11s, 6d.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE MEDICAL SCHOOLS OF SCOTLAND FOR THE SESSION 1898-99—
(CONTINUED).

LECTURES, &c.	UNIVERSITY OF GLASGOW, QUEEN MARGARET COLLEGE.	
	LECTURERS.	FEES.
WINTER SESSION.		£ s. d.
ANATOMY	Dr. T. H. Bryce	3 3 0
PRACTICAL ANATOMY AND DEMONSTRATIONS	Dr. T. H. Bryce	3 3 0
CHEMISTRY	Mr. T. Gray	3 3 0
PRACTICAL CHEMISTRY	Mr. T. Gray	3 3 0
PHYSIOLOGY	Professor McKendrick	3 3 0
GENERAL PATHOLOGY	Dr. C. Workman	3 3 0
MEDICINE	...	3 3 0
SURGERY	Dr. J. H. Pringle	3 3 0
PHYSICS	Mr. Blyth	3 3 0
MATERIA MEDICA	Dr. W. MacLennan	3 3 0
MIDWIFERY	Professor Cameron, Dr. J. M. M. Kerr	3 3 0
HOSPITAL PRACTICE	Glasgow Royal Infirmary	1st year, £10 10s.
CLINICAL MEDICINE	Dr. J. Lindsay Steven, Dr. Dougall	2nd year, £10 10s.
CLINICAL SURGERY	Dr. Adams, Dr. Pringle	
SUMMER SESSION.		
PRACTICAL ANATOMY AND DEMONSTRATIONS*	Dr. T. H. Bryce	2 2 0
EMBRYOLOGY*	Dr. T. H. Bryce	2 2 0
BOTANY	Mr. W. H. Lang	3 3 0
PRACTICAL BOTANY	Mr. W. H. Lang	3 3 0
HISTOLOGY	Professor McKendrick	3 3 0
PRACTICAL PHARMACY	Dr. W. MacLennan	3 3 0
MEDICAL JURISPRUDENCE AND PUBLIC HEALTH	Professor Glaister and Dr. J. Knight	3 3 0
DISEASES OF THE EYE	Dr. Maitland Ramsay	2 2 0
DISEASES OF THE EAR	Dr. T. Barr	1 1 0
NATURAL HISTORY	Professor Young and Mr. Rankin	3 3 0
PRACTICAL ZOOLOGY	Professor Young and Mr. Rankin	3 3 0
MEDICAL PSYCHOLOGY AND INSANITY	Dr. Yellowlees	2 2 0
OPERATIVE SURGERY	Dr. Pringle	2 2 0
PRACTICAL PATHOLOGY	Dr. Workman	3 3 0

* Embryology and Practical Anatomy, if taken together, £3 3s.

of Medicine, Drs. Bramwell, Gibson, and Philip (£3 3s.); Medical Electricity, &c., Dr. Turner (£2 2s.); Diseases of the Circulation, Dr. Gibson (£2 2s.).

Special Classes for Women, Winter Session: Practical Anatomy and Demonstrations, Drs. Ryland Whitaker and Hardie (£4 4s.); Chemistry (Lectures and Practical), Mr. Ivison Macadam and Dr. Aitken (£3 5s. and £3 3s.); Practice of Physic, Drs. Philip and Graham Brown (£3 5s.); Surgery, Mr. Thomson and Mr. McLaren (£3 5s.); General Pathology, Dr. Russell (£3 5s.); Physiology (Institutes of Medicine), Dr. Noël Paton (£3 5s.); Practical Pathology, Dr. Bruce, &c. (£3 5s.); Materia Medica, &c., Dr. Craig (£3 5s.); Clinical Medicine, Dr. Bramwell, Royal Infirmary (£3 5s.); Clinical Surgery, Royal Infirmary (£3 5s.); Physics, Dr. Dawson Turner (£3 3s); Biology, Mr. Thomson and Mr. Turnbull (£3 3s.); Diseases of Children, the staff of the Sick Children's Hospital and Dr. Cumming (£2 2s.); Vaccination, Dr. Husband and Mr. Cadell £1 1s.); Practical Gynæcology, Dr. Brewis (£2 2s.). Summer Session: Practical Anatomy, Dr. Ryland Whitaker and Mr. Hardie (£2 2s.); Practical Chemistry, Mr. Ivison Macadam and Dr. Aitken (£3 3s); Materia Medica, &c., Dr. Craig (£3 3s.); Operative Surgery and Surgical Anatomy, Mr. Alexis Thomson and Mr. McLaren (£3 3s.); Materia Medica and Therapeutics, vacant (£3 3s.); Midwifery and Diseases of Women, Drs. Sophia Jex-Blake and R. Milne Murray (£3 5s.); Medical Jurisprudence and Public Health, Dr. Harvey Littlejohn (£3 5s.); Clinical Medicine and Clinical Surgery, Royal Infirmary (£3 5s.); Practical Physiology and Histology, Dr. Paton (£3 3s.); Practical Pathology, Dr. Russell (£3 3s.); Biology, Mr. Arthur Thomson and Mr. Turnbull (£3 3s.); Physics, Dr. Dawson Turner (£3 3s.); Diseases of Children, Mr. Bell, Dr. Burn-Murdoch, and Dr. Cumming (£2 2s.); Ophthalmology, Dr. Mackay (£2 2s.); Insanity, Dr. Macpherson (£2 2s.); Practical Gynæcology, Dr. Brewis (£2 2s.).

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £115, which is payable by instalments during the period of study.

Further particulars regarding the school, also its calendar, may be had on application to Mr. R. N. Ramsay, the Secretary, 24, Forrest-road, Edinburgh.

* Lectures, £3 5s.; Practical, £3 3s.; Analytical, £2 a month, or £5 for three months. † Also in Summer Session. ‡ Also in Winter Session. § Practical, £3 3s.; Analytical, £2 a month, or £5 for three months.

N.B.—Where two or more lecturers appear as teaching the same subjects their lectures are not conjoined, but each gives an independent course.

GLASGOW.

ANDERSON'S COLLEGE MEDICAL SCHOOL, Glasgow.—This medical school was founded in the year 1800. It has given twelve professors to the University of Glasgow, of whom two at present hold office. The following courses are given, which qualify for all the licensing boards and for the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions):—In winter: Anatomy, Professor A. M. Buchanan, M.A., M.D.; Chemistry, Professor J. Robertson Watson, M.A.; Physics, Professor Peter Bennett; Zoology, Professor Geo. Bell Todd, M.B.; Physiology, Professor W. Ernest Thomson, M.A., M.D.; Surgery, Professor T. Kennedy Dalziel, M.B.; Practice of Medicine, Professor Samson Gemmell, M.D.; Midwifery and Diseases of Children, Professor John Edgar, M.A., B.Sc., M.D.; Materia Medica, Professor R. Barclay Ness, M.A., M.B.; Botany, Professor B. G. Cormack, M.A., B.Sc.; Ophthalmic Medicine and Surgery, T. Spence Meighan, M.D.; Aural Surgery, James Erskine, M.A., M.B.; Diseases of Throat and Nose, John Macintyre, M.B.; Hygiene and Public Health, Joseph Carroll, M.B., D.P.H. In summer: Anatomy, Practical Anatomy and Osteology, Practical Chemistry, Physics, Zoology, Practical Materia Medica and Pharmacy, Practical Physiology, Operative Surgery, Botany, Ophthalmic Medicine and Surgery, also Medical Jurisprudence, Professor R. M. Buchanan, M.B., and Mental Diseases, Dr. Carswell; Hygiene and Public Health, and Aural Surgery. The Chemical Laboratory is open daily from 10 to 6. The Dissecting-room is open in winter from 9 A.M. to 6 P.M., and in summer from 6 A.M. to 6 P.M. The students are assisted in their dissections by the Professor and Demonstrators, by whom frequent examinations and demonstrations on the parts dissected are conducted. The supply of subjects for dissection is ample, and students are consequently provided with parts as soon as they may be ready for them. The Dissecting-room is provided with a complete series of dissected specimens, mounted in plaster of Paris, illustrating the anatomy of the human body. Candidates for the licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica. The courses special to Dentistry are conducted at the Glasgow Dental Hospital and School.

The new buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of it, and four minutes' walk of the University. Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Physiology, Practical Pharmacy, Public Health, and Operative Surgery. There are also provided a large library and reading-room and a students' recreation-room.

Fees.—For each of the above courses of Lectures (Anatomy, Chemistry, Botany, Zoology, Practical Physiology, Practical Pharmacy, and Mental Diseases excepted), first session, £2 2s.; second session, £1 1s. Anatomy Class Fees: Winter, first session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s. To those who have had the necessary courses of Practical Anatomy the fee will be £1 1s. Summer, Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone, £1 11s. 6d.; Practical Anatomy alone, £1 1s.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d. Chemistry Fees: First course, £2 2s.; second course, £2 2s. Practical Physiology Fees.—First course, £2 2s. Second course, £2 2s. Practical Materia Medica and Pharmacy Fees.—First course, £2 2s. Second course, £2 2s. Botany fee, £1 11s. 6d. Zoology, fee £1 11s. 6d.

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Mental Diseases, £1 1s. Matriculation Fees: Winter, 10s. to those taking out two or more classes; 5s. to those taking out only one class. The fee of 10s. represents a combined fee for the winter and summer sessions. Summer, 5s., except to those who have paid a fee of 10s. for the Winter Session. Students who have attended classes at other schools, and who desire to pursue their studies at Anderson's College Medical School, will be admitted to such classes as they may have attended elsewhere at the reduced fees.

Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £6 6s.; three months, £4 4s.; Pathology, both courses, £3 3s. Vaccination Fee, £1 1s.

Western Infirmary. — Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £7 7s.; three months, £4 4s. Pathology, first course, £3 3s.; second course, £2 2s. Practical Pathology, first course, £3 3s., second course, £2 2s. Vaccination Fee, £1 1s.

Eye Infirmary.—Fee: Hospital Practice and Clinical instruction, six months, £1 1s.

Certificates of attendance on the lectures at Anderson's College Medical School are received by the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions); by the Royal Colleges of Physicians of London and Edinburgh; by the Royal Colleges of Surgeons, England, Edinburgh, and Ireland; by the Royal College of Physicians of Ireland; by the Faculty of Physicians and Surgeons of Glasgow; by the Society of Apothecaries, London; and by the Army, Navy, and East India Boards. Communications relating to the Medical School to be addressed to The Secretary of the Medical Faculty, Anderson's College Medical School, Dumbarton-road, Partick, Glasgow. Communications relating to the Preliminary Examination in General Education to be addressed to Mr. Alexander Mackay, LL.D., Educational Institute Office, 40, Princes-street, Edinburgh. Communications relating to the Triple Qualification to be addressed to Mr. Alexander Duncan, LL.D., Faculty Hall, 242, St. Vincent-street, Glasgow. Communications relating to the Dental School to be addressed to Mr. D. M. Alexander, 97, West Regent-street, Glasgow.

The Kerr Bursary in Anatomy (value £10) is open to students of the Junior Anatomy Class during Winter Session 1898-99.

ST. MUNGO'S COLLEGE AND GLASGOW ROYAL INFIRMARY.—This College was incorporated in 1889. The Glasgow Royal Infirmary was founded in 1791. The Faculty of Medicine of the College occupies new buildings erected for the purposes of a medical school, adjoining and communicating with the Royal Infirmary. The Laboratories, Museums, and Lecture-rooms are equipped and adapted to modern scientific requirements. Recent additions consist of Public Health, Practical Zoology, and Bacteriological Laboratories. The Royal Infirmary, which is at the service of the College for the purpose of clinical and practical instruction, is one of the largest general and special hospitals in the kingdom. It has nearly 600 beds, and will almost immediately have considerably over 600. It has special wards for Diseases Peculiar to Women, for Venereal Diseases, Erysipelas, Burns, and Diseases of the Throat and Nose. At the Dispensary special advice and treatment are given in diseases of the Eye, Ear, Teeth, and Skin, Women, Throat and Nose, in addition to the large and varied number of ordinary medical and surgical cases—over 46,000 per annum—which in a great industrial centre daily require attention. Students of the College and Hospital get the benefit of dispensary experience free of charge. All appointments are open. There are five Physicians' and seven Surgeons' Assistants, who board in the hospital free of charge and act in the capacity of House Physicians and House Surgeons. These appointments are made for six months, and are open to gentlemen who have a legal qualification in Medicine or Surgery, and preference is given to the students of this College and Hospital. Clerks and Dressers are appointed by the Physicians and Surgeons. From the large number of cases of acute disease and accidents of varied character received into this hospital these appointments are very valuable. In the Pathological Department assistants are also appointed. The session will open with an address on Wednesday, Oct. 20th, at the College buildings.

Ophthalmic Department.—The Ophthalmic Institution in West Regent-street having been amalgamated with the Royal Infirmary the usefulness of this department is very much increased, and greater opportunities are afforded to students for the practical study of Diseases of the Eye. Dr. Ramsay, the ophthalmic surgeon, attends the Royal Infirmary every Monday, Wednesday, and Friday at 12 noon, and daily at the Institution in West Regent-street from 1 to 2 o'clock. Students can attend both without payment of any additional fee. Lectures are delivered twice a week during the winter session. Fee for the course, £2 2s.

The fee for each class is £2 2s., except for Anatomy, which is £4 4s., Pathology £4 4s., Zoology £4 4s., Botany £3 3s., Practical Physiology, £3 3s., and for Physics, which is £2 4s. 6d., and certain extra classes, for which the fee is £1 1s. The hospital fee (including clinical lectures) is £21 for a perpetual ticket. The classes in St. Mungo's College and in the Glasgow Royal Infirmary are for male students exclusively. Further particulars can be obtained in the Calendar of the College (price 1s.), or syllabus which can be obtained free on application to the Dean, 86, Castle-street, Glasgow. Remittance should accompany application.

GLASGOW WESTERN MEDICAL SCHOOL.—This School is situated in University-avenue, close to the University and Western Infirmary, in which latter students obtain their Hospital Practice and Clinical Lectures. Lectures and Demonstrations are given on Chemistry, on Anatomy, on Surgery, on Physiology, on Midwifery and Gynæcology, and on the Eye.

Class Fees.—For each course of Lectures the fee is £2 2s., or in some cases £1 1s. There is no matriculation fee.

QUEEN MARGARET COLLEGE, University of Glasgow.—Queen Margaret College was founded in 1883 by the Glasgow Association for the Higher Education of Women (instituted in 1877), and handsome buildings and grounds near the University were presented to the College in 1884 by Mrs. John Elder. In 1890 a School of Medicine for women was added to its Arts Faculty. In 1892, when the Universities Commissioners issued an ordinance empowering the Scottish University Courts to make provision for the instruction of women, the Council of the College and Mrs. Elder transferred to the University the College, its buildings, grounds, and endowments, on condition that these should be devoted to the maintenance of University classes for women only. The College then became the women's department of the University of Glasgow; its classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate. The curriculum, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library of reference in Queen Margaret College. The number of students enrolled in session 1897-8 was 267, of whom 86 were studying medicine, and the rest arts or science. The School of Medicine is a special feature of the College, and gives full preparation for the medical degrees of the University. In July, 1894, for the first time in the history of any Scottish university, women students graduated in medicine at the "capping" in Glasgow University. Twenty-seven women have now taken the degree of M.B., C.M. or M.B., Ch.B. of the University of Glasgow. Excellent facilities for clinical work are given in the Royal Infirmary and other hospitals. By a gift of £5000 lately granted for the purpose by the Bellahouston Trust the University Court was enabled to add to the College a large new building for the study of Anatomy and Physiology, which was opened in October, 1895. The Arthur Scholarship is open every third year to students of first year entered the October previously to the award; the George Grant Bursary has been held by a woman student, and there are other Bursaries open in Arts as well as in Medicine; and the Universities Commissioners have issued an ordinance making regulations for the admission of women to certain University bursaries, scholarships, and fellowships. A house of residence for the students of the College coming from a distance was opened by the Queen Margaret Hall Co., Limited, in October of 1894.

DUNDEE.

UNIVERSITY COLLEGE, Dundee (University of St. Andrews).—The classes of this College qualify for graduation in the University of St. Andrews and are recognised by the other Scotch Universities; they also qualify for the degrees of the

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University of London and the Royal University of Ireland and for the Licences of the Royal Colleges. Equipment has in the past been provided for the first three years of the medical curriculum, but arrangements are at present being made for the inauguration of the complete course in October, 1898. The Royal Infirmary of Dundee contains about 300 beds, and the clinical instruction and hospital attendance in its wards are recognised by the various degree-giving and licensing bodies. In all the special departments of study facilities are offered to senior students.

Scholarships:—First year: (*a*) Three Armitstead Scholarships of £20 each, tenable for one year. (These Scholarships were founded and endowed in 1883 by George Armitstead, Esq., M.P.) (*b*) Three Scholarships of £15 each, tenable for one year. Second year: Three Armitstead Scholarships of £20 each, tenable for one year, to be awarded to day students entering upon their second year. Candidates must have attended not less than two regular courses at the College during the year immediately preceding the competition. (*c*) Bute Bursary, founded in 1893 by the Most Honourable the Marquess of Bute, K.T.; this bursary consists of the free proceeds of £1000. (*d*) Two bursaries of the annual value of £25, and tenable for three years, either "at University College, Dundee, or at any Scottish University."

Fees.—Chemistry, £3 3*s*.; Prof. James Walker, D.Sc. Practical Chemistry: Winter £3 3*s*., Summer £2 2*s*.; Prof. James Walker, D.Sc. Physics: Winter £3 3*s*., Prof. Kuenen, Ph.D., M.A. Zoology, £3 3*s*., Prof. D'Arcy W. Thompson, M.A. Botany, £3 3*s*., Prof. Geddes. Anatomy, £3 3*s*.; Prof. Yule Mackay, M.D. Practical Anatomy: Winter £3 3*s*., Summer £2 2*s*.; Prof. Yule Mackay, M.D. Physiology, £3 3*s*.; Prof. E. W. Reid, B.A., M.B. Practical Physiology and Histology, £2 2*s*.; Prof. E. W. Reid, B.A., M.B. Surgery. £3 3*s*.; Prof. D. MacEwan. Operative Surgery, £3 3*s*.; Prof. MacEwan. Practice of Medicine, £3 3*s*.; Prof. A. N. Stalker. Clinical Medicine, Prof. Stalker and Dr. Mackie Whyte. Clinical Surgery, Prof. MacEwan and Dr. Greig. Hospital fee, £2 2*s*.; Dispensary, £2 2*s*. Pathology, £3 3*s*. Materia Medica and Therapeutics, £3 3*s*. Midwifery. £3 3*s*. Medical Jurisprudence and Public Health, £3 3*s*.; Dr. Templeman. The Lectures and Classes for the winter session will commence on Wednesday, Oct. 5th.

ROYAL INFIRMARY.—The Infirmary contains 286 beds, including special wards for the Diseases of Children, Eye, and Lock cases. In addition, there were during last year 7798 out-patients and 6629 home patients. The Royal Infirmary offers exceptional facilities for practical work to students. Three qualified Resident Assistants and Clinical and Pathological Assistants are appointed as vacancies occur. Appointments: Three qualified Resident Medical Assistants are appointed every six months. Clinical Clerks and Dressers are attached to the Physicians and Surgeons, and students are appointed as assistants in the Pathological department. There is in connexion with the hospital course a class of Minor Surgery and Bandaging, conducted by the Assistant Surgeons, and a class of Practical Pharmacy and Materia Medica held at the Dispensary. Full information can be obtained from Dr. H. E. Fraser, Medical Superintendent.

ROYAL ASYLUM.—Lectures on Mental Diseases and clinical instruction in connexion with University College, Dundee (University of St. Andrew's), are given at the University and at the Royal Asylum. There are two paid qualified Resident Assistants and two unpaid Resident Clinical Assistants. Last Summer Session began April 19th, 1898. Prize-winners at lectures: (1) Miss Ann Mercer Watson; (2) Miss Laura Stewart Sandeman. Dr. Richardson, Medical Assistant, resigned; F. W. Gardiner, M.B., C.M., appointed in his place.

ABERDEEN.

ABERDEEN ROYAL LUNATIC ASYLUM.—Contains, with hospital attached to main institution and Agricultural Branch, about 820 beds. Medical Superintendent: Dr. William Reid. Assistant Physicians: Dr. W. R. Matthews and Dr. Moir. Joint Secretaries: Mr. W. Carnie and Charles M. Brown. Clinical instruction is given to students during three months in summer.

ABERDEEN ROYAL INFIRMARY.—Contains over 200 beds. Consulting Physicians: Drs. P. Blaikie Smith and James Rodger. Physicians: Drs. Angus Fraser, Professor Finlay, and George M. Edmond. Assistant Physicians: Drs. John Gordon, A. H. Lister, and Ashley W. Mackintosh. Consulting Surgeon: Dr. J. C. O. Will. Surgeons: Professor A. Ogston, Drs. R. J. Garden and J. McK. Booth. Assistant Surgeons: Drs. J. S. Riddell, W. Sinclair, and J. Marnoch. Ophthalmic Surgeon: Dr. C. H. Usher. Gynæcologist: Professor W. Stephenson. Pathologist: Professor David James Hamilton. Assistant Pathologist: Dr. G. Duncan. Dental Surgeon: Dr. W. H. Williamson. Anæsthetist: Dr. J. J. Y. Dalgarno. Assistant ditto: Dr. H. M. W. Gray. Medical Electrician: Dr. J. R. Levack. Clinical Registrar: Dr. W. R. Pirie. Medical Superintendent: Charles Angus, M.B. Joint Treasurers and Secretaries: Mr. W. Carnie and Mr. Charles M. Brown.

HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

ROYAL INFIRMARY, Edinburgh.—Beds are set apart for clinical instruction by the professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the ordinary physicians and surgeons. Special instruction is given in the medical department on Diseases of Women, Physical Diagnosis, and on Diseases of the Skin; and in the surgical department on Diseases of the Eye, the Ear, the Larynx, and the Teeth. Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, and the Skin, and also to cases of Incidental Delirium or Insanity. Three wards are specially set apart for Clinical Instruction to Women Students. Post-mortem examinations are conducted in the anatomical theatre by the pathologists, who also give practical instruction in Pathological Anatomy and Histology. The fees for hospital attendance are as follows—viz.: Perpetual ticket, in one payment, £12; annual ticket, £6 6*s*.; six months, £4 4*s*.; three months, £2 2*s*.; monthly, £1 1*s*. Separate payments amounting to £12 12*s*. entitle the student to a perpetual ticket. No fees are paid for any medical or surgical appointment. The appointments are as follows:—1. Resident physicians and surgeons are appointed, and live in the house free of charge. The appointment is for six months, but may be renewed at the end of that period by special recommendation. 2. Non-resident physicians and surgeons are appointed for six months. The appointment may be renewed for a like period by special recommendation. 3. Clerks and dressers are appointed by the physicians and surgeons. These appointments are open to all students and junior practitioners holding hospital tickets. 4. Assistants in the Pathological Department are appointed by the pathologists.

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh.—This hospital, which has been recently built, contains over 100 beds, and is fitted with every modern improvement. A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital. Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff. Students may enter at any time. A limited number of Clinical Clerkships are obtainable. Full particulars can be obtained from the Registrar at the hospital.

EDINBURGH EYE, EAR, AND THROAT INFIRMARY, 6, Cambridge-street, Lothian-road.—The Infirmary has been entirely re-arranged and greatly improved by recent structural alterations and the electric light introduced; also the electric power is used for illumination and cauterising purposes in all departments. Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for out-door patients for Eye Diseases; Mondays, Thursdays, and Saturdays at 12 noon for out-door Ear Patients; and Tuesdays and Fridays at 4 P.M. for out-door Throat Patients. Special Practical Ophthalmoscopic Classes by arrangement. Patients whose diseases require operations or more than ordinary care are accommodated in the house. Consulting Surgeon: Dr. Joseph Bell, F.R.C.S.E. Surgeons: Dr. J. J. Kirk Duncanson, F.R.C.P.E. and F.R.S.E.; Dr. G. Hunter Mackenzie; Dr. William George Sym, F.R.C.S.E.; Dr. Alexander Black, F.R.C.P.E.; and Dr. Malcolm Farquharson. Dental Surgeon: Mr. G. W. Watson, L.D.S. Treasurer and Secretary: Mr. J. P. Waton, W.S., 13, Hill-street.

GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR, 28, Elmbank-crescent.—The hospital, which contains twelve beds for in-door patients, is always open for

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urgent cases. Hours of surgeons' visits, 2 P.M. daily; clinical teaching daily. Out-patients are seen on Mondays, Tuesdays, Wednesdays, Thursdays, Fridays, and Saturdays, at 2 P.M., by Dr. Barr and assistants. Course of Lecutres and Clinical Instruction given during winter months by Dr. Barr.

GLASGOW WESTERN INFIRMARY.—This hospital adjoins the University of Glasgow. Number of beds upwards of 400. Special wards are set apart for Diseases of Women and for Affections of the Skin. In the out-patient department there are special cliniques for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. All the courses of clinical instruction are recognised by the University of Glasgow and the other boards in the kingdom. In the Pathological Department the course is both systematic and practical, also post-graduate courses, and extends through the winter and following summer; these are likewise recognised by the University for graduation. Ten resident assistants are appointed annually, without salary, from those who have completed their course. The fee for the hospital practice, including the various courses of clinical instruction, is 20 guineas in one payment, or in two equal instalments for the first and second year; for six months, 7 guineas; and for three months, 4 guineas.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow, situated at Garnet Hill.—This hospital was opened in December, 1882, and is now available to medical students for clinical instruction in the diseases peculiar to childhood. The hospital includes 80 beds for non-infectious cases only. A specially designed Dispensary, or Out-patient Department, was opened in October, 1888. Students may be enrolled at any time. Fee £1 1*s.* per annum, admitting to both Hospital and Dispensary. Particulars on applying to the House Surgeon, 45, Scott-street, Garnet-hill, Glasgow.

GLASGOW OPHTHALMIC INSTITUTION, 126, West Regent-street (30 beds).—Clinical and systematic course of lectures for students during the winter and summer sessions. In-patients, 476; out- or dispensary patients, 2634. Operations on Wednesdays and Saturdays. Consulting Surgeon: D. N. Knox, M.B., C.M., F.F.P.S.G. Acting Surgeon: A. Maitland Ramsay, M.D. Assistant Surgeon: John Rowan, M.B., C.M. Assistant Surgeon and Pathologist: H Walker, M.B., C.M. House Surgeons: H. W. Thomson, M.B., C.M.; Malcolm Watson, M.B., C.M. This institution has recently been amalgamated with the Glasgow Royal Infirmary, of which it forms an integral part.

GLASGOW EYE INFIRMARY, Berkeley-street and Charlotte-street.—This institution, the largest of its kind in Scotland, was founded in 1824. The Infirmary now consists of two large buildings—that in Berkeley-street being occupied as the Infirmary proper, and that in Charlotte-street (new buildings opened June, 1894) as a dispensary. The Infirmary is devoted exclusively to the treatment of Diseases of the Eye, and is intended primarily to provide treatment, and, when necessary, board and lodging, for those who are unable to do so for themselves. The average number of new patients for the last ten years has been 13,842, and the total number of cases treated in 1897 was 20,057. The Medical Staff is as follows:—Senior Surgeon: Thomas Reid, M.D. Surgeons: Thomas S. Meighan, M.D., and A. Freeland Fergus, M.D. William Robertson, M.D. Andrew Wilson, M.B., C.M., and James Hinshelwood, M.A., M.D. Pathologist: Leslie Buchanan, M.B., C.M. House Surgeon: H. Wright Thomson, M.B., C.M. Assistant House Surgeon: Arthur D. Ketchen, M.B., M.R.C.S. Clinical Assistants: A. Lewis M'Millan, M.B., C.M.; W. Ernest Thomson, M.A., M.D.; Henry L. G. Least, M.D.; W. Cochrane Murray, M.B., C.M.; Leslie Buchanan, M.B., C.M.; Brownlow Riddell, M.B.

Regulations as to Attendance of Students.—(1) Gentlemen may attend as students on payment to the treasurer of the following fees:—For six months £1 1*s.*, twelve months £2 2*s.* (2) All students when duly entered in the Infirmary Register may attend the clinical instruction of any or every member of the medical staff on production of their tickets. The days on which the surgeons respectively attend to receive patients may be ascertained at the Infirmary. Students have the privilege of being present in the Dispensaries at such hours as are arranged. They may enter the wards along with the surgeon whose clinique they are attending when he visits his patients. They may also be present at operations under the sanction of the surgeon operating, but no student may enter the wards or operating-room except under the aforesaid regulation. Students may be allowed the use of the journals and case-books for examination on applying to the House Surgeon. The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in ophthalmology for graduation in medicine. Secretary: William George Black, 88, West Regent-street.

IRISH SCHOOLS OF MEDICINE.[1]

QUEEN'S COLLEGE SCHOOL OF MEDICINE, Belfast.—Ten Junior Scholarships have been founded in the Faculty of Medicine of the annual value of £20 each. Two are tenable by matriculated students, of the first, second, third, fourth, and fifth years of their course respectively. The examinations for Scholarships take place at the commencement of the session. Class Prizes are awarded at examinations which take place at the close of the session. The Exhibitions, &c., of the Royal University of Ireland are also open to students. Lectures in Medicine at Queen's College, Belfast, will commence on Oct. 18th and end on March 31st. The Summer Session will begin on May 1st. Clinical instruction is given at the Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Maternity Hospital, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Hospital for Sick Children, and the District Lunatic Asylum are open to students. A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

QUEEN'S COLLEGE SCHOOL OF MEDICINE, Cork.—The building is provided with a very large, well-ventilated dissecting-room, with physiological, toxicological, and pathological laboratories, materia medica, anatomical and pathological museums, as well as a room for surgical and obstetrical instruments and appliances. There are well-appointed physical, chemical, and biological laboratories, and a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden. The plant houses are well filled with plants, and are open to the students in the class of Botany.

Fees.—For Practical Anatomy and for Practical Chemistry, £3 each course; for Anatomy and Physiology, £3 first course, and £2 for each subsequent course. Other medical classes, £2 first course, and £1 each subsequent course. Eight scholarships (value about £30 each), as well as several exhibitions and class prizes, are open to students in their first four years and the Blayney Scholarship and a Senior Exhibition to students in their fifth year.

HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS, Peter-street, Dublin.—Fee for nine months' hospital attendance, £12 12*s.*; six months, £8 8*s.* Summer, three months, £5 5*s.*

Staff.—Physicians: James Little, M.D., M.R.I.A.; Wallace Beatty, M.D., F.R.C.P.I.; H. T. Bewley, M.D., F.R.C.P.I. Surgeons: F. T. Heuston, M.D., F.R.C.S.I.; J. H. Scott, M.B., F.R.C.S.I.; T. E. Gordon, M.B., F.R.C.S.I. Obstetric Surgeon: W. J. Smyly, M.D., F.R.C.P.I. Ophthalmic Surgeon: H. R. Swanzy, M.B., F.R.C.S.I. Pathologist and Bacteriologist: J. Alfred Scott, M.D., F.R.C.S.I. Medical and Surgical Registrar: G. Peacocke, M.D., B.Ch. House Surgeon: T. Douglas Good, M.B., B.Ch.

A resident surgeon is elected yearly, and three resident pupils half-yearly. At the termination of the session prizes in Clinical Medicine and Surgery and in Obstetric Medicine will be awarded.

Hudson Scholarship.—In addition to the junior prizes, the Hudson Scholarship, £30 and a gold medal, as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in Clinical Medicine and Medical Pathology, Clinical Surgery and Surgical

[1] For Scholarships see page 648 et seq.

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TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE MEDICAL SCHOOLS OF IRELAND FOR THE SESSION 1898-99.

LECTURES &c.	DUBLIN UNIVERSITY.	DUBLIN R.C. OF SURGEONS.		DUBLIN, CATHOLIC UNIVERSITY.‖		BELFAST, QUEEN'S COLLEGE.		CORK, QUEEN'S COLLEGE.		GALWAY, QUEEN'S COLLEGE.	
	Lecturers.	Lecturers.	Fees.	Lecturers.	Fees.	Lecturers.	Fees. First Course.	Lecturers.	Fees. First Course.	Lecturers.	Fees. First Course.
HISTOLOGY & PHYSIOLOGY.	...	Prof. Scott	Course, £3 3s., in all Classes, ex. Descr. Anat. (£5 5s.), Oper. Surg. (£5 5s.), Pract. Chem. (£5 5s.), Pract. Histology (£5 5s.).	Dr. Coppinger & Dr. Coffey† Dr. Birmingham	£3 3s. each Course, except Dissections, Pract. Chem., Oper. Surg., Histology, and Pub. Health, which are £5 5s. each.	Dr. W. H. Thompson	£ s. 3 0	Dr. J. J. Charles.	£ s. 3 0	Dr. Pye	£ s. 3 0
ANATOMY, DESCRIPTIVE & SURGICAL	Dr. Cunningham	Prof. Fraser				Dr. J. Symington	2 0		...	Dr. Pye	2 0
PRACTICAL ANATOMY AND DISSECTIONS	Dr. Cunningham	Prof. Fraser		Dr. Birmingham,† assisted by Drs. Fagan & Dempsey		Dr. Symington & Demonstrators	3 0	Dr. Charles and Demonstrators.	3 0	Dr. Pye and Demonstrators	3 0
CHEMISTRY	Dr. Reynolds	Profs. Sir C. Cameron and Lapper		Dr. Campbell assisted by Dr. Frengley		Dr. Letts	2 0	Dr. Augustus E. Dixon	2 0	Dr. Senier	2 0
PRACTICAL CHEMISTRY ...	Dr. Reynolds					Dr. Letts†	3 0	Dr. Augustus E. Dixon	3 0	Dr. Senier	3 0
MATERIA MEDICA AND PHARMACY	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan *		Dr. W. Whitla	2 0	Dr. C. Y. Pearson	2 0	Dr. Colahan	2 0
BOTANY AND ZOOLOGY ...	Dr. Wright Prof. Mackintosh	Profs. Minchin and Cosgrove§		Dr. Sigerson † & Dr. Blaney		Dr. R. O. Cunningham‡	2 0	Professor Hartog	2 0	Dr. R. J. Anderson	2 0
INSTITUTES OF MEDICINE AND PATHOLOGY	Dr. Purser	Prof. A. H. White		Dr. McWeeney		...	...	...	... each	Dr. Lynham	2 0
NATURAL PHILOSOPHY ...	Prof. FitzGerald	...		Prof. Stewart†		Prof. W. B. Morton	2 0	Prof. William Bergin	2 0	Prof. Anderson	2 0
HOSPITAL PRACTICE	Sir P. Dun's or other Dublin Hospital.	The various Dublin Hospitals.		The various Dublin Hospitals.		Belfast Royal and other Hospitals.	...	North and South Infirmaries.	...	Galway Hospt'l, Galway Union Hospital, & Galway Fever Hospt'l	Sess. 5 0
CLINICAL LECTURES	...	...		...		...	...	...	...	Drs. Kinkead, Pye, Brereton, Colahan, and Lynham	...
SURGERY	Dr. E. H. Bennett	Profs. Sir W. Stokes and W. Stoker		Mr. P. J. Hayes & Mr. McArdle		Dr. Sinclair	2 0	Dr. S. O'Sullivan	2 0	Dr. W. Brereton	2 0
OPERATIVE SURGERY	...					Dr. Sinclair*	2 0	Dr. S. O'Sullivan	...	...	...
MIDWIFERY, &c....	Dr. A. V. Macan	Prof. S. R. Mason		Dr. A. J. Smith		Dr. J. W. Byers	2 0	Dr. Corby	2 0	Dr. Kinkead	2 0
MEDICINE	Dr. Finny	Prof. J. W. Moore		Sir C. J. Nixon		Dr. Cuming	2 0	Dr. W. E. Ashley Cummins	2 0	Dr. Lynham	2 0
MEDICAL JURISPRUDENCE	Dr. Bewley	Prof. Auchinleck		Dr. Roche		Dr. Hodges	2 0	Dr. C. Yelverton Pearson	...	Dr. Senier Dr. Kinkead	2 0
COMPARATIVE ANATOMY ...	Prof. Mackintosh	...		Drs. Sigerson & Blaney†		...	...	...	2 0	[*Modern Languages*: Prof. Steinberger]	...
PRACTICAL PHARMACY ...	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan		Dr. V. G. L. Fielden	2 0	Dr. C. Y. Pearson	...	...	2 0
LOGIC	The College Tutors	...		... [*Medical Registrar*: Dr. Birmingham] Prof. Stewart †		Prof. J. Park	2 0	Professor Stokes	1 0	Mr. Starkie	2 0
PHYSICS	...	Prof. Lapper				...	...	...	...	...	...
PATHOLOGY	Mr. O'Sullivan	...		Dr. McWeeney		Dr. J. Lorrain Smith	2 0	Dr. Cotter	2 0	Dr. Dargan	2 0
OPHTHALMOLOGY AND OTOLOGY	...	Profs. Jacob, Fitzgerald, and Story		Dr. Werner		Dr. W. A. McKeown	2 0	Dr. Sandford	...	...	...
HYGIENE	Dr. Bewley	Sir Charles Cameron		Dr. Roche		Dr. E. A. Letts and Dr. Henry Whitaker	2 0	Dr. Donovan	...	...	...

* In Summer. † In Winter and in Summer. ‡ Zoology in Winter; Botany in Summer. § Including Biology. No returns.

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Pathology, Pathological Histology, Surgical Appliances, including instruments and bandaging, Ophthalmology and Gynæcology.

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom. Further particulars may be obtained from Mr. F. T. Heuston.

COOMBE LYING-IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin.—This hospital contains nearly 70 beds, and consists of two divisions, one of which is devoted to lying-in cases, and the other to the treatment of the diseases peculiar to women. The maternity department is one of the largest in Ireland, 3000 cases being annually treated either as intern or extern patients. A regular course of lectures is delivered in the hospital, and clinical instruction is given daily at the bedside. There are two large dispensaries connected with the institution, at one of which instruction is given on the General Diseases of Women and Children, and in the other on the Diseases Peculiar to Women. There is accommodation for a limited number of intern pupils, who enjoy exceptional advantages of acquiring a practical knowledge of this branch of their profession. Two Resident Pupil Midwifery Assistants and one Clinical Clerk are elected half-yearly from among the pupils of the hospital. Certificates of attendance at this hospital are accepted by all licensing bodies, and the diploma is recognised by the Local Government Board as a full legal midwifery qualification. Fees (six months' course): extern pupils, 8 guineas, half payable in advance; intern pupils, 18 guineas for six months' residence. If pupils enter as interns by the month the fees are £4 4*s.* for first month, and £3 3*s.* for each succeeding month. Intern pupils enjoy very special advantages, which can be learned on application. Registration fee on entrance, 10*s.* 6*d.* Students can enter for attendance at any time. Further particulars may be had on application to the Master or the Registrar at the hospital.

SIR PATRICK DUN'S HOSPITAL.—Fees for attendance of students—nine months, £12 12*s.*; six months, £8 8*s.*; three months, £5 5*s.* The hospital is open to extern students as well as to the students of Trinity College, and the certificates are recognised by all the licensing bodies in the kingdom. Dr. Taylor, Secretary to the Medical Board, will give any further information.

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.—This hospital was founded in 1753, and now contains 160 beds available for clinical teaching. A new building for the isolated treatment of fevers has recently been added. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom. Medical and Surgical Resident Pupils and Clinical Clerks and Dressers are appointed every six months, and a House Surgeon is elected annually. A prospectus giving the complete arrangements for the Medical and Surgical classes for the coming session may be obtained from the Secretary of the Medical Board, R. Glasgow Patteson, F.R.C.S., 20, Lower Baggot-street, Dublin.

MATER MISERICORDIÆ HOSPITAL, Dublin. — Consulting Physician: Sir Francis R. Cruise. Physicians: Sir Christopher Nixon, Drs. Joseph Redmond, Michael Boyd, and John Murphy. Assistant Physician: Dr. Martin Dempsey. Medical Registrar: Dr. John O'Donnell. Surgeons: Messrs. Patrick Hayes, Charles Coppinger, Arthur Chance, and John Lentaigne. Assistant Surgeon: Mr. Hugh Blaney. Obstetric Physician: Dr. Thos. More Madden. Ophthalmic Surgeon: Mr. Louis Werner. Dental Surgeon: Mr. Daniel Corbett, jun. Pathologist: Dr. Edmond McWeeney. Anæsthetist and Surgical Registrar: Dr. Michael O'Sullivan. House Physician: Dr. Farnan. House Surgeons: Messrs. Coppinger, Blayney, Keller, and O'Regan. This hospital, the largest in Dublin, at present containing 335 beds, is open at all hours for the reception of accidents and urgent cases. Fifty beds are specially reserved for the reception of patients suffering from fever and other contagious diseases. Instruction at the bedside will be given by the Physicians and Surgeons at 9 A.M. daily. Clinical Instruction will commence on Monday, Oct. 3rd, at 9 A.M. A course of Clinical Instruction on Fever will be given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Opportunities are afforded for the study of Diseases of Women in the ward under the care of the Obstetric Physician, and at the Dispensary held on Tuesdays and Saturdays. Ophthalmic Surgery will be taught in the Special Wards and Dispensary. Surgical Operations will be performed on Mondays, Tuesdays, Fridays, and Saturdays at 11 o'clock. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, Accidents, &c. Instruction will be given on Pathology and Bacteriology. Junior Appointments: A House Physician and four House Surgeons will be appointed annually. Eight resident pupils will be elected from the most attentive of the class to hold office for six months. For the current session the elections will take place in the first week of November and in the first week of May. Dressers and Clinical Clerks will be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff. Leonard Prizes: One Gold and one Silver Medal will be offered for competition annually in the subject of Medicine, and one Gold and one Silver Medal in the subject of Surgery. Junior Leonard Prizes: One prize value £3 and one prize value £2 will be awarded in Medicine, and one prize value £3 and one prize value £2 will be awarded in Surgery. They will be awarded on the aggregate of marks gained for Reports of Cases and at a Clinical Examination to be held at the close of the summer session. For further particulars see prospectus. Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom. Private Wards have been opened for the reception of Medical and Surgical cases. A Training School and Home for Trained Nurses have been opened in connexion with the Hospital.

Terms of attendance.—Nine months, £12 12*s.*; six winter months, £8 8*s.*; three summer months, £5 5*s.* Entries can be made with any of the physicians or surgeons, or with the Registrar, Arthur Chance, F.R.C.S., 90, Merrion-square. A prospectus containing in detail the arrangements for Clinical Instruction, Prizes, &c., may be obtained from the Secretary, Dr. Joseph Redmond, 41, Merrion-square, E., Dublin.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, North Brunswick-street, Dublin.—These hospitals contain 312 beds—110 for Surgical cases, 82 for Medical cases, and 120 for Fever and other epidemic Diseases. A Resident Physician and a Resident Surgeon are appointed each year, and are paid for their services. Clinical Clerks: Five Resident Clinical Clerks are appointed each half-year, and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced Students as formerly, but also to those who are qualified in Medicine or Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. For prospectuses apply to Sir W. Thomson, F.R.C.S., Treasurer, 54, Stephen's-green East; or to J. O'Carroll, M.D., Hon. Sec., 43, Merrion-square, Dublin.

ROTUNDA HOSPITAL, Rutland-square, Dublin.—This institution consists of two distinct hospitals—namely, the Lying-in Hospital and the Auxiliary Hospital, the latter for the reception of patients suffering from Uterine and Ovarian Diseases. There is also a large extern maternity and a Dispensary for Diseases Peculiar to Women, which is open daily. Clinical instruction is given daily (Saturdays excepted) in Midwifery and the Diseases peculiar to Women, special attention being directed to the application of antiseptics in Midwifery. Accommodation is provided for a limited number of intern pupils.

DR. STEEVENS'S HOSPITAL.—This hospital, containing beds for 200 patients, is situated close to the Kingsbridge Terminus of the Great Southern and Western Railway, occupying a position in the centre of one of the busiest manufacturing districts of the city, otherwise unprovided with medical institutions, and affords exceptional advantages for clinical instruction. Immediately adjoining is St. Patrick's (Swift's) Asylum for the Insane. The hospital is easily accessible by two lines of tramways. There is a ward entirely devoted to Venereal Disease, a detached building for Fever Cases, and an extensive Out-patient Department, with separate Clinics for Diseases of the Skin, Throat, Eye, Ear, and Teeth.

The hospital is visited daily at 9 A.M. by the physicians and surgeons. The wards are also visited by the resident surgeon each evening. Clinical Lectures are given by the physicians and surgeons during the session. There is accommodation in the hospital for two medical and six surgical resident clinical assistants.

Fees.—Hospital Practice: Nine months, £12 12*s.*; six months, £8 8*s*; three months, £5 5*s.* Dressership: £10 10*s.* each three months. Further information may be obtained from the Resident Surgeon or from R. A. Hayes, M.D., Hon. Sec., 82, Merrion-square South.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY.

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
LONDON UNIVERSITY	No. 1.	£40 per annum.	2 years.	By first place with distinction in ANATOMY at July Intermediate M.B. Examination.	M.B. Examination within 3 years.
	No. 2.	£40 per annum.	2 years.	By first place with distinction in PHYSIOLOGY AND HISTOLOGY at July Intermediate M.B. Examination.	Ditto.
	No. 3.	£30 per annum.	2 years.	By first place with distinction in ORGANIC CHEMISTRY at July Intermediate M.B. Examination.	Ditto.
	No. 4.	£30 per annum.	2 years.	By first place with distinction in MATERIA MEDICA and PHARMACEUTICAL CHEMISTRY at July Intermediate M.B. Examination.	Ditto.
	University Scholarship in Medicine.	£50 per annum.	2 years.	By first place with distinction in MEDICINE at M.B. Honours Examination.	
	University Scholarship in Obstetric Medicine.	£30 per annum.	2 years.	By first place with distinction in OBSTETRIC MEDICINE at M.B. Honours Examination.	
	University Scholarship in Forensic Medicine.	£30 per annum.	2 years.	By first place with distinction in FORENSIC MEDICINE at M.B. Honours Examination.	
	University Scholarship in Surgery.	£50 per annum.	2 years.	By first place with distinction in B.S Honours Examination.	
ST. BARTHOLOMEW'S MEDICAL SCHOOL	Entrance Scholarships. No. 1.	£75.	...	Open Competitive Examination in PHYSICS and CHEMISTRY.	Full Course at St. Bartholomew's Hospital.
	,, No. 2.	£75.	...	Open Competitive Examination in BIOLOGY and PHYSIOLOGY.	Ditto.
	,, No. 3	£150.	...	Open Competitive Examination in PHYSICS, CHEMISTRY, and BIOLOGY.	Ditto.
	Preliminary Scientific Exhibition.	£50.	...	Open Competitive Examination in PHYSICS, CHEMISTRY, and BIOLOGY.	Ditto.
	Jeaffreson Exhibition.	£20.	...	Open Competitive Examination in LATIN, MATHEMATICS, and GREEK, FRENCH, or GERMAN.	None.
	Shuter Scholarship.	£50.	...	Competitive Examination among Cambridge Graduates in ANATOMY, PHYSIOLOGY, and MATERIA MEDICA.	None.
	Junior Scholarships.				
	,, No. 1.	£30.	...	Competitive Examination among Students in ANATOMY and BIOLOGY.	None.
	,, No. 2.	£20.	...	Ditto.	None.
	,, No. 3.	£25.	...	Competitive Examination in CHEMISTRY, PHYSICS, and HISTOLOGY.	None.
	,, No. 4.	£15.	...	Ditto.	None.
	Senior Scholarship.	£50.	....	Competitive Examination among Students in ANATOMY, PHYSIOLOGY, and CHEMISTRY.	Study at St. Bartholomew's Hospital.
	Kirkes Scholarship.	£30 and Medal.	....	Competitive Examination among Students in CLINICAL MEDICINE.	
	Brackenbury Scholarships.				
	,, No. 1.	£39.	...	Competitive Examination among Students in MEDICINE.	
	,, No. 2.	£39.	...	Competitive Examination among Students in SURGERY.	
	Lawrence Scholarship.	£42 and Medal.	....	Competitive Examination among Students in SURGERY, MEDICINE, and MIDWIFERY.	None.
	Sir Geo. Burrows Prize.	£10 10s.	...	Competitive Examination in PATHOLOGY among Students.	
	Skynner Prize.	£15.	...	Competitive Examination in REGIONAL and MORBID ANATOMY among Students.	
	Matthews Duncan Medal and Prize.	£20.	...	Competitive Examination among Students in MIDWIFERY and GYNÆCOLOGY.	None.
	Research Studentship in Pathology.	£100.	...	By Election, on the recommendation of the School Committee.	Research Work at St. Bartholomew's Hospital.
CHARING CROSS HOSPITAL AND COLLEGE	Entrance Scholarships, open to students at the commencement of curriculum.				
	Livingstone.	100 guineas.	...	The Livingstone and Huxley Scholarships are awarded annually at the commencement of each Winter Session, after a competitive examination in the following groups of subjects: — (1) ENGLISH, including LANGUAGE, HISTORY, and GEOGRAPHY; (2) Any two of the following four languages —LATIN, GREEK, FRENCH, and GERMAN; (3) MATHEMATICS,	Open to all general students.
	...	60 ,,	...		Open to all general students.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
CHARING-CROSS HOSPITAL AND COLLEGE—*continued.*	Huxley.	55 guineas.	....	including ARITHMETIC, ALGEBRA, and GEOMETRY; and MECHANICS, including STATICS and DYNAMICS; (4) INORGANIC CHEMISTRY and EXPERIMENTAL PHYSICS, including ACOUSTICS, HEAT, MAGNETISM, ELECTRICITY, and OPTICS; and (5) ANIMAL and VEGETABLE BIOLOGY. No candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left entirely to the Candidate.	For sons of medical men.
	...	40 ,,	....		Open to all general students.
	...	30 ,,	....		For dental students.
	Epsom Scholarship.	Free education.	....	....	Epsom Foundation Scholars who have passed Preliminary Scientific M.B. Lond. Univ.
	Universities Scholarship (1)	60 guineas.		Examination in ANATOMY and PHYSIOLOGY, including HISTOLOGY.	Oxford Students who have passed first M.B. Exam. Cambridge students who have passed second M.B. Exam. London students who have passed Intermediate Exam. in Med. who have not entered at any London Medical School.
	Universities Scholarship (2)	60 ,,			
	Llewellyn Scholarship.	£25.	....	Competitive Examination among Fourth-year Students in ANATOMY, PHYSIOLOGY, PHARMACOLOGY, MEDICINE, SURGERY, THERAPEUTICS, and MIDWIFERY.	None.
	Golding Scholarship.	£10.	....	Competitive Examination among Second-year General Students in ANATOMY and PHYSIOLOGY, CHEMISTRY, and BIOLOGY.	Students must have attended the Classes in each subject at this School.
ST. GEORGE' HOSPITAL ...	Entrance Scholarships. No. 1.	£150.	....	Competitive Examination among First-year Students, being the sons of medical men, in LATIN, GREEK, FRENCH, GERMAN, MATHEMATICS, PHYSICS, CHEMISTRY, and PHYSIOGRAPHY; three at option.	Previous entrance at St. George's School.
	,, No. 2.	£85.	....	Competitive Examination among Students being First M.B.'s of Oxford or Second M.B.'s of Cambridge, in ORGANIC CHEMISTRY, ANATOMY, PHYSIOLOGY, ZOOLOGY, and BOTANY; two at option.	Ditto.
	,, No. 3.	£85.	....	Ditto.	Ditto.
	,, No. 4.	£85.	....	Competitive Examination among Students of Provincial University Colleges of similar standing in the same subjects.	Ditto.
	,, No. 5.	£50.	....	Competitive Examination among Students in the same subjects as Entrance Scholarship No. 1.	To enter St. George's School.
	,, No. 6.	£50.	....	Ditto.	Ditto.
	Wm. Brown Exhibition.	£100 per annum.	2 years.	Competitive Examination among Perpetual Pupils having registrable qualification in the PRACTICE OF MEDICINE, MIDWIFERY, and SURGERY.	Study at St. George's School.
	,,	£40 per annum.	3 years.	Competition among Third-year Students in the same subjects.	Ditto.
	Brackenbury Prize in Medicine.	Interest on £1103.	....	Competitive Examination among Students of not more than five years' standing.	None.
	Brackenbury Prize in Surgery.	Interest on £1103.	....	Competitive Examination among Students of not more than five years' standing.	None.
	Treasurer's Prize.	£10 10s.	....	Proficiency in Clinical Examination of three Medical and three Surgical Cases, together with a written Examination in Medicine, Surgery, and Midwifery.	None.
	H. C. Johnson Memorial Prize.	£10 10s.	....	Competitive Examination in PRACTICAL ANATOMY.	None.
	Pollock Prize.	Interest on £372.	....	Competitive Examination in PHYSIOLOGY, PHYSIOLOGICAL CHEMISTRY, and HISTOLOGY.	None.
	Clarke Prize.	Interest on £209.	....	Awarded for Clinical Reports and Commentaries.	None.
	Thompson Medal.	Interest on £185.	....		
	Brodie Prize.	Interest on £220.	....		
	Acland Prize.	£5.	....		
	Webb Prize.	Interest on £1000.	....	Competitive Examination among Perpetual Pupils in BACTERIOLOGY.	None.
	General Proficiency Prizes. No. 1.	£10 10s.	....	Competitive Examination in ELEMENTARY ANATOMY, BIOLOGY, CHEMISTRY, and PHYSICS.	None.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITION ATTACHED TENURE.
ST. GEORGE'S HOSPITAL—*continued.*	General Proficiency Prizes. No. 2.	£10 10s.	....	Competitive Examination in ANATOMY, PHYSIOLOGY (including HISTOLOGY), and PHYSIOLOGICAL CHEMISTRY.	None.
	,, No. 3.	£10 10s.	....	Competitive Examination in ORGANIC CHEMISTRY, ANATOMY, and PHYSIOLOGY, including HISTOLOGY and PHYSIOLOGICAL CHEMISTRY.	None.
	,, No. 4.	£10 10s.	....	Competitive Examination in MEDICINE, SURGERY, OBSTETRIC MEDICINE, and PATHOLOGY.	None.
GUY'S HOSPITAL - - -	Entrance Scholarships. No. 1.	£100.	....	Open Competitive Examination among Candidates under twenty years of age in LATIN, GREEK, FRENCH, GERMAN, ARITHMETIC, EUCLID, and ALGEBRA.	Course at Guy's Hospital.
	,, No. 2.	£50.	....	Under twenty-five years of age, ditto.	Ditto.
	,, No. 3.	£150.	....	Open Competitive Examination among Candidates under twenty-five years of age in INORGANIC CHEMISTRY, GENERAL BIOLOGY, and EXPERIMENTAL PHYSICS.	Perpetual Course at Guy's Hospital
	,, No. 4.	£60.	- - -	Ditto.	Ditto.
	,, No. 5.	£50.	....	Competitive Examination among Candidates under twenty-five years of age who have completed the curriculum for, or passed, the Examinations in Anatomy and Physiology for a medical degree in any University of the United Kingdom, and have not entered as Students in any Metropolitan Medical School.	Ditto.
	Arthur Durham Prizes.	£15.	....	Dissections done by Students of more than one year's standing.	
	,,	£5.	....	Dissections by First-year Students.	Ditto.
	Hilton Prize.	£5.	....	Ditto.	
	Junior General Proficiency.	£20.	- - -	Competitive Examination among Junior Students in ELEMENTARY ANATOMY.	None.
	,,	£15.	- - -	Ditto.	Ditto.
	,,	£15.	- - -	HISTOLOGY, and ANATOMY and PHYSIOLOGY.	Ditto.
	Michael Harris Prize.	£10.	- - -	Competitive Examination among Second-year Students in HUMAN ANATOMY.	Ditto.
	Sands Cox Scholarship.	£15 per annum.	3 years.	Competitive Examination among Second-year Students in PHYSIOLOGY, HISTOLOGY, and PHYSIOLOGICAL CHEMISTRY.	Course at Guy's Hospital
	Wooldridge Memorial Prize.	£10.	- - -	Ditto.	
	Senior General Proficiency.	£20.	- - -	Competitive Examination among Senior Students in MEDICINE, SURGERY, MIDWIFERY, DISEASES OF WOMEN, MEDICAL JURISPRUDENCE, THERAPEUTICS, PUBLIC HEALTH and MENTAL DISEASES.	Ditto.
	,,	£15.	- - -	Ditto.	Ditto.
	,,	£10.	- - -	Ditto.	Ditto.
	Golding-Bird Prize.	£20 and Medal.	- - -	Competitive Examination among Senior Students in SANITARY SCIENCE.	Ditto.
	Bredin Prize.	£25.	- - -	ORIGINAL REPORTS on Three Medical and Three Surgical Cases.	Ditto.
	Beaney Prize.	£31 10s.	- - -	Competitive Examination among Students in PATHOLOGY.	Ditto.
	Gull Studentship, Pathology.	£150 per annum.	3 years.	Awarded without Competitive Examination to Students intending to conduct Research.	
	Beaney Scholarship, Therapeutics.	£31 10s.	3 years.	Ditto.	
KING'S COLLEGE - -	Warneford Scholarships. No. 1.	£25 per annum.	3 years.	Competitive Examination among Matriculated Medical Students in DIVINITY, ENGLISH HISTORY, LATIN, GREEK, FRENCH, GERMAN, and MATHEMATICS.	Perpetual Course at King's College
	,, No. 2.	£25 per annum.	3 years.	Ditto.	Ditto.
	,, Class II.	£25 per annum.	2 years.	Competitive Examination among Matriculated Medical Students in the third year, residing in the College.	
	Sambrooke Exhibitions. No. 1.	£60.	- - -	Competitive Examination among Matriculated Students in MATHEMATICS, ELEMENTARY PHYSICS, INORGANIC CHEMISTRY, BOTANY, and ZOOLOGY.	Course either as Science or Medical Student at King's College.
	,, No. 2.	£40.	- - -	Ditto.	Ditto.
	Rabbeth Scholarship.	£20.	- - -	Competitive Examination among Matriculated Students in Science.	None.
	Science Exhibitions. No. 1.	£30 per annum.	2 years.	Competitive Examination among Candidates under nineteen years of age in MATHEMATICS, MECHANICS, PHYSICS, &c., or alternative Subjects.	None.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
KING'S COLLEGE—*continued.*	Science Exhibitions. No. 2.	£20 per annum.	2 years.	Competitive Examination among Candidates under nineteen years of age in MATHEMATICS, MECHANICS, PHYSICS, &c., or alternation subjects.	None.
	Medical Entrance Scholarships.				
	,, No. 1.	£73 10s.	....	Open Competitive Examination for Students who propose to take degree at any British University and have passed the Examination at that University in BIOLOGY, CHEMISTRY, and PHYSICS.	
	,, No. 2	£63.	....	Ditto.	
	Medical Scholarships. No. 1.	£40 per annum.	1 year.	Competitive Examination among Third- and Fourth-year Students.	
	,, No. 2.	£30.	1 year.	Competitive Examination among Second- and Third-year Students.	
	,, No. 3.	£20.	1 year.	Competitive Examination among First-year Medical Students.	
	,, No. 4.	£20.	1 year.	Ditto.	
	Sambrooke Registrarship. No. 1.	£50.	2 years.	Competitive Examination among Matriculated Medical Students who have filled certain appointments at hospitals.	
	,, No. 2.	£50.	....	Ditto.	
	Daniel Scholarship.	£20 per annum.	2 years.	Open Competitive Examination among six months' Laboratory Students.	
	Carter Prize.	£15.	....	Open Competitive Examination in Botany.	
	Tanner Prize.	£10.	....	Competitive Examination in OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.	None.
	Todd Prize.	£4 4s. and medal.	....	Competitive Examination in Clinical Medicine.	
LONDON HOSPITAL	1. Price Scholarships.	£120.	....	Competitive Examination among Students in subjects of Preliminary Scientific M.B. Examination at University of London.	
	2. Entrance Scholarships.				
	,, No. 1.	£60.	....	Ditto.	
	,, No. 2.	£35.	....	Ditto.	
	3. Epsom College Scholarship.	Free Education.	....	....	
	4. Price Scholarships.	£60.	....	HUMAN ANATOMY AND PHYSIOLOGY.	Study at Oxford or Cambridge.
	Buxton Scholarships. No. 1.	£30.	....	Competitive Examination among Students in subjects of Preliminary Examination.	
	,, No. 2.	£30.	....	Ditto.	
	Scholarship.	£20.	....	Competitive Examination in CLINICAL MEDICINE.	
	,,	£20.	....	Competitive Examination in CLINICAL SURGERY.	
	,,	£20.	....	Competitive Examination in CLINICAL OBSTETRICS.	
	Sutton Prize in Pathology.	£20.	....	Competitive Examination in PATHOLOGY.	
	Duckworth Nelson Prize.	£10.	....	PRACTICAL MEDICINE and SURGERY.	
	Biennially: Letheby Prizes.	£20 and £10.	....	Competitive Examination in CHEMISTRY.	
	Scholarship.	£25.	....	Competitive Examination in ANATOMY AND PHYSIOLOGY.	
	,, Dressers' Prize.	£20.	....	Competitive Examination in ANATOMY and BIOLOGY.	
	,, No. 1.	£15.	....	ZEAL, EFFICIENCY, and KNOWLEDGE OF MINOR SURGERY.	
	,, No. 2.	£10.	....	Ditto.	
	,, No. 3.	£10.	....	Ditto.	
	,, No. 4.	£5.	....	Ditto.	
	,, No. 5.	£5.	....	Ditto.	
	,, No 6.	£5.	....	Ditto.	
	,, No. 7.	£5.	....	Ditto.	
	Triennially: Hutchinson Prize.	£35.	....	For the best essay upon a subject in CLINICAL SURGERY.	
	Practical Anatomy Prizes.	£6. £4.	....	....	
	Biennially: Andrew Clark Prize.	£20.	....	CLINICAL MEDICINE and PATHOLOGY.	
	James Anderson Prize.	£9.	....	CLINICAL MEDICINE.	
ST. MARY'S HOSPITAL ..	Natural Science Scholarship. No. 1.	£144.	....	Competitive Examination among Students in NATURAL SCIENCE.	
	,, No. 2.	£78 15s.	....	Ditto.	
	,, No. 3.	£78 15s.	....	Ditto.	
	,, No. 4.	£78 15s.	....	Ditto.	
		£144.	....	For Students from Epsom College being sons of Medical Men.	

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
ST. MARY'S HOSPITAL—*continued.*	Natural Science Scholarship. No. 1.	£57 15s.	— —	Competitive Examination among Students from Oxford, Cambridge, or other University in SUBJECTS OF PRELIMINARY SCIENTIFIC EXAMINATION AT LONDON UNIVERSITY.	
	,, No. 2.	£57 15s.	....	Ditto.	
		£20.	....	Competitive Examination among First-year Students.	
		£20.	....	Competitive Examination among Second-year Students.	
		£20.	....	Competitive Examination among Third-year Students.	
		£20.	....	Competitive Examination among Fourth-year Students.	
MIDDLESEX HOSPITAL ..	Entrance Scholarship. No. 1.	£100.	....	Open Competitive Examination.	Course at Middlesex Hospital.
	,, No. 2.	£60.	....	Ditto.	Ditto.
	,, No. 3.	£60.	....	Competitive Examination among Students from Oxford or Cambridge. (Subjects: ANATOMY and PHYSIOLOGY, including HISTOLOGY.)	
		£126.	....	To Students of Epsom College, on Nomination of Head Master.	
	Broderip Scholarship. No. 1.	£60.	....	Competitive Examination among Senior Students in CLINICAL SUBJECTS.	
	,, No. 2.	£40.	....	Ditto.	
	Governor's Prize.	£21.	....	Competitive Examination among Students during Sixth Year of Study.	
	Hetley Clinical Prize.	£25.	....	Competitive Examination among the Students during Fifth Year of Study.	
	John Murray Gold Medal and Scholarship.	....	Every third year.	Examination in MEDICINE, SURGERY, and OBSTETRICS.	
	Lyell Medal.	£6 5s.	— —	Examination in SURGICAL ANATOMY and PRACTICAL SURGERY.	
	Leopold Hudson Prize.	£11 11s.	....	Examination in SURGICAL PATHOLOGY and BACTERIOLOGY.	
ST THOMAS'S HOSPITAL	College Prizes.				
SUMMER.	,, No. 1.	£15.	....	Competitive Examination among First-year Students.	
	,, No. 2.	£10.	....	Ditto.	
	,, No. 3.	£15.	....	Competitive Examination among Second-year Students.	
	,, No. 4.	£10.	....	Ditto.	
	,, No. 5.	£15.	....	Competitive Examination among Third-year Students.	
	,, No. 6.	£10.	....	Ditto.	
	Entrance Science Scholarship. No. 1.	£150	....	Competitive Examination in PHYSICS, CHEMISTRY, PHYSIOLOGY, BOTANY, or ZOOLOGY.	Perpetual Course
	,, No. 2.	£60.	....	Ditto.	Ditto.
	,, No. 3.	£50.	....	Competitive Examination in ANATOMY, PHYSIOLOGY, and CHEMISTRY.	Perpetual Course from third year
	Wm. Tite Scholarship.	£27 10s.	....	Competitive Examination among First-year Students.	
	College Prizes.				
	,, No. 7.	£20.	....	Ditto.	
WINTER.	,, No. 8.	£10.	....	Ditto.	
	Musgrove Scholarship.	£38 10s.	2 years.	Competitive Examination among Second-year Students.	
	Peacock Scholarship.	£38 10s.	2 years.	Ditto.	
	College Prizes.				
	,, No. 9.	£20.	....	Competitive Examination among Second-year Students.	
	,, No. 10.	£10.	....	Ditto.	
	,, No. 11.	£20.	....	Competitive Examination among Third-year Students.	
	,, No. 12.	£15.	....	Ditto.	
	,, No. 13.	£10.	....	Ditto.	
	Cheselden Medal.	....	....	Competitive Examination in SURGERY and ANATOMY.	
	Mead Medal.	....	....	Competitive Examination in MEDICINE and PATHOLOGY.	
	Bristowe Medal.	....	....	Competitive Examination in PATHOLOGY and MORBID ANATOMY.	
	Solly Medal and Prize.	....	....	SURGICAL REPORTS.	
	Treasurer's Gold Medal.	....	....	General Proficiency.	
	Wainwright Prize.	....	....	Medicine.	
	Hadden Prize. *Biennially:*	....	....	Pathology.	
	Beaney Scholarship.	....	....	For SURGERY and SURGICAL PATHOLOGY.	
	Sutton Sams Memorial Prize.	£5.	....	Reports of Cases in OBSTETRIC MEDICINE.	
	Grainger Testimonial Prize.	£15.	1 year.	For work in ANATOMY and PHYSIOLOGY.	
	The Salters' Company Research Fellowship.	£100 annually.	3 years.	Promotion of Research — PHARMACOLOGY.	

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
UNIVERSITY COLLEGE, LONDON	Entrance Scholarships. No. 1.	131 gs.	...	Open Competitive Examination in CHEMISTRY, PHYSICS, BOTANY, and ZOOLOGY.	Perpetual Course at University College.
	,, No. 2.	55 gs.	...	Ditto.	Ditto.
	,, No. 3.	55 gs.	....	Ditto.	Ditto
	Atkinson Morley Scholarship.	£45 per annum.	3 years.	Theory and Practice of Surgery.	
	Atchison Scholarship.	£55 per annum.	2 years.	Competitive Examination among Medical Students.	
	Sharpey Physiological Scholarship.	£120.	...	Proficiency in Biological Science.	
	Filliter Exhibit'n.	£30.	1 year.	Competitive Examination among Students in PATHOLOGICAL ANATOMY.	
	Cluff Mem. Prize.	£15.	...	Competitive Examination among Students in ANATOMY, PHYSIOLOGY, and CHEMISTRY.	
	Erichsen Prize.	£10 10s.	....	Practical Surgery.	
	Morris Bursary.	£16.	2 years.	....	
WESTMINSTER HOSPITAL	Guthrie Entrance Scholarship.	£60 (total).	...	Open Competitive Examination among Candidates under twenty-five years of age in LATIN,* MATHEMATICS, EXPERIMENTAL PHYSICS, CHEMISTRY, and GREEK, FRENCH, or GERMAN.	For Students entering in the Winter Session.
	Entrance Scholarship.	£40 (total).	...	Ditto.	Ditto.
	Ditto.	£30.	....	Ditto.	Ditto.
	Colonial Scholarship.	£60.	....	Ditto.	In April and in September.
	Ditto.	£40.	....	Ditto.	Ditto.
	Dental Scholarship.	£20 (total).	....	Ditto, as above, save that Dental Students only can compete.	For Students entering in the Winter Session.
	Free Presentation.	....	...	Open to Pupils of the Epsom Medical College, obtained by recommendation.	
	Entrance Scholarship (Governors).	£40 (total).	...	Open Competition in CHEMISTRY and EXPERIMENTAL PHYSICS according to the Synopsis of the Conjoint Board.	For Students entering in the Summer Session.
	Natural Science.	£40.	....	Ditto.	For Students entering in the Winter Session.
	Oxford and Cambridge Scholarship.	£40 (total).	...	Competitive Examination among Oxford and Cambridge Students in ANATOMY and PHYSIOLOGY.	In April and in September.
	Natural Science	£60.	...	Competitive Examination in subjects of Preliminary Scientific of London University.	Ditto.
	Arts Scholarship (Entrance).	£50.	...	Competitive Examination as for the Guthrie Scholarship, except that the Latin Book is that of the London Matriculation of the preceding January.	For Students entering in the Summer Session.
	Ditto.	£50.	....	Ditto.	Ditto.
	Treasurer's Prize.	£10 10s.	...	Competitive Examination among First-year Students in ANATOMY, PHYSIOLOGY or BIOLOGY, and CHEMISTRY.	
	President's Prize.	£21.	...	Competitive Examination among Second-year Students in ANATOMY, PHYSIOLOGY, and HISTOLOGY.	
	Sturges Prize in Clinical Medicine.	£10.	...	Notes and commentaries on 6 cases.	
	Clinical Surgery.	£5.	....	Ditto on 12 cases.	
	Chadwick Prize.	£21 in books or instruments.	...	Competitive Examination among Medical Students in MEDICINE and SURGERY, including PATHOLOGY and APPLIED ANATOMY and PHYSIOLOGY.	
	Bird Medal and Prize.	£14 in medal, books, or instruments.	....	Competitive Examination in MIDWIFERY and DISEASES of WOMEN, MEDICINE, and PATHOLOGY among Students who have completed their Fourth Winter Session at the Westminster Hospital School of Medicine.	
	Fish Prize.	£20.	....	PATHOLOGY by paper, also *vivâ voce* in Post-mortem Room and on MICROSCOPIC and MUSEUM PATHOLOGY.	
LONDON SCHOOL OF MEDICINE FOR WOMEN	Entrance Scholarship.	£30.	...	Competitive Examination in ENGLISH, LATIN, ARITHMETIC, EUCLID, and ALGEBRA.	
	Stuart Mill Scholarship.	£30.	4 years.	Ditto.	Candidates must be willing to enter into a legal arrangement to practise in India under the Countess of Dufferin's Fund.

* The Latin Book is that of the Matriculation, University of London, in the preceding June.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
LONDON SCHOOL OF MEDICINE FOR WOMEN—*continued*.	Fanny Butler Scholarship.	£14 10s.	4 years.	Competitive Examination in ENGLISH, LATIN, ARITHMETIC, EUCLID, and ALGEBRA.	Candidates must be willing to work in connexion with the Church of England Zenana Missionary Society.
	John Byron Bursary.	£20.	2 to 4 years.	....	Offered to students already in the school requiring assistance for the prosecution of their medical studies.
	Two Mackay Prizes.	£20 each.	....	Given to the two Students gaining the highest number of marks in the School Examinations during the first two years of Medical Study.	
	Helen Prideaux Scholarship.	£50.	....	Given to Graduates of not more than 3 years' standing for Original Work.	
OXFORD UNIVERSITY * —	Burdett-Coutts Scholarships.	£80 per annum.	2 years.	Competitive Examination.	....
	Radcliffe Trav. Fellowship.	£200 „ „	3 years.	Ditto.	Foreign Travel for purpose of Medical Study.
	Rolleston Prize.	£60 „ „	....	Original Research.	
UNIVERSITY OF DURHAM	Four Scholarships.	£25 a year each.	4 years.	Examination in GOSPEL OF ST. LUKE in GREEK, LATIN, ARITHMETIC, ALGEBRA, EUCLID, and ENGLISH HISTORY.	Students pursuing their medical studies and not of a sufficient standing to proceed to a Degree in Medicine.
College of Medicine	Dickinson Scholarship.	Interest on £400 and Gold Medal.	....	Examination in MEDICINE, SURGERY, MIDWIFERY, and PATHOLOGY.	Full students of the College of Medicine who have passed the intermediate examination of any of the Licensing Bodies named in Schedule A of the Medical Act, 1858.
	Tulloch Scholarship.	Interest on £400	....	Examination in ANATOMY, PHYSIOLOGY, and CHEMISTRY.	No student is eligible who commenced his medical curriculum more than two academical years before the date of examination.
	Charlton Memorial Scholarship.	Interest on £700	....	....	Open to full students of the College entered for the class on the Principles and Practice of Medicine.
	Gibb Scholarship.	Interest on £500	....	Awarded annually as a Scholarship in PATHOLOGY to full student who passes the best examination in that subject.	No student eligible after completion of his curriculum.
	Luke Armstrong Memorial Scholarship.	Interest on £680	....	Original Essay on some subject in COMPARATIVE PATHOLOGY.	Open to all graduates in Medicine or Hygiene and candidates for these degrees who have spent six months at the University, and whose age does not exceed thirty years.
	Stephen Scott Scholarship.	Interest on £1000.	....	Original essay on any Surgical subject.	Any graduate in Medicine or Surgery of the University or any student of the College of Medicine. Student's age must not exceed 30 years.
	Heath Scholarship.	Interest on £4000.	....	Original essay on CONGENITAL DEFORMITIES: THEIR PATHOLOGY AND TREATMENT.	All graduates in Medicine or Surgery of the University are eligible.
Royal Infirmary...	Goyder Memorial Scholarship.	Interest on £325.	Annually.	Student who most distinguishes himself in CLINICAL MEDICINE AND CLINICAL SURGERY at the Royal Infirmary.	

* No returns.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
MASON UNIVERSITY COLLEGE BIRMINGHAM.	Ingleby Scholarships (1 or more).	£10 to £15.	1 year.	....	Candidates must have spent first two years of curriculum at the College.
	Sydenham Scholarship.	£10 10s. per annum.	3 years.	Award of Council to orphan sons of Medical Practitioners.	
	Sands Cox Scholarship.	£10 10s. per annum.	3 years.	Competitive Examination among sons of Medical Practitioners under eighteen years of age in ARTS SUBJECTS.	
	Queen's Scholarship.	£10 10s. per annum.	3 years.	Open Competitive Examination in ELEMENTARY SCIENCE, with a Modern Language.	
	Dental Scholarship.	£7 17s. 6d.	2 years.	Open Competitive Examination in subjects learned during apprenticeship.	
VICTORIA UNIVERSITY ...	Gilchrist Scholarship.	£50.	3 years.	Awarded annually to the candidate who shall stand highest at the June preliminary examination of the Victoria University provided that he pass in the first division.	Candidates must be over 18 years of age on July 1st in the year of competition.
	University Scholarship in Medicine.	£50.	1 year.	Awarded annually on the results of the second examination for the degrees of M.B. and Ch.B.	
OWENS COLLEGE, MANCHESTER	General Entrance Scholarships.	....	....	....	Open to candidates above 16 and under 20 years of age.
	Rogers.	£40.	2 years.	Subjects: GREEK, LATIN TRANSLATIONS AT SIGHT, and PROSE COMPOSITION.	
	Seaton.	£40.	2 years,	Subjects: GREEK, LATIN TRANSLATIONS AT SIGHT, and PROSE COMPOSITION.	
	Dalton.	£40.	2 years.	Subjects: EUCLID, ALGEBRA, TRIGONOMETRY, GEOMETRY, and CONIC SECTIONS.	
	Cartwright.	£35.	3 years.	Ditto.	
	Hulme.	£35.	3 years.	Subjects: ENGLISH LANGUAGE and LITERATURE, HISTORY, GEOGRAPHY, and (LATIN, GREEK, FRENCH, or GERMAN, any two subjects).	
	James Gaskill.	£40.	2 years.	MATHEMATICS and CHEMISTRY.	
	Manchester Grammar School	£18.	3 years.	MATHEMATICS, ENGLISH ESSAY with CLASSICS and PHYSICAL SCIENCE in alternate years.	
	Kay-Shuttleworth	£30.	3 years.	Subjects as in James Gaskill Scholarships.	Pupils of Sedbergh, Giggleswick, or Burnley Grammar School.
	Theodores Exhibition.	£15.	1 year.	Subjects: FRENCH and GERMAN.	Successful candidates are required to enter for a regular University course.
	Robert Platt Physiological Scholarship.	£50.	2 years.	Subjects: PHYSIOLOGY and COMPARATIVE ANATOMY.	Open to Candidates whether or not previously students of the College.
	Dauntesey Medical Scholarships (two).	£35 each.	1 year.	Subjects: ZOOLOGY, BOTANY, and CHEMISTRY.	These Scholarships are open to all students preparing for a Medical Course who shall not have attended Lectures or Laboratory Courses on Human Anatomy or Physiology, or a purely Medical or Surgical Course in the Owens College or any other Medical School in the United Kingdom. Candidates must not be more than 25 years of age on October 1st of the year of competition. Scholars must immediately on election enter for a full course of medical studies.
	Robert Platt Exhibitions (two).	£1 each.	....	....	First and second years' students in Physiology.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
OWENS COLLEGE, MANCHESTER—*continued*	Turner Scholarship.	£20.	...	...	Students who have completed a full course of medical study in the College are eligible only.
	John Henry Agnew Scholarship.	£80.	...	The Scholarship is awarded on the results of an Examination, partly written and partly clinical, on DISEASES OF CHILDREN, MEDICAL AND SURGICAL.	Open for competition annually to all students in the Medical Department who have pursued a regular course of medical study in the College extending over a period of not less than 4 years or more than 6, and who have attended the course of lectures on Diseases of Children.
	Dumville Surgical Prize.	£15.	...	Subjects: SYSTEMATIC, PRACTICAL, and OPERATIVE SURGERY, SURGICAL ANATOMY, and SURGICAL PATHOLOGY.	
BRISTOL GENERAL HOSPITAL.	Lady Haberfield Entrance Scholarship.	Interest of £1000.	...	Competitive Examination among Medical Students in Subjects of GENERAL EDUCATION.	Perpetual Students.
	Second Entrance Scholarship.	£20.	....	Ditto.	
	..	£10 10s.	...	Ditto.	
	Clark Prize.	£15.	...	Class Work of Third-year Students.	
	Clarke Scholarship.	£15.	....	Competitive Examination in SURGERY among Students of Fourth Year.	Ditto.
	Sanders Scholarship.	£22 10s	....	Competitive Examination in MEDICINE, SURGERY, and MIDWIFERY of Fourth-year Students.	Perpetual Students.
	Martyn Memorial Pathological Scholarships.	Two annually, each of value of £10.	....	Examination in PATHOLOGY and MORBID ANATOMY.	Ditto.
	Committee Gold and Silver Medals.	....	...	To most distinguished Students of Fifth Year.	Ditto.
LEEDS SCHOOL OF MEDICINE (YORKSHIRE COLLEGE).	Entrance Scholarship.	£67 4s.	....	Competitive Examination among Medical Students who have passed Preliminary Scientific Examination at London or Victoria University.	Complete Course of Lectures and Practical Classes at Leeds School.
	Infirmary Scholarship.	£42.	...	Competitive Examination in ARTS among Students who have passed one of the Preliminary Examinations.	Complete Course of Hospital Practice and Clinical Lectures at Leeds Infirmary.
	Hardwick Prize.	£10.	...	Competitive Examination among Clinical Clerk Students of two years' standing in CLINICAL MEDICINE.	
	McGill Prize.	£10.	...	Competitive Examination among advanced Surgical Students in CLINICAL SURGERY.	
	Thorp Prizes.	£10 and £5.	....	Examinations in Forensic Medicine and Hygiene.	
	Thorp Prize Essay.	£15.	...	Essay or research on some subject connected with FORENSIC MEDICINE, TOXICOLOGY, or PUBLIC HEALTH.	Every three years to former students of the Leeds School.
UNIVERSITY COLLEGE, LIVERPOOL	Robert Gee Entrance Scholarships (four annually).	£25 each.	1 year.	Special College Scholarship Examination (M.B. Victoria) held in May and October.	
	Holt Fellowships (Physiology and Pathology).	£100 each.	1 year.	Vote of Faculty to Student on graduation.	Teaching and Original Research.
	Gee Fellowship (Anatomy).	£160.	1 year.	Vote of Faculty to Student on graduation.	Teaching and Research.
	Lyon Jones Scholarship. No. 1.	£21 per annum.	2 years.	Competitive Examination among Junior Students in 1st M.B. SUBJECTS.	Perpetual Course at Victoria University.
	„ No. 2.	£21.	...	Competitive Examination among Third-year Students in ANATOMY, PHYSIOLOGY, and MATERIA MEDICA.	
	Derby Exhibition.	£15.	...	Competitive Examination among Fourth- or Fifth-year Students in CLINICAL SUBJECTS.	
*EDINBURGH UNIVERSITY	Theses Gold Medals.	....	....	Candidates for M.D. who present Theses of high merit.	
	Crichton Research Scholarships in Anatomy, Physiology, Materia Medica, and Pathology.	£100 each per annum.	1, 2, or 3 years.	Competitive Examination for Graduates of the University.	Continued Research.

* Several Fellowships, Scholarships, Bursaries, &c., in the above list are vacant in alternate years.

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
EDINBURGH UNIVERSITY —*continued.*	Syme Surgical Fellowship.	£100 per annum.	2 years.	Competitive Thesis by M.B. of not more than three years' standing.	.....
	Goodsir Memorial Fellowship.	£100 per annum.	2 years.	Competitive Essay by M.B., &c., of not more than three years' standing.	.....
	Leckie Mactier Fellowship.	£80 per annum.	3 years.	Competitive Examination among M.B.'s of not more than three years' standing.	
	Freeland Barbour Fellowship.	£100.	1 year.	Highest Marks in ANATOMY, PHYSIOLOGY, and PATHOLOGY in Professional Examinations.	One year's research in Midwifery.
	Sibbald Scholarship.	£40 per annum.	3 years.	Competitive Examination among University Students in CHEMISTRY, BOTANY, PHYSICS, and ZOOLOGY.	Continued study.
	Thomson Scholarship.	£40 per annum.	4 years.	Competitive Examinations in BOTANY ZOOLOGY, and MECHANICS.	.....
	Vans Dunlop Scholarship.				
	,, No. 1.	£100 per annum.	3 years.	First place in MEDICAL PRELIMINARY EXAMINATION.	.....
	,, No. 2.	£100 per annum.	3 years.	Competitive Examination in CHEMISTRY, ANATOMY, and PHYSICS.	Continued study.
	,, No. 3.	£100 per annum.	3 years.	BOTANY and ZOOLOGY.	Ditto.
	,, No. 4.	£100 per annum.	3 years.	Competitive Examination in PHYSIOLOGY and SURGERY.	Ditto.
	,, No. 5.	£100 per annum.	3 years.	Competitive Examination in ANATOMY and PHYSIOLOGY.	Continued study and research.
	,, No. 6.	£100 per annum.	3 years.	MATERIA MEDICA (including PHARMACOLOGY).	Ditto.
	,, No. 7.	£100 per annum.	3 years.	PATHOLOGY and MEDICAL JURISPRUDENCE and PUBLIC HEALTH.	Ditto.
	Murchison Memorial Scholarship.	Interest on £1000.	1 year.	Competitive Examination in CLINICAL MEDICINE.	.....
	Stark Scholarship in Clinical Medicine.	£112.	1 year.	Competitive Examination in CLINICAL MEDICINE.	Research in Clinical Medicine.
	Buchanan Scholarship.	£40.	1 year.	Competitive Examination and Class Work in MIDWIFERY and GYNÆCOLOGY.	Work in Gynæcological Ward, &c.
	James Scott Scholarship.	£32 10s.	1 year.	Competitive Examination and Class Work in MIDWIFERY.	.....
	Ettles Scholarship.	£31.	1 year.	Most distinguished M.B., Ch.B. of year.	.....
	Mackay Smith Scholarship in Chemistry.	£25 per annum.	2 years.	Competitive Examination in CHEMISTRY among University Students.	Continued study of Chemistry.
	Houldsworth Scholarship.	£40	1 year.	Competitive Examination in MATERIA MEDICA among University Students or Graduates.	Research in Pharmacology.
	Sibbald Bursaries (1 or 2 annually).	Each £30 per annum.	3 years.	Competitive Examination in Preliminary Subjects among entrants.	.....
	Heriot Bursaries (9 for men and 2 for women annually).	Each £30 per annum.	3 years.	Ditto.	.....
	Thomson Bursaries (2 annually).	Each £25 per annum.	4 years.	Distinction in Medical Preliminary Examination.	.....
	Grierson Bursary.				
	,, No. 1.	£20.	1 year.	Ditto.	.....
	,, No. 2.	£20.	1 year.	Competitive Examination in CHEMISTRY, BOTANY, and NATURAL HISTORY and PHYSICS among Second-year Students.	.....
	,, No. 3.	£20.	1 year.	Competitive Examination in ANATOMY and PHYSIOLOGY among Third-year Students.	.....
	,, No. 4.	£10.	1 year.	Competitive Examination in MATERIA MEDICA among Fourth-year Students.	.....
	,, No. 5.	£10.	1 year.	Competitive Examination in PATHOLOGY among Fourth-year Students.	.....
	Crichton Bursaries (2 or 3 annually).	Each £50 per annum.	4 years.	Distinction in Medical Preliminary Examination, with extra subjects.	Born in Scotland
	Junior J. A. Carlyle Bursary.	£28.	1 year.	Distinction in Class Examinations in ANATOMY and CHEMISTRY.	.....
	Senior J. A. Carlyle Bursary.	£28.	1 year.	Distinction in Class Examinations in ANATOMY and PHYSIOLOGY.	.....
	Mackenzie Bursaries (2 annually).	£20.	.....	Industry and Skill in PRACTICAL ANATOMY.	.....
	Beaney Prize.	£32 10s.	.....	Highest Marks in ANATOMY, SURGERY, and CLINICAL SURGERY, in M.B. and Ch.B. Examinations.	.....
	Neil Arnott Prize.	£37 10s.	.....	Distinction in Natural Philosophy in the M.A. Examination.	.....
	Wightman Prize.	£12.	.....	Competitive Reports on Cases by Clinical Students.	.....

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
GLASGOW UNIVERSITY—QUEEN MARGARET COLLEGE	Mackintosh Mental Science Bursary.	£30.	1 year.	....	Open for competition to students of medicine of either sex who have attended the lectures on Insanity.
	Dr. Thos. Gibson Bursary	£30.	3 years.	....	Open to medical students preparing to be missionaries in connexion with the Church of Scotland.
	Arthur Bursary.	£20.	3 years.	Competition by students of 1 year's standing in the subjects of the First Professional Examination.	Restricted to women students only.
	Logan Bursary.	£16.	4 years.	Appointment by the Senate of Glasgow University. Next vacancy 1901.	Open to medical students of either sex.
	Armagh Bursary in Medicine.	£45.	3 years.	Competition by students who are presenting themselves for the Final Examination for the degree of M.A. with Honours in Classics, in 1898.	Open to students of either sex who have taken the course of study for graduation in Arts and intend to study Medicine.
	Two Taylor Bursaries.	£7.	4 years.	Appointment by the Senate. Next vacancy 1899.	Open to students of either sex in any faculty.
QUEEN'S COLLEGE, BELFAST	Ten Junior Scholarships for Matriculated Students, two for each of the five years' curriculum.	£20 each.	....	....	....
ROYAL COLLEGE OF SURGEONS IN IRELAND, SCHOOL OF SURGERY...	Class Prizes.	£72.	....	Proficiency in Class Examination.	....
	Carmichael Scholarship.	£15.	....	Examination in ANATOMY, PHYSIOLOGY, HISTOLOGY, CHEMISTRY, MATERIA MEDICA, and PHARMACY.	Open to students of the third year.
	Mayne Scholarship.	£15.	....	SURGERY, MEDICINE, JURISPRUDENCE, MIDWIFERY, and DISEASES OF WOMEN.	Open to students of third and fourth year.
	Barker Bequest	£26 5s.	....	For best DISSECTION.	Open to all medical students.
ROYAL UNIVERSITY OF IRELAND	Travelling Medical Scholarship.	£100.	....	The subjects are in rotation: (1) ANATOMY AND HISTOLOGY; and (2) PHYSIOLOGY AND PATHOLOGY.	Those who have passed the Medical Degrees Examination either in the year of the scholarship examination or in the year immediately preceding are alone eligible.
	Dr. Henry Hutchinson, Stewart Medical Scholarships.				
	,, No. 1	£10.	3 years.	Competition in the subjects of the second examination in MEDICINE.	Candidates must present themselves after the lapse of not more than one academical year from the time of passing the first examination in medicine.
	,, No. 2	£50.	3 years.	Subjects include PSYCHOLOGICAL MEDICINE, DISEASES OF THE NERVOUS SYSTEM, and ANATOMY, PSYCHOLOGY and PATHOLOGY OF BRAIN, CORD, AND NERVES.	Competition among medical students of not more than 2 years' standing for proficiency in the knowledge of Mental Diseases. Fee £2.
	Medical Studentship.	£200.	2 years.	PATHOLOGY and BACTERICLOGY.	Fee £2.
	Exhibition at first Examination in Medicine.				
	,, No. 1.	£20.	....	....	
	,, No. 2	£20.	....	....	
	,, No. 3.	£10.	....	....	
	,, No. 4.	£10.	....	....	
	Exhibition at second Examination in Medicine.				
	,, No. 1.	£25.	....	....	
	,, No. 2.	£25.	....	....	
	,, No. 3.	£15.	....	....	
	,, No. 4.	£15.	....	....	

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SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

INSTITUTION.	TITLE OF SCHOLARSHIP, &c.	ANNUAL OR TOTAL VALUE.	HOW LONG TENABLE.	HOW OBTAINABLE.	CONDITIONS ATTACHED TO TENURE.
ROYAL UNIVERSITY OF IRELAND—*continued*.	Exhibition at third Examination in Medicine.				
	,, No. 1.	£30.	....	....	
	,, No. 2.	£30.	....	....	
	,, No. 3	£20.	....	....	
	,, No. 4.	£20.	....	....	
	M.B., M.Ch., and B.A.O. Examinations.				
	,, No. 1.	£40.	....	....	
	,, No. 2.	£40.	....	....	
	,, No. 3.	£25.	....	....	
	,, No. 4.	£25.	....	....	
QUEEN'S COLLEGE, GALWAY	Eight Junior Scholarships.	£25 each and half fees.	1 year.	Competitive Examination in subjects of each year of Medical Course.	Students must be of the standing of the year, and may be of any recognised school of medicine.

NOTE.—*St. Andrews University.*—For Scholarships, &c., see page 603.
NOTE.—*Glasgow University.*—In addition to the bursaries mentioned above in connexion with Queen Margaret College, there will be at least eleven bursaries and prizes of the aggregate value of about £218 awarded during the session 1898-99.
NOTE.—*St. Mary's Hospital.*—A Gold Medal in Clinical Medicine has been founded this year for Fifth-year Students by Dr. W. B. Cheadle.

PUBLIC HEALTH.

INSTRUCTION FOR DIPLOMAS IN STATE MEDICINE.

ENGLAND.

THE following recommendations, designed with a view of ensuring "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," were adopted by the General Medical Council in 1896.[1] The regulations require that—"(1) A period of not less than twelve months shall elapse between the attainment of a first registrable qualification in Medicine, Surgery, and Midwifery and the examination for a diploma in Sanitary Science, Public Health, or State Medicine; (2) every candidate shall have produced evidence of having attended, after obtaining a registrable qualification, during a period of six months, practical instruction in a laboratory approved of by the body granting the qualification; (3) every candidate shall have produced evidence of having for six months practically studied the duties of out-door sanitary work either under a medical officer of health who is a teacher in public health in a recognised school, or under the medical officer of health of a county or of a single sanitary district of 50,000, or a combination of districts of 35,000 inhabitants in England, or in one or more districts of 30,000 in Scotland or Ireland; (4) the examination shall have been conducted by examiners specially qualified, and shall comprise laboratory work as well as written and oral examination; (5) the rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890." It was enacted by Section 18 (2) of the Local Government Act [England and Wales], 1888, that after Jan. 1st, 1892, no such appointment (that of medical officer of health) may be made in any county, or in any district or combination of districts with a population of 50,000 or upwards, unless the officer—having, of course, qualifications in Medicine, Surgery, and Midwifery—is registered as the holder of a diploma in Sanitary Science, Public Health, or State Medicine under Section 21 of the Medical Act, 1886, or has during any three consecutive years preceding 1892 been medical officer of a district or combination of districts with a population of 20,000 at least, or has for three years previously to Aug. 13th, 1888, been a medical officer or inspector of the Local Government Board. With the sanction of the Local Government Board, the same person may be appointed medical officer for two or more districts.

London University.—Sanitary Science is included under the head of State Medicine in the M.D. degree, and a certificate has to be produced showing that a course of practical instruction has been attended for the prescribed period, and that the course has included such chemical, microscopical, and meteorological work and exercises as more especially relate to sanitation. The attendance includes six months' practical instruction in a laboratory and six months' out-door sanitary work. Certificates will be received from the holder of any public health office directly or indirectly subject to control by a Secretary of State or a Government Department. If a candidate have studied State Medicine for two years or have studied State Medicine for one year and have held for a period of two years the position of medical officer of health in any sanitary district, or without having studied State Medicine have held for a period of three years the position of medical officer of health in any sanitary district, he will be eligible for the examination.

Cambridge University.—Examinations in so much of State Medicine as is comprised in the functions of medical officers of health will be held in Cambridge, beginning on the first Tuesday in April and in October, and ending in the following week. Any person whose name is on the Medical Register is eligible as a candidate for this examination: Provided (*a*) he be in his twenty-fourth year at least when he presents himself for the first part of the examination, and have attained twenty-four years of age before he presents himself for the second part; (*b*) a period of not less than twelve months shall have elapsed between the time when he first obtained a registrable qualification and the time when he presents himself for either part of the examination; (*c*) he produce evidence of having, before or after obtaining a registrable qualification, attended the clinical practice of a hospital for infectious diseases approved by one of the licensing bodies recognised under the Medical Acts; (*d*) he produce evidence of having, after obtaining a registrable qualification attended during a period of six months on one or more courses, approved by the Syndicate, of practical laboratory instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man; (*e*) he produce evidence of having, after obtaining a registrable qualification, practically studied for six months the duties of out-door sanitary work under the medical officer of health of a county or large urban district, unless he have himself held an appointment as medical officer of health under conditions not requiring a special sanitary diploma. The provisions (*b*), (*c*), (*d*), (*e*) are not to apply to (*a*) candidates whose names shall have been placed on the Medical Register on or before Jan. 1st, 1890, or who have obtained a registrable qualification on or before that date; (*β*) candidates who have for a period of three years held the position of medical officer of health to any county, or to any urban district of more than 20,000 inhabitants, or to any entire rural sanitary district. The examination is in two parts. The first part will

[1] The regulations were last settled on June 9th, 1896, and came into operation on Jan. 1st, 1897.

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comprise Physics and Chemistry; the principles of chemistry and methods of analysis, with especial reference to analyses of air, water, and food; application of the microscope, including the investigation of micro-organisms; the laws of heat and the principles of pneumatics, hydrostatics, and hydraulics, with especial reference to ventilation, water-supply, drainage, construction of dwellings, disposal of sewage and refuse, and sanitary engineering in general; meteorology in relation to health; sources of water-supply; and statistical methods in their application to public health. The second part will comprise Laws and Statutes relating to public health; origin, propagation, pathology, and prevention of epidemic and infectious diseases, including those diseases of animals that are transmissible to man; effects of overcrowding, vitiated air, impure water, and bad or insufficient food; unhealthy occupations and the diseases to which they give rise; water-supply and drainage in reference to health; nuisances injurious to health: distribution of diseases within the United Kingdom, and effects of soil, season, and climate. The following is a list of Colleges and Schools of Medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the State Medicine Syndicate: The Chemical and Pathological Laboratories, Cambridge; the University of Edinburgh; the London Hospital Medical College; St. Bartholomew's Hospital Medical College; King's College, London: University College, London; the Army Medical School, Netley; Owens College, Manchester; the University of Durham Medical School, Newcastle-on-Tyne; Mason College, Birmingham; University College, and Southern Hospital School, Liverpool; St. Mary's Hospital Medical College; Charing-cross Hospital College; Westminster Hospital; University College, Bristol; and Yorkshire College, Leeds. The examination in both parts will be oral and practical, as well as in writing. One day at least will be devoted to practical laboratory work and one day to oral and practical examination in, and reporting on, subjects connected with out-door sanitary work. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which concern the public health. Every candidate will be required to pay a fee of £6 6*s*. before admission or readmission to *either part* of the examination. Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health. All applications for information respecting this examination should be addressed to Dr. Anningson, Barton-road, Cambridge, Secretary to the Syndicate. Candidates who desire to present themselves for the examination in October next must send in their applications on forms supplied for the purpose and transmit the fees to J. W. Clark, M.A., Registrary, University of Cambridge, on or before Sept. 17th. Cheques should be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled, without an additional fee, to be a candidate on one subsequent occasion. The applications of candidates whose names have not been on the Medical Register for three years should be accompanied by a certificate of birth or other proof of age.

University of Oxford (Diploma in Public Health).[2]—An examination, open to all registered medical practitioners, conducted partly in writing, partly *viva voce*, and in each subject partly practical, is held in Michaelmas Term in the following subjects:—General Pathology, with special relation to Infectious Diseases, the Laws relating to Public Health, Sanitary Engineering, Vital Statistics,. The fee for admission to the examination is £10. Candidates (*a*) must have spent after registration a period of at least six months studying in a public health laboratory approved by the Board of the Faculty of Medicine. Candidates must also (*b*) have had their names on the Medical Register of the United Kingdom for a period of at least twelve months; (*c*) have spent after registration a period of study of not less than six months in all, under the medical officer of health of a county or of a city or town containing at least 50,000 inhabitants, or under two or more such medical officers of health. Certificates of proficiency are granted to those who pass this examination.

University of Durham.—Sanitary Science is the special object of the degrees in Hygiene. Candidates for the degree of Bachelor in Hygiene (B. Hy.) must be at least twenty-two years of age and registered, and before presenting themselves for examination must have been for at least twelve months graduates in Medicine of a recognised university. They shall spend six months at Newcastle-upon-Tyne studying Public Health, Comparative Pathology, Practical Bacteriology, Out-door Sanitary Work, Infectious Diseases, Sanitary and Practical Chemistry. They have to pass an examination in Sanitary Chemistry, Physics, Sanitary Legislation, Comparative Pathology, Vital Statistics, Nosology, Distribution of Health and Disease, Sanitary Medicine and Practical Hygiene. The fee for the examination for the degree of B.Hy. is 10 guineas, and for the degree £6 6*s*. Candidates for the degree of Doctor in Hygiene (D.Hy.) must have acquired the degree of Bachelor in Hygiene, must for two years subsequently have been engaged in practice as a Medical Officer of Health, and must write an essay upon some practical hygienic subject. The fee for the examination for the degree of D.Hy. is £5, and for the degree £6 6*s*. The regulations for education and examination for the Diploma in Public Health (D.P.H.) are the same as those for the degree of Bachelor of Hygiene, except that the candidate is not required to be a graduate in Medicine of a recognised University, and the course of study need not be passed at Newcastle-upon-Tyne. The fee for the examination and diploma in Public Health is ten guineas.

Victoria University.—An examination in Public Health is held yearly under the following regulations: The examination is in two parts, and is written, oral, and practical. Candidates before entering for either part of the examination must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates of having attended courses of instruction in Public Health in a college of the University, or in a college or medical school recognised for this purpose by the University; of having attended, after obtaining a registrable qualification, during at least six months, practical instruction in a laboratory approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man; of having attended for three months the clinical practice of a hospital for infectious diseases; of having practically studied the duties of out-door sanitary work for not less than six months under the Medical Officer of Health of a county or of a large urban district. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be admitted to Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. The fee for each part is £5 5*s*., and must be paid on or before July 1st in each year. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners, and who is legally registered, will receive a Diploma in Public Health. The examinations will begin on the third Monday in July each year.

Royal College of Physicians of London and the Royal College of Surgeons of England.—The following are the regulations for obtaining the Diploma in Public Health: Section 1: Candidates must be registered under the Medical Act. The examination consists of two parts. The fee for each part is £5 5*s*. A candidate intending to present himself must give fourteen days' written notice to the Secretary, at the Examination Hall, Thames Embankment, W.C. A candidate registered under the Medical Act on or before Jan. 1st, 1890, will be admissible to Part I. of the examination on producing evidence of being at least twenty-three years of age, and to Part II. on producing evidence of being at least twenty-four years of age. A candidate registered under the Medical Act after Jan. 1st, 1890, will be admissible to examination in Part I. on producing evidence (1) of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least twelve months; (2) of having attended, after obtaining such registrable qualification, practical instruction in a laboratory recognised by the Examining Board in England during a period of six months; and (3) of being at least twenty-three years of age. A candidate will be admitted to Part II. of the examination on producing evidence (1) of having, during a period of six months

[2] No returns.

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after obtaining a registrable qualification, either practically studied the duties of out-door sanitary work under the medical officer of health of a county or large urban district or else held appointment as medical officer of health under conditions not requiring the possession of a special Sanitary diploma; (2) of having attended the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England, either before or after obtaining his registrable qualification in Medicine, Surgery, and Midwifery (this certificate is not required in the case of a candidate who produces evidence that he has commenced special study of Sanitary Science before Jan. 1st, 1894); and (3) of being at least twenty-four years of age.

King's College, London.—The necessary Laboratory Instruction to comply with the regulations of the various Universities and other Medical Licensing Bodies will be given by Professor William R. Smith, M.D., D.Sc., and Professor Edgar M. Crookshank, M.B. Lond. The syllabus includes Physics, Chemistry, Microscopy; Parasites and other Organisms Infesting Food-stuff or the Human Body; Bacteriology, including the Cultivation and Recognition of Micro-organisms. The course will last six months, four months of which will be spent in the Laboratories of Public Health, and two months in the Bacteriological Laboratory. Fee 20 guineas, payable in advance in the College Office. Under the direction of Professor William R. Smith, M.D., D.Sc., and Demonstrator C. G. Moor, M.A., F.C.S., practical instruction will be given in the laboratories in the methods of Analysis of Air, Water, Foods, &c.; Detection of Poisons. Fees, one month, £4 4*s.*; three months, £10 10*s.* The laboratories are also available for original investigations and practical work in Public Health, and are open daily from 9 A.M. to 4 P.M. and on Saturdays to 1 P.M. In Public Health special classes will be held during the winter session by Professor W. R. Smith; fee, £12 12*s.* The Bacteriological Laboratory is open daily for original research under the direction of the professor and demonstrator of Comparative Pathology and Bacteriology. For one month for original research, 3 guineas. For a longer period by arrangement. For one month for private study, with supervision, 4 guineas. For a longer period by arrangement. Practical course for a month, with attendance on lectures, 5 guineas. For a year, 30 guineas. Professor H. G. Seeley, F.R.S., will deliver a course of six lectures on Physiography. For further particulars connected with any of the foregoing classes apply to Professor W. R. Smith, King's College, London.

University College, Bristol.—A course of lectures on the Principles and Practice of Hygiene is given at the College by D. S. Davies, M.D. Lond., D.P.H. Cantab., on Mondays and Fridays, 10–11 A.M., commencing on the first Monday in October. A six months' course of Practical Laboratory Instruction is given at the Western Counties' Laboratory, Park-street, by Mr. F. Wallis Stoddart, commencing on the first Wednesday in October, and including the subjects of Chemistry, Physics, Bacteriology, and Parasites. Demonstrations on the provisions and practical working of the various Acts relating to Public Health and on the Orders, Circulars, and By-laws of the Local Government Board are delivered by Mr. J. C. Heaven on Mondays and Fridays, commencing on the first Monday in October. Gentlemen taking out the course are admitted to practical out-door sanitary work during the session, under the supervision of the Medical Officer of Health for the city and port of Bristol. They are considered as pupil assistants, and are required to carry out diligently such of the duties of medical officers of health as they may be directed to undertake. Facilities are afforded during the course for the study of those diseases of the lower animals which are communicable to man. Fee for the entire course, 20 guineas.

SCOTLAND.

Edinburgh University.—Two degrees in Science in the Department of Public Health are conferred by the University of Edinburgh—viz., Bachelor of Science in Public Health and Doctor of Science in Public Health. Candidates for the degree of B.Sc. in Public Health must be graduates in Medicine of a University of the United Kingdom, or of some other University recognised for the purpose, and must pass two examinations, for the first of which they must, after graduation in Medicine, have worked for at least twenty hours per week during a period of not less than eight months, of which at least five consecutive months must be in the Public Health Laboratory of the University of Edinburgh and the remainder either there or in a laboratory recognised by that University; they must also have attended lectures on Physics and Geology in some Scottish University. Candidates are not admitted to the Second Examination sooner than six months after having passed the First Examination, nor sooner than eighteen months after having taken their degree in Medicine, and they must have attended two separate courses in Public Health in some University of the United Kingdom or in such medical school or Indian, Colonial, or Foreign University as may be approved for the purpose by Edinburgh University, each course consisting of forty lectures at least; one of these courses shall deal with medicine and the other with engineering, each in its relation to public health. They must also give evidence (1) that for six months they have practically studied sanitary work under the medical officer of health of a county or borough or district containing a population of not less than 25,000; (2) that they have had three months' clinical instruction regarding fevers and infectious diseases; and (3) that they have had three months' instruction in mensuration and drawing. The subjects of examination include Laboratory work, Physics, Geology, Medicine in its application to Public Health, Sanitation, Sanitary Law, and Vital Statistics. Graduates who have held the degree of B.Sc. in Public Health from the University of Edinburgh for a term of five years may offer themselves for the degree of D.Sc. in Public Health in that University. They must then present a Thesis and pass an examination in Public Health. The fees are £3 3*s.* for the First and £3 3*s.* for the Second B.Sc. Examinations, and £10 10*s.* for the degree of D.Sc.

University of Aberdeen.—The Diploma in Public Health (D.P.H.) is conferred only on graduates in Medicine of a University in the United Kingdom; and a period of not less than twelve months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene in a laboratory approved of by the University, together with having for a like period after graduation practically and daily studied the duties of out-door sanitary work under the Medical Officer of Health of a county or large urban district, or of having himself held appointment as Medical Officer of Health. He must also have regularly attended for six months the wards of a general fever hospital containing not less than fifty beds. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates desiring to appear for examination at either of these periods must send in their names, with the necessary fee, to the Secretary of the Medical Faculty before the first day of the month in which the examination takes place. The fee for the examination is £5 5*s.* The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

The Royal Colleges of Surgeons and Physicians of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow.—All candidates for the diploma in Public Health must have been qualified for at least one year. Those qualified before 1890 and also those who have held the position of Medical Officer of Health to a county or to an urban district of more than 20,000 inhabitants, or an entire rural sanitary district, do not require to produce evidence of attendance on any special courses. All other candidates must have attended, after qualifying, six months' practical instruction in a recognised public health laboratory or laboratories, and must have studied for six months the duties of out-door sanitary work under the Medical Officer of Health of a county or large urban district, or must themselves have held an appointment as Medical Officer of Health under conditions not requiring the possession of a sanitary diploma. It is also recommended where possible to take out a course of instruction in the diseases of animals transmissible to man.

There are two examinations, and candidates may enter for both at one period or for either separately. The First Examination includes (*a*) Laboratory Work, (*b*) Chemistry,

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(*c*) Physics, and (*d*) Meteorology; and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of £3 3*s*. is payable by rejected candidates to either examination. The examination is held twice yearly in May and October. The published regulations provide detailed synopsis of the subjects of examination and give lists of books from which to select. The Registrar for Edinburgh is Mr. James Robertson, Solicitor, 48, George-square; and for Glasgow Mr. Alexander Duncan, LL.D., 242, St. Vincent-street.

IRELAND.

Royal University of Ireland.—This University grants a diploma in Sanitary Science. It is conferred only on graduates in Medicine of the University. Candidates are not admitted to this examination until the lapse of twelve months from the time of obtaining the first registrable qualification; they must give notice in writing to the Secretaries of their intention to present themselves and must pay the fee, £2, at least one month previously to the examination. Candidates are required to produce a certificate of having, after obtaining the degree of M.B., B.Ch., B.A.O., attended six months' practical instruction in a laboratory approved by the University, and also of having for six months practically studied the duties of out-door sanitary work under the Medical Officer of Health of a county or large urban district.

University of Dublin.—The Diploma in State Medicine is conferred, after examination, on the following conditions:—The candidate must be a Doctor in Medicine or a graduate in Medicine and Surgery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the Medical Register at least twelve months before the examination. The candidate must have completed, subsequently to registration, six months' practical instruction in a laboratory approved by the University and also have studied practically out-door sanitary work for six months, under an approved officer of health. The subjects of examination will be—(*a*) State Medicine and Hygiene, including causation and prevention of disease, contagion in different diseases, morbid diathesis, congenital diseases and malformations, diseases of animals in relation to the health of man, diseases of the vegetable kingdom, famine diseases, causes of origin and spread of epidemics, principles of bacteriology, quarantine, disinfection, &c.; (*b*) Chemistry, including air, water, and articles of food and drink, and their chemical and microscopical examination and analysis, the detection of common poisons and recognition of injurious pigments, &c.; (*c*) Physics and Meteorology; (*d*) Engineering; (*e*) Morbid Anatomy; (*f*) Vital Statistics; (*g*) Medical Jurisprudence; and (*h*) Practical Sanitary Engineering, Epidemiology, and Duties of a Public Health Officer.

Royal College of Physicians and Royal College of Surgeons in Ireland.—Stated examinations for the diploma in State Medicine are held in the months of February, May, and November. A special examination for the diploma can be (except during the months of August and September) obtained on payment of £5 5*s*., in addition to the ordinary fees mentioned below, and on giving notice at least one fortnight before the date of the proposed examination. Every candidate for the diploma in State Medicine must be a registered medical practitioner. (Candidates registered or entitled to be registered prior to January, 1890, are exempt from the rules as to study.) He must subsequently to qualification (1) receive six months' laboratory instruction in Chemistry, Bacteriology, and the Diseases of Animals transmissible to man; and (2) during six months either practically study out-door sanitary work under a Medical Officer of Health or himself hold an appointment of Medical Officer of Health under conditions not requiring the possession of a special sanitary diploma. Candidates are examined on four days commencing on the first Tuesday of February, May, and November, and shall as an additional requirement attend a hospital for infectious diseases. Each candidate must return his name to the secretary of the committee of management under the conjoint scheme three weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. The fee for the examination is £10 10*s*. The examination for the diploma in State Medicine comprises the following subjects:—State Medicine and Hygiene, Chemistry, Meteorology and Climatology, Engineering, Vital Statistics, Law and Bacteriology. For further particulars apply to the Secretary, Committee of Management Office, Royal College of Physicians, Dublin.

DENTAL SURGERY.

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without the special licence; but it is of eminent advantage to take the L.D.S., otherwise few dental appointments at general or special hospitals or dispensaries are available, and, what is still more important, the manual dexterity and knowledge of mechanics requisite for the successful practice of dentistry can only be gained by long and careful training at the dental operating chair and in the dental laboratory; and, this having been attained, it costs but little trouble to pass the special examinations. The subjects beyond those included in the general qualification are—Dental Anatomy and Physiology (Human and Comparative), one course; a separate course of Dental Histology, including the preparation of microscopical sections; Dental Surgery, one course; a separate course of Practical Dental Surgery; a course of not less than five lectures on the Surgery of the Mouth; Dental Mechanics, one course; a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns; Dental Metallurgy, one course; a course of Practical Dental Metallurgy; Practice of Dental Surgery at a recognised school, two years, and a certificate of having been engaged during a period of not less than three years in acquiring a knowledge of Dental Mechanics (this may be obtained by apprenticeship to a duly qualified dental practitioner or in the mechanical department of a recognised dental hospital). In the case of qualified surgeons two years will suffice. The Dental Schools in London are the Dental Hospital of London, the National Dental Hospital and College, and Guy's Hospital Dental School. Most of the large provincial towns have now dental hospitals. A convenient arrangement by which the M.R.C.S., L.R.C.P., and L.D.S. can be taken is as follows:—The Preliminary Examination in General Education having been passed the student should become apprenticed to a qualified dentist and register as a dental and medical student. (This instruction, however, may be taken prior to the date of registration as a dental student.) During his apprenticeship the student should receive instruction in Chemistry and Physics, Pharmacy and Elementary Biology, and pass in these subjects before entering the hospital. (The foregoing constituting the First Examination.) Having entered the hospital the student should attend the dental and general courses contemporaneously, and pass at the end of the second winter the Second Examination—namely, Anatomy and Physiology. At the completion of his second year of study the Dental Examination should be passed. The student should then devote his time to general studies and pass the Third Examination. When time permits it is advisable to attend the general hospital only until after the First and Second Examinations have been passed. At this point a break may be made to admit of the completion of the dental curriculum and the passing of the examinations for the L.D.S. diploma. The best course, however, is to entirely finish the curriculum for the M.R.C.S. and L.R.C.P. and then take the special Dental work. The regulations for the Dental Licence of the Royal Colleges of Ireland and Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow are very similar to those of the English College. The L.D.S. can also be obtained alone.

REGISTRATION OF DENTAL STUDENTS.

The registration of dental students is carried on at the Medical Council Office in London in the same manner as the existing registration of medical students, and subject to the same regulations as regards Preliminary Examinations. Students who commenced their professional education by apprenticeship to dentists entitled to be registered or by attendance upon professional lectures before July 22nd, 1878 (when dental education became compulsory), are not required to produce evidence of having passed a Preliminary Examination. Candidates for a diploma in Dental Surgery must produce certificates of having been engaged during four years in professional studies and of having received three years'

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instruction in Mechanical Dentistry from a registered practitioner. One year's *bonâ fide* apprenticeship with a registered dental practitioner, after being registered as a dental student, may be counted as of the four years of professional study. The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the dental student either before or after his registration as a student, but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

It is now necessary for anyone practising Dental Surgery in this country to register and no foreign qualifications are admitted. Formerly exception was made with regard to the Universities of Harvard and Michigan.

The Royal College of Surgeons of England grants a diploma in Dental Surgery under the following regulations, which apply to all candidates who have registered as dental students after Jan. 1st, 1897. Candidates are required to pass three examinations: the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination. I. Preliminary Science Examination.—Before admission to this examination the candidate must produce a certificate of having received instruction (which may be taken prior to the date of registration as a dental student) at a recognised institution in Chemistry, Physics, and Practical Chemistry. The examination consists of these subjects and is identical with Part I. of the First Examination of the Examining Board in England. II. The First Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during a period of not less than three years in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction (which may be taken prior to registration as a dental student) of a competent Practitioner or under the direction of the Superintendent of the Mechanical Department of a recognised Dental Hospital. In the case of qualified surgeons evidence of a period of not less than two, instead of three, years of such instruction will be sufficient. 2. Of registration as a dental student by the General Medical Council. 3. Of having attended at a recognised Dental Hospital and School (*a*) a course of lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy; (*c*) a course of Lectures on Dental Mechanics; and (*d*) a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns. Candidates may present themselves for the First Professional Examination after the completion of six months' attendance at a recognised Dental Hospital and School. The Examination consists of Mechanical Dentistry and Dental Metallurgy; the examination in Dental Metallurgy will be by written paper. III. The Second Professional Examination.—The Candidate must produce the following certificates: 1. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student. 2. Of having attended at a recognised dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of microscopical sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; and (*e*) a course of not less than five lectures on the Surgery of the Mouth, which lectures may be given at a dental hospital or at a recognised medical school; in the latter case they may form part of the course of lectures on Surgery. 3. Of having attended at a recognised dental hospital or in the dental department of a recogised general hospital the practice of Dental Surgery during two years. 4. Of having attended at a recognised medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, and (*e*) a course of lectures on Medicine. 5. Of having performed Dissections at a recognised medical school during not less than twelve months. 6. Of having attended at a recognised hospital the practice of Surgery and Clinical Lectures on Surgery during two winter sessions. 7. Of being twenty-one years of age. The certificates of professional study will be required to show that students have attended the courses of professional study to the satisfaction of their teachers. Candidates may present themselves for the Second Professional Examination after the completion of four years' professional study from the date of registration as a dental student and after the lapse of not less than six months from the date of passing the First Professional Examination. The Second Professional Examination consists of General Anatomy and Physiology, General Surgery and Pathology, Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. The written examination comprises General Anatomy and Physiology, General Pathology and Surgery, Dental Anatomy and Physiology, and Dental Pathology and Surgery. At the Practical Examination candidates may be examined (*a*) on the treatment of Dental Caries, and may be required to prepare and fill cavities with gold or plastic filling or material, or to do any other operation in Dental Surgery (candidates must provide their own instruments); (*b*) on the Mechanical and Surgical Treatment of the various irregularities of Children's Teeth. There is also an Oral Examination. Exemption from the Preliminary Science Examination is granted to candidates who have passed an Examination in Chemistry and Physics for a degree in Medicine at a University in the United Kingdom, in India, or in a British colony. Exemption from Examination in Anatomy and Physiology is granted to candidates who have passed the Second Examination of the Examining Board in England or the corresponding Examination of the Royal College of Surgeons of Edinburgh, of the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or of any University in the United Kingdom. Exemption from Examination in General Surgery and Pathology is granted to candidates who have passed the Examination in Surgery of the Examining Board in England or the corresponding Examinations of the Colleges and Universities above mentioned. The fee for the diploma is 20 guineas and is payable as follows:—Preliminary Science Examination, 3 guineas; First Professional Examination, 2 guineas; Second Professional examination, 5 guineas; the balance to be paid on the completion of the Examinations. The Preliminary Science Examination is held in January, March or April, July, and October in each year. The First and Second Professional Examinations are held in May and November in each year. Candidates must give twenty-one clear days' notice of their intention to present themselves for examination.

Royal College of Surgeons, Edinburgh.—For the Licence in Dental Surgery all candidates must pass a Preliminary Examination in General Knowledge and have their names inscribed in the Register of Dental Students of the General Medical Council. A copy of regulations, giving a list of Preliminary Examinations recognised for obtaining this Licence, as well as of the subjects of the Professional Examinations, may be obtained from Mr. James Robertson, Clerk to the Royal College of Surgeons, at 48, George-square, Edinburgh. Students who commenced their professional education by apprenticeship or attendance on lectures before July 22nd, 1878, are exempt from the Preliminary Examinations. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates who have commenced their studies *after* Oct. 1st, 1890, must have attended the following curriculum: Anatomy, one course of six months; Practical Anatomy, twelve months; Chemistry, one course of six months; Practical Chemistry, one course of three months; Physiology, one course of six months; Materia Medica, one course of three months; Surgery, one course of six months; Medicine, one course of six months; and attendance on the practice of a recognised general hospital, with Clinical Instruction, twelve months. (Candidates who commenced study in accordance with the regulations in force before July, 1895, shall not be required to attend more than six months' hospital work.) These courses must have been attended at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the diploma in Surgery. In addition to these courses candidates will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, the following special courses of lectures and instruction: Dental Anatomy and Physiology (Human and Comparative) (not less than 24 lectures), Dental Surgery and Pathology (not less than 20 lectures), Dental Mechanics (not less than 12 lectures)—one course each; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Certificates of attendance on such of these courses of the new curriculum as may be respectively required will entitle candidates to appear either

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for the First Dental Examination or for the First and Second Examinations for the Triple Qualification, as they may select, and subject to the existing regulations for each qualification. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination: The candidate must have attended the courses on Anatomy, Chemistry, and Physiology. The examination embraces Anatomy, Chemistry and Physiology. The fee is £4 4*s*. Second Examination: The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is twenty-one years of age, and must pay a fee of £6 6*s*. The examination embraces Surgery, Medicine, Therapeutics, and the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, and Dental Mechanics with Dental Metallurgy. Unsuccessful candidates will be repaid £2 2*s*. in the First and £3 3*s*. in the Second Examinations. Candidates who claim exemption from the First Dental Examination on the ground of having passed the First and Second Triple Qualification Examinations will, before being admitted to the Second Dental Examination, be required to pay the total fee of £10 10*s*. payable for the dental diploma, of which £3 3*s*. will be returned in case of rejection. The fee payable by candidates who begin study after Oct. 1st, 1896, shall be £15 15*s*.

Faculty of Physicians and Surgeons of Glasgow.—The regulations as to certificates, curriculum, number, and subjects of examinations, fees, &c., are in effect similar to those of the Royal College of Surgeons of Edinburgh. Special provision is made for candidates who intend to qualify both in Medicine and in Dentistry. There is a practical examination in Mechanical Dentistry and also an examination in Practical Dentistry conducted in a dental hospital.

Royal College of Surgeons in Ireland.—All information concerning the licence in Dentistry may be obtained from the Registrar of the College, who will receive the applications of candidates for permission to be examined. The bank receipt for fees, together with all certificates, &c., are to be lodged with him at least seven days prior to the day fixed for the commencement of the examination. The Primary Dental Examinations commence on the second Monday in the months of February, May, and November. The Final Dental Examinations commence on the Thursdays immediately following the Primary Dental Examinations. Candidates are required to pass three examinations—viz., Preliminary (in General Education), Primary Dental, and Final Dental. Preliminary Examination.—All examinations in general education recognised by the General Medical Council are accepted by the College. Preliminary Examinations are held conjointly by the Royal Colleges of Physicians and Surgeons on the third Wednesdays in March and September. Primary Dental Examination.—Fee £10 10*s*.; for re-examination, if rejected, £5 5*s*. Every candidate[2] is required, before admission to the Primary Dental Examination, to produce evidence—(1) of having passed a recognised preliminary examination and of having been registered as a medical or dental student by the General Medical Council; (2) of having, subsequently to registration as a dental or medical student, attended at a recognised medical school the following courses: Lectures on Practical Anatomy, including Dental Anatomy, six months; Demonstrations and Dissections, two courses of six months each; Lectures on Chemistry, six months; Lectures on Physiology, including Dental Physiology, six months; Practical Histology; and Practical Chemistry, including Metallurgy, three months; (3) of having attended Clinical Instruction at a recognised general hospital for one year. The subjects of this examination are: (1) Physics;[3] (2) Chemistry, including Metallurgy; (3) Anatomy; (4) Physiology and Histology; and (5) Surgery. Final Examination.—Candidates holding L.R.C.S.I. or students who have passed Primary Dental or Third Professional Examination of the College, £10 10*s*.; re-examination, £5 5*s*. Fees for Final Examination of all other candidates, £26 5*s*.; re-examination, £10 10*s*. Extra fee for Special Examination, £5 5*s*. Candidates must produce evidence of having passed the Primary Dental Examination of this College, or the Third Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognised by the College, and are required to produce certificates of having attended: (1) the following courses of lectures recognised by the College: Dental Surgery and Pathology (two courses), Dental Mechanics (two courses); (2) for two years the practice of a dental hospital recognised by the College or of the dental department of a general hospital so recognised; (3) of having been engaged during four years in professional studies; and (4) of having received three years' instruction in Mechanical Dentistry from a registered dentist. Candidates holding a diploma in Surgery shall be admissible to the Final Dental Examination on producing certificates of having attended: (1) one course of Lectures on Dental Surgery and Pathology; (2) one course of Lectures on Dental Mechanics; (3) for one year the practice of a dental hospital recognised by the College, or of the dental department of a general hospital so recognised, where such attendance has been subsequent to the date of diploma (this remission (3) has been made on the understanding that the surgeon devotes his whole time to dental work); and (4) of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the instruction of a registered dentist. The following are the subjects of examination: Dental Surgery, Theoretical (including Dental Pathology), Clinical, and Operative; Dental Mechanics, Theoretical, Clinical, and Practical (including the Metallurgy of the Workshop). Examinations for the Licence in Dentistry *sine curriculo:* The Council has power to admit to examination, *sine curriculo*, candidates whose names are on the Dental Register published under the direction of the General Medical Council, and who are unable to furnish the certificates required by the foregoing regulations, on presentation of a special schedule of application.

TEACHING INSTITUTIONS.

ENGLAND.

Dental Hospital of London and School of Dental Surgery, Leicester-square.—The school was founded to provide the special dental education required by the Royal College of Surgeons for the Licence in Dental Surgery. The general part of the curriculum may be taken at any general hospital. The hospital is open from 9 A.M. to 4 P.M., there being one staff for the morning and another for the afternoon of each day. There is a good mechanical laboratory, and opportunity is afforded students of gaining practical experience in taking models and fitting dentures into the mouth. The demonstrators at the commencement of each session give a course of lectures on Operative Dental Surgery. The eight house surgeoncies are held for one year each, and are open to all qualified students. The lecturers, in addition to their lectures, give special demonstrations on the Microscopy of Dental Anatomy and Dental Surgery. The lecturer on Dental Mechanics also gives practical demonstrations in the mechanical laboratory. A scholarship of the value of £20 has been founded by Sir Edwin Saunders and will be awarded to the student who has obtained the highest aggregate number of marks in the five class examinations—viz., the four Lecturers' Prizes, the Operating Prize—and in additional special *viva voce* examinations in Practical Dentistry. Prizes and certificates are awarded by the lecturers for the best examinations in the subjects of their respective courses, at the end of the summer and winter sessions. A prize of the value of 5 guineas is given by Messrs. Ash and Sons for the best essay on some surgical subject connected with Dental Surgery. The conditions under which this prize is to be competed for are the same as those for the Saunders Scholarship, with this

[2] Candidates educated in England or Scotland are admitted to the Primary Dental Examination on the production of the certificates that would be necessary for both Primary and Final Examinations in their own countries.

[3] Candidates who have passed in Chemistry and Physics at a First Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognised by the College, are exempted from examination in these subjects at the Primary Dental Examination.

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exception, that the papers are to be written in the hospital during the summer session. Consulting Physician: Sir Richard Douglas Powell, Bart., M.D. Consulting Surgeon: Mr. Christopher Heath, F.R.C.S. Consulting Dental Surgeons: Mr. T. Arnold Rogers, M.R.C.S., L.D.S., and Mr. Smith Turner, M.R.C.S., L.D.S. Dental Surgeons: Leonard Matheson, L.D.S.; E. Lloyd Williams, L.R.C.P., M.R.C.S., L.D.S., L.S.A.; W. B. Paterson, F.R.C.S., L.D.S.; W. H. Woodruff, L.D.S.; A. Clayton Woodhouse, M.R.C.S., L.D.S.; and J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S. Assistant Dental Surgeons: C. F. Rilot, L.R.C.P., M.R.C.S. L.D.S.; H. Baldwin, M.R.C.S., L.D.S.; H. Lloyd Williams, M.R.C.S., L.D.S.; W. H. Dolamore, L.R.C.P., M.R.C.S., L.D.S.; Percy Smith, L.R.C.P., M.R.C.S., L.D.S.; G. Hern, L.R.C.P., M.R.C.S., L.D.S.; J. G. Turner, L.R.C.P., F.R.C.S., L.D.S.; Russell Barrett, L.R.C.P., M.R.C.S., L.D.S.; Ashley Densham, L.R.C.P., M.R.C.S., L.D.S.; N. G. Bennett, M.A., M.B., L.D.S.; and D. P. Gabell, L.R.C.P., M.R.C.S., L.D.S. Anæsthetists: Dudley W. Buxton, M.D., B.S. Lond., M.R.C.P. Lond.; Frederic W. Hewitt, B.A., M.D. Cantab.; Carter Braine, F.R.C.S.; Henry Davis, M.R.C.S., L.S.A.; George Rowell, F.R.C.S.; and E. A. Bridger, M.D. Assistant Anæsthetists: R. Turle Bakewell, M.B. Lond., L.R.C.P., M.R.C.S.; Harvey Hilliard, L.R.C.P., M.R.C.S.; R. J. Probyn-Williams, M.D. Durh.; H. Bellamy Gardner, L.R.C.P., M.R.C.S.; George Flux, M.D. Brux. Demonstrators: H. Austin, M.D. Lond., L.D.S.; R. Herschell, L.D.S.; H. W. Trewby, L.R.C.P., M.R.C.S.; and J. R. Freeman, L.D.S. Medical Tutor: W. S. Nowell, M.A. Oxon., L.D.S. Curator of Mechanical Laboratory: W. E. Fletcher. Lecturers.—Dental Anatomy and Physiology (Human and Comparative): Charles Tomes, F.R.S., M.A. Oxon., F.R.C.S., L.D.S., on Wednesdays and Saturdays, at 8 A.M. (Summer). Dental Surgery and Pathology: Storer Bennett, L.R.C.P., F.R.C.S., L.D.S., on Tuesdays and Fridays, at 8 A.M. (Summer). Mechanical Dentistry: E. Lloyd Williams, L.R.C.P., M.R.C.S., L.D.S., L.S.A., on Wednesdays, at 5 P.M. (Winter). Metallurgy in its Application to Dental Purposes: Dr. Forster Morley, M.A., F.I.C., F.C.S., on Thursdays, at 5 P.M. (Winter). During the sessions the surgeons of the day will give demonstrations at stated hours. The house surgeons attend daily while the hospital is open. Fee for two years' hospital practice required by the curriculum, including lectures, £50 in one payment, or 50 guineas in two yearly instalments. The curriculum requires two years to be passed at a General Hospital; the fee for this is about £55. Both hospitals can be attended simultaneously. The Dean, Mr. Morton Smale, attends at the hospital every Wednesday morning from 10 to 12, or he can be seen at other times by appointment. Letters to be addressed—40, Leicester-square, "to be forwarded."

National Dental Hospital and College.—Winter Session, 1898-99, commences on Oct. 3rd at the new building at the corner of Great Portland and Devonshire-streets, W.—Consulting Physician: Sir W. H. Broadbent. Consulting Surgeon: Mr. Christopher Heath. Consulting Dental Surgeon: Sir Edwin Saunders. Visiting Physician: Dr. James Maughan. Visiting Surgeon: Mr. E. W. Roughton. Dental Surgeons: Mr. F. H. Weiss, Mr. A. Smith, Mr. M. Davis, Mr. T. G. Read, Mr. Rushton, and Mr. C. W. Glassington. Assistant Dental Surgeons: Mr. W. Weiss, Mr. E. Beverley, Mr. S. F. Rose, Mr. A. E. Relph, Mr. W. H. Wheatley, and Mr. H. J. Relph. Anæsthetists: Dr. Flux, Mr. C. E. A. Macleod, Mr. C. J. Ogle, Mr. G. E. Norton, Dr. J. Maughan, and Dr. Harold Low. Lecturers (winter), Dental Anatomy and Physiology: Dr. J. W. Pare, Tuesdays and Thursdays, 5 P.M., in October, November, and December. Practical Dental Surgery: Dr. George Cunningham, Mondays, 6.30 P.M., in October, November, and December. Dental Materia Medica and Therapeutics: Mr. C. W. Glassington, Tuesdays, 6 P.M., in October, November, and December. Dental Metallurgy: Dr. A. B. Griffiths, Tuesdays, 5.45 P.M., in January, February, and March. Dental Mechanics: Mr. H. Rose, Wednesdays, 6 P.M., in January, February, and March. Summer—Dental Surgery and Pathology, Mr. Hopewell Smith, Tuesdays and Fridays, 6 P.M., in May, June, and July. Elements of Histology: Dr. J. Maughan, Mondays and Thursdays, 12 o'clock, May, June, and July. Surgery of the Mouth: Mr. E. W. Roughton, Monday at 5, May, June, and July. The hospital is lighted throughout by electricity and warmed and ventilated by approved methods. Clinical Lectures and Demonstrations are given from time to time, and each student on entering passes through a preliminary course under a demonstrator. The stopping rooms have accommodation for sixty chairs. Dresserships in the extraction rooms are re-arranged every three months. An Entrance Exhibition, of the value of £15, is open for competition at the commencement of each summer and winter session. Prizes in medals are open for competition at the end of each course of lectures. Certificates of honour are given in each class. The Rymer Medal for General Proficiency, value £5, is awarded annually to the most meritorious student; and the Ash Prize, value £3 3*s.*, for a Thesis on a subject in Dental Surgery. Total fee for the Special Lectures and Hospital Practice required, 40 guineas. Single Courses: Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Mechanics, Dental Metallurgy, Dental Materia Medica, Demonstration of Dental Mechanics, £5 5*s.* each. Practical Dental Surgery, £3 3*s.* Hospital Practice to registered practitioners by special permission of Committee, twelve months, £15 15*s.* The Committee also consider applications from medical men who may desire to attend the Anæsthetic Room for a course of instruction in Nitrous Oxide administration. Information respecting the Hospital Practice and the College may be obtained from the Dean, Mr. Sidney Spokes, who attends at the Hospital, Great Portland-street, on Tuesday mornings.

Guy's Hospital.—The work of the Dental Department begins daily at 9 A.M. both in the extraction rooms and in the conservation room. *The Extraction Rooms:* Patients are admitted between 9 and 9.30 A.M., and are seen by the dental surgeon for the day, the dental house surgeon, the assistant dental house surgeon, and the dressers. Such cases as are suitable for conservative treatment are transferred to the conservation room, taking with them a dental chart to indicate the treatment required. *The Conservation Room:* This room is open from 9 A.M. till 5 P.M. There are fifty Morrison chairs for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. The members of the staff attend every morning and afternoon in the week to give demonstrations and otherwise assist students in their work in the Conservation Room and Mechanical Laboratory. Dental students have the opportunity of attending concurrently at this hospital the two courses of instruction required by the examining board for the L.D.S. Eng., viz., the special lectures and practice of the Dental Department and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. An Entrance Scholarship in Arts of the value of £30 is offered for competition annually in September, and prizes of the aggregate value of £35 are awarded for general proficiency and skill in Practical Dentistry. Dental students are eligible for admission to the Residential College and enjoy the other social privileges of students in the Medical School.

London Hospital.—Mr. Cunningham and Mr. Dolamore give practical instruction during the winter and summer sessions on Mondays, Tuesdays, Thursdays, and Fridays at 9 A.M. In selecting from candidates for the office of Dental Assistant priority will be given to those who have attended the greatest number of lectures on Dental Pathology and Surgery, and have also been the most punctual in attendance in the dental department. A class for special instruction in filling teeth will be formed each term. Candidates for Dresserships must undertake to attend regularly on Mondays and Thursdays, or on Tuesdays and Fridays, for three months, and to follow the practical course of demonstrations.

Mason University College, Birmingham.—The teaching of Dentistry is undertaken by the Mason University College, acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that the students may fully qualify themselves for the Dental diploma of the Royal Colleges. There is a special and well-equipped Dental Museum and Laboratory. Special courses of lectures are delivered on Medical and Surgical Diseases of the Mouth, &c., and there is a special course of Practical Dental Histology and Pathology. An Entrance Exhibition, value £15 15*s.*, is awarded annually at the commencement of the winter session. Medals and honour certificates are awarded annually in the various classes.

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Liverpool Dental Hospital, Mount Pleasant.—The Liverpool Dental Hospital, founded in the year 1864, combines the work of a most useful charity with all the advantages of a dental school recognised by all the licensing bodies of Great Britain and Ireland. The increased facilities provided by the recent extensive additions and alterations have more than fulfilled the most sanguine anticipations of the committee and staff, and students have been quick to avail themselves of the increased accommodation and conveniences. Special attention has been paid to the ventilation and lighting; the electric light alone is employed for operating during the evening. Each chair has been provided with a specially constructed canting pendant which can be fixed at any angle. The chairs are of the well-known Morrison pattern, which, together with other fittings and fixtures, render this room one of the finest in the kingdom. There is an abundant daily supply of patients. Over 23,000 cases were treated during last year. The hospital staff consists of twelve honorary dental surgeons, one of whom is present each morning and evening. In addition to these there are one or more house surgeons to superintend all the hospital work and devote themselves to clinical teaching, advising and helping the students in their studies. Every facility is afforded to students who are anxious to acquire proficiency in Dental Surgery and to prepare themselves for the Dental diploma of the Royal College of Surgeons. The fee for the two years' Dental Hospital Practice required by the Royal College of Surgeons is £12 12*s.*, which must be paid on entrance. Fee as a perpetual student, £15 15*s.* Composition fee for Lectures: a payment of £50 on entrance, or in two equal instalments (one-half on entrance and the remainder within twelve months). Fee for General Hospital Practice, £10 10*s.* All communications relating to the medical department should be addressed to Professor Paterson, Dean of the Medical Faculty, University College; and all communications relating to the Dental Hospital should be addressed to R. Edwards, 50, Mount Pleasant.

University College, Bristol. — Dental students can enter for the full curriculum at Bristol. The Lectures are delivered at the college. Practical instruction is given at the Royal Infirmary by Mr. Auckland and at the General Hospital by Mr. Genge, both institutions being recognised by the Dental Board of the Royal College of Surgeons of England. Full information may be obtained of the Dean of the Medical Faculty, Professor E. Markham Skerritt, University College, Bristol.

Owens College, Manchester.—Arrangements have been made for dental students to attend the hospital practice at the Manchester Royal Infirmary and the practice at the Victoria Dental Hospital. Lectures on special subjects will be given in the College as follows:—Winter session: Dental Mechanics, Mr. Tanner, Thursday, 4 P.M. Dental Metallurgy, (vacant). Summer session: Dental Anatomy and Physiology, Mr. Hooton, Tuesday at 4 P.M., Friday at 2 P.M. Dental Surgery, Mr. Campion, Tuesday and Friday, 3 P.M. Practical and Operative Dental Surgery, Mr. Whittaker, Wednesday: Lecture, 2.30 P.M.; Demonstration, 4 P.M. Lectures in Dental and Practical Histology, Mr. Headridge. Fee for the course £4 4*s.* Dental practice for two years at the Manchester Royal Infirmary, £10 10*s.*; at the Victoria Dental Hospital at Manchester, £12 12*s.*, paid in advance, or £8 8*s.* for the first year and £5 5*s.* for the second year. At the Victoria Dental Hospital patients attend at 8.30 A.M. daily, and at 7 P.M. on Monday, Wednesday, and Friday. Consulting Physicians: Dr. H. Simpson and Professor D. J. Leech. Consulting Surgeons: Mr. E. Lund, Mr. F. A. Heath, Professor T. Jones, and Mr. J. Hardie. Consulting Dental Surgeons: Mr. H. Campion and Mr. G. W. Smith. Dental Surgeons: Mr. G. G. Campion, Mr. E. P. Collett, Mr. W. Dougan, Mr. L. Dreschfeld, Mr. J. W. Dunkerley, Mr. W. Dykes, Mr. W. Headridge, Mr. W. A. Hooton, Mr. I. Renshaw, Mr. W. Simms, Mr. W. Smithard, Mr. T. Tanner, and Mr. G. O. Whittaker. Assistant Dental Surgeons: Mr. P. A. Linnell, Mr. F. W. Minshall, Mr. C. R. Morley, and Mr. C. H. Smale. Administrators of Anæsthetics: Dr. A. Wilson and Dr. J. P. Stallard. Dean: Mr. G. G. Campion.

University College, Liverpool (Liverpool Dental Hospital and School of Dental Surgery).—The courses of systematic instruction are given in University College, five minutes from the Dental Hospital. The two institutions are now closely associated and the management of the curriculum is in the hands of a joint committee. At the Dental Hospital recent alterations have been made and as it now stands this school offers advantages to students which are not excelled anywhere. The ground floor of the building contains the following: Extraction-room, with all needful appliances; anæsthetic room, specially reserved with every convenience; and large waiting-room for patients. The first floor has a large board-room and a very comfortable students' room set apart exclusively for the use of students. The whole top floor of the building has been thrown into one fine, airy, and well-ventilated operating room. This room will accommodate upwards of thirty operating chairs, which are of the "Morrison pattern," and each of which has a special electric light (canting pendant) suspended before it. In the basement a very convenient workroom has been fitted up containing the necessary requirements, and there are commodious lavatories for students. A new Laboratory for practical mechanical work is at present being constructed, so as to meet the requirements of the curriculum. A skilled Dental Mechanic will be engaged and students will be able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lectures at University College are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes twelve honorary Dental Surgeons, a Demonstrator, two House Surgeons, and a Curator. Fees for two years' hospital practice £12 12*s.*; perpetual £15 15*s.* The various medical and dental lectures are given at University College. The Anatomical Department contains an excellent collection of skulls illustrative of human and comparative dental anatomy. The dissecting-room and theatre are lighted by electricity. The Physiological and Pathological Department enter into occupation of new and spacious laboratories erected by the Rev. S. A. Thompson Yates. These laboratories will be opened by Lord Lister, P.R.S., on Oct. 8th. Fees: The composition fee for all lectures is £50 in one payment on entrance, or in two equal instalments (one-half on entrance and the remainder within twelve months). The fee for general hospital practice is £10 10*s.* Further particulars can be obtained of A. M. Paterson, M.D., Dean.

Devon and Exeter Dental Hospital, Castle-street, Exeter.—Established 1880.—The hospital is open daily (Sundays excepted), and patients are admitted between the hours of 9 and 11 A.M. Students attending the practice of the hospital must consider themselves strictly under the control of the medical officers, and must not undertake any operation without the consent of the dental surgeon for the day. Hon. treasurer, Mr. J. M. Ackland; hon. secretary, Mr. Henry Yeo.

SCOTLAND.

The Incorporated Edinburgh Dental Hospital and School, 31, Chambers-street, Edinburgh.—For the special classes, both theoretical and practical, required by dental students the directors have secured the services of an efficient staff of dental officers and lecturers. There will also be a course of demonstrations in Mechanical Dentistry. Students will receive instruction in Practical Dental Mechanics under the mechanician. The fee for clinics in gold filling is included in the Dental Hospital fee of £15 15*s.* The minimum cost of classes for the whole course of dental instruction amounts to £78 13*s.*

Dental Hospital and School, Glasgow. — The summer session was opened on May 3rd, 1898, and the lectures were delivered as under:—Dental Surgery and Pathology, on Tuesdays and Thursdays, at 8 A.M. J. M. MacMillan, L.R.C.S. & P. Edin., L.D.S., lecturer. Dental Anatomy and Physiology, on Wednesdays and Fridays, at 8 A.M. Wm. Wallace, M.A., M.B., C.M., L.D.S., lecturer. The winter session opens on Nov. 1st, 1898, and the lectures will be delivered as under: Dental Mechanics, on Tuesday evenings at 7.30 P.M., beginning Nov. 2nd. Mr. John A. Biggs, L.D.S., lecturer. Fee for each of the above courses of lectures, £3 3*s.* The lectures on Dental Anatomy and Dental Surgery are arranged to extend over two summer sessions, as required by the Royal College of Surgeons of England, thus enabling students to present themselves for examination at any of the four Licensing Boards. The fees for lectures and two years' hospital practice amount to £25 4*s.* Intending students before commencing to attend the lectures or hospital practice must produce evidence of having passed the preliminary examination prescribed by the regulations of the General Medical Council for registration of dental students. Dean: Mr. John A. Biggs, L.D.S. Secretary: D. M. Alexander, 97, West Regent-street, Glasgow. The hospital

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is open daily from 5 to 7 P.M. (Saturdays excepted). Students may enrol at any time, their period of attendance counting from date of entry.

Glasgow Royal Infirmary (Dental Department).—Mr. W. H. Gray, L.D.S., attends at the Royal Infirmary at 3 P.M. on Mondays, Wednesdays, and Saturdays, and gives a course of Dental Surgery on these days in summer. The following course in the curriculum can be taken at St. Mungo's College: Anatomy, six months; Practical Anatomy, nine months; Physiology, six months; Chemistry, six months; Practical Chemistry with Metallurgy, three months; Surgery, six months; Medicine, six months; Materia Medica, three months; Clinical Surgery, six months; Dental Surgery, six months, and attendance for two years on the dental department of the hospital. The attendance on the Dental Clinic is free to students of the hospital; to dental students, one year, £5 5*s.*; perpetual £10 10*s.*

IRELAND.

School of the Royal College of Surgeons in Ireland.—Dentistry: Professor R. T. Stack, M.D.Univ.Dub., F.R.C.S., L.D.S.Eng., Examiner Royal College of Surgeons, Dentist Dental Hospital of Ireland. Arrangements are completed for the education of candidates for the Licence in Dental Surgery of the College, and the following courses are delivered during the session:—Dental Anatomy, Professor Fraser; Dental Metallurgy, Professor Lapper. Fee, each course, £3 3*s.*

MEDICAL TEACHERS.

MR. R. C. B. KERIN, B.A. London, first in First Class Honours in Classics, assisted by a staff of B.A. and B.Sc. Honour Graduates, prepares candidates in class and by private Tuition for Medical Preliminaries, London Matriculation, Preliminary Scientific Inter. Science, Hospital Scholarships, First Conjoint, First M.B.Lond., Oxon., and Camb., &c. Biological, Chemical, and Physical Laboratories. For last six years 150 London University Successes and 3 Hospital Science Scholarships, &c.—Carlyon College, 55 and 56, Chancery-lane, W.C.

The UNIVERSITY EXAMINATION POSTAL INSTITUTION prepares candidates through the post or orally for all Medical Examinations, especially for the M.D. (London or Durham) and the D.P.H. (Cambridge or London). There are five medical tutors, of whom three are Medallists of the London University. Preparation also by the other tutors for the Preliminary Arts or Science Examinations. Numerous recent successes. — Manager, Mr. E. S. Weymouth, M.A., 27, Southampton-street, Strand, London, W.C.

M.D., B.S. LOND., prepares for all the Professional Exams. Small classes are held for the Final College of Surgeons and Physicians, the Hall, the M.D.'s of Brussels and Durham (fifteen years' standing). Tuition by correspondence. — Address, M.D., 23, Wimpole-street, Cavendish-square, W.

Special preparations, in class, privately, and by correspondence, for the Triple Qualification, Edinburgh. Also for Fellowship Examinations of Royal College of Surgeons, Edinburgh, and M.D. Brussels. Resident pupils received.—Address, CLASS ROOMS, 7, Chambers-street, Edinburgh.

Coaching for Examination (University of Brussels). Also Correspondence Course for Provincial Practitioners, with practical and *viva voce* work in London before going to Brussels.—Address, CANTAB., THE LANCET Office, 423, Strand, W.C.

Mr. BECKTON (late 19, Keppel-street, W.C.) has removed to 61, Torrington-square, Russell-square, W.C., where he continues to prepare candidates for Matriculation and Professional Preliminary Examinations, and the 1st Conjoint. Boarders received.

Private Tuition in Materia Medica, Chemistry (Practical and Theoretical), Physics, and Pharmacy for all Exams. Classes recognised by General Medical Council and Apothecaries' Hall. Tuition by Correspondence. Numerous successes.—Mr. SKERRY, M.A., The City School of Chemistry, 27, Chancery-lane.

Classes for the Navy Medical Service are held at 46, Great Ormond-street, W.C. Those for the November Competitions begin on Monday, Sept. 19th, at 11 A.M.—H. R. JENNINGS, Sec.

Ordinary and Revision Courses in Chemistry, Physics, and Biology, for Prelim. Sci. (M.B.) and Courses in Organic Chemistry for Inter. M.B., are held at the UNIVERSITY TUTORIAL COLLEGE, Red Lion-square, Holborn. Last year 124 students of the University Tutorial College passed the Prelim. Sci. Examination of London University. Particulars may be had from the Vice-Principal, University Tutorial College, Red Lion-square, Holborn.

INSTRUCTORS IN ELOCUTION, &c.

Professor ALTSCHUL, Ph.D., has made Stammering, Stuttering, Lisping, Falsetto, recent or of long standing, due to nervousness, &c., irrespectively of age or sex (without any mechanical appliances), his special life-long study. The voice greatly developed and strengthened.—9, Old Bond-street, W. (Attends at Brighton.)

Mr. WILLIAM VAN PRAAGH, the public introducer of the Pure Oral System of Teaching Deaf Mutes, has made the subject of Lip-reading and the cure of all Defects of Speech, both acquired and congenital, his special study. Papers on the various subjects can be had at 11, Fitzroy-square, W.

Mrs. EMIL BEHNKE gives instruction in Voice Training and treats Stammering and other Defects of Speech at 18, Earl's-court-square, S.W.

Miss BOULTBEE, 37, Gloucester-place, Portman-square, W., gives Lessons in Lip-reading to persons wholly or partially Deaf.

THE STUDENT'S LIBRARY.

THE number of medical works available to the English student has now become so large, while their general quality is so excellent, that it is a matter of increasing difficulty to make any attempt to indicate the most serviceable text-book in any branch. For some years past we have endeavoured to make such a guide by taking the leading examinations as the basis of our comments and pointing out some of the chief text-books which may be read in preparation for these examinations. But for the reason above stated this mode of dealing with the matter has the objection of making a somewhat invidious selection. In what follows we propose merely to arrange in systematic fashion most of the publications now in vogue under each subject of the curriculum. We do not pretend to have made the list exhaustive and we can quite understand that there are books omitted from it which others besides the authors and the publishers know to be standard works. But we can say without fear of contradiction that any student who masters the contents of the library we here suggest for his use will know enough and to spare to pass his examinations.

ANATOMY.

THE standard text-books on Systematic Anatomy are Quain's and Gray's. Both of these have been recently brought up to date. Quain's is the more scientific work, and is, indeed, the most advanced and comprehensive treatise on the subject in the English language, if not in all languages. Its morphological, histological, and visceral anatomy is unequalled. The volume on Embryology by Professor E. A. Schäfer is the clearest and best history of development with which we are acquainted. An appendix has been published on Superficial and Surface Anatomy by Professor Thane and Professor Godlee. The work is now published in separate parts.

Quain's (Jones) Elements of Anatomy. London: Longmans, Green, and Co. The tenth edition. Edited by EDWARD ALBERT SCHÄFER, F.R.S., Professor of Physiology and Histology in University College, London; and GEORGE DANCER THANE, Professor of Anatomy in University College, London. In three volumes. Vol. I., Part I. Embryology. By Professor Schäfer. Illustrated by 200 Engravings, many of which are coloured. 9*s.* Vol. I., Part II. General Anatomy or Histology. By Professor Schäfer. Illustrated by nearly 500 Engravings, many of which are coloured. 12*s.* 6*d.* Vol. II., Part I. Osteology. By Professor Thane. Illustrated by 168 Engravings. 9*s.* Vol. II., Part II. Arthrology, Myology, Angeiology. By Professor Thane. Illustrated by 255 Engravings, many of which are coloured. 18*s.* Vol. III., Part I. Spinal Cord and Brain. By Professor Schäfer. Illustrated by 139 Engravings. 12*s.* 6*d.* Vol. III., Part II. The Nerves. By Professor Thane. Illustrated with 102 Engravings, many of which are coloured. 9*s.* Vol. III., Part III. Organs of the Senses. By Professor Schäfer. Illustrated by 178 Engravings. 9*s.* Vol. III., Part IV. Splanchnology. By E. A. Schäfer, F.R.S., and Johnson Symington, M.D. With 337 Illustrations. 16*s.* Appendix. Superficial and Surgical Anatomy. By Professor G. D. Thane and Professor R. J. Godlee. With 29 Illustrations. 6*s.* 6*d.*

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S., late Lecturer on Anatomy at St. George's Hospital. The fourteenth edition. 36*s.* London: Longmans, Green, and Co. Re-edited by T. PICKERING PICK, Surgeon to St. George's Hospital, Member of the Court of Examiners, Royal College of Surgeons of England. There are 705 large Woodcut Illustrations, a large proportion of which are coloured, the arteries being coloured red, the veins blue, and the nerves yellow. The attachments of the muscles to the bones in the section on Osteology are also shown in coloured outline.—*Gray's Anatomy* occupies a place only second to Quain's. In popularity it is doubtful if it does not actually precede its larger rival, and for mere everyday work it has points of superiority; in many instances the diagrams are much clearer, if somewhat more diagrammatic, excessive detail being omitted.

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Human Anatomy: a Treatise by various Authors. Edited by HENRY MORRIS, M.A., M.B. Lond., F.R.C.S., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital, with 800 Illustrations, nearly all original, and many of them in several colours. 36*s.* Second edition.—This is an excellent work. We may mention especially the description of the peritoneum, in which the arrangement of that complicated structure is set out with admirable clearness. In one volume. London: J. & A. Churchill.

A Manual of Anatomy for Senior Students. By EDMUND OWEN, M.B., F.R.C.S., Senior Surgeon to the Hospital for Sick Children, Great Ormond-street, Surgeon to St. Mary's Hospital, London, and co-Lecturer on Surgery, late Lecturer on Anatomy, in its Medical School. With 210 Illustrations. Price 12*s.* 6*d.* London: Longmans, Green, and Co.

A Text-book of Human Anatomy: Systematic and Topographical. By ALEXANDER MACALISTER, M.A., M.D., F.R.S., F.S.A., Professor of Anatomy in the University of Cambridge, and Fellow of St. John's College, Examiner in Human Anatomy, University of London. Includes the Embryology, Histology, and Morphology of Man, with special reference to the requirements of Practical Surgery and Medicine. One vol. 1889. 816 Illustrations. 36*s.* London: Charles Griffin and Co.—It is in many respects the most important work on the subject that has appeared in recent years, being thoroughly comprehensive, lucid, and up to date. It is especially suited for senior students.

Wilson's Anatomist's Vade-Mecum. Eleventh edition. By HENRY E. CLARK, M.R.C.S. Eng., F.F.P.S. Glasg., Examiner in Anatomy, F.P.S., and Professor of Surgery in St. Mungo's College, Glasgow. With 492 Engravings and 26 Coloured Plates. 18*s.* London: J. & A. Churchill.

The Anatomy of the Joints of Man. By HENRY MORRIS, F.R.C.S. 8vo. 16*s.* London: J. & A. Churchill.—This is perhaps the most complete book on the subject yet published. The work is fully illustrated, and many of the illustrations are in colour. Besides the bones, ligaments, and synovial membranes, the various features connected with the arterial and nervous supply of the joints, the bursæ, and the muscles which act upon the joints are very thoroughly dealt with.

In Practical Anatomy the student has the choice of text-books by Ellis, Cunningham, Heath, and Cleland. The favourite dissecting-room manuals are probably those of Ellis and Cunningham.

Ellis's Demonstrations of Anatomy, as edited by Professor THANE, have been studied by generations of dissectors, and for accuracy and thoroughness leave nothing to be desired.—*Cunningham's Practical Anatomy* is a very clear, well-written book, and fully illustrated. It has the advantage of being published in separate volumes. It is steadily growing in favour and has many points of superiority.—*Heath's Practical Anatomy* is a smaller work, clearly written, and forming a compendious introduction to the subject.

Demonstrations of Anatomy. By GEORGE VINER ELLIS, F.R.C.S. Eleventh edition. 1890. Pp. 782. 12*s.* 6*d.* London: Smith, Elder, and Co.

Cunningham's Manual of Practical Anatomy. Second edition. In two vols., cloth, illustrated with 372 Wood Engravings and two Coloured Plates. Vol. I.: Upper Limb, Lower Limb, Abdomen; Vol. II.: Thorax, Head, and Neck. Price 12*s.* 6*d.* each volume. Edinburgh: Young J. Pentland.

Heath's Practical Anatomy. Edited by W. ANDERSON, F.R.C.S. With 329 Engravings. 15*s.* London: J. & A. Churchill.

Surgical Anatomy: a Manual for Students. By A. MARMADUKE SHEILD, M.B. Cantab., F.R.C.S. Crown 8vo, cloth, pp. xii.-226. 1891. 6*s.* Edinburgh: Young J. Pentland.

Dissections Illustrated. By C. GORDON BRODIE, F.R.C.S. A graphic handbook for students of anatomy; 73 Coloured Plates and 37 Diagrams. 42*s.* London and New York: Whittaker and Co. It is also published in four parts.—This is an admirable book and should find a place in every student's library.

Applied Anatomy may be studied from the works of Treves, Bellamy, Holden, or Maclachlan.

Holden's Landmarks, Medical and Surgical, like all his work, is distinguished by its clearness of arrangement and correctness of detail. The English is perfect and the illustrations excellent. It thoroughly justifies its popularity in every way.—*Treves's Surgical Applied Anatomy* and the *Guide to Surgical Anatomy* by EDW. BELLAMY are both in general use in our schools. The former is particularly full of information, conveyed in such a way that it is likely to stay in the student's memory.—*Maclachlan's Surgical Anatomy* is better known in Scotland. It is an accurate and comprehensive work.

Landmarks, Medical and Surgical. By LUTHER HOLDEN, F.R.C.S. Fourth edition. 3*s.* 6*d.* London: J. & A. Churchill.

Surgical Applied Anatomy. By F. TREVES, F.R.C.S. Pp. 574, with 61 Engravings. 16th thousand. 1894. 7*s.* 6*d.* London: Cassell and Co.

Human Osteology. By LUTHER HOLDEN, F.R.C.S. Edited by Professor Stewart and Robt. W. Reid, M.D. Seventh edition. With 59 Plates. 16*s.* London: J. & A. Churchill.

Aphorisms in Applied Anatomy and Operative Surgery: including 100 Typical vivâ-voce Questions on Surface Marking, &c. By THOMAS COOKE, F.R.C.S. Crown 8vo. 3*s.* 6*d.* London: Longmans, Green, and Co.

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PHYSIOLOGY.

Text-book of Physiology. By Professor MICHAEL FOSTER, M.D., F.R.S. Four parts. Pp. 1550. With an Appendix. *The Chemical Basis of the Animal Body,* constituting a separate volume of 270 pages, by A. SHERIDAN LEA, D.Sc., F.R.S. The best English text-book of the subject; suitable for students preparing for higher examinations. Deals with histology as well as with physiology proper. The parts can be bought separately. Part I., The Blood, Tissues of Movement, and Vascular Mechanism. 10*s.* 6*d.* Part II., The Tissues of Chemical Action and Nutrition. 10*s.* 6*d.* Part III., The Central Nervous System. 10*s.* 6*d.* Thoroughly revised and brought up to present date. Part IV., The Tissues and Mechanisms of Reproduction. 10*s.* 6*d.* Appendix, 7*s.* 6*d.* Sixth edition. London: Macmillan and Co. 1895.

An Introduction to Human Physiology. By AUGUSTUS WALLER, M.D., F.R.S.—A very complete manual, though of medium size; thorough and attractively written in all its parts; presupposes good acquaintance with chemistry and physics; well suited to meet medical and other examinations in the subject, but containing very little histology; with 314 illustrations. Third edition. 1896. Pp. 640. London: Longmans, Green, and Co. Price 18*s.*

Text-book of Physiology. By British Physiologists. Edited by E. A. SCHÄFER, F.R.S., Jodrell Professor of Physiology, University College, London. Two vols., royal 8vo. Vol. I., pp. xx.-1036, with 3 Plates and 93 Illustrations in the text. Price 31*s.* 6*d.* Vol. II. in Press. 1898. The following among others will contribute: Professor Burdon Sanderson (Oxford), Professor Gamgee, Dr. Gaskell (Cambridge), Professor Gotch (Oxford), Professor Sherrington (Liverpool), Professor M'Kendrick (Glasgow), Professor Halliburton (King's College), Professor Haycraft (Cardiff), Dr. Pembrey (Charing-cross), Dr. Starling (Guy's), Dr. Rivers (Cambridge), J. N. Langley (Cambridge), Professor Waymouth Reid (Dundee), B. Moore (University College), F. G. Hopkins (Guy's), Leonard Hill (London Hospital), W. H. R. Rivers (Cambridge), the Editor, &c. Edinburgh: Young J. Pentland.

A Manual of Physiology for Students and Practitioners. By Professor G. N. STEWART, M.A., D.Sc., M.D., D.P.H. Camb.—A first-class text-book of medium size; profusely illustrated; deals fully with medical physiology; contains a number of practical exercises; also some well-coloured histological plates; thoroughly commendable. Pp. 795. London: Baillière, Tindall, and Cox. 1895. Price 15*s.*

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Kirkes' Handbook of Physiology. Edited by W. D. HALLIBURTON, M.D., F.R.S.—This book may be regarded as a thoroughly reliable exposition of the present state of physiological knowledge. Fourteenth edition. Revised. London: J. Murray. 1896. 14*s.*

Human Physiology. By Professor LANDOIS. Translated and edited by WILLIAM STIRLING, M.D., D.Sc. Fifth edition in active preparation. London: Charles Griffin and Co. 1891.

Text-book of Physiology. By JOHN GRAY MCKENDRICK, M.D., F.R.S. A large work, containing in some directions more than the student requires, but a first-class treatise. 40*s.* Two vols. Glasgow: Maclehose and Sons.

Manual of Physiology. By G. F. YEO, M.D., F.R.S. A good book, somewhat smaller than the foregoing. 14*s.* Third edition. London: J. & A. Churchill.

Elements of Human Physiology. By ERNEST H. STARLING, M.D., M.R.C.P., Joint Lecturer on Physiology at Guy's Hospital. Third edition, with 140 Engravings. 7*s.* 6*d.* London: J. & A. Churchill. Outlines; no histology.

Physiology for Beginners. By Professor MICHAEL FOSTER, M.D., F.R.S., and LEWIS E. SHORE, M.A., M.D.—A capital little book, forming a good introduction to Foster's "Text-book" or to Waller's "Human Physiology." Extremely clearly written and thoroughly illustrated. Not sufficient by itself to meet the requirements of medical examinations in physiology or histology. 2*s.* 6*d.* London: Macmillan and Co. 1894.

Notes on Physiology for the Use of Students preparing for Examination. By HENRY ASHBY, M.D. Lond., F.R.C.P., Physician to the General Hospital for Sick Children, Manchester; formerly Demonstrator of Physiology, Liverpool School of Medicine. Sixth edition, thoroughly revised. With 141 Illustrations. Fcap. 8vo, price 5*s.* London: Longmans, Green and Co.

The Essentials of Experimental Physiology. For the Use of Students. By T. G. BRODIE, M.D., Lecturer on Physiology, St. Thomas's Hospital Medical School. With 2 Plates and 177 Illustrations. 8vo. 1898. 6*s.* 6*d.* London: Longmans, Green and Co.

PHYSIOLOGICAL CHEMISTRY.

A Text-book of the Physiological Chemistry of the Animal Body. By ARTHUR GAMGEE, M.D. Edin., F.R.S. Vol. II., Digestion.—The best manual on the subject, but only suitable for advanced students. 1892. 18*s.* London: Macmillan and Co.

Text-book of Chemical Physiology and Pathology. By Professor W. D. HALLIBURTON, M.D., F.R.S.—An excellent manual for all students. Illustrated. One vol. 1891. 28*s.* London: Longmans, Green, and Co.

Essentials of Chemical Physiology. By the same author.—An excellent and indispensable manual for students in the physiological laboratory. It is a very handy size, 170 pp. 1896. Price 5*s.* London: Longmans, Green, and Co.

The Chemical Basis of the Animal Body. By A. SHERIDAN LEA, D.Sc., F.R.S.—A first-rate treatise, constituting the appendix to Foster's Physiology. Smaller, less illustrated, and less expensive than either of the foregoing text-books, containing very complete references to original papers. One vol. Pp. 270. 1892. 7*s.* 6*d.* London: Macmillan and Co.

HISTOLOGY AND EMBRYOLOGY.

Some physiological text-books deal with Histology sufficiently fully for the pass examinations of the medical student; such books are Foster, Landois, and Kirkes (see above). The histological descriptions in Quain's "Anatomy" are unsurpassed. Special treatises are:—

Histology. By E. A. SCHÄFER, F.R.S., Jodrell Professor of Physiology in University College, London; Editor of the Histological Portion of Quain's "Anatomy." Second edition. Revised and enlarged. 1897. 7*s.* 6*d.* London: Smith, Elder, and Co.

The Elements of Embryology. By Professor MICHAEL FOSTER, F.R.S., and the late Professor FRANK BALFOUR, F.R.S. Second edition, revised. Pp. 470. 1893. 10*s.* 6*d.* Eminently practical; the best book for those examinations in which practical work and manual skill in the subject are required.—*Practical Physiology.* By Professors MICHAEL FOSTER, F.R.S., and J. N. LANGLEY, F.R.S. Sixth edition. 1895. 7*s.* 6*d.* An excellently selected series of laboratory exercises, with full instructions to the student. Both, London: Macmillan and Co.

The Essentials of Histology: Descriptive and Practical. For the Use of Students. By E. A. SCHÄFER, LL.D., F.R.S. Illustrated by nearly 400 Figures. Fifth edition, revised and enlarged. 8vo. 1898. 8*s.* (Interleaved, 10*s.* 6*d.*). London: Longmans, Green, and Co.

Outlines of Practical Physiology. By Professor WILLIAM STIRLING, D.Sc. Third edition. 1895. 12*s.* 6*d.* Thoroughly revised and partly re-written, with additional illustrations. Includes chemical and experimental physiology and references to practical medicine; histology not included; the best students' book on the subject; full of information and capitally illustrated.—*Outlines of Practical Histology.* Second edition. 1892. 12*s.* 6*d.* Companion volume to the above and equally good; copiously illustrated. Both, London: Charles Griffin and Co.

Text-book of Histology. By A. CLARKSON, M.B., C.M. Edin. A useful student's book, with 200 excellent illustrations, most of them well coloured. Bristol: Wright. 1896. 21*s.*, or plates only, with descriptions, 9*s.* net.

Text-book of Morbid Histology. By Professor RUBERT BOYCE. With 130 Coloured Illustrations. 1892. 31*s.* 6*d.* London: H. K. Lewis.

Atlas of Human Anatomy. By Dr. ARNOLD BRASS, Göttingen. Translated by R. A. YOUNG, M.D., B.Sc. Sixty plates, containing 500 accurately coloured drawings of sections. London: Baillière, Tindall, and Cox. 1897. 31*s.* 6*d.* net.

Elements of Histology. By E. KLEIN, M.D., F.R.S., and J. S. EDKINS, M.A., M.B. With 296 Illustrations. 7*s.* 6*d.* London: Cassell and Co.

There are also two small books dealing with histological methods which will be found useful by students and hospital residents:—

Methods and Formulæ. By PETER WYATT SQUIRE. London: J. & A. Churchill.

Section Cutting and Staining. By W. S. COLMAN, M.D. Second edition, revised. 1896. London: H. K. Lewis.

CHEMISTRY AND PHYSICS.

Chemistry: General, Medical, and Pharmaceutical. By JOHN ATTFIELD, F.R.S.—A very serviceable manual both for preparation work and reference. It has been designed especially for medical and pharmaceutical students, treats at fair length of both inorganic and organic chemistry, and contains useful data on the analysis and examination of drugs and morbid products—as, for example, calculi, urine, and blood. Seventeenth edition. Revised in accordance with the new Pharmacopœia. 15*s.* London: Gurney and Jackson.

Organic Chemistry. By IRA REMSEN.—A clear account of the principles, including also the preparation of important organic substances. 6*s.* 6*d.* London: Macmillan and Co.

Notes on Analytical Chemistry for Students of Medicine. By A. J. BERNAYS.—This is an excellent laboratory book for medical students preparing for examination, and contains also data of service to the practitioner—as, for example, the methods of examination of urinary deposits, the estimation of sugar, and the detection of biliary constituents, &c., in urine. Third edition. 4*s.* 6*d.* London: J. & A. Churchill.

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Physics for Students of Medicine. By ALFRED DANIELL, M.A., D.Sc.—This is a recently published work by Professor Daniell, whose experience of the requirements of medical students in regard to physics is well known. It will be found an excellent companion to lecture work and is suitable for students preparing for the elementary physics examination of the Conjoint Board. It is published by Macmillan and Co., price 4*s.* 6*d.* For the first M.B. Lond. students should possess a copy of the more advanced work—*A Text-book of Physics.* Third edition. 21*s.* By the same author and publisher.

A Manual of Physics. By WILLIAM PEDDIE, D.Sc., F.R.S.E. Second edition (revised and enlarged). London: Baillière, Tindall, and Cox. 1896. Price 7*s.* 6*d.*—This handy-sized volume will be found a very useful companion to those

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reading for the London University examinations and the Conjoint Board. It belongs to the University series. It is written to the level of junior students or of schoolboys of a fair average intelligence, but for that reason, we think, might have been more fully illustrated.

Elementary Lessons in Electricity and Magnetism. By SYLVANUS THOMPSON, D.Sc. A standard text-book on the subject. 4*s.* 6*d.* London: Macmillan and Co.

MATERIA MEDICA AND THERAPEUTICS.[1]

Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. LAUDER BRUNTON, M.D., D.Sc., F.R.S. Third edition, containing the additions (1891) to the British Pharmacopœia, 21*s.*; in two vols., 22*s.* 6*d.* Supplement separately, 1*s.* London: Macmillan and Co.—The student for the higher examinations would be well advised to provide himself with this work. It is equally useful as a practical treatise and as a work of reference and is admirably written. It is not intended for junior students.

A Handbook of Therapeutics. By SIDNEY RINGER, M.D., F.R.C.P., F.R.S. This is another large and important work, designed more for reference than for daily use. Thirteenth edition. London: H. K. Lewis.

Manual of Pharmacology and Therapeutics. By WILLIAM MURRELL, M.D., F.R.C.S. Price, 10*s.* 6*d.* London: Baillière, Tindall, and Cox.

Materia Medica. By HALE WHITE, M.D., F.R.C.P., Physician to Guy's Hospital. Third edition, based upon the 1898 Pharmacopœia. London: J. & A. Churchill. 7*s.* 6*d.*

Materia Medica and Therapeutics. An Introduction to the National Treatment of Disease. By J. MITCHELL BRUCE, M.D., F.R.C.P. Thirty-third thousand. Pp. 582. Price 7*s.* 6*d.* London: Cassell and Co. 1896.—Two excellent practical books for students engaged in any of the pass examinations.

Essentials of Materia Medica and Therapeutics. By Sir A. B. GARROD, M.D., F.R.S., &c. Fourteenth edition. 1895. Edited by NESTOR TIRARD, M.D., F.R.C.P. The subject is regarded entirely from a practical therapeutic point of view, and the work, though more useful to the practitioner, can still be used as a book of reference by the student. 12*s.* 6*d.* London: Longmans, Green, and Co.

Of other text-books likely to be of value we might mention:—*Materia Medica and Therapeutics: Inorganic Substances.* By C. D. F. PHILLIPS, M.D. Second edition. 8vo. 21*s.* London: J. & A. Churchill.—*Guide to Therapeutics.* By R. FARQUHARSON, M.D., F.R.C.P., &c. Fifth edition. Pp. 417. 7*s.* 6*d.* London: Smith, Elder, and Co. 1891.—*Materia Medica and Therapeutics.* By Dr. BARTHOLOW. Ninth edition. Pp. 866. 21*s.* London: H. K. Lewis. 1896.—*The Dictionary of Treatment.* By WM. WHITLA, M.D. Q U.I. Fourth edition. Pp. 1000. 16*s.* London: Henry Renshaw. 1898. A capital, practical book, and pleasant reading.—*Notebook on Materia Medica.* By SCORESBY JACKSON. New edition. Edited by RALPH STOCKMAN, M.D., and J. RUTHERFORD HILL. London: J. Thin.

MEDICINE.

The number of text-books on Medicine is so large, and their general excellence so high, that it is impossible to make a selection with which no one could find legitimate fault. It must always appear that some books as good or better than the specified list have been omitted. We do not for a moment pretend that this is the best possible list, but the student who is guided by these books will be in very good hands.

The list might be considerably extended were works dealing with special branches of medicine included. To the aspirant for high medical degrees it may be a matter of moment to make himself familiar with some of these, such as Gowers on the Nervous System, Ashby and Wright on Diseases of Children, Goodall and Washbourn on Fevers; whilst he would find it valuable to refer to special treatises on diseases of the throat, dermatology, and other branches of medicine when engaged in the practical study of the subject. But our purview is not intended to embrace the whole field of medical literature, and the library of the medical school will afford him ample opportunity for consulting such works if need be. His own library should consist of a few selected general text-books, with the contents of which he should make himself thoroughly familiar.

[1] It must be remembered that owing to the recent publication of the new edition of the British Pharmacopœia many of the statements in these books will require modification or omission.

Text-book of the Principles and Practice of Medicine. By the late HILTON FAGGE, M.D., F.R.S., and P. H. PYE-SMITH, M.D., F.R.C.P., F.R.S. Third edition. 40*s.* London: J. & A. Churchill. Two vols.—A work of great interest mainly based on the author's personal experience as physician to Guy's Hospital as well as his wide knowledge of the literature of medicine. It is almost indispensable to the advanced student.

A System of Medicine by Many Writers. Edited by T. CLIFFORD ALLBUTT, M.A., M.D. Cantab., LL.D. Glasg., F.R.C.P. Lond., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge. Seven vols. Each 25*s.* net. London: Macmillan and Co.—Five volumes of this admirable work have now appeared. In scope and character it resembles the well-known "System" edited by the late Sir J. Russell Reynolds. The articles are replete with information and embrace the latest teachings of science. It should be invaluable to the practitioner as well as to the candidate for higher degrees.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by WILLIAM PEPPER, M.D., LL.D. Two vols. 1893. Pp. 909 and 1046. Philadelphia: W. B. Saunders. London: The Rebman Publishing Company.

The Theory and Practice of Medicine. By the late J. S. BRISTOWE, M.D., F.R.S. Seventh edition. 1890. Pp. 1285. 21*s.* London: Smith, Elder, and Co.—A work of sterling merit by a highly-esteemed physician; perhaps more full in clinical and pathological exposition than in therapeutical, but thoroughly sound in teaching.

The Theory and Practice of Medicine. By F. T. ROBERTS, M.D. Ninth edition. 21*s.* London: H. K. Lewis.—Long a deserved favourite with students, for whom it is especially written. Its great feature is the remarkably systematic division of the subject matter; replete with facts, but somewhat restrained in style.

A Medical Handbook for Practitioners and Students (Griffin's "Pocket-book Series.") By R. S. AITCHISON, M.D. Edin., F.R.C.P. Third edition, with numerous Illustrations.—This is an excellent little book which can be carried in the pocket. It is well adapted for ready reference.

The Principles and Practice of Medicine. By W. OSLER, M.D. Third edition. 1895. 25*s.* London: Young J. Pentland.—This work is one of the best text-books now available; it is clearly and pleasantly written, and is thoroughly up to date in science and practice.

Manual of the Practice of Medicine. By F. TAYLOR, M.D., F.R.C.P. Fourth edition, with Thirty Engravings. Pp. 958. 15*s.* London: J. & A. Churchill.—Perhaps the most widely read of all text-books in the present day, sharing with Osler's work the favour of the student, who is fortunate to have such sound and useful works at his disposal.

The Practice of Medicine. By JAMES TYSON, M.D. 1896. Pp. 1184. Philadelphia: Blakiston. Manchester: J. K. King and Son.

The Practice of Medicine. By HORATIO C. WOOD, A.M., M.D., LL.D., and REGINALD H. FITZ, A.M., M.D. 1897. Pp. 1088. 21*s.* London and Philadelphia: J. B. Lippincott Co.

Text-book of Medicine. By Professor STRÜMPELL. Second edition. 1893. Pp. 1053. 28*s.* London: H. K. Lewis.—A work of great merit, representing the German school; in originality nearly approaching to the famous text-book of Niemeyer, which was highly appreciated twenty years ago.

Dictionary of Medicine. Edited by Sir RICHARD QUAIN, Bart., M.D. Lond., LL D. Edin., F.R.S., assisted by F. T. ROBERTS, M.D., F.R.C.P., and J. MITCHELL BRUCE, M.D., F.R.C.P. Two vols. 1895. 40*s.* nett. London: Longmans, Green, and Co.—The arrangement of this work is such that the subjects can be readily selected for study, and the thorough revision to which it has been subjected renders it in all respects a trustworthy guide. The contributors are all of them physicians well qualified to speak on the subjects assigned them.

Dictionary of Practical Medicine. By J. K. FOWLER, M.D., F.R.C.P. 21*s.* London: J. & A. Churchill.—A very useful book of reference for the student and busy practitioner.

Elements of Practical Medicine. By A. H. CARTER, M.D., F.R.C.P. Seventh edition. 1895. Pp. 496. 10*s.* London: H. K. Lewis.

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Student's Guide to Practice of Medicine. By M. CHARTERIS, M.D., L.R.C.S. Edin., &c. Seventh edition. With Engravings. 10*s.* London: J. & A. Churchill.

An Index of Medicine: a Manual for the Use of Senior Students and Others. By SEYMOUR TAYLOR, M.D., M.R.C.P., Senior Assistant Physician to the West London Hospital. With Illustrations. Pp. 808. 12*s.* 6*d.* London: Smith, Elder, and Co.—The foregoing works are well planned; without being exhaustive, they present the salient facts of medicine in a concise form, and may well be chosen by the beginner.

Medical Diagnosis. By J. M. DA COSTA, M.D., LL.D. Eighth edition. 1896. London: Smith, Elder, and Co.—The leading text-book on diagnosis, replete with practical information.

Medical Diagnosis. By J. H. MUSSER, M.D. With 162 Engravings and 2 Coloured Plates. Pp. 882. Price 24*s.* 1894. Edinburgh and London: Young J. Pentland.—A voluminous work, less practical than Da Costa's treatise, and resembling rather a systematic manual of medicine, confined to diagnostic points.

Clinical Medicine. By JUDSON BURY, M.D., F.R.C.P. Price 21*s.* London: Charles Griffin and Co.—A very admirable and clearly written work, fully illustrated.

Clinical Manual. By JAMES FINLAYSON, M.D., F.F.P.S. Glasg. Third edition. 1891. Pp. 719. 8*s.* 6*d.* London: Smith, Elder, and Co.—One of the earliest works of its class, thorough and systematic.

Manual of Medical Diagnosis. By Professor H. VIERORDT. With 178 Engravings, many in colour. 1892. Pp. 700. 18*s.* Edinburgh and London: Young J. Pentland.—A translation of a systematic work on diagnosis, which has just reached a fifth edition in the original.

Medical Diagnosis: A Manual of Clinical Methods. By J. J. GRAHAM BROWN, M.D., F.R.C.P., F.R.S. Edin. Fourth edition. Pp. 428. 9*s.* Edinburgh: Wm. F. Clay.—A sound and reliable manual.

Fenwick's Students' Guide to Medical Diagnosis. Edited by S. FENWICK M.D., and W. SOLTAU FENWICK, M.D. Eighth edition. With 135 Engravings. 9*s.* London: J. & A. Churchill.—This manual has long enjoyed undivided favour; an excellent guide for practical clinical work.

Physical Diagnosis: A Guide to Methods of Clinical Investigation. By G. A. GIBSON, M.D., F.R.C.P. Edin., and WILLIAM RUSSELL, M.D., F.R.C.P. Edin. Second edition. With 109 Illustrations, many coloured. 1893. Pp. 383. 10*s.* 6*d.* Edinburgh and London: Young J. Pentland.—Contains a good exposition of the rationale of the physical signs of disease.

Auscultation and Percussion. By SAMUEL J. GEE, M.D., F.R.C.P. Fourth edition. 1893. Pp. 327. 6*s.* London: Smith, Elder, and Co.—An original and helpful manual for the clinical observer.

Cardiac Outlines. By WILLIAM EWART, M.D., F.R.C.P. With 62 Illustrations. 1892. Pp. 165. 5*s.* 6*d.* London: Baillière, Tindall, and Cox.—Useful as a guide to the thorough examination of cardiac disease and the record of physical signs.

Clinical Diagnosis. By Professor R. VON JAKSCH. Third edition. Translated and edited by JAMES CAGNEY, M.D., M.R.C.P. 25*s.* London: Charles Griffin and Co.—A work of world-wide reputation, dealing exhaustively with microscopical and chemical aids to diagnosis.

A Manual of Clinical Diagnosis. By CHARLES E. SIMON, M.D. Second edition. 1898. London: Henry Kimpton.—Covers the same ground as the classical treatise of von Jaksch; admirably suited for the clinical laboratory.

Guide to Examination of Urine. By J. WICKHAM LEGG, M.D., F.R.C.P. Seventh edition. 1893. Pp. 136. 3*s.* 6*d.* London: H. K. Lewis.

Notes on Examination of Blood and Fæces. By SIDNEY COUPLAND, M.D., F.R.C.P. Third edition. 1892. Pp. 64 1*s.* 6*d.* London: H. K. Lewis.—Examples of a large class of small and concise manuals intended to assist the ward clerk in his daily observations.

SURGERY.

The standard English text-book on Surgery for the student is the tenth edition of *Erichsen's Science and Art of Surgery.* It has been brought well up to date. It is comprehensive, but not diffuse, and no student will ever regret having mastered it. *Walsham's Theory and Practice of Surgery*, though useful for a student commencing the study of the subject, and sufficiently full for the minor examinations in surgery, is by no means sufficient for any of the higher examinations. It is careful and exact. A very recent text-book is Rose and Carless's *Manual of Surgery.* It is trustworthy, and sufficient for all except the most advanced examinations. Spencer's *Outlines of Practical Surgery* is a valuable recent work for the student. There are several larger treatises on surgery suitable for the more advanced student; of these the latest is *Treves's System of Surgery;* it is excellently printed, very accurate, and fully up to date. *Holmes and Hulke's System of Surgery*, though no recent edition of it has appeared, is still valuable, as it contains numerous excellent authoritative monographs. *Heath's Dictionary of Practical Surgery* is also useful for reference. For Operative Surgery *Jacobson's Operations of Surgery* is an admirable text-book. The information given includes, in addition to the descriptions of the operations, the reasons for their performance. *Treves's Manual of Operative Surgery* is also excellent, and one of the two should be read by all candidates for any of the higher examinations. *Treves's Student's Handbook of Surgical Operations* gives a short but careful account of the ordinary operations, and is well worth using as a text-book in a course of operative surgery. Waring's *Manual of Operative Surgery* is an excellent work and gives the student a good insight into this important branch of the subject. There are numerous other works on surgery, such as those of Bryant, Mansell Moullin, Druitt, Keetley, and Gant; all these deservedly have their adherents. Both Heath and Pearce Gould have written useful little treatises on Surgical Diagnosis. Minor Surgery and Bandaging may be studied in the works of Heath or Caird and Cathcart.

The Science and Art of Surgery. By Sir J. E. ERICHSEN, F.R.S., LL.D. Tenth edition. Edited by the late MARCUS BECK, M.S., F.R.C.S., and RAYMOND JOHNSON, B.S., F.R.C.S. 1895. With nearly 1000 Wood Engravings. Two vols. 48*s.* London: Longmans, Green, and Co.

Manual of Surgery for Students. By Professor W. ROSE, F.R.C.S., and ALBERT CARLESS, F.R.C.S. Pp. 1160 and 400 Illustrations. 21*s.* London: Baillière, Tindall, and Cox.—This is the latest book published on surgery and we have been able to highly commend it in our columns.

Surgery: its Theory and Practice. By W. J. WALSHAM, F.R.C.S., &c. Sixth edition. With 410 Engravings. 12*s.* 6*d.* London: J. & A. Churchill.

Outlines of Practical Surgery. By WALTER G. SPENCER, M.B., M.S., F.R.C.S. 1898. Pp. 694. Price 12*s.* 6*d.* net. London: Baillière, Tindall, and Cox.

A System of Surgery. Edited by FREDERICK TREVES, F.R.C.S. 1895. Two vols. With four Coloured Plates and several hundred original Illustrations. 48*s.* London: Cassell and Co.

A System of Surgery. Edited by TIMOTHY HOLMES, F.R.C.S., and J. W. HULKE, F.R.C.S., F.R.S. Third edition. Three vols. With Coloured Plates and numerous Illustrations. Price £4 4*s.* London: Longmans, Green, and Co.

Dictionary of Practical Surgery. Edited by C. HEATH, F.R.C.S. Third edition. 1889. Two vols. Vol. I., pp. 978; Vol. II., pp. 884. 32*s.* London: Smith, Elder, and Co.

Surgery. By C. W. MANSELL MOULLIN, F.R.C.S. 1891. With 497 Engravings. 34*s.* London: J. & A. Churchill.

Manual of Practice of Surgery. Two vols. By T. BRYANT, M.D., F.R.C.S. Fourth edition. With 750 Engravings. 32*s.* London: J. & A. Churchill.

Manual of Surgery. By F. TREVES, F.R.C.S. 1894. Pp. 574. Three vols. 22*s.* 6*d.* London: Cassell and Co.

Druitt's Surgeon's Vade-Mecum. Edited by STANLEY BOYD, F.R.C.S. Twelfth edition. With 373 Engravings. London: J. & A. Churchill.

Index of Surgery. By C. R. B. KEETLEY, F.R.C.S., &c. Fourth edition. 1887. Pp. 526. 10*s.* 6*d.* London: Smith, Elder, and Co.

Operative Surgery. By F. TREVES, F.R.C.S. 1894. Pp. 1550. 42*s.* London: Cassell and Co.

Students' Handbook of Surgical Operations. By F. TREVES, F.R.C.S. 7*s.* 6*d.* 94 Illustrations. London: Cassell and Co.

The Operations of Surgery. By W. H. A. JACOBSON, F.R.C.S. Third edition. 34*s.* London: J. & A. Churchill.

Manual of Operative Surgery. By H. J. WARING, M.S., M.B., B.Sc., F.R.C.S. 1898. Pp. 661. Edinburgh and London: Young J. Pentland.

Senn: Principles of Surgery. By N. SENN, M.D., Ph.D. Second edition. One vol., Pp. 656. With 178 fine Wood Engravings and Coloured Plates. 24*s.* 6*d.* London: The Rebman Publishing Company.

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The Science and Practice of Surgery: a Complete Text-book. By F. J. GANT, F.R.C.S., Senior Surgeon, Royal Free Hospital. Third edition, about 1100 Engravings. Two vols. Price 36*s.*

Guide to Surgical Diagnosis. By C. HEATH, F.R.C.S. Second edition. 6*s.* 6*d.* London: J. & A. Churchill.

Elements of Surgical Diagnosis. By A. P. GOULD, F.R.C.S., &c. Pp. 584. 7*s.* 6*d.* London: Cassell and Co.

Minor Surgery and Bandaging. By C. HEATH, F.R.C.S. Eleventh edition. With 176 Engravings. 6*s.*

A Surgical Handbook. By CAIRD and CATHCART. With Illustrations. Eighth edition. 1897. 8*s.* 6*d.* London: Griffin and Co.

A Text-book of Surgery. Edited by WILLIAM W. KEEN, M.D., LL.D., and J. WILLIAM WHITE, M.D., Ph.D. Third edition. In two parts. Profusely illustrated with Coloured and Black and White Plates. Price 42*s.* London: The Rebman Publishing Company.

Surgical Handicraft: A Manual of Surgical Manipulations and Minor Surgery for the use of General Practitioners, House Surgeons, Students, and General Dressers. By WALTER PYE, F.R.C.S. Revised and Edited by T. H. R. CROWLE, F.R.C.S. Third Edition. 1891. With 235 Engravings. 10*s.* 6*d.* Bristol: John Wright and Co.

MIDWIFERY.

In this subject the student will find it advantageous to have two books; one a small and elementary work, which he can, if he likes, take with him when attending his cases; and the other a larger text-book, for systematic reading.

Of the elementary books we mention four:—

First Lines of Midwifery. By G. ERNEST HERMAN, M.B., F.R.C.P. 1897. 5*s.* London: Cassell and Co.—*Obstetric Aphorisms for Students.* By J. G. SWAYNE, M.D. Tenth edition. Fcap. 8vo, with Twenty Engravings. 3*s.* 6*d.* 1893. London: J. & A. Churchill.—*An Introduction to Midwifery.* By ARCHIBALD DONALD, M.D. Second Edition.—*A Short Practice of Midwifery.* By HENRY JELLETT, M.D. 6*s.* 1897. London: J. & A. Churchill.—All four are excellent for their purpose—that is, they serve well to instruct the student as to his practical duties and the points to be noted and watched in attending his first cases of labour. Dr. Swayne's book is the old-established favourite. The other two are more modern, but by any of the four the student will find himself much fortified.

General Text-books:—

A Manual of Midwifery. By A. L. GALABIN, M.D., F.R.C.P.—A very deservedly popular book; literally a manual as it is in one volume; clear and precise and sufficiently informatory to provide the student with all the information necessary for pass examinations. Fourth edition. Crown 8vo. 1897. With 271 Engravings. 15*s.* London: J. & A. Churchill.

A Handbook of Midwifery. By W. R. DAKIN, M.D., F.R.C.P. This new book is well suited to the student. It contains all the necessary information in a clear and precise manner and is illustrated by a number of most instructive drawings and diagrams. Large crown 8vo. 1897. With 400 Illustrations. Pp. 600. 18*s.* London: Longmans, Green, and Co.

The Student's Guide to the Practice of Midwifery. By D. LLOYD, M.D., F.R.C.P. Fourth edition. With two Coloured Plates and 226 Woodcuts. Fcap. 8vo. 10*s.* 6*d.*

The Science and Art of Midwifery. By W. T. LUSK, M.D.—This American work is undoubtedly in many ways the best English text-book on the subject. The amount of information contained is very large, the references complete, and the plan of the book is easy to follow. For honour examinations this book is a necessity. Fourth edition. 1892. Pp. 671. 18*s.* London: H. K. Lewis.

The Science and Practice of Midwifery. By W. S. PLAYFAIR, M.D., F.R.C.P. Eighth edition. Two volumes, each containing 430 and 443 pages respectively.—This has long been a deservedly popular work with students. It practically held the field till the appearance of the two previous treatises, and is still, and we think fitly, the most widely read text-book on the subject. 1893. 28*s.* Ninth edition, ready this month. London: Smith, Elder, and Co.

The student will also find the following books of reference of use:—

Text-book of Midwifery. By the late OTTO SPIEGELBERG. Translated from the second German edition by Dr. HURRY.—This work in two volumes is published by the New Sydenham Society. Although a text-book in name it is not well adapted to the immediate needs of the student, who, however, may be advised to consult it on special points.

A Manual of Midwifery. By WILLIAM RADFORD DAKIN, M.D., F.R.C.P., Obstetrical Physician and Lecturer on Midwifery at St. George's Hospital, &c. With 393 Illustrations. 8vo, 18*s.* London: Longmans, Green, and Co.

An American Text-book of Obstetrics. NORRIS and DICKENSON. Two vols.—This work written by various authors will be found useful to refer to by the student or practitioner; it is profusely illustrated and contains a large amount of reliable information.

Difficult Labour. By G. ERNEST HERMAN, M.B., F.R.C.P. With 162 Illustrations. Price 12*s.* 6*d.*—This will also be found a useful work of reference on its subject.

Dührssen's Manual of Obstetric Practice. 6*s.* London: H. K. Lewis. 1897.—A useful compendium of German midwifery.

GYNÆCOLOGY.

A Manual of Gynæcology. By BERRY HART, M.D., and FREELAND BARBOUR, M.D.—The work consists of two parts and an appendix. Part I. deals with the Anatomy, Physiology, and Methods of Examination of the Female Pelvic Organs, and Part II. with the diseases peculiar to the organs. This favourite manual is especially strong in its anatomical and purely scientific sections, if somewhat less complete as a clinical guide. It has the advantage of giving at the end an Index of Recent Gynæcological Literature. Fifth edition. Pp. 722. 1897. Illustrated with Lithographs and 400 Woodcuts. London: W. & A. K. Johnston.

A System of Gynæcology. By many writers. Edited by THOS. CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College; and W. S. PLAYFAIR, M.D., LL.D., F.R.C.P., Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital. Pp. 922. 1896. 25*s.*

Diseases of Women. By G. E. HERMAN, M.B., F.R.C.P.—This work contrasts with the preceding in being written mainly from the clinical point of view. It gives an exceedingly good and practical account of the subject and will no doubt become a widely read work with students and practitioners. Pp. 870. 1898. Large crown 8vo. With 252 Illustrations. London: Cassell and Co.

A Practical Text-book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D. — This is a smaller book, but like the above it treats the subject mainly from the clinical point of view. It is a deservedly popular work with students because of the extremely practical nature of its information. Fifth edition. 1897. Pp. 526. 10*s.* 6*d.* London: H. K. Lewis.

The Diseases of Women: a Concise Handbook for Students. By JOHN PHILLIPS, M.A., M.D., F.R.C.P. Second edition, revised and enlarged. With illustrations. 7*s.* 6*d.* London: Charles Griffin and Co., Limited.—Contains a great deal of information in a condensed form.

Diseases of Women. By J. C. WEBSTER, B.A., M.D., F.R.C.P. Edin.—This book can be recommended as containing all that a student will require to know without being unduly large. Crown 8vo. 1898. Pp. 678. 14*s.* London: Young J. Pentland.

The Diseases of Women. A Handbook for Students and Practitioners of Medicine. By J. BLAND SUTTON, F.R.C.S. Eng., and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin. In one crown 8vo volume of 436 pages. With 115 Illustrations (mostly original) in the text. Cloth, forril back. Price 14*s.* London: The Rebman Publishing Company, Limited. 1897.

The following books of reference are recommended:—*Operative Gynæcology.* By HOWARD A. KELLY, M.D. 1898. Two vols. This book is most sumptuously illustrated, and is one of the most complete works on operative gynæcology in any language.—*A System of Gynæcology.* ALLBUTT and PLAYFAIR. 1896. As a work of reference, written as it is by many authors, this book will be found of great value, and gives a clear exposition of the views prevalent in this country at the present time.—*A Treatise on Gynæcology.* By S. POZZI, M.D. This work, in three volumes, is published by the New Sydenham Society, and while not well adapted for general reading will be found invaluable for reference. The same remark to a greater or less extent, applies to the following books:—*Diseases of the Ovaries.* By LAWSON TAIT, F.R.C.S. Fourth edition. 1883.—*Abdominal Surgery.* By J. GREIG SMITH. Sixth

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edition.—*The Surgical Diseases of the Ovaries and Fallopian Tubes.* By J. BLAND SUTTON, F.R.C.S. New and enlarged edition, with 146 Illustrations. Price 21*s.*—*The Diagnosis and Surgical Treatment of Abdominal Tumours.* By Sir SPENCER WELLS.—*Clinical Lectures on the Diseases of Women.* By J. MATTHEWS DUNCAN, M.D. Fourth edition.—*The Diseases of Women and their Treatment.* By H. MACNAUGHTON JONES, M.D., F.R.C.S.I., F.R.C.S.E. Seventh edition. 1894. Price 15*s.*

DISEASES OF CHILDREN.

It is only natural that students should be obliged by the medical schools to give some attention to the study of the diseases of children when it is considered that in general practice one patient at least out of every three will be a child. At present some of the examining boards, as the Royal University of Ireland, require candidates for the M.B. degree to produce certificates of having attended a practical course on the diseases of children, and the students are also specially examined in this subject. We therefore suggest for their guidance the following text-books:—*Diseases of Children, Medical and Surgical.* By HENRY ASHBY, M.D., F.R.C.P., and G. A. WRIGHT, B.A., M.B., F.R.C.S. Eng. Enlarged and improved edition, with 192 Illustrations. 8vo. Pp. 248. 25*s.* London: Longmans, Green, and Co. This admirable work, as it deals with diseases of children from both a medical and surgical point of view, can be recommended to students as containing everything that they will require to know.—*The Diseases of Children.* By JAMES F. GOODHART, M.D., F.R.C.P. Fifth edition. 10*s.* 6*d.* London: J. & A. Churchill. For those who want to study diseases of children from a medical aspect we can recommend this most popular manual, written, as it is, by one who convinces the reader that he has seen everything he describes. A new edition is nearly ready.—*The Diseases of Children (Medical).* By H. BRYAN DONKIN M.D., F.R.C.P. Medium 8vo. 16*s.* London: Charles Griffin and Co. This is in many respects a most original book.—*Clinical Examination and Treatment of Sick Children.* By JOHN THOMSON, M.D. Edinburgh: W. F. Clay.—For those students who desire to know the surgical aspect of the affections of children there are two useful text-books—*Surgical Diseases of Children,* by E. OWEN, M.B., F.R.C.S. Eng., third edition, revised and enlarged, with Chromo Plates and Engravings, price 21*s.*, Cassell and Co., Limited, London, Paris, and New York; and *The Surgical Diseases of Children and their Treatment by Modern Methods,* by D'ARCY POWER, M.A., M.B. Oxon., F.R.C.S. Eng., crown 8vo, price 10*s.* 6*d.* London: H. K. Lewis.—The following larger works are recommended for reference:—EUSTACE SMITH'S *Treatise on Disease in Children.* Second edition. Price 22*s.* 1889. 8vo. Pp. 895. London: J. & A. Churchill.—*The Diseases and Infancy and Childhood.* By L. EMMETT HOLT, A.M., M.D. Pp. 1117. Price 25*s.* London: Henry Kimpton. 1897. *Lectures on Children's Diseases.* By HENOCH. Two vols. Translated by JOHN THOMSON, M.D., F.R.C.P. Ed., from the fourth German edition. This treatise is published by the New Sydenham Society.—*Diseases of Children.* Edited by LOUIS STARR, M.D., and sixty Associates. Two vols. Price 42*s.* London: The Rebman Publishing Co. This is one of the most recent large works on diseases of children compiled in America. It is well got up and profusely illustrated.—*Medical Diseases of Infancy and Childhood.* By DAWSON WILLIAMS, M.D. Lond. 648 pages, with 52 Illustrations. 10*s.* 6*d.* London: Cassell and Co.—*Pediatrics: The Hygienic and Medical Treatment of Diseases in Children.* By THOMAS MORGAN ROTCH, M.D., Professor of Diseases of Children, Harvard University. Two vols. Pp. 1124. Price 25*s.* net. Edinburgh and London: Young J. Pentland.—Two other very useful books are those of Dr. CHEADLE: *On the Principles and Exact Conditions to be Observed in the Artificial Feeding of Infants* (London: Smith, Elder, and Co., Fourth edition, price 5*s.*), and Dr. LOUIS STARR: *Hygiene of the Nursery* (Sixth edition, crown 8vo, 3*s.* 6*d.* London: H. K. Lewis).

On the Natural and Artificial Methods of Feeding Infants and Young Children. By EDMUND CAUTLEY, M.D., Physician to the Belgrave Hospital for Children. Crown 8vo, 7*s.* 6*d.* London: J. & A. Churchill.

OPHTHALMOLOGY.

Either of the two following handbooks on Ophthalmology will be found to contain all that is necessary to the student of medicine who has no inclination to make a special study of the subject.

Handbook of Diseases of the Eye. By HENRY R. SWANZY, M.B., F.R.C.S.I. Sixth edition. Pp. 608. 1897. An excellent book. Price 12*s.* 6*d.* London: H. K. Lewis.

Nettleship's Diseases of the Eye. Edited by T. HOLMES SPICER, F.R.C.S. Sixth edition. Student's Guide Series. Price 8*s.* 6*d.* Fcap. 8vo. London: J. & A. Churchill.

By those who wish for fuller information on the subject the larger text-books must be consulted, of which, perhaps, *The Text-book of Ophthalmology,* by Professor FUCHS, of the Vienna University, is the most generally useful. This has been recently translated from the German into English by A. DUANE, and is published in one large octavo volume, with 178 Illustrations, price 21*s.*, by H. K. Lewis.

Most students find the study of errors of refraction difficult and unattractive and are consequently inclined to neglect this important branch of the subject. *The Manual for Students on the Refraction of the Eye,* by GUSTAVUS HARTRIDGE, is a most useful little book, as it explains simply the principles on which are based the methods in use in the out-patient department.

It is unnecessary, and, indeed, undesirable, here to enumerate all the text-books which have been written on diseases of the eye, but the following may be mentioned as generally useful books:—

The Diseases and Injuries of the Eye. By W. H. H. JESSOP, M.A., F.R.C.S., Ophthalmic Surgeon to St. Bartholomew's Hospital. With Engravings. London: J. & A. Churchill.

Diseases of the Eye. By GEORGE BERRY, M.B., F.R.C.S. Edin. Price 25*s.* Edinburgh and London: Young J. Pentland.

Handbook of Ophthalmic Science and Practice. By HENRY JULER, F.R.C.S Second edition.

The Fundus Oculi. By W. ADAMS FROST, F.R.C.S. An excellent book with admirable illustrations. Price £3 3*s.* Edinburgh and London: Young J. Pentland.

The Refraction of the Eye. A manual for students. By GUSTAVUS HARTRIDGE, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital. Ninth edition. With 100 Illustrations, test types, &c. Crown 8vo. 1896. 6*s.*

The Ophthalmoscope. A manual for students. Third edition. With 4 Coloured Plates and 67 Engravings. Crown 8vo, 4*s.* 6*d.* London: J. & A. Churchill.

The Refraction of the Eye. By A. STANFORD MORTON, F.R.C.S. Sixth edition. 1897. 3*s.* 6*d.* London: H. K. Lewis.

To those who are conversant with French the "Traité Complet d'Opthalmologie," by L. DE WECKER and E. LANDOLT, may be recommended as the most valuable work of reference. It is published in four large volumes at a price of about 20 francs each volume, and is consequently scarcely adapted for the student's use. A German edition of this work may also be obtained.

PATHOLOGY.

Manual of General Pathology. By JOSEPH FRANK PAYNE, M.D. Oxon., F.R.C.P. Pp. 702. 150 Illustrations.—Deals specially with general pathology and pathological anatomy and the processes and causes of disease, including parasites, both animal and vegetable. Special pathology and pathological histology are not touched upon, but on general pathology it is one of the best books in the language. London: Smith, Elder, and Co. 1888.

A Text-book of Pathology, Systematic and Practical. By Professor D. J. HAMILTON.—An admirably original, but somewhat unequal work. The most complete and systematic work published in the English language. Contains a very full and accurate bibliography. Invaluable for reference and for study for the higher examinations. Published in two volumes (the second volume is divided into two parts), which may be bought separately. Vol. I. (London: Macmillan and Co., 1889, pp. 736, 225 Illustrations, woodcuts, and coloured lithographs, price 21*s.* net) deals with the technique of the post-mortem room and the histological and bacteriological laboratories. An account is also given of the general pathological processes of the diseases of the blood, the heart and blood-vessels, and of tumours. Vol II., 1895, Part 1 (172 Illustrations, pp. 514, price 15*s.* net), treats of diseases of the air-passages and lungs, of the liver, of the genito-urinary appartus, and the alimentary tract, except the intestines, whilst Part 2 of Vol. II. (225 Illustrations, pp. 624, price 15*s.* net) completes the description of the diseases of

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the alimentary tract and then takes up in turn the nervous system (very good), diseases of the mamma, bones and joints, the skin, malformations, diseases of the fœtal membranes and placenta, vegetable and animal parasites, animal heat and fever.

A Text-book of Special Pathological Anatomy. By ERNST ZIEGLER. Translated and edited from the eighth German edition by DONALD MACALISTER, M.A., M.D., and HENRY W. CATTELL, M.A., M.D. Sections I.—VIII. 17*s.* net. Sections IX.—XV. 17*s.* net. The Alimentary Tract; the Liver and Pancreas; the Respiratory System; the Urinary Organs; the Genital System; the Eye; the Ear. 1896. London: Macmillan and Co.—A first instalment of a new English edition of a leading text-book notable for its excellent and abundant illustrations and full references to literature. A good text-book for the higher examinations. The subjects treated in this volume embrace the Blood and Organs of Circulation, the Osseous and Nervous Systems. The complete work (published by Fischer, of Jena) comprises a volume on General Pathological Anatomy, as well as the whole of Special Pathological Anatomy, of which the present volume constitutes about one-half.

A Manual of General Pathology for Students and Practitioners. By WALTER SYDNEY LAZARUS-BARLOW, B.A., M.D., late Demonstrator of Pathology, and Examiner in Sanitary Science in the University of Cambridge. 8vo. 21*s.* London: J. & A. Churchill.

A Manual of Pathology. By JOSEPH COATS, M.D. Pp. 1180. Numerous Illustrations. London: Longmans, Green, and Co. Third edition. 1895. 31*s.* 6*d.*—An interesting treatise on morbid anatomy and pathology; covers a great deal of ground; in most cases very reliable and a good text-book, especially for the student preparing for the higher examinations.

Practical Pathology. By GERMAN SIMS WOODHEAD, M.D., F.R.S.E. Third edition. 1892. Pp. 652. With 195 Coloured Plates from Original Drawings.—This book is almost an essential to the proper study of the subject. It is not only thoroughly clear and well arranged, but beautifully illustrated. The points where the student might be expected to be most in difficulty have received special attention. 25*s.* Edinburgh and London: Young J. Pentland.

An Introduction to Pathology and General Morbid Anatomy. By T. HENRY GREEN, M.D., F.R.C.P. Revised and enlarged by H. MONTAGUE MURRAY, M.D., F.R.C.P. 224 Engravings.—An excellent *résumé* of pathology from the student's point of view. Brought well up to date, especially in the sections dealing with inflammation, the specific infectious fevers, and the nervous system. May be confidently recommended as giving a very good and accurate account of the groundwork of pathology and as containing sufficient information to enable the student to pass any ordinary examination on the subject. Price 17*s.* London: Henry Renshaw.

Text-book of General Pathology and Pathological Anatomy. By Professor THOMA. Translated from the German by ALEXANDER BRUCE, M.A., M.D., F.R.C.P.E., F.R.C.S.E., Vol. I., with 436 Illustrations. London: Adam and Charles Black. 1896.—An admirable work for reference. Professor Thoma treats in this first volume of the natural history of disease, pays special attention to the questions of heredity and malformations, to the physics and mathematics of the laws of pathology, especially of the circulatory system.

A Text-book of Morbid Histology for Students and Practitioners. By RUBERT BOYCE, M.B., M.R.C.S. Pp. 477, with 130 Coloured Photographic Illustrations. 31*s.* 6*d.* London: H. K. Lewis. 1892.—Contains good descriptions of morbid histological specimens; also a number of photographs, which, however, are of very unequal merit and value. Exceedingly useful for the advanced student and the laboratory worker. A carefully selected bibliography is appended.

The Elements of Pathological Histology. By A. WEICHSELBAUM. Translated by W. R. DAWSON, M.D. 21*s.* net. 1895. London: Longmans, Green, and Co.—A work of approved merit, concise and clear in exposition; useful for practical study, and admirably illustrated.

A Manual of General Pathology. By WALTER S. LAZARUS-BARLOW. London: J. & A. Churchill. 1898. Price 21*s.*—A work of considerable merit, which should prove most useful to the student of latter-day pathology.

The following books have different uses for students which we have tried to briefly indicate:—

Practical Pathology. By JOHN LINDSAY STEVEN, M.D. Pp. 266. 7*s.* 6*d.* Glasgow: James Maclehose and Sons. 1887.—A concise and well-arranged description of methods and of pathological anatomy and histology. There are no illustrations, but the descriptions are clear and concise. Useful for a student going in for examination or as a supplement to demonstrations.

Practical Pathology and Morbid Histology. By HENEAGE GIBBES, M.D. Pp. 320. Illustrated with 60 Photographic Reproductions. Edinburgh and London: Young J. Pentland. 1891.—A good practical book with a series of photographs of typical pathological microscopic specimens. Useful for private laboratory work rather than for examination purposes.

Surgical Pathology and Morbid Anatomy. By ANTHONY BOWLBY, F.R.C.S. Third edition. London: J. & A. Churchill.—A capital little handbook on surgical pathology. Well up to date as regards pathogenesis.

Elements of Surgical Pathology. By AUGUSTUS J. PEPPER, M.S., M.B. Lond., F.R.C.S. Eng. Pp. 532. 99 Engravings. Fourth edition, re-written and enlarged. 8*s.* 6*d.* London, Paris, and Melbourne: Cassell and Co., Limited. 1894.—A compact little handbook of surgical pathology.

A Handbook of Surgical Pathology. By W. J. WALSHAM, M.B., F.R.C.S. Eng.; and D'ARCY POWER, M.A., M.B. Oxon., F.R.C.S. Eng. Pp. 634. London: Baillière, Tindall, and Cox. Second edition. 1890. Price 7*s.* 6*d.*—A clear and concise description of the specimens in the Museum of St. Bartholomew's Hospital, and therefore specially useful to students of that school or to those that have access to that museum. But the descriptions are so good that this work will serve as a capital text-book to any student preparing for an examination in surgical pathology.

Pathological Anatomy of Diseases. By NORMAN MOORE, M.D. London: J. & A. Churchill. Fcap. 8vo. 8*s.* 6*d.*—An accurate and concise, but not very full, student's manual of morbid anatomy of 416 pages, with 110 figures.

Practical Morbid Anatomy. By H. D. ROLLESTON, M.A., M.D., F.R.C.P.; and A. A. KANTHACK, M.D., M.R.C.P. Cambridge University Press and H. K. Lewis. Price 6*s.* 1894. Pp. 240.—A capital account of the methods and course of procedure to be adopted in the post-mortem room. Practical, but thoroughly scientific throughout.

Section Cutting and Staining. By WALTER S. COLMAN, M.B. Lond. London: H. K. Lewis. Second edition, just ready.—A handy little guide to the preparation of normal and morbid histological specimens. Concise, and gives everything that is really necessary for ordinary class work.

Post-Mortem Examinations in Medico-Legal and Ordinary Cases. With Special Chapters on the Legal Aspects of Post Mortems and on Certificates of Death. By J. JACKSON CLARKE, M.B.Lond., F.R.C.S. Fcp. 8vo. 2*s.* 6*d.* London: Longmans, Green, and Co. 1898.

Atlas and Essentials of Pathological Anatomy. By Professor C. BOLLINGER. With 112 Coloured Plates. Two vols. 12*s.* 6*d.* net each. 1898. London: Baillière, Tindall, & Cox.

The following books are hardly to be used as text-books, but for one reason or another the student will do well to supplement his reading by consulting them:—

Lectures on Surgical Pathology. By Sir JAMES PAGET, Bart., F.R.S., &c. Revised and edited by Professor WM. TURNER, F.R.S. Pp. 844. 130 Illustrations. 21*s.* London: Longmans, Green, and Co. 1876. Fourth edition.—Still one of the most valuable books of reference on surgical pathology in our language, and should be read by every student as a model on which to base methods of observation and study.

An Introduction to General Pathology. By JOHN BLAND SUTTON, F.R.C.S. 14*s.* London: J. & A. Churchill.—An admirable introduction to the subject of evolution in pathology, well worth study by those who wish to gain more than a mere examination knowledge of the subject.

Lectures on Pathological Anatomy. By Sir SAMUEL WILKS, Bart., M.D., F.R.S., and the late WALTER MOXON, M.D., F.R.C.P. Third edition, thoroughly revised by Sir SAMUEL WILKS, M.D., Bart., LL.D., F.R.S. 18*s.* London and New York: Longmans, Green, and Co. 1889.—An admirable description of macroscopic morbid anatomy, doing for medicine what Paget's lectures have done for surgery. May be studied with advantage both before and after practical work is engaged in.

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BACTERIOLOGY.

The following works will be found useful to students either for examination purposes or for special study.

Ptomaines, Leucomaines, Toxins, and Antitoxins. By Professor VICTOR C. VAUGHAN, Ph.D., M.D.; and Associate Professor FREDERICK G. NOVY, Sc.D., M.D. Third edition. Revised and enlarged. Philadelphia: Lea Brothers and Co. 1896. Pp. 604. $3.—The best book in the language on bacterial products and poisons. Well up to date as regards methods.

Manual of Bacteriology. By ROBERT MUIR, M.A., M.D., F.R.C.P. Edin., and JAMES RITCHIE, M.A., M.D., B.Sc. Edinburgh and London: Young J. Pentland. 1897.—An exceedingly good text-book for the medical student. Methods, descriptions, and illustrations alike excellent. The principles of bacteriology are well set forth. A most useful list of literature is appended. Well up to date in all respects.

Elementary Practical Bacteriology, including Bacteriological Analysis and Chemistry. By A. A. KANTHACK, M.D., M.R.C.P., and J. H. DRYSDALE, M.B., M.R.C.P. London: Macmillan and Co. 1896. Pp. 180. Sixteen Woodcuts. Price 4*s.* 6*d.*—A guide to the elementary study of bacteriology. The work deals in turn with general and special methods of cultivation and examination of micro-organisms, with the more important species of bacteria, and with bacteriological analysis and bacteriological chemistry.

Micro-organisms and Disease. An Introduction to the Study of Specific Micro-organisms. By E. KLEIN, M.D., F.R.S. Fourth edition. Revised. Pp. 595, with 20 Illustrations. Price 10*s.* 6*d.* London: Macmillan and Co., Ltd. 1896.—A standard text-book.

Practical Guide to the Demonstration of Bacteria in the Animal Tissues. By Dr. H. KÜHNE. Translated and edited by VINCENT DORMER HARRIS, M.D., F.R.C.P. London: Baillière, Tindall, and Cox. 1890. Pp. 53. Figs. 7. 2*s.* 6*d.*—A practical little handbook.

Applied Bacteriology. By T. H. PEARMAIN and C. G. MOOR. London: Baillière, Tindall, and Cox. Second Edition. 1898. Price 12*s.* 6*d.* net.—A lucid exposition of bacteriology, especially as it relates to the work of the medical officer of health and to the student preparing himself for such work.

Medical Microscopy. By FRANK J. WETHERED, M.D., F.R.C.P. London: H. K. Lewis. 1891. Pp. 250. 40 Illustrations. Price 9*s.*—A guide to the preparation of microscopical preparations and examination of sputum, urine, &c. Useful for advanced students and general practitioners.

Bacteriological Technology for Physicians. By Professor C. J. SALOMONSEN. Translated by WILLIAM TRELEASE. Pp. 162, with 72 Figures in the text. New York: William Wood and Co. 1890.—A most concise and accurate work on methods, well adapted to the use of the student, as the apparatus described as necessary is both simple and inexpensive.

Manual of Bacteriology for Practitioners and Students. With especial reference to Practical Methods. By Professor S. L. SCHENK. Translated by W. R. DAWSON, B.A., M.D. With an Appendix by the Translator. 100 Illustrations, partly coloured. 10*s.* net. London and New York: Longmans, Green, and Co. 1893.—A really good student's text-book.

The Principles of Bacteriology: a Practical Manual for Students and Physicians. By A. C. ABBOTT, M.D. Fourth Edition. 1898. With Illustrations.—A very good manual for the student who wishes to study the technique of bacteriological investigation.

Studies on Fermentation. By L. PASTEUR. Translation, with Notes, Index, and original Illustrations, by FRANK FAULKNER and D. CONSTABLE ROBB, B.A. London: Macmillan and Co. 21*s.* 1879. Pp. 418, with 12 Plates and 85 Figures in text.—An admirable work and one that should be read by every advanced student of bacteriology.

On Fermentation. By P. SCHÜTZENBERGER. Fourth edition. London: Kegan Paul, Trench, Trübner, and Co., Ltd. 1891. Pp. 331, with 28 Illustrations. Price 5*s* (Vol. XX., International Scientific Series.)—A capital *résumé* of the subject for advanced students.

Technical Mycology. By Prof. FRANZ LAFAR. Translated by CHARLES T. C. SALTZER. In Two Volumes. Vol. I: Schizomycetic Fermentation. Pp. 405. With Plates and 90 Figures in the text. London: Charles Griffin and Co. Price 15*s.*—A valuable account of the processes of fermentation and fermentative processes.

Bacteria and their Products. By GERMAN SIMS WOODHEAD, M.D. 1891. Pp. 459, with 20 Photo-micrographs. London: Walter Scott. Price 3*s.* 6*d.*—Gives a description of the more important micro-organisms and the diseases they produce and of fermentation; also a short history of bacteriology; includes an appendix dealing with bacteriological methods and with the classification and identification of micro-organisms. Is in every respect a first-class text-book, excellent in arrangement and clear and full in detail.

A Manual of Bacteriology. By GEORGE M. STERNBERG, M.D. New York: William Wood and Co. 1892.—A most complete and exhaustive work of 886 pages, of which over a hundred are devoted to bibliography. An encyclopædic, painstaking, and usually accurate *résumé* of the subject. Well illustrated with chromo-lithographic plates and 268 engravings. Too ponderous for the ordinary student, but very useful for the advanced worker. Dr. Sternberg has now issued a condensed text-book which is more suited to the general student of bacteriology.

A Text-book of Bacteriology for Students and Practitioners of Medicine. By G. M. STERNBERG, M.D., LL.D., Surgeon-General U.S. Army. Illustrated by 9 Heliotype and Chromo-lithographic Plates and 200 Engravings. 8vo. 24*s.* London: J. & A. Churchill.

Text-book of Bacteriology. By EDGAR M. CROOKSHANK, M.B. London: H. K. Lewis. 21*s.* net. Fourth edition, reconstructed, revised, and greatly enlarged.—A well-written and well-illustrated treatise on the subject. A good text-book, especially for those who have no opportunity of attending a practical course.

FORENSIC MEDICINE.

Manual of Medical Jurisprudence. By A. S. TAYLOR. Edited by T. STEVENSON, M.D. Crown 8vo. Twelfth edition. 1891. 56 Engravings. 14*s.* London: J. & A. Churchill.—An authoritative text-book.

Text-book of Forensic Medicine and Toxicology. By ARTHUR P. LUFF, M.D., B.Sc. Lond. Two vols. Pp. 416 and 360. 24*s.* With numerous Illustrations. London and New York: Longmans, Green, and Co.—This recently published work is one of the best on the subject.

Aids to Forensic Medicine and Toxicology. By WM. MURRELL, M.D., F.R.C.P. Price 2*s.* 6*d.* London: Baillière, Tindall, and Cox.

Principles of Forensic Medicine. By W. A. GUY and DAVID FERRIER, M.D., F.R.S. Seventh edition just published. 16*s.*—The work has been practically rewritten under the direction of Professor W. R. SMITH, M.D., F.R.S. Edin. London: Henry Renshaw.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D., F.R.C.P., Professor of Medical Jurisprudence and Toxicology, Owens College, Manchester; Examiner in Forensic Medicine, London University, and Victoria University, Manchester. Second edition, enlarged. 1898. 21*s.*

A System of Legal Medicine. By ALLAN MCLANE HAMILTON, M.D., Consulting Physician to the Insane Asylums of New York City, &c., and Mr. LAWRENCE GODKIN, of the New York Bar. Illustrated with 14 Coloured Plates and 161 Woodcuts and Half-tone Plate. Fully indexed by 3202 references. Royal 8vo. Two vols. Pp. 1400. 30*s.* per volume. Only sold in sets.

Poisons: their Effects and Detection. By ALEXANDER WYNTER BLYTH, M.R.C.S. Third edition. Revised and Enlarged. 1895. 21*s.* London: Chas. Griffin and Co.—A well-known work, much in esteem with toxicologists, partly as a book of reference, but chiefly as an excellent guide to the detection of poisons. The recent edition treats of the cadaveric alkaloids or ptomaines, and contains also a separate chapter on the connexion existing between the arrangement of the constituent parts of an organic molecule and physiological action.

Practical Toxicology for Physicians and Students. By Prof. RUDOLF KOBERT. Translated and edited by L. H. FRIEDBURG, Ph.D. New York: William R. Jenkins. 1897.—This work is full of useful information and contains an excellent series of tables of reactions of poisons, and is a valuable guide to the practical toxicologist.

A Text-book of Medical Jurisprudence for India. By J. B. LYON, F.C.S., F.I.C., Brigade-Surgeon, Bombay Medical Service; Chemical Analyser to Government; Professor of Chemistry and Medical Jurisprudence, Grant

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Medical College, Bombay. Revised as to the Legal Matter by J. D. INVERARITY, of the Inner Temple, Barrister-at-Law, Calcutta. Bombay: Thacker, Spink, and Co. London: W. Thacker and Co., 87, Newgate-street. 1889.

The Principles and Practice of Medical Jurisprudence. By ALFRED S. TAYLOR, M.D., F.R.S., late Professor of Medical Jurisprudence to Guy's Hospital. Fourth Edition. By THOMAS STEVENSON, M.D., F.R.C.P. With 189 Engravings. Two vols. 8vo. 31*s.* 6*d.* London: J. & A. Churchill.

PUBLIC HEALTH.

Hygiene and Public Health. By B. ARTHUR WHITELEGGE, M.D., B.Sc. London: Cassell and Co. Price 7*s.* 6*d.*—This is an admirable text-book in every way. It is well fitted for the student of public health, and it possesses the additional advantage that it can be carried in the pocket.

The Elements of Vital Statistics. By ARTHUR NEWSHOLME, M.D. London: Swan Sonnenschein and Co.—A good standard text-book on vital statistics.

Knight's Annotated Model By-laws. London: Knight and Co. Price 12*s.*—This volume is almost essential for the student of public health.

Stratton's Public Health Acts. London: Knight and Co. Price 7*s.* 6*d.*—The Acts relating to public health arranged in a convenient form and with a useful index.

Public Health Laboratory Work. By HENRY R. KENWOOD, M.B. Edin., D.P.H. Second edition. London: H. K. Lewis. Price 10*s.* 6*d.*—An excellent little book for the laboratory bench. It is written for students preparing for the diploma of public health, and describes the processes of analysis of food, water, air, &c., with which he must have a practical acquaintance. It also includes an account by Professor Boyce of the methods employed in bacteriological research.

Notter and Firth's Theory and Practice of Hygiene. London: J. & A. Churchill. Price 18*s.*—A good and comprehensive text-book, founded largely on the late Dr. Parkes' "Hygiene."—Especially well-fitted for naval and military medical men.

A Simple Method of Water Analysis: especially designed for the Use of Medical Officers of Health. By JOHN C. THRESH, M.D., D.Sc., D.P.H. London: J. & A. Churchill. Price 2*s.* 6*d.*—This method may be carried out on the spot and gives valuable indications of the fitness or unfitness of water for drinking purposes.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H. Lond. Univ. Fifth edition. 10*s.* 6*d.* London: H. K. Lewis. 1897.—This edition has been thoroughly revised and brought up to date.

A Treatise on Hygiene and Public Health. Three vols. Edited by STEVENSON and MURPHY. London: J. & A. Churchill.—This is quite the standard work of reference at the present time. Vol. III. treats solely of sanitary law.

Hygiene (a Handbook of). By Surgeon-Major A. M. DAVIES, D.P.H. Camb. Pocket size, leather. With Illustrations. Price 12*s.* 6*d.* Griffin's "Pocket-Book" Series.—A comprehensive little work which should be in the hands of all who wish to qualify for the D.P.H. diplomas.

Manual of Public Health. By WYNTER BLYTH, M.R.C.S., L.S.A. London: Macmillan and Co. Price 17*s.* net.—An excellent manual dealing with general principles. It is fairly exhaustive and affords a good book of reference.

Water and Water-Supplies. By J. C. THRESH, D.Sc., M.D. Second edition. 8*s.* London: The Rebman Publishing Company, Limited.—A valuable dissertation on the important subject of water-supply. Besides practical details of the finding of water and the construction of wells, it contains also admirable chapters on the quality of water and the value of chemical and bacteriological analysis in enabling an opinion to be given upon it.

Final Report of the Royal Commission on Vaccination. Eyre and Spottiswoode. Price 1*s.* 10*d.*

MEDICAL ELECTRICITY.

Medical Electricity: A Practical Handbook for Students and Practitioners.—By H. LEWIS JONES, M.A., M.D., F.R.C.P. Second edition. With Illustrations. Crown 8vo. 10*s.* 6*d.* Pp. 454. 101 Figures in text. London: H. K. Lewis.—*A Manual of Practical Medical Electricity.*—By DAWSON TURNER, B.A., M.D., F.R.C.P. Edin. Second edition. London: Baillière, Tindall, and Cox. 1897.—The student who wishes to become acquainted with this subject cannot do better than begin by reading one or other of these excellent books. Of course they do not pretend to go so fully into the subject as Erb's Treatise in Von Ziemssen's "Handbook of General Therapeutics," or Bigelow's "International System of Electro-Therapeutics," or Rockwell's "Medical and Surgical Uses of Electricity"; but as thoroughly practical guides to electrical diagnosis, the choice, preservation, and use of electrical apparatus for medical purposes, and the methods of application they are the best books on the subject with which we are acquainted. Certain illustrations, reproduced from photographs, of patients with paralysis of particular muscles or groups of muscles are a most useful feature in Dr. Jones's book. Dr. Turner's work being the more recent contains a chapter on the x rays.

The Roentgen Rays in Medical Work.—By DAVID WALSH, M.D. Edin. London: Baillière, Tindall and Cox. 1897. Price 6*s.*—An excellent little volume on the subject in its application to medical work.

DENTAL.

A System of Dental Surgery. By the late Sir JOHN TOMES, F.R.S. Fourth edition. Edited by CHARLES S. TOMES, M.A., F.R.S. Crown 8vo, 289 Engravings. 16*s.* London: J. & A. Churchill.

Diseases and Injuries of the Teeth. By MORTON SMALE and J. F. COLYER. With 334 Illustrations. Large crown 8vo. 15*s.* London: Longmans, Green and Co.

Dental Anatomy, Human and Comparative. By CHARLES S. TOMES. Fifth edition. Crown 8vo., 235 Engravings. London: J. & A. Churchill.

A Practical Treatise on Mechanical Dentistry. By RICHARDSON. Seventh edition. Edited by GEO. WARREN. London: J. & A. Churchill.

Dental Materia Medica and Pharmacology. By CHARLES W. GLASSINGTON. London: J. & A. Churchill.

A Manual on Dental Metallurgy. By ERNEST A. SMITH. London: J. & A. Churchill.

MISCELLANEOUS.

The Anatomy of the Nasal Cavity and its Accessory Sinuses. By Dr. A. ONODI, Lecturer on Rhino-Laryngology in the University of Budapest. An atlas for practitioners and students, translated by ST. CLAIR THOMSON, M.D. Lond., F.R.C.S. Eng., M.R.C.P. Lond. Plates, small 4to. 6*s.* net. London: H. K. Lewis.

Elements of Practical Pharmacy and Dispensing: Intended for Students of Medicine. By W. ELBORNE, B.A. Cantab., F.L.S., F.C.S. Extra crown 8vo, with Litho-plates and numerous Illustrations, cloth. 8*s.* 6*d.* London: Charles Griffin and Co.—A practical little book containing a Chemical Pharmacy and Laboratory Course, a Galenical Pharmacy and Laboratory Course, and a Practical Course of Dispensing, with Facsimiles of Autograph Prescriptions.

The Student's Guide to Diseases of the Chest, including the Principal Affections of the Pleuræ, Lungs, Pericardium, Heart, and Aorta. By VINCENT D. HARRIS, M.D., F.R.C.P., Physician to the Victoria Park Hospital for Diseases of the Chest. With 55 Engravings. Pp. 419. Fcap. 8vo. 7*s.* 6*d.* London: J. & A. Churchill.

Text-book of Diseases of the Ear and Adjacent Organs. By Professor POLITZER, of Vienna. Translated from the third German edition by OSCAR DODD, M.D., and edited by Sir WM. DALBY, B.A., M.B., F.R.C.S. Profusely illustrated. Price 21*s.* London: Baillière, Tindall, and Cox.—A reliable book, and contains all that is known on the subject.

Diseases of the Ear. Including the Anatomy and Physiology of the Organ, together with the treatment of the affections of the Nose and Pharynx which conduce to Aural Disease (a Treatise). By T. MARK HOVELL, F.R.C.S.E., M.R.C.S., Aural Surgeon to the London Hospital and Lecturer on Diseases of the Throat in the College, &c. 8vo, with 122 Engravings. 18*s.* 1894. London: J. & A. Churchill.

Practical Plant Physiology. By Dr. W. DETTMER. Translated from the Second German Edition by S. A. MOOR, M.A., F.L.S. Illustrated. London: Swan Sonnenschein and Co. 1898. Price 12*s.*—Recently reviewed in our columns. An experimental book appealing on the whole to research students, but "it would prove useful in the hands of a capable demonstrator in the biological classes."

Manual of Botany. Vol. I., Morphology and Anatomy. By J. REYNOLDS GREEN, Sc.D., M.A., F.R.S., Professor of Botany to the Pharmaceutical Society. Crown 8vo, with

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about 778 Engravings. 7s. 6d. 1897. Vol. II., Classification and Physiology. 415 Engravings. 10s. London: J. & A. Churchill.

Diseases of the Skin. By W. A. JAMIESON, M.D., F.R.C.P. Edin. A Manual for Students and Practitioners. Fourth edition, revised and enlarged, 8vo, cloth, pp. xvi.-676, with coloured Illustrations. 1894. Price 21s. (Pentland's Medical Series, Vol. I.)

Diseases of the Throat, Nose, and Ear. By P. MCBRIDE, M.D., F.R.C.P. Edin. Second edition, revised and enlarged, 8vo, cloth, pp. xvi.-632, with Coloured Illustrations from original drawings. 1894. Price 25s. (Pentland's Medical Series, Vol. III.)

Dictionary of Medicine, Biology, and Allied Sciences. Illustrated By G. M. GOULD, A.M., M.D. Price 40s. London: Baillière, Tindall, and Cox.—This is the best dictionary of medical terms we have seen. It should find a place in the library of every medical man.

Outlines of Zoology. By THOMSON J. ARTHUR, M.A. Second edition, revised and enlarged, with 266 Illustrations in the text. Price 15s. Edinburgh: Young J. Pentland.

Clinical Lectures on Mental Diseases. By J. S. CLOUSTON, M.D., F.R.C.P. Edin. Fourth edition. With 15 Plates, crown 8vo. 14s. London: J. & A. Churchill.

The Student's Medical Dictionary. By G. M. GOULD, A.M., M.D. Tenth edition. 14s. net. London: H. K. Lewis.

A Pocket Medical Dictionary. By the same Author. 2s. 6d. net. London: H. K. Lewis.

POST-GRADUATE COURSES.

THE LONDON POST-GRADUATE COURSE.—This course is specially arranged to meet the wants of the practitioner and to enable him during his leisure time to brush up his knowledge on subjects about which he may desire further information. It has been both popular and successful and has been attended by men from all parts of the Empire, from all branches of the Services, from the United States of America, as well as from foreign countries. Members can enter for each or all of the courses of lectures for the term, for half the term, or for all the lectures for one week, and thus each can obtain just what he wants and in the shortest possible time. The Vacation Courses have been attended by large numbers of practitioners and have been much appreciated. By this means men who wished to bring themselves abreast of the scientific knowledge of the day have been able to learn the elements of the technique of bacteriology and the latest advances in hygiene in a fortnight's daily course. The staffs of the following hospitals have associated themselves for teaching purposes — viz., the Hospital for Diseases of the Skin, Blackfriars; the London Throat Hospital; and the Bethlem Royal Hospital for Lunatics; and courses are given at the Bacteriological Laboratory, King's College, at the Parkes Museum on Hygiene, and at the Cleveland-street Sick Asylum on Clinical Medicine and Surgery. The fees are £1 1s., £2 2s., and £3 3s., according to the number of lectures in the course. Further information can be obtained from, and fees should be paid to, Dr. Fletcher Little, Secretary, 32, Harley-street, Cavendish-square, W.

CHARING-CROSS HOSPITAL.—Special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners, are given at the hospital by members of the staff throughout the year. The lectures for the year are arranged in three courses, each course consisting of ten meetings and lasting ten weeks. Two of these courses are held during the winter and one during the summer. The class meets on each Thursday afternoon at 4 P.M. in the board-room of the hospital, and proceeds thence to the wards or other department in which the demonstration may be held. Practitioners wishing to join the class can receive any further information as to the dates and subjects by communicating with the Honorary Secretary or the Honorary Treasurer at the hospital.

WEST LONDON HOSPITAL.—This hospital is using the excellent opportunities afforded it by its position as the general hospital for Hammersmith and a populous surrounding neighbourhood to offer similar post-graduate instruction to members of the medical profession. All communications from those desirous of joining the classes should be addressed to Mr. L. A. Bidwell, Dean of the Hospital.

Medical News.

THE MEDICINAL SUPPLIES OF POOR-LAW UNIONS IN IRELAND.—A circular has been sent by the Local Government Board to all boards of guardians in Ireland calling their attention to the issue of a new edition of the British Pharmacopœia and to the fact that contractors of medicine are obliged by the terms of their bond to supply all drugs in accordance with the standard prescribed by the latest edition of the Pharmacopœia.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next examination for certificates in nursing and attending the insane will be held on Monday, Nov. 7th, 1898. Candidates should obtain from the Registrar (Dr. Spence, Burntwood Asylum, near Lichfield) a schedule to be filled up, signed, and returned to him at least four weeks before the date of the examination. Monday, Oct. 10th, will be the last day upon which, according to the rules, candidates can enter their names for the November examination.

THE SANITARY INSTITUTE CONGRESS. — The programme of the local arrangements for the Congress at Birmingham is now complete. The opening will be on Sept. 27th and the ending on Oct. 1st. The general reception is to be held in the Town-hall, the conferences and sections at Mason College. The president's inaugural address and the popular lecture will be delivered in the large lecture theatre of the Midland Institute, Sir Joseph Fayrer presiding. The Lady Mayoress (Mrs. Beale) is to preside over the section of Domestic Hygiene. Mr. W. Henman is president of Section II. on Engineering and Architecture; Section III. on Physics, Chemistry, and Biology will find a chairman in Dr. Sims Woodhead. The popular lecture is to be delivered by Dr. Alex. Hill, Master of Downing College and Vice-chancellor of Cambridge University. Various excursions to places of interest in the locality have been arranged, as also visits to the leading firms of manufacturers in the town and district. Altogether the meeting is looked forward to with considerable interest and the local committee are to be congratulated upon the extensive and elaborate arrangements made for the reception and edification of the visitors.

THE TYPHOID FEVER EPIDEMIC AT BELFAST.—It is to be hoped that Belfast is over the worst of the typhoid fever epidemic, as the number of cases notified is becoming distinctly less. 41 were reported on Saturday and on Sunday and Monday the aggregate was 71. There are between 300 and 400 cases in the Union Fever Hospital. The authorities there have decided upon using exclusively for typhoid fever patients a large additional building, formerly a convalescent hospital occupied by old and infirm men. These aged paupers have been removed to other parts of the house and this extensive edifice will accommodate 300 typhoid fever patients. It is 151 ft. long, 42 ft. broad, and has three storeys and a very serviceable lift. Two additional resident medical men have been appointed as well as twelve extra nurses. The guardians are also providing another ambulance to convey patients into hospital. The public health offices are constantly open and the officials are most active. Disinfectants are there supplied to the public and the printed instructions of the medical officer of health as to how the citizens should act in reference to the present outbreak are being distributed broadcast. The medical officer of health (Dr. Whitaker) and Dr. Lorrain Smith (Pathologist to the Corporation) are investigating the causes of the epidemic, and at present a bacteriological examination is being made of the water supplied to the city. At the next meeting of the corporation it is expected that there will be a discussion in reference to the epidemic. It is a satisfactory circumstance that although there is a widespread epidemic of typhoid fever the mortality is not high.

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OUR CURRENT NUMBER

Being almost exclusively devoted to information especially interesting to Students, we are necessarily compelled to defer the publication of communications on other important subjects.

We tender our best thanks to those gentlemen who have at considerable personal trouble kindly supplied us with the returns and prospectuses upon which the information given in this Students' Number of THE LANCET *relative to the various medical examining bodies, hospitals, and medical schools of the United Kingdom is based. We regret that in some cases, however, owing to proofs having been either not returned at all or too late, certain inaccuracies will be found.*

TO ADVERTISERS.

Owing to the pressure on our advertisement columns this week many announcements have unavoidably been held over.

Communications, Letters, &c., have been received from—

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Presidential Address

ON

THE WHEAT-SUPPLY OF THE WORLD, THE LATEST ACHIEVEMENTS OF SCIENCE, AND THE POSITION OF PSYCHICAL RESEARCH.

Delivered before the British Association for the Advancement of Science at Bristol on Wednesday, September 7th,

BY SIR WILLIAM CROOKES, F.R.S.,

PRESIDENT OF THE ASSOCIATION; PRESIDENT OF THE SOCIETY FOR PSYCHICAL RESEARCH; AND VICE-PRESIDENT OF THE CHEMICAL SOCIETY.

GENTLEMEN,—For the third time in its history the British Association meets in your city of Bristol. The first meeting was held under the presidency of the Marquis o Lansdowne in 1836, the second under the presidency of Sir John Hawkshaw in 1875. Formerly the President unrolled to the meeting a panorama of the year's progress in physical and biological sciences. To-day the President usually restricts himself to specialities connected with his own work or deals with questions which for the time are uppermost. To be President of the British Association is undoubtedly a great honour. It is also a great opportunity and a great responsibility, for I know that, on the wings of the Press, my words, be they worthy or not, will be carried to all points of the compass. I propose first to deal with the important question of the supply of bread to the inhabitants of these islands, then to touch on subjects to which my life work has been more or less devoted. I shall not attempt any general survey of the sciences; these, so far as the progress in them demands attention, will be more fitly brought before you in the different sections either in the Addresses of the Presidents or in communications from members. Before proceeding with my address I wish to refer to the severe loss the British Association has sustained in the death of Lord Playfair. With Sir John Lubbock and Lord Rayleigh, Lord Playfair was one of the permanent trustees of our Association and for many years he was present at our meetings. It would be difficult to over-rate his loss to British science. Lord Playfair's well-matured and accurate judgment, his scientific knowledge, and his happy gift of clothing weighty thoughts in persuasive language made his presence acceptable, whether in the council chamber, in departmental inquiries, or at light social gatherings, where by the singular laws of modern society momentous announcements are sometimes first given to the world. Lord Playfair (then Sir Lyon Playfair) was President of the British Association at Aberdeen in 1885; his address on that occasion will long be remembered as a model of profound learning and luminous exposition.

And now I owe a sort of apology to this brilliant audience. I must ask you to bear with me for ten minutes, for I am afraid what I now have to say will prove somewhat dull. I ought to propitiate you, for, to tell the truth, I am bound to bore you with figures. Statistics are rarely attractive to a listening audience, but they are necessary evils, and those of this evening are unusually doleful. Nevertheless, when we have proceeded a little way on our journey I hope you will see that the river of figures is not hopelessly dreary. The stream leads into an almost unexplored region and to the right and left we see channels opening out, all worthy of exploration and promising rich reward to the statistic explorer who will trace them to their source—a harvest, as Huxley expresses it, "immediately convertible into those things which the most sordidly practical of men will admit to have value—namely, money and life." My chief subject is of interest to the whole world, to every race, to every human being. It is of urgent importance to-day and it is a life and death question for generations to come—I mean the question of food-supply.

I.—THE WHEAT-SUPPLY OF THE WORLD.

Many of my statements you may think are of the alarmist order; certainly they are depressing, but they are founded on stubborn facts. They show that England and all civilised nations stand in deadly peril of not having enough to eat. As mouths multiply food resources dwindle. Land is a limited quantity and the land that will grow wheat is absolutely dependent on difficult and capricious natural phenomena. I am constrained to show that our wheat-producing soil is totally unequal to the strain put upon it. After wearying you with a survey of the universal dearth to be expected I hope to point a way out of the colossal dilemma. It is the chemist who must come to the rescue of the threatened communities. It is through the laboratory that starvation may ultimately be turned into plenty.

The Food-supply of Great Britain.

The food-supply of the kingdom is of peculiar interest to this meeting, considering that the grain trade has always been, and still is, an important feature in the imports of Bristol. The imports of grain to this city amount to about 25,000,000 bushels per annum, 8,000,000 of which consist of wheat. What are our home requirements in the way of wheat? The consumption of wheat per head of the population (unit consumption) is over 6 bushels per annum; and taking the population at 40,000,000 we require no less than 240,000,000 bushels of wheat, increasing annually by 2,000,000 bushels, to supply the increase of population. Of the total amount of wheat consumed in the United Kingdom we grow 25 and import 75 per cent. So important is the question of wheat-supply that it has attracted the attention of Parliament and the question of national granaries has been mooted. It is certain that in case of war with any of the great powers wheat would be contraband, as if it were cannon or powder liable to capture even under a neutral flag. We must therefore accept the situation and treat wheat as munitions of war, and grow, accumulate, or store it as such. It has been shown that at the best our stock of wheat and flour amounts only to 64,000,000 bushels—fourteen weeks' supply—while last April our stock was equal to only 10,000,000 bushels, the smallest ever recorded by "Beerbohm" for the period of the season. Similarly, the stocks held in Europe, the United States, and Canada, called "the world's visible supply," amounted to only 54,000,000 bushels, or 10,000,000 less than last year's sum total, and nearly 82,000,000 less than that of 1893 or 1894 at the corresponding period. To arrest this impending danger it has been proposed that an amount of 64,000,000 bushels of wheat should be purchased by the State and stored in national granaries, not to be opened except to remedy deterioration of grain or in view of national disaster rendering starvation imminent. This 64,000,000 bushels would add another fourteen weeks' life to the population; assuming that the ordinary stock had not been drawn on, the wheat in the country would only then be enough to feed the population for twenty-eight weeks. I do not venture to speak authoritatively on national granaries. The subject has been discussed in the daily press and the recently published report from the Agricultural Committee on National Wheat Stores brings together all the arguments in favour of this important scheme, together with the difficulties to be faced if it be carried out with necessary completeness.

More hopeful, although difficult and costly, would be the alternative of growing most, if not all, of our own wheat-supply here at home in the British Isles. The average yield over the United Kingdom last year was 29·07 bushels per acre, the average for the last eleven years being 29·46. For twelve months we need 240,000,000 bushels of wheat, requiring about 8,250,000 acres of good wheat-growing land, or nearly 13,000 square miles, increasing at the rate of 100 square miles per annum, to render us self-supporting as to bread food. This area is about one-fourth of the size of England.[1] A total area of land in the United Kingdom equal to a plot 110 miles square, of quality and climate sufficient to grow wheat to the extent of 29 bushels per acre, does not seem a hopeless demand.[2] It is doubtful, however, if this amount of land could be kept under wheat and the necessary expense of high farming faced except under the imperious pressure of impending starvation or the stimulus of a national subsidy or permanent high prices. Certainly these 13,000 square miles would not be

[1] In preparing the part of this address dealing with the world's supply and demand for wheat and the conclusions thereon I have been materially assisted by Mr. C. Wood Davis of Kansas, U.S.A.

[2] The total area of the United Kingdom is 120,979 square miles; therefore the required land is about a tenth part of the total.

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available under ordinary economic conditions, for much, perhaps all, the land now under barley and oats would not be suitable for wheat. In any case, owing to our cold, damp climate and capricious weather, the wheat crop is hazardous and for the present our annual deficit of 180,000,000 bushels must be imported. A permanently higher price for wheat is, I fear, a calamity that ere long must be faced. At enhanced prices land now under wheat will be better farmed and therefore will yield better, thus giving increased production without increased area. The burning question of to-day is, What can the United Kingdom do to be reasonably safe from starvation in presence of two successive failures of the world's wheat harvest or against a hostile combination of European nations? We eagerly spend millions to protect our coasts and commerce, and millions more on ships, explosives, guns, and men, but we omit to take necessary precautions to supply ourselves with the very first and supremely important munition of war—food.

The Bread-Eaters of the World.

To take up the question of food-supply in its scientific aspect I must not confine myself exclusively to our own national requirements. The problem is not restricted to the British Isles—the bread-eaters of the whole world share the perilous prospect—and I do not think it out of place if on this occasion I ask you to take with me a wide, general survey of the wheat-supply of the whole world. Wheat is the most sustaining food grain of the great Caucasian race which includes the peoples of Europe, United States, British America, the white inhabitants of South Africa, Australasia, parts of South America, and the white population of the European colonies. Of late years the individual consumption of wheat has almost universally increased. In Scandinavia it has risen 100 per cent. in 25 years; in Austro-Hungary, 80 per cent.; in France, 20 per cent.; while in Belgium it has increased 50 per cent. Only in Russia and Italy, and possibly Turkey, has the consumption of wheat per head declined. In 1871 the bread-eaters of the world numbered 371,000,000, In 1881 the numbers rose to 416,000,000; in 1891, to 472,600,000; and at the present time they number 516,500,000. The augmentation of the world's bread-eating population in a geometrical ratio is evidenced by the fact that the yearly aggregates grow progressively larger. In the early seventies they rose 4,300,000 per annum, while in the eighties they increased by more than 6,000,000 per annum, necessitating annual additions to the bread-supply nearly one-half greater than sufficed twenty-five years ago. How much wheat will be required to supply all these hungry mouths with bread? At the present moment it is not possible to get accurate estimates of this year's wheat crops of the world, but an adequate idea may be gained from the realised crops of some countries and the promise of others. To supply 516,500,000 bread-eaters, if each bread-eating unit is to have his usual ration, will require a total of 2,324,000,000 bushels for seed and food. What are our prospects of obtaining this amount?

According to the best authorities the total supplies from the 1897–98 harvest are 1,921,000,000 bushels. The requirement of the 516,500,000 bread-eaters for seed and food are 2,324,000,000 bushels; there is thus a deficit of 403,000,000 bushels, which has not been urgently apparent owing to a surplus of 300,000,000 bushels carried over from the last harvest. Respecting the prospects of the harvest year just beginning it must be borne in mind that there are no remainders to bring over from the last harvest. We start with a deficit of 103,000,000 bushels and have 6,500,000 more mouths to feed. It follows, therefore, that one-sixth of the required bread will be lacking unless larger drafts than now seem possible can be made upon early produce from the next harvest. The majority of the wheat crops between 1882 and 1896 were in excess of current needs, and thus considerable reserves of wheat were available for supplementing small deficits from the four deficient harvests. But bread-eaters have almost eaten up the reserves of wheat, and the 1897 harvest being under average the conditions become serious. That scarcity and high prices have not prevailed in recent years is due to the fact that since 1889 we have had seven world crops of wheat and six of rye abundantly in excess of the average. These generous crops increased accumulations to such an extent as to obscure the fact that the harvests of 1895 and 1896 were each much below current requirements. Practically speaking, reserves are how exhausted and bread-eaters must be fed from current harvests—accumulation under present conditions being almost impossible. This is obvious from the fact that a harvest equal to that of 1894 (the greatest crop on record both in acre-yield and in the aggregate) would yield less than current needs. It is clear we are confronted with a colossal problem that must tax the wits of the wisest. When the bread-eaters have exhausted all possible supplies from the 1897–98 harvest there will be a deficit of 103,000,000 bushels of wheat, with no substitution possible unless Europeans can be induuced to eat Indian corn or rye-bread. Up to recent years the growth of wheat has kept pace with demands. As wheat-eaters increased the acreage under wheat expanded. The world has become so familiarised with the orderly sequence of demand and supply, so accustomed to look upon the vast plains of other wheat-growing countries as inexhaustible granaries, that, in a light-hearted way, it is taken for granted that so many million additional acres can be added year after year to the wheat-growing area of the world. We forget that the wheat-growing area is of strictly limited extent and that a few million acres regularly absorbed soon mount to a formidable number.

The Capabilities of the Wheat-growing Countries: the United States.

The present position being so gloomy, let us consider future prospects. What are the capabilities as regards available area, economic conditions, and acreage yield of the wheat-growing countries whence we now draw our supply? For the last thirty years the United States have been the dominant factor in the foreign supply of wheat, exporting no less than 145,000,000 bushels. This shows how the bread-eating world has depended, and still depends, on the United States for the means of subsistence. The entire world's contributions to the food-bearing area have averaged but 4,000,000 acres yearly since 1869. It is scarcely possible that such an average under existing conditions can be doubled for the coming twenty-five years. Almost yearly since 1885 additions to the wheat-growing area have diminished, while the requirements of the increasing population of the States have advanced, so that the needed American supplies have been drawn from the acreage hitherto used for exportation. Practically there remains no uncultivated prairie land in the United States suitable for wheat-growing. The virgin land has been rapidly absorbed until at present there is no land left for wheat without reducing the area for maize, hay, and other necessary crops. It is almost certain that within a generation the ever-increasing population of the United States will consume all the wheat grown within its borders and will be driven to import, and, like ourselves, will scramble for a lion's share of the wheat crop of the world. This being the outlook exports of wheat from the United States are only of present interest and will gradually diminish to a vanishing point. The inquiry may be restricted to such countries as probably will continue to feed bread-eaters who annually derive a considerable part of their wheat from extraneous sources. But if the United States, which grow about one-fifth of the world's wheat and contribute one-third of all wheat exportations, are even now dropping out of the race and likely soon to enter the list of wheat-importing countries, what prospect is there that other wheat-growing countries will be able to fill the gap and by enlarging their acreage under wheat replace the supply which the States have so long contributed to the world's food? The withdrawal of 145,000,000 bushels will cause a serious gap in the food-supply of wheat-importing countries and unless this deficit can be met by increased supplies from other countries there will be a dearth for the rest of the world after the British Isles are sufficiently supplied.

Russia.

Next to the United States Russia is the greatest wheat exporter, supplying nearly 95,000,000 bushels. Although Russia at present exports so lavishly this excess is merely provisional and precarious. The Russian peasant population increases more rapidly than any other in Europe. The yield per acre over European Russia is meagre—not more than 8·6 bushels to the acre—while some authorities consider it as low as 4·6 bushels. The cost of production is low—lower even than on the virgin soil of the United States. The development of the fertile though somewhat overrated "black earth," which extends across the southern portion of the empire and beyond the Ural Mountains into Siberia, progresses rapidly. But, as we have indicated, the consumption of bread in Russia has been reduced to danger point. The peasants starve and fall victims to "hunger

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typhus," whilst the wheat-growers export grain that ought to be consumed at home. Considering Siberia as a wheat-grower, climate is the first consideration. Summers are short—as they are in all regions with continental climates north of the 45th parallel—and the ripening of wheat requires a temperature averaging at least 65° F. for from 55 to 65 days. As all Siberia lies north of the summer isotherm of 65° it follows that such region is ill-adapted to wheat culture unless some compensating climatic condition exists. As a fact, the conditions are exceptionally unfavourable in all but very limited districts in the two westernmost governments. The cultivable lands of Western Siberia adapted to grain-bearing neither equal in extent nor in potential productive powers those of Iowa, Minnesota, and Nebraska. There are limited tracts of fair productiveness in Central Siberia and in the valleys of the southern affluents of the Amoor, but these are only just capable of supporting a meagre population. Prince Hilkoff, Russian Minister of Ways and Communications, declared in 1896 that "Siberia never had produced, and never would produce, wheat and rye enough to feed the Siberian population." And a year later Prince Krapotkin backed the statement as substantially correct.

Canada.

Those who attended the meeting of the British Association last year in Canada must have been struck with the extent and marvellous capacity of the fertile plains of Manitoba and the North-West provinces. Here were to be seen 1,290,000 acres of fine wheat-growing land yielding 18,261,950 bushels, one-fifth of which comes to hungry England. Expectations have been cherished that the Canadian North-West would easily supply the world with wheat, and exaggerated estimates are drawn as to the amount of surplus land on which wheat can be grown. Thus far performance has lagged behind promise, the wheat-bearing area of all Canada having increased less than 500,000 acres since 1884, while the exports have not increased in greater proportion. As the wheat area of Manitoba and the North-West has increased the wheat area of Ontario and the Eastern provinces has decreased, the added acres being little more than sufficient to meet the growing requirements of population. We have seen calculations showing that Canada contains 500,000,000 acres of profitable wheat land. The impossibility of such an estimate ever being fulfilled will be apparent when it is remembered that the whole area employed in both temperate zones for growing all the staple food crops is not more than 580,000,000 acres, and that in no country has more than 9 per cent. of the area been devoted to wheat culture. The fertility of the North-West provinces of the Dominion is due to an exceptional and curious circumstance. In winter the ground freezes to a considerable depth. Wheat is sown in the spring, generally April, when the frozen ground has been thawed to a depth of 3 in. Under the hot sun of the short summer the grain sprouts with surprising rapidity, partly because the roots are supplied with water from the thawing depths. The summer is too short to thaw the ground thoroughly and gate-posts or other dead wood extracted in autumn are found still frozen at their lower ends.

Australasia.

Australasia as a potential contributor to the world's supply of wheat affords another fertile field for speculation. Climatic conditions limit the Australian wheat area to a small portion of the southern littoral belt. Professor Shelton considers there are still 50,000,000 acres in Queensland suitable for wheat, but hitherto it has never had more than 150,000 acres under cultivation. Crops in former days were liable to rust, but since the conferences on rust in wheat and the dissemination of instruction to farmers rust no longer has any terrors. I am informed by the Queensland Department of Agriculture that of late years they practically have bred wheat vigorous enough to resist this plague. For the second season in succession the wheat crop last year was destroyed over large areas in Victoria; and in South Australia the harvest averaged not more than about 3¾ bushels per acre after meeting colonial requirements for food and seed, leaving only 684,000 bushels for export. In most other districts the yield falls to such an extent as to cause Europeans to wonder why the pursuit of wheat-raising is continued.

New Zealand has a moist climate resembling that of central and southern England, while South Australia is semi-arid, resembling western Kansas. Only two countries in the world yield as much wheat per acre as New Zealand—these are Denmark and the United Kingdom. Notwithstanding the great yield of wheat, due to an equable climate, New Zealand finds fruit and dairy farming still more profitable. The climatic conditions favourable to wheat are also conducive to luxuriant growths of nutritious grasses. Thus the New Zealander ships his butter more than half way round the world and competes successfully with western Europe.

Austro-Hungary and other European States.

During the last twenty-seven years the Austro-Hungarian population has increased 21·8 per cent., as against an increase of 54·6 per cent. in the acreage of wheat. Notwithstanding this disparity in the rates of increase exports have practically ceased by reason of an advance of nearly 80 per cent. in unit consumption. There can be little doubt that Austro-Hungary is about to enter the ranks of importing nations, although in Hungary a considerable area of wheat land remains to be brought under cultivation.

Roumania is an important wheat-growing country. In 1896 it produced 69,000,000 bushels and exported 34,000,000 bushels. It has a considerable amount of surplus land which can be used for wheat, although for many years the wheat area is not likely to exceed home requirements. France comes next to the United States as a producer of wheat; but for our purpose she counts but little, being dependent on supplies from abroad for an average quantity of 14 per cent. of her own production. There is practically no spare land in France that can be put under wheat in sufficient quantity to enable her to do more than provide for increase of population. Germany is a gigantic importer of wheat, her imports rising 700 per cent. in the last twenty-five years, and now averaging 35,000,000 bushels. Other nations of Europe, also importers, do not require detailed mention, as under no conceivable conditions would they be able to do more than supply wheat for the increasing requirements of the local population, and instead of replenishing would probably diminish the world's stores.

Argentina and Uruguay.

The prospective supply of wheat from Argentina and Uruguay has been greatly overrated. The agricultural area includes less than 100,000,000 acres of good, bad, and indifferent land, much of which is best adapted for pastoral purposes. There is no prospect of Argentina ever being able to devote more than 30,000,000 acres to wheat; the present wheat area is about 6,000,000 acres, an area that may be doubled in the next twelve years. But the whole arable region is subject to great climatic vicissitudes and to frosts that ravage the fields south of the 37th parallel. Years of systematised energy are frustrated in a few days—perhaps hours—by a single cruelty of Nature, such as a plague of locusts, a tropical rain, or a devastating hail storm. It will take years to bring the surplus land of Argentina into cultivation and the population is even now insufficient to supply labour at seed time and harvest. During the next twelve years Uruguay may add 1,000,000 acres to the world's wheat fields; but social, political, and economic conditions seriously interfere with agricultural development.

Africa.

At the present time South Africa is an importer of wheat and the regions suitable to cereals do not exceed a few million acres. Great expectations have been formed as to the fertility of Mashonaland, the Shire Highlands, and the Kikuyu plateau, and as to the adaptation of these regions to the growth of wheat. But wheat culture fails where the banana ripens and the banana flourishes throughout Central Africa except in limited areas of great elevation. In many parts of Africa insect pests render it impossible to store grain and without grain-stores there can be little hope of large exports. North Africa, formerly the granary of Rome now exports less than 5,000,000 bushels of wheat annually, and these exports are on the decline owing to increased home demands. With scientific irrigation Egypt could supply three times her present amount of wheat, although no increase is likely unless the cotton fields of the Delta are diverted to grain-growing. In Algeria and Tunis nearly all reclaimed lands are devoted to the production of wine, for which a brisk demand exists. Were this land devoted to the growth of wheat an additional 5,000,000 bushels might be obtained.

India.

The enormous acreage devoted to wheat in India has been declining for some years and in 1895 over 20,000,000 acres

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yielded 185,000,000 bushels. Seven-eighths of this harvest is required for native consumption and only one-eighth on an average is available for export. The annual increase of population is more than 3,000,000, demanding an addition to the food-bearing lands of not less than 1,800,000 acres annually. In recent years the increase has been less than one-fourth of this amount.

In surveying the limitations and vicissitudes of wheat crops I have endeavoured to keep free from exaggeration and have avoided insistance on doubtful points. I have done my best to get trustworthy facts and figures, but from the nature of the case it is impossible to attain complete accuracy. Great caution is required in sifting the numerous varying current statements respecting the estimated areas and total produce of wheat throughout the world. The more closely official estimates are examined the more defective are they found, and comparatively few figures are sufficiently well established to bear the deductions often drawn. In doubtful cases I have applied to the highest authorities in each country and in the case of conflicting accounts have taken data the least favourable to sensational or panic-engendering statements. In a few instances of accurate statistics their value is impaired by age; but for 95 per cent. of my figures I quote good authorities, while for the remaining 5 per cent. I rely on the best commercial estimates derived from the appearance of the growing crops, the acreage under cultivation, and the yield last year. The maximum probable error would make no appreciable difference in my argument.

The Meaning of the Figures.

The facts and figures I have set before you are easily interpreted. Since 1871 unit consumption of wheat, including seed, has slowly increased in the United Kingdom to the present amount of 6 bushels per head per annum; while the rate of consumption for seed and food by the whole world of bread-eaters was 4·15 bushels per unit per annum for the eight years ending 1878, and at the present time is 4·5 bushels. Under present conditions of low acre yield wheat cannot long retain its dominant position among the food-stuffs of the civilised world. The details of the impending catastrophe no one can predict, but its general direction is obvious enough. Should all the wheat-growing countries add to their area to the utmost capacity, on the most careful calculation the yield would give us only an addition of some 100,000,000 acres, supplying at the average world-yield of 12·7 bushels to the acre, 1,270,000,000 bushels, just enough to supply the increase of population among bread-eaters till the year 1931. At the present time there exists a deficit in the wheat area of 31,000 square miles—a deficit masked by the fact that the ten world crops of wheat harvested in the ten years ending 1896 were more than 5 per cent. above the average of the previous twenty-six years. When provision shall have been made, if possible, to feed 230,000,000 units likely to be added to the bread-eating populations by 1931—by the complete occupancy of the arable areas of the temperate zone now partially occupied—where can be grown the additional 330,000,000 bushels of wheat required ten years later by a hungry world? What is to happen if the present rate of population be maintained and if arable areas of sufficient extent cannot be adapted and made contributory to the subsistence of so great a host? Are we to go hungry and to know the trial of scarcity? That is the poignant question. Thirty years is but a day in the life of a nation. Those present who may attend the meeting of the British Association thirty years hence will judge how far my forecasts are justified. If bread fails—not only us, but all the bread-eaters of the world—what are we to do? We are born wheat-eaters. Other races, vastly superior to us in numbers, but differing widely in material and intellectual progress, are eaters of Indian corn, rice, millet, and other grains; but none of these grains have the food value, the concentrated health-sustaining power of wheat, and it is on this account that the accumulated experience of civilised mankind has set wheat apart as the fit and proper food for the development of muscle and brains. It is said that when other wheat-exporting countries realise that the States can no longer keep pace with the demand these countries will extend their area of cultivation and struggle to keep up the supply *pari passu* with the falling-off in other quarters. But will this comfortable and cherished doctrine bear the test of examination? Cheap production of wheat depends on a variety of causes, varying greatly in different countries. Taking the cost of producing a given quantity of wheat in the United Kingdom at 100*s*., the cost for the same amount in the United States is 67*s*., in India 66*s*., and in Russia 54*s*. We require cheap labour, fertile soil, easy transportation to market, low taxation and rent, and no export or import duties. Labour will rise in price and fertility diminish as the requisite manurial constituents in the virgin soil become exhausted. Facility of transportation to market will be aided by railways, but these are slow and costly to construct, and it will not pay to carry wheat by rail beyond a certain distance. These considerations show that the price of wheat tends to increase. On the other hand, the artificial impediments of taxation and customs duties tend to diminish as demand increases and prices rise.

The Chemist to the Rescue.

I have said that starvation may be averted through the laboratory. Before we are in the grip of actual dearth the chemist will step in and postpone the day of famine to so distant a period that we and our sons and grandsons may legitimately live without undue solicitude for the future. It is now recognised that all crops require what is called a "dominant" manure. Some need nitrogens, some potash, others phosphates. Wheat pre-eminently demands nitrogen, fixed in the form of ammonia or nitric acid. All other necessary constituents exist in the soil; but nitrogen is mainly of atmospheric origin, and is rendered "fixed" by a slow and precarious process which requires a combination of rare meteorological and geographical conditions to enable it to advance at a sufficiently rapid rate to become of commercial importance. There are several sources of available nitrogen. The distillation of coal in the process of gas-making yields a certain amount of its nitrogen in the form of ammonia; and this product, as sulphate of ammonia, is a substance of considerable commercial value to gas companies. But the quantity produced is comparatively small; all Europe does not yield more than 400,000 annual tons, and in view of the unlimited nitrogen required to substantially increase the world's wheat crop this slight amount of coal ammonia is not of much significance. For a long time guano has been one of the most important sources of nitrogenous manures, but guano deposits are so near exhaustion that they may be dismissed from consideration.

Much has been said of late years and many hopes raised by the discovery of Hellriegel and Wilfarth that leguminous plants bear on their roots nodosities abounding in bacteria endowed with the property of fixing atmospheric nitrogen; and it is proposed that the necessary amount of nitrogen demanded by grain crops should be supplied to the soil by cropping it with clover and ploughing in the plant when its nitrogen assimilisation is complete. But it is questionable whether such a mode of procedure will lead to the lucrative stimulation of crops. It must be admitted that practice has long been ahead of science and for ages farmers have valued and cultivated leguminous crops. The four-course rotation is turnips, barley, clover, wheat—a sequence popular more than two thousand years ago. On the Continent, in certain localities, there has been some extension of microbe cultivation; at home we have not reached even the experimental stage. Our present knowledge leads to the conclusion that the much more frequent growth of clover on the same land, even with successful microbe-seeding and proper mineral supplies, would be attended with uncertainty and difficulties. The land soon becomes what is called "clover-sick" and turns barren.

There is still another and invaluable source of fixed nitrogen. I mean the treasure locked up in the sewage and drainage of our towns. Individually the amount so lost is trifling, but multiply the loss by the number of inhabitants and we have the startling fact that in the United Kingdom we are content to hurry down our drains and watercourses into the sea fixed nitrogen to the value of no less than £16,000,000 per annum. This unspeakable waste continues and no effective and universal method is yet contrived of converting sewage into corn. Of this barbaric waste of manurial constituents Liebig nearly half a century ago wrote in these prophetic words: "Nothing will more certainly consummate the ruin of England than a scarity of fertilisers—it means a scarcity of food. It is impossible that such a sinful violation of the divine laws of nature should for ever remain unpunished, and the time will probably come for England sooner than for any other country when, with all her wealth in gold, iron, and coal, she will be unable to buy one-thousandth part of the food which she has during

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hundreds of years thrown recklessly away." The more widely this wasteful system is extended, recklessly returning to the sea what we have taken from the land, the more surely and quickly will the finite stocks of nitrogen locked up in the oils of the world become exhausted. Let us remember that the plant creates nothing; there is nothing in bread which is not absorbed from the soil, and unless the abstracted nitrogen is returned to the soil its fertility must ultimately be exhausted. When we apply to the land nitrate of soda, sulphate of ammonia, or guano, we are drawing on the earth's capital, and our drafts will not perpetually be honoured. Already we see that a virgin soil cropped for several years loses its productive powers and without artificial aid becomes infertile. Thus the strain to meet demands is increasingly great. Witness the yield of 40 bushels of wheat per acre under favourable conditions dwindling through exhaustion of soil to less than 7 bushels of poor grain, and the urgency of husbanding the limited store of fixed nitrogen becomes apparent. The store of nitrogen in the atmosphere is practically unlimited, but it is fixed and rendered assimilable by plants only by cosmic processes of extreme slowness. The nitrogen which with a light heart we liberate in a battleship broadside has taken millions of minute organisms patiently working for centuries to win from the atmosphere.[3]

Nitrogenous Manures.

The only available compound containing sufficient fixed nitrogen to be used on a world-wide scale as a nitrogenous manure is nitrate of soda, or Chili saltpetre. This substance occurs native over a narrow band of the plain of Tamarugal, in the northern provinces of Chili between the Andes and the coast hills. In this rainless district for countless ages the continuous fixation of atmospheric nitrogen by the soil, its conversion into nitrate by the slow transformation of billions of nitrifying organisms, its combination with soda and the crystallisation of the nitrate have been steadily proceeding, until the nitrate fields of Chili have become of vast commercial importance and promise to be of inestimably greater value in the future. The growing exports of nitrate from Chili at present amount to about 1,200,000 tons. The present acreage devoted to the world's growth of wheat is about 163,000,000 acres. At the average of 12·7 bushels per acre this gives 2,070,000,000 bushels. But thirty years hence the demands will be 3,260,000,000 bushels and there will be difficulty in finding the necessary acreage on which to grow the additional amount required. By increasing the present yield per acre from 12·7 to 20 bushels we should with our present acreage secure a crop of the requisite amount. Now from 12·7 to 20 bushels per acre is a moderate increase of productiveness, and there is no doubt that a dressing with nitrate of soda will give this increase and more. The action of nitrate of soda in improving the yield of wheat has been studied practically by Sir John Lawes and Sir Henry Gilbert on their experimental field at Rothamstead. This field was sown with wheat for thirteen consecutive years without manure and yielded an average of 11·9 bushels to the acre. For the next thirteen years it was sown with wheat and dressed with 5 cwt. of nitrate of soda per acre, other mineral constituents also being present. The average yield for these years was 36·4 bushels per acre—an increase of 24·5 bushels. In other words, 22·86 lb. of nitrate of soda produce an increase of one bushel of wheat. At this rate, to increase the world's crop of wheat by 7·3 bushels about 1¼ cwt. of nitrate of soda must annually be applied to each acre. The amount required to raise the world's crop on 163,000,000 acres from the present supply of 2,070,000,000 bushels to the required 3,260,000,000 bushels would be 12,000,000 tons distributed in varying amounts over the wheat-growing countries of the world. The countries which produce more than the average of 12·7 bushels will require less and those below the average will require more; but, broadly speaking, about 12,000,000 tons annually of nitrate of soda will be required, in addition to the 1,250,000 tons already absorbed by the world. It is difficult to get trustworthy estimates of the amount of nitrate surviving in the nitre beds. Common rumour declares the supply to be inexhaustible, but cautious local authorities state that at the present rate of export of over 1,000,000 tons per annum the raw material "caliche," containing from 25 to 50 per cent. nitrate, will be exhausted in from twenty to thirty years. Dr. Newton, who has spent years on the nitrate fields, tells me there is a lower class material, containing a small proportion of nitrate, which cannot at present be used, but which may ultimately be manufactured at a profit. Apart from a few of the more scientific manufacturers no one is sanguine enough to think this debatable material will ever be worth working. If we assume a liberal estimate for nitrate obtained from the lower grade deposit, and say that it will equal in quantity that from the richer quality, the supply may last, possibly, fifty years, at the rate of 1,000,000 tons a year; but at the rate required to augment the world's supply of wheat to the point demanded thirty years hence it will not last more than four years.

The Fixation of Nitrogen.

I have passed in review all the wheat-growing countries of the world, with the exception of those whose united supplies are so small as to make little appreciable difference to the argument. The situation may be summed up briefly thus: the world's demand for wheat—the leading bread-stuff—increases in a crescendo ratio year by year. Gradually all the wheat-bearing land on the globe is appropriated to wheat-growing until we are within measurable distance of using the last available acre. We must then rely on nitrogenous manures to increase the fertility of the land under wheat, so as to raise the yield from the world's low average—12·7 bushels per acre—to a higher average. To do this efficiently and feed the bread-eaters for a few years will exhaust all the available store of nitrate of soda. For years past we have been spending fixed nitrogen at a culpably extravagant rate, heedless of the fact that it is fixed with extreme slowness and difficulty, while its liberation in the free state takes place always with rapidity and sometimes with explosive violence. Some years ago Mr. Stanley Jevons uttered a note of warning as to the near exhaustion of our British coalfields. But the exhaustion of the world's stock of fixed nitrogen is a matter of far greater importance. It means not only a catastrophe little short of starvation for the wheat-eaters, but indirectly scarcity for those who exist on inferior grains, together with a lower standard of living for meat-eaters, scarcity of mutton and beef, and even the extinction of gunpowder!

There is a gleam of light amid this darkness of despondency. In its free state nitrogen is one of the most abundant and pervading bodies on the face of the earth. Every square yard of the earth's surface has nitrogen gas pressing down on it to the extent of about seven tons—but this is in the *free* state and wheat demands it *fixed*. To convey this idea in an object lesson I may tell you that, previously to its destruction by fire, Colston Hall, measuring 146 ft. by 80 ft. by 70 ft., contained 27 tons weight of nitrogen in its atmosphere; it also contained one-third of a ton of argon. In the free gaseous state this nitrogen is worthless; combined in the form of nitrate of soda it would be worth about £2000. For years past attempts have been made to effect the fixation of atmospheric nitrogen and some of the processes have met with sufficient partial success to warrant experimentalists in pushing their trials still further; but I think I am right in saying that no process has yet been brought to the notice of scientific or commercial men which can be considered successful either as regards cost or yield of product. It is possible, by several methods, to fix a certain amount of atmospheric nitrogen; but to the best of my knowledge no process has hitherto converted more than a small amount, and this at a cost largely in excess of the present market value of fixed nitrogen. The fixation of atmospheric nitrogen, therefore, is one of the great discoveries awaiting the ingenuity of chemists. It is certainly deeply important in its practical bearings on the future welfare and happiness of the civilised races of mankind. This unfulfilled problem, which so far has eluded the strenuous attempts of those who have tried to wrest the secret from nature, differs materially from other chemical discoveries which are in the air, so to speak, but are not yet matured. The fixation of nitrogen is vital to the progress of civilised humanity. Other discoveries minister to our increased intellectual comfort, luxury, or convenience; they serve to make life easier, to hasten the acquisition of wealth, or to save time, health, or worry. The fixation of

[3] Sir Andrew Noble informs me that a first-class battleship would carry about 63 tons of cordite and we may suppose that in a general action 40 tons of this would be expended. Now at Trafalgar Nelson had 27 line-of-battle ships and the allied forces 33. If we suppose a similar number of modern battleships and first-class cruisers to be engaged and each to expend 40 tons of cordite, the total volume of nitrogen set free would be 302,400 cubic metres, or about 380 tons, equivalent to 2300 tons of nitrate of soda.

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nitrogen is a question of the not far distant future. Unless we can class it among certainties to come the great Caucasian race will cease to be foremost in the world and will be squeezed out of existence by races to whom wheaten bread is not the staff of life.

Let me see if it is not possible even now to solve the momentous problem. As far back as 1892 I exhibited at one of the *soirées* of the Royal Society an experiment on "The Flame of Burning Nitrogen." I showed that nitrogen is a combustible gas, and the reason why when once ignited the flame does not spread through the atmosphere and deluge the world in a sea of nitric acid is that its igniting point is higher than the temperature of its flame—not therefore hot enough to set fire to the adjacent mixture. But by passing a strong induction current between terminals the air takes fire and continues to burn with a powerful flame, producing nitrous and nitric acids. This inconsiderable experiment may not unlikely lead to the development of a mighty industry destined to solve the great food problem. With the object of burning out nitrogen from air so as to leave argon behind Lord Rayleigh fitted up apparatus for performing the operation on a larger scale, and succeeded in effecting the union of 29 4 grammes of mixed nitrogen and oxygen at an expenditure of one horse-power. Following these figures it would require one Board of Trade unit to form 74 grammes of nitrate of soda, and therefore 14,000 units to form one ton. To generate electricity in the ordinary way with steam-engines and dynamos, it is now possible with a steady load night and day, and engines working at maximum efficiency, to produce current at a cost of one-third of a penny per Board of Trade unit. At this rate one ton of nitrate of soda would cost £26. But electricity from coal and steam-engines is too costly for large industrial purposes; at Niagara, where water power is used, electricity can be sold at a profit for one-seventeenth of a penny per Board of Trade unit. At this rate nitrate of soda would cost not more than £5 per ton. But the limit of cost is not yet reached and it must be remembered that the initial data are derived from small scale experiments in which the object was not economy but rather to demonstrate the practicability of the combustion method and to utilise it for isolating argon. Even now electric nitrate at £5 a ton compares favourably with Chili nitrate at £7 10*s.* a ton; and all experience shows that when the road has been pointed out by a small laboratory experiment the industrial operations that may follow are always conducted at a cost considerably lower than could be anticipated from the laboratory figures.

Before we decide that electric nitrate is a commercial possibility a final question must be mooted. We are dealing with wholesale figures and must take care that we are not simply shifting difficulties a little further back without really diminishing them. We start with a shortage of wheat and the natural remedy is to put more land under cultivation. As the land cannot be stretched and there is so much of it and no more, the object is to render the available area more productive by a dressing with nitrate of soda. But nitrate of soda is limited in quantity and will soon be exhausted. Human ingenuity can contend even with these apparently hopeless difficulties. Nitrate can be produced artificially by the combustion of the atmosphere. Here we come to finality in one direction; our stores are inexhaustible. But how about electricity? Can we generate enough energy to produce 12,000,000 tons of nitrate of soda annually? A preliminary calculation shows that there need be no fear on that score; Niagara alone is capable of supplying the required electric energy without much lessening its mighty flow. The future can take care of itself. The artificial production of nitrate is clearly within view and by its aid the land devoted to wheat can be brought up to the 30 bushels per acre standard. In days to come, when the demand may again overtake supply, we may safely leave our successors to grapple with the stupendous food problem. And in the next generation, instead of trusting mainly to food-stuffs which flourish in temperate climates, we probably shall trust more and more to the exuberant food-stuffs of the tropics, where, instead of one yearly sober harvest, jeopardised by any shrinkage of the scanty days of summer weather or of the few steady inches of rainfall, Nature annually supplies heat and water enough to ripen two or three successive crops of food-stuffs in extraordinary abundance. To mention one plant alone, Humboldt—from what precise statistics I know not—computed that, acre for acre, the food-productiveness of the banana is 133 times that of wheat—the unripe banana, before its starch is converted into sugar, is said to make excellent bread. Considerations like these must in the end determine the range and avenues of commerce, perhaps the fate of continents. We must develop and guide Nature's latent energies, we must utilise her inmost workshops, we must call into commercial existence Central Africa and Brazil to redress the balance of Odessa and Chicago.

II.—THE LATEST ACHIEVEMENTS OF SCIENCE.

Having kept you for the last half-hour rigorously chained to earth disclosing dreary possibilities it will be a relief to soar to the heights of pure science and to discuss a point or two touching its latest achievements and aspirations. The low temperature researches which bring such renown to Professor Dewar and to his laboratory in the Royal Institution have been crowned during the present year by the conquest of one of Nature's most defiant strongholds. On May 10th last Professor Dewar wrote me these simple but victorious words: "This evening I have succeeded in liquefying both hydrogen and helium. The second stage of low temperature work has begun." Static hydrogen boils at a temperature of 238° C. at ordinary pressure and at 250° C. in a vacuum, thus enabling us to get within 23° C. of absolute zero. The density of liquid hydrogen is only one-fourteenth that of water, yet in spite of such a low density it collects well, drops easily, and has a well-defined meniscus. With proper isolation it will be as easy to manipulate liquid hydrogen as liquid air. The investigation of the properties of bodies brought near the absolute zero of temperature is certain to give results of extraordinary importance. Already platinum resistance thermometers are becoming useless, as the temperature of boiling hydrogen is but a few degrees from the point where the resistance of platinum would be practically nothing, or the conductivity infinite.

Several years ago I pondered on the constitution of matter in what I ventured to call the fourth state. I endeavoured to probe the tormenting mystery of the atom. What *is* the atom? Is a single atom in space solid, liquid, or gaseous? Each of these states involves ideas which can only pertain to vast collections of atoms. Whether, like Newton, we try to visualise an atom as a hard, spherical body or, with Boscovitch and Faraday, to regard it as a centre of force, or accept the vortex atom theory of Lord Kelvin, an isolated atom is an unknown entity difficult to conceive. The properties of matter—solid, liquid, gaseous—are due to molecules in a state of motion. Therefore, matter as we know it involves essentially a mode of motion and the atom itself — intangible, invisible, and inconceivable — is its material basis and may, indeed, be styled the only true *matter*. The space involved in the motions of atoms has no more pretension to be called matter than the sphere of influence of a body of riflemen — the sphere filled with flying leaden missiles—has to be called lead. Since what we call matter essentially involves a mode of motion, and since at the temperature of absolute zero all atomic motions would stop, it follows that matter as we know it would at that paralysing temperature probably entirely change its properties. Although a discussion of the ultimate absolute properties of matter is purely speculative it can hardly be barren, considering that in our laboratories we are now within moderate distance of the absolute zero of temperature. I have dwelt on the value and importance of nitrogen, but I must not omit to bring to your notice those little known and curiously related elements which during the past twelve months have been discovered and partly described by Professor Ramsay and Dr. Travers. For many years my own work has been among what I may call the waste heaps of the mineral elements. Professor Ramsay is dealing with vagrant atoms of an astral nature. During the course of the present year he has announced the existence of no fewer than three new gases—krypton, neon, and metargon. Whether these gases, chiefly known by their spectra, are true unalterable elements, or whether they are compounded of other known or unknown bodies, has yet to be proved. Fellow workers freely pay tribute to the painstaking zeal with which Professor Ramsay has conducted a difficult research, and to the philosophic subtlety brought to bear on his investigations. But, like most discoverers, he has not escaped the flail of severe criticism. There is still another claimant for celestial honours. Professor Nasini tells us he has discovered, in some volcanic gases at Pozzuoli, that hypothetical element coronium, supposed to cause the bright line 5316·9 in the spectrum of the sun's corona.

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Analogy points to its being lighter and more diffusible than hydrogen and a study of its properties cannot fail to yield striking results. Still awaiting discovery by the fortunate spectroscopist are the unknown celestial elements, Aurorium—with a characteristic line at 5570·7—and Nebulum, having two bright lines at 5007·05 and 4959·02.

The fundamental discovery by Hertz of the electro-magnetic waves, predicted more than thirty years ago by Clerk Maxwell, seems likely to develop in the direction of a practical application which excites keen interest—I mean the application to electric signalling across moderate distances without connecting wires. The feasibility of this method of signalling has been demonstrated by several experimenters at more than one meeting of the British Association, though most elaborately and with many optical refinements by Oliver Lodge at the Oxford meeting in 1894. But not until Signor Marconi induced the British Post Office and foreign Governments to try large scale experiments did wireless signalling become generally and popularly known or practically developed as a special kind of telegraphy. Its feasibility depends on the discovery of a singularly sensitive detector for Hertz waves—a detector whose sensitiveness in some cases seems almost to compare with that of the eye itself. The fact noticed by Oliver Lodge in 1889 that an infinitesimal metallic gap subjected to an electric jerk became conducting, so as to complete an electric circuit, was rediscovered soon afterwards in a more tangible and definite form and applied to the detection of Hertz waves by M. E. Branly. Oliver Lodge then continued the work and produced the *vacuum filling-tube* coherers with automatic tapper-back, which are of acknowledged practical service. It is this varying continuity of contact under the influence of extremely feeble electric stimulus alternating with mechanical tremor, which, in combination with the mode of producing the waves revealed by Hertz, constitutes the essential and fundamental feature of "wireless telegraphy." There is a curious and widely spread misapprehension about coherers, to the effect that to make a coherer work the wave must fall upon it. Oliver Lodge has disproved this fallacy. Let the wave fall on a suitable receiver, such as a metallic wire, or, better still, on an arrangement of metal wings resembling a Hertz sender, and the waves set up oscillating currents which may be led by wires (enclosed in metal pipes) to the coherer. The coherer acts apparently by a species of end-impact of the oscillatory current and does not need to be attacked in the flank by the waves themselves. This interesting method of signalling—already developing in Marconi's hands into a successful practical system which inevitably will be largely used in lighthouse and marine work—presents more analogy to optical signals by flash-light than to what is usually understood as electric telegraphy; notwithstanding the fact that an ordinary Morse instrument at one end responds to the movements of a key at the other, or, as arranged by Alexander Muirhead, a syphon recorder responds to an automatic transmitter at about the rate of slow cable telegraphy. But although no apparent optical apparatus is employed, it remains true that the impulse travels from sender to receiver by essentially the same process as that which enables a flash of magnesium powder to excite a distant eye.

The phenomenon discovered by Zeeman that a source of radiation is affected by a strong magnetic field in such a way that light of one refrangibility becomes divided usually into three components, two of which are displaced by diffraction analysis on either side of the mean position and are oppositely polarised to the third or residual constituent, has been examined by many observers in all countries. The phenomenon has been subjected to photography with conspicuously successful results by Professor T. Preston in Dublin and by Professor Michelson and Dr. Ames and others in America. It appears that the different lines in the spectrum are differently affected, some of them being tripled with different grades of relative intensity, some doubled, some quadrupled, some sextupled, and some left unchanged. Even the two components of the D lines are not similarly influenced. Moreover, whereas the polarisation is usually such as to indicate that motions of a negative ion or electron constitute the source of light, a few lines are stated by the observers at Baltimore, who used what they call the "small" grating of 6 in. width ruled with 65,000 lines to be polarised in the reverse way. Further prosecution of these researches must lead to deeper insight into molecular processes and the mode in which they affect the ether; indeed, already valuable theoretic views have been promulgated by H. A. Lorenz, J. Larmer, and G. F. Fitzgerald, on the lines of the radiation theory of Dr. Johnstone Stoney; and the connexion of the new phenomena with the old magnetic rotation of Faraday is under discussion. It is interesting to note that Faraday and a number of more recent experimenters were led by theoretical considerations to look for some such effect; and though the inadequate means at their disposal did not lead to success, nevertheless a first dim glimpse of the phenomenon was obtained by M. Fieves of the Royal Observatory at Brussels in 1885.

The Roentgen Rays.

In the mechanical construction of Roentgen ray tubes I can record a few advances, the most successful being the adoption of Professor Silvanus P. Thompson's suggestion of using for the anti-cathode a metal of high atomic weight. Osmium and iridium have been used with advantage, and osmium anti-cathode tubes are now a regular article of manufacture. As long ago as June, 1896, x ray tubes with metallic uranium anti-cathodes were made in my own laboratory and were found to work better than those with platinum. The difficulty of procuring metallic uranium prevented these experiments from being continued. Thorium anti-cathodes have also been tried. Roentgen has drawn fresh attention to the fact very early observed by English experimenters—that of the non-homogeneity of the rays and the dependence of their penetrating power on the degree of vacuum; rays generated in high vacua have more penetrative power than when the vacuum is less high. These facts are familiar to all who have exhausted focus tubes on their own pumps. Roentgen suggests a convenient phraseology; he call a low vacuum tube, which does not emit the highly penetrating rays, a "soft" tube, and a tube in which the exhaustion has been pushed to an extreme degree, in which highly penetrating rays predominate, a "hard" tube. Using a "hard" tube he took a photograph of a double-barrelled rifle, and showed not only the leaden bullets within the steel barrels but even the wads and the charges. Benoit has re-examined the alleged relation between density and opacity to the rays and finds certain discrepancies. Thus the opacity of equal thicknesses of palladium and platinum are nearly equal, whilst their densities and atomic weights are very different, those of palladium being about half those of platinum. Meantime, while the general opinion of physicists seems to be settling towards a wave or ether theory for the Roentgen rays, an opposite drift is apparent with respect to the physical nature of the cathode rays; it becomes more and more clear that cathode rays consist of electrified atoms or ions in rapid progressive motion. My idea of a fourth state of matter, propounded in 1881,[4] and at first opposed at home and abroad, is now becoming accepted. It is supported by Professor J. J. Thomson[5]; Dr. Larmor's theory[6] likewise involves the idea of an ionic substratum of matter; the view is also confirmed by Zeeman's phenomenon. In Germany — where the term cathode ray was invented almost as a protest against the theory of molecular streams propounded by me at the Sheffield meeting of the British Association in 1879—additional proofs have been produced in favour of the doctrine that the essential fact in the phenomenon is electrified radiant matter. The speed of these molecular streams has been approximately measured chiefly by aid of my own discovery nearly twenty years ago that their path is curved in a magnetic field and that they produce phosphorescence where they impinge on an obstacle. The two unknown quantities, the charge and the speed of each atom, are measurable from the amount of curvature and by means of one other independent experiment. It cannot be said that a complete and conclusive theory of these rays has yet been formulated. It is generally accepted that collisions among particles, especially the violent collisions due to their impact on a massive target placed in their path, give rise to the interesting kind of extremely high frequency radiation discovered by Roentgen. It has, indeed, for some time been known that whereas a charged body in motion constitutes an electric current, the sudden stoppage or any violent acceleration of such a body must cause an alternative electric disturbance which, though so rapidly decaying in intensity as to be practically "dead beat," yet must give rise to an ethereal wave or pulse

[4] Philosophical Transactions, Part 2, 1881, pp. 433–4.
[5] Philosophical Magazine, October, 1897, p. 312.
[6] Ibid., December, 1897, p. 506.

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travelling with the speed of light, but of a length comparable to the size of the body whose sudden change of motion caused the disturbance. The emission of a high-pitched musical sound from the jolting of a dustman's cart (with a spring bell hung on it) has been suggested as an illustration of the way in which the molecules of any solid not at absolute zero may possibly emit such rays. If the target on to which the electrically-charged atoms impinge is so constituted that some of its minute parts can thereby be set into rhythmical vibration, the energy thus absorbed reappears in the form of light, and the body is said to phosphoresce. The efficient action of the phosphorescent target appears to depend as much on its physical and molecular as on its chemical constitution. The best known phosphori belong to certain well-defined classes, such as the sulphides of the alkaline-earthy metals, and some of the so-called rare earths; but the phosphorescent properties of each of these groups are profoundly modified by an admixture of foreign bodies—witness the effect on the lines in the phosphorescent spectrum of yttrium and samarium produced by traces of calcium or lead. The persistence of the samarium spectrum in presence of overwhelming quantities of other metals is almost unexampled in spectroscopy; thus 1 part of samaria can easily be seen when mixed with 3,000,000 parts of lime. Without stating it as a general rule it seems as if with a non-phosphorescing target the energy of molecular impact reappears as pulses so abrupt and irregular that, when resolved, they furnish a copious supply of waves of excessively short wave-length—in fact, the now well-known Roentgen rays. The phosphorescence so excited may last only a small fraction of a second, as with the constituents of yttria, where the duration of the different lines varies between the 0·003 and the 0·0009 second; or it may linger for hours, as in the case of some of the yttria earths, and especially with the earthy sulphides, where the glow lasts bright enough to be commercially useful. Excessively phosphorescent bodies can be excited by light waves, but most of them require the stimulus of electrical excitement. It now appears that some bodies, even without special stimulation, are capable of giving out rays closely allied, if not in some cases identical, with those of Professor Roentgen. Uranium and thorium compounds are of this character and it would almost seem from the important researches of Dr. Russell that this ray-emitting power may be a general property of matter, for he has shown that nearly every substance is capable of affecting the photographic plate if exposed in darkness for sufficient time.

No other source for Roentgen rays but the Crookes's tube has yet been discovered, but rays of kindred sorts are recognised. The Becquerel rays, emitted by uranium and its compounds, have now found their companions in rays—discovered almost simultaneously by Curie and Schmidt—emitted by thorium and its compounds. The thorium rays affect photographic plates through screens of paper or aluminium and are absorbed by metals and other dense bodies. They ionise the air, making it an electrical conductor; and they can be refracted and probably reflected, at least diffusively. Unlike uranium rays, they are not polarised by transmission through tourmaline, therefore resembling in this respect the Roentgen rays. Quite recently M. and Madame Curie have announced a discovery which, if confirmed, cannot fail to assist the investigation of this obscure branch of physics. They have brought to notice a new constituent of the uranium mineral pitchblende, which in a 400-fold degree possesses uranium's mysterious power of emitting a form of energy capable of impressing a photographic plate and of discharging electricity by rendering air a conductor. It also appears that the radiant activity of the new body, to which the discoverers have given the name of polonium, needs neither the excitation of light nor the stimulus of electricity; like uranium, it draws its energy from some constantly regenerating and hitherto unsuspected store, exhaustless in amount. It has long been to me a haunting problem how to reconcile this apparently boundless outpour of energy with accepted canons. But, as Dr. Johnstone Stoney reminds me, the resources of molecular movements are far from exhausted. There are many stores of energy in nature that may be drawn on by properly constituted bodies without very obvious cause. Some time since I drew attention to the enormous amount of locked-up energy in the ether; nearer our experimental grasp are the motions of the atoms and molecules, and it is not difficult mentally so to modify Maxwell's demons as to reduce them to the level of an inflexible law and thus bring them within the ken of a philosopher in search of a new tool. It is possible to conceive a target capable of mechanically sifting from the molecules of the surrounding air the quick from the slow movers. This sifting of the swift-moving molecules is effected in liquids whenever they evaporate, and in the case of the constituents of the atmosphere wherever it contains constituents light enough to drift away molecule by molecule. In my mind's eye I see such a target as a piece of metal cooler than the surrounding air acquiring the energy that gradually raises its temperature from the outstanding effect of all its encounters with the molecules of the air about it; I see another target of such a structure that it throws off the slow-moving molecules with little exchange of energy, but is so influenced by the quick-moving missiles that it appropriates to itself some of their energy. Let uranium or polonium—bodies of densest atoms—have a structure that enables them to throw off the slow-moving molecules of the atmosphere, while the quick-moving molecules, smashing on to the surface, have their energy reduced and that of the target correspondingly increased. The energy thus gained seems to be employed partly in dissociating some of the molecules of the gas (or in inducing some other condition which has the effect of rendering the neighbouring air in some degree a conductor of electricity) and partly in originating an undulation through the ether, which, as it takes its rise in phenomena so disconnected as the impacts of the molecules of the air, must furnish a large contingent of light waves of short wave length. The shortness in the case of these Becquerel rays appears to approach without attaining the extreme shortness of ordinary Roentgen rays. The reduction of the speed of the quick moving molecules would cool the layer of air to which they belong; but this cooling would rapidly be compensated by radiation and conduction from the surrounding atmosphere; under ordinary circumstances the difference of temperature would scarcely be perceptible and the uranium would thus appear to perpetually emit rays of energy with no apparent means of restoration. The total energy of both the translational and internal motions of the molecules locked up in quiescent air at ordinray pressure and temperature is about 140,000 foot-pounds in each cubic yard of air. Accordingly the quiet air within a room 12 ft. high, 18 ft. wide, and 22 ft. long contains energy enough to propel a one-horse engine for more than twelve hours. The store drawn upon naturally by uranium and other heavy atoms only awaits the touch of the magic wand of Science to enable the twentieth century to cast into the shade the marvels of the nineteenth.

The Fractionation of Yttria.

Whilst placing before you the labours and achievements of my comrades in science I seize this chance of telling you of engrossing work of my own on the fractionation of yttria to which for the last eighteen years I have given ceaseless attention. In 1883, under the title of "Radiant Matter Spectroscopy," I described a new series of spectra produced by passing the phosphorescent glow of yttria, under molecular bombardment *in vacuo*, through a train of prisms. The visible spectra in time gave up their secrets and were duly embalmed in the Philosophical Transactions. At the Birmingham meeting of the British Association in 1886 I brought the subject before the Chemical Section, of which I had the honour to be President. The results led to many speculations on the probable origin of all the elementary bodies—speculations that for the moment I must waive in favour of experimental facts. There still remained for spectroscopic examination a long tempting stretch of unknown ultra-violet light, of which the exploration gave me no rest. But I will not now enter into details of the quest of unknown lines. Large quartz prisms, lenses, and condensers, specially sensitised photographic films capable of dealing with the necessary small amount of radiation given by feebly phosphorescing substances,[7] and, above all, tireless patience in collating and interpreting results, have all played their part. Although the research is incomplete I am able to announce that among the groups of rare earths giving phosphorescent spectra in the visible region there are others giving well-defined groups of bands which can only be recorded photographically. I have detected and mapped no less than six such groups extending to λ 3060.

[7] In this direction I am glad to acknowledge my indebtedness to Dr. Schuman, of Leipsic, for valuable suggestions and detail of his own apparatus, by means of which he has produced some unique records of metallic and gaseous spectra of lines of short wave-length.

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Without enlarging on difficulties I will give a brief outline of the investigation. Starting with a large quantity of a group of the rare earths in a state of considerable purity a particular method of fractionation is applied, splitting the earths into a series of fractions differing but slightly from each other. Each of these fractions, phosphorescing *in vacuo*, is arranged in the spectrograph, and a record of its spectrum photographed upon a specially prepared sensitive film. In this way, with different groups of rare earths, the several invisible bands were recorded—some moderately strong, others exceedingly faint. Selecting a portion giving a definite set of bands, new methods of fractionation were applied, constantly photographing and measuring the spectrum of each fraction. Sometimes many weeks of hard experiment failed to produce any separation and then a new method of splitting up was devised and applied. By unremitting work—the solvent of most difficulties—eventually it was possible to split up the series of bands into various groups. Then, taking a group which seemed to offer possibilities of reasonably quick result, one method after another of chemical attack was adopted, with the ultimate result of freeing the group from its accompanying fellows and increasing its intensity and detail. As I have said, my researches are far from complete, but about one of the bodies I may speak definitely. High up in the ultra-violet, like a faint nebula in the distant heavens, a group of lines was detected, at first feeble and only remarkable on account of their isolation. On further purification these lines grew stronger. Their great refrangibility cut them off from other groups. Special processes were employed to isolate the earth, and using these lines as a test and appealing at every step to the spectrograph, it was pleasant to see how each week the group stood out stronger and stronger, while the other lines of yttrium, samarium, ytterbium, &c., became fainter, and at last practically vanishing left the sought-for group strong and solitary. Finally, within the last few weeks, hopefulness has emerged into certainty and I have absolute evidence that another member of the rare earth groups has been added to the list. Simultaneously with the chemical and spectrographic attack atomic weight determinations were constantly performed. As the group of lines which betrayed its existence stand alone, almost at the extreme end of the ultra-violet spectrum, I propose to name the newest of the elements Monium, from the Greek μόνος, alone. Although caught by the searching rays of the spectrum Monium offers a direct contrast to the recently discovered gaseous elements by having a strongly marked individuality; but although so young and wilful it is willing to enter into any number of chemical alliances. Until my material is in a greater state of purity I hesitate to commit myself to figures; but I may say that the wave-lengths of the principal lines are 3120 and 3117. Other fainter lines are at 3219, 3064, and 3060. The atomic weight of the element, based on the assumption of R_2O_3, is not far from 118—greater than that accepted for yttrium and less than that for lanthanum. I ought almost to apologise for adding to the already too long list of elements of the rare earth class—the asteriods of the terrestrial family. But as the host of celestial asteroids, unimportant individually, become of high interest when once the idea is grasped that they may be incompletely coagulated remains of the original nebula, so do these elusive and insignificant rare elements rise to supreme importance when we regard them in the light of component parts of a dominant element, frozen in embryo, and arrested in the act of coalescing from the original protyle into one of the ordinary and law-abiding family for whom Newlands and Mendeleeff have prepared pigeon-holes. The new element has another claim to notice. Not only is it new in itself, but to discover it a new tool had to be forged for spectroscopic research. Further details I will reserve for that tribunal before whom every aspirant for a place in the elemental hierarchy has to substantiate his claim.

III.—THE POSITION OF PSYCHICAL RESEARCH.

These, then, are some of the subjects, weighty and far-reaching, on which my own attention has been chiefly concentrated. Upon one other interest I have not yet touched—to me the weightiest and the farthest reaching of all. No incident in my scientific career is more widely known than the part I took many years ago in certain psychic researches. Thirty years have passed since I published an account of experiments tending to show that outside our scientific knowledge there exists a force exercised by intelligence differing from the ordinary intelligence common to mortals. This fact in my life is of course well understood by those who honoured me with the invitation to become your President. Perhaps among my audience some may feel curious as to whether I shall speak out or be silent. I elect to speak, although briefly. To enter at length on a still debatable subject would be unduly to insist on a topic which—as Wallace, Lodge, and Barrett have already shown — though not unfitted for discussion at these meetings, does not yet enlist the interest of the majority of my scientific brethren. To ignore the subject would be an act of cowardice—an act of cowardice I feel no temptation to commit. To stop short in any research that bids fair to widen the gates of knowledge, to recoil from fear of difficulty or adverse criticism, is to bring reproach on science. There is nothing for the investigator to do but to go straight on, "to explore up and down, inch by inch, with the taper his reason"; to follow the light wherever it may lead, even should it at times resemble a will-o'-the-wisp. I have nothing to retract. I adhere to my already published statements. Indeed, I might add much thereto. I regret only a certain crudity in those early expositions which, no doubt justly, militated against their acceptance by the scientific world. My own knowledge at that time scarcely extended beyond the fact that certain phenomena new to science had assuredly occurred, and were attested by my own sober senses, and, better still, by automatic record. I was like some two-dimensional being who might stand at the singular point of Riemann's surface, and thus find himself in infinitesimal and inexplicable contact with a plane of existence not his own. I think I see a little farther now. I have glimpses of something like coherence among the strange elusive phenomena—of something like continuity between those unexplained forces and laws already known. This advance is largely due to the labours of another association of which I have also this year the honour to be President—the Society for Psychical Research. And were I now introducing for the first time these inquiries to the world of science I should choose a starting-point different from that of old. It would be well to begin with *telepathy*; with the fundamental law, as I believe it to be, that thoughts and images may be transferred from one mind to another without the agency of the recognised organs of sense—that knowledge may enter the human mind without being communicated in any hitherto known or recognised ways.

Telepathy.

Although the inquiry has elicited important facts with reference to the mind it has not yet reached the scientific stage of certainty which would entitle it to be usefully brought before one of our sections. I will therefore confine myself to pointing out the direction in which scientific investigation can legitimately advance. If telepathy take place we have two physical facts—the physical change in the brain of A, the suggester, and the analogous physical change in the brain of B, the recipient of the suggestion. Between these two physical events there must exist a train of physical causes. Whenever the connecting sequence of intermediate causes begins to be revealed the inquiry will then come within the range of one of the sections of the British Association. Such a sequence can only occur through an intervening medium. All the phenomena of the universe are presumably in some way continuous, and it is unscientific to call in the aid of mysterious agencies when with every fresh advance in knowledge it is shown that ether vibrations have powers and attributes abundantly equal to any demand—even to the transmission of thought. It is supposed by some physiologists that the essential cells of nerves do not actually touch, but are separated by a narrow gap which widens in sleep while it narrows almost to extinction during mental activity. This condition is so singularly like that of a Branly or Lodge coherer as to suggest a further analogy. The structure of brain and nerve being similar it is conceivable there may be present masses of such nerve coherers in the brain whose special function it may be to receive impulses brought from without through the connecting sequence of ether waves of appropriate order of magnitude. Roentgen has familiarised us with an order of vibrations of extreme minuteness compared with the smallest waves with which we have hitherto been acquainted and of dimensions comparable with the distances between the centres of the atoms of which the material universe is built up; and

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there is no reason to suppose that we have here reached the limit of frequency. It is known that the action of thought is accompanied by certain molecular movements in the brain, and here we have physical vibrations capable from their extreme minuteness of acting direct on individual molecules, while their rapidity approaches that of the internal and external movements of the atoms themselves.

Confirmation of telepathic phenomena is afforded by many converging experiments and by many spontaneous occurrences only thus intelligible. The most varied proof, perhaps, is drawn from analysis of the sub-conscious workings of the mind when these, whether by accident or design, are brought into conscious survey. Evidence of a region below the threshold of consciousness has been presented since its first inception in the Proceedings of the Society for Psychical Research, and its various aspects are being interpreted and welded into a comprehensive whole by the pertinacious genius of F. W. H. Myers. Concurrently our knowledge of the facts in this obscure region has received valuable additions at the hands of labourers in other countries. To mention a few names out of many the observations of Richet, Pierre Janet, and Binet (in France), of Breuer and Freud (in Austria), of William James (in America) have strikingly illustrated the extent to which patient experimentation can probe subliminal processes, and can thus learn the lessons of alternating personalities and abnormal states. Whilst it is clear that our knowledge of subconscious mentation is still to be developed, we must beware of rashly assuming that all variations from the normal waking condition are necessarily morbid. The human race has reached no fixed or changeless ideal; in every direction there is evolution as well as disintegration. It would be hard to find instances of more rapid progress, moral and physical, than in certain important cases of cure by suggestion—again to cite a few names out of many—by Liébeault, Bernheim, the late Auguste Voisin, Bérillon (in France), Schrenck-Notzing (in Germany), Forel (in Switzerland), van Eeden (in Holland), Wetterstrand (in Sweden), Milne Bramwell and Lloyd Tuckey (in England). This is not the place for details, but the *vis medicatrix* thus evoked as it were from the depths of the organism is of good omen for the upward evolution of mankind.

Modern Observation of Elusory Phenomena.

A formidable range of phenomena must be scientifically sifted before we effectually grasp a faculty so strange, so bewildering, and for ages so inscrutable, as the direct action of mind on mind. This delicate task needs a rigorous employment of the method of exclusion—a constant setting aside of irrelevant phenomena that could be explained by known causes, including those far too familiar causes, conscious and unconscious fraud. The inquiry unites the difficulties inherent in all experimentation connected with *mind*, with tangled human temperaments and with observations dependent less on automatic record than on personal testimony. But difficulties are things to be overcome even in the elusory branch of research known as Experimental Psychology. It has been characteristic of the leaders among the group of inquirers constituting the Society of Psychical Research to combine critical and negative work with work leading to positive discovery. To the penetration and scrupulous fairmindedness of Professor Henry Sidgwick and of the late Edmund Gurney is largely due the establishment of canons of evidence in psychical research which strengthen while they narrow the path of subsequent explorers. To the detective genius of Dr. Richard Hodgson we owe a convincing demonstration of the narrow limits of human continuous observation. It has been said that "Nothing worth the proving can be proved nor yet disproved." True though this may have been in the past it is true no longer. The science of our century has forged weapons of observation and analysis by which the veriest tyro may profit. Science has trained and fashioned the average mind into habits of exactitude and disciplined perception, and in so doing has fortified itself for tasks higher, wider, and incomparably more wonderful than even the wisest among our ancestors imagined. Like the souls in Plato's myth that follow the chariot of Zeus, it has ascended to a point of vision far above the earth. It is henceforth open to science to transcend all we now think we know of matter and to gain new glimpses of a profounder scheme of Cosmic Law. An eminent predecessor in this chair declared that "by an intellectual necessity he crossed the boundary of experimental evidence, and discerned in that matter, which we in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the potency and promise of all terrestrial life." I should prefer to reverse the apophthegm and to say that in life I see the promise and potency of all forms of matter.

In old Egyptian days a well-known inscription was carved over the portal of the temple of Isis: "I am whatever hath been, is, or ever will be; and my veil no man hath yet lifted." Not thus do modern seekers after truth confront nature—the word that stands for the baffling mysteries of the universe. Steadily, unflinchingly, we strive to pierce the inmost heart of nature, from what she is to reconstruct what she has been and to prophesy what she yet shall be. Veil after veil we have lifted and her face grows more beautiful, august, and wonderful with every barrier that is withdrawn.

An Essay
ON
THE MARRIAGE OF THE UNFIT.[1]

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THE fitness of two individuals to marry embraces two considerations—their fitness as regards each other and their fitness as regards the production and rearing of offspring. Fitness of the former kind implies mental suitableness and also, where there are no private means, the ability of the one or the other to make the necessary provision; except when this is necessary physical health, desirable though it may be, is not an essential. There may be a "marriage of true minds" without it. It is not this kind of fitness which I propose to discuss, nor the ability of parents to rear children—i.e., properly to provide for and educate them, which is a separate question altogether and a very wide one—but rather the fitness to produce children who shall reach a certain level of mental and bodily excellence.

When men come to understand the potency of heredity the question of marital fitness will receive more attention, and they will begin to realise that the responsibility of making a life is scarcely less tremendous than that of taking it. As it is, one of the last things that occur to a marrying couple is whether they are fit to be represented in posterity. I know of few things more remarkable than the extreme self-complacency of human beings (and these often the most unfit) in this respect. Yet even as things now stand the physician is not infrequently called upon to decide whether individuals are fit as regards the production of children, and in view of the enormous responsibility thus thrown upon him it behoves him to be ready with a well-formed judgment in such cases. That they will come before us more and more in the future is to be both hoped and expected, and it is with the view to help to create a proper public opinion on these matters that I bring this subject before the profession.

In order that we may gain a philosophic insight into our subject we must understand the mode in which the human race is evolving and the part which heredity plays in shaping structure and causing disease.

We have still much to learn concerning the factors which determine animal evolution, but almost all are agreed that the principle of the "survival of the fittest" plays a predominant part in it. While it is a fact that the environment tends to mould the organism adaptively, in such a way, namely, that the latter becomes adapted to the environment, it seems very doubtful whether the direct action of the environment plays a decided part in animal evolution, because environmental mouldings (as we may term them) do not appear to be inherited. At any rate, no unmistakeable instance of the inheritance of an acquired character has yet been observed. It is therefore probable that organic evolution does not take place, or takes place only in a very slight

[1] Founded upon a paper read before the Watford Medical Society on April 1st, 1898.

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degree, by a summation through successive generations of environmental mouldings. I need scarcely say how unwillingly one comes to this conclusion, for the old Lamarckian school, of which Herbert Spencer is the ardent apostle, held out the promise of great things. What might we not achieve by the continued inheritance of beneficial acquisitions? But this dream, so fondly clung to by our grand old thinker, is apparently but a dream, and it would seem that we must look for progress, not by direct equilibration, as he terms it, but by indirect, in other words by natural selection. Now this selection is of two kinds (*a*) sexual, of which I do not propose to say anything here save that the whole question of marrying is one of proper sexual selection, and (*b*) natural selection commonly so-called, or the survival of the fittest. Since animals tend to increase in geometric ratio, and since there is only room for a certain number, a struggle for existence ensues resulting in the survival of the most fit. Any animal possessing an attribute giving it an advantage over its fellows tends to be selected, and seeing that this beneficial attribute tends to be inherited, it is clear that a species may in this way be considerably modified in the course of several generations, just as happens in the case of the artificial selection practised by breeders of domestic animals.

The tendency of organisms to increase in geometric ratio is not, however, the only cause of natural selection. In the first place the environment is always changing, and this involves the continued readjustment to it of successive generations, by a survival of those individuals varying in suitable directions. But even were the environment unchanging, and were there no geometric increase, natural selection would still be needful in order to maintain adaptation owing to the law of deterioration. Natural selection, in short, has not done its work when it has achieved adaptation to a certain environment; its continued operation is needful in order to maintain a certain level of excellence, otherwise racial deterioration must ensue. Natural selection thus operating has been termed "panmixia." The offspring of even the most perfectly adapted parents are not all alike, but vary round a certain standard of excellence. Some fall short of it, and these require to be weeded out if the standard is to be maintained. Take as an instance the case of eyesight. In order to maintain this at a high standard there must be a continual elimination of individuals with defective sight. Among savage peoples even moderate degrees of short sight place the individual at a great disadvantage in the hunt and the fight, and tend to his premature death, thus preventing him from leaving progeny with the like defect. And what is true of the organs of sight applies to all the organs of the body—they are all liable to fall short of the standard of excellence, and panmixia is needful to the maintenance of that standard.

The tendency of species to increase in geometric ratio, the changeableness of the environment from generation to generation, and the occurrence of variations which fall short of the standard of excellence—these, then, are the factors which start the operation of natural selection. The first of them has little direct effect upon selection among civilised communities, since in their case food is placed within the reach of practically all, and those unable to procure food for themselves do not die as they would under more primitive conditions; but elimination from other causes is still busily at work among us. *Every death not due to accident or old age is really the elimination of an unfit variation*, and occurring before the end of reproductive life falls under the category of natural selection.

A word as to elimination due to changing environment. We are surrounded by vast armies of pathogenic organisms. Did they but remain unchanged we should sooner or later become adapted to them (as we should to any environment not fatal to the entire race) by the continued elimination of those of us least able to resist them; but these organisms being living are ever varying like ourselves and adapting themselves to new conditions, and consequently we never can become adapted to them all. We may possibly succeed in becoming adapted to some species and in starving out others, but depend upon it mankind will always be liable to germ diseases, let nature strive how she may to bring about adaptation to the organisms causing them, and we may be sure that untold millions will be sacrified in the attempt.

Next as to elimination by panmixia. The wonder is, if we come to think of it, not that it should operate, but that its operation should not be much more stringent than it actually is. Think for a moment of the marvellous complexity of the human organisation. Take any limited branch of physiology, make a life-long study of it, and every day will increase your wonder at the intricate adjustment of means to ends. Whether we study the physiology of the heart and vascular system, of phagocytes, or of sugar metabolism, or whether we contemplate the mysterious cerebral processes which underlie the operations of mind, we shall be equally impressed with the fact; and when once imbued with it we can only marvel that our hearts and vaso-motor systems, our phagocytes, sugar-forming organs, and brains serve us so well as they do, and that more of us do not suffer from palpitations, flushings, defective phagocytosis, diabetes, and insanity than is actually the case. How is this high level of excellence maintained? The answer is, By panmixia. If panmixia is needed in order to keep the several parts of the eye so nicely adjusted as to render accurate accommodation possible, must it not also be necessary in order to maintain the same level of excellence in respect of the cardio-vascular system, the phagocytes, and the tissues which subserve the glycogenic and kindred functions? As a matter of fact, defects in these systems constantly occur: a certain number of people do get serious heart disturbances, do get diabetes, do suffer from defective phagocytosis, and do go mad, and all such tend to get eliminated by the action of panmixia. The defects may, however, not be sufficiently great to lead to death. Many suffer from wretched health even when placed under the most favourable conditions. I am thinking especially of the large army of neurotics and hypochondriacs who, though life is but a misery to them, yet do not die and who thus escape the operation of panmixia. Nevertheless, it cannot but be supposed that under more primitive conditions it would operate among them.

This leads me to refer more at length to the interference with the operation of natural selection among civilised communities, for though, as I have said, natural selection is actively operating among them, it is of course to a large extent interfered with. Many lives are saved which would otherwise succumb through incapacity to cope with the environment. If every individual had to provide for himself, a large number would succumb who now live by the sufferance of their fellows. Some would succumb through not having sufficiently keen senses—hearing, eyesight; others through being crippled in their limbs; more from general weakness; others again from strangulated hernias, ovarian cysts, and so forth. These are now in numberless cases saved, and are thus enabled to have children who tend to inherit the like defects. Hence it follows that these defects are continually increasing among the civilised, and that the level of physical perfection among them is lower than among primitive communities, and if the present state of things continues, it must go on getting lower still.

I am tempted here to refer briefly to another interference with the operation of selection among the civilised. Among primitive communities polygamy generally prevails. Those members of a savage tribe who by their mental and physical superiority are able to raise themselves to the rank of chiefs secure the largest number of wives and leave the largest number of children to inherit the paternal excellences. Now while as a sociologist I am dead against polygamy, as a biologist I confess (at the risk of being accused of regarding humanity from the point of view of a stud-groom, as some one has put it) I cannot but regret its complete abolition. I would like to see our giant intellects and champion athletes leave a numerous progeny.

To turn now to the question of heredity. It is very necessary that we should understand its potency. The structure of an individual depends almost wholly upon it. The power of natural selection to mould a species presupposes its influence, for it assumes that the individual "selected" will transmit his peculiarities to his offspring. Let us ever remember that what we are, whether fair-skinned or dark-skinned, long-nosed or short-nosed, big-brained or little-brained, depends essentially upon our parentage. The influence of heredity in disease is vast, much greater, in my opinion, than must medical men deem it to be. In the text-books we are told that one disease is hereditary, 30 per cent., another 10 per cent., while a third disease is not hereditary at all. Not hereditary? I maintain that all diseases are hereditary: *you cannot eliminate the influence of heredity* from any disease, and I will prove it. What is disease? It

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is abnormal life. And what is life? It consists of an interaction between the individual and his environment; therefore disease is an abnormal interaction between the two. It follows that you cannot possibly eliminate the part played by the individual from the causation of any disease, since it is *his structure which determines whether he shall or shall not react abnormally to a given environment*. Now his structure is essentially determined by heredity. I have therefore proved my point. This is no mere logical quibbling but a practical fact. I will test my position by taking a disease with which most people will probably say heredity has nothing at all to do—the wheal caused by flea-bite. This affection depends upon the morbid interaction of the host and the specific environment constituted by the poison with which the parasite inoculates him. As everyone knows, the liability to be flea-bitten and the tendency to suffer from wheals when thus bitten, differ greatly in different individuals. Some suffer little or not at all in this way; others grievously. Upon what does this difference depend? It depends upon differences in the organisation or structure of the host, and these differences are essentially determined by heredity. Hence all parasitic diseases, from a flea-bite to pulmonary consumption, from typhoid to malignant tumour, are hereditary. Such diseases depend upon defect in the organism as regards some specific environment, but others, such as chronic Bright's disease, diabetes, ovarian cyst, strangulated hernia, may occur independently of any specific environment, and it is obvious that these are *a fortiori* hereditary.[2]

To reiterate briefly the chief conclusions we have arrived at. There seems good reason to believe that organic evolution proceeds essentially by a survival of the fittest, and that all further evolution of man must take place essentially by the operation of this process. Natural selection is needful not only to *attain* adaptation of the individual to his environment but also to *maintain* it. Structure is chiefly determined by heredity, and seeing that disease is a morbid interaction between the individual and his environment and that his structure determines whether he shall or shall not react abnormally to a given environment, it follows that the factor of heredity cannot be eliminated from the causation of any disease.

We are now in some sort of a position to answer the question: Who are unfit to marry and have children? A question I can only very briefly answer in a paper like the present. We have seen that panmixia is largely interfered with in civilised communities, with the result that racial deterioration must inevitably be in progress, and will disastrously continue unless some new means is discovered by which man's present level of adaptation to his environment can be maintained. Happily, we have such a means to hand, and it is from among those very forces of progress wherein, as we have seen, arises his danger, that his safety also is to be found. For the leavening influence of high ideals for nearly 2000 years has had its effect, and modern progress, modern civilisation, tend more and more consciously or unconsciously, and whether we recognise it or not, towards altruism; it has already widened out man's conception of the duty he owes his neighbour until that duty has come to mean, to those at least who "feed the high tradition of the world," the service of humanity at large, and more enlightenment as to his undoubted responsibility to posterity will show him that that service does not end with the present generation but reaches forward to a future to which we can set no limits. Fortified with the conviction that generations yet unborn have also a claim upon him, a man could of his own free choice do far more than the blind working out of natural laws has ever done, or ever can do, to stamp out the tendency to disease and to perpetuate a healthy race. For all that is needed to enable panmixia to proceed as beneficially as ever, and that without the ruthless destruction of the unfit which obtains when natural selection works unchecked, is for those who have defects *which under natural conditions would lead to annihilation* to forbear to procreate. As beneficially, did I say? Nay, very much more beneficially, for not only could those who are already marked by disease refrain from marrying, but those also who as judged by their family history are likely to become ultimately the victims of serious disease. And if it be urged that such a self-denying ordinance presupposes a higher ethical development than the generality of men have at present attained, that by no means disproves my contention; it only proves that much has yet to be done to get a sound public opinion, a sensitive public conscience, on these matters, such an opinion and such a conscience as I hold it to be one of our first duties to strive to create. Meantime, I doubt much whether the renunciation would be felt to be so very great if men's minds were trained to realise all the issues that are involved, and if it were plainly shown, as it might be, that the sum total of human happiness would be increased by it. What I do recognise is that it must take time for society to get out of the old grooves of thought, sanctioned by almost the whole of our current fiction, as to marrying and giving in marriage, and that while it is getting out of them there must be at times personal suffering, stress and conflict where strong feeling is involved. But all progress is obtained at some sacrifice, the first steps in a reforming movement nearly always cost someone dear, and I can imagine a state of society gradually evolving out of this transition period in which there shall be such a sound healthy view of the responsibilities of marriage that the idea of any union that would be at all likely to involve the survival of the unfit would not be entertained for one moment, and where consequently, there would not be felt to be any renunciation to make, any more than there is now in keeping within the prohibited degrees of the prayer-book and not marrying one's grandfather or grandmother. It is a notable and I think hopeful sign of the times that in a recent novel by Robert Buchanan, in which the reader is introduced to the twenty-first century, he assumes that by a careful elimination of the unfit a state of physical perfection has been achieved. The markedly unfit are disposed of in the chamber of Euthanasia and man and woman may not "under any circumstances come together in lawful wedlock without a certificate of physical perfection from the Holy Office of Health." Now though the time is far yet when men will submit to State coercion in such matters, it is not therefore too soon to urge their responsibility upon them, and everything that will awaken them to it, whether from the press or the pulpit, is to be welcomed.

Let us now consider under what circumstances the physician ought to use his influence to prevent marriage. In certain cases there can be no doubt as to the course he should take. Such serious diseases as pulmonary consumption, organic heart disease, epilepsy, insanity, diabetes, and chronic Bright's disease, are obvious bars to m rriage. Not only the present existence of any one of these diseases, but the having had it and recovered from it, would in my opinion constitute unfitness. The same restriction applies, I think, to rheumatic fever (certainly if there has been more than one attack) and to most cases of acute Bright's disease not due to scarlet fever, especially when the inflammation has been of more than two months' duration.

There are other disorders equally serious in themselves but the having suffered from which is not usually regarded as a bar to marriage. I allude to all those cases of non-accidental disease in which life is saved by the surgeon's skill. Most if not all individuals of this class should be regarded as unfit for procreation. Take the case of a person with strangulated hernia or ovarian cyst. In a less artificial condition of existence such a one would be weeded out as unfit and thus prevented from transmitting to others the like defect. Let us use all the means at our command to rescue such from death, but it must be upon the clear understanding that no children shall be born to them afterwards. Think of the millions and millions of women suffering from ovarian cyst whom nature has in the past sacrificed with a cruel kindness, in order to keep up a certain level of ovarian fitness in the race. These are practically all saved now in civilised communities, with the result that the percentage of ovarian cysts is necessarily increasing. It can only be because medical men do not realise the potency of heredity that they sanction the propagation of children by women whose lives have been saved in this way.

In cases of the class just referred to there can be no doubt about our course, but in other and kindred cases we may find it more difficult to decide what to do. We cannot rely on the rule—in the main a safe one and which I believe should always form the basis on which our own judgment rests—that those with some defect which under primitive conditions would lead to destruction should refrain from marriage. To take an example, a person with a bad error of refraction can be made to see well with glasses and may become a very useful citizen, and although we cannot but regard with regret and misgiving the increasing defect of vision which is

[2] I have discussed the influence of heredity in disease in my work, "The Causation of Disease," p. 318, *et seq.*

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taking place in consequence of the interference with panmixia in this one single class of cases only, it would need more boldness than most of us possess to advise a person to refrain from marriage on account of such defect alone. We should be merely laughed at. With congenital defect of hearing the case is different. There we can speak with authority: none such should procreate.

I now come to a particular class of disorders which I think should beyond almost all others be regarded as a bar to marriage. I mean functional disorders of the nervous system. The highly sensitive are not suited for this hard world. Its strenuous conditions call for men of iron nerve and stout hearts. I fear it must be acknowledged that as regards happiness—which at any rate from the purely physical point of view may perhaps be fairly looked upon as our being's end and aim—the fine animal with little imagination and a good thick skin has the best time of it here—is the most truly "fit." It may be that such a one cannot rise to the same heights of happiness as his more nervous and imaginative brother; but, on the other hand, he is incapable of sinking into the same depths of wretchedness. The future has no terrors for him, for he has no imagination to depict it; he lives in the enjoyment of the present, and even when afflicted with the gravest organic disease he suffers very little as compared with people of weak nerves, whose lives are often one long-drawn-out misery. In this latter class I include not only those who suffer from continual headache, noises in the ears, depression of spirits, and so forth, but the hysteric and hypochondriac class also. To the neurotic man as well as to all of these I should say, "Remain single." He is often advised to marry on the ground that wife and children will draw him out of himself, and so far the advice is doubtless good, but I fail to see what right we have to sacrifice the prospective wife and children. I have seen too much home misery caused by neurotic parents to connive at such an arrangement.

In testing an individual's fitness to marry we have to consider not only his past history and his present state, but his probable future as judged by his family history, and this enables us, as already observed, to be more searching than even natural selection. Among the many evils which it would be possible greatly to diminish, if not to eradicate, by obeying the warnings furnished by family history are apoplexy and premature senility. Seeing that deaths from these causes do not as a rule occur until after the procreatic age—i.e., until after the individual has had the opportunity of leaving a full complement of children—such deaths leave little direct impress upon the race. In regard to the staving off of senility I hold it to be well within our province to attempt to do so. The fate of the man in his sixties who, in the zenith of a successful career, or having just settled down to well-earned rest after an anxious and laborious life, is struck down by apoplexy, or who suffers from a general senile breakdown, is surely a tragic one, and I contend that we should wage hot warfare against such occurrences. Some there are whose blood-vessels degenerate, whose hair turns grey, and whose tissues generally show a tendency to senility while yet in their thirties; and on the children of such, especially those who "take after" the prematurely senile parent, we should for the most part urge abstention from marriage. For it is quite remarkable how individuals as they grow old imitate the old age of their parents, sometimes of the one, sometimes of the other. How often does it happen that the young have occasion to criticise the testiness, the ill-nature, or the selfishness of the old. It seems to them quite impossible that they can ever be the same themselves, and yet as the years roll on it too often happens that all the weaknesses of the parent recur with painful exactitude in the child. Indeed, the exactness with which the individual repeats the life history of his progenitors is freshly impressed upon me every day of my life and I often find myself involuntarily forecasting the future of the child by reference to the condition, mental and physical, of the parent. I have in my mind a case in point. Mr. and Mrs. A. are between forty and fifty years of age. Each became decidedly grey before thirty, and as in all such cases each is highly neurotic and has within recent years developed several nervous symptoms. Mr. A., indeed, shows signs of a complete nervous breakdown. Now there are seven children of this marriage from eighteen years of age downwards and they are what would be called remarkably "fine" children; yet it is as certain as anything can well be that the majority of them, if not all, will like their parents become prematurely grey and neurotic. To look at them now without any reference to their family history no one would anticipate this for a moment, but judged in that light it is no mere idle fancy but almost a certainty; and if we were able to prevent marriage in their cases we should be helping towards the elimination of a prematurely senile and neurotic type.

To return, in conclusion, to what I have already touched upon—the difficulty of a practical application of these views. As a general reply to the objections that few are capable of the sacrifice of enforced celibacy where the affections are engaged, and that any interference with marriage on the grounds above given is an undue infringement of the liberty of the subject, I would observe that the life of the individual living in a civilised community is one long-continued self-restraint and that each such individual has very much less freedom of action than is generally supposed. Turn where he may he will find his actions restricted, for, being part of a highly complex social machinery, elaborate rules of conduct are necessarily imposed upon him; mere prudence indeed, compels a man constantly to restrain his natural impulses. And surely when it is realised what are the tremendous issues at stake we may take a higher ground than the ground of mere expediency and appeal to the sense of duty; but it were a very poor and inadequate conception of duty which could content itself with the fulfilment of obligations to the living heedless of those who shall come after. Theft and murder are considered the blackest of crimes, but neither the law nor the church has raised its voice against the marriage of the unfit, for neither has realised that worse than theft and well-nigh as bad as murder is the bringing into the world, through disregard of parental fitness, of individuals full of disease-tendencies. This has been left to our own profession, and we shall be unworthy of its traditions if we do not, each of us in his own particular sphere, strive to bring nearer the day when, not in a heritage of woe but of blessing, the deeds of the fathers shall be visited upon the children unto the third and fourth generation.

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THE CAUSES OF URINARY FEVER AT THE BEGINNING OF CATHETER LIFE.

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MANY years ago Sir Benjamin Brodie drew attention to the very serious symptoms that not infrequently follow the withdrawal of residual urine from the bladder in cases of enlargement of the prostate at the beginning of what has been called "catheter life." Since that time the symptoms have been described by Sir Henry Thompson and by many othe and by nearly every one they have been attributed to the suddenness with which the change is made from the natural and usual mode of micturition to the artificial method. Removing the whole of the residual urine at once and on every occasion of catheterism is most injurious during the first few days. "If the patient has been in the habit of retaining perhaps a pint of urine, or even more, after he has made water it is a serious change for the bladder to be suddenly and completely emptied two or three times a day. The organ soon becomes irritable, the urine is charged with pus, the patient loses appetite and becomes feverish, and there is sometimes considerable danger to life. The rule under such circumstances is to proceed cautiously. Instead of removing the entire quantity leave some urine behind, and thus a compromise is made between the exigencies arising in this condition of the bladder and the usually absolute rule that it should be emptied. Draw off half or only two-thirds of a pint; you will thus relieve the organ partially and in the course of a week or sooner you may gradually accomplish the entire emptying of the bladder and all will probably go well. And it conduces greatly to success to permit no out-door movement to such a patient, but to confine him to his room, in a warm temperature if the weather is cold, or even to his bed for a few days."[1] In the light of the results arrived at by recent

[1] Sir H. Thompson: Clinical Lectures on Diseases of the Urinary Organs, sixth edition, Lecture x., p. 56.

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bacteriological researches into the causation of cystitis and urinary fever, it seems to me not altogether inopportune to inquire how far the generally received explanation is correct.

So far as the broader features are concerned the symptoms that present themselves in these cases are remarkably uniform. They do not begin at once. Nearly always some few days elapse before there is anything to excite suspicion. Then the urine becomes cloudy though it may still maintain its acid reaction. A small quantity of albumin, more than can be accounted for by the amount of pus that is present, makes its appearance. Under the microscope there are a few hyaline casts, perhaps a blood corpuscle or two, numerous pus corpuscles, and myriads of bacteria. The specific gravity is lower than it ought to be, and lower than it was before the catheter was used. The total amount passed in the twenty-four hours may either increase until it is as much as seven or eight pints, or diminish until it scarcely reaches twenty ounces. There is seldom any definite rigor but there may be numerous slight chills. The pulse grows more rapid and feeble. The tongue becomes red and dry. There is complete anorexia. Delirium sets in at night, and in a considerable proportion of cases the symptoms rapidly grow worse and worse until, at the end of a few days, the patient sinks into a semi-comatose condition from which he seldom rallies. Post mortem there are all the signs of recent acute cystitis and pyelonephritis. The mucous membrane lining the pelvis and calices of the kidneys, the ureters, and the bladder is swollen and stained by old and recent hæmorrhages, and here and there a thin layer of pus is adherent to it. The pelvis and the ureters are dilated, the apices of the pyramids are eaten away, the cortex is shrunken and hard, the capsule is adherent, and in places between the tubules are minute collections of pus differing in shape and outline according to the anatomical arrangement.

It must be admitted at once that there is a great deal both in the clinical history and in the post-mortem appearances that not only cannot be explained by, but is entirely inconsistent with, the hypothesis of too rapid evacuation. The symptoms do not begin at once, even if the bladder is emptied completely. (I do not include those cases in which fatal syncope is caused by rapidly drawing off a large quantity of residual urine from the bladder when the patient is standing upright; such cases belong to an entirely different class.) The symptoms often do not set in for four or five days. They cannot therefore be explained as the result of shock or of inhibition of the vasomotor nerves of the kidneys. They do not occur when an aspirator is used to relieve retention of urine in prostatic enlargement, even if it is used four or five times, provided always that the patient regains the power of voluntary micturition when the congestion has passed away, and that no catheter is introduced. On the other hand, if the kidneys are sclerosed exactly the same symptoms may occur without any residual urine at all, if a catheter is passed or any operation, such as lithotrity, performed in the bladder; and it cannot be denied that the cause assigned is not reasonably sufficient. Inflammation of the bladder and kidneys may be caused by various agents, but there is absolutely no evidence to support the view that evacuation of the urine is one of them. The wall of the bladder, it is true, is always in a state of atony in such cases, but the pressure of the abdominal viscera from above and the weight of the abdominal wall are more than sufficient to compensate for the loss of tension due to the evacuation of a few ounces of urine. Suppuration, which is invariably present in these cases, both in the bladder and the kidneys, is still more unintelligible. No account whatever is taken of the profuse bacterial growth in the urine and the tissues of the urinary organs. The beginning of it all, the earliest sign that there is anything wrong, is cystitis. It may not appear to be very severe, but it is always there and is always purulent, and caused, therefore, by pyogenic organisms. The symptoms may be slight (probably because the neck of the bladder is not so much involved as the post-prostatic part); the urine may retain its acid reaction; and there may be but little pain and strangury; but there is a distinct floating cloud in the urine, and if the urine is allowed to stand or, better, if it is placed in a centrifugal machine, this cloud condenses into a greyish deposit, which under the microscope consists almost entirely of pus corpuscles and bacteria. The deposit is not mucus. As Traube[2] and Cohnheim[3] long since pointed out there is no such thing as catarrhal cystitis. Cystitis is always purulent. Mucous glands do not exist in the bladder and the epithelium that lines it is never converted into mucus secreting cells as it is in the intestine. The deposit that is usually spoken of as mucus either consists of detached epithelial cells with a few pus corpuscles, or else is simply pus that has been converted into a glairy mass by the alteration in the reaction. If the urine is centrifugalised so as to concentrate the deposit pus corpuscles and bacteria can always be found. Putting aside those forms of inflammation of the bladder that are due to chemical reagents (such as cantharides) and specific organisms (the tubercle bacillus, for example, or the bacillus of typhoid fever, or the gonococcus), cystitis is always purulent, and the immediately exciting cause is invariably the access of pyogenic organisms. And, finally, the symptoms themselves do not present more than a very vague and general resemblance to those that are characteristic of uræmia and suppression of urine. They are essentially the symptoms of a subacute form of septicæmia occurring in a person whose health is broken down by chronic renal degeneration. Comparing them with the results shown by the recent experiments of Albarran and Hallé in France and of Rovsing and Melchior in Denmark, there is no doubt that they are caused by the growth of septic organisms in the urine and the walls of the urinary organs, and that they are to be prevented, not by slowly and gradually reducing the amount of residual urine, but by proper attention to the principles of aseptic catheterism.

The micro-organism that is most frequently present is the bacterium coli commune. It was first described in the urine by Clado[4] as the "bacterium septicum," next by Albarran and Hallé[5] as the bacterium pyogenes. Then almost simultaneously its identity with the bacterium coli was demonstrated by many observers. Albarran and Hallé found it in 47 cases out of 50, and by itself (pure) in 15. Albarran alone found it in 23 out of 25 and pure in 16. Morelle[6] found it in 13 out of 15 and pure in 6, and Melchior[7] found it 24 times out of 35 and pure in 17. In the last two years I have myself examined a very large number of cases and have rarely been able to find it. The next most common is a form of streptococcus, probably identical with the streptococcus pyogenes, and like this organism especially associated with diffuse forms of suppuration and phlebitis; and then one which Melchior identifies with the proteus of Hauser, exceedingly important from the energy with which it causes decomposition of urea. After these there comes a host, as many as thirty different varieties having been described; but probably many of them are the same under different names, and in any case their importance is very much less than that of the three which I have mentioned.

These organisms are always present in inflammation of the bladder. Cystitis (with the exceptions I have mentioned) cannot occur without them. Normally they are not present in the urine or in the bladder. Healthy urine obtained from a healthy bladder with proper precautions to avoid contamination is perfectly sterile. Cultivations give no result. No micro-organisms can be found by the microscope, even after the persistent use of the centrifugal machine. The urine in cases of intra-peritoneal rupture of the bladder does not give rise to peritonitis until secondary changes have developed from the injury sustained by the bladder itself. If the operation is strictly aseptic the urine does not prevent union by the first intention in cases of suprapubic cystotomy. Union by the first intention has even been known to occur after lateral lithotomy. In animals the urine, both that which has descended into the bladder and that which remains in the pelvis of the kidney, is sterile for some time after death; and the few results that have been obtained under similar circumstances in the case of man point in the same direction. Nor does this arise from any resistance offered by the urine to the growth of pathological organisms, or to the fact that the urine never becomes infected. Urine is an excellent nutrient medium, both for those organisms that grow in the presence of air and for those that do best without oxygen. The explanation is that so long as the organs that secrete the urine and retain it are healthy, organisms have no chance of growing in it. They can get into the bladder through the kidneys—for it is well known that the microbes of many infective disorders are discharged in this way—or they may enter it by the urethra, especially

[2] Gesammte Abhandlungen, Band iii., p. 11.
[3] Vorlesungen über Allgemeine Pathologie, 1880, p. 400.

[4] Etude sur une Bactérie Septique de la Vessie, Paris, Steinheil.
[5] Académie de Médecine, Paris, 1888.
[6] Proceedings of the Sixth French Surgical Congress, 1892.
[7] Clystite et Infection Urinaire, Paris, Steinheil, p. 119.

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in the case of women, or by some accidental route. Guyon,[8] for example, has published a case in which for weeks together a stream of pus, loaded with virulent micro-organisms, poured through a patient's bladder; but so long as the bladder is healthy and working under healthy conditions, the organisms, no matter what their nature or how great their number, are swept away by the continuous flow before they can take any hold and the contents of the bladder remain aseptic.

The source of these organisms is the urethra: they exist there and in the neighbourhood of the meatus in profusion. Urine passed *per vias naturales* or drawn off in the ordinary way with a catheter is very rarely sterile. Nearly always under either of these conditions cultures may be obtained with ease If the glans penis and the prepuce are thoroughly disinfected beforehand and if an irrigating catheter is passed down to the neck of the bladder and the whole of the canal that lies in front of this is washed out from behind with a strong solution of boric acid, sometimes, then, a perfectly sterile specimen can be obtained. But the only simple method that can be relied upon is that which has been devised by Melchior[9] or a modification of it. Melchior employs a double catheter, one tube lying inside the other. The outer tube has a terminal orifice which is closed by means of a rubber film. The inner tube lies inside this and when the outer is passed down to the neck of the bladder is pushed on through the film, rupturing it as it goes. In this way the inner tube is protected from contact with the micro-organisms that inhabit the urethra, except perhaps at the moment that it bursts through the film, and if the urethra has been washed out first and the instrument sterilised the result can generally be relied upon. The urethra, in short, is full of germs. What Melchior calls the urethral flora is most abundant. Every time urine is passed it washes some of them out and every time a catheter is passed it carries some of them in and, as might be imagined, no antiseptic that can be applied to the surface of the instrument is of the slightest use. If the antiseptic is weak it is no good; if it is strong it does harm by irritating the surface of the mucous membrane; and in either case it is swept off at once by the lips of the meatus or, at the farthest, by the mucous membrane an inch or two down.

Such is the state of things that exists during health. The bladder contains a variable amount of urine that is perfectly sterile. The urethra, especially the anterior part of it, harbours a profusion of septic organisms. The sphincter at the apex of the prostate is the barrier, and so far as the male sex is concerned is capable of preventing the germs getting in of themselves. Whether there is any enlargement of the prostate or collection of residual urine, so far makes no difference. But there is an immense difference as soon as a catheter is passed. Unless special precautions, such as those devised by Melchior, are taken, some of the septic organisms are certain to be carried in by the catheter. It is impossible to prevent it. If the bladder is healthy and capable of emptying itself completely no harm results, the organisms do not get the chance of growing. But on the other hand if the bladder is not capable of emptying itself as it should, if there is any urine left habitually, at once the bacteria begin to increase and multiply, and very soon they spread into the epithelial layer and set up septic cystitis. It is the entrance of these bacteria into the bladder in cases of enlargement of the prostate and residual urine that causes the cystitis, and not the evacuation of the residual urine.

This, however, is not quite all. Residual urine not only favours the occurrence of cystitis by providing a supply of nutrient material in which the germs can grow, but it seems as if it had the power as well of weakening the resistance of the tissues that form the wall of the bladder, so that the bacteria can penetrate more easily. It is true that under certain conditions the bacterium coli may acquire such a degree of virulence as to excite septic inflammation in a healthy and uninjured bladder[10]; but this is not the rule. In general there must be some additional predisposing cause, although be it said, this need often only be of the slightest description. An attack of congestion such as is so common in old men with enlargement of the prostate, bruising the wall of the bladder with a catheter, cold applied to the surface of the abdomen, or temporary retention of urine, is quite enough. The experiments performed by Melchior upon rabbits prove that in them six hours' retention is sufficient to turn the scale. A culture which injected into a rabbit's bladder with the urethra open does no harm, causes intense cystitis if the penis is tied. And Bary[11] has shown that the result is the same if the injection instead of being thrown into the bladder, is thrown into the auricular vein, so that the organisms reach the urine, not directly but through the kidneys. In men with enlargement of the prostate the condition of partial atony that is always associated with residual urine is quite sufficient as the predisposing cause. The nutrition of the epithelium suffers as much as that of the muscular coat; it loses the power of offering an effectual resistance and the septic organisms penetrate more easily and grow more freely.

A striking example of the way in which residual urine prepares the way for cystitis (by its presence, not by its absence) is not uncommonly met with in women. Purulent cystitis, in which the urine is loaded with micro-organisms, sometimes breaks out quite suddenly in women after severe operations, when they are kept lying upon their back for many days together. The muscular power of the bladder is not so great in them as it is in men, for it has not so much work to do, and partly for this reason and partly from the difficulty they experience in micturating when in the recumbent position, women under these circumstances frequently do not empty their bladder thoroughly until they sit up. In other words, there is in them a condition of partial retention similar to that which is present in so many old men with enlargement of the prostate, with, however, one very decided difference. In women it is comparatively easy for germs in the region of the meatus urinarius (where they abound in singular profusion) to gain entry into the bladder; in men it is not. Consequently in the former cystitis without catheterism is common, both conditions are fulfilled, the entry of organisms and the presence of residual urine. In the latter it is altogether exceptional. Fortunately in women the very conditions that render an attack of cystitis so easy are equally energetic in causing it to disappear as soon as the position in altered and they sit upright. Cases of stricture of the urethra in men not uncommonly illustrate the same point. I have known a patient go about for months with his bladder half-way up to his umbilicus and his urine dribbling away from him without a sign of cystitis. The urine when it was drawn off was acid and perfectly clear. In three days' time it was turbid and full of organisms, carried in undoubtedly by the instruments used to dilate the stricture. The bladder was in a state of atony from long-continued over-distension and unable to empty itself, there was a certain amount of residual urine, the epithelial lining was incapable of offering active resistance, the germs spread rapidly into the wall of the bladder, and a very severe attack of cystitis followed. And essentially the same thing happens when the expulsive power of the bladder has been lost in cases of paraplegia due to injury or disease of the spinal cord. The bladder is not emptied thoroughly. Sooner or later germs are carried in by the catheter and cystitis follows. The length of time that elapses from the date of the paralysis to the beginning of the cystitis is a measure of the care that is taken in the treatment of the retention.

One of the chief reasons, I believe, why so little attention has been attracted to the real source and importance of the cystitis that occurs after the removal of residual urine is that the inflammation has not been regarded as septic, because the urine has not undergone ammoniacal decomposition. Urine is often thought to be free from organisms that can do any serious harm, if it is only acid. One of the most valuable results of Melchior's work, and one that is thoroughly borne out by clinical facts, is that the worst forms of septic cystitis and urinary septicæmia may occur independently of ammoniacal decomposition with urine that is distinctly and persistently acid. Ammoniacal decomposition is a very grave addition in cystitis and still more in pyelonephritis, but it is by no means essential. Germs that live in acid urine can and do give rise to toxic products capable of causing intense septicæmia. Some time ago I removed through a perineal incision a small polypoid outgrowth from the region of the neck of the bladder in a patient aged fifty-eight years. The specific gravity of the urine was a little below what it ought to have been and there was a large amount of residual urine in the bladder, 12 oz. at least and sometimes more, but otherwise the patient was

[8] Annales des Maladies des Organes Génito-Urinaires, 1892.
[9] Loc. cit.
[10] Barlow: Archiv für Dermatologie und Syphilographie, 1893.
[11] Annales des Maladies des Organes Génito-Urinaires, 1893, p. 815.

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in good condition. The operation was a short one and perfectly successful. As often happens in such cases there was a considerable amount of venous oozing afterwards (although the pedicle had been twisted off) and the blood coagulating in the prostatic urethra caused a good deal of straining. Two days later a rigor set in and from that time during the six weeks that the patient lived the temperature was never normal. No secondary deposits of any kind made their appearance. There was no pneumonia or joint affection, merely exceedingly irregular temperature with rapid emaciation and intense depression. The most noteworthy feature was the extremely offensive character of the motions. Their colour was almost black and the odour intolerable. Nor had any of the drugs that are usually regarded as intestinal antiseptics the least influence over them. There was no albuminuria and no sign of renal infection or of suppression. The quantity of the urine was good and the specific gravity was the same that it had been. Throughout the whole time the urine was acid but it was loaded with long, slender bacilli which, from my later experience in connexion with them, I have little doubt were the bacterium coli and from the intensely offensive character of the intestinal contents a peculiarly virulent form of it. During the straining that followed the operation it seems probable that some of these virulent bacilli were forced into the open ends of the veins at the neck of the bladder and caused general septicæmia. And there can be little doubt that the rigors that occur after internal urethrotomy and after operations upon the kidney involving the opening of large and deep-seated collections of pus (I have known a rigor set in after a pyonephrosis had been explored almost before the patient had been removed from the operating table), are due essentially to the same cause, either the toxic products of the organisms or the organisms themselves being forced into the circulation. On this point, however, there is no need to dwell. The virulent properties that the bacterium coli is capable of developing under certain conditions are well known; and Melchior has shown by experiments upon animals that the products of cultures in urine are as poisonous as those of cultures in broth and other media.

The septic pyelonephritis which is always present in cases that terminate fatally after the withdrawal of residual urine is the natural sequence of the septic cystitis. Perhaps it sets in all the sooner because the ureters are so frequently dilated and because their terminations in the bladder are so often covered with the deposit from the urine.

The injurious effect of the habitual presence of a large quantity of residual urine shows itself here, too, as well as in the bladder. The ureters, the pelvis and calices of the kidneys, and the substance of the kidney itself, suffer in a similar manner. Dilatation of the pelvis, and sclerosis and degeneration of the cortex and medulla, are inevitable in cases of long-standing residual urine. Whether the connexion is a mechanical one, in the same way that the connexion between residual urine and enlargement of the prostate is mechanical, or whether, as Albarran[12] believes, the renal degeneration is the product of septic organisms not sufficiently numerous or powerful to cause suppuration is beside the question at the present time. Degeneration is always present, and as in the bladder so in the kidney, the power of resisting the assault of septic organisms possessed by healthy tissues is impaired or lost. The septic organisms spread rapidly from the bladder up the ureters to the pelvis of the kidneys. Thence they work their way either by the lymphatics or through the intertubular spaces into the medulla and cortex, and whenever they are arrested they set up suppuration.

The immediate result is twofold. On the one hand, the function of the kidney is so much interfered with that there is defective elimination of urea and other waste products, sometimes amounting to suppression of urine. On the other hand, there is the more or less rapid absorption of the toxic products of these organisms—products which clinical and experimental evidence alike have shown capable of causing rigors and all the other phenomena of septic intoxication. But no matter which is the more prominent in any individual case it stands out clearly that both are due directly to the septic organisms that have found their way up from the bladder, and that these in their turn have been carried into the bladder from the urethra by catheters. The effect is the result, not of the withdrawal of residual urine rapidly or slowly, but of the introduction of pyogenic organisms (and especially the bacterium coli) under conditions that suit their growth to perfection.

Aseptic catheterism is one of the problems of modern surgery. It is impossible to deal with it fully now, and I will only mention the precautions which I have been constrained to adopt in cases in which there is a large amount of residual urine, and which, so far, have proved successful. All instruments must be disinfected first by boiling. The hands, the prepuce, and the skin of the penis must be cleansed as thoroughly with soap and water as if a surgical operation were going to be performed, and then sponged over with a solution of corrosive sublimate, 1 part in 5000. The glans and the meatus require especial care. An irrigating catheter is then introduced into the fossa navicularis and this part of the canal thoroughly washed out from behind with boric acid. Then the catheter is pushed on into the deep part and the process repeated. Finally Melchior's double catheter is introduced and the urine drawn off. In this way it is possible to obtain a very high degree of asepticity. The lubricant I prefer is lanolin, because it is readily soluble in water, kept aseptic by the addition to it of 1 part in 5000 of corrosive sublimate. Afterwards, and in the case of an old man with enlarged prostate, I try to enforce the same precautions as far as possible; but when catheters have to be passed at frequent intervals the disinfection of the hands, penis, and front part of the urethra will manifestly be never carried out each time. At the outside it will only be done night and morning, and often one has to be content if it is done thoroughly once a day. But catheters can be kept clean. Those made for me by Messrs. Maw, Son, and Thompson, as smooth and as polished on the inner surface as they are on the outer, which were described in THE LANCET of July 6th, 1895, will stand boiling day after day (if they are kept straight while in the boiling water and drained afterwards) and continued immersion in boric acid without injury. Each patient is provided with two of the glass catheter cases devised by Dr. Nicoll of Glasgow. One of these is filled with boric acid lotion for instruments that have been used; the other, provided with a rubber cork as well as a metal cap, is dry and aseptic. These cases are so arranged that they can be hung up in the patient's wardrobe, out of sight and out of dust. No catheter is used more than once a day. As soon as a catheter is withdrawn from the urethra it is dropped into the case filled with boric acid solution and left there. Once a day all the catheters are taken out, boiled for five minutes, and placed in the dry case until required. The plan is not perfect and I have no doubt is capable of improvement, but it works fairly well with an intelligent private patient who can be made to understand the necessity of observing strict precautions. Unfortunately they are not all intelligent, and in the case of a hospital out-patient such a complicated plan is out of the question. The best that can be done is to start such people as well as possible and hope that by degrees they will acquire a certain amount of immunity against the toxins they are bound to absorb. There is a little evidence to show that a certain degree of immunity may be acquired, but I am very sceptical as to its ever being sufficient in the face of a virulent growth, or when the bacterium coli is assisted by other germs such as the streptococcus and the proteus.

Wimpole-street, W.

[12] Étude sur le Rein des Urinaires, Paris, Steinheil.

A SERIES OF CASES OF OBSTRUCTIVE DISEASE OF THE LARGE INTESTINE TREATED BY LATERAL ANASTOMOSIS—IN ONE CASE AFTER COLECTOMY.

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CASE 1. *Malignant growth at the splenic flexure of the colon; lateral anastomosis of the cæcum and the sigmoid by Senn's plates.*—In August, 1894, a man, aged seventy-two years, was admitted into the Newcastle Royal Infirmary, under the care of Dr. Drummond, suffering from obstruction of the large intestine. Symptoms of intestinal trouble had existed for a year and these at the time of admission had

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become acute. The abdomen was much distended, the distended and loaded intestines being visible as an oblique ladder. The last motion, which consisted of only a few small scybala, was passed on August 1st, and thereafter signs of obstruction with vomiting became urgent. The patient was transferred to me for operation on August 6th. A constricting mass was found at the splenic flexure of the colon. This was bound down and surrounded by enlarged glands, so that any radical operation was impracticable. A lateral anastomosis was therefore made between the cæcum and the sigmoid, the bowel being first drained and washed out with boric solution. The incision in each portion of the bowel was an inch and a half in length and the junction was effected by Senn's plates and a surrounding row of Lembert sutures. A piece of omentum was wrapped round and fixed as an additional safeguard. Relief to all the symptoms was immediate. The bowels were well moved on the second day and afterwards daily. One of the bone plates passed on the fifth day and the other came away in pieces on the seventh day. He left the hospital on the eighteenth day after the operation expressing himself as feeling quite well, and he continued well throughout the ensuing winter. In the spring of 1895, however, he returned with a renewal of obstructive symptoms. The tumour had greatly enlarged and it now extended across the abdomen from left to right. An exploratory incision into the cavity was made, but nothing could be done to afford relief. He recovered from the operation and the wound being healed he left the hospital, but died soon afterwards.

CASE 2. *Stricture (probably non-malignant) at the hepatic flexure; three attacks of obstruction; lateral anastomosis between the cæcum and the transverse colon.*—The patient, a slight, thin man, forty-nine years of age, but looking older, was seen in September, 1895, with Mr. Galbraith of Gosforth. He had for several days vomited all his food and there had been no action of the bowels. The abdomen was distended and tender all over and the vomit was unmistakeably stercoral, but it was stayed by washing out the stomach and stopping all feeding by the mouth. Food was given by the rectum for several days and then a cautious return was made to stomach feeding. The bowels were in the end moved by enemata and convalescence went on satisfactorily. This attack, which was the first in which the patient was seen, was the third of a similar character which had occurred, the first being in 1887 and the second in 1891. As soon as his strength was sufficiently regained he was admitted into the Newcastle Royal Infirmary for operation. When examined upon admission a small hard nodule could be felt under cover of the outer border of the right rectus at the level of the umbilicus. The operation was performed on Nov. 25th, 1895, the abdomen being opened in the right linea semilunaris. The appendix was first examined and was found to be normal, but the cæcum was much distended, whereas the transverse colon when drawn down was found to be as markedly collapsed. Examination of the intermediate portion of the colon was hindered by extensive and firm adhesions. The cæcum was therefore opened and the finger passed up to a tight stricture which did not admit the finger-tip. From the lengthened history of the case—the first attack dating back eight years—and from the absence of any definite growth, it was judged that the stricture was non-malignant. The extent of adhesions would have made the removal of the affected part of the intestine difficult and tedious, and it was therefore resolved to short-circuit by anastomosing the transverse colon to the cæcum. This was done in the way hereafter described, a very free communication being made. The operation gave immediate relief to the abdominal discomfort which previously had been constant. Almost at once flatus was passed freely *per anum*. There was no sickness and therefore food was given by the mouth from the first. The bowels acted of themselves on the third day and recovery was rapid and uneventful. The patient left the infirmary on Dec. 23rd, when he was on full ordinary diet and quite relieved from all his symptoms. Since then he has continued well and has been able to follow his occupation, which involves much knocking about and irregularity of meals. When he was examined quite recently no induration or swelling of any kind was to be found in the abdomen.

CASE 3. *Malignant growth of the cæcum, anastomosis between the ileum and the ascending colon.*—A woman, aged forty-eight years, was admitted into the Newcastle Royal Infirmary in June, 1896, complaining of severe abdominal pains and stoppage of the bowels. On examination a hard fixed mass was found in the right iliac region. On June 11th the abdomen was opened and a growth apparently carcinomatous was found in the cæcum. The growth was irremoveable, and an anastomosis by lateral apposition was therefore made between the ileum and the ascending colon. The patient made a good recovery, and was quite freed from all symptoms of obstruction. She was last seen in October, 1896, when the growth had considerably increased, but although she still suffered from much pain the action of the bowels was regular and sufficient.

CASE 4. *Malignant disease of the cæcum; lateral anastomosis between the ileum and the transverse colon.*—In February, 1896, the patient, a man, aged fifty-three years, noticed a hard lump in the side which was painful on pressure, and there was constant pain in the right side, and much trouble from flatulence. For some time after his admission into the Newcastle Royal Infirmary (in June, 1896) his temperature ran high, suggesting the possibility of the swelling being inflammatory. The tumour extended to within an inch and a half of the umbilicus and downwards to Poupart's ligament. The edges were well defined except below and the skin was moveable over the tumour. The abdomen was opened beyond the margin of the tumour in the right linea semilunaris and the swelling examined. It was found to be a growth involving the cæcum, and not removeable. The ileum was connected by lateral anastomosis to the transverse colon. For a fortnight after the operation the patient went on well. The wound had healed and the dressings were removed. Then the temperature began to rise and he suffered from pain and distension. It was evident that peritonitis had set in, most likely from leakage, and death occurred twenty-four days after the operation. Only a partial examination could be made, and it was therefore difficult to make out the exact condition of the parts, but apparently a rapid extension of the growth had taken place with which the seat of the anastomosis had become involved. At any rate, the junction had at one part given way and death had resulted from septic peritonitis due to the leakage.

CASE 5. *Malignant growth of the splenic flexure; colectomy; lateral anastomosis of the sigmoid and the transverse colon.*—In this case the patient, a woman, aged fifty-six years, had first noticed a lump on the left side below the ribs two years before her admission to the Newcastle Royal Infirmary. It was small at first, but it had gradually increased in size as time went on. She had severe pain, which was worse at night, and there was gradual emaciation and loss of strength. More than once the bowels, always difficult to move, had been obstructed, accompanied with vomiting. Such an attack came on whilst she was in the hospital. When examined on admission a moveable mass was found in the left hypochrondriac region. An operation was therefore performed on July 27th, 1896. The abdomen was opened in the left linea semilunaris and the mass was found to be a growth of the splenic flexure just at the end of the transverse colon. It was attached at a limited point to the greater curvature of the stomach, though the gastric wall did not itself seem invaded by the disease. As the case seemed favourable for colectomy the bowel was divided at a sufficient distance on either side of the tumour, the open ends being clamped with forceps. The growth could then be well drawn down and its adhesion to the stomach wall was peeled off with the finger-nail. The costo-colic ligament attaching it to the diaphragm was next divided. In separating the peritoneum where this was reflected over the pancreas the substance of the gland was torn and the bleeding from the torn surface gave trouble. When the tumour was detached the open end of the transverse colon was closed by a puckering suture of catgut through all layers. The closed end was then well invaginated and the contiguous peritoneal coat was stitched with a close series of Lembert sutures of catgut. The same method was followed in closing the open end of the descending colon. Finally, the sigmoid and transverse portions were brought in apposition and a wide lateral anastomosis was established between them. The free oozing of blood from the lacerated pancreas, the substance of which was too friable to hold a ligature, necessitated gauze-packing and the employment of a drainage-tube. These were removed on the second day and recovery was uninterrupted till ten days afterwards, when some fæcal discharge escaped from the track of the tube. This discharge became gradually more abundant, though happily without affecting the generally favourable conditions. The discharge soon

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diminished and when the patient was able to leave the hospital, at the end of August, it had quite ceased and the wound was healed. The patient has been seen lately and continues in all respects well.

The foregoing cases are grouped together as examples of the method of re-establishing continuity of the bowels by lateral anastomosis. Case 1 exhibits the only instance in which any kind of clamp or support was made use of in effecting the junction, and in this case the cohesion effected by the pressure of the plates was not considered sufficient without the additional safeguards of a row of Lembert stitches and a wrap of omentum. When these additional measures are taken the saving of time effected by any form of button or clamp is seriously reduced. As a set off to the saving of time all such mechanical devices have the drawback that they restrict within very moderate limits the communication established between the two segments of intestine. It seems to be a matter of great importance, not only for the immediate relief of the symptoms but still more for the continuance of this relief, that the communicating opening should be exceedingly free; and this can only be secured when the junction is made by sutures alone. The plan followed in the other four cases was the same. The two portions of bowel to be united were placed side by side and where the sides lay in apposition they were joined by a series of Lembert sutures for a length of rather more than 3 in. Then an incision was made into each segment of bowel in that part of the wall opposite the mesenteric attachment and just falling short of the ends of the row of stitches. By an overcast suture through all layers the two openings were next united. This suture began in the margins which were contiguous and as it passed round it was carried through the margin of one opening and then through the corresponding point of the margin of the other, so that when the suture was tightened these were drawn together. In this way one end, then the corresponding outer margins of the two incisions, then the other end back to the point whence the suture started were united, and the openings in the two portions of bowel were converted into one large aperture of communication. To avoid puckering and narrowing of the opening the suture was tied off after each three or four stitches. Lastly, the cincture of Lembert stitches which was begun before opening the intestines was completed. Carried out in this way the suturing can be rapidly done, and as the anastomosis can be made as free as desired there need be no risk of future contraction.

Newcastle-on-Tyne.

LANDRY'S PARALYSIS.

BY ARTHUR S. TAYLOR, M.D. CANTAB., F.R.C.S. ENG.

CASES of acute motor paralysis rapidly proving fatal are so rare, especially in this country, that the following remarkable case is of the greatest interest. I have classed it as a case of Landry's paralysis as it appears to me that the symptoms followed more closely the lines of that disease than those of any other lesion of the nervous system with which we are acquainted. The paralysis, however, was not "ascending" as in the majority of cases, and the course of the disease was even more acute than in any I have seen described.

The patient was a man, aged forty-two years, who had been married twelve months. He had always enjoyed exceptionally good health and his life would have been accepted as a first-class one by any life assurance company. About six years ago he had a bad accident, being run over by an omnibus, but from this he completely recovered with the exception that he had a partially stiff left elbow-joint. He had been a good deal worried recently by domestic illness, but the cause had been removed and apparently he was not affected by it in any way. On August 7th, 1898, he went to bed in his usual perfect health. At seven o'clock the next morning he awoke to find his right arm tingling and numb. The left arm was affected similarly but to a less degree. He thought he had been "sleeping on his arm." When given a cup of tea he dropped it and on getting out of bed found that he had not the full power in his legs. There was a good strong grip with either hand. He could walk round the bed but was evidently afraid of falling. His pupils were equal and reacted to light but not perfectly during accommodation. Although he could see and recognise those about him he could only read with great difficulty. The knee-jerk was absent. His mind was perfectly clear and he was able to dictate a good business letter. There was no headache or other pain. Tactile sensation was perfect everywhere. The temperature was normal and the pulse was full and strong but not accelerated. On the afternoon of the same day I found the general loss of power slightly increased, formication of the arms and legs persisted, and the temperature was still normal. He passed a good night, but when I saw him early on the morning of the 9th (the second day of illness) all the symptoms were much intensified. He had now to be assisted to move in the bed. His tongue was slightly furred and the temperature had risen to 100° F. His sight was worse and the pupils no longer reacted to light. There was now also a distinct difficulty in articulation. The brain remained perfectly clear. In the afternoon Dr. James Taylor kindly saw the case with me. By this time it was apparent that the motor paralysis would soon become absolute. The breathing was shallow and bulbar symptoms were much more marked. There was no nystagmus or tremor. The third nerve was involved, as shown by ptosis and by paralysis of accommodation and of all the ocular muscles. The optic discs were normal. There was also paralysis of the soft palate with difficulty in swallowing. The temperature was still 100°. Dr. James Taylor drew attention to the similarity of the condition to that caused by curari poisoning and agreed that the condition was almost hopeless. On the 10th (the third day of illness) the motor paralysis became absolute with the exception that the patient could still move the head slightly from side to side. Any attempt to swallow set up spasms in the facial muscles; the respiration gradually failed and he died at 4.30 P.M. There were no bedsores. The nurse told me that the heart continued to beat long after respiration had ceased, but she did not notice whether abdominal or thoracic respiratory movements ceased first. The rectum and bladder were unaffected throughout and the urine was free from albumin and sugar.

The case was, no doubt, one of acute motor paralysis and it is probable that the whole of the grey matter of the spinal cord was affected. The bulb and the course of the third nerve were also involved. The slight rise of temperature which occurred in this case is, I believe, not usually observed, but the absence of anæsthesia, bedsores, and paralysis of the rectum and bladder sufficiently differentiates the disease from myelitis. The extremely rapid course of the disease and the absence of any symptoms of gross change in the grey matter point to some virulent poisoning of the latter structure and the analogy to curari poisoning lends colour to the theory of some toxic agency. There was little time to adopt any treatment. At the outset iodide of potassium was given, and on the second day $\frac{1}{100}$ grain of strychnine was injected hypodermically every three hours. Possibly this may explain the strong and persistent action of the heart. The patient was fed by nutrient enemata.

Surbiton Hill.

AN EMBRYOLOGICAL CURIOSITY.

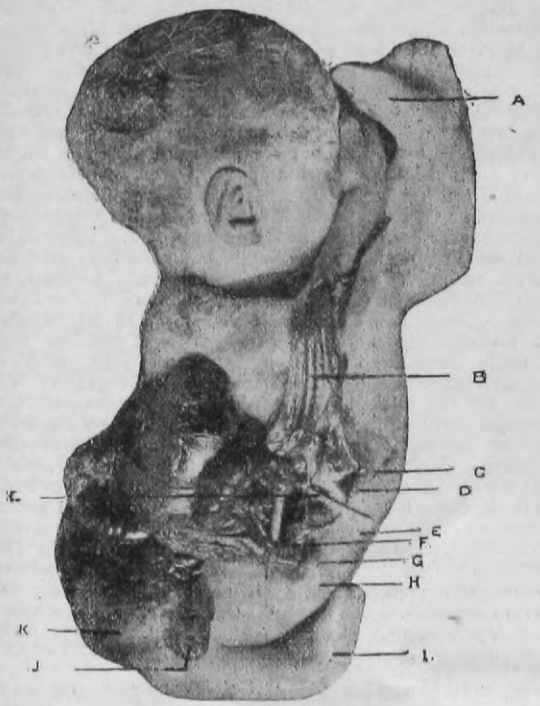
BY J. ROSS MACMAHON, M.B., C.M. ABERD.

THE case described in the following paper embodies a number of points of great embryological interest. An alternative heading might have been, "Absence of Abdominal Wall, Bladder, and Anus, with a Semi-cloacal Condition and Bilateral External Genitalia, &c."

The child, an eight-month one, was the sixth offspring of the mother and was not born alive. Throughout her pregnancy the mother exhibited relatively little abdominal protrusion and she averred that she was ignorant of her condition until about one month before her delivery. By abdominal examination the child's parts could easily be felt. Examination *per vaginam* revealed the fact that the sacral region was the presenting part; in other respects matters were consistent with a normal condition. The labour only lasted three or four hours, very little liquor amnii escaped, and the ovum was delivered *in toto*. This circumstance was owing to the fact that the umbilical cord was represented by

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a condition which obtains about the beginning of the second month of pregnancy. At this period the embryonic somatopleure (the part about to be folded in to form the body wall) is continued on beyond the embryo as the amnion (the extra-embryonic somatopleure) to the already determined placental area of the chorion. This continuation is quite short and the cord-like form between the embryo and the containing membrane is only assumed in later months. It will therefore be evident that consequent on the absence of the long umbilical cord and the presence of its short *anlage* the child and the placenta must of necessity be born together. It may be as well to state here that the child presented a lateral curvature to the right extending from the upper dorsal region of the spine to its lower limit; in addition to this the right lower extremity was doubled so that the sole of the foot apposed the corresponding buttock and the foot was a typical clubfoot. The left lower extremity was placed so that the foot apposed the forehead and was a talipes valgus. The abdominal wall was deficient in a kite-shaped area the tail of which was situated at a point corresponding to the ensiform cartilage, and the sides of which gradually diverged to the widest point rather on the outside of the middle of either Poupart's ligament, from which the dome-shaped head, passing beneath a point corresponding to the absent pubic arch, completed the area. The boundary of this space represented the point where skin formation ceased; beyond this the somatopleure, or body wall, passed on as in an early stage to become amnion. Through this gap the abdominal viscera protruded, the right kidney being rendered particularly prominent by a well-marked hydronephrosis as large as a duck's egg. The bladder was deficient, the left kidney occupying the site. It was indicated, however, by a very curious state of things, which is all the more interesting when compared with extroversion of the bladder of congenital origin and the condition of the genitals usually concomitant with that event. Bordering the middle line on



A, Talipes valgus. B, Umbilical vessels. C, Scrotum. D, Penis. E, Anal dimple. F, Ureter of left kidney. G, Penis. H, Scrotum. I, Pes varus. J, Right kidney. K, Hydronephrosis. L, End of gut with quill passed through.

either side an ill-defined leaf-shaped space was visible on the lower end of the body wall, and here, in contrast to the surrounding somatopleure, two layers could be felt and rolled over each other. The two areas were quite independent and their walls could be separated and dissected up to the middle line, where they fused. This condition is really suggestive of a precursory duplex bladder and would seem to imply a bifid allantois. Into each area a ureter could be traced, so far as could be made out, ending blindly on the right side (that of the hydronephrosis), but having a minute opening on the left side. The lower margin of the spaces formed most of the dome of the kite-shaped deficiency of the abdominal wall; below this skin formation commenced and passed along to the perineum. Situated at this point on either side and about an inch apart was a well-formed though diminutive penis. Each penis presented a glans, a prepuce and a closed meatus urinarius, and below them the skin was sacculate and thrown into loose folds so as to form a scrotum. The testes had not descended and were lying high up, where they were formed from the genital ridge. The duplex quasi-bladder corresponded well with the formation of two penes, but there was no communication between the penes and the bladders. On the under or dorsal side of each penis a distinct but comparatively faint raphé was observable, indicating the presence of two uro-genital sinuses at an earlier period.

Before passing to perhaps the most interesting abnormality which was manifested in this case it may be opportune to observe that in normal pregnancies the cloaca in the human embryo exists up to the fourteenth week. Into it open the two Wolffian ducts, the two fused Müllerian ducts, the allantois, and the intestine. A vertical division of the cloaca from side to side, growing up from below in the form of an epithelial plate, divides it into an anterior or uro-genital opening and a posterior or anal opening. This involves the complete separation of the uro-genital system from the intestinal canal. The Wolffian ducts form the kidneys and ureters in both sexes, and the spermiduct, seminal vesicles, &c., in the male, and the connexion with the gut then vanishes. The Müllerian ducts fuse before entering the cloaca per the neck of the allantois. In the female they form the uterus, the vagina, the Fallopian tubes, &c.; but in the male a remnant is retained in the uterus masculinus. In the present case the anus was represented by a slight dimpling at the normal site, but no perforation had occurred and the gut ended in the middle line between the two bladder areas. The termination was abrupt and was situated just in front of the skin of the perineum and it was quite patent. About 1 in. above the end of the gut, and communicating with it posteriorly, lay numerous coils of tube of varying circumference. These occupied a site behind the gut, and on a close inspection it could be seen that the mass really consisted of three distinct and blind tubes all conducting to the rectum. On slitting the rectum with scissors the three openings could be seen and a quill could be passed into each. The tubes were arranged one on each side of a larger and central one. The two lateral tubes were of equal lumen and length and were placed symmetrically. The central one was much longer and of much greater circumference and it gradually tapered off at its blind end. A semi-cloacal condition of things was thus revealed. The central blind duct was doubtless the fused Müllerian ducts (the uterus, Fallopian tube, &c., in the female) which had remained instead of undergoing resorption and disappearing. The two lateral tubes were the remnants of the two Wolffian ducts which had also failed to disappear. Some distance up the large intestine was a narrow strip of cicatricial-like tissue 2 in. long; it was flat and smooth and felt like a piece of parchment let into the long axis of the gut. This doubtless was the site of the closure of the yelk sac. Around this the bowel was gathered up in pleats and puckers which radiated outwards. Strangely enough, there was absolutely no sign of an appendix vermiformis, but some inches above the closure of the yelk sac, and corresponding exactly to the site at which the appendix should come off, was an exact facsimile, in miniature, of the condition described at the closure of the yelk sac. The parchment-like longitudinal plateau, the puckering of the gut, &c., were all represented.

In reviewing the case I would suggest that the cause of the limb and spinal deformity was the dearth of liquor amnii. Pressure would be a consequence of this deficiency, and the position and deformities of the child were consistent with this theory. The idea might be carried further, and it would be reasonable to suppose that the scantiness of the liquor amnii, combined with the resulting position of the legs of the fœtus, exerted a combative influence against the normal evolution of the other parts.

Kensington, W.

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TRAUMATIC SEPARATION OF THE LOWER EPIPHYSIS OF THE HUMERUS WITH DISPLACEMENT FORWARDS.

BY W. McADAM ECCLES, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON, WEST LONDON HOSPITAL, CITY OF LONDON TRUSS SOCIETY, DEMONSTRATOR OF OPERATIVE SURGERY AT ST. BARTHOLOMEW'S HOSPITAL, ETC.

THE rarity of displacement *forwards* after separation of the lower epiphysis of the humerus induces me to put on record the following case.

A boy, aged ten years, living in the country fell, as I understand, from a see-saw, or swing, alighting on his right hand. Shortly afterwards the elbow was painful, but as there was no idea of any serious injury having occurred medical advice was not sought until some time had elapsed and no splint was applied. At the end of three weeks, as the elbow remained stiff and slightly swollen, the patient was brought up to town. The right forearm was in a position of flexion, forming an angle of 145° with the arm, and the boy was unable to extend it voluntarily any further. Full flexion, however, could be satisfactorily accomplished and practically without discomfort. The biceps cubiti was kept contracted. The forearm, moreover, was somewhat pronated and it was impossible for the patient by his own effort to completely supinate without pain. Examination under ether showed flexion to be free, but extension impeded though it could be forcibly accomplished. Creaking about the joint was noticed, but all the usual movements were nearly normal in their range. When I saw him first in consultation with Dr. John Shaw-Mackenzie between four and five weeks after the original injury, it was observable that there was no evidence of inflammation about the joint. A distinct dimple could be seen about the tip of the olecranon process, which was not apparent on the sound side. The three bony prominences bore their normal relationship to one another, but appeared to be on a plane anterior to the shaft of the humerus when compared with the left side. Measurement of the arm gave a like length on the two sides, but the distance from the projecting part of the humerus on the outer side to the radial styloid process showed some increase in the length of the forearm. Forcible movement without an anæsthetic proved that full extension of the elbow joint was impossible, though flexion could be readily brought about. The other points were much the same as those alluded to above. Seeing the unusual nature and uncertainty of the lesion my friend, Dr. F. H. Low, very kindly and successfully skiagraphed both the normal and abnormal elbow-joints. Each limb was placed with its inner surface upon the sensitive plate, with the elbow flexed at a right angle. The prints from the negatives showed very clearly the dimple mentioned before in the curve of the line of the soft parts. It showed, further, that the breadth of the limb at the region of the elbow was distinctly increased, and this without there being any local swelling or œdema. The ossific centres of the lower epiphysis were displaced distinctly forwards, well shown by their relationship to the shaft of the humerus.

I have been unable to find more than a few references to what I believe the case under review to be—namely, a traumatic separation of the lower epiphysis of the humerus with displacement forwards. Hamilton[1] does not mention it and Pick[2] makes no allusion to it, nor does R. W. Smith[3] in his paper on the subject. All these and other authorities give a full account of the much more common *backward* displacement. An excellent skiagram of this latter deformity is given by Roswell Park.[4] J. Hutchinson, jun., says[5]: "Very occasionally the epiphysis is driven forwards instead of backwards," and in one case under his care the forward displacement was well marked. I believe the prognosis as to the subsequent growth and usefulness of the limb is good in the majority of these cases, provided that passive movement, together with massage, is early resorted to. In this particular case the patient has now a useful limb, with but little deformity, although it has taken many months to bring this result about

Harley-street, W.

[1] A Treatise on Fractures and Dislocations, eighth edition.
[2] Fractures and Dislocations, 1890, p. 191.
[3] Dublin Quarterly Journal, vol. ix., 1850, p. 63, and Brit. Med. Jour., vol. ii., 1867, p. 121.
[4] A Treatise on Surgery, vol. i., 1897, p. 718, plate xxi.
[5] Brit. Med. Jour., vol. ii., 1893, p. 1418.

CHLORODYNE POISONING

BY JAMES GILROY, M.B., C.M. GLASG.

ON Jan. 15th, 1895, at 12.30 A.M., I was called to see a man, aged seventy years. Having to travel two miles I did not see him till 1 A.M. I found him unconscious with stertorous breathing and the pupils unequal, the left being contracted to a pin's point and the right moderately dilated. The surface of the body was fairly warm, there was a considerable amount of perspiration over the trunk, and the pulse was full and regular, being about 70 per minute. The history I got was that about 8.30 P.M. on the 14th he had retired to bed as was his wont and that later, about 11 P.M., some of his family fancied they heard unusually heavy breathing and entered his room, having to force the door, and found the patient on the floor; lying in close proximity was a bottle of cough mixture, an eight-ounce bottle, which was three-quarters empty, leaving scarcely two ounces in the bottle. The mixture smelt strongly of chlorodyne and was a patent medicine labelled "Joe Todd and Co.," with a graduated dose scale given on the label up to one tablespoonful and "not intended for infants" printed thereon, together with an intimation on the reverse side that "owing to containing morphine and other valuable drugs" the requirements of the law required it to be labelled "poison." I was told that before I had arrived the patient had vomited slightly, his son having administered mustard and water and put him to bed. Not having had any intimation of the nature of the case I had nothing with me, but despatched a messenger for the stomach tube and some emetics and meanwhile I proceeded to try to rouse the patient, which was apparently indicated. This was done by pinching him, signs of pain being evinced, and by getting him out of bed and walking him about as best we could for upwards of an hour. He exhibited signs of knowing what was being done, but his condition was, to say the least, alarming. On arrival of the tube I washed out the stomach freely with hot water and followed by introducing some infusion of green tea and later some Liebig's extract in hot water. About 5 A.M. I left him, after having expended some considerable effort, and finding that on speaking loudly to him he evinced signs of consciousness. I called again at 4 P.M. I found him still sleeping soundly, the pupils being in the same condition as before; there was no change. I introduced into the stomach two-thirds of a quart of warmed milk with a little lime-water, and left him, to return again at midnight to find the same state of affairs, when I again introduced about one pint of milk with the stomach tube. I continued to attend the patient twice daily all the week and the treatment was as stated all through until the afternoon of the 18th, when he awoke and sat up to assist me with the tube, which he appeared quite to understand was being used for his benefit, but he did not speak, though when he was spoken to his lips moved as if he were attempting to answer. On the 16th I noticed the odour of opium very perceptibly in his breath, but on no other day could I detect it except more faintly on the 17th. On the 19th, on my visiting him in the afternoon, he spoke to me quite plainly, asking if he had been asleep over twenty minutes. All through there was no involuntary discharge of urine. It was passed naturally and was loaded with urates, and only on one day—viz., the 17th—was it retained over twenty-four hours.

The patient told me that the dilated eye had been one for which he had had special advice and treatment, but whether that had anything to do with the inequality of the pupils is another question; but I noted that the condition was still present on the 23rd—that is to say, although the firm contraction had yielded in one eye the other pupil was larger. He was then taking his food well and was very hungry. On the 19th the history I got was that his demands for food were incessant, whilst on the 23rd he had practically recovered. The mixture came into his possession on the evening of the 12th and he simply drank it *ad libitum* at intervals, and admitted taking a drink of it from the bottle,

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using no measure, on his entering his room on the evening of the 14th, but he remembered nothing else.

Waterbeck, Dumfriesshire.

RUPTURE OF THE LEFT CORONARY ARTERY; HÆMOPERICARDIUM; FAILURE OF PULSE IN THE RIGHT CAROTID AND RADIAL ARTERIES.

BY LAURENCE HUMPHRY, M.D. CANTAB.,
ASSISTANT PHYSICIAN, ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

THE following case is worthy of record, partly on account of its clinical interest and partly because it reveals a somewhat rare pathological condition.

The patient was a woman, aged fifty-eight years, and unmarried. She had always enjoyed good health except that about thirty years ago she had suffered temporarily from albuminuria. Up to the time of her death she was active and free from breathlessness and pain and a few months previously she had taken long walks on the mountains without undue fatigue. On Nov. 15th, 1896, while she was at breakfast she complained of a sense of faintness and dizziness and soon afterwards she was violently sick. When she was seen at 9.30 A.M. she was lying on the floor looking pale and anxious. She complained of pain in the stomach and a feeling of numbness on the right side. The right radial pulse was imperceptible, the left was 100 and was feeble and irregular in force. The præcordial dulness was not increased and the apex beat was not felt; the heart-sounds were feeble at the apex, and a roughness was noticed with both sounds at the base. The extremities were cold and clammy. Hot bottles and stimulants were ordered and a mustard plaster was placed over the præcordia. Two hours later she was very restless and was unable to express herself coherently. Her face was pale and cyanosed and the right jugular vein appeared full and prominent. The bowels had acted copiously and the sickness was decreasing; she could move all her limbs and only complained of pain at the pit of the stomach. During the afternoon she was evidently getting weaker and less conscious. The right pulse was still absent but on further examination the radial vessel on that side could be distinguished and rolled under the finger, though it was not distinctly hard. The right brachial artery could also be felt but pulseless, and no beat could be distinguished in the right carotid artery. The left pulse was quite distinct, but feeble, irregular, and intermitting slightly with inspiration. At this time it was noticed that on turning the patient over on to the left side to give a nutrient injection the right pulse could be distinctly felt and continued as long as she remained in that position, but disappeared again immediately on turning on to her back. A rapid auscultation of the back on the right side indicated some tubular breathing at the angle of the right scapula but owing to the patient's condition no further examination could be made. In the evening there were several loose actions of the bowels containing small quantities of red blood. The patient never rallied, but became weaker and died at 2 A.M on Nov. 16th, 17 hours after the first onset of the attack.

Necropsy.—At the post-mortem examination the large veins of the neck were found distended and prominent. The pericardium bulged slightly but was covered by the left lung to the normal extent. The pericardial cavity contained about from 5 oz. to 6 oz. of blood and clot. The heart appeared of normal size and weight but the walls were soft and flabby. There was no evidence of any valvular disease. On the surface of the heart near the aorta was a small opening of the size of the head of a large pin and here there was much extravasation of blood into the muscular tissue and fat and upwards into the fold of pericardium ensheathing the first part of the aorta. The result of this was the production of a swelling which reached so high as to cause pressure on the innominate artery. There were a few patches of atheroma in the aorta and both coronary arteries were throughout the seat of extensive atheromatous disease. They were both dilated and the left coronary artery was ruptured about a quarter of an inch from its exit from the aorta, the rupture corresponding in situation to the small orifice above described. There was no sign of a small aneurysm of the coronary vessel and the sinuses of Valsalva were normal. The muscular substance of the heart was in an advanced state of fatty degeneration.

Remarks.—Rupture of a coronary artery appears to be a rare incident and there are but few recorded cases. In THE LANCET of June 4th, 1887, Dr. J. W. Batterham records a case in which there was a rupture of the coronary artery near the apex of the heart causing hæmopericardium, and in *The Medical Times and Gazette* of March, 1862, Mr. Osborne describes a case in which the coronary artery was ruptured near its origin from the aorta. The coronary artery is sometimes the seat of a small aneurysm which may rupture, and in the Transactions of the Pathological Society of London for 1871 Dr. Crisp has collected 11 cases, all occurring in males, and in 7 of which rupture took place into the pericardium. The failure of the right pulse beat in this case is very interesting and in the absence of any other explanation must, I think, be attributed to the pressure of the extravasated blood upon the innominate artery. The swelling produced in this situation was very obvious after death and was probably greater during life as the blood continued to escape into it. While the patient was lying on her back with the head low the pressure was sufficient to obstruct the pulse in the innominate artery, but when she was turned on to the left side the blood in the pericardium flowed towards the apex and relieved the pressure sufficiently for the pulse to return. The tubular breathing heard at the right base behind may have been due to the pericardial effusion, but whether this sign was present on the left side also I am unable to say. Other noteworthy features in the case are the absence of angina and the fact that the patient had been able to take very active exercise in spite of the advanced fatty degeneration of the heart muscle and the extensive atheroma of the coronary vessels.

Cambridge.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF BELLADONNA POISONING.

BY R. A. MORRIS, M.B., B.S. DURH.,
LATE RESIDENT ASSISTANT HOUSE SURGEON, ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

ON Feb. 24th, 1897, I was called to see a man, aged forty years, a patient of mine, who was suffering from pleurisy with effusion on the right side and phlebitis of the right femoral. For the latter he was using a paint composed of extract of belladonna ½ oz. with glycerine to 1 oz. At 7.15 A.M. his daughter, aged twelve years, went to give him a dose of medicine and in mistake gave him a tablespoonful of the preparation just mentioned, so that he got 2 drachms of extract of belladonna. When I saw him at 10.30 A.M. he was comatose, his breathing was very shallow, his pulse was almost imperceptible, his skin was dry and the pupils were widely dilated. I immediately gave him a hypodermic injection of ¼ gr. of pilocarpine hydrochlorate and washed out his stomach. I may state that before I saw him his wife had administered some mustard and water, which caused him to vomit about a wineglassful of fluid, but there was little or none of the belladonna in the vomit which was kept for my inspection. The fluid which came away when I introduced the stomach tube contained a considerable amount of the poison. Subsequently to washing out the stomach I introduced a quart of strong coffee, a little of which he vomited. I gave him another hypodermic injection of ¼ gr. of pilocarpine hydrochlorate. His breathing by this time was much deeper and his pulse was much stronger, 120 to the minute, and he now tried to push away those near him. His wife said that

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previously to his becoming unconscious he complained of soreness and dryness of the throat; he occasionally smiled and muttered, but never laughed outright or talked loudly. I left him at 12.15 P.M. He was muttering a little but both pulse and respiration were strong.

On seeing him again at 2.30 P.M. his temperature was 102·7° F., but it must be remembered that his temperature was previously 100° from the pleurisy and phlebitis. He was now conscious of what was said to him, putting out his tongue when I asked him to do so. He would not attempt to swallow anything. The pupils were still very widely dilated and did not react to light. I again administered ⅓ gr. of pilocarpine, thus making in all ⅔ gr. There was no scarlatiniform rash to be seen and no paralysis of the sphincters. He frequently retched, but he never vomited subsequently to the vomiting which followed the dose of mustard and water. On seeing him again at 7.30 P.M. his pupils were still much dilated and did not react to light. On attempting to take a little coffee he felt very sick but did not vomit. His temperature was now 102·2°. He recognised me but did not remember what had taken place beforehand. On Feb. 25th his temperature was 100°, his pulse was 108, and he was sweating profusely, as he had done all night. He had had some disturbed sleep. He fancied he saw black things moving about during the night, and also fancied that the pictures in the room were all kinds of strange animals, although he knew they were the pictures. On closing his eyes tightly there was an awful blackness with white stars here and there. The pupils were still dilated but reacted slightly. On examining his chest I found that it was markedly improved, the effusion having nearly all gone. He described himself as being sore all over but with no definite pain. On Feb. 27th the pupils were normal, the temperature was 99·4°, and the pulse was 92.

Bedlington, Northumberland.

PIN IN THE RECTUM FOR THIRTY YEARS.

BY W. DUTTON AKERS, M.R.C.S. ENG., L.R.C.P. LOND.

A MAN, aged fifty-eight years, a linendraper, consulted me with a view to obtaining relief from the following symptoms. He had pain in the rectal region of a pricking character on sitting down, constant desire to defecate, great pain on doing so, and the motions were small, pipe-like and streaked with blood. These symptoms had been present with more or less intensity for a period of thirty years; he had frequently sought medical aid, and the treatment generally took the form of morphia suppositories or other local applications. Examination revealed the presence of external hæmorrhoids, and digitally considerable induration and inflammation of the mucous membrane covering the internal sphincter was detected. Above and at the right side of the internal sphincter the head and about half an inch of the body of a pin were to be felt, the head projecting upwards and somewhat across the lumen of the intestine. With the aid of a pair of long dressing forceps introduced by the side of the examining finger the pin was pushed up into the rectum, rotated, and then extracted head foremost. Thanks to the pluck exhibited by the patient I was enabled to carry out this painful manipulation without an anæsthetic. The removal of the *fons et origo mali* was followed by a rapid subsidence of the symptoms which had prevailed for so many years. This case illustrates the great importance of making a careful examination of the rectum in such cases. I suspected carcinoma and found an easily removeable pin. The patient was unable to account for the pin, but his occupation is a sufficient explanation.

Bath.

STRANGULATED HERNIA IN AN INFANT.

BY J. E. BRISCOE, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, a small, healthy child, twenty-one days old, who had been quite well up to the evening of the day before my visit (Sept. 8th, 1896), became cross from no obvious cause and a dose of castor-oil was given. Later in the evening a small motion was passed, but the child continued to be extremely fretful and was at 9 A.M. next day evidently ill, the face appearing pinched. Vomiting had occurred once and no motion or flatus had passed since the day before. The scrotum was slightly œdematous and red on the right side and distended by a very tense pear-shared swelling. The swelling seemed to end completely at the external inguinal ring and no alteration was discovered in it when the child cried. The physical signs were those of inflamed hydrocele, but the symptoms pointed to hernia, and a hot bath having been given an attempt at reduction was made, but with no success. Under chloroform—administered by Dr. David Watson—an incision was made into the sac. From one to two drachms of dark serous fluid escaped and a coil of bowel, thickened and distended, dark-purple in colour but still glossy, was exposed. The length of the coil was from 3 in. to 4 in. The walls of the sac, the epididymis, and the cord behind were very deeply congested. With the child inverted a second attempt at reduction was made. This failing the canal was dissected up and the internal ring was laid bare. Throughout the whole length of the canal the bowel was tightly invested by the thickened peritoneal tube and at the internal ring the constriction was very marked. The point of a Lister's sinus forceps was, however, passed through the ring and was then brought out above the upper margin, and the portion thus separated was divided on the forceps as on a director. A further quantity of dark fluid escaped from the abdominal cavity when this was done. The bowel was then easily reduced on inverting the child. The ring was closed by two catgut sutures and the edges of the incision were brought together loosely by two sutures of silkworm gut. Healing was rapid and uninterrupted. The bowels acted regularly from the first night.

I think the following are points of interest in the case: (1) the youth of the child; (2) the apparent abrupt termination of the sac at the ring, leading to a very close resemblance to hydrocele; and (3), the tight tube of peritoneum which surrounded the bowel. Nothing larger than the point of a probe could pass along this and I was in consequence obliged to make an open dissection of the canal. How the bowel entered this tube is a mystery.

The child still wears a woollen truss of the kind described in Pye's "Surgical Handicraft" which has been worn since a fortnight after the operation, and in this case as in other cases of congenital hernia it answers admirably as a support to the ring.

Leeds.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prœmium.

ROYAL FREE HOSPITAL.

A CASE OF COMPOUND FRACTURE OF THE PATELLA DUE TO A KICK FROM A HORSE; RECOVERY WITH A MOVEABLE JOINT.

(Under the care of Mr. W. H. BATTLE.)

THE value of modern surgery is in few conditions more strikingly shown than in wounds of joints. In pre-antiseptic days an extensive wound of any large joint was certain to be followed by prolonged suppuration, in only too many cases terminating in septicæmia or pyæmia; and so fully were these dangers recognised that a primary amputation was often advocated. The importance of a wound of a knee-joint was greatly aggravated by fracture of the patella, for even if the patient were fortunate enough to survive the lengthy suppuration and its concomitant septic dangers he was left with a limb which was absolutely useless for walking. The contrast between these severe symptoms and results and the effects of modern treatment are strikingly shown in the following account of a compound fracture of the patella. Recovery was rapid and practically uneventful, for the slight rise of the temperature which occurred on one occasion immediately disappeared after the administration of an enema.

A cabman, aged fifty-three years, was admitted into the Royal Free Hospital on April 20th, 1898, for injuries to his

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knees. Shortly before his admission to the hospital he was, whilst sitting on the driving seat of his cab, kicked on both knees by the horse, a vicious animal, the splash-board being destroyed. On the left knee there was only a small and comparatively unimportant wound extending down to the patella, but on the right knee there was a transverse lacerated wound extending almost the whole width of the limb. Through this opening the interior of the knee-joint could be seen, and it was at once evident that the right patella had been broken transversely into two large pieces, though several smaller fragments could be felt. The two large pieces formed about five-sixths of the patella. The wounds were temporarily dressed with an antiseptic application and a back splint was applied to the right leg. On the evening of the day of admission, about five hours after the accident happened, the patient was anæsthetised and Mr. Battle, who had been sent for, proceeded to wire the bone. An incision three inches long was made directly upwards from the middle of the horizontal wound on the right knee, the flaps were reflected on each side of this incision, and the knee-joint was completely exposed. The joint cavity, the bony fragments, and the surrounding parts were then thoroughly washed in a solution of perchloride of mercury (1 in 2000). Two or three small fragments required removal. Then the two larger pieces of bone were joined together with silver wire and the ends of the wire, after having been twisted, were hammered on to one of the fragments. The aponeurosis over the patella was united by silk sutures and the edges of the skin wound, having been carefully pared, were drawn together with interrupted sutures. A drainage-tube was inserted through a separate incision in the outer side of the joint. A dressing of double cyanide gauze and absorbent wool was applied and the limb was enclosed in a plaster-of-Paris splint. The wound on the left knee was sutured and dressed in a similar manner. On April 22nd the right knee was dressed and the drainage-tube was removed. On the 24th the temperature rose to 100° F. but fell to normal on the bowels being opened by an enema. On May 3rd the skin stitches were removed and the plaster-of-Paris splint was exchanged for a wooden back splint. On the 12th the patient was allowed to sit up and on the 19th the splint was removed, a small dressing only being applied. On the 24th he was discharged from the hospital; he had firm union of the patella and was able to walk. Further improvement has resulted.

Remarks by Mr. BATTLE.—The patient was not regarded as a favourable subject for operation, his occupation and appearance suggesting that he was not a teetotaler. He was a stout, heavy man, with dilated cheek capillaries. Subsequent examination, however, did not show any visceral disease, although his arteries were hard and tortuous. In a simple fracture of the patella there are many conditions to be taken into account by the surgeon before he can decide whether it is best to wire the patella or not, whereas in a case of compound fracture he has no option; the fragments if they are of sufficient size must be wired if the joint is to be rendered useful in the future. In addition it is imperative that the wound should be rendered thoroughly aseptic and here the treatment which the case first receives is of the greatest importance. If when the patient is first seen the applications to the wound are thoroughly applied a successful result may be hoped for, but if not a suppuration in the joint at the least is to be feared. When wiring is performed for simple fracture the surgeon can prepare the patient and make the outside of the joint aseptic, he can also choose his own time for the operation; these conditions do not apply in compound fracture. Some months ago I showed at the Medical Society of London a case of compound fracture of the patella in a young man caused by a fall of several feet from a ladder with his bent knee striking on the edge of a barrel. He was under my care at St. Thomas's Hospital and a result in every way satisfactory was secured without suppuration after wiring. In both instances much credit is due to the house surgeons for their earlier treatment and prompt recognition of the injury, as well as for their great care in the after treatment.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

THREE CASES OF FÆCAL FISTULA TREATED BY OPERATION.

(Under the care of Mr. RUTHERFORD MORISON.)

ALL the three cases recorded below are of interest. In the first a correct diagnosis was made and the extent of the tuberculous disease of the bowel necessitated a wide operation, fully justified by the complete removal of all the diseased intestine; it was not found necessary or even desirable to employ any mechanical contrivance for effecting the intestinal anastomosis. In the second case a subperitoneal abscess had burrowed widely in the anterior abdominal wall and had perforated the transverse colon as well as the skin. Although the suppuration had commenced in the right side it was quite unconnected with the vermiform appendix, which was healthy. The third case illustrates a sequela of lateral lithotomy which is much less frequently met with now than formerly, chiefly because the operation itself is not so often performed. For the notes of the cases we are indebted to Dr. Grant Arnott, house surgeon.

CASE 1.—A girl, sixteen years of age, was admitted to the Royal Infirmary, Newcastle-on-Tyne, on Dec. 1st, 1897. The patient was very small and ill-developed and had always been delicate. Fourteen months previously to her admission a painful swelling appeared in the right side of her abdomen. A month later this lump burst and discharged pus and fæces. Three openings formed which had discharged ever since. At first most of the fæces passed through these openings and very little *per anum*, but for some months the greater part of the motions had been passed naturally. On admission to the infirmary her general condition was very bad and she suffered from constant discomfort. In consequence of the leakage of fluid fæces she had a painful dermatitis of the skin at the lower part of her abdomen. In the right iliac region, surrounded by cicatricial tissue, were three fistulous openings discharging pus and fæces. Underneath the fistulæ there was a hard mass of the size of half an orange, apparently in the head of the cæcum. The constant discharge of fluid fæces led to a diagnosis of fistula in the small intestine. The hard mass and the general appearance of the patient, with the history suggested tuberculous infiltration and ulceration of the cæcum. The diagnosis of tuberculous ulceration of the cæcum, ileum, and ileo-cæcal valve was made. The condition of the patient was intolerable to herself and others and careful treatment by competent surgeons had failed to relieve her. Operative treatment was therefore imperative. Accordingly, on Dec. 9th an elliptical incision was made round the fistulæ and the infiltrated skin. The two ends of the ellipse were then prolonged anteriorly to the middle line and posteriorly to the back of the ilio-costal space. The abdominal cavity was opened in this line and carefully packed off with sterile gauze. The cæcum was firmly adherent to the abdominal wall and also a loop of ileum 1 ft. from the ileo-cæcal valve. Both portions of intestine were thick, firm, and infiltrated with tubercle. The ileum was clamped between two pairs of forceps and divided on the proximal side of the fistula, and the diseased portion, together with about 18 in. of healthy bowel between it and the diseased cæcum, was separated from its mesenteric attachment up to the cæcum. The ascending colon was then divided between two pairs of forceps beyond the diseased cæcum, which was cut away still attached to the ileum. Along with the cæcum a large tuberculous gland was taken out of the meso-cæcum. This part of the operation was difficult because of extensive and firm adhesions. The forceps holding the cut end of the ileum and the colon were next drawn forward and a continuous catgut suture which was run through all the coats closed the cut ends of the intestine before the forceps were removed. When this had been done the portion of the intestine gripped by the forceps was doubled in and retained by a few interrupted Lembert's sutures. A lateral anastomosis was then made between the ileum and the transverse colon by an inner continuous suture of catgut through all the coats and by an interrupted ring of silk Lembert's sutures. The wound in the abdominal wall was closed by strong silk sutures through the different layers. There was considerable tension on these sutures owing to a portion of the abdominal wall, which was infiltrated and adherent to the intestine, having been excised. The excised intestine showed a healed tuberculous ulcer of the ileum causing stricture and an infiltrated, contracted, and ulcerated cæcum. Both the ileum and the cæcum had fistulous openings in them. Immediately after the operation the patient was much collapsed, but she rallied after having been transfused with 40 oz. of normal saline solution. No fæces have escaped from the wound since the operation, her bowels have been moved without difficulty, her appetite has been good, and her general condition is satisfactory.

CASE 2.—A girl, aged nine years and six months, was admitted to the infirmary on Feb. 12th, 1898. She had had attacks of pain in the abdomen, accompanied by vomiting,

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for six years. These attacks came on periodically and were attended by constipation. In the intervals she frequently had diarrhœa. About six months before admission an abscess formed at the umbilicus and burst. Fæces and pus were discharged from it and had continued to do so ever since. On admission a small opening was found at the umbilicus discharging pus which was neutral in reaction and had no fæcal odour. On pressing on the abdomen fæcal matter was seen to come through the opening. A hard tender mass of the size of a hen's egg was felt in the right iliac fossa; otherwise nothing abnormal was discovered. The patient was well nourished and the pulse and temperature were normal. On Feb. 17th an elliptical incision was made round the umbilicus, including the fistulous opening. The umbilicus and the outer opening of the fistula were excised. The incision was then prolonged downwards to the pubes in the middle line, but no entrance could be effected on account of adhesions. The incision was next extended upwards and the abdominal cavity was entered above the umbilicus. A sinus was then found to extend in the subperitoneal tissue from the neighbourhood of the umbilicus down to the right iliac fossa and into a coil of thickened ileum adherent there. This formed the mass discovered before the operation. The ileum was separated and the hole in it was closed by a continuous catgut suture through all the coats, and outside of this interrupted Lembert's sutures, transversely to the axis of the bowel. The sinus was then dissected out from the parietes. As this was being done the track was found to branch upwards and to extend to an opening in the hepatic flexure of the colon. The colon was dissected from the parietes and the opening in it was closed in the same manner as that in the ileum. To remove the sinus in the parietes it was necessary to extend a second incision from the middle line to the right iliac fossa. The appendix was found to be normal. The abdomen was completely closed with silk sutures. The patient never appeared to be ill after the operation and made a good recovery. The only drawbacks experienced were some superficial gaping and suppuration of the transverse portion of the abdominal wound, which granulated up. There was no fæcal discharge from the wound.

CASE 3.—A man, aged twenty-seven years, had a lateral lithotomy performed on him seventeen years before his admission to the infirmary, since when he had suffered from constant discomfort and annoyance owing to the passage of fæces and flatus by the urethra. He had enjoyed good health till three and a half years before admission, when he became ill and an abscess formed in the right loin and was opened. Since then his general condition had improved. He was in good health with the exception of the urinary organs. The urine, which on examination was found to be acid and of specific gravity 1017, smelt rather fæcal and contained pus, bacteria, and blood. The quantity passed for the twenty-four hours preceding the operation was 16 oz. On examination under an anæsthetic with a catheter in the bladder and a finger in the rectum a round hole of about the size of a split pea could be felt in the anterior wall of the rectum, slightly to the left of the middle line, about 1½ in. above the anus. A probe passed through the opening touched the catheter in the prostatic portion of the urethra. A scar was present in the perineum in the position of a lateral lithotomy wound. An operation was performed on Feb. 7th, 1898. The patient was placed in the lithotomy position and a semilunar incision was made through the skin of the perineum from one tuberosity of the ischium to the other. The skin flap was dissected downwards and a transverse incision was made across the perineum and the rectum was separated from the urethra, previously catheterised. The openings in the rectum and in the urethra were then both plainly seen. The hole in the urethra was closed vertically by fine catgut sutures over a No. 18 catheter, avoiding the mucous membrane. The opening into the rectum was treated in a similar manner. Buried sutures of catgut were then deeply introduced and tightened, making the transverse incision antero-posterior, much the same as is done in Mr. Lawson Tait's operation for ruptured perineum. The sinus in the lumbar region was explored and scraped. (So far as could be ascertained no urine had ever come through this.) The after progress of the case was good. No urine escaped from the wound after the operation and from the second day the amount of urine passed rose to the normal. The perineal wound healed by first intention. The patient was seen again in June of this year, when the sinus in the back was found to be reduced to very small dimensions. There was still a trace of pus in the urine.

Remarks by Mr. MORISON.—Case 3 is interesting in connexion with the recent suggestions concerning transplantation of the ureter into the intestine. The patient had no trouble except for the disagreeable experience of passing fæces and flatus *per urethram* for thirteen and a half years. It was evident that most of the urine which passed into the bowel was absorbed. The quantity of urine passed before the operation compared with that passed after and the fact that his bowels were regular and the motions of normal consistence make this certain. Although no urine escaped through the sinus in the back it appears to be fairly clear that the abscess in the loin was connected with the kidney. This seems to be the great risk of such operations and the danger evidently cannot be considered to be removed for some time after an apparently successful operative result.

Reviews and Notices of Books.

On Cardiac Failure and its Treatment, with especial reference to the Use of Baths and Exercises. By ALEXANDER MORISON, M.D., F.R.C.P. Edin. London: The Rebman Publishing Company, Limited. 1897. Pp. 256.

THIS is essentially a "Nauheim" book in its latter portion, with the usual presentation of sphygmograms and areas of cardiac dulness in illustrative cases. But the author has attempted a good deal more than this, and the earlier portion of the work is a disquisition on cardiac failure from a general standpoint. It commences, somewhat unnecessarily, with the elementary anatomical facts about the position and relations of the heart and the methods of palpation, auscultation, and percussion, which, as the book is not for beginners, might judiciously have been omitted. They are, however, very well put and are mingled with a number of clinical observations of no small value. The writer follows the late Sir Richard Quain in his views on the causation of the first heart-sound, and his remarks on "cantering" action and quadruplication of the heart-sounds are worthy of attention. The sections on the extra-cardiac signs of cardiac failure and on the signs in the nervous system are also good. The pathology of cardiac failure receives somewhat inadequate consideration in the second division of the book. It is perhaps too much to expect that such work as that of Starling, set forth in his Arris and Gale Lectures (1897), should be incorporated in a book published in the same year, but that is the kind of solid substratum which is wanting in Dr. Morison's volume. The third division of the book is devoted to the general treatment of cardiac failure, and here we find a fair *résumé* of current doctrine on the subject, though there is nothing of any novelty. The latter half of the book is devoted to baths and gymnastics, chiefly to the Nauheim treatment. The author has, of course, visited Nauheim and is very fair and dispassionate and states facts as he has found them from his own observations. The treatment is, as is now well recognised, an excellent one in certain selected cases and Dr. Morison does not err in indiscriminately recommending it. The effect of mechanical exercises as devised by Zander, Oertel, and Schott is discussed at considerable length. There is an appendix by Medizinalrat Dr. Groedel of Bad Nauheim in which the ground is recapitulated. The book contains a good deal of useful clinical observation.

Manual of Chemical Analysis, Qualitative and Quantitative. By G. S. NEWTH, F.I.C., F.C.S. London: Longmans, Green and Co. 1898. Price 6*s.* 6*d.*

MR. NEWTH opens his preface with a very sensible diatribe against the somewhat prevalent idea that a specific analysis may be performed satisfactorily without learning more than a minimum amount of chemistry. Thus as a teacher he was once introduced to an intending pupil whose anxious and interested father did not want his

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boy to "waste his time learning about oxygen and hydrogen and all that" but he simply wished him to "do copper." This book is not suitable for such a one, since it is primarily intended to teach analytical chemistry. Mr. Newth has already contributed two very excellent practical text-books on chemistry of a high educational order (*vide* THE LANCET, Dec. 3rd, 1892, and Dec. 22nd, 1894), and so we were not unprepared to find the present volume on qualitative and quantitative analysis to be written on the same consistent level. Moreover, his position as demonstrator in the Royal College of Science, London, gives him authority to speak on the best methods of instilling sound ideas. The directions with regard to the carrying out of an analysis, be it qualitative or quantitative, are clear and concise, attention being very properly directed to those details of manipulation which are essential to success. The first chapter is thus devoted to preliminary exercises on filtration, solution, evaporation, fusion, precipitation, ignition, and neutralisation. This is followed by the reactions of the metallic salts, the detection of the non-metals and their acids occupying chapters XI. to XVII. which concludes Book I. In Book II. will be found the directions for carrying out quantitative work (Part I.) gravimetrically and (Part II.) volumetrically (including gas analysis), while Part III. is devoted to the estimation of carbon, hydrogen, nitrogen, chlorine, and sulphur and phosphorus in organic compounds. A section is added on miscellaneous physico-chemical determinations, such as the specific gravity of solids and liquids, boiling point, melting point, and vapour density. The appendix contains tables of data useful in analysis.

The author has made the most of the space which a comparatively small volume has afforded him and the book will be found a reliable guide and an excellent companion for work at the chemical bench.

Janus. Troisième année. Première Livraison. Juillet-Août, 1898. Amsterdam: F. Van Rossen.

THIS is the first number of the third volume of the international journal which treats mainly of the history of medicine and of medical geography. Published in Amsterdam and edited by Dr. H. F. A. Peypers of that city, it contains contributions in English, French, German, and Italian, and comprises in the list of its supporters the names of well-known physicians all over the world. A paper of much interest to the English reader is that by Dr. J. F. Payne dealing with some "Letters and Fragments of Thomas Sydenham." These are four in number—namely: 1. A private letter to his friend, Dr. Gould, Fellow of Wadham College, Oxford, dated from "*Pell Mell*, Dec. 10th, '87," or two years before the death of the writer. After informing Dr. Gould of the safety in administering opiates to a variolous patient salivated by mercury Sydenham goes on to refer to his own unpopularity (surmised by the editor, Dr. Payne, to be due to his previous connexion with the Puritan party) and to the care he had taken to write nothing beyond that which was "down-right matter of fact" based on personal observation. 2. This is a petition of "Capt. Thomas Sydenham" to Oliver Cromwell, preserved in the State Paper Office. It was written in 1653 and refers to the services rendered to the cause of the Commonwealth by the petitioner and his brothers Major John Sydenham and Major Francis Sydenham, both of whom were slain in the Civil War. The petition was favourably received, the sum of £600 being awarded to Sydenham by the Council. 3. A letter to a patient whose case was deemed by Sydenham to be "only that which in men we call Hyperchondriacall, in women Hystericall ....." advising a temporary abstinence from medicine, and then, if the symptoms continued, to make trial of Peruvian bark, at the same time expressing a wish that he (the patient) might have an attack of the gout, as being of itself a "bitter but most effectual remedy." 4. The last excerpt is from some notes in English written in 1669 and criticising somewhat freely the current practice in regard to small-pox and reiterating his confidence in conclusions drawn from his own observations. "The Plague at Formosa" is the title of a brief article by Dr. J. Matignon, and Dr. Brandt writes upon the Medical Geography of African Diseases. There is also a learned account of an Antique Vase, which is of medical as well as archæological interest, by Dr. A. Kronfeld of Vienna, and the first part of an article upon the Early Periods of Anæsthesia by Dr. Cabanès. The bibliographical and other summaries are exceptionally full and varied and the number includes several plates illustrative of beri-beri at Java, which are copied from a report by Dr. Vordermann exhibiting patients suffering from the disease, the hospitals for their reception, and the kinds of rice to which the malady is attributed.

Diseases of the Kidneys and Genito-Urinary Organs. By Professor Dr. PAUL FÜRBRINGER. Translated by W. H. GILBERT, M.D. Vol. II. London: H. K. Lewis.

THE diseases of the kidneys considered in this volume are those which depend upon suppuration, calculus, tumours, and abnormalities; the remainder of the space is devoted to diseases of the bladder, urethra, and genital organs. This volume represents a large amount of labour and is filled with the different opinions of various authorities. In dealing with the results which follow a stone in the kidney more stress might with advantage have been laid on the condition of calculous anuria which usually first comes under the notice of the physician and which requires prompt recognition if surgical treatment is to be of any avail. In discussing the various operative measures in cases of calculus the advantages of nephrotomy over nephrectomy are clearly pointed out, but it would have been well also to have made the advantages of an early operation more clear, for statistics of operations clearly show that the mortality is very much less in cases which are operated upon before any definite changes have taken place in the renal tissue itself. The affections of the genital system are very fully discussed and the different indications for treatment are clearly pointed out. This volume contains a large amount of information and will prove a very useful work to all who wish to consult the principal views which are held by the different authorities of the present day. There is an excellent bibliography at the end for those who desire further references.

The Removal and Disposal of Town Refuse. By WILLIAM H. MAXWELL, Assistant Engineer and Surveyor, Leyton Urban District Council. London: The Sanitary Publishing Co., Ltd., 5, Fetter-lane, Fleet-street, E.C. 1898. Price 15*s*.

IT will be admitted that a book which includes "a *résumé* of the law bearing on the subject, a consideration of the nature of town refuse, a discussion of the various systems of its collection, and finally an investigation of the methods of its sanitary and economical disposal, or in some cases utilisation," must cover practically the whole of the ground of one very important branch at any rate of sanitary engineering. This branch, however, does not include the very wide subject of sewerage and sewage disposal, the title which Mr. Maxwell has chosen for his book referring strictly to house, trade, and street refuse; although, again, it is difficult to separate for the purpose of classification the removal and disposal of excreta where the pail, privy, cesspool or midden system is in vogue. Undoubtedly the most interesting part of the work is that dealing with

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"refuse destructors," "destructor accessories," and the economic means available for utilizing the heat of combustion of waste materials, as in the application of Mr. Halpin's system of thermal storage recently installed at the Shoreditch Destructor and Electricity Station. This installation in particular is fully described on pages 327 and 328, and the engineering principles involved in the working of this ingenious system are made perfectly clear. A more miscellaneous mixture than common house garbage can hardly be imagined, and this fact largely militates against its economic destruction by heat, not to say utilisation of what fuel value it may possess for the purpose of steam-making. But considerable advance has been made in this direction only within the last few years. It was not long ago when a great proportion of London house refuse was dumped down on almost every available open space to the exceeding detriment of the inhabitants near by and the depreciation of the property. Huge heaps have thus accumulated on the marshy grounds on the banks of the lower reaches of the River Thames. With the great increase in the metropolitan and suburban population the evil grew at an alarming pace and the problem had to be seriously faced. Engineering has been brought to bear upon the matter with success, and with few exceptions now "destructors" are at work on all sides. And these heat appliances in some instances are not mere "destructors" but "converters" also—that is, extracting and utilising, perhaps in the production of electric energy, any calorific value that the "rubbish" may possess. So far the dust problem has gone ahead of the sewage problem from the points of view of both disposal and utilisation. We venture to think that this is because the sewage disposal question, unlike that of garbage, is not exclusively one for engineers to approach. It requires the joint efforts of the chemist, biologist, and engineer. With this essential combination at work we may soon hope for a satisfactory solution of the sewage problem; and indeed very encouraging results, as is well known, have already been obtained as an outcome of the three aspects of the problem having been attacked in concert by experts severally concerned in the three branches of science just indicated.

But there are other matters affecting the health and comfort of the public, and with these also Mr. Maxwell deals. Indeed, it will be seen that such a book is indispensable to our local health authorities, vestries, and similar bodies, and we believe we are right in saying that it is the first really comprehensive work on the subject. On reflection this must be so, for the material in the chapters is in the main based on quite recent advances in methods of disposal and utilisation. In the first chapter the sewerage and cleansing of streets, the question of the best materia for paving streets, and the removal of snow, are amongst the important subjects touched upon. To grapple efficiently with these problems is the duty—and it is often an arduous one—of our local authorities, who in particular owe Mr. Maxwell a word of thanks, we think, for placing at their disposal so much valuable material and information on just those subjects which are of direct practical concern to them. The book is well written, well devised, and comprehensive, so far as the subject goes—and none can dispute that the subject is a broad one. Mr. Maxwell has contributed a valuable book of reference and a guide upon a most important branch of work which is closely connected with the health and well-being of the public.

De la Symphyséotomie à la Clinique Baudelocque. Dec. 7th, 1896–Dec. 7th, 1897. By Professor PINARD. Paris: G. Steinheil.

DURING the year ending Dec. 7th, 1897, the operation of symphysiotomy was performed 7 times in the Clinic Baudelocque, making a grand total of 89 such operations performed in that clinic during the six years 1892–97. Six of the cases were examples of rickety, flattened pelves, while the remaining case was one of a Naegelé oblique pelvis. Of the mothers 2 were primiparæ and 5 multiparæ; of the former 1 died from sepsis and acute albuminuria, the latter complication being present upon her admission to the clinic. All the children were born alive, 3 being delivered by forceps and 4 by version. In one patient the operation was performed for the second time, her second pregnancy having been terminated by symphysiotomy in 1892. At the first operation a tear occurred through the anterior vaginal wall into the operation wound, and at the second operation a similar accident happened in spite of every care being taken to prevent it. The urethra and bladder, however, escaped injury and the wound healed well. In the event of this patient again becoming pregnant Professor Pinard considers that Cæsarean section would be indicated on account of the cicatricial tissue present in the anterior vaginal wall. That symphysiotomy may produce some permanent enlargement of the pelvis seems to be shown by the fact that 4 of the patients delivered spontaneously during the year had previously had symphysiotomy performed upon them. The report is of interest as enabling us to watch the progress of the operation. Professor Pinard justly points out that in any future history of symphysiotomy a very important place will have to be assigned to the work done at the Clinic Baudelocque. That the operation is now established upon a firm basis is shown, he thinks, by the fact that in the discussion at the Moscow Congress no one was found to attack the favourable opinions expressed about it by Varnier, Zweifel, and Küstner.

LIBRARY TABLE.

Transactions of the Reading Pathological Society, 1896–97.—The oldest pathological society in the United Kingdom has only issued two volumes of Transactions, of which the one under review is the second. It is edited by the President, Dr. H. Phillips-Conn, and the honorary secretaries, Dr. W. J. Maurice, Dr. Guilding, and Dr. J. B. Hurry. Eighteen articles are contributed by various members of the society. Perhaps the most interesting from a practical point of view is a note by Mr. H. G. Armstrong on the Distribution of the Rash in Scarlet Fever. He quotes sundry authorities, nearly all of whom say that the rash does affect the face, and one of whom (Aitken, 1880) says that the rash appears *first* on the face. Thomas of Leipsic says that the rash appears only on the temples and forehead and so does Fagge (1891). Mr. Armstrong has made notes of eleven cases with the result that he considers Thomas's opinion strictly correct. He says: "As the flush disappears on the termination of the fever the upper margin of the true exanthem may be seen on the neck just below the ramus of the jaw and occasionally on the temples and forehead at the roots of the hair, the lobes of the ears being almost always affected. ..... The rash of rubella ..... makes its first appearance on the cheeks and at the root of the nose." Mr. Armstrong thinks this a valuable diagnostic point. Dr. Alfred Ashby has a very interesting paper upon Small-pox and Vaccination.

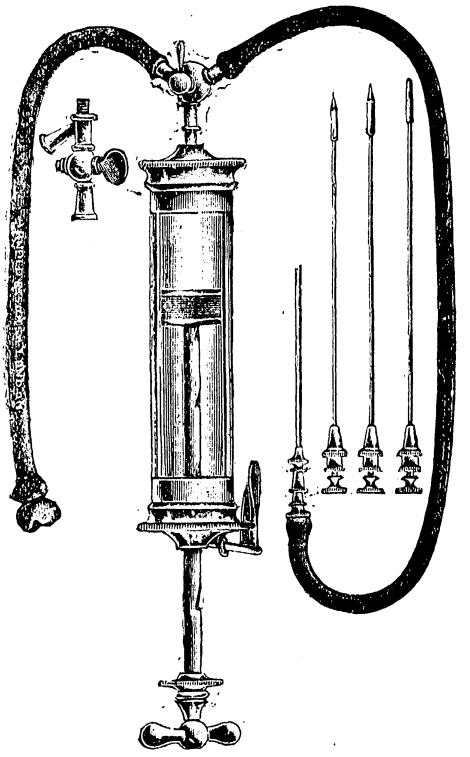
ILFORD MEDICAL SOCIETY.—At a meeting of medical men held at Mr. M. J. Houghton's residence, it was unanimously decided to form a medical society for this district. Twelve gentlemen attended. Mr. Best was elected President, Mr. Drought treasurer, and Mr. H. Ernest Watts secretary. A small sub-committee consisting of the officers elected and three other members, Mr. Bell, Dr. Fraser, and Dr. Appleyard was also appointed. Meetings are to be held monthly at members' houses in rotation, when a paper is to be read, cases are to be shown, and medical topics discussed. The subscription is nominal. The first meeting will be held at the President's house, High-road, Ilford, on Oct. 6th, at 9 P.M.

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New Inventions.

NEW ASPIRATOR.

MESSRS. ARNOLD AND SONS have made for me an aspirator which works on the Dieulafoy principle, but the nozzle of the pump is a three-way detachable tap, with the three branches arranged to exactly trisect a circle. A spring catch prevents recoil of the plunger and maintains the vacuum at 20, 40, 60, 80, or 100 cc. For exploration fix the syringe to the nozzle which lies in the continuity of the tubing, and close all the branches; then draw the plunger to the size of vacuum desired, insert the needle or trocar, and place the indicator between the ascending and middle branches. If there is fluid it will be aspirated into the syringe, then if the fluid appears to be such as would run by syphonage, place the indicator between the ascending and descending branches, and remove the syringe with a sample of the fluid, leaving the tubing and tap *in situ*. If syphonage should stop by blocking of the cannula or tubing, both limbs of the syphon can be flushed out with any antiseptic fluid from the syringe.



The advantages claimed for the instrument are as follows: 1. It allows the operator to establish syphonage by simply turning the indicator without disturbing the tubing. 2. It gives him complete control over the operation by placing the syringe at his disposal to flush out the tubing and cannula if necessary without admitting air or disturbing the tubing. 3. The spring-catch by preventing recoil of the plunger maintains the size of vacuum desired. 4. Exploration, syphonage, or aspiration and washing out a cavity can be carried out under the most perfect antiseptic conditions and without admitting air. 5. The plunger is always efficient and works smoothly. 6. By means of the three-way nozzle anyone possessed of an aspirating needle or a trocar with side branch can extemporise a more useful instrument than the ordinary Dieulafoy aspirator by means of a glass syringe and rubber tubing. 7. Compared with the bottle aspirator it has all the advantages of Dieulafoy's design for dealing with pus. 8. The whole instrument can be readily taken to pieces and sterilised.

Beeston, Notts. WILLIAM CATTO, M.B., C.M.Edin.

FACILITIES FOR CLINICAL INSTRUCTION IN INFECTIOUS DISEASES AFFORDED BY THE HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

THE study of infectious disease is a very necessary part of the student's curriculum, but it is only within recent years that proper facilities have been afforded for taking advantage of the valuable material to be found in the fever hospitals of the Metropolitan Asylums Board. In former years the student had but few opportunities of becoming familiar with the natural history of this branch of medicine, and it was by no means an unheard-of event for a student to complete his career without having seen half a dozen cases of infectious disease. That there is still evidence of the state of affairs which formerly obtained may be gathered from the fact that during 1895 no fewer than 1277 patients, or a percentage on the total admission into the Metropolitan Fever Hospitals of 7·6, were, after admission, found not to be suffering from the diseases mentioned in the medical certificates upon which they were removed to hospital, the percentage of mistakes at the Eastern Hospital at Homerton being 11·0 of the total admissions. At the present time five of the admirable hospitals of the Asylums Board—viz., the Eastern at Homerton, the Western at Fulham, the South-Eastern at Deptford, the South-Western at Stockwell, and the North-Western at Hampstead, are open under certain conditions to students and medical practitioners, while instruction in small-pox is also afforded at the small-pox ships in the Long Reach, near Dartford. A student desirous of taking a course at one of the Board's hospitals must have completed his third year and have held the offices of clinical clerk and dresser; he must then obtain the sanction of the medical school to which he belongs and pay a fee of three guineas for the first three months, and one guinea for each subsequent month to the clerk of the board, from whom he receives a card indicating the hospital to which he is to be attached. At this hospital he must attend at stated times for at least two days in the week for a minimum period of two months, and on the completion of his attendance he receives a certificate from the medical superintendent whose lectures and classes he has attended. While in the hospital the student places himself under the control of the medical superintendent, and is bound to observe the regulations in force for the prevention of spread of infection. These rules comprise the wearing while within the hospital wards of brown holland overalls, consisting of coat, trousers, and cap, which are provided by the board, and the use of what may be termed a discharge block, which consists of an infected room where the overalls are left, a lavatory, and a theoretically uninfected room. The students are further required to keep their hair short and to be efficiently protected against small-pox. A duly qualified medical practitioner has equally to conform to these regulations and must obtain the consent of the medical superintendent of the hospital at which he elects to attend. The student who attends these courses will obtain a fair knowledge of infectious disease, which will stand him in good stead in years to come, while he will also get an insight into the management of fever hospitals and the methods of disinfection practised therein.

The provisions with regard to instruction in small-pox differ somewhat from the above, as it is necessary for the student to reside for from two to four weeks on the small-pox ships, where he is provided with rations, apartments, and washing at the extremely moderate sum of 12*s*. per week. The student has to travel to and from the hospital ships on the ambulance steamer and to furnish himself with a suit of clothes to which he does not attach much value, in order that it may be disinfected or destroyed at the termination of the period.

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THE LANCET.

LONDON: SATURDAY, SEPTEMBER 10, 1898.

FOR those of all creeds there is wealth of material for profound thought in the admirable and comprehensive Presidential Address which Sir WILLIAM CROOKES, F.R.S., V.P.C.S., delivered before the British Association for the Advancement of Science at Bristol on Wednesday. Sir WILLIAM CROOKES has devoted his life to science and his laborious and painstaking researches have, as is well known in all scientific circles, borne abundant fruit mainly in the direction of throwing more light on the constitution of matter and on the evolution of the elements. This is not the only occasion upon which Sir WILLIAM CROOKES has addressed the British Association. More than a decade ago at a similar meeting he ventured the hypothesis of the so-called meta-elements, ascribing the apparent fluctuation of atomic weights to groups of atoms comprising, so to speak, a cluster round one common number. Then there were indications occurring in his masterly researches of the atomic value of the same element differing slightly, a circumstance which would quite account for the difficulty of raising the supposition of PROUT from the grade of hypothesis to that of a theory. The genesis of the elements, however, formed but a small part of the address at Bristol, though the President made a very important announcement as the result of the exceedingly penetrating character of his spectroscopic studies. The air just now would seem to be full of new elements, most of which appear to be of a singularly inert type; but Sir WILLIAM CROOKES announced the appearance of a new element occurring in the rare earths which he proposes to call "monium." He says it has a marked individuality, but although so young and wilful "it is willing to enter into any number of chemical alliances." He apologised for adding yet another element to an already long list, but when we regard them, he added, in the light of component parts of a dominant element, frozen in embryo, and arrested in the act of coalescing from the original protyle into one of the ordinary law-abiding families for whom NEWLANDS and MENDELÉEF have prepared pigeon-holes, they arise to supreme importance.

Recent events and public discussion of a matter of great national importance have evidently prompted the eminent chemist to choose as part of his Presidential Address the question of food supply. At the outset Sir WILLIAM CROOKES was decidedly pessimistic as to future demands being supplied by the ordinary methods of agriculture. It is the chemist, he asserts, who must come to the rescue of the threatened communities. In other words, it is through the laboratory that starvation may ultimately be turned into plenty. Sir WILLIAM CROOKES looks upon the exhaustion of the world's stock of fixed nitrogen as a matter of far greater importance than the exhaustion of British coal-fields. The former would mean not only a catastrophe little short of starvation for the wheat-eaters, but indirectly scarcity for those who exist on inferior grains together with a lower standard of living for meat-eaters, scarcity of mutton and beef and even the extinction of gunpowder. Every square yard of the earth's surface has nitrogen gas pressing upon it to the extent of about seven tons, but in the *free* state, and wheat demands it *fixed*. In the free gaseous state nitrogen is worthless, but 27 tons weight in the atmosphere combined in the form of sodium nitrate would be worth £2000. The question arises, How, then, are we to utilise the abundant element for such a mighty purpose? Sir WILLIAM CROOKES showed some time ago that the nitrogen of the air could be converted directly into nitrous and nitric acids by passing a strong induction current through ordinary air, when it takes fire and burns with a powerful flame. This inconsiderable experiment, he mentioned, may not unlikely lead to the development of a mighty industry destined to solve the great food problem. The suggestion makes the recent announcement of the alleged synthesis of albumin pale into the merest insignificance. It is all a question, in short, of power which Sir WILLIAM CROOKES seems to think Nature could be made to supply. In short, the fertiliser of the future is to be electric nitrate produced, say, by Niagara or some colossal natural force as soon as we come to know how to turn it economically to account.

Sir WILLIAM CROOKES'S observations on recent researches which have bred newly-discovered elements such as argon and helion are of interest. Referring to his own researches the President confessed he had been engaged upon "the waste-heaps of the mineral elements," but Professor RAMSAY "is dealing with vagrant atoms of an astral nature." From the discovery of new elements he then passed to new vibrations—wireless telegraphy—referring chiefly to the investigations of Signor MARCONI. This naturally led him to the Roentgen rays, the discovery of which was due to the vacuum tube bearing Sir WILLIAM CROOKES'S own name. The nature of these rays is still unfathomed. As has been shown by Dr. RUSSELL, a ray-emitting power appears to be a general property of matter, for he has demonstrated that nearly every substance is capable of affecting the photographic plate if exposed in darkness for sufficient time. The property is most marked—as we have shown in our columns—with uranium and thorium compounds.

Sir WILLIAM CROOKES, as is well known, has been bold in expressing his views on what most people consider to be occult subjects and he has been taken to task for his attitude as a scientific man on these questions. He has been silent for some time, but he evidently felt that the trend of public thought has changed, and so he reverted to a subject which has recently attracted the attention of recognised men of science. Sir WILLIAM CROOKES believes the fundamental law of telepathy to be "that thoughts and images may be transferred from one mind to another without the agency of the recognised organs of sense, that knowledge may enter the human mind without being communicated in any hitherto known or recognised ways." The subject obviously presents

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many difficulties in the way of practical inquiry, investigation, and elucidation; but we do not doubt that some are prepared to accept this postulate. Molecular movements occur in the brain during thought processes and it is conceivable that physical vibrations are set up capable from their extreme minuteness of acting directly on individual molecules, while their rapidity approaches that of the internal and external movements of the atoms themselves. We need only refer to the Roentgen ray phenomena and the transmission of electric waves without wires in order to find an analogy which lends considerable assistance to the idea.

It will be conceded that in spite of the wide range of subjects which the President thought fit to include in his highly interesting address, yet he preserved with conspicuous success a continuity of reasoning and thought throughout. The subjects touched upon were such as will provide abundant opportunities for reflection for all classes of thinking people. The address bristles with some of those fascinating suggestions which have arisen as the outcome of the enormous progress of scientific research during the last few years. Sir WILLIAM CROOKES has crystallised into characteristically simple language these advances, and his eloquent peroration should afford a powerful stimulus to all those engaged in wresting the hidden secrets from Nature. "Steadily, unflinchingly, we strive to pierce the inmost heart of nature, from what she is to re-construct what she has been, and to prophesy what she yet shall be. Veil after veil we have lifted and her face grows more beautiful, august, and wonderful, with every barrier that is withdrawn."

WE have recently[1] had occasion to notice the interesting and beautiful geological model of London and its suburbs constructed by Mr. JAMES B. JORDAN, F.G.S. This gentleman is well and favourably known to meteorologists by his contributions to their branch of science, by his invention of the glycerine barometer, the daily records of which are published in the *Times*, and by his admirable photographic sunshine recorder, both of which are known by his name. He is, perhaps, better remembered by medical men as the joint author with the late Mr. WILLIAM TOPLEY, F.G.S., of the "Geological Survey of England and Wales," of the excellent geological models of the south-eastern portion of England, including the Wealden district,[2] and of the Thames Valley, which last, as Sir A. C. RAMSAY, LL.D., F.R.S., states, clearly explains the relation of the river to the geological formations through which it has cut its way from source to sea. In all these models London is well represented and this reminds us of the splendid geological model of London which stands in the Museum of Practical Geology, 28, Jermyn-street, St. James's, S.W., where it attracts annually many visitors, who, owing to its large scale—six inches to one mile—are able to satisfy themselves as to the altitude above sea level and the nature of the geological formation of any locality in which they may be interested, the names of the streets, roads, parks, &c., being legibly engraved on the map before them. Then, again, the model is so constructed that not only are the more deeply seated rocks shown in coloured sections along the four sides of the model, but mechanical contrivance is resorted to by which the separate blocks of the model into which it is divided are capable of being raised above the surface, so as to expose other sections in various parts of the London area. This model has been described by Mr. W. WHITAKER, F.R.S., in his valuable work on "The Geology of London," who also adds Mr. J. B. JORDAN'S account of the constructional arrangements which he carried out in making it. All these models, therefore, it will be at once conceived, cannot fail to impress upon the geological student the local and general facts associated with the several areas represented and consequently are of eminent service to him. But their usefulness is not confined to these geological teachings; in these days of progress in sanitary science members of our profession gladly welcome such models, as they open up a vast field of inquiry as to the relations which exist between the soils and subsoils of defined areas and the various causes of disease prevailing within them.

Let us, then, see how these geological models can be applied to the practical requirements of the medical man whilst studying the statistics of disease within the areas they represent, and for this purpose we will include the map lately published by Mr. HORACE B. WOODWARD, F.R.S., to illustrate his admirable memoir on "Soils and Subsoils from a Sanitary Point of View; with Especial Reference to London and its Neighbourhood,"[3] reviewed in THE LANCET of Feb. 5th (p. 372). The horizontal scale of Messrs. TOPLEY and JORDAN'S geological model of the south-east of England is four miles to the inch, the same as that of the index map of the Ordnance and Geological Surveys; Mr. WOODWARD'S map just referred to is on the same scale. In 1888 the Ordnance Survey Office, Southampton, issued a series of Diagrams of the Sanitary (Registration) Districts in each county of England and Wales, showing also the boundaries of the civil parishes contained in each on the same scale as the index map, the boundaries of the registration or sanitary districts being coloured red and those of borough or other urban sanitary districts brown and blue respectively. Now if a clear piece of tracing-paper or linen be taken and applied to any of these diagrams a correct copy of the boundaries of the districts can be made in red ink, and when completed applied to the map or model so as to enable us to study the geological colouring and the physical configuration of the area comprehended within the boundaries of each district as they appear to us through the transparent paper or linen on which the boundaries are defined; in some instances glass may be used when the boundaries have been drawn on it. As a matter of detail it is necessary to trace the courses of some of the characteristic rivers, such as the Thames, in the model and map selected, so as to enable us accurately to adjust the tracing to the map or model. Mr. JORDAN'S model of London and its suburbs above referred to is on the larger scale of one mile to an inch, but

[1] THE LANCET, July 16th, 1898, p. 162.
[2] London: E. Stanford.
[3] London: Eyre and Spottiswoode.

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the method which we have explained is equally applicable to it when the boundary lines of the several districts on the same scale have been procured. We believe that for many years the above method has been adopted by Mr. ALFRED HAVILAND in studying the medical geography of Great Britain.

It will be evident to our readers that such relief maps as we have briefly noticed cannot fail to be of great usefulness in the study of the physical configuration and geological structure of a country in relation to the causes of disease. The all-important factor in local climate—aspect—is at once grasped through their means, and all can appreciate the value of such a help in this direction; again, the pent-in valley systems, where natural air-flushing is defective on account of the obstruction offered to prevailing winds, are displayed before us as if we were viewing them from one of the surrounding heights. Eleven years ago, at a meeting of the Scottish Meteorological Society in Edinburgh, it was proposed to select sites for the outdoor treatment of the phthisical, and it was urged that the country should be well and carefully studied with the view of selecting sites for buildings devoted to this purpose; in such a selection the advantages offered by relief maps would be incalculable as they facilitate the process of eliminating inappropriate sites at once and thus afford more time for the critical examination of others which promise to fulfil the required conditions of aspect, altitude, soil and protection from adverse winds. In these days when an effort is being made to disseminate knowledge with regard to the prophylaxis of tuberculosis, which has hitherto been ever amongst us, ravaging and despoiling our population, it is to be hoped that the publication of relief maps will be undertaken by the Government and not be left to private enterprise, as hitherto has been the case. Then, again, in that wide field of research, bacteriology, these geological models present an opportunity to our profession to study the habitats of those "hidden foes" which make so great a mark on our death-rates and the natural history of which as regards their relation to soil remains as yet almost a *terra incognita*.

OMDURMAN has fallen, the Egyptian flag and the British standard are flying at Khartoum, the great Dervish army has been utterly defeated, the Khalifa is a fugitive, the neck of a cruel and oppressive tyranny has been broken, and, to the relief of all, and especially of the unhappy inhabitants of the Soudan, there is a complete and final end to the power and prestige of Madhism. Such, briefly summarised, is the welcome news from Egypt which has given rise to a sense of relief and rejoicing in this country and to much unstinted praise on the continent of Europe and in the United States of America. We do not think that the situation could be more tersely or generously stated than has been done in a Paris paper—the *Temps*—which recognises that it was a real *tour de force* to bring so far from its base into the desert, and especially by the Nile, the course of which is so frequently broken by cataracts and studded with rocks, an army perfectly equipped, in admirable training, and in the best of sanitary conditions. All had, it says, been foreseen, calculated, and regulated by the simplest means and according to a general plan so scientific that the march may be likened to the solution of a mathematical equation. That the difficulties which have been encountered in transporting a large army equipped with all the weapons and appliances of modern warfare some twelve hundred miles have been successfully overcome so that the Khalifa's army has been utterly defeated outside his capital with relatively little loss to the force under Sir HERBERT KITCHENER'S command is no doubt a striking military achievement of which any nation may well feel proud.

On the design, organisation, and conduct of the campaign, the tactical skill o the general, and the discipline and gallantry of his troops there is no need to dwell. The nation is to be congratulated on having such an army as that which fought at Omdurman and the army is to be congratulated on having found a general of such conspicuous ability as Sir HERBERT KITCHENER. But we may legitimately refer to the medical arrangements for the expeditionary force, which seem to have been admirably carried out. If our campaigns in various parts of the world since the Crimean war be compared with those of other nations the British medical service will have no cause to feel ashamed of the results of the comparison. So long as war is war and military success is necessarily its first object it is futile to expect that army hospitals can be equipped with such an elaboration of comfort as to leave nothing to be desired, nor indeed is it to be wished that soldiers on service should keep pace with the habits of a luxurious age. All that is practically attainable should, however, be provided, and we are glad to recognise that every succeeding war shows a progressive improvement in these respects. By lessons of experience we have been schooled into forethought and attention to medical and sanitary details with the result that we have been steadily but surely improving in the management of our small campaigns and military expeditions. Time is no doubt an important element, for success is in proportion to preparation. The more unexpected and sudden the outbreak of war and the more rapid the conduct of a campaign the harder it obviously becomes for all branches of the military service, and especially for the medical transport and supply branches, to fulfil the requirements of an expedition. The Soudan campaign no doubt gave time for the needful preparation, of which apparently full advantage was taken, for it is probable that no force was ever better or more completely organised and equipped in these respects than the force which went to Omdurman under Sir HERBERT KITCHENER.

We congratulate the officers of the Royal Army Medical Corps on their share in the successful issue. The total number of casualties among the Anglo-Egyptian forces at Omdurman was 387. The British killed were 2 officers and 23 rank and file, while 7 officers and 99 rank and file were wounded. 6 British officers attached to the Egyptian army were wounded—137 British casualties in all. We much regret to notice the name of Lieutenant-Colonel A. J. SLOGGETT, R.A.M.C., among the list of severely wounded and trust that he may speedily recover. Lieutenant-Colonel SLOGGETT was the senior medical officer

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with the First Brigade under the command of Brigadier-General WAUCHOPE, C.B., and had been previously mentioned in despatches for his services in the Dongola campaign. Now that the Royal Army Medical Corps is for the first time an amalgamated corps we should not omit to mention that a private and lance-corporal of that corps were also among the wounded. It will be seen, at any rate, that the officers and men of the Royal Army Medical Corps run all the risks of battle in addition to those which they specially incur from the nature of their calling. Sir HERBERT KITCHENER in a telegraphic despatch from Omdurman of Sept. 4th says that "the British wounded have all left for Abadia in barges towed by steamers. I saw them before leaving and they were all doing well and were comfortable." We venture to add an expression of sympathy with the *Times* on its loss of the services of two of its war correspondents, one of whom was killed and the other severely wounded.

Annotations.

"Ne quid nimis."

THE WATER FAMINE IN NORTH-EAST LONDON.

THE situation in the district supplied by the East London Waterworks Company has not altered for the better since we described it a fortnight ago, for the heavens still refuse rain. That it has not altered materially for the worse and that the public health remains fair must be looked upon as a piece of good fortune for the company commensurate at least with the bad fortune which they are experiencing in running short of water during a drought. For if an epidemic of any kind should break out in north-east London the medical men would have hard work to keep the mischief under when deprived of the most natural and efficacious remedy against zymotic diseases—water. Proceedings are now being taken to place the mains of the company in communication direct or indirect with those of two other companies, and when this has been done all fear of an absolute water-famine will be at an end. But with the tiding over of the temporary difficulty we hope that the occurrence of these annual breakdowns will not pass from the recollection of the people of London. They ought not to occur, and if the company cannot prevent them the company would appear to be unable to carry on its business. There is an alternative. It may be said that the company can manage its works at least as well as any municipal or central body would be able to manage them, but that if there is not the water the water cannot be supplied. In this way the relations during the last two or three summers of the East London Waterworks Company with their clients form a strong argument for the augmentation or alteration of the present source of the metropolitan water-supply.

SCIENCE AND MEDICINE.

DR. KANTHACK, Professor of Pathology at the University of Cambridge, recently delivered the mid-sessional address before the Abernethian Society of St. Bartholomew's Hospital. He chose for his subject "The Science and Art of Medicine" and the whole discourse was an earnest and impassioned plea for the more scientific teaching of medicine and for the impressing upon students the necessity of finding out if possible everything about a patient which can have any bearing on the case. Dr. Kanthack drew a parallel between medicine and a technical industry such as brewing. An art, he said, may be learned in two ways: first, by experience based on a rule of thumb principle, which is the English way; and secondly, by experience based upon systematic research, which is the German way. Citing Hansen's great work in revolutionising the brewing industry at Copenhagen Dr. Kanthack proceeded to point out that the more we know about fermentation the more we shall know about disease, for infection is merely a form of fermentation. In our happy-go-lucky British fashion we do manage somehow to get good beer, though the average English ale, to say nothing of Scotch ale, is somewhat heavy for this weather. But there is one technical industry in which a real knowledge of fermentation would be of infinite assistance, and that is bread-making. Why is it that ordinary baker's bread is simply uneatable after it has been baked two days? If it were made of good flour, good water, and carefully selected yeast it should keep quite fresh three or four days. There is at least one bakery, and there may be more, which pays attention to the yeast question, but everybody knows the usual stuff proffered as "bread." To return to Dr. Kanthack. He gave as another example the work done in Denmark, a small and poor country, with regard to the great tuberculosis question and compared it with what we are doing over here. True we have had a Royal Commission which has issued a report, and so, we might add, have we had a Commission on Vaccination, but neither of them have at present had very beneficial results. "Pathology," said Dr. Kanthack, "is not a subject of secondary importance inferior to practical medicine or surgery; it is the foundation of diagnosis, treatment, and prognosis." The late Dr. James Andrew, as sound a physician as ever lived, used always to tell his clerks that there was no place for learning like the post-mortem room and his admirable clinical teaching was always based upon scientific research. Another of his maxims was that the best book on medicine was Foster's Physiology, neither can there be any doubt of the truth of this. Even since his death the opportunities and advances of scientific research have increased enormously, and we can only hope that Dr. Kanthack's words will be taken to heart not only by his student audience but by those in whose hands lies the future training of our young medical men. With all our knowledge we are still very much in the dark about the causes and processes of disease. It is the "why" we must seek for; when we have found this we shall be better able to say how to treat it and for this reason we must inculcate research upon the learner.

SALE OF DRINK TO CHILDREN.

A CORRESPONDENT writes to us referring to our annotation in THE LANCET of August 27th entitled "Drink-fetching by Children." "It may be mentioned," he says, "that two deputations, one representing the temperance party and the other the licensed victuallers, have laid their views before the Manchester city justices. The latter deputation suggested that if any such intimation were necessary it should go forth through the press and not by circular, 'that it was the desire of the magistrates that vendors of liquor, wholesale or retail, should exercise care not to serve children of very tender years and should use their influence to minimise as far as possible what the temperance party considered to be a great evil.' One of the deputation stated that the Licensed Victuallers' Association had already issued a circular urging their members not to give sweets or toys to the children sent to their houses. He also said that if one licence-holder refused to serve children his neighbour might do so. Another said the restrictions placed on licencees had been the means of creating bogus

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clubs, to which 'young persons'—a euphemism probably for children—were sent for drink. The representative of Gilbey's mentioned the case of a licencee who refused to supply children under thirteen years of age and found they were sent to neighbouring clubs, so that he had through declining trade to sell his business. No doubt it is a difficult question to settle. It would be simplified if alcoholic drinks were only taken 'when necessary,' but necessity would in that case no doubt very frequently arise. The Lord Mayor complimented both deputations on the moderation with which their views had been expressed. In addressing his colleagues he said he need not remind them that there was no law to compel a publican to refuse to sell drink to children under thirteen for outdoor consumption. He assumed that they would not dream of sending out any circular instructing publicans not to supply such children, but there was no reason why they should not instruct the chief constable to issue one asking all licencees to assist the justices by refusing as far as possible to sell drink to children under thirteen. He moved the following resolution: 'That the justices of this city, assembled in special meeting for licensing purposes, desire to express their opinion, with which they feel sure all licencees will agree, that it is undesirable in the common interests of morality and good government to serve liquor to children under thirteen years of age, and most earnestly request that all licencees will assist the justices in carrying out this very laudable object to the best of their ability.' In the discussion which followed there was a general agreement with the views of the Lord Mayor. Dr. Woodcock thought that 'their first consideration ought to be, not the convenience of the parents, but the future well-being of the children.' Mr. Shann said that a statement had been made to the Licensing Committee that in three-quarters of an hour on Sunday afternoon nearly 250 children between the ages of three and twelve had been served with beer at the public-houses in one street and most of them were seen to sip the beer as they took it home. It will take a long time for the mass of the people to learn that drink is a luxury, not a necessity, not always harmless, and all the more that the legislation concerning it was enacted in pre-scientific days when it was an almost universal article of belief that alcohol in some form was a necessary of life. People take drink, of course, because they like it, the educated ignoring the evidence of its being one of the chief causes of crime and physical deterioration, while the uneducated have temptations to drink that the 'better classes' know little about."

THE SEVENTH SON.

IT is comforting to see that Board schools and the spread of education have not yet altogether killed romance. On Sept. 2nd a weaver named "Doctor" Talbot was charged at Southwark Police-court with travelling on the railway without having paid his fare. The prisoner said that "Doctor" was his Christian name and he had had it given him because he was the seventh son of a seventh son, and therefore possessed the gift of healing. This is a very old belief and was sometimes varied by being applied to a seventh male child in succession, whether or no his father had been in like case. In *Notes and Queries*, June 12th, 1852, appeared the following: "In Saltash-street, Plymouth, my friend copied on Dec. 10th, 1851, the following inscription: 'A. Shepherd, the third seventh daughter, Doctress.'" In Lupton's "Notable Things," ed. 1660, we find: "It is manifest by experience that the seventh male child by just order (never a girl or wench being born between) doth heal only with touching, through a natural gift, the king's evil, which is a special gift of God, given to kings and queens, as daily experience doth witnesse." In France, especially in the Orleans district, the seventh son is called a *marcou*, he possesses healing powers, and is marked on the left side with a fleur-de-lys. On the Border the seventh son is marked with the seven stars and it is interesting to find that individuals of this class not only possess inherent healing powers but it is the usual custom to bring them up as "doctors." Wrightson, the Wise Man of Stokesley, who flourished some seventy years ago, was a seventh son. The belief is only one of the innumerable beliefs connected with the number seven. So numerous are these that a narration of them all would fill a volume of THE LANCET, but we may mention a few of them. From the very earliest ages the seven great planets were known and ruled this world and the dwellers in it, and their number entered into every conceivable matter that concerned man. There are seven days in the week, "seven holes in the head for the master stars are seven," seven ages both for man and the world in which he lives. There were seven material heavens and in the underworld described by Dante, the great Pagan dead who were not good enough for heaven or bad enough for hell reposed in a seven-walled and seven-gated city. There are seven colours in the spectrum and seven notes in the diatonic octave and the "leading" note of the scale is the seventh. Be it noted that the seventh son is not always gifted with beneficent powers. In Portugal he is believed to be subject to the powers of darkness and to be compelled every Saturday evening to assume the likeness of an ass. Wild and dreamy as all these legends and ideas are it is not impossible that underlying an almost universal belief there should be some substratum of truth. As Sir William Crookes reminds us, there are powers and influences of which we know nothing. The eye is insensible to the ultra violet rays which yet we know to exist. To quote Epictetus, "A little soul, for a little, bears up this corpse which is man," and this earth and all upon it is but a speck of dust in the vast expanse of the universe.

BOULIMIA.

ON August 27th an inquest was held by Mr. Negus Wood at Plumstead upon the body of William Ward, aged eighty-four years, an army pensioner, who died from asphyxia. At the post-mortem examination three pieces of meat measuring in all 12 in. in length were found in the deceased's "throat." Evidence was given that the deceased was always a gluttonous feeder and in the habit of bolting his food. His daughter-in-law said that she used to mince his food, but that even then he would bolt such large spoonfuls that he had to gasp for breath. A verdict was returned of "Accidental death." Instances of ravenous appetite are not uncommon, constituting the condition known as boulimia or bulimy, moreover this craving for food substances is sometimes associated with another condition known as polyphagism, when the sufferer eats pins, string, broken bottles, and other indigestible articles. In THE LANCET for May 5th, 1894, we commented upon the death of a man in the London Hospital whose stomach was found after death to be full of a heterogeneous mass of these things. Certain tribes in South America are known as earth-eaters from the habit they have of filling their stomachs with clay, and the custom of gorging is common among peoples who live a precarious life and scarcely know from one day to another when they will get another meal. Dr. Kane relates the case of an Esquimaux who ate an enormous quantity of walrus flesh and blubber, and in 1799 there was a French prisoner in England, by name Charles Domery, one of nine brothers who with their father were all remarkable for voracious appetite. One day he was allowed as much to eat as he liked and between 4 A.M. and 6 P.M. consumed 4 lb. of raw cow's udder, 10 lb. of raw beef, 2 lb. of candles, and five bottles of porter. The narrator remarks: "It is

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also to be observed that the day was hot, and not having his usual exercise in the yard, it may be presumed he would otherwise have had a better appetite." When unable to procure rational food he was accustomed to eat rats, cats, and dogs, and upon one occasion, when in action on board ship, feeling himself hungry, he began to eat the leg of a man, which limb had been shot off and was lying handy. We fancy the custom still exists in some parts of the country of having hasty pudding eating matches, and at a certain college in Oxford the following rite obtains or used to do twenty years ago. On Mid Lent Sunday the first lesson in the evening is Genesis xliii., which gives an account of Benjamin's mess, which was five times as great as any of the other's. Furmenty was always served in Hall on that evening, and the junior man at each table was considered as Benjamin and served with an enormous helping. If he ate it all he could "sconce"—i.e., fine the whole table in sherry—if he could not he was himself fined. When this custom originated no one knows, but it is probably like so many other old customs a remnant of paganism with a veneer of Christianity over it.

REPORT OF THE ASYLUMS COMMITTEE OF THE LONDON COUNTY COUNCIL.

THE ninth annual report of the Asylums Committee of the London County Council, presented to the Council on May 17th, 1898, has just reached us. The report deals with the following seven institutions: Banstead, Cane-hill, Claybury, Colney Hatch, Hanwell, The Heath (Bexley), and Horton. The most serious feature of the report is the marked increase in the number of lunatics chargeable to the County of London and its various parishes. Thus the total number on Jan. 1st, 1898, was 20,482, while on Jan. 1st, 1897, the total number was 19,937. There was thus an increase in 1897 of 545. Want of accommodation caused on Jan. 1st, 1898, 1526 lunatics to be boarded out at a cost of some £31,000 per annum, but every effort is being made to provide accommodation. Up to March 31st, 1898, 1284 lunatics were residing in asylums other than those belonging to the County of London. The total number under treatment in the seven above-mentioned asylums was 14,557 and the percentage of recoveries 7·85. We are glad to see that the salaries of the assistant medical officers have been increased, the scale of payments now being from £300 to £400 per annum for the first assistant medical officer down to £150 per annum for the fifth assistant medical officer and all appointments under. With regard to the Lunacy Bill reintroduced this session the report says: "In its present form we felt it our duty to again recommend opposition." Dr. F. W. Mott, the pathologist, whose duties were sadly interfered with by a severe attack of enteric fever, appends a most interesting report which we hope to notice more fully in a future issue. The table of the various occupations of patients shows that the largest number in any one class was supplied by, to make use of somewhat of a bull, females of no occupation. Of these there were 422. The next largest class is supplied by female servants, who number 216. Among the males labourers supplied 206; those of no occupation, 87; seamen, 24; boot- and shoe-makers, 21. There were two clerks in holy orders and one medical student. Alcoholic intemperance would seem to be the most active cause of insanity; starvation and privation give very low figures except at Claybury, where 35 patients were admitted with this as the exciting cause. Dr. Mott's report deals chiefly with the pathological features observed post mortem in cases of general paralysis. He also made some observations upon the urine and found that during the seizures of general paralysis there was often present an increase in the quantity of aromatic sulphates in the urine. Dr. Mott thinks that this may be due to tissue waste. As far as the nervous system goes, however, Dr. Wakelin Barratt examined a number of vagus nerves together with the cardiac branches of the sympathetic and with one doubtful exception found no degeneration. Degeneration of the peripheral nerves is not often found, says Dr. Mott, in general paralysis except in tabetic cases. In one case where a symmetrical bullous eruption was present there was shown degeneration of the anterior crural nerve and its corresponding spinal ganglia. Microscopic examination of the brain from patients who had died from general paralysis showed (1) bio-chemical and necro-biotic changes in the cells; (2) degeneration of the tangential system of fibres; (3) changes in the vessels and neuroglia cells. Portions of brains in which all the vessels had been ligatured in order to produce complete anæmia were also examined and changes were found in the nerve cells similar to those observed in the brains of patients who had suffered from general paralysis, except of course that there had not been time enough for the proliferation of the neuroglia cells. With regard to syphilis as a cause of general paralysis as well as of tabes dorsalis Dr. Mott found that in some interesting cases of general paralysis which he examined he could generally obtain a history of venereal infection. In 10 cases of juvenile general paralysis 8 showed undoubted signs of congenital syphilis. Atheroma is common in general paralysis, but cerebral hæmorrhage is very uncommon. This Dr. Mott attributes to the fact that cardiac hypertrophy is uncommon also. Another disease rarely seen in asylum practice is hepatic cirrhosis, although abuse of alcohol admittedly plays a large part in the production of insanity. Dr. Mott considers that the patients admitted to asylums suffer from an hereditary neuropathy and that alcohol produces toxic effects upon their nervous system long before cirrhosis of the liver can be brought about. Syphilis is by far the most important cause of organic brain disease in persons not much past middle life. It acts in various ways: (1) by causing specific arteritis, (2) by causing meningitis, and (3) by the formation of gummatous growths.

SUPPURATIVE SPLENITIS.

IN the *Maryland Medical Journal* of August 13th Dr. B. M. Cromwell, of Eckhart Mines, Maryland, describes a case of suppurative splenitis caused by tight-lacing and violent exercise, which was successfully treated by operation. The patient was a strong, healthy girl, seventeen years of age, who in order to escape an impending shower ran for the greater part of a mile on a hot day in August, 1897. After running for some time she felt a pain in her left side, and reached home in a state of more or less collapse. The pain ceased before she reached home and did not return until the next day, after which it was continuous. Dr. Cromwell, on examining her two or three days afterwards, found a deep sulcus about the margin of the ribs, and in answer to his inquiries the girl explained that while she was running her corset was loose enough but the band of her petticoat was too short and she had to pull it very tight to button it. Above and below the sulcus there was a marked tumefaction. Percussion revealed dulness over the whole of the left side, extending to near the brim of the pelvis and anteriorly to near the median line of the abdomen. The edge of the tumefied spleen could be plainly felt around the greater part of this dull space. The diagnosis was an enlarged and inflamed spleen, and as no improvement followed from iodine ointment and blistering an incision was carried through the abdominal parietes into the substance of the spleen. At first there was a copious flow of bright arterial blood, then a small ribbon of pus was mixed with it, and as the pus increased in quantity the blood diminished until the escaping fluid consisted entirely

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of pus, which continued to be discharged for many days under the influence of poultices, and for several days after it ceased there was a discharge of serum. The total amount of blood, pus, and serum was estimated at about 30 oz. The girl made a good recovery and is now in excellent health.

EVIDENCE AT INQUESTS AS TO CAUSE OF DEATH.

ON Sept. 2nd Mr. J. E. Hill, deputy coroner, held an inquest at Huddersfield upon the body of Hervin Hoyle, who died after being crushed by the fall of a door in a mill. The door in question was a sliding one hung by a counterpoise. Deceased was trying to pull it down when it suddenly descended with great force and deceased was caught underneath it. The door caught him across the chest and he called for help, but he died ten minutes after he was got out. Evidence was given that the chain of the door had slipped off the pulley. Another witness said that he had examined the place of the accident and could not arrive at its cause. The cream of the evidence, however, is the following, which we give together with the verdict in the words of the *Huddersfield Weekly News*: "Sarah Jowett, who laid out the body, said the spinal cord was broken." The jury returned a verdict, "That the deceased died from fracture of the spine, caused by the accidental falling of a door." Apparently no medical evidence was called at this inquest, and although Sarah Jowett may be able to say as her great namesake was made to say in the oft-quoted lines—

> "My name is ..... Jowett;
> Whatever is known, I know it,"

yet we do not think that her evidence is enough to satisfy scientific requirements.

THE JOYS OF PLAGUE NURSING.

WE should like to know why it is that a vestry or a municipality though it may be composed of gentlemen in its units seems to act in its corporate capacity in a manner in which no gentleman would ever think of doing and also in a hopelessly unbusiness-like fashion. The subjoined rules have been issued for the guidance of the Nursing Sisters who are helping to combat the plague in Calcutta and are printed as reported in the *Bombay Gazette* of July 11th:—

RULES FOR THE GUIDANCE OF LADY DOCTOR AND SISTERS.

The lady doctor is responsible to the medical officer of health and the chairman of the municipality for the good conduct of the establishment, and it is trusted that the sisters will cordially support her.

2. Sisters wishing to communicate with the authorities must do so through the lady doctor.

3. Sisters must be in to dinner every night and must not leave the premises after dinner, except with the leave of the lady doctor. Such leave will not be granted more than once a week and then only till 11 P.M., except under very special circumstances: the address at which the sister will be must be given to the lady doctor.

4. Sisters going out driving are required to let the lady doctor know their destination and their escort (if any): and she is given authority to modify the arrangements made, if she shall deem it necessary.

5. Visitors to the sisters must send in their card to the lady doctor.

6. Sisters to be in bed by 11 P.M.

7. In case of sickness the lady doctor is to be at once informed and she shall, if she shall deem it necessary, or if the sisters shall desire it, call in one of the senior medical practitioners of Calcutta; she shall also make such arrangements for the invalid as shall appear necessary, with the advice of the medical attendant, subject to the approval of the medical officer of health.

8. The household expenses are to be provided for by a fixed contribution from each person to be made as soon as the monthly salaries are paid. The payment to be made through the lady doctor.

9. At present each person is to contribute Rs.110 a month for board, lodging, light, and fuel and use of the servants provided by the landlady.

10. Personal servants, punkhawallahs, ice, and wines and aerated waters, dhobee and ghari hire to be provided by each person for herself.

11. There must be at least one personal servant between every two or three sisters; some public duty may be required from such servants at the discretion of the lady doctor.

12. No orders to be given by the sisters to any except their own personal servants and punkhawallahs except through the lady doctor.

13. Any complaints about the housekeeping to be made through the lady doctor.

14. Visitors may be invited to afternoon tea with the consent of the lady doctor. Ladies may occasionally be invited to other meals (with the consent of the lady doctor), at the expense of the person who invites them.

15. The rooms to be allotted at the discretion of the lady doctor, who may subsequently alter the arrangements, if she shall consider advisable.

(Sd.) R. T. GREER, Acting Chairman.

These ladies, be it remembered, have gone out to nurse plague patients and thus assist the municipality in a very sore strait. We should have thought that the powers that be would have tried their utmost to make things as easy as possible for people who have undertaken a very arduous task; but, on the other hand, these willing servants are hampered with the most absurd rules and saddled with expenses, not merely for luxuries, but for necessaries, to enable them to carry out their duties. We do not so much take exception to the restrictions on personal liberty and the rule that nurses should say where they are going, for this may be necessary for the purposes of organisation. But it is monstrous that they should have to pay for their own board and lodging, and still more for the items mentioned in Rule 10. A punkhawallah is a necessity in India, so is a washerman. Of course all expenses should be paid as well as a salary given. The municipality may well bear in mind the fate that overtook a sheriff in West Africa the other day. Three murderers had to be executed, and not being able to hire a professional slaughterer he had to hang the criminals himself. Soon afterwards he died from shock. If the municipality have to nurse plague patients themselves we should be sorry for the patients, but plague is no respecter of persons and might not spare even a vestryman.

THE MEAN ATMOSPHERIC PRESSURE AND TEMPERATURE OF THE BRITISH ISLANDS.

APART from its purely scientific interest, the subject of climatology has special attractions for the medical profession on account of its obvious bearing on many problems of health and disease. Most persons, also, who are free to choose their place of residence like to have some idea of the kind of weather which is likely to prevail in localities where they think of settling, for there is no doubt that all places are not alike in this respect and that the fact may be shown numerically by observations continued over a sufficiently long period. As mentioned in Dr. J. W. Moore's address on the Climatology of Dublin, published in THE LANCET of Aug. 27th, the temperature and rainfall of a given town or place are among the most important meteorological factors in the determination of its climate, hygienically considered; whilst, on the other hand, it is found in most parts of the world that the variations in atmospheric pressure as shown by the barometer have a definite relation to the phenomena of either wind or rain or both of them. In his well-known work "British Rainfall," Mr. G. J. Symons, F.R.S., has fully dealt with that component of our weather, and a valuable monograph on the mean atmospheric pressure and

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temperature of the British Islands has this year been published in the *Journal of the Scottish Meteorological Society* by Mr. Alexander Buchan, LL.D., meteorological secretary of the society. The comprehensiveness of Mr. Buchan's work may be understood from the fact that it is based on the compilation and reduction of observations taken at 400 stations, 176 in England, 194 in Scotland, and 30 in Ireland. Fifteen years ago he published in the society's journal two papers on the same subject, based on the observations made during the twenty-four years ending with 1880, but since that time a large number of highly important stations have been added, including the two observatories on Ben Nevis, and a better inspection of stations has been brought about. These circumstances have suggested a revision of the work, and accordingly the present paper has been prepared from the observations made during the forty years from January, 1856, to December, 1895. It consist of twenty-three pages of tabular matter, twenty pages of explanatory text, and twenty-six coloured maps of the British Islands, showing the mean temperature and pressure for each month of the year graphically by isothermal lines marked with Fahrenheit and Centigrade degrees and isobaric lines marked with inches and millimetres. Mr. Buchan says of the south coast:—

It follows that where a winter climate is sought offering in the highest degree anywhere afforded by the British Islands the combined qualities of mildness and dryness, such a climate is to be found on the shores of the Channel from about Dover to Portland. To the west of Portland and round the coast to Clifton a higher temperature may be had, but the rainfall is greater, the climate damper, and raw weather of more frequent occurrence. On the other hand, in the eastern counties north of the Thames the climate is as dry, or rather dryer, but it is accompanied by a temperature from 2·0° to 3·0° colder. The south coast has another climatic advantage which may be noted. The prevailing west-south-westerly winds having crossed the Isle of Wight pass on in the direction of London. Now observations show that in passing from the Isle of Wight to London the mean temperature falls 3·0°, the lowering of the temperature being caused by the more rapid rate by which, as compared with the sea, the land is cooled by terrestrial radiation in winter. From this lowering of the temperature in proceeding inland it follows that haze and cloud are formed with greater frequency and of greater denseness as the winds successively advance on the colder districts. Hence the skies of the south coast may be expected to be clearer and brighter than in the valley of the Thames, a statement observation amply confirms."

SCARLET FEVER IN SWINE.

THE susceptibility of any of the lower—especially the domestic—animals to specific diseases proper to man, whether the communication be effected by ordinary contagion or by artificial inoculations, is fraught with scientific and practical interest, bearing as it does on the origin of local outbreaks and the spread of disease by milk, &c., and also as affording the only practicable means of fully investigating their etiology and prophylaxis by experiments *in corpore vili*. It has thus been fairly proved that cows are susceptible to scarlet fever, though in a modified form, dependent on histological and other differences, transmitting it again to man, in whom it resumes its normal characteristics. The disease of swine known as *rothlauf* in Germany, and as *rouget* in France is in England popularly called "pig's scarlatina" on account of the red erythematous eruption on the skin, but the absence of renal phenomena and the fact that lesions of the intestines are an essential feature would suggest a nearer relation to enteric fever. But Behle[1] reports a remarkable outbreak of what appears to have been the true human scarlet fever in swine. He states that in a district where *rothlauf* had never been known a severe epidemic of scarlet fever among the children was followed or accompanied by a very fatal disease among the pigs at the same farmhouses and cottages. The symptoms included erythema, angina, albuminuria, and those of uræmic poisoning, which (or the angina) were the usual causes of death, while in such as recovered desquamation of the skin was well marked. The lesions in the kidneys observed after death were very characteristic. A previously healthy pig having been inoculated with the blood of a child suffering from a severe attack died after a week's illness with symptoms and post-mortem appearances which were identical with those seen in the human subject and in the animals which had contracted the disease presumably from the children or from one another. If the facts be correctly reported the conclusion that swine are susceptible to true scarlet fever is irresistible.

[1] Centralblatt für Bakteriologie, Abtheilung i., Band xxi., Nos. 20 an 21.

THE AUTUMN CONGRESS OF THE SANITARY INSTITUTE.

THE Autumn Congress of the Sanitary Institute will be held at Birmingham from Sept. 27th to Oct. 1st inclusive. The reception, the public luncheon, and the opening of the Health Exhibition will take place on Sept. 27th, when the inaugural address will be delivered by Sir Joseph Fayrer, K.C.S.I., F.R.S. Sept. 28th, 29th, and 30th will be devoted to the business of the sections, but on the last-mentioned date several excursions are announced. Saturday, Oct. 1st, will be entirely devoted to excursions, including one to Stratford-on-Avon and Warwick Castle. Copies of the programme, tickets of membership, lodging lists, and all other information can b obtained from the honorary local secretaries, Dr. A. Bostock Hill, Mr. W. Bayley Marshall, M.Inst.C.E., and Mr. J. E. Wilcox, A.M.Inst.C.E. Communications should be addressed to the Council House, Birmingham.

"CONSCIENTIOUS BELIEF."

WHAT is "conscientious belief"? and what is the meaning of the law when it stipulates that magistrates shall be "satisfied" of its existence in an objecting parent? The metropolitan magistrates in conference have decided to hear such applicants without requiring them to be sworn. If *satisfied*, upon a verbal statement, that the applicant had a conscientious objection, the certificate, for which the applicant would be required to pay a fee of 1*s*., would be given. Such is the decision of the stipendiary magistrates and we may be pretty sure that the Justices of the Peace for the metropolis will not act very differently. But the fact remains that the Vaccination Act of 1898 is rather hard on the magistrates and throws upon them an undignified and an impossible duty. They are to "satisfy" themselves that the belief against vaccination is conscientious; but it is understood—Mr. Balfour said so in the House of Commons—that it was not intended that the magistrate should cross-examine the objecting parent of the "conscientiousness" of whose belief he was to "satisfy" himself. It is as difficult to ascertain the conscientiousness of a belief as its intellectual ground, but it might well puzzle even a philosopher like Mr. Balfour to do either when the mouth of the magistrate is supposed to be shut. One witness before a London magistrate has given in the course of the last fortnight the following reasons, among others, in support of his "conscientious" objection to have his two children vaccinated: "That vaccination was invented by an unqualified doctor's assistant named Jenner as a 'cure all, not as a specific remedy, for small-pox," and "that the statistics of small-pox in the county of London are systematically falsified by the way in which returns of small-pox are entered." Surely the magistrate's "conscience" might have some qualms in permitting such libels of Jenner and

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of the authors of the statistics of small-pox of the County of London, much less in accepting such statements as signs or proofs of a conscientious belief. We are not intending to advise magistrates to raise difficulties in giving objectors the advantage of the Act; by doing so they would accept a responsibility which is not theirs and possibly put themselves into a still more undignified position than that in which the Act has placed them. But it does not follow that they should be speechless while the greatest medical authorities are being traduced and misrepresented, or that they should fail to show that they are noting the nature of the objection on which a "tremendous experiment" is being tried on helpless children which may have to be ended some day when its significance is realised by a community still largely protected by vaccination.

ALLEGED DEATH FROM WEARING A DYED STOCKING.

ON August 23rd the city coroner for Hull concluded an inquiry into the death of Rachel Binnington, who died on August 15th from, it was supposed, poisoning contracted from a dyed stocking worn on her left leg. Medical evidence showed that the deceased died from acute septicæmia. She had very extensive varicose veins. The city analyst said that the dye was composed of logwood and bichromate of potash. Dr. H. Robinson said he did not think the dye had anything to do with the death—he would rather put it down to some septic material from a living organism being introduced into the stocking. Considerable irritation has often been set up by dyes but in such cases arsenic has been the offending agent. Some instances were reported in the columns of THE LANCET, vol. i., 1886, page 432. Bichromate of potash certainly is poisonous but it would not set up septicæmia. We cannot but think, however, that all articles of wearing apparel, at any rate those that come in contact with the skin, should never be dyed with anything but vegetable or animal dyes and should be fixed with some non-poisonous salt like alum. An exception might be made in the case of using an iron salt to produce a black dye, but certainly aniline and arsenical colours should be avoided.

THE LATE DR. K. N. BAHADHURJI.

WE recently announced in our columns the too premature death of this very able Parsee medical man. On this side of the water Dr. Bahadhurji was perhaps best known as an ardent but temperate advocate for medical reform in India, but this was far from being the only subject in which he took an interest. During the plague epidemic he started a plague hospital in Bombay and it is to be feared that though he did not die from actual plague, yet the exertions which he made in attending his less fortunate brethren who were affected contributed to hasten his death. So much was his work appreciated by his fellows that in November, 1897, he was presented by the Parsee community with a service of plate. When the news of his death was made public the Corporation of Bombay adjourned their meeting out of respect to his memory and both Europeans and non-Europeans paid him tributes of respect. His funeral was almost of a public character and the office of the Empire of India Life Assurance Company, of which Dr. Bahadhurji was the chief medical officer, and the Ripon Musical Club were closed out of respect to the memory of the deceased. The Government paper and share markets were also closed on account of the useful services rendered by Dr. Bahadhurji to the Millowners' Association in 1891 in connexion with the Indian Factory Act. In this case the prophet was certainly not without honour in his own country and we can only offer our sympathies to all his friends and relations in their sorrow and add that as members of the medical profession we mourn the loss of one who had done, and if spared would have continued to do, such excellent work.

THE BRITISH ASSOCIATION.

BRISTOL is this year the scene of the annual meeting of the British Association for the Advancement of Science, and the proceedings were opened on the evening of Sept. 7th at the People's Palace. The recent disastrous conflagration at Colston Hall, where the meetings were to have been held, caused less inconvenience than might have been anticipated, owing to the energy of the local committee in making other arrangements at very short notice. The retiring President, Sir John Evans, introduced his successor, Sir William Crookes, whose presidential address will be found in another part of our present issue. The report of the council of the Association was read and adopted at a meeting of the general committee, held at the Museum, and presided over by Sir John Evans. Professor Rücker, the general treasurer, in presenting his report for 1897–98, mentioned that the association would give a donation of £120 to the Colston Hall Fund.

CONGENITAL FACIAL PARALYSIS.

AT the recent Congress of Physicians in Hamburg Dr. Nonne related the case of a child, two years of age, who had suffered since birth from the signs of right-sided facial paralysis. The labour was normal and no artificial aid was necessary. The deformity of the face was noticed as soon as the child cried. Syphilis and alcoholism in the parents could be excluded and no anomaly could be felt in the parotid region of the affected side. The child heard equally well on each side and no abnormality of the ears was apparent. There was no affection of any other cranial nerve, and mentally and physically the child seemed perfectly well but for the facial weakness. In the region of the forehead, eye, and cheek the electrical reactions seemed to be quite abolished; but in the quadratus menti and the orbicularis oris on the affected side a strong current evoked a slight contraction. Dr. Nonne was of opinion that the defect depended upon some lesion of the facial nucleus, possibly as Moebius and others have conjectured some congenital anomaly of the ganglion cells, and the prognosis as regards any improvement was distinctly bad.

THE DANGERS OF FOOD.

THE following is a selection of headings which appeared in the daily newspapers in the brief period of 5 days from August 25th to 30th inclusive: "Poisoned by Tinned Rabbit"; "Milk Adulteration in London"; "Dangers of Tinned Salmon: Fatal Result"; "Unsound Meat in Salford: Potted Meat Manufacturers Heavily Fined"; "Poisoned by Plums"; "Heavy Fine for Exposing Diseased Meat for Sale"; "Diseased Livers and Meat Extract"; and "A Job Lot of Condensed Milk." We need not dwell at any great length on the cases of poisoning by rabbit and salmon, which may be explained by the existence of some kind of ptomaines, those obscure basic bodies which for a reason not very clear develop in what is otherwise to all appearance food of a wholesome character. In regard, however, to tinned food the public cannot be too often warned that such food should be consumed immediately after the tin is opened and on no account should the contents of the tin be regarded as fit to eat if the ends are bulging outwards or convex. It is a pretty safe indication of the wholesomeness of the contents when both ends of the tin are partly collapsed inwards. The poisoning by plums was traced to the use of a zinc pan in the stewing of the fruit. When, however, we come to consider cases in which unwholesome, nay, putrid, meat and animal organs are found in the possession

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of manufacturers of "table delicacies" we are face to face with a matter fraught with the gravest possible consequences. On the premises of certain dealers were found recently forty-four barrels of livers of various animals, perished, diseased, and rotten, and the slime into which they had liquefied by putrefaction was most offensive. These dealers are described on their business card as "manufacturers of preserved provisions, soups, and all kinds of table delicacies." Of course there was no intention to employ these livers in the manufacture of food for human (or other) consumption, but the association of "table delicacies" and putrid animal organs on the same premises is not a pleasant one. Apart altogether from sentiment the mischief done might be incalculable. It is well known that putrid meat infusions, and especially putrid animal organs, yield crystallisable bodies of a very deadly nature and comparable to the powerful vegetable alkaloids such as atropine, strychnine, and digitaline.

THE DINNER TO PROFESSOR VIRCHOW

As our readers are already aware the medical profession has decided to entertain Professor Virchow at dinner. The invitation has now been definitely accepted by the distinguished guest, and already there are 195 names on the stewards' list of persons desirous of attending to do honour to their great *confrère*. The dinner will be held, as previously announced, on Wednesday, Oct. 5th, in the Whitehall Rooms of the Hôtel Métropole, with Lord Lister in the chair. There will be accommodation found for about 250 guests, a fact of which those who wish to be present and have not already applied for tickets are reminded. All communications should be made to Mr. Andrew Clark, 71, Harley-street, W., who has undertaken the duties of honorary secretary of the dinner. The inclusive cost of a ticket is £1 5*s*.

ABSCESS OF INTERNAL CAPSULE.

IN the Biological Section of the Congress of Physicians at Hamburg in June last Dr. Sänger related a case possessing both medical and surgical interest. The patient was a man, aged twenty-eight years, who had previously been in hospital on account of alcoholism and delirium, but who, in May of the present year, sought admission on account of headache, giddiness, and sickness. In May of 1897 he had had double otitis media, and in October his right ear had been operated upon. In December he had had severe pain in the frontal region which had persisted both night and day for some time, but had been relieved by antipyrin and local measures to the ear. On May 12th on admission he was rather stupid with weakness all down the left side, blunting of sensibility, hemianopia, and tenderness on percussion over the right frontal and temporal regions. There was unsteadiness in walking and even in standing and it was evident that there was a lesion of the hinder part of the internal capsule. Trephining was done, but in spite of many punctures no abscess was found. The patient died seven days later and at the necropsy an old abscess was found in the locality indicated. It had so thick and firm a wall that the exploring needle had apparently glided off and failed to penetrate it—a possibility in such cases well worthy the attention of surgeons.

BY Royal Warrant dated India Office, August 26th, 1898, it is announced that Her Majesty has deemed it expedient to alter the ranks of the officers of the Indian Medical Service. The same military titles as those conferred on the officers of the Royal Army Medical Corps are announced for the officers of the Indian Medical Service.

A MOVEMENT has been set on foot to place a memorial window to Principal Caird's memory in the Bute Hall of the University of Glasgow. We commend the idea to the notice of Glasgow graduates, who should send their contributions to Mr. Archibald Craig, of 156, St. Vincent-street, Glasgow.

THE Lord-Lieutenant of Ireland has appointed Mr. John Lentaigne, F.R.C.S.I., to be surgeon to the household in the room of Mr. Thomas Nedley, M.D. Aberd., F.R.C.S. Irel., resigned.

PROFESSOR CORFIELD has, we regret to learn, sustained a fracture of one of the metacarpal bones of the left hand by a blow from a golf-ball.

DR. KESER, Physician to the French Hospital and Dispensary, has been made a Knight of the Legion of Honour.

TYPHOID FEVER IN BELFAST.

THE main discussion at the meeting of the city corporation of Belfast on Sept. 1st was the present increased prevalence of typhoid fever. The report of the medical officer of health brought out the serious fact that between July 17th and August 20th 1052 cases of zymotic disease had been notified and of these 784 were typhoid fever. Since the notification of the Infectious Diseases Act came into force the number of cases of typhoid fever notified has been as follows:—1897: March, 215; April, 289; May, 517; June, 262; July, 179; August, 304; September, 379; October, 354; November, 351; and December, 273. 1898: January, 288; February, 222; March, 345; April, 469; May, 254; June, 327; July, 226; and August, 784 (five weeks). These figures show that, as THE LANCET Special Sanitary Commissioner in his reports on Belfast has pointed out, typhoid fever in that city is really endemic and that the present state of affairs is not an epidemic but simply an exacerbation of the normal condition. It is interesting to note that while the number of cases of typhoid fever has more than doubled (comparing August, 1898, with the same month in 1897), the number of deaths from all zymotic diseases is less by 25 per cent. In the face of the present deplorable state of affairs we are glad to say that the Public Health Committee have decided:—1. To appoint Dr. Lorrain Smith to examine bacteriologically all samples that the medical officer of health considers necessary for the purpose of investigating the cause of the fever. 2. They have decided to establish refuse destructors which should have been in use many years ago. 3. They recommend that proceedings be taken against each individual owner of houses which are not supplied with water-closets and have not back passages by which offensive material can be removed, and also to compel the provision of water-closets in place of privies. It is a most extraordinary circumstance that the corporation ever should have passed the plans of houses without back passages. 4. Each member of the corporation is to be supplied with a copy of a return of the piggeries kept in the city of Belfast and the number of pigs kept and where they are or are not kept in accordance with the by-laws. Further, the chairman of the Town Improvement Committee announced that after Sept. 5th building inspectors would test all drains of houses before they were passed. It appears that hundreds of new houses, as stated by members of the corporation, were passed without the ordinary test. Councillor O'Neill, M.D. R.U.I., said that he did not want to make out things blacker than they were—they were quite black enough in the city—but he considered it a matter of urgency that there should be an investigation of the drains of all the houses built within the past five years. "Typhoid fever was now so prevalent because," he said, "they had laid the means of breeding it. They had allowed matter containing the germs of the disease to be sown broadcast and now they attributed to a visitation of Providence what was really due to a want of visitation by the sanitary inspectors." We give the Public Health Committee every credit for the exertions they are now putting forth, but they

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must remember that they have not merely to stamp out the present epidemic of typhoid fever, but they have to attack a much more difficult and more serious problem, and that is the fact that the disease is endemic and that this has been caused by a deplorable neglect of the most obvious sanitary laws. Alderman Graham, M.D.R.U.I. (chairman of the Public Health Committee), who is taking the utmost pains in the present most difficult position, deplored that the corporation had done very little for them except when there was an epidemic; he hoped they would now give them a free hand over everything they asked.

We are sure that Alderman Graham will have the unanimous support of all the citizens in any efforts he may make to have the reproach removed from Belfast that its death-rate from typhoid fever — a preventable disease—is the highest in the three kingdoms. Some people have raised suspicions as to the water being the cause of the epidemic. We quite admit that the water supplied to the city is not by any means a first-class one nor are the catchment areas beyond the suspicion of sewage contamination; but it is a curious fact that while the water comes from two different areas, no one of these supplies seems to have infected those using it more than the other; the typhoid fever is all over the city; but, what is very remarkable, the inhabitants of the gaol and the asylum (although using town water) have escaped the disease. But even if the water could be proved not to be good we know that in a few years the new supply brought from the Mourne Mountains will be ready. The Water Commissioners are pushing on with this new scheme; it behoves the corporation to do their duty and to see that the defects of the most obvious sanitary laws which they allowed to occur are at last corrected. Councillor O'Connell, M.D.R.U.I., a member of the Health Committee, said in the discussion that as a matter of fact the schemes at present in operation and contemplated would involve an expenditure of £150,000 to the ratepayers and private property owners, and he gave the following quotation from the report of THE LANCET Special Commissioner, who wrote a series of articles last year on the Sanitary State of Belfast—"Though there are all sorts of side issues and contributory causes the high death-rate and the exceptionally insanitary condition of Belfast are in the main due to the condition of the house property and thus it is that typhoid fever is endemic at Belfast.

OPENING OF THE MEDICAL SCHOOLS.

WINTER SESSION, 1898-99.

St. Bartholomew's Hospital.—The session will open on Oct. 3rd, and the usual dinner of old students will be held in the great hall of the hospital on Oct. 4th.

Charing-cross Hospital.—The session will commence on Oct. 3rd, when Professor Virchow, Foreign Member of the Royal Society, Director of the Berlin Pathological Institute, and some time Rector Magnificus of the University of Berlin, will deliver the second Huxley Lecture on Recent Advances in Science and their bearing on Medicine and Surgery. The chair will be taken at 4 P.M. by Lord Lister, President of the Royal Society.

Guy's Hospital.—The session will begin on Oct. 3rd.

St. George's Hospital.—The session will commence on Oct. 1st, when an introductory address will be delivered by Mr. George R. Turner, surgeon to the hospital, at 4 P.M.

King's College Hospital.—The session will begin on Oct. 3rd.

The London Hospital.—The session will commence on Oct. 1st. The annual dinner will be held in the College Library on Oct. 3rd, Mr. Mansell Moullin in the chair.

St. Mary's Hospital.—The session will begin on Oct. 3rd with an introductory address at 3 P.M. by Dr. Caley. The annual dinner will be held in the evening at the King's Hall, Holborn Restaurant, Mr. J. N. Moore, J.P., in the chair.

The Middlesex Hospital.—The session will open on Oct. 3rd, at 3 P.M. Dr. Arthur F. Voelcker will deliver an introductory address, after which the prizes gained during the previous year will be distributed. The annual dinner of the past and present students and their friends will take place the same evening at the Café Royal, Regent-street, at 7 o'clock, the Right Hon. Sir Ralph Thompson, K.C.B., in the chair.

St. Thomas's Hospital.—The session will commence on Oct. 3rd, when the prizes will be distributed at 3 P.M. by the Right Rev. the Lord Bishop of Rochester in the Governors' Hall. The old students' annual dinner will take place the same evening in the Whitehall Rooms of the Hôtel Métropole at 6.30 for 7 P.M., Dr. Leonard W. Sedgwick in the chair.

University College Hospital.—The session will be opened on Oct. 3rd at 4 P.M., when an introductory lecture will be delivered by Mr. Sidney Spokes, dental surgeon to the hospital. The annual dinner of the old and present students will take place on Oct. 3rd at the Hotel Cecil at 6.30 P.M., Professor F. T. Roberts, M.D. Lond., in the chair.

Westminster Hospital.—The session will begin on Oct. 3rd.

London School of Medicine for Women (Royal Free Hospital).—The session will open on Oct. 3rd. The introductory address will be delivered by Dr. J. Walter Carr, senior physician to out-patients, Royal Free Hospital, on Oct. 4th, at 8 P.M., when the distribution of prizes by Mrs. Charles Burt will take place.

The Dental Hospital of London, Leicester-square.—The session will commence on Oct. 3rd.

National Dental Hospital and College, Great Portland-street, W.—The session will begin on Oct. 3rd.

PROVINCIAL.

Mason University College, Birmingham.—The session will commence on Oct. 1st. Professor Michael Foster, M.A., M.D., F.R.S., will deliver an address.

University College, Bristol.—The session will commence in October.

University College of South Wales and Monmouthshire, Cardiff.—The session will commence on Oct. 3rd, when the opening address will be delivered by Dr. Robert Saundby.

The University of Durham College of Medicine, Newcastle-upon-Tyne.—The session will be opened on Oct. 1st, when the scholarships and prizes will be presented by Sir David Dale, Bart., D.C.L., J.P., D.L.

The Yorkshire College, Leeds.—The session will open on Oct. 3rd, when an address will be delivered by Dr. Cullingworth.

University College, Liverpool.—The session will commence on Oct. 1st.

Owens College, Manchester.—The session will commence on Oct. 3rd.

University College, Sheffield.—The session will commence on Oct. 3rd, when the introductory address will be delivered by Dr. Wm. Dyson, B.A., Vice-President of the College, Professor of Medicine, and Senior Physician, Sheffield Royal Infirmary.

SCOTLAND.

University of Aberdeen.—The session will commence on Oct. 19th.

Anderson's College Medical School, Glasgow.—The session will be opened on Oct. 20th.

University of St. Andrews.—The classes will be opened for the session on Oct. 12th.

University College of Dundee.—The session will open on Oct. 12th.

University of Edinburgh.—The session will open on Oct. 18th.

University of Glasgow.—The session will be opened on Oct. 20th.

University of Glasgow (Queen Margaret College).—The session will begin on Oct. 20th.

St. Mungo's College and Glasgow Royal Infirmary.—The session will be opened with an Address to Medical Students on Oct. 20th.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE Secretary of State for the Home Department has made the following further appointments of medical referees under the Workmen's Compensation Act, 1897, for Scotland:—

Sheriffdom of Lanarkshire.—Dr. Hector Cameron, Dr. T. K. Dalziel, Dr. G. T. Beatson, Dr. Duncan Macartney, Dr. James C. Renton, Mr. H. E. Clark, Dr. David Newman, and Dr. W. J. Fleming, all of Glasgow; Dr. James Barras, Govan; and Dr. Hugh Arthur, Airdrie.

Sheriffdom of Argyll.—Dr. Dove M'Calman, Oban; Mr. James Stewart, Inveraray; Dr. John Ritchie, Dunoon; and Dr. John Cunningham, Campbeltown.

Sheriffdom of Perth.—Dr. Robert Stirling, Perth; Dr. Charles Lunan,

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Blairgowrie; Dr. John Mackay, Aberfeldy; Dr. Alexander Thom, Crieff; and Dr. Andrew C. Buist, Dunblane.

Sheriffdom of the Lothians and Peebles.—Dr. John Shaw M'Laren, Dr. David Wallace, Dr. J. C. Dunlop, and Dr. Alexander Miles, all of Edinburgh; Dr. Alexander Ballantyne, Eskbank, Midlothian; Dr. Thomas Malcolm Murray Lyon, Mid Calder; Dr. John George Wallace-James, Haddington; and Dr. John Connel, Peebles.

Sheriffdom of Stirling, Dumbarton, and Clackmannan.—Dr. D. McFadyen, Stirling; Dr. Alexander D. Fraser and Dr. Robert D. Clarkson, Falkirk; Dr. W. A. McLachlan, Dumbarton; Dr. P. Napier Grant, Lenzie; Dr. Robert Wilson, Alloa; and Dr. John Barlow and Dr. Samuel Macfarlane Sloan, Glasgow.

Sheriffdom of Roxburgh, Berwick, and Selkirk.—Dr. William Jeffrey, Jedburgh; Dr. W. Turnbull Barrie, Hawick; Dr. John McWatt, Duns; and Dr. Charles Reid, Selkirk.

Sheriffdom of Aberdeen, Kincardine, and Banff.—Dr. Alexander Ogston and Dr. J. C. Ogilvie Will, Aberdeen; Dr. John Barclay, Banff; and Dr. James Taylor, Keith.

Sheriffdom of Ross, Cromarty, and Sutherland.—Dr. William Bruce, Dingwall; Mr. Murdoch Mackenzie, Stornoway; and Dr. James Bertie Simpson, Golspie.

Sheriffdom of Dumfries and Galloway.—Dr. Thomas Ferguson, Dumfries; Dr. W. S. Spence Reid, Kirkcudbright; and Dr. D. Duke Monro, Stranraer.

Sheriffdom of Forfar.—Dr. David MacEwan and Dr. Patrick R. Murison, Dundee; Dr. A. S. McLagan Wedderburn, Forfar; and Dr. James Alexander Dewar, Arbroath.

Sheriffdom of Caithness, Orkney, and Shetland.—Dr. Samuel Elliot, Wick; Dr. Alexander Asher, Thurso; Mr. Benjamin Bell, Kirkwall; and Dr. John F. Robertson, Lerwick.

Sheriffdom of Renfrew and Bute.—Dr. J. N. Marshall, Rothesay; Dr. Donald Fraser and Dr. Thomas Graham, Paisley; Dr. James Whiteford and Dr. Thomas Philip, Greenock; Mr. R. H. Parry and Dr. A. E. Maylard, Glasgow; and Dr. Robert Allan, Ardrossan.

Sheriffdom of Ayr.—Dr. George McKerrow and Dr. James Ross Watt, Ayr; Dr. William Macfarlane, Maybole; Dr. William McAlister and Dr. William Frew, Kilmarnock; and Dr. Robert Allan, Ardrossan.

Sheriffdom of Fife and Kinross.—Dr. C. E. Douglas, Cupar; Mr. Robert Balfour Graham, Leven; Dr. J. Sutherland Mackay and Dr. H. W. Laing, Kirkcaldy; Dr. C. A. Sturrock, Dunfermline; and Mr. James Mungle, Kinross.

Sheriffdom of Inverness, Elgin, and Nairn.—Dr. John Munro Moir, Inverness; Dr. Alexander Cameron Miller, Fort William; Dr. John Dewar, Portree, Skye; Dr. Francis William Grant, Elgin; and Dr. Hugh William Mann, Larkfield, Nairn.

METROPOLITAN MEDICAL SCHOOLS.

PRIZES FOR 1897-98.

THE following is a list of prizes, &c., awarded for the session 1897-98:—

St. Bartholomew's Hospital.—Lawrence Scholarship and Gold Medal: T. J. Horder. Brackenbury Medical Scholarship: C. Riviere. Brackenbury Surgical Scholarship: H. Munday. Matthews Duncan Medal and Prize: J. L. Maxwell. Senior Scholarship in Anatomy, Physiology, and Chemistry: R. C. Elmslie. Open scholarships in Science, Chemistry, and Physics: C. E. West. Biology and Physiology: W. M. Fletcher; junior, H. R. Kidner and E. C. Williams, equal. Preliminary Scientific Exhibition: E. G. Pringle. Jeaffreson Exhibition: L. R. Tosswill. Kirkes Scholarship and Gold Medal: R. Hatfield. Bentley Prize (surgical) not awarded. Hichens Prize: F. Gröne. Wix Prize: W. E. L. Davies. Harvey Prize: (1) S. G. Mostyn; (2) R. C. Elmslie, (3) F. Gröne, and (4) E. Ladell. Sir George Burrows Prize: No award. Skynner Prize: No award. Practical Anatomy (senior): Foster Prize: R. C. Elmslie and H. Love (equal), (3) F. N. White, (4) R. T. Worthington, (5) A. E. Thomas, (6) W. R. Read, (7) E. W. J. Ladell, (8) E. L. Martin, and (9) H. J. Slade. Practical Anatomy (junior)—Treasurer's Prize: (1) T. C. Neville, (2) E. B. Smith, (3) T. P. Baldwin, (4) J. Corbin, (5) N. E. Waterfield, (6) E. C. Williams (7) T. R. Couldrey, and (8) A. S. Petrie. Shuter Scholarship: F. C. Shrubsall. Junior Scholarships: (1) E. C. Williams and (2) E. B. Smith. Junior Scholarship in Chemistry and Histology (1897): (1) R. C. Elmslie and (2) F. N. White.

Guy's Hospital.—Open Scholarships in Arts: Percy Reginald Bolus, Bancroft School, Woodford Wells, £100; Gayton Warwick Smith, Liverpool College, Certificate. Dental Students: Percival Pasley Cole, Weymouth College, £30. Open Scholarship in Science: Albert Ernest Hardman Pakes, Guy's Hospital, £150. Scholarship for University Students: Aubrey Hugh Davies, Caius College, Cambridge, £50; Reginald Cuthbert Mullins, Keble College, Oxford, Certificate; James Alison Glover, St. John's College, Cambridge, Certificate. Second Year's Prize: (1897) James Alfred Butler, £25. Junior Proficiency Prizes: Louis Edward Stamm, £20; William Henry Bowen, Claude Tessier, equal, £12 10*s.* each; Henry Crewe Keates, Certificate; George Thomas Collins, Certificate. The Michael Harris Prize for Anatomy: Claude Tessier, prize £10. William Henry Bowen, Certificate. The Sands Cox Scholarship in Physiology: Louis Edward Stamm, £15; Myer Coplans, Certificate. The Hilton Prize for Dissection: (1897) Frederick Goulburn Gibson, prize £5. The Arthur Durham Prizes for Dissections—First year's students: Richard Willan, prize £5; Carrick Hey Robertson, Certificate; William Edward James Tuohy, Certificate. Second year's Students: Hugh Davies-Colley, Claude Tessier, equal, £7 10*s.* each; Herbert William Brown, Certificate; Henry Francis Hatfield, Louis Edward Stamm, equal, Certificates. Dental Prizes—Second Year's Students: (1897) Hubert Arnold George Butler, prize, £15; Alfred William Walker, certificate; Victor George Smith, certificate; Bertram James Sumerling, certificate. First Year's Students: (1897) Percival Sidney Campkin, prize, £10; Harry Hudson Evans, certificate; (1898) Frank Warlow, prize, £10; Hugh Titford Campkin, certificate. Practical Dentistry Prize: (1897) Henry Albert Ellis Canning, prize, £10; Alfred William Walker, certificate; (1898) Percival Sidney Campkin, prize, £10; John Stewart Farnfield and Stephen Holloway Olver, equal certificates. Fourth Year's Prizes: (1897) Philip Turner, prize, £25; Harold Wilson Bruce and William Tayler Milton, equal, £5 each; Charles Leopold Granville Chapman and George Ernest Richmond, equal certificates. The Richard Bredin Prize for Clinical Study: (1897) Robert Pugh Rowlands, £25; (1898) William Tayler Milton, £25. The Golding-Bird Gold Medal and Scholarship for Sanitary Science: Robert Wynne Charles Pierce, £20. The Treasurer's Gold Medal for Clinical Medicine: (1897) Robert Pugh Rowlands; (1898) William Tayler Milton. The Treasurer's Gold Medal for Clinical Surgery: (1897) Robert Howard; (1898) Frederick Edward Walker and Philip Turner.

King's College, London.—Faculty of Medicine, 1897-98.—Recommended for the Associateship: R. M. Cowie, H. Dingle, L. H. Fuller, F. H. Jacob, J. E. London, and R. P. Williams. Scholarships and Exhibitions.—Senior Scholarship: C. A. Sprawson and A. Brown (equal). Second Year Scholarship: A. Edmunds. Junior Scholarship: E. A. Bell. Warneford Scholarship (resident): J. C. Briscoe. Warneford Scholarship (Class I.): H. B. Day and A. A. Myers. Sambrooke Scholarship: M. R. C. MacWatters and J. A. Drake (equal). Rabbeth Scholarship: A. A. Myers and H. B. Day (equal). Special Prizes.—Leathes: W. H. Lowman; Warneford (first): W. H. Lowman; Warneford (second): J. M. Twentyman; Barry (Divinity): A. A. Myers; Tanner: C. A. Sprawson. Todd (Medical Clinical): C. A. Sprawson. General Prizes and Certificates—Winter session, 1897-98, summer session 1898.—Divinity: E. A. Bell; Anatomy: W. L. Stuart; Materia Medica: W. W. Campbell; Hygiene: C. A. Sprawson; Pathological Anatomy: C. A. Sprawson; Obstetric Medicine: W. H. Lowman; Forensic Medicine: W. H. Lowman; Clinical Surgery: R. R. Mowll; Clinical Surgery (Professor Rose's prize): I. M. Jefferiss.

University College, London.—Winter Session, 1897-98.—Entrance Exhibitions.—L. A. E. de Zilwa (£137 11*s.*); C. S. Parker and R. E. Lloyd (£57 15*s.* each). Atchison Scholarship (£55 per annum for two years): J. E. Simpson. Bruce Medal: J. E. Simpson. Physiology—Senior Class: Gold medal, R. E. Lloyd; silver medal, L. A. E. de Zilwa; certificates, (3*) L. G. Hopkins and (4*) W. S. Rooke. Second Class: F. J. A. Mayes, C. S. Parker, and S. H. Bown. Third Class: C. A. Hewavitarna, G. W. Curtis, and F. J. Lawson. Junior Class: Silver Medal, J. E. Stratton; certificate, (2*) R. H. Aders. Second Class: G. F. I. Harkness, C. J. Loosely, and H. A. Lyth. Third Class: J. B. Burt, A. F. Horn, and G. B. McKean. Anatomy—Senior Class: Gold Medal, C. S. Parker; Silver Medal, S. H. Bown. Second Class: S. Bree and E. S. Littlejohn. Third Class: W. T. Crawford, L. A. E. de Zilwa, and R. E. Lloyd. Junior Class: Silver Medal, H. A. Lyth; certificate, (2*) A. F. Horn. Second Class: G. B. McKean and J. E. Stratton. Third Class: J. A. Smyth, J. B. Burt, and G. F. I. Harkness. Medicine: Gold Medal, W. L. Griffiths; first silver, J. E. Phillips; second silver, Ivor L. Tuckett; certificates, (4*) A. Ricketts and J. E. Simpson (equal), (6*) H. M. Hart-Smith. Surgery: Gold Medal, J. E. Simpson. Second Class: W. L. Griffiths, H. M. Hart-Smith, and Ivor L. Tuckett. Third Class: J. E. Phillips. Pathology—Morbid Histology and Bacteriology—Tuke Silver Medal: G. E. Charles. Tuke Bronze Medal: A. R. G. Pocock. Third Class: A. R. Spencer. Practical Surgery—Erichsen Prize: W. L.

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Griffiths. Certificates: (2*) D. Davies and H. M. Hart-Smith, equal; (4*) J. E. Simpson. Second Class: Ivor L. Tuckett. Clinical Medicine—Senior Class—Fellowes Gold Medal: H. M. Hart-Smith. Fellowes Silver Medal: Ivor L. Tuckett. Certificates: (3*) W. L. Griffiths, J. E. Phillips, A. Ricketts, and J. E. Simpson (equal). Second Class: D. S. Baker. Junior Class—Fellowes Silver Medal: P. M. Heath. Certificates: (2*) W. F. Addey, (3*) A. R. G. Pocock, B. E. Reynolds, and W. L. Steele (equal). Second Class: W. Bastian, T. Evans, A. L. Murison, and E. W. D. Swift. Third Class: H. S. Capper and A. R. Spencer. Clinical Dental Surgery—Silver Medal: J. E. Simpson. Certificates: (2*) W. L. Griffiths, (3*) J. E. Phillips, and (4*) Ivor L. Tuckett. Summer Session, 1897-98—Histology and Practical Histology—Second Class: J. B. Burt, G. F. I. Harkness, C. A. Hewavitarna, H. A. Lyth, and J. E. Stratton. Third Class: R. H. Aders, C. H. Berry, and G. A. Bosson. Chemistry—Practical Class (Int. Med.)—Prize: W. T. Crawford. Second Class: S. M. Banham, G. E. Waugh, and C. S. Parker. Chemistry and Chemical Physics (Conjoint Board)—Prize: V. K. Sadler. Third Class: E. C. E. Barnes and W. H. Neil. Practical Chemistry (Conjoint Board)—Prize: V. K. Sadler. Certificate: (2*) W. H. Neil. Third Class: O. Marshall. Materia Medica and Therapeutics—Gold medal: L. A. E. de Zilwa. Certificate: (2*) C. S. Parker. Second Class: S. H. Bown. Third Class: D. Roberts. Midwifery—Junior Class—Silver Medal: P. M. Heath. Certificate: (2*) W. E. Peck. Second Class: C. J. I. Krumbholz and E. W. D. Swift. Third Class: A. R. G. Pocock. Medical Jurisprudence.—Gold Medal: A. R. G. Pocock. Pathology—Filliter exhibition of £30: H. S. Capper. Silver Medal: E. W. D. Swift. Second Class: A. R. G. Pocock and A. R. Spencer. Third Class: M. T. Male. Ophthalmic Medicine and Surgery—Third Class: J. E. Simpson. Clinical Medicine—Junior Class: Fellowes Silver Medal—N. F. Stallard. Certificates: (2*) M. T. Male and C. Visger (equal). Second Class: P. T. H. Steadman, H. Stuart, and C. W. Wirgman.

* Obtained the number of marks qualifying for a prize.

St. George's Hospital.—Brackenbury Prize in Medicine: B. Percival. Brackenbury Prize in Surgery: H. S. Barwell. Webb Prize in Bacteriology: H. Spitta. Treasurer's Prize: R. B. Ainsworth. Sir Benjamin Brodie's Clinical Prize in Surgery: R. B. Ainsworth. The Henry Charles Johnson Prize in Anatomy: J. C. S. Rashleigh. Honorary Certificates in Anatomy: Keppel H. Reed, S. H. Nathan, Adrian Caddy, and C. M. N. May. Sir Charles Clarke's Prize: H. G. Drake-Brockman.

St. Thomas's Hospital.—Winter Session, 1897-98.—Entrance Science Scholarships: W. H. Harwood-Yarred, first scholarship, £150, and certificate of honour; and F. H. Whitehead, scholarship, £60, and certificate of honour. University Scholarship: F. C. Eve, scholarship, £50, and certificate of honour. First Year's Students: W. H. Harwood-Yarred, the William Tite Scholarship, £27 10*s.*, and certificate of honour; J. E. Adams, college prize, £20, and certificate of honour; O. Mills, college prize, £10, and certificate of honour; and C. U. Ind, certificate of honour. Second Year's Students: C. N. Sears, the Peacock Scholarship, £38 10*s.*, and certificate of honour; A. F. Miskin, college prize, £20, and certificate of honour; and A. B. Lindsey, college prize, £10, and certificate of honour. Practical Medicine: E. F. Buzzard, the Mead Medal, founded by Mr. and Mrs. Newman Smith. Surgery and Surgical Anatomy: S. O. Bingham, the Cheselden Medal, founded by the late Mr. George Vaughan; S. A. Lucas, certificate of honour; and H. D. Singer, certificate of honour. Pathology and Morbid Anatomy: A. W. Sikes, the Bristowe Medal. Grainger Testimonial Prize: R. Beer, prize, £15; E. M. Corner, certificate of honour. For Reports of Surgical Cases: C. W. Pilcher, the Solly Medal and prize. For General Proficiency and Good Conduct: H. E. Hewitt, the treasurer's gold medal.

St. Mary's Hospital.—1897—Entrance Scholarship in Natural Science of £144: M. F. Kelly. 1897—Entrance Scholarship in Natural Science of £78 15*s.*: J. B. Albury. 1897—Entrance Scholarship in Natural Science of £78 15*s.*: D. E. Finlay. 1897—Entrance Scholarship in Natural Science of £52 10*s.*: J. H. Wells. 1897—University Scholarship of £57 15*s.*: C. Killick, B.A. 1897—University Exhibition of £39 7*s.* 6*d.*: A. Whitmore, B.A. 1897—University Exhibition of £39 7*s.* 6*d.*: E. R. Clarke, B.A. 1897—Meadows Memorial Prize: J. B. Page. 1898—Kerslake Scholarship of value of £25: C. W. Buckley. Summer session, 1897.—Third year—Practical Surgery: J. A. H. Brincker, B.A., and E. R. Hunt, B.A. Second year—Midwifery: J. B. Page, F. C. Lewis, and A. F. MacCallan, B.A. Medical Jurisprudence: T. W. Bates, M.A., A. E. Horn, J. A. H. Brincker, B.A., and R. C. Leaning. First year—Materia Medica: W. H. Willcox, B.Sc., E. W. Holyoak, and V. C. Bensley. Practical Chemistry: H. T. Doble, H. M. Major, and F. C. Lambert. Chemistry: H. T. Doble, G. J. Evans, and R. Butterworth. Prizes in Ophthalmology of £10 10*s.*: A. S. Gardiner and G. S. Keeling. Prizes in Dermatology of £5 5*s.*: J. B. Page and V. C. Bensley. Prize in Psychological Medicine of £3 3*s.*: T. W. Bates, M.A. Clinical Surgery Prize, 1897—98: J. A. H. Brincker, B.A., and E. R. Hunt, B.A. Clinical Medicine Prize, 1897—98: J. A. H. Brincker, B.A., and J. B. Page. Clinical Medicine Prize, 1898-99: W. H. Willcox, B.Sc., and W. B. Watson. Winter Session, 1897-98.—Third year.—Medicine: C. W. Buckley and F. S. Dawe, B.Sc. Surgery: A. G. Wilson, B.A., and C. W. Buckley. Practical Surgery: F. W. Sumner, B.A., and C. W. Buckley. Pathology: H. Agate and J. A. H. Brincker, B.A. Second year—Anatomy: T. M. Harris, B.A., D. W. Bishop, and C. C. C. Shaw. Physiology: C. C. C. Shaw. Histology: W. J. Morrish, D. W. Bishop, and C. C. C. Shaw. First year—Anatomy: M. F. Kelly, V. Nesfield, and D. E. Finlay. Physiology: M. F. Kelly and H. E. Corbin, B.Sc. Biology: N. Low, G. Y. Evans, O. Jevers, and G. E. Wood. Special Prize, 1897.—In Anatomy and Physiology (including Histology): W. H. Willcox, B.Sc.; Prosectors, D. W. Bishop and J. Gay-French.

The London Hospital.—Session, 1897-98.—Price Scholarship in Science (£120): J. Jones. Price Scholarship in Anatomy and Physiology (£60): R. Warren. Entrance Science Scholarships—£60 Scholarship, R. V. Dolbey; £35 Scholarship, M. T. Williams. Buxton Scholarships.—Arts: £30 Scholarship, M. Culpin; £20 Scholarship, G. Rodolph. Clinical Medicine: £20 Scholarship, A. F. Tredgold. Clinical Surgery: £20 Scholarship (equal, scholarship divided), R. Howard and G. R. Slade. Clinical Obstetrics: £20 scholarship, J. Sherren. Duckworth Nelson Prize: biennial, £10, awarded 1897. Andrew Clark Prize: biennial, £26, R. C. B. Wall. Letheby Prizes: Senior, £20 (equal, scholarship divided), H. Balean and F. Challans; junior, £10, M. Culpin. Sutton Scholarship: £20 scholarship, E. W. A. Walker; extra prize, £5 5*s.*, A. F. Tredgold, *proxime accessit*. Anatomy and Physiology: £25 scholarship (equal, scholarship divided), A. L. Matthews and A. B. Soltau. Anatomy and Biology: £20 scholarship, H. B. Willoughby Smith. Minor Surgery Prizes: £15 prize, H. L. Burgess; £5 prizes, H. C. Clitherow, J. S. Elliot, R. Jeremy, C. C. T. Magee, and G. Sowden; £3 6*s.* 8*d.* prizes, E. W. Grogono, W. M. McDowall, and C. L. Traylen. Practical Anatomy: £6 prize, H. E. Ridewood; £4 prize, E. F. Fisher. Anderson Prizes: £2, F. P. T. Hilliard and W. B. Taylor; £1, E. V. Aylen, A. C. Goodwin and J. H. Philbrick.

Westminster Hospital.—Entrance Scholarships: G. L. Bunting (£60), B. N. Tebbs, B.A. (£40), P. J. Marett (£40), and W. C. Nimmo (£30). Treasurer's Prize, for first winter subjects (value 10 guineas): E. C. Whitehead (prize). President's Prize for second-year subjects (value 20 guineas): prize, W. Payne and E. R. Carling (equal). Bird Prize and Medal (value £14): H. C. Barlow and H. H. Cheesman (equal). Class Prize, Medicine: E. C. Lambert (prize). Fish Prize (value £20): H. T. Barron (prize). Clinical Medicine Prize (value 8 guineas): H. C. Barlow (prize). Practical Chemistry: E. R. Carling (prize). Physics: E. R. Carling (prize). Histology: W. Payne (prize). Practical Pharmacy: W. Payne (prize). Midwifery: E. B. Sherlock (prize). Forensic Medicine and Toxicology: E. B. Sherlock (prize). Pharmacology and Therapeutics: F. W. W. Dawson (prize).

Charing-cross Hospital.—Summer Session, 1897, and Winter Session, 1897-98.—Livingstone Scholar: S. A. Boyd. Huxley Scholar: W. J. O'Brien. Epsom Scholar: E. J. C. Jermain. University Scholar: W. G. Rogers. Llewellyn Prize of £25: P. L. Daniel. Governors' Clinical Gold Medal: P. L. Daniel. Huxley Medal with Prize of £10: E. F. Ackery. Golding Prize—Certificate and £10: S. A. Boyd. Pereira Prize—Certificate and £5: E. L. Lilley; Anatomy (senior)—prize: E. F. Ackery; Anatomy (junior)—prize: E. Bayley; Physiology (senior)—prize: E. F. Ackery; Physiology (junior)—prize: W. B. Blandy; prize, E. Bayley (equal); Biology—prize: C. L. Lakin; Chemistry—prize: S. A. Boyd; Practical Medicine—prize: B. A. Nicol; Minor Surgery—prize: J. P. Candler; prize, W. T. Mullings (equal); Medicine (senior)—prize: P. L.

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Daniel; Medicine (junior)—prize: B. A. Nicol; prize, E. H. Bonney (equal); Surgery (senior)—prize: P. L. Daniel; Surgery (junior)—prize: B. A. Nicol; Psychological Medicine—prize: W. H. Unwin; Practical Midwifery—prize: P. L. Daniel; Practical Chemistry—prize: G. S. Oades; Midwifery—prize: E. L. Lilley; Public Health—prize: P. L. Daniel; Therapeutics—prize: W. H. Park; Pathology—prize: R. J. Wilson; Forensic Medicine and Toxicology—prize: E. L. Lilley.

London (Royal Free Hospital) School of Medicine for Women.—Winter Session, 1897-98.—Biology: Miss Martin. Physics: Miss Hickman. Chemistry: Miss Hickman. Physiology: Miss Naylor. Medicine: Miss Watts. Midwifery and Gynæcology: Miss Turnbull, 1st Evans Prize; Miss Lovibond, 2nd Evans Prize; Miss Ford and Miss Watts, 3rd Evans Prize. Senior Anatomy: Mrs. Willey. Junior Anatomy: Miss Hooper. Organic Chemistry: Miss M. Smith. Summer Session, 1898.—Practical Organic Chemistry: Miss H. G. Jones. Practical Chemistry: Miss Simpson. Materia Medica: Mrs. Willey. Operative Midwifery: Miss Clapham, Evans Prize.

The London School of Dental Surgery.—Saunder's scholarship: W. H. Thomas; Ashs' Prize: W. H. Thomas. Class Prizes—Winter Session, 1897-98—Metallurgy—First Prize: W. H. Thomas. Second Prize: H. G. Williams. Dental Mechanics—First Prize: W. H. Thomas. Second Prize: H. H. Belsey. Practical Dental Surgery Prize—Prize: A. G. Payne.—Summer Session, 1898—Dental Anatomy—First Prize: W. H. Thomas. Second Prize: A. G. Payne and H. G. Williams. Dental Surgery—First Prize: W. H. Thomas. Second Prize: H. H. Belsey.

THE PRINCE OF WALES'S HOSPITAL FUND.

LAST year two stamps were issued on behalf of this fund. They produced a sum of about £35,000, and were issued to give small subscribers a handy and convenient form of receipt, which has become popular. This year a new issue for 1898 is made. It consists of four stamps, each of distinct design, with a face value of 1*s.*, 2*s.* 6*d.*, 5*s.*, and 10*s.* respectively. The designs for the stamps and the colours in which they are printed were selected by H.R.H. the Prince of Wales. The 1*s.* stamp is printed in red, the 2*s.* 6*d.* stamp in blue, the 5*s.* stamp in dark green, and the 10*s.* stamp in a lighter green. Each contains a vignette of the figure of Charity, with the words "Prince of Wales's Hospital Fund"



The five-shilling stamp reproduced in black-and-white and enlarged by one-third, to show the details.

and the date 1898 in the top right-hand corner. A facsimile of the Prince's signature appears at the bottom. The 1*s.*, 5*s.*, and 10*s.* stamps have the Prince of Wales's feathers introduced, whereas in the 2*s.* 6*d.* stamp these are replaced by a fleur-de-lis. The 10*s.* stamp is intended as a national emblem, the vignette being enclosed by an ornamental border containing the rose, shamrock, thistle, and leek. Our illustration shows the 5*s.* stamp.

HOSPITAL REFORM IN IRELAND.

MR. T. GARRETT HORDER, the Secretary of the Hospital Reform Association, has sent us some statistics of the various hospitals in Ireland. In 1896 the population of Ireland was 4,486,100. The number of hospitals, including county infirmaries, is 92. Of this number the Dublin registration area with a population in 1891 of 349,594 has 31 hospitals. The proportion of hospitals to population is thus seen to be enormous. Some statistics follow with reference to various items in hospital management and income as regards Dublin.

THE DUBLIN HOSPITALS.

Number of hospitals in Dublin registration area... ...	31
Number of beds	2,438
Population of registration area (1891)	349,594
Number of patients admitted in 1897	22,572
Number of out- or dispensary-patients (attendances) ...	149,766
Number of maternity patients (extern)	5,125

The following hospitals are supported almost entirely by Government grants:—

		Government grant.
House of Industry hospitals.	The Hardwicke Fever Hospital	£7472
	The Richmond Surgical Hospital	
	The Whitworth Medical Hospital	
	The Lock Hospital (females)	2000

The following are supported by Government grants, by assessments either on the county of Dublin or on the city of Dublin, by subscriptions and donations, by payments from patients, and by the Hospital Sunday Fund:—

	Hospital Sunday Fund	Government grant.	Subscriptions and donations.	Assessments.	Patients' payments.
	£	£	£	£	£
Steevens' Hospital ...	126	1,300	431	200	1,109
Meath Hospital	447	600	1,985	1,300	224
Cork-street Fever Hospital	186	2,500	668	360	3,544
Rotunda Lying-in Hospital	299	700	1,058	250	417
Coombe Lying-in Hospital	101 (1896)	500	325	200	24
Hospital for Incurables	—	250	1,055	350	—
St. Mark's Eye and Ear Hospital	107 (1896)	100	208	150	579

The following other hospitals receive grants from the Corporation of Dublin.

	Amount (1896).		Amount (1896.)
Sir Patrick Dun's Hospital	£450	National Children's Hospital	£125
City of Dublin Hospital ...	300	The Orthopædic Hospital ...	125
Mercer's Hospital...	300	National Maternity Hospital	?
The Children's Hospital ...	?	St. Vincent's Hospital ...	?
Jervis-street Hospital... ...	?		
Mater Misericordiæ Hospital	500		

Cork with a population of 75,345 has 12 hospitals with 629 beds, 3671 in-patients, 40,827 out-patients, and 383 maternity patients. Belfast with a population of 255,950 has 12 hospitals with 514 beds, 4466 in-patients, and 50,594 out-patients. County infirmaries number 32 with 1588 beds, 11,395 in-patients, and 24,963 out-patients. In all, these institutions possess 75 nurses and 22 probationers. The discrepancy between the relation of hospitals to population existing in Cork as compared with Belfast will strike the reader at once and it is obvious that some readjustment is urgently required.

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Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Chelsea Sanitary District.—Dr. Louis Parkes has turned his attention to the recent manifestations of scarlet fever and of diphtheria in the eight parishes constituting western London, and he furnishes in his annual report for 1897 two tables and some charts based upon the notifications of each of these diseases for 1890 to 1897. In dealing with Chelsea the district of Kensal Town has been very properly omitted as its topographical relations to Chelsea proper are obviously but remote. The lessons which Dr. Parkes draws from the tables are (1) that in the case of diphtheria fluctuations in its prevalence are much less marked than is the case with scarlet fever; (2) that the prevalence or absence of diphtheria is a much more local circumstance than is the prevalence or absence of scarlet fever, a disease which apparently possesses a greater diffusive power than does diphtheria. For instance, in dealing with diphtheria it is common to find it highly prevalent in one parish and but little prevalent in adjoining parishes, whereas scarlet fever has a greater tendency to diffuse itself over wider areas; the infection, however, of diphtheria is much more persistent in an invaded area than is that of scarlet fever. Dr. Parkes does not regard the future *quâ* diphtheria prevalence as discouraging, for the figures would seem to indicate that the wave of diphtheria prevalence which has passed over London since 1892 is now on the decline. As Dr. Parkes observes, the precise factors which may favour the persistence of diphtheria are but very imperfectly understood and it may be that social circumstances such as overcrowding and poverty are at least as potent for harm as are purely insanitary conditions; in other words, the extent of the prevalence of diphtheria is largely governed by opportunities for infection. Assuming, however, the diphtheria wave to be on the decline in London, what we have to do is to render both the social and sanitary condition of the population such that a wave of equal virulence will when it comes reap a smaller harvest.

Plymouth Urban District.—In advocating the erection of swimming baths Mr. F. M. Williams points out how very important it is in a place like Plymouth where there is a large seafaring population that every facility for learning to swim should be afforded. It seems that in the elementary schools of Plymouth only eight of the boys are able to swim. The number of articles disinfected during 1897 affords a capital illustration of the amount of labour which the arrival of an infected vessel necessitates. Many of our readers will remember the circumstances connected with the s.s. *Nubia*, which brought cases of cholera to Plymouth in January of last year, and they will read with interest that of 31,000 articles disinfected during 1897 no less than 27,000 came from the infected vessel. In dealing with the prevalence of disease, Mr. Williams deplores the extension of syphilis amongst the military, naval, and civil populations of our great centres, and in commenting thus he has doubtless in mind circumstances with which he is familiar in a garrison town like Plymouth. The repeal of the Contagious Diseases Act has, Mr. Williams states, been most disastrous as regards the moral and physical well-being of the young in great naval and military centres. It is certainly well that the medical officer of health should regard this question as distinctly a branch of preventive medicine. Whilst dealing with the subject of cattle inspection and milk-supply attention is called to the necessity for the inspection by a veterinary surgeon of all milch cows yielding milk for the people of Plymouth, and as a step in the right direction Mr. Williams has apparently prevailed upon the principal dairy company to set up a filtering and sterilising plant.

Brighton Urban District.—The population of Brighton in 1897 was estimated at 121,401, and for the year in question the general death-rate was but 15·3 per 1000—the lowest yet recorded for Brighton. Under the heading of small-pox Dr. Newsholme furnishes a series of diagrams illustrating very clearly the altered age incidence of fatal small-pox side by side with the extension or diminution of the practice of vaccination. With the decrease of vaccination which has taken place within recent years we see a tendency for small-pox to revert to its pre-vaccination incidence on the infantile population, and we much fear that the next decade will witness a marked accentuation of this tendency. As regards enteric fever, Dr. Newsholme reports that detailed investigation was made into the circumstances connected with the 88 cases which originated in Brighton during 1897, and it appeared from the evidence procurable that in 47 cases no shellfish had been eaten within three weeks of attack; in 11 cases there was doubt as to the point, and in 27 cases shellfish derived from a sewage-contaminated source had been consumed at a time consistent with their having been the cause of the attack. In the 3 remaining cases the patients were intimately connected with the sale or storage of shellfish. It would seem, therefore from this that some 27 or 30 cases of enteric fever may have derived their infection from specifically contaminated shellfish; indeed, from the details with regard to certain illustrative cases, a thesis of this nature would appear to be the best and most reasonable explanation. Unfortunately we cannot well ascertain the incidence of enteric fever on the shellfish-eating community as compared with that upon the non-shellfish-eating community, and in all questions of this nature the decision must be arrived at by building up the best chain of evidence possible from the links available. It is to be deplored that ere this we have not had legislation in reference to this question of shellfish culture and disease, and it is to be hoped that Mr. Chaplin may early next session be able to introduce his long-expected and much-needed measure. Dr. Newsholme gives an interesting account of the means taken in Brighton to control the spread of measles, and he expresses the opinion that notification of this disease would only be successful if dual notification were rigidly enforced, and if only the first case in a household outbreak should require to be notified by the medical practitioner. He would, however, have the parent notify every case.

Blackpool Urban District.—There were but 50 cases of enteric fever notified in Blackpool during 1897 as against 66 in the previous year, but as there were 15 deaths in 1897 and only 13 in 1896 Dr. Jasper Anderson regards it as probable that a number of slight cases are not reported. We expect this is a very common feature in every town, but it may obviously obtain in some years more than in others according as to whether the type of the disease is well or ill developed. One death from typhus fever—infection introduced from Liverpool—occurred in Blackpool during 1897.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6583 births and 4988 deaths were registered during the week ending August 27th. The annual rate of mortality in these towns, which had increased in the six preceding weeks from 14·7 to 22·0 per 1000, further rose to 23·2. In London the rate was 21·5 per 1000, while it averaged 24·3 in the thirty-two provincial towns. The lowest death-rates in these towns were 13·7 in Huddersfield, 16·5 in Oldham, 16·8 in Nottingham, and 16·9 in Swansea; the highest rates were 30·9 in Liverpool, 32·3 in Preston, 35·2 in Sunderland, and 38·5 in Wolverhampton. The 4988 deaths in these towns included 1541 which were referred to the principal zymotic diseases, against 1127 and 1250 in the two preceding weeks; of these, 1321 resulted from diarrhœa, 84 from whooping-cough, 53 from measles, 45 from diphtheria, 19 from "fever" (principally enteric), and 19 from scarlet fever. The lowest death-rates from these diseases were recorded in Swansea, Oldham, Burnley, Huddersfield, and Halifax; and the highest rates in Wolverhampton, Salford, Preston, and Sheffield. The greatest mortality from measles occurred in Wolverhampton and Norwich; from whooping-cough in Sheffield, Sunderland, and Swansea: and from diarrhœa in Liverpool, Birkenhead, Leicester, Salford, Wolverhampton, Preston, and Sheffield. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 45 deaths from diphtheria included 21 in London, 4 in Liverpool, and 3 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and only 2 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday, August 27th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of

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the week was 2178, against 2326, 2293, and 2241 on the three preceding Saturdays; 182 new cases were admitted during the week, against 224, 201, and 187 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 171 and 196 in the two preceding weeks, declined again to 135, and were 24 below the corrected average. The causes of 54, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Nottingham, Oldham, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Bristol, Leicester, Liverpool, and Preston.

In thirty-three of the largest English towns 6749 births and 5242 deaths were registered during the week ending Sept. 3rd. The annual rate of mortality in these towns, which had increased in the seven preceding weeks from 14·7 to 23·2 per 1000, further rose last week to 24·4. In London the rate was 22·0 per 1000, while it averaged 26·0 in the thirty-two provincial towns. The lowest death-rates in these towns were 15·1 in Halifax, 15·3 in Huddersfield, 17·2 in Oldham, and 17·3 in Portsmouth; the highest rates were 31·1 in Bolton, 31·2 in Gateshead, 36·7 in Wolverhampton and in Salford, and 37·0 in Sunderland. The 5242 deaths in these towns included 1646 which were referred to the principal zymotic diseases, against 1250 and 1541 in the two preceding weeks; of these, 1438 resulted from diarrhœa, 75 from whooping-cough, 43 from diphtheria, 40 from "fever" (principally enteric), 30 from measles, 19 from scarlet fever, and 1 from small-pox. The lowest death-rates from these diseases were recorded in Plymouth, Oldham, Huddersfield, and Halifax; and the highest rates in Wolverhampton, Salford, Bolton, Preston, and Sunderland. The greatest mortality from whooping-cough occurred in Croydon, Halifax, and Sunderland; and from diarrhœa in Wolverhampton, Leicester, Salford, Bolton, Preston, Sheffield, Hull, and Sunderland. The mortality from measles, from scarlet fever, and from "fever" showed no marked excess in any of the large towns. The 43 deaths from diphtheria included 19 in London, 5 in Swansea, 4 in Leeds, 3 in Birkenhead, and 3 in Liverpool. One fatal case of small-pox was registered in Gateshead, but not one in London or in any other of the thirty-three large towns; and only 2 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, Sept. 3rd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2240, against 2293, 2241, and 2178 on the three preceding Saturdays; 238 new cases were admitted during the week, against 201, 187, and 182 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 196 and 135 in the two preceding weeks, further declined to 127 last week, and were 16 below the corrected average. The causes of 44, or 0·8 per cent. of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Bradford, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Huddersfield, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·8 and 18·1 per 1000 in the two preceding weeks, rose again to 18·4 during the week ending August 27th, but was 4·8 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 11·9 in Perth and 13·0 in Leith to 26·4 in Greenock and 28·9 in Paisley. The 556 deaths in these towns included 89 which were referred to diarrhœa, 27 to whooping-cough, 9 to "fever," 8 to measles, 5 to scarlet fever, and 2 to diphtheria. In all, 140 deaths resulted from these principal zymotic diseases, against 136 and 118 in the two preceding weeks. These 140 deaths were equal to an annual rate of 4·6 per 1000, which was 2·6 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 80 and 70 in the two preceding weeks, rose again to 89 last week, and included 44 in Glasgow, 11 in Paisley, 9 in Edinburgh, and 9 in Dundee. The 27 deaths from whooping-cough showed a slight further increase upon recent weekly numbers, and included 8 in Glasgow and 8 in Aberdeen. The deaths referred to different forms of "fever," which had increased from 1 to 9 in the three preceding weeks, were again 9 last week, of which 8 occurred in Glasgow. The 8 fatal cases of measles exceeded by 2 the number registered in the preceding week, and included 3 in Glasgow, where 2 of the 5 deaths from scarlet fever were also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 71 and 80 in the two preceding weeks, declined again to 64, and were 14 below the number in the corresponding period of last year. The causes of 24, or more than 4 per cent., of the deaths in these eight towns were not certified.

The annual rate of mortality in the eight Scotch towns, which had been 18·1 and 18·4 per 1000 in the two preceding weeks, further rose to 19·8 during the week ending Sept. 3rd, but was 4·6 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Perth, and 17·4 in Aberdeen to 27·9 in Leith and 28·9 in Greenock. The 596 deaths in these towns included 81 which were referred to diarrhœa, 22 to whooping-cough, 9 to "fever," 5 to measles, 5 to scarlet fever, and 2 to diphtheria. In all, 124 deaths resulted from these principal zymotic diseases against 118 and 140 in the two preceding weeks. These 124 deaths were equal to an annual rate of 4·1 per 1000, which was 3·5 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 70 and 89 in the two preceding weeks, declined to 81 last week, of which 39 occurred in Glasgow, 12 in Edinburgh, 9 in Leith, and 7 in Greenock. The 22 deaths from whooping-cough showed a decline of 5 from the number in the preceding week, and included 13 in Glasgow and 5 in Aberdeen. The deaths referred to different forms of "fever," which had been 9 in each of the two preceding weeks, were again 9 last week, of which 5 occurred in Glasgow and 2 in Paisley. The 5 fatal cases of scarlet fever also corresponded with the number recorded in the preceding week, and included 3 in Edinburgh and 2 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 80 and 64 in the two preceding weeks, rose again to 72 last week, and slightly exceeded the number in the corresponding period of last year. The causes of 34, or nearly 6 per cent. of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·5 and 21·8 per 1000 in the two preceding weeks, rose again to 22·4 during the week ending August 27th. During the four weeks ending on that date the death-rate in the city averaged 23·4 per 1000, the rate during the same period being 21·0 in London and 17·1 in Edinburgh. The 150 deaths registered in Dublin during the week under notice showed a slight increase upon the number in the previous week, and included 29 which were referred to the principal zymotic diseases, against 31 and 28 in the two preceding weeks; of these, 24 resulted from diarrhœa, 3 from "fever," 2 from diphtheria, but not one either from small-pox, measles, scarlet fever, or whooping-cough. These 29 deaths were equal to an annual rate of 4·3 per 1000, the zymotic death-rate during the same period being 6·4 in London and 2·5 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 22 in the five preceding weeks, further rose to 24. The deaths referred to different forms of "fever," which had been 3 in each of the two preceding weeks were again 3 during the week under notice. The 2 fatal cases of diphtheria exceeded the number recorded in any recent week. The 150 deaths in Dublin included 51 of infants under one year of age, and 29 of persons aged upwards of sixty years; the deaths of infants showed a slight further increase upon recent weekly numbers, while those of elderly persons showed a decline. Four inquest cases and 4 deaths from violence were registered, and 51, or rather more than a third, of the deaths occurred in public institutions. The causes of 10, or nearly seven per cent. of the deaths in the city were not certified.

The death-rate in Dublin, which had been 21·8 and 22·4 per 1000 in the two preceding weeks, further rose to 27·6 during the week ending Sept. 3rd. During the four weeks ending on Saturday last the rate of mortality in the city averaged 24·3 per 1000, the rate during the same period being 21·9 in London and 17·1 in Edinburgh. The 185 deaths registered in Dublin during the week under notice showed an

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increase of 35 upon the number in the preceding week, and included 39 which were referred to the principal zymotic diseases, against 28 and 29 in the two preceding weeks; of these, 33 resulted from diarrhœa, 4 from whooping-cough, 1 from measles, 1 from "fever," but not one either from small-pox, scarlet-fever, or diphtheria. These 39 deaths were equal to an annual rate of 5·8 per 1000, the zymotic death-rate during the same period being 5·9 in London and 3·2 in Edinburgh. The fatal cases of diarrhœa, which had increased in the five preceding weeks from 9 to 24, further rose to 33 last week. The 4 deaths referred to whooping-cough exceeded the number recorded in any recent week, while the mortality from "fever" showed a decline. The 185 deaths in Dublin last week included 62 of infants under one year of age, and 33 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a further increase upon those recorded in recent weeks. Seven inquest cases and 8 deaths from violence were registered; and 53, or more than a fourth of the deaths occurred in public institutions. The causes of 16, or nearly 9 per cent. of the deaths in the city last week were not certified.

THE SERVICES.

NEW WARRANT FOR THE INDIAN MEDICAL SERVICE.

THE following is the text of the Warrant published in the *London Gazette* of Friday, August 26th, granting new titles to the Indian Medical Service:—

India Office, August 26th, 1898.

VICTORIA, R.I.

Whereas We have deemed it expedient to alter the Ranks of the Officers of Our Indian Medical Service:

Our Will and Pleasure is that the following alterations shall be made:

Present Ranks.	New Ranks.
Surgeon-Colonel	Colonel.
Brigade-Surgeon-Lieutenant-Colonel ... ... / Surgeon-Lieutenant-Colonel	Lieutenant-Colonel.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant	Lieutenant.

Officers above the rank of Surgeon-Colonel shall in future be styled Surgeon-Generals (ranking as Major-Generals), and the title of Surgeon-Major-Generals now serving shall be altered accordingly.

It is further Our Will and Pleasure that the following alterations shall be made in the honorary rank of the Senior Assistant Surgeons of the Subordinate Medical Department in India:

Present Honorary Ranks.	New Honorary Ranks.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant	Lieutenant.

Given at Our Court at Osborne, this tenth day of August, one thousand eight hundred and ninety-eight, in the sixty-second year of Our reign.

By Her Majesty's Command.

GEORGE HAMILTON.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon Horace Ximenes Browne has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet. Staff-Surgeon Charles William Buchanan-Hamilton has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet Staff-Surgeon Arthur William May has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet. Staff-Surgeon Charles Hazlitt Upham has been allowed to withdraw from Her Majesty's Service with a gratuity.

The following appointments are notified:—Fleet-Surgeons: John Lyon to the *President;* William R. White to the *Magnificent;* and George W. Bell to the *Hannibal.* Staff-Surgeons: John Lowney to the *Proserpine;* Daniel J. P. McNabb to the *Northampton;* Hamilton Meikle to the *Pearl;* E. G. Swan to the *Collingwood;* and F. J. Burns to the *Boscawen.* Surgeons: Herbert Holyoake to the *Pembroke,* additional; Harold G. T. Major to the *Victory;* Shirley H. Birt to the *Victory;* Henry W. Finlayson to the *Vivid;* Robert S. Bernard James, W. W. Stanton, and Arthur E. Kelsey to Haslar Hospital; William Hackett to Plymouth Hospital; Joseph C. Wood to the *Britannia;* and Charles R. Sheward to the *Vivid.*

ROYAL ARMY MEDICAL CORPS.

The under-mentioned officers retire on retired pay: Colonel Charles F. Pollock and Major Arthur Harding, half-pay. Lieutenant-Colonel H. Charlesworth has assumed the duties of Recruiting and Embarking Medical Officer (Portsmouth). Major T. G. Lavie has embarked for Egypt.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Robert Stirling, M.D., 4th Volunteer Battalion the Black Watch (Royal Highlanders), to be Surgeon-Captain.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Captain W. W. Lake to be Surgeon-Major.

VOLUNTEER CORPS.

Artillery: 8th Lancashire: Surgeon-Major A. R. Hopper to be Surgeon-Lieutenant-Colonel. 1st Shropshire and Staffordshire: Surgeon-Captain R. P. Mackenzie, M.B., resigns his commission. 1st Sussex: Surgeon-Lieutenant G. A. Skinner resigns his commission. *Rifle:* 9th Lanarkshire: The under-mentioned Surgeon-Lieutenants to be Surgeon-Captains: A. Campbell, M.B., and J. Bradford. 2nd Volunteer Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Captain E. D. Berton, M.B., to be Surgeon-Major. 3rd Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Captain F. F. Moore resigns his commission; also is granted the rank of Surgeon-Major, with permission to continue to wear the uniform of the battalion on his retirement. 2nd (Berwickshire) Volunteer Battalion the King's Scottish Borderers: Alexander John Campbell, M.B., to be Surgeon-Lieutenant.

THE ROYAL ARMY MEDICAL CORPS IN THE SOUDAN.

The following are the arrangements in detail:—

The principles and methods laid down in the regulations for the provision of hospital and medical services in the field have been followed in the late Soudan expedition, with such additions and modifications as were considered necessary to best adapt them to the climate, to the nature of the expedition, and to the work which had to be fulfilled. A medical officer accompanied every corps unit; brigades were furnished with sectional field hospitals and these were also attached to the cavalry and artillery; the wounded and sick were transported from the front by the Nile to Atbara in barges specially fitted up as temporary hospitals. The water-carriage of wounded is, it may be remarked, about the best and most comfortable transport which can be devised for the purpose. Large stationary hospitals, which are equipped with all practicable conveniences and comforts, are located at Atbara, Abadia, Wady Halfa, and Shellal. Two sets of Roentgen ray apparatus have also been provided.

The citadel hospital at Cairo is a very fine, well-placed and well-ventilated building; the weakest point about it is the conservancy accommodation; but the dry earth system is, or was, in use and is most carefully supervised and worked.

Principal Medical Officer—Surgeon-General Taylor.
Secretary—Major Wilson, C.M.G.
Principal Medical Officer of the British Division of two Brigades—Lieutenant-Colonel Macnamara.

First Brigade.

Senior Medical Officer—Lieutenant-Colonel Sloggett.
Warwickshire Regiment—Major Irwin.
Lincolnshire Regiment—Major Adamson.
Cameron Highlanders—Captain Mathias.
Seaforth Highlanders—Lieutenant Bliss.

Five sectional field hospitals of 25 beds each are attached to this brigade:—

No. 1 Sectional Field Hospital—Major Myles.
No. 2 Sectional Field Hospital—Major Webb.
No. 3 Sectional Field Hospital—Major Robinson.
No. 4 Sectional Field Hospital—Major Wardrop.
No. 5 Sectional Field Hospital—Major Dodd.

Second Brigade.

Senior Medical Officer—Lieutenant-Colonel Hughes.
1st Battalion Grenadier Guards—Major Kilkelly and Captain Austin.

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Northumberland Fusiliers—Lieutenant Jephson.
Lancashire Fusiliers—Captain Luther.
Rifle Brigade—Major O'Callaghan.

Five sectional field hospitals of 25 beds each are attached to this brigade :—

No. 6 Sectional Field Hospital—Major M'Neece.
No. 7 Sectional Field Hospital—Major Wilkinson.
No. 8 Sectional Field Hospital—Major Stewart.
No. 9 Sectional Field Hospital—Major Thompson.
No. 10 Sectional Field Hospital—Major Jones.

Cavalry and Artillery.

21st Lancers—Major Pinches.
Artillery—Major Clarkson and Lieutenant Gaine.

To the Cavalry is attached :—

No. 11 Sectional Field Hospital of 25 beds—Major Sawyer.

To the Artillery :—

No. 12 Sectional Field Hospital, with 25 beds—Major Barnes.

The Convoy of the Wounded.

The wounded will be taken down the Nile on barges fitted as temporary hospitals to four stationary hospitals at Shellal, Wady Halfa, Abadia, and Atbara. Each convoy boat contains 25 beds. The medical officers in charge are :—Major Hunter, D.S.O., Captain Reily, Captain Graham, Lieutenant Huddlestone, Major Carr, Captain Thomson, Captain Peeke, Lieutenant M'Kessack.

Shellal Hospital is close to Assouan. It contains 50 beds under the charge of the following medical officers :—Captain J. Hayes and Lieutenant Hearn.

Wady Halfa Hospital also contains 50 beds under the charge of the following medical officers :—Major Baylor and Captain Alexander.

Abadia Hospital is a little north of Berber. It is a larger hospital than the two more northern ones, offering accommodation for 300. The medical staff is as follows :—Lieutenant-Colonel Clery, Major Geoghegan, Major Battersby, Major Marder, Major Allen, Major Braddell, Major Burrows, Captain Girvan, Captain Borrodaile, Lieutenant M. Corkery, Lieutenant Cummins, Lieutenant M'Ardle, and Lieutenant Stallard. The hospital is well found in every respect and is provided with proper hospital clothing and bedding and sheets. A telegram from the Sirdar dated Sept. 5th states that the wounded had arrived safely at Abadia and were doing well.

Atbara Hospital is the most southern stationary hospital and is situated where the river Atbara joins the Nile. It will accommodate as many as 300 patients if tents are also brought into use. The following are the medical officers :—Lieutenant-Colonel Leader, Major Smythe, Major Birrell, Lieutenant S. Archer, and Lieutenant Hopkins.

THE PRESENT OUTLOOK.

We are certainly living in very sensational times. Look which way we will we are encountered by matters of the gravest importance and greatest interest. The late Spanish-American war, the Czar's peace manifesto, the Dreyfus affair and the consequent agitation and unrest of France, the Soudan expedition with the victory of Omdurman and the capture of Khartoum, the partition of China and at the present moment the renewed difficulties in Crete. In India, too, there is much cause for anxiety from the continued prevalence of plague, the still unsettled state of the tribes on the North-west frontier and the perennial question of Indian finance and the coinage. The present is not a very hopeful time for the political economist and the Government of this country will apparently need all its resources and will, at any rate, have to keep its medical services up to the mark as regards numbers and efficiency. Let us hope that matters may have improved before the Congress meets to consider the wise and benevolent proposals of the Czar as to the possibility of limiting the competition of the Powers in the terrible race for naval and military supremacy.

LIEUTENANT-COLONEL SLOGGETT.

We regret to learn that Lieutenant-Colonel A. T. Sloggett, R.A.M.C., was severely wounded in the breast during the splendid battle before Omdurman. Lieutenant-Colonel Sloggett, who is Senior Medical Officer of the First Brigade, is an old fighting hand in Africa. Two years ago he served with the Dongola Expeditionary Force under the present Sirdar and was present in the engagement at Firket and the operations at Hafir. He was mentioned in the despatches and promoted to be Surgeon-Lieutenant-Colonel, and he also received the Fourth Class of the Osmanieh and the Khedive's medal. The latest account as we go to press gives a good report of Colonel Sloggett's wound.

NAPOLEON'S MEDICAL ATTENDANT AT ST. HELENA.

Baron Antomarchi, a grand-nephew of Napoleon's medical attendant at St. Helena, has published in *La Réforme Hebdomadaire* an interesting account of the campaign in Cuba. His great-uncle, Dr. Antomarchi, settled in Cuba in 1834, but died there four years later from yellow fever. His family, however, continued to reside in the island, where they acquired large possessions and enjoyed the society of a number of French planters who had been obliged to fly for refuge to the Queen of the Antilles on the breaking out of the revolution in San Domingo.

DEATHS IN THE SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Benjamin Burland, M.B. (retired), A.M.S., at his residence in London, on August 30th, aged sixty-six years. He entered the Army in 1858, became Surgeon in 1865, Surgeon-Major in 1873, and retired in 1884. He was promoted Staff-Surgeon in consideration of highly meritorious service rendered during the epidemic of yellow fever at Bermuda.

Major George Schuyler Cardew, Royal Army Medical Corps, on August 17th, at Murree, India, aged thirty-seven years.

THE CAMP NEAR OMDURMAN.

The Sirdar and the medical authorities of the Soudan expeditionary army acted very wisely in encamping their victorious forces outside the city of Omdurman. The stench from the corpses of men and beasts which strewed the ground was most offensive and in other respects the city was so insanitary that a very serious outbreak of disease was certain to have occurred had the place been occupied by troops after an exhausting campaign.

THE LATE SPANISH-AMERICAN WAR.

Although the war is over the United States Government will have a good many difficult problems to settle. Questions with regard to the sickness and loss of life alleged to have been caused by the occupation of insanitary camps and want of proper medical arrangements during the late war still occupy the public mind and, as might have been expected, have given rise to much controversy.

The *Army and Navy Gazette* of Sept. 3rd says :—"Fleet-Surgeon A. Gorham's retirement last week brought various changes in the Medical Department. Fleet-Surgeon J. Lyon, of the *Magnificent*, relieves him in the *President*, while Fleet-Surgeon W. R. White, C.B., of the *Hannibal*, goes to the former vessel, and Fleet-Surgeon G. W. Bell, late of the *Crescent*, takes the place of the latter officer."

Surgeon-General Marston, C.B., Army Sanitary Committee, accompanied by Mr. Frederick, the secretary, visited Plymouth yesterday (Sept. 9th) and inspected the buildings recently erected in the citadel.

LITERARY INTELLIGENCE.—Messrs. Archibald Constable and Co. announce the publication of a biographical memoir of the late Dr. E. Schnitzer, known to the world as "Emin Pasha," Governor of the Egyptian Equatorial Province and Scientific Explorer in Central Africa. Emin Pasha's career was in every way remarkable; this, the only official account of his life and work, which is a slightly abbreviated translation from the German edition, compiled by his brother-in-law, will be particularly interesting at the present moment as giving many a side-light on German colonial methods at the time when the Anglo-Egyptian expedition has reached Khartoum. Dr. R. W. Felkin, a personal friend and for long a correspondent of Emin, has written an introduction to the English edition of the book explaining what assistance Emin asked for from Britain and how his requests were met.—The Scientific Press, Limited, will shortly publish an Atlas of Bacteriology, by Charles Slater, M.D. Cantab., and E. J. Spitta, L.R.C.P. Lond., M.R.C.S. Eng. The book will be copiously illustrated with photographs.

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Correspondence.

"Audi alteram partem."

SAWDUST URINALS.

To the Editors of THE LANCET.

SIRS,—Some few years since I took occasion to direct attention to the value of sawdust in rendering urine filtered through it thoroughly aseptic; and the present dearth of water for sanitary purposes is my reason for asking you to allow me to direct the attention of sanitary authorities to this fact; and to advise them to give sawdust urinals a trial, as my increasing experience in this matter leads me to say that when properly constructed they are thoroughly satisfactory. There should always be complete exposure to light and air, but protection from rain is advisable. No better urinal can be devised than a tall bushel basket filled with deal sawdust and placed in a shed. Such a urinal in dry hot weather will take a surprising amount of urine without affording any filtrate, owing to the freedom of evaporation. If the use of such a urinal be not excessive and if it be stirred occasionally it will increase in effectiveness with use. If the nose be placed close to the surface of such a urinal it will be found to be strongly ammoniacal, but I have never known one to be foul. The filtrate is usually slightly aromatic and has never shown any disposition to putrefy. I do not know how often the sawdust needs to be changed. I lately examined the sawdust which had been used for three months in the urinal of a country public-house and I found it absolutely free from all offensive odour.

When such urinals are not made of basket-work they must have an outlet at the bottom through which the aseptic filtrate may escape to the drain. Those who may wish for further details as to the construction of sawdust urinals will find them in my little book, "The Dwelling House," which is published by Longmans.

I am, Sirs, yours faithfully,

Sept. 2nd, 1898. G. V. POORE, M.D.

"THE PLAISTOW MATERNITY CHARITY."

To the Editors of THE LANCET.

SIRS,—With reference to your remarks on the Plaistow Maternity Charity" in Howard's-road, Plaistow, in THE LANCET of August 27th, I beg to state that St. Mary's Day Nursery and Hospital for Sick Children, Plaistow, E., is in no way connected with the St. Mary's Children's Hospital, Plaistow, E.

I am, Sirs, yours faithfully,

W. W. FARNFIELD, Resident Medical Officer.

St. Mary's Children's Hospital, Plaistow, E., August 30th, 1898.

To the Editors of THE LANCET.

SIRS,—In the article in THE LANCET of August 27th referring to the East Suburban Medical Protection Society your contributor deals with nursing charities to some extent from a medical man's point of view, and passes certain strictures which are wholly undeserved upon the Maternity Charity and District Nurses' Home, Plaistow. It is no part of your aim to deal with the subject from the patient's point of view, and therefore any observations upon that head would be out of place. In the interest, however, of the charity to which you refer, there are certain misstatements of fact in that article which ought to be corrected. In all ordinary cases—that is to say, in all the district nursing and most of the midwifery—no payment whatever is received, and the frequent reference to fees in your article is most misleading. Further, as regards the district nursing, no patient is nursed unless attended by a medical man, except in a few trifling cases, such as cut fingers, for which no doctor would be called in. As to the case of people who have been attended who might be able to afford a nurse, it may be pointed out that these cases are extremely rare, numbering certainly not more than 2 in every 1000 cases attended, and in each case there has been a special reason for the attendance.

As regards the midwifery work it should be observed that in the great majority of the cases no payment is made, and that the fee, in such cases where it is payable, was raised from 5*s.* to 10*s.* with a view to meeting certain objections advanced by this medical protection society. The sum of 10*s.* was fixed upon because this pays the whole expense of the attendance, so that it is a misrepresentation to suggest that the patient gets any benefit out of the donations to the charity or, on the other hand, that the charity makes any profit out of the putient. The right of the patient to choose between a midwife and a local medical man, and where she insists on a midwife—as many poor women will—the desirability of ensuring that a properly certificated midwife shall be in attendance, are matters which are beside the point of your article, though not in themselves unimportant.

In conclusion, it is desirable to state a fact, which is probably well known to your contributor, that the advantage to the local practitioners of the presence of this charity is very great. The local medical men are constantly asking for nurses to attend their cases and returning warm thanks for their being sent; the more important practitioners are enabled in this way to attend cases which must otherwise go to hospital; they often have patients sent them by the nurses and, in fact, their demands for nursing attendance tax to the utmost the resources of the charity.

I am, Sirs, yours faithfully,

Inner Temple, August 30th, 1898. ARTHUR PRITCHARD.

THE PERSHORE GUARDIANS AND THEIR POOR-LAW MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—The Pershore Guardians, at the last annual election of their medical officers, advertised for candidates who would waive all claim to superannuation. The Local Government Board, upon representation being made to them, informed the guardians that the arrangement was not one to which they could consent. It would seem now, according to a report of the proceedings of the guardians in the *Evesham Journal and Four Shires Advertiser*, to be the intention of certain members of that board to oust at least one of their medical officers, who has served them for nearly thirty years, by appointing at their next election a medical man they would get to "reside" in the district, and thus unless the Local Government Board again interfere he will not only lose his appointment but have the annoyance of being opposed under most unfair circumstances.

I am, Sirs, yours faithfully,

ARTHUR GREENWOOD,

Honorary Secretary, Poor-Law Medical Officers' Association, 3, Copthall-avenue, London Wall.

August 31st, 1898.

VITALITY.[1]

To the Editors of THE LANCET.

SIRS,—Dr. Harry Campbell will, I hope, pardon me for this late reply. Having recently occupied so many columns of THE LANCET I did not like to ask for space until the last of "Vitality" was published. Perhaps I may be allowed to remark that in replying to those who may differ from me I shall be as brief as possible and shall compress what I may deem it right to say in less than half a column of the journal.

If, as Dr. Harry Campbell considers, vitality is to be regarded "as a peculiar play of forces belonging to the inanimate world" I venture to inquire what it is that governs, controls, and regulates the particular forces of that very small portion of the matter of the inanimate part of our world which alone has entered or ever will enter into the composition of living things.

Although I consider that the "immaterial" does act, ever has acted, and will continue to act upon the "material," I cannot think that I occupy "a position as untenable as that of the spiritualists" which has been assigned to me by Dr. Harry Campbell, who also tells your readers that my assumption "that bioplasm is structureless" is "wholly *illogical*," because forsooth "*in our journey into the world of the infinitesimal we come sooner or later to a point at which we cease to detect structure!*" (The italics are mine.) I

[1] In reply to Dr. Harry Campbell's letter to THE LANCET of July 16th.

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cannot say, with Dr. Harry Campbell, "I believe in the spontaneous evolution of life," because I do not, never did, and never can believe in anything of the kind.

If Dr. Harry Campbell will define the characters of his "cell," and tell us what it does, what it looks like when magnified about 250 linear, how it began life, how it works, and what happens when it dies, I will do my best to convince your readers that facts demonstrated are to be accounted for, if we only begin with structureless bioplasm and go on to formed material.

In this discussion concerning the nature of life—Vitality—I must beg opponents of any views of mine not to include me in any class or section whatever of believers, unbelievers, materialists or spiritualists, sceptics or agnostics (who beat us all in *knowing*), for among those who devote themselves to science and the real, and are influenced by reason in their search after truth, are members of all "denominations" under the sun.

Let us, then, begin by considering the *matter that is alive* and the *formed material*—bioplasm and tissue—the "energy" of the living body and the "energy" of the dead body—the well-constructed laboratory with its intelligent working chemists and physicists, and the *living laboratory* with the chemical and physical changes therein, and then perhaps we may be ready to begin to prepare for "our journey into the infinitesimal," or rather "into" that infinitesimal portion of it that is *alive*.—I am, Sirs, yours faithfully,

Grosvenor-street, W., Sept. 2nd, 1898. LIONEL BEALE.

HOSPITAL REFORM ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me space to ask your readers whether they are of opinion that it would be desirable and useful to hold a congress in London some time during the ensuing year to discuss the following subjects: (1) The reform of the out-patient department of hospitals; (2) the desirability of converting all free dispensaries into provident dispensaries; (3) the best method of conducting provident dispensaries. I may say at once that the promotion of such a congress would entail a good deal of expense and we should be compelled to appeal to the profession for special help to carry it out. The Hospital Reform Association has been able, with a very limited income, to arouse public interest in the hospital question, and has to a certain extent been the means of bringing about some tangible reforms. Much work, however, remains to be done, and it would be a pity that it should not be accomplished for the want of proper support from the profession.

I am, Sirs, your obedient servant,

Cardiff, Sept. 6th, 1898. T. GARRETT HORDER.

THE CONGRESS OF PHYSIOLOGY.

(BY OUR OWN CORRESPONDENT.)

THE Fourth Triennial Congress of Physiologists took place at Cambridge University between August 23rd and 26th and was an unqualified success, though the lay press hardly discovered its existence. It was perhaps partly overshadowed by the better-known Congress of Zoology, whose 400 members held their meetings during the same week. But while they admitted many amateurs to their sections the physiologists were rigorous in only receiving those connected with their own subject and the allied sciences. So it happened that out of 232 members 154 were professors or lecturers, and 16 foreign countries were represented, including Egypt, India, and Japan. It is difficult out of 91 communications to know which to comment upon, but it seemed to be the general opinion of the foreign members that the English papers were of good value and of commendable brevity and lucidity.

The official business of the Congress was formally opened by a few pithy words of welcome and direction from the President, Professor FOSTER, on Tuesday morning, August 23rd. The President intimated that the object of the meeting was primarily to see actual experiments rather than to listen to verbal or even receive merely pictorial demonstrations.

An early paper of much interest was one by Professor KOSSEL (Marburg) on the Proteid Molecule. The hexon bases into which the molecule can be split are found in various amounts in different species of proteids. Their quantity is greatest in the newly recognised proteid histon and they are least in quantities in elastin. The physiological value of these substances differs, therefore, considerably within the limits of the albuminous group.

Professor BEER (Vienna) showed a number of experiments demonstrating the mode of production of visual accommodation in various groups of animals. The mechanism employed in the human eye is not that universally obtaining even in vertebrata. The same object is attained in amphibians and snakes by the shifting forward of the lens when objects near at hand have to be focussed. In fishes the active accommodation is not for near vision but for far vision, and in them a muscle, the retractor lentis, draws the lens towards the retina for vision of distant objects. Some vertebrates, even mammals, have no power of accommodation; the water tortoises have a relatively enormous accommodative range.

Professor BIEDL (Vienna) demonstrated the production of glycosuria by ligation of the thoracic duct and the alleviation of the symptom by the intravenous injection of lymph.

Dr. BRUNTON BLAIKIE exhibited specimens of urea obtained from normal mammalian muscle freed from blood.

Professor DENYS (Louvain) brought forward experiments showing the bactericidal power of extracts of leucocytes from the marrow and the absence of such power in leucocytes of the lymph glands, &c.

Professor HEGER and Dr. DEUWOR (Brussels) contributed work upon the alterations in the morphological appearance of the neurons of the cortex of the brain brought about by anæsthetic and narcotic drugs and by the winter sleep of hibernating animals. The interesting point has been proved by Professor von Frey (Zürich) that in order to evoke a sensation of touch the larger the surface of contact the relatively more intense must be the pressure per unit of the surface of application.

Two significant experiments were shown by Professor SHERRINGTON, F.R.S. (Liverpool): (1) the striking inhibition of the tonus of the extensor muscles of the knee-joint and the consequent abolition of the knee-jerk obtained by electrically stimulating or even gently kneading the flexor muscles of the knee; and (2), in conjunction with Dr. H. E. HERING (Prague), the inhibition of various muscles of the limbs and trunk obtained by excitation of points of the cortex of the brain. It was shown for a large number of muscle groups that at least two cortical centres for each exist. From one of these contraction can be regularly elicited and from the other relaxation.

Professor HAHN (Munich) showed that by injection of extracts of cholera bacilli and of typhoid bacilli into guinea-pigs specific immunity against intra-peritoneal infection with those bacilli can be obtained.

Professor TOWNSEND PORTER (Harvard, Boston, U.S.A.) showed some remarkable experiments on the mammalian heart. The heart removed from a recently killed dog, washed clean of blood, and then supplied with defibrinated blood or even with blood serum under high pressure of oxygen recommences to beat. Even small pieces of the ventricle of the thus excised heart will go on contracting forcibly and regularly for many hours.

Dr. LEONARD HILL (London) exhibited a simple and accurate sphygmometer for recording the blood-pressure in the human radial artery. Dr. Hill also demonstrated experiments illustrating the great influence of gravity upon the circulation. He showed how by adoption of suitable postures or by use of a bath or of compression of the abdomen the dangers and ill effects can be removed. The arterial pressure is restored, the heart fills, and respiration becomes re-established.

Dr. F. G. HOPKINS (London) and Mr. W. B. HOPE detailed observations on the dietetic precursors of the uric acid of urine. They pointed out that the ascription of all uric acid production in the mammal to the disintegration of nucleins is an over-hasty conclusion.

An important addition to micro-chemistry was made by Professor MACALLUM (Toronto) in the demonstration of a new and reliable method for the detection of phosphorus in animal and vegetable cells. The tissues after being treated with molybdate of ammonia in nitric acid are acted on by phenylhydrazin hydrochloride. To prevent confusion their lecithin is previously extracted with hot alcohol. The

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phosphorus compounds give a dark-green reaction. The method reveals phosphorus in the chromatin of all nuclei, in all nucleoli, in the zyanogen granules of pancreatic cells, in the colloid material of the thyroid and in the outer limbs of the rods and cones of the retina.

Professor WALLER, F.R.S., brought forward the continuation of his work on the influence of salts on the electro-mobility of nerve fibres. The predominant moiety of a salt in its action upon nerve is the basic or electro-positive element—e.g., any potassium salt is more effective than any sodium salt.

Dr. BUDGETT (St. Louis, U.S.A.) communicated experiments on the physical absorption of salt solutions by egg-membranes.

Professor VITZOU (Bucharest) reported experiments showing the existence of visual power in the monkey after total ablation of both the occipital lobes of the brain. The effect of injection of neurin and allied substances upon the circulation was shown by Professor HALLIBURTON, F.R.S., and Dr. MOTT, F.R.S,, in prosecution of their research upon toxic substances occurring in certain classes of diseases of the central nervous system.

Dr. LEE (New York) showed that of the two supposed causes of muscle-fatigue—viz., decrease of contractile substance and accumulation of fatigue products with poisoning of the muscle thereby—the former plays no part, the latter being the sole factor. His attempts to demonstrate histological differences between resting and fatigued muscle had given only negative results.

An excellent demonstration of the electric changes in the phrenic nerve which accompany its normal periodic activity was given by Professor WAYMOUTH REID, F.R.S. (Dundee), and Dr. J. MACDONALD.

Professor BÉDART (Lille) reported on the production of a flow of secretion from the mammary glands by electrification of the skin over the gland.

Mr. LANGLEY (Cambridge) showed a cat the end of the vagus nerve of which had been joined to the sympathetic nerve 64 days ago. Both nerves had been ligatured with horsehair and 1 in. of the nerves above the ligature carefully excised. The central end of the vagus was then turned forward to lie in contact with the peripheral end of the cervical sympathetic. At the meeting the vagus was cut near the skull and its peripheral end stimulated, when all present could plainly see that a regeneration had taken place, the eye opened, the nictitating membrane retracted, the pupil dilated, and there were in short produced the ordinary effects of stimulating the cervical sympathetic. This experiment proves that fibres of nerves can be diverted for other purposes and vaso-dilators be converted into vaso-constrictors. During the experiment an injection of nicotin prevented the vagus but not the superior cervical ganglion from acting.

Professor MAREY (Paris) pleaded the need of an international commission to unify and control recording physiological instruments such as manometers, myographs, sphygmographs, &c., in order to bring results up to the uniform standard which has been accepted in physics.

Professor HEYMANS (Gand) showed that various organic substances of the sulphur group can prevent or cure poisoning produced by fatal doses of nitryls and cyanides. A rabbit injected with the antidote and immediately afterwards with the poison remained lively and well, while a control rabbit without the antidote was killed in half an hour, and a third rabbit which received the same dose of poison without the antidote was reduced to a moribund state and brought back to life again by a dose of the antidote.

Professor SCHÄFER (London) gave a valuable account of his experiments on the alleged sensory functions of the motor cortex cerebri of the monkey. He has made 30 experiments upon the area connected with movements of the face, the leg, combined arm and leg, and upon the gyrus fornicatus. An important point noticed in the face area observations is that, although the cheek-pouch was paralysed and became filled with food, the animal was conscious of its presence and occasionally emptied it by pressing it against the shoulder or by forcing the contents out with the hand. Some of the monkeys were shown to the Neurological Society and were tested by several of its members a year ago. The result, in short, shows that complete voluntary motor paralysis of a part may be produced by a cortical lesion without perceptible loss of tactile sensibility. It cannot, therefore, be the case that the motor paralysis which is produced by a lesion of the Rolandic area is due to a sensory disturbance. And it also follows that tactile sensibility is not localised in the same part of the cortex from which voluntary motor impulses directly emanate. Hemianæsthesia sometimes results from an extensive lesion of the motor cortex; this is, however, not local but general, and is due to the vascular and mechanical disturbance produced upon the whole side of the brain by the establishment of the lesion. That this is the case is shown by the fact that it is generally accompanied by hemiopia, though in none of the experiments was the visual cortical area directly involved in the lesion. Five monkeys were operated on in this way: having exposed the upper Rolandic region the leg area in the gyrus marginalis was completely severed by a cut passing as far down as the calloso-marginal sulcus and deep enough to sever all the fibres passing from the cortex to the centrum ovale. In no case did the lesion produce anything more than a temporary sensory disturbance; the opposite leg was always completely paralysed, although after a time "associated movements" returned. This tends to show that the hemianæsthesia of former operations must have been correlated with disturbance of some part of the cortex other than the motor region and was probably indicative of a general disturbance of the whole hemisphere, involving perhaps the thalamus.

Professor BOWDITCH (Harvard) begged members to sign a protest in favour of the moderate use of alcohol to counteract the efforts of too zealous teetotallers in America who had persuaded the Government to introduce into schools and school-books the doctrine that alcohol is a poisonous substance which can only do harm and never do good to the human body.

Professor BOYCE (Liverpool) read a paper illustrated with many lantern slides on the Central Nervous System of Birds. Two constant physiological movements are obtained by stimulating the surface of their hemispheres—viz., contraction of the opposite pupil from stimulation about the middle of the mesial wall, and rotation of the head and neck and deglutition from stimulation of a small area on the lateral aspect. By removing the anterior or posterior portion of the cerebral hemisphere marked deficiency of vision in the opposite eye is caused but no kind of motor defect. If the injury be to one optic vesicle marked partial blindness in the opposite eye occurs, and if injury be very severe the bird becomes unable to stand and lies on its back continually. If both central hemispheres are destroyed the bird is very inert, does not peck corn and must be fed, does not pay any attention to objects moved in front of its eyes, but in walking avoids obstacles and obtains some support in the air by its wings, but cannot fly properly. To show how completely the brain is an optic organ absolute blindness could never be produced, for the acerebral pigeon avoids obstacles, and this is the case also when, together with removal of one hemisphere and consequent blindness on the opposite side, the eye of the same side is enucleated.

Professor KRONECKER (Berne) read several papers for himself and others, of which want of space forbids further mention.

The five physiologists chosen by the University to receive the honorary degree of Doctor of Science were Bowditch, "from the other Cambridge," known for his work on heart, muscle, nerves, &c.; Golgi (Pavia), renowned for his interest in malaria; Kronecker (Berne) and Marey (Paris), both of whom have adapted many physical instruments to physiology; and Kühne of Heidelberg whose labours are known in connexion with nerves and muscles.

The Public Orator employed the modern pronunciation of Latin, but our medical colleague the Vice-Chancellor was loyal to the English methods. Great credit is due to the president, committee, and honorary secretaries for making the meeting a great success. The only unfriendly criticism made was that the exhibition of instruments and apparatus was a very poor one. The evening entertainments were shared by the zoologists, which made a pleasant variation. They consisted of a reception by the mayor, a *fête champêtre* given by the Vice-Chancellor at Downing College, a conversazione in the Fitzwilliam Museum, a garden party in the botanical gardens and a subscription banquet. At the final meeting grateful thanks were accorded to all the kind hosts. The great feature of the Cambridge congress for most of the visitors was that they were nearly all housed in Trinity, Trinity Hall and Caius colleges, and they were allowed to obtain an intimate insight into the inner life of the Cambridge dons.

At the final session of the Congress it was resolved that

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the next meeting (1901) should be held at Turin under the presidency of Professor Mosso. The following were elected to act as an organising committee:—Professor Bohr (Copenhagen), Professor Bowditch (Boston, U.S.A.), Professor Dastre (Paris), Professor Foster (Cambridge), Professor Fredericq (Liège), Professor Grützer (Tübingen), Professor Kronecker (Bern), Professor Kühne (Heidelberg), Professor Mosso (Turin), Professor Sherrington (Liverpool), and Professor Wedenskij (St. Petersburg).

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Fresh Increase of Plague. — Postponement of the Great Improvement Scheme for Bombay. — Inoculation and Vaccination.—More Regulations about Plague.

THE increasing death-rate from plague in Bombay city seems to foreshadow the early occurrence of a third outbreak. 85 deaths from plague have been registered during the past week—an increase of 23 on the previous record. The almost entire absence of cholera is still a remarkable feature in the returns. While last year the returns of plague were probably under-estimated in consequence of the concealment of cases there is reason to believe that under the present system of administration all the cases are recorded. In Calcutta it has been feared for some time past that cases of plague have been concealed. As the total mortality, however, has been small the unreported cases must have been very few. The discovery of two natives dead and two more in a dying state in one house on August 10th gives proof of this concealment. The disease is increasing in the Deccan. As many as 90 fresh cases and 62 deaths were reported at Hubli for August 8th. In the Bhore State also it is increasing. It is hardly likely that Poona will escape another visitation and already some suspicious cases have been discovered at Poona station.

The indefinite postponement of the great improvement scheme for Bombay has caused great disappointment. At one time the matter was put forward as one of great urgency and promised an early prospect of its fulfilment. Rumour has it that jealousy is the cause of this urgent and great reform in the western city being postponed. It might seem childish to English minds to suggest that such an influence could prevail, but those who know India best say that it is not only possible but probable. The third reading of the Bill was taken in April and while numerous references have been made in matters of detail it still requires the final sanction, and the final sanction does not come.

No further results have been proclaimed about "curative" serum. Prophylactic inoculation proceeds but slowly. It is unknown how long the partial protection lasts—in all probability but a few months. A few experiments on animals would afford some clue on this point, but nothing seems to have been done. Being merely a temporary toxin poisoning there is of course no comparison with vaccination. The latter practice was carried out in Bombay to the extent of 84 per cent. Considering the difficulties of registration it shows that in India at any rate the people have learnt to place confidence in its value. It is to be hoped at any rate that the Eastern mind will not require a clause to satisfy its conscience. Amongst the unvaccinated emigrants, chiefly from Africa, small-pox is most terrible.

The vacillation of the Government with respect to plague administration is again shown by the issue of a fresh series of regulations, dated August 12th, giving special powers and directions to the Municipal Commissioner of Bombay. It will be remembered that after the riots all coercive measures were suspended and that practically from that date little was done except house cleansing and disinfection. Now, however, the removal to hospital of persons suffering from plague is re-enacted. Powers are given to a specially appointed Deputy-Commissioner to inspect and have cleansed any insanitary buildings, to take such measures as he shall think fit where any dangerous disease is suspected to exist in order to prevent its spread, to close any well or tank the water of which is likely to cause the spread of any dangerous disease, and to have destroyed any hut or shed, bedding, clothing, or other articles likely to spread disease. The new regulations are, in fact, a re-instatement of the powers of the late Plague Committee. A special medical officer is appointed for plague operations. It is too soon perhaps to calculate upon the effect of such measures. Suffice it to say that if they be carried out with the strictness of the previous authorities more troubles may be anticipated.

August 13th.

The Bombay Improvement Scheme. — The Milk-supply of Bombay.—Death of Dr. K. N. Bahadurji.—The Plague and Typhoid Fever in India.

The Act for the great Bombay Improvement Scheme has at last received the final sanction, so that there is no cause why the structural improvement of Bombay should not be commenced at once. While the great alterations proposed will improve the city in many ways it must not be imagined that it will make Bombay a healthy city or have any effect on the plague. The conditions of existence of the great mass of the natives are such that only radical building Acts, housing Acts, and almost universal alteration of drainage arrangements could improve their state of health. Bombay will be beautified, communications between one part of the city and another will be facilitated, the streets will be opened out, and "artisans dwellings" constructed for a certain number of the people, but these things, while comprising immense improvements, will not strike at the inner unhealthy life of the people. In THE LANCET of Feb. 26th the state in which hundreds of thousands of people live in the crowded parts of Bombay was described. Perhaps the most crying evil is the overcrowding and the general want of ventilation in the dwellings. One effect of this is the extremely high death-rate from phthisis. It must be admitted that to put a large and overcrowded Indian city on a proper sanitary footing and to adapt the principles of western civilisation to the circumstances of this country is an almost impossible undertaking. At any rate, a sanitary miracle cannot be performed, so that it is necessary to remind enthusiasts that improvement of the public health must necessarily be slow and that they must be satisfied with the prospective advantages in many years to come.

The milk-supply of Bombay is another matter which requires urgent attention. It is obvious that the dairies and cattle-sheds should be subject to rules and regulations the breach of which should be punishable, and that they should be periodically visited by competent inspectors. At present this is far from being the case, the cattle for the most part being housed and kept in a most filthy state. There is not sufficient protection against dirt and there is practically none against fraud. These strictures do not apply to one or two well-managed dairies, but the great mass of the milk-supply is open to this condemnation.

I record with much regret the death, at the early age of thirty-eight years, of Dr. K. N. Bahadurji, the leading Parsee practitioner in Bombay. He was a M.D. Lond. and well-known for his advocacy of certain medical reforms, more especially the grievances of native medical graduates.

Whilst typhoid fever is so common and so fatal amongst the British in India it has been asserted that from this disease the natives are free. On the other hand it has been argued that being common amongst young children it is in consequence not often seen amongst the adult population. From cases I have seen I believe there is an explanation for these apparently contradictory statements. In the first place the bowel symptoms in natives suffering from typhoid fever are but slightly marked, so it is probable that the general symptoms existing alone have caused it to be confounded with other diseases. It is generally admitted that there are a large class of fevers in India in which it is almost impossible to make an exact differentiation. These two facts explain the absence of a correct diagnosis in a very large number of cases. In the second place typhoid fever is not so fatal among the native population and when the patient succumbs it is more frequently due to what is apparently a complication. The illness is therefore often probably recorded as a local disease although accompanied by a general fever. The essential point of difference, however, lies in the comparatively slight abdominal symptoms. If these statements be confirmed they will explain why it is that typhoid fever has not hitherto been recognised as common amongst the native population. I have reason to believe that at the present time typhoid fever is prevalent in Bombay, that many of the deaths returned as from "fever" are due to this cause, and that the prevailing diarrhœa has a similar origin. At the same time the total

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deaths from fever are considerably below the average of previous years.

In view of the possibility that plague will become epidemic in Calcutta during the colder season elaborate precautions are being taken by the authorities. The health officer has granted licences for 974 ward, family, and caste hospitals. They are divided thus: family hospitals, 957; ward hospitals, 11; and caste hospitals, 6. The reported mortality from plague in Calcutta up to date is over 150. Outside the Bombay Presidency Calcutta is the only place affected, though an isolated case has been reported from the Punjab and 2 imported cases in Madras. In the Bombay Presidency, Bombay City and Belgaum, Dharwar, Surat and Thana districts are most affected. In Bombay City 101 deaths from plague were registered during the past week. Relapsing fever still continues, 16 deaths having been recorded. The mean death-rate for Bombay in the month of August is about 40 per 1000; at the present time it is 44·4 per 1000.

August 20th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Deaths under Anæsthetics.

TWO instances of death during the administration of anæsthetics have lately occurred in this neighbourhood. One was that of a boy, aged fifteen years, who died on August 10th at Redditch when chloroform was given for an operation on a diseased hip. In this case Dr. Page, who gave the chloroform with a modification of Junker's inhaler, stated that the amount given was 80 minims, the operation lasting 25 minutes. The deceased was a fragile, delicate boy, but examination beforehand showed no contra-indication to the use of chloroform. The post-mortem examination showed no unusual signs, the heart being natural but contracted. A verdict of "Death from syncope following the administration of chloroform" was recorded. The second case occurred at the Queen's Hospital on August 24th. The patient was a woman, aged thirty-nine years, the subject of cancer. An abdominal section was about to be performed but the patient died before it was commenced. Here the anæsthetic was chloroform and ether in mixture and was given by one of the house surgeons. Preliminary examination failed to find any abnormality in the heart. At a post-mortem examination it was found to be fatty and flabby. A verdict of "Death while under an anæsthetic properly administered" was given, the cause being attributed to syncope and heart failure.

The Viewing of Bodies at Inquests.

This well-worn subject was the occasion of some remarks from the coroner for the city (Mr. I. Bradley) at his court on August 17th. The question has apparently not been definitely settled whether the viewing of the body at an inquest is obligatory or not. The Home Secretary has not expressed himself authoritatively upon the matter. No doubt the primary object of the viewing was to assist at the inquest in the detection of crime—to find out when and where and by what means the deceased came to his death—"of whose body you shall have the view." The perfunctory way in which the viewing is performed and the distaste it occasions, particularly during the recent hot weather, has been the subject of much animadversion on the part of jurors. As long as the law remains so wanting in precision of interpretation in this direction it cannot be a matter of surprise that this repugnant duty causes so much disgust among those whose duty calls them to fulfil the privileges of citizenship.

August 30th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Henshaw's Blind Asylum and the Guardians.

THE quarterly meeting of the old and valuable institution well known in the Manchester district as Henshaw's Blind Asylum was held the other week. Mr. S. L. Helm in moving the adoption of the report said that at present there were 193 inmates—62 men, 44 boys, 44 women, and 43 girls. All but 4 of them had had summer holidays, the board providing funds for 48 who had no means of their own. For many of the blind a home is provided for life. Three of the oldest inmates died during the last quarter, one of whom was admitted in 1845, another in 1849, and the third in 1865. They are taught various occupations enabling many of them to earn their own living and to return to their friends. The Manchester guardians have hitherto subscribed 5 guineas a year to the asylum, in return for which they became governors and had the power of nominating candidates for admission. There are at present several inmates nominated by the guardians, for whom a charge of from 4*s.* to 6*s.* a week is made, but even the larger sum does not meet the cost incurred in their support. Now, however, according to the newspaper reports, the guardians have decided to withhold their subscription. Under these circumstances Mr. Helm said it would be his duty to bring the matter before the board of management in order that they might consider the propriety of raising the weekly charge for these inmates to recoup themselves for the loss of the 5 guineas. The guardians would no doubt be charged the rate asked from others. They could withdraw their nominees, "but as the institution was usually full, and there were at present a number of candidates waiting for admission, that was not a matter with regard to which the board of governors need feel immediate concern." He said they could not allow the institution to suffer through the action of the guardians. The asylum is a voluntary institution and "by no means compelled to find room for the candidates sent by the guardians." It will be unfortunate if there should be any misunderstanding between the asylum and the guardians, for the latter will have a serious undertaking before them if they are to maintain, instruct, and educate their nominees in the various occupations open to the blind as thoroughly and efficiently as is now done at the asylum. They have neither the special skill acquired by long experience nor the necessary appliances, nor will their nominees escape from the tainted social atmosphere of the workhouse.

Enlargement of Monsall Fever Hospital.

The City Council of Manchester having applied to the Local Government Board for sanction to borrow £27,500 for the alteration and enlargement of the Monsall Hospital, an inquiry was held in the town-hall on August 23rd by Mr. W. W. E. Fletcher, M.B. It may be remembered that the hospital was recently taken over by the Corporation from the Infirmary. It is used for the various infectious diseases exclusive of small-pox, which will be treated elsewhere. At present neighbouring outside authorities send cases to the hospital for so much per head, but this arrangement will terminate on June 24th next, after which date it will be used exclusively as a Manchester hospital. Thirty acres of additional land are to be utilised. The inspector said that if separate accommodation were provided for small-pox cases he did not see that there would be any difficulty with regard to granting the corporation's application.

Open Spaces for Manchester.

The Lord Mayor on August 26th formally opened a recreation ground presented by Mr. F. E. Loyd to the residents of Cheetham. Plots are reserved for bowls and lawn-tennis, and a playground is set apart for children. The Lord Mayor said it was the thirty-eighth park or open space under the control of the Parks Committee, and claimed that Manchester was as well off for parks as any city in the kingdom. The *Manchester Guardian*, however, took him to task the next day, saying that there is scarcely any great city worse off, a proposition which unfortunately can be sustained by figures. Two years ago it pointed out that Glasgow had 817 acres of open space for public recreation, Liverpool nearly 700 acres, Birmingham 450 acres, Leeds a single park of more than 400 acres besides smaller parks and recreation grounds, while Manchester had only 312 acres. Some few acres have been added since, but there is still plenty of opportunity for wealthy citizens to give some brightness to the depressing life of the crowded population by adding to the scanty area of open spaces in the city. Nor is Manchester, as the Lord Mayor said, one of the healthiest of cities. The death-rate, though lower than it was, is still high, and while the suburbs are fairly healthy the average is made up by the appalling death-rate of some of its poorest quarters, which, as the *Manchester Guardian* says, "disgraces the city." It must in fairness be said, however, that we are reaping the fruits of municipal ignorance and neglect in years gone by and that earnest and

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intelligent efforts are now made to remedy the mischief caused by old errors.

Unsound Meat.

At the Salford police-court on August 26th Messrs. Reid Brothers, potted meat manufacturers, were summoned for having unsound meat on their premises. On August 4th a cart in the yard contained the heads of sixty-four beasts "unsound and stinking," and in a storehouse were eighteen tongues also unsound. The two defendants were fined £20 each and costs and also £3 3*s.* extra costs.

Aug. 30th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool City Hospitals: Contemplated Extensions.

THE members of the Port Sanitary and Hospitals Committee of the City Council made their annual inspection of the several infectious diseases hospitals under corporate management on Sept. 2nd. The Fazakerley site was the first to be visited. The site was acquired by the committee at a cost of £37,000 as a safeguard against the dislodgment of the Parkhill Hospital, which is let to the corporation by the Mersey Docks and Harbour Board, and which it is possible may be required by the latter body. The site consists of 113 acres and will accommodate 300 beds, 80 more than are provided at the Parkhill Hospital. The party then proceeded to visit the offices of the Port Sanitary staff at the pier-head, thence proceeding to the Grafton-street and Parkhill Hospitals. The Grafton-street institution is probably one of the most complete of its kind in the kingdom. Extensions are in contemplation at Mill-lane, Old Swan, at a cost of £40,000, where it is proposed to erect two pavilions to contain 80 beds. As time goes on the committee will be enabled to deal with all acute cases of infectious diseases and to draft convalescent cases to Fazakerley. The chairman, Dr. Thomas Clarke, pointed out that with regard to small-pox the new Vaccination Act did not accord with the views of the committee, as in a limited time unvaccinated cases would probably predominate. That was one of the strongest arguments which could be used in favour of the erection of additional small-pox hospital accommodation. Dr. Hope pointed out that the parish of Liverpool was the most extensively vaccinated parish in England. The latest published returns showed that only 4 per cent. of children born in Liverpool were not accounted for in regard to vaccination. In West Derby the rate was 7 per cent. and in Toxteth Park about 9 per cent. The members of the committee sat down to luncheon at the Parkhill Hospital, which was presided over by Dr. Thomas Clarke, the chairman of the Committee.

The Purity of the Liverpool Water-supply.

It is satisfactory to know that the Vyrnwy water is not "particularly rich in typhoid germs" as was asserted by a speaker at a recent meeting of the Chester Waterworks Company. Dr. Hope, the medical officer of health of Liverpool, informed the Water Committee of the Liverpool City Council that all the reports made by Professor Boyce during the past twelve months proved that the Vyrnwy water was of exceptional purity and not a typhoid organism or anything allied to it had ever been found in it. The members of the committee expressed themselves quite satisfied that the statement was absolutely without foundation and that Liverpool was very fortunate in having such a wholesome water-supply.

Death of Mr. John Wallace, M.D., L.R.C.S. Edin.

The death of Dr. John Wallace, the Professor of Midwifery at University College, Liverpool, and consulting gynæcological surgeon to the Liverpool Royal Infirmary, took place on Sept. 1st from an attack of gastritis. Dr. Wallace had only been confined to the house for a few days, his death being so unexpected that the wedding of his son, Dr. Arthur J. Wallace, which was fixed for Sept. 1st, was not postponed. However, during the evening of Sept. 1st, an attack of hæmatemesis supervened, causing so much prostration that Dr. Wallace succumbed before midnight. Dr. Wallace graduated as Doctor of Medicine at the University of Edinburgh in 1861, having been a pupil of the late Sir James Y. Simpson. He settled in Liverpool nearly thirty years ago and devoted himself to obstetric practice. Prior to the foundation of University College, Liverpool, Dr. Wallace was lecturer on midwifery at the old Liverpool School of Medicine and afterwards became its professor at University College. In 1878 he was appointed gynæcological surgeon to the Thornton Wards of the Liverpool Royal Infirmary upon the death of the late Mr. A. B. Steele, the first gynæcologist, which he resigned at the last annual meeting, having attained the limit of age of sixty years. He was thereupon appointed consulting gynæcological surgeon. He was also an examiner in obstetric medicine at the Victoria University and a past president of the North of England Obstetric and Gynæcological Society. Dr. Wallace leaves three sons and two daughters; his eldest son, Dr. Arthur J. Wallace, is the assistant lecturer and demonstrator in midwifery and gynæcology at University College, Liverpool. The remains were cremated at Anfield Cemetery on Sept. 5th, prior to which a funeral service was held at St. Andrew's Church, Rodney-street, which was attended by a large number of Dr. Wallace's former colleagues and other friends.

The New Vaccination Act: the First Case in Liverpool.

The first "conscientious objector" to the practice of vaccination appeared at the Liverpool Police-court before Mr. Kinghorn, the deputy stipendiary magistrate, a few days ago. The applicant, a young married man, aged twenty-three years, applied for a certificate of exemption on the grounds that he "did not believe, never did believe, and never will believe in vaccination." Mr. Kinghorn naively remarked that he thought under the circumstances the young man was hopeless, a remark which excited laughter in court. The magistrate, assuming the young man's objections to be conscientious, and having, as he said, no means of testing his *bona fides*, granted a certificate of exemption. Evidently Mr. Kinghorn felt his position an embarrassing one as regards the means of testing the conscience of the "conscientious objector."

Closing of a Liverpool Cemetery.

The Necropolis, one of the oldest and largest of the remaining intra-mural cemeteries, has been closed under the powers of the Liverpool Improvement Act, 1898, which provides for the acquisition and closing of a number of old burial grounds in the city. The city council has paid £3800 to the proprietors of the cemetery in compensation. A number of small burial grounds have also been closed under the same Act.

The Liverpool School Board and the Scholars' Eyesight.

The Liverpool School Board have arranged for a series of three lectures with demonstrations to be given to head and assistant teachers with regard to the best methods of ascertaining defects in the children's eyesight. The first lecture was delivered on Sept. 5th in the Arts Theatre of University College, Liverpool, by Mr. R. J. Hamilton. The periodical examination of the eyesight of school-children is a step in the right direction and will prove beneficial to them. The board are anxious that the teachers should avail themselves of the opportunity afforded to them by means of these demonstrations.

Charge against a Military Officer of Aiding in Procuring Abortion.

Mr. Sampson, the city coroner, held an inquest on August 29th touching the death of Miss Jane Yates, a young woman, aged twenty-nine years, who died on July 27th under suspicious circumstances. The medical evidence went to show that the patient died from septicæmia the result of a miscarriage. The post-mortem examination revealed evidences of septic peritonitis and a shallow abrasion on the posterior side of the uterus. Mr. F. T. Paul stated that in his opinion the miscarriage was due to the use of one of the catheters produced in court. The jury returned a verdict that Miss Yates's death was caused through procuring abortion and that Lieutenant Wark was privy to the act. As the verdict was equivalent to one of murder Lieutenant Wark was placed under arrest and was committed to the Assizes under the coroner's warrant.

Sept. 7th.

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SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Glasgow: Memorial Window in Honour of Principal Caird.

ON the initiative of the Business Committee of the University General Council a movement has been set on foot to place a painted glass window in the Bute Hall of the University as a special tribute by past and present students of the University of Glasgow to the memory of its late distinguished head. The idea is a most appropriate one and has only to be made known to be completely successful. Already many old *alumni* of the University in various parts of the country have sent in contributions. It is estimated that the undertaking will require about £1000 and the maximum subscription is £1 1*s*. As there are many former students of the University whom it is obviously impossible to communicate with from any lists at present available the coöperation of all interested in making the movement known among students of older date is invited. The secretaries are Mr. John G. Kerr, M.A. (Convener of the Business Committee of the University General Council), and the Rev. Arthur Stanley Middleton, M.A. (President of the Students' Representative Council). Mr. Archibald Craig, 156, St. Vincent-street, Glasgow, is treasurer.

Hospitals in Aberdeen.

Intimation having been made by the directors of the Royal Infirmary that they could not see their way to take any more cases of erysipelas into the infirmary the Town Council's Hospital Committee has agreed to admit such cases to the City Hospital, where a ward will be set apart for the purpose. The action of the infirmary directors is probably not unconnected with the fact that for the first seven months of this year there has been a deficit in the finances of £1300. The directors of the infirmary have appealed to the life managers and the public generally for larger subscriptions so as to meet the expenses of the enlarged institution and the increased number of patients. A similar appeal has been issued on behalf of the new convalescent hospital at Pitfodels in the suburbs of the city. For each contribution of one guinea per annum subscribers will have the right to nominate for a week's residence one patient, whether previously treated in the infirmary or not.

Horseplay at the Glasgow Royal Infirmary.

On Wednesday morning last, at the St. Rollox Police-court, Glasgow, ten of the junior staff of the Glasgow Royal Infirmary and two other persons were fined 1 guinea each with the alternative of fourteen days' imprisonment for having ducked another resident in a bath. The cowardice of this combination of twelve persons to do physical violence to one will strike all who hear of the matter. Members of the medical profession who attain to responsible posts in our large hospitals are supposed to have learnt to behave themselves, so that the rough horseplay which these young fellows indulged in was decidedly out of keeping with their positions.

Sept. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Typhoid Fever in Strabane.

AT the weekly meeting of the Strabane Board of Guardians, held on August 23rd, it was reported that there were 11 cases of typhoid fever in the Fever Hospital, and 3 other cases were also reported. The Local Government Board have requested Dr. Trimble, medical officer of the Strabane Dispensary District, to let them know the probable source of infection in each case of typhoid fever and scarlet fever which has recently occurred in Strabane.

Nursing in Castleblaney Workhouse.

At an inquest held at the workhouse, Castleblaney, on August 24th, on an inmate of the workhouse infirmary, it was stated in evidence that the deceased was one of about 75 patients in the hospital and infirm wards—24 in hospital, the remainder infirm—who are attended by one nurse and one untrained assistant. These have the care of eight and sometimes of ten wards, and have in addition to the nursing to superintend the washing and serving of food to the inmates of these wards. Dr. Wilson, the medical officer of the workhouse, said in his examination that it was a physical impossibility for the nurse and her assistant to pay proper attention to the sick in the hospital. It appears that the guardians have not carried out the recent requirements of the Local Government Board who called upon them to appoint an efficient staff of nurses to pay proper attention to the sick and infirm. Perhaps the rider added by the jury to their verdict, in which they recommend the Local Government Board to see that an efficient staff of nurses is appointed in the hospital to look after the sick, will have some effect on the guardians.

Bangor District Nursing Society.

At the first annual meeting of this society, held in Bangor on August 23rd, the Marquis of Dufferin presided, and the annual report was submitted by the Marchioness of Dufferin. It would appear that in Bangor trained nursing of the sick poor began on May 24th, the Queen's Birthday, and in commemoration of the Diamond Jubilee. The donations to the society were £89 and the annual subscriptions were £74. The district embraced by the nurse extends for two miles in every direction from the centre of Bangor and her nursing is entirely unsectarian. She had looked after 144 cases during the year and paid 3017 visits. The noble chairman intimated that during the coming year he would deliver a lecture on behalf of the funds of the society.

Belfast Water-supply.

The Belfast Water Commissioners, recognising the vast and increasing population of Belfast, are pushing on their new scheme by which they propose, at a cost of £850,000, to bring the water from the Silent Valley—a huge table-land immediately over Kilkeel, co. Down—a distance of 45 miles. Recently the Commissioners spent two days in inspecting the entire length of route. They first visited the service reservoir situated about five miles from Belfast, near Knockbracken, and found it in a wonderfully forward condition; it is to cost £34,000. They then inspected the conduit from the reservoir to Ballynahinch. It includes a considerable amount of "cut-and-cover" and a tunnel of more than 3¼ miles. This is almost finished and this contract is for £145,000. The next part of the conduit is principally "cut-and-cover" and will cost £45,000. The Commissioners then visited what is a very difficult part of the work, as it includes in addition to 2 miles of "cut and cover" the very laborious task of boring a tunnel 2¼ miles long through the highest of the Mourne range of mountains, Slieve Donard, as well as 7¼ miles of cast-iron and steel syphon pipes. The contract for this is £96,000. On the far side of Slieve Donard, that is, between it and the Silent Valley, the conduit is principally "cut and cover" and will cost £115,000. The Silent Valley, situated 500 feet above sea level, is a most suitable district for a reservoir and catchment area, but it is not contemplated for the present to build a reservoir here, as the supply of water from two rivers—the Kilkeel and Annalong—will for some years to come be sufficient without a reservoir, and the Commissioners have the right to tap these rivers. The work on this gigantic undertaking will probably not be finished for two more years. Then the citizens will have a never-failing supply of water which experts, after examination, declare to be equal to that of Loch Katrine, which supplies Glasgow.

Report of the President of Queen's College, Cork.

The annual report of the president of Queen's College, Cork, has been issued. It refers to the appointment of a lecturer on Celtic and considers there ought to be a chair for such an important subject, especially as comparative philology is receiving so much attention on the Continent at present. The president makes reference to many subjects concerning the medical school. The new pathological laboratory has been completed and is ready for the summer course of practical pathology. There have been very considerable improvements made in the medical department. A splendid collection of frozen sections of the human body has been obtained from Berlin and will shortly be placed in the dissecting-room. Many of these by a new arrangement will be visible on both sides. An excellent set of the newest kind of diagrams has been procured for the anatomical and physiological departments. Models of the viscera and other parts of the body have also been obtained and will be also placed in glass cases in the dissecting-room.

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There are already several instructive dissections in the anatomical museum. It is proposed to place these in the dissecting-room with models in cases. When these changes have been made the dissecting-room will be well-furnished according to modern ideas. The president deals tentatively with the education question generally and urges on the Government the desirability of founding a University in Cork. In that connexion he alludes to "the extraordinary and quite exceptional ability of the people of the South of Ireland and particularly of those who inhabit the counties of Cork and Kerry." He directs attention to the very large sums provided by the State in various parts of Germany for the development of the national universities, and suggests that if our Government were to devote the same attention to the fostering of higher education in Ireland this country, like Germany, would rapidly attain a high position side by side with England amongst the commercial nations of Europe.

Sept. 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Pulmonary Streptococcus Infection.

THE meetings of the Academy of Medicine are but sparsely attended at present owing to the holidays, but at the meeting held on August 15th M. Clozier reported a very interesting case of what at first appeared to be acute pulmonary tuberculosis. The illness, however, was due to streptococcus infection and was cured by the use of Marmorek's serum. The patient, a boy aged thirteen years, had previously been in good health and there was nothing of note in either his personal or his family history. After coming in from a bicycle ride in the rain he was seized with shivering, his temperature ran up, and he had a cough. Auscultation revealed small crepitations over the whole of both lungs. The sputa, which were muco-purulent, contained none of Koch's bacilli but plenty of streptococci. His condition became more and more serious despite free stimulation and active revulsive treatment. At last he was given a hypodermic injection of 20 c.c. of antistreptococcic serum followed by an injection of 10 c.c. for the next three days. He continued to get worse and there were heard on auscultation tubular breathing, large bubbling râles and pectoriloquy. The three following days the dose of serum was increased to 20 c.c. Finally, three days later than this a pulmonary abscess lying at about the angle of the scapula emptied itself and all the signs of a cavity became audible. One more injection was given and from that time rapid convalescence ensued.

Agglutination in Tuberculous Serum.

At a recent meeting of the Academy of Sciences, a body whose work is less affected by the dull season than that of the other societies, M. S. Arloing and M. P. Courmont read a paper on the best methods of cultivating the bacillus of tuberculosis so as to obtain the agglutinative reaction in a neat and really convincing manner. The culture medium is beef or veal bouillon peptonised 1 in 100 and glycerinated to a strength of 6 in 100. Plain bouillon does not further the growth of the agglutinative material, whatever be the bacillary strength of the cultures, although agglutination sometimes occurs under such circumstances in a very defective manner. The proportion of glycerine is a percentage of from 2 to 12, but the most convenient proportion for bringing about the agglutinative action is a percentage of from 2 to 8. In a culture glycerinated to 6 or 8 per cent. serum manifests an agglutinative power twice as strong as a culture only glycerinated to 2 per cent. Peptone is also indispensable for a good growth. In a bouillon glycerinated but not peptonised the culture is no richer at the end of ten days than in a peptonised bouillon at the end of three. The bouillon must be sterilised by being heated for as short a space of time as possible to a temperature of 110° C. Homogeneity is obtained by frequently shaking the cultures, which are made for this purpose in cylindrical flat-bottomed flasks. Rich cultures of from eight to ten days old are the best for obtaining the agglutinative reaction. In many cultures the agglutinative substance is found to increase up to the fifteenth day, but after that date it diminishes or gets weaker. It is best to work with weak serums and cultures.

Radiography and the Physiology of the Heart.

M. Bouchard at a recent meeting of the Academy of Sciences reported some observations he had made upon the thoracic organs by means of the x rays. Amongst other things he has been enabled to assert the existence of a marked dilatation of the auricles when the intra-thoracic blood-pressure is raised during inspiration. This condition is artificially brought about by endeavouring to inspire with the glottis shut and is naturally brought about by the violent inspirations during a paroxysm of whooping-cough. M. Bouchard has also discovered that a clear horizontal space exists during forced inspiration between the shadow of the heart and that of the diaphragm, but during normal inspiration there is no space visible. This phenomenon, which is remarkable considering that the diaphragm and the pericardium are attached to one another, is explained by M. Bouchard in the following way. During the forced descent of the diaphragm in a large inspiration the inferior surface of the heart is in contact with the diaphragm to a very limited extent. The pericardium tucks itself into the space existing between itself and the heart, forming in front and behind a gutter into which in turn the pulmonary tissue is packed, thus forming a layer of tissue much more penetrable by the x rays than those which make up the heart and the diaphragm.

Vaccination in France.

At the Congress held at Nantes M. Brouardel proposed a resolution, which was unanimously adopted, to the effect that compulsory vaccination should be extended to Tunis. In France vaccination is enforced by strict regulations which do not meet with any opposition from the public. All persons seeking employment of any kind are required to produce a certificate of vaccination and all soldiers are revaccinated on joining their regiments. The Academy of Medicine also awards every year a considerable number of prizes and medals to the medical practitioners and midwives who have performed the most vaccinations and revaccinations. In fact, vaccination is taken quite as a matter of course in France and the arrangements for making it compulsory in the colonies are at the present time almost complete. Under these circumstances no one looked for a campaign against vaccination undertaken by the celebrated anti-Jewish journalist Edouard Drumont, a campaign undertaken in the name of individual liberty and, which is still more strange, in the name of hygiene as understood by M. Drumont. In an article which has produced some sensation and caused astonishment rather than made converts, he declares that small-pox is not a disease but a natural process, in the course of which the organism spontaneously throws off morbid products which it contained; in his opinion vaccination has no other effect than that of closing the pores of the skin and preventing the escape of the morbid products. According to M. Drumont vaccination is the only cause of racial degeneration and of the increase of new diseases which were formerly unknown; on this ground Jenner must be regarded as a scourge of humanity, although it is admitted that he possessed the merits of being an excellent father and a naturalist who carefully studied the habits of the cuckoo. In conclusion, M. Drumont draws attention to the unpopularity of vaccination in Jenner's own country. It is not very probable that the French public, whether medical or non-medical, will be influenced by these fanciful ideas.

Sept. 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Plague in East Africa.

IN a paper on Bubonic Plague which was read a short time since before the Berlin Society of Public Health Professor Koch said that only a few years ago it seemed as if the disease possessed little more than a historical interest, but the recent epidemics in China and the East Indies have proved that under conditions favourable to its development it remains capable of committing great ravages. The researches of Yersin and Kitasato have shown that plague is a contagious disease produced by bacteria, and it has, moreover, been ascertained that it may be to a great extent spread by rats. It is also known that the disease is endemic in certain districts which from time to time become the starting

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points of epidemics. For instance, the course of the epidemics which came from the East to Europe could be traced back to Mesopotamia and there were grounds for believing that there really was a centre there. The second point of origin is in Central Asia and the epidemics in China and India have obviously had their source there. A third centre of minor importance is situated in Assir, Western Arabia. To these three centres there must now be added a fourth which has not long been recognised. Professor Koch when in Dar-es-Salaam in German East Africa was informed that a disease was prevalent in the Kisiba district the symtoms of which were very like those of bubonic plague. He accordingly sent Dr. Zupitza, one of the colonial medical officers, to this district with instructions to make bacteriological examinations of the cases. Dr. Zupitza's report was to the effect that the clinical symptoms were those of bubonic plague and that the typical bacilli were present in the lymphatic glands and in the spleen. The disease is termed *rubwunga* by the natives, who, moreover, are aware that its germs are spread by rats, and abandon their dwellings as soon as the rats begin to die. Dr Zupitza succeeded in ascertaining the presence of bacilli in three rats. Kisiba, however, is not the real focus of the plague, for the disease was imported eight years ago from the British territory of Uganda, where the *rubwunga* has been known from time immemorial. From Kisiba the disease was carried north to Emin Pasha's provinces and to Upper Egypt. In the beginning of this century there were some small epidemics in Egypt and in the year 1870 there was one in Morocco, the origin of all of which was quite obscure, but it is now known that they were caused by caravans of slaves which had passed through the infected territory. There has hitherto been hardly any traffic between Uganda and the coast of East Africa, but when the railway from Mombassa to that country is finished this state of things will probably be altered and the permanently infected district will be brought into direct communication with the coast. There is no need for alarm on this account, for it is known from the history of plague that the disease has always retired before advancing civilisation. It may therefore be hoped that the spread of civilisation will in course of time have the effect of abolishing plague.

Professor Koch's Investigations on Malaria.

To continue his researches on malaria Professor Koch has gone to Italy accompanied by several of his assistants. The Italian Government has placed the university laboratories at his disposal and will do everything to facilitate his work. On leaving Italy he will proceed to Greece. This first journey will be of a preliminary character and will be finished within three months. Afterwards he will visit the fever districts in East Africa, India, and New Guinea and will be absent there for about two years. The expenses of the expedition will be defrayed by the German Government. Colonial medical officers before going to the tropics will attend courses of instruction at the Institute for Infectious Diseases in order to be trained in the diagnosis and treatment of tropical diseases under the special supervision of Professor Koch and his assistants.

Tuberculosis of the Kidney.

In a paper read before the Berlin Surgical Society and published in the *Deutsche Medicinische Wochenschrift* Professor Israel stated that primary tuberculosis of the kidneys is more frequent than is generally believed. In 21 cases of tuberculosis of the kidneys operated on by him there were 16 cases of primary tuberculosis, the urethra and the bladder being free from the disease. Women are more liable to be affected than men. Both kidneys were attacked in two instances, not including the acute form, which, of course, is only a symptom of acute general tuberculosis and is thus not amenable to surgical treatment. There are three different forms: the most frequent is the cavernous, originating in a caseous degeneration and usually combined with suppuration of the adipose capsule. The second form has its seat in the papilla; it is very rare and is characterised by profuse hæmaturia. The third form is the nodose condition, in which the whole kidney is occupied by numerous nodules of different sizes. Secondary tuberculosis of the bladder was observed in 43 per cent. of the cases operated on; this complication was therefore not regarded as contra-indicating operation. It is very important to ascertain the state of the patient's second kidney. In 14·3 per cent. of the cases operated on both kidneys were affected. Professor Israel is of opinion that when tuberculosis of the kidneys is combined with tuberculosis of the bladder and the genital organs both conditions originate in infection by the blood; in support of this view he mentions a case where tuberculosis of the kidneys was combined with tuberculosis of the testicle whilst the bladder remained healthy. The affection of the kidneys may be the only symptom of general tuberculosis, but on making a post-mortem examination tuberculosis of the lungs was discovered in about 50 per cent. of the cases. The patients, however, did not look like tuberculous subjects; there were among them men whose weight was 100 kilos. (220 lb.). Hæmaturia is the most important clinical symptom and in 4 out of 16 cases it was the only trouble present at the outset. Enlargement of the kidney could be ascertained by palpation in nearly all instances. Koch's bacilli were seldom found in the urine when the bladder was free from disease, but they are present in the great majority of cases of tuberculosis of the bladder. The bacilli thus, as a rule, come from the bladder and not from the kidney. The following complications were observed: perinephritic abscess, tuberculosis of the adipose capsule, tuberculous pleuritis and fistula of the colon. Fever was present in only 25 per cent. of the cases, but in tuberculosis of the bladder in 80 per cent. 21 patients were operated on and in all cases but 1 the kidney was entirely removed. 3 patients died as a result of the operation, either from shock or from affection of the second kidney; 5 died from tuberculosis after the wound had nearly healed. Of the cases with healthy bladder 6 are still alive, 1 of whom was operated on nine years ago. In the cases complicated by affection of the bladder there was obvious amelioration of the symptoms and sometimes, also, a partial healing could be recognised by examination with the cystoscope. Professor Israel concludes that in primary tuberculosis of the kidneys, either with or without implication of the bladder, an early operation is necessary; in secondary ascending tuberculosis operation should only be performed when grave symptoms have arisen or when the patient's general health is obviously suffering. Extirpation of the kidney should be the usual operation; simple nephrotomy is allowable only when both kidneys are involved and where fever caused by retention of pus makes an operation necessary.

Sept. 5th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Professor Koch's Study of Malaria.

WITH the facilities afforded him by the Premier, General Pelloux, and the coöperation of his old friend Guido Baccelli, once more Minister of Public Instruction, Professor Koch pursues his researches into the bacillus malariæ and its pathological effects with every official aid and encouragement desirable. Indeed, he has only to indicate the direction in which he wants to widen or deepen his investigations and the Government responds with sympathetic alacrity. The other day he expressed a wish to examine a number of cases of malaria perniciosa as at present prevailing in certain military hospitals and the Direzione Generale di Sanità, through the Minister of War, at once procured the opportunity required. In fact, Colonel Panara, Medical Inspector of Hospitals, was deputed by the War Office to place himself at Professor Koch's disposal till his purpose is fully carried out. The thoroughness with which the great bacteriologist is conducting his researches is eminently characteristic. Fresh from the Dark Continent, where he began his present study of malaria, and *en route* from Germany, he had barely alighted on Italian soil when he made a halt at Milan and, accompanied by his two assistants, Dr. Pfeiffer and Dr. Kossel, examined the more typical cases of the fever in the Spedale Maggiore, whence he carried away with him specimens of the malaria-infected blood. He did likewise at Pavia, and on his way to Rome made a brief stay at Florence, where he was met by Baccelli, and lost no time in availing himself of the clinical opportunities afforded by that school. His sojourn in the Eternal City will be prolonged till the third week in September or even later, and I believe he will extend the area of his researches so as to include the Neapolitan Riviera before completing the study to which the medical

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world is now looking for fresh light on one of the most obscure, while most widely prevalent, of maladies. Since his arrival at Rome Professor Koch has followed up the quest he started a year ago in Southern and Central Africa, and ably assisted by Dr. Pfeiffer and Dr. Kossel of Berlin and by Professor Bartolommeo Gozio (bacteriologist of the Public Health Department and pupil of his own in the same school), works daily in the fever wards and *gabinetto della clinica* of the Santo Spirito Hospital, both placed at his disposal by Government for as long as he sees fit to use them. From half past six in the morning till noon the four men divide their labour and time between the bedsides of the patients and the laboratory; at 3 P.M. they resume operations; and only at 6 o'clock, or sometimes later, do they suspend them till the morrow. Professor Koch has twenty typical cases under his eye for clinical observation and bacteriological analysis, but he makes a point of seeing every fresh patient on admission, always with a view to symptoms or phenomena either novel or more pronounced. Not only so, but on certain days he proceeds to such *foci malariæ* in the neighbourhood as the Trappist monastery of the Tre Fontani (the scene of St. Paul's martyrdom); and on others he goes further afield—to Ostia, at the mouth of the Tiber, to Maccarese, and even to the Pontine Marshes. These excursions he makes for etiological purposes, so as to study the genesis of the fever, or at least the conditions under which it is intensified, if not actually evolved. On this side of the subject he expressed himself to the Commendatore Santoliquido, of the Public Health Department, as materially indebted to the Italian investigators, from Lancisi early in last century, down to Tommasi-Crudeli and his successors, whose work dates from 1878 onwards. I may add that he seldom misses a necropsy, particularly if the dead subject has had the disease in its *forma perniciosa*. No opportunity, in fact, escapes him of adding to the material necessary whether in the clinical or in the bacteriological field, and, as I have already stated, his experience at the Spedale dello Santo Spirito will be supplemented by a series of visits to the hospitals of the Roman garrison, in which, especially at this season, typical cases of the fever in its various forms are always to be found.

The University of Cambridge and Professor Golgi.

While on the subject of malaria I may mention the genuine gratification of the profession in Italy at the honour just bestowed by the University of Cambridge on one of the most meritorious workers in that field. Professor Camillo Golgi received not only from the Pro-Rector and his colleagues in the University of Pavia their cordial congratulations on the high distinction awarded him, but the mayor of the town, in name of the Giunta and the citizens, sent him similar felicitations on the event. The happy epigram in which Dr. Sandys, the Public Orator, conveyed the honour has already gone the round of the Italian press. "The death of Camillus by malaria has been avenged by a second Camillus" (*Camilli mortem pestilentia absumpti Camillus alter ultus est!*). Academic Italy has not forgotten how, on the occasion of the centenary celebrations of Bologna and Padua in 1888 and 1892 respectively, Cambridge far outshone her European sisters in the classic elegance, both in verse and prose, in which she couched her congratulations to either University, and she is glad, amid the controversies now raging as to the retention or modification of her time-honoured faculties, to cite the example of the English seat of learning where science, pure and applied, and literature, ancient and modern, are cultivated side by side without prejudice to either, but rather to the reciprocal advantage of both.

The Heat.

We are now emerging from a period of high temperature rarely experienced even in a Roman August. It was fondly hoped that this year's summer months would have been moderate as to heat, considering the extraordinary rainfall of June and July; but from August 15th the thermometer rose steadily, reaching on that day a maximum of 32·2° C., and steadily mounting still higher, particularly in the Alta Italia, where at Milan, Pavia, Brescia, Cremona, and other meteorological stations, a temperature truly tropical was registered. "It is difficult," says Signor Pio Bettoni, the able director of the observatory at Salò, "to explain this phenomenon. We cannot, in my judgment, accept the hypothesis that these excessive heat-waves are due to the state of eruptive activity of the *superficie solare* and other cosmic conditions. I greatly doubt whether more value can be ascribed to those 'variations of climate,' according to the theory of Brückner, received with such favour by some meteorologists who hold them to be *fenomeni meteorici* subjected to a periodicity of thirty-five years. I hazard no opinion of my own, but I invite attention to a fact. When during the day the sky has been notably clear, with a prolonged solar illumination, as we have lately experienced, and when during the night it has been cloudy or starless, we invariably have at this season a marked recrudescence of heat."

Sept. 5th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Medical Practitioners in Austria.

THE number of medical practitioners in Lower Austria has increased from 1936 in 1889 to 2593 in 1896, in Bohemia from 1629 in 1889 to 2131 in 1896, and in Galicia from 860 in 1889 to 1221 in 1896. Those who have passed away included 588 surgeons of the old school (*Wundärzte*), and 2544 young graduates have entered on a medical career. In 1889 there were 248 places without any medical practitioner, but in 1896 the number was 9 per cent. less.

Stypticin.

Dr. Braitenberg has published an interesting report on the use of stypticin in uterine hæmorrhages, especially those which are due to perimetritis, parametritis, inflammation of the adnexa, or profuse and protracted menstruation. Stypticin forms a yellow crystalline powder and is the hydrochloric acid compound of cotarnine, a base which is obtained from narcotine, one of the opium alkaloids. It may be given in doses of 0·05 gramme (¾ grain); in urgent cases the dose may be increased to 0·1 gramme or 0·2 gramme (1½ grain or 3 grains) injected into the gluteal region.

The Retort of an Unqualified Practitioner.

A patient who had lost confidence in ordinary medical treatment sent to an unqualified practitioner for a supply of Alpine moss, the curative powers of which were highly vaunted. At different times eight parcels of moss were sent to him, each costing 20 gulden (about £1 15*s.*), but it proved to be useless, and in reply to a threat that he would take legal proceedings he received a letter to the effect that if the moss had not done good to him it had at any rate done good to the sender, who made a livelihood out of people with plenty of money. The patient was also informed that if he used the moss for stopping up the chinks of his windows in autumn he would be protected from draughts and would feel less pain.

Treatment of Chronic Arthritis.

A recent number of the *Medicinische Presse* contained an article by Dr. Bier on the treatment of chronic arthritis by active hyperæmia, and engorgement. In 1891 he tried the experiment of treating tuberculous diseases of the joints with hot air applied so as to produce artificial hyperæmia, and he afterwards used this method in chronic arthritis, but in the latter case he found engorgement more effectual, for the hyperæmia produced by engorgement is more marked and lasts longer than that obtained with hot air. When engorgement is to be employed the leg is enveloped in a cambric bandage reaching from the toes to the knee for the purpose of preventing engorgement of the blood in healthy parts, and an indiarubber bandage is then applied over the knee-joint, so that it becomes cyanotic. The bandage must remain constantly in position until the pain has disappeared.

Sept. 4th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The American Medical Association and the Requirements for the Degree in Medicine.

THE American Medical Association in 1892 unanimously resolved to demand of all the medical colleges of the United States the adoption and observance of a standard of requirements of all candidates for the degree of Doctor of Medicine

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which should in no manner fall below the minimum standard of the Association of American Medical Colleges, and this demand was sent officially by the permanent secretary to the dean of every medical college in the United States. Now the association gives notice that hereafter no professor or teacher in, or any graduate of, any medical college in the United States which shall after Jan. 1st, 1899, confer the degree of Doctor of Medicine or receive such degree on any conditions below the published standard of the Association of American Medical Colleges will be allowed to register as either delegate or permanent member of this association.

The Nursing Bottle Ordinance.

The Health Department of the city of Buffalo enacted the following ordinance in 1890: "It shall be unlawful for any person or persons to use or engage in the sale of any bottle, mechanism, or other device for the artificial feeding or nursing of infants or children under three years of age that has connected therewith a rubber tube, hose, or similar contrivance." The object of this ordinance was to banish from the market the long-tube nursing bottle. Five convictions have since been secured by the Health Department and suits have been commenced against thirty other dealers. Vigorous opposition to the ordinance is being made in the courts, but the Department is sustained by the County Medical Society, which recently issued the following statement: "The death-rate among the artificially-fed newly-born marks the level of the sanitary enlightenment of the community. Competent medical opinion has, and does, unhesitatingly and unanimously condemn a certain type of feeding bottles in frequent use. Inspired by such well-founded conviction ordinances forbidding the sale of this apparatus were recently enacted by the proper authorities of this city. The relations between the professions of medicine and pharmacy are, and should be, most reciprocal and harmonious, the pharmacist being a conspicuous citizen, learned in medicine, with singular opportunities to form and develop a right public opinion. We commend to the druggists and pharmacists of our city, our health ordinances in general, and with greater particularity the ordinance forbidding the sale of a certain class of feeding-bottles, as timely, wise, and in the best interests of the public health; and we invite them to join us in supporting these ordinances with their earnest and constant efforts. We commend to all those in authority the subject of the preservation of the lives of the newly-born and those of tender years as of the highest practical importance and deserving their incessant and sleepless vigilance. We approve, in the most hearty and unqualified terms, of the ordinance prohibiting the sale of any nursing-bottle which has connected therewith a rubber tube, hose, or similar contrivance."

Precautions against Yellow Fever.

Precautions are being taken by both the War and Treasury Departments to prevent the introduction of yellow fever into the United States. The officials of these two departments are coöperating very thoroughly in the efforts which are being made and the opinion of those best informed is that they will be successful. The Secretary of War has issued the following instructions:—1. That medical officers of the United States Marine Hospital Service be immediately detailed for duty at Santiago, and subsequently at other Cuban or Porto Rican ports under control of United States forces, to carry out the requirements of the Quarantine laws of 1883, such officers to issue certificates and perform other duties of sanitary or other port inspectors. 2. That all sanitary matters pertaining to the condition of transports and crews be placed under the jurisdiction of the medical officers of the Marine Hospital Service of the United States. Every vessel engaged in the transport service between the United States and Cuban or Porto Rican ports to carry a medical officer of the Army or of the Marine Hospital Service, whose duty shall be that of sanitary inspector of the vessel, and who shall see that in a foreign port no material or person is taken aboard liable to convey yellow fever, to keep the crews of the transports under surveillance, and on the return voyage to act as sanitary inspector. 3. That there be placed at Santiago and every chief port where practicable a receiving ship for the recreation of those who take passage for ports in the United States. This ship would be practically a detention camp and quarantine station and passengers seeking homeward voyage would be taken from this vessel after they had undergone a period of observation and disinfection of their effects.

A Steam Vessel Equipped for Disinfection.

The *Protector*, the first vessel in the world to be equipped solely for the purpose of disinfection, is about 80 ft. long. On deck is a structure fitted for bathrooms. It is intended that soldiers shall come on board, take a bath, and give up their clothing, receiving new clothes in exchange. The old clothing will then be taken below, thoroughly sterilised, and then returned to the owner. In the bow of the boat are a sulphur furnace, combustion chambers, and a fan for disinfecting vessels. In the middle are a sterilising chamber and a formaldehyde generator. A boiler and a water-heater are near the stern. The sulphur furnace will be used for disinfecting vessels. The hatches of the vessel to be treated will be battened down and piping carried from the *Protector* to the hold of the vessel. Through this tubing sulphur fumes will be pumped by the fan in the *Protector*. Air is drawn into and through the sulphur furnace, baffle-plates being so placed as to thoroughly mix air and sulphur fumes, a fairly perfect combustion being thus obtained. The sterilising apparatus consists of a cylinder, a chamber, and an exhauster. The chamber is of iron and though open at both ends it can be hermetically sealed. The exhauster consists of a steam-jet for removing air from the chamber. The generator is a copper cylinder divided vertically into two parts, a steam coil being placed in each part. The clothes to be sterilised are placed in the chamber, the air in which is removed by means of the steam-jet exhauster. Formaline is placed in part of the generator and steam admitted to the coil, and when sufficient heat has been thus applied to generate the required amount of formaldehyde gas the gas is admitted to the chamber. At the end of half an hour ammonia placed in the other part of the generator and similarly heated is admitted to the chamber. This neutralises the formaldehyde and the clothes are removed and returned to the owners.

August 19th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Epidemic of Measles in Victoria.

MEASLES made its appearance in epidemic form in Victoria in December last. The outbreak appears to have reached its greatest severity in April and to be now abating. During the whole period 341 persons, chiefly children, have died from the disease. The Board of Health has directed an inquiry to be made by its assistant medical officer into the circumstances associated with the fatal cases. It is believed that while the epidemic has been most impartial in its attacks the fatal cases have occurred almost entirely among those in poor circumstances, and it is thought that in future epidemics the mortality might possibly be diminished by a wider dissemination of information and an extension of the system of district nursing. During the last 25 years six epidemics of measles have occurred, of which that in 1874–75 was the most fatal, causing 733 deaths, and that in 1893 was next in fatality, causing 386 deaths. The epidemics have recurred every 4 or 5 years with considerable regularity but apparently uninfluenced by season.

The Water-supply of Bendigo.

In March last the health officer at Bendigo in reporting on a recent outbreak of typhoid fever in that city attributed it to pollution of the water-supply. The analytical chemist for water-supply has made an examination of the locality and a careful chemical and bacteriological examination of various samples of the water from both the reservoir and the mains. In no case was the typhoid bacillus found or the bacillus coli communis. While the failure to find bacilli did not prove that the outbreak was not due to the water-supply his investigations did not bear out the health officer's statements and it was not proved that the outbreak was due to the water-supply. Nevertheless, the water-supply was not good and was liable to pollution in the reticulation area. He recommends a system of house filtration under official control, for which an efficient filter is now available at a cheap rate.

Melbourne Fever Hospital.

The Premier of Victoria has officially notified the Heidelberg Municipal Council that it had been finally decided to grant fifteen acres of the reserve at the Yarra Bend

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Lunatic Asylum to the Infectious Diseases Hospital Committee subject to the following conditions: (1) that the site be enclosed by a high iron fence; (2) that no person suffering from small-pox, plague, or other exotic infectious or contagious disease be admitted to the hospital; (3) that no drainage be permitted to pass into the River Yarra or through the asylum reserve (except by underground sewer connected with the Metropolitan Board of Works system) unless on such conditions as may be approved of by the lunacy department, that is, by the chief secretary or inspector of asylums for the insane; (4) that the Government shall have the right to send patients to the hospital; and (5) that any requirements of the Minister of Health as to dealing with infectious matter and passing the air from the wards through fire shall be complied with.

The Public Charities in Victoria.

The report of the inspector of charitable institutions in Victoria has just been laid before Parliament. The accommodation provided and the number of inmates at the various institutions were as follows:—

	Beds provided.	Inmates.
Hospitals	2253	1716
Hospitals and benevolent asylums	667	555
Benevolent asylums	2350	2314
Orphanages	983	884
Asylums (blind, deaf and dumb, and infant)	255	225
Refuges	524	526
Convalescent homes	63	29
	7095	6249

The number of persons receiving charitable relief for the year is estimated at 99,277, of whom 71,698 received outdoor relief. The chief sources of income, irrespectively of the Government grant of £100,000, were:—

Municipal grant	£8,022
Locally raised contributions	79,533
Interest upon investments	9,738
Paying patients and paying pupils	7,754
Out-patients' fees	3,616
Proceeds of inmates' labour	9,407
Legacies and bequests	4,149
Other sources	11,476
	£133,695

The cost per bed per annum for the daily average of patients varied a good deal in the leading hospitals and on the whole was considerably higher than in similar institutions in Great Britain. Thus the cost at the Melbourne Hospital was £75 12*s.* 9*d.*; at the Alfred Hospital, Melbourne, £70 11*s.* 8*d.*; at the Women's Hospital, Melbourne, £74 13*s.* 3*d.*; at Ballarat Hospital, £52 7*s.* 9*d.*; and at Bendigo Hospital, £49 14*s.* 7*d.* The inspector advocates the establishment of a Nurses' Fund for sickness and superannuation and a half-yearly inspection and test of the efficiency of the fire-appliances of each institution. He expresses fear that serious loss of life would occur in the event of an outbreak of fire at any of the hospitals or asylums, since in none that he had visited did the employés know their stations in case of such emergency. At the annual meeting of the Charity Organisation Society the President (Professor Morris) said the work of the society was of two kinds, registration and inquiry into individual cases and the organisation of charity. The case work had now been so well done that when a subscriber sought information it could generally be given at once, as in the books of the society were to be found particulars of 11,000 cases. The organisation of charity, however, was not so satisfactory and must be taken in hand by the Government. The great need of the charities was not more money but better organisation and administration. Many of the hospitals had a large number of what were really benevolent asylum inmates, maintained in the hospitals at expensive rates. Victoria was quite sufficiently supplied with hospitals; in fact, the Government should provide measures to prevent the creation of unnecessary hospitals, but was lamentably deficient in benevolent asylums. Professor Morris also criticised very adversely the methods of electing the medical staffs at some of the hospitals by the votes of the subscribers.

Deaths at the Melbourne Benevolent Asylum.

An article appeared recently in the *Melbourne Argus* stating that 600 deaths had occurred in three years at the Melbourne Benevolent Asylum and no inquest had been held at the institution since the year 1891. The secretary to the asylum reported that the actual number of deaths in the last three years was 450 and it was pointed out that it was not the fault of the officers of the institution if no inquests were held and that no necessity for holding inquests existed, most of the patients dying from natural causes and the ordinary certificate being given by the medical officer.

Lunatic Asylums in Victoria.

The inspector of hospitals for the insane in Victoria has presented his annual report. He again draws attention to the overcrowding of the metropolitan asylums. The asylum population has increased largely within the last few years and will probably continue to increase, and provision must be made to accommodate the increase. He recommends that the Ballarat Asylum should be enlarged and special provision made at it for epileptics. The removal of all epileptics from the metropolitan asylums would enable a better system of classification to be introduced and better means to be adopted for the treatment of recent and curable cases. Great difficulty has been experienced in obtaining suitable men to fill vacancies on the medical staff owing to the low rate of pay given by the Government. Two vacancies for junior medical officers exist at the present time, but no applications have so far been received. The inspector urges that arrangements should be quickly made which will secure and retain in the service competent officers on whom depends in a great measure the satisfactory working of the asylums. The inspector also complains of the low rate of pay of some of the nurses and attendants, which causes many changes in the staff by resignations and transfers to other departments.

A Medical Man committed for Manslaughter.

On July 4th at the coroner's court, Sydney, Dr. Terence Albert Green was committed to take his trial for the manslaughter of Pauline Durlac. The circumstances of the case are of considerable medical interest. Dr. Green was first consulted by Miss Durlac about four months before her death for injuries received to her leg in an accident. After her recovery she was treated for some uterine condition, which, he said in evidence, he diagnosed as chronic enlargement of the uterus and endometritis. He advised curettage, and first to have a consultation with Dr. Worrall. The patient declined the consultation but decided to have the operation performed. Dr. Martin administered chloroform and after the operation was commenced Dr. Green discovered that the patient was pregnant. He then cleared out the uterus. Severe hæmorrhage followed and the patient died. Dr. Green, after a conversation with Dr. Martin as to reporting the death to the coroner, gave a certificate that death was due to endometritis and hæmorrhage. The police were subsequently informed and the body was exhumed. Dr. Rennie and Dr. Taylor made a post-mortem examination and found a rupture in the uterus and stated in evidence that the cause of death was rupture and hæmorrhage, that the breast contained milk, and that it ought to have been quite possible to have diagnosed that deceased was pregnant during life. The coroner, in summing up, said that from the evidence it appeared that Dr. Green did not visit the patient with intent to commit a criminal act. The jury had to consider, however, whether culpable negligence had not been shown in not ascertaining the patient's condition before operating and whether there was not carelessness in the performance of the operation itself, and to consider the fact that the actual conditions had been concealed and a wrong certificate given. The jury found that the deceased died from hæmorrhage consequent upon an operation performed by Dr. Green, who did not exercise the necessary precautions to ascertain her condition. The coroner said that that was equivalent to a verdict of manslaughter, to which the jury assented.

The Coast Hospital, Little Bay, Sydney.

The report of the chief medical officer of the Government on the Coast Hospital, Sydney, has been presented to Parliament. The institution is used as a hospital for infectious and typhoid fevers and as a hospital for chronic cases and for convalescents. A moderate number of out-patients from the neighbourhood had been treated and surgical cases had gradually been admitted. The total number of cases treated had increased from 1132 in 1884 to 2307 in 1897, and the average daily number of in-patients from 104 to 224. An increase in the medical staff was recommended.

The Financial Position of the Melbourne Hospital.

The annual report of the Committee of Management of the Melbourne Hospital shows a deficiency of revenue of over

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£5000 for the year. The cost of maintenance has been increased by the advance in the prices of supplies and the extra nursing required by the prevalence of epidemic disease. The total expenditure was £25,953, an increase on the previous year of £1551. The total receipts amounted to £20,645. A special committee has been appointed to investigate the expenditure and devise means of increasing the income. One means suggested is to endeavour to get contributions from in-patients. This plan has been adopted at the Alfred Hospital, Melbourne, with very satisfactory results. The strain upon the resources of the Melbourne Hospital is shown by the fact that 340 patients had to be refused admission for want of room. In the wards for infectious cases alone 613 patients had been treated, 264 of which were cases of diphtheria, and the high price of antitoxin, which had been freely used, was an item in swelling the expenditure.

Death of a Centenarian.

On July 22nd Mrs. John Beirs died at Adelaide at the age of 102 years. She arrived in the colony in 1838, and had been bedridden for ten years.

July 31st.

Obituary.

GEORGE ROPER, M.D. ABERD., M.R.C.P. LOND., M.R.C.S. ENG.

DR. ROPER belonged to a family which had lived at Colby in Norfolk for about three hundred years. He was the third son of Mr. Snelling Drosier Roper and was born at Colby on August 15th, 1823. He received his medical education at Guy's Hospital and became a Member of the Royal College of Surgeons of England and a Licentiate of the Apothecaries' Society in 1847. After a voyage in one of the Hudson Bay Company's ships he started in general practice in the prolific centre of Shoreditch, joining Mr. F. Wildbore as assistant and later succeeding him as chief. His work was arduous and he acquired a good reputation in the East-end, in particular as a scientific and successful obstetrician. Fortune favoured him in that he received substantial legacies which made him independent. He gave up general practice, went to Aberdeen for a year, where he took the degree of M.D. in 1873, and became a Member of the Royal College of Physicians of London in 1874. He settled for a time in Finsbury-circus and was elected physician to the Royal Maternity Charity for the Eastern Division. During four years he did good work in that capacity and he summed up his experience in a memoir on "The Use of the Forceps and its Alternatives" which was printed in the *Transactions of the Obstetrical Society of London* in 1879. He also contributed a paper on the Action of the Ileo-cæcal Valve in Stercoraceous Vomiting to the *Medical Gazette* in 1849, an account of a Case of Sudden Death during Labour to THE LANCET in 1855, and a paper on Cases of Hypertrophic Elongation of the Cervix Uteri in Labour at Full Term to the *Transactions of the Obstetrical Society of London*. Having been elected physician to the Royal Hospital for Children and Women, Waterloo-road, he removed to Ovington-square and had at the same time consulting-rooms near Cavendish-square. But after a short time he left London and settled at Oulton, near his native place in Norfolk, where he lived for some years. He never married, and failing in health he gave up his house and went to live with some relatives at Southwold in Suffolk, where he died on August 14th, 1898, at the age of seventy-five years. He was a vice-president of the Obstetrical Society of London and of the Hunterian Society, a Fellow of the Royal Medical and Chirurgical Society, and a Corresponding Member of the Gynæcological Society of Boston. Dr. Roper was a good judge of horses and an ardent lover of sport of all kinds—shooting, coursing, racing, and salmon fishing. He had also travelled much. As we have already said, on becoming qualified he went to Hudson's Bay as surgeon on one of the Company's vessels; in 1867 he went to China, Japan, Canada, and the United States; in 1881 he spent many months in Holland, the south of France, Italy, and Spain; and in 1886 and 1887 he travelled for eighteen months in Canada and the United States.

Sir Samuel Wilks writes as follows concerning Dr. George Roper, whom he knew intimately: "No man have I more respected than Dr. George Roper. Knowing him first as a fellow student and then through a long life, my estimate of him, both professionally and personally, has been of the highest. I remember Dr. Roper in general practice in the East-end of London, and it was a large and remunerative one. I often spoke to him of his choice of locality in a low-class neighbourhood, and he answered me quite characteristically that he would rather earn a guinea by seeing a dozen poor people over whom he had influence than by spending the time in talking over the imaginary grievances of some ancient dowager. Straightforwardness and independence of character were his main qualities. He told me that he had never quarrelled with a brother practitioner but had had some severe differences with more than one leading man in the profession owing to his belief that he had been unfairly dealt with in consultation. He was not the man to accept an insult, and just and generous as he was to others he conceived that they should act in the same manner towards himself. He was remarkably acute in his insight into cases and with a good knowledge of his profession he made some capital diagnoses in cases of difficulty. He took a great interest in and paid especial attention to operative midwifery. In middle life he determined to give up general practice and to devote himself to his favourite specialty as a consultant. Having no degree he proceeded to Aberdeen and nothing better than this determination to do so showed Dr. Roper's indomitable perseverance. He entered the classes and examinations like other and younger students, where his ardour was so marked that he became known as 'young Roper.' After he took his degree he became a Member of the Royal College of Physicians of London and attached himself to the Infirmary for Women and Children in the Waterloo-road, where he had an opportunity of practically applying his knowledge of female diseases with great benefit to the institution. He was a diligent member of the Obstetrical Society and a most valuable officer of the Maternity Charity."

From Sir Samuel Wilks's sympathetic little note, as well as from the facts of Dr. Roper's life which we have briefly given, it will be clear that he belonged to an order of practitioners whose members can be ill spared by the profession or the public. He combined a love of science and a grasp of its principles with a delight in the practical side of his work, and he was above all things anxious to be the friend of his patients and to do them good in all ways. Dr. Roper had suffered severely from angina pectoris for several years before his death, which, in the end, occurred somewhat suddenly.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Evert Julius Bonsdorff, formerly Professor of Anatomy and Physiology in the University of Helsingfors.—Dr. H. Endres, *privat-docent* of Anatomy and Histology in the University of Halle.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Vienna:* Dr. Arthur Schattenfroh has been recognised as *privat-docent* of Hygiene.—*Berlin:* Dr. Georg Puppe has been recognised as *privat-docent* of Forensic Medicine.—*Budapest:* Dr. Géza Krepuska has been recognised as *privat-docent* of Otology, Dr. Karl Morelli as *privat-docent* of Laryngology and Rhinology, and Dr. Desider Kuthy as *privat-docent* of Hydrotherapy and Climatology.—*Bologna:* Dr. Umberto Monari of Turin has been recognised as *privat-docent* of Surgery.—*Cincinnati (Ohio Medical College):* Dr. C. L. Bonifield has been appointed Professor of Clinical Gynæcology and Dr. S. C. Ayres Professor of Ophthalmology.—*Cracow:* Dr. Wladimir Sieradzki has been recognised as *privat-docent* of Forensic Medicine.—*Modena:* Dr. Giulio Vassale has been promoted to the chair of General Pathology.—*Naples:* Dr. Gaetano Sorge has been recognised as *privat-docent* of Operative Medicine.—*Prague (Bohemian University):* Dr. Alois Velich has been recognised as *privat-docent* of General and Experimental Pathology, Dr. Karl

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Svehla as *privat-docent* of Pædiatrics, and Dr. Ivan Honl as *privat-docent* of Bacteriology.

A STRANGE OBJECTION TO CALF LYMPH.—At the meeting of the Chard (Somerset) Board of Guardians held on Aug. 22nd a member mentioned a rumour that children vaccinated with calf lymph were in the habit of "blaring" at night.

AN UNREGISTERED DENTIST.—At the Pontypridd Petty Sessions held on Aug. 24th a man named Charles was fined £5 for practising as a dentist without being registered under the Dentists Act. The evidence showed that the defendant possessed the D.D.S. of America.

THE LATE MR. AUGUSTIN PRICHARD.—The family of the late Mr. Augustin Prichard, F.R.C.S., of Bristol, have presented to the Bristol Museum the valuable collection of human crania brought together by the distinguished ethnologist Dr. James Cowles Prichard and his son, the late Mr. Augustin Prichard.

THE DOWAGER LADY HOWARD DE WALDEN has presented a site for a nurses' home and club in connexion with the Nurses' Coöperation (of which H.R.H. Princess Louise, Marchioness of Lorne, is patroness) and has promised to provide a large proportion of the cost of erecting a suitable building.

SOMERSET ARCHÆOLOGICAL SOCIETY.—The fiftieth annual meeting of the Somersetshire Archæological and Natural History Society was held at Taunton recently. In order to celebrate the jubilee by a permanent memorial it was proposed to restore the ancient hall of Taunton Castle, the property of the society, and to convert it into a museum.

AMERICAN CLIMATOLOGICAL ASSOCIATION.—The fifteenth annual meeting of this association was held at the Maplewood Hotel, near Bethlehem, New Hampshire, on August 31st and Sept. 1st, 1898. An opening address was delivered by the President, Dr. E. O. Otis of Boston, who took for his subject Avenbrugger and Laennec, the Discoverers of Auscultation and Percussion.

VACCINATION AT DEVIZES.—At a recent meeting of the Devizes Board of Guardians it was stated that the vaccination returns for the first district of the union, which includes Devizes, showed that during the six months ended Dec. 31st, 1897, there had been 164 births, and that of these children 62 had been successfully vaccinated, 8 had died unvaccinated, 3 had removed, and 91 were unaccounted for.

UNIVERSITY COLLEGE OF WALES.—Sir William Vernon Harcourt will open on Oct. 26th the new portion of the University College of Wales, Aberystwyth, erected at a cost of nearly £20,000. In the evening the Master of Trinity College, Cambridge, will give the inaugural lecture and on the following day the degrees of the Welsh University will be conferred at Aberystwyth.

NATIONAL REGISTRATION OF PLUMBERS.—A public meeting will be held in the Mayor's Parlour, Manchester, on Sept. 19th, at which the Lord Mayor will distribute the prizes, certificates, and bronze medal of the Plumbers' Company awarded in connexion with the recent Exhibition of Plumbers' Work at Manchester. The programme will include a lecture on the Registration of Plumbers and Domestic Sanitation, by Dr. Mansel-Howe.

PRESENTATION TO A MEDICAL MAN.—At a public meeting held at Cwmavon, near Port Talbot, on August 27th, which was presided over by the Mayor of Aberavon, Mr. Robert William Roberts, L.R.C.P. & S. Edin., L.F.P.S. Glasg., was presented with a drawing-room clock with ornaments, dining-room clock with ornaments, etchings, and an ophthalmoscope, as a mark of respect and esteem on the occasion of his marriage.

THE DEATH OF MR. EDWARD CURTICE.—Mr. Edward Curtice, proprietor of the Press Cutting Agency of Romeike and Curtice, passed away on August 30th at his residence in Museum-street, after a long and painful illness. Mr. Curtice, who commenced as a wholesale newsagent and publisher, was the first to recognise the value of Romeike's enterprise in starting some twenty years ago a press-cutting agency which should be a general intelligence bureau.

THE LONDON HOSPITAL.—A quarterly court of the governors of this hospital was held on Sept. 7th, when a promising financial position was revealed. A special appeal was made early in the year for £100,000, of which £77,000 has been received or promised in donations and £11,000 in annual subscriptions. The Press bazaar in aid of the hospital brought in £12,000, while it is understood that the Prince of Wales's Hospital Fund will make a large annual donation conditional upon certain improvements in structure being made. Three new operating theatres are to be built at the cost of £13,000, the expenses being entirely defrayed by an anonymous donor. An annual saving of over £1000 a year is said to have been effected by charging certain of the out-patients 3*d.* for bandages and medicines. This is a departure at the London Hospital and one that will probably attract some attention.

BOOKS, ETC., RECEIVED.

BAILLIERE, TINDALL, AND COX, King William-street, Strand, London.
Cattle Tuberculosis. By T. M. Legge, M.A., M.D., D.P.H., and H. Sessions, F.R.C.V.S. 1898. Price 2*s.* 6*d.* net.

BAUERMEISTER, F., Glasgow.
Mikroskopie des Auswurfes. Von Dr. A. Daiber. 1898.
Zur acuten Ueberanstrengung des Herzens und deren Behandlung. Von Dr. Th. Schott. 1898.
Die manuelle Beckenschätzung. Wann sind Falschlagen der Gebärmutter Gegenstand der Behandlung. Von Dr. H. Lohlein. 1898.
Ueber den künstlichen Hornhautersatz. Von Dr. F. Salzer. 1898.
Die therapeutischen Leistungen des Jahres 1897. Von Dr. Arnold Pollatschek. IX. Jahrgang. 1898.

HIRSCHWALD, A., Berlin.
Encyklopädie der Therapie. Von C. Liebreich. Zweiter Band. 1898.
Therapie der Harnkrankheiten. Von Professor Dr. C. Posner. Zweite Auflage. 1898.

KIMPTON, H., High Holborn, London, W.C.
A Manual of Clinical Diagnosis. By C. E. Simon, M.D. Second edition. Illustrated. 1898.
A Text-book of Surgery. By H. Tillmanns. Translated from the Fourth German Edition by B. T. Filten, M.D., New York. Edited by L. A. Stimson, M.D. Vol. III.—Regional Surgery. Illustrated. 1898. Price 21*s.* net.
A System of Practical Medicine. Edited by A. L. Loomis, M.D., LL.D., and W. G. Thompson, M.D. Vol. IV.—Diseases of the Nervous System. Illustrated. 1898. 25*s.* net.

LEWIS, H. K., Gower-street, London.
Dwelling Houses: Their Sanitary Construction and Arrangements. By W. H. Corfield, M.D. Oxon., F.R.C.P. Lond. Illustrated. Fourth edition. Price 3*s.* 6*d.* 1898.

LIPPINCOTT, J. B., COMPANY, London and Philadelphia.
System of Diseases of the Eye. By American, British, Dutch, French, German, and Spanish authors. Edited by W. F. Norris, M.D., and Chas. A. Oliver, M.D. Vol. III. Illustrated. 1898. Price 21*s.* net.

MASSON ET CIE., Paris.
Hernies. Par. P. Berger. 1898.

NICHOLS AND CO., Oxford-street, London.
Nature *versus* Drugs. A Challenge to the Drugging Fraternity. By A. F. Reinhold, Ph.D., M.D.

OFFICE OF "THE CHEMIST AND DRUGGIST," 42, Cannon-street, London.
Diseases and Remedies: A concise survey of the most modern methods of medicine, written expressly for the Drug Trade. By Physicians and Pharmacists. 1898.

OFFICES OF THE SANITARY INSTITUTE, Margaret-street, London.
Illustrated List of Exhibits, to which medals have been awarded at their Exhibitions, held in connection with Congresses. 1898. Price 1*s.*

PUTNAM'S, G. P., SONS, Bedford-street, Strand, London.
Electricity in Diseases of the Nose, Throat, and Ear. By W. Scheppegrell, A.M., M.D. 1898.

REBMAN PUBLISHING COMPANY, Shaftesbury-avenue, Cambridge-circus, London.
Health Loss and Gain. No. 1. A Plea for the more extended Practice of Preventive Medicine. By M. A. Ohreiman. 1898. Price 3*s.* net.
The Ferment Treatment of Cancer and Tuberculosis. By H. Manders, M. D., F.R.C.S. 1898. Price 10*s.* 6*d.*

RENSHAW, H., Strand, London.
Elements of Pharmacy, Materia Medica, and Therapeutics. By Wm. Whitla, M.A., M.D. With Woodcuts. Seventh edition. 1898.

SKEFFINGTON AND SON, Piccadilly, London.
Where Two Worlds Meet. By Rosa E. March. 1898.

STEINHEIL, G., Paris.
De l'Exploration des Organes Internes. Par Dr. L. Bouchacourt. 1898.

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SWAN SONNENSCHEIN AND Co., London.

Radiation. By H. H. F. Hyndman, B.Sc. Lond. With a Preface by Professor S. P. Thompson, D.Sc., F.R.S. 1898. Price 6s.

VIEWEG UND SOHN, Braunschweig.

Lehrbuch der Anorganischen Chemie. Von Professor Dr. H. Erdmann. 1898.

WAHR, GEO., Ann Arbor.

Laboratory Work in Physiological Chemistry. By F. G. Novy, Sc.D., M.D. Michigan. Second edition. Illustrated. 1898.

A Catalogue of Ophthalmic Instruments and Appliances Manufactured by John Weiss and Son, Oxford-street, London, and Kingstreet, Manchester.—Magazines, &c., for September: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, St. Peter's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALLFREY, F. H., B.A. Camb., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

BABINGTON, S. N., L.R.C.P., M.R.C.S., has been appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

BARNES, J. A., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

BELFRAGE, S. H., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

BINGHAM, S. O., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

BUZZARD, E. F., B.A., M.B., B.Ch. Oxon., has been appointed House Physician to St. Thomas's Hospital.

CHARLES, J. R., B.A., M.B., B.C. Camb., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

COBB, E. H., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

CORNER, E. M., M.A., M.B., B.C. Camb., B.Sc. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

COWBURN, A. D., L.R.C.S., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

DALTON, THOMAS, M.D., M.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act (1897) for County Court Circuit No. 28.

DURRANT, CHARLES E., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Resident Medical Officer to the National Sanatorium for Consumption and Diseases of the Chest, Bournemouth.

EDMUNDS, WALTER, M.A., M.C., has been appointed Surgeon to Outpatients on the Honorary Medical Staff of the Evelina Hospital.

ELIOT, E. F., F.R.C.S., L.R.C.P. Edin., F.F.P.S., L.S.A. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Southampton, Winchester, and Romsey Districts.

FEGEN, C. M., M.R.C.S. Eng., L.R.C.P. Edin., Diploma in State Medicine Conjoint Colleges of Ireland, has been appointed Deputy Medical Officer of Health to the Croydon Rural District Council, vice L. W. D. Mair.

GALT, W. J., B.A. Oxon., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

GREAVES, F. L. A., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

GREG, A. H., B.A. Camb., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

HALL, J. S., L.R.C.P., M.R.C.S., has been appointed Junior Ophthalmic House Surgeon to St. Thomas's Hospital.

HASLAM, H. C., M.A., M.B., B.C. Camb., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

KILVERT, J. E., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

MCCLEAN, J. F., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

MAKINS, G. H., F.R.C.S., has been appointed Consulting Surgeon on the Honorary Medical Staff of the Evelina Hospital for Sick Children.

PIERCE, R. W. C., M.B., B.Sc., Lond., L.R.C.P., M.R.C.S., D.P.H. Camb., has been appointed House Physician to St. Thomas's Hospital.

REVELY, J. S., M.D., M.R.C.S., has been appointed Medical Officer to the Tettenhall District of the Seisdon Union.

ROBINSON, A. C., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

SHEA, H. F., M.B., B.S. Durh., L.R.C.P., M.R.C.S., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

SHEARS, CHARLES H. B., Surgeon to the Liverpool Eye and Ear Infirmary, has been appointed Ophthalmic Referee for County Court Circuit 6 under the Workmen's Compensation Act, 1897.

SNELL, E. H., M.D., B.Sc. Lond., D.P.H., M.R.C.S., L.R.C.P., has been re-appointed Medical Officer of Health to the City of Coventry and Medical Superintendent to the City Fever Hospital.

STEVENS, A. E., M.B. Durb., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

STURGES-JONES, W. E., M.R.C.S. Edin., L.R.C.P. Lond., L.S.A. Lond., has been appointed Vice-Consul for the Perené and Chanchamayo Districts of Central Peru, South America.

TAYLOR, HENRY J., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Junior House Surgeon to the Manchester Royal Eye Hospital, vice W. E. Smith.

THWAITES, G. B., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

TUDBY, A. H., M.S., has been appointed Surgeon to In patients on the Honorary Medical Staff of the Evelina Hospital.

WINSTAN, ST. ANDREW ST. JOHN, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant House Surgeon to the Derbyshire Royal Infirmary, vice Reginald H. Hill.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index)

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester-street, S.W.—House Surgeon for six months. Board and residence in the hospital and an allowance of £5.

BETHLEM HOSPITAL.—Two Resident House Physicians for six months. Apartments, complete board, and washing provided.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £100 per annum, increasing £10 yearly to £120 per annum, with board, lodging, washing, and attendance.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board and lodging.

EXETER CITY ASYLUM.—Assistant Medical Officer. Salary £120 per annum, rising by £10 yearly to £150, with board, lodging, and washing.

GENERAL HOSPITAL, Birmingham.—Ophthalmic Surgeon (Honorary). Also Dental Surgeon. Honorarium of £50 per annum. Also House Surgeon. The appointment is for six months. There is no salary, but residence, board, and washing will be provided. Also Pathologist. Salary £100 per annum, with board and residence. The appointment will be subject to annual re-election, to a limit of five years. A knowledge of bacteriology will be deemed essential. Also two Assistant House Physicians for six months. There is no salary, but residence, board, and washing will be provided.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST. Resident House Physicians.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W.—Three Senior Clinical Assistants. The first appointment will be for six months, but is renewable at the discretion of the Committee of Management. Also Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

LEEDS CITY HOSPITALS.—Assistant Resident Medical Officer. Salary £150 per annum, with board, lodging, &c.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium at the rate of £50 per annum and board.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. The House Physician and House Surgeon each receive a salary at the rate of £40 a year; the Assistant House Physician and Assistant House Surgeon each receive a salary at the rate of £20 a year.

MONSALL FEVER HOSPITAL, Manchester.—Medical Assistant at £100 per annum, with board and lodgings.

NEW HOSPITAL FOR WOMEN, Euston-road.—Three Clinical Assistants (women) in the out-patient department, to attend on Tuesday, Wednesday, or Friday. The appointments are for one year.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Board, lodging, and washing provided. No salary.

PARISH OF WESTRAY, Orkney.—Medical Officer and Public Vaccinator. Salary £90 per annum.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £50 per annum, with board, rooms, washing, &c.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £30 per annum, board and washing provided.

ST. GEORGE-IN-THE-EAST.—Infirmary and Workhouse Assistant Medical Officer. Salary £120 per annum, with rations and apartments.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Ophthalmic Surgeon. Also Assistant Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £70 per annum, with board, washing, and residence. Also a Junior Assistant House Surgeon. Salary £2 per mensem, with board, washing, and residence.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon (to act also as Secretary). Salary £60, with board, lodging, and washing.

UNIVERSITY OF ST. ANDREWS.—Professor of Midwifery.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon for six months.

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Births, Marriages, and Deaths.

BIRTHS.

BLOMFIELD.—On August 26th, at The Horsefair, Pontefract, the wife of Geo. Wills Blomfield, M.R.C.S., L.R.C.P., and L.S.A. Lond., of a daughter.

BLUMER.—On August 30th, at St. Mary's-grove, Stafford, the wife of F. Milnes Blumer, M.D., of a son.

FRANCIS.—On August 29th, at Uxbridge, the wife of L. A. Francis, M.R.C.S., L.R.C.P., of a son.

GOSSE.—On August 25th, at Eccleshall, Staffs., the wife of Hope Wilkes Gosse, M.R.C.S. Eng., L.R.C.P. Edin., of a son.

HARDYMAN.—On Sept. 5th, at Bath, the wife of George Hardyman, M.B., F.R.C.S.E., of a daughter.

LAZARUS-BARLOW.—On August 31st, the wife of W. S. Lazarus-Barlow, M.D., of a son (stillborn).

REYNOLDS.—On August 28th, at 81, Hornsey-rise, London, N., the wife of Austin Edward Reynolds, M.R.C.S., of a son.

RYLE.—On August 26th, at German-place, Brighton, the wife of Reginald John Ryle, M.D., of a son.

SHAW.—On August 24th, at Sedgomoor, St. Austell, Cornwall, the wife of Archibald Shaw, M.D. Glasg., of a son.

STAVELEY.—On Sept. 3rd, at South Eaton-place, S.W., the wife of W. H. C. Staveley, F.R.C.S., of a daughter.

WOOLBERT.—On August 9th, at Landour, India, the wife of Major H. R. Woolbert, of a daughter.

MARRIAGES.

ABERNETHY—LYALL.—On Sept. 1st, in St. Thomas's Church, Haverfordwest, by the Rev. Atterbury Thomas, Robert Abernethy, M.D., F.R.C.P. Edin., to Frances Elizabeth, daughter of the late David Lyall, M.D., Deputy-Inspector-General of Hospitals and Fleets, R.N.

CRAWFORD—WILLIAMSON.—On August 31st, Cyril Rodney Holtz Crawford, M.R.C.S., of Pembury, Kent, to Lucy Phillis, second daughter of George Williamson.

DAVIS—GILL.—On Sept. 7th, at Christ Church, Marylebone, John Warren Davis, M.R.C.S. Eng., L.R.C.P. Lond., to Agnes, widow of the late Edmund Richard Gill, of Kimberley, South Africa.

DURRAN—SMITH.—On August 30th, at Bank of Scotland House, Kirriemuir, by Rev. James Durran, M.A., Queen-street F. C., Edinburgh, brother of the bridegroom, assisted by Rev. William Kirkpatrick, South F. C., Kirriemuir, and Rev. Gilbert Laurie, M.A., Fairbairn Memorial F. C., Glasgow, John George Durran, M.B., C.M., Kirriemuir, to Flora Margaret, elder daughter of Archibald Smith, Solicitor, Kirriemuir.

DYER—PRICE.—On Sept. 3rd, at St. Luke's, Uxbridge-road, W., Sidney Reginald Dyer, M.D., M.R.C.S., Barrister-at-law, of the Middle Temple, and Deputy Medical Officer of H.M. Prison, Wandsworth, to Rose, daughter of Henry Talbot Price.

JONES—GRUGGEN.—On Sept. 1st, at Amport, Andover, by the Rev. G. S. Gruggen, vicar of the parish, assisted by the Rev. Alfred Jones, late vicar of St. John's, Kenilworth, and by the Rev. E. G. Watts, brother-in-law of the bride, Edward Jones, M.R.C.S., of St. Columb, Cornwall, elder son of the Rev. Alfred Jones, to Josephine, third daughter of the Rev. G. S. Gruggen.

MONSARRAT—TURNEY.—On Sept. 6th, at Nottingham, Keith Waldegrave Monsarrat, F.R.C.S.E., of Liverpool, to Marguerite Ada, second daughter of Alderman Sir John Turney, J.P., of Nottingham.

NUTTALL—STEAD.—On August 25th, at the Parish Church, Leamington, by the Rev. Cecil Hook, vicar, assisted by the Rev. Murray Ragg, brother-in-law of the bride, Arthur Peel Nuttall, M.D. Lond., of Bury, Lancashire, to Dorothy May, fifth daughter of the late Maud Stead, of Harrogate, and of Mrs. Stead, of Leamington.

POOLE—HARLAND.—On August 22nd, at Holy Trinity Church, Ryde, I.W., by the vicar, Rev. W. M. Cameron, M.A., W. Evered Poole, Major, late 60th Royal Rifles, to Fanny Kate Elliott, younger daughter of Henry Harland, M.D., of Eastridge, Ryde, I.W., fomerly of Wadhurst and Tunbridge Wells.

SPICER—HUNTER.—On July 7th, at Marylebone Parish Church, by the Rev. F. Eliott, M.A., vicar of St. Luke's, Oseney-crescent, assisted by the Rev. Alfred Pugh, Assistant Chaplain to H.M. Prison, Holloway, Frederick Spicer, M.D., of Devonshire-street, Portland-place, elder son of Frederick Spicer, M.R.C.S., of Carleton-road, Tufnell-park, to Florence Annie, third daughter of the late Richard Hunter, of The Elms, Hilldrop-road, N.

WAINWRIGHT—CAVELL.—On August 25th, at St. Helen's Church, Ore, Sussex, William Longworth Wainwright, M.B., B.Sc., of Brixworth, Northamptonshire, to Mary Lilian, youngest daughter of the Rev. Frederick Cavell.

WALKER—PEDDER.—On Sept. 6th, at St. Michael and All Angels, Helensburgh, by the Rev. W. Perowne Holmes, Vicar of St. Peter's, Leicester, assisted by the Rev. J. Stuart Syme, Rector of St. Michael and All Angels, Walter W. Walker, M.B., B.C. Cantab., Peterborough, to Margaret, youngest daughter of William Pedder, Stirling.

WILSON—HANBURY.—On Sept. 2nd, at Chefoo, China, William Wilson, M.B., C.M., to Elizabeth, second daughter of Cornelius Hanbury, of Richmond, Surrey.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898, bound in cloth, gilt lettered, price 18*s.*, carriage extra; and Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*, can be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Subscriptions (which may commence at any time) are payable in advance.

THE COMMENDATORE DR. LAPPONI, BODY-PHYSICIAN TO THE POPE.

OUR Rome correspondent writes:—Giuseppe Lapponi studied medicine at the Bologna school, where he distinguished himself in the classes of Professor Concato and Professor Murri, the latter a pathologist and surgeon of high repute, and well known to the professional world as a contributor to THE LANCET. He graduated as Doctor in Medicine in 1875, and after for a brief interval assisting the Professor of Pathological Anatomy in Bologna, Dr. Tartuffi, he went into general practice, first at Capalone, in Tuscany, and next at Pollenza, near Macerata. There he remained till 1885, recommending himself by his skill.

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his fertility in resource, and his self-reliance, while contributing with much acceptance to medical periodicals, Italian and French. In 1888 he had transferred his *penates* and practice to Osimo, when one day he received from the Vatican an invitation to become the Pope's body-physician, the holder of that post, who had also held it in the latter years of Pio Nono, being Dr. Alessandro Ceccarelli, an excellent practitioner who had won his fame as a surgeon and was by this time well stricken in years. Dr. Lapponi's reply was in the affirmative and he accordingly repaired to Rome, at first as assistant to Ceccarelli, who required him to pay a weekly visit to the Vatican, while still keeping a *pied-à-terre* at Osimo. This arrangement did not last long. Ceccarelli died and Dr. Lapponi succeeded him as "archiatro di Sua Santità" (physician-in-chief to His Holiness). In this position he speedily won the entire confidence of his august patient, who placed the whole management of his health unreservedly in his hands and came to consult him—as Pio Nono used to consult Ceccarelli—even on matters but remotely connected with the healing art. As years rolled by and His Holiness began more and more to feel their weight, Dr. Lapponi's attendance at the Vatican became gradually more assiduous, till of late his ordinary visits are never fewer than thrice weekly, sometimes every day, at others (when occasion requires) as often as three or four times in the 24 hours. As to the Pope's recent illness, or rather mild indisposition, of which the Continental press made so much, Dr. Lapponi gave no countenance to the alarmist reports set in circulation. His Holiness, according to Dr. Lapponi, was unwell for no more than two days—the cause, a slight access of intestinal catarrh due to the excessive heat. Hardly any treatment was resorted to—repose, absolute repose, was the line indicated; while, to put an end to the reports aforesaid Dr. Lapponi caused an editorial announcement to be made in the official organ of the Vatican—the *Osservatore Romano*—describing the clinical *status quo*. His Holiness himself used to smile gently at the sensational "intelligence" as to his condition, and always fell back on the directions of his physician, in whose hands his wiry, unbroken constitution had, he felt, all justice done to it. In March next he will be a nonogenarian, but Dr. Lapponi ventures to predict that—if no unforeseen complication occur—His Holiness will betray but small indication of the senile state. One reassuring feature in his case is the marvellous alertness of mind, above all the ready and unimpaired memory which never fails to recall names, events, and places with a precision, a promptness, and an accuracy which are the envy of his court. His faculties he maintains in admirable exercise, and on the Sunday succeeding his last illness (on August 21st) he recited to his physician twelve stately hexameter lines which he had composed in bed the night before, because he felt more wakeful than usual. Hygienic conditions, much more than active treatment, are what Dr. Lapponi relies on for the health of his patient, and among these are the avoidance of extremes of cold in winter and of heat in summer, the latter secured by four ventilators of the doctor's own devising by which the Holy Father's study and dormitory and audience-chambers are kept deliciously cool without draughts or sudden alternations of temperature. As to the Pope's daily life, it is already known to readers of THE LANCET. Early rising is secured by his being always in bed by 9 P.M., and the frugal meals he takes—*una piccolissima colazione* (a very slight breakfast) shortly after he gets up at 7 A.M. and a quite frugal dinner at 2 P.M.—amply suffice for the audiences, the correspondence, the composition of the allocutions, the encyclicals and the bulls which form so important a feature of the pontifical year. It is quite a mistake to suppose that he has in any way relaxed his solicitude as to official cares, ecclesiastical or other. He is closeted daily, and often for hours, with his Cardinal secretary, Monsignor Rampolla, whom he never keeps waiting, and, the moment the conference is over, he resumes his work, theological or ecclesiastical, as aforesaid, without perceptible loss of energy. Add to all this his delight in conversation when a congenial interlocutor presents himself, occasions on which he pours forth historical, literary, artistic and even scientific lore, amassed during long years of devotion to books—and some notion may be formed of the personality for whose bodily health and mental vigour Dr. Lapponi is not only answerable but effectively responsive.

WANTED A SCHOOL FOR THE DEAF AND DUMB.

A CORRESPONDENT asks for the address of a good boarding-school for a boy about ten years old who is deaf and dumb.

PULEX IRRITANS.

To the Editors of THE LANCET.

SIRS,—I notice in THE LANCET of May 14th, 1898, an editorial note in reply to a correspondent who had written to you to inquire "the best way of exterminating the flea-pest." For personal use the chloroform method suggested in your note is certainly the best. In particularly hot summers the resident staff of the London Hospital, when engaged in receiving-room and out-patient duty, were, in my time, always armed with a chloroform drop-bottle and at the least sign of irritation a few drops were poured on the clothing over the affected spot. But this method is not available for the general public and it is, moreover, defence at too late a stage. The best method of prevention lies in the annihilation of the breeding-places of the fleas. The larvæ are nourished on minute blood-clots deposited by the female flea in dirty clothing, carpets, cracks in the floor, and other convenient places.

According to one of the minor characters in Shakespeare fleas breed in putrid urine:

Second Carrier. I think this be the most villanous house in all London road for fleas. I am stung like a tench.

First Carrier. Like a tench! by the mass, there is ne'er a living christen could be better bit than I have been since the first cock.

Second Carrier. Why, they will allow us ne'er a jordan, and then we leak in the chimney; and your chamber-lye breeds fleas like a loach. *King Henry IV.*, Part I., Act 2, Scene 1.

But this interesting observation in natural history lacks confirmation.

With proper cleanliness the eggs or larvæ should be destroyed at some time during the fourteen days occupied in the developmental process. In many badly constructed houses, however, with gaping cracks in the flooring, under the skirting board, &c., true cleanliness is hardly attainable. In such cases one of the various vegetable products which destroy or annoy the fleas may be freely used. In your note you mention common English lavender, but this is of doubtful efficiency. The powder of the dried flowers of various species of pyrethrum (the so-called "Persian" insect powder) stupefies and finally kills fleas and most other insects. In common use for many hundred years have been wormwood (Artemisia) and fleabane (Pulicaria). Of the former Tusser writes—

> "Where chamber is swept and wormwood is strown,
> No flea for his life dare abide to be known."

But the cheapest and most efficient of all the powders employed for this purpose is powdered fennel. My attention was first directed to its use by a note in Dr. Lauder Brunton's Materia Medica, second edition, page 852. "I am informed," he writes, "that the wild fennel growing in South Africa will completely drive away fleas from kennels and stables, and powdered fennel has a similar effect in this country." The powder must be used very freely and will then be found singularly effective. In a tenement house inhabited by some friends of mine in the Jews' quarter of East London, in which owing to the numerous floor-cracks which no broom could penetrate thorough cleanliness had failed to eradicate the pest, the floors and furniture were, on my advice, freely sprinkled with powdered fennel. In a fortnight the fleas had all disappeared, never to return.

I am, Sirs, yours faithfully,

Nagasaki. M. E. PAUL.

VISUAL PERCEPTION OF THE THIRD DIMENSION.

IN the July number of the *Psychological Review* Professor Charles H. Judd of New York University discusses various explanations of the visual perception of depth. After describing experiments with a thread extended forwards from the bridge of the nose and criticising the theory which makes sensations of movement the especial factor of all space-perception, he concludes as follows:—

> "Visual depth is thus conditioned by a certain relation of contradiction between the two-dimensional data of the retinal image or between the muscle-sensations which are connected with these images. The agreement between the elements in which the contradiction appears must be great, but it must not be complete, for the contradiction is an essential element. Depth, then, may be properly defined as a form rather than as a content of perception. It is not in any sense an original attribute of sensation. ..... It is, of course, like all psychical experience, subjective, but its source is just as much objective as is that of the sensation qualities which are arranged in space."

THE POST OF MEDICAL OFFICER OF HEALTH AT BINGLEY.

THE *Bradford Observer* recently contained an advertisement from the Bingley Urban District Council which ran as follows:—

> BINGLEY URBAN DISTRICT COUNCIL.
>
> The Council propose to appoint a MEDICAL OFFICER OF HEALTH for the district of Bingley, comprising an area of 11,800 acres and a population of 18,500. The appointment will be made subject to the regulations of the Local Government Board, under their General Order of the 23rd March, 1891.
>
> Applications, stating salary required, to be addressed to me not later than Saturday, Sept. 10th.
>
> R. ARMISTEAD, Clerk to the Council.
>
> Town Hall, Bingley, August 20th, 1898.

That candidates should themselves state the salary for which they would be willing to work is, in our opinion, a most unfortunate feature in the projected appointment. The words of the advertisement suggest that the Bingley Urban District Council are prepared to hand over the care of the public health of the community to the medical man making the lowest tender.

DANGERS OF CHRYSAROBIN.

IN the *Deutsche Medicinische Wochenschrift* of August 25th Dr. Max Linde, an ophthalmic surgeon in Lübeck, describes the case of a man who suffered severely as a result of treatment with chrysarobin ointment. He had for seven years been the subject of general psoriasis, but was otherwise healthy and was free from syphilis. Four years ago the disease almost entirely disappeared after painting with a solution, but this was followed by a relapse and for the last two years the eruption has covered the whole body with the exception

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of some limited spaces. Since the beginning of last January the medical man in attendance had made use of iodide of postassium, sulphur ointment, pyrogallol dissolved in traumaticin, and Fowler's solution, but as no improvement was produced he adopted active treatment with chrysarobin. From Feb. 23rd to Feb. 28th he used a weak ointment of Goa powder and vaseline (1 to 8), and from Feb. 28th to March 21st a stronger ointment consisting of 1 part Goa powder to 4 parts vaseline. The patient was warned of the danger to his eyes, and he carefully followed the directions given him for their preservation; but eighteen days after the commencement of the treatment their condition was very bad. In the right eye the conjunctiva was extremely red, velvety, and somewhat swollen; the cornea was white (*milchig*) and opaque, and at the meeting of the lids the epithelium was absent over a space of ¼ in. (8 mm.) long and ¼ in. (5 mm.) broad; the sensibility of the cornea was greatly impaired but not entirely lost. The patient felt no actual pain, but only "something burning." In the left eye the corneal epithelium was macerated and wavy but not broken; its sensibility was impaired. Both pupils were of the size of pinheads and did not react. The iris was hyperæmic and the ciliary border was injected bluish-red. With the right eye a finger could be seen at a distance of 4 ft. and with the left eye at a distance of 8 ft. The urine contained abundance of albumin, red and white blood-corpuscles, and a few granular casts. The patient complained of weakness and palpitation of the heart. On using atropine and stopping the inunction he improved to some extent, but did not regain his original condition. When the last examination was made on May 22nd, eight weeks after the commencement of the treatment, his cornea showed opaque spots penetrating to the deep layers; the epithelium was smooth and gave a reflection everywhere; the pupils were of ordinary size, and reacted normally; there was no irritation. The urine still contained albumin, white blood corpuscles, and granular casts. The psoriasis had again appeared on different parts of the body, especially on the face and back; a cautious attempt to resume the treatment was in a few days followed by renewed irritation of the eyes. Dr. Linde recommends that whenever chrysarobin is used a careful watch should be kept for constitutional symptoms, such as contracted pupils, impaired sensibility of the cornea, pericorneal injection, and abnormalities of the urine, on the occurrence of which the treatment should be immediately stopped. The same precautions should be taken with pyrogallol, which is more poisonous than chrysarobin and more liable to attack the kidneys.

"THE TITLE OF 'DR.'"

To the Editors of THE LANCET.

SIRS,—I have read with interest the letter of "X." in THE LANCET of August 27th. In the town where I am in practice three of my fellow-practitioners, who are M.R.C.S., L.R.C.P., boldly write "Dr." on their doorplate and visiting cards.—I am, Sirs, yours faithfully,

August 26th, 1898. G. D. E.

REAGENTS FOR FREE HYDROCHLORIC ACID IN THE GASTRIC JUICE.

A SERIES of experiments on the identification of free hydrochloric acid in presence of acetic, lactic, and butyric acids has been made by Dr. R. Ricci at the Istituto di Clinica Medica in Milan and the results are published in the *Gazzetta degli Ospedale* of Aug. 14th. Weigert's hæmatoxylin in aqueous solution gives a very fine yellow colour with all acids; this reaction is of such delicacy that it will show traces of free hydrochloric acid inappreciable by other means. Toiseau's reagent (the composition of which, however, is not stated) is also extremely sensitive. If 1 c.c. be mixed with a like quantity of filtered gastric juice in a test-tube the organic acids cause no change, but in presence of free hydrochloric acid the violet colour becomes light blue. Tungstate of soda in saturated solution has the property of giving a white precipitate with free hydrochloric acid, but is unaffected by the other acids; 1 c.c. of it is mixed in a test-tube with from 1 c.c. to 5 c.c. of filtered gastric juice; the precipitate forms in the upper part of the tube. The other reagents experimented with were safranine, vesuvine, methyl green, dahlia, and malachite green.

A REPUDIATION.

To the Editors of THE LANCET.

SIRS,—A most annoying mention of my name having been made in an article on Buxton and its Treatment in Wednesday's *Sun*, I at once addressed a letter of remonstrance to the editor of that paper, and this duly appeared. I find, however, that an unfair use is being made of the incident, and I venture to ask you to publish this disclaimer to the medical profession. I am, Sirs, yours faithfully,

Buxton, Sept. 5th, 1898. WM. ARMSTRONG.

FORMALIN IN INSECT STINGS.

To the Editors of THE LANCET.

SIRS,—As the subject of insect stings is mentioned in a recent annotation in THE LANCET, may I point out that "formalin" (recommended some time ago for mosquito bites in one of the medical journals by a Zanzibar correspondent) is an excellent remedy for the irritation produced by the stings of all insects? The "bite" is touched with the moistened stopper of the "formalin" bottle and as soon as the application begins to smart the excess of "formalin" is wiped off; relief is almost instantaneous. I am, Sirs, yours faithfully,

F. HYDE MABKRLY.

Brooklyn, Earl's Court-square, S.W., August 30th, 1898.

Tse-Tse.—Although much work has been done on the Tse-Tse fly disease its records exist only in pamphlet form. In the recently issued work on "The Infective Diseases of Animals," a translation of vol. i. of Friedberger's and Fröhner's "Veterinary Pathology," there is an original chapter on the subject by the translator, Captain Hayes, F.R.C.V.S. The account given is, however, very short and does not add to what is already known. We know of no better pamphlet than that by Major Bruce, of the Royal Army Medical Corps, entitled "A Further Report on the Tse-Tse Fly Disease."

X. Y. Z.—1. A house surgeon is bound to obey the authorities of his hospital. He must therefore grant the certificates as he is directed by the committee. 2. He may charge no fees without leave of the governing body of his hospital. 3. The committee has a right to levy any fee it likes.

Fundus Oculi.—Our correspondent will find "Sight Testing for the General Practitioner," price 2*s.* 7*d.* post free (F. Davidson, 107, Great Portland-street, London, W.), useful for the purposes which he mentions.

Southern Cross.—Certifying surgeons under the Factory and Workshop Act are appointed by the inspectors of factories. Our correspondent should apply to Dr. Whitelegge, Home Office.

A. R. M. E., from his account of the matter, has been shabbily treated. A solicitor on seeing the letters which have passed could best say what remedy he has.

U.C.H.—The Warrant for giving substantive rank is published in our present issue but the title of Indian Medical Service is still retained.

M. D. will find our reasons in the leading article to which we have already made reference.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 8th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 2	30·33	W.	...	113	78	52	55	60	Fine
,, 3	30·37	W.	...	117	84	59	60	64	Fine
,, 4	30·35	S.E.	...	116	84	62	65	70	Fine
,, 5	30·30	S.E.	...	106	79	62	63	64	Overcast
,, 6	30·16	S.E.	...	107	80	63	63	64	Overcast
,, 7	30·03	S.E.	...	105	86	63	63	64	Foggy
,, 8	29·99	E.	...	122	89	64	65	69	Hazy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (17th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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A Lecture
ON
TUBERCULOSIS AND THE MILK-SUPPLY, WITH SOME GENERAL REMARKS ON THE DANGERS OF BAD MILK.

Delivered at Sudbury Hall at the invitation of Lord Vernon, on Thursday, September 15th,

BY SHERIDAN DELÉPINE, M.B. EDIN., B.Sc.,
PROCTOR PROFESSOR OF PATHOLOGY, OWENS COLLEGE.

GENTLEMEN,—Some months ago Lord Vernon wrote to me with regard to the work which is being done in his Sudbury estate and with special reference to his anxiety to free all the cattle on his farms from tuberculosis. It is well known that a considerable initial expense is attendant on carrying out such a plan. The difficulty is further increased on account of the well-known tendency which practical men generally, and especially farmers, have to look with suspicion upon any new idea which is not in accordance with the practice of their predecessors. History acquaints us with the value of such arguments; if man had not from time to time risen above traditional practices we would have been deprived of the benefits of steam and electricity, or of sanitation, without speaking of greater boons still, such as the freedom of conscience and the impartial administration of justice which we enjoy under the British Constitution.

The difficulty of dealing with tuberculosis is further increased by the general ignorance of the public. The danger which they incur from a contaminated milk-supply is appalling in its magnitude, yet because this danger is of an insidious nature and its effects are often so gradual that it is difficult to trace their onset they prefer to have their quietude not disturbed. They are also afraid that their purses might have to be opened. Rather than face such possibilities they prefer to believe the few experts who still hold views which numerous most searching investigations have proved to be wrong. They still hold that tuberculosis is a disease chiefly due to climatic conditions and to hereditary tendencies. The belief that tuberculosis is transmitted from parent to offspring is one of the traditions most inimical to progress with regard to the prevention of this disease. It gives to the mind a sense either of helplessness or of the necessity of measures, such as segregation, which would be repellent to our affections and which nothing but an immense peril could induce us to contemplate.

Tuberculosis is a disease which is acquired almost invariably after birth owing to the penetration in our organs of a minute parasite. We know now this parasite and most of the ways in which it can gain entrance into our body. This being so we should be able to defend ourselves by avoiding or destroying this enemy. I am convinced that if people could see the tenth part of what we students of disease have a too frequent opportunity of witnessing they would be convinced at once of the necessity of taking proper precautions against the disease. It is this conviction which has led me to accept the invitation which Lord Vernon has done me the honour to send me and to give you a short account of tuberculosis and of the way in which milk may assist its spread. It gives me much pleasure to do what I can to assist Lord Vernon in his good work—work which is undoubtedly of great public importance. Many others might do it better than I can, but I will speak with the conviction which fifteen years of continuous pathological studies have given me. Many here are experts before whom I would hardly think it necessary to repeat what to most of them are truths firmly established; they must, however, excuse me if, keeping in mind the nature of the invitation given me by Lord Vernon, I address myself to those who have directed their activities to other fields than the study of disease. Perhaps had I known that instead of coming here to give some information to Lord Vernon's tenants I should have had to address such a gathering of distinguished experts, with Sir William Broadbent in the chair, I should have accepted his lordship's invitation less readily.

Tuberculosis is produced by the penetration into various parts of our body of a very small vegetable parasite, which was first described by Koch sixteen years ago. This bacillus is quite invisible to us unless we help our powers of vision by means of the microscope. It is so small that particles of dust minute enough to be easily raised by slight currents of air may contain many of them, so that we may breathe air loaded with the parasite without our being conscious of it. In the same way it may be present in milk without our being aware of its presence. It does not multiply readily outside the body of its victims, but it has extraordinary powers of resistance. It is but slightly affected by the greatest extremes of heat or cold of our seasons; it may be kept dry for several months without dying or ceasing to be able to produce disease; it resists immersion in water, putrefaction, burying in the ground for days, weeks, or months; and the only natural agency which seems rapidly fatal to it is sunlight. It is generally admitted that this bacillus does not grow readily outside the body of animals liable to tuberculosis, yet by taking proper precautions it is not very difficult to make it grow on suitable substances, and I satisfied myself several years ago that it is quite possible for the conditions necessary to occur in nature. Up to the present time, however, we have no clear evidence that this multiplication of the bacillus outside living tissues plays an important part in the spread of the disease. I have for the last six years tried to find whether this multiplication outside the body might be of importance under ordinary circumstances but have not succeeded in coming to a definite conclusion. I will therefore assume that for the present we need only discuss the share which tuberculous men or animals have in the spread of the disease.

Let us suppose that a few particles loaded with tubercle bacilli have been carried into the lungs of a person. These bacilli will, by means of the products which they secrete, produce irritation of the part and, if sufficiently numerous or active, they will rapidly cause the deaths of a few cells. Then a fight, first described by Metschnikoff, will follow during which some of the cells composing the tissues of the person attacked will surround the bacilli, take them up into their bodies, and digest them if they can. If the cells are sufficiently active and the bacilli not too virulent the microbes will either be killed or rendered harmless and, fortunately for us, this takes place in a large number of instances. When the fight is short nothing appreciable remains to show what has taken place. If the contest is more equally balanced a number of cells die, undergo caseous degeneration—i.e., a kind of fermentation similar to that which takes place in ripening cheese—and a so-called cheesy nodule or tubercle is produced; this becomes surrounded by scar tissue and may gradually be infiltrated with lime salts. These cheesy or chalky nodules may remain in the tissues till the individual dies from some other cause. When they are found in the organs after death it is generally assumed that they indicate a victorious fight of the tissues against the microbes and for that reason these lesions are described as of "healed tuberculosis of phthisis." In many cases, unfortunately, the fight does not end so favourably. After being checked for a longer or shorter period the bacilli manage to multiply in the midst of the enfeebled or dead tissues. This takes place more specially when these tissues have been weakened by some congenital vice of constitution or by some recent disease or unfavourable condition which has reduced the activity of the cells or killed many of them. As the bacilli multiply they extend beyond the margin of the area which they first invaded. Some are carried away by wandering cells which move in a system of channels and spaces permeating all our tissues and which are known as lymphatic spaces and vessels.

On the course of the larger lymphatic vessels there are organs known as lymphatic glands or ganglia through which the lymph is elaborated and, so to speak, filtered before it can pursue its course along the lymph-vessels. Before this lymph can reach the blood-vessels it has to pass through a number of these glands. Now, the bacilli contained in the wandering cells continue their fight and the diseased cells become arrested in the first lymphatic gland which they reach which is usually very near the point where the bacilli have entered the body. I have assumed that all the bacilli are carried along by cells. This may not be the only way in which they spread along the lymphatics. The fact, however, remains that they rapidly reach the lymphatic ganglia which are connected with the place where the bacilli have penetrated. They have now reached the second line

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of defence the fight is there renewed and in some cases the bacilli are checked and though they may produce extensive disease of the gland they are unable to go further. This form of tuberculosis of the lymphatic glands is generally known under the name of scrofula (one of the forms of the old king's evil), on which so much has been written. This form of disease has been lately thoroughly investigated in my laboratory by Dr. F. C. Moore, who has recently embodied the results of his experiments and observations in a most valuable monograph.[1] Out of 26 cases of chronic enlargement of the glands, mostly of the neck, which had to be operated upon for various reasons, not less than 19—i.e., a little over 73 per cent.—were found to be tuberculous.

Lymphatic glands are not the only organs which are liable to this chronic form of tuberculosis—bones and joints, for instance, are often affected in the same way. In a large number of cases, however, the bacilli pass beyond this second line of defence and, after overcoming a number of other glands, they may finally affect most of the lymphatic glands of the body. It is easy for me to demonstrate this process to you by a series of guinea-pigs inoculated with minute doses of tuberculous matter taken either from human or bovine lesions. Tuberculosis has a remarkable tendency to remain confined to the lymphatics and to certain internal organs for a comparatively long period. The spread of the disease along the lymphatics presents a remarkable peculiarity to which I attracted the attention of pathologists some years ago.[2] After following the course of the lymph so closely for a time, that only those glands receiving lymph from the part infected become diseased, other glands not situated on the course of the lymph-stream become invaded as if the tuberculous process extended back against the lymph-current. Thus it is found that after the glands at the root of such organs as the lungs have become tuberculous those organs themselves usually become rapidly diseased. According to our expectations, based on current knowledge of the course followed by the lymph, the viscera should be affected first and the glands receiving the lymph from them should be affected last. I do not wish to trouble you here with a discussion of the nature of this phenomenon but its practical importance in connexion with tuberculosis of the udder is evident. Whenever the glands receiving the lymph from the udder become affected the possibility of the udder being already diseased or about to be diseased should be considered even in those cases in which the udder appears on external examination absolutely normal.

The further stages of the disease are produced in two ways. Either the interference with important organs and the generation of poisonous substances by the bacillus or both combined cause a general state of debility and fever which ends in death or the disease becomes generalised by the bacilli penetrating in comparatively large numbers into the blood-vessels. One of the ways in which this takes place is by ulceration of the walls of some veins passing through or at the side of some tuberculous focus; tuberculous matter loaded with bacilli is thrown through the opening in the walls of the vessel into the blood-stream and is distributed to all the organs of the body. Wherever the bacilli get lodged they give rise to small centres of disease similar to those which I have already described. These lesions have the form of small nodules, grey and transparent at first, becoming afterwards yellow in the centre owing to cheesy degeneration. Owing to their size being usually that of a millet-seed these tubercles are known as miliary tubercles. These tubercles may be found in all parts of the body and of course render all the tissues infectious; hence the danger of eating the uncooked flesh of animals in which tuberculosis has become general. It is for this reason that carcasses of animals affected with general tuberculosis are invariably condemned by sanitary authorities. This form of the disease is rapidly fatal.

I have passed over certain changes taking place in the lesions of localised tuberculosis in order to give you a connected view of the progress of the disease when once it has taken hold of our body or of that of an animal such as the cow, the horse, the pig, &c. There are differences in the various animals, but these need not be discussed here as they are not essential. The destruction of tissues in certain organs of the body is associated with consequences of great practical import, for it is to them that is due the danger of infection of healthy individuals by diseased ones. To make the consequences of ulceration clearer to you I will show you the effects of tuberculosis affecting the skin of the face of some patients suffering from that dreadful disease, tuberculous lupus. You notice first the effects of the reaction of the tissues giving rise to considerable swelling and deformity, then the tissues decay, soften, and crumble away, and prominent parts of the face are removed as if bitten away and may even be replaced by ghastly cavities. What takes place on the face occurs also in the lungs, the kidneys, the bowel, and the mamma when these parts are affected with local tuberculosis. Now, the mass of decayed matter which is set loose by this ulceration contains in some cases large numbers of tubercle bacilli. The ulcers which in the lungs take the form of cavities empty themselves into the air-passages from which their contents escape through the mouth when the patient expectorates or they are swallowed as soon as they reach the back of the mouth and go down the bowels where they may start fresh mischief and render excreta infectious. It is easy to demonstrate the presence of these tubercle bacilli in the expectoration of phthisical patients or animals; they can also be demonstrated in their excreta. These dried discharges scattered by draughts in the air render the houses or places inhabited by phthisical persons or animals dangerous when absolute cleanliness is not observed. This is the chief source of tuberculous disease in man, in cattle, and in some of our pets—such as dogs. Out of 80,943 persons dying from all cases in London during 1897 in no less than 10,984 cases the death was registered as due to tuberculous disease. Out of these 10,984 cases 7864 are put down to phthisis. Though it is not proved that all cases dying from pulmonary phthisis have been infected through the air passages it is reasonable to assume that most of them have.

In the same way as bacilli are liberated from the lungs and scattered outside the body they are by the same process of ulceration set free in the intestine, in the kidney, in the mamma, and in subcutaneous lesions and pass out of the body with excrements, urine, milk, and purulent discharges. Now some of these products after becoming dry may infect fresh victims by contamination of the air just as dry tuberculous sputa have been shown to do. But with milk the case is different. It is through the intestine that tuberculous milk attacks the body. It has been denied that the consumption of tuberculous milk is attended with serious danger. I think, however, that there is a sufficient number of instances in which this danger has been proved by the actual occurrence of tuberculosis in children who have been fed on milk from tuberculous cows. By experiments on young animals such as kittens, rabbits, pigs, and calves, it is quite easy to produce tuberculosis by feeding these animals on tuberculous milk or other tuberculous products. Thirty years ago, that is about three years after Villemin had announced and admirably proved that tuberculosis was an infectious disease communicable from man to animal and from animal to animal (and not essentially a constitutional one as was then believed), Chauveau demonstrated experimentally that tuberculosis could be induced in cattle by feeding them on tuberculous products. Nearly thirty years have been necessary to allow public opinion to come to the conclusion that these men of science were right. In the reports of the last two Royal Commissions on Tuberculosis we find the following statement: "No doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter." It is difficult to prove when a child dying from tuberculosis has been infected through milk because before the death occurs or the disease becomes manifest the milk supply may have often been changed and milk diet has often given place to ordinary diet. As I have said there are cases in which no such doubt exists and in which tuberculosis has been traced to the consumption of tuberculous milk. Lord Vernon and Dr. Livesay have informed me that they know of a farm where such a case has occurred. There are, however, very often clear indications in the body of the victim showing the channels through which the bacilli have penetrated. We have seen how the bacilli infect first the lymphatic glands nearest to their point of entrance. The lymph coming from the intestine passes first through the mesenteric glands. The lymph from the lungs passes in the same way through the bronchial glands. It is therefore evident that in the event of the bacilli penetrating through the intestine the mesenteric glands would be chiefly affected and in the case of lung

[1] Vict. M.D. Dissertation, Manchester, 1898.
[2] Brit. Med. Jour., September, 1893, and March, 1894.

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infection the bronchial ganglia would be most involved. There are cases in which death occurs before any other glands than those first invaded have had time to become diseased; in such cases the state of the glands will clearly indicate the channel through which the bacilli have entered.

In a series of over 300 experiments I have found that tuberculosis of the mesenteric glands occurs extremely late in guinea-pigs infected through other channels than the intestinal canal and the peritoneal cavity and am absolutely convinced of the value of lymphatic glands as indicators of the path followed by tubercle bacilli in cases which have died before the disease has become too advanced. According to Dr. Woodhead the post-mortem examinations of the bodies of tuberculous children who had died before the age of five and a half years show that in the large majority of them the intestine and mesenteric glands were affected and that in 14 per cent. of those cases the mesenteric glands alone were tuberculous.

A very striking proof of the frequency of infection through the intestine fell under my notice six years ago. Dr. Simcock[3] was investigating in my laboratory the pathology of chronic wasting of children due to improper feeding. He selected 13 cases out of many more in which there was no evidence of tuberculosis in the parents or in the various organs of the children as examined in the post-mortem room. He considered these cases free from tuberculosis. I was not, however, quite convinced. We carefully examined the mesenteric glands of all these children with the object of discovering whether some might not be tuberculous. In 2 of these cases the mesenteric glands showed clear tuberculous lesions under the microscope and in 5 more the mesenteric glands presented lesions suggesting the possibility of incipient tuberculosis.

The presence of two clear cases of tuberculosis among 13 cases carefully selected as free from tuberculosis is specially significant. It is also interesting to notice that the only clear lesions were found in children over ten months of age, as will be seen in the following table:—

Children Dying from Chronic Wasting with no Clinical or Post-mortem Naked Eye Evidence of Tuberculosis.

No. of case.	Age of children.	How long after birth suckled by mother.	Lesions in mesenteric glands.	
			Indefinite.	Tuberculous.
6	3 months.	Not at all.	0	0
1	3½ ,,	1 month.	Slight.	0
2	3½ ,,	2 weeks.	Slight.	0
7	4 ,,	2 ,,	0	0
8	4 ,,	2 ,,	Slight.	0
4	4 ,,	A few weeks.	Slight.	0
5	4 ,,	Not at all.	Slight.	0
9	5 ,,	1 month.	0	0
10	6 ,,	2 months.	Slight.	0
11	10 ,,	3 ,,	0	0
13	10 ,,	Not at all, cow's milk from first.	—	Well marked.
12	11 ,,	2 weeks.	Slight.	0
3	18 ,,	3 months.	—	Distinct.

Out of 4 children above ten months 2 were tuberculous. These numbers are too small to allow one to generalise from them but they assist us to understand the statistics referring to infant mortality. If we now compare with these results the returns given by the Registrar-General in his annual summary for 1897 we find that it is during the first five years of life that most deaths attributable to tabes mesenterica, scrofula, and forms of tuberculosis other than pulmonary phthisis occur. In the case of phthisis it is between the twentieth and the sixtieth year that the greatest number of deaths take place.

It is therefore clear that if infection through the air passages is well proved to be the most important cause of phthisis, the same mode of infection is not equally at work in the production of other forms of tuberculosis. Of the deaths from tuberculosis which occur during the first year of life very few occur during the first ten weeks. On the other hand they become very numerous as soon as children reach the age of six months, at which age a very large number of them have been fed for three, four, five, or even six months on cow's milk. We have also abundant observations to show that calves are exceedingly rarely born tuberculous. A few cases have been reported by various observers. Only three such cases have come under my own observation and I have been able to investigate only one of them thoroughly, through Mr. Holburn's kindness, and found

[3] Vict. M.D. Dissertation, Manchester, 1893.

Deaths from Tuberculous Diseases Registered in London during the Year 1897.

—	Under 1 year.	1 and under 5.	5 and under 20.	20 and under 40.	40 and under 60.	60 and under 80.	80 and upwards.
Tabes mesenterica... ...	619	222	84	35	25	4	—
Tuberculous meningitis	384	576	209	31	8	—	—
Scrofula tuberculosis ...	229	259	181	147	70	34	3
Tuberculous diseases other than phthisis ...	1232	1057	474	213	103	38	3
Phthisis	96	191	576	3547	2862	581	11

Total number of deaths from all causes at all ages in London during 1897, 80·943. Total number of deaths from tuberculous diseases at all ages in London during 1897, 10,984.

that one half of the uterus of the dam was in an advanced state of tuberculosis, a lesion of the uterus which is of rare occurrence. This instance shows only the possibility of the fœtus being occasionally infected by the womb, which is a very different thing from hereditary transmission. We have also the results of the inspection of a very large number of calves, heifers, oxen, cows and bulls. The statistics collected by various observers show that whilst it is difficult to find districts where as many as 2 calves in 1000 are affected with tuberculosis, it is, on the contrary, unusual to find out of the same number less than from 400 to 500 animals over one year old in a state of more or less advanced tuberculosis (see statistics quoted in Report of Royal Commission, 1898). The results of the testing of 39 head of cattle on Mrs. Ashton's estate at Ford Bank, near Manchester, are very instructive in this respect. After discussing the matter with me Mr. G. Ashton determined to have all the cattle kept at Ford Bank tested with tuberculin, all the animals reacting isolated at once, and those not reacting placed in disinfected stables. The diseased cows were to be replaced only by others which would have been proved by the tuberculin test and careful veterinary inspection to be free from tuberculosis. This was carried out by Mr. Locke and by Mr. King with the assistance of Mr. Holburn. Mr. G. Ashton has very kindly allowed me to make use of the results obtained, being himself most anxious to investigate the whole question.

Results of the Testing by Tuberculin of 39 Head of Cattle at Ford Bank, Didsbury, near Manchester, 1898.

—	Positive reaction.	Negative reaction.
5 calves, from 3 to 6 months old, born on the estate, 4 of tuberculous dams, 1 of healthy dam...	0	5
1 heifer, 12 months old, born of healthy dam	0	1
12 heifers, about 2 years old	2	10
3 bullocks, from 18 months to 2 years old ...	3	0
1 heifer, 2 years and 9 months old	1 slight	0
5 heifers, 3 years or a little more	3	2
3 milking cows, from 3½ to 4½ years...	2	1
6 milking cows (one 5 years old and five 6 years old)	3	3
3 milking cows, one "aged," one 7, and one 8 years old	3	0
	17	22

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These results give the following distribution of tuberculosis in cattle according to age :—

	Tuberculous.	Not tuberculous.
Under 1 year (5 cases tested)	0	5
One year and under 3 years (17 cases) ...	6	11
Three years and under 5 years (8 cases)...	5	3
Five years and over (9 cases)	6	3
	17	22

Having now given evidence to show that the prevalence of tuberculosis in the young is in most cases due to infection, and that in man this mode of infection is responsible for a considerable loss of young life, I wish to say a word more as to the influence of hereditary tendencies. If children or young animals are extremely rarely born tuberculous, how are we to account for the fact that the disease so very often attacks member after member in the same family? There are two factors which account for this: (1) the children of diseased parents are often weak at their birth and their tissues are less able to stand the fight against the bacilli when these gain entrance into the body than stronger children would; and (2) they are born in infected places and often nursed for a considerable time by persons affected with tuberculosis. Thus these weak individuals, who should be more than any others protected against the risk of infection, are by the fact of their birth in an infected family or house more exposed than stronger children would be. We know, however, for certain that by preventing infection after birth the children of tuberculous parents may be made to escape tuberculosis entirely. The same has been proved over and over again with regard to cattle. The statistics given previously show that infection takes place chiefly during the first year, at a time, therefore, when a large number of children are fed on cow's milk partly or entirely. It has been proved abundantly that by feeding them on tuberculous milk it is easy to produce tuberculosis in most kinds of young domesticated animals.

Can we find any evidence in the milk itself of the presence of the tubercle bacillus? And is the occurrence of the bacillus in milk sufficiently frequent to justify any serious fears in connexion with the use of this article of diet? In dealing here with this question I suppose that results obtained in this part of the country will prove specially interesting. I will, therefore, make use only of the data obtained in my laboratory and relating to milk coming chiefly from various farms situated in the counties of Derbyshire, Lancashire, and Cheshire. The observations I am going to relate were mostly made in the course of investigations instituted by Dr. Hope, the medical officer of Liverpool, and Dr. Niven, the medical officer of Manchester. Dr. Hope's object was chiefly to ascertain what proportion of the milk reaching Liverpool in various ways was tuberculous. He had samples of milk taken at railway stations and various town dairies and sent to various bacteriologists to be examined for tubercle bacilli. Some 50 samples were sent to me in this way.

In Manchester, where I had often the opportunity of discussing the matter with my colleague Dr. Niven, we came to the conclusion that a complete investigation should include (1) the examination of milk from cows certainly tuberculous, with and without tuberculous udders; and (2) that of milk from farms or various parts of the country and also of milk obtained from town byres and dairies. Dr. Niven's object, like that of Dr. Hope, was to find out how much tuberculous milk was used by town consumers in order to ascertain exactly the extent of the danger. Through his kindness, however, I was able to obtain information collected by the chief veterinary inspector, Mr. King, and his assistants, as well as notes regarding the situation and condition of the various farms or dairies from which milk was obtained. In addition to the samples sent to me from Manchester and Liverpool I have obtained myself a number of samples from healthy or diseased cows. During the last four years, and chiefly during the last two, I have thus had to examine some 208 samples of milk, of which 7 were from cows not known to be tuberculous; 22 were from cows nearly all in an advanced state of tuberculosis; 54 were from town dairies; and 125 were from country farms being collected by sanitary inspectors at the railway stations immediately on arrival of the cans from the country. Time does not permit me to describe the methods which I used in this investigation. I have described them in other places.[4] It will suffice to say that all these milks were (1) collected in sterilised vessels and rapidly examined on their arrival at the laboratory; (2) the colour, reaction, specific gravity, and proportion of cream and sediment were noted; (3) the sediment (or slime) and often the cream were separated by centrifugalisation and examined microscopically for dirt, morbid products, various cocci, bacilli, vibrios, yeasts, and moulds; (4) guinea-pigs were inoculated with small quantities of sediment, and, after their death, dissected in order to find whether any lesions had been produced; and (5) the lesions produced in the guinea-pigs were further examined in various ways for the purpose of finding out whether they had been produced by the bacillus tuberculosis or other microbe.

I need not say that an investigation of this kind implies a considerable amount of work. The first half I carried out mostly alone, but in the second half I have had considerable assistance, more especially from Dr. E. J. Sidebotham, and also from Dr. Moore, and lately from Dr. Carver. I have taken the greatest care from beginning to end to avoid as far as possible any source of fallacy. I may tabulate the results obtained as follows :—

A.—UNMIXED MILK COLLECTED IN STERILISED BOTTLES DIRECT FROM THE COW WITH CARE TO AVOID DIRT.

1.—Cows showing no evidence of Tuberculosis.

	Actual No. of samples.	Per cent.
1. *a.* Innocuous milk	6	85·68
b. Milk causing slight local irritation of the tissues near the point of inoculation ...	1	14·28
2. Milk causing severe œdema, ulceration, or suppuration at the seat of inoculation (local infection) or at some distance ...	0	0·0
3. Milk causing general infection, rapidly fatal (from 24 to 48 hours after inoculation) ...	0	0·0
4. Milk causing tuberculosis	0	0·0
	7	100

2.—Cows showing Distinct Evidence of Advanced Tuberculosis, Udder Diseased in 8 Cases and Suspicious in 8 others.

	Actual No.	Per cent.
1. Innocuous	10	45·40
2. Local infection, &c.	6	27·24
3. General infection, &c.	0	0·0
4. Tuberculosis*	6	27·24
	22	99·88

* In all these cases there was evidence of disease of the udder.

B.—MIXED MILK COLLECTED IN STERILISED BOTTLES FROM MILK CANS.

3.—Town Dairies (Liverpool 50 samples).

	Actual No.	Per cent.
1. Innocuous	33	61·05
2. Local infection	13	24·05
3. General infection	5	9·25
4. Tuberculosis	3	5·55
	54	99·90

4.—Country Dairies (Milk collected at Railway Stations in Liverpool and Manchester—Manchester, 93 samples).

	Actual No.	Per cent.
1. Innocuous	70	56·0
2. Local infection	21	16·8
3. General infection	12	9·6
4. Tuberculosis	22	17·6
	125	100

The meaning of these results is very clear. 1. The milk of non-tuberculous cows does not produce tuberculosis. 2. The milk of at least 1 out of every 4 cows much affected with tuberculosis is capable of communicating tuberculosis. 3. The milk coming from country farms which are not under the constant supervision of the health authorities is capable of communicating tuberculosis in 17·6 per cent. of the cases examined. A little more than 1 sample out of every 6 examined proved infectious. This comes from the extreme prevalence of tuberculosis in the country and of the mixing of tuberculous milk with good milk. Dr. Rivers informs me that after receiving the results of my examinations he asked Mr. King to visit the cowsheds from which milk had come which had been found tuberculous. Mr. King found that in all these byres (18) but one there were cows with diseased udders, which, as far as it was possible to ascertain by clinical examination, were probably tuberculous. 4. In towns, such as Liverpool, where cowsheds are under constant supervision, the number of cases in which the milk proved to be infectious was considerably less, being reduced to 5·55 per cent.

[4] Journal of Comparative Pathology and Therapeutics, 1897.

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About 1 sample out of every 17 was found capable of producing tuberculous infection. This shows conclusively that improvement may be obtained by using proper measures, but that the sanitary authorities have not so far been able to remove entirely the evil. I wish to point out also that milk is capable of producing serious troubles other than tuberculosis. This is specially true of mixed milk, which, whether it comes from the country or from the town, is capable of producing a very serious form of infection—in fact, a septicæmia in some 9 per cent. of the cases examined. In addition to this from 16 to 24 per cent. of the samples are capable of producing considerable irritation of the tissues.

In a previous communication I have shown that these noxious properties were mostly due to the contaminations of the milk either at the time of milking or afterwards by the dirty vessels in which it is kept. The microbes thus introduced into the milk are of various kinds and when the temperature is high and the milk kept too long certain noxious bacteria multiply rapidly and render the milk dangerous. These bacteria may produce an infection on their own account, or, by irritating the bowel, prepare the way for the penetration of the tubercle or other bacilli. To test the truth of this supposition I have during the last summer kept in ice all the milk which had to be examined more than 6 or 8 hours after milking, with the result that only 1 out of about 30 specimens so treated has given rise to general septic infection. I show you plate cultures of milk proving the effect of cold on the bacteria in milk. You can see that milk kept four days in ice contains fewer bacteria than it did half an hour after milking.

You may ask whether inoculation of milk into the tissues is a proper test to apply in estimating the value of an article of food which in the natural course of things has only to pass into the alimentary canal. I have not asserted that all the samples of milk which I have found to produce disease when injected into the tissues would necessarily have produced disease in the human subject, but what I intend to convey is that unsound milk has properties which are not present in good milk and that these properties are of a dangerous nature. Milk may be obtained which is capable of standing the test and we have seen that milk when collected so as to avoid dirt, and kept under conditions not favouring the multiplication of bacteria, never produced a general infection rapidly fatal. This being the case there seems to be no necessity for allowing milk with unpleasant properties to reach our markets. The fact that about 60 per cent. of the milk supplied by our dairies is perfectly innocuous shows that it is not impossible to supply absolutely wholesome milk. Whether therefore the tests I have used are severe or not they show that milk of two distinct qualities is sold to the consumer: (1) milk which cannot produce any form of disease even under the conditions most favourable to the production of disease; and (2) milk which under the same conditions produce various forms of disease, some extremely severe. I think everybody will admit that this second quality is not desirable. After considering the danger let us consider the remedy.

On a previous occasion [5] I have expressed an opinion as to the public measures which seemed to me to be necessary for dealing adequately with tuberculosis from the public and administrative point of view and I can only repeat now what I said then.

1. The first general measure which can be recommended for the purpose of combating tuberculous infection through milk is in the hands of the consumers; it consists in boiling all the milk used. There is a strong prejudice against this boiling of milk. For my own part I think the defects of boiled milk have been exaggerated. I know families who on my recommendation have drunk nothing but boiled milk (except in their tea) for the last 12 or 13 years. I have watched children who have practically never drunk any unboiled cows' milk from the time they were weaned to the present day—i.e., in one case over 12 years and in the other case a little less—and these children have never suffered from the use of boiled milk and prefer it to unboiled milk. The great objection, however, to this easy remedy is that it does not protect us against tuberculous cream, butter, and cheese. Nor does it mitigate the dangers of infection due to the presence in our midst of so many tuberculous animals and the losses caused to the farmers by tuberculosis.

2. A second method of dealing with the milk so as to protect the consumer is to analyse samples from time to time and to reject from our markets all milk which is not free from infectious properties. This method is not a practical one; it is easy to detect common adulterations by simple chemical tests, but it is another thing to find out whether a sample of milk can produce tuberculosis or not; this may take days and meanwhile the consumer is not protected. This method can only be used for the purposes of checking other preventive measures and for that purpose it will always prove a useful adjunct.

3. We must turn to the actual source of milk—i.e., to the cow—and see that it is not allowed to contaminate our milk-supply. This means systematic inspection of our cowsheds and milch cows by competent men able to detect tuberculosis even before it has produced symptoms obvious to all. A careful veterinary surgeon can now by the application of the tuberculin test combined with a thorough inspection almost always determine whether a cow is tuberculous or not.

As it is impossible to say when the udder of a tuberculous cow will become diseased, the untreated milk of all tuberculous cows should be excluded from the market. After being sterilised by boiling or otherwise, this milk might still have a good commercial value. This method of inspection would free our markets from the greater part of the tuberculous milk which at present reaches them, yet this would do little towards stamping tuberculosis out. Tuberculous cows and tuberculous sheds would still remain a source of infection. It would therefore be necessary to (1) separate the tuberculous cows from the healthy ones; (2) to fatten all tuberculous cows for slaughter whenever the disease has not reached serious proportions and slaughter those in which the disease is advanced; (3) to disinfect thoroughly infected sheds; and (4) to improve their construction so as to allow of their being thoroughly cleaned, lighted and ventilated. These measures, although they would deal efficiently with tuberculosis as it exists at present, would certainly not prevent the action of fresh sources of infection.

4. This makes it evident that steps should be taken to prevent the introduction of tuberculous cattle into any county where it was desired to deal efficiently with tuberculosis: (1) all cattle brought into the county from neighbouring counties or from abroad should be examined first by veterinary surgeons acting under the direction of some central county sanitary authority; (2) all cattle kept in the county should also be registered and marked, so that it should be easy to ascertain which animals have been registered, inspected, and tested; (3) all cowsheds should then be inspected at least twice a year and the few tuberculous animals which would have escaped previous inspection weeded out; and (4) the breeding of healthy cattle should be encouraged and calves fed on sterilised milk would be easily protected against chance of infection if the preventive measures above mentioned were taken.

5. The presence of tuberculous servants should not be tolerated either in the sheds or dairies. Milk pails and cans should be kept scrupulously clean. Of all the measures I have mentioned two seem to me essential: 1. The systematic and periodical inspection of cowsheds and herds for the purpose of weeding out tuberculous animals. To be efficient such an inspection should be thorough and include all the cattle kept within definite administrative areas. For the first year or two compensation should be given to the farmer for losses incurred except in cases of gross or culpable neglect on his part. After this transitional period the presence of a case of advanced tuberculosis in a cowshed should make the owner liable to a penalty. 2. The testing of all cattle brought into, say, a given county, so that fresh sources of tuberculosis should not be introduced. If such methods were adopted it would then be only right to see that foreign dairy produce is not allowed to flood our market unless good guarantees were obtained that proper measures have been taken to safeguard the consumer.

It does not seem probable that general measures of the nature I have described are likely to be carried out in England for some considerable time to come, and probably the work will be left to private initiative. This will render the stamping out of cattle tuberculosis a much slower process than it might otherwise be. It seems to me, however, that work like that done on Lord Vernon's estates if carried out in various parts of the country must ultimately induce a general demand for wholesome milk, which demand will probably be supported by better prices. This demand will ultimately force the farmer to free his stock from all diseased animals, collect the milk and forward it under

[5] The Journal of Comparative Pathology and Therapeutics, June and September, 1897.

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conditions which will insure the safety of the consumer. At the present time there are only a few who realise the importance of this, and to obtain pure milk the dairy owner must pay higher prices for pure than for impure milk. The consumer should certainly take his share of the expense. Dr. Livesay, who has so ably directed the work done at Sudbury, informs me that a number of farmers on the Sudbury estate have agreed to submit to certain regulations ensuring the exclusion of tuberculosis and purity of the milk. And as compensation the farmer receives 1*d.* more a gallon for this tested milk than he would for ordinary milk. I think the time will come when this inducement will be unnecessary, for the exclusion of tuberculosis will be found to be a source of profit instead of being one of apparent loss, as it seems to be at present.[6]

We have seen that the proportion of cows affected with tuberculosis increases rapidly with age. After the age of three—that is, as soon as cows become useful for breeding and dairy purposes—it is not an exaggeration to say that more than half of them are under the present conditions doomed to become tuberculous. And of this half a certain proportion will rapidly reach the wasting stage, after which they will lose much of their value, if not the whole, as beef producers. Now a young cow with slight tuberculosis properly fattened has a very good value as beef. Were it sold to the butcher at the proper time and replaced by another cow free from tuberculosis the immediate loss to the farmer would be the difference between the price of the beef and of the milking cow. But had the farmer waited longer he would have had a possible loss due to the diminished quantity and lowered quality of milk (for a time the milk production is often not unfavourably affected by tuberculosis) and when ultimately he found it necessary to have the cow slaughtered on account of advancing tuberculosis the value of the cow as beef would have considerably diminished or entirely vanished. In addition to this each tuberculous cow is capable of infecting a number of other healthy animals. Therefore by having his cattle slaughtered as soon as tuberculosis becomes evident the farmer is exposed to an immediate loss which is probably smaller than the prospective loss he would incur did he keep the tuberculous animals.

On the other hand, after having had his tuberculous cattle slaughtered and his stable thoroughly disinfected he may arrange to buy none but cattle which have been certified by competent veterinary inspectors to be free from tuberculosis. He may have to pay a little more for cows bought under these conditions, but the ultimate value of his stock will be considerably increased, for only a small number of his cattle will develop a slight degree of tuberculosis, and this being detected in time will not cause him any serious loss.

In the fight against tuberculosis in cattle by private enterprise unsupported by the State it seems to me that the following lines are clearly indicated:—

1. Healthy cowsheds, well lighted and ventilated, easily cleaned, arranged so as to separate the animals as completely as possible from each other and to prevent the food and litter of one from being contaminated by others. Good water-supply. After discovery of a tuberculous animal thorough disinfection of its stall and if possible of the whole shed.

2. Isolation sheds of the same kind for cattle found to be affected with a moderate or slight degree of tuberculosis.

3. Stalls well isolated from the others might be provided in this shed for animals which have not been tested and have to be kept in quarantine until tested, or better still a special testing shed frequently disinfected might be provided.

4. Immediate slaughter of all cows in an advanced state of tuberculosis.

5. Fattening of cows with moderate tuberculosis; these cows not to be allowed to come again at any time in contact with the healthy ones.

6. Any dairy produce from these tuberculous cows to be sterilised. If butter be made the cream should be treated for some time at 85°, which does not interfere with the making of good butter (Bang). Tuberculous cows should, however, be fattened as soon as possible and their milk used as short a time as possible.

7. Tuberculous cows with tuberculous udders are usually in a state of advanced tuberculosis, but in any case a cow with tuberculous udder should be slaughtered at once.

8. All calves to be fed from the first on sterilised milk. The thoroughly sterilised milk of tuberculous cows might be used for this purpose.

To avoid the other sources of deterioration which I have mentioned:

9. The udder and milkers' hands should be kept absolutely clean.

10. The milk cans or pails should be washed with boiling water or sterilised by steam.

11. This milk should be cooled immediately after being milked and its temperature kept below 40° F. until it is treated in the dairy (by filtration, separation, sterilisation, &c.).

12. Milk which has not been sterilised and which has to be sent by rail from the dairy to a distance should be kept by packing in ice or otherwise at a temperature below 40° F. if possible, until it reaches the consumer. The same precautions with regard to cooling apply to all milk which cannot be consumed within a few hours—say, 8 or 10 hours at the most—from the time of milking.

13. The authorities should be asked to regulate the importation of foreign milk and dairy produce with the view to ensure that the precautions above mentioned have been duly taken to ensure the wholesomeness of these products.

14. The authorities should be asked to find the means to prosecute and punish adequately all kinds of neglect rendering milk dangerous to health so as to place the farms and dairies where proper precautions are taken on a fair footing in the general competition.

[6] Thus in Massachusetts, where an attempt has been made since 1894 to fight tuberculosis in cattle, it has been found that although the preventive measures have not been applied generally and thoroughly enough to insure a diminution in the number of cases, yet cases of generalised tuberculosis have diminished to a considerable extent. Among animals slaughtered after being shown to be tuberculous by the tuberculin test it was found that in 1895 there were 32·6 per cent. of them affected with generalised tuberculosis, in 1896 there were 26·1 per cent., and in 1897 3·5 per cent.

THE PLAGUE IN CALCUTTA.

BY FRANK G. CLEMOW, M.D. EDIN., D.P.H. CANTAB.

MORE than three months have now (August 4th) elapsed since the presence of plague in Calcutta was established beyond a doubt. The disease has in that time shown little sign of becoming widely epidemic or of causing such disastrous havoc as followed its appearance in Bombay, Poona, and elsewhere. The daily number of fresh cases has only on one occasion risen so high as 8, and has usually varied between the limits of *nil* and 3 or 4. The total number of cases appearing in the returns up to, and including, July 31st, 1898, has been 190, and the daily average since the beginning of the outbreak has been less than 2. During the past few weeks there has been a distinct decline even in this small number of cases, and for several days recently there has, so far as plague is concerned, been a clean bill of health. This in itself is most satisfactory and to some extent reassuring for the future. It is obvious, however, that so long as even single cases are occurring they are evidence that the infection has not completely died out or quitted the city, and while that is the case there cannot but be grounds of apprehension as to the course the disease may pursue later, when the advent of the cool season must favour the spread of any remaining infection. For the plague infection made its appearance in Calcutta at a time of year when, if we may judge by the experience of previous epidemics, the seasonal conditions were not favourable to its spread. As a rule, though the rule is not without exceptions, the disease has only become widely epidemic in India in the cool part of the year—that is to say, between the months of November and March. This was the case in the very severe outbreaks in Bombay, in Poona, in Karachi, and in Thana. In certain districts the climax of an epidemic has fallen rather later—in the month of April or even so late as May, when the hot season is fully established. This happened in Surat, where the outbreak reached its highest point in April; in Kolaba, where the mortality was highest between the last week in March and the first week in May; and in the Janjira State, where May was the worst month. In the Navsari division of the Baroda State the main

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period of the epidemic was from the middle of March to the end of the first week in May. In Cutch Mandvi and in Hyderabad the most fatal period of the outbreak was in each instance in May. It is important, however, to note that in all these epidemics the disease was already established in the town or district some time before the hot season set in and it has not in a single instance happened that the infection, introduced into a new locality so late as the month of April, has started an epidemic in the hot season. The infection was, it is believed, introduced into Calcutta in April of the present year. The behaviour of the disease, therefore, in remaining sporadic throughout the hot and so far throughout the rainy season, is such as might have been anticipated from its behaviour elsewhere, while on the same grounds there is every reason to be prepared for a much more extensive outbreak when the cool weather sets in.

The course of the present outbreak in Calcutta has presented several points of interest. The earliest recognised case of plague occurred on the night of April 16th, 1898, when a sudden death from fever accompanied with swelling of the glands of the left groin took place in Kapalitola, a crowded locality near Bow Bazar, in one of the most insanitary districts of the city. The man's name was Issur Chunder Dey. The clinical history and the post-mortem appearances showed evidence which was regarded by the health officer of Calcutta and by the leading medical advisers of Government as highly suspicious of plague. A most careful bacteriological investigation was made; pure cultures of bacilli were obtained from the bubo and these were found to give all the reactions regarded as characteristic of the plague bacillus. To make assurance doubly sure some of the growths were sent to M. Haffkine in Bombay, and his report confirmed the view that the case had been one of true bubonic plague.

While the case of Issur Chunder Dey derives considerable importance from the fact that it was the first to be diagnosed as plague and that on the result of the investigation of this case ultimately hinged the public recognition by Government of the existence of plague in Calcutta, there is reason to believe that it was not the first case of the disease in this city. 2 days earlier than its occurrence—i.e., on April 14th—2 patients with symptoms characteristic of plague had been admitted to the Medical College Hospital. Both of these patients died. 1 of them, moreover, had been in contact with a patient who had been admitted to the same hospital as early as March 30th, and who had died after an illness which presented many features suggestive of plague. These cases are important as they illustrate the difficulty of assigning a definite date to the appearance of plague in a city, a point to which reference will again be made later. On April 17th 3 other persons were discovered in Kapalitola with symptoms of plague and of these 1 died. A *dome*[1] who assisted at the necropsy on Issur Chunder Dye and accidentally pricked his finger, was the next to sicken and after a long fight for life he ultimately succumbed to secondary pulmonary affection. Before the end of April a total of about 40 cases of plague had occurred and the infection had shown its presence in parts of the city at some distance from the area originally infected. The latter continued to furnish cases, and a second area, around the General Market, began to rival it as a plague centre. Elsewhere only isolated cases were occurring. From that time onwards there has been a slow but steady spread of the disease until there are now only 7 out of the 25 wards into which the city is divided which have not at any time returned a case of plague.

The above facts, so far as they relate to the early cases of the disease in Calcutta (I am indebted to the courtesy of Dr. Nield Cook, the health officer of Calcutta, for many of the details of these cases), were publicly announced by the secretary to the Lieutenant-Governor of Bengal at a meeting of the Bengal Legislative Council held in Calcutta on April 30th. This was the first public recognition of the existence of plague in the city. It will be noted that an interval of fourteen days had elapsed between the date of the first recognised case and the date of the announcement. But it must not be thought that the authorities had in the meantime done nothing to cope with the threatened danger or that the public were ignorant of what had occurred. Both the authorities and the native populace had been equally prompt, though in exactly opposite directions, in taking action on the first breath of suspicion that plague had appeared in the city. The authorities, as already related, took all possible steps to ascertain the exact cause of death in the first case, and without waiting for complete confirmatory evidence—which could only be forthcoming after the lapse of some days—proceeded to act on the supposition that the cause of death had been plague and to take precautionary measures accordingly. The house where the death occurred was thoroughly disinfected, all persons who had been in contact with the patient were removed to a segregation camp, and all articles likely to convey infection were burnt, compensation being paid to the owners. The native populace, on the other hand, the moment it was known that a suspected case of plague had occurred, proceeded incontinently to lose its head and to give way to as violent an attack of panic as has perhaps ever been seen in modern times. This showed itself, as usual in such cases, in a general flight of about one-fourth of the population, in strikes and riots, in the murder of several quite inoffensive persons, and in an attempted reign of terror which fortunately proved abortive. For days together the approaches to the railway-stations were blocked by enormous crowds of struggling natives striving to reach the platforms. The rush to leave the city reached its height on April 29th and 30th, and it has been stated that on those two days alone between 40,000 and 50,000 people left Calcutta. The exodus continued at a slower rate for many weeks, and the estimate generally accepted that some 200,000 people in all fled to the country is probably not above the truth. The wildest rumours were in circulation, attributing the most horrible motives and intentions to Government and particularly to its medical officers. The mildest of these stories was to the effect that the medical men in charge of the plague hospitals were instructed to quietly kill every patient admitted. But no story or rumour was too grossly ridiculous to find ready credence. Unfortunately the native press did little to allay the alarm, and in many instances rather encouraged it by publishing articles which only fanned the flames of panic and disaffection. Interested persons fomented the panic, and the jewellers and goldsmiths are said to have made a rich harvest in the form of bracelets, anklets, and other jewellery purchased from their fellow natives whose sole means of escaping from the city was by converting this portable wealth into money. The scare caused by the fear of plague was succeeded by a second access of panic which may be termed the "inoculation scare." It followed immediately upon the proclamation of Government which aimed at promoting general, but of course voluntary, inoculation with M. Haffkine's prophylactic. It was characterised by another crop of equally wild and gross rumours, and it unfortunately led to some very terrible consequences. Several quite innocent persons were murdered by the mob, and many others were severely mauled merely because the cry had been raised that they were *ticcawallahs*—the native word for inoculators. A little later came the "ambulance scare." The appearance of one of the municipal ambulances in the street was the sure cause of collecting a crowd of excited natives, and on two occasions an ambulance was set upon by the mob and those in charge of it injured, while on one of these occasions the vehicle was completely destroyed and the remains of it were set on fire in the street. At this period patients were removed to hospital under an escort of police armed with *lathies* or long bamboo rods. For a while all of us who were in any way connected with the plague organisation were in more or less danger of personal violence, and it was not safe to go about the city without a revolver. Few Europeans in this city, whether connected with the plague operations or not, failed to provide themselves with this weapon of defence and in a short time it was scarcely possible to purchase a revolver in the whole of Calcutta. This scare came to a climax on Saturday, May 21st, when Dr. Ronald Laing, one of the district medical officers, was attacked by a mob in a native house which he was inspecting. He was compelled to fire his revolver three times, twice with fatal effect, before the mob retired. The incident produced a deep impression and there was a very general feeling that the community owed a debt of real gratitude to Dr. Laing for having by his prompt

[1] *Domes* are natives of very low caste employed in hospitals to do the mechanical part of post-mortem examinations. They often develop great expertness in opening the body and removing the organs. 5 of these poor fellows have unfortunately contracted plague in Calcutta as the result of wounds or scratches inflicted at necropsies on plague patients. The fact is of considerable diagnostic importance, as instances of other diseases being thus contracted by these men, who do not appear to mind making necropsies with open cuts or scratches on their hands, are said to be of very rare occurrence.

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action taught the more excitable and turbulent class of natives a much needed lesson. The lesson seems to have been at once taken to heart, for from that time the tendency on the part of the people to interfere with the medical staff in the course of their duties almost at once disappeared. This is not the place to dwell upon the many inconveniences which accompanied this state of panic—the suspension of business, the strikes among labourers of almost every class and the straits to which many people were reduced by the flight of their servants. Anyone who has lived in India and learnt how greatly one's happiness here is dependent upon the faithful discharge of their duties by punkah-pullers, bearers, and table servants, will readily realise the discomfort which a general flight of domestic servants would be capable of causing.

Before proceeding to discuss the further course of the outbreak it is of importance to recall the fact that this is in all probability not the first occasion upon which the plague infection has made its appearance in Calcutta in recent years. Very shortly after plague broke out in Bombay in the autumn of 1896 a group of cases occurred in Calcutta which gave rise, it is said, at the time to considerable controversy and no little alarm. The cases are fully described in the Annual Report of the Health Officer of Calcutta for the year 1896-97.[2] Dr. Simpson, the late health officer, there writes that, as a rule, epidemic diseases prevailing in Bombay sooner or later find their way to Calcutta, and that "in October, 1896, a case of glandular sickness with fever occurred in Howrah in a patient who had arrived from Bombay." Howrah is a separate municipality, divided from Calcutta only by the River Hooghli. The case was regarded by Dr. Simpson as a case of pestis ambulans, but the Medical Board[3] investigating the case later came to the conclusion that there was no evidence to consider this a case of true bubonic plague. Then there cropped up (the report continues) "a group of similar cases, one of which was fatal, each with fever, glandular enlargements, and presenting bacilli in the blood." Then a case of bubonic fever occurred in a child named Giga and in the same house a sickly-looking rat was seen. The rat was in a dazed condition and was easily caught and killed. On examining this animal "the glands of the left groin were found to be enlarged, congested, and agglutinated together. The internal organs were generally congested; diplo-bacteria were found in the blood and internal organs and cultures from these gave growths resembling specimens of plague bacilli in rats received from Bombay. Healthy rats were examined, but no bacilli were found in their organs." It is of interest to note that the occupants of the house where this rat was found were Marwaris, who received goods, clothing, and yarns from Bombay. A week later it was reported that an unusual mortality among rats was occurring in two grain shops in a street called Burtolla-street. As many as a hundred dead rats were found in one day in one shop alone. Some of these animals were examined and exactly the same pathological changes were found in them as have just been described above. In both shops "the floors were dug up, the place flooded with disinfectants, and any rats found were killed, after which no further cases occurred. A few sick rats were found in adjoining houses and these houses were also thoroughly cleansed and disinfected and the rats destroyed."

Reviewing these facts there seems to be little room for doubt that so long ago as October, 1896, the plague infection was introduced into Calcutta; but, whether as the result of the measures taken or from the conditions then met with proving unfavourable to its spread, there was no extension of the disease. If the infection which thus manifested itself for a brief period was indeed the true plague infection (it is right to recall that many highly qualified observers did not and do not regard it as such) the fact that it did not extend is a remarkable one; and it is the more remarkable in that the time of year at which it appeared was the time of year when, as has been already shown, plague, if introduced into an Indian city, is most likely to spread and become widely epidemic.

To return from this digression. The further course of the present outbreak has been as follows. After a marked rise in the number of cases at the end of April (17 fresh cases occurring in three days) there was a sudden pause and in the first week of May only 4 fresh cases were reported. The following table completes the statistics of the outbreak:—

Week ending	Number of fresh cases reported.	Week ending	Number of fresh cases reported.
May 7th	4	June 25th	19
,, 14th	8	July 2nd	23
,, 21st	10	,, 9th	17
,, 28th	9	,, 16th	12
June 4th	15	,, 23rd	4
,, 11th	16	,, 30th	4
,, 18th	19		

These figures, it will be observed, show a distinct rise to a small maximum followed by an equally distinct and more rapid fall. They are, however, obviously too small to lead to any conclusion based solely upon them. It may or may not be of significance that the highest part of the small curve formed by these figures fell in the weeks immediately following the breaking of the monsoon and setting in of the rainy season. June 15th is regarded here as the average date when this looked-for event may be expected to happen, and this year it came very near to that date. Judging from the present season it does not seem to be very easy to fix an exact date for the commencement of the rains. There had been many heavy showers at intervals throughout the great heats of May. Towards the second week of June there was a gradual but distinct change in the weather; the clouds gathered more and more ominously each day and the showers became more frequent, until by about June 16th or 17th it was very generally admitted that "the monsoon had broken" and the long rainy season fairly begun. While on the subject of weather it should be added that the hot season this year in Calcutta was, in the opinion of most people, an exceptionally cool one. The showers in May already referred to certainly did much to relieve us from the burden of heat and glare of sun which at times during that month had been very trying. Calcutta is far from being among the hot places of India; its average temperature is a moderate one when compared with that of such furnaces as Jacobabad or Mooltan, where the thermometer in the hot season may remain for days together above 120° F. in the shade. From personal experience I can speak only of the second half of the hot season in Calcutta. During that period I did not see the thermometer rise on any occasion above 96°, though on one excessively close day the return from the meteorological office recorded 99° in the shade. But, though the climate of Calcutta is not an excessively hot one, it is an excessively moist one. The coefficient of humidity, even in the hot and dry season, is seldom less than 75, and is more often between 80 and 90. Since the rains have set in there has been an appreciable and welcome change of some 10° in the height of the thermometer, which instead of averaging as before between 90° and 95° now usually stands between 80° and 85°.

The plague infection made its appearance in Calcutta in the earlier half of the hot season. From the moment of its appearance two important problems presented themselves for solution: firstly, whence had the infection come? and secondly, having come, what would its behaviour be? The first problem has up to the present proved insoluble. The earliest patients, so far as could be ascertained, had had no communication directly or indirectly with Bombay, Hong-Kong, or any of the other places where plague was or had been epidemic. There is, however, some interesting evidence, which will be discussed later when speaking of the disease in rats, tending to show that the infection may have been brought to Calcutta by ships trading from some infected port. The second question has been partially answered: the infection has spread in the course of rather more than three months to nearly all parts of the city; worse in some parts (particularly Wards 8, 10, and 13, all more or less central wards), more slight in others. In five of the twenty-five municipal wards into which the city is divided there has been only a single case of plague reported, while seven (all with one exception either suburban wards or wards mainly inhabited by European residents) have been fortunate enough to escape altogether.

A further and equally important question remains for solution, What will the disease do when the cool weather sets in and conditions arise which are known to be favourable to the extension of plague? Will it become widely epidemic

[2] A still more detailed account of these cases will be found in Parliamentary Paper, C. 8368: "Papers relating to the Outbreak of Bubonic Plague in India up to March, 1897."

[3] The Medical Board was appointed in October, 1896, to supervise all plague measures in the Bengal Presidency. It was the predecessor of the present Plague Commission appointed last November.

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in Calcutta as it did in Bombay, Poona, and elsewhere? will it disappear altogether? or will it remain as at present, the cause of only occasional sporadic cases?

In this connexion a comparative study of the rapidity with which the infection of plague in past epidemics has gained a hold upon a given community may prove interesting and may throw some light upon the question at issue. It may be stated in general terms that all epidemics of plague commence with a period in which the disease presents itself in isolated, sporadic cases. This period is of uncertain length and may vary from a few weeks up to many months. To take examples, it will probably be admitted that the three greatest epidemics of modern times have been the Great Plagues of London in 1665–6, of Marseilles in 1720–1, and of Moscow in 1770–1. The recent outbreaks in Bombay, Poona, and Karachi, severe as they have been, cannot be compared with these in regard to the number of persons attacked, but they are of more importance in the present connexion from the fact that they occurred recently and in India, and may therefore be included in this rapid survey.

In the Great Plague of London the earliest known case of the disease is supposed to have occurred at the end of November or beginning of December, 1664, but it was not until the end of May or beginning of June, 1665, that the weekly return of cases of plague began to be seriously high, and the main period of the epidemic was during the summer and autumn of that year.[4] The presence of the plague infection throughout the winter of 1664–5 is evidenced by the appearance of "plague" in the mortality returns of several parishes and probably also by the unusually high death-rate which prevailed in London throughout the winter. In this great pestilence, therefore, the sporadic period preceding the great epidemic outbreak was probably of about six months' duration. In the Great Plague in Marseilles this period seems to have been shorter. The infection is supposed to have been brought to the city by a ship from Syria which arrived at Marseilles on May 20th, 1720. Cases of plague had occurred on board, and on June 22nd cases began to occur among the porters employed in unloading the ship, and very shortly after the plague seems to have become widely epidemic.[5] In the Great Plague of Moscow the early course of the epidemic was remarkably similar to that of the Great Plague of London. In Moscow the earliest cases occurred in October or November, 1770, and it was not until the following spring that the disease began to be extensively epidemic. Here, as in London, cases of plague occurred throughout the winter and there was a distinct rise in the general mortality.[6]

With regard to the first appearance of plague in Bombay in 1896 some evidence has been recently published, from which it would appear that the sporadic period was of much greater length than has been hitherto supposed. In the extremely valuable report upon Plague in India, issued by Government in April last, it is written[7]: "Several circumstances point to plague having prevailed in Bombay for some time before its existence was recognised. In August cases of fever with glandular swellings had been attended by several medical practitioners, cases of fever accompanied by pneumonia had been reported to the executive health officer, and a death was actually registered on the 31st August as due to bubonic fever. These circumstances failed to arouse an alarm of plague, as a type of fever with glandular swellings has, it is said, been for years known in Bombay. Again, it is stated by Mr. Snow, the Municipal Commissioner, that 'when plague broke out, several native practitioners of the first standing acknowledged that from the end of the hot weather in May onwards they had come across several cases of peculiar fever which entirely puzzled them and usually ended fatally. It does not, however, appear that the bubonic swellings in such cases were apparent in a marked degree, and little further thought appears to have been given to the matter, which is no wonder considering the various obscure forms of plague noticed in the epidemic.'" The great epidemic rise of plague in Bombay began at the end of September. If the cases just referred to were in truth early cases of plague, the sporadic period of the disease may be said to have lasted for four months. An increased mortality rate began to prevail in the city from the end of August. In Poona "the infection appears to have taken hold of the city early in January. It spread steadily throughout January and February, and culminated in the middle of March." In Karachi cases of plague occurred at least as early as the beginning of December, and the great epidemic rise began in the month of January.

To sum up, in at least 3 of the 6 epidemics here briefly reviewed the disease remained in a sporadic form before it became widely epidemic for a period to be reckoned by months. It should, however, be added that in each of these epidemics this period was marked by a more or less striking rise in the general mortality. This has so far not been the case in Calcutta, and it is perhaps the most hopeful feature in the present outbreak that the general mortality of the city has remained comparatively low throughout; and even when allowance is made for the greatly reduced population as a result of the general flight there does not appear reason to believe that there has been any great increase of mortality among the remainder. Unfortunately, the mortality statistics of any Indian city are open to many sources of vitiation. Bodies are frequently burned or buried without any medical certificate as to the cause of death. The returns from the burning *ghâts* and cemeteries are acknowledged to be never more than approximately correct, and there are strong grounds for suspicion that the rupee is quite powerful enough to secure the disposal of a body without any return or entry of it at all being made. It is therefore more than probable that many cases of, and deaths from, plague have occurred unknown to the authorities. There are other than *à priori* grounds for this belief. For example, attention has recently been called to the extraordinary predominance of males over females in the returns of cases. The proportion of the sexes in the general population of Calcutta was, according to the census return of 1891, as follows: males, 447,000; females, 235,000, or about 53 females to every 100 males. There are many reasons[8] for believing that this proportion is much below the truth and that the true ratio of the two sexes is much more nearly one of equality than these figures express. But in the 190 plague cases which have appeared in the returns the proportion of males to females has been immensely higher. Thus among Hindoos the distribution of the sexes has been 87 males and 18 females; among Mohammedans, 48 males and 8 females; and among Eurasians, 13 males and 11 females. Expressed in percentages, there have been for every 100 male cases, among Hindoos only 20 female cases, among Mohammedans only 17, and among Eurasians as many as 91. So far as is known of the general mode of spread of the plague infection there does not seem any very good reason to suppose that men are more exposed to the infection than women. On the contrary, since plague is generally regarded as a "house disease," and one in which the soil contains and conveys the infection, it would appear probable that women in India are more exposed to the infection than men; for not only are they more confined to the house, but one of their most constant occupations appears to be the cleansing of brass and other vessels with earth scraped from the floor of their huts or from the road outside. There is therefore constant opportunity in the case of Indian women to come in contact with the plague infection; and unless there is some very excessive degree of susceptibility to plague in men over women, the figures just quoted may, with much reason, be held to point to concealment of a number of cases occurring among females. No such excessive degree of susceptibility has been proved elsewhere and, moreover, it will be observed that among Eurasians, against whom no charge of concealment of cases could possibly rest, the cases have been almost equally divided between the two sexes.

In discussing above the early history of the epidemic in Bombay reference was made to the statement that a type of fever with glandular swellings had been known for years in Bombay. This raises a point of no little interest and

[4] Defoe: Journal of the Plague Year.
[5] Encyclopædia Britannica: Article on Plague by Dr. J. F. Payne.
[6] Practitioner, October, 1894: Notes on some Past Epidemics of Plague in Russia, by the present writer.
[7] The Plague in India, 1896, 1897: compiled by R. Nathan, I.C.S., Simla, 1898, vol i., p. 108.

[8] "According to the census report of 1891 to every 1000 males there are returned only 958 females [i.e., for the whole of India]; and the tables show that there are in the country fewer females than males to the number of, speaking roundly, 6½ millions. The deficiency is greatest in the Punjab, N.W. Provinces, and Rajputana. In Bengal, Madras, and Upper Burmah, however, females are in excess to the extent of something under three-quarters of a million. The conclusion arrived at with regard to the deficiency of females is that it is to a large extent due to deliberate concealment and deliberate omission from the census returns." *Vide* editor's footnote on p. 213 of the last edition (1897) of that wonderful storehouse of information, "Hindu Manners, Customs, and Ceremonies," by the Abbé Dubois. In 1896 the proportion of registered female births to registered male births in Calcutta was 87·5 to 100.

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importance in connexion with the present outbreak in Calcutta, for here the same assertion has been widely made, and during the early weeks of the outbreak there were many practitioners of high standing and repute who maintained the view that the cases returned as plague were not cases of plague at all, but cases of the endemic fever with buboes. Almost without exception these gentlemen have since admitted that, in view of the clinical character and high mortality of the recent cases, they have rightly been regarded as cases of plague. The occurrence of this endemic disease is, however, of importance, as it must add one more difficulty in the way of fixing an exact date for the first case of an epidemic of plague, to which reference was made earlier in this paper. The evidence for the existence of such a disease is conclusive, although it is a remarkable fact that at one of the largest of the Calcutta hospitals no such cases are ever seen.[9] It is based upon the assertion of many practitioners in Calcutta that a certain number of cases with these characteristics are met with in general practice every year, and upon statistics of a similar disease among English troops in Fort William, where every year an average of between 30 and 40 cases of fever with glandular swellings occurred in the years 1890–6 inclusive.[10] No published description of this disease appears to exist, but, so far as may be gathered, it would seem to differ from plague in its being altogether of a milder character, in its low rate of mortality, in the fact that suppuration of the glands is the exception rather than the rule,[11] and in the absence of any concurrent disease in rats. The bacteriology of the malady has not, it would seem, been studied.

Frequent reference has been made in the course of this paper to the appearance of a disease among rats preceding and coincident with the appearance of plague in man. It must now be accepted as one of the established facts of medicine that in almost all outbreaks of human plague rats are affected by a similar disease both before and during the epidemic. The evidence that the two diseases are the same is of exactly the same character as that which has established the identity of human and bovine tuberculosis, and there seems to be but little more reason for suspension of judgment in the one case than in the other. It may therefore be accepted that plague in man and plague in the rat are, as far as our present knowledge of the two diseases goes, one and the same disease. Evidence has been published[12] that the disease may attack other animals than the rat, such as dogs, pigs, pigeons, and domestic fowls. I have no personal knowledge of such an occurrence (with the exception of a very doubtful case in a dog),[13] and the present notes are therefore confined to the disease in rats.

There is, as already stated, some interesting evidence pointing to the possibility that rats were the means of introducing the plague infection into Calcutta. Before the date of the first recognised case of plague in man intimation was received at the Health Office that a number of dead rats had been found in an office situated near the river; and a little later other dead rats were found in a street close to and parallel with the river and in the warehouses of a shipping company near to the wharfs where ships unload. The occurrence seems to have been so unusual as to have at once attracted attention and the premises were cleansed and disinfected. Some of these animals were examined at the municipal laboratory and cultures of the plague bacillus were obtained from them. Ever since the beginning of the outbreak dead rats in large numbers have been found in various parts of Calcutta but more particularly in and near houses where cases of human plague have occurred. In a large city like Calcutta a certain number of dead rats will always be found, but during the past three months the number has been unusually large and there can be no question that this has been due to the occurrence of a plague epizoötic among these rodents. Several specimens examined at the municipal laboratory were found to present pathological changes characteristic of plague, and moreover pure cultures of plague bacilli were obtained from the enlarged glands and other organs. The following incident came under my own immediate observation. A death from plague occurred on certain premises in British Indian-street. Previously a number of dead rats had, it was ascertained, been found on these and on adjoining premises, and several cases of plague had occurred in the immediate neighbourhood. The patient had died at 3 A.M. on June 15th, and at 7 A.M. I saw the body, which was still lying in the outhouse or *godown* where death had occurred. The post-mortem examination revealed all the pathological changes characteristic of plague, and I was moreover able to obtain pure cultures of the plague bacillus from both the bubo and the liver. There was therefore no doubt as to the cause of death. At the time of inspecting the body I had observed that the big toe of one foot had been half eaten away by rats. During the following week or two there was a marked increase in the number of dead rats found on the premises where the man had died and on the adjoining premises. Some dazed and sickly-looking rats, which showed evident signs of severe illness, were also seen in an adjoining house. Unfortunately these facts did not come to my knowledge until later, and it was therefore impossible to obtain any of the bodies for examination, but the facts left little doubt in my mind that the rats had died from plague, and that in some at least this result was brought about by their fatal feast off the tissues of the dead man's toe.

A few words may be added as to the mortality of the plague as it has shown itself in Calcutta. Among male Hindoos the proportion of reported deaths to reported cases has been 86·2 per cent.; among female Hindoos, 72; among Hindoos of both sexes, 84; among male Mohammedans, 85; among female Mohammedans, 88; among Mohammedans of both sexes, 86; among male Eurasians, 54; among female Eurasians, 73; among Eurasians of both sexes, 63; among males of all classes, 83; among females of all classes, 76; and finally among persons of all classes and both sexes, 82 per cent. The figures upon which these percentages are based are in many instances, particularly in the female groups, too small to permit of any sweeping conclusions as to racial or sexual susceptibility to the plague poison, but attention may be called to the remarkably low mortality among Eurasians. A similar observation was, it will be remembered, made in the epidemic in Hong-Kong. The mortality among the natives, both Hindoo and Mohammedan, as expressed by the above figures, may possibly be above the truth, as cases which recovered are more likely to have been concealed than cases which died. The only European (a male) who contracted the disease recovered. Of other nationalities, two Chinese, one Burmese, and one Jewess caught the disease, and in each case it proved fatal.

Calcutta.

9 I am assured that this is so by the medical officers of the Medical College Hospital.

10 Parliamentary paper C. 8386: Papers relating to the Outbreak of Bubonic Plague in India. The statistics are furnished in a statement by Surgeon-Lieutenant-Colonel W. Allan May, in charge of the Station Hospital, Calcutta, dated October 22nd, 1896. It had been suggested that the cases suspected to be plague then occurring in Calcutta (*vide supra*), and some cases of glandular fever in men of the Shropshire Regiment (recently transferred to Calcutta from Hong-Kong where they had been on plague duty) might have some connexion. The statistics here referred to rendered this view untenable.

11 In the Parliamentary paper already quoted from will be found a reprint from the *British Medical Journal* of an article by Fleet-Surgeon Charles C. Godding on "Non-Venereal Bubo," from which it appears that a bubonic disease with fever is common in the navy on certain stations, a yearly average of 733 cases occurring out of a yearly total of 56,180 men. The disease would, however, appear to differ from the one under consideration in the more frequent occurrence of suppuration. May not the habit of sailors of going about barefooted afford an explanation of the occurrence of these buboes, which are "invariably inguinal"?

12 Dr. Cantlie and Dr. Lowson at the Epidemiological Society of London in December, 1896. THE LANCET, Jan. 2nd and 9th, 1897.

13 A. B. was attacked with plague on June 30th, 1898. He recalled the fact that two or three weeks before (he could not fix the day) his little dog had brought a dead rat and placed it on his bed. A day or two later the dog had seemed unwell, but it had rapidly recovered; it was not known whether any glandular enlargement had occurred. The patient had touched the rat in removing it from the bed; but in view of the facts that over a fortnight elapsed before he himself sickened, and that he lived in an infected area, there seems no reason to believe that this was the particular source from which he contracted the infection.

NOTE ON A CASE OF SATURNINE AMBLYOPIA.

BY CHARLES BELL TAYLOR, M.D., F.R.C.S. EDIN.,
SURGEON TO THE NOTTINGHAM AND MIDLAND EYE INFIRMARY.

A WOMAN, aged twenty years, single, consulted me on account of failing sight in May of the present year. There was no evidence on superficial examination of inflammatory affection or organic change, but the ophthalmoscope revealed white atrophy of the left optic disc and I found on testing vision marked central scotoma in both eyes, notwithstanding that the right papilla was apparently normal (amblyopia

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without tissue change). I diagnosed drug amaurosis and detected in the urine traces of lead which I then ascertained she had been taking in ten-grain doses nightly in the form of emplastrum plumbi for upwards of three weeks. Under treatment the right eye recovered perfectly, but the left, although it has improved considerably, is still very defective and likely to remain so.

The power of certain drugs to produce definite tissue change in the optic nerves (axial neuritis) is a curious property possessed by a variety of substances—alcohol, tobacco, lead, and other metals for instance, as well as quinine, salicylic acid, santonin, bisulphide of carbon, and various coal-tar products. Of these, according to my experience tobacco is the most frequent cause of impaired sight, not only on account of the nicotine which it contains and which in its natural form blinds the horses which graze upon pastures where tobacco is grown, as in some parts of New South Wales, but also on account of the pyridine, viridine, carbolic acid, and marsh gas which are set free when it is smoked. Alcohol probably comes next, while saturnine amblyopia among the workers in lead factories has been known for centuries. The lead may enter the system either with articles of food or drink, the workmen in the former case neglecting to wash their hands, or through the skin by means of hair dyes and cosmetics, or by silk threads which are weighted with sugar of lead and bitten instead of cut by those who use them. In my case the patient, finding herself pregnant, took diachylon in order to procure abortion, with no other effect than to cause blindness in one eye. That this should result in four weeks' time without other symptoms of plumbism, colic, leadline on the gums, palsy, or wrist-drop is indeed singular if not unprecedented.

With regard to treatment in such cases iodide of potassium should be given in large doses, the patient should use baths of sulphuret of potassium, take sulphate of magnesia, mercury, and pilocarpine, while the affected nerve should be galvanised with the continuous current, about 2 milliampères to each temple daily.

Nottingham.

STRANGE SUCCESSION OF FRACTURES IN A COLLIER, WITH REMARKABLE COINCIDENCE IN TIME OF OCCURRENCE.

BY D. T. RICHARDS, M.D. GLASG.,
SURGEON TO RISCA COLLIERIES.

As might naturally be expected from his hazardous occupation the collier is frequently injured by accidents underground. But the following particulars deserve, I think, a space in THE LANCET because of the strange series of fractures sustained by the man himself and his near relatives, as well as the remarkable coincidence in the date of their occurrence as far as the patient himself is concerned.

A man, aged forty-four years, short and well built, was first attended by me on August 26th, 1890, for a compound fracture of the left leg, resulting from a portion of the roof or top falling and striking him while following his employment in Risca Collieries. After being brought out and conveyed on a stretcher to his home on the hill-top, a distance of about three miles, a journey by no means easy to bear by a man with a fractured leg, I found on examination a crescentic wound nearly 3 in. long on the outer aspect of the middle of the left leg, and well peppered over with coal-dust. In spite of the temporary splints and scarf tourniquet applied by his fellow workmen considerable hæmorrhage had occurred, no doubt aggravated by the long, rough journey over an uneven road and up the hill. An anæsthetic was given and the tibia and fibula were found to be fractured near the same level, about half-way between the knee and ankle, and detachable sequestra were removed. After free ablution and cleansing with carbolised water and the limb being brought to a good position iodoform gauze was applied and the leg put up in a modified box-splint. For some hours, the patient felt easy, but during the night he was sick and the leg was painful, which kept him from sleeping. When seen next morning his temperature was 102° F., the pulse was 112, and the tongue was covered with dry white fur. After a grain each of calomel and opium he felt easier and slept. Suffice it to say the patient made an uninterrupted recovery and was able in about six months to resume his work as a collier underground.

The patient's previous history, told by himself and corroborated by others, is very remarkable. With the exception of an attack of typhoid fever, which he had when eighteen years of age, and two or three attacks of quinsy subsequently, he had not suffered bodily in any way. He was always very temperate and for about eighteen years a total abstainer. But his misfortunes in the mine were many and are remarkable from the fact that they all happened on the 26th day of August. Here is his record. At the age of ten years he fractured his right index finger. It happened on August 26th. When thirteen years old he fractured his left leg below the knee through falling from horseback, also on August 26th. When fourteen years of age he fractured both bones of the left forearm by stumbling, his arm striking the edge of a brick (August 26th). In another year, on August 26th, when fifteen years of age, he had compound fracture of the left leg above the ankle by his foot being caught under an iron rod and his body falling forwards. Next year, again on the same date, August 26th, he had compound fracture of both legs, the right being so severely crushed that it had to be amputated at the lower third of the thigh. This was caused by a horse, hitched to a tram of coal, which, running wild underground, caught him in a narrow passage, crushing both legs severely. After this he did not work on August 26th for 28 years, and little wonder, but in the year 1890 he forgot his fateful day and went to work, with the result that he sustained the compound fracture which I have mentioned in the beginning. After this he has studiously avoided working on August 26th, though never missing work at other times.

The patient's father is living, aged seventy-nine years, and has never had a severe injury. His mother died at the age of seventy-nine years. When aged sixty years she had compound fracture of the leg below the knee through being run over by a truck. Recovering, she enjoyed good health for fourteen years, when the old wound reopened and discharged small pieces of bone. The wound remained open for about a year, when under treatment it healed. From this time her health failed and her death, which occurred soon after, was attributed to the healing of the wound. The patient had no brothers, but his only sister, when ten years of age, fractured both bones of the forearm, refracturing the same in about three weeks by falling with her arm under her. One cousin had an arm amputated at the shoulder for injury and another cousin had a severe compound fracture of the leg, while a third had fracture of the leg from which he died. Of three paternal uncles one had his leg amputated for injury underground.

Risca, Mon.

SARCOMATOUS DEGENERATION IN AN UNDESCENDED TESTICLE; CASTRATION; RECOVERY.

BY JAMES R. WALLACE, M.D. BRUX., F.R.C.S. IREL.,
FORMERLY RESIDENT SURGEON TO THE MEDICAL COLLEGE HOSPITAL, CALCUTTA.

AN Anglo-Indian, aged twenty-five years, short, thick-set, and of good constitution, was born a cryptorchid, his left testicle having remained undescended from birth. There was always, as long as the patient could remember, a "lump" in the left groin. It had remained absolutely painless till about four months previously to his consultation with me, when he observed occasional acute pains in the swelling and a frequent sense of nausea. In a few weeks the pain became worse, the swelling more enlarged, and there was persistent vomiting, which confined him to his bed for a few days. The symptoms subsided, but with the resumption of his duties there was a recurrence of suffering. When I first saw him, on March 22nd, 1898, the lump in the groin was hard, tender, and non-fluctuant. The slightest pressure upon it induced nausea. Sulphate of magnesia with tartar emetic in small doses internally, the application of belladonna and glycerine to the swelling, with rest in the bed, gave complete relief

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and for three weeks the patient was able to go about his work. On April 25th he had a recurrence of all the bad symptoms above described, but finding that the slightest exertion was attended with a return of suffering he was advised to undergo castration of the undescended testicle. Accordingly on April 29th he was placed under chloroform by Dr. William Coulter. I cut down upon the testicle, doing the bulk of the dissection with the handle of my scalpel. The main vessels leading to the tumour were ligated and the mass was cut off above the ligature. All bleeding points were quickly secured by pressure forceps so that the patient did not lose more than half an ounce of blood during the operation. The wound cavity was insufflated with iodoform and boric acid, a drainage-tube was inserted, and the incision was closed by horsehair sutures. Boric gauze dressings were applied and changed on the second day, when also the tube was removed. The subsequent progress was most satisfactory. During the operation I had the assistance of Mr. Arnold Caddy.

Remarks.—This case is interesting from the diagnostic value of the reflex testicular vomiting as the characteristic sign of the disease present. On cutting into the testicle after removal it was found to have undergone purulent inflammatory change, and as the structure of the mass seemed very much altered pathologically it was sent to Surgeon-Major J. F. Evans, the pathologist to the Calcutta Medical College, who reported on it as follows: "I find the tumour which you sent me on April 29th to be a round-celled sarcoma, with practically no trace remaining of the glandular structure of the organ in which the new growth arose. There is some evidence of inflammatory change and of hydrocele having occurred prior to the formation of the growth."

Calcutta.

RE-BREATHED AIR AS A POISON *PER SE*.

BY JOHN HARTLEY, F.R.C.S. ENG.,

SURGEON TO THE DARLINGTON HOSPITAL; LATE SENIOR DEMONSTRATOR OF ANATOMY, MIDDLESEX HOSPITAL MEDICAL SCHOOL.

THE noble work which has been, and is still to be, done by the bacteriologist can never be over-valued or over-applauded, but I think our attention is apt to be so absorbingly fixed on the ever-increasing cloud of organisms that we are somewhat in danger of losing sight of the effects of those gaseous poisons which are so prone to accumulate very literally under our noses in the present state of "civilisation" and over-crowding. The "Fresh Air Treatment of Consumption," which has been so lately hall-marked in a manner absolutely unprecedented, appears to be made up of three essential factors: (1) the discontinuance of the supply of bacilli from without; (2) the supply of an abundance of nutritive material to the tissues; and (3) the supply of an abundance of fresh air uncontaminated by the products of respiration. This seems to mean that the tissues if not too enfeebled may be trusted to deal with the bacilli already present if their metabolism is kept going at high pressure. Fresh air is now the "official" remedy in the treatment of tubercle. Why is it so ignored in the case of other diseases? We are told that the expired air of the phthisical patient contains no bacilli, so that apparently re-breathed air is not forbidden to him on account of these. Does the pneumonic or bronchitic breathe out bacilli? If so he would seem to require airing more than the phthisical patient; and if he does not, what then? A rise of temperature or the presence of bronchitis or of a patch of pneumonia in the phthisical patient is, I am told, no bar to his being officially aired. Has the pneumonic or bronchitic no need of special ventilation because his microbe is of a different breed?

Within the last three years or so I have known a severe case of double pneumonia (probably influenzal) treated by a specialist, without protest, in an unventilated little room with closed door and window and no chimney but with a paraffin lamp burning day and night to keep up the temperature. When I remember this and contrast the treatment of pneumonia by one eminent authority with the treatment officially recommended for phthisis by the other eminent authorities with the weight of the Colleges at their back, am I, a poor, unscientific, general practitioner, to be blamed if I find it, like Dickens's millband, "awe a muddle"? And it is with the greatest humility that I venture to suggest it is possible when the air was created that it was intended not only for phthisical patients or patients suffering from pneumonia but for *all*—diseased and healthy alike—and that it is still the natural medium in which the poisonous products of tissue metabolism excreted by the lungs are further broken down and rendered harmless. With even more humility I suggest that it is a work of supererogation to heat air twice over—since everyone has, I suppose, a fairly good heating apparatus inside; that, in fact, so long as the patient's surface is kept warm it is of no consequence whatever whether the air he breathes, provided it be fresh, is at freezing point or the traditional 65°.

Dr. A. Ransome has done great service not only by his onslaught on "air sewage" but also by his coinage of the term. For a thoroughly good opprobrious epithet resembles a good wall-poster in its power of arresting and enchaining the attention of the many. It was long ago pointed out that certain constituents of expired air are intensely powerful nerve poisons. Whether sewer gas has been actually proved to contain similar toxins I am sorry to say I do not know, but having regard to its largely similar origin from decomposing proteid, though coming through a different channel, one can hardly doubt that it is so. These considerations should surely make us look on re-breathed air and sewer gas, not as mere carriers of accidental poisons, such as influenza and pneumonia and the like, but as *poisons per se*, and I wish to be allowed to record a few very imperfect observations made by myself during some years past chiefly on the subject of re-breathed air, with certain inferences which I think tend, however feebly and imperfectly, to show that the poisons we expire have *per se* very definite effects on tissue metabolism and need not a mere perfunctory admixture with fresh air but very large and very continuous dilution before they are rendered innocuous—that is to say, innocuous to *all;* for while some persons appear to be almost immune others seem intensely susceptible.

The first observation I will allude to was made in the autumn of 1896, in cool weather. I had to take a long night journey by rail after a long and hard day's work. The train was full and the compartment I entered was close, so, as I was tired and fagged, I sat in the corridor by an open window, well rugged up, throughout the journey. The compartment was completely shut off from the corridor by a glass door and windows, through which I could freely inspect its occupants. Two remarkably fresh-complexioned, wholesome-looking young fellows got into the compartment at York. They formed a remarkable contrast to the pallid and fagged-looking travellers already there. The windows and ventilators were carefully closed, and the new-comers, with the rest, settled off to sleep and slept soundly for nearly four hours, with the exception of a few minutes' interval at Grantham. When aroused on nearing London they, like the other occupants of the compartment, were haggard and leaden-hued, their fresh colour was entirely gone, and they looked and moved as if exhausted. I examined my own face in the lavatory mirror at the beginning and end of the journey and could see but little alteration in my colour, if anything it was rather improved by the end of the journey, and though I had slept little I was decidedly less tired than when I started. There had been but little smoking in the compartment, every one had slept too soundly. The gas lamp, I noticed, was so fitted that the products of combustion escaped directly into the outer air; the hot-air apparatus had not been started. It seemed to me that the change in the appearance of the two young fellows must be due entirely to the effects of re-breathed air. The inferences seemed to be these: the leaden grey hue was a mixture of pallor and blueness, pallor owing to contracted arterioles, blueness due to dilated venules, whether from peripheral vaso-motor changes primarily or from central changes beginning in the heart or lungs I cannot say, but I am inclined to believe peripheral, or why do so many people get clammy feet and hands in a close room? Carbonic acid may have had something to do with it—I think not much. The colour was more pale than blue—i.e., grey; and a similar though less marked change may be seen in the faces of some of the members of most congregations any Sunday towards the end of the service even though the air space is large enough to put carbonic acid poisoning out of court.

Dr. Lauder Brunton a good many years ago recorded a

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most interesting experiment designed to show the antagonistic effects of muscarin and atropin. The thorax of a curarised dog was opened and artificial respiration started; a small quantity of muscarin was then injected with the result that the right heart and lungs became greatly swollen and engorged while the left side of the heart became almost empty. Atropin quickly caused both sides to return to their usual size and the lungs returned to their usual colour. I believe no mention was made of the state of the peripheral circulation; but I have often thought that re-breathed air must contain a poison similar in its effects on the peripheral circulation to those recorded by Dr. Brunton of muscarin on the central.

Some years ago a patient of mine, who certainly had all the surroundings which can render a man liable to sewer-gas poisoning, was seized with acute illness. He lay on his back with limbs outspread, a leaden-coloured face and clammy skin, with sighing respirations, a small, quick, feeble pulse, great restlessnes, and complaining of "awful" flatulence, begging me to relieve the "awful" distension of his abdomen. (These were his expressions.) There was *no* distension and *no* tympanites. His symptoms were slowly relieved by large doses of atropin subcutaneously and next day he was better, his colour was natural, and the sense of distension was gone, but his abdomen was very tympanitic. I thought the sense of distension complained of was due to overfulness of the abdominal veins, not to distension of gut—that he was, in fact, bleeding almost to death into his abdominal veins. When somewhat better he went to Norway and kept well there except for two slight attacks. The first occurred at a primitive inn where the contents of a cesspool in the closed courtyard were carried through the house in buckets on the night before the onset of his illness; the second attack, a very slight one, occurred on a return visit to the same inn. This is probably an unjustifiable digression, but the effects of sewer-gas on myself are, so far as sensations go, almost identical with those of re-breathed air.

The second case occurred early in 1897. I was asked to see a woman, aged about forty-eight years, who had been treated in a neighbouring town for many weeks for bronchitis and asthma following influenza. She had relapsed about a week when I first saw her. She was then sitting up in bed; her face was leaden-coloured, her skin was clammy and sweating, with a feeble, quick pulse, and the heart sounds were indistinguishable owing to wheezing; there was some crepitation at the bases. The temperature was about 101° F. The weather was cold, but after wrapping her up, with a hot bottle to her feet, the window was well opened. Her colour improved in a few minutes and the sweating ceased soon after. But it and the blueness returned if the window was shut for any time. It was directed to be kept open night and day, and I could see from my house that this order was carried out. Although on one night the thermometer showed 14° F. of frost the chest was clear of noises and she was convalescent in eight days. If fresh air needs warming she ought to have died.

The next case was that of a slight but healthy-looking young fellow, aged twenty-two years, who was admitted into the Darlington Hospital under my care in September, 1897, suffering from a strangulated congenital hernia. An operation for radical cure was performed in the usual way. The hospital was then full, and the ward in which the patient lay was in my opinion decidedly stuffy, though in other respects its sanitation was excellent. The wound gave no trouble, but the patient became very restless, with grey face, foul tongue, and irregular temperature. Within forty-eight hours retention of urine came on, necessitating the use of the catheter several times a day. Five days after operation, the patient's condition remaining unimproved, he was removed to an empty room with wide open windows. Within twenty-four hours the temperature had become normal and it remained so, and the catheter was required only once, a few hours after his removal. The wound healed without trouble and he remained in this room a fortnight, looking, eating, and sleeping well. He was then moved into the general ward, which was certainly in as good a sanitary condition as those of any London hospital. Within twenty-four hours he became restless and grey, his temperature rose, and he again required the catheter regularly. The need for this again ceased immediately on his removal back to the old room with the open windows; and though he went through a slight attack of influenza, which was then rife in the town and hospital, the old symptoms soon vanished and did not recur; but we kept him in the airy room till his discharge.

If, as I believe will be found to be the case, the poison of re-breathed air tends to cause contraction of arterioles and dilatation of venules, it is easy to understand how diminished arterial supply and sluggish venous outflow must hamper metabolism and render tissue change slow and imperfect. This alone seems to me to be a strong reason for giving operation cases all the fresh air obtainable. The greatest care must of course be taken to keep the surface and extremities warm. The common occurrence of faintness (usually ascribed to "the heat") in crowded buildings or even in crowded streets would seem to show the probability that expired air contains a poison having a powerful effect on the cardio-inhibitory function of the vagus.

And what about exhaustion? Why do most men feel so tired after an afternoon's work in a crowded out-patient room. Why is a long journey in a full railway carriage, even with a comfortable seat, so exhausting to many people? Personally an hour or two in a full carriage with the windows shut will give me numbness in my feet and legs and knock me up for the day, while a railway journey in an empty carriage with open windows does not affect me at all. But most people will be willing to admit that any kind of crowd is tiring. And it is to me difficult to resist the impression that an overdose of waste products, whether of one's own or other people's, must generally interfere with the metabolism of nerve tissue. Can constant exposure to re-breathed air (or sewer gas) be one of the causes of the unexplained neuroses and non-specific nerve degenerations? I feel convinced that infants kept in close rooms are peculiarly liable to convulsions, and I believe that many cases of neuralgia are due to this cause. Paralysis agitans strikes me as being another possible example.

Besides all this I am inclined to believe that one of the essential causes of "idiopathic" anæmia will be found among the volatile products of tissue metabolism, and that expired air, and probably sewer gas also, contains something which when inspired either hinders the evolution of the red corpuscle or breaks up its hæmoglobin. Why are the majority of the members of the nursing and resident staffs of the London hospitals anæmic? As a rule they are not ill-fed or greatly over-worked. The hospitals are well lighted and well warmed, foul wounds are things of the past, sanitation is excellent, except in one particular, and it is this—with so many persons under one roof and with the ordinary means of ventilation at present in vogue it is manifestly impossible to get rid of the products of respiration so rapidly and continuously as to prevent their being re-inspired. Why do hospital patients, adults and children alike, improve so rapidly in colour and vitality when able in the summer to lie all day in the garden? What other condition is common to so many pale people of all classes? Take for instance the city clerk, the Lancashire millhand, the overfed footman, the underfed lodging-house drudge, the coffee-house waitress, the wealthy old lady with a terror of "draughts,"—all these and many and many another live almost entirely in re-breathed air. The pallor of the drudge or the waitress is certainly not due to a sedentary occupation. The fact that indoor occupations are far commoner amongst girls than youths is perhaps suggestive, so far as it goes, as partly accounting for the greater frequency of anæmia in the former. What the hæmoglobin-destroying poison may be, should it ever be proved to exist, whether one or more of the innumerable sulphur compounds, I will not attempt to guess. Why some persons seem immune, why some of those affected become deeply and variously pigmented and others slightly or not at all is to me inexplicable.

Women as they grow older are apt to live much indoors. I believe the fat, flabby, paunchy woman, whether purple or pale, with feeble, irritable heart and "inadequate" kidneys, is usually the victim of re-breathed air. I think it will turn out that many feeble hearts and inadequate kidneys, without any definite history of antecedent acute disease, may at least in part own this cause. It seems as if both anabolism and katabolism had been hindered, and inert fat formed and stored, at the expense of active protoplasm. Is it possible that unexplained and fatal "suffocative breast-pang" may be due to a muscarin-like action of this poison on a degenerate heart?

Quite lately I have had as a patient a clerk in the service of a railway company, who works in a very close office immediately under the roof of a large station. He suffers much from flatulence and constipation during the week, but he assures me he has no trouble from either when he visits his parents' home in the country for the week end. A "close" room will infallibly give me abdominal distension

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and borborygmi within half an hour and I am inclined to think the purity of the air breathed by the dyspeptic quite as important as his regimen or his teeth. It must, I think, sooner or later be recognised that many of the increasing ills which it has been the fashion to charge on the "hurry and brain fag" incidental to a high state of civilisation and a large population are in reality due to the greater contamination of the air we breathe by the waste products of that population, and that toxins excreted by the lungs will in time take high rank among these as both potent and insidious. If this should come to pass the present ideas anent ventilation must be abandoned as utterly futile, and the need will be felt, not of letting a little air in, but of rushing waste products out, a vastly different matter, for which the Tobin's tube and tiny so-called ventilator are hopelessly inadequate. Our methods of ventilation generally must be more approximated to those now approved by the Colleges for the airing of the phthisical patient; and, above all things, we must sleep in a "thorough draught" of pure air. The "surface ventilator" for sewers—that cheap and effective fouler of our street air—must surely also go.

It would seem that any departure from health is more and more to be recognised as due to some definite cause—mostly to some definite poison—which poison (or its producer) has most commonly been introduced from without; in fact, with some very obvious qualification and reservation, a paraphrase of the first law of motion might almost stand as a first law of medicine—viz., the body in health will continue in health unless acted on by some external poison. Whether or no any fresh grain of truth may have been turned up by my ignorant groping, of this I am certain, that the subject of re-breathed air in its relation to disease affords a grand field for skilled and accurate scientific research.

Darlington.

A CASE OF LARGE CYSTIC ABDOMINAL TUMOUR PROBABLY OF THE BROAD LIGAMENT OR OVARY OF UNUSUAL DURATION AND SLOW GROWTH.

BY J. H. DAUBER, M.A., M.B., B.CH. OXON., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE HOSPITAL FOR WOMEN, SOHO.

I AM not acquainted with any recorded case of ovarian or broad ligament cyst of large size with a history of over fifty years' duration, and as the following case appears to me to be authentic and genuine it may be of some interest to place it on record.

I saw the patient on two separate occasions in my out-patient department at the Hospital for Women, Soho, with an interval of several months between them—the second time being in February, 1897. On both occasions careful notes of her statements were taken and she was subjected to a somewhat severe cross-examination. She was frank, candid, and intelligent, and made no statements of a contradictory and inconsistent character. She gave her age as seventy years, and was a thin, small, and shrunken woman. Her leanness was less noticeable when she was dressed, because of the distension of the abdomen; moreover, she wore a large amount of padding over the chest, as she explained, "to correspond with her stomach." Upon examination the abdomen was seen to be completely occupied by a large tumour extending from the pubes to the ensiform cartilage and bulging on either side as she lay on her back beyond her body. The tumour was not very tense; it was uniformly dull on percussion; the flanks were resonant and the area of dulness was not altered by change of position. Fluctuation was easily obtainable wherever the dulness extended. The girth at the umbilicus was 43 in. *Per vaginam*, senile atrophic changes were well marked. The uterus was small, low, and moveable.

The history she gave was that as a girl as far back as she could remember she was always "high-stomached," but that at fourteen or fifteen years of age this became so noticeable that people commented upon it, so much so, indeed, that her father—her mother being confined to bed at the time—took her with him to consult Mr. Cumplin of Charterhouse-street, who after examining the abdomen called her father aside and informed him that he considered she was pregnant. Her father was doubtful and said: "Well, be that as it may, she shall not leave my roof till it is over." The tumour continued to increase if at all very slowly, and at the end of about ten months her father took her to see Mr. Cumplin again, who then admitted he had been in error and advised the patient to consult Dr. Frederick Bird of Brook-street. Her mother took her to him and the patient was very positive that she was not more than fifteen years of age—certainly not more than sixteen—at the time of this visit. Dr. Bird pronounced the swelling to be due to an ovarian tumour. He seems to have taken much interest in the case and the patient speaks most gratefully of his kindness throughout a long series of years. She invariably declined all operative measures, even tapping, when suggested to her, though from time to time Dr. Bird and Sir Spencer Wells, who saw her with him on more than one occasion, pressed her to undergo operation. For a time she was in Dr. Bird's private hospital in Carey-street, Lincoln's Inn, which, according to the patient's statement, he carried on with five other medical men "each having one bed and paying the cost of it."

The patient was twice married, first in 1843, when she says she was nineteen or twenty years of age—but either age would make her over seventy years old now. Her first husband died when she was six months pregnant with her first child, about two years after marriage. She was married again in 1849, and this time to Dr. Bird's coachman, and so remained under Dr. Bird's observation for many years. She had four children, one—which was posthumous—by her first husband; three by her second. The first child was a boy; it was a "crossbirth" and stillborn. Dr. Jameson of Finsbury-pavement attended her. The second child (a girl) was born in 1850; this was also a "crossbirth" and stillborn. A "gentleman from South Audley-street," whose name she cannot recall, attended her with this child. At the third confinement Dr. Bird and Dr. Merriman of Grosvenor-street were present and they succeeded in delivering her of a live child (a girl) who lived to the age of thirty-two years. Dr. Bird, with his friend Dr. Morgan, again assisted her at the birth of the fourth child (a boy) who survived to his fourth year. All the labours were very difficult.

I think from these detailed statements, which to me bear the impress of veracity, there can be but little doubt that her present large tumour was also of considerable size at the age of fifteen years, that it subsequently complicated all her confinements and that it excited much interest in the minds of Dr. Bird, Sir Spencer Wells and some other gynæcologists at a time when ovariotomy had not become an established operation, but when the treatment by tapping was gradually being abandoned in favour of the radical cure. I may add that the patient declines all operative treatment at the present time as persistently as she has done all her life.

Charles-street, Berkeley-square, W.

A CASE OF LAPARO-NEPHRECTOMY IN AN INFANT SIXTEEN MONTHS OLD.

BY J. A. CAMPBELL KYNOCH, M.B., C.M. EDIN.

THE question of operative treatment in cases of malignant tumours of the kidney in young children is one on which there is still difference of opinion. The operation has not received much favour in this country. Thus Bland Sutton states that nephrectomy in such cases is absolutely unavailing (1) on account of the frequent immediate fatal results and (2) the almost certain early recurrence of the disease in those cases that recover from the operation. He tabulates 21 cases of operation for renal sarcoma in children under six years of age with the following results: 12 died from the operation, and of the 9 that recovered all died from recurrence within one year. The late Mr. Greig Smith held that the operation was only justifiable (1) if the tumour was small; (2) if the general condition of the patient was satisfactory; and (3) if the patient was at least four years of age. Keith states that in young children it is doubtful whether it is ever right to operate. In Germany the operation is much more frequently undertaken, except in those cases in which

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the disease is obviously far advanced. The results, however, are not very encouraging. Thus, of 150 cases (including all ages) collected by Czerny only five lived more than five years after operation, and of his own 12 successful cases only one patient was alive at the end of that period. Aldibert, finding from a collection of 45 nephrectomies in infants an operative mortality of 48 per cent. and an ultimate one (within a short period) of 75 per cent., considers that this operation should not be undertaken except in the very early stages, and Chevalier concludes that operative treatment in such cases is quite unwarrantable. The most recent complete monograph on the subject of sarcoma of the kidney in children is that of Walker of Baltimore, who has collected from all sources 145 cases, 3 of which came under his own observation. Of these 74 were operated upon with the following results: died from the operation, 27; recovered from the operation but had early recurrence, 28; recovered with incomplete subsequent history, 15; cured, 4. Of those included as "cured" each case was reported on at least three years after operation. Walker finds the average duration of life without operation in such cases to be 8·08 months and that with operation 16·77 months, and concludes that although the percentage of cures is only 5·47 per cent., still, in consideration of the invariably fatal termination, operation is justifiable in all early cases and an exploratory incision in all except the very large tumours and advanced cases. In this country cases are recorded which have been operated on with satisfactory results by Mayo Robson and J. D. Malcolm.

The following case is of interest on account of (1) the early stage at which the condition was recognised and thus making it a favourable case for operative treatment, and (2) the age of the child. The case of the youngest infant successfully operated on is recorded by Schmidt of Munich. His patient was six months old and remained well three years after operation. There are about six cases reported where the operation of nephrectomy was performed with satisfactory results in infants under two years of age. Thus Abbe records a case operated on at the age of fourteen months, the patient remaining well four years afterwards.

In August, 1896, a female infant, fourteen months old, was brought to me on account of diarrhœa of some weeks' duration. This was relieved by ordinary means. The family history was good; the child was very weak and emaciated in appearance. On palpating the abdomen there was found a tumour the size of a lemon in the right lumbar region; it was slightly irregular in outline, fairly moveable, solid in consistence, and apparently not tender to pressure. The ascending colon could be made out in front and to the inner side of the swelling; the liver was separated from its upper margin by a resonant area, the spleen was not enlarged, and the left kidney was not palpable. The external genitals were normal. There was no glandular enlargement made out. The heart and lungs were normal. The urine was of specific gravity 1015, amber and contained no albumin, blood corpuscles, or epithelial cells. There had never been hæmaturia. As I had evidently to do with a renal tumour, and as the case appeared to be a very suitable one for operative treatment, I decided upon an operation if the emaciated condition of the child could be improved. In the course of two months there was not the very rapid increase in the size of the swelling which might have been expected, and as the child's condition was if anything more favourable for operation I decided to carry it out, Dr. Foggie giving chloroform and the nurse assisting me. A vertical incision was made over the tumour slightly inside the anterior superior iliac spine, my intention at first being to remove the tumour extra-peritoneally. This I found would cause delay and difficulty in reaching the pedicle. The peritoneum was opened, the opposite kidney was made out, the incision enlarged, the posterior layer of peritoneum opened, and the tumour with its capsule easily detached. The renal vessels were ligatured together with silk, then the ureter separately, and both were returned into the abdomen. There was very little hæmorrhage and, satisfying myself that oozing had ceased, the wound was completely closed with interrupted silkworm gut sutures and dressed with iodoform and boric powder. The child stood the operation, which lasted twenty minutes, well. On the following day the temperature was 102° F. and the pulse was 140 and on the fifth day the temperature was 103°, when a stitch abscess was discovered. Two sutures were removed, when the temperature came down to 99°. The stitches were all removed on the tenth day and the subsequent history was one of steady recovery.

On examining the kidney the tumour, brain-like in appearance, occupied the greater part of the organ, the kidney itself being represented by a band extending over the front of the tumour and seperated from the latter by a capsule. A piece of the tumour was examined by the Clinical Research Association. The following is the report: "The tumour is clearly of the adenomatous type—that is, tubules embedded in a loose and delicate cellular tissue. In places the stroma contains many round and oval nuclei and here the tubular arrangement of the neoplasm is not distinct; the appearance is that of solid cords of epithelial cells. The present specimen would be called by some an adeno-sarcoma, but there is not sufficient evidence from the piece of tissue examined to pronounce it malignant as it would be desirable to examine further sections and search for striped muscle cells and sarcoma tissues."

The child has now been under observation for nearly two years and appears to be in perfect health as compared with its appearance before the operation. The result, I think, justified the line of treatment adopted, even should recurrence yet take place.

Dundee.

TWO CASES OF

ACUTE DIFFUSE CELLULITIS OF THE SUB-MAXILLARY REGION (ANGINA LUDOVICI) IN WHICH TRACHEOTOMY WAS PERFORMED; RECOVERY IN ONE.

BY H. W. WEBBER, M.S., M.D. LOND.,

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FOR permission to publish the reports of these cases I am indebted as to the first to Mr. W. H. A. Jacobson, senior assistant surgeon to Guy's Hospital, to whom at the time I was acting as house surgeon, and as to the second to Mr. Connell Whipple, senior surgeon to the South Devon and East Cornwall Hospital.

CASE 1.—A woman, aged forty-three years, was admitted to Guy's Hospital at 8·30 P.M. on Feb. 27th, 1892, under the care of Mr. Jacobson, suffering from an inflammatory swelling of the neck with dyspnœa. The history obtained was that three days previously she had fallen against the sharp edge of a chair and had bruised or cut her chin. The wound became inflamed and the redness and swelling increased rapidly up to the time of her admission. The whole of the tissues between the chin and the sternum and between the sterno-mastoid muscles of each side were then in a condition of brawny, inflammatory œdema, and the patient was dyspnœic and of bad colour. She was taken into the ward used for "septic" cases and shortly afterwards, in response to an urgent summons, I found her sitting up in bed moribund from asphyxia. She was at once laid back and an incision was made deeply from chin to sternum in the middle line through the inflamed tissues. These yielded nothing but dark blood and serum and the incision was rapidly deepened until the trachea was found at about 5 in. from the skin surface and slightly to the left of the middle line. It was opened and a sinus-forceps inserted, while the bleeding from the cut surfaces was stopped by the application of pressure forceps (some of which were left *in situ*) and sponges wrung out of boiling water. As no tracheotomy tube was sufficiently long to reach the tracheal opening a Symonds' œsophageal tube was inserted and the cavity round this was powdered with iodoform and tightly packed with strips of sal alembroth gauze, to avert, if possible, the entrance of septic material into the trachea. A hot boric fomentation was placed round the neck over all and changed every two hours. The patient was ordered to take 1 oz. of the mistura spiritus vini gallici every four hours and she was directed to breathe near a steam kettle. On the 28th she was better. Her pulse was 130. The sal alembroth strips were changed and the Spencer Wells's forceps were removed. The next day her temperature was 102° F. and the respirations were 20. The A. C. E. mixture was given, and about a dozen free incisions were

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made into the still much inflamed neck. These openings were dilated with a steel director and dressing-forceps, and drainage-tubes were placed in two of them. Hot boric fomentations were continued as before and the trachea and the large wound were treated in the same manner. On March 1st her temperature was 101·4°, and the swelling of the neck had subsided considerably the discharge from all the wounds was now purulent in character and quite sweet smelling. The Symonds' tube was removed from the trachea and the whole wound was packed with gauze strips in a square of butter-muslin. Respiration was easy and quiet. She was now ordered a mixture containing 2 grains of quinine every four hours and a pint of champagne and 4 oz. of brandy in the twenty-four hours. The hot boric fomentations were continued. On the 2nd the patient's temperature was 98·4° and the discharge from the wound was sweet. The sal alembroth strips were changed three times in the twenty-four hours. The neck was much smaller in size and the tissues were soft. The tracheotomy wound was beginning to close and there were no adventitious respiratory sounds. The after history of the case was uneventful and she left the hospital early in April.

CASE 2.—A woman, aged twenty years, was seen with Dr. Hay of Plymouth on May 29th, 1898. The history was that three days previously she had consulted Dr. Hay for a swelling in the right submaxillary region. This corresponded to a carious tooth and Dr. Hay advised its removal by a dentist. The patient was not seen again until the morning of the 29th, when her neck had become much swollen on the right side, the swelling extending to the middle line, and her general condition was much worse. The tooth had not been removed. Dr. Hay made a median incision below the chin and ordered the application of hot linseed poultices and prescribed a mixture containing tincture of perchloride of iron every four hours. In the evening, as her condition was becoming serious, I saw her with Dr. Hay about 10 P.M. She was then sitting up in bed. She was of a dusky purplish colour, her pulse was 120, and her temperature was 102° F. There was a brawny inflammatory swelling extending from the lobule of the right ear to the hyoid bone and upwards to the chin and lower jaw. The floor of the mouth was involved and the tongue was of a purplish colour and pushed up against the roof of the mouth. There was much dyspnœa and speech was impossible. Chloroform was cautiously given and I first deepened the incision below the chin opening up the subfascial tissues after Hilton's method. Another curved incision was then made in the right submaxillary region and the deep parts were opened up in a similar manner. From both the wounds dark blood and a little dark-coloured pus exuded. An attempt was then made to extract the carious tooth but it caused such dyspnœa that it was abandoned. The hot poultices were reapplied. On the 30th the patient was somewhat better. The pulse was 110 and the temperature was 101°. The swelling had gone down a little and she could swallow liquids. On the 31st she had a change for the worse. She was more cyanosed and dyspnœic and the left submaxillary region was swelling. As her surroundings were of a poor description and nursing was practically *nil* I advised her removal to the South Devon and East Cornwall Hospital. This was delayed until the following morning, June 1st, when she was admitted at 11 A.M., I saw her at midday and unexpectedly found her better. Her tongue was of a red colour and she was able to protrude it from the mouth. She could articulate and could swallow beef-tea fairly easily. The incisions on the right side were beginning to granulate but there was still much swelling on both sides of the neck. It was decided not to interfere further for the present and hot boric fomentations were ordered to be applied every hour. About 7 P.M. she became suddenly attacked with dyspnœa. A little chloroform was given and I incised the left side of the neck, only dark blood flowing from the wound. Directly this was done respiration ceased. A long incision was immediately made in the middle line and was rapidly deepened, but the trachea could not be found, and after a search with the finger it was felt on the left side of the neck at the depth of the forefinger from the skin and some 2 in. from the middle line. The knife was pushed along the finger and the trachea was opened and kept open with sinus forceps, and artificial respiration was performed, but the patient failed to recover.

The symptoms in the latter case were somewhat fluctuating, but I regret that I did not perform tracheotomy earlier, before the trachea, pushed across by the swelling on the right side, had become compressed by that on the left.

Plymouth.

THREE CASES OF PLAGUE IN PREGNANT WOMEN; RECOVERY IN ALL THREE CASES.

BY B. H. F. LEUMANN, M.B. LOND., D.P.H. CANTAB.,
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As it has been stated by competent observers that during the epidemic of plague in Hong-Kong "every pregnant woman aborted and every woman who aborted died," it may be interesting to record the three following cases which have lately been under my care in the Plague Wards at St. George's Hospital, Bombay. Of these three women two came into hospital in a pregnant condition and one aborted at the beginning of the tenth day of her illness, while the other left the hospital without any abortion having occurred. The third case aborted before admission into hospital and soon after admission was considered by Dr. Yersin to be too far advanced to be injected with his serum.

CASE 1.—The patient was a woman, aged twenty years, a young Eurasian. She had been married eight months, had had no children and no miscarriages. She was admitted to hospital at 4 P.M. on Feb. 9th, 1898, after nearly twenty-four hours' illness. With regard to her history she awoke feeling quite well on the 8th, but soon after rising suffered from severe frontal headache and malaise. At 5 P.M. she had a rigor which lasted ten minutes and was followed by cramps in the hands and feet. At 6 P.M. she vomited profusely and first noticed a "painful lump in the left groin." The vomiting and fever continued unabated all night and till admission. During December and January she had had morning sickness, but it had ceased on Jan. 28th. There had been many cases of plague in her neighbourhood. On admission she was found to be a well-nourished young woman, with a flushed face, dilated pupils, injected conjunctivæ, and anxious though dull expression of countenance. The skin was hot and dry, the temperature was 105° F., the pulse was 130, soft and regular, and the respirations were 40, but quite regular. The tongue was covered in the centre with a silvery-white fur, slightly moist; the edges and tip were bright red. She lay on her back with both legs drawn slightly up and the left foot crossed over the right; her hands were extended above her head. She had scratches on both her feet. She complained of great frontal headache and cough. On examination all the abdominal and thoracic organs appeared to be healthy. Towards the inner part of the left femoral region was a mass of the size of a walnut surrounded by slight œdema and extremely painful on manipulation. The skin over it was not reddened and the swelling was quite distinct from the inguinal glands, which could easily be felt but were not painful. No other glandular enlargement was detected. The urine was very acid, of specific gravity 1018, no albumin and no sugar. On the 10th she had slept fairly well but could not retain her food. The bubo had increased in size and was more painful. The temperature had fallen to 101·2°, the pulse was 136, and the respirations were 32. She was extremely drowsy and resented being roused. In the evening her temperature reached 105·2° and the vomiting was more constant. On the 11th the vomiting was not relieved at all. The cough was much less. The bowels were opened after administration of calomel; large scybalous fæces were passed. She was very drowsy now as she had hardly slept all night. There was extension of the œdema to the left inguinal glands and the bubo was much more painful. No other glandular enlargement could be felt. The temperature in the morning was 103·8° and in the evening was 102·8°. Her condition continued much the same until the evening of the 12th, when she became delirious—low muttering—and continued so all night. The temperature on Feb. 12th in the morning was 103·8° and in the evening was 104·2°. On the 13th she was extremely weak and drowsy but not unconscious. When awake she was extremely nervous and difficult to manage. She vomited frequently, mostly after partaking of milk. The bowels were constipated. The physical signs were as before. The temperature in the morning was 100·2° and in the

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evening was 105·2°. On the 15th the patient—who had been delirious for two nights but the previous night was violently so, constantly trying to get out of bed—was now quiet. She complained of cough and burning pain in the chest. On examination moist râles were audible on both sides, back and front. The abdominal organs were apparently normal. The bowels were opened daily after small and frequent doses of calomel; they were semi-solid and very offensive and yellow in colour. The pulse was 140 and dicrotic. The temperature in the morning was 103·0° and in the evening was 102·6°. Pain and distension of the abdomen began in the afternoon, but had been relieved by turpentine enema and stupes. On the 16th there was no pain in the chest. The cough was almost absent; there was no headache; she was quite conscious but extremely weak. The temperature in the morning was 102·0° and in the evening 101·8°. On the 17th the patient—who had slept well during the previous night—was much exhausted after vomiting her meal of broth at 8 P.M. The signs were the same as before, but the bubo was less œdematous and more painful. There was slight abdominal distension and pain. Towards evening the pains in the abdomen had increased and at 8 P.M. they were extremely severe. At 3 A.M. sudden bearing-down pains occurred and she aborted at 5 A.M. (fœtus of three and a half to four months). The placenta was slightly adherent and was removed by the finger. There was slight hæmorrhage afterwards. The temperature at 8 A.M. had fallen to 99 4° and the patient seemed quite comfortable and much relieved; she was sleeping soundly. The evening temperature was 102·0°. On the 18th the vaginal discharge was free, sweet, and alkaline, and yellow in colour. (Perchloride of mercury, 1 in 2000, was used as a vaginal douche night and morning.) The patient was comfortable though her temperature had risen. The temperature in the morning was 100·8° and in the evening was 102·4°. On the 19th she had slept well. The discharge was yellowish red, thick, and slightly offensive. The right eye was affected with iritis. There was no pain elsewhere except in the bubo. The temperature in the morning was 101·8°, and in the evening was 103·2°. On the 20th the vaginal douche was used thrice daily as shreds of membrane and placenta were coming away. The pain in the bubo was very great. The patient had severe headache all day. The temperature in the morning was 101·6° and in the evening was 102·6°. On the 22nd the temperature had reached normal and kept fairly low. The vaginal discharge was sweet and scanty, yellowish, and thin. There was much pain in the right eye and the pupil was irregular, with surrounding chemosis of the conjunctiva. The tension of the right eye very much increased. The temperature in the morning was 99·2° and in the evening was 99·2°. On the 23rd a drop of pus was let out of the right eye and afforded instant relief. The bubo showed signs of commencing suppuration. The temperature in the morning was 98·4° and in the evening was 98·8°. On the 25th the bubo opened and about 1 oz. of creamy pus escaped. The general condition was much improved. From this date the patient continued to rally in strength; on the 25th vaginal discharge entirely ceased and though the bubo was long in healing she wa soon able to sit up in bed and take solid food. The temperature remained low and hectic in character for about two weeks and then fell to normal. The patient was discharged from the plague wards on March 12th, only slight iritis remaining to worry her.

Bacteriological examination.—On Feb. 10th bacilli resembling those of plague were found by puncture of the bubo and microscopical examination of the lymph exudation which escaped. A culture was made on slanting agar-agar and showed numerous colonies of plague bacilli (examined and proved both microscopically and by experiments on mice) the next and second day. On the 15th the blood was examined both microscopically and by stroke cultivations on agar-agar. No colonies of any sort were found.

Treatment consisted mainly in stimulating liquid diet and good nursing. Milk, as much as she could take, with strong beef-tea, egg-flip, &c., formed her staple food. Thirst was relieved by ice to suck. Medicinally from the first she was put on a mixture containing 3 minims of carbolic acid, 5 minims of tincture of iodine, 2 drachms of mucilage of gum acacia with water to 1½ oz. This was given every three hours for the first day and after that four times daily till Feb. 14th. A boric acid fomentation was kept continually on the bubo and helped greatly to relieve the pain. Whenever the temperature rose to 104° she was sponged down with weak vinegar and water and the wet pack was resorted to when it reached 105°. As cardiac stimulants brandy and strychnine were freely given. Digitalis proved very useful in slowing and regulating the pulse-rate. Other treatment for cough, vomiting, constipation, &c., was purely symptomatic. To produce sleep and quiet delirium morphia and atropine given hypodermically proved far more effective than hyoscine, bromidia (which is far too depressant for these cases), or other drugs. Tonics and oleum morrhuæ were given during convalescence.

CASE 2.—The patient was a woman, aged thirty-four years, who first came under my care and then under that of Surgeon-Colonel J. Arnott, physician in charge of St. George's Hospital, Bombay, by whose permission I publish the notes of her case. On Feb. 11th, immediately after breakfast at 10 A.M., she felt giddy and sick and took to her bed and while undressing noticed her left femoral glands to be swollen. In the afternoon fever supervened and these symptoms continuing all night she was sent to hospital and was admitted at noon on the 12th. She had no rigor or vomiting. Menstruation had not occurred for nearly three months and she considered herself pregnant. On admission she appeared to be dull, lying in a crouching attitude with her legs drawn up and her head forwards on to her chest. The skin was hot and dry; the temperature was 104·4° F.; the pulse was 120, soft and feeble. The tongue was furred, white in the centre, with the tip and edges irritably red (typical). The thoracic and abdominal organs were apparently healthy. In the left femoral region two glands were found enlarged to the size of a hazel-nut each and they were very tender. There was no other glandular enlargement. On the 13th the patient had slept badly and now had great frontal headache. The glands in the left femoral region remained the same. The specific gravity of the urine was 1022; it was very acid; there was no albumin and no sugar. The temperature in the morning was 102·4° and in the evening was 102·0°. On the 14th the patient's headache prevented her sleeping, though she was distinctly dull and drowsy. The urine was neutral and contained phosphates in large quantity. The temperature in the morning was 101·6° and in the evening was 102·0°. On the 16th the patient was very weak. Her face had an "earthy" hue and she looked extremely dull and drowsy. The buboes were more painful and swollen. The physical signs were the same as before. The temperature in the morning was 100·2° and in the evening was 102·6°. On the 17th the temperature had reached normal and the patient said she felt much better, but her appearance and signs remained unaltered. From this date she made an uninterrupted recovery, the glands undergoing complete resolution, and she left the hospital well in a fortnight.

Treatment was practically the same for this case as for the former one, except that for the first twenty-four hours she was given the carbolic acid and iodine treatment mentioned above; but after that, when under Surgeon-Colonel Arnott's care, 15 minims of solution of chlorine in water every six hours was substituted and seemed to agree very well. Other treatment was mainly symptomatic.

No microscopical or bacteriological examination was conducted in this case, but from the clinical symptoms and the fact that she had attended on one of her servants who had suffered and died from this disease there seems to be absolutely no doubt that she suffered from a mild attack of plague in its bubonic form.

CASE 3.—The patient was a married woman, aged thirty-one years, a Eurasian, living in a very infected district. She had had two children born at full time and no miscarriages. She was admitted at 6 P.M. on March 11th after three days' illness. With regard to her history, on the evening of March 8th she had felt pain in the right groin and had detected a small swelling there. The next day she did her household work, but at 4 P.M. suddenly had a severe rigor, which lasted nearly one hour and was followed by frequent vomiting, frontal headache and fever. At 3 P.M. on the 10th severe abdominal and bearing-down pains set in and she aborted at about 5 P.M. (fœtus three and a half months). A Hindoo medical attendant removed the after-birth, but apparently failed to diagnose the case though aware of the existence of the painful glands above mentioned. On admission the patient was found to be a thickly-set woman, with flushed face, dull expression, dilated pupils and congested conjunctivæ. She lay on her right side with both

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legs well drawn up to the abdomen. The temperature was 104·6° F., the skin was hot and dry, the tongue was coated with a silvery white fur in the centre, the tip and edges were red and cracked; the breath was foul; the respirations were 28 and shallow; and the pulse was 124, but of fair volume. The thoracic and abdominal organs were apparently natural. The right femoral and inguinal glands were much enlarged, though distinct from one another, and they were surrounded by considerable brawny œdema. The whole tumour measured 3½ in. by 4½ in. and was extremely tender. The skin overlying it was slightly reddened and not moveable on the surface of the swelling, but no fluctuation could be detected. The lochia were very free, light yellow and sweet. The external os admitted the little finger; the internal os was dilated to admit the finger, by which means several small bits of placenta and shreds of membrane were removed. The cavity was washed out with a 1 in 3000 perchloride of mercury solution and similar vaginal douches were ordered twice daily. On the 12th, the morning after admission, the patient was seen by Dr. Yersin, who refused to inject her as he considered her case to be hopeless. The temperature had remained high, but the lochia were sweet and the pain in the bubo was slightly less. The urine was dirty yellow, of specific gravity 1020, slightly albuminous, and neutral. On the 13th, though much improved in the morning, she became very restless towards night and at 11 P.M. complained of severe pain in both iliac regions. On examination no swelling was detected. The temperature in the morning was 102·0° and in the evening was 104·8°. On the 14th there was no more pain in the abdomen, she looked much better, and the bubo was considerably enlarged in size. The temperature in the morning was 103 0° and in the evening was 102·4°. On the 15th, the temperature remaining high, she was given 10 gr. of antefebrin in brandy at night. This greatly relieved the headache as well as being effectual in reducing the temperature 3° F. On the 17th the bubo was opened. Caseous pus and blood escaped. Beyond copious sweating she complained of nothing. There was no pain and no other swellings were detected. The temperature in the morning was 99·6° and in the evening was 101·0°. From this time the patient progressed quite favourably. On the 22nd the incision in the bubo was considerably enlarged and two more suppurating sacs were opened. On April 1st she was discharged well.

Bacteriological examinations of her blood were made on March 12th and 16th, but the agar tubes remained perfectly sterile. On March 17th cultures on slanting agar were made from the caseous pus and yielded many colonies of plague bacilli and a few streptococci, which were examined microscopically.

The treatment in this case was practically the same as in Case 1 and needs no further comment.

I have to thank Dr. Bitter of Cairo and Professor Gaffky for their kindness in allowing me to work in their laboratory and for confirming the bacteriological and microscopic investigations of the above cases. I am also indebted to Assistant Surgeons Lafonde, Netscher, and Macgregor of St. George's Hospital, Bombay, for their help in observing these cases clinically.

Bombay.

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on Sept. 8th, 1898, Mr. Wm. Berry, F.R.C.S.I., President, being in the chair.—Dr. Blair read a paper on the Serum Treatment of Puerperal Septicæmia, which he illustrated with copious notes from a successful case in his own practice. The usual methods of treatment were also adopted throughout. Anti-streptococcic serum was used. The serum was best employed early in the disease and then towards evening, and in all cases collapse must be watched for and obviated. The belief was expressed that recovery from puerperal septicæmia treated with serum would be more thorough than with other methods alone.—Dr. Blair said it was desirable that the serum should be of standard strength and purity so that definite results could be obtained.—In the discussion on the paper the following gentlemen took part: The President, Mr. Parker, Mr. Jones, Mr. Graham, Mr. Monks, Mr. France, and Dr. Rees and Dr. Benson.—Dr. Blair replied.—A vote of thanks to Dr. Blair for his paper was moved by Dr. Benson, seconded by Mr. Monks, and carried unanimously.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON THE OCCURRENCE OF CARTILAGINOUS AND BONY NODULES OF THE TONSILS.

BY WYATT WINGRAVE, M.R.C.S.ENG.,
ASSISTANT SURGEON AND PATHOLOGIST TO THE CENTRAL LONDON THROAT AND EAR HOSPITAL.

IN an article published in THE LANCET of August 13th last Dr. Hugh Walsham drew attention to the existence of cartilage and bone in the faucial tonsil and expressed the opinion that they were vestigial in origin, whilst Dr. Kanthack believed that they were due to some metaplastic process. I am quite of the view that these cartilaginous masses originate in developmental vestiges and have always considered them to be identical with the subpharyngeal cartilage of Luschka, referred to in Macalister's "Anatomy,"[1] but with regard to the bony masses in some instances I am inclined to agree with Dr. Kanthack, since they are generally multiple, being often scattered about the substance of the tonsil and they are often associated with morbid changes in that structure. Still, Dr. Walsham's example of transition proves a possible chondral origin.

My experience is that cartilaginous nodules are by no means rare in this situation. Several years ago I exhibited sections at the British Laryngological and Rhinological Association and in January last further examples at the Laryngological Society of London.[2] These nodules were found accidentally during the microscopical examination of diseased tonsils—mostly chronic hypertrophy—removed from patients below twenty years of age. Dr. Walsham's were, however, associated in two instances with the more mature ages of twenty-seven and fifty years, Deichert's case being as old as seventy-seven years. As in those cases, the cartilage was hyaline and white fibrous, embedded in a dense connective tissue capsule, sometimes occurring in the fibrous "bed" and sometimes in the lymphoid pulp of the tonsil, but never in the lymph nodules or follicles. I have only found calcification in one instance and this was not truly osseous. It is interesting to note that in Dr. Walsham's cases the tonsils were atrophied and that the bony elements were in excess of the cartilaginous. There must be considerable difficulty in forming a true estimate as to the frequency in the occurrence of these "nodules," since they are generally found by accident; still I have no doubt but that a systematic search will prove them to be much commoner than is generally believed. It is not an unusual experience when operating to find considerable resistance to the guillotine quite disproportionate to the density of the tonsil tissue. This I have in several instances proved, by the aid of a pocket lens and the fingers, to be due to the presence of fibrous and cartilaginous tissue, which was confirmed by the microscope. The fact that all my cases were young subjects is, perhaps, sufficient explanation for their being solely cartilaginous, since in the second instance described by Dr. Walsham there was partial ossification. That these nodules may as "vestigial rests" be the possible and probable foci of neoplastic changes must not be ignored, and as they are of somewhat more than transcendental interest further research as to their frequency and association may prove valuable.

Devonshire-street, W.

CASE OF LARGE FATTY TUMOUR.

BY J. A. HAMILTON, M.B., C.M. EDIN.,
LIEUTENANT, I.M.S.

AS cases of very large tumours are comparatively rare nowadays the following may be of interest. I am away from books of reference at present, but I do not think that

[1] A Text-book of Human Anatomy, by Alexander Macalister, 1889, p. 596.
[2] Proceedings of the Laryngological Society of London, vol. v., p. 34.

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fatty tumours often reach such a size as the one described below.

The patient, a Manipuri, came to me in March, 1897, when I was officiating as civil surgeon in Manipur. He said he was forty years of age, but he looked more, and was very thin and feeble. He stated that the tumour had been present for about fourteen years, that it had first appeared on the back of his shoulder in the supra-spinous region, and that it had gradually attained its present position as it increased in size. It now hung from the right side of the thorax, the line of attachment crossing the posterior axillary line obliquely downwards and forwards. Looking at the patient from behind he gave the appearance of a *bhisti* carrying a *mussuk*. He stated that the tumour had not perceptibly increased in size during the last three years. He had tried all sorts of native medicines and applications, and finally, as he found it in every sense of the term a burden to him, he came to the Civil Dispensary to see if anything could be done for his relief. The nature of the tumour was made out without any difficulty and its removal recommended; to this he gladly consented. Accordingly a few days later I amputated it; I made an eliptical incision, turned the flaps back, and easily separated the tumour from its surroundings, removing it with most of its skin covering. The only difficulty lay in the number of very large superficial veins which had to be secured and in the size of the tumour, which made it very unwieldy and awkward to handle. I unfortunately made the flaps a trifle small, so, owing to tension, I had to cut two stitches next day, but even with this the wound completely healed within three weeks. The tumour was carefully weighed half an hour after removal and it turned the scale at just over 37½ lb. I saw the patient two months later. He was very fit and had put on weight, he could get about easily and had even been playing polo, a thing he had not been able to do for years.

Gantok, Sikkim.

[The above article was accompanied by photographs of the patient taken before removal of the tumour. It had the appearance of an enormous pyriform mass larger in circumference than the man's waist, projecting backwards and sideways so much that it could be seen in whatever position he stood with reference to the observer.—ED. L.]

IPECACUANHA IN A CASE OF EPILEPSY.

BY C. KNOX BOND, L.R.C.P. LOND., M.R.C.S. ENG.

THE treatment of epilepsy remains so unsatisfactory that any suggestion derived from the treatment of individual cases of this malady may possess some therapeutic value.

The following note refers to an unmarried woman, aged twenty-nine years, a patient at the St. George's and St. James's General Dispensary, who had been subject to epileptic fits from the age of eight years. When the fits first commenced they were described as "faints," but from the onset of the catamenia they assumed a more serious form, when she was taken to a special hospital for nerve diseases for a period of six months and was said to have received no benefit from treatment. She was then treated at a general hospital continuously for two years and since then has been more or less under treatment at the hands of several physicians. On July 14th, 1897, she was admitted to the above institution under the care of Dr. Alfred Eddowes, who found that she had taken continuously for a long period large doses of bromide without, according to the statement of her mother, diminishing the number or severity of the fits. Dr. Eddowes therefore decided to reduce the bromide to a third of the former dose and added vinum ipecacuanhæ to the prescription. A dose of 10 minims was commenced with, increased from time to time as the fits recurred until a dose of 40 minims three times a day was reached. With each increase of ipecacuanha there was a marked improvement in the patient's condition. The severity and frequency of the fits had diminished under this treatment until May 3rd, 1898, since when no fits have occurred. The patient's mother stated that her daughter had never enjoyed so long an immunity from fits at any previous period since their commencement.

The reasons which led Dr. Eddowes to adopt this treatment were based, firstly, on his observation in his former private practice as to the value of ipecacuanha in convulsive attacks of children apparently due to gastro-intestinal irritation; and secondly, that it seemed a likely remedy to check the voracious appetite and neglect of mastication so frequently observed in epileptics. The marked improvement with this treatment so noticeable in a very intractable case under my observation for nearly three years leads me with Dr. Eddowes's concurrence to submit this brief note for publication in THE LANCET.

King-street, W.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GREAT NORTHERN CENTRAL HOSPITAL.

A CASE OF GASTRO-JEJUNOSTOMY IN WHICH THE ARTIFICIAL OPENING WAS SURROUNDED WITH A TRIPLE ROW OF SUTURES AND LINED WITH MUCOUS MEMBRANE.

(Under the care of Mr. C. B. LOCKWOOD.)

THE best method of uniting two portions of the alimentary canal has been much discussed in recent years. There are at present two chief parties; first, those who advocate the employment of only a needle and suture, and those who call in the aid of various mechanical appliances. By a needle and suture it is quite possible to unite two pieces of intestine completely and successfully, but even the most ardent supporters of this method must acknowledge that in some cases at least the process is lengthy. The advocates of the employment of "apparatus" in enterectomy or gastro-enterostomy claim that the duration of the operation is materially shortened. It is true that some little time is saved in the operation, but the presence of the "apparatus" is in itself a danger. In some cases it may be important to terminate the operation at the earliest possible moment; in these a Murphy's button or other "apparatus" may be usefully employed, but if it be possible safely to prolong the operation a simple suture will offer less chance of troublesome complications. The method of suture employed by Mr. Lockwood in the following case is ingenious, and a very thorough joint results; the only possible objection which can be raised is that the operation requires no small amount of time; but practice in the method would go far to obviate this objection. Gastro-jejunostomy is a valuable, though of course only a temporary, method of treatment of cases of malignant disease of the pylorus, in which no attempt at removal can be made. It is also of permanent value in cases of non-malignant pyloric obstruction, but for this condition a Heineke-Michulicz operation is usually preferable.

The patient, a man, aged fifty-four years, said that he had had syphilis in his youth, but otherwise his history was good. He had not been a hard drinker. In October, 1895, he began to have dyspepsia and pain after food. In November he vomited occasionally after food; soon he began to vomit all solid food; and when he was admitted to the Great Northern Central Hospital on Jan. 1st, 1896, he had commenced to vomit liquids. No blood was seen either in the vomit or in the motions. A rapid loss of weight accompanied this illness, so that he had become exceedingly emaciated and so weak that he had to be carried into the ward. A hard ovoid swelling, the long diameter of which was about 3 in. and the short diameter 2½ in., was easily felt through the thin abdominal walls beneath the eighth right costal cartilage and in the situation of the pylorus. The stomach was dilated and reached before the level of the umbilicus. A succussion splash could be heard and felt. The tumour of the pylorus was rather tender and moved freely with the descent of the diaphragm. It was soon ascertained that all the fluids which the patient swallowed were vomited mixed with gastric juice

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and having a very sour and unpleasant smell. He was made more comfortable by washing out the stomach, but in spite of rectal feeding he said that he felt starved. Dr. Clifford Beale, under whose care the patient had been admitted, requested Mr. Lockwood to see him with a view to an operation being performed. As he was eager to obtain relief from his horrible sufferings endeavours were made forthwith to diminish the size of his stomach and to improve its condition by daily washing it out with boric lotion. Mr. H. Randall Wadd carried this out with great assiduity and without a doubt much is due to his efforts. After the patient had been under observation for a fortnight and with little alteration in his condition Mr. Lockwood performed the following operation. A vertical incision about 5 in. long was made through the centre of the left rectus abdominis muscle so as to expose the front of the stomach. This incision began about an inch below the left costal margin. It was at once ascertained that at least 5 in. of stomach and jejunum would have to be resected to take away the disease; also an enlarged lymphatic gland was felt in the gastro-hepatic omentum. As there was no prospect of the patient bearing such a formidable operation the commencement of the jejunum and the front wall of the stomach were drawn out of the wound and the great omentum was pushed back with a flat sponge. The stomach and jejunum being now held together were sewn to one another for three inches by a row of interrupted silk sutures. All of these were cut short except the two end ones. These being left long were a useful landmark and helped to steady the stomach and bowel. This first row of sutures only transfixed and fastened together the peritoneum. It was parallel to the great curve of the stomach and to the mesenteric edge of the jejunum and about half an inch from both. The peritoneal row of sutures having been inserted an incision at least one and a half inches long was made through the peritoneal and muscular coats of the stomach and jejunum. This cut was the beginning of the artificial opening and was a third of an inch from the peritoneal row of sutures and opposite its middle part. It brought the mucous membranes of the stomach and of the jejunum into view. These mucous membranes were easily separated from the muscular coats of the stomach and jejunum for about a third of an inch all round the incision.[1] When this had been done the peritoneal and muscular coats of the stomach and of the jejunum were sewn together with a row of interrupted sutures parallel to the row in the peritoneum. When the second row of sutures had been cut short the stomach and jejunum were both opened by cutting through their mucous membranes. These were sewn together by a row of interrupted sutures parallel to the last two rows. By this stage of the operation openings had been made into the stomach and jejunum and the edges of the opening next to the great curve of the stomach and next to the mesenteric border of the intestine had been sewn together by three parallel rows of sutures—the first through the peritoneal cone, the second through the peritoneal and muscular coats, and the third through the mucous coat. At this stage two of these rows of sutures (the first and the second) were hidden from view, but the last was still in sight, having been tied on the inner mucous surface of the stomach and jejunum.

Although rather difficult to describe the operation is quite simple up to this point and quite easy to perform. Briefly, an opening has been made into the stomach and into the jejunum, and one side (the lower) of the opening has been fastened together with three rows of interrupted sutures. To complete the operation it is only necessary to sew together the other side (the upper) of the opening. This is easily done by sewing together (1) the mucous membrane, (2) the muscular and peritoneal layer, and (3) the peritoneal. In sewing together the mucous membrane nearly all the sutures can be tied on the mucous surface with the exception of the last. The suture of the muscular and peritoneal coat and of the peritoneal coat alone presents no difficulties whatever. The result is an opening from the great curve of the stomach into the jejunum. This opening is lined with mucous membrane and is big enough to admit easily the end of the thumb. The three rows of sutures effectually prevent leakage and are strong enough to guard against the muscular contractions of the stomach and jejunum.

[1] The above method of opening the stomach and jejunum has, Mr. Lockwood finds, been used by Mr. F. Barker and subsequently by Mr. Jessett, Brit. Med. Jour., June 2nd, 1888, p. 1115.

The final stages of this operation were the return of the stomach and jejunum and the closure of the abdominal wound. The whole proceeding took about a little more than an hour, but it was the first time that it had been done and neither the operator nor the assistant were experienced in it. Subsequently the same operation was performed in forty-five minutes upon a patient under the care of Dr. Galloway. It is not quite safe to put continuous sutures into distensile organs, but, nevertheless, in the next case Mr. Lockwood will endeavour to save time by using short lengths of continuous suture.

The after progress of the case was as follows. The shock was very slight, great care having been taken to keep the patient warm during the operation and to ply him with nutrient enemata containing brandy. The next day feeding by the mouth was begun with peptonised meat essence and peptonised milk and milk-and-soda-water. The second day after the operation the patient twice vomited some fluid mixed with bile and gastric juice. The vomiting ceased as soon as his stomach was washed out. His nourishment was gradually increased until the tenth day, when an untoward accident, fortunately attended with no ill result whatever, occurred. With Mr. Lockwood's consent the abdominal sutures were taken out. That evening the patient coughed and strained and a piece of bowel was protruded from the wound. This was replaced and the wound was brought together and healed without any suppuration. It is clear that allowance ought to have been made for the slowness with which wounds heal in such emaciated patients. Moreover, there was no reason why the sutures should not have been left in for another week or ten days. Ten days after the operation the patient took pounded meat and fish without any vomiting and each day he made steady progress. It was found advisable, however, to wash out the dilated stomach occasionally and on Feb. 2nd he walked home. He could then eat an ordinary diet without vomiting. It seemed to be a great pleasure to him to drink beer again. He attended from time to time during 1896 and in October he vomited occasionally. This was attributed to his diet, which consisted of beer, cheese, herrings, and so forth; but in spite of all he had gained 4 lb. in three months. When admitted into the hospital and fed on a light nourishing diet he ceased to vomit and soon improved and was able to help with the ward work. His stomach also required to be washed out, but no dilatation could be discerned. The patient was shown at the Medical Society of London on Nov. 9th, 1896. On Jan. 4th, 1897, he still maintained his ground and so far as could be discovered the pyloric growth had made hardly any progress. He looked well and said he had continued to gain weight.

Remarks by MR. LOCKWOOD.—The above case illustrates a method of sewing together the intestine and stomach in gastro-jejunostomy. I used it twice during the year 1896. Although at first a little more time may be required for its application, nevertheless it seems to promise to be more secure than other methods and to have the advantage of lining the artificial opening with mucous membrane. In the operations by sewing or by using decalcified bone plates, the cut surfaces of the mucosa and serosa of the stomach are left exposed to the corrosive action of the gastric juice. This has always seemed to me to be a great risk, and has probably been the cause of some of the fatal results. But it has to be allowed that apart from this danger the operation of gastro-enterostomy is as yet likely to have a considerable mortality. At present surgeons are called upon to operate when the patients are emaciated to the last degree, worn out with perpetual vomiting, and in the very worst state for an operation which makes demands upon their powers of repair. But it is hard to refuse to make an attempt when there is the faintest chance of relieving, if only for a time, such horrible sufferings.

As yet the operation of gastro-jejunostomy is comparatively rare. In 1892 Mr. Jessett[2] collected 17 cases and in 1894 Mr. Bidwell[3] added 15 more, all done in this country. No doubt when the striking benefit of gastro-jejunostomy is properly recognised it will be done oftener and earlier. From what I have seen of three cases under my own care and of several operated upon by other surgeons the method of operating may be improved upon. Although the delay had been slight yet it is probable that my patients would have been more comfortable after the operation if the stomach

[2] Transactions of the Clinical Society of London, vol. xxv.
[3] Ibid., vol. xxvii.

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had not been so dilated. Mr. Richard Bevan[4] has very convincingly urged that the operation should be performed as soon as the dilatation is diagnosed. In the two cases, which he evidently watched with much solicitude, great discomfort arose both before and after the operation owing to that condition. But he adds that "the benefits, in spite of discomfort, were enormous."

At present it is the custom with many surgeons to unite the stomach and jejunum with a mechanical contrivance such as a Senn's plate or Murphy's button. The last-named is probably the most popular. It is easier to use than the decalcified bone plate and does not take quite so long to apply Senn's plates have been used less often since cases have been recorded by Stansfield, Larkin, and others of closure of the artificial opening. Cases reported by Keen[5] and Morton[6] show that the button may not be quite free from this danger, but the risk seems to be small. But apart from this the metallic button has to traverse the whole length of the small and large intestine and this journey is often delayed or not completed. In some cases the intestine has sloughed beyond the button[7] and twice for reasons which are not given. Dr. Wiggin[8] mentions a case in which the button stuck in the small intestine and had to be removed by laparotomy, also one in which the weight of the button bent a loop of intestine until it became obstructed, and one in which the button was plugged with hard fæcal matter. The actual success after the use of buttons and mechanical contrivances is not easy to ascertain. Dr. Murphy[9] includes as recoveries patients who died "eleven days later from complication," "four weeks later from diarrhœa," "died fourteen days after, pneumonia," and so on, because the union was good. If the cases of suture were taken in the same way a high proportion of recoveries would be obtained. Indeed, according to the late Mr. Greig Smith[10] Hahn has had fifteen gastro-enterostomies, and Doyen eighteen without a death, neither operator having used any apparatus. Union by suture ought to appeal very strongly to the surgeons who think with Desault "that the simplicity of an operation is the measure of its perfection." A needle and thread are always at hand. A few days after the operation the result has declared itself and no anxiety is felt regarding the passage of the button through the intestines, or lest it may leak, or cause ulceration or sloughing, or become plugged with fæces. On the other hand, when suture fails it is usually due to bad sewing, as I think was the fact in one of my own cases. Those who sew cannot comfort themselves by blaming the button, or the bobbin, or the plate. The chief objection to sewing is the time it takes. But the time can be much shortened by careful organisation and by skilful rapidity, and shock is now less severe as hot tables are used and hypodermic injections of strychnine are given and brandy is administered by the rectum. Anæsthetics, too, are now used with much greater skill.

LEEDS GENERAL INFIRMARY.

A CASE OF PERINEAL ABSCESS; PYÆMIA TREATED WITH ANTI-STREPTOCOCCIC SERUM; RECOVERY.

(Under the care of Mr. LAWFORD KNAGGS.)

IN the following case the anti-streptococcic serum was employed with a most satisfactory result. No doubt at the present time the serum is given in many instances where it would not be thought to be indicated if all the facts which might be elicited were known. Only few hospitals possess the equipment which enables general bacteriological work in connexion with cases in the wards to be carried out with promptitude, and as time in severe septic infective diseases is often of great importance the surgeon naturally feels that he must not delay the use of a remedy which may be powerful for good if used in time and which fortunately does not as a rule seem to do harm in inappropriate cases. For the notes of the case we are indebted to Mr. J. Victor Hartley, house surgeon.

A man, aged forty-three years, was admitted on Feb. 9th, 1898, with a perineal abscess of unusual size, which formed a prominence in front at the root of the penis and had burrowed into both ischio-rectal fossæ behind. There had been no retention of urine, but the urethra was found to communicate with the abscess cavity through an opening 1 in. long the result of sloughing. Subsequent progress was uneventful until March 29th. At this time the perineal wound was small and Lister's metallic sounds were being passed daily. On March 29th No. 9–12 was passed for the first time and caused a little bleeding. In the afternoon the patient had a rigor and his temperature rose to 103·6° F. The next day the scrotum was œdematous and a second rigor occurred at 8 P.M. (temperature 104°). On the 31st a considerable quantity of pus escaped from a closed drainage-tube wound at the root of the penis. After this the scrotal condition quickly settled down and gave no more trouble. There was a third rigor on this day (temperature 103·6°). On April 1st he had a fourth rigor (temperature 106°) and an abscess began to form over the left olecranon. There were no abnormal sounds in the chest. It was decided to employ the anti-streptococcic serum, but there was some delay in getting it. The abscess was opened on April 2nd. The pus was stained and numerous micrococci were found. On the 3rd the temperature was 105·4° at 10 P.M., and though no rigor was noticed the patient was very ill during the night and sweated profusely. On the 4th the serum treatment was begun, 10 c.c. were injected over the abdomen at 8.30 P.M., shortly before the time at which a rigor was expected. The same dose was repeated every day except on the 6th, 9th, and 16th till the 18th. It never caused any untoward symptom beyond the pain due to the large quantity of fluid injected. About this time rhonchi were heard over both lungs and for several days there was a good deal of bronchitis and cough. There was also marked hæmoptysis, but this was present only on April 5th and 6th. On the 8th the chest condition had almost entirely cleared up, but at the angle of the right scapula sibilant rhonchi and crepitations could be heard over a small area. By the 10th an occasional cough was the only sign of lung trouble left. On the 11th an abscess which had been forming over the outer condyle of the right humerus for three days was opened. From this date the patient mended rapidly, no further local manifestations developed, and an inflammatory patch in the subcutaneous tissue on the inner side of the patella, which was first noticed on April 6th, gradually subsided without suppuration. The excursions on the temperature chart had been steadily but slowly diminishing from the commencement of the serum treatment, and after the 19th never rose above the normal. No serum was given after the 18th. On the 22nd the passage of soft bougies was begun and on the 30th the patient went home with a slight fistula at the root of the penis which quickly closed. He was seen on August 2nd. He was quite well and passed a No. 11 bougie for himself regularly.

Remarks.—The position of the subcutaneous abscesses in the neighbourhood of both elbows suggests a traumatic rather than an embolic origin. In other words, that laceration of capillaries led to minute extravasations of blood containing micrococci. On the other hand, very little doubt was felt that the lung condition pointed to embolic plugging of vessels which would have resulted in metastatic abscesses if the serum had not been given. Abscesses of embolic origin, besides being more liable to occur in inaccessible situations and to interfere with vital functions, point to the existence in the circulation of masses of micro-organisms unable to traverse its smaller ramifications and would seem to indicate that the septic process had reached a point beyond the protective powers of the body to cope with successfully. Here, therefore, the gravity of the prognosis was distinctly increased as soon as the lung condition developed. The effect of the serum upon the chest symptoms was very marked. They completely subsided in two or three days under this treatment alone. When the lung condition, which presumably never reached the suppurative stage, had subsided, and after the progress of an inflammatory focus near the right knee had been effectually checked, an abscess developed near the right elbow and had to be incised. This no doubt was of the traumatic variety. It might be argued that micro-organisms when once outside the circulation are not so easily brought

[4] A Plea for Early Operation in Dilated Stomach due to Pyloric or Duodenal Obstruction.—THE LANCET, Sept. 26th, 1896.
[5] Annals of Surgery, vol. xvii., 1893, p. 663.
[6] Brit. Med. Jour., vol. ii., 1895, p. 631.
[7] In a case under the care of the late Mr. Greig Smith the patient died on the third day from a sudden shock. Two gangrenous rings of bowel within the button flanges were all that could be found to account for death. Abdominal Surgery, 5th edition, vol. ii., p. 631.
[8] New York Medical Journal, Dec. 1st, 1894.
[9] THE LANCET, April 27th, 1895.
[10] Abdominal Surgery, fifth edition, p. 538.

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under the influence of the antidote as those within the vascular channels, yet it must be confessed that the appearance of this abscess, when other inflammatory foci—traumatic as well as embolic—had given way under the influence of the serum, is not easy to understand. There were no rigors after the serum was commenced, but there were the daily elevations of temperature and profuse sweatings which are characteristic of the pyæmic state. These gradually diminished each day and in fifteen days from the beginning of the treatment the patient was convalescent. Had the daily dose of serum not been omitted on two or three occasions this period would no doubt have been shortened.

WESTERN INFIRMARY, GLASGOW.

A CASE OF RUPTURE OF THE PATELLAR LIGAMENT; SUTURE; RECOVERY.

(Under the care of Dr. D. MACARTNEY.)

IT is always difficult to say definitely why in one case a fracture of the patella, in another a rupture of the tendon of the quadriceps extensor muscle takes place, while in a third the ligamentum patellæ suffers. That the patella should be fractured by muscular action it is necessary that the knee should be strongly flexed at the time of the contraction of the muscle and one of the other two lesions is liable to occur if the knee is extended. In the case recorded below it is very probable that the blow on the knee was the real cause of the ligament giving way, for there is no evidence that the rupture resulted from muscular contraction. As to the treatment to be adopted for this rare injury there can be no doubt that an aseptic operation offers the best chance of a thoroughly useful limb; for the ligament is even less likely than a fractured patella to unite after having been torn in two.

A man, aged fifty-four years, by occupation a lamp-lighter, was admitted to the Western Infirmary, Glasgow, on Dec. 4th, 1895, suffering from the effects of a fall from his ladder on to the pavement, his knee striking the ground first. On examination the patella was found to be quite normal in shape and size, but drawn up the thigh for nearly two inches, leaving a distinct hollow at the upper part of the tibia. The patient could not extend the limb, and the swelling in and near the joint was well marked. The limb was fixed temporarily on a long splint in order to allow the effusion into the joint to pass away. A week after admission (Dec. 11th), the patient being under chloroform, a vertical incision was made over and below the patella of sufficient length to expose the parts. It was then found that the ligament with the capsule of the joint was torn across in its whole breadth in a ragged line just below the apex of the patella. The under surface, the capsule of the joint, was first dealt with by paring the irregular edges with scissors and uniting the pared edges by means of a fine continuous catgut suture. The ligament proper, which showed the same raggedness of edge, was similarly dealt with, the suture being of the same material but stronger. The parts having been cleaned the superficial vertical wound was brought together by means of salmon-gut sutures, dressings were applied, and the limb was fixed in an osteotomy splint, which was raised on a block when the patient was put to bed. For a day or two he complained of pain and uneasiness, but as his temperature kept normal it was thought right not to disturb the dressings. On the 20th, nine days after the operation, the dressings were removed and the wound was found to have healed; half of the stitches were removed. On Jan. 7th, 1896, the splint was removed. On the 22nd the patient was allowed to get up and two days later was permitted to go home. Four months afterwards he visited the infirmary to report himself. The limb was quite well, the patella was in its proper place and his walking was good. He had resumed work and felt no difficulty in the use of his injured limb.

Remarks by Dr. MACARTNEY.—Rupture of the patellar ligament is of comparatively rare occurrence, and on that account alone the record of such a case is interesting; all the more if the steps taken to treat the condition showed more clearly the pathological state of the parts involved, which the case described above did. In such recorded cases as I have come across in my reading the rupture has been near the tibial insertion; in some cases the ligament has torn away its bony attachment. In Holmes's "System of Surgery" cases recorded by Spence, Chiene, Toogood, and Shaw are referred to. In only one of these—namely, that reported by Shaw—has the rupture been at the patellar end of the ligament. The thing which struck me as being most noteworthy was the stringy, ragged appearance of the wound in the ligament.

Reviews and Notices of Books.

Die Zelle und die Gewebe. Zweites Buch von Professor Dr. OSCAR HERTWIG. Mit 89 Abbildungen im Text. (Cell and Tissue. Second Book. By Professor OSCAR HERTWIG. With 89 Illustrations in Text.) Jena: Verlag von Gustav Fischer. 1898. Pp. 314. Price 7*s*.

THE author having in a previous work given an account of the chemical, physical, morphological, and biological characters of the "cell" now takes up the physiological side of the process of development, dealing especially with the mode of origin of the tissues and the physiological causes of the formation of the structures and organs of the body. He shows how the cells unite to form the individual, the mutual influence they exert upon each other in point of physical characters and function and the mode in which they become differentiated for the performance of the duties they have to discharge. He shows how cells respond to external agents and that even in the case of the ovum the process of development is not a mere unfolding and increase but that the ultimate product is the result of the action of many external and involved factors, that variations of temperature, of light, and of food in the earlier stages exert in different instances potent influence on the growth, external characters, and life of the adult. Thus, in the matter of temperature he gives drawings of four ova of the frog respectively kept for three days at a temperature of 10° C., 15°, 20°, and 24°. In the first the ovum is shown to have only reached the gastrula stage, in the second the medullary plates are seen to have formed, in the third the primary gills appear with the rudiment of a tail, whilst in the fourth the external branchiæ are fully formed and the tail has attained considerable length. Similar effects of variations of temperature are seen in the seasonal dimorphism of many butterflies, quoting the interesting observations of Professor Eimer upon a little butterfly, the Lycæna agestis, which is widely spread and which exhibits dimorphism in accordance with the season. In Germany the insect has a winter and a summer form, which may be designated A and B, but the same insect appears in Italy also with two seasonal forms, B and C. The form B thus appears in both climates, but in Germany it is the summer and in Italy the winter form. The German winter form does not occur at all in Italy whilst the Italian summer form does not occur in Germany. Hence it may be concluded that the various forms are associated with variation of temperature.

So with chemical agents, the differences presented by flowers growing in different soils is well known to gardeners. Iron, Professor Hertwig points out, is essential for the formation of chlorophyll by plants; without this element chlorosis supervenes and if it be then supplied indications of recovery become apparent in 24 hours. So Knop found that on feeding plants of maize with certain sulphites the resulting form was so different from the ordinary one that it might quite easily have been described as a new species. Nor is the influence of chemical agents less obvious in the case of animals. The effects of arsenic and phosphorus fumes are the subjects of present legislation, and the fact that the absence of lime is a fertile source of disease is familiar knowledge. The changes caused by an increase or decrease of salt in the brine

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shrimp Artemia, the alteration effected in Whitstable oysters when transported into the Mediterranean, the influence of exclusive feeding of certain butterflies on lactuca or on atropa belladonna in changing their colouration, the practice of modifying the colouration of the feathers of certain birds by the natives of the Amazons by the substitution of the fat of some kind of fish for their ordinary food, the effects of small quantities of lithium on the development of the larva of sea urchins and of the changes effected in development of frogs' and 'axolotls' ova in a 6 or 7 per cent. solution of common salt, in the production of anencephaly and hemicrania, with many other facts, are collected in a very interesting manner. The subject of the influence of the internal factors of organic development is treated with equal fulness of detail.

Professor Hertwig concludes his work with a short account of the different theories that have been advanced since the appearance of Darwin's book and finishes with the following account of his own views, which we have taken the liberty to slightly abbreviate: The cell with its properties is the elementary living being; it is the carrier of the idioplasm and thus corresponds to Herbert Spencer's "physiological unit"; owing to its collective activity it brings forth the different kinds of plants and animals. Inasmuch as all organisms in the course of their development pass through the one-celled condition the cell must possess in their simplest form all constant and essential characteristics by which the several species are differentiated. There are therefore as many fundamentally different kinds of cells as there are different species of plants and animals. The essential character distinguishing these different cells are hidden from our knowledge; we can only on logical grounds presume that the cell possesses an extremely delicate organisation, and that the highly organised substance which determines the species of cell and was called "idioplasm" by Nägeli is only a small part of the total cell substance and, on Professor Hertwig's hypothesis, is included in the nucleus. The agreement between the different individuals of each generation or the continuity of development is effected by the circumstance that every individual proceeds from a single cell. The question then arises how out of the cell and its invisible peculiarities the compound organism with its visible peculiarities proceeds. And the answer given by biogenesis is that it is through the multiplication of the specific cells and the coincident processes of social union, division of labour, and integration. A physiologically fundamental character of every form of life is the faculty of preserving its kind, which is owing to the fact that each cell by hereditary division gives rise to innumerable generations of cells which are carriers of the peculiar characters of the race or of the 'heredity mass.' These cells or units take specific forms which at every stage show the influence of, and are modified by, countless external factors as well as by the endless complications which the life units exert upon each other. The individual cells, although of the same species as being descendants of the same mother cell, yet develop under dissimilar conditions both in point of space and of time. The full exposition of Professor Hertwig's theory requires more space than is at our disposal, but our readers will be able to gather from the above the general tenour of his work.

Elements of Pharmacy, Materia Medica and Therapeutics. By WILLIAM WHITLA, M.A., M.D. Seventh edition. London: Henry Renshaw. 1898. Price 10*s.* 6*d.*

THE issue of a seventh edition of Dr. Whitla's well-known work is itself strong evidence of its popularity, and the present volume, which is brought well up to date, will be found a useful addition to the library of all students and practitioners. The book is divided into five parts. The first part is devoted to the subject of pharmacy, and full directions are given concerning the compounding and dispensing of drugs. There are numerous woodcuts which illustrate many practical points, and the "general hints to the dispenser" at the end of the section will be found equally useful to the prescriber.

The administration of medicines is dealt with in the second part and the subjects of variations of doses, incompatibles, and prescription writing, are all carefully considered and fully explained. In connexion with the last-named subject there is a very useful table which gives all the Latin words which are ever likely to be met with in prescribing.

Materia medica occupies the third part, and here the arrangements and classifications of the different preparations in tabular forms will be very serviceable to students for examination purposes; there is also a description of all the official remedies arranged in alphabetical order. The important subject of therapeutics is considered in the fourth part, and here again the drugs are arranged alphabetically. Clear and concise accounts of their actions are given and examples of typical prescriptions are freely interspersed.

The fifth part is given up to non-official drugs and a judicious selection of the principal ones in use together with their therapeutical actions will be found.

A valuable index of the poisons and their antidotes, lists of the additions and omissions of the British Pharmacopœia for 1898, and full tables of the weights and measures together with the relations between English and metric weights will also be found. It will thus be seen that the different branches of the subject are all fully dealt with in a useful and practical manner and the book is one which can be confidently recommended to both practitioners and students.

Renal Growths, their Pathology, Diagnosis and Treatment. By T. N. KELYNACK, M.D. Vict., M.R.C.P. Lond., Pathologist to the Manchester Royal Infirmary; Demonstrator and Assistant Lecturer in Pathology at the Owens College, Manchester. Edinburgh and London: Young J. Pentland. 1898. Pp. 269. Price 12*s.* 6*d.*

IT is a very fortunate thing for teachers and workers in science that able men are from time to time inspired to write monographs. It is mostly a labour of love, and though the financial profit may not be large the credit is considerable when the result is as successful as in the present case. The subject of renal growths, which Dr. Kelynack has chosen for a monograph, is a difficult but highly interesting one. No one in this country has hitherto attacked it and Dr. Kelynack has done so in such a thorough manner that he has filled a gap in medical literature for some time to come.

In an introductory chapter the author points out the vague nomenclature formerly in use with regard to renal neoplasms—rendering the records of the past almost valueless for purposes of scientific study. Accurate histological data have only begun to accumulate within the last few years, the term cancer having been loosely employed for any sort of malignant growth of the kidney. The classification which Dr. Kelynack prefers is that of Newman, which differs from that of most writers on the subject in disregarding the question of congenital or acquired origin and taking histological structure alone into consideration, and this is certainly a logical position, since there is no hard and fast line between the renal tumours of infancy and of adult life. Numerous figures are given illustrating the frequency of primary and secondary growths of the kidney, but the number of cases with an accurate histological record is not sufficient for any satisfactory conclusion as to the relative frequency of the different types of neoplasm. Secondary growths appear to occur in the kidney in some 8 per cent. of all cases of carcinoma and in 14½ per cent. of all cases

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of sarcoma. In the matter of etiology Dr. Kelynack is unfortunately not in a position to shed much fresh light on the subject. Embryonic inclusions of different kinds receive due consideration and a number of cases are recorded in which traumatism seems to have preceded the appearance of the growth. The author's own figures as to the influence of sex are in opposition to those of most authorities, as he finds a slight preponderance in females up to the age of forty years, and this seems to be due to the larger number of cases of sarcoma in early life in that sex. In an analysis of 160 cases of malignant renal growths of all kinds their excessive incidence in early childhood is well brought out, 52 per cent. occurring in patients under ten years old.

A chapter is devoted to the general characters of renal tumours; in some tables devoted to their weight the greater average mass of sarcomata, as compared with carcinomata, is well brought out as also is the greater average mass of cases in children compared with adults. Size, form, and consistency are also discussed. The surgical importance of the modes of extension of malignant renal growths leads to a special chapter devoted to this subject and several important points are brought out, amongst others the lateness and comparative infrequency of lymphatic involvement and the liability to spread along the veins. It is a well-known fact that renal tumours are often extremely difficult to diagnose microscopically and there is probably no organ in the body of which the neoplasms would better repay minute study than the kidney. Regret may be expressed with regard to the brevity of Dr. Kelynack's chapter on the Relationship of Renal Growths, and the absence of any definite conclusions on the subject. We can, however, fully endorse his remark that sections should be prepared from different parts of any doubtful growth, as the microscopic appearances may vary remarkably in the same neoplasm.

The benign growths of the kidney are naturally treated shortly on account of their relative rarity and slight practical importance. Fibroma, lipoma, and angioma are the principal forms described. An interesting case of fibro-lipoma is quoted at length from Warthin and another of a very unusual case of vascular growth from Rolleston and Kanthack. Renal sarcoma is very fully considered, since it is perhaps the most important and in many respects the most interesting class of renal growths. The author deals with them from three points of view—according to the age at which they develop, the situation in which they arise, and their histological character. A summary of all the known facts is well presented, though nothing of any striking novelty is to be found. The complex histological character of many of the renal sarcomata is very rightly insisted on and cases of myosarcoma and adenosarcoma are related. Next follows an account of the adenomata, simple and malignant; the writer lays stress on the occasionally malignant character of certain growths which from their microscopic characters alone might be pronounced innocent. A full account of a case of "malignant papilliferous cyst-adenoma" is given, with clear and careful drawings, and other cases are related for comparison. The very important question of the relation of renal growths to adrenal structures is the subject of a special chapter. The inclusion of adrenal "rests" not only in the kidney but elsewhere is a well-established fact and there are numerous examples of renal growths which seem clearly to have this origin. The best authenticated of these are described by Dr. Kelynack in considerable detail and he is able to add cases under his own care. True carcinoma of the kidney is dealt with in a comparatively short chapter, a circumstance due mainly to our ignorance of these growths. Not only is there no hard and fast line between adenoma and carcinoma, but the truly epithelial growths of this organ are often very difficult to distinguish from those of connective tissue origin. Nevertheless, true cancers are not very rare and Dr. Kelynack is able to quote examples of their most important varieties.

The relation of renal to adrenal tumours is so close that the author very properly devotes a chapter to the growths arising in the latter organs. Of the benign growths adenoma is the only one of any importance and numerous illustrations of this condition are given. Various malignant tumours are also described, including a full account of a case of primary adrenal sarcoma by Affleck and Leith. Finally, a short account of perirenal growths ends the pathological part of the volume and deals mainly with perirenal lipomata.

It is sufficiently evident that Dr. Kelynack is a pathologist, for after 191 pages of pathology we find symptoms, diagnosis, and treatment disposed of in less than 40 pages. Not, indeed, so much because he omits anything, for we can find no matters of importance left on one side, as because this part of the subject seems to appeal to him less and he only rarely introduces illustrative cases in any detail. We note with pleasure that the old doctrine that renal tumours do not move with respiration receives very qualified acceptance at the writer's hands; small degrees of movement, at least, are common. The differential diagnosis of renal growths from other tumours with which they might be confounded is discussed with sufficient fulness. In treatment the all-important question is whether removal is justifiable or not. The history of the operation is given and its mortality from various published tables carefully considered. Dr. Kelynack does not take by any means so pessimistic a view as to surgical interference as is usually met with. He believes that the present mortality (some 50 per cent.) might be largely reduced if the operation were undertaken at an earlier stage than is commonly the case. A long and useful bibliography of thirty pages and a good general index bring the work to a conclusion.

Dr. Kelynack may be congratulated upon the care and thoroughness with which he has brought together and rendered conveniently accessible such a large mass of information upon an important and interesting but difficult subject. The only important matter to which we can take exception is that the book is too largely a collection of the observations and opinions of others and too little a judicial criticism of those opinions by the writer himself. This, however, is a small matter compared with the great service which Dr. Kelynack has rendered in writing the monograph. The illustrations are numerous and often admirable. Mechanical reproductions of photographs are largely employed, but they are not invariably successful in giving a good idea of the naked-eye characters of a renal growth since the colour element is wholly lacking—indeed, some of the most instructive illustrations in the book are from drawings and not from photographs.

ROYAL AQUARIUM, WESTMINSTER.—At the Royal Aquarium there is now on exhibition a family consisting of Clara, Tom, and Anna Snell, three of a family of fourteen. They were born at the Bunyip, Gippsland, Victoria, their father and mother being natives of Devonshire and showing nothing of the extraordinary peculiarities of their children. The rest of the members of the family are of normal size. At the age of twelve years Clara, the eldest, weighed 17 st. 4 lb., with a waist of 66 in., calves 23 in., and arms 19 in. Tom at the age of eight years weighed nearly 9 st. and Anna turned the scale at 8 st. 4 lb. Clara is now twenty-four years old, weighs nearly 36 st. and measures 78 in. round the waist, 26 in. round the leg, and 22 in. round the arm. Tom, aged twenty years, weighs 19 st. and measures 48 in. round the chest, the rest of the body being very well peveloped, and Anna, the youngest, turns the scale at 24 st. and is large in proportion, their united weight totalling nearly half a ton.

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THE LANCET.

LONDON: SATURDAY, SEPTEMBER 17, 1898.

RICH in moral as in material products Italy seems bent on creating a monopoly in that most sinister creature—the political assassin. Her soil is traditionally well fitted for his cultivation. Given the southern blood, quick to feel and quick to resent; given the all too amply justified contempt for the law as a means of protection and reparation; given the much-abused resource of the confessional, which whitewashes crime and rehabilitates the criminal on easy terms; given the sonorous rhetoric of the Revolution with its impassioned appeals only too effective with an impressionable proletariat, to the examples of HARMODIUS and ARISTOGEITON, of TIMOLEON and BRUTUS, of BALILLA and PALAFOX; given finally the hardness of living which makes incarceration welcome and meets death more than half way, and we have a total of conditions which goes far to explain the fact that, "excluding Spain and Portugal, Continental Europe is outdone in her annual number of homicides by Italy alone," and that Italian soil is rapidly becoming the appropriate recruiting-ground whence the political assassin springs — whence he is almost invariably drawn to subserve the purposes of aggressive Socialism and to promote the Reign of Terror which the anarchist avowedly seeks to impose.

For this characteristically Italian "product" has now become an Italian "export"—freighted from Italy in unusually increasing numbers, represented in the gangs of cheap labour which the hardness of living within her borders throws year by year upon frontier States and even further afield, until there is hardly a European centre which has not its "Italian quarter," lost to its own and not affiliated to its adopted country and only too prolific of desperadoes, the willing tools of the "social vendetta." Leaving out the attempt in Rome during the race week of last year on the life of King HUMBERT, the three murders within a few months of each other of the French President CARNOT, of the Spanish Premier CANOVAS, and now of the Empress of AUSTRIA have each been the work of an Italian, each perpetrated with a cynical audacity bearing a perfect family likeness, and each gloried in by its author as, though possibly useless in itself, still done "*pour encourager les autres*" and preparing for the "socialist advent" and for the "anarchical paradise."

The political assassin is indeed an Italian "export," and Italy must not be surprised if the civilised world applies to it the most stringent prohibitive "duty" if only in self-defence and the common interests of mankind. Already the European press is recommending as strict a frontier surveillance over the immigrant Italians as is already enforced against the unauthorised importation of dynamite or any other death-dealing explosive, and it justifies this policy on the ground that it is humaner and less likely to irritate than the hounding to death of Italian residents or the sacking of Italian shops which was practised on French soil after CASERIO'S murder of CARNOT. Even without such preventive policy it is likely enough that Continental employers of labour will shrink from recruiting their industrial hands from Italy and thereby introducing into their respective communities an element so prompt to make itself the tool of a conspiracy aimed avowedly at all wealth amassed through the toil of others. But be all this as it may, the lesson must be borne in upon Italy herself that it is with her and her alone that the responsibility lies of sinister "product" and sinister "export" alike and that only by her ceasing to create the former can she hope to escape the consequences which she incurs from the latter. Her whole system—governmental and administrative—requires root and branch reform and she has not a day to lose in beginning the work of rehabilitation. She has representative institutions: let her see that they are properly utilised. She has what practically amounts to manhood suffrage: let her show, or, at least, try to develop, that "sense of citizenship" which on election day brings the voter to the urn, and the want of which, even in the gravest political crises, causes her to poll but half her strength. She has an army and navy far beyond her needs, certainly far beyond her power to maintain at a decent standard of efficiency: let her reduce both to the dimensions required by prudence and the claims of more vital interests. Above all, let her wipe away the reproach cast upon her by her own sons, "che in 38 anni di governo nazionale l'Italia abbia fatto nulla, propriamente nulla, per l'educazione delle classi lavoratrici" (that in 38 years of national government Italy has done nothing, literally nothing, for the education of the working classes). Here, indeed, lies the inner plague spot of her political system—the impoverishment of her elementary and secondary schools to meet the expenses of establishments which devour her substance and drive her robuster hands to seek a livelihood in other climes. Out of a population of (in round numbers) 30,000,000 about one-half are *analfabeti* (unlettered), and this too when, thanks to her thirty universities, her professions are enormously over-manned, 500 *avvocati* (barristers) thrown upon the public every year in excess of any possible occupation for them, and medical men "duly qualified" in similar disproportion after a four-years' graduation course which costs only three hundred francs (£12)! By none is this "waste" or malversation of intellectual and moral force more deeply deplored than by the heads of the professional classes themselves, condemned as they are to see the unemployed *avvocato* or *sanitario*, whom nature intended for industry or commerce, seeking in political agitation or revolutionary journalism the maintenance his all too easily acquired degree denies him. "Heal thyself," is Italy's watchword, and she may rest assured that in the Europe (justly indignant at her unique reinforcement of anarchical crime) which is now striving to protect itself against the assassins whom she exports she will find a sympathetic

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well-wisher and auxiliary if only she will be true to her illustrious traditions and rehabilitate herself on nobler lines.

THE exceptionally dry and bright weather which has been experienced in this country during the summer months, culminating in the heat waves which have not yet ceased to beat upon us, has brought with it both benefits and ills. Of the latter the scarcity of water in many rural districts and in the most densely populated sections of the metropolis has been perhaps the most prominent. Happily, it has not as yet been accompanied by any notable increase in sickness, whilst as if to compensate for the drought the farmer has had no reason to complain of the character of the harvest. Setting aside the important question of water-supply, which is dealt with in another column, it may well be asked whether a hot season does not conduce more to health than to illness provided that due provision is made by those subjected to it to accommodate themselves to the change in temperature. For with heat comes the excess of sunshine which, as we all know, is one of the best of Nature's remedies. [A summer like that which we have just gone through has enabled thousands to live practically in the open air and to gain fresh vigour of mind and body by the mere subjection to the influence of light, assisted by the breezes from the sea or the pure air of the mountain-top. Many, we doubt not, have prolonged their holiday in some health-giving spot, taking full advantage of the continuance of sunshine, and in this they have acted wisely by adding still more to their stores of health.

All, however, are not so happily circumstanced, and the vast majority of our town-dwellers are those who have had perforce to remain chained to the mill and to pursue their daily task under conditions which are, to say the least, irksome. Yet even to them life under exposure to well-nigh tropical conditions would have been endurable had they only been able to change their habits with their environment and temporarily to transfer to the temperate regions the manners and customs of the denizen of the tropics. Few, however, can do this—many because of the lack of enterprise or of the dread of making any change in routine. It is partly, if not mainly, in consequence of this inability to adaptation to circumstances that every "heat wave" is sure to be marked by cases of sickness directly due to the heat itself. Nor are such cases all of the category of heat-stroke or heat-apoplexy of which there have been not a few during the past weeks. Sometimes the influence of heat has been exerted on the brain in such a way as to produce definite functional derangement and undoubted insanity. It would seem, indeed, as if the higher cerebral functions are especially prone to be affected by extremes of temperature. We imply this when we say that cold benumbs and heat exhausts the faculties. Intellectual labour of any kind is toilsome under extreme climatic conditions, and much of the differences in racial characteristics, both physical and mental, may be explained by the nature of the climate under which life is carried on. That there is evidence of the direct action of external heat upon the production of insanity is manifest from the comparative frequency of a history of previous sunstroke amongst the insane in contrast with the prevalence of sunstroke in the community at large. No doubt the "sunstroke" is only one factor towards the ultimate result, but it is equally certain that often everyone of the antecedents may co-exist without the sequel of insanity. Yet it is probable that many of those who do become insane after experiencing a sunstroke have become so in consequence of some pre-existing mental instability.

But does this explanation hold in such cases where the mental derangement follows immediately upon the heat-stroke? Of this there have been several cases recorded during the past few weeks—cases of acute mania, of melancholia, of suicide—of which no other explanation has been forthcoming. The scientific investigation of such cases has yet to be made, but the fact remains that exposure to unaccustomed heat may upset the nervous balance so that what to one is merely a sense of exhaustion or an irritability of temper is to another pronounced insanity. Curiously enough, it is not amongst those whose nervous organisations are the most finely balanced that these graver effects are most often shown, so that it is clear the subject requires far more attention than has hitherto been bestowed upon it. It comes to this, that in a temperate climate like ours the subjection for even a few days to a temperature of 90° F. in the shade is trying to all and dangerous to some. It might be better borne and its dangers minimised were it possible for the community to change their habits and their clothing concomitantly with the rising thermometer. But duties have to be performed, the imperious behests of fashion have to be obeyed, the daily routine of work has to be gone through, and the staple articles of food consumed in order that the machinery of our civilisation shall continue to do its work without fail. Hence it happens that more victims have to be sacrificed to the sun-god than he would be able to claim were more rational modes of living in vogue. Still, in spite of all there are few who do not gladly suffer the inconveniences and discomforts of a temporary tropical existence under conditions adapted to the temperate zone in return for the gain to health which must accrue from a high average of the number of hours of sunshine.

WHILST the physics of the senses of sight and hearing have attracted the attention of many philosophers and have been elucidated by numerous ingeniously contrived experiments those of taste and smell have been comparatively neglected. The very phraseology by which we are accustomed to describe the impressions which we receive through these portals of sense is indefinite, obscure, and uncertain. There are, indeed, several terms which would call up corresponding sensations in regard to the sense of taste, such as sweet, acid, alkaline, oily and mawkish, but our vocabulary is small in calling up sensations of smell and is almost limited to such general terms as pleasant and unpleasant, pungent and aromatic, fœtid and fresh, which have none of the definiteness or precision that the terms blue or green possess in ordinary conversation or that the expression treble G gives to the musician. Our memory of odours is in general very imperfect. Attempts have been

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made, but not very successfully, to establish a gamut of odours, and it is difficult in many instances to dissociate the senses of smell and taste. CUVIER observed that these two senses are nearly allied to common sensation. In those animals which are only capable of breathing through the nose, like the horse, the extent of surface ministering to the sense of smell is immense as compared with that of man. A large area of the nasal cavities is covered with mucous membrane which is thick in both, studded with numerous acinous glands, covered with stratified ciliated epithelium, supplied by the fifth pair of nerves, and is probably dedicated to other functions than those of smell, as for example, the warming and moistening of the air,' and its purification from dust before entry into the lungs, and a large portion also of the upper region seems merely to act as a periosteum to the frontal and ethmoidal cells, and to possess but a small share of special sensibility. The turbinal bone, on the other hand, the volutes of the ethmoid, and a considerable area of the septum between the nostrils, is covered with a thin yellowish-red membrane, the epithelium of which is unprovided with cilia, to which the branches of the olfactory nerves are distributed, the ultimate fibrils being traceable to the very surface, covered only by a thin layer of fluid and being well placed therefore for the perception of delicate impressions. Common observation shows that whilst man is capable of perceiving a great variety of odours many animals surpass him in the acuteness of their perceptions. The nature of these emanations probably varies considerably. Water, which has no smell to man, can be perceived by some animals at considerable distances. Sexual odours appear to be peculiarly expansive. SCARPA found that if he plunged his hand into water after handling a female toad the males were attracted to him. Insects, and especially those of nocturnal habits, are guided to each other by their emanations. Judging from the actions of animals, the odours of plants are only in rare instances, as in the case of valerian by the cat, perceived or at least enjoyed by the carnivora. Putrid meat is devoured by the vulture and jackal though it is not touched by many flesh-eating animals that feed on living prey, whilst it produces a kind of convulsion in many horses and madness in the bull.

The physics of smell was made the subject of an address delivered to the British Association at Bristol by Professor W. E. AYRTON, F.R.S., who has devoted much time to the subject and has performed some original experiments. The points to which Professor AYRTON especially directed his inquiries were the smell of metals, the rapidity with which odours diffuse, and the capability of odours to traverse thin films of glass. In regard to the first point it seems that contrary to what might be expected a large number of the metals, as aluminium, copper, silver, gold, iron, steel, tin, and zinc, and of the alloys brass, bronze, German silver, and phosphor-bronze, have no smell, providing they are carefully cleaned, nor is any smell perceptible when they are rubbed over with dilute nitric acid, vinegar, ammonia, soda, or a solution of sugar, except the odour of these several substances. Breathing on brass, copper, iron, steel, or zinc, which has been rendered practically odourless by cleaning produces a very distinct smell which Professor AYRTON is inclined to believe is due, when iron or steel is handled, to the hydrocarbons developed by this operation and not to the detachment of particles of the metal.

In regard to the diffusion of odours it would at first sight appear that odours diffuse with great rapidity. If the females of certain moths be exposed in an open space enclosed in a muslin bag the males will soon be seen to congregate around them. Deer, dogs, and other animals, will recognise their enemies or their prey at considerable distances, but Professor AYRTON, although beginning his experiments with this preconceived idea, and using at first tubes 15 ft. or 20 ft. long, soon found that if draughts were carefully avoided odours diffused with extreme slowness and that tubes of a few inches in length were quite sufficient to enable him to determine the rate of diffusion, from which the conclusion may be drawn that under ordinary circumstances the movement of the air is the principal agent in the diffusion of odours. The long retention of certain odours by glass vessels led Professor AYRTON to try whether an actual transpiration through glass could be detected by the nose, and for this purpose various scents were enclosed in extremely thin glass globes, but the results were negative. The subject which Professor AYRTON brought before the British Association is one of considerable interest, and he deserves the thanks of biologists for suggesting a fresh line of inquiry.

JUST a year ago there began the epidemic at Maidstone in which, during four months, 1818 persons out of a population of about 34,000 were attacked by typhoid fever and some 130 deaths ensued. It will be remembered that the Local Government Board hit upon a novel, and we hardly think a satisfactory, method of investigating this outbreak by means of a formal public inquiry held after the epidemic was over. With the enviable leisureliness which characterises the appearance of official publications they have now issued the report of the three inspectors to whom this inquiry was entrusted. From this report, which we notice in another column, we find that the conclusions drawn by the inspectors are in general accord with the views which at the time of the outbreak were formulated by Mr. M. A. ADAMS, the medical officer of health of Maidstone, as well as with the facts set out in the series of articles by our Special Commissioner published in THE LANCET last October.

The epidemic, say the inspectors, "was caused by the pollution of the water supplied by the Maidstone Company from their Farleigh sources." To a material, but nevertheless to a wholly subsidiary extent, the epidemic once set going was maintained by a multiplicity of insanitary conditions in the town itself—defective drainage, accumulations of excreta in water-closets without means of flushing, and the like. The evidence which connected this outbreak with water was irresistible. The map of Maidstone could be divided into three areas of peculiar shape, each having an independent water-supply obtained respectively from the springs of Cossington, Boarley, and Farleigh. During the first six weeks of the outbreak

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some 1560 persons in the borough were attacked. If anyone unacquainted with the conditions of the Maidstone water service had set himself to mark on a map the streets in which these people lived he would have produced an almost complete plan of the distribution of the Farleigh service. This peculiar incidence, by far the most important factor in the etiology of the outbreak, was, apart from water, incapable of adequate explanation. It is true that the water company were fortunate in having in Professor CORFIELD a high authority for asserting that notwithstanding the distribution of the cases faulty sewers and house drains might have been sufficient to cause the epidemic. But the suddenness of the outbreak; facts such as the heavy incidence of fever in Barming Asylum, with drains practically without defects, but supplied with water from Farleigh; the special selection by the fever of those (unsewered) parts of the rural district which received Farleigh water, as well as many other matters which the inspectors record, all suffice to show that a theory of infection by sewer emanations could not account for the principal phenomena of the epidemic. In the matter of bacteriological evidence, again, the water company were able to claim some divergence of expert opinion. But the circumstance that Dr. SIMS WOODHEAD, the bacteriologist called in by the company, failed to find bacterial evidence of fæcal pollution in any part of the Farleigh supply loses most of its significance when we learn that all the samples which he examined were collected nine weeks or more after the outburst in the middle of September. And, on the other hand, while the epidemic was at its height, Dr. J. W. WASHBOURN had found unmistakeable bacterial evidence of pollution in certain of the springs, while as late as Oct. 19th Dr. H. E. DURHAM found the bacillus coli in samples which he examined. Moreover, in the circumstances the question whether antecedently to the outbreak there had been dangerous pollution of Farleigh supplies was not one which needed to be decided upon bacteriological evidence. On this point the history of the source of the Farleigh springs, together with the evidence of trustworthy eye-witnesses, which "showed clearly that the neighbourhood of some of the springs was immediately before the outbreak plentifully covered with human excrement," was of itself conclusive. By whose means and at what point or points the specific infection was introduced, the inspectors have, however, been unable to pronounce.

The experience which Maidstone has so dearly bought has, we may hope, already brought some share of good as well as of evil. Throughout the kingdom it has compelled attention to the inadequacy of control which both central and local public health authorities have over water companies and to the pressing need that a proper control should be exercised. For the present state of things Parliament has been largely to blame and Ministers will take heavy responsibility if they delay to find adequate remedy. The outbreak has brought home, as nothing but a big calamity can, the necessity of constant vigilance on the part of all purveyors of water, whether they be local authorities or companies, to safeguard the purity of their supplies. No water authority should rest content with the knowledge that its waterworks are well designed and that at the time of their establishment they furnished water of demonstrated purity. The question must constantly be asked whether adequate steps are being taken to keep this water day by day up to its proper standard of wholesomeness. Only in very exceptional cases can a water authority safely dispense with frequent and systematic skilled inspection of their gathering-ground together with bacteriological and chemical examination, also frequent and systematic, of each contributory source of supply. It is to be feared that in the case of too many of our public water-supplies such inspections and examinations are carried out in a perfunctory fashion, while there are still other supplies in which—notwithstanding the experience of Maidstone—no attempt is made to take these necessary precautions.

Annotations.

"Ne quid nimis."

THE LATE EMPRESS OF AUSTRIA.

IT would be hard to conceive a more impressive spectacle than that which confronts Europe and the civilised world at the present time in the person of the nobly pathetic figure of the Emperor of Austria crowned with sorrows superimposed one upon the other. Upon few princes, indeed, has the irony of fate borne so hardly as upon this dignified and benevolent Emperor. It is a pitiful history, turn which way we will. He succeeded to a kingdom shaken by civil war, but by force of character, combined with just and conciliatory rule, he has lived to convert his once bitter and traditional enemies into his warmest friends and admirers. In no part of his composite empire is Francis Joseph so beloved as in Hungary. He has seen the kingdom it was his unhappy fortune to inherit torn and mutilated at Magenta by the victorious armies of France and Sardinia and on the plains of Bohemia by the Prussians at Königgrätz. Turning to the private and domestic side of his character it is benevolent and blameless. The life of the Emperor, who is universally recognised as a good and virtuous man, with a conscience void of offence to everyone, has been full of tragedy—sorrow succeeding sorrow and disappointment following disappointment. But, like the hero he is, he has borne himself throughout with real dignity. He has never allowed his misfortunes to embitter him or render him cynical; on the contrary, they have widened his sympathy with suffering and enlarged his charity. And yet, to quote his pathetic exclamation on hearing the terrible news of his wife's assassination, it seems as if no sorrow in this world is to be spared him. It must be remembered that his marriage with the Empress was a love match; that the Emperor was passionately in love with the young, beautiful and romantic girl who has throughout been his affectionate support for forty-four years and who was an altogether charming, brave and accomplished woman of whom any prince might have been proud. Well might the bereaved Emperor say that it passed his comprehension how a man could lift a finger against his wife who certainly never injured anyone in her life. The womanly graces, the charities, the pitifulness and heroism making up the Empress's life and character were well known. It is, indeed, a lamentable illustration of the irony of fate that at the very time when his subjects are preparing to celebrate the Emperor's jubilee this calamity should have fallen upon him. The Emperor's devotion to his sense of duty has hitherto carried him through all his trials and those

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who know him best feel assured that it will not desert him now in the hour of his present affliction but that he will maintain the same fortitude he has always displayed. It is some solace to feel that the death of the unfortunate Empress was so comparatively painless that Her Majesty evidently did not realise the injury she had received and that it was so speedily followed by unconsciousness. Of one thing the Emperor must feel assured—namely, that all his subjects share his sorrow and that he has not only their heartfelt condolence, sympathy and respect, but those also of every right-thinking man and woman outside the confines of his empire. As regards the perpetrators of such crimes they are simply outside the pale of humanity and they require to be treated with exactly the same consideration that we should extend to dangerous wild beasts or venomous reptiles, and some concerted international action is required to deal with these cruel pests. The post-mortem examination showed that the heart had been completely penetrated; and some surprise has been felt that so grave an injury to a vital organ can be inflicted without causing immediate death. But unless the cardiac ganglia are directly involved such an event seldom happens, provided that, as in this case, the wound of the heart wall is small, for in medical literature there will be found records of survival of considerable duration with retention of power such as in this case enabled the Empress to walk to the steamer and to be herself unconscious of the gravity of the lethal blow. We publish elsewhere the details of a case of wound of the heart which was successfully sutured eight hours after the injury had been inflicted.

THE LABELLING OF POISONS.

AN INQUEST of considerable importance to medical men and druggists was held by Mr. Cox, coroner for the Exmouth district, on August 15th. The coroner made use of strong expressions, as will be seen below, but it is a matter of regret that he had not first consulted the Pharmacy Acts, when he would have seen that whatever his private feelings may have been he was quite wrong in his law. The inquest was on the body of a child, aged three years, who drank some of the contents of a bottle of eye wash which had been left on a chest of drawers. The wash had been obtained from a druggist (Mr. Bickford) through the dispensary according to a prescription given by Mr. Martyn. The mother had been using the eye wash for some months, but had not been told whether it was dangerous or not. The coroner said that the bottle had a red label bearing the words, "Not to be taken," and another label with the following: "Exmouth Dispensary. The drops to be used three times a day. Lily Bastin. J. T. Bickford, dispenser by appointment, Strand Pharmacy, Exmouth." The lotion was made up from cocaine, atropine, and water. The child when seen by Dr. J. W. Hodgson shortly after swallowing the lotion was suffering from the symptoms of atropine poisoning and died the following day. It is not with these symptoms that we are concerned, however, but with the following conversation as reported in a local paper (*Devon Gazette*, August 16th). Mr. J. T. Bickford stated that he supplied the preparation in the bottle produced. "The Coroner: Are you aware what the ingredients are? Yes.—Are you aware that some of them are poisons and that they are incorporated by the Pharmacy Act in Schedule A as such? Yes.—Are you further aware that it is your business to be aware that any preparation of atropine has to be labelled 'Poison'? No; I am not aware of that with respect to a medical practitioner's prescription. I am aware that if it is sold over the counter it is required to be labelled.—The Coroner: This bottle ought by law—and you have broken the law—to have been labelled 'Poison,' and it is for the protection of the public that that law was made. Did you label it? Yes.—Then you've broken the law and it is a very serious matter for you; you have neglected your duty and this child has died. The regulations laid down in this Act are made for the protection of the public and it is my duty to see that they are carried out.—Witness: Will you read the Act, please? The Coroner: Yes, most certainly.—That part of the Act relating to the subject was read and Mr. Bickford contended that he had complied with the provisions.—The Coroner: I don't know what view the jury will take of this case, but you lay yourself open to a charge of manslaughter and I leave it with them as to the verdict. They can return a verdict of manslaughter if they think it a case of sufficient neglect." Assuming the above to be a correct report of what took place such remarks falling from the lips of an officer of the law are very serious. Turning to the Act we find in Section 17 the following words: "It shall be unlawful to sell any poison, either by wholesale or by retail, unless the box, bottle, vessel, wrapper, or cover in which such poison is contained be distinctly labelled with the name of the article and the word poison, and with the name and address of the seller of the poison." Certain exceptions are then made, such as in the case of a "legally qualified apothecary." We presume it was the above extract which was read in the open court. It would have been better, however, for everybody concerned if the following had also been read: "An Act to amend the Pharmacy Act, 1868, 32 and 33 Vict., cap. 117," "3. Nothing contained in section 17 of the said recited Act shall apply to any medicine supplied by a legally qualified medical practitioner to his patient or dispensed by any person registered under the said Act, provided such medicine be distinctly labelled with the name and address of the seller, and the ingredients thereof be entered with the name of the person to whom it is sold or delivered in a book to be kept by the seller for that purpose." As nothing is reported to the contrary, we may presume that Mr. Bickford followed the usual custom of copying the prescription before sending out the bottle; consequently, by placing the label "Not to be taken" on the bottle, Mr. Bickford took more precautions than the law required and certainly did not merit the reproof administered by the coroner. We hear that the latter has offered an apology for his error. We trust that such is the case and that the withdrawal of the censure will be as widely made known as the report of the inquest. We cannot leave the subject without drawing attention to the verdict of the jury: 'The jury, after a short deliberation, returned a verdict of 'Accidental death,' adding a rider that the cause of death was due to the child drinking part of the poisonous contents of a bottle of eye wash." The foreman (Mr. J. Dyer) also said it was the unanimous wish of the jury that he should say that all druggists in Exmouth, when supplying any of the poisons or preparations in which they were contained mentioned in the Act should label the bottle "Poison." The Coroner (addressing Mr. Bickford): "You have heard the expression of the jury. I entirely agree with it and I hope you will adhere strictly to what has been said and that you will label all dangerous bottles 'Poison.'" A juryman: "I don't think that it is the opinion of the whole jury. It is not mine. I think it is only the foreman's."

DR. NEUFELD.

IT is perhaps not generally known that Dr. Neufeld, who has just been delivered from captivity in Omdurman by the Sirdar's army, is a medical man. *The Times* of September 13th, quotes the following account of his career on the authority of the *Vossische Zeitung*:—

"Karl Neufeld studied medicine at Leipsic University and went early in life to Egypt, following first his profession as a medical man and subsequently as a merchant. At the

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beginning of the eighties he had a practice at Keneh, Upper Egypt, where several Germans and also natives of his own home saw him. Subsequently he set up as a merchant at Assouan. After the fall of Khartoum and the firm establishment of the Mahdi's power at Omdurman Neufeld seems to have formed a scheme for opening up commercial intercourse with the closed Soudan, for he equipped a caravan with which he proceeded to Berber, which was then in the hands of Osman Digna. The latter sent the German, whom he looked upon as a dangerous spy, to the Khalifa Abdullahi. This was in 1886. Neufeld was condemned to death and was taken to the place of execution. He behaved there so courageously, asking to be executed like a Mahomedan (instead of suffering death by hanging), that the Khalifa was struck and respited him under the gallows. He was taken to the general prison, with heavy chains on his hands and feet, and treated altogether in a most abominable manner. He was kept alive by the women, who took pity on him and fed him, as they had done before him to Slatin. Then an endeavour was made to utilise his knowledge. He knew nothing about founding cannon, but he managed to manufacture powder, and he was also ordered to invent a machine for coining money. Owing to the escape of Father Ohrwalder and, later, of Slatin Pasha, his position became worse. He was again manacled and threatened with having his arms and feet hacked off if he should attempt to escape. There were many efforts to liberate him. The Austrian Catholic Mission, induced by Father Ohrwalder, Slatin Pasha, the British Government, the German, and more especially the Austrian, representatives at Cairo, all endeavoured to further the escape of Neufeld. He frequently received money, but he refused to escape as he would not accept liberty without his wife—an Abyssinian slave presented to him by the Khalifa—and the two children whom she had borne him. The latter would have been exposed to fearful tortures, and thus Neufeld chose to remain a prisoner. He was active subsequently also as an artist, and as he could draw well he was ordered to decorate the mausoleum of the Mahdi, and this pleased the women of the Khalifa so much that they petitioned the latter for his liberation. It is also said that he has written Arabic books and illustrated them. The latter part of his twelve years' detention appears to have been less onerous, as after the escape of Slatin he had to be interpreter to the Khalifa and translator of European newspapers which the ruler of the Soudan received regularly. It is to the credit of the Khalifa Abdullahi that not one of the Christian prisoners received a hurt on the approach of the Anglo-Egyptian forces. It is expected that a narrative of his experiences in the Soudan will be shortly published by Dr. Neufeld."

THE DERBY CORONER AND THE MEDICAL ASSOCIATION OFFICER.

AT an adjourned inquest on the death of William Marshall, aged fifty-one years, a laundry porter of Derby, held by the borough coroner, Mr. John Close, some interesting points were raised, though they were unfortunately obscured by the altercations between the coroner and Mr. A. B. Carey Orchard, L.R.C.P. & S. Edin., one of three medical officers of the Derby Friendly Societies' Medical Association. The facts of the case were very simple and were admitted by Mr. Orchard. They were to this effect: Marshall was found dead in bed on August 19th. He was a member of the Medical Association and had used a prescription written by Mr. Orchard—which was put in evidence—at various times between May 14th and July 2nd. On the prescription he was entitled to three bottles of medicine. When the death occurred Mr. Orchard was away and declined to give a certificate. An inquest was necessitated by this refusal. But the warmth of the altercation began over it and by the other facts candidly admitted and confidently defended by Mr. Orchard. The principal other fact was that Mr. Orchard, the author of the prescription, had no remembrance of having ever seen the patient and thought it quite likely that he had not seen him. He said that on that very day he had done the same thing five or six times. He explained that working men were unwilling to leave their work and often sent a relative to describe the symptoms and get medicine for them. The prescription in question had been written apparently for a supposed slight torpidity of the liver. Another practitioner, Dr. Laurie, testified that his *locum tenent* had seen the deceased and had said that the death was due to heart disease. The report does not show why this gentleman did not give the certificate. Delay of burial and an inquest resulted, at any rate, from Mr. Orchard's refusal to give one. Up to this time our readers will not quite see how any warmth of discussion could arise between two learned gentlemen—Mr. Orchard and the coroner. But it did. The rise of temperature began by Mr. Orchard's saying that the coroner had once abused him for giving a certificate for a patient whom he had attended for eight weeks. It rose as the coroner described the system of the association as one which would allow a patient to be prescribed for for six weeks without being seen by a medical officer, and it culminated when the coroner refused to withdraw an expression of his opinion that the case was "an abominable one," and Mr. Orchard said that he (the coroner) was not a gentleman. He had to withdraw the statement, the coroner having ordered a warrant for commitment to be sent for. It is to be regretted that the facts could not have been temperately discussed, as they really are of interest to the public and all practitioners, and, as we have said, were really very simple. We entirely approve of Mr. Orchard's refusal to give a certificate for a case which he had probably never seen and certainly had not seen for six weeks. Nor can we say that it is absolutely wrong to prescribe for a patient without seeing him. In this work-a-day world it is sometimes inevitable in every class of society and especially in the case of working men. But still some facts of an unsatisfactory nature remain which it was worth an inquest to bring out. Here was a member of a friendly societies' medical association ill for three months and eventually dying without seeing one of its medical officers. We do not say or think that it was Mr. Orchard's fault, but may it not have been the fault of a system which throws on three men an impossible amount of work, and because the medical association system, as its critics say, is only another specimen of that kind of medical practice in which work is done wholesale for crowds and in which the individual patient suffers and perhaps dies? We are passing no partial judgment. The same is true of the out-patient system and even the old club system. And very impartial judgment is needed to correct the evil.

THE DANGERS OF THE "DRY-CLEANING PROCESS."

THE extreme care with which easily inflammable liquids should be handled was exemplified some time ago in the case of a paraffin hair-wash. This unfortunate occurrence, which resulted in the death of a lady from shock and burns, would appear to have been due to the ignition of benzine by the production by friction of an electric spark. It is well known that when the air is particularly dry the production of an electric spark, say by stroking the hair or by rubbing flannel, is a very simple matter. Under the very dry conditions of the atmosphere there is a strong tendency for opposite electrical conditions to exist on the slightest provocation. This probably accounts for a somewhat remarkable accident which occurred in a "dry-cleaning room" at Ashton. Some workmen were engaged in cleaning by the dry process certain garments, such as pants and vests. During the rinsing process a flash suddenly occurred in the "rinse kettle." "It was a bright flash like lightning. Then everything became one mass of flame, the spirit, garments, and everything." The fire extended and one man unfortunately lost

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his life. The witnesses were one and all positive that the flame had its origin in the "rinse kettle" and every precaution was taken to exclude any possibility of ignition from naked flames or from lighted tobacco pipes. The igniting cause was probably, therefore, an electrical phenomenon and it only remains to suggest that when the weather is remarkably dry the air in dry-cleaning workshops should be kept moist by suitable means and extra care should be taken to avoid friction in the cleaning process.

A FLOATING HOSPITAL SHIP.

THE poor children of New York are during the summer months in a much more pitiable plight than those of London, or probably than those of any large town of the civilised world. The reasons for this state of things in New York are, firstly, because that section of it occupied by the lower classes and termed the tenement district is perhaps the most overcrowded of any plot of a like area in either the Old or New World. Here may be found massed together peoples of all nationalities—Italians, Germans, Russians, Danes, Swedes, Irish, and negroes—existing amidst inconceivably bad insanitary surroundings. The second reason is that there is, owing to the lack of space—New York being compressed within narrow limits by water on both sides—a great need of parks and playgrounds, and the third reason is that the heat during a portion of the summer is excessively stifling and oppressive. Until quite recent times too little has been done by public or private charity and nothing whatever by the municipal authorities towards bettering the conditions of life of the poorer classes in New York. It may be well understood that under these circumstances, while the lot of the adult members of the "submerged tenth" is hard to bear, the infants and young children suffer terribly; indeed, as might be expected, the infantile mortality is extremely high. One of the oldest of the New York charitable associations—St. John's Guild—resolved some twenty years ago to try the experiment of a floating hospital ship as a means of relieving and invigorating sick and weary infants, children, and their mothers during the hot months. Accordingly a boat suitable for the purpose was bought and in 1875 her first trip was made, since which time more than 800,000 children and their mothers have been carried on the Guild's great life preserver. The boat itself is a large barge about 300 ft. in length and having two decks. On the lower deck aft are two wards containing 15 cots and a bed in case some of the children should be too ill to sit outside. A medical man is carried aboard and attends to and gives medicine to any of the little ones needing his medical or surgical care. Forward on the lower deck are situated the commodious bath-rooms, supplied with hot and cold tub baths, shower baths, &c., under the supervision of a head nurse and three assistants. Bathing is made an especial feature of the hospital ship, and taking into consideration the woful lack of bathing facilities in the New York tenement houses the luxury of a good wash in hot water is fully appreciated by mothers both for themselves and their children. The remark, too, need hardly be made that as a sanitary measure and in certain affections the beneficial effects of a sea-water bath is of great value. The upper deck, which is covered in and well-sheltered from sun and wind, has ample sitting accommodation in the centre, but is unobstructed at the sides, thus providing a fine promenade. This upper deck is where the motley crowd of children and women spend their day inhaling the health-giving sea breezes and enjoying a short respite from their sordid existence in their crowded insanitary homes. The catering on the ship is on a generous scale, the infants and small children are given pasteurised or sterilised milk at frequent intervals, while those who are old enough to enjoy a good meal are provided with one in the middle of the day. The dining-room and kitchens are down below. The dining-room will accommodate 350 persons. The food consists of excellent meat stew and bread with milk as a beverage. The officers of the ship comprise superintendent, captain, physician, two matrons, and about twenty nurses and assistants. The total number of women carried in 1896 was 16,934, children 29,370. During the same season 1735 patients received actual treatment in the hospital. Of these 610 received special treatment in the two wards and 1125 on the decks of the hospital. These figures do not include the number of those patients who only received medical and sanitary instruction and advice. It should be mentioned that the ship makes six trips a week, starting at nine in the morning and returning at half-past five, she is able to accommodate comfortably 1600 patients, and in the hot weather is always quite full. Great care is taken by the physician, who examines everyone before embarkation, to exclude all those suffering from infectious complaints, and as the applicants for the trip include many nationalities it is necessary for the medical man to have a good knowledge of modern languages. St. John's Guild has also a hospital for children in New York and a seaside one at Staten Island, distant about eight miles from the city and to this the patients are conveyed by the hospital ship. The seaside hospital and hospital ship receive patients from June to September. Admission to both the ship and land hospitals is granted by means of tickets, which must be signed by a qualified medical man. A ticket for the ship is usually available for the day trip only, but weekly ones are also issued, while the seaside hospital tickets are good for two weeks or longer, at the discretion of the medical attendant. No infants are received without their mothers. It is interesting to note that the resident physician at the seaside hospital is a lady. The beneficial effects of the trips on the hospital ship has now been amply proved, and especially in the case of infants. In the continued hot weather of the present summer the carrying limit of 1600 has been many times reached. The experiment has been so decided a success in New York that it might be worth a trial in London.

DIPHTHERIA IN PUBLIC ELEMENTARY SCHOOLS.

FOR some years it has been fully recognised that the attendance of children at public elementary schools has been the main factor in the spread of diphtheria epidemics. As Sir Richard Thorne has pointed out in his article on diphtheria in Dr. Clifford Allbutt's "System of Medicine." "in day-schools, and notably in our elementary schools, early attacks of diphtheria have hitherto been apt to be overlooked; and it has not been until the attendance at schools began to diminish by reason of sickness that the matter received attention." No doubt many epidemics have been fostered and intensified in this manner. Even if the disease has been recognised and the school closed the reopening has often led to a recrudescence. In some instances this may have been due to insufficient disinfection of the buildings or to faulty drainage, but provided that every care and skill has been exercised in these matters there in another danger, which has only been comparatively recently recognised—namely, that the specific organism of the disease may exist in the fauces in a state of vitality for several weeks at least after all disappearance of local indications of any throat affection. Therefore when the utmost procurable certainty is required that any one case is no longer infectious, bacteriological examination of scrapings from the fauces is necessary. Acording to the report of Mr. Windle, medical officer for the district of Southall, a rapidly growing urban district of West Middlesex, diphtheria has been present in an endemic form for upwards of two years in that district and he suspected that the public elementary

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schools were largely responsible for the spread of the disease. The local council and its officers had adopted every means to stay the spread of the malady; the sewerage system had been improved, disinfectants had been freely distributed, the patients had been duly isolated, and every precaution as regards cleanliness and sanitation had been adopted. Mr. Windle, however, pointed out to the board that diphtheria often occurs in so slight a form that its recognition was a matter of difficulty, and thus many cases considered by the parents of the children to be simply "sore-throats" escaped notification and were thus sources of danger to other children. He therefore suggested a very large but excellent scheme—excellent if it could only be carried out everywhere—namely, a full bi-weekly examination of all the children in the board schools. The recommendation was approved and Mr. Windle and Dr. G. B. Macdonald were appointed to carry out the former's suggestion. The method adopted was to examine the tonsils for the pathogenic bacteria, the hands for peeling, the nose and ears for traces of discharge, and the eyes for ophthalmia. In all suspicious cases the children were sent home and when the existence of infectious disease was established the children were taken to the isolation hospital. This experiment is to be tried till the end of the year. We congratulate Mr. Windle on thus acting on the courage of his convictions, and no doubt if such a thorough investigation could everywhere be carried out epidemics of diphtheria would rapidly become things of the past, but we fear the idea is Utopian. In some of the metropolitan districts many thousands of children are attending the schools, cases of diphtheria are constantly occurring as the records of the large general hospitals show, and it would be almost impossible for the medical officers attached to these districts to carry out Mr. Windle's proposal. Much has been done by improved hygienic measures to minimise the spread of diphtheria; the antitoxin treatment has lowered the mortality to an enormous extent, and the prevention of recurrences now lies mainly with the medical officers of hospitals and private practitioners, upon whom it is incumbent to make sure (preferably by bacteriological observations) that the patients' throats no longer harbour the pathogenic bacilli. If this were done as a matter of routine no doubt recrudescences would be far less common than they are at present.

THE ALBUMIN OF HÆMOGLOBIN.

HÆMOGLOBIN contains both colouring matter and albuminous compounds. To the former a considerable amount of attention has been paid, to the latter Dr. F. N. Schulz devotes an article which appears in the *Zeitschrift für Physiologischen Chemie* (Band xxiv., p. 449). Dr. Schulz names the albumin in question globin, and the method he has adopted to obtain it consists in adding a very small quantity of dilute hydrochloric acid to a watery solution of hæmoglobin derived from the blood of the horse. The solution becomes brown but remains clear, and one-fifth of its volume of alcohol is added and the colouring matter taken up by agitation with ether; the watery alcoholic solution is neutralised with ammonia, the precipitate is filtered and washed and again dissolved in water to which a few drops of acetic acid have been added. The superfluous acetic acid is removed by dialysis. The globin thus obtained, which forms about 2 per cent. of the solution, differs in its behaviour from albumin, for, in the first place, by extremely cautious addition of ammonia, it is precipitated, but is redissolved in an excess of the alkali. If the solution has been previously acidified with hydrochloric acid the addition of ammonia still occasions a precipitate, but it is no longer redissolved in an excess. Globin quickly undergoes digestion with pepsin and hydrochloric acid and in the course of four hours is converted into true peptone. When subjected to the action of trypsin it yields leucin but no tyrosin. The percentage composition of globin is C 54·97, H 7·20, N 16·89, S 0·42. The ashes contain oxide of iron, but this must be regarded as an impurity since it is probably derived from the iron of the hæmatin. Inasmuch as the globin is obtained from hæmoglobin through the agency of weak hydrochloric acid it must be regarded as pre-existing perhaps in the form of a salt or ether-like compound. On the breaking up of hæmoglobin a third body is also obtained, which, however, has not yet been isolated. In regard to the chemical nature and status of globin it would appear that in its essential characteristics it resembles histon, for it is precipitated by ammonia from its solution in hydrochloric acid, and the precipitate is insoluble in an excess of ammonia. Like histon it is precipitated by strong nitric acid in the cold, but not when heated, and, like histon, it coagulates on boiling under certain conditions, though it differs from other true products of coagulation in the remarkable facility with which it dissolves in acids. Globin does not, unlike the nucleo-histon of Lilienfeld, inhibit the coagulation of the blood. When injected into a vein it appears in the urine. Dr. Schulz suggests that many cases of albuminuria depend upon the excretion or elimination of globin. The hæmoglobin of the dog gave a globin which in all respects resembles that of the horse; on the other hand, the hæmoglobin of the blood of the goose behaves differently.

EXPERIMENTAL QUININE AMBLYOPIA.

DR. SCHWEINITZ, in an article contributed to the *Ophthalmic Record*,[1] remarks that quinine amblyopia was recognised as long ago as 1829, but that the study of complete cases of quinine amaurosis began in America in 1879, and so many cases have now been reported that from the clinical standpoint quinine blindness is one of the best-studied of the toxic amblyopias. The researches made by himself, by Dr. Brunner, and others in animals and man show that the lesion in quinine blindness is peripheral, that primarily there is an ischæmia of the retinal and optic nerve vessels caused by their intense contraction, and that if the blindness continue for a sufficient length of time atrophy of the optic nerve and optic tract associated with vascular changes indicating vasculitis and endovasculitis ensued, followed ultimately by obliteration of the lumen of the vessels. Dr. Schweinitz, in his experiments upon dogs, found that from the first to the fourth week there was pallor of the discs and great contraction of the vessels during life, whilst examination of the optic nerve with the microscope revealed imperfect differentiation of the fibrous framework and spreading apart of the individual nerve fibrils which were varicose and beginning to be atrophic. At this time there were no changes in the vessels. Later, and about from two to three months after the onset of the blindness, the discs were white and the vessels were almost entirely obliterated when examined with the ophthalmoscope, and under the microscope there was practically complete atrophy of the optic nerve fibres, thickening and collapse of the nutrient arteries of the optic nerve, and occasionally (in two specimens) obstruction of the central vessel of the nerve with a partially organised thrombosis. The atrophy extended throughout the optic nerve, chiasma, and tracts. Dr. Schweinitz proceeds to give a report of a paper by Dr. Ward Holden which was read at a meeting of the American Ophthalmological Society, in which the details are given of the examination of the brain and spinal cord. The optic nerves and eyes of numerous dogs were examined which had been killed at periods ranging from two hours to seven weeks after the first injection of quinine. It was found that as early as the third day after several toxic

[1] Vol. vii., No. 8, August, 1898, p. 392.

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doses had been given some ganglion cells presented vacuolation, pallor, absence of chromophilic granules, and breaking down of the cell body, whilst analogous degenerative changes, such as the appearance of large globules of a myelin-like character, were observed in the nerve fibres. The number of cells and fibres so changed continued to increase and on the seventeenth day the first changes in the optic nerve were noticed, consisting in the breaking down of the medullary sheaths in numerous fibres. At about the end of six weeks the ganglion cell and the nerve fibre layers had almost entirely disappeared, leaving large cavities, and the myelin globules were no longer present. Many of the fibres of the optic nerve were broken down and the degeneration of the nerve could be traced up to its fibres in the external geniculate body and pulvinar. The researches of Dr. Holden therefore, whilst supporting the statements made by Dr. Schweinitz, Dr. Brunner and others, appear to demonstrate that in the first instance the effect of toxic doses of quinine is to cause spasm of the vessels, and as a result of the lessened but not obliterated blood-supply the less resistant elements of the inner layers, the ganglion cells, and nerve fibres break down, whilst the cells of the inner nuclear layer are not visibly affected. An ascending degeneration of the optic nerve fibres follows the retinal changes. The microscopical examination of the retina in other forms of toxic amblyopia might probably lead to revelations of a similar character to those in the tissue of the retina so ably described by Dr. Holden.

THE LANE MEDICAL LECTURES.

THE Lane Medical Lectures, founded in connexion with Cooper Medical College, San Francisco, were delivered this year by Dr. T. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, the subject selected being Diseases of the Heart. It is well known that this important branch of practical medicine is a favourite study with Dr. Allbutt and that he has done much to increase our knowledge of the pathology and treatment of these conditions. In his closing lecture he gave a review of the advancement of medicine during the nineteenth century, a fascinating page of recent history filled with the records of many workers whose labours have effected in almost all departments of medical science and practice such improvements as could not have been imagined a century ago. Dr. Levi Cooper Lane, the President of Cooper Medical College, informs us that Dr. Allbutt's audience were greatly impressed with his power of exposition and with his facility in drawing on his experience for instances to illustrate particular points. As our readers may recollect, the Lane Lectures were delivered in 1897 by Mr. Christopher Heath.

THE BRITISH ASSOCIATION.

THE 1898 meeting of the British Association for the Advancement of Science at Bristol will be remembered as an eventful one. To those who hold that these annual meetings are merely well-organised picnics the result must have been disappointing. The attendance was greater than usual and the interest shown in each of the sections was distinctly in advance of previous years. This can only be accounted for either by reason of the subjects being more than usually attractive or else because the public are acquiring a healthy desire for scientific knowledge. The authorities concerned in organising the meeting are to be warmly congratulated on its success, especially in view of the difficulties involved by the disastrous fire which completely destroyed Colston Hall. In spite of this deplorable occurrence there was not a single hitch in the management of the sections and meeting places. Perhaps the two great features of the meeting which will be most remembered are Sir William Crookes's remarkable Presidential Address and the story of M. De Rougemont's thrilling Robinson Crusoe-like adventures in Australia. There is much contention waging round the latter paper which promises to fill the correspondence columns of our daily newspapers for some time to come. The sectional proceedings practically closed on Monday. On Wednesday, at a meeting of the General Committee, with the President, Sir William Crookes, in the chair, it was decided to hold the next meeting at Dover, and a motion appointing Professor Michael Foster as President-elect was seconded and carried unanimously. A motion was also carried unanimously that the Archbishop of Canterbury, the Marquis of Salisbury, the Mayor of Dover, Lord Herschell, the General commanding the South-eastern district, Mr. Akers Douglas, the Dean of Canterbury, Sir Norman Lockyer, and Professor G. H. Darwin should be asked to accept the position of vice-presidents elect for the Dover meeting.

THE WRECKING OF TRAINS.

THE two recent dastardly attempts to wreck express trains on the Midland Railway, following so closely the remarkable disaster at Wellingborough, cannot be overlooked. The fact of a barrow sliding off the platform at Wellingborough on to the metals and wrecking the Manchester express, going at high speed, with loss of life and severe injuries to passengers, seems to have inspired some miscreant to attempt to bring about a similar awful result. An obstruction was found on the rails shortly after the Wellingborough accident, and close to the same spot, and again on another day a similar obstruction was found on the line at Bedford. A more wicked act than this cannot be conceived, and it is to be hoped that the cowardly and unprincipled perpetrator will be found. It is charitable to think that he is mad, but that does not reduce the necessity of employing every possible means to clap hands upon him. If it should be shown that the act was the deliberate plan of a person enjoying ordinary reason then nothing short of being hanged and quartered should be his lot. After all, it is dangerously simple to place an obstruction upon a railway line and the results may be appalling. Our great trunk lines, over which trains proceed at a great speed, run through dark and deserted places and nothing is easier than for a villainous person to place a "sleeper," "chair," or crowbar on the metals. Cannot something be done in the way of attaching a guard to the engine after the manner of an American "cow-catcher" which would at least prevent the obstruction from getting complicated with the wheels or machinery of the locomotive?

A PATHOLOGICAL PLANTAR REFLEX.

THE *Semaine Médicale*, July 27th, 1898, contains a paper by M. Babinski on a peculiar modification of the plantar reflex termed by him "the phenomenon of the toes," which he first described in 1896. In the normal plantar reflex, besides other movements, flexion of the toes on the metatarsus occurs. In some healthy individuals the toes remain, apparently at least, immobile, but they never execute movements of extension. In certain diseases, on the contrary, a movement of extension, especially of the great toe, takes place. This modification of the plantar reflex M. Babinski terms "the phenomenon of the toes." It may occur in lesser degrees—that is to say, the reflex may be partly physiological, partly pathological; there may be extension of the great toe or of the two first toes and flexion of the others, or stimulation of the external part of the sole may cause extension of the toes and stimulation of the internal part of the sole may cause flexion, or stimulation of any part of the sole may produce sometimes extension, sometimes flexion. This inversion of the normal plantar reflex is found in a

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variety of diseases: in hemiplegia from any organic disease of the brain (on the paralysed side), in paraplegia, in hemiparaplegia (on the paralysed side), in Friederich's disease, in diffuse meningo-encephalitis, in cerebro-spinal meningitis and in strychnine poisoning, in Jacksonian epilepsy (on the affected side immediately after a crisis). It occurs not only in old cases of hemiplegia with rigidity, but also immediately after the onset of hemiplegia with muscular flaccidity. Similarly in spinal cases it occurs in spastic paralyses from any cause and in recent paralyses from injury of the cord with flaccidity of the muscles and diminution or abolition of the tendon reflexes. On the other hand, the phenomenon was not found in hysteria, uncomplicated tabes, anterior poliomyelitis, or in two cases of section of the spinal cord. M. Babinski points out that the diverse affections in which it is found have this in common: they bring about some perturbation in the pyramidal system, to which he attributes the phenomenon. But it does not imply a grave affection; it may occur in cases of slight and curable paralysis and disappear with the latter. Conversely, the sign may be absent in cases where the pyramidal system is profoundly altered. It may prove valuable in distinguishing organic from hysterical hemiplegia or paraplegia. Also its presence in tabes would show affection of the pyramidal system which otherwise might remain unknown. In the new-born the phenomenon occurs normally. This confirms the theory of its relation to the pyramidal system, for at birth the latter is not developed.

CHLOROFORM FOR DOGS.

IN the *Journal of Comparative Pathology and Therapeutics* for June an article appears from the pen of Professor Hobday which deals with the statistics derived from the use of chloroform in his out-patients' department at the Royal Veterinary College. Out of 500 administrations to dogs one death is recorded, that of "an aged fat pug," and a post-mortem examination revealed a ruptured portal vein. In two instances anxiety was felt; respiration ceased, but the application of artificial respiration and three minims of hydrocyanic acid (Scheele's) were given, the animals recovering. It will be remembered that Professor Hobday, guided by the presumed physiological antagonism between hydrocyanic acid and chloroform upon the respiratory centre, has advocated the employment of this acid as a means for resuscitation in over-dosage with chloroform. As, however, artificial respiration, especially if done when the animal is placed on its side, is usually sufficient to bring a dog round which has been over-dosed, it is difficult to feel sure that the recovery in these cases may not have been due simply to ventilation of the lungs and enforced expulsion of the chloroform vapours. 120 cats were chloroformed by Professor Hobday's method—the aspiration of air over chloroform—and of these 3 died and 1 other was only recovered by restorative measures. In this case hydrocyanic acid (Scheele's), 3 minims, was used with artificial respiration. The deaths among the cats are described and are of interest. A few whiffs of chloroform were given; in the first case the breath was apparently held before anæsthesia was achieved. As the suspension of respiration was thought to be voluntary no resuscitative measures were adopted and too late it was discovered that the cat was dead. There seems little doubt that this was a death due to direct action of too strong a vapour; many such were reported by Snow, who regarded them as arising from cardiac failure. The other deaths were due to respiratory failure the result of gradual over-dosage. The conclusions which Professor Hobday arrives at are: 1. That dogs are good subjects for chloroform when due precautions are taken in its administration and the slapdash method is laid aside for one in which the dose can be properly graduated and the quantity given controlled. Posture and restraint without interference with the movements of respiration are, he considers, of great moment. He advises the "abdominal position" (? prone) with the limbs spread-eagled and hobbled. 2. Cats he regards as much more easily killed by chloroform and requiring the greatest care in their management. Young animals are more susceptible to over-dose than are older ones, the sickly and fat than the strong and well-conditioned.

CONVICTION UNDER THE DENTISTS ACT.

AT the Louth Borough Police-court on Sept. 8th, before the Mayor and other magistrates—including Dr. F. Fawssett and Dr. P. Best—Herbert Manning, 86, Upgate, Louth, was charged for that he, not being a legally qualified medical practitioner, did so use the words "Dental Institute," as to imply that he was registered under the Dentists Act, and also for that he, not being registered under the Dentists Act, 1878, did use an addition—viz., "15 years' experience in modern dentistry," implying he was a person specially qualified to practise dentistry. The defendant was warned about the large board or sign on his premises with the words "Dental Institute," but he did not remove it. He professed to do work at half the price of dentists and to correct their misfits. The Bench inflicted a fine of £7, with 26*s.* costs, or one month's imprisonment. Dr. Best stated that any qualified medical man who coöperated with an unqualified dentist in the administration of anæsthetics is liable to be struck off the Medical Register. The prosecution was conducted by Mr. R. W. Turner, barrister, on behalf of the British Dental Association.

RECOVERY AFTER WOUND OF THE HEART.

AT a meeting of the Società Lancisiana held in Rome on July 9th Dr. G. Parlavecchio described a case of punctured wound of the heart on which he had operated successfully. On the night of July 7th a man, twenty years of age, was stabbed with a knife in the fifth intercostal space on the left side in the parasternal line (the vertical line midway between the border of the sternum and the nipple). He afterwards walked a distance of more than 200 metres (218 yards) to the Hospital of San Giacomo. Five hours later he was found to be suffering from pneumothorax on the left side with extensive effusion of blood into the pleura, the area of cardiac dulness was increased, at the apex the heart sounds were confused, and at the base they seemed to be distant, the pulse was irregular, intermittent, and small. Dr. Parlavecchio suspected a wound of the heart, or at least a wound of the pericardium, but was not able to operate until eight hours after the injury. Chloroform having been given a free incision was made in the fifth intercostal space and much blood escaped on opening the pleura. After resection of the fifth rib a wound admitting two fingers was discovered in the pericardium and was enlarged so as to expose the heart, in which there was near the apex a V-shaped wound, 3½ centimetres (1½ in.) long, penetrating obliquely into the left ventricle and intermittently discharging blood. It was closed with four deeply-applied separate silk sutures, after which there was no further hæmorrhage. The pericardium and the intercostal wound were then sutured, the whole operation lasting 40 minutes. The V-shape of the wound in the heart was probably due to its movement during the infliction of the wound. The patient's survival for the 8 hours preceding the operation may be explained by occlusion of the wound by clot which was displaced during the struggling occasioned by the chloroform. According to the *Supplemento al Policlinico* of August 20th, from which the preceding is taken, the subsequent history of the case was quite uneventful and on August 14th the patient insisted on

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leaving the hospital. It is added that this is the third case in which suture of a wound of the heart has been followed by recovery.

THE METROPOLITAN ASYLUMS BOARD EXPENDITURE.

IT is satisfactory to see that the Local Government Board has informed the Asylums Board that they have directed their chief inspector, Mr. W. E. Knollys, C.B., to hold after the vacation an inquiry into the causes of the excess of cost over the tenders received for the erection, &c., of the Brook Hospital, the architect's responsibility, and the supervision exercised by the committee and the managers as regards expenditure. We shall look with interest for the report of Mr. Knollys.

THE DROUGHT.

THE drought continues and the outlook in regard to water-supply is serious not only in the East of London but all over the country. It is clear that in the prolonged absence of rainfall our catchment water areas fail to afford an adequate water service and the moral of it is the necessity of adding enormously to the capacity for storage. The community must have an abundant and efficient water-supply at all times since a pure and adequate supply is the first factor in maintaining the public health. The East London Waterworks Company not much more than a year ago very materially increased their undertakings by constructing huge reservoirs near their Tottenham pumping station and they possess further powers we believe for adding again to the storage capacity. In spite of this the water-supply has failed, a fact practically admitted by the company, the admission amounting to an acknowledgment that the sources of supply, the Lee and the wells in its neighbourhood, are unequal to the increasing demand. When the enormous growth of London "over the border" is considered—the area supplied by the company—some idea of this increasing demand may be realised. We have no wish to inspire alarm, but if the present abnormally steady condition of meteorological things continues the consequences may be of the most serious kind. The rivers are depleted to the utmost, the drains are not adequately flushed, and there is little flow in the upper reaches to carry off the daily discharge of the sewage outfalls. There must be something anomalous in the fact that the first necessity of life is also employed to carry away from sight human excreta. According to the present system we draw on the river for a supply of drinking water purified with care by an elaborate scheme of filtration and then use the purified water as a means of conveying sewage back again to the same river. Thus the water in the river is withdrawn in a comparatively pure state and returned foul. With a population increasing at an almost alarming rate this state of things cannot go on much longer without disaster. If the water carriage system is to be continued the supply for drinking purposes and the supply for flushing purposes must be, we think, perfectly distinct unless a fresh and more abundant source be obtained. In this perhaps we have the most powerful argument for seeking new sources of supply. Thus, could the Welsh scheme be realised the maximum flow of the Thames and Lee would not be affected—there would be no depletion; on the contrary, the volume of the rivers would be materially augmented, the water would always be clean, and in abnormal times of drought the water catchment area of the Welsh mountains and valleys would in a way maintain the normal amount of water in these rivers. The recent records of rainfall are of interest. We are indebted to Mr. Glaisher, F.R.S., for the following figures: London average, 0·90 in.; Wales, 4·74 in. Further, there would be no need for sinking wells, which in the neighbourhood of rivers draw seriously on the flow. There is no difficulty in increasing if need be the capacity of Nature's own great storage reservoirs, as is instanced in the case of Loch Katrine, and in Wales the simplest possible engineering scheme can be turned to account in conserving colossal tanks of water in the valleys of that country on a scale quite comparable with the Scottish lakes. A member of our staff recently visited Loch Katrine and gained some interesting particulars connected with this remarkable water-supply. It has been found necessary to increase the capacity of the loch owing to the greater demands of an ever-growing population. A new tunnel of twice the calibre of the one built now nearly forty years ago is in course of construction. At present some 49,000,000 gallons of water per diem are discharged through the old tunnel, while 5,000,000 gallons are allowed as compensation to flow over the sluices at the Trossachs end of the loch so as not to spoil the flow of the river Teith. The inlet of the tunnels is about 7ft. below the surface of the water. In view of increasing requirements the sluices are being enlarged and raised, which will bring the level of the water so many inches higher as to increase the capacity by billions of gallons, the loch being 8 miles long, and thus will meet the increased withdrawal of water by the new tunnel to Glasgow. The supply has been found to be pure, ample, and abundant for now nearly forty years without seriously affecting the volume of water or flow of the river Teith. Moreover, the water is remarkably pure and soft and strict surveillance is adopted to prevent any possible contamination. The drought has, however, affected even this great natural reservoir. We learn that the water-level has not been so low for seventeen years, the depreciation amounting to 10 in. The slightest fall of rain, however, soon restores this difference. At a time when one of the worst water famines has occurred in the history of metropolitan affairs these particulars are not without interest and instruction. As far back as forty years ago Glasgow was alive to the necessity of providing an adequate and pure supply of water. The source adopted has not only not failed, but by a simple engineering plan it may obviously be greatly increased, and there is little limit toward extending this supply in accordance with future needs. It is a similar source of supply to which, in view of present conditions, London must turn, although it must be owned that London is not so favourably situated as Glasgow in this respect. There is, however, a wonderful and inexhaustible watershed in Wales which, were it to be tapped for London's needs, would require a waterway of over 100 miles in length, but this would offer no difficulty from the engineering point of view, whilst the adoption of the scheme would solve a great sanitary problem.

THE FREQUENCY OF VOLVULUS OF THE SMALL INTESTINE.

VOLVULUS of the small intestine is generally supposed to be rare; few cases are seen either at operations or necropsies. In the *Medical Chronicle* of June, 1898, Mr. Thorburn has published some cases which tend to show that this form of intestinal obstruction is not as uncommon as is supposed and that spontaneous reduction may take place, so that neither operation nor necropsy reveals the cause of obstruction. Mr. Treves has already adopted this hypothesis as an explanation of certain cases of acute intestinal obstruction, occasionally recurrent, which recover without surgical treatment, but neither he nor others has observed the condition. Three cases are narrated. Laparotomy was performed in a case of acute intestinal obstruction; a coil of small intestine was found rotated on its mesentery. It was readily thrown back into the normal position; in fact, it fell back as soon

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as it was handled. At the two ends of the coil, where the intestine crossed itself, the wall was pale and the lumen was contracted. These parts recovered their normal appearance under the eyes of the operator. A man suffered for five days from complete obstruction of sudden onset. Within a few minutes of palpation of the abdomen, while the question of operation was being discussed, the bowels were suddenly and freely moved. But the patient's prostration increased and he died in six hours. A sharply defined segment of the ileum, 6 in. in length, black and gangrenous, was found. In the third case at a laparotomy Mr. Thorburn found about 18 in. of small intestine similarly affected. In the second and third cases there is no direct evidence of volvulus, but there is no other explanation of the gangrene, for there was no hernia, old-standing peritonitis, bands, or interference with the mesenteric circulation. In the Transactions of the North of England Gynæcological Society, 1895, Dr. Donald has published a case of sharply defined gangrene of 5 ft. of ileum, which caused death thirty-five hours after ovariotomy and has adopted this explanation of a spontaneously reduced volvulus. Mr. Thorburn says that no new principles of treatment can be deduced from these cases.

ALPINE ACCIDENTS.

THE holiday season as usual is producing its annual crop of accidents. In many instances, notably those disasters which occur to persons when bathing or boating, the fault is generally their own and is due to ignorance. But we cannot always say this, for the two lamentable accidents which have lately happened in the Alps show that even when care and forethought are taken "the iced mountain top" still has its perils. All the world is the poorer for the loss of Dr. Hopkinson, the well-known electrician, and the circumstances of his death are rendered all the more sad by the loss at the same time of his three children. The peak which Dr. Hopkinson ascended, namely the Petite Dent de Veisivi, is not considered dangerous, and Dr. Hopkinson was an expert mountaineer. But he was heavily handicapped by the presence of two young and untried climbers. How the fatality happened will never be known, suffice it to say that it did happen. The other accident is notable for one of the most magnificent pieces of heroism which we can recall to mind. Professor Nasse, well known in Berlin as the assistant to Professor von Bergmann, and Dr. Borchardt, with two guides, the four roped together, were crossing the Piz Balne over a snow bridge which was considered quite safe by the guides. The bridge gave way and the leading guide and Professor Nasse fell into the crevasse. Professor Nasse had the rope round his chest and hung in mid-air for half an hour. To relieve the intolerable strain the leading guide cut the rope between himself and Professor Nasse and disappeared into the depths. The other guide and Dr. Borchardt were then able to pull Professor Nasse up, but he was dead. It is cheering to know that the guide who had so willingly offered his own life was not killed but was found unhurt by a rescue party. But as an heroic action it is beyond all praise. Men have risked their lives on the battlefield in many very noble ways, but there they have the excitement and the lust of fighting to keep them up. Here, however, there was nothing of the kind, almost certain and horrible death stared him in the face. Two actions we can recall which are in some way comparable—the one which happened in England the other day when the driver and fireman of the Great Western express stuck to their engine, so as to stop the train, although being boiled alive, and the other the well-known instance of the steersman on the burning steamer on Lake Erie who stood at the wheel while slowly scorching so that he might steer the ship safe to land. Such deeds are beyond all praise, and let us not forget them.

THE OPENING OF LABORATORIES OF PHYSIOLOGY AND PATHOLOGY AT LIVERPOOL.

AMONG those who have accepted invitations to be present on Oct. 8th at the opening, by the President of the Royal Society, Lord Lister, of the new laboratories of Physiology and Pathology given by the Rev. Mr. Thompson-Yates to University College, Liverpool, are the following: the Duke of Devonshire, Lord Derby, Lord Spencer, Lord Ripon, Lord Kelvin, Professor Michael Foster, Professor Virchow, Mr. A. J. Balfour, Sir Douglas Galton, Sir Samuel Wilks, Sir Richard Thorne, the Bishop of Chester, the Bishop of Carlisle, the Bishop of Ripon, Sir William Gairdner, Mr. Justice Kennedy, Sir James Crichton Browne, Sir Archibald Geikie, Captain Abney, C.B., Sir George King, Professor Ramsey, Professor David Ferrier, Professor Rücker, Dr. Pavy, Mr. R. B. Haldane, Sir John Batty Tuke, Sir Henry Littlejohn, Mr. Thistleton Dyer, Professor Darwin, Professor Schäfer, Professor Kanthack, Professor Burdon-Sanderson, Professor Halliburton, Professor Meldola, the Dean of Lichfield, Professor Charlton Bastian, the Hon. Sydney Holland, Professor Rose Bradford, Professor Forsyth, Professor Bower, Dr. Alexander Cope, Professor Crookshank, Dr. Lauder Brunton, Professor Waller, Professor Noel Paton, Dr. Ludwig Mond, Dr. Mott, Professor Poulton, Professor Stirling, Professor Liveing, Mr. Gerald Yeo, Professor Macallum, Dr. Byrom Bramwell, and many others well known within and outside the profession. The ceremony will commence with the conferment of the honorary degree of Doctor of Sciences upon Lord Lister at the hands of the Chancellor, Earl Spencer. Lord Lister will then, with the President, Earl Derby, proceed to open the new laboratories. In the evening a banquet will be given by the Lord Mayor in the City Hall.

THE BACILLUS OF RABIES.

THERE are many diseases the communicability, incubation, and general phenomena of which compel us to regard them as bacterial, even though the microbes should for ever elude observation. Such a disease is rabies. Pasteur to the last contented himself with the empirical procedure of attenuating the virus of a hypothetical microbe, and so long as the results he aimed at were satisfactory he worked at improving his methods, leaving the more purely scientific aspect of the question to bacteriologists in the future. Accordingly Foll, Rivolta, Ferran, and Spinelli have claimed to have detected in certain secretions and preparations a bacillus the specific character of which was made highly probable by Sanfelice, who, employing a special staining process, demonstrated its presence in large numbers in the spinal cord of a boy who had died from hydrophobia. Memmo of Rome confirmed the observation of Sanfelice and proved the virulent character of the micro-organism, which he described as a blastomycete and the presence of which he detected in several cases of rabies, but quite recently he has succeeded in cultivating it in artificial media and in reproducing by inoculations with these cultures the disease with its distinctive characters in dogs, rodents, and birds respectively. These experiments and observations, which, fulfilling the most stringent demands of bacteriological criticism, leave no room for doubt, are described in the *Centralblatt für Bakteriologie*, Abtheilung I., Band xxi., 17, 18. He found the microbe in the cerebro-spinal fluid and the substance of the brain and spinal cord, in the saliva and parotid gland, and in the aqueous humour of four dogs dying from the natural disease, and of rabbits, guinea-pigs, and pigeons in which it had been produced by inoculation. It grew better in

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fluid than in solid media, the best being bouillon with glucose slightly acidulated with tartaric acid. The growth did not become manifest under a week and was easily arrested by "air infection," as through the access of dust from the laboratory. Inoculated with cultures of the fourth generation, purified by successive plate cultures, guinea-pigs and rabbits developed symptoms of paralysis of the hind limbs, &c., after from 11 to 20 days and died from the paralytic form of the disease. With dogs the inoculation was prolonged to from 30 to 60 days, when they were attacked with all the symptoms of typical natural rabies. Though Memmo does not suggest the application of his discovery to the prophylaxis of hydrophobia, it is not impossible that artificial cultures may be found capable of definite attenuation so as ultimately to simplify the methods adopted by Pasteur.

THE TREATMENT OF CHRONIC CERVICAL LYMPHADENITIS BY THE INTRODUCTION OF DRUGS INTO THE CRYPTS OF THE TONSILS.

IN the *Boston Medical and Surgical Journal* of May 19th. 1898, Dr. J. L. Goodale has described this novel and ingenious method. His observations refer to the glands at the angle of the jaw and not to the occipital, jugular, and submental glands. The difference between the stout, compact epithelium covering the exposed surface of the tonsil and the delicate loose structure lining the crypts leads him to suppose that absorption takes place chiefly through the latter. A number of foreign substances were introduced into the crypts of tonsils destined for excision and the tonsils were removed at varying intervals and examined microscopically. The substances were found to have been absorbed and to have passed into the interfollicular lymph channels. To exclude complicating influences in the cases selected for treatment adenoid hypertrophy was absent and the lymphadenitis was out of proportion to discoverable disease of the tonsil, particularly hypertrophy. In most cases a 10 per cent. aqueous solution of iodine was used. Three or four drops were drawn into a syringe through a canula, which was introduced into a crypt as far as it would go and the fluid was expelled. The injections were repeated every third or fourth day. In most cases a remarkable reduction in the glandular swelling took place. For example, a pale, poorly nourished girl, aged eight years, had a gland at the right angle of the jaw measuring 2 in. by 1 in. The gland became steadily reduced in size and in eight weeks measured ¾ in. by ½ in. In a few cases apparently suitable for this treatment no improvement resulted; possibly there was some source of infection other than the tonsils.

INSANITARY AREAS AND THE DRINK QUESTION IN LIVERPOOL.

OUR readers will remember that in a recent notice of the report for 1897 of the medical officer of health of Liverpool we directed attention to his anxiety about the continued operation of intemperance in Liverpool as a cause of death, not only direct but insidious and far reaching. "Deaths attributed to excessive indulgence in drink had been more numerous than from scarlet fever or from all the other forms of fever—viz., typhus, typhoid, and simple continued fever—combined." The indirect operation of this vice was equally clear. "Proof," he said, "is clear that the poverty and the sickness and the mortality which owe their cause to excessive indulgence in drink are not fully indicated by inquests." He adds: "It will be noted that two of the areas of excessive disease and mortality dealt with by the Insanitary Property Committee (p. 142) are over-supplied with public-houses." It is not surprising that the anxiety of the medical officer of health has extended to the magistrates and that they have determined to face this problem and the means of solving it. They had objected this year to the renewal of licences in areas dealt with by the Insanitary Property Committee, and they feel that they are warranted in this course. But they have resolved to give twelve months' notice in order that both the licensees and the public shall have time to think out the question. They intimate that at the end of this period they will deal with the question of over-supply from whatever cause in every part of the city. The bench are satisfied that the houses are largely in excess of reasonable requirements and hope that the trade will take the same view. In this action the Bench will have the support of public opinion and certainly of medical opinion, which recognises in excessive drinking a most powerful factor in the destruction alike of property and of health. It may be hoped that before the lapse of a year the magistrates of the country may have the advantage of the Report of the Royal Commission on this question, which will impose a great responsibility on Her Majesty's Government. The number of public-houses is only one element in this great question, but it is an important one. Apart, as we understand, from this general resolution of the Liverpool Bench, the justices at the recent Licensing Sessions have withheld 26 licences—that is, 21 from full public-houses and 5 from beershops.

THE PREVENTION AND TREATMENT OF PULMONARY PHTHISIS.

THE movement for the repression of tuberculosis initiated at a meeting at Sir W. Broadbent's house[1] has advanced a stage further in the North of England than in the metropolis. It has been there recognised that public instruction in the principles and methods of preventive medicine as applied to tuberculous disease may form a powerful means of checking the spread of pulmonary phthisis. A society for this purpose, consisting of medical and lay members, has been formed as the outcome of a resolution passed at the annual meeting of the North of England Branch of the British Medical Association, held in the Town Hall, Sunderland, on July 11th. Although its title of "Society for the Prevention and Cure of Consumption in the County of Durham" indicates a merely local organisation the example is one which deserves to be followed everywhere and the result of such operations on a large scale would inevitably be an immediate reduction in the death-rate from this cause. The objects of the society are (1) to teach the public that consumption is an infectious disease, to show how its spread may be prevented, and to call attention to the fact that it is curable in the earlier stages in a large proportion of cases when systematically treated by the open-air method; (2) to urge upon sanitary authorities in the county the necessity of taking steps to stop its ravages and of obtaining further powers for so doing; and (3) to provide a properly-equipped open-air sanatorium for the treatment of suitable cases, admission to which will be free to the poor, but all patients who can contribute towards their maintenance ought to do so, in order that the institution may be largely self-supporting when once fully started. A meeting will be held on Sept. 20th, in the town-hall, Sunderland, for the purpose of appointing a central committee, with auxiliary committees throughout the county, to carry out the above objects. The prospectus of the society states that there are in this country 250,000 persons affected with phthisis, and that 60,000 die yearly from it. In the county of Durham, with a population of 1,128,000, the total number of deaths in 1897 was 19,464, of which 1450 were due to phthisis and 954 to other tuberculous diseases. It is also pointed out that there is in England no public provision for the rational open-air method of treatment, whilst in German open-air sanatoria, in places which have nothing special in the way of climate,

[1] THE LANCET, June 25th, 1898, p. 1768.

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about 34 per cent. of recoveries are reported. The office of the society is at No. 43, West Sunniside, Sunderland.

LUNACY IN THE COLONY OF VICTORIA.

THE annual report of Mr. J. V. McCreery, inspector of lunatic asylums, shows that the total number of registered lunatics in the colony of Victoria on Dec. 31st, 1897, was 4346 (2296 males and 2050 females), of whom 4341 were on the books of the seven public asylums, the largest of which is that at Kew, containing 1021 inmates. The persons admitted during the year 1897 numbered 771, the highest admission rate recorded since the opening of the asylums and an increase of 88 as compared with the previous year. The proportion of the insane to the sane population was 1 to every 271. The recoveries were 217, against 210 discharged during the preceding year. The percentage of recoveries on admissions was 27·96 and of relieved 11·08. The number of patients who died during the year was 324, the percentage of deaths on the daily average numbers resident being 7·93. 3 patients committed suicide, 1 died through being knocked down by another patient, and 1 who assisted in cleaning lamps injected kerosene into his body and died from the results of the inflammation so caused. The general health of the asylums was good, and with the exception of a few cases of scarlet fever at the Idiot Asylum the institutions were free from contagious disease. On Jan. 1st, 1897, there were 198 patients on probation with their friends, and during the year 324 in addition were allowed out of the asylums. The system of allowing patients out on trial has been growing more and more into favour in the Victorian asylums, where it is used to a greater extent than in any other part of the world. It is considered that to allow the patient to mix in the world for a reasonable time away from the asylum restraint is a good test of mental recovery. The weekly cost of maintenance was 8*s.* 6*d.* per patient. The medical service seems not to be popular. At the date of the report there were two vacancies for junior medical officers but no applicants.

QUANTITATIVE ESTIMATION OF SUGAR IN URINE.

IN the *Deutsche Medicinische Wochenschrift* of Sept. 1st Dr. Richard Benjamin of the University Klinik in Berlin strongly recommends K. B. Lehmann's new iodine method of estimating urinary sugar on the grounds both of its precision and its convenience for medical men. It is based upon De Haën's volumetric estimation of copper by means of iodine. A definite quantity of Fehling's solution, the amount of copper in which is exactly known, is brought to the boil, treated with a measured quantity of the saccharine solution, kept boiling for some minutes, and passed through a very small filter. The filtrate and washings are made up to 250 c.c., of which 50 c.c. are treated with iodide of potassium and acidulated with sulphuric acid. The free iodine is then estimated with decinormal hyposulphite of sodium in the usual way. Dr. Benjamin says that 60 c.c. of Fehling's solution and 25 c.c. of a half per cent. or 1 per cent. saccharine solution may be used, but in some of his published experiments he took 30 c.c. of copper solution and 5 c.c. of diabetic urine. In addition to this estimation of the residual copper in solution a useful alternative method, especially when the amount of sugar is small, is to dissolve the cuprous oxide on the filter cautiously in nitric acid and estimate it volumetrically. As the nitrous acid produced by dissolving cuprous oxide in nitric acid would liberate iodine, it must be destroyed by warming with a little urea. Dr. Benjamin tested the process in a variety of ways, using saccharine solutions of known strength and also diabetic urine, both in the natural condition and diluted with an equal quantity of water and with the addition of known amounts of glucose. In all cases the results agreed very well. He found that 315 parts of copper correspond to 165·3 parts of sugar. There is a description of the process by Lehmann in vol. xxx. of the *Archiv für Hygiene* and one by E. Riegler in Part I. of the *Zeitschrift für Analytische Chemie* for 1898.

HISTOLOGY OF MUSCLE—NEURO-MUSCULAR SPINDLES.

DURING the last few years much attention has been paid to peculiar structures brought into relief by modern methods of histology to which Signor Ruffini has applied the term neuro-muscular spindles; the results of his researches are given in the July number of the *Journal of Physiology*. These structures are found scattered through the muscle but are especially numerous and closely set, as Sherrington has shown, near the tendon and in the proximity of aponeuroses and intra-muscular septa. They vary in length from about $\frac{1}{4}$ to $\frac{1}{8}$ of an inch and are about $\frac{1}{12\frac{1}{5}}$th of an inch in diameter. Kölliker counted fifteen in each belly of the omohyoid of a child of four. It is remarkable, however, that they appear to be absent in the ocular muscles. Each spindle presents a certain resemblance, noticed by Ranvier, to a Pacinian body since it is enveloped in a capsule or sheath composed of concentric lamellæ of dense fibrillated connective tissue covered on each surface with a layer of endothelium and separated by a layer of lymph. The sheath is surrounded by the perimysium internum which divides it from the surrounding muscular fibres. The centre of the neuro-muscular spindle is occupied by a small fasciculus of striped muscular fibres which has been designated "Weissmann's bundle" after its discoverer. These muscular fibres are from two to twelve in number in different animals and are smaller than the ordinary fibres of the muscles, which led Hassall to regard them as subservient to the production of neuro-muscular fibres. One end of the "Weissmann bundle" is muscular, the other is tendinous. In the muscular or proximal end lie the so-called parent muscular fibres which by longitudinal division make daughter fibres. The chief interest of these neuro-muscular spindles lies in their relation to the nerves. Every neuro-muscular spindle in the cat receives a nerve fibre which just before joining the spindle almost always splits into two or more secondary divisions, which do not separate but course together and plunge into one and the same spindle. Each of these secondary divisions in turn subdivides into tertiary branches in close proximity to the Weissmann bundle, and becoming flattened and losing their myelin sheaths, end on one of the muscular fibres. There are three modes of termination. The primary ending is constituted by the nerve fibre running spirally round the muscle fibre and terminating in a free and dilated extremity, or in some instances by running for some distance straight upon the fibre, but giving off at intervals riband-like fibres which encircle the muscle fibres. In the secondary ending the branches of the nerve fibre quickly break up into a large number of varicose axis-cylinders joined together by extremely delicate and short filaments, the whole resembling a spray of flowers. In the third node or plate ending the non-myelinated nerve fibre breaks up at the preterminal node into a few short, extremely delicate, branched endings. These quickly begin to form what may be called coronets by means of rounded varicose nerve fibrils and very minute hooks set side by side. These coronets, which unite in various ways in the plate, terminate in free and enlarged ends. Signor Ruffini is unable to state definitely the function of the spindles or whether the nerves are sensory. He has satisfied himself that the plate endings have not a motor function. The original article is illustrated by some excellent drawings of the appearances see

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THE OFFICIAL REPORT ON THE EPIDEMIC OF TYPHOID FEVER IN MAIDSTONE IN 1897.

IN this report three inspectors, Mr. J. S. Davy, Dr. Theodore Thomson, and Mr. Willcocks, of the Poor-law, Medical, and Engineering Departments of the Local Government Board respectively, give an account of the evidence as to the epidemic of typhoid fever given before them at a public inquiry held at Maidstone in January last and extending over eight sittings. The report with appendices makes a considerable volume of 84 pages of folio, and is illustrated by maps, diagrams, and photographs. Although it gives a clear account of the epidemic and the inspectors sum up their subject concisely and judicially, yet we must confess that we find in the report no indication of the advantage of the Local Government Board's new policy of investigating an outbreak by means of a formal public inquiry. If the purpose of the new departure was to satisfy local opinion it is quite certain that the report has appeared too late to attain its object. From a scientific standpoint the proceeding is a misfortune. Having in mind the knowledge gained in the past from the admirable investigations of epidemics made by Dr. Thomson in the ordinary course of the work of the Medical Department of the Local Government Board it seems a pity to find that at Maidstone his services were mainly utilised in hearing other people's evidence some three months after the event.

The population of the borough of Maidstone was estimated at 33,830 in 1897. The incidence of typhoid fever was as follows:—

Weekly Table of Attacks and Notifications.

Week ending	Borough of Maidstone, exclusive of county asylum.		County asylum.		Rural district of Maidstone.
	Notifications.	Attacks.	Notifications.	Attacks.	Notifications.
August 28th... ...	—	4	—	—	—
Sept. 4th	—	29	—	—	1
„ 11th	2	165	—	1	—
„ 18th	128	434	—	18	2
„ 25th	544	432	50	48	17
Oct. 2nd	529	274	—	12	6
„ 9th	246	134	39	15	8
„ 16th	116	64	9	4	4
„ 23rd	61	45	2	2	3
„ 30th	44	33	—	4	1
Nov. 6th	34	25	2	2	1
„ 13th	22	23	4	1	—
„ 20th	20	19	1	—	2
Nov. 21st to Jan. 1st.	40	30	—	—	—
Totals	1786	1711	107	107	45

The Maidstone Water Company supplied the borough from springs in three distinct gathering grounds by way of three distinct systems of mains. The incidence of the fever upon these three water areas was as follows:—

—	Houses.			Persons.		
	Supplied.	Attacked.	Per cent.	Population.	Attacked.	Per cent.
Cossington supply ...	671	19	2·8	3,355	29	0·86
Boarley supply ...	1,410	63	4·46	7,050	69	0·97
Farleigh supply ...	3,916	1,077	27·5	19,580	1,583	8·08

The altogether excessive incidence upon persons consuming Farleigh water was made more significant by various facts recorded in the report. The County Asylum, which received Farleigh water, sustained 107 attacks. In the barracks, with a population of 300, supplied from the Boarley service, and in the prison with an average population of 171 supplied both by a private well and from Boarley, not a single case of typhoid fever or diarrhœa occurred. In the rural parishes of East Farleigh and Barming, containing together a population of about 2300, a total of only 68 houses were supplied by Farleigh water. The inhabitants of these 64 houses sustained 34 attacks; in the rest of the parishes only 2 cases (as to which there were no particulars) occurred. Many other facts of this kind recorded by the inspectors put the relationship between the epidemic and Farleigh water beyond doubt. While, however, the inspectors conclude that polluted Farleigh water was the essential cause of the outbreak, and that infection from polluted soil and defective water-closets and drains played only a subordinate part in the earlier and acuter stage of the epidemic, they record their opinion that "many of the cases in the borough were due to defects of drainage and sewage, with consequent pollution of the soil of the town." These defects, as was pointed out last year by the Special Commissioner of THE LANCET, were everywhere conspicuous. In particular we learn that nearly one-half of the water-closets of the place were without mechanical means of flushing, and that a large number of the sewers were objectionable brick barrel drains. Conditions such as these probably had much concern with the considerable number of typhoid fever cases which occurred after the Farleigh water-supply had been cut off.

The Farleigh supply was derived from a series of springs in the Kentish ragstone (of the Lower Greensand series). Certain of these springs, particularly the Tutsham in Orchard, Tutsham in the Fields, and the South-eastern springs were undoubtedly fed from superficial sources, while their gathering grounds were hop and fruit gardens, heavily manured, on which great numbers of persons are employed at certain seasons of the year. Evidence was received that shortly before the epidemic the neighbourhood of some of these springs was "plentifully covered with human excrement." One of the most interesting points in this report is a diagram prepared by Mr. M. A. Adams, which suggests the manner in which after a period of drought had established cracks in the soil a sudden rainfall would have washed these surface pollutions directly to the springs. Mr. Adams also pointed out a probable relationship between meteorological conditions, rise of subsoil water in the neighbourhood of the springs, and the onset of the epidemic, and put forward some interesting views upon certain attacks of diarrhœa which had immediately preceded the outbreak. Although stating their reasons for believing that many of the springs were subject to serious risk of pollution, the inspectors state that they have no evidence to show either how the specific pollution was introduced into the supply or which of the springs was thus polluted.

Much chemical and bacteriological evidence was given at the inquiry, almost all of which tended to cast serious suspicion on the Farleigh service. It was hardly to be expected that typhoid bacilli should have been found in the Farleigh water, nor was this the case. But in certain of the springs Dr. Washbourn in September and Dr. H. E. Durham in October found typical as well as atypical bacillus coli. Dr. Sims Woodhead, called in to advise the company at a later date, found no bacillus coli which he considered typical, but he obtained colonies which he thought might be indicative of "surface relations." As the inspectors point out, the "relations" between water-supplies and the "surface" of gardens or fields like those which surround the Farleigh sources must be extremely dangerous.

Space does not permit us to dwell upon other matters in this report. The measures adopted in repression of the outbreak appear to have been thorough, although undesirable delay seems to have occurred before the water company shut off the whole of the suspected Farleigh supply. The borough hospital and temporary hospitals were freely used, 381 cases being treated. For work in the hospitals and in the town an extra staff of medical officers and 139 trained nurses were engaged and much voluntary assistance was given. An excellent organisation for washing infected linen was established, some 3600 articles being washed each week. Sewers were flushed, and the Farleigh mains were washed

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out with chloride of lime solution. £27,888 were subscribed to the relief fund, including £4000 from the Lord Mayor of London's Fund. Poor-law relief was granted to the extent of nearly £1500. The execution of these emergency arrangements appears to have merited all praise. The inspectors conclude their report by expressing doubt as to whether "the regulations of the Board relating to the duties of medical officers of health and the statutes which regulate the powers and obligations of private water companies are sufficient to ensure a reasonable amount of protection to the public health."

BULUWAYO HOSPITAL.

THE medical and surgical statistics of Buluwayo Hospital for the twelve months ending June 30th, compiled by Dr. Frank Arnold, the resident surgeon, give much valuable information as to the health conditions of this part of South Africa. The total admissions during the twelve months were 1619, of whom 1204 were Europeans and 415 were natives. There were 119 deaths, 48 among the Europeans and 71 among the natives. The summary of admissions of Europeans is as follows: Malarial fever (including 8 cases of blackwater fever), 701 cases with 19 deaths; dysentery, 71 cases with 11 deaths; typhoid fever, 23 cases with 4 deaths; other diseases, 359 cases (arranged under 71 headings) with 12 deaths; poisoning, 2 cases, neither of them fatal; accidents, 48 cases with two deaths. The deaths of Europeans were due to the following causes: Malarial fever, 19; dysentery, 11; typhoid fever, 4; pneumonia, 3; heart disease, 3; Bright's disease, 1; alcoholism, 2; gunshot wound, 1; shock of injury, 1; phthisis, 1. There were 22 operations performed upon Europeans under anæsthetics (chloroform or A.C.E. mixture) without any fatal result. There were 4 post-mortem examinations. The summary of admissions of natives is as follows: Malarial fever, 133 cases with 17 deaths; dysentery, 45 cases with 19 deaths; other diseases (arranged under 41 headings), 155 cases with 32 deaths; accidents, 78 cases with 2 deaths; poisoning, 4 cases with 1 death. There were 19 post-mortem examinations. The deaths of natives were due to the following causes: Dysentery, 19; malarial fever, 17; tuberculosis, 7; pneumonia, 11; other diseases, as specified, 17. The subjoined table shows the monthly admissions for malaria, together with meteorological data supplied by the Rev. Father Barthelemy, S.J.:—

Month.	Malaria admissions.			Temperature (Fah.).		No. of rainy days.	Rain (inches).	Mean barometer (inches).	Relative humidity (per cent.).
	Europeans.	Natives.	Total.	Maximum.	Minimum.				
1897.									
July	7	3	10	75	46	0	0·00	25·83	62
August ...	6	—	6	75	48	0	0·00	25·93	63
September..	9	—	9	84	55	0	0·00	25·75	60
October ...	16	—	16	93	64	3	0·23	25·75	45
November..	23	2	25	90	63	7	3·75	25·75	59
December...	30	4	34	78	62	14	7·23	25·75	79
1898.									
January ...	42	12	54	81	62	20	8·30	25·79	79
February ...	110	27	137	79	59	5	0·19	25·78	59
March ...	144	27	171	83	60	10	2·15	25·76	59
April	154	33	187	78	57	5	0·13	25·82	58
May	108	18	126	74	50	2	0·19	25·81	49
June	62	7	69	—	—	—	—	—	—

We are indebted to Dr. Arnold for the following notes accompanying the statistics.

1. EUROPEANS.

The hospital serves as the centre for a very large area; by rail, waggon, and patrols of the British South African Police sick people are brought in from distant parts. The past "wet season" is reported to have been an unusually unhealthy one.

"Blackwater fever" is so called on account of the dark colour of the urine. Cases admitted here have generally come from districts known to be rife with malaria. Sometimes they have been unconscious on admission, vomiting coffee-ground-coloured remnants of food, and have died in 48 hours; at other times they come in in a state of profound anæmia with a yellowish tint of skin and conjunctivæ and temperature subnormal, urine of dark colour but giving negative results on testing for blood or bile. In a few days the temperature rises, perhaps to 103° or 104° F., vomiting of bile (green) is profuse, and the urine becomes tea-coloured and sometimes port-wine-looking; pain in the epigastrium and intense headache are complained of; the bowels are usually confined and difficult to move. As the temperature falls the urine clears and the general condition improves. Albumin may sometimes be found in the urine during the paroxysm. Generally blood can be demonstrated in the urine, either actual blood discs disorganised or hæmoglobin, but sometimes neither by microscope nor chemically can such be proved; there is simply the tea colour. In the intervals between the paroxysms the patient is sometimes markedly jaundiced and bile pigment and salts can be found in the urine. Quinine appears to be quite useless and it seems best to deal with symptoms as they arise. With proper accommodation, &c., together with some of my routine work taken by a junior—to be appointed—I hope to be able to study this variety closely the next wet season.

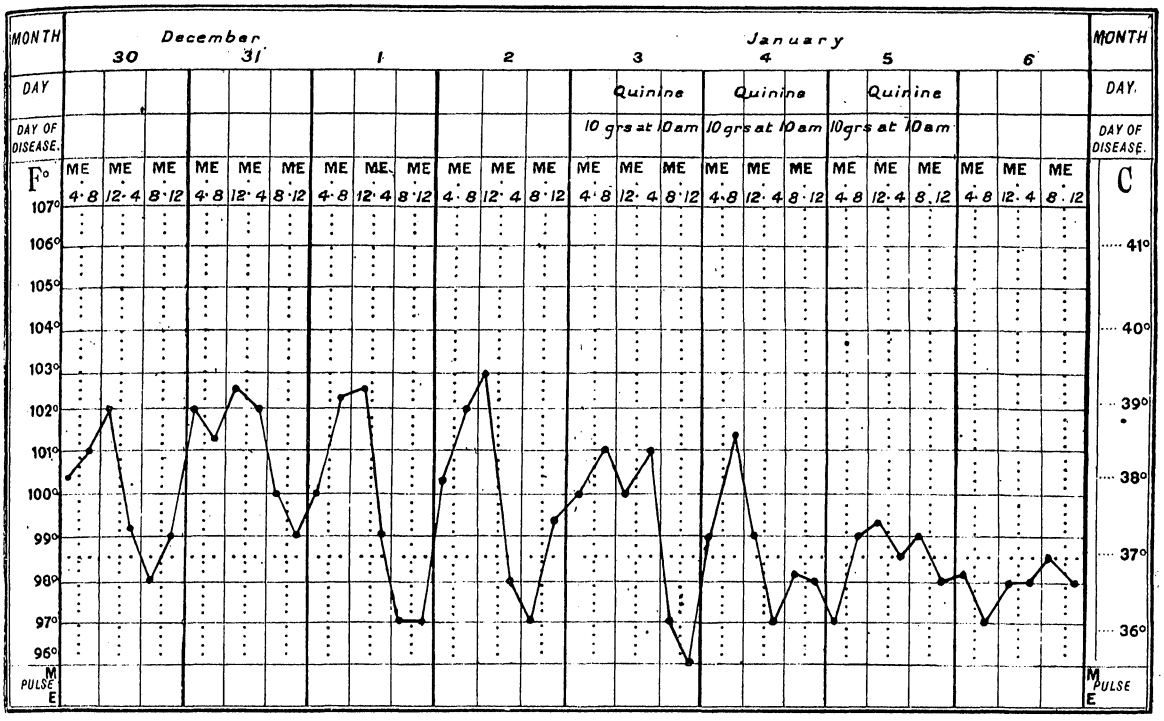
The antipyretics, antipyrine, antifebrin, and phenacetin, especially the last named, are of great use here in reducing high temperatures in malarial fever. Whatever may in theory be the pharmacology of these drugs in malarial fever they act rapidly, producing free perspiration and affording immediate relief of headache, &c. Where perspiration does not follow their exhibition the fall of temperature is not marked, but the distress of the patient is nevertheless relieved. It is generally supposed that the lowering of the temperature is of central action, hence this sweating is of interest.

Typhoid fever is not prevalent to any extent; the type of the past year has been markedly asthenic. Two patients died within 3 days from perforation and general peritonitis; 2 more had intestinal hæmorrhage—1 severely. Turpentine in 60-minim doses appeared to check it. The temperature charts of typhoid fever cases show peculiar rises and abnormal falls. At times a periodicity can be traced in these thermometric excursions. Enclosed is a chart showing a maximum rise at 12 noon each day, when normally the curve as a whole should be descending. The influence of quinine is well shown. The mistura chlori of Burney Yeo ("Medical Treatment") has been given largely by me. Cases seemed to do well with it. The chlorine can as described be detected in the evacuations. I have seen no cases that could be called typho-malaria, although malaria modified the temperature charts of practically every typhoid fever case and, indeed, most other charts. It is to be expected in a malarious country that the residents should show signs of the endemic disease and that these signs should be apparent whether they are suffering from another acute disorder or not.

Two deaths from acute pneumonia occurred in men admitted in an advanced stage of the disease, and a third in a chronic drunkard. All the cases of phthisis were imported and not contracted here. Only early cases of phthisis are likely to stand this climate. Except in the middle of the dry season there are factors in the climate which would be harmful to advanced cases. The dry season is ushered in in May with cold winds and at intervals fine-dust storms—these soon give way to three or four months of continuous fine dry weather, cold at night, hot in the day, with a considerable mean range of temperature. Towards the end of the dry season the heat becomes more marked, thunderstorms and magnificent displays of lightning are common, and about November deluges of rain suddenly close the dry season and mark the onset of the wet season. During this wet season the advanced phthisical subject in common with the healthy runs the risk of malaria which if contracted will handicap him in struggling against his chronic disorder. Also, the standard of personal and domestic comfort, although good and improving, is not equal to the European, this is an important item often overlooked by those who send phthisical sufferers from home.

In connexion with the two successful cases of abscess o

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Four-hour chart showing malarial rises of temperature at 12 noon and the effect of quinine upon these rises.

the liver no harm resulted from exploratory aspiration—indeed, without such a proceeding the cases could not have been diagnosed. The exploring syringe was also used in two other instances without harm, although negatively. One interesting case of old injury to the skull was admitted. A European woman was struck on the forehead by a bottle. Two months later she was admitted. The sinus was 1 in. above the centre of the left orbital ridge, there was complete aphasia and right spastic hemiplegia. The temperature was 100°. I suspected frontal abscess and trephined over the sinus. The ring so removed had a hole in it and the inner table was carious. Exploration of the frontal lobe in five different directions to a depth of about 2 in. yielded nothing. The wound healed almost by first intention, the temperature fell and kept down, potassium iodide was exhibited, and complete recovery of speech and movements ensued.

In regard to the deaths, 2 were directly and 6 indirectly due to alcoholism, although the latter were admitted for other reasons.

Among the accidents there was a case of revolver-shot through the upper half of the right lobe of the liver; recovery ensued without any bad results.

2. NATIVES.

Natives do not show so good results in medical cases as Europeans. They rarely come to hospital unless they are seriously ill and a very large proportion of the fatal cases are either unconscious on admission or become so soon after. Moreover, it seems quite a matter of indifference to a native whether he does or does not recover. It is interesting to note that the death-rate from fever and dysentery is higher amongst the natives than the Europeans, showing that mortality amongst the original occupants of a country is not a safe guide to what may obtain amongst newcomers. Natives stand pain, injuries, and surgical operations well and they recover with less disablement than one would expect. Tuberculosis is certainly demonstrable post mortem, although not common; when attacking the lungs it would appear from experience in this hospital to be more often disseminated than limited to areas of consolidation. Scurvy is also seen, at times similar to ordinary European scurvy and at other times aggravated by sub-periosteal hæmorrhage of the long bones of the legs, hæmorrhage into the muscles of the calf, along fasciæ such as the fascia lata of the thigh, and into the knee-joints. Such cases generally die from some complication such as dysentery, &c. Treatment seems futile; limejuice, raw meat juice, citrates of the alkalies, iodides, calcium chloride, iron, cod liver oil, and the whole list of supposed remedies for scurvy fail. One case of acute scurvy-rickets in a boy of about twelve or fourteen years of age is now in hospital and resisting all treatment. It is significant that natives confined in the gaol and others admitted here for prolonged treatment for, say accidents, frequently develop scurvy although no fault can be found with diet and surroundings. A "Kaffir small-pox" occurs here. One such case developed in hospital, with the usual premonitory symptoms of ordinary small-pox. The eruption which appeared on the fourth day was vesicular with some umbilicated and shotty spots and was distributed over the face and body generally. It is a disputed point whether such cases are genuine small-pox or an aggravated chicken-pox. The disease runs riot amongst the natives and sometimes leaves scars. It is apparently not communicated to Europeans, it is very rapid in the development and course of the eruption, and it is not very fatal. From the character of the eruption alone apart from other considerations it is impossible to distinguish it from European small-pox.

Measles, scarlet fever, diphtheria, and typhoid fever have not yet been found amongst natives at this hospital; syphilis is common and aggravated. Here are one or two cases of interest. A boy with a compound depressed fracture ¾ in. by ¼ in. of the right parietal bone close to the anterior superior angle walked up to the hospital; trephining was at once performed and the boy recovered completely. One boy was brought in dead from lightning stroke. The hair on the left temple was scorched. From the inner end of the left clavicle to the umbilicus ran a greyish narrow scar looking as though cigar ash had been rubbed along the skin; the epidermis along this scar readily rubbed off but the dermis revealed nothing and post mortem the appearances were negative; the pubic hair had been singed. The boy's clothes were wet, the right coat-sleeve was ripped open and his cap torn in two; in the pocket of his waistcoat was a penknife with the blade strongly magnetised. Of 4 cases of acute poisoning by arsenic 1 died with almost complete absence of gastric symptoms and marked cerebral symptoms closely resembling narcotic poisoning. A case of severe epistaxis of four days' standing yielded readily to administration of calcium chloride.

On June 30th the order of the Royal Red Cross was conferred on the matron of the hospital, the Rev. Mother Jacoba.

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ABERDEEN WATER-SUPPLY.

THE Aberdeen Town Council has obtained exhaustive reports from the Professor of Pathology (Dr. D. J. Hamilton) and Dr. T. S. Murray, D.Sc., of the Chemical Department, University of Aberdeen, giving the results of detailed bacteriological and chemical examinations of the city water-supply. It may be explained that the water-supply of Aberdeen is taken from the River Dee at Cairnton about twenty-one miles from the city. From the intake to the settling reservoir at Invercannie, a distance of about one and a half miles, the water runs through a tunnel cut in rock. In this section a considerable addition of pure spring water is made to the supply, the quality of which it has been found to improve, while it does not appreciably affect the degree of hardness. The river water is very soft, a characteristic which leads to less consumption of soap and tea in Aberdeen than would otherwise be the case. From Invercannie to the service or distributing reservoirs near the city the water passes through an aqueduct (finished in 1866) which is composed of brick except at three points where it crosses small streams in cast-iron pipes under pressure. It was in consequence of complaints that the brick-work was not watertight and that impurities from cesspools, &c., found their way into the aqueduct that Professor Hamilton and Dr. Murray were instructed to draw up reports. The town council has established sewage irrigation farms at the villages of Kincardine O'Neil, Aboyne, Ballater, and Braemar above the intake, but in order to place the water-supply above suspicion has been considering whether a new source higher up the River Dee than Cairnton should be sought. To replace the present brick aqueduct by iron pipes would alone represent an expenditure of £125,000 and a scheme for new works from a source far up the country would probably cost nearly £500,000. Hence the desire to have scientific advice before coming to any definite resolution. As the result of a general survey of the amount of germ impurity found in the Aberdeen water Professor Hamilton says that the lowest number reached was 105 colonies per cubic centimetre on one occasion during very dry weather in the month of September, and the highest 5061 in the month of December after a heavy night's rain. The average over all points examined was 1862. He also found that whereas the water leaving the settling pond at Invercannie contained 3324 bacteria per cubic centimetre, the number rose in that entering the Mannofield reservoir after passing along the aqueduct, to 5061—a period of seventeen hours having intervened between the taking of the two samples. From these figures it would appear that the water had become distinctly contaminated in its transit. During the interval, however, it had been raining heavily, a circumstance which may have been accountable for the rise in the germ impurity. A sudden flush of rain, particularly after dry weather, is more effectual in raising the general impurity than any other natural factor, and this holds good not only of the ordinary supply from the river, but probably also of the water which gains entrance to the aqueduct through its walls. Notwithstanding occasional impurity of the jets, the water entering the aqueduct from extraneous sources, at least during dry weather, is, taken all in all, much purer than that of the river, and the admixture of this relatively pure water with the ordinary river-supply may aid in rendering the gross amount of germ impurity at the Mannofield exit less than at the Invercannie entrance. The relationship during the winter months between the colour of the water and the number of bacteria—that is to say, where the colour is high the bacterial impurity is also high—is usually pretty close but is not perfectly constant. The amount of sediment contained in the Aberdeen water is, Professor Hamilton continues, much greater than it ought to be. The brown residual matter found in certain water-pipes consists of dead vegetable substances, chiefly of peat moss, and while probably harmless—although this has been called in question—yet such sediment tends to harbour all sorts of minute animal life, such as small round worms (anguillula), infusoria, embryo leeches, &c. Portions of the slime scraped from the inside of the aqueduct swarmed with these round worms and infusoria, which were also found in considerable abundance in sediment from pipes. Professor Hamilton remarks that the quantity of gross sediment does not appear to bear any relationship whatever to the number of bacteria contained in the water. A much more constant indication of excessive germ impurity is a certain "milkiness" or turbidity which does not disappear on settling. He also found that it by no means follows because the organic impurity is high that the bacterial impurity will be high also. Very much the same may be said regarding the chlorine and the number of bacteria. Bacterial contamination was found to rise when the height of the river did so. The residual water in the aqueduct (when the water was turned off) was found to be relatively free from germ impurity, due to its being accumulated leakage, which in most cases must have filtered through the soil and become thereby purified, or been derived from springs in which the germ contamination is usually less than in any other water. This experience is not peculiar to the Aberdeen water-supply. But there is danger when polluted water runs through a crack or fissure in the soil, or where, from running continuously, it excavates a waterway for itself and mixes with the water-supply in an undiluted condition—as was actually verified by examination of one of the waterspouts in Aberdeen aqueduct, where the number of bacteria came up to 19,500 or 20,000 per cubic centimetre. The most prevalent organism found in this spout water seemed to be a variety of "proteus," one of the organisms found in putrefying animal substances. There may be several spots where highly contaminated water gains access to the aqueduct and Professor Hamilton dwells on the danger of this pollution as likely to spread water-borne diseases such as typhoid fever, cholera, and epidemic diarrhœa. Sand filtration, he adds, after the grains of sand become coated with slime consisting mainly of arrested vegetable matter, algæ, diatoms, &c., has an extraordinary effect in reducing the number of bacteria. The bacillus coli communis—an organism which inhabits the intestines of man and other animals and which is regarded as one of the characteristic bacteria of sewage—was looked for but discovered on only one occasion. The other organisms found are most likely harmless varieties. Professor Hamilton recommends (1) the furnishing of a water-tight aqueduct; (2) the purification of the water by means of settling ponds and filter beds; and (3) the removal, as far as possible, of all reservoirs, settling ponds, or other possible sources of contamination between the filter beds and the points of distribution in the city. Dr. Murray analysed 73 samples of the water. As to sediment, turbidity, and colour, he corroborates Professor Hamilton. In general the water was palatable and inodorous. The organic matter in the Aberdeen water is essentially of vegetable origin, owing chiefly to the extensive beds of peat on the higher gathering ground. Waters taken from Loch Muick and the River Muick were found to be unpolluted. No polluting influence from the irrigation farms was detected, but these farms may not prove completely equal to the work at the end of winter after prolonged frost. The filtering of the water is desirable and Dr. Murray considers that, in one way or another, the aqueduct should be made watertight. The water-supply was found to be of very varying quality.

BATTLE OF THE CLUBS.

EAST SUBURBAN MEDICAL PROTECTION AND MEDICO-ETHICAL SOCIETY.

THE membership of this society is open to "duly registered medical practitioners and other professional persons." The annual subscription is 10*s.* 6*d.* and the society's present address is at West Ham Hospital, E. The objects which the society has in view, as described at length in the memorandum of association, form a very comprehensive programme, the first five sections of which are as follows: (*a*) The investigation and the suppression of abuses in medical charities; (*b*) obtaining, or attempting to obtain, adequate representation of medical practitioners on the governing or managing bodies of medical charities; (*c*) suppressing, or attempting to suppress, medical aid societies and clubs which are not carried on by duly registered medical practitioners and in an honourable, professional, and satisfactory manner; (*d*) establishing a public medical service, a hospital, or dispensary chiefly managed by registered medical practitioners if and when

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desired by a majority of the members in general meeting assembled; and (e) engaging, or assisting to engage, district, monthly, or other nurses for remuneration, to work under the sole direction of duly registered medical practitioners. The other objects include the undertaking of prosecutions, debt-collecting, carrying on a medical agency for the sale of practices, keeping a register of defaulting patients, &c.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6320 births and 5287 deaths were registered during the week ending Sept. 10th. The annual rate of mortality in these towns, which had increased in the eight preceding weeks from 14·7 to 24·4 per 1000, further rose last week to 24·6. In London the rate was 23·2 per 1000, while it averaged 25·5 in the thirty-two provincial towns. The lowest death-rates in these towns were 16·4 in Cardiff, 17·2 in Oldham, 17·3 in Portsmouth, and 17·4 in Swansea; the highest rates were 30·5 in Preston, 31·3 in Blackburn, 33·9 in Newcastle-upon-Tyne, and 35·5 in Salford and in Sunderland. The 5287 deaths in these towns included 1578 which were referred to the principal zymotic diseases, against 1541 and 1646 in the two preceding weeks; of these, 1318 resulted from diarrhœa, 82 from whooping-cough, 62 from diphtheria, 48 from "fever" (principally enteric), 39 from measles, 29 from scarlet fever, and not 1 from small-pox. The lowest death-rates from these diseases were recorded in Portsmouth, Cardiff, Swansea, and Huddersfield; and the highest rates in Wolverhampton, Preston, Bolton, Hull, and Sunderland. The greatest mortality from measles occurred in Plymouth; from scarlet fever in Wolverhampton; from whooping-cough in Sunderland; and from diarrhœa in Croydon, Wolverhampton, Blackburn, Bolton, Preston, Hull, and Sunderland. The 62 deaths from diphtheria included 30 in London, 5 in Manchester, 5 in Leeds, 4 in Swansea, and 3 in Birkenhead. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and only 3 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, Sept. 10th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2300, against 2241, 2178, and 2240 on the three preceding Saturdays; 273 new cases were admitted during last week, against 187, 182, and 238 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 135 and 127 in the two preceding weeks, rose again to 130 last week, but were 18 below the corrected average. The causes of 42, or 0·8 per cent. of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Bradford, Hull, Newcastle-upon-Tyne, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Swansea, Norwich, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the three preceding weeks from 18·1 to 19·8 per 1000, further rose to 23·0 during the week ending Sept. 10th, but was 1·6 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 18·7 in Perth and 20·7 in Paisley, to 23·8 in Greenock and 29·3 in Leith. The 695 deaths in these towns included 92 which were referred to diarrhœa, 22 to whooping-cough, 9 to measles, 9 to "fever" (principally enteric), 6 to scarlet fever, and 2 to diphtheria. In all, 140 deaths resulted from these principal zymotic diseases against 140 and 124 in the two preceding weeks. These 140 deaths were equal to an annual rate of 4·7 per 1000, which was 2·6 per 1000 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 89 and 81 in the two preceding weeks, rose again to 92 last week, of which 45 occurred in Glasgow, 19 in Edinburgh, 9 in Dundee, and 8 in Leith. The 22 deaths from whooping-cough corresponded with the number recorded in the preceding week, and included 10 in Glasgow and 4 in Dundee. The deaths referred to different forms of "fever," which had been 9 in each of the four preceding weeks, were again 9 last week, of which 4 occurred in Glasgow and 4 in Paisley. Of the 9 fatal cases of measles 4 were recorded in Glasgow and 3 in Edinburgh. The 6 deaths from scarlet fever exceeded by 1 the number in the preceding week, and included 4 in Glasgow, where the 2 fatal cases of diphtheria were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 64 and 72 in the two preceding weeks, further rose to 100 last week, and exceeded by 22 the number in the corresponding period of last year. The causes of 32, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·4 and 27·6 per 1000 in the two preceding weeks, further rose to 30·7 during the week ending Sept. 10th. During the past four weeks the rate of mortality in the city has averaged 25·6 per 1000, the rate during the same period being 22·5 in London and 18·1 in Edinburgh. The 206 deaths registered in Dublin during the week under notice showed an increase of 21 upon the number in the previous week, and included 54 which were referred to the principal zymotic diseases, against 29 and 39 in the two preceding weeks; of these, 38 resulted from diarrhœa, 6 from whooping-cough, 5 from "fever," 2 from diphtheria, 2 from scarlet fever, and 1 from measles. These 54 deaths were equal to an annual rate of 8·1 per 1000, the zymotic death-rate during the same period being 6·3 in London and 4·2 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 33 in the seven preceding weeks, further rose to 38 last week. The 6 deaths from whooping-cough showed an increase of 2 upon the number in the preceding week. The deaths referred to different forms of "fever" which had been 3 and 1 in the two preceding weeks, rose again to 5 last week. The mortality from scarlet fever and from diphtheria also exceeded that recorded in recent weeks. The 206 deaths in Dublin last week included 63 of infants under one year of age, and 46 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a further increase upon recent weekly numbers. Nine inquest cases and 7 deaths from violence were registered; and 59, or nearly a third, of the deaths occurred in public institutions. The causes of 13, or more than 6 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING AUGUST, 1898.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during August in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 6·5 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 7·2, 7·1, and 8·1 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Paddington, Westminster, St. James Westminster, Marylebone, Stoke Newington, St. Martin-in-the-Fields, Strand, and City of London; while they showed the largest excess in Fulham, Clerkenwell, St. George-in-the-East, Mile End Old Town, St. George Southwark, St. Olave Southwark, and Bermondsey. Five cases of small-pox were notified in London during August, against 1, 6, and 2 in the three preceding months; of these, 2 occurred in St. Pancras, 1 in Hackney, 1 in City of London, and 1 in Battersea sanitary areas. Two small-pox patients were admitted into the Metropolitan Asylum Hospitals during August, and remained under treatment at the end of the month. The prevalence of scarlet fever in London showed a marked decline from that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Hammersmith, Fulham, Clerkenwell, Mile End Old Town, Poplar, St. George Southwark, Bermondsey, and Plumstead. The Metropolitan Asylum Hospitals contained 2207 scarlet fever patients at the end of August, against 2147, 2146, and

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ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1898.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1898.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	5	1267	855	—	250	8	14	398	8	2805	6·5	—	94	47	121	156	—	48	3	1875	2344	5·4	8949	20·7	316
West Districts.																										
Paddington	127,480	—	24	15	—	4	—	—	9	—	52	4·3	—	4	1	3	1	—	1	—	40	50	4·1	210	17·2	346
Kensington	172,174	—	52	14	—	5	—	1	12	—	84	5·1	—	2	3	1	5	—	—	—	48	59	3·6	284	17·2	316
Hammersmith	107,370	—	49	17	—	4	1	1	8	—	80	7·8	—	2	3	2	3	—	—	—	58	68	6·6	223	21·7	330
Fulham	125,275	—	60	52	—	8	—	—	8	—	128	10·7	—	—	2	7	2	—	2	1	88	102	8·5	282	23·5	333
Chelsea	96,713	—	22	26	—	2	—	—	7	—	57	6·1	—	—	—	5	3	—	2	—	31	41	4·4	184	19·8	351
St. George Hanover-square	80,608	—	20	10	—	3	1	—	1	—	35	4·5	—	—	1	—	1	—	1	—	10	13	1·7	90	11·6	221
Westminster	52,574	—	4	5	—	6	—	—	1	—	16	3·2	—	—	—	—	3	—	—	—	13	16	3·2	91	18·0	243
St. James Westminster	22,200	—	3	1	—	—	—	—	2	—	6	2·8	—	1	2	—	—	—	—	—	1	4	1·9	36	16·9	152
North Districts.																										
Marylebone	140,483	—	19	13	—	7	—	—	19	—	58	4·3	—	3	2	—	1	—	—	—	27	33	2·4	211	15·7	206
Hampstead	78,755	—	23	10	—	5	—	—	4	—	42	5·6	—	1	—	4	—	—	1	1	7	14	1·9	87	11·5	196
St. Pancras	243,416	2	90	36	—	20	1	1	20	2	172	7·4	—	2	7	4	6	—	3	—	88	110	4·7	513	22·0	380
Islington	344,616	—	70	35	—	20	—	1	20	—	146	4·4	—	16	2	5	7	—	6	—	121	157	4·8	583	17·6	246
Stoke Newington	34,660	—	7	3	—	—	—	—	1	—	11	3·3	—	—	—	—	—	—	—	—	14	14	4·2	55	16·5	250
Hackney	219,630	1	57	60	—	19	—	2	23	—	162	7·7	—	4	2	6	5	—	7	—	91	115	5·5	434	20·6	326
Central Districts.																										
St. Giles	37,519	—	2	8	—	2	—	—	8	—	20	5·6	—	—	1	1	1	—	—	—	10	13	3·6	71	19·7	264
St. Martin-in-the-Fields	12,424	—	1	1	—	—	—	—	2	—	4	3·4	—	—	—	—	—	—	—	—	2	2	1·7	22	18·5	313
Strand	23,284	—	1	—	—	—	—	—	3	—	4	1·8	—	—	—	—	—	—	—	—	5	5	2·2	50	22·4	300
Holborn	30,056	—	8	12	—	—	—	—	1	1	22	7·6	—	—	—	1	2	—	—	—	9	12	4·2	68	23·6	483
Clerkenwell	66,120	—	43	25	—	4	—	—	8	—	80	12·6	—	2	—	2	2	—	1	—	35	42	6·6	151	23·8	355
St. Luke	41,076	—	11	13	—	—	—	—	2	—	26	6·6	—	2	—	2	3	—	—	—	25	32	8·1	111	28·2	325
City of London	29,088	1	6	—	—	1	—	—	2	—	10	3·6	—	—	1	—	—	—	—	—	2	3	1·1	38	13·6	80
East Districts.																										
Shoreditch	121,485	—	36	12	—	12	1	1	19	1	82	7·0	—	6	2	2	2	—	1	—	88	101	8·7	329	28·2	435
Bethnal Green	129,027	—	34	18	—	8	1	—	34	—	95	7·7	—	8	1	4	2	—	—	—	61	76	6·1	296	23·9	286
Whitechapel	80,559	—	20	10	—	5	—	—	6	—	41	5·3	—	2	—	—	—	—	2	—	14	18	2·3	177	22·9	256
St. George-in-the-East	48,241	—	15	13	—	4	—	—	7	—	39	8·4	—	3	1	1	—	—	2	—	14	21	4·5	131	28·3	276
Limehouse	58,661	—	13	13	—	3	—	—	5	—	34	6·0	—	3	—	2	6	—	2	—	38	51	9·1	164	29·2	447
Mile End Old Town	112,528	—	39	28	—	6	—	—	18	—	91	8·4	—	5	—	10	1	—	—	—	59	75	6·9	255	23·6	332
Poplar	170,220	—	65	28	—	10	—	—	22	—	125	7·7	—	6	1	5	5	—	3	—	108	128	7·8	404	24·7	371
South Districts.																										
St. Saviour Southwark	24,562	—	7	6	—	1	—	—	2	—	16	6·8	—	—	—	—	1	—	—	—	13	14	5·9	60	25·5	394
St. George Southwark	60,466	—	46	17	—	5	—	—	2	2	72	12·4	—	2	5	2	6	—	1	—	49	65	11·2	167	28·8	381
Newington	123,183	—	35	48	—	4	—	1	5	—	93	7·9	—	5	1	11	5	—	1	—	82	105	8·9	294	24·9	358
St. Olave Southwark	11,288	—	6	3	—	1	—	—	—	—	10	9·2	—	—	—	—	1	—	—	—	3	4	3·7	18	16·6	135
Bermondsey	85,738	—	55	21	—	8	—	—	8	—	92	11·2	—	3	3	3	6	—	1	—	30	46	5·6	189	23·0	271
Rotherhithe	40,849	—	13	2	—	2	—	—	10	—	27	6·9	—	—	—	—	1	—	—	—	8	9	2·3	80	20·4	280
Lambeth	304,073	—	64	49	—	14	2	1	26	1	157	5·4	—	5	1	10	24	—	4	1	116	161	5·5	612	21·0	302
Battersea	171,921	1	52	60	—	4	—	1	10	—	128	7·8	—	—	—	10	7	—	1	—	84	102	6·2	361	21·9	370
Wandsworth	202,526	—	33	28	—	13	—	2	16	—	92	4·7	—	1	1	4	11	—	2	—	82	101	5·2	329	16·9	278
Camberwell	261,189	—	70	50	—	8	—	—	16	—	144	5·7	—	3	2	8	10	—	2	—	118	143	5·7	482	19·2	327
Greenwich	180,441	—	33	49	—	18	1	2	14	—	117	6·8	—	—	—	4	12	—	2	—	90	108	6·2	377	21·8	321
Lewisham (excluding Penge)	88,562	—	14	18	—	5	—	—	4	1	42	4·9	—	—	—	—	2	—	—	—	45	50	5·9	174	20·5	352
Woolwich...	41,478	—	10	7	—	3	—	—	2	—	22	5·5	—	—	1	—	4	—	—	—	18	23	5·8	82	20·6	279
Lee	39,717	—	7	6	—	3	—	—	6	—	22	5·8	—	3	—	—	1	—	—	—	11	15	3·9	61	16·0	275
Plumstead	62,531	—	28	13	—	1	—	—	5	—	47	7·8	—	—	1	—	3	—	—	—	19	23	3·8	113	18·8	290
Port of London	—	—	—	—	—	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 17 cases of membranous croup.

† Including deaths from membranous croup.

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2255 at the end of the three preceding months; the weekly admissions averaged 202, against 223, 208, and 242 in the three preceding months. The prevalence of diphtheria in London during August also showed a marked decline from that recorded in the preceding month; this disease was proportionally most prevalent in Fulham, Holborn, Clerkenwell, St. Luke, Newington, and Battersea sanitary areas. There were 865 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of August, against 917, 971, and 1014 at the end of the three preceding months; the weekly admissions averaged 107, against 134 and 146 in the two preceding months. The prevalence of enteric fever in London showed a further increase upon that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in Westminster, Hackney, Shoreditch, Bermondsey, and Greenwich. The Metropolitan Asylums Hospitals contained 118 enteric fever patients at the end of August, against 54, 53, and 87 at the end of the three preceding months; the weekly admissions averaged 21, against 8, 11, and 16 in the three preceding months. Erysipelas was proportionally most prevalent in St. Giles, Bethnal Green, St. George-in-the-East, Mile End Old Town, and Rotherhithe sanitary areas. The 14 cases of puerperal fever notified in London during August included 2 in Hackney, 2 in Wandsworth, and 2 in Greenwich sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the five weeks ending Saturday, Sept. 3rd, the deaths of 8949 persons belonging to London were registered, equal to an annual rate of 20·7 per 1000, against 15·7, 14·6 and 14·7 in the three preceding months. The lowest death-rates in the various sanitary areas were 11·5 in Hampstead, 11·6 in St. George Hanover-square, 13·6 in London City, 15·7 in Marylebone, 16·0 in Lee, 16·5 in Stoke Newington, and 16·6 in St. Olave Southwark; the highest rates were 24·9 in Newington, 25·5 in St. Saviour Southwark, 28·2 in St. Luke and in Shoreditch, 28·3 in St. George-in-the-East, 28·8 in St. George Southwark, and 29·2 in Limehouse. During the five weeks of August 2344 deaths were referred to the principal zymotic diseases in London; of these, 1875 resulted from diarrhœa, 156 from whooping-cough, 121 from diphtheria, 94 from measles, 48 from enteric fever, 47 from scarlet fever, 3 from ill-defined forms of continued fever, and not one either from typhus or small-pox. These 2344 deaths were equal to an annual rate of 5·4 per 1000; among the various sanitary areas the lowest zymotic death-rates were recorded in St. George Hanover-square, St. James Westminster, Hampstead, St. Martin-in-the-Fields, Strand, and London City; and the highest rates in Fulham, St. Luke, Shoreditch, Limehouse, Poplar, St. George Southwark, and Newington. The 1875 fatal cases of diarrhœa were as many as 833 above the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Fulham, St. Luke, Shoreditch, Limehouse, Poplar, St. George Southwark, and Newington sanitary areas. The 156 deaths referred to whooping-cough almost corresponded with the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Holborn, St. Luke, Limehouse, St. George Southwark, Lambeth, and Woolwich. The 121 fatal cases of diphtheria were 77 below the corrected average number; this disease showed the highest proportional fatality in Fulham, Chelsea, Hampstead, Mile End Old Town, Newington, and Battersea sanitary areas. The 94 deaths from measles were less than half the corrected average number; among the various sanitary areas the mortality from this disease was highest in Islington, St. Luke, Shoreditch, Bethnal Green, St. George-in-the-East, and Lee. The 48 fatal cases of enteric fever were 6 below the corrected average number; the mortality from this disease showed no marked excess in any of the sanitary areas. The 47 deaths referred to scarlet fever were 58 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in St. James Westminster, St. George Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was as much as 32 per cent. above the average, owing to the excessive fatality of summer diarrhœa.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to registered births, was equal to 316 per 1000, which very considerably exceeded the average, owing to the fatal prevalence of infantile diarrhœa. Among the various sanitary areas the lowest rates of infant mortality were recorded in St. George Hanover-square, Westminster, St. James Westminster, Marylebone, Hampstead, London City, and St. Olave Southwark; and the highest rates in St. Pancras, Holborn, Shoreditch, Limehouse, Poplar, St. Saviour Southwark, St. George Southwark, and Battersea.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: Jeremiah Sugrue to the *Dido;* Anthony Kidd to the *Isis*, and Edward J. Morley to the *Australia.* Surgeons: Richard A. Ross to the *Dido;* Harold G. T. Major to the *Isis;* and John A. Keogh to the *Jupiter.*

ROYAL ARMY MEDICAL CORPS.

Captain William Perceval Gore Graham retires from the service, receiving a gratuity. Surgeon-General Catherwood is selected for the appointment of Principal Medical Officer at Bengal, vice Surgeon-General Masham, retiring, and Colonel Pollock succeeds Colonel Catherwood as Principal Medical Officer at Gibraltar.

INDIA AND THE INDIAN MEDICAL SERVICE.

Captain Bird, Resident Medical Officer, Medical College Hospital, Calcutta, is appointed in addition to his own duties, to act as Professor of Physiology, Medical College Hospital, until further orders. Captain Clarkson, on return from temporary military duty, is appointed to act as Civil Surgeon of Nadia during the absence on deputation of Captain Dare, or until further orders. Major Waddell (Bengal), Chemical Examiner and Professor of Chemistry in the Medical College, Calcutta, is granted special leave on urgent private affairs for six months.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant David R. Dobie, M.D., 2nd Volunteer Battalion, the King's Scottish Borderers, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 2nd Cinque Ports (Eastern Division, Royal Artillery): Shepherd McCormick Boyd to be Surgeon-Lieutenant. 2nd Devonshire (Western Division, Royal Artillery): Leonard Leighton Hanham to be Surgeon-Lieutenant. 4th West Riding of Yorkshire (Western Division, Royal Artillery): Surgeon-Captain C. N. Gwynne to be Surgeon-Major, to resign his commission, with permission to retain his rank, and to wear the uniform of the corps on his retirement. *Rifle:* 7th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Major J. L. Crombie to be Surgeon-Lieutenant-Colonel. 1st Volunteer Battalion the Queen's (Royal West Surrey Regiment): John Wayte to be Surgeon-Lieutenant.

THE RECENT MANŒUVRES.

Now that the manœuvres are over there is an opportunity for taking a brief retrospective view of what has been done. In the first place the weather throughout the operations was very hot—indeed sub-tropical—temperatures of 90° F. in the shade and 112° in the sun having been commonly reached. The men bore the heat and their fatigues and privations, for there were privations, well and cheerfully. The health of the troops was excellent, the sickness having been from 1 to 2 per cent., and the diseases were of a relatively trifling nature. The physique and marching powers of the troops were excellent, and we have reason to know that many officers and spectators were very agreeably surprised at the good quality of the material they saw, and at the numbers, military bearing, and physical appearance of the troops. There was comparatively but little falling out, and take them for all in all both Army Corps consisted of sturdy, active and well-set-up soldiers. The Royal Engineers' arrangements were very good. Water was a difficulty owing to the supply not being by any means so abundant as could be desired. Great care was taken to protect it from contamination. Officers commanding battalions and officers of junior rank can only see what is going on in their

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immediate vicinity; they can know little or nothing of the strategical and tactical objects of the military movements. The main benefits to be derived from big military manœuvres are reserved for the generals commanding and their staffs. As regards strategy the commanders of each side had very little initiative allowed them and they had comparatively little, instead of absolute, freedom of action to deal with the actual situation as it presented itself and varied from time to time. One well-known firm undertook to supply the canteens, which is a very different thing to supplying an army in the field, a large number of things being provided in the one case which could not be furnished, or expected to be furnished, in the other. Another well-known firm supplied the hired transport. Transport is always a great practical difficulty in war and it is unfortunately the pivot on which so much depends in a campaign. The employment of civilian horses, drivers, and carts was by all accounts far from a success. It is a very general and popular belief that big contracting firms could do everything better for a force than the regular transport and supply branches of the army, but the experiment on this occasion should convince people that it is an uncommonly difficult thing to deal satisfactorily with the conditions presented by an army in the field—conditions which are quite novel to contractors. Organisation and discipline are absolutely essential in all undertakings of this kind, and the Army Service Corps did their work in a more efficient and better way than their auxiliary civil aids, only that corps was too weak, owing to the Egyptian and other campaigns, to undertake the task unaided. It is well, however, that the civil experiment has been made, because its shortcomings can be guarded against by better arrangements in the future. Lord Wolseley has called for information and full returns to be furnished to the War Office in connexion with the manœuvres. We have every reason to believe that, as far as the arrangements of the Royal Army Medical Corps were concerned, they were satisfactory and worked well.

THE LATE SPANISH-AMERICAN WAR.

The sufferings of the American soldiers from disease—especially of those of the force recently operating in Cuba—have been very great and continue to cause much indignation among the American people, whose conscience has been keenly aroused in this respect. Nothing could have exceeded, by the way, the kindness of the people to these unfortunate American soldiers; it was quite conspicuous. In addition to the malarial and climatic fevers and other disorders which may be fairly attributed to active service in Cuba, there has also been a lamentable prevalence of enteric fever among the American troops recently employed there and elsewhere. The food, it is alleged, supplied to the Cuban force was unsuitable, the hospital accommodation and sick supplies were insufficient for the purpose, the land transport was inadequate, and the shipping transport for the sick and wounded left much to be desired in various ways. Moreover, several of the military camps in America, owing to their having been badly selected and insanitary, are stated to have given rise to much preventable disease. The whole subject is, it is understood, to be investigated and reported upon by a Commission appointed by the United States Government.

GALLANTRY OF FRENCH MEDICAL OFFICERS IN THE FIELD.

The French navy has reason to be proud of its medical officers. In addition to Dr. Abbatucci, whose decoration for Soudan services was recently mentioned in this column,[1] another young naval surgeon has been rewarded with the Cross of the Legion of Honour for gallant conduct before the enemy in Madagascar. When the outpost at Bekapoka was attacked last September Dr. Rapuc, rifle in hand, ably seconded the efforts of the lieutenant in command, and by his *sangfroid* and energy materially contributed towards the discomfiture of the assailants. The following month also, while on a medical tour, this officer succeeded in effecting the escape from the rebels of almost the whole of his escort after their leader, a European sergeant, had been mortally wounded. In the same gazette the special promotion of yet another naval medical officer, Dr. Emily, is recorded on account of "exceptional services in the Oubanghi district," while a member of "the Marchand mission."

[1] THE LANCET, June 18th, 1898, p. 1718.

DEATHS IN THE SERVICES.

Surgeon-Major-General Inkson, A.M.S., retired, at Acton, on Friday, Sept. 9th, at the age of sixty-two years. He served with the Baltic Expedition of 1855, including the bombardment of Sweaborg. He was appointed an Assistant Surgeon in the Army in October, 1857. The following year he served in the Indian Mutiny campaign, including the capture of Jugdespore and three subsequent actions in October, for which he had another medal. In 1865 he was again employed on active service, this time with the Bhootan Expedition, for which he had a third medal. Surgeon-Major in March, 1873, Brigade-Surgeon in 1883, and Surgeon-Colonel in September, 1888, he became Surgeon-Major-General in 1893 and was placed on the retired list in November, 1895. The late officer was an M.D. of Edinburgh University and L.R.C.S. Edin.

Among the appointments on the personal staff of Sir William Lockhart on his assuming the command of the forces in India we notice the name of Captain Beyts, R.A.M.C., as surgeon to the Commander-in-chief.

Correspondence.

"Audi alteram partem."

THE SO-CALLED CONSERVATIVE SURGERY OF THE UTERINE APPENDAGES.

To the Editors of THE LANCET.

SIRS,—As Mr. Christopher Martin owes his education, experience and advancement in gynæcology entirely to me it is something more than a disappointment to find that he ignores or forgets some of the best instruction I ever gave him. What he refers to in his paper as valuable additions made by German authorities of recent years is merely and for the most part the discarded work of English operators of a time when Mr. Martin wore jackets. The first real piece of conservative work on the ovary and its tube was when Bantock and I discovered, almost simultaneously, that parovarian tumours could be removed entirely by enucleation and showed that they should not be classed for any purpose whatever with tumours of the ovary. From that time I have never ceased to argue that in cases of broad ligament cysts, which constitute at least 10 per cent. of all the cases reckoned as "ovariotomies," the healthy ovary and tube should be left alone. This is the only successful piece of conservative surgery in the pelvis with which I am acquainted and its success is not constant. The broad ligament is a piece of peritoneum and the ovary and tube are covered with it. If you injure the peritoneum or if inflammatory action is in any way excited in it it lies against another peritoneal surface and inevitably (so at least it appears) becomes adherent to it. If a Fallopian tube or ovary is injured they become adherent and after a time, usually years, they become cirrhotically atrophied and cause endless suffering and trouble, and their removal under these circumstances includes by far the most difficult pelvic operations we have to encounter, operations which many of those who attempt them leave unfinished and say nothing about them. On these points I have published over and over again and I have published series of cases showing that by reason of these peculiar complications the secondary operations are fatal to a terribly increased degree. The facts of these adhesions and the difficulty of overcoming them being known only to the fingers of the men operating were much doubted till I was able to show the celebrated specimens given to me by Sir Henry Littlejohn and then all doubt was set at rest.

Mr. Christopher Martin passes all this by and derives much comfort from the word "conservative." The term "conservative surgery" was invented in the reign of the late Sir William Fergusson and was greatly supported by him. Large numbers of operations of the "conservative" order were done and the victims were sent out of hospital. But in looking over the operation lists of our large hospitals now I am greatly comforted by seeing that the "conservative" class of operations are hardly performed now at all, certainly not as they were, and that flail-like limbs have gone out of fashion.

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It is difficult to see why this second wave of "conservative surgery for the uterine appendages" should have its existence, for no suggestion in it has been made, but one, which was not tried in my *clientèle* in the early "eighties." That exception is "ignipuncture," though as a perfectly certain exciter of the process of peritoneal adhesion it is the last thing which could have occurred to me as reasonable.

Finally, this "conservative surgery for the uterine appendages" is to include removal of a perfectly healthy uterus. I have shown some eight or ten years ago that secondary removal of the uterus is sometimes necessary to relieve symptoms continued after removal of diseased tubes and ovaries, some 6 or 8 per cent. of the cases requiring this secondary proceeding. But any effort to make removal of the uterus an essential part of the first operation will have my strongest disapproval. Mr. Martin exaggerates the number of cases in which vulvar and vaginal atrophy occurs after removal of the appendages, but he will immensely increase it in reality if he removes the uterus with them. Further, there are strong reasons, which I have not space to give here, why in dealing with cases in which the neurotic element is a preponderating factor the uterus should be left. This subject I hope to deal with at length before long.

In conclusion, let me beg Mr. Martin and my younger brethren generally not to fall into the pit of neglecting to read what has gone before them, even in the generation immediately preceding them. Between the years 1870 and 1894 a good deal was done in Great Britain for gynæcology, and on the conservative aspect of the case we have nothing, absolutely nothing, for which we have to be beholden to our German brethren.—I am, Sirs, yours faithfully,

Birmingham, Sept. 12th, 1898. LAWSON TAIT.

THE PITCH OF THE HUMAN VOICE.

To the Editors of THE LANCET.

SIRS,—Has it been observed that some ratio exists between the set of the human ear and the (singing) pitch of the voice? During my holiday I have amused myself by forecasting the qualities of their voices, whether deep-toned or otherwise, before the vocalists whom I have met have sung. The inference is drawn from the squareness or angularity of the jaw and from the mode in which the ear is set on to the cheek, whether vertically with the face or obliquely; if vertically then a deep-toned voice belongs, but if the ear slants downwards and forwards a tenor or soprano voice accompanies. A better anatomist than myself will probably explain the reason.

I am, Sirs, yours faithfully,

ALEXANDER WALLACE, M.D. Oxon.

Colchester, Sept. 10th, 1898.

"THE PLAISTOW MATERNITY CHARITY."

To the Editors of THE LANCET.

SIRS,—To reply fully to Mr. Pritchard's letter in THE LANCET of Sept. 10th would require more time and space than his special pleading merits, but the last paragraph, in which he infers that we who employ nurses from this Home are therefore satisfied with them, claims a prompt denial. It is a case of Hobson's choice. The conditions under which we practise our profession in Plaistow make a nursing institution supported by charitable funds a necessity.

We are obliged to employ these nurses because they are the only ones available and we naturally express our thanks for the help we get. But at the same time we almost unanimously condemn the maternity department and find the training of nurses leaves much to be desired, for the nurses are responsible to a superintendent nurse and not to us and frequently our instructions are not carried out. Mr. Pritchard's "more important practitioners" will hardly thank him for the insinuation that they make use of these charity nurses, not only to enable them to keep paying patients, but even to tout for them

I am, Sirs, yours faithfully,

Plaistow, Sept. 13th, 1898. P. NAPIER JONES.

*** In the letter from Mr. W. W. Farnfield, headed "The Plaistow Maternity Charity," printed in THE LANCET of Sept. 10th, the last three lines should have read: "St. Mary's Day Nursery and Hospital for Sick Children, Plaistow, E., is in no way connected with the Plaistow Maternity Charity."

"A CASE OF MEMBRANOUS TRACHEITIS AND LARYNGITIS WITHOUT THE PRESENCE OF DIPHTHERITIC BACILLI."

To the Editors of THE LANCET.

SIRS,—The interesting case reported by Mr. Grimes under the above heading in THE LANCET of August 13th of membranous tracheitis and laryngitis in which no diphtheria bacilli were found, draws attention to a circumstance in regard to diphtheria which is not sufficiently recognised—viz., that the term "diphtheria" requires to be now considered in a double sense. First, we have the clinical form in which the leather-like membrane from which the word "diphtheria" was derived is the prominent feature. The conclusion of the Royal Medical and Chirurgical Society's committee of 1875 that such a membranous laryngitis is identical with true diphtheria has been allowed to give too much colour to all statements on this point from English authors. It is, however, now generally recognised that in a certain proportion—14 per cent. according to Billings—there may be a membranous laryngitis or tracheitis not truly diphtherial according to the bacteriological test. I have reported such a case in my monograph on Diphtheria at p. 181. The responsible organisms in this instance were streptococci and staphylococci. Mr. Grimes does not state what they were in his case. The second form of diphtheria to which I have alluded is the bacillary, in which the clinical evidences of membrane are but very slight or may be entirely absent. According to Variot and other observers the prognosis of this form is very favourable. May I, in conclusion, once more plead that since Trousseau gave his reasons for substituting the word "diphtheria" for "diphtheritis," the use of the adjective "diphtheritic" should give way to "diphtherial"? Certainly the term "diphtheritic bacilli" does not accurately describe the Klebs-Löffler organisms of the malady.

I am, Sirs, yours faithfully,

LENNOX BROWNE, F.R.C.S. Edin., M.R.C.S. Eng.

Mansfield-street, W.

UNTOWARD RESULTS AFTER ADMINISTERING RESORCIN.

To the Editors of THE LANCET.

SIRS,—Recently I was called in consultation with another medical man to see a child and we prescribed resorcin in 2 gr. doses. The mother states that a quarter of an hour after the powder had been administered the child's mouth became inflamed and the tongue was swollen. When I saw the child the following morning blisters had been formed on the lips similar to what would have been produced by boiling water, and in addition to a thick white coating on the tongue there was a distinct excoriation outside the mouth. On making inquiries we found the drug dispensed had been exposed to light and presented the appearance of decomposition having taken place and it occurs to us that carbolic acid or other irritant may have been produced. The chemist we have reason to believe has suggested to the parents that the injury was due to the drug having been administered without a vehicle. We have never known or heard of severe results of the kind being produced by pure resorcin and we think that in the present instance decomposition or the substitution of another drug may have had much to answer for. Perhaps I ought to have mentioned that the child was suffering from cholera infantum. I enclose some of the powders and we will feel much obliged for your opinion.

I am, Sirs, yours faithfully,

Sept. 5th, 1898. L. C.

*** We have submitted the powders to our analyst for examination in THE LANCET Laboratory, but no evidence was gained that they contained anything but resorcin. The papers enclosing the powders were slightly discoloured, due to partial oxidation, resorcin especially in association with alkali absorbing oxygen from the air much in the same way as its analogue pyrogallol. Our correspondent will

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find a reference on the pharmacology and therapeutics of resorcin in THE LANCET, vol. ii., 1880, p. 777, and vol. ii., 1881, p. 1065, in which it is stated that resorcin has a caustic action on the skin, and application to the moist lips causes a white eschar.—ED. L.

THE ABUSE OF NURSING CHARITIES.

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from p. 580.*)

THE first result of the attempted organisation of the medical practitioners was to retard the opening of a branch for the extension of the Plaistow Maternity Charity and District Nurses' Home to the East and West Ham districts. It was not till August 4th that the projected branch was opened. It is situated in East Ham and it is a significant fact that no medical man in that district has consented to attend to such midwifery cases as proved to be beyond the competence of the nurses. The nurses are therefore obliged to send for medical assistance to a practitioner living in the West Ham district. The feeling is strong among the members of the profession that in thus extending this nursing institution the cases of abuse will be considerably increased. As a further proof that such abuse existed several medical men related to me that they had been called in because the nurses had not given satisfaction and that in such cases they received fees of a guinea and upwards. How was it that these charity nurses were in attendance on persons who could afford to pay guinea fees? and for one person who was dissatisfied with the nurse and therefore called in a medical practitioner, how many have contented themselves with the nurses' services and not called in any medical adviser though they could well afford to pay his fee? Another local practitioner related that he had been retained to attend a woman in her confinement who could afford and had promised the usual fee. As the time drew near this woman, however, changed her mind, did not send for her medical man, but secured the services of one of the charity nurses instead. Complications arose at the confinement, the husband was alarmed and came to fetch the medical man whose services had been originally retained. When, however, my informant, the medical man in question, reached the house he found that the nurse, with other nurses to help her, had profited by the husband's absence to have the patient removed to the hospital. Here, then, we have a double abuse. Firstly, a woman who can afford to pay and had actually retained her medical attendant is persuaded at the last moment to accept instead the services of a charity nurse who should be attending only to the poor. Secondly, as the case turns out badly, the patient is carried off to the hospital while her husband has gone out to bring in the local practitioner. Thus the practitioner is deprived of his case first by the charity nurses and then by the hospital, and this was a patient who could afford to pay.

The question of the attitude that the local practitioners should observe towards these nurses is somewhat complicated and delicate. Thus a general practitioner related to me that a nurse from the Plaistow Maternity Charity came to him and asked for his assistance in a case of retained placenta. The nurse said that she had been to several other medical men and they had all refused to have anything to do with the case. My informant likewise refused. He argued that medical men should not be thus utilised at the last moment to get a nurse out of a scrape. If medical men were available on such emergencies the nurses would go round saying that a medical man was sure to follow them if needed. The patients would then not be afraid to employ only nurses and the latter would trade on the fact that they could call in the nearest practitioner if any trouble arose. This would be all the more useful to the nurses from the Plaistow Maternity Charity, as they are often too far away to get help from that institution. On the other hand, it may be argued with much force that when a life is in danger the medical practitioner should not refuse his services, even though he may by such help be aiding some system of undercutting his own profession. Perhaps the formation of a strong union may provide the answer to this problem. Alone and unaided the refusal to attend such cases is the only means of defence which the local practitioners possess, but if they have a strong union behind them they might perhaps attend, and this not only from motives of humanity, but so as to better investigate and expose the case. A strong organisation can expose a case of abuse where an individual acting alone would fail to do so. Then, again, if it be nevertheless necessary under certain circumstances to refuse attendance, it would be better that these circumstances should be clearly defined by a medical union and not by an individual practitioner. Such a decision also should be made public. It would be most lamentable and injurious to the cause of organisation if a woman in confinement lost her life because she had in her ignorance engaged a nurse in a manner not acceptable to the members of the medical profession. At least it should be made clearly evident that the widest publicity had been given to the fact that under certain clearly defined conditions medical practitioners would refuse to attend. Indeed, this refusal to attend is probably the most powerful weapon in the hands of the profession, but it must be employed with great prudence and only after the matter has been thoroughly discussed and the policy approved and sanctioned by the union. It is needless to point out the utter futility of one practitioner refusing to attend. But in this particular instance several practitioners declined to attend. There seems therefore to have been good reason for such an attitude. Then let those reasons be produced; let the union to which these gentlemen belong, the East Suburban Medical Protection Society, investigate the matter closely. If this policy of refusing to attend a case of confinement when an emergency arises and a nurse seeks to cover her responsibility is approved, the precise conditions under which it may be anticipated that medical men will withhold their services should be made widely known. This would indeed be a very effective manner of checking certain phases of abuse.

Of course such grievances are not confined solely to the Plaistow Maternity Charity and Nurses' Home. For instance, at Leytonstone a patient retained the services of her medical attendant for her confinement, the fee agreed upon being one guinea. The patient likewise engaged a nurse from the Essex Cottage Nursing Homes, which is a charity supported by voluntary contributions and by entertainments. The nurse was paid 5*s.* for her services. These nurses attend to midwifery cases for 5*s.* and the nurse in question was surprised to find that a medical practitioner had also been engaged. The nurse even went so far as to protest that this was in no way necessary. The patient, however, persisted in her resolution; she could afford the guinea and therefore she meant to have a fully qualified medical man to attend upon her, and the medical man in question related to me the incident; but, as he pointed out, for one person who acts in this manner how many are there who would easily allow themselves to be persuaded and would trust themselves entirely to the nurse, who charges only 5*s.*? Yet I am told that the nurses from the Essex Cottage Nursing Homes have no qualified practitioner to assist them. At Ilford, also, there is a nurse who is canvassing the medical men's patients for midwifery cases. She tells the people that all medical men charge at least a guinea for confinements and that she will take 5*s.* or 7*s.* 6*d.* Out of this there arises incidentally a curious question. A medical practitioner must not employ an unqualified assistant, but he is quite at liberty to send for this unqualified nurse and get her to take over some of his midwifery cases whenever he has not time to attend to them fully himself. It seems illogical that nurses may be employed, however incompetent they may be, while the unqualified assistant, though often competent and possessing considerable experience, must not be employed. Such in any case was the question which arose when discussing the position of the unqualified nurse who is canvassing for midwifery cases at Ilford. Doubtless as medical union becomes stronger and better organised we shall hear more and know more of the evils which arise from midwifery cases being left in the hands of incompetent persons.

What can be done by united action can be seen in the east suburban district of Loughton. About two years ago some charitably disposed inhabitants of Loughton wanted to establish a nursing charity. A nurse was to be imported into Loughton for the purpose of attending midwifery cases among the poorer sections of the population either for nothing or for very small fees. Fortunately the local practitioners at once took action. They were quite unanimous and declared

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that such a charity would interfere with the trained nurse and the medical men established in the locality. The proposed nursing charity was successfully nipped in the bud. Instead of indiscriminate charity there is at Loughton a Maternity Club. The mothers subscribe some months in advance to this institution and when they are confined they are attended by one of the local fully-qualified practitioners and the club pays him a guinea fee. At first the subscriptions paid by the mothers did not suffice and the balance was made up by donations from charitable persons. Now, however, the Maternity Club has ceased to be a charity the members subscribe enough not only to pay the guinea fee to the medical attendant, but also to pay a nurse and to get various things specially needed at such a time. Thus there are no midwifery cases attended in Loughton for less than a guinea and one of the local practitioners assured me that during the last four years he had had no bad debts and he had not even been put to the unpleasantness of having to ask for his money. It is true that the inhabitants of Loughton are fairly prosperous. They work for the railway, for corn-merchants, and as gardeners for the local residents. The most improvident belong to the mixed gipsy class. They are not true gipsies, for when a number of gipsies were turned out of Epping Forest some of them married East-end women and thus a sort of half-breed race has grown up. They live by providing donkeys and various sorts of entertainments for the holiday folk who visit the forest. These are the only class of people at Loughton likely to give the local practitioners some trouble. There is a provident society at Loughton which is self-supporting and there are benefit societies and medical aid associations. These all pay 1*d.* a week for adults, but for children they pay less. However, as the population is exceptionally healthy and there is very little sickness these sums represent more than they would in a large town and I did not hear any complaints. The nurses from Plaistow and other and nearer nursing institutions do not come to Loughton. Yet the poor have an efficient nurse to attend to them. This is one of the "Queen's nurses" and she costs the community about £100 a year. The money is raised by subscription and managed by a committee on which the interests of both Church and Chapel are duly represented. The nurse has a cottage to live in, must not accept any fee, and only attends to others than the poor in a case of emergency. If an accident happens to a well-to-do person and the help of a nurse is required immediately then the medical attendant may send for this nurse, but she must leave the case as soon as a paid nurse has been brought down from London. It is therefore only in cases of emergency that the Queen's nurse can be employed, and on those occasions the person profiting by her services is supposed to contribute half a guinea towards her maintenance. Such a case, however, is of rare occurrence. The nurse's time is devoted to attending the poor, but she must only visit patients to whom she is sent by one of the medical men of the town. Thus the matter is entirely in the hands of the local practitioners: the nurse is there to help them and not to compete against them. The inhabitants of Loughton seem to have realised that it is the business of medical men to attend to the sick and that the best way of helping those who are ill is to help medical men to do their work. Efficient nursing is a great help; the grievance at Plaistow, East Ham, and elsewhere is not against nurses who help, but against nurses, most of them insufficiently trained, who compete against fully-trained nurses and against the medical practitioners. The fact that such a grievance does not exist at Loughton, though it prevails extensively in the immediate neighbourhood, shows what the profession can do when its members are united, and it indicates also that there is a way out of the difficulty.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A Third Outbreak of Plague in Bombay.—New Measures and their Probable Consequences.—Appointments of Divisional Health Officers.—Plague elsewhere.

IT cannot be disguised that Bombay is seeing the commencement of a third outbreak of the plague epidemic. The deaths during the past week have risen from 101 to 162, the type of the disease appears to be extremely virulent, and the cases are occurring in all parts of the city. Considerable anxiety is being felt and expressed in trade circles with regard to the probability of severe plague regulations being again enforced. The continuous expenditure on plague measures is also telling seriously in many quarters, and has virtually brought the finances of the Bombay Government to insolvency. The new plague powers and organisations are much the same as the old, but instead of the Plague Committee the Municipal Commissioner becomes the responsible chief plague authority. As he is interested in the municipality, and especially in its finances, whatever plague measures may be enforced will at least be subject to proper financial control.

The denial of the riots of last March being premeditated is only an official defence of departmental policy. No one believes it. I have been given an intimation that if the former obnoxious measures be reintroduced rioting will be repeated. The plague regulations being so distasteful the native leaders seek for means of counteracting them. The loss of a few lives is nothing to them and is admitted as such. They recognise the results of the last riots and almost regret that they were not brought about before, and they have the foresight to see that the enforcement of sanitary measures which lead to disturbance will assuredly be condemned and consequently withdrawn. A fight against disease when the people are against you cannot be conducted at the point of the bayonet. This, I believe, is the native opinion and indicates their future policy. If the new powers placed in the hands of the Commissioner be carried out with the martial spirit and with the military assistance of the late Plague Committee the rioting will be repeated. In view of the developing third outbreak it is to be hoped a more sympathetic course will be adopted.

In the reorganisation scheme for the Health Department of Bombay city 4 divisional health officers have been appointed. Dr. C. H. Cayley has been given No. 1 division, comprising the south of the island and the eastern district of the city. Mr. J. Leask has No. 2 division, comprising the western and central districts of the city; Mr. W. Venis No. 3 divison, comprising the northern part of the city; Dr. S. C. Hormasjee (a Parsee) No. 4 division, comprising the whole of the suburbs on the north. As Mr. J. Leask is not a medical man his appointment to such a post is a curious anomaly. His powers for administrative work are undoubted and he has acted as the assistant health officer for some years. Personally nothing but praise can be said in his favour, but in principle the appointment is wrong. Some other post might well have been given to him in order to secure his services to the corporation.

In other places plague seems more intense than it has ever been in Bombay. Dharwar district shows a death-rate of 82 per cent., Thana district of 78 per cent., Satara district of about 80 per cent., and Belgaum of 77 per cent. Also a much larger proportion of the population has been attacked. The ridiculous rules made for the English nurses at Calcutta and previously reported were withdrawn soon after they were made publicly known by the press.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Infectious Diseases at Health Resorts.

IN his report on the health of Manchester for the second quarter of this year Dr. Niven draws attention to the frequency with which children contract scarlet fever and other infectious fevers at "health resorts" and to the little solicitude shown by heads of families that the quarters selected should present a clean bill of health. He points out that at most of our health resorts there are powers for the compulsory notification of infectious disease and that visitors may obtain reliable information from the local medical officers of health. It is to be feared, however, that the danger of infection cannot always be met in this way, for there is no doubt that many children are taken to these places after suffering from scarlet fever and before desquamation is finished and after measles before they are free from infection. It is clearly the duty of medical practitioners to do all they can to prevent their patients being moved before they cease to be dangerous to others.

Poisoning Attributed to Potted Shrimps.

Some 40 or more people at St. Anne's-on-the-Sea have

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been made violently ill with sickness and diarrhœa from eating potted shrimps. At all events, that has been the local belief. The Lancashire coast is famous for its shrimps and it would be a serious misfortune if they were to lose their character. The shrimp-nets are plied for some miles along the coast, where a deep channel divides the foreshore from the shallow banks. It is said that the shrimps were caught, potted, and used the same day. No deaths have occurred, though some of the cases were serious. The fishermen say that the shrimps were caught where there could be no sewage pollution.

An Anti-vaccinator.

The first application under the recent Vaccination Act was made to Mr. Headlam, the stipendiary magistrate, at the Manchester city police-court on Sept. 8th. The applicant said his child was ten months old, and he asked what he should do under the circumstances, as he had not got all his papers and was going on a three months' journey. The magistrate recommended him to have the child vaccinated and after some discussion told him to make another application.

Conference on the Sewage Question.

A meeting of representatives of local authorities in the Irwell watershed, called by the River Irwell Conservancy Committee of the Salford Corporation, was held yesterday at the Salford Town Hall to consider the question of sewage disposal by land treatment. The chief outcome was a strong protest against the insistence by the Local Government Board in every case on land being purchased for the treatment of sewage. It still demands "that for every 20,000 of population ten acres of suitable land should be adopted for land filtration" whether it was possible or impossible to obtain the land. It was stated that in the Swinton and Pendlebury districts preparation had been made for the bacteriological treatment of their sewage and the effluent was satisfactory to the Mersey and Irwell Joint Committee. "But the Local Government Board would not give them power to sewer a certain portion of their district that was at present unsewered unless they undertook to buy 125 acres of land in addition to the 33 acres they had at present." It was moved: "That it be recommended that an association be formed of the local authorities within the Irwell watershed to be composed of two representatives of each authority to fully consider and report upon the following matters—namely: (*a*) the requirements of the Local Government Board with respect to filtration of sewage effluent through land; (*b*) the rights of manufacturers to turn trade liquids and refuse into the public sewers; and (*c*) the standard of purity of the effluent required by the Mersey and Irwell Joint Committee, and that each authority be required to contribute towards the incidental expenses *pro ratâ* according to population."

Sept. 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Sanitary Association of Scotland.

THE twenty-fourth annual congress of this association has during the past week been in session at Rothesay, receiving a cordial welcome from the inhabitants, who were represented by the Marquis of Bute, the honorary President of the association. The President for the year is Dr. Archibald K. Chalmers, one of the medical officers of health of Glasgow. The subject of the Presidential Address was the Vital Statistics of School Ages. Dr. Chalmers took the years between the fifth and fifteenth as representing approximately the school period and showed by statistics that this period contained the healthiest years of life. Comparing the figures for 1890-92 with those for 1870-72 it appeared that the death-rate for the school age during the former period was less by 38 per cent. than during the latter. The causes of death during the school period were discussed in detail and figures were produced to show that the fatal influence of zymotic and tuberculous diseases had been very considerably reduced; also by comparison of the figures for diseases of the nervous system it was claimed that no support, but the opposite, was afforded to the contention that over-pressure in schools exercised a prejudicial influence on the nervous systems of the children. Diseases of the circulation showed an increase of 7 per cent. "at all ages," the increase being specially marked under five, where it reached 50 per cent., whilst during the school age the figures indicated a reduction of 10 per cent. The increase in the percentage of deaths from these diseases, Dr. Chalmers remarked, had been going on steadily for many years, and was not to be explained by the increasing prevalence of rheumatic disease, a circumstance which he considered suggested that greater attention should be given to the supervision and selection of games and gymnastic exercises. In this direction, as in others, children and young people needed guidance and advice. In conclusion the President claimed that the increased knowledge and improved methods of the sanitarians were already resulting in saving for the nation a large number of lives which under the conditions existing twenty years ago would have been lost. Further, as the deaths were fewer, the disabled also must be fewer, so that our school children now left the arena not only in greater numbers than their predecessors, but the proportion of those among them who were handicapped in the life race by physical disability had been diminished. Credit for this in no small measure was due to the efforts of the educational authorities to provide for the children the conditions of healthy existence and vigorous growth. The address was very cordially received.

Faculty of Physicians and Surgeons, Glasgow.

The following gentlemen, having passed the necessary examinations, have been admitted Fellows of the Faculty: Hugh Galt, M.B., C.M. Glasg., and Clarence Alfred Wright, L.R.C.P. & S. Edin., L.F.P.S. Glasg.

University of Glasgow.

Post-graduate classes in Bacteriology and Practical Pathology are to be conducted during the vacation by Professor Joseph Coats, assisted by Dr. L. R. Sutherland and Dr. Alexander Ferguson, in the Pathological Institute at the Western Infirmary.

Sept. 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Epidemic of Typhoid Fever at Belfast.

THE epidemic of typhoid fever still continues at Belfast and the admissions into the Union Fever Hospital were for the week ending Sept. 10th more in number than in the preceding one. There are now over 400 cases in that hospital. The type of the disease is more severe than it was in the beginning and hæmorrhage and other serious complications are more common. Everyone is waiting for the Public Health Committee to give information as to what they are doing to remedy the present most serious state of affairs and how they propose to attack the most difficult question of the admittedly deplorable sanitary condition of Belfast. It will take an enormous expenditure of money to remedy the defects of the town, but we are sure if the Public Health Committee will only face these difficulties the citizens will give them their unanimous support.

Outbreak of Fever at Markethill.

At a meeting of the Armagh Board of Guardians held on Sept. 6th Mr. Marshall reported that in Markethill, of which he is medical officer of health, there has been since July an outbreak of enteric fever and scarlet fever has also affected a number of persons. Everything is being done by Mr. Marshall to limit the spread of the disease.

Cookstown Sewerage System.

The Cookstown Board of Guardians have decided to apply for a loan of £1370 for the purpose of extending the sewerage system of Cookstown and a special committee has been appointed to discuss various matters regarding the sanitation of that town.

Water Famine at Cushendall.

Dr. Fogarty, the sanitary officer of this beautiful health resort in county Antrim, reported to the Ballycastle Board of Guardians at their meeting on Sept. 10th that the town was practically without water. The question of a water-supply will be fully considered on Sept. 24th.

The Cork Hospital Saturday Collection.

The Committee of the Cork Hospital Saturday Collection

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held a meeting for the purpose of discussing whether it would be well to have the usual collection this year in view of the comparatively small sum realised last year. Some members pointed out that though the managers of certain hospitals in the city were quite willing to accept the sums apportioned to them, they rendered absolutely no assistance to the committee in organising the collection. It was accordingly suggested that the proper course to pursue would be to drop the collection for one year, and thus forcibly impress upon those concerned the importance of taking more than a passive interest in a movement designed to materially improve the financial condition of the institutions with which they are intimately connected. In the course of the discussion it was mentioned that the year the collection was inaugurated (1892) a sum of £970 was available for distribution and that last year the collection amounted to only £370. No doubt this marked decrease was in great measure due to the fact that last year the "Record Reign Fund" for the hospitals had already appealed to the charitably disposed. But even so nobody could assert that the Hospital Saturday Committee had not just grounds of complaint and it is admitted on all hands that they adopted a judicious course in summoning a meeting of the managers of the various hospitals to confer with them as to the best means of making the collection in future a distinct success. At the following meeting every hospital was well represented, promises of assistance were cheerfully given, the committee was largely increased, and the Countess of Bandon was nominated President. Her ladyship has since intimated her intention of accepting the office and doing all in her power to further a movement which appeals to the sympathies of the community at large.

Invitation to the British Association to hold their Meeting in Cork in the year 1900.

Sir Rowland Blennerhasset, President of the Queen's College, Cork, has suggested the desirability of inviting the British Association to hold their meeting in Cork in the year 1900. The suggestion has been taken up warmly by the city corporation and at a meeting of the medical profession of Cork specially convened a resolution was unanimously adopted urging the Association to accept the invitation and promising on behalf of the medical men of Cork that in case of acceptance every effort would be made to provide for the Association a most enjoyable sojourn in the capital of the south of Ireland.

Sept. 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Changes in the Viscera Produced by the 72 Hours' Bicycle Ride.

AT a meeting of the Academy of Science, held on August 29th, M. Regnault and M. Bianchi read a paper in which they said that on the occasion of the recent bicycle race which lasted for 72 hours they had examined the winner, the man who came in second, and the man who came in fourth. They examined them before the race, directly after it, and during the three following days. From this examination they have drawn the following conclusions: The riders have lost weight, and the size of the viscera, notably of the abdominal viscera, such as the spleen, the liver, and the stomach, have diminished. The subcutaneous fat has also disappeared. These changes are due to the small amount of food taken during the race, to the heat, to the want of sleep, and to the mental strain. The thoracic viscera—namely, the heart and the lungs—have hardly shrunk at all owing to the extra flow of blood through them produced by the hard work. The continual movement of the legs and of the pelvis, together with the bending forward of the body, have pushed up all the abdominal organs, and these in their turn have pushed up the heart and the lungs. The liver, as being most dense, has markedly pushed up the right lung and the pyloric end of the stomach has been pushed up so that the organ assumes a crescent shape, and thus food stays in it for a much longer time than usual. These displacements are very marked. The abdominal organs are raised about 4 centimetres and the heart is pushed up towards the neck from 2 to 5 centimetres. These facts form an explanation of the therapeutic use of the bicycle in various ptoses, pleurisy and too straight a position of the stomach. The heart and other viscera of these three riders were extremely powerful and so they were able to finish their ride; the other riders who had somewhat weaker hearts left off quite early in the race. It would therefore be advisable for race-riders to be examined by a medical man to see whether they are fit to stand the strain of long-distance rides.

The Medical Treatment of Epilepsy.

At the meeting of the Academy of Medicine held on Sept. 6th M. Motet referred to the researches of M. Maurice de Fleury on the medical treatment of epilepsy. His work is well worth particular attention, as the debates at the recent congress held at Angers have brought out the slight success which has attended surgical operations in epileptics. M. Motet laid great stress upon the originality of M. de Fleury's work, especially upon his statement that injections of artificial serum enhanced very considerably the sedative effect of bromide of potash. Two or three injections of the serum caused a dose of two or three grains of bromide to act just as well as the enormous dose hitherto given to epileptics, the fits are not nearly so frequent and the mental condition is greatly improved. This action of the serum appears to be due to the power which it has of relieving arterial tension and acting as a cardiac tonic.

A Quasi Laporte Case.

Paris has been within measurable distance of another Laporte case. A woman died and the medical officer of the Registrar's Department called on to certify the death gave a certificate for burial without hesitation. Two busybody neighbours, however, went to the commissary of police and declared that the woman had died after a useless and dangerous operation which she herself had told them she had undergone some days before her death. The police commissary called in another medical man who said that he could not state the cause of death without a post-mortem examination. The medical man who had attended the patient on asking for information was referred to his colleague who was to make the post-mortem examination. That very day one of the daily papers published a full account of the facts, naturally grossly exaggerated, and added that a warrant was out against the operator. Here, however, is exactly what happened. The patient suffered from metritis and used to visit her medical man daily to have the cervix uteri dressed. This was what she called "her little operation." Some days afterwards she died from cerebral hæmorrhage, hence the romance evolved by her neighbours. It is much to be desired that police officials would not be so ready to listen to accusations, and also that the daily press would not bring in a verdict of "Guilty" upon absolutely insufficient evidence.

Sept. 12th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

"Contro il Coltello."

THROUGH her associated working-men's clubs Rome has taken an initiative as laudable as it is opportune. She has organised a "Lega Contro il Coltello" (League against the Knife), the instrument carried in contravention of the law by every peasant and artisan and the medium of the homicides, 4000 and upwards, annually perpetrated in Italy. The latest meeting of the League was held on Sunday, Sept. 11th, when a "Statuto" was compiled embodying the "sense" of previous meetings in a series of final resolutions. Its membership is by this time reinforced by an enormous number of "adhesions," and if, as is more than likely, it becomes the parent of other "Leghe" on similar lines in the provinces Italy will have taken a step long expected of her by contemporary Europe towards clearing her character of the stigma which has hitherto been attached to it for "priority in crimes of blood."

The Tragedy of the Quai Mont Blanc.

"Infelix! utcunque ferent ea facta minores." The pathetic Virgilian line rose to many a lip on learning this latest visitation to a House already all too sorely tried. Whatever its past may have been, the Hapsburg dynasty has illustrated the second half of the nineteenth century by as

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nobly philanthropic a record as any reigning power can point to. The brothers of the late Empress—the Duke Karl Theodor and his younger brother—are well known in the medical world, the former as an ophthalmic surgeon, the latter as an authority in chest diseases, not only professionally qualified but singularly successful among the very poor of town and country, to whom their advice or treatment are restricted, while the Empress herself, conspicuous in every good work, quite shared the family predilection for charitable institutions, chiefly medical. The wretch Lucchesi could have dealt his baleful cause no more deadly blow than that which robbed humanity of such a benefactress and plunged in grief a family literally redolent of generous impulses and kindly deeds. His latest deliverance is as revoltingly cynical as any of its predecessors. In anticipation of the plea which may be set up for him he writes to a Naples journal—the *Don Marzio*—a warning to Lombroso and the Piedmontese school that their efforts to prove him a *criminel-né* had better be spared as he had all his wits about him in perpetrating the deed he glories in. All the same, I believe his antecedents are in course of investigation to show that he belonged to the class of physically as well as morally "degenerate," and enough has already been ascertained to justify Professor Lombroso in asking for opportunities to give scientific proof to his provisional view of the man's defects, organic and acquired. The study cannot but be an interesting one and must aid the endeavours of those who are pressing upon the Government a more searching examination of candidates for military service and a better inspired system of education than the traditional one which allows the promiscuous association of children in all stages of deficiency, moral and intellectual, doing no good to the mentally imbecile, while corrupting those who are normally developed.

Sept. 13th.

Medical News.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the first examination for the degree of Bachelor of Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

OLD REGULATIONS.

1. *Chemistry with Chemical Physics.*—Arthur Hinckes Bird, L.S.A., St. Mary's Hospital; William Curling Hayward, M.R.C.S., L.R.C.P., Charing-cross Hospital; and Frederick William Woolrabe, L.R.C.P. & S. Edin., L.F.P.S.G., Melbourne University.

NEW REGULATIONS.

1. *Elementary Anatomy and Biology, Chemistry, and Physics.*—*First-class Honours:* James Bowden Waters, College of Medicine, Newcastle-upon-Tyne. *Second-class Honours:* Norman Bryan Walker, College of Medicine, Newcastle-upon-Tyne. *Pass List:* John William Crawford, William Morton Emmerson, and Guy Rowland East, College of Medicine, Newcastle-upon-Tyne; Reginald Moyle, Guy's Hospital; Robert Reid Pirrie, College of Medicine, Newcastle-upon-Tyne; Carl Anders Ryman, St. George's Hospital; Thomas Wilson and Robert Younger, College of Medicine, Newcastle-upon-Tyne.
2. *Chemistry and Physics.*—Thomas Englehart Amyot, College of Medicine, Newcastle-upon-Tyne; Anthony Bourchier Bradford, St. Thomas's Hospital; Clement Harlow Cox, Mason College, Birmingham; Charles Courtenay Gibb and Ralph Stuart Renton, College of Medicine, Newcastle-upon-Tyne; Charles Ravenscroft Stewart, St. George's Hospital; and John Benjamin Thomas, St. Mary's Hospital.
3. *Elementary Anatomy and Biology.*—Frederick George Armstong and John William Cross, College of Medicine, Newcastle-upon-Tyne; Wharram Henry Lamplough, Mason College, Birmingham; John Herbert McDowall, College of Medicine, Newcastle-upon-Tyne; Percy Montgomery Rivaz, St. Bartholomew's Hospital; and Monica Lucien Mary Robertson, London School of Medicine for Women.
4. *Elementary Anatomy, Chemistry, and Physics.*—Thomas Corrie Rutherfoord, St. Thomas's Hospital.
5. *Elementary Anatomy.*—Arthur John Spiller Brandon, St. Thomas's Hospital; Charles Fisher, St. Bartholomew's Hospital; Edward Henry Milner-Moore, St. Mary's Hospital; and John Norman Parrott, St. Mary's Hospital.

PRESENTATION.—On Sept. 6th Mr. G. H. Ward-Humphreys, M.R.C.S. Eng., L.R.C.P. Lond., of Cheltenham, was entertained at dinner at the Queen's Hotel in that town and presented with a silver tea and coffee service and silver tea-tray, designed according to the Louis Quinze period. After dinner the toast "Floreat Cheltonia" was proposed by Mr. Ward-Humphreys in an entertaining speech and responded to by Mr. Agg-Gardner.

STREET HAWKING.—The Manchester City Council at their meeting on Sept. 7th unanimously adopted a report from the Watch Committee upon the question of the regulation of street hawking by children. Powers of this kind exist in Liverpool and are found to work well.

MANCHESTER CHILDREN'S HOSPITAL.—A new ward was opened on Sept. 12th at the Manchester Children's Hospital, Pendlebury. The ward in question was used until recently for the reception of fever cases, but the acquisition by the Manchester Corporation of the Monsall Hospital has enabled the authorities at Pendlebury to utilise the ward for general purposes. The necessary alterations and improvements have cost £800 and the change will entail an increased annual expenditure of £1200.

THE half-yearly meeting of the Bristol General Hospital was held on Sept. 12th, Mr. J. S. Fry being in the chair. The chairman stated that for the first half of 1898 the in-patients numbered 1111 and that the out-patients during the same period had increased from 13,630 to 14,102. Subscriptions had slightly decreased as well as donations. Certain improvements had been made in the internal fitting of the hospital, more especially in the kitchen department. The out-patient department had been remodelled, the cost to a great extent being defrayed by a friend.

THE MIDDLESEX HOSPITAL.—The in- and out-patient departments of the Middlesex Hospital will be re-opened on Monday, Sept. 19th, for the admission of patients. The winter session of the Medical School will commence on Monday, Oct. 3rd, when an address will be delivered by Dr. Arthur Francis Voelcker, at 3 P.M., after which the prizes gained by the students during the past session will be distributed by Sir Elliott Lees, Bart., M.P., and a banquet will be held in the evening at the Café Royal under the presidency of the Right Hon. Sir Ralph Thompson, K.C.B., chairman of the council of the medical school.

CHARING-CROSS HOSPITAL MEDICAL SCHOOL AND THE HUXLEY LECTURE.—The annual dinner of the past and present students of the Charing-cross Hospital Medical School will be held in the Venetian Chamber of the Holborn Restaurant on Thursday, Oct. 6th. The chair will be taken by Dr. William Carter of Liverpool and Professor Virchow will be among the guests. Applications for tickets should be addressed to either of the secretaries, Mr. Donald Naesmyth and Mr. P. L. Daniel, at Charing-cross Hospital. We understand also that the Huxley Lecture by Professor Virchow is to be delivered in the large hall of St. Martin's Town Hall (Monday, Oct. 3rd). There are still a few tickets to be disposed of, early application for which should be made to the Dean, Charing-cross Hospital Medical School, 62, Chandos-street, W.C.

LITERARY INTELLIGENCE.—Mr. Young J. Pentland announces the following: Contributions to Clinical Medicine. By T. McCall Anderson, M.D., F.F.P.S. Glasg., Professor of Clinical Medicine to the Glasgow University; physician to the Glasgow Western Infirmary, &c.—Text-book of Physiology. By British Physiologists. Edited by E. A. Schäfer, F.R.S., Jodrell Professor of Physiology, University College, London. Vol. II.—Diseases of the Heart and Aorta. By G. A. Gibson, M.D., D.Sc., F.R.C.P. Edin., assistant physician to the Royal Infirmary; lecturer on Medicine, School of Medicine, Edinburgh.—The Principles of Treatment. By J. Mitchell Bruce, M.D., F.R.C.P.Lond., physician to, and lecturer on the Practice of Medicine at, Charing-cross Hospital; physician to the Hospital for Consumption, Brompton, London.—The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., LL.D., F.R.S., F.R.C.P., Professor of Medicine in the Johns Hopkins University; physician-in-chief to the Johns Hopkins Hospital, Baltimore. Third edition.—Lectures on Giddiness and on Hysteria in the Male. By Sir Thomas Grainger Stewart, M.D.Edin., LL.D., physician-in-ordinary to Her Majesty the Queen for Scotland, Professor of the Practice of Physic and of Clinical Medicine in the University of Edinburgh.—Text-book of Medicine. By British Teachers. Edited by G. A. Gibson, M.D., D.Sc., F.R.C.S.Edin., assistant physician to the Royal Infirmary; lecturer on Medicine, School of Medicine, Edinburgh.—The Radical Cure of Hernia, Hydrocele, and Varicocele. By C. B. Lockwood, F.R.C.S.Eng., assistant surgeon and demonstrator of Practical Surgery, St. Bartholomew's Hospital;

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surgeon to the Great Northern Central Hospital, London.—Manual of Midwifery. By R. Milne Murray, M.B., F.R.C.S. Edin., assistant physician to the Royal Maternity and Simpson Memorial Hospital; lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.—The Journal of Pathology and Bacteriology. Edited by German Sims Woodhead, M.D. Edin., director of the Laboratories of the Royal College of Physicians of London and Surgeons of England. Volume V.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ASHER, A., M.B., C.M. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Caithness, Orkney, and Shetland.

BOND, C. HUBERT, D.Sc., M.D., Ch.M. Edin., has been appointed Senior Assistant Medical Officer to the Heath Asylum (for the County of London), Bexley, Kent.

CHESTNUTT, J., B.A., L.R.C.S., L.R.C.P. Edin., has been appointed Medical Officer for the Howden Union Workhouse and District, East Yorkshire, vice H. Tireman, deceased.

CONNON, M., M.B., C.M. Aberd., has been appointed Medical Officer of Health for the Burgh of Montrose.

CONNOP, A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Brailsford Sanitary District of the Ashbourne Union.

COWIE, GEORGE, M.B., C.M. Aberd., has been appointed Medical Officer for the City-road Workhouse, London.

DALLEWY, J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Wem Rural District Council.

FLETCHER, F. A. C., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer for the Sutton and Steeton Sanitary District of the Keighley Union.

GIBBON, A. H., L.R.C.P., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health by the Bury Town Council.

HARRIS, F. D., M.B. Lond., L.R.C.P., M.R.C.S., D.P.H., has been re-appointed Medical Officer of Health by the St. Helen's Town Council.

INNES, J. C., L.R.C.S., L.M. Edin., has been re-appointed Medical Officer of Health for the Crawford Sanitary District of the Bakewell Union.

KNOX, J., M.D. Aberd., L.R.C.S. Edin., has been re-appointed Medical Officer of Health for the South Division of the Rural Sanitary District, Bakewell Union.

MACKENZIE, M. T., M.D. Edin., J.P., has been appointed a Medical Referee under the Workmen's Compensation Act (1897) for the Sheriffdom of Inverness, Elgin, and Nairn.

NESBITT, R., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer of Health by the Sutton-in-Ashfield Urban District Council.

PATERSON, HERBERT J., M.A., M.B. Cantab., F.R.C.S. Eng., has been appointed Assistant Medical Officer for the Hospital of St. Francis, New Kent-road, S.E.

PECK, HERBERT, M.B., C.M. Edin., D.P.H. Camb., has been appointed Medical Officer of Health by the Chesterfield Rural District Council, vice Angus Macintosh, deceased.

ROBERTSON, J. A., M.D., C.M. Glasg., has been re-appointed Medical Officer by the Norman Cross District Council.

SCURFIELD, H., M.D. Edin., C.M., D.P.H. Camb., has been re-appointed Medical Officer of Health for the Borough and Port of Sunderland.

SLEITH, DAVID STUART, A.B., M.B., B.Ch., B.A.O., T.C.D., L.M., has been appointed Assistant Resident Medical Officer for the North Dublin Union.

TURNER, J. A., M.B., C.M. Edin., D.P.H. Camb., has been re-appointed Medical Officer of Health for the Ware Sanitary Rural District.

WILSON, G., M.D., C.M. Edin., D.P.H. Camb., has been re-appointed a Medical Officer by the Warwick Rural District Council.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer.

BOOTLE BOROUGH HOSPITAL.—Junior House Surgeon. Salary £40 per annum, with board, lodging, washing, &c.

BRADFORD ROYAL INFIRMARY.—Honorary Physician.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-Inn-road, W.C.—House Surgeon. Board and residence provided in the Hospital.

CHELSEA, BROMPTON, and BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Surgeon.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £100 per annum, increasing £10 yearly to £120 per annum, with board, lodging, washing, and attendance.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer for four years. Salary to commence at £100 per annum (and £8 in lieu of beer, &c.), with board, lodging, washing, rising to £120 at the end of two years' service.

CROYDON GENERAL HOSPITAL.—House Surgeon for two years, unmarried. Salary £100, increasing £10 per annum to £120, with board and residence in the hospital.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary commencing at £100, with board and lodging.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £50, with apartments and board.

HALIFAX PROVIDENT DISPENSARY.—Medical Officer. Salary to commence at £150 per annum, with house rent, rates, gas, and coals free, or furnished rooms, with other arrangements.

HEREFORD GENERAL INFIRMARY.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished rooms, board, washing, gas, coals and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident House Physicians.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W.—Three Senior Clinical Assistants. The first appointment will be for six months, but is renewable at the discretion of the Committee of Management. Also Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—Resident Medical Superintendent for one year. Salary £105 a year, with board and residence in the hospital.

JOINT COUNTIES ASYLUM, Carmarthen.—Second Assistant Medical Officer. Salary £120 per annum, advancing £10 annually to £140, with board, residence, and washing. £5 per annum in lieu of stimulants.

LONDON COUNTY ASYLUM, Claybury, Woodford-bridge, Essex.—Junior Assistant Medical Officer. Salary £150 per annum, with board, furnished apartments, and washing. Applications to the Clerk of the Asylums Committee, 21, Whitehall-place, London, S.W.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium at the rate of £50 per annum and board.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Board, lodging, and washing provided. No salary.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House Surgeon for six months. Board, lodging, and washing provided and an honorarium of £10 given conditionally.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, House Surgeon, each for six months. Salary at the rate of £50 per annum, with board and residence.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £50 per annum, with board, rooms, washing, &c.

SOUTHPORT INFIRMARY.—Junior House and Visiting Surgeon for six months. Residence, board, and washing provided, and an honorarium at the rate of £30 per annum given.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £70 per annum, with board, washing, and residence. Also a Junior Assistant House Surgeon. Salary £2 per mensem, with board, washing, and residence.

SUSSEX COUNTY HOSPITAL, Brighton.—Fourth Resident Medical Officer, unmarried. Salary £30 per annum, with board, washing, and residence in the hospital.

WEST RIDING ASYLUM, Menston, near Leeds.—A Lady recently qualified, or Senior Student to act as Resident Clinical Clerk. Board and residence provided.

Births, Marriages, and Deaths.

BIRTHS.

BLIGH.—On Sept. 7th, at Caterham-valley, Surrey, the wife of William Bligh, M.B., B.S. Lond., of a daughter.

CHAMBERS.—On Sept. 9th, at Beaumont-street, Oxford, the wife of T. Rubery Chambers, L.D.S.R.C.S. Eng., of a daughter.

CONNOR.—On Sept. 6th, at Soho-square, W., the wife of S. Grahame Connor, M.B., of a daughter.

MARRIAGES.

BOYD—BEVERIDGE.—On July 30th, at St. Mary's Church, Addington, Christchurch, N.Z., by the Rev. W. S. Bean, Vicar, Alexander Brooke Boyd, M.A., M.B. Oxon., of Richmond, Nelson, to Margaret Miller, eldest daughter of Thomas Beveridge, of Fendalton, Christchurch, and formerly of Balado, Kinross-shire.

DODGSON—ATWOOD.—On Sept. 12th, at Guston, Kent, George Stanley Dodgson, M.B., B.C., son of Mr. A. Dodgson, of Headingley, Leeds, to Jaquetta Marion, younger daughter of the Rev. George Atwood, Rector of Hinton-cum-Steane, Brackley.

OLIVER—CUFF.—On Sept. 14th, at Shoreditch Tabernacle, Herbert Stedman Oliver, surgeon, of Skinner House, Lydd, Kent, to Lizzie Ridley, fourth daughter of Rev. Wm. Cuff, Amesbury House, Stoke Newington, N.

PATON—BALFOUR.—On Sept. 13th, at Dawyck Private Chapel, Peebles-shire, Diarmid Noel Paton, M.D. Edin., eldest son of Sir Noel Paton, R.S.A., to Agatha Henrietta, eldest daughter of the late Alexander Balfour, of Liverpool.

PETYT—HAMMERTON.—On Sept. 8th, at the Parish Church, Beckenham, Kent, Allan I. Petyt, M.A., M.B., B.C. Cantab., L.S.A. Lond., of Loughton, Lancs, to Kate, second daughter of Thomas Moy Hammerton, "Hollington," Beckenham.

DEATHS.

INKSON.—On Sept. 9th, at Acton, Surgeon-Major-General James Inkson, M.D., A.M.S. (retired), aged 62 years.

KINGSFORD.—On Sept. 13th, at Sunbury-on-Thames, Middlesex, Edward Kingsford, F.R.C.S., aged 81 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898, bound in cloth, gilt lettered, price 18*s*., carriage extra; and Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*., can be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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Subscriptions (which may commence at any time) are payable in advance.

ALCOHOL AS A WOUND-DRESSING.

MR. PEYTON T. B. BEALE contributes to *The Phonographic Record* a note on the use of alcohol which is worthy of attention. The grounds upon which the practice is based seem reasonable and sound. After the bleeding in a wound has ceased, as Mr. Beale says, "the arterioles near the edges dilate, the edges are therefore very richly supplied with pabulum in the form of blood plasma which exudes through the walls of the capillaries. A few septic organisms gain access; they find plenty of food and multiply very rapidly, so rapidly in fact, that the phagocytes are not able to cope with them, and suppuration is the result." Taking advantage of the well-known property of alcohol to check cell growth and cell division Mr. Beale has used alcohol with excellent results; serous exudation is practically absent and wounds unite rapidly after its use. Methylated alcohol is used and before the wound is closed it is lightly swabbed out with a sponge or cotton wool pledget moistened with the spirit. The sutures having been inserted a piece of double cyanide gauze large enough to overlap the wound 4 in. in every direction is dipped in the alcohol and applied. The dressing is then completed in the usual way with gauze wrung out in 1 in 40 carbolic solution, dry salicylic wool, and the bandage. Mr. Beale has used alcohol for swabbing out abscess cavities and boils, and he describes the healing process as "remarkably rapid after its use." The alcohol, in addition to its action on the capillaries, acts as a mild antiseptic and appears to injure the tissues to the smallest possible extent. At the same time we are warned that none of our usual antiseptic precautions must be omitted.

TUBERCULOUS DISEASE OF THE ANKLE-JOINT.

To the Editors of THE LANCET.

SIRS,—A patient came to live near me with a friend suffering fearful pain in the ankle-joint. She never secured a minute's rest or peace and had not done so for a month. Large doses of opium were useless. The ankle was considerably swollen and was treated with cloths rung out with lead and opium lotion and changed frequently. Her medical adviser gave a family history of tuberculous joint disease in several members of the family who had died from tuberculous disease of joints. This patient was seen by several medical men and by a professor of surgery and they all recommended amputation of the foot. This seemed absolutely necessary to save her life, but the patient wished to have change of air before undergoing the operation. She was thirty years of age and had a family of six, who all seemed healthy and strong.

When I first saw her she was suffering the most acute pain in the ankle and had a feeling as if the part were on fire. Evidently it was of no use to apply local soothing applications, as these had proved useless, therefore we arranged to have cold water running upon the bare ankle continually night and day, with the result that in twenty-four hours the pain and burning sensation had passed away and in a few days the swelling had also gone. The water was now discontinued and the patient was given syrup of hypophosphites in large doses thrice daily and she made an uninterrupted recovery and is now in perfect health.

In several cases of tuberculous disease of the joints I have used this treatment and in every case with success. My plan has been to have a large tin reservoir hung up at the foot of the bed with a small piece of rubber tubing, of the size which is used for feeding bottles, to come from the reservoir on to the diseased joint, and to have waterproofing so arranged as to conduct the water to a vessel under the bed. When things are carefully arranged there is no inconvenience caused by the water. I am, Sirs, yours faithfully,

WM. TIPLADY, L.R.C.P. Edin., &c.

Tow Law, co. Durham, September, 1898.

"WANTED A SCHOOL FOR THE DEAF AND DUMB."

To the Editors of THE LANCET.

SIRS,—In answer to your correspondent who asks for the address of a good boarding-school for a deaf and dumb boy, I beg to refer him to the Director, School for the Deaf, 11, Fitzroy-square, under whose care I have great reason to know that he would receive the highest educational advantages, &c. I am, Sirs, yours faithfully,

Parolles-road, Highgate, N. K. LUNN.

To the Editors of THE LANCET.

SIRS,—For the information of your correspondent who is asking for the address of a good boarding-school for a deaf and dumb boy ten years old I beg to send particulars of the West of England Institution for the Deaf and Dumb. The regular charge for private pupils who board with the master and matron and sleep in special dormitories is £50 a year, but the committee have power to vary this if there are special circumstances to warrant it. I shall be happy to supply further particulars if required. I am, Sirs, yours faithfully,

Exeter, Sept. 10th, 1898. T. J. ALLEN, Secretary.

To the Editors of THE LANCET.

SIRS,—In reply to your correspondent's query in THE LANCET of Sept. 10th I may mention that a school for the oral education of the deaf is kept by Mr. H. N. Dixon, M.A., at Wickham House, East Park-parade, Northampton. Boarders are also received at the school of the Training College for Teachers of the Deaf, Castlebar-hill, Ealing, W. I am, Sirs, yours faithfully,

Sept. 13th, 1898. S.

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THE KINEMATOGRAPH IN MEDICINE.

THE *New York Medical Journal* publishes an article on some suggestions thrown out by M. Marcel Baudouin, the chief editor of the *Gazette Médicale de Paris*, on the uses to which the kinematograph may be put in the study and practice of medicine and surgery. The French writer points to its probable utility in such physiological studies as that of the gait in animals and in man, in medical and surgical diagnosis, especially in cases of disease characterised by abnormality of movement, such as ataxia, congenital luxation of the hip, &c., whether the fundamental disease affects the nervous, the muscular, or the osseous system, and, moreover, in teaching operative surgery. M. Baudouin says that ever since the beginning of the year 1897 he has been intending to employ the apparatus in Professor Terrier's laboratory at the Paris School of Medicine, at first for registering the successive steps in operative procedures, with the particular purpose in view, especially in operations involving the viscera, of demonstrating how far current practice is at variance with what is taught theoretically in the books. He was then going to employ it in the study of operations called rapid. Unfortunately for all these excellent purposes, however, it was found that the fund available for the laboratory did not allow of those first trials.

MUSIC IN THE SOUDAN.

AN amusing story has recently appeared in the papers concerning the new Soudanese military bands. Our excellent allies were much impressed with the British brass bands and proceeded to start one of their own. They managed fairly well and played British tunes without understanding much what they meant. One day a Soudanese died and the regiment and band attended the funeral. The band was on its mettle and when the body came in view began to play, but alas for the fitness of things, the tune selected was "Up I came with my little lot."

THE MEDICAL DIRECTORY.

To the Editors of THE LANCET.

SIRS,—Kindly allow me to draw attention to the great inconvenience caused by the present sectional arrangement of Churchill's Medical Directory, lately increased by cutting out Wales. If I want to find the whereabouts of a medical man I have to turn to *seven* different sections before I can find him. It would be far more convenient to have all names alphabetically arranged together, the initials (nearly always known) being a guide to the name. It is much less trouble to run through an alphabetical list of names than to have to turn about to so many different sections. The more a directory is sectionally divided up the more bulky and less useful it becomes. The universities and medical schools would be much more convenient placed all together than separated.—I am, Sirs, yours faithfully,

SUBSCRIBER OF TWENTY-FIVE YEARS' STANDING.

August 26th, 1898.

*** Wales is not "cut out" but only transferred to a section of its own. We must say, however, that we thought the old arrangement the more convenient.—ED. L.

Verax.—The local authorities first decide upon the appointment of a person or persons "possessing"—we are quoting a clause in the Food and Drugs Acts—"competent knowledge, skill, and experience as analysts of all articles of food and drugs." The appointment is then subject to the approval of the Local Government Board. There is no officially recognised qualification for the post, but we believe the Fellowship of the Institute of Chemistry counts for a great deal and may perhaps at a future time be accepted. Our correspondent might present himself for this diploma (F.I.C.), particulars of which will be furnished him on application to the secretary, Institute of Chemistry, 30, Bloomsbury-square, W.C. Years of laboratory practice would be the only way of "getting the work up" and the only course which would justify the candidate regarding himself as "possessing competent knowledge, skill, and experience."

Subscriber, &c.—The most natural and correct style is simply "Dr. X. Y. Z." Of the other two mentioned by our correspondent "Mr. X. Y. Z., M.D.," is sometimes used, and we see no reason why he should not employ the style "X. Y. Z., M.D.," except that it is not customary, but "Dr. X. Y. Z., M.D.," is quite unnecessary.

Mr. Edward Knight.—We do not fancy that there is any book dealing with popular medicine in the various countries mentioned by our correspondent. But there are various papers and articles scattered throughout journals and magazines. Our correspondent might get the information he desires by applying to the Folk Lore Society.

J. P. Dunelm.—Our correspondent is entitled to announce his change of residence and the circumstances under which it is made. The announcement should be made privately through the post.

X. Y. Z.—The drug recommended for mosquito "bites" was ipecacuanha, either the vinum or the powdered root made into a paste with water or vinegar being applied.

Mr. W. R. James.—We never prescribe. Our correspondent should consult his own medical man.

Mr. R. W. Garrett.—The name mentioned does not appear in the current Medical Register.

T. O. D.—We believe the institution in question is extinct. It is not to be found in the Post Office Directory.

F.—The average number of normal respirations in a healthy adult is from 16 to 20 per minute (Quain's Dictionary).

S. E. H. has omitted to enclose his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 15th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 9	29·88	W.	...	121	91	68	68	73	Fine
,, 10	30·04	WNW	...	114	79	62	59	64	Fine
,, 11	30·05	N.W.	0·02	116	80	58	60	66	Raining
,, 12	29·93	N.W.	...	112	79	59	59	60	Fine
,, 13	30·12	W.	...	102	70	53	51	54	Fine
,, 14	30·20	SSW	...	113	81	54	59	62	Overcast
,, 15	30·35	S.W.	...	103	77	59	58	60	Foggy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (24th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received: *Surrey Advertiser, Local Government Chronicle, Public Health, City Press, Local Government Journal, Pioneer Mail, Times of India, Liverpool Daily Post, Birmingham Gazette, South Wales Daily News, Scotsman, Citizen, Hertfordshire Mercury, Yorkshire Post, Sanitary Record, Buckingham Express, Eastern Morning News, Coventry Times, Perth Constitutional, Dundee Advertiser, Sheffield Telegraph, Torquay Directory, Cornish Telegraph, Burton Chronicle, Bristol Mercury, Manchester Courier, Leeds Mercury, Cambrian News, Worcestershire Echo, Beverley Record, Isle of Wight Times, Newark Advertiser, Dorset Chronicle, Devizes Gazettee, Glasgow Evening News, Ballinrobe Chronicle, West Britain Advertiser, Malvern Advertiser, Northern Telegraph, Shields Daily Gazette, Westminster Independent, Prescott Reporter, Selby Express, Woburn and District Reporter, Llanelly and County Guardian, Morecambe Times, &c., &c.*

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ABSTRACT OF A

Post-Graduate Lecture

ON

THE DIFFERENTIAL DIAGNOSIS OF ABDOMINAL DISEASES IN CHILDREN.

Delivered at the Evelina Hospital for Sick Children on March 23rd, 1898,

BY GEORGE CARPENTER, M.D., M.R.C.P. LOND.,

SENIOR PHYSICIAN TO OUT-PATIENTS AT THE EVELINA HOSPITAL FOR SICK CHILDREN.

AFTER referring to the wide range of the subject of the lecture, which made it difficult to compress the matter within the limits of one hour, Dr. Carpenter stated that he hoped to conveniently concentrate this by discussing and demonstrating the method to which he particularly wished to draw attention — namely, that of rectal exploration as applied chiefly to the diagnosis of abdominal and pelvic disease in children. With reference to this method Dr. Carpenter noted the insufficient recognition by the profession of the valuable information which could be gained from rectal examination, and stated that in his opinion if combined with abdominal palpation it was frequently of great assistance in elucidating cases of difficulty. He then quoted as examples the following cases.

CASE 1.—This was a case of obstinate constipation in a little girl in which after assiduous treatment by drugs rectal examination revealed a tumour growing from the anterior surface of the sacrum which later proved to be a myeloid sarcoma.

CASE 2.—A boy, aged three years, was brought to the out-patient department at the Evelina Hospital suffering from an umbilical fistula. A probe could be passed along the fistula for a short distance and careful abdominal palpation revealed a mass of mesenteric glands of about the size of a tangerine orange, with which the sinus was apparently connected. On rectal examination a mass of about the size of a small pea was felt in the position of the prostate and extending from this there existed a slight enlargement of the seminal vesicles on either side. Using the bimanual method the probe could be passed down to the pea-like enlargement where the sinus ended; passing from the fistula to the mesenteric glands was a cord of about the diameter of a lead pencil and oval in shape; the tumour also felt hard and was obviously composed of a mass of glands. No further abnormality could be detected and the case was undoubtedly one of tuberculosis of the vesiculæ seminales and prostate.

CASE 3.—The patient was a child, aged two years, suffering from whooping-cough and broncho-pneumonia. Abdominal examination revealed a tumour suggestive of tuberculous peritonitis; by the combined rectal and abdominal method a horseshoe kidney could readily be detected. This diagnosis was confirmed at the necropsy.

CASE 4.—A boy, aged seven years, a patient under the care of Mr. Lacy of Sunninghill, Ascot, suffered from an indefinite febrile complaint characterised by tumid abdomen, constipation, and ill-health. Typhoid fever was suspected. Nine weeks later, considerable improvement having meanwhile occurred, the patient's temperature suddenly rose to 104° F. and kept at about this point. A rectal examination was made and an abscess was found at the back of the rectum containing about an ounce of foul-smelling pus.

Dr. Carpenter then made reference to the tumour frequently felt *per rectum* in intussusception, which gives a sensation to the finger similar to that obtained from the os uteri in advanced pregnancy, and to the blood-staining of the finger on examination. He afterwards noticed the frequency with which rectal exploration was of service in the diagnosis of tuberculous peritonitis from chronic gastro-intestinal catarrh with loss of muscular tone; if peritonitis were not present, between one finger in the rectum and the other hand on the abdomen the thickness of the abdominal wall only would be felt, whereas if an appreciable quantity of extraneous tissue existed it would point to the existence of lymph and thickening of the peritoneum, whilst intestinal matting and glandular enlargement could in many cases be readily detected.

Dr. Carpenter next considered the pelvic organs in female children. He stated that in a child the sacrum is almost straight and consequently also the rectum, that the bladder is egg-shaped with the larger end downwards, and is almost entirely an abdominal organ, and that the uterus consists almost entirely of cervix and is readily felt by rolling it between the finger and the symphysis pubis. He then noted that if the finger be introduced for a short distance into the rectum the sharp edges of the falciform ligament can be readily recognised, forming a sickle-shaped curve surrounding the rectum and attached behind to the sacrum, and in front to the lower part of the cervix; that guided by this structure the tubes and ovaries could be readily manipulated between the examining finger and either the bony wall of the pelvis or more frequently the tips of the fingers of the other hand placed on the lower part of the abdomen, and, finally, that at this stage the uterus could be examined. As an example of the normal size of the pelvic organs Dr. Carpenter stated that in a child, aged two years and four months, the uterus is 1 in. in length and ½ in. in breadth at the fundus; the tubes are 1¾ in. in length; and the ovaries ½ in. in length and ⅛ in. in diameter. He next referred to various pathological conditions which can be detected. Small cysts of the ovary cannot infrequently be felt and displacements of the ovaries and tubes into the inguinal and crural openings can be demonstrated. Tuberculous disease of the uterus, tubes, or ovaries is exceedingly rare in children, but several cases of this were quoted and many drawings were exhibited. Inflammatory diseases of the ovaries and tubes have not received much attention up to the present time. Sanger,[1] however, of Leipsic, records the case of a little girl who contracted gonorrhœa and subsequently developed all the symptoms of acute pelvic peritonitis. Marx[2] also points out that salpingo-oöphoritis sometimes complicates vulvo-vaginitis in infants, the symptoms being similar to those found in adults. He refers to 15 post-mortem examinations on cases which exhibited symptoms of this complication, and in 5 of these he found that the Fallopian tubes contained pus and had their uterine attachments sealed. He states that these uterine inflammatory conditions may become exacerbated at puberty and may cause inflammatory pelvic conditions in newly married women. In a patient under the care of Dr. Carpenter, aged twenty-two months, and suffering from congenital syphilis, a tumour could be detected in the right inguinal region of the size of a French walnut; on rectal examination the uterus was found to be normal and attached to its upper part, by a short, cord-like enlargement, was the tumour, on the posterior surface of which could be felt what appeared to be a convoluted tube. The tumour was freely moveable and on bimanual examination fluctuation could be obtained in it. The ovary of the opposite side was normal, but on the affected side it could not be found. The liver and spleen were both enlarged. Pyosalpinx or possibly tubo-ovarian cyst was diagnosed and the case was successfully operated upon. The tumour contained foul-smelling pus and was probably a suppurating ovarian cyst burrowing between the layers of the broad ligament.

The earliest ovariotomy on record was successfully performed by Roemer, the patient being one year and nine months old. Dr. Carpenter has collected from gynæcological literature 35 cases of ovariotomy performed on patients of twelve years of age and under: of these 15 were dermoids, 10 cystic tumours, 6 sarcoma, 2 carcinoma 1 malignant tumour, 1 cylindro-epithelioma, and 1 fibromyoma. Rosenstein has reported a case of carcino-sarcoma in a child aged two years and Ganghofner a case of carcinoma of the uterus in a child eight years of age. 20 cases of carcinoma of the vagina under twelve years of age are recorded; they commonly exist as multiple polypi, do not usually ulcerate, run a chronic course, and end fatally, the surrounding organs and tissues being occasionally attacked.

Dr. Carpenter then spoke at some length on the subject of tuberculous peritonitis. He grouped this disease under the following clinical headings:—

1. A matted condition of the bowel associated with

[1] Keating's Cyclopædia of Diseases of Children, vol. iii., p. 739.
[2] Gazette de Gynécologie, Nov. 15th, 1895.

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tuberculous ulceration and caseous disease of the mesenteric glands and exhibiting the symptoms of the so-called tabes mesenterica.

2. A tuberculous condition characterised by the existence in the abdomen of hard and fixed masses usually lying close under the parietes and due to the luxuriant growth of miliary tubercle. This if occurring in the omentum causes it to become thickened and contracted into a band or plate stretching horizontally across the upper part of the abdomen, or at other times the result is the formation of a thick apron lying in front of the intestines and adherent to them and to the liver, spleen, and parietes. A mass may also form in Douglas's pouch and be detected on rectal examination. Again, isolated masses, usually composed of intestinal coils matted together with tuberculous deposit outside the bowel, may give rise to a somewhat puzzling physical sign—namely, a frequent variation in the size and definition of the masses. Finally, a large mass or plate may exist between the liver and diaphragm in such a position as to be clinically unrecognisable. Very exceptionally these fixed lumps may be due to caseation of the mesenteric glands alone and it may be noted as an important fact that advanced caseation, fibroid change, or calcareous degeneration may exist in a mass of glands large enough to form an abdominal tumour with either a relatively small amount of intestinal ulceration or a mere injection of the mucous membrane. Neither fever nor ascites is a marked feature in these cases, though either may occur, and this class of cases as a rule enters the wards of a hospital, not owing to the abdominal condition, but as cases of tuberculous meningitis, of lung disease, or of extreme asthenia associated with diarrhœa. Sometimes, of course, the condition is diagnosed during life, but probably more frequently the fact is first brought to light at the necropsy owing to more prominent and striking symptoms having during life engaged the attention of the observer. In a girl, aged ten years, a fixed tumour existing in the abdomen was due to the following morbid changes which were limited to the last two feet of the small intestine. Here and there in this region to within six inches of the ileo-cæcal valve there was extensive ulceration associated with caseation and matting of the neighbouring glands, the whole being bound together by dense adhesions. Some of the ulcers were of cartilaginous hardness; the rest of the abdominal cavity was free from disease. There was secondary tuberculous pulmonary implication. The limited extent of the disease in this case suggests the possibility of its having started in a mild attack of enteric fever. A general impression seems to exist that the majority of cases of this type ultimately recover, but this seems not to be the case. In many instances, in addition to the tuberculous masses, caseation of the mesenteric glands and intestinal ulceration are present; these are the worst class of cases and border on the group enumerated under Heading 1.

3. Under this heading are placed cases which come under observation suffering from ascites; this may be the only condition existing throughout the illness, though perhaps a rectal examination may reveal some slight thickening of the abdominal contents. Ascites may hide the existence of such tuberculous tumours as have been described under Heading 2, and these may only be detected after paracentesis or if the fluid becomes absorbed. Miliary tuberculosis of the peritoneum may give rise to a considerable collection of fluid or, on the other hand, to a quantity too small for detection by clinical methods. Tubercles, again, may be found in considerable numbers in the peritoneum without the existence of any inflammatory symptoms whatever. Very little fever usually exists in these cases. The temperature may be raised for a day or two to 100° or 101° F., but it usually quickly falls to normal. On the other hand, a hectic type of temperature may exist for a considerable period in cases which ultimately recover.

4. The cases which come under notice as abdominal abscesses, but which ultimately prove to be tuberculous in nature.

5. Cases exhibiting few definite physical signs beyond an enlarged and tympanitic condition of the abdomen. There may be some variety or other of diarrhœa, the stools may have a typical pea-soup appearance or may be loose and contain masses of a putty-like consistence or a larger or smaller amount of white, flaky material or even obvious particles of undigested food. Such a case may at one moment from the associated signs and symptoms be thought to be one of typhoid fever and at another to be merely one of intestinal disturbance from improper feeding. In this group of cases no gross lesions exist and a rectal exploration may prove of the utmost assistance in enabling the observer to form an opinion on the subject of peritoneal implication.

Dr. Carpenter then referred to certain conditions liable to be mistaken for tuberculous peritonitis, such as fæcal masses, malignant disease, or even tumours due to simple inflammation of the peritoneum. Masses of scybala are usually situated in the right hypochondrium and left iliac region and are due to fæcal accumulations in the region of the hepatic or sigmoid flexure. They may be recognised by their irregular shape, by the possibility of moulding them by manipulation and by their removal by enemata. With reference to simple inflammation of the peritoneum Dr. Carpenter quoted the case of a male infant, aged eleven months, who had suffered for 14 days from severe paroxysmal pains in the abdomen accompanied by nausea and vomiting; he was pale but fairly nourished. The abdomen was distended and prominent. Around the umbilicus was a well-marked local projection which was reddened, tender to the touch and considerably indurated. There was dulness in the left umbilical, hypogastric, inguinal, and lumbar regions, but no fluctuation. A fortnight later a fæcal fistula formed near the navel and soon large, loose, yellowish motions, mixed with pus, were passed through the wound. A week later he died from exhaustion. At the necropsy a large abscess cavity existed filled with yellow semi-solid fæcal material, on the removal of which a greyish wall was visible covered with flakes of shreddy lymph. Beneath this lay many coils of intestine matted together. A fistulous opening existed at the upper end of the ileum, and the mucous membrane surrounding the opening and in other parts of the bowel was quite healthy; hence probably in this case the local peritoneal abscess opened into the bowel and did not originate in an intestinal perforation. Dr. Carpenter then referred to the subject of enlarged spleen and demonstrated a number of cases. He stated that in most cases a chronic enlargement of the spleen in children indicated syphilis, rickets, a disease of unknown causation associated with changes in the blood, or tubercle. With regard to the diagnosis of tubercle both in the abdomen and in other parts of the body Dr. Carpenter stated that he had been frequently aided in doubtful cases by an ophthalmoscopic examination of the fundus oculi. He remarked that in his experience tubercles in the choroid were not, as many have thought, so rarely met with or so hopeless to discover as the proverbial needle in the haystack. On the contrary, he had found the routine and careful use of the ophthalmoscope of the greatest value in the elucidation of difficult cases. Several cases were described as illustrations of this fact, and of these the following one is particularly instructive. For six weeks a boy, aged eight years, with a family history of tubercle, had been attended for gastric disturbance. During this time his temperature had been irregular, never above 102·4° F., and at times the morning temperature was in excess of that in the evening. At this time he was dull and apathetic. The only abnormality to be detected apart from extrapuerile breath-sounds was an enlarged mesenteric gland of the size of a hazel nut to the left of and slightly above the umbilicus. On ophthalmoscopic examination of the left eye by the indirect method the optic disc was found to be normal, but when the eye was directed to the right a round fawn-coloured tubercle of the apparent diameter of a No. 1 shot could be seen close to a retinal vein, and passing across its surface was a tiny offshoot from the vein. In the case of the right eye the optic disc was again normal, but when the eye was directed down three similar fawn-coloured tubercles were noticed in the choroid. An unfavourable prognosis was consequently made and this was justified by the result, the patient dying a few days later.

Dr. Carpenter concluded his lecture by briefly describing the appearances seen in tubercle of the choroid. The tubercles are exceedingly protean in their characteristics. They present all shades of colouration, from paper whiteness to grey and yellowish-white, or from yellowish-grey to a fawn colour. Sometimes a shimmering white central spot is seen. In shape they may be circular, oval, triangular, reniform, or quadrangular. They may be clearly cut or blurred, as may also be the retinal vessels in their immediate neighbourhood. They are not necessarily situated in the neighbourhood of the optic disc, but may be detected even at the periphery of the fundus.

[After the lecture numerous drawings of the ophthalmoscopic appearances seen in tubercle of the choroid were exhibited.]

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GASTRIC TETANY.

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TETANY complicating gastric dilatation is admittedly a rare disease, only some 45 cases having been recorded, yet 2 such cases have been received into the Leeds General Infirmary within a period of little over a year. Details will be given first of a case in which the gastrectasis was the result of a duodenal carcinoma, which is itself also a rare affection. Some remarks will then be made on this case in the light of such records of published cases of gastric tetany as are within my reach. Under the morbid anatomy the outlines, unfortunately very imperfect, will be given of a second case in which the dilatation was due to causes acting outside the stomach and duodenum. A few observations will then be made upon the pathogeny of this form of tetany and on the occasional association of tetany and renal disease, including albuminuria. Finally, the possible occurrence of tetany in gastric disease other than dilatation, with an illustrative case, will be referred to and some points in duodenal carcinoma will be mentioned. I am indebted to the house physician of the Leeds Infirmary, Mr. Hirst, for notes of the first case, and to Dr. Roberts, the resident medical officer, for notes and a photograph of the second case and for the post-mortem reports of both cases.

CASE 1.—A woman, aged forty-five years, was admitted into the Leeds General Infirmary on July 5th, 1898, suffering from vomiting and loss of flesh. Many years before she had suffered from anæmia and fifteen years ago she had had hæmoptysis. She had been much troubled with indigestion, but had never vomited blood. The patient was in her ordinary somewhat weakly health up to a month before her admission, when she began to suffer from a dragging pain in the region of the stomach which was worse after food. A week later severe vomiting supervened and almost everything she ate was vomited and she was therefore compelled to limit herself to a liquid diet. During the week previous to her admission she had had cramps in her legs which came on after excessive vomiting. The following note was made as to her state when she was admitted: "The patient is a spare woman, weighing 6 st. 12 lb. She shows signs of much wasting. There is no vomiting or pain at present. The temperature is 98·4° F., the pulse is 84, and the respirations are 20. The tongue is coated and the bowels are constipated. She feels very hungry. In the abdomen there is a marked prominence occupying the umbilical region obviously due to the dilated stomach. The lesser curvature is clearly visible above the umbilicus and the greater curvature 1½ in. below it. The prominence extends 2½ in. to the right of the middle line. Peristalsis can be distinctly seen, the wave passing from left to right." It was thought that a tumour could be felt over the right extremity of the dilated stomach about 2½ in. to the right of the middle line and 1½ in. below the costal margin. The urine contained a trace of albumin, but the other organs presented no evidence of disease. There was no vomiting from the evening of July 4th up to the evening of July 6th and the patient felt quite comfortable and took small quantities of solid food. On the evening of July 7th copious vomiting again appeared and persisted during the night. The next morning tetany supervened without any previous tingling in the extremities. The hands and arms were chiefly affected with the painful tonic spasm. The fingers and thumbs assumed the position described as the "obstetric hand" and the wrist and elbows were flexed. The feet were also involved and she lay propped up in bed with flexed knees. The muscles of the jaws were somewhat rigid and there was difficulty in opening the jaws at all widely, but the speech was unaffected. The patient was much exhausted, her face was dusky, her lips were blue, and her pulse was small. The temperature was 94·6°. An attempt to wash out the stomach was abandoned. I saw the patient at 2 P.M. on July 8th, when the tetany was still present though the vomiting had ceased. The stomach was emptied and thoroughly washed out with saline solution. A nutrient enema was given at once and a hot rectal saline injection ordered to be given in two hours. She improved, but only temporarily, and died a couple of hours later from exhaustion. Death was preceded by a more generalised spasm.

Necropsy.—The body was that of a much wasted woman. There was no jaundice. When the abdomen was opened the stomach was seen to be enormously dilated, the greater curvature extending down to the pelvis. No growth could be seen, but a mass of the size of a walnut was felt in the neighbourhood of the duodenum. When the stomach and duodenum were laid open the growth was seen to extend from just above the papilla downwards for 1½ in. It seemed to almost completely obstruct the lumen of the gut. Although the papilla was surrounded by growth, yet there was no obstruction to the common bile-duct, for bile could be readily expressed from the gall-bladder into the duodenum. The growth extended through the whole intestinal wall and two or three small and more recent nodules were present in the pancreas. The microscope showed the tumour to be a cuboidal-celled carcinoma containing much fibrous tissue. The stomach was dilated and its walls were thickened. The pylorus was healthy but dilated. The kidneys were small and cirrhotic and presented a typical red granular appearance. With the exception of pleural adhesions all the other organs to the naked eye appeared to be healthy.

Although the clinical examination was deficient in certain details, especially in regard to the symptoms of Trousseau, Chvostek and Erb respectively, the diagnosis in this case cannot, I think, be doubted. It has been urged that all cases of tonic spasm occurring in dilatation of the stomach are not to be called tetany. So distinguished an authority on tetany as Frankl Hochwart[1] writing in 1897 only recognises as genuine gastric tetany 11 out of some 40 cases reported up to that time. The grounds, however, on which some of the cases have been excluded are not always obvious. The advantages of distinguishing between gastric tetany and gastric dilatation with tetanoid spasm are not altogether apparent unless it can be shown that the two conditions differ in cause as well as in symptoms. It certainly seems convenient to include under the name of gastric tetany, as most writers do, at least all cases of gastric dilatation complicated with such tonic spasm in the extremities as is seen in ordinary tetany. If the classification given in Bouveret and Devic's[2] paper be accepted, the above recorded case would fall into the second group, where the spasm of the extremities is also accompanied by tonic spasm in the muscles of the face and neck or trunk. The rapidity with which death may occur in this disease is well illustrated by this case. In Marten's[3] case the single attack of tetany proved fatal in four hours. In a very few instances (Müller,[4] Kussmaul[5]) a long interval of comparative health had separated previous attacks of tetany from the fatal one. Although in the case now recorded there had been dyspeptic symptoms for many years, yet the gastric dilatation leading to the tetany had probably not existed more than a few weeks. The reason that dyspeptic symptoms have usually been noted for many years previously is because by far the most frequent cause of gastrectasis complicated by tetany is cicatrisation of an ulcer. Severe vomiting has been almost a constant precursor of gastric tetany and has been immediately preceded by tingling in the extremities. The vomiting, but not the tingling, was present in this case. Albuminuria was noted here as in several other recorded cases. There was no particular thirst. The temperature fell during the attack to 96·4°. Often a rise and not a fall of temperature has been noted; in Collier's[6] cases it reached 109° before death. The patient resembled in many respects one dying from acute abdominal disease, consciousness being maintained to the end. The embarrassment of respiration so frequently observed in gastric tetany was absent.

There are one or two facts which stand out in much prominence when the morbid anatomy of gastric dilatation fatal by tetany is considered. In by far the large majority of the cases, as mentioned above, the gastrectasis has been the result of the cicatrisation of an ulcer or very rarely, as in the cases of Bouveret and Devic,[7] Richartz,[8] and Riegel,[9] carcinoma has developed in the simple ulcer. Attention has

[1] Nothnagel's Specielle Pathologie und Therapie, Band xi., 1897.
[2] Revue de Médecine, 1892.
[3] THE LANCET, Jan. 8th, 1887, p. 74.
[4] Charité Annalen, Band xiii.
[5] Deutsches Archiv für Klinische Medicin, 1869.
[6] THE LANCET, June 6th, 1891, p. 1251.
[7] Loc. cit. [8] Thesis, 1893, quoted by Sievers.
[9] Nothnagel's Specielle Pathologie und Therapie, 1897.

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been drawn by more than one writer to the comparative frequency with which a duodenal ulcer has been found in gastric tetany such as in the cases recorded by Bamberger,[10] Dujardin-Beaumetz,[11] and Renvers.[12] More frequently still the pyloric ulcer has extended into the duodenum (Neumann,[13] Loeb,[14] Müller,[15] Thiroloix and du Pasquin [16]). There seems to be no explanation forthcoming of why, considering their infrequency, these duodenal ulcers should lead relatively often to gastric tetany. In another group of cases the cause leading to obstruction of the duodenum has operated from without. A very remarkable case was recorded by Blazicek [17] in which the gastric dilatation was due to the pressure upon the duodenum of a thickened and calculus-containing gall-bladder. In one of Müller's [18] cases there was an hour-glass contraction of the stomach due to past gastric ulceration with an axial rotation which had led to closure of the duodenum. In Berlizheimer's [19] case a pancreatic cyst had pressed on the duodenum. I may now refer to another case of gastric tetany in the Leeds General Infirmary, under the care of Dr. Barrs, who has kindly allowed me to make use of it.

CASE 2.—A woman, aged sixty years, was admitted into the infirmary on July 3rd, 1897, with gastric symptoms. The outlines of the greatly dilated stomach were distinctly visible through the abdominal walls and there was incessant vomiting. On the evening of July 4th she developed tetany, the hands and arms assuming the characteristic position of that disease. There was much pain in the arms and legs. She died in a few hours and consciousness was preserved until the end. The temperature rose to 100·4° F. before death.

Necropsy.—The body was considerably emaciated. When the abdomen was opened the stomach was seen to be greatly dilated and reaching far below the umbilicus. The stomach being laid open, the upper part of the duodenum was seen also to be dilated, but there was no trace of cicatrised ulcer or other lesion. There was a mass of new growth occupying the middle of the body of the pancreas, but the head was quite free from disease. There was also a small mass of growth (primary carcinoma) in connexion with one ovary. There was no peritonitis. The kidneys were distinctly diseased. The right kidney was small and weighed only 3¼ oz., whereas the left kidney was enlarged and weighed 6¼ oz. Both presented undoubted evidence of cirrhosis. I may add that I have recently carefully examined the stomach and duodenum, including the head of the pancreas, and I could find no lesion which would account for the gastric dilatation. There was some evidence of past adhesion about the duodenum.

This case is interesting from two points of view—namely, (1) the entire absence of any disease of the stomach itself or duodenum to account for the gastric dilatation and (2) the presence of renal disease. The dilatation could not have been due to the malignant disease of the pancreas, for the head of this organ was quite healthy. I am inclined to think that it was caused by an anchoring of the pylorus or duodenum through adhesions. In the case reported by Holman [20] the stomach was much dilated, but there was also no sign of ulceration past or present. In de Beaurmann's case quoted by Fenwick [21] the dilatation is said to have been atonic. Singer [22] in the Vienna Medical Club stated that dilatation of the stomach is not always present in cases of gastric tetany, but often only an atony; no cases are given in support of this view. In Merlin's [23] case quoted by Sievers there were dilatation of the stomach and hæmorrhages and erosions in the mucous membrane of the stomach and duodenum.

It has been very properly suggested that any satisfactory explanation of the etiology of gastric tetany must take cognisance of the frequent occurrence of ulcers wholly or partially cicatrised. Bouveret and Devic [24] thought they had discovered the connecting link in the hyperchlorhydria frequently associated with gastric ulcer. Excess of hydrochloric acid has certainly also been found in gastric tetany by Gumprecht [25] and Thiroloix and Du Pasquin.[26] The occurrence of tetany in gastric carcinoma developing in an old gastric ulcer would not militate against this view because hyperchlorhydria has been known to occur in this small subgroup of gastric carcinomata. On the other hand, there are cases of gastric tetany on record in which free hydrochloric acid has been absent from the gastric contents, as in Blazicek's [27] case. In addition, there are cases referred to above in which pressure from without and other conditions presumably unassociated with gastric hypersecretion have led to dilatation of the stomach and tetany. Thus, if Bouveret and Devic's [28] views are correct as regards some cases they certainly are not so for all.

Of the three or more theories put forward to explain the origin of gastric tetany the auto-intoxication theory has very rightly found the widest acceptance. Neither the loss of fluid to the body, first put forward by Kussmaul but afterwards disclaimed by him, nor yet the reflex theory supported by G. Sée, Müller,[29] Berlizheimer,[30] and others, offers a satisfactory explanation. Fleiner, quoted by Max Einhorn,[31] has warmly supported the first-named theory, but Blazicek [32] showed by actual investigation that in his case, at all events, there was no increased loss of water to the blood. Jürgensen,[33] however, in commenting quite recently upon a case of cerebral symptoms with clonic convulsions occurring in gastric dilatation also leans to this view. Another very strong reason against it is the fact that there are not a few pathological conditions in which either adequate fluids are not supplied to the body or excess of fluids are drained away from it without producing tetany.

With increasing knowledge the application of the reflex theory to the actual causation of disease has gradually been narrowed down within very modest limits. It is true that gastric tetany has followed almost immediately on passing a stomach tube (Fenwick,[34] Collier,[35] and others), or on percussion or even stroking the abdomen (Müller [36] and Gerhardt [37]), yet, as Loeb [38] and others have pointed out, it would be equally reasonable to attribute ordinary tetanus to reflex causes, since such peripheral irritation will suffice here also to bring on the paroxysm of spasm. The presence of entozoa in the intestine in cases of tetany such as the one described by Riegel [39] and others and the disappearance of the disease with the evacuation of the parasite have been looked upon by some as being evidence in favour of this reflex view. Yet it is not impossible that these parasites themselves lead to the development of poisons, a view lately discussed by Peiper.[40] If the auto-intoxication theory be accepted it is an easy matter to believe that the same convulsive poison which produces the tetanoid spasm also heightens the excitability of the nervous centres, so that a slight peripheral irritation may suffice to call forth the spasm. In support of the intoxication theory Bouveret and Devic [41] have separated from the stomach contents of a patient with permanent hyperchlorhydria a poison soluble in alcohol which produced convulsions in animals. They thought that this poison arising in the stagnate and hyperacid gastric contents in dilatation of the stomach would explain this form of tetany. On the other hand, cases have been examined with negative results by very reliable observers, such, for instance, as a case by von Jaksch and Berlizheimer,[42] one by Blazicek [43] assisted by Landsteiner, and also Müller's [44] cases. Fleiner, quoted by Gumprecht,[45] obtained positive results in his case only after a certain chemical treatment of the gastric contents. Gumprecht's elaborate investigation also gave a somewhat uncertain result. The alcoholic precipitate containing albumoses and salts possessed marked toxic properties, but the albumoses had not been absorbed, since there were none present in the urine. This

[10] Virchow Hirsch Jahresbericht, 1892.
[11] L'Union Médicale, 1884.
[12] Berliner Klinische Wochenschrift, 1888.
[13] Deutsche Klinik, 1869.
[14] Deutsches Archiv für Klinische Medicin, 1890.
[15] Loc. cit.
[16] Bulletin de la Société Anatomique, 5me série, vii.
[17] Wiener Klinische Wochenschrift, 1894.
[18] Loc. cit.
[19] Berliner Klinische Wochenschrift, 1897.
[20] THE LANCET, Oct. 20th, 1894, p. 915.
[21] Transactions of the Clinical Society of London, vol. xxxviii., 1895.
[22] Neurologisches Centralblatt, 1894.
[23] La Loire Médicale, 1890.
[24] Loc. cit.
[25] Centralblatt für Innere Medicin, 1897.
[26] Loc. cit.
[27] Loc. cit.
[28] Loc. cit.
[29] Loc. cit.
[30] Loc. cit.
[31] Twentieth Century Practice.
[32] Loc. cit.
[33] Deutsches Archiv für Klinische Medicin, 1898.
[34] Practitioner, 1892.
[35] Loc. cit.
[36] Loc. cit.
[37] Berliner Klinische Wochenschrift, 1888.
[38] Loc. cit.
[39] Deutsches Archiv für Klinische Medicin, 1873.
[40] Deutsche Medicinische Wochenschrift, 1898.
[41] Loc. cit.
[42] Loc. cit.
[43] Loc. cit.
[44] Loc. cit.
[45] Loc. cit.

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observer concludes that in his case the presence in the body of any special poison at the time of the tetany, such as might be looked upon as the basis of an auto-intoxication, could not be proved by the ordinary methods. If a poison is manufactured in the abnormal chemical processes in the dilated stomach its absorption should lead to a greater urotoxic coefficient and also it should be possible to separate this poison from the urine. Gumprecht found a higher urotoxic coefficient in his case, but it was present both in the interval as well as during the attack, and Jacobson and Ewald [40] obtained from the urine of their case a ptomaine-like body. There have been other investigations in tetany, notably by Albu, to which I have not referred, as my object is merely to roughly indicate the present position of the subject. Unfortunately no investigations of any kind were made in my cases. However, plausible and probable the auto-intoxication theory is, it cannot as yet be looked upon as having been definitely established by experiment.

There is, however, another point of considerable interest also connected with the intoxication theory in the relation of gastric tetany to renal disease including albuminuria, In not a few cases of gastric tetany (Loeb,[47] Merlin,[48] Dreyfuss Brisac,[49] Blazicek,[50] Galliard,[51] Fenwick,[52] Sievers[53]), albuminuria has been noted. In some of these cases the kidneys have been found healthy after death, at least so far as the naked-eye appearances were concerned. Poisons excreted by the kidneys, whether in the infections or the intoxications, may, and frequently do, injure the kidney in their passage through it. I have not met with any particular researches into this subject in tetany, gastric or other. In one of Hoffmann's [54] cases of tetany (No. 6) it is stated that there was an acute nephritis, but no exact details are given. The relation of tetany to chronic nephritis is perhaps of greater importance. In one of Blazicek's cases and in both of mine there was more or less advanced renal disease. Wick [55] has related a case of tetany, not of gastric origin, in a patient who was the subject of granular kidney, but, as Frankl Hochwart [56] points out, there are so many factors present in this case that it is difficult to interpret it. In No. 7 of Hoffmann's [57] cases, in a lad aged nineteen years, there was also chronic nephritis, but in the reading through the details of the case the question arises whether it might not be a mere matter of coincidence. It has not been proved that the poison or poisons causing uræmia can set up the spasm of tetany nor clinically is there any reason to suspect such a possibility. There is, however, another aspect of the relationship of tetany and renal disease. If tetany is due to a poison excreted by the kidneys then anything which would render the kidneys less efficient excretory organs should precipitate the attack of tetany. It may be, as Bouveret [58] says, that a sudden augmentation of the poison or a temporary insufficiency in the elimination may determine the attack, but this view as yet quite lacks the necessary proof. Before leaving the kidneys it may be mentioned that acetone, to which, indeed, Biscaldi [59] attributed the tetany in his case, and also sugar (Fenwick [60] and others) have been found in the urine. Frankl Hochwart [61] has specially drawn attention to the question of season and tetany, and Gumprecht [62] says that 75 per cent. of the cases of gastric tetany occur from January to March, the months in which ordinary tetany is most common. The figures as regards gastric tetany are certainly too small to base any conclusions upon. Both my cases occurred in July. Of Sievers's [63] cases recently published one occurred in April and the other in November, and of the other two cases referred to in his paper Holstoi's was noted in February and Bockman's in April. The greatest frequency of tetany at a given time of the year, epidemic outbreaks of the disease, its occurrence as a complication of infective illnesses, the frequent rise of temperature noted and other facts, have been appealed to in support of an infective origin.

[40] Verhandlungen des Congress für Innere Medicin, 1893.
[47] Loc. cit. [48] La Loire Médicale, 1890.
[49] Gazette Hebdomadaire, 1885. [50] Loc. cit.
[51] Gazette des Hôpitaux, 1883.
[52] Transactions of the Clinical Society of London, 1895, vol. xxxviii.
[53] Berliner Klinische Wochenschrift, 1898.
[54] Deutsches Archiv für Klinische Medicin, 1888.
[55] Wiener Medicinische Wochenschrift, 1894.
[56] Loc. cit. [57] Loc. cit.
[58] Maladies de l'Estomac, 1893.
[59] Revue des Sciences Médicales, tome xli.
[60] Loc. cit. [61] Loc. cit.
[62] Loc. cit. [63] Loc. cit.

A question of some importance arises as to whether tetany may occur in connexion with gastric disease other than dilatation. Max Einhorn [64] and some other writers accept this view. Schlesinger [65] in the Vienna Medical Club reported a case in a woman, aged thirty-five years, which occurred in connexion with an acute gastro-enteritis caused by eating contaminated sausage. The same writer drew attention to an almost unknown form of tetany which he described as chronic benign tetany of gastric origin. Perhaps the following case, which Dr. Barrs has very kindly placed at my disposal, falls into this category.

CASE 3.—A girl, aged seventeen years, a patient under the care of Dr. Cheetham of Guiseley, complained of cramps in the hands and feet. When she was seen by Dr. Barrs the hands presented the typical position found in tetany. The tonic spasm also affected the legs. It was stated that the face was involved at times. The attacks came on chiefly in the afternoon and lasted until night and were preceded by vomiting. The patient was a delicate girl and diarrhœa and vomiting were very readily induced. There was no evidence of gastric dilatation. The girl's parents stated that the attacks had recurred on and off for six years, but that during the last two years there had been no recurrence. They were certain about the relation of the spasm to the vomiting; indeed, they attributed the spasm to the vomiting. Beyond being worse in cold weather the parents could give no information about the relation of the attacks of tetany to any particular months in the year. The patient is now perfectly well.

The chief interest in this case is the systematic occurrence of the attacks of tetany after severe vomiting. It is this fact, together with the long period of time over which the attacks were observed, which separates the case from ordinary tetany. Of course, gastro-intestinal symptoms are not uncommon in tetany of children, but the regular association of the vomiting and tetany is, I take it, a different matter. I may mention here that tetany is decidedly an uncommon disease in Leeds and its neighbourhood.

The diagnosis of gastric tetany is mostly quite easy. Fenwick,[66] however, tells of a case in which apparently there was some chance of mistaking the disease for uræmia and in my first case the idea of uræmia presented itself but was easily set aside. If the term "gastric tetany" is allowed to include the milder as well as the severer cases, and there is no sufficient reason against this view, then the disease may turn out to be more common than is usually supposed. The transition between gastric tetany strictly so-called, tetany with gastro-intestinal symptoms, and ordinary tetany would seem to be a gradual one. The prognosis of tetany occurring in gastric dilatation is undoubtedly very serious; nearly 75 per cent. of the cases die. The largest mortality occurs in the groups 2 and 3 referred to above, that is, where the spasm in the extremities is associated with tonic spasm in the head and trunk muscles or with clonic spasm. If the very strict views are held as to the disease then the outlook is almost hopeless; thus of the 11 cases recognised by Frankl Hochwart only 1 recovered. There is a danger here, as in some other diseases, that the fatal issue is raised to be the chief criterion as to the nature of the affection.

After what has been said under the prognosis it may be thought that little need be added about the treatment of gastric tetany, yet in some cases, and notably one by Blazicek, [67] the fatal issue was warded off for a time by systematically washing out the stomach. On the other hand, as mentioned above, the tetany itself has been ascribed to the stomach-tube, and undoubtedly the paroxysm has sometimes followed almost immediately upon its use. Some time ago this fact so impressed itself upon some observers, such as Fenwick, [68] that the opinion was expressed against washing out the stomach in this disease. Most writers, however, including Fenwick, now agree that this method of treatment should be adopted. With the soft tube now in general use the risk of provoking an attack should be reduced to a minimum. Before the stomach is emptied it is perhaps well to supply fluid to the body in the form of saline injections into the rectum or subcutaneous infusion. In my case the stomach was thoroughly washed out, sterilised saline solution being used for the purpose as soon as the wash-water became clear. In some quarters it has been strongly stated, perhaps rather from theoretical considerations, that alcohol should be avoided in gastric

[64] Loc. cit.
[65] Neurologisches Centralblatt, 1894.
[66] Loc. cit. [67] Loc. cit. [68] Practitioner, 1892.

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dilatation. Other authorities have, perhaps, more correctly stated it when they say that alcohol should be avoided if it is found in the stomach some time after it has been taken. Penzoldt[69] says that the treatment should aim chiefly at avoiding the occurrence of this fatal disease. He draws attention to the fact that Boas recommends diuresis. Rectal injections of milk are also mentioned by Penzoldt, otherwise the treatment is symptomatic. If the tetany ceases and the general condition of the patient permits of it an attempt should, perhaps, be made to do away with the gastric retention by pyloroplasty, gastro-enterostomy, or pylorectomy. A pylorectomy was performed in Gumprecht's case some time after the last attack of tetany, but unfortunately the patient after doing well for a few days died from peritonitis.

In conclusion, I will make a few remarks on duodenal carcinoma. Its rarity is obvious from the statistics given by Ewald.[70] Thus, among 1184 cases of intestinal carcinoma, in only 17 cases did the new growth occupy the duodenum. The proportion of duodenal to intestinal carcinoma was thus 1 in from 60 to 70. This accords fairly well with Schlesinger's[71] figures (1 in 60) taken from the post-mortem reports in Vienna. Pic[72] has made a very elaborate study of duodenal carcinomata and he divides them into three groups according to their situation. When placed above the common papilla they are indistinguishable from carcinoma of the pylorus. When situated below the papilla there is a permanent reflux of bile and pancreatic juice, and when round about the papilla they produce mixed symptoms. My case could not be distinguished during life from carcinoma of the pylorus; it has been pointed out that bile may regurgitate through a rigid pylorus. The growth surrounded the duodenum and produced marked stenosis with dilatation of the upper duodenum and stomach. The papilla lay in the middle of the growth but the common bile-duct was not obstructed and there was no jaundice. In Schlesinger's case, in a woman, aged fifty-eight years, the growth was of the size of a gulden piece and extended up as far as the papilla. There was no stenosis of the duodenum and therefore no dilatation of the stomach. There was no vomiting until the last few weeks. Jaundice was present and became intense towards the close. Secondary nodules were present in the liver. In the case reported by Mauclaire and Durrieux[73] the non-ulcerated growth extended for three-quarters of its length round the lumen of the gut and the papilla was placed in the middle of it. There were much pain in the epigastrium and vomiting, but no jaundice. The growth had produced more acute symptoms of obstruction, but as yet no dilatation of the upper duodenum or stomach.

Leeds.

A CASE OF TETANUS TREATED WITH TETANUS SERUM; RECOVERY.

BY DAVID SIME, M.D. GLASG.

ON July 2nd, 1897, a strong, healthy youth, aged seventeen years, had a fall from his bicycle and cut his right hand whilst turning sharply from a country road into a farmyard. The wound, which was on the hypothenar prominence of the hand, was about three-quarters of an inch in extent and it was found to be not merely bleeding but grimed with dirt. In consequence of this latter fact, rather than of the bleeding, the patient, with the companion who was with him, repaired to the village pump and sensibly scrubbed the wound thoroughly "for a good half hour." So little injury otherwise was incurred that he was able to return home on his bicycle, a distance of at least eight miles. Thereafter, apparently, the wound healed satisfactorily and on returning to town, which he did in a few days, he at once resumed his business duties, looking so vigorous and well that his friends congratulated him on the fact. On July 12th, however—i.e., on the eleventh day after the accident, the latter by this time having been practically forgotten—he felt an unaccountable heaviness about the lower jaws and a slight difficulty in mastication and swallowing. These were the first indications of anything like a toxic result of the injury. The incubation period, therefore, of this particular case was not less than 10 days. Next morning the heaviness of the jaw and the difficulty of mastication were slightly increased, but these symptoms were in no way referred to the accident either by the patient or his relatives. Nevertheless, they were so persistent that on the same day he took advice on the matter in the city and having been reassured by the medical man as to their transient character he ignored them as well as he could. This, however, was found to be impossible, so much so that on returning home he called upon me on the way, this being the first time I had seen him. I then found that he could only open his mouth about half its normal extent. There was no other muscular difficulty unless a slight thickness of speech and uneasiness in swallowing. He could rise from his chair, stand, and walk about without difficulty, and the hand grasp was normal and even strong, and equally so on both sides. The wound in the hand was quite healed, with a tolerably dense fibrous cicatrix, and there was still some black "dirt" ingrained in the scar, but pinching of the latter gave no pain and there was no inflammation whatever either here or in any part of the arm. Next day, July 14th—i.e., the third morning after the first symptoms had set in—he still courageously went to his office, but he was unable to stay for more than two hours; a certain stiffness in the loins and back had set in and he found difficulty in sitting on his office stool for more than a few minutes at a time. He was sent home by the heads of the firm. On his way home he again called upon me and I now found that in addition to the difficulty of opening his mouth, which had increased, there was a slight rigidity of the muscles of the back and of the right hand and arm, the hand grip being less pronounced than that of the left side, which was in no way impaired. He rose from a chair with difficulty and his walk was somewhat stiff and unsteady; he was also restless and nervous and had an anxious, scared look, which was altogether foreign to him. On the 15th—i.e., on the fourth day of the disease—he remained at home and, after a hot bath, for the most part in bed; but although not in any way materially worse he was yet in no way really improved, the muscles of the jaw and neck being constantly more or less rigid, with a tremor occasionally running through the rigidity, and the muscles of the right arm and back were still disagreeably stiff. Nevertheless, he could yet masticate, although with increased difficulty, and his appetite was excellent. Early in the morning of the 16th—i.e., on the fifth day of the illness, I was hastily summoned and found him in a deplorable condition. He was lying in bed, rigid, arched, and trembling, with great drops of sweat rolling down his face. It was quite impossible for him to open his mouth and within the last two hours he had for the first time repeatedly bitten through his tongue, which was still bleeding slightly. The expression of combined agony and despair in his face was now pitiful, all the more so that he was bearing his appalling sufferings so stoically. The centre of disturbance seemed located mainly, if not exclusively, in the upper tracts of the spinal substance. Twitching of the facial muscles, with the characteristic facies sardonica, was marked, whilst rigidity of the neck and of the right arm and hand was hardly less pronounced. The muscles of the lower back and loins and of the lower extremities, on the other hand, although occasionally rigid, were at this time not anything like so much so or so excruciatingly painful as those of the upper levels of the body. The slightest irritation in the region of the right shoulder-blade immediately induced a spasm.

It was obvious, then, that complete "intoxication" of the spinal substance with the virus and in its highest and most important tracts had at last taken place. But in this connexion it is not without interest to note that it took actually four days after the disease had set in before this result was fairly accomplished. In other words, manifestly enough, for four days after the incubation was over virus was still being steadily eliminated into the circulation by the micro-organism in the peripheral scar. On the whole this, the fifth day, was, perhaps, the worst and most excruciating of the entire illness. In spite of bromides and morphia and other sedatives, and in very large doses, the spasms continued with decreasing intervals of rest, the chief source of distress being the spasm of the lower jaw and the biting of the tongue which it occasioned. By night he had calmed down somewhat, but he slept not at all, and the paroxysms recurred at

[69] Handbuch der Speciellen Therapie, Band iv., 1896.
[70] Twentieth Century Practice.
[71] Wiener Klinische Wochenschrift, 1898.
[72] Revue de Médecine, 1895.
[73] Bulletin de la Société d'Anatomie, 1898, No. 7.

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less and less intervals as the night advanced, the spinal site of disturbance being still centred mainly in the upper tracts. It was now necessary for him to be tended night and day without cessation and fortunately his parents proved as intelligent attendants as they were anxious and devoted. On the sixth and seventh days of the illness he was no better, the paroxysms, on the contrary, increasing in frequency and severity; and, both by night and day he but dozed occasionally, invariably awakening with a violent start and a paroxysm of spasm. The latter was still mainly centred in the upper tracts, but was now steadily implicating the loins and lower limbs, the lumbar not less than the bulbar swelling becoming gradually involved. The twitching of the face with the facies sardonica by this time had all but disappeared; but the clenching of the jaws with the crushing of the tongue was more frequent than before. He now only could take liquid nourishment, but of this he took plenty, his appetite remaining excellent; his pulse, too, was strong and regular; the temperature was normal and he passed urine freely and without difficulty. The bowels were cleared out by an injection of soapy water.

On July 19th, the eighth day of the illness, as there was no sign of improvement, but quite the reverse, Dr. Pye-Smith was summoned for consultation. After a careful examination of the patient, he was able to completely eliminate any possibility of a surgical injury to the spine, possibly arising from the bicycle accident, and the diagnosis of tetanus was established. Most formidable as the case was, and in spite of the appalling mortality of tetanus, the prognosis determined on was not altogether without hope, partly on account of the vigorous youth and the continued strength of the patient; partly on account of the soundness of his nervous system as a whole; but mainly on account of the considerable length of the incubation period—ten days—and the already considerable duration of the disease itself—eight days—death not unfrequently occurring on the sixth or even the fifth day. As the patient had slept so little a change was advised in the sedative, and consequently a mixture of tinctura opii and of tinctura cannabis indicæ was prescribed, 15 minims of each drug in every dose, and a dose to be given every four hours, or oftener, according to the severity of the malady. The case, too, was deemed a favourable one for trying the tetanus serum treatment. At bedtime the patient had the first draught of the opium and Indian hemp mixture and thereafter he had four hours' sleep, the longest he had had since the disease was fully established. It must not be forgotten, however, that he was at the time well under the influence of the bromides, &c., for the mixture never again had exactly the same delightful effect. Although he slumbered for four hours the paroxysms never really ceased, the grinding of the teeth, the biting of the tongue, and the arching of the spine, with muffled moans, recurring with the same mournful periodicity. On the morning of July 20th—i.e., the ninth day of the illness—the serum arrived, and at about 9 A.M. (after clearing out the bowels with an injection and giving an extra large dose of the opium and Indian hemp mixture) I inoculated in the right hypogastric region—the Pasteurian site for hydrophobia—10 c.c. of the liquid. Every precaution was taken to ensure that the hypodermic needle was sterilised, the instrument (which was a new one) being taken to pieces, and the pieces boiled together for five minutes, and the skin of the abdominal wall being well sponged with a disinfectant lotion. No uneasiness whatever was caused by the inoculation, and the slight subcutaneous swelling which was occasioned by it in the course of the day gradually disappeared. The paroxysms of spasm, however, were in no way reduced either in severity or in frequency, and the centre of disturbance was in addition becoming stronger every hour in the lower levels of the spine, the entire spinal substance being now apparently involved. So severe and widespread and so frequent were the spasms that the Indian hemp and opium mixture was administered every two hours. Nevertheless towards evening I noticed that, although the spasm of the loins and abdominal walls and of the lower limbs was increasing, the facies sardonica was obliterated. The spasms of the jaw were less pronounced and the patient could open his mouth somewhat better than he had done for some days. Impressed with this fact I determined to give him another subcutaneous injection of the tetanus serum; and this I did about 10 P.M., using the same precautions as before, in the left hypogastric region. On this occasion, in spite of an increased dose of the Indian hemp and opium mixture, he by no means slept so well, but although the paroxysms continued unabated, steadily becoming more pronounced in the loins and lower extremities, he slumbered uneasily for two hours. The limbs and lower spine were supported by pillows, which gave him some comfort. Although not any better, but emphatically worse in the lower levels of the body, before leaving I noticed that the spasm of the jaws was distinctly less frequent and, moreover, that he did not bite his tongue so frequently. Next morning (the tenth day of the illness) I learnt that he had passed a very bad night but that he had not bitten his tongue for four hours. The spasms were apparently becoming stronger in the lower and slightly weaker in the higher levels of the body, and his spine was in a condition of more or less constant arch. The spasms in the loins and lower limbs became in the course of the morning so excruciating that Dr. Pye-Smith was again summoned. By the time he arrived there was no indication of the subcutaneous injections in the hypogastric sites, but a slight erythematous eruption had developed itself over the thighs and abdominal walls. This was at least proof that the serum was having some constitutional effect, which was still further evidenced by the fact that by 10 P.M. the temperature, which hitherto had been practically normal, rose to 101° F. A continuation of the opium and Indian hemp sedative was advised, as, if it did not reduce the severity or frequency of the spasms, it unquestionably induced a certain amount of sleep; if it did not soothe the spinal irritation it at least calmed the brain well. Another subcutaneous injection of the tetanus serum was also recommended, providing the spasms did not soon materially abate. As, however, the erythematous eruption had very considerably increased over the body by the next day, the 22nd, or the eleventh day of the illness, the parents demurred about the further use of the serum unless it should prove absolutely essential. By this time the biting of the tongue had completely ceased and the maximum of spinal disturbance was steadily shifting down the cord, by much the worst of the spasms being now in the small of the back and in the thighs. If the biting of the tongue or the spasmodic distress of the jaws and neck should at all recur, much less increase, if, in other words, there should at any time be any indication whatever, however slight, of a fresh "intoxication" of the upper levels of the spinal substance or of any level higher than the lumbar swelling, it was my intention to repeat without delay the inoculation of tetanus serum, and this the parents very sensibly agreed to and fully empowered me to do. After the tenth day of the illness, however, any indication of a fresh implication of the superior tracts of the cord, with biting of the tongue, &c., never again recurred, so the necessity for repeating the serum inoculation did not arise. That it was still acting constitutionally was obvious, for the erythematous eruption spread over the entire body in a bright lobster-red scarlatinoid rash, the temperature rising to a little over 102°, but this temperature was not maintained for more than two nights, and in the course of a week the eruption disappeared in scales and the temperature became strictly normal. All this time, however, the severity of the spasms in the back and legs continued unabated, and if there was no indication of any increase or spreading of the affection upwards to its original site, there was no proof whatever of the character or severity of the spasms, such as they were, being diminished. Furthermore, the Indian hemp and opium sedative had by this time to be materially increased in order to induce any sleep at all, and even when induced the paroxysms of spasm seemed but slightly influenced thereby. These facts, taken in connexion with the ominous contraction of the pupils, which was now revealing itself, induced me to try chloral hydrate. On the 24th, or the thirteenth day of the illness, I accordingly gave, at 10.30 P.M., a draught composed of 20 grains of chloral hydrate and 30 grains of bromide of potassium and waited for a couple of hours to watch the result. Very little effect was produced; I therefore repeated the dose, and the spasms soon became distinctly less severe and the patient fell into a long but troubled sleep. All night long he was delirious and at 3 A.M. I was summoned. The delirium, however, was clearly due to the chloral hydrate, and to this alone, for hitherto, and in the worst of his agonies, the patient's mind had been marvellously undisturbed. By this time I noticed that the spasms, even of the loins, were distinctly less pronounced, and that in his restless sleep he moved about with more freedom than he had yet done

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since the fifth day of his illness, or when the complete intoxication of the spinal substance had occurred. Next day, the fourteenth of the illness, he seemed decidedly better, the paroxysms of spasm being much less pronounced, and, on the whole, he passed a fairly quiet day, much calmer than he had yet enjoyed. At night the Indian hemp sedative with 20 grains of chloral hydrate were administered and he passed one of the best nights he had yet had. I wrote to Dr. Pye-Smith at this stage as to the best sedative now to administer and he strongly recommended the continuation of the chloral hydrate, with, in addition, a glass of stout every night. From this time the progress towards recovery was rapid and extremely satisfactory, the paroxysms became distinctly less severe and less enduring; for the most part they were mainly confined to the legs and occurred chiefly in the evening before his night draught and when he was most exhausted. His appetite increased, he was now taking regularly a mixture of peruvian bark and dilute phosphoric acid and he could masticate food fairly well. On the 29th, the eighteenth day of the illness, the bowels for the first time moved spontaneously. On July 31st and August 1st, the twentieth and twenty-first days of the illness, he had the very last flickering indications of anything like spasm. He now only had the sedative mixture at bed-time and when he could not otherwise go to sleep, and he slept for hours without the slightest sign of spasm. On August 2nd he twice got up for an hour and his movements were good and, although very weak, perfectly normal. He now could bring his arms around his head and both sit with ease on a chair and rise from it with the same freedom. By the 7th he was so decidedly improved that his father and mother were able to take him to the seaside. On the 10th I received a letter from his father in which he said that his son "stood the journey well and is already showing great benefit from the change; he is gaining strength daily."

What influence had the tetanus serum on this case? It can hardly, I think, he said that it was "antitoxic," or, in other words, that it destroyed or aborted the "virus" which had been eliminated into the circulation, for the frequency and the severity of the paroxysms of spasm were in no way reduced by it. The amount of virus which had been thrown into the spinal system by the fifth day of the illness remained for at least a week after the subcutaneous inoculations of serum and in spite of these apparently the same. The amount, however, did not increase. Now, before the fifth and sixth days, it is certain that there was a continuous elimination of virus into the spinal substance, with fresh points of intoxication every few hours. Did this process cease on the sixth day? If it did not cease is it possible that the serum, although in no way antitoxic or antidotal, nevertheless prevented any further elimination of the virus by acting on the specific micro-organism which elaborated it and therefore prevented any fresh intoxication of the higher levels of the cord? If this were so it was a very great result and rendered ultimate recovery but a question of time and strength. With another such case I should employ the treatment at the earliest possible opportunity, for if the serum be in reality a germicidal agent even more than an "antitoxin"—which from this case alone there is reason to show—the sooner it is used the better. There is no reason why it might not be used for every suspicious wound and not merely as a preventative inoculation, but even as a lotion itself. One fact is certain from the case before us—that it does no harm, however much good. Again, it is of interest to note that the wound in this case was received in the country and at a farmyard. How often does this occur? Tetanus is a disease of the country much more than of the town, there being good reason to show that an old garden, a badly-drained stable, or a badly-drained farmyard is the peculiar haunt or "home" of the tetanus bacillus. If this be so a wound such as that incurred in this case must be of pre-eminent danger and should receive the promptest and the most effective of preventive treatment.

Harringay, N.

FATAL POISONING BY MUSHROOMS.—An inquest has been held at Llandaff, Glamorganshire, on a man, aged forty-four years, who died after eating mushrooms which he had gathered. The widow stated that she and the children had taken them without any ill-effects. After hearing the medical evidence the jury returned a verdict of "Death from poisoning through eating mushrooms."

CASE OF TETANY WITH DILATATION OF THE STOMACH; DEATH.

BY JOHN SOUTTAR McKENDRICK, M.B., C.M. GLASG.,
LATE RESIDENT PHYSICIAN TO THE GLASGOW WESTERN INFIRMARY.

WHILE acting as resident physician in the wards of Sir William Gairdner I had an opportunity of observing that somewhat unusual nervous disorder, tetany in the adult. As I have noticed that a few cases have already been recorded of tetany resulting from gastric dilatation I take the liberty of publishing this case, which, if nothing more, may interest those who are collecting statistics on this subject. Almost 50 years ago Steinheim in Germany and Dance in France described this disease, but it was not until Trousseau in his masterly way wrote on the subject that the disease became much known. Trousseau called it "tetanilla"; for the name "tetany" we are indebted to Corvisart, who described the condition in 1852. Cases have been reported by Moxon, Wilks, and Abercrombie, and by Riegel, Erb, Weiss, and others, and the disease has been fully discussed in lectures by them. The description of the complaint is fully given in Gowers's and Ross's text-books on diseases of the nervous system. Moxon described the close similarity between tetany and certain symptoms developed from poisoning by ergot, although he noted that in the latter the symptoms passed on to tetanus. Foord has also mentioned a case of hysterical spasm which closely simulated this disease, while Cheadle[1] instances cases where patients who in childhood had convulsions in adult life suffered from tetany. He also notices the similarity of the disease in adult life and in childhood. Tetany is considered by some to be of a rheumatic nature as it so frequently occurs from exposure to cold, while the joints are painful and often swollen from œdema. Trousseau has described it as the "rheumatic contracture occurring in nurses," and a case is reported by Cheadle of a girl, aged seventeen years, who had tetany, and who, when she was twelve years of age, was the victim of chorea, a disease closely related to rheumatism. Amongst numerous other causes assigned to this obscure complaint may be mentioned anæmia, intestinal disorders, and dilatation of the stomach, while it has also been observed during lactation and in pregnancy. The etiology of tetany is fully discussed by Stewart of Canada,[2] who classifies various types of the disorder as follows: (*a*) when it is epidemic and acute; (*b*) when it is chronic from debilitating diseases; and (*c*) when it is the result of thyroidectomy. He points out that recovery is frequent and that the malady has a low death-rate. He notes, however, that out of 78 thyroidectomies 13 had tetany, of whom 6 died; and he also mentions the fatal tendency in cases where dilatation of the stomach is a complication or possibly a factor in the causation of the disease. Cases of tetany with gastric dilatation have been described by Kussmaul, Gerhardt, Dujardin-Beaumetz, and Müller, the latter noting the mortality in the few cases he had met with as 66 per cent. It will be my object to describe this case as fully as possible and afterwards to discuss it shortly.

A man, aged twenty-six years, was admitted into the Western Infirmary on June 14th, 1897, complaining of cramps of the hands and arms of four days' duration. It appears that the patient was at work as usual on June 10th, apparently in his ordinary health, when he was suddenly seized with a tingling sensation in his hands and then in his legs, which afterwards extended up to the elbows and knees. He had the same feeling also in his face. He commenced to feel drowsy and his eyes felt heavy. He soon noticed that his hands and feet were somewhat stiff and shortly afterwards he had severe cramps in the same parts with acute pain. With some difficulty he was able to walk home, as he says that the legs did not share long in the extreme spasm but became only stiffened. His head was painful and he felt as if it and his tongue were swollen, and he had difficulty in articulation. Drowsiness supervened and he soon became very sick, vomiting a small quantity of bright red blood. The spasms in the hands, the arms, and the face occurred every six or seven minutes, giving him great pain, but during the interval the arms and

[1] THE LANCET, May 7th and 14th, 1887.
[2] Braithwaite's Retrospect of Medicine, 1890, p. 180.

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hands remained in a contracted position and felt numb, cold, and dead. He said that he was not exposed to cold before the onset of his illness. He passed his urine naturally but it had been small in quantity and not voided at too frequent intervals. His bowels had always been constipated. Apart from "a fever" which he had when a child, the name of which he had forgotten, he declared that indigestion had been his only ailment. For twelve years he had been troubled constantly with headache, pain in the stomach, aggravated by food, and, as a rule, relieved by vomiting, and this vomiting had been more severe during the last few months. The vomited matter was sour to the taste and was of a greenish-yellow colour. He had never had rheumatism, swelling of the face and legs, or venereal disease. He had never had cramps before nor had he had convulsions as a child. There was nothing unusual in the family history except that his father was subject to indigestion and vomiting in the same way as himself. His father had never had cramps in the extremities to his knowledge.

On admission to the infirmary the patient was put to bed. He had a drowsy, unintelligent appearance; his eyes were partly closed and it was only with an effort that he could completely open them for a short time. He was slow in answering questions and his articulation was thick. The lips, the nails, and the backs of the hands and the forearms were livid. The arms and hands were cold. There was no œdema of the ankles or of any other part of the body, nor was there any clubbing of the finger tips or marked curving of the finger nails. The temperature was 98·6° F. and the respirations were 20. The pulse was of moderate tension, numbering 96 in the minute. The tongue was protruded in the middle line and was slightly tremulous; it was dry and fissured and was covered with creamy fur, and the papillæ were enlarged. The pupils were equal and small, but responded to light and in accommodation. The hands were equally bent at the wrists and were inclined to the ulnar side. The fingers were flexed at the metacarpo-phalangeal joints, although the terminal phalanges were in extension. The thenar and hypothenar eminences were contracted, leaving a cup-shaped depression in the palm, and the muscles of these eminences were in a state of tremor. The thumb was forcibly adducted into the palm and was partly covered by the fingers. (This position of the hand has been described by Trousseau as like the "accoucheur's hand.") The arms were bent at the elbows, but they could be straightened and the hands and fingers bent into their normal positions without causing pain. There was no contracture of the legs. The spasms occurred every few hours. During the spasm the arms were more bent at the elbows, the thumb was more forcibly pressed into the palm, and was more closely surrounded by the fingers. The forehead was drawn upwards and the sides of the mouth backwards, which gave the face a grinning expression. The abdominal wall was tense and hard. In the intervals between the spasms the muscles of the arms, the hands, and the fingers were in a state of semi-contracture although he had no pain. Greater pain was felt during the spasm in the left hand than in the right, and it was noticeable that the shape of the left hand was more altered than the right. There was nothing abnormal detected in the lungs on percussion or auscultation, although when he was asked to take a deep inspiration he performed a series of irregular jerking movements. The heart was perfectly normal. As regards the abdomen, the liver was of normal dulness; there was great resistance of the abdominal wall and no evidence on examination of a dilated stomach. The specific gravity of the urine was 1017, it gave an acid reaction, was of a pale amber colour, and there was distinct albumin but no sugar, bile, or blood. Tube casts were never found. The patient died on June 19th. The tetanic contracture of the muscles of the arms and hands were present to the last although the severe spasms only occurred at occasional intervals. Vomiting was a constant symptom and the vomited matter was usually of a dark-brown colour which gave no blood or biliary reaction and certainly was not in harmony with the idea of a dilated stomach. The urine which was collected always contained albumin, but otherwise it was not remarkable. During the last thirty hours before death only a few ounces were passed and at no time did there seem to be much urine in the bladder. On the day before his death the patient had a sudden attack of dyspnœa. He then became cyanosed and his respiratory efforts were irregular and jerky, with considerable periods of apnœa. His pulse became quicker and he was totally unconscious. He had another similar attack on the day of his death. The treatment consisted of chloral and bromide of potassium in frequent doses; calomel and croton oil were given for the constipation. The patient was fed latterly by the rectum and stimulants were freely administered. A post-mortem examination was obtained, but unfortunately permission to examine the head was refused. There were found marked gastric dilatation, cicatricial contraction of the pyloric end of the stomach, and marked enlargement and caseation of the glands around, with intimate adhesion to the wall of the stomach and the cicatrised area. For this description of the appearances presented at the necropsy I am indebted to Dr. Lewis Sutherland.

I now venture to make a few remarks on the causation, symptoms, neuropathic heredity, diagnosis, and pathology of the disease, with special reference to the case as above described.

Causation.—Kussmaul and Nönsten have noted transient albuminuria in two cases. This patient had albuminuria. Is the tetany, then, one of the sequelæ of Bright's disease, or is it the result of gastric dilatation? The former supposition is, I think, negatived by the facts that no blood or tube casts were found in the urine, that the patient never had œdema of the ankles, the face, or other part of the body, and that he never at any time had polyuria or deficiency of sight. The periods of apnœa which occurred towards the end of his life were not due to Cheyne-Stokes breathing, but rather to a spasmodic condition of the diaphragm and muscles of the chest interfering with the physiological processes of respiration.

Symptoms.—Before the onset of cramps the patient had certain nervous premonitory symptoms[3] such as tingling sensations in the extremities, a feeling of coldness of the limbs, drowsiness, heaviness of the eyes, and swelling of the head and tongue. There was no pain on extension of the fingers, hands, and arms as would have been expected. The contracture was not quite equal on the two arms, being greater on the left. The spasms commenced in the arms and hands and afterwards affected the legs and feet. A permanent stiffness of the legs and feet resulted after the first few spasms had occurred, while the severity of the spasm increased in the arms and hands and affected the muscles of the face and abdomen as well. Ross says that the muscles of the facial expression and tongue are rarely involved, and Gowers mentions that when the muscles of the face are involved it is usually a severe case. Although the spasms in this case were intermittent, especially at the commencement, yet towards the end there was a more continuous spasm, interrupted only at occasional intervals by contractions of a severer kind. Ross mentions that the mental faculties are always unimpaired. In this case they were undoubtedly dulled and the memory had likewise suffered.

Neuropathic heredity.—Abercrombie has noted cases where a distinct neuropathic heredity could be traced and also where several members of the same family had the affection. In the present case no such history could be discovered, although it is a curious and interesting fact that the patient's father has had symptoms referable to the stomach of a nature precisely similar to his own.

Diagnosis.—The order of the symptoms as they occurred in this case was closely analogous to that described by Trousseau in his article on Tetany. No other affection has a series of symptoms precisely similar. Hysterical contracture very commonly affects only one side of the body or individual members, while in tetanus prolonged contraction of the masseter muscle is an early and characteristic symptom. The "Trousseau phenomena," so graphically described and of such diagnostic importance, were not tried in this case. They consist: (1) in the production of spasm in the hands and arms by pressure on the nerves or vessels of the forearm; (2) in the increased irritability and excitability of muscles and nerves to both faradaic and galvanic currents (it has been observed also that only in cases of tetany do we get anodal opening tetanus); and (3) in the disappearance of the spasm when the affected part was immersed in cold water.

Pathology.—Numerous are the changes in the brain and cord which have been described by writers as probably the pathological lesion in cases of tetany, and still more

[3] Gowers: Diseases of the Nervous System, vol. i., p. 648; and Ross; ibid., vol. i., p. 524.

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numerous are the speculative theories which have been offered as to their causation. Thickening of membranes, small inflammatory areas in the brain cortex with exudation of leucocytes, hæmorrhages, and disorganisation of brain cells have been described and their significance discussed in cases of tetany, but are not similar changes frequently met with in many other diseases? The microscopical pathology of brain structure is yet imperfect and furnishes us with few positive data which can guide us in clinical observation. But is this lesion an affection of the centres—the brain or the cord—or is it due to pathological changes in the nerves? Russel[4] supposes it to be due to the unopposed operation of the cerebellar influence—a view supported also by Hughlings Jackson.[5] Gowers[6] thinks that the pathology of the disease is vague, but he believes that there is some affection of the nerves and cerebro-spinal centres, and this view is supported by many authorities. The suggestion that nerves themselves may be the seat of the disease is negatived by the fact that "muscular spasm is rarely caused directly by chronic disease of peripheral motor nerves."[7] The suggestion offered by Cheadle[8] appears to me to be a fairly reasonable one, and one which well accounts for the tetanoid contracture in the present case. It is that the body becomes debilitated from a gastric or intestinal trouble with the result that there is a general weakening of the nervous system, with a consequent over-excitability of the motor cells of the cord. This condition of over-excitability is the predisposing cause, but there is also an exciting cause, such as diarrhœa, teething, &c., which acts reflexly on the cells of the cord, causing a series of impulses to pass along the neur-axons into the nerves supplying the muscles and producing a tetanoid contracture. In the present case no doubt the patient's strength had been gradually undermined by deficient nourishment owing to gastric dilatation. We may then suppose the cells of the cord had become impoverished and over-excitable and that a temporary acute gastritis or the absorption into the blood of ptomaine substances produced by fermentative changes in the stomach had acted as exciting causes and produced tetany. It is not easy to show a causal relation between dilatation of the stomach and tetany due to heightened reflex excitability of the cord except on the supposition that in certain cases specific substances of the nature of ptomaines may be generated in the stomach by fermentative processes, and that these substances raise the excitability of the cells in the cord. It is only in rare cases of dilatation of the stomach that this condition is accompanied by tetany; but, on the other hand, while fermentative changes due to micro-organisms are always present in cases of dilated stomach, it does not follow that the products of fermentation are always the same. It seems more reasonable to conclude that the reflex excitability of the cord is heightened by the action of specific substances than that this is due merely to deficient nutrition, as has been suggested. Clinically, therefore, it is important to take the warning that a dilated stomach in which fermentative processes are going on may be the precursor of a serious disorder of the central nervous system. It must be admitted, however, that there is no proof that a state of debility from exhaustive disease causes hyper-excitability of the motor cells of the cord and consequent tetany. The condition is by no means so common as we might expect if this were the sole cause of the disease, and a consideration of this case and of the literature of the subject obliges me to conclude that its real origin is still obscure.

It was unfortunate that no examination of the head could be obtained after death; still, it is important to observe that had we not had the post-mortem examination I am afraid the presence of an excessively dilated stomach might have been overlooked, which would have left us in a greater uncertainty as to the source of the tetany and the fatal issue of this case.

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Glasgow.

[4] Practitioner, vol. ii. 1881, p. 341.
[5] Buzzard: Diseases of the Nervous System, p. 424.
[6] THE LANCET, July 21st, 1883.
[7] Sharkey: Brit. Med. Jour., vol. i. 1886.
[8] THE LANCET, May 7th and 14th, 1887.

SOME NOTES ON MALARIA AS SEEN IN RHODESIA.

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IN every form of disease it is an acknowledged fact that the vitality of the body must be lowered before the specific germs of any disease can begin to manifest themselves in the system, for it is self-evident that wherever we may be we are all of us breathing air laden with germs and that it is only the inherent vitality of our tissues which prevents us from falling victims to every disease we may come in contact with.

Malarial fever is to be found universally distributed all over the world, though in greatly modified forms where civilisation and consequent drainage of ground, good food, and comfortable dwellings are obtainable. In Europe, for instance, it is scarcely ever met with and most probably only in those who have previously lived in some parts of the tropics. In Rhodesia, as in most new countries, malaria is very prevalent owing to a variety of causes or conditions, a few of which I will enumerate. Those arising from the land itself, or "endemic causes," are: low-lying country, porous soil, alternate spells of heavy rainfalls and intense dry heat causing rapid growth of rank vegetation, which is quickly dried up and withered by the sun, and the heavy rains following convert the whole into a mass of decaying matter, most pernicious to those living near; also the overturning of fresh virgin soil, necessary in farming, appears to produce a severe form of malarial fever. The malarial poison also seems to be most virulent an hour before and an hour after sunrise and I have made cultivations of the malarial bacillus obtained at this time of the day from the grass and soil, but only to the height of 4 ft. from the level of the soil—a curious fact, and one with regard to which I should like to know whether it has been substantiated by the observations of others.

Another note of mine may prove of interest also: it is with regard to "horse-sickness," an almost always fatal disease, which I consider to be malarial fever in the horse, inasmuch as I have made cultivations from and obtained the malarial bacillus in the blood of an affected animal. Now it has been proved that horses will not develop this sickness if they are stabled an hour before sunrise and not let out again until about 9 or 10 A.M., when the grass is dry. Numerous cases I have noted have shown the following facts to be indisputable: (1) horses turned out to grass during the day and stabled at night seldom or never take "horse-sickness"; (2) horses left out all night but stabled before sunrise and not turned out to grass until 10 A.M. continue healthy; (3) horses kept in at night and turned out just before sunrise always get "horse-sickness" sooner or later; and (4) this "horse-sickness" is not contagious inasmuch as others in the same stable do not contract the disease.

The conditions which I consider facilitate a tendency to malarial fever, and which may be classed as "ethnological causes" are: excessive spirit-drinking (there is a recognised form of malarial fever termed "whisky fever"), poor quality of food (fresh meat and vegetables being quite unprocurable in parts), tinned meats, jams, vegetables—in fact, everything is tinned, and becomes in time quite nauseous.

Then, again, I find fever far more frequent amongst men than among women and more single men are victims than married ones. This I put down to the fact that women are not exposed to "roughing it" like men and that married men have home comforts which are impossible for the single. The following is a typical single life: there are "messes" at the different hotels, and most single men prefer joining one of these to feeding themselves in a solitary room about 12 ft. square by the light of a single candle (candles, remember, are valuable, being from 6*d.* to 1*s.* 6*d.* each); then, after dinner, he goes into the drinking bar—far more inviting than his own quarters—and is therefore bound to drink, and thus gradually acquires habits which sooner or later will land him in a severe attack of "whisky fever."

On microscopical examination of the blood of a patient suffering from an attack of malaria the observer finds numbers of red corpuscles shrivelled up and blackened and

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others containing bacilli of a crescentic form. The white corpuscles are greatly increased in number and there are also seen numerous giant white corpuscles with patches of black colouring matter in them. The pathology of this I take to be: (1) the crescentic bacilli of malaria invade the red corpuscles and proceed to absorb the hæmoglobin, converting it into melanin, and they also multiply in number (these facts I have demonstrated by examining the blood of a patient subject to malarial fever, but about three hours before an attack of rigors was expected); and (2) after a variable time the red corpuscles burst, setting free crowds of bacilli (this process I have found in blood taken at the period of rigors); the giant white corpuscles absorb the bacilli and apparently digest them, leaving only the melanin which remains as black patches in the corpuscles (this process may be traced by examining the blood of a patient at intervals during a typical attack of fever). The effect of the malarial poison shows itself differently in different individuals, the most usual form being that of high fever, the period of incubation being in most cases fourteen days, during which time the patient has a great feeling of *bien aise*. Towards the end of the incubation he becomes irritable and chilly, generally suffering from nausea, sometimes actual vomiting. At this period he begins to have a succession of rigors, which, however, gradually cease and he becomes feverish, with a full, bounding pulse. Without drugs this stage lasts from six to eight hours, when he begins to perspire, the temperature falls, and he sleeps for several hours, awakening without fever. After a length of time, varying from twenty-four hours to a week, if the person has not been placed under the influence of drugs the fever occurs again in exact similitude to the initial attack and this may recur at intervals for months. There is also a variety of malarial poisoning without much elevation of temperature, but with marked cerebral symptoms resembling meningitis. It is a most fatal variety and post mortem no signs of inflammation of the meninges can be seen.

Residents in Rhodesia are also, I find, liable to attacks of dysenteric diarrhœa which will not yield to opium or ipecacuanha, but rapidly gives way to tincture of perchloride of iron with quinine and arsenic. I have also seen what were apparently syphilitic ulcers, especially on the legs and thighs, which proved most obstinate to the usual specific treatment, but got well at once with the iron, arsenic, and quinine mixture, with a dusting powder of quinine locally. On healing these ulcers leave a permanent brown stain on the skin. I consider both diarrhœa and ulcers due to malarial poison and the brown discolouration of the skin is possibly the local deposit of melanin from the bacilli.

The sequelæ of malarial fever are only what may be naturally expected, the first and most important being the intense anæmia which is so often found and which requires lengthy treatment by iron and arsenic with, if possible, change of air. This anæmia causes anasarca of the most dependent parts—viz., legs and feet—but this cures itself as the anæmia decreases, as also does the intense weakness, amounting in some cases to temporary paralysis; whilst another result of the poverty of red-blood corpuscles is shown in the dizziness, partial blindness, and flashes of light experienced by some on recovering from a severe attack.

With regard to treatment every treatise on medicine and also the so-called popular handbooks describe quinine as a "sheet anchor" in malarial fever, but my experience tells me there is no greater mistake. The result is that nearly everyone coming to Africa brings enormous quantities of quinine tabloids, which they take *ad lib.*, and also dose their friends, independently of any advice from a medical man, and they fully believe they are rendering themselves proof against fever. These large doses of quinine—and it is not uncommon to find persons taking from two to three drachms a day—produce an utter rottenness of the constitution. There is a distinct quinine cachexia, easily recognised by those who see it often, and when one of these individuals falls a victim to an attack of fever he generally has it badly. I have found the most successful treatment to be absolute rest in bed, a 15 gr. dose of antipyrin to begin with, followed in an hour by the following mixture: 10 minims of tincture of perchloride of iron, 5 minims of hydrochloric solution of arsenic, with water to 1 oz. 1 oz. to be taken every four hours with a 5 gr. tabloid of sulphate of quinine. At bedtime I generally give about 5 gr. of calomel, followed in the morning by a dose of some effervescent saline. In most ordinary cases of fever this treatment cuts short an attack under twenty-four hours and then I follow up with a tonic course of Easton's syrup in 1 dr. doses with 1 oz. of water three times a day at meals for a month, and I find that most individuals will thus enjoy an immunity from malarial fever for some months at least, although living in an unhealthy district.

With regard to food stimulants are required, especially champagne. This will often stop the obstinate vomiting when even a mustard poultice at the pit of the stomach fails. During an attack I order milk and hot water in equal parts, and in some cases milk with a tablespoonful of brandy to each pint. When the temperature is normal and the paroxysm is over I give any food the patient fancies, and I find this answers well. I have one patient who after an attack of fever eats ravenously of cheese, enjoys it, and, what is more to the point, digests it.

In the "cerebral apyrexial form" as I term that variety with low temperature and head symptoms, which is very fatal, I find, so far, that the best treatment is calomel and sulphate of magnesia in full doses, producing free purgation, giving at the same time the quinine, iron and arsenic as in an ordinary attack. It is happily a rare form. I have only seen 6 cases, of which 1 was fatal; the rest recovered, 3 completely and 2 with some mental aberration, which I am in hopes will prove only temporary.

In Africa "ice-bags" are an impossibility, and yet how often one longs for them. Here, where medical men are rare, being often from 85 to 100 miles apart, it stands to reason that there are many farmers and traders who when they get fever cannot obtain medical advice. For these Messrs. Burroughs, Wellcome, and Co. have prepared cases for me containing five bottles and a thermometer. These contain 25 (5 gr.) tabloids of antipyrin; 100 (5 gr.) tabloids of sulphate of quinine; 100 "Iron and Arsenic Co." tabloids; and 200 (1 dr.) tabloids of Easton's syrup. I order possessors of these when "shakes" begin to go to bed and take three 5 gr. tabloids of antipyrin and one hour afterwards to take one each of quinine and iron and arsenic tabloids, repeated every three hours until the temperature is normal; then to begin with the Easton syrup tabloids, taking one three times a day for a month, and in every case I have been told that these drugs and directions have proved a boon; and whereas the traders, &c., at outlying stations have previously suffered all the wet season from malarial ague, now the initial attack is all they experience for the season.

To sum up, it must be remembered in every case that the malarial parasite destroys the red blood corpuscles, and one method of treatment is to replace them and so raise the vitality of the tissues that they may resist further invasions of the poison.

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DISSECTING ANEURYSM.[1]

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THE term "dissecting aneurysm" is applied to cases in which a partial rupture of the inner tunics of an artery allows the blood to become diffused between the coats of the vessel. Having regard to the difference of opinion which exists as to the author of the original description of this very remarkable affection the following extract from Peacock's[2] "Report on Cases of Dissecting Aneurysm" may be of interest: "It has generally been supposed that Laennec was the first writer who applied the term 'dissecting' to this form of aneurysm, but it has been recently shown by Broca that Maunoir employed the same designation and clearly described the formation of aneurysms of this kind in his work published in 1802. A characteristic case is also related by Allan Burns in his work on 'Diseases of the Heart and Aneurysm,' published in 1809." Shekelton[3] published two cases of dissecting aneurysm in 1822, and the preparations are to be seen in the museum of the Royal College of Surgeons in Ireland. Erichsen, in the eighth

[1] A paper read before the Medical Section of the Royal Academy of Medicine in Ireland, May 20th, 1898.
[2] Transactions of the Pathological Society of London, vol. xiv., 1863.
[3] Dublin Hospital Reports, vol. iii., 1822.

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edition of his "Science and Art of Surgery," incorrectly refers to this variety of aneurysm "as originally described by Shekelton," and the use of the name "Shekelton's aneurysm" as a synonym for "dissecting aneurysm" is to be deprecated. Peacock, in the paper to which I have already referred, collected 80 instances in which the affection appeared in well-marked form, including 5 Dublin cases published by Shekelton,[4] R. W. Smith,[5] Kirkpatrick,[6] Lees,[7] and MacDonnell respectively. An interesting specimen was exhibited by Connolly Norman at a meeting of the Pathological Section of the Royal Academy of Medicine in Ireland a few months ago. In the earlier published cases of dissecting aneurysm it was supposed that the separation of the tunics of the artery took place between the middle and external tunic; but modern pathologists agree that the blood almost invariably makes its way between the laminæ of the middle coat, so that the outer wall of the aneurysm is formed of the outer strata of the media together with the adventitia. In the vast majority of cases the rupture of the inner tunics is due to their excessive lacerability, the result of atheromatous degeneration. Indeed, out of 60 of Peacock's cases the artery was found healthy in only two instances. Ziegler[8] suggests that in the rare absence of morbid changes in the coats of the vessels, traumatic injury to, or defective development of, the vessel wall is the primary cause of the lesion, and Walshe[9] mentions 2 cases in which dissection of the aortic coats on a limited scale had been abruptly effected as the result of a railway concussion. On the other hand, Rokitansky[10] supposes that in some cases a morbid condition of the external coat deprives the inner coat of support and so predisposes to their rupture.

Dissecting aneurysm is practically confined to the aorta and its large branches, although Ziegler[11] states—on what authority I do not know—that the small arteries of the brain are a usual seat of the affection. The internal rupture is usually situated at the origin of the aorta or in the ascending aorta (it was so in 55 out of 73 of Peacock's cases) but it has been found as low as the end of the abdominal aorta, as happened in Shekelton's cases. The direction of the rupture is generally transverse when it is near the aortic valves, whilst it is more frequently vertical at the beginning of the descending aorta. Ordinarily from one-half to two-thirds of the vessel is torn asunder, although the whole circumference of the artery is occasionally separated. The longitudinal extent of the separation of the tunics varies considerably. As a rule the aneurysm does not extend beyond the ascending aorta, though it is occasionally found to extend into the iliac arteries. In my case the separation of the coats begins at the arch and ends in the left femoral, and in a very remarkable case recorded by Tessier[12] the separation extended from the commencement of the ascending aorta to the left popliteal artery. The dissection not unfrequently is carried along the primary branches of the aorta; for instance, in MacDonnell's[13] and Tessier's[14] cases it extended along the innominate and its branches to the internal carotid; in another case[15] it followed the course of the coronary arteries; in Laennec's[16] case it passed along the cœliac artery and in my case along the right renal artery. Some of the intercostal and lumbar arteries are frequently found to be cut across by the stream of blood "so that a probe introduced into the aortic orifice of one of those little branches passes directly into the aneurysmal canal and traverses this before entering the artery itself, which thus appears to arise directly from the aneurysm."[17] In cases which have ended fatally within a short time there has been only a single opening leading from the aorta into the arterial coats, death having been usually due to the subsequent giving way of the external wall of the sac. This is the common form, comprising 73 out of Peacock's 80 cases. My case is also an instance of it. On the other hand, when life is prolonged for any considerable time the blood is found to have forced its way from the subadventitious sac back again to the blood-stream at some point further on in the course of the vessel. In such chronic cases the new blood-channel acquires an endothelial lining. Shekelton's[18] and Fagge's[19] cases were examples of this variety. The disease is specially common in persons of advanced age, and though it probably occurs more frequently in men than in women there is not the excessive preponderance in males which is the rule in ordinary aneurysms. Indeed, some writers say that it is more common in women. The case which I now relate and the specimen which I exhibit typically exemplify the symptoms and pathology of the early stage of the fully formed dissecting aneurysm.

A man, aged sixty-five years, a house-painter by occupation, was admitted to the Whitworth Hospital under my care on Jan. 13th, 1898, complaining of severe pain in his back and of loss of power in his legs. On the morning of his admission to hospital he was on a ladder papering a room when he was suddenly seized with a violent pain in the lower part of his back and in his left hip. The pain appeared to begin in the lumbar region and to shoot up into his chest and downwards towards his left thigh; it was so intense that, to use his own expression, he "bellowed with agony." He felt faint but did not lose consciousness, and he was able with difficulty to walk across the room to a chair. Within a quarter of an hour his lower extremities were completely paralysed and his left leg was anæsthetic. He was sent to the hospital in a few hours. Beyond the fact that he was a painter there was nothing noteworthy in his personal history and he came of a healthy family. On admission to the hospital he was seen to be a well-nourished, grey-haired old man, but rather anæmic. He was unable to walk, but he could move his legs slightly. He still suffered from severe pain in his back and everything he ate or drank was vomited. He had no longer anæsthesia in his left leg. His arteries, in which there was visible pulsation, were atheromatous and his pulse was high-tensioned. His heart was hypertrophied; no murmurs were audible, but the aortic second sound was greatly accentuated. No sign of aneurysm could be detected, although the patient was carefully examined for it. There was marked arcus senilis and he had a "lead-line" on his gums. His urine was feebly alkaline; its specific gravity was 1014. It was clear and contained 0·2 per cent. albumin and a few hyaline and granular casts; neither sugar nor blood was present. The quantity of urine passed was about the average amount, and he had perfect control over the sphincters of the bladder and rectum. The pain in his back ceased after 12 hours and next day he felt much better and he was able to move his legs freely. The knee-jerks and plantar reflexes were absent. On the following morning he was able to walk a few steps and he expressed himself as feeling almost well. At this period I showed him to the hospital class and diagnosed the case as plumbism and chronic interstitial nephritis with the usual cardio-vascular changes. I pointed out that the history of the attack clearly indicated some vascular lesion of the spinal cord and that the sudden onset, wide diffusion, and intensity of the pain, together with the transient duration of the paraplegia, appeared to justify the further diagnosis of spinal meningeal hæmorrhage. The patient was apparently well about 4 P.M. when he took a drink of milk. Five minutes afterwards he was found dead in his bed, his death having thus occurred about 52 hours subsequent to the onset of the symptoms.

Necropsy.—The post-mortem examination, which was made within 24 hours of death, showed the right pleural cavity to be filled with blood. The pericardium contained a little clear serous fluid. The heart was rather large, there being hypertrophy of the left ventricle. The arch and upper part of the descending aorta were distended, forming a tumour-like mass from which the blood had escaped by a small rent into the right pleura. On opening the aorta its inner aspect was covered with atheromatous plaques and calcareous plates and a dissecting aneurysm extended from the arch at the level of the innominate artery and terminated in the left femoral artery about an inch below Poupart's ligament. A large mass of freshly coagulated blood was effused between the tissues at the level of the arch and the upper portion of the descending thoracic artery, and here the separation of the tunics took place around nearly the whole circumference of the vessel

[4] Ibid.
[5] Dublin Journal of Medical Science, vol. ix., 1836.
[6] Ibid., vol. xiv., 1844.
[7] Ibid., vol. xv., 1844.
[8] Special Path. Anat.
[9] Diseases of the Heart.
[10] Manual Path. Anat.
[11] Special Path. Anat.
[12] Giornale della Scienza Mediche, 1842.
[13] Dublin Journal of Medical Science, vol. xvi., 1845.
[14] Giornale della Scienza Mediche, 1842.
[15] Boyd: THE LANCET, Jan. 23rd, 1841.
[16] Traité de l'Auscultation Mediate, 2me. ed., 1826.
[17] Fagge: Transactions of the Royal Medical and Chirurgical Society, vol. lii.
[18] Dublin Hospital Reports, vol. iii., 1822.
[19] Transactions of the Royal Medical and Chirurgical Society, vol. lii.

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wall. From the abdominal aorta through the left common iliac, external iliac, and femoral artery the coats of the vessels were separated by a thin layer of coagulum, but no palpable thickening of the arteries was so produced. In the lower part of the aneurysm the dissection of the arterial coats did not extend much more than half-way around the circumference of the vessels.

The microscopic sections which I exhibit are from the left common iliac artery and they show that the blood is effused in the substance of the middle tissue of the artery, so that the external wall of the aneurysmal canal is composed of the outer strata of the media together with the adventitia. The dissection was carried along the coats of the right renal artery, which was also occluded by a thrombus. The lumbar arteries were cut across and their orifices likewise contained thrombi. A large coagulum was adherent to the posterior wall of the aorta at the level of the renal and lumbar arteries. I have not been able to satisfy myself as to the position of the internal rupture of the aorta. There are many degenerated spots in the inner coat of the vessel through which it might have occurred, or possibly it took place at the origin of one of the primary branches of the aorta. The capsule of the left kidney was adherent, the organ being cirrhotic; the right kidney was in a similar condition and was, in addition, cystic; it was extremely engorged with blood and the microscopic sections (which were prepared by Dr. Dargan in Dr. MacWeeney's laboratory) show that a universal hæmorrhagic infarction was present. There was no hæmorrhage in the spinal cord or its membrances. In the light of the necropsy it is not difficult to account for the symptoms of this case. As predisposing causes of dissecting aneurysm the patient had extensive atheroma of the inner coats of his aorta, which was consequently unduly lacerable, and in addition he had hypertrophy of the left ventricle with high arterial tension. The intense pain at the onset of the symptoms was due to the primary rupture and separation of the coats of the aorta by the blood. The paraplegia was caused by the interference with the arterial supply to the lumbar region of the cord, partly from thrombi in, partly from rupture of, the origin of the lumbar arteries. The sudden death ensued on the rupture of the external wall of the aneurysm and the consequent escape of blood into the right pleural cavity. It is rather remarkable that the urine contained no blood and that the amount passed was not noticeably diminished, for the functions of the right kidney must have been completely arrested.

Other cases of dissecting aneurysm have been recorded in which a remarkable series of symptoms was due to the arrest of vascular supply to the brain, kidneys, or cord. Tessier's[20] patient died with symptoms of apoplexy, and a dissecting aneurysm was found extending from the arch of the aorta along the innominate artery and its branches to the internal carotid. Todd's case[21] was characterised by hemiplegia and suppression of urine, and the post-mortem examination showed softening of the brain due to obstruction in the carotids, and the renal arteries were also obstructed. Sainet[22] records a case in which the patient became rapidly paraplegic. In Dickenson's[23] case a policeman after seven hours on his beat was seized with loss of power over his lower extremities, followed by pain, collapse, and death in twenty-four hours. Swaine's[24] case was diagnosed during life, the patient having been suddenly seized with pain in his chest followed by paraplegia. Where the symptoms are liable to such variation it is evident that the diagnosis of dissecting aneurysm must be always difficult and uncertain. In reference to treatment Walshe[25] remarks: "Were the practitioner fortunate enough to divine the occurrence of acute separation of the coats of the aorta it does not appear that, in the present state of our knowledge, the management of the case would be materially improved by his sagacity. Did he fail to diagnose the occurrence, his aim would be to restore the patient from the first shock of the accident, control excited arterial action, and relieve the symptoms as they arose. And it does not appear that art could do more than this were the anatomical nature of the affection understood from the first."

Dublin.

[20] Giornale della Scienza Mediche, 1842.
[21] Todd: Transactions of the Royal Medical and Chirurgical Society, vol. xxvii., 1844.
[22] Bulletin de la Société d'Anatomie, 1851.
[23] Transactions of the Pathological Society of London, vol. xiii.
[24] Ibid., vol. vii.
[25] Diseases of the Heart.

A CASE OF DOUBLE LOBAR PNEUMONIA COMPLICATING INFLUENZA DURING THE COURSE OF ACUTE MANIA.

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ASSISTANT MEDICAL OFFICER TO THE COPPICE HOSPITAL, NOTTINGHAM.

THE following is a case of some interest, showing as it does the possibility of recovery from double pneumonia complicating influenza under conditions of such special difficulty as to render the prognosis almost certainly fatal.

The patient, a woman, aged thirty-seven years, was admitted into the Coppice Hospital, Nottingham, on March 18th, 1898, suffering from acute mania of three weeks' duration, her leading mental symptoms being extreme restlessness, hallucinations of sight and hearing, and obstinate refusal of food. She professed inability to walk and had to be carried to her room. On examination there were no signs of organic disease except at the apex of the right lung, where there was evidence of consolidation, which from the history was presumably tuberculous in character. The pulse was 84 and the respirations were 22 per minute, while the temperature was normal. The pupils were equal and reacted (though somewhat sluggishly) to light. The muscular power generally was fair, but the knee-jerks were greatly exaggerated. The patient was said to be of a highly excitable disposition and for several years had been subject to attacks of *petit mal*. After admission she was very troublesome in the matter of food, being only induced to take it after much persuasion, while the use of the nasal tube was necessary on one or two occasions. On the 22nd the patient had a slight cough and on the following evening the temperature was found to be 101·4° F., but the rate of respiration was not accelerated; the pulse was 92 per minute and no abnormal signs were found in the lungs apart from the condition at the right apex. On the following morning the temperature had fallen to 99·4° and in the evening it was normal; during the night, however, the breathing became very rapid and the face cyanosed, and the night nurse, becoming alarmed at the patient's condition, sent for the medical officer, when the respiration was found to be 60 per minute, the temperature 103·4°, and the pulse very rapid (160 per minute) and of so feeble a quality that a hypodermic injection of 15 minims of ether with $\frac{1}{60}$ gr. strychnine was given, upon which the patient rallied a little. She was then put on strychnine ($\frac{1}{30}$ gr. hypodermically every six hours) and fed four times daily through the nasal tube as it was impossible to get her to take food otherwise and the bowels were acting so frequently that rectal feeding would have been useless. At 6 P.M. the temperature had risen to 105° and the pulse was 168. Signs of consolidation were now observed over the lower hand's breadth of the right lung behind, the previous examination having given negative results. The patient's condition now appeared to be very grave and death was looked upon as imminent. She was fed, however, and 10 gr. of quinine were given with the food, the temperature dropping in the course of an hour to 103·2°, while the pulse had greatly improved. During the whole of the day the patient had been trying to throw the bedclothes off and had passed urine and fæces under her. On the 25th the temperature at 8 A.M. was 102·4°, and at 6 P.M. was 105·4°. The same treatment was adopted as on the previous day and the result was similar. On the 26th there was evidence of consolidation over the whole of the right lower lobe and a patch of a similar character at the left base. The temperature rose as on the last two evenings and fell under the influence of the same treatment. 5 gr. of quinine were now ordered three times a day. The feeding and injections of strychnine were to be continued as before. On the 27th signs of improvement began to manifest themselves, the temperature being 101·4° at 8 A.M. and 103° at 6 P.M. The case now progressed favourably, the injections of strychnine being discontinued on the 29th and the temperature falling to normal for the first time on the 30th. A slight recrudescence of fever which occurred on April 4th was attributed to the regurgitation and inhalation of a portion of her food during her feeding on the previous evening. After this the temperature dropped steadily to normal, the recovery being uninterrupted, while the signs of consolidation which had involved the whole of

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the two lower lobes had cleared up almost completely on April 10th. The patient is now much stouter than on admission and is in a condition of obstinate melancholia, refusing her food and having to be fed four times daily with the nasal tube.

The main point of interest in this case is the apparent proximity of death and the recovery under particularly unfavourable conditions. The patient was very much exhausted by her maniacal attack and added to our difficulties by her refusal of food, constant attempts to get out of bed, uncleanly habits, and violent resistance to anything done for her benefit or comfort. The irregularity of the temperature and the absence of a definite crisis are probably due to the pneumonia occurring as a complication of influenza. The effect of the strychnine injections upon the pulse was very marked as was also that of the quinine upon the high temperature. It is remarkable considering the severity of the fever that the patient was able to retain so large a quantity of food as was administered on each occasion through the nasal tube, the amount given altogether in the twenty-four hours consisting of 4 pints of milk, 6 eggs, and 6 ounces of brandy. To this somewhat unusual power of digestion the recovery of the patient is, no doubt, in great part due.

I am indebted to Dr. Tate for permission to publish this case.

Nottingham.

A CASE OF TEMPORO-SPHENOIDAL ABSCESS; TREPHINING; RECOVERY.[1]

BY HERBERT J. ROPER, M.R.C.S.ENG., L.R.C.P.LOND.;
AND
H. LITTLEWOOD, F.R.C.S. ENG.

A GIRL, aged fourteen years, had had a purulent discharge, which latterly had been offensive, from the left ear for two years. She came of an unhealthy stock, her father and mother being distinctly delicate and her grandmother showing scars all over her body the result of necrosis of bone, probably syphilitic. On June 11th, 1897, she complained of severe pain in the left ear and corresponding side of the head, which nothing appeared to alleviate. On the 13th the headache was still intense, but the earache had ceased. There was only a slight rise of temperature—generally about 101° F. On the 14th she was practically free from pain and on the following three days it was noticed that her memory was defective for common objects in the room. She was unable to name a spoon, fork, knife, chair, &c. As soon as the word was mentioned she recognised it and could pronounce it, but she forgot it again almost immediately. A slow pulse (50) and occasional vomiting were her other symptoms. On the 23rd her temperature was 101°, her pulse was 50, and her respirations were 12. She was drowsy and wished to be let alone. When roused she was childish in her manner and voice, quite different from her usual condition. She remembered dates well, but could not tell the name of any of the surrounding objects in the room. She had taken a dislike to many people of whom she had previously been fond and would have nothing to do with them. There was no disturbance of sensation or power of movement on either side. Optic neuritis was present on both sides. The ear was being carefully syringed with an antiseptic lotion and there was no discharge perceptible. The next day, however, the ear began to "run," but she was more drowsy than the day before, and the vomiting persisted and grew worse. On the 25th the temperature was normal, the pulse was still slow, but she was not so drowsy. During the day, though, the drowsiness increased and became more and more pronounced during the following three days until it resolved itself into coma. She took nourishment fairly well, retaining some. On the 27th and 28th she passed urine and fæces into the bed. The temperature continued normal. During the 29th the right arm became strongly flexed and remained motionless in that condition. On the 30th she was comatose but still able to swallow liquids; the right arm was paralysed and the right leg was much weaker than the left. I strongly advised operation at this stage, to which the parents readily consented. Mr. Littlewood at my request performed the operation. I administered ether, of which very little was required. Mr. Littlewood, assisted by Mr. F. E. Taylor, first exposed the mastoid process by a semilunar incision down to the bone and by chiselling opened the antrum until there was a free communication with the external auditory meatus. Some purulent material was found and the cavity was cleansed. He next dissected back a large semicircular flap and then proceeded to trephine over the petrous portion of the temporal bone. On pressing aside the dura mater the anterior surface of the petrous bone was well exposed but nothing was found here. The dura mater was perfectly healthy. Mr. Littlewood then proceeded to remove bone in a backward direction with Hoffmann's cutting forceps until he had exposed the membranes over the temporo-sphenoidal lobe. He then opened the dura mater and exposed the brain, which bulged out and did not pulsate. With a large trocar (Macewen's) he punctured the brain and immediately very offensive, thin, yellowish-green pus, with thick flakes of lymph floating in it, rushed out. The trocar was withdrawn and Mr. Littlewood plugged the opening with his finger in order to allow the pus to escape slowly, so that the intracranial pressure might not be too rapidly reduced. When the pus had all escaped the cavity began at once to shrink. This was then well washed out with boiled water by means of a syphon. Several large flakes of lymph came away with the water which returned. The large scalp-flap, which had become soiled by the discharge, was well washed with boiled water and afterwards with weak carbolic lotion. A drainage-tube was inserted into the abscess cavity and the flap was stitched up with silk sutures. The antrum was packed with iodoform gauze and a dressing of boric wool was applied over the whole. The condition of the patient at the end of the operation was wonderfully good; the extremities were warm and the pulse was 120 and fairly full. Before we left the house she moved her right arm. At 9.30 the patient was asking for food. Milk and soda-water in small quantities were given. On July 1st she had had a fairly good night. She moved her arm quite well and her mental condition was distinctly improved. Her temperature was normal and her pulse was 120. There was no pain. She asked for solid food. The dressing was changed. She had been asking her mother if the knocking had ceased, which appeared to refer to the chiselling. On the 2nd the temperature was subnormal. The patient was bright and cheerful but still amnesic. She took nourishment well. Hernia cerebri had formed. On the 4th the tube was removed and the scalp wound had nearly healed. The hernia continued to increase in size for some days until it was of the size of a Tangerine orange, when it slowly began to shrink. On the 22nd she sat up for a short time daily and was able to read and remember names of objects much better, though she still made mistakes. The antrum was filling up. Pressure was applied to the hernia after a time by means of a piece of thin sheet lead shaped to the hernial protrusion. After this it rapidly decreased in size and towards the end of September disappeared altogether and the wound healed over. The patient's memory gradually improved and now is almost normal. At the present date (March 10th, 1898) she is remarkably well in every respect.

Leeds

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on Feb. 4th, 1898.

THREE CASES OF MYOMATA OF THE UTERUS COMPLICATING PREGNANCY;

PAN-HYSTERECTOMY PERFORMED IN TWO CASES AND SUBPERITONEAL HYSTERECTOMY IN THE THIRD; RECOVERY IN EACH CASE.

BY FRED. BOWREMAN JESSETT, F.R.C.S. ENG.,
SURGEON TO THE CANCER HOSPITAL AND TO THE GORDON HOSPITAL FOR FISTULA.

I VENTURE to record these three cases because cases of myomata of the uterus complicating pregnancy are of comparatively rare occurrence and when met with, owing to the rapid growth which the myomata take and the symptoms they produce, are a source of grave anxiety to the medical

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attendant and of danger to the patient. Abortion not unfrequently occurs, when the risk of septic poisoning and hæmorrhage is very great owing to the myomata interfering with the proper contraction of the uterus.

CASE 1. *Large fibro-myoma of the uterus complicated with pregnancy; pan-hysterectomy; recovery.*—The patient was a woman, aged forty years, who had been married for twenty years. She had had no family and no miscarriages and had always been quite regular, but there was no menorrhagia. She was a stout, healthy-looking woman and had always enjoyed good health. She consulted me on July 15th, 1894, with the history that she had about two months previously noticed a lump in her abdomen, which had of late increased very rapidly in size. She had had amenorrhœa for the last three months. The breasts were somewhat full with pigmented areolæ. She complained of a good deal of pain over the tumour. In the abdomen a hard rounded tumour was readily felt, which reached as high as the umbilicus; springing from this tumour another boss was felt on the left side. By bimanual examination these tumours were found to be connected with the uterus. As there were no urgent symptoms and as there was a question as to her being pregnant, she was advised to wait and report herself again in a month's time. On August 10th her husband called to see me, saying that his wife had been very seriously ill and that Mr. W. Newbery, her medical man, was very anxious respecting her condition. She had had high temperature and one or two rigors. I gave an order of admission into the Cancer Hospital. On admission the patient was very collapsed and in great pain. She had had a slight rigor and was sweating a great deal. The tumour had increased considerably in size, reaching some two or three inches above the umbilicus. Fœtal souffle could not be heard. *Per vaginam* the os could be reached with difficulty. The patient was placed in bed and was kept perfectly quiet for two days. She had no more rigors. Her night temperature reached 102° F. and she was obviously getting worse. On August 14th, under ether, with the assistance of Mr. Cotterell, I proceeded to operate. A long incision was necessary, extending for two inches above the umbilicus. The tumour was then expressed and the broad ligaments with the ovarian and uterine arteries were tied. The anterior and posterior flaps of the peritoneum were reflected. A large speculum was introduced into the vagina and the peritoneal flaps were reflected quite down to the vaginal roof, which was divided anteriorly and posteriorly. A ligature was applied to the two lateral undivided portions, the tissues were cut through, and the uterus with its myomata lifted out. All the ligatures were left long and drawn down through the vagina. Sutures were then passed through the peritoneal flaps and formed into long loops which were also passed out through the vagina. By this manœuvre the flaps were brought down in such a manner as to cause the peritoneal flaps to be in accurate apposition. The toilet of the peritoneum was attended to and the abdominal wound closed by single silkworm gut sutures passing through the whole thickness of the parietes. The patient made an uninterrupted recovery and was discharged from the hospital on Sept. 15th, just a month after the operation, she having been up for ten days before. On examination of the tumour a soft elastic prominence was felt in the posterior surface. On cutting into this a fœtus was discovered which had apparently been dead for some days.

CASE 2. *Large fibro-myomata of the uterus complicated with pregnancy; pan-hysterectomy; recovery.*—The patient was a woman, aged thirty-seven years. She had one child ten years old; she had had none since and no miscarriages. She had had amenorrhœa for four months. Mr. E. Bellis was sent for to see the patient in the middle of March. She was then suffering from most distressing vomiting. On examination he found a large tumour occupying the abdomen which had increased very rapidly of late. She believed herself to be pregnant, a belief which Mr. Bellis confirmed. The size of the tumour, however, clearly pointed to its existing apart from pregnancy. The patient suffered much pain from the pressure of the tumour and from the irritation to the bladder. I saw the patient with Mr. Bellis on March 21st, 1897. I found a large, smooth tumour extending some 2 in. above the umbilicus and situated to the left of the middle line. *Per vaginam* another growth was felt in the pouch of Douglas, pushing down the posterior fornix. It was with great difficulty that the os could be felt, situated high up in front of the last-named growth. The vagina was filled with a dark grumous fluid of the colour of coffee grounds, evidently blood-stained, which was escaping from the os. The discharge had a faint disagreeable smell. By auscultation over the abdomen the fœtal bruit was thought to be heard at a spot between the large tumour in the abdomen and the vaginal tumour. The question of treatment was discussed, and in view of the difficulty of reaching the os and the extremely high rate of mortality attending attempts at abortion I decided to negative this form of treatment. Next the question of leaving things as they were and awaiting further developments was discussed; this also was thought to be inadvisable owing to the reduced state of the patient, the pressure of the tumour upon the bladder, the possibility of the fœtus being dead, and, finally, owing to the large growth which existed in the posterior as well as in the anterior wall of the uterus, the chances of pregnancy extending to its full term being very remote, and the great danger to which the patient would be exposed if such a course were adopted. It was then decided to recommend the removal of the whole organ, my advice being strengthened by the good results which followed the operation in Case 1. The patient was admitted into a surgical home and with the assistance of Dr. Purcell and Mr. C. N. Barton, Mr. Bellis being present, I performed pan-hysterectomy on March 23rd. The patient made a perfectly good recovery and returned to her own home on April 19th. She has remained perfectly well since.

CASE 3. *Large fibro-myoma of the uterus complicated with pregnancy; the vagina filled by the tumour; subperitoneal hysterectomy; recovery.*—The patient was a married woman, aged thirty-nine years. She had had no children. She was sent to me by Dr. Macpherson Lawrie of Weymouth on April 20th, 1898, suffering from a large fibro-myoma of the uterus with suspected pregnancy of about from two to three months. She had been married for three years and had had no children or miscarriages. Menstruation, which commenced at the age of fourteen years, had always been regular but there was severe dysmenorrhœa; the last period was in the middle or at the end of January. The patient noticed that her abdomen was enlarging shortly after her marriage, but she had not suffered any inconvenience from it until a month previous to admission, when she had some difficulty in micturition. Since this time her urine had become very offensive and she could only pass it when lying down. The abdomen was felt to contain a large tumour which extended upwards to about 2 in. above the umbilicus. The upper part of the tumour was hard and resisting; the lower portion, which extended from the pubes to within an inch of the umbilicus, was soft and boggy; this portion appeared to be of about the size of a cocoanut. *Per vaginam* another tumour was found completely filling the pelvis; the uterus was drawn upwards and owing to this tumour it was impossible to feel the os. Bimanually this and the tumour in the abdomen were found to be connected, and the whole was firmly wedged into the pelvis and was very immobile. The bladder sound was passed with difficulty, and by it the soft, boggy tumour above the pubes was found to be the bladder. Auscultation revealed nothing. The urine was loaded with pus and contained some blood. The areolæ around the nipples were very slightly pigmented. After consultation it was decided to operate with a view of removing the entire mass. On April 23rd, the patient being placed under ether, I performed abdominal hysterectomy by the subperitoneal method. The patient made an uninterrupted recovery. The bladder at the time of the operation was found to be enormously thickened and dilated. On examination of the specimen the uterus was found to be strongly retroverted, the os being above the pubes, situated between the abdominal and vaginal tumours; the uterus was found enlarged and the walls somewhat soft and evidently contained a foreign substance. On cutting into the uterus a fœtus of about ten weeks was found.

Remarks.—I have reported these three cases, as they are, I think, of great practical importance. It is well known that fibromata often increase rapidly during pregnancy. This is more marked in the case of interstitial fibroids, single or multiple, with enormous thickening of the uterine tissue. This increase in size of the fibroids exaggerates the symptom of compression, to which it may have already given rise, and the pain resulting from the pressure upon the sacral plexus often is very intense. These symptoms are the more pronounced in the pelvic variety, when the fibroid develops below the brim of the pelvis, having its origin in the supravaginal portion of the cervix or lower part of the body of the uterus. In Case 3 such was the case and symptoms from compression upon the bladder, ureters, rectum, nerves, and

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vessels were most formidable. Perhaps, however, the most common and by no means the least serious complication is abortion. Contraction of the uterus being hindered the danger of hæmorrhage and the risks of septic poisoning are very great. Lefour[1] out of 307 cases has collected 39 cases of abortion, in 14 of which the mother died. Nauss[2] out of 241 cases noted abortion in 47. The question of treatment in these cases must be decided by the nature of the accident and the seat of the tumour. Subserous fibroids of the fundus probably will in no way interfere with parturition and these cases not infrequently disappear after parturition. In these cases then the surgeon may wait, but in cases of pelvic fibromata the dangers are very much greater, although cases have gone their full time, and patients been delivered either naturally or artificially. The expectant treatment must not be therefore carried too far or in the endeavour to save the child one may lose both mother and child.

Some fibroids of the cervix may be enucleated either before or during delivery. Duyan[3] removed one which weighed 650 grammes. Braxton Hicks[4] obtained enucleation immediately upon the application of the forceps and delivery was completed without difficulty. Maundé[5] recommends enucleation by the vagina whenever that is possible. Out of 16 cases which he relates the mother only succumbed twice and the majority of the children were born alive. In the case of interstitial fibroids with abdominal development the operation for their removal is so serious and the risks of primary abortion are so great that it becomes a very serious question with the surgeon what form of treatment to recommend. He must not, however, ignore the fact that induced abortion and induced premature labour themselves present serious danger. When the placenta is inserted at the region of the tumour alarming hæmorrhage will ensue owing to the inability of the uterus to contract, not only so, but the patient is exposed to far greater risks of septicæmia. Lefour in a series of 23 cases of induced labour noted 3 deaths. Tarnier out of 7 cases in which labour was normal saw the mother die in 1 case and the child in 3. Out of 6 cases which were delivered by forceps 4 mothers and 4 children died. In 6 cases where version was performed 3 mothers and 3 children died. Süsserot out of 147 cases of pregnancy complicated by fibroma which he has collected says that the forceps were applied in 20 with the result that 8 mothers and 13 children succumbed; version was performed in 20 cases, when 12 mothers and 17 children died; in 21 cases the placenta was artificially extruded and in 13 of these the mothers died. Collectively the mortality of the mothers was 53 per cent., that of the children 66 per cent. Lastly, as Pozzi has pointed out, abortion liberates the compressed organs only to a very slight extent, and if the surgeon is afterwards obliged to resort to hysterectomy he has put himself in the position of having exposed the life of the patient twice instead of once. For these reasons it is manifest that the surgeon should decide upon early interference and when comparing the mortality after pan-hysterectomy or subperitoneal hysterectomy with those of induced abortion or premature labour the statistics are so much in favour of the former form of treatment that I consider the surgeon should not hesitate to recommend hysterectomy in all those cases in which the symptoms are such that surgical interference is imperatively indicated.

Brook-street, Grosvenor-square, W.

[1] Lefour: Uterine Fibroma in Relation to Pregnancy, Paris, 1880.
[2] Nauss: Inaugural Dissertation, Halle, 1882.
[3] Duyan: Bulletin de l'Academie de Médecine, vol. xvi., p. 591.
[4] Braxton Hicks: Transactions of the Obstetrical Society of London, 1870, vol. xii., p. 273.
[5] Maundé: American Journal of the Medical Sciences, 1884, vol. i., p. 423.

BRISTOL ROYAL INFIRMARY.—The Greig Smith Memorial operation theatre of the Bristol Royal Infirmary will be opened by Sir William Mac Cormac, the President of the Royal College of Surgeons of England, on Friday, Sept. 30th.

NEW LUNATIC ASYLUM.—At a special meeting of the Breconshire County Council held on Sept. 16th it was decided to erect a joint asylum for Breconshire and Radnorshire. The council resolved that the asylum should accommodate 350 patients, with administration for 500.

A PROTEST AGAINST THE PRESENT DAY TEACHING OF APPLYING THE BLADES OF THE OBSTETRIC FORCEPS WITH EXCLUSIVE REFERENCE TO THE TRANSVERSE DIAMETER OF THE MATERNAL PELVIS.

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As the report in THE LANCET[1] of my remarks in the discussion on "The Use and Abuse of the Midwifery Forceps" at the recent meeting of the British Medical Association in Edinburgh requires a little elucidation, and as the matter I referred to there is, in my opinion, of some importance, I desire to supplement what I said by the following paper. I there, as I do now, took exception to the general teaching of the present day in this country that, so long as the blades of the forceps are applied transversely as regards the maternal pelvis it does not matter, or at least it need not be considered, how they are disposed as regards the head of the child. This is a departure (a Continental importation) from the older teaching of obstetricians in this country, who from Smellie's time until quite recently laid great stress upon the importance of applying the blades, both of the straight and double-curved forceps, with a due consideration not only of the pelvis, but also of the diameters of the fœtal head. The present day teaching is without doubt largely due to the writings of Dr. Barnes, who in his "Lectures on Obstetric Operations"[2] maintains that while with the straight forceps "the head determines the manner of applying it," continues, "but with the long forceps it is the pelvis that rules the application. The position of the head may be practically disregarded." We, of course, are only concerned here with the double-curved forceps.

Writing on the application of the forceps, Dr. Playfair and Dr. Galabin, in their respective text-books on midwifery, express themselves as follows. I quote from them because their text-books are the two most popular in the various medical schools of this country. Dr. Playfair writes:[3] "It is admitted that in the high forceps operation the blades must be introduced in the transverse diameter of the pelvis without relation to the position of the head."

Dr. Galabin writes:[4] "Accordingly it is now the usual plan, even if straight forceps are used, not to pay much regard to the position of the head, but apply the blades one at each side of the pelvis." "In the case of the long curved forceps it is generally taught that the blades should be applied at the sides of the pelvis without regard to the position of the head. The position of the head should, however, be exactly determined in the first instance, not so much that any great difference in the position of the blades should be aimed at in consequence, but rather that," &c.

It may be taken, then, from these quotations that the general teaching and practice in this country in applying forceps is to consider only the pelvis of the mother and to apply the blades always in the transverse diameter. Now, I consider such teaching unwise and incorrect. It is unwise because it tends to encourage carelessness from its lack of exactness. In applying the blades of the forceps both the child's head and the pelvis of the mother should be considered, and when an operator commences to exert traction not only should he know how the blades are lying with regard to the maternal pelvis, but also how they are lying with regard to the head of the child. It is also incorrect.

Dr Playfair says,[5] speaking in vindication of the teaching of applying the blades of the forceps always in the transverse diameter of the maternal pelvis, that he agrees with Dr. Barnes, who points out that "do what we will and attempt

[1] THE LANCET, August 6th, 1898.
[2] Lectures on Obstetric Observations, by Dr. Robert Barnes, fourth edition.
[3] The Science and Practice of Midwifery, by Dr. L. S. Playfair, eighth edition, p. 201.
[4] A Manual of Midwifery, by Dr. A. L. Galabin, fourth edition, p. 623.
[5] Op. cit., vol. ii., p. 202.

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as we may to pass the blades in relation to the child's head they find their way to the sides of the pelvis." I presume Dr. Playfair means by "sides of the pelvis" the "transverse diameter" of the pelvis, for otherwise there is no sense in the sentence, seeing that the blades can only lie one to one side and the other to the other side. But such a statement as the above—and please observe it is a very generally expressed one—is, if one only thinks of it for a moment, tantamount to saying that the forceps is an instrument over which we have not complete control; that one operator will grasp the head as well as another; that all the operator has got to do is to introduce one blade to one side and the other to the other side of the pelvis, when the blades pass beyond his control and adjust themselves to the fœtal head in the best direction possible. But further proof of the incorrectness of the statement and general teaching will be found clinically. It will, I think, be admitted by all who have had much experience in obstetric practice that a head which was causing very great difficulty in extraction may sometimes be easily delivered by altering the grasp of the forceps. Now that is not because with the previous grasp the operator was exerting traction in a wrong direction, for before readjusting the instrument every operator would make attempts at traction in every possible direction. Neither is it because, on the first occasion, the blades of the forceps were not applied in the transverse diameter of the pelvis. The reason is simply that certain grasps of the head are better than others. In each case there is one grasp better and safer for mother and child than all others. The better grasp, however, is not likely to be secured by applying the blades of the forceps to the sides of the pelvis, and trusting to the chance of their adapting themselves to the most favourable diameter of the head. Much more likely is it to be obtained by applying the blades in a certain diameter of the child's head, which after due consideration of the case the operator believes to be the best.

Now a word or two with regard to the application of the forceps at the outlet, at the brim, and in flat pelves.

1. *At the outlet.*—Here, the long axis of the head having rotated into the conjugate diameter of the pelvis, the blades can as easily be applied with reference to the diameters of the fœtal head as with reference to the diameters of the maternal pelvis. When straight forceps were in use for this operation they were always applied with reference to the child's head and Dr. Barnes still recommends that method of applying them, as may be seen from the quotation I have already given.

2. *At the brim.*—Here, in spite of all one's efforts, it is nearly always impossible to grasp the fœtal head bi-parietally. The grasp must be more or less oblique in most cases. What I maintain, however, is that by considering the fœtal head and applying the blades deliberately to it as nearly as possible in the bi-parietal diameter a less oblique grasp is obtained one which will less often slip and one which will require less frequently to be altered than if the blades as recommended are simply introduced into the transverse diameter of the pelvis, traction exerted, and the grasp of the head never considered.

3. *In flat pelves.*—In such cases it is of the very highest importance that the fœtal head be deliberately grasped. In flat pelves, when the long axis of the fœtal head lies very nearly in the transverse diameter of the pelvis, the application of the blades of the forceps in the transverse diameter of the pelvis without reference to the head results in one of the three following grasps: (*a*) the head is grasped directly in the antero-posterior diameter—a very rare occurrence; (*b*) it is grasped very nearly but not quite in the antero-posterior diameter, also a rare occurrence; in such cases there is often the mark of the tip of one blade just above the eye; and (*c*) the head is grasped quite obliquely, one blade is to the side of the occiput and the other blade to the side of the forehead. This is by far the most usual grasp obtained.

What I maintain here is that if one applies the blades of the forceps, as is now generally taught, one cannot tell which of the above three grasps of the head one will get; it is entirely a matter of chance as far as the operator is concerned. Surely there is something wrong in a teaching into which the element of chance enters, especially when it is quite unnecessary that it should do so. To avoid it the operator has simply first to satisfy himself as to whether in a particular case it is better to grasp the head antero-posteriorly or obliquely and then deliberately to apply the blades to the child's head in the one or the other direction. That deliberate grasping of the child's head was the general teaching of obstetricians up till thirty years ago, only they, of course, approved only of the "oblique grasp," as they considered the antero-posterior one very dangerous to the child. Into the question of which of the two "grasps" is the better I will not enter at present. I would only say that in certain cases the one, and in certain cases the other, appears to me the safer for child and mother, and that the indications for the one or other will be found in the variety of flat pelvis one is dealing with.

In conclusion, I would only add that although the teaching I have been here condemning is very very general, I know it is not universal. Dr. Milne Murray, in his most able paper at the annual meeting of the British Medical Association the other day, referred to the matter and advocated a deliberate grasp of the head in flat pelvis, and other teachers in Edinburgh and elsewhere I am glad do the same.

Glasgow.

REMOVAL OF THE TRANSPARENT LENS FROM THE EYE IN HIGH DEGREES OF MYOPIA.

BY KENNETH SCOTT, M.B., C.M., F.R.C.S. EDIN.,
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THE true practical aspect of the operation of removal of the transparent lens for high degrees of myopia is apt to be somewhat lost sight of. On fully considering the question few surgeons can deny that in theory the above method of treatment is most excellent and should be adaptable with almost scientific exactitude—i.e., beyond a certain degree of myopic error removal of the lens from the eye by operation must be advocated in lieu of the more ordinary treatment by correction with spectacles. The much discussed point as to whether the operation tends to give rise to detachment of the retina or otherwise should for the moment be placed on one side and the question of lens extraction in high myopia be regarded from altogether a wider and more vital aspect. It is impossible to perform the operation of removal of the lens without in a certain degree violently disturbing the normal tranquillity of parts, the involved area comprising the ciliary zone and adjoining portions of the uveal tract, a region which, it is well known, is peculiarly liable to exhibit inflammatory resentment towards any extraneous interference. There are surely few ophthalmic surgeons who have not at some time encountered cases in which after extraction of a cataractous lens the eye has "gone wrong," either immediately after operation or later, without any apparent cause and in spite of every apparently possible precaution having been taken to avoid such a calamity. A myopic person and one with cataractous lenses cannot for one momen be classed in the same category. The latter is to all intents and purposes completely blind and has everything to gain by operative interference and nothing to lose should it prove unsuccessful, as he remains in very much the same plight as before. A myope, on the contrary, unless the case is one of malignant type, is a person who can generally obtain a reasonable amount of fairly accurate vision by the use of suitable spectacles, and who, if the operation proved only a partial failure, would be a considerable loser as regards vision, besides the possibility of noticeable eye deformity. In view of the inflammatory risks with their far-reaching consequences which the myopic patient would have to incur, quite apart from the possibility of the occurrence of retinal detachment, &c., the surgeon in the present state of our knowledge should wholly abstain from recommending the operation of removal of the lens in cases of high myopia. The method of treatment in question is one which is avowedly sound in theory and also quite feasible in practice, but it is absolutely imperative that it should be entirely regarded from the patient's point of view, and consequently should be placed in abeyance until the operation for the extraction of the lens from the eye by whatever method has been resolved into one which is entirely free from all risk of the onset of any after inflammation,

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This accident is unfortunately not nearly so rare as one would wish, a fact which may be easily ascertained by reference to thoroughly complete and detailed lists of any moderately long series of cataract operation cases.

Cairo, Egypt.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

A CASE OF GLANDERS; NECROPSY.

(Under the care of Dr. SHARKEY.)

GLANDERS is fortunately a fairly rare disease in the human subject, but it is probably not quite so rare as it is usually thought to be. The resemblance between the ulcer resulting from a broken-down farcy button and that caused by a gumma is very great, and as in the following case the ulcerations in glanders are very often thought at first to be syphilitic in origin. As gummatous ulcers are very much the more common it is only natural that the mistake in diagnosis should occur; but should the ulcer withstand energetic anti-syphilitic treatment a bacteriological examination may possibly prove of value. If the diagnosis of the superficial manifestations of glanders is far from easy, still more difficult is it to recognise its presence early when the disease attacks only or chiefly the internal organs. Some cases show many points of resemblance to enteric fever and in many the symptoms closely simulate those resulting from tubercle. No certain diagnosis can be made without a bacteriological examination and cultures, but these are so trustworthy and definite that the presence of glanders may sometimes be settled in a very short time. For the notes of the case we are indebted to Mr. H. H. Scott, house physician.

The patient, a man, aged thirty-two years, was admitted to the hospital on July 5th, 1898. There was nothing of importance in the family history; no tubercle or syphilis. With regard to the previous history, three months before admission the patient had suffered from what he called rheumatism, the symptoms being pain of a sharp, stabbing character, starting in the abdomen and shooting down the right thigh to the calf; the calf at the same time became swollen. The attacks of pain came on suddenly at intervals of from 10 to 15 minutes. He found that he obtained most relief by merely supporting the leg on pillows. He consulted a medical man, who gave him some medicine to take; this was followed by subsidence of the swelling in the calf; he also applied poultices and lotions to the abdomen at the seat of pain. He was laid up altogether for 24 days. On Feb. 17th last he attended the out-patient department of St. Thomas's Hospital and received treatment there for a period of six weeks. On referring to his out-patient's letter Mr. Scott found that his complaint was entered as periostitis of the right tibia, ? syphilitic. It considerably improved on iodide of potassium, but a month later (while still taking the iodide) there was the entry: "Sore on arm, ? gummatous"; he was treated with chlorinated soda lotion locally and the iodide of potassium was pushed to 20 grains three times daily; improvement resulted and the patient ceased to attend six weeks after his first appearance. In his work he had charge of one horse only and that was, he stated, perfectly healthy. For three months before admission he had been losing weight—he thought about 2 st. On June 21st, 1898—that is, 14 days before admission—the patient was troubled with pain in the right side of the chest and abdomen, this time of a heavy, aching character, but, as in his former illness, shooting down the leg at intervals of about 10 minutes. He stated that he only passed a small quantity of urine during the day, but it was of normal colour; there was no deposit and he had never had any pain on micturition. On admission the patient was found to be a moderately well-nourished man, with face flushed and eyes bright, complaining of abdominal pain, mainly referred to the epigastrium and the adjacent part of the right hypochondriac region. The abdomen was not distended; it moved well on respiration; to percussion the note was resonant everywhere; but even light percussion caused evident pain under the right costal margin in the right lumbar and upper part of the right iliac regions. The abdomen was held more rigid in these situations; gurgling was noticed in the right iliac fossa, but nothing abnormal was detected on palpation. The heart and lungs were normal. The liver edge was felt one finger's breadth below the right costal margin. Splenic dulness extended from the eighth rib above in the left mid-axillary line to just below the costal margin; laterally, it extended to the anterior and posterior axillary lines. It could be easily felt descending on inspiration; no pain was caused by palpation in this region. No spots in any way suggestive of enteric fever were to be seen. The pulse was 100 per minute, regular and of fair tension; the respirations were 24. The urine was normal, of 1020 specific gravity. Just below the bend of the elbow on the outer side of the right arm was a sore on a reddish base an inch to an inch and a half in diameter, practically healed; the patient described it as being a sort of boil. Shortly after admission the patient passed a motion, almost liquid, dark yellow in colour, and appearing to contain undigested milk. The serum reaction of typhoid fever was tried with negative result, there being no clumping or loss of motility in half an hour with a dilution of 1 in 10. Diazo-reaction also did not give any characteristic result. The temperature rose to 102° F. in the evening, but in the morning it fell to 99 8°. The patient slept and took food well. Next day he complained of pain in the hepatic and splenic regions on palpation but none now in the right lumbar or iliac regions. Pain in the epigastrium still continued and was increased on taking food. The patient had up to July 12th been kept on milk and beef-tea, but on that date he began to complain of such low diet; he was given bread and butter, milk puddings, and two eggs daily. The idea that the case was one of enteric fever had been by this time almost given up. The temperature varied between 102° in the evening and 97·4° in the morning. By July 13th the pain had gone from the abdomen except in the splenic region. The abdomen all this time had been too rigid for a good examination to be made and it was suggested that the patient should be examined under an anæsthetic, but the temperature suddenly fell to normal and remained so for twelve hours. The patient seemed much better, so an anæsthetic was not given, the general opinion being that the case was merely one of fever without explained cause and that all was going to clear up. After this the intermittent type of temperature again appeared (varying between the limits of 103° and normal), but, in spite of this, the patient stated that he felt well and wished to get up. Four days later he was examined under an anæsthetic but nothing wrong could be detected in the abdomen. On July 25th he complained of an aching pain in the right calf and on the right tibia just above the malleolus. There was nothing to be seen at either situation nor did movement cause any pain, but the spots were very tender and painful to the touch. At the angle of the scapula over the right lung breath-sounds were feeble and on deep inspiration a few crepitations of small and medium size could be heard. The lungs had been repeatedly examined in order to see if there were any signs of tubercle to account for the temperature, but nothing had been detected until that day. The pain above the ankle becoming greater Mr. Clutton was asked to see the case and in his opinion the painful spot suggested a localised periostitis following enteric fever. Widal's reaction was consequently again tried but with the same negative result as on the former occasion. Fomentations always relieved the pain. He also now began to complain of pain over the right eye, increased by pressure, and the spot was very tender. On July 29th similar pain was complained of in the left eye, knee and ankle; there was ptosis of the left eyelid and pain in the right eye was increasing; the fundi were found to be normal. The right side of the face and the right temporal fossa began to swell and pain was caused on moving the jaw. On August 2nd a small pustule was noticed at the summit of the swelling; the left eye was kept closed, was painful and suffused. The evening temperature had been rising during the last week and for the past three days had remained

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during daytime also almost uniformly up to 103°. On the 3rd the face was very much swollen. Small red nodules were noticed in the following situations: on the right arm at the junction of the upper and middle-third of the ulna, over the styloid process of the radius, and on the left arm near the middle of the biceps muscle. All were very painful; the first two were of the size of a sixpence and the third was as large as a florin. The patient had been delirious in the evening for the last two days and was bathed in perspiration at varying intervals. On the 5th the three nodules mentioned were pustular and many more pustules with inflamed red bases had appeared (following small red raised nodules as before) all over the face and legs. They did not now, however, cause any pain; in fact, on this morning the patient lay in bed and read a newspaper. There was this day some yellowish, offensive, watery discharge from the nostrils. Towards afternoon he began to run rapidly downhill. He became very drowsy, the pulse was rapid and feeble, delirium was low and muttering with louder outbursts at intervals, and he could not be roused to reply to questions. Several pustules appeared yesterday over the swelling in the right temporal fossa and some of these had now run together forming an irregular shaped ulcer. The ulcers extended through the skin and subcutaneous tissue and had very defined edges, giving the appearance of having been punched out; they were somewhat suggestive of vaccination marks which had become purulent on an inflamed, swollen base, or of small-pox pustules except that they were not umbilicated. Elsewhere the pustules remained discrete. Over the soft palate and the nasal septum some half-dozen similar pustules were present. The patient sank rapidly and without again recovering consciousness. He died at 4.30 A.M. on August 6th.

Necropsy.—At the post-mortem examination several of the nodules mentioned were found to be in the skin, others were subcutaneous, and others were still deeper in the muscular tissue. The maxillary lymphatic glands were enlarged and slightly also the submaxillary glands. There were a few shallow ulcers in the stomach; the edges were not indurated. Studded over the lungs and close beneath the pleura were numerous nodules of about the size of a split pea or a little larger, greyish-white in colour; a few of them were soft and caseous, but mostly hard. The lung tissue itself seemed normal. The heart was normal. The spleen was large, but nothing abnormal was found in it. The liver, kidneys, and intestines (except the stomach) were normal. A culture was taken before death from one of the pustules on the swelling in the right temporal fossa. The growth on potato and the microscopical appearance of the bacillus were pronounced by Mr. Shattock to be characteristic of bacillus mallei. It was practically a pure culture. Pus taken post mortem from an intra-muscular abscess showed results equally typical.

Remarks by Mr. SCOTT.—As regards the treatment of the case nothing seemed in any way to affect the course of the disease. On admission the patient was given quininæ sulphas 1 gr., mistura potassæ citratis effervescens 1½ oz. three times a day. On July 20th, with a view to more effectually controlling the temperature, 5 gr. of quinine were given twice daily. This was equally without result, so on July 30th he was prescribed liquor hydrargyri perchloridi 1 drachm, potassii iodidum 10 gr., infusum gentianæ compositum to 1 oz. three times a day, again without effect. The difficulty in the case from the first was in the matter of diagnosis. The enlarged spleen, general malaise, and a moderately high temperature suggested enteric fever, but the result of the serum test was negative. As the case went on this idea was given up, for the temperature was very unlike typhoid fever at the beginning of the third week. The bowels were opened as a rule once daily and the stools after the first two or three days were normal. There was nothing in the history to point to any definite disease. On July 12th, as stated in the notes, the temperature fell and it was thought that all might go on well and the cause never be discovered. The improvement, however, only lasted a very short time, when the tender spot over the tibia appeared. The view that the case might turn out to be an anomalous form of typhoid fever now had to be again entertained, Mr. Clutton stating that the lesion suggested a post-enteric periostitis. Serum reaction, however, again negatived that view. A few days later the remittent form of temperature was strongly suggestive of pyæmia from some cause, but nothing could be discovered on close examination into his history or on physical examination. When on August 3rd the small, red, raised nodules later becoming pustular and the offensive nasal discharge appeared the idea that the case was one of glanders began to come to the front and a culture was accordingly taken which subsequently, but too late for anything to be undertaken in the way of treatment, proved to be an almost pure culture of bacillus mallei both microscopically and by the characteristic yellowish honey-like mass on potato becoming of a brownish chocolate colour. From consideration of evidence the case should probably not be looked upon as one of acute glanders, or more strictly subacute, with an exacerbation towards the end and running its course in from six to seven weeks, but as a chronic one lasting from four to five months, and in support of this view is the fact that the lymphatic glands of the arm and the submaxillary glands also were enlarged and hard, and again the lungs showed well-marked farcy nodules which in some instances could be shelled out from their bed of lung tissue beneath. Then probably the "sore on the arm," mentioned as occurring in March last while the patient was attending the out-patient department, was a chronic farcy lesion, although it certainly improved to some extent on administration of potassium iodide, or the improvement may have resulted from the local use of chlorinated soda lotion.

CUMBERLAND INFIRMARY.

A CASE OF SUPPURATIVE PERIOSTITIS OF THE NECK OF THE FEMUR WITH ACUTE PYÆMIA.

(Under the care of Mr. LEDIARD.)

FOR the notes of the case we are indebted to Dr. Stuart McDonald, house surgeon.

The patient, a boy, aged sixteen years, was admitted to the infirmary on August 8th, 1898, with the following history. Seven days before, while in the train on an excursion, he was seized with acute pain in the left groin. The pain was so severe that he could not walk about and on his return he had to be assisted home by friends. He was in perfect health in the morning and there had been no recent injury. On the following two days, the pain persisting, he kept in the house but was not confined to bed; the pain was relieved by turpentine and hot cloths. He felt hot and feverish at times, and on the Wednesday night, the third day from the beginning of his illness, he had a shiver and sweated profusely; he was also delirious that night. On the following afternoon he walked out and consulted a medical man in town, who found that he was suffering from severe pain in the upper part of the left thigh, which was slightly swollen; there was localised tenderness on pressure, below the middle of Poupart's ligament. There was no pain on "jarring" the hip-joint and no pain in any other part of the body. The boy walked very lame and only with assistance. His temperature was 102° F. He was sent home to bed and given anti-rheumatic remedies with hot poultices locally. On Friday and Saturday the symptoms continued, the temperature ranging between 101° and 103° and the swelling extending down the thigh. On the Sunday he complained for the first time of pain in his other joints, especially the right wrist, which was slightly swollen. On Monday there was dulness at the base of the right lung with friction. There was a trace of albumin in the urine. He was removed to the hospital in the afternoon. With regard to his personal and family history, the patient's mother was phthisical; the rest of the family were healthy, but the boy had always been delicate; he had only been laid up once, however—viz., with inflammation of the left lung seven years before. Six months ago he had been knocked down at football and had received a kick on the left hip. He was not laid up with this, but his father stated that he had seen him lately walking with his hand over the left hip. The boy himself did not complain. On admission the patient looked very ill. His temperature was 102°, his pulse was 125, and his respirations were 30. He could answer some questions but could not sustain attention. The tongue was dry and brown, the lips and teeth were covered with sordes, the bowels had not been moved for two days. As to the local condition, there was well-marked swelling of the whole of the left thigh, most marked in the upper part, where there was hard inflammatory œdema extending from below Poupart's ligament up into the left iliac fossa and out over the great trochanter and immediately above it over the ilium. There was a distinct dark blush

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over this latter region and distension of veins over the upper and outer aspect of the thigh. There was acute tenderness over a small area below the middle of Poupart's ligament and also over the area of blush. There was no fluctuation to be made out anywhere. The right wrist was slightly swollen, but there was no redness. No other joint was affected. There was dulness at the base of the right lung with occasional harsh friction. The first sound was almost inaudible; there was no bruit or friction. There was a trace of albumin in the urine, the specific gravity of which was 1018. The patient was given two drachms of whisky hourly; he was very thirsty and took milk and soda freely. Mr. Lediard operated the night of admission about 8 o'clock. The temperature had then risen to 104°. An incision was made over the most prominent part of the swelling behind—viz., over the great trochanter and immediately above it. The incision extended down to the bone; the tissues, especially the edge of the fascia, presented an unhealthy gelatinous appearance. About half an ounce of rather watery pus was evacuated; it seemed to come from deep down just above the trochanter. Some seemed to come also from along the ilium, but the tissues were separated from the bone down to the margin of the sacro-sciatic notch, and no more was discovered. The wound was stuffed with iodoform gauze. The pus evacuated contained numerous micrococci, mostly in the form of diplococci, but there were also typical staphylococci. The patient stood the operation very well. Two hours afterwards the temperature had fallen to 102·5°, the pulse was 125, and the general condition remained unchanged. At 1.30 A.M. there was considerable oozing from the wound, which was dressed and more pressure applied; the patient was very restless, sweating profusely, and was very thirsty. The temperature was 103°, the pulse was 135, and the respirations were 35. On August 9th, at 9 A.M., the patient looked worse: the respirations were 42; the pulse was 140 and very weak; and the temperature had risen to 104°, with noisy delirium. 10 c.c. of anti-streptococcic serum were given. At noon the temperature had risen to 106°, and just before death, which took place at 3 P.M., it reached 108°.

Post-mortem appearances.—The incision in the thigh was prolonged up and down; the periosteum of the shaft was healthy. The periosteum of the neck of the femur was found to be thickened and dissected off the bone with pus all the way round. There were about two drachms of pus in the hip-joint and the head of the femur and lining of the acetabulum were of a bright pink colour; the interior of the head and neck of the bone and epiphyseal cartilage were apparently healthy. The right wrist-joint was opened and found to be apparently healthy. With regard to the lungs there was recent pleurisy over the lower and lateral aspect of the right lung and there were extensive old adhesions over the lower lobe on the left side. Both lungs were acutely congested. As to the heart, there were two minute patches of recently effused lymph on the surface of the right ventricle near the apex. There were no vegetations on the valves and the organ looked otherwise healthy. Both kidneys were congested and showed cloudy swelling. There was a small group of miliary abscesses deep in the cortex of the left kidney. The spleen was much enlarged, very soft and friable. A small superficial abscess containing about ten drops of pus was discovered in the scalp behind the right ear. Films were prepared from the pus from below the periosteum, from the hip-joint, from the pyæmic abscesses in the kidney, and from the scalp abscess. These all showed similar organisms—viz., micrococci, many diplococci and typical staphylococcal groups; there were no streptococci and no bacilli. Films from a scraping from the spleen and from blood from the interior of the heart showed similar forms, but in that from the blood in addition were numerous large bacilli like bacillus subtilis in appearance, probably post mortem putrefactive forms.

Remarks by Dr. MCDONALD.—It would be difficult to say what chances, if any, this patient would have had from early operation, the small amount of pus formed locally and the intensity of the general symptoms pointing to a very virulent type of staphylococcus. The relationship of the old injury of the hip to the illness is by no means clear and the significance of the scalp abscess is also doubtful. An eminent pathologist who examined the preparations was of opinion that it certainly had no causal connexion. With regard to the serum used the absence of streptococci from the first pus evacuated seemed to contra-indicate its use, but as the patient was rapidly getting worse the next morning it was decided to try it. It is impossible to say how much of the hyperpyrexia was due to its use, but it certainly seemed to hasten the end.

Reviews and Notices of Books.

Outlines of Medical Jurisprudence for India. By J. D. B. GRIBBLE, M.C.S. (retired), and PATRICK HEHIR, M.D., F.R.S. Edin., &c. Fourth edition, revised and corrected. Edited by Surgeon-Major PATRICK HEHIR. Madras: Higginbotham and Co. Calcutta: Thacker, Spink, and Co. Bombay: Thacker and Co. 1898. Pp. 498.

THE fact that this work has reached the fourth edition is proof that it supplies a want. One especial merit about the book is that it is equally suitable for members of the medical and the legal professions. All technical expressions are explained in footnotes, so that a barrister consulting it would be able to understand the purely medical details. The whole book is arranged in numbered paragraphs, so as to be easy of reference.

With the exception of minor changes, including that of correction and revision, no noteworthy modification has been made in this edition, and its publication was delayed owing to the editor being on duty with the Tirah Expedition. The text contains a large number of illustrative cases, the majority of them culled from Indian experiences, so that they are new to English readers; several well-known examples, however, are copied from the English text-books.

The chapter on Evidence in India is particularly interesting. It would seem from this work that the great difficulty with which all magisterial and judicial officers in India have to contend is the false evidence which daily comes before them. The editor thinks that it is no exaggeration to say that a case scarcely ever comes before a criminal court in which there is not a certain amount of false or concocted evidence. The duty of a judge or magistrate in India is, generally speaking, not so much to decide which story is the true one and which is the false one, but to separate the falsehood and the truth on both sides, and, having eliminated the former, to decide upon the case. The legal maxim, *falsum in uno, falsum in omnibus*, does not apparently apply in that country. In England the discovery that some evidence for the prosecution had clearly been concocted would probably be quite sufficient to ensure the release of the accused; but if such a rule were to be followed in India the author is of opinion that there would scarcely ever be a conviction.

The book is well printed and, owing to the marginal notes on nearly every page, very easy of reference for barristers and medical men.

Laboratory Work in Physiological Chemistry. By FREDERICK G. NOVY, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second Edition. Revised and Enlarged. Ann Arbor, Michigan: George Warr, Publisher. 1898. Price $2.

THE system of orthography adopted by so many scientific American writers is apparently ignored in this volume except in regard to a few everyday words such as "color" and "behavior." But we do not find the final "e" lopped off such words as oxide, chlorine, urine, as is so conspicuously the case in many American text-books of science. The work before us is essentially a laboratory companion, and calculated to train the student in the right way, that is to develop his capacity of observing and reasoning. The plan adopted is clear and simple and for an experimental course the best. Thus the chemistry and physiology of food stuffs, of the animal fluids and secretions, is first presented, and then succeed short paragraphs describing the reactions characteristic of the substance under study. When it is a factor

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of pathological importance processes are also given for the quantitative determination of certain constituents, as, for example, uric acid in urine, hæmoglobin in blood, and so on. We have often pointed out that the original test devised by Pettenkofer for biliary acids is not satisfactory when, as is enjoined in the volume before us, cane sugar is employed; it is much better to substitute glucose which does not char and mask the violet colouration. The tintometer of Lovibond has evidently not come into use in America in its application to "hæmoglobinimetry," for we do not find this ingenious and useful apparatus described in the chapter (VIII.) on blood. The author recommends the bibulous paper method for estimating the fat in milk. This method, it is true, is very accurate, but there are other methods equally accurate and certainly much less laborious, as for example the Werner Schmid method, or the Leffman Beam centrifugal process, which by the way had its origin in the United States. In the now well-known Kjeldahl process for the estimation of organic nitrogen the addition of permanganate to the hot acid fluid is suggested. Investigators in this country have found that this leads to a loss of nitrogen, and consequently the modification has been abandoned, and when potassium sulphate and a pellet of mercury are employed it is not necessary in order to make the digestion and change to a colourless fluid complete. The book concludes with an excellent scheme for the the examination of urine, and some microscopical illustrations of urinary sediments.

Conservative Gynæcology and Electro-Therapeutics. By G. BELTON MASSEY, M.D. Third edition. Illustrated. Pp. 390. 1898. Philadelphia: The F. A. Davis Co.

IT is quite certain that electricity judiciously used is capable of giving good results in certain classes of gynæcological cases, and the numerous observations of Apostoli, Keith, and others show that it has in many cases a very definite effect upon the growth of fibroid tumours of the uterus. It is of great importance, if this method of treatment be used at all, that it should be used in properly selected cases, and with a due knowledge of what may be expected from it, and how the best results are to be obtained. There can be little doubt but that the disappointments and failures that have occurred are due to the want of a proper knowledge of the best methods to be employed, and to an absence of that technical knowledge which is so indispensable if really trustworthy results are to be obtained. In his book upon Conservative Gynæcology and Electro-Therapeutics Dr. Massey, who is an ardent advocate of electrical treatment in gynæcology, gives a clear account of the subject and shows what may be done by this method of treatment. The book consists of two parts. The first part contains, amongst others, chapters upon the Phenomena attending the Transmission of Galvanic Currents through Living Bodies, the Typical Methods of applying Electric Currents in the Diseases of Women, and an account of the various affections in which the author recommends their use. It is clearly in the selection of cases suitable for this treatment that great differences of opinion may arise. No doubt all would admit that cases of endometritis, chronic metritis, fibromata of the uterus, and inflammatory exudations in the pelvis, are likely to be benefited by the treatment. In cases of early ectopic gestation, however, most gynæcologists would prefer to rely upon operative treatment, and yet the results brought forward by the author tend to show that electrical treatment in such cases may be followed by good results and is seldom productive of any harm. The use of the faradaic current is recommended in labour in cases of inertia uteri and for post-partum hæmorrhage, for which Dr. Massey says "there is nothing equal in immediate results to the primary faradaic current applied with a bipolar electrode within the uterus, or a single active pole in that situation and the other on the abdomen." Here most obstetricians would be inclined to join issue with him and to continue to rely upon the tried and known effects of an intrauterine injection of hot water. Still, if the necessary apparatus were at hand, no doubt good results could be obtained with the faradaic current.

The second part of the book contains a clear account of the rudiments of medical electricity, and there are two appendices, one containing a table of 86 cases of fibromata of the uterus with details of treatment and ultimate results, and the second a table of 34 cases of catarrhal disease of the uterus under electric treatment.

Lehrbuch der Anorganischen Chemie. Von Professor H. ERDMANN in Halle. Mit 276 Abbildungen und 4 farbigen Tafeln. Braunschweig: Druck und Verlag von Friedrich Vieweg und Sohn. 1898. (Manual of Inorganic Chemistry. By Professor H. Erdmann. With 276 Illustrations and 4 Coloured Plates.) Price 18 marks.

THERE is considerable difference of opinion amongst English teachers of chemistry as to whether the purely mathematical portion of the science should be presented to the student before he has made a few experiments, before he has handled a test-tube, blowpipe or reagent, or, in other words, before he has got a glimpse of the nature of chemical change. If the student is an absolute stranger to the elements of the science there can be no question as to the way in which he should start. The volume before us is therefore adapted for those students who already possess some knowledge of chemistry such as now may be gained at our schools, since the author with startling suddenness opens boldly with the consideration of the theoretical side of the science in a chapter on decimal fractions and the use and value of logarithms. This section amounts, indeed, to a plea for the more general employment of logarithms in calculation, and a loose sheet of logarithms useful in chemical calculations is placed under a band on the inside of one of the covers. Next we come to theory and law, atomic and molecular weights, and the methods for their determination, the first chapter closing with valency and affinity. The second chapter, which we should ask the beginner to study first, is devoted to what the author calls "the metalloids," under which heading he includes the ordinary non-metallic elements, and under the same classification selenium, tellurium, arsenic, antimony, silica, and germanium. Under the class entitled "*edelgase*" (rare gases) occurs an excellent section on argon and helion. The apparatus used in the preparation and separation of these gases is fully illustrated, and an admirably coloured map of the spectra of gases includes the brilliantly characteristic lines of these newly discovered elements. For the rest, the plan of the book is much on the same lines as English text-books, the classification adopted being already indicated, the elements being divided into metalloids and metals (*Metalloide und Metalle*). We are glad to find that an acknowledgement is made of the work of the English chemist, Mr. J. A. R. Newlands (whose death, we regret to add, was announced a short while ago), in connexion with the discovery of the periodic law afterwards so ingeniously elaborated by Mendelèeff, the illustrious Russian chemist. The book will be very useful as an introductory manual for students taking the more purely technical sides of the science, since the description of technical processes, of metallurgical processes, of the refinement of metals, and of the compression of gases is given in some detail, and, moreover, in accordance with modern advance, the preparation of aluminium from cryolite or clay is here included; indeed, the author has treated the subject

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with a surprising completeness of detail and narrative considering the limits of space entailed in a "*lehrbuch*."

Responsible or Irresponsible? Criminal or Mentally Diseased? A Plea for the Unjustly Convicted, and on the Cause of Crime. By HENRY SMITH, M.D. Jena. London: Watts and Co. 1898. Pp. 92. Price 1*s*.

THE intention with which this little book is written is well expressed in the opening words of the preface. "I plead that our fellow-citizens who are of unsound mind shall not be treated as criminals; and that those who may have broken a law or committed a crime when in a morally unconscious state, the result of disease, shall not be convicted as insane or as criminals, but shall be treated as persons diseased, and neither consigned to a convict prison nor to a lunatic asylum, but to an asylum fitted for those who require medical attention."

Most people will probably agree with Dr. Henry Smith in the general sense of the above, but when details are discussed a number of difficulties will be found. In the first place the law does not define what insanity is; it is a matter of evidence, expert or otherwise, whether a person is insane or not, and therefore it is of the first importance that medical men should know what insanity is, and when a person is insane. Do they know? Are they agreed on this difficult question? Dr. Smith thinks not; and there is certainly great room for opinion. Another difficulty is that a medical man finds it by no means an easy matter to convince a patient that it is no more disgraceful to be sent to a home for the cure of dipsomania, delirum tremens, or mania, than to a hospital for the cure of fever or small-pox. Such patients naturally shrink from letting the world know the true diagnosis of their condition, but all the same it is universally admitted amongst medical men that some radical change in the laws relating to inebriety is required if practitioners are to do justice to their patients. Dr. Smith enters fully into this question and his remarks thereon are well worth perusal. He maintains that magistrates should have the power to commit drunkards to a home or asylum where they may be detained till cured of their desire for drink.

Another chapter which may be more noticed in legal circles than in medical is entitled "Equal Means must be given to all Men for their Defence." Here the author makes declarations with which we cannot agree. "I venture to say it is all but certain that he who can pay for a costly and learned defence will be discharged and the poor man who cannot pay will be convicted." We believe that such is by no means the case. If a prisoner is undefended by counsel the judge gives him every assistance in his power; if the charge is very serious a barrister is requested to undertake his defence.

This little volume is certainly worth reading and we trust that many of the reforms which its author suggests will eventually be carried out.

JOURNALS AND REVIEWS.

Annales de Gynécologie et d'Obstétrique. August, 1898. Paris: G. Steinheil.—Professor Pinard contributes a note to this number of the *Annales* upon Puériculture during Pregnancy, with special reference to the influence of the well-being of the mother upon the development of the fœtus. Professor Vautrin writes upon Gangrene of Interstitial Fibroids of the Uterus; and Dr. Meslay and Dr. Hyenne conclude their paper upon Degenerative Changes in Fibroid Tumours of the Uterus. Dr. Hartmann contributes an article upon Posterior Colpotomy in the treatment of Suppurating Appendages. Dr. Labusquière reviews recent papers by Dr. Grigorieff and Dr. Knauer upon the Transplantation of Ovaries and its results, and a paper by Dr. Karl Heil upon the Existence of a Physiological Slowing of the Pulse in the Puerperium. The treatment of Chronic Bartholinitis is considered by M. Cordier, who recommends the injection into the gland of a saturated alcoholic solution of salicylic acid. The rest of the number consists of the proceedings of the Society of Surgery and the Obstetrical and Gynæcological Society of Paris.

Revue de Gynécologie et de Chirurgie Abdominale. No. 4. July–August, 1898. Paris: Masson et Cie.—As usual this review contains several articles of great value. Tuffier writes upon Vaginal Hysterectomy without Forceps or Ligatures. He employs an instrument he calls an angiotribe with which he crushes the broad ligaments and so occludes the vessels. F. L. Neugebauer gives an interesting account of all the recorded cases—some 31—of utero-intestinal fistulæ with full details of the cases and a table. Two cases of abdominal hysterectomy for fibromata of the uterus complicated by pregnancy at full term are related by Eugène Gutierrez. Henrotin and Herzog describe 2 cases of extra-uterine gestation, the one occurring in the extremity of an accessory pavilion of the Fallopian tube, the other in a diverticulum. These are of great interest in connexion with early rupture of ectopic gestations. In an article upon the therapeutic value of ovarian extract Jayle concludes that it is often useful and recommends it in cases of removal of the ovaries, at the menopause, in amenorrhœa, dysmenorrhœa, chlorosis, and ovaritis. Ratchynsky, reviewing the various forms of suturing the abdominal wall after laparotomy, recommends deep sutures embracing all the structures, with separate suturing of the aponeurosis of the recti and superficial sutures for the skin. The number also contains a paper illustrated by cases upon lateral implantation of the intestine by Lauwers, and the usual analysis of current literature.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., ADAM SEDGWICK, F.R.S., and W. F. R. WELDON, F.R.S. New Series, Vol. XLI., Part 2. June, 1898. London: J. & A. Churchill. Price 10*s*.—This part contains the following memoirs: 1. The Segmentation of the Ovum of the Sheep, with Observations on the Hypothesis of a Hypoblastic Origin for the Trophoblast, by Richard Assheton, M.A. With 4 plates. 2. On the Heart-body and Cœlomic Fluid of Certain Polychæta, by Lionel James Picton, M.A. With 4 plates. 3. On the Hypothesis that Lake Tanganyika Represents an Old Jurassic Sea, by J. E. S. Moore. With a plate. 4. On the Reno-pericardial Canals in Patella, by Edwin S. Goodrich, B.A. With a plate.

The Journal of Anatomy and Physiology. Conducted by Professor Sir WM. TURNER, Professor D. J. CUNNINGHAM, Professor A. MACALISTER, Professor J. G. MCKENDRICK, and Professor G. D. THANE. Vol. XXXII., Part 4. July, 1898. With Plates and Figures in the Text. London: Charles Griffin and Co. Price 6*s*.—This part contains the following articles: 1. Dr. W. G. Aitchison Robertson: The Salivary Digestion of Starch in Simple and Mixed Diets. This article is noticed in an annotation in our present issue. 2. Mr. J. Playfair McMurrich, M.A., Ph.D.: A Case of Crossed Dystopia of the Kidney with Fusion. 3. Mr. N. Bishop Harman: The Duodeno-jejunal Flexure, its Variations and their Significance. 4. Louis J. Mitchell, M.D.: Notes on a Series of Thirty-nine Cases of Meckel's Diverticulum. 5. Dr. Francis O. Simpson: Congenital Abnormalities of the Heart in the Insane. 6. Mr. A. E. Taylor: Note on a Case of Six Lumbar Vertebræ and Abnormal Middle Sacral Artery. 7. Dr. F. W. Eurich: Contributions to the Comparative Anatomy of the Neuroglia, with two plates. 8. Dr. R. Broom: On the Organ of Jacobson in the Hyrax, with a plate. 9. Dr. R. Broom: Is there a Critical Period in Marsupial Development? 10. Mr. F. G.

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Parsons: The Muscles of Mammals, with special relation to Human Myology. 11. Mr. J. H. F. Wilgress of Selwyn College, Cambridge: A Note on Hereditary Stiffness of the Metacarpo-phalangeal Joint of the Thumb. 12. Dr. Edred Corner of Sidney Sussex College, Cambridge: On Some Skulls from Ceylon. 13. Professor Richard J. Anderson: Some Notes on the Manus of the Dugong. 14. Dr. Edward Fawcett: Some Points concerning the Mounting of Dissections in Basins. 15. Archæologia Anatomica. 16. Mr. R. J. McClelland (student): Note on a Moderator Band in the Left Ventricle and a Perforate Septum Ovale in the Heart of a Sheep. 17. Professor Bertram C. A. Windle: Eighth Report on Recent Teratological Literature. Lastly, there are notices of new books, a report on the Association of American Anatomists, and the index to Vol. XXXII. of the journal.

Medical Temperance Review.—The September number contains an abstract of a paper on Alcohol in Drugs and Drug Preparations read by Dr. Norman Kerr at the meeting of the British Medical Association. There is also an account of the proceedings at the annual medical temperance breakfast which took place in Edinburgh during the meeting of the Association. The speakers were Professor Simpson, Dr. ims Woodhead, Dr. Clouston, Dr. Ridge, Dr. Connel, and Mr. A. P. Young.

Liverpool Medico-Chirurgical Journal.—The original articles are on Colotomy (by Mr. F. T. Paul), on the Influence of Skin Condition on Surgical Procedure and on the Treatment of Eczema by Counter-irritation (by Mr. Colin Campbell), on Sewage Disposal (by Dr. H. R. Jones and Dr. Frank Robinson), on Foreign Bodies and the Use of the x Rays (by Mr. C. T. Holland), on Practical Gynæcology (by Dr. William Alexander), and on Cholecystitis as a Complication of Enteric Fever (by Dr. C. A. Hill). As usual the bulk of the journal consists of reports of the meetings of the Liverpool Medical Institution.

Mercy and Truth.—The numerous articles include an account of the Kashmir State Leper Hospital, by Dr. E. F. Neve. There is a full-page photo-print of a Chinese Opium Smoker.

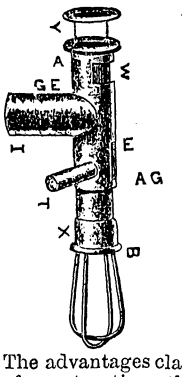
In the *Phonographic Record* for September contributions by Sir W. R. Gowers on Syphilitic Disease of the Cerebral Arteries and by Mr. Peyton Beale on the Use of Alcohol as a Wound Dressing deserve attention. Sir W. R. Gowers says that as an indication of previous syphilis great reliance may be placed upon loss of the pupillary action to light, whilst the reaction of accommodation is not impaired. Mr. Beale, whose article we referred to last week, finds that alcohol applied as methylated spirit on double cyanide gauze promotes rapid union of wounds and checks serous exudation, so that the risk of the wound becoming infected after the first dressing is very slight. Dr. Atchley's Note on a Cancer Cure of the Eighteenth Century shows that vaunted specifics for cancer were known more than 100 years before the days of Mattei; and the concluding instalment of Dr. Fletcher Beach's Observations on Mentally Deficient Children is marked by many helpful suggestions on the psychology and treatment of these alien outcasts.

PLYMOUTH INFECTIOUS DISEASES HOSPITAL.—On Sept. 13th the Plymouth Board of Guardians received from their Visiting Committee a report which contained serious allegations as to the treatment of the workhouse children sent to the Borough Infectious Diseases Hospital. On Sept. 16th the hospital sub-committee of the town council held an inquiry into these allegations, with the result that all the charges against the hospital were emphatically denied. The affair had created a considerable amount of interest in the Three Towns and much more will probably be heard about the matter. It is certainly to be regretted that the guardians did not give the Sanitary Committee and hospital officials an opportunity of replying to the charges before they adopted the report.

New Inventions.

A THREE-WAY COCK FOR ADMINISTERING NITROUS OXIDE GAS AND ETHER; FOR USE WITH CLOVER'S INHALERS.

THIS device consists of a T-shaped tube with two telescoping tubes X and Y at either end of the horizontal limb.

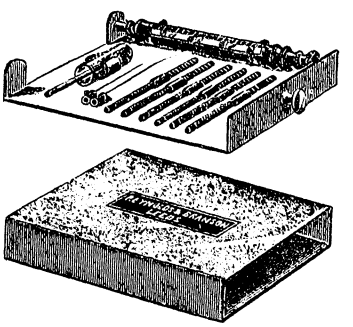


A small ether bag is passed over the shoulder B. The gas enters by a tube T and is guided into the bag which it distends. The vertical limb I fits into a Clover or similar inhaler. With both Y and X pulled out the patient breathes air. Push Y in and the inspiratory and expiratory valves are brought into action. Push X in and they are thrown out of action and he breathes backwards and forwards into the bag. The movements are controlled by slot-pins and the letters opposite these indicate the action of the valves, thus for breathing Air the slot-pins will be at A and A G, for breathing Gas they will be at G E and A G, and for breathing Ether they will be at G E and E. The advantages claimed for the apparatus are that it is simple of construction, that it can be fitted to a Clover's inhaler, and that an ordinary small ether bag only is required, and ether anæsthesia can be continued without changing the bag. It has been used by myself and my colleagues at Wolverhampton General Hospital for more than a year with very satisfactory results. It is made by Mr. F. Ash of Birmingham.

J. A. CODD, M.D., B.Sc. Lond.,
Honorary Assistant Physician, General Hospital, Wolverhampton.

IMPROVED ASEPTIC HYPODERMIC SYRINGE AND CASE.

THE accompanying illustration shows a new form of aseptic all-metal hypodermic syringe and case. The advantages claimed for it are, that it can be easily sterilised, that it is durable, that it holds a number of tubes of compressed drugs, all the articles in the case are easily got out, and that, being compact, it can be carried in the waistcoat pocket very conveniently. It is manufactured by Messrs. Reynolds and Branson, of Leeds.



E. MILWYN JENKINS, M.B., C.M. Glasg.
Shaftesbury House, Calverley.

A NEW CATHETER DISH.

THE accompanying illustration shows a dish which I have designed for the reception of flexible catheters in daily use. It consists of an elongated narrow vessel, furnished with an overlapping lid, and it is sufficiently long to admit a catheter of ordinary length without flexion being necessary. The catheter rests on two transverse ridges attached to the bottom of the dish, so that the antiseptic solution with which the dish is filled surrounds the instrument. A flexible catheter, once having been used, has to be bent to be placed in most of the receptacles as used at present and this frequently produces "kinking" or injury at the eye. In my

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dish the catheter can be kept perfectly straight and a minimum amount of solution is required to keep it submerged. The vessel being long and flat it may be kept by a patient's bedside without fear of upsetting it, and the shallow depth combined with the absence of angles renders the dish very easily cleansed and sterilised. A label may be attached



to the handle or the patient's name may be written directly in ink or pencil on the lid. The dishes will serve for all forms of flexible catheters or bougies and may also be used for drainage tubes. They are manufactured of iron, enamel ware, glass, or porcelain, and may be obtained from Messrs. Reynolds and Branson of Leeds at a small cost.

H. DE PAIVA B. VEALE, L.S.A. Lond.,
Late House Surgeon General Infirmary, Leeds.

A MODIFIED UTERINE SOUND.

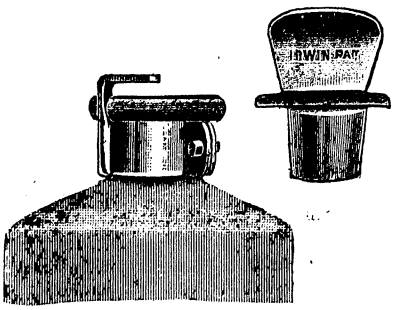
THE many dangers incidental to the use of the ordinary uterine sound, even in skilful hands, may, I think be avoided by the use of the instrument depicted in the illustration. The various manipulations for which the sound in its original form has been found so useful can be equally effected and without danger by its use in the modified form. During the operations for vaginal or abdominal hysterectomy it will be found useful for lifting the uterus or deflecting it to either side or carrying it to the front or back. The sound is constructed of flexible copper, plated, with the addition of a metal disc on which the os and cervix rest; this is placed two inches from the point, thus making it impossible to penetrate the fundus (the weight of the uterus being borne by the disc and not by the point), which was a serious fault of the original instrument. The entire sound being made of metal can be easily sterilised, while the handle being pear-shaped will afford additional power in manipulation (more especially in operation cases) and be found more comfortable to the hand than the older form. Messrs. Arnold and Sons, London, are the makers.



Cheltenham. ALEXANDER DUKE, F.R.C.P. Irel.

A NEW ANÆSTHETIC BOTTLE.

DR. FREDERIC HEWITT has asked us to draw the attention of our readers to a new and efficient bottle for ether, chloroform, and allied substances. It is the invention of



Mr. Irwin, of 4, Cottage-grove, Stockwell, S.W., from whom bottles of various sizes (6 oz., 12 oz., and 18 oz. capacity) may be obtained. The stoppers are made of a special alloy and each one is ground into the glass neck of its bottle, so that a very accurate fitting results. In placing the stopper in its bottle it has simply to be turned a little and the projecting metal rod shown on the left hand side of the stopper in the illustration wedges more and more tightly under the metal arm carried by the collar round the neck of the bottle. In this simple way perfect accuracy of fitting is secured and the stopper cannot be dislodged until it is released by turning it back. Dr. Hewitt has tried the system for three months and finds that it works well. Each bottle is supplied with a leather case, which has the advantage of being lighter than the wooden case generally used.

FIFTY-SECOND ANNUAL REPORT OF THE COMMISSIONERS IN LUNACY.

THE fifty-second annual report of the Commissioners in Lunacy provides the usual statistical review of the certified insane in England and Wales and a critical retrospect of the different institutions set apart for the care and treatment of those afflicted with mental disease. The total number of persons of unsound mind under the supervision of the Lunacy Commission on Jan. 1st, 1898, was 101,972, being an increase of 2607 over that of the previous year. Figures like these are warranted to arouse a feeling of anxiety in the public mind, and at first sight it would appear that the malady is tightening its grip upon the community. The statistics are no doubt disquieting, but if we accept the views of the Commissioners, set forth in the special report issued last year, as correct, the increase is more apparent than real. The Commissioners attributed the higher numbers to various causes, amongst others the increase in the general population, a gradually diminishing death-rate in the institutions under their control, and an enhanced tendency on the part of relatives and others to send senile cases to the asylums for treatment. These and certain other influences undoubtedly account in a large measure for the increase, but it is more than questionable whether they account for all. It would be well if the Commissioners could see their way to include in their statistical returns a table showing the number of first cases in which the insanity developed itself within three months before admission. There ought to be no difficulty in compiling such a table; it would unquestionably prove a surer means of gauging the actual rate of freshly occurring insanity than some of the theoretical methods so frequently employed. The table itself could not fail to be a valuable addition to the statistical returns presented from year to year, some of which, we regret to say, are absolutely useless and only serve to cumber the pages of the blue-book. The actual increase above notified is caused mainly by a large increment in the pauper class—viz., 2486. There were 124 more private patients and 3 fewer criminal lunatics. The ratio of registered insane to the population on Jan. 1st, 1898, amounted to 32·48 per 10,000, a differential increase of 0·48 on last year's ratio. According to the Commissioners' figures in the year 1859 1 person in 536 was insane, whereas this year it is computed that 1 person in 308 is of unsound mind.

The ratio per cent. of the pauper insane to paupers of all classes is perhaps the fairest test for determining the prevalence of insanity in the community, for the actual pauper population is known and the number of pauper insane within the cognisance of the Lunacy Board embraces, with but few exceptions, the total number of pauper insane in the country. The ratio of paupers to the population is fairly stationary, but there has been a gradually progressive rise in the ratio of pauper lunatics to paupers of all classes during the last decade. The ratio in 1889 was 9·25 per cent.; in 1898 it stands at 11·08 per cent. This represents an actual increase in the ratio of pauper lunatics to paupers of all classes of 1·83 per cent. during the two years, but, according to the official view, as before explained, the increase is mainly due to accumulation and to the gathering within the official net of numbers of the class described as "unregistered lunatics,"

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whose numbers, notwithstanding annual depletion, seem to be as large as ever.

The total number of patients under detention on Jan. 1st, 1898, amounted to 76,423, an increase on the number on the same date in the previous year of 2843. The total number of admissions during the year, excluding transfers and re-admissions on fresh reception orders, was 19,405, a number 191 in excess of last year's admissions. The actual number of patients discharged as recovered during the year amounted to 7230, being 52 more than in 1896. This increase occurs mainly amongst the private patients. The proportion of "stated" recoveries (the Commissioners carefully emphasise "stated") to the total number of admissions amounts to 38·35 per cent., as against 38·53 per cent. in the previous year. Of the total number of patients under treatment in 1897 7·34 per cent. were discharged *recovered* (the Commissioners' italics).

The death-rate calculated on the average number resident was 9·43 per cent., being 0·38 per cent. higher than in 1896, when, however, it was exceptionally low. The mortality table not only shows the causes of death, but also enumerates the number of post-mortem examinations made and gives the average age at death for each disease. The average age at death for males was fifty years and for females forty-nine years. It is important to note that the average age at death in cases of general paralysis of the insane was forty years, and the average age in cases dying from phthisis was also forty years. General paralysis and phthisis proved the most fatal maladies, the former accounting for 19 per cent. of the deaths and the latter for 14·5 per cent. The proportion of deaths from cerebro-spinal diseases was 40·5 per cent., from thoracic diseases 34·8 per cent., from abdominal diseases 8 per cent., from general diseases 6 per cent., and from other diseases—a group in which senile decay figures prominently—10 per cent.; accident, suicide, and violence accounted for 0·8 per cent. of the death-rate. The inference somewhat hastily drawn in last year's report that insanity in a form requiring treatment away from home is more frequently developed in the spring and summer than in the autumn and winter is not quite borne out on the second appearance of the new table introduced last year, for January occupies quite a prominent position, being third on the list, following closely on May and June.

The severely simple classification of insanity to which the Commissioners tenaciously cling may be described as somewhat out-of-date. In the table giving the yearly average occurrence of the "principal" forms of mental affection for the five years 1892–1896 the classification employed is "mania," "melancholia," "dementia (ordinary and senile)," and "other forms of insanity." It is perfectly certain that such a classification would not be found in any ordinary asylum report and the nomenclature is utterly unsuited to modern ideas.

The yearly average number of epileptics admitted during the quinquennial period 1892–1896 was 7·9 per cent., that of general paralytics 8·2 per cent., and that of patients with suicidal tendency 24·7 per cent.

Intemperance in drink and heredity appear to be the most frequent causes of insanity, but the Commissioners with reason state that "the tables dealing with the assigned causes of insanity are not very reliable."

In dealing with the distribution of pauper lunatics the Commissioners again call attention to the growing tendency to send to asylums cases formerly treated at home or in the workhouse. They state that "this tendency evidently continues to work, for the proportion of pauper lunatics in institutions for lunatics advanced from 74·59 to 75·16 per cent., an increase of 0·57 per cent., while there was a corresponding decrease in the proportions of those treated in workhouses or living with relations or friends. The cases so brought under asylum treatment are those of senile dementia or congenital weakness of mind." This is no doubt the case, but it is worthy of remark that the proportion per cent. of congenital cases to the total of the yearly average number admitted is steadily decreasing, being 4·6 per cent. for the quinquennial period 1892–1896, as against 5·7 per cent. forthe quinquennial period 1888–1892.

Owing to the opening of four new establishments the number of county and borough asylums is augmented to 74, the patients in these institutions being classified thus: private, 1254; pauper, 67,759; criminal, 120. The number of fresh admissions was 283 in excess of that of 1896, and it exceeded the average of the ten preceding years by 2317. Of these fresh admissions no less than 16·1 per cent. were cases readmitted into asylums from which they had previously been discharged. It is a significant feature that the proportion of such readmissions is steadily rising year by year, and it comes to be a question of serious import whether, owing to the number of admissions and the great lack of accommodation, there is not a tendency on the part of asylum authorities to create vacancies by shortening the course of treatment, and allowing the discharge of patients who have apparently recovered, but whose mental equilibrium has not sufficiently regained that balance, which is required to withstand the worry, the excitement, and the temptations of every-day life. It would really seem that the Commissioners are justified in using the word "stated" when alluding to recoveries in their statistical tables.

The deaths in the county and borough asylums amounted to 6659. Post-mortem examinations were made in 79·3 per cent. of the cases, a proportion almost identical with that of last year; the percentage of such examinations varies greatly in the different asylums. The deaths from suicides numbered 11; in two instances, however, the act was committed when the patients were absent on leave, and in another prior to admission. This is exactly half the number recorded in the previous year, and affords satisfactory evidence of the vigilance and care exercised by the staffs of the various asylums. Two murderous attempts were made by patients during the year; in one case upon a superintendent and in the other upon a male attendant. Fortunately neither was followed by a fatal result, but the repeated occurrence of such incidents clearly shows the dangers of the service and accentuates the claims of those engaged in it to exceptional liberality of treatment. This aspect of asylum life ought certainly to be borne in mind by the Legislature when the pension clauses of the belated Lunacy Bill again come up for discussion in the ensuing session of Parliament. 21 asylums are scheduled in which insanitary conditions prevailed to a greater or less extent. Typhoid fever, erysipelas, and colitis bulk largely in this return. Overcrowding, with all its attendant evils, is no doubt largely responsible for this state of affairs. The Commissioners have found it desirable to give particulars of various matters of detail affecting individual asylums. These relate principally to building extensions, insanitary conditions, overcrowding, fatalities, and suicides. While expressing regret at the burden imposed on the ratepayers they urge the need which exists for further accommodation for pauper lunatics, and state their conviction that delay in this respect is essentially false economy. The question whether the visiting committee of a county and borough asylum is entitled to charge a larger weekly sum than 14*s.* for out-county patients was referred to the Commissioners. They submitted a case for the consideration of the law officers of the Crown, who replied that in their opinion such larger charge could legally be made. Prohibitive rates will be a powerful factor in inducing those districts which have not the necessary accommodation to adopt measures for housing their pauper insane. The number of registered hospitals remains at 14. There are 7 institutions for idiots and 70 licensed houses. With regard to the latter the Commissioners express their approval of the efforts made to improve the accommodation for patients and to add to their comfort. They have to report, however, an unusual number of suicides in these institutions. Some correspondence took place between the Foreign Office and the Commissioners relative to the alleged detention of a number of British subjects in a French lunatic asylum. The matter was referred to the law officers of the Crown but no action was taken, the Commissioners being of opinion that no useful purpose would be served by taking proceedings. They express themselves as being well satisfied with the state in which they found the various institutions under their supervision.

All those engaged in lunacy work will echo the expression of regret made by the Commissioners concerning the sudden death of their valued colleague Dr. Wallis. His place on the Commission has been taken by Dr. Marriott Cooke, for many years the medical superintendent of the County and City of Worcester Asylum. Lord Hatherton has resigned his chairmanship of, and seat at, the Board.

On the whole the report maintains its high standard as an official record of the careful supervision exercised over the certified insane under increasing difficulties, and notwithstanding a few defects, to which attention has been drawn, it should prove an interesting study to all who are entrusted with the care and treatment of the insane.

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THE LANCET.

LONDON: SATURDAY, SEPTEMBER 24, 1898.

THERE is still much obscurity about the pathology of the curious spasmodic affection known as "tetany," of which the main characteristic is an intermittent tonic contraction of the muscles of the extremities, especially of the fingers and toes, although the spasm is not in all cases so limited. It does, however, differ from true tetanus in its mode of onset, as well as in the march of the spasm, and also—except in the grave forms with which we propose immediately to deal—in its comparative benignity. It was not until the appearance of TROUSSEAU'S classical lecture on the subject that much attention was paid to the affection, although, as TROUSSEAU himself points out, it had even then been known and described several years before. He himself had been struck by the frequency of its occurrence in nursing women and in those who were recently delivered, so that from his early experiences he had gone so far as to term it "rheumatic contraction of nurses," the conception of a "rheumatic" basis being favoured, according to the knowledge of the day, by its apparent relationship to chill. He came, however, to recognise that this was but a partial description, although he never realised the full extent of its associations. However, in course of time he met with cases in both sexes and at various ages, many in infancy, when perhaps it prevails the most. He also found that it was frequently associated with teething, with chronic diarrhœal disorder, and that it might follow upon cholera and typhoid fever. At the same time he thought that its most common direct antecedent—its "exciting cause"—was exposure to cold. Readers of his lecture need not be reminded of the accuracy of the clinical picture which TROUSSEAU delineated. Little has been added by those who have come after him, whilst to him is owing the observation that the spasms can be excited by compression of the main nerve-trunks and blood-vessels. By him tetany was regarded as a comparatively trivial affection, for although he was careful to distinguish between the mild, moderate, and severe types—a distinction founded mainly upon the less or greater amount of general disturbance—he said that he had only met with one case in which death could be directly referred to the tetaniform condition. For the most part in his experience the symptoms would pass away within a variable period, the spasms intermitting with lessened frequency until after the lapse of a few weeks or a month recovery was assured.

Since TROUSSEAU wrote, many have contributed to the subject, especially writers upon diseases of children in whom it has been found to be largely associated with rickets and with the diarrhœa or general marasmus which may accompany that nutritional disorder. Yet there still prevailed a very hopeful view as to the prognosis of cases of tetany. It was not until attention came to be directed to the supervention of tetany upon gastric dilatation in adults that a change took place in this favourable prognostic opinion. In association with that visceral condition tetany assumes a more serious significance and its supervention must always be regarded with anxiety, if not with alarm. Hence writers upon diseases of the stomach speak in quite different fashion from TROUSSEAU and others as to the outlook in cases of tetany; they aver that its prognosis is "very bad" and mention 70 per cent. as the mortality of cases in which it arises. This changed attitude in regard to the character of the affection is borne out in the papers by Dr. SOUTTAR MCKENDRICK and Dr. TREVELYAN, which we publish elsewhere, and which, moreover, contain all that can be said on the subject, the interest of which does not rest merely upon its comparative rarity. Indeed, we are sanguine that the appearance of these suggestive and full records may lead to further contributions and perhaps to the demonstration that tetany and allied states in less grave forms are observed in association with gastro-intestinal diseases more frequently than is generally believed.

The clinical features of a well-marked case are readily recognised, but the questions which afford most scope for discussion are those connected with its etiology and pathology. These have been fully and ably discussed by Dr. TREVELYAN, so that we ought almost to apologise for venturing to make any further comments on the subject were it not that some good may be done by exciting interest in this "gastric tetany," as he succinctly terms it, by fixing attention on the problems which surround it. Now, although tetany may be met with in association with many and varied states its relationship with dilatation of the stomach appears to be so definite and, so to speak, so constant (using the term in a general sense) that it must, in such cases, depend on the conditions peculiar to that state of the viscus. The main circumstance is of course the retention of more or less partially digested material in various stages and kinds of fermentation. It is conceivable that these may act as irritants of gastric nerves and thus excite reflexly the muscular spasms of the tetanoid state. The fact that tetany has been known to supervene on lavage of the stomach, or even during its performance, might be cited in support of such a view, and perhaps the remarkable frequency of tetany after thyroidectomy might be deemed also to bear on the theory of nerve irritation. But nowadays, and not without reason, the doctrine of reflex nerve irritation has been found insufficient in cases where it was formerly thought to explain all. The "reflex neuroses" are fast becoming obsolete, and wherever a more tangible theory can be framed it is to be preferred. Another view, propounded by KÜSSMAUL and supported by some, is that the whole nervous system shares with the tissues generally in a dehydration owing to the excessive loss of water by copious vomiting, as well as by the abundant secretion which is poured into a dilated stomach. To our thinking more satisfactory and more rational is the reference of the condition to toxic agencies, and this on more than one ground. In the first place, the production of toxins of many and varied properties cannot but occur in the fermenting contents of a dilated stomach. In the second place the experiments of BOUCHARD

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have shown that some of the products of urinary excretion in health and disease are direct poisons to the nervous system. What, then, is more likely than that in certain subjects, and under certain conditions which cannot as yet be formulated, poisons are produced which are capable of exciting the nerve centres so as to produce the phenomena of tetany? It should, of course, be possible, if this were the case, to analyse the contents of a stomach after the method adopted by BOUCHARD in respect to the urine, so as to ascertain whether they included any nerve poison of this type. Perhaps this may be done in the future. Meanwhile we must be content to act on the hypothesis and must not hesitate in cases of gastrectasia in which this dreaded complication is arising to thoroughly relieve the stomach of its contents. In one of Dr. TREVELYAN'S cases some temporary relief was obtained by this measure, but the patient sank from exhaustion. It is noteworthy, however, that on the previous day when the symptoms were fully marked, there had been a fruitless attempt at lavage, and it may be that the performance of the operation is too difficult in such circumstances. This is all the more reason why attention should be drawn to the earliest symptoms, in order if possible to resort to lavage before the tetany becomes fully developed. Nor can we pass from the contemplation of these fatalities without raising the question again as to the probability of the occurrence of slighter manifestations of nervous disorder directly referable to the gastrectasic condition. *A priori*, if the toxic theory be the correct explana tion, it might be thought, considering the large number of cases of gastric dilatation and the fewness of the severe and fatal cases of tetany which complicate them, that cases of less severe intoxication should not seldom occur. Cases of slight and transient spasm, of cramps, of temporarily deranged sensation may arise and be so trivial as to escape the observation of the medical adviser or be disregarded by the patient himself. So, if they do occur their existence would go far to confirm the opinion of the toxic origin of tetany, which is not gainsaid by the conditions of its occurrence in children, in nursing women, or after thyroidectomy.

THERE are two Italies, and they are as wide as the poles asunder. There is the Italy of romantic tradition and there is the Italy of prosaic reality. It is as the former that outlying Europe, or we should rather say the English-speaking world, persists in regarding her, and with consequences by no means favourable to Italy herself. The interest she has inspired and the sympathy she has aroused have made her the "spoiled child" of her more civilised contemporaries, bringing her moral and material help which had far better have been evolved from within her own borders, to the reinvigoration of her own character and to the acquisition of self-reliance, independence, and the nobler virtues which spring from such discipline. Her liberty and her unity she owes mainly to external forces—to foreign allies who, like France and Prussia, assisted her for ends not wholly unselfish, or who, like Great Britain, gave her a moral, and in the long run a more substantial, because disinterested, support. After she became united and free it was still to the kindly outsider that she was indebted for material as for moral aid. To the English-speaking visitor she owes about one-third of her revenue in gold; to the English-speaking world she almost spontaneously looks for sympathy and succour in political adversity or calamitous visitation. Does a disastrous flood reduce one of her districts to homelessness and want, Great Britain's charitable aid is always forthcoming. Does an earthquake bring ruin on one or other of her islands, the same free-handed largess is never appealed to in vain. So much is this the case that such visitations are looked upon by provincial Italians as "providential" in a double sense—"Providential" as coming from on high; "providential" as providing means often much in excess of the occasion which evoked them.

Italy, indeed, has, by the rueful admission of the best of her publicists, come to be a "moral mendicant," with the disastrous consequences to character induced by such a *rôle*. Beggary is an "institution" within her borders, and those of her sons who try to put it down by introducing the atmosphere of self-respect which should be fatal to it find in the thoughtlessly free-handed Englishman or American the greatest obstacle they have to encounter. This indulgent attitude towards her and hers has all the force of a conspiracy—kindly, if unconscious—to keep her *in statu pupillari* among the nations—to perpetuate the truth of MASSIMO D'AZEGLIO'S bitter exclamation: "Fanciulli siámo" (children we are). Her well-meaning but injudicious friends are, indeed, her worst enemies, who have only to be a little more familiar with her or her real, not her romantic, side to do her the genuine and lasting service of leaving her to work out her own salvation.

"Italia farà da se" (Italy will suffice for herself) was the watchword of the creators of her "Risorgimento," and it is high time that she revived it and made it practically operative. She has within her own personality all the means of self-rehabilitation, but she must be taught to rely upon them. "The cleverest people in Europe if only they had staying-power," was the verdict of a great British engineer who had been in touch with their inner life for nearly half a century. "Steadiness, steadiness, the English steadiness," was the one requisite they needed for success in GARIBALDI'S estimation. But how to acquire it when the moral fibre, relaxed by long subjection, is kept flaccid by influences from without and never feels the tonic of effort from within? The native genius is in these circumstances perverted and all its development moulded to the utilisation of opportunity casually presented, not to the creation of means or the fusing and welding of nature's own material for the working out of ends conducive to common good. We have thus in Italy a mediæval spirit struggling for existence amid nineteenth-century institutions, showing admirable ingenuity and subtlety and nimble resource as a substitute for the manlier, maturer, and more effective qualities of latter-day evolution.

Corruptio optimi pessima est. There is more wit and talent put forth in Italy for the attainment of illicit objects than healthily constituted countries expend on legitimate undertakings. We have to go back to "Gil Blas" for examples of clever knavery similar to those perpetrated in the kingdom every day. Even crime

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within its borders is romantic and serves to keep up the fatal "interest" in Italians which makes them the object of a foolish fondness on the part of other peoples. Leaving aside the brigandage which, as in the recent case of the Tuscan Tiburzi, recalls the "forest days" of ROBIN HOOD, we find the swindler plying his *métier* with a dramatic skill which extorts an unwilling admiration. Take two specimens which came off within twenty-four hours in the city of Florence not so long ago. The scene is a *trattoria* or restaurant in the suburbs. A young man and his sweetheart are at a table conversing over a frugal meal. Presently a well-dressed gentleman comes in and at another table orders a more luxurious repast. The landlord is attracted to the first-mentioned table—the pair being obviously in difficulties. The young man has forgotten his purse. "I cannot let you go without paying," says the irate Boniface; "you have a watch, leave that with me and then you may go home for the purse you say you have left behind." The young man, not without protest, gives up his chronometer and the landlord is returning to his coign of vantage, when the gentleman, who has been a witness of the scene, rises and stops him. "Your conduct to that young man, sir," he says, "is shameful. Anyone may forget his purse. Give him back his watch and include his bill in mine and let him go if you ever want me as a customer again." Producing a pocket-book well filled with bank-notes the gentleman hands a 100-franc *bigliétto* to the landlord, who sulkily restores to the youth his watch, makes up the double bill, and gives the gentleman some 90 francs in change. First the pair go out and then the gentleman, leaving the landlord half glad and half sorry for the incident which gave him his money and cost him a reprimand. Days afterwards he has to pay a large sum, towards which he adds the 100-franc note received from the gentleman, only to find it a clever counterfeit. While this drama *à la* LE SAGE was being played another even more effective was in course of performance. At an hotel, also in Florence, a traveller for a large jewellery firm has put up and is already doing good business. A gentleman appears, makes purchases to the amount of twelve hundred francs, for which he gives notes of unexceptional genuineness and goes his way. An hour afterwards a delegate of *Pubblica Sicurezza* comes in and takes the traveller aside, wishing to have a word with him privately. "You have just sold some jewellery," he says, "to an individual who paid you twelve hundred francs for it?" "I have," replies the traveller. "You have been victimised, sir, by a swindler well known to the police," says the *delegato*. "How so?" inquires the dismayed traveller. "There are the notes. They are perfectly genuine." "They are nothing of the kind," says the *delegato*. "They are imitated admirably—the work of a well-known gang of forgers. But keep your mind at ease. Your jewellery is quite safe at the police-office, where you will find it along with the swindler, whom we have arrested. Call there at four o'clock and you will get your property back. Meanwhile give me the notes. They are required to identify the forgery." The traveller gave up the notes, called at the police-office, found neither delegate nor prisoner, but found only that by consummate acting he had lost twelve hundred francs' worth of jewellery and also the perfectly good money which had been paid for it.

Such occurrences are of daily experience and explain the phenomenon that Italian fiction is poor—poor out of al proportion to the literary skill of the people. It is beaten out of the field by fact, chronicled day after day by the police-reporter. When is all this perversion of ingenuity and labour and forethought to be replaced by the honest employment of the same qualities towards legitimate ends? When Italy becomes true to herself, is the answer; when she recognises the fact that, "hooked on to the express train of the nineteenth century," she must conform to the new conditions of progress; and, above all, that she must count as her worst enemies those whose kindly forbearance with her shortcomings and free-handed ministration to wants of her own contracting keep her in the mediæval stage from which she was supposed to have emerged.

LORD WOLSELEY'S homily on Intemperance and Immorality among Soldiers, which was issued as an Army Memorandum last April, has now been republished in the form of a Parliamentary paper and will, no doubt, thereby gain in weight. His lordship in forcible language calls upon all officers in command of troops, batteries, and companies to perform their bounden duty in directing and controlling the morals of the men over whom they are placed in authority, and that not only by precept but also by example. Young soldiers in particular should be encouraged to look to their superiors for example and guidance amid the temptations which surround them and to expect ready sympathy and counsel in all their difficulties and troubles. Officers and also non-commissioned officers are repeatedly directed to do their utmost to promote a cleanly and moral tone among the rank and file and to spare no effort in watching over the physical and moral welfare of the men for whose proficiency in military exercises they are responsible. This is certainly expecting a great deal, for it must be remembered that the vast majority of company officers are young men themselves, obnoxious to the same temptations as the private soldier and totally destitute of special training as instructors in morality. British officers, however, have invariably proved themselves worthy of trust and the nation may with confidence expect to see the Commander-in-Chief's instructions fulfilled in the spirit as well as in the letter. Throughout his Memorandum Lord WOLSELEY deals in generalities—with one single exception. "Surprise visits" for the detection of suspected immorality are enjoined and this, we venture to say, is a weak point in the otherwise admirable exhortation. Everything which savours even distantly of espionage should be avoided in the management of British soldiers. The British soldier is *primâ facie* an honest man and must on no account be treated as though he were *ipso facto* an evil-doer. If he finds that he is liable to be tracked and pounced upon as though he were a hardened criminal he will very soon lose his self-respect and seek in every underhand way he can think of to outwit the detectives set over him. Straightforwardness is the best policy in dealing with the class of man whom it is desirable to attract as a recruit. Trust your soldier and let him see that you do so, should be the golden rule amongst all who

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are charged with authority in the army. On active service spying out the enemy is no doubt advantageous, but as an item of internal economy among grown men in barracks surreptitiousness of every description should be rigorously interdicted. With regard to the preliminary training of both officers and private soldiers there are several points which urgently demand attention. Before a recruit is allowed to fire ball-cartridge he must have given proof that he thoroughly comprehends the mechanism of his piece as well as the effects of the discharge. Should his arm be the lance or the sabre his dexterity with these weapons is tested before he is allowed to manipulate them at large. Drills without number and exercises beyond computation have to be endured before the neophyte receives permission to take his place in the ranks. In a word, the utmost care is taken to educate the young soldier in the art of killing or maiming his enemy, but by stopping short at this point the instructors have only half equipped their man. In order that a soldier may be in a condition to do his country the maximum amount of service it is necessary that the art and science of taking care of his own health should be included in his curriculum. Even on home service it is highly desirable that this should be so; but abroad, where our troops have to live under conditions largely differing from those to which they have been accustomed, it should be made a *sine quâ non*. When a soldier fails to preserve his health he forthwith becomes an encumbrance in the field, a source of weakness instead of a source of strength. Not only are his individual services wasted, but also the services in whole or in part of several of his comrades. As regards the efficiency of the force it would be better for him to die than to fall lame. For a soldier actively engaged there is nothing more important than health and yet no attempt is made to teach him how to preserve it. In addition to teaching their men how to be moral it would be well if commanding officers were to be directed to teach them the essentials of personal hygiene, with especial reference to the requirements of the locality where they might happen to be serving. A course of lectures at the canteen could not but be advantageous provided the lecturer were properly equipped for his task. Of this, however, he would need to furnish unquestionable proof, for of all branches of knowledge in which a little learning is a dangerous thing there is none to surpass self-medication.

THE recent regulations of the General Medical Council prohibiting the employment of unqualified assistants, save in an entirely subordinate way, have a very obvious application in holiday times. It is absurd to think that although an unqualified assistant may not be allowed to have sole or serious charge of cases, yet such an assistant may be left in a position by his principal during the holidays which would place him at any moment in responsible care of the whole practice. This very obvious point seems to be overlooked by some practitioners. During the holiday season in past years medical men have experienced the reality of the risk and have been subjected to the odium and the inconvenience of censure at inquests as well as of being brought before the General Medical Council with the chance of being found guilty of infamous conduct in a professional respect, and of having their names erased from the Register. There is too much reason to think that the warning conveyed by these facts seems to have been, like so many other warnings in the matter of unqualified assistants, overlooked. In one case recently investigated by Dr. WYNN WESTCOTT and a jury an unqualified assistant, in the absence of the principal, was sent to a serious case by the qualified assistant. The excuse of the qualified assistant was that he could not be in two places at once, and that "half a loaf" (an apt name for an unqualified assistant) was better than no bread. In the end the qualified assistant was censured and the coroner was asked by the jury to forward a report of the proceedings to the principal "and to the General Medical Council so that they could take what steps they thought necessary in the matter." It is not for us, of course, under these circumstances, to pass any judgment on the facts of this particular case. But we should fail in our duty if we did not give them prominent notice as a lesson to others. A holiday should be no holiday to a medical man if made under conditions of such risk as we have described, for his apprehensions of mischief should prevent him from enjoying himself. The instructions and arrangements of a principal on leaving town should be such as to make sure that his patients can be attended by a qualified representative. It is only by such arrangements that he can enjoy that sense of irresponsibility which, after all, is the very essence of a holiday. It may be said that the remuneration of medical practice in poorer neighbourhoods will not always admit of a principal keeping qualified assistants or paying qualified locum tenents. Then the public must understand that if they are to have fully equipped medical men they must pay for the service they receive. But we can scarcely think it possible that in any part of London a medical man would not be able to make arrangements with his medical neighbours so that they might share his responsibilities in his absence. The cultivation of neighbourly amenities is not only a duty but an advantage, and one at no time more obvious than in holiday seasons.

Annotations.

"Ne quid nimis."

COUNTRY HOUSE DRAINAGE.

THE problem for solution in a letter signed "South Dublin" which will be found on p. 846, is one of perplexity to most responsible dwellers in rural districts. The extremely unsatisfactory provision for the disposal of the house drainage described in our correspondent's letter is shared by many thousands throughout the country. The great importance of the question induced us recently to issue a Commission upon the subject of water-supply and the disposal of sewage in rural districts, the two questions being so intimately connected. The result of this inquiry will shortly be published and will afford more complete information than can be given in an annotation. Soak-away cesspools, such as are described by "South Dublin" are not only objectionable but must constitute a source of grave danger to the springs from which the water-supply is derived. The sewage, escaping as it does under pressure below the surface of the ground, depends entirely upon mechanical filtration through the soil

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for its purification, and in a limestone district will often travel for miles through fissures without undergoing any material improvement. Bacterial life, the mainstay upon which we depend for the breaking up of organic into harmless inorganic substances, scarcely exists 12 in. below the surface of the ground, and can therefore exercise no influence upon matter escaping below this point. The contamination of the rain-water by first discharging it into the cesspool and afterwards having to disinfect it seems a somewhat useless mode of procedure. This should be made to go directly into the ditch mentioned by our correspondent. Disinfectants are at best but a poor substitute for the process of disintegration provided by nature through the means of bacteria, the existence of which process recent research has revealed. Experiments have proved that secondary decomposition invariably takes place in a short time after using disinfectants; they do not prevent but only delay a natural process. If used, quicklime is perhaps the best and cheapest for this purpose, and in this case it should be thrown into the ditch. The principle which would appear to provide at once the simplest and the most effective method of dealing with domestic sewage where water carriage is adopted, is one which was first practised by Mr. J. Scott Moncrieff in his microbe cultivating tank. This consists of passing raw sewage through a brick channel filled with round stones upon the surface of which various bacteria of a non-pathogenic character always present in excreta rapidly multiply. They convert the solid organic constituents into a liquid form. This view is confirmed by the experiments carried out a short time back by Mr. Dibdin (when chemist to the London County Council). This gentleman passed large quantities of raw sewage slowly through a pit filled with various materials, such as coke, burnt ballast, small stones, &c. He found that a comparatively clear effluent was obtainable with either material, provided that the pit or filter had at least one week's rest in five. He found the coke perhaps the least desirable. For such a case as that described by "South Dublin," in place of the existing cesspool two channels or filters would be required, formed side by side. They should be six or eight feet long by three feet wide and cemented internally to prevent the escape of the liquid sewage. These should be filled to a depth of about two feet with stone or pieces of burnt ballast measuring, say, about two inches over each piece. The effluent should be made to flow out at the level of the top of the stones, and provision must be made for running off the liquid from each filter once every month, the incoming stream being diverted into the neighbouring filter, for which purpose some simple provision must be made. The effluent can then be allowed to pass into the ditch without any annoyance being caused. It is better to fill the filters above the stones to the level of the ground with washed gravel. At periods varying from six to twelve months the stones must be taken out and laid at the side of the filter so as to be exposed to the air, but they must not be washed, and any accumulated sludge should be removed from the bottom of the filter. This last had better be buried at once in the ground. Mr. Scott Moncrieff's tank provides the most satisfactory conditions for the conduct of the foregoing arrangement, but how far the application of the principle is covered by his patent rights is a detail.

THE HURRICANE IN THE WEST INDIES.

THE recent hurricane in the West Indies, which affected principally the group known as the Lesser Antilles, has worked great havoc. The islands which have suffered most are Barbadoes, Santa Lucia, and St. Vincent. The governor of Barbadoes has telegraphed home that 50,000 persons are homeless, and he most earnestly entreats financial help as in its present financial condition the colony is quite unable to bear the strain. Up to Sept. 19th 83 deaths had been reported. The Administrator of St. Vincent sends the following report: "Speaking generally, about three-quarters of the population, 41,000, are shelterless, without food, and crowding into the populous centres, which have no accommodation for their own inhabitants, much less for the hundreds of others who are coming in. From Argyle to Kingstown on the windward side there is not a single works or estate house standing. From Buccament to Kingstown on the leeward side everything is destroyed. Kingstown has hardly a house uninjured, and most of them are in ruins; two vessels are ashore, two have sunk, and the fate of others is unknown. It is unnecessary after this to say that almost all the labourers' houses are lying flat. There are at least fifty deaths that are known of the people that are flocking into Kingstown from all the country round for shelter and food, which I am endeavouring to supply for the moment until the weather clears and we can take the damage in detail. So far I have no news of the country beyond Argyle to windward or beyond Buccament to leeward, but I fear that the disaster there cannot have been less than in the southern part of the island. Reports from windward report everything as far as Grand Sable a wreck; that there are two large ships and one small one ashore on the windward coast, and the manager of Sans Souci, Mr. Hillocks, has been killed. From leeward everything is a wreck with much loss of life; in Barrouallie everything levelled to the ground except three buildings; Château Belair reported not to have suffered so heavily, but no reliable information yet." The Governor is borrowing necessary funds to provide relief. From Santa Lucia the accounts are as follows: "Tremendous rain with thunder and incessant lightning all Sunday (Sept. 11th) night. The following information received to-day from coast: 'Immense landslips at Soufrière; five deaths; ten houses and two bridges washed away. A tidal wave did much damage at Choiseul; 7 deaths occurred from landslips. Cocoa estates have suffered immense damage and many are quite ruined. No news from westward; roads impassable; all telephone lines down. Steamer *Deramore* returned to the port last evening with three men rescued off this island from waterlogged schooner *Ocean King* of Saint Vincent.'" Food is running very short in St. Vincent and a steamer has been sent from Trinidad with supplies.

SHOULD PREGNANT WOMEN WORK?

IN a paper in the *Annales de Gynécologie* for August, 1898, Professor Pinard continues his observations with regard to the influence of rest on the part of the mother during pregnancy upon the development of the fœtus. In a previous paper he had shown by observations upon 1000 infants, 500 born of mothers who had had to work up to the end of their pregnancy and 500 born of mothers who had been able to rest for varying periods not longer than ten days before their confinement, that there was a marked difference in weight in favour of the children of the latter class. In further confirmation of his views he quotes from a table drawn up by Dr. Bochimont, based upon 4445 cases showing the average weight of the children of women who had been compelled to work during the whole of their pregnancy and of those who had been able to rest for periods of two, three, or more months. From the results set out in the table he comes to the conclusion that the average weight of the child of a woman who is able to rest for the last two or three months of her pregnancy is greater by at least 300 grammes than that of the child whose mother is compelled to work up to the date of her confinement. The explanation of this difference appears

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to be the fact that the duration of pregnancy in the former class is more frequently normal, while in the latter it is often prematurely interrupted. The more frequent occurrence of premature confinements amongst the workers he attributes to a tendency to premature expulsion of the ovum produced by a greater descent of the uterus into the pelvis. The truth of this assertion is to some extent confirmed by the observations of Dr. La Torre upon the development of the fœtus in women with contracted pelves. Dr. La Torre's conclusions are that premature confinements are more common in women with normal pelves than in women with contracted pelves and that the products of conception attain the same degree of development in the former as in the latter class. Professor Pinard from his experience goes further than this and holds that the average weight of the children of women with contracted pelves is greater than the average weight of the children of women with normal pelves. The condition of a woman with a contracted pelvis he regards as comparable to that of a woman who is able to rest during the last few months of her pregnancy, in that the child is lying mainly in the abdominal cavity and to a less extent than usual in the true pelvis. In the case of a woman, on the other hand, who has to work standing or sitting the tendency is for the child to lie low in the pelvis and as a result of this premature delivery not uncommonly occurs. Many factors no doubt enter into the question of the development of the child, and it is asserted by some writers that the physique of the mother herself must largely determine the size of her child. The fœtus *in utero*, however, has been well termed a true parasite, and, as Professor Pinard points out, cases of contracted pelves in which the mother is often mal-developed and of small stature seem to show that the development of the mother has but little influence, since in these cases the children show no corresponding want of development, but on the contrary are often above the average size. In conclusion, he cordially agrees with Dr. Bochimont's recommendation that "from the point of view of humanity, from the point of view of the increase of the population, from the point of view of the evolution of the French race it is necessary that the public authorities should intervene to safeguard the pregnant woman during the last three months of her pregnancy and the fœtus during the last three months of its intra-uterine life." Such paternal intervention is hardly likely to be ever necessary or called for in this country, but from a consideration of this paper the interesting question arises, What is the best mode of life for a woman to pursue during the last three months of her pregnancy? Should she be allowed to work or to take exercise, or is she best kept at rest as much as possible? A compromise must no doubt be effected between these two extremes, and while the interests of the mother will be best served by a moderate amount of exercise and a minimum amount of work the development of the child and the avoidance of a premature confinement would appear to be most favoured by a maximum amount of rest.

A CENTRAL BACTERIOLOGICAL LABORATORY FOR LONDON.

A CORRESPONDENT writes: A short time ago the London County Council addressed a communication to each of the vestries and district boards throughout the metropolis asking them whether they would be in favour of the Council applying for Parliamentary powers to establish a bacteriological laboratory. The idea is to appoint an expert or experts in connexion with the projected institution, or otherwise to make arrangements whereby medical officers of health and medical practitioners in London can obtain at the expense of the county the examination by a competent bacteriologist of material from suspected cases of infectious disease, with a view to aiding in the diagnosis. Owing to the summer vacation of the various local authorities the proposition has not yet been fully considered by the majority, but as far as those are concerned who have paid attention to the question the scheme has met with unanimous approval. Among those authorities who have already pronounced in favour of the project may be mentioned Bermondsey, Shoreditch and St. Pancras. In the case of Shoreditch the Health Committee of the vestry point to the laboratory established by the City of New York some five years ago in connexion with a scheme for general bacteriological examination of cases of diphtheria and state that it has been received by the medical profession of that city with almost unanimous approval. The Shoreditch committee mention further that several towns in the provinces and some of the London sanitary authorities appear to have also made arrangements whereby medical practitioners can send pathological material to experts for bacteriological examination. Believing that it would be desirable in order to secure uniformity and economy that such provision should be made, the Shoreditch vestry has just informed the London County Council of its advocacy of such a laboratory. In St. Pancras the vestry has already made some progress in the direction indicated, since from a report just submitted to the Health Committee by Dr. John F. J. Sykes, medical officer of health, it appears that the vestry early last year sanctioned the examination of pathological material in doubtful cases of diphtheria and typhoid fever, the examinations being made when necessary and when considered essential to the proper notification and prevention of the spread of the disease to which they apply. Two questions have to be considered: (1) whether it is more desirable to carry on the work locally or to centralise it, and (2) if centralised, which is the best method of centralisation. In this connexion the Health Committee of the St. Pancras Vestry states that the systems have been organised by the several sanitary authorities in conjunction either with the British Institute of Preventive Medicine, the Clinical Research Association, or the bacteriologists of the large London hospitals. At the same time the small hospital laboratory at each of the larger infectious diseases hospitals of the Metropolitan Asylums Board is utilised for the purpose of examinations of this nature. Taking all the points into consideration, the St. Pancras vestry has come to the conclusion that a central bacteriological laboratory should be established and has expressed the opinion that such an institution could be provided by the Metropolitan Asylums Board, under the latter's Parliamentary powers, in the new premises now being built on the Victoria Embankment. A letter to this effect has recently been addressed to the London County Council. As the London County Council does not meet until next month and as the vestries and district boards are only now beginning to resume their proceedings, some little time will elapse before all the replies are in the possession of the Council. As these will not require much consideration, it is possible that the Public Health Committee may be in a position to submit to the Council a recommendation on the subject early in November next.

POISONOUS SHRIMP PASTE.

THE indiscriminate way in which the sea water bordering our coasts is sometimes polluted is sufficient in many instances to account for the symptoms of poisoning now and again occurring after the consumption of fish. In the case of shell-fish which are eaten without being cooked the symptom may be very possibly due to the action of micro-organisms. In the case, however, of poisoning by cooked fish no such explanation is admissible. It is difficult, therefore, to account for the number of cases of acute poisoning which occurred at St. Anne's-on-Sea, near Blackpool, a week or so ago. Shrimps in this case were the *fons*

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et origo mali. The shrimps were potted and had been cleaned and cooked in the usual manner and converted into a paste with the aid of butter. The symptoms were precisely those of irritant poisoning—diarrhœa, vomiting, and severe pain, especially in the bowels, being very marked. Some forty people were thus affected, but happily medical advice was soon sought and no fatal result was recorded. It would be interesting to know whether an analysis of the shrimp paste was made and if so whether it threw any light upon the occurrence. Possibly the shrimps may have assimilated a mineral poison, notable quantities of copper, for example, having been found in certain shell-fish. It would seem more probable, however, that the poison was organic in nature—some obscure product of decomposition consequent upon the prevalent excessive heat. In THE LANCET of Sept. 10th we pointed out the great number of cases of poisoning which occurred within a few days and which were due to some mysterious changes taking place in composition through prolonged exposure to a temperature approaching blood-heat, the most favourable point for the fostering and growth of micro-organisms and consequently their poisonous excreta. In the absence of further evidence it is probable that the shrimp paste, especially as it was fairly fresh, had undergone similar changes.

THE APPLICATION OF STEAM TO THE INTERIOR OF THE UTERUS.

DURING the four years which have elapsed since Snegirjeff first proposed the use of superheated steam for the arrest of hæmorrhage a good deal has been written upon the employment of this agent in the treatment of bleeding from the interior of the uterus. Amongst others, Pincus of Dantzig has used this mode of treatment with very encouraging results. He has perfected two methods of carrying it out which he terms respectively atmocausis and zestocausis. In the first the steam is applied directly to the interior of the uterus by means of a double-channelled intra-uterine catheter (atmocautery) provided with fenestræ in both tubes; in the second the steam is employed to heat the outer tube, which is unfenestrated and which then acts as a cautery (zestocautery), and can be applied to any part of the uterus which it may be desired to treat. The intra-uterine application of steam is not without its dangers, and the fact that the result aimed at in certain cases is total obliteration of the uterine cavity shows what it is capable of effecting and at the same time what disastrous results may follow if it be not carefully used. Two cases of unintentional obliteration of the uterus have been recorded, one by Baruch where the method was employed to arrest secondary post-partum hæmorrhage, and the other by Otto von Weiss where in a young girl, aged nineteen years, steam at 100° C. was applied for three-quarters of a minute to the interior of the uterus for the arrest of profuse menorrhagia. The duration of the action should be from ten to thirty seconds. If total obliteration of the cavity be desired it must be continued for from two to three minutes. The steam generated in a vessel furnished with a safety valve is used at from 100° C. to 115° C. Preliminary dilatation of the cervix is necessary in all cases, and if the action is to be limited to the interior of the body of the uterus gauze must be bound round that portion of the tube which will lie in the cervical canal. The vagina is protected from burning by a short tubular wooden speculum. The applications should not be repeated oftener than once a month, that amount of time being required to regenerate the mucous membrane. The period of time which elapses before the destroyed mucous membrane separates is an indication of the depth to which the cauterisation has extended; if it be merely superficial the interval is usually from six to ten days. The method is recommended for all forms of endometritis, subinvolution of the uterus, for disinfection of the uterine cavity, in cases of inoperable carcinoma of the body, in climacteric hæmorrhages, and in senile catarrh. In the two latter instances it may be used to produce total obliteration of the cavity of the uterus, and it is suggested that this may replace in some cases total extirpation of that organ. It is contra-indicated in cases of suspected malignancy, in affections of the appendages, and in cases of markedly rigid cervix (Pincus). Pitha records the results of 46 cases treated in Pawlik's clinic. 28 of the cases suffering from hæmorrhagic endometritis all recovered. In 10 cases of hæmorrhage following miscarriage decidual remains were first removed by the curette before applying the steam. These also recovered. The danger of the occurrence of unintentional obliteration of the uterine cavity appears to be greater after the application of steam than after curettage, but it is possible that such a result may ensure a more perfect recovery in certain cases such as those indicated by Pincus—viz., uncontrollable climacteric hæmorrhages and profuse senile catarrh. In all cases where intentional obliteration is carried out protection of the cervix is necessary in order to prevent closure of the cervical canal occurring before that of the body of the uterus. In some cases the use of steam would appear to be preferable to the use of the curette, as, for example, in cases of submucous and interstitial fibroids, where the operation of curettage may result in damage to the capsule of some of the tumours followed by sloughing. The reckless employment of such a powerful agent as steam may, however, be productive of much harm, and it is necessary, therefore, to utter a caution against its use except in carefully selected cases, especially where curettage has failed, and with a due observance of all the precautions necessary for the successful carrying out of the treatment. Our Berlin letter contains, it will be seen, an account of a paper on this subject by Professor Dührssen.

THE PRESS AND WATER ANALYSIS.

IT is idle to dispute the educational power of the press so long as it keeps its readers well and intelligently informed, but the lay papers now and again ill-advisedly attempt not only to record matters of a highly technical character, but also to serve up an interpretation of the same which may be very misleading and indeed serious. In an evening paper last week an analysis of a sample of the East London Company's water taken from a public standpipe was published and above the analysis and contents was printed a heading of a very sensational character, such as is calculated to inspire needless alarm and perhaps panic. We doubt whether the great bulk of newspaper readers understood one word of the analytical report, or if they did it would only be those sentences which would probably convey a wrong idea. The condition of things in regard to water-supply is quite serious enough without attempting to alarm the public with such statements as the following: "The sample of water was very impure and contained over two thousand microbes per cubic centimetre. Drinking such water might give rise to infectious or other diseases (typhoid fever, cholera, &c., are water-borne diseases). It is well known that cholera spreads more rapidly when the temperature is high and when the ground water is low. Consequently the present low condition of the company's water-supply is indicative of disease. It may be stated that the typhoid fever microbe can retain its vitality for a considerable period of time in water and it may multiply almost to any extent in that medium." Now these remarks are simply volunteered information, for this report says nothing of the existence of either the typhoid or the cholera bacillus. The object of the writer is clearly indicated in such sentences as, "It *may* multiply to any extent,"

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and "The present low condition of the company's water-supply is *indicative* of disease." We do not believe that the quality of the water-supply up to the present is open to serious condemnation, otherwise we should find evidence of it in the health returns and there is no indication of any general prejudicial effect having so far been produced by the scarcity of the supply. It must be borne in mind that in spite of the reduced volume of water and of the flow of rivers yet in summer there are very powerful purifying agencies at work and, as a matter of fact, the maximum of purity of the London supply is invariably attained in the summer. Sunshine, doubtless, is the most important factor in this connexion. We might point also to the condition of things which prevails in southern Europe, as in Spain, where, in spite of the absence of rain for months together and the existence of insanitary conditions in the streets, the effect upon the public health is hardly as commensurate as might be expected with these conditions. There is no doubt that the intense sunlight serves as a powerful bactericide and compensatory factor. Such reports as we have pointed out do not help to tide over the difficulty and distress of a water famine, but, on the contrary, may bring about incalculable and perfectly needless harm, followed perhaps by insensate and groundless panic.

THE PLAGUE IN SIND.

IN a paper which was read at a meeting of the Bombay Medical and Surgical Society last July, Surgeon-General Bainbridge, I.M.S., gives a detailed account of the epidemic of plague which occurred in Sind in 1896–97. The communication was based on the author's official report bearing date Oct. 25th, 1897, a document which he describes as "the earliest complete account by a medical man of any outbreak outside the city of Bombay," but he further adds that the views therein set forth are in the main confirmed by the information which has since been recorded both in Sind and elsewhere. The first case of plague in Sind was reported at Karachi on Dec. 10th, 1896, and the last on July 27th, 1897, the total recorded cases during the period having been 6439 with 5182 deaths, or 80·4 per cent. The way in which Karachi became infected was not traced, but the importation of the disease by sea from Bombay was clearly possible as there was considerable traffic between the two ports and the three-day transit by steamer was free from restrictions "except in the case of vessels which had had a case on board or which carried no doctor." However it may have been introduced the plague spread slowly throughout the province, following the movements of infected persons, a quiescent interval of about one month in each fresh focus being usually observed before the bursting forth of the local manifestation. "This leads to the inference," continues the writer of the paper, "that the bacilli do not infect until they have gained a certain degree of potency and that they require certain media for their development. How infection takes place," he proceeds to say, "cannot at present, so far as I am aware, be demonstrated with certainty. It is known, however, that the infection (*a*) will prevail in certain dwellings and amongst certain families, whilst others in the immediate vicinity will escape; (*b*) that the spread of plague is associated with, or favoured by, overcrowding, dirt, and other insanitary conditions; (*c*) that contact with, or contiguity to, persons suffering with plague will, under certain conditions not exactly known, result in infection—probably the duration of the required exposure is proportionate to the numbers of the required microbes and to the resisting power of the individual; (*d*) that possibly plague may be communicated by infected clothing and other articles." In the same connexion he further observes: "I am unable to avoid the conclusion that infection occurs by inhaling the microbes when in close proximity to the sufferer, or in any place the air of which contains them in certain numbers." It is true that people who live under good hygienic conditions—even in plague hospitals where microbes must be present in the air of the wards—habitually escape the disease, but that may be either because fresh air, light, and cleanliness impair the potency of the germs or else because people so circumstanced "possess a certain power of resistance to infection." Surgeon-General Bainbridge does not believe in cutaneous inoculation as a common mode of infection, and with regard to the influence on the disease of climate and season he observes: "There seems no reason to suppose that, given the present sanitary conditions, plague may not originate and, if uncontrolled, spread in India at any season of the year, though certain climatic conditions may be more favourable than others to its development." That rats play an active part in carrying the plague from one part of a town to another he considers "fairly certain," but there is no proof that these animals infect human beings directly. The matter requires further elucidation, and the possibility of the plague germs being disseminated by means of soil carried on shoes, sandals, or even on bare feet, is also a point which should be determined. As may be supposed, the question of prophylaxis is dealt with at considerable length. The success of preventive measures depended entirely upon "the thoroughness and intelligence with which they were carried out by the individual officials concerned," but wherever these essentials were forthcoming the results were most satisfactory. The author looks upon the inspection of passengers at railway stations as a futile means of repression, calculated to effect a minimum of good in return for a maximum of trouble and expense. His sheet anchor is detention, with segregation of all arrivals from infected places, and, since the disease "almost invariably declares itself by symptoms within the fourth or fifth day from infection," the duration of the quarantine need never exceed ten days. The best way of dealing with localised outbreaks is by prompt evacuation. Referring to the Nussurpuri Camp, Surgeon-General Bainbridge is able to assert that "the mere removal of these people to a healthy place and wholesome environments sufficed, with imperfect measures of sanitary police, to stay an epidemic which would almost certainly have been extremely severe had they remained in their very unhealthy and overcrowded houses."

STREET HAWKING BY CHILDREN.

AT the meeting of the Manchester City Council on Sept. 7th a report from the Watch Committee dealing with the question of street trading or hawking by children and providing in the interests of the children for its supervision and control was unanimously adopted. There is plenty of evidence as to the demoralising tendency of this practice. The chief constable said that "street hawking in the centre of the city has a great tendency to lead boys to become thieves, loafers, and disorderly persons," and that the girls were led into degraded habits and eventually to utter ruin. "In the case of twenty-one girls, previously hawkers, all had taken to an evil life, and eight of them had become thieves in addition." Most of the children are the victims of their parents' vices. The chief constable reported that "in thirty-seven homes where boy hawkers lived in only one were sober parents found, in the remaining thirty-six either one was a drunkard or both." Powers are sought like those already possessed by Liverpool by which licences can be granted so that some effectual supervision may be exercised over those who obtain them and those found trading without licences can be properly dealt with and cared for. The provisions sought are powers to take a child trading without a licence or contravening its

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regulations into custody without a warrant and to convey such child to a place of safety till he or she can be brought before a magistrate, who, if he is satisfied that the child has no proper home or that the parents are not fit custodians, will be able to commit such child in charge to some fit relative or other person named by the court until the attainment of the age of sixteen years or some shorter period, or to send the child to an industrial school or to suitable lodgings provided by the corporation. In no case, however, should the child even for the briefest detention be taken to a police-station or to a workhouse. Most probably arrangements can be made with the officers of the "Prevention of Cruelty Homes," or with that admirable institution the Boys' and Girls' Refuge in Strangeways. Almost anything would be better than the present state of things, which probably exists in London as well as Manchester. The nuisance caused by newspaper and race-card hawkers is intolerable. If licences were made obligatory they would get rid of the idle and vicious while the respectable hawkers would not be interfered with.

THE PATHOLOGY OF HERPES ZOSTER: "ABERRANT VESICLES."

HERPES ZOSTER should not be regarded as a disease of the skin but as a manifestation of disease of the nervous system —localised neuritis—which affects usually the posterior root and ganglion of a spinal nerve. But what is the cause of this neuritis? The etiology of herpes zoster has long been a moot subject. The most satisfactory hypothesis seems to be Landouzy's—that it is of infectious origin. Its definite course, occasional epidemic prevalence, and the immunity conferred by one attack support this view. Moreover, it may occur in known infections—tuberculosis, pneumonia, and syphilis, and (very rarely, it is true) in other exanthemata. In the *Revue de Médecine*, 1891, Adenot published a case in which zona developed in the tract of the radial nerve during measles. In THE LANCET, Dec. 26th, 1896, Dr. Maurice Paul published a case in which an attack of typhoid fever was ushered in by an outbreak of herpes zoster in the segmental area of distribution of the twelfth dorsal nerve. The neuritis probably is a toxic effect, and its localisation doubtless results from a diminished power of resistance of the affected nerve. That a general intoxication can produce this localised effect is proved by cases of arsenical herpes zoster. But the neuritis does not necessarily affect the root and it is not necessarily of infectious origin. Peripheral neuritis of traumatic origin—for example, pressure of an aneurysm on a nerve trunk—may give rise to herpes zoster. The most characteristic feature of herpes zoster is the distribution of the lesions according to cutaneous nerves or nerve roots. At a recent meeting of the Société Médicale des Hôpitaux M. Jeanselme and M. Leredde contributed a paper entitled "The Aberrant Vesicles of Zona." They state that in a number of cases careful examination shows disseminated over the entire cutaneous surface isolated vesicles quite similar to those of the zoster eruption. In 1888 M. Boulland published a case from the practice of M. Brissaud, and in 1893 M. Tenneson carefully studied the subject and stated that if the entire skin of patients affected with typical herpes zoster were examined every day these "aberrant vesicles" would be found nine times out of ten distributed irregularly at great distances from one another on all parts of the body. This statement by a well-known dermatologist is, to say the least, startling, for these vesicles have never been observed, as far as we know, in this country. Though described as similar to the ordinary zona vesicles they do not appear to be usually accompanied by pain, as they remain unnoticed if not looked for. At the next meeting of the society Dr. Giraudeau read notes of two other cases. A man had well-marked lumbo-femoral zona accompanied by malaise, anorexia, and fever. As the zona eruption was completing its development there appeared about thirty lesions over the whole body. Some were small papules, others were excoriated papules, and others were vesicles; some were isolated, and others were united in groups of two or three. There were three or four on the scalp, three or four on the face, ten on the back, and two or three on each upper limb. The erratic eruption was the seat of pains localised to the papules or vesicles but not propagated in the course of the nerves. M. Jeanselme and M. Leredde think that these aberrant vesicles bear out M. Landouzy's hypothesis. They certainly are evidence of the existence of a general and not merely local malady.

OFFICIAL INDEX TO THE REPORT OF THE VACCINATION COMMISSION.

THOSE who are acquainted with the ponderous blue-books containing the minutes of evidence, reports, and appendices which form the standing memorial of the seven years' labour of the Royal Commission on Vaccination cannot fail to have appreciated the excellent and compendious indexes which are affixed to the first four volumes of evidence and to have experienced keen disappointment at the absence of any such guide to the contents of the fifth volume and to the Final Report. This defect has been partially and somewhat tardily remedied by the issue of an index (obtainable from Messrs. Eyre and Spottiswoode, price 9*d.*) to the Final Report, compiled in the Medical Department of the Local Government Board. The index is strictly confined to the Report itself and does not include the lengthy Statement of the Dissentient Commissioners, whilst the bulky fifth volume of evidence still lacks this essential complement. However, students of the subject will be thankful to have their labours lightened by this instalment, which is admirably executed and embraces every one of the numerous points commented on in the Report. It shows, too, at a glance how wide was the field surveyed by the Commission and how thoroughly every subject material to the inquiry was handled by it.

SANITARY ADMINISTRATION IN PORTSMOUTH.

THE borough of Portsmouth had in the middle of 1897 an estimated population of some 182,585, and this fact, together with the importance of the town in other respects, is such as to justify its setting an example to smaller aggregations of people in the south of England as to sanitary equipment and administration. Unfortunately, this is apparently not the view taken by the town council of its duty, and some of the conditions revealed by Dr. A. M. Fraser in his last annual report are by no means "model." The isolation accommodation of the borough is presumably very deficient, and considerable difficulty has been experienced in preventing overcrowding of the wards; indeed, Dr. Frase reports that the accommodation is so small that it is often impossible to allow the proper amount of air space per bed. In a word the "accommodation is quite inadequate to the needs of the borough." We are glad to see that the medical superintendent refuses to allow overcrowding of the wards in order to admit more patients. Sanitary authorities have certainly no right to use moral suasion to bring patients to hospital and then to jeopardise their chance of recovery by overcrowding them. There is, too, a lack of "observation wards" at the hospital, and those who are familiar with the administration of fever hospitals know what unnecessary risks such absence entails. In the matter of house drainage and buildings by-laws, too, the sanitary authority seems on the horns of a dilemma. In consequence of a representation made recently to the town council by Dr. Fraser as to the absurd practice by which the Health Department was never consulted as to the drainage of a new house,

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although that department was responsible for the drainage of every inhabited house, it was apparently resolved to bring into operation Section 24 of the Portsmouth Corporation Act, which enacts that "No new house shall be occupied until certified by the medical officer of health and borough engineer to be in every respect fit for occupation." The sanitary authority was, however, not yet out of the wood, for the borough engineer declined to certify that any house built under the by-laws then in force in the borough was necessarily fit for occupation! It would be certainly difficult, as Dr. Fraser observes, to bring forward a stronger argument for amending the old and obsolete by-laws of 1869 than that a house built in accordance with them should "be actually unfit to live in." We cordially endorse Dr. Fraser's wish that the end of 1898 may see this discreditable state of affairs remedied.

SAD MISADVENTURE WITH STRYCHNIA.

A MELANCHOLY incident occurred on Sept. 15th at the small village of Great Budworth, between Northwich and Warrington, in Cheshire. Dr. Gilbert Love, who is in practice there, had gone for a holiday, leaving Dr. W. Howard Clark as his locum tenent, and on the date mentioned this gentleman, who had been in the village about a fortnight, walked from Northwich, a distance of four miles. Arriving home much fatigued, and also suffering from the unwonted heat of the weather, he went into the surgery and afterwards sat down to dinner with Dr. Love's sister-in-law, who was in charge of the house, but before taking anything he complained of feeling cramp all over his body, became unconscious, and died in a few minutes. On the surgery being entered a bottle of strychnine was found on the table, together with a medicine bottle in which was the residue of a draught containing strychnine, gentian, and ammonia. At the inquest, which was held on Sept. 17th, a medical friend of the deceased stated that he had seen him take a similar mixture as a pick-me-up and the evidence showed that between half a grain and three-quarters of a grain of strychnine was found in the stomach. Letters were read in court proving that not long before his death the deceased was in good health and spirits. The jury returned a verdict of "Death from misadventure due to the taking of an overdose of strychnine." Much sympathy will be felt for the friends of Dr. Clark who was twenty-six years of age and graduated as M.B. at Aberdeen University in 1897. The case is an impressive reminder of the need for care in the dispensing of poisons.

THE SALIVARY DIGESTION OF STARCH.

THE digestion of starch is a process which is common to man and all herbivora, for starch is widely distributed in the tissues of plants and constitutes one of their most important constituents, second only to protoplasm and chlorophyll. It is composed of granules, varying considerably in size, from the large, concentrically laminated, oval bodies seen in "tous les mois" and in potatoes, to the minute angular granules in rice. Starch is insoluble in water and consequently to enable it to be absorbed after its entrance into the alimentary canal it is necessary that it should undergo some chemical change. It has long been known that the change in question is its conversion into sugar, which is accomplished in the first place by the ptyalin or diastatic ferment contained in the saliva and subsequently by the action of ferments having a similar action contained in the pancreatic and intestinal juices. The effect of the ferments is the addition of a molecule of water to the starch molecule, by which it is converted from an insoluble substance into a soluble sugar. Dr. Aitchison Robertson has recently undertaken a series of researches on the process of amylolysis by ptyalin in mixed diets which has not hitherto been carefully studied. His results are of considerable interest, since they have a direct bearing on the selection of a proper diet for invalids and infants. There are not a few persons who suffer from amylaceous dyspepsia, and to aid such patients in their digestion of the starches many forms of diastase have been recommended, such as malt, maltine, malt extracts, and taka-diastase, but there are objections to the use of these agents since they interfere with the digestion of the proteids and have a tendency to set free rapidly a large quantity of sugar in the stomach. Dr. Robertson commenced his researches by endeavouring to ascertain the quantity of saliva which he secreted with different articles of diet by weighing them, masticating them, and then instead of swallowing them ejecting and re-weighing each bolus. He found that taking 6 oz. of porridge for breakfast with milk leads to only a small salivary secretion, not amounting to more than 3 or 4 grammes. After eating the porridge, bread, butter, and cold meat to the amount of 5¼ oz. were chewed, and it was found on re-weighing that about 50 grammes of saliva had been secreted. In the interval between breakfast and dinner the quantity of saliva secreted during four and a half hours amounted to from 50 to 60 grammes. During dinner, consisting of 7½ oz. of meat, potatoes, and rice, followed by milk pudding, from 20 to 30 grammes of saliva were secreted. In the interval between dinner and tea there were from 35 to 55 grammes. At tea, which consisted of 2¾ oz. of bread and butter, from 47 to 53 grammes of saliva were added. Between tea and supper from 60 to 70 grammes. Supper consisted of 2¼ oz. of plain bread and butter and 5 grammes of cheese, leading to the secretion of from 40 to 45 grammes of saliva. Between supper and bedtime from 30 to 40 grammes were secreted. The total amount per diem was consequently 400 grammes. He found that rinsing out the mouth with tepid water greatly promotes the flow of saliva, hence tea, though it contains tannin, rarely causes amylaceous dyspepsia, the excess of ptyalin counteracting the action of the tannin. Brandy, whisky, and beer are sialogogues, as also are sweets. Mechanical irritation of the buccal mucous membrane and movement of the jaws as in speaking cause an increase of saliva. Dr. Robertson found that there were considerable daily variations. He made many experiments, for the details of which reference must be made to the original paper in the *Journal of Anatomy and Physiology* (vol. xxxii., p. 615), on the effects of saliva on mixtures of starch with different food constituents and beverages, which is, of course, quite different from the quantity of saliva secreted. Amongst other conclusions he satisfied himself that porridge and milk forms a more digestible compound as far as amylolysis by saliva is concerned than other combinations of oatmeal; that the more broken-down and moist the starch particles are the more rapid and extensive is the amylolysis. Bread in a light and spongy condition is more rapidly acted upon by saliva than when less spongy, though the ultimate digestion is not more complete. Milk has a retarding influence on the salivary digestion of starch in bread, whilst broth has little or no effect. Tea and coffee have an inhibitory influence on amylolysis, but cocoa has little or none. Beer promotes the salivary digestion of starch; alcohols, speaking generally, retard it even in dilute solution, wines appearing to have this influence chiefly owing to their acidity.

THE ENNISCORTHY UNION.

AT the recent Congress of the Royal Institute of Public Health held in Dublin Mr. Thomas Kelly of Enniscorthy read a paper in which he made some reflection upon the pauper nurses employed in the Enniscorthy Workhouse. The

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matter came up at a meeting of the Enniscorthy guardians on Sept. 8th and Mr. Kelly was called upon to apologise. This apparently he has not done. Now we know nothing personally of Enniscorthy, still it must be allowed that scandals in connexion with the nursing of paupers by paupers undoubtedly do exist in Ireland and for the matter of that in England and Scotland too. Mr. Kelly was quite right to point them out. Possibly he described them in rather more florid language than the circumstances would warrant, but on this point it is impossible for us to decide. The chairman of the meeting (Mr. H. H. O'Neill) is reported as saying :—

I have no objection to see medical officers paid well if there was a uniform fee or tax, but they get everything they ask. This should no longer exist. The people are getting unfettered, a new era is dawning, liberty is approaching, and we will no longer tolerate in the future what we have tolerated in the past.

If medical officers in Ireland get everything they ask for it is more than they do in England.

THE ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

IN drawing attention last week to the formation of a society in the county of Durham having for its object the dissemination of knowledge concerning tuberculous diseases and their prophylaxis we did not perhaps do full justice to the association founded in London this summer, and of which the offices are established at 20, Hanover-square, W. We understand that this association has already enrolled a large number of members, and that steps are being taken to make its objects more widely known by means of a public meeting to be held probably in the course of next month. We have pleasure in publishing the annexed statement of the senior association's objects and views, which clearly shows that the organisation of this association may well claim priority in this laudable enterprise :—

1. OBJECT.—The prevention of tuberculosis.
2. MEMBERSHIP.—The Association consists of ordinary and of life members. The subscription of ordinary members is 5s. annually. Life members give a donation of 5 guineas.
3. METHODS.—I. The education of public opinion and the stimulation of individual initiative by means of—
(a) A central bureau for the collection and distribution of information as to modes of diffusion of tuberculosis and measures of prevention.
(b) The circulation of pamphlets and leaflets setting forth in plain language the results of scientific investigation of the above points.
(c) Public lectures by men approved by the council; addresses at congresses and other public gatherings.
(d) Coöperation with other societies having for their object the promotion of public health.
(e) The coöperation of the public press.
(f) The holding of periodical congresses and the issue of an annual report.
(g) The promotion of the establishment on a self-supporting basis of open-air sanatoria for tuberculous patients.
II. The influencing of Parliament, county councils, boards of guardians, and other public authorities on matters relating to the prevention of tuberculosis.

THE WATER-SUPPLY OF MELBOURNE.

IN a report on the condition of the drinking-water and the necessity for having the waste-pipes from houses disconnected from the drains into which they lead Dr. D. Astley Gresswell, of the Board of Public Health, Victoria, gives an interesting sketch of his efforts to improve the quality of the public water-supply. In 1894 he drew the attention of the Board to the facts that almost throughout that colony the water provided for drinking purposes was directly derived from open catchments, that necessarily it contained a large quantity of organic matter, that in most instances it was open to very gross pollution, that with only rare exceptions it was supplied unfiltered, and that there was a close relationship between impure water and diseases such as diarrhœa, dysentery, typhoid fever, and hydatids. During the past seven years the Board has persistently brought under public notice the need for care as to the condition of the water used for drinking and has strongly recommended the boiling or effective filtration of all such water. Filtration on the premises of the consumers is being more and more adopted, with a corresponding improvement in the quality of the water. This holds more particularly in connexion with the Railway Department, the Education Department, the Government offices, private schools, hotels, coffee palaces, restaurants, factories, and public buildings, while effective filters in large numbers have been affixed to service-pipes supplying private families. At the State School numbered 583, in Punt-road, Melbourne, Mr. W. H. Powell, the head teacher, some time ago, by means of voluntary subscriptions and the proceeds from a concert, had four large-sized Jeffery filters with a 350-gallon iron tank installed at a cost of about £12. Beetles in enormous numbers and snakes in large numbers, as well as rabbits and other animals pass into the conduits and reservoirs from the open catchments and dying give rise to much contamination of the water. Eels also are found in the pipes within the city; Dr. Gresswell has one in his office measuring 33 in. in length and 7 in. in girth. Another cause of pollution is the entrance of foul surface water from the streets into the mains through the fire-plugs. A small fish (Galaxias) has for years been found in large numbers in the mains of the Adelaide Waterworks, and has given rise to numerous complaints owing to blockage of service-pipes and putrefaction of the fish. The appendices to Dr. Gresswell's report include reports on an occurrence of typhoid fever by Dr. Thomas Gray, assistant medical inspector, and Dr. James Jamieson, officer of health of the city of Melbourne.

THE DANGERS OF ICE-MAKING.

THE awful disaster reported from Glasgow must be counted as one amongst the many dangers which a spell of hot weather may bring in its train. The demand for ice has risen by leaps and bounds, and doubtless the increased pressure upon the working capacity of a large freezing machine at an ice works in Glasgow was responsible to some extent for the explosion of the apparatus which ultimately killed three men and injured several others. The freezing plant was constructed on a well-known principle, ammonia being employed as the agent for producing cold by evaporation. In its simplest form the apparatus consists of an iron boiler into which a quantity of a saturated solution of ammonia is placed. On heating the liquid the ammonia gas is driven out of the solution and travels into a receiver where it liquefies under the pressure attained. The heat is then withdrawn and the boiler cooled, when the reverse process takes place. The water absorbs the ammonia, the evaporation of the liquid gas in the receiver produces intense cold and thus converts into ice the water which is placed in it. The process is continuous. Since a saturated solution of ammonia will contain from 600 to 700 times its volume of gas the effect of the bursting of a large machine may be to some extent imagined. In the disaster already referred to there was no fire at all, and the fire-engines which arrived on the scene soon after the explosion were powerless to act, and the crowd which had gathered could not approach the scene on account of the overpowering ammonia gas. It was a long time before a search could be made, but by means of drenching the premises with water and the use of respirators soaked in vinegar a search was at length made and the body of the unfortunate manager was recovered. We presume that the ammonia mothod affords certain advantages for the purpose, but carbonic acid gas may also be used in a similar way. In the case of explosion, however, the carbonic acid would not be so deadly and overpowering as ammonia gas. This fatal occurrence should emphasise the need of great care

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being taken with domestic freezing machines which do their work on the same principle—that is, the alternate expulsion and reabsorption of ammonia. We do not remember a case occurring before, so it may be assumed that the process is fairly safe but that owing to a structural defect or perhaps blocking of the pipes the unfortunate explosion took place.

THE OPENING OF LABORATORIES OF PHYSIOLOGY AND PATHOLOGY AT LIVERPOOL.

IN our issue of Sept. 17th we gave a list of some of those who are to be present at the opening of the new Thompson-Yates Laboratories of Physiology and Pathology, on Saturday, Oct. 8th, at Liverpool. Additional names are those of the Bishop of Liverpool, the Vice-Chancellor of the University of Cambridge, the Presidents of the Royal Colleges of Physicians and Surgeons of Edinburgh, and Sir William Turner. At three o'clock Lord Spencer, Chancellor of the Victoria University, will confer the degree of Doctor of Science upon Lord Lister in St. George's Hall, after which at half-past four the laboratories in University College will be formally opened and inspected. After the ceremony tea and coffee will be served at the College.

SECONDARY HÆMORRHAGE FOLLOWING THE REMOVAL OF POST-NASAL ADENOID VEGETATIONS.

IN the *Boston Medical and Surgical Journal*, May 19th, 1898, Dr. W. Preble writes on this very unusual complication. He removed vegetations from a girl aged eleven years. The bleeding was not severe. The operation was quite successful and nasal breathing was restored. But on the seventh day a sudden hæmorrhage occurred and the girl was carried into the house fainting. Under cold syringing the bleeding stopped. It recurred and was stopped by plugging the posterior nares. On the eighth day a sudden gush of blood came on and she died before assistance could be rendered. There was no history of hæmophilia. Dr. Preble has collected 21 cases of serious primary hæmorrhage after this operation (of which 4 proved fatal) and 5 cases of secondary hæmorrhage. Of the latter 3 of the patients were French and 2 were Danish. There does not appear to be any case of secondary hæmorrhage recorded in English literature.

THE TRAVELS OF PROFESSOR KOCH.

UNDER the title of "Reise-Berichte" Professor Koch has published[1] the text of the reports furnished by him from time to time during the eighteen months of his "roving commission" in Africa and India, where he was engaged in investigating the rinderpest, the plague, and malarial and other affections. They form an interesting volume in which the main lines of his inquiries and their results are described with his customary lucidity. Professor Koch was invited by the Cape Government to investigate the rinderpest which had invaded the colony from the districts north of the Zambesi. He arrived at Cape Town on Dec. 1st, 1896, accompanied by his assistant, Dr. Kohlstock. He established himself at Kimberley, in the vicinity of which the rinderpest was rife, and by the end of March, 1897, was well advanced in his laboratory work upon a method of protective inoculation for the disease. He was then requested by the German Government to proceed to Bombay to take charge of a scientific commission which had been despatched thither to investigate bubonic plague. Leaving his work on rinderpest immunisation — already practically complete — in the hands of Dr. Kohlstock and Dr. Turner, the former being subsequently replaced by Dr. Kolle, Professor Koch set out for Bombay. When he arrived on May 1st he found that the German Commission under Professor Gaffky had nearly finished their labours, and by the end of June the Commission returned to Germany. Professor Koch, however, had in accordance with instructions to proceed to German East Africa to investigate a disease resembling plague which had appeared there. Here, he says, he found a rich field for work, and whilst Dr. Zupitza proceeded inland to collect material on the malady in question he busied himself with studies on tropical malaria (which we propose to notice at greater length in a future issue), Texas fever, and the Tsetse or Surra disease of cattle. It was in February, 1898, that he received at Daressalam, where he had established himself, materia which enabled him to declare the cases seen by Dr. Zupitza to be true bubonic plague. His labours were now at an end and on May 20th he returned to Berlin. The reports now published must, he says, be considered for the most part as preliminary to more detailed accounts which he hopes to produce when occasion serves. We fear that the new commission he has received to study malaria may delay the appearance of these more extended writings, and therefore it is all the more satisfactory to have the present accounts of scientific work written at the time when the researches were in progress.

[1] Reise-Berichte über Rinderpest, Bubonenpest in Indien und Afrika, Tsetse oder Surrakrankheit, Texasfieber, Tropische Malaria, Schwarzwasserfieber. Von Robert Koch. Berlin: Verlag von Julius Springer. (Reports on Rinderpest, Bubonic Plague in India and Africa, Tsetse or Surra Disease, Texas Fever, Tropical Malaria, and Blackwater Fever. By Robert Koch. Berlin: Julius Springer.) 1898. Obtainable from F. Bauermeister, foreign bookseller, Glasgow. Price 2s. 9d.

NON-POISONOUS MATCHES.

ONE undoubted way of preventing phosphorus necrosis in match factories would be to eliminate altogether the yellow phosphorus in the manufacture of the match-head. The difficulty is, however, to find a substitute which, like the ordinary phosphorus match-head, will strike anywhere. The safety match will, of course, not do this, the means of producing ignition being the rubber on the box which contains non-poisonous or amorphous phosphorus. In other words, the safety-match tip contains the elements of combustion while the rubber contains the excitant. We are not prepared to admit that the entire adoption of this system would be a source of serious inconvenience to the public. However, several persons, prompted by the publication of the recent cases of phosphorus poisoning in certain match factories, have been seeking for a composition which will do away entirely with the use of poisonous phosphorus while at the same time it will strike anywhere. No quite new direction in the preparation of such a match appears to have been suggested. The published composition of one in particular is the following: chlorate of potash, whitening, plaster of Paris, ground glass, glue, and amorphous phosphorus. There is reason to believe that red or amorphous phosphorus is not poisonous, for a case is recorded in which a dog took as much as 7 oz. in twelve days and remained without showing any signs of being poisoned. The only novelty in the above composition appears to us to be the use of special diluents like whitening and plaster of Paris, which reduce the energy of the otherwise violent action between red phosphorus and chlorate of potash. These latter substances indeed form undiluted a very powerful and dangerous explosive. It is this mixture which is used in toy caps or the French *amorces*. By attenuating the mixture with an inert powder such as whitening it is probably rendered less active and therefore safe, while in the form of a dry match tip it is said to strike anywhere. Now that public opinion has been stirred in this matter it is probable that attention will be given to non-poisonous matches with the view of dispensing with the ordinary yellow phosphorus, the use of which involves unhealthy conditions to the operatives engaged in ordinary match-making. We have ceased

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to look upon the match in the light of a luxury as in the flint, steel and tinder days of our forefathers, but the new match must be satisfactory in all points before the public will take kindly to it.

THE MALARIA COMMISSION.

THE Commission for investigating the various questions associated with malaria which has been appointed by the Colonial Office and the Royal Society consists of the following members:—Dr. C. W. Daniels, of British Guiana; Dr. S. R. Christophers, of University College, Liverpool; and Dr. J. W. W. Stephens, John Lucas Walker Student in Pathology in the University of Cambridge. Dr. Christophers and Dr. Stephens will proceed almost immediately to Pavia to work in the laboratory of Professor Golgi and thence to Rome to work in Professor Cetti's laboratory. The Commission will eventually proceed to Africa, when its first work will in all probability be to determine the clinical varieties of malarial fevers occurring there.

LECTURES AND DEMONSTRATIONS FOR SANITARY OFFICERS AND STUDENTS.

A COURSE of lectures has been arranged by the Sanitary Institute for the special instruction of those desirous of obtaining knowledge of the duties of sanitary officers and of other persons desirous of obtaining a practical knowledge of sanitary requirements and regulations. The course will consist of seventeen lectures delivered at the Parkes Museum, Margaret-street, Regent-street, W., and will commence with a free introductory lecture on Oct. 17th. The lectures will be given at 8 P.M. every Monday, Wednesday, and Friday from Oct. 17th to Nov. 25th. The lecturers for October are Sir Douglas Galton, Dr. Louis Parkes, Dr. Herbert Manley, Dr. W. A. Bond, Professor A. Bostock Hill, Dr. J. F. J. Sykes, and Professor W. H. Corfield. Inspections and demonstrations have been arranged in connexion with the lectures, and will include visits to disinfecting stations, dairy premises, municipal depôts, artisans' dwellings, offensive trades, waterworks, common lodging-houses, sanitary works in progress, refuse and sewage disposal works. There will also be demonstrations of meat inspection and diseased meat. The museum of sanitary appliances and the library will be opened free to students attending the course. The fee for the course is £2 2*s*. Application should be made at once to Mr. E. White Wallis, secretary of the Institute, Margaret-street, W.

THE PUBLIC HEALTH ACT AND ENTERIC FEVER.

AT the meeting of the Sanitary Committee of the Louth Town Council, held on Sept. 8th, the sanitary inspector reported that on August 26th Mr. G. Briggs had been notified by Mr. G. Gresswell as suffering from enteric fever and that the said Mr. G. Briggs had on Sept. 3rd wilfully exposed himself while suffering from a dangerous and infectious disease without taking proper precautions against the spread of infection in certain streets of the town. It was resolved that proceedings should be taken under Section 126 of the Public Health Act of 1875 against Mr. Briggs. At a monthly meeting of the town council, held on Sept. 13th, this report of the committee was submitted for confirmation and a long discussion arose about the above-mentioned case. Dr. Best, a member of the town council, said that in his opinion it was dangerous to be in a railway compartment with a person suffering from typhoid fever. The medical officer of health said that Dr. Albert Gresswell had told him that there was no doubt about the diagnosis. On the other hand, the Mayor said that Mr. George Gresswell had written and said that there was no danger in the man being out and that Dr. Albert Gresswell had called upon him (the Mayor) and had said the same thing. Therefore he thought that if they prosecuted Mr. Briggs the magistrates would not convict. Eventually the matter was referred back to the committee. We should say that Mr. Briggs probably did a great deal more harm by going out to himself than to anyone else. For all that, a person going about whilst suffering from typhoid fever is undoubtedly a potential source of infection and it should be made plain that "exposure" in the sense of Section 126 of the Public Health Act of 1875 is illegal and should be punished. The danger, of course, of spreading infection is infinitely less in a case of typhoid fever than in scarlet fever or typhus fever, but it exists for all that.

HEALTH RESORTS AND INFECTIOUS DISEASE.

THE public of Great Britain, and doubtless to a greater degree the public of other countries, still betray an almost criminal slackness as to the sanitary conditions, equipment, and administration of the "health resorts" to which each recurring summer the holiday-makers betake themselves. Business men who, as members of their urban or rural district councils, have, or ought to have, sanitary matters constantly before them, give not a thought to the drainage, the water-supply, or the isolation accommodation of the "health resorts" to which at no small expense they send their wives and their children. Much less do they take the trouble to ascertain whether infectious diseases may be prevalent in the locality, or if, perchance, the previous occupants of the room or lodgings have suffered from such diseases. What a reform might be brought about in the sanitation of many of our so-called "health resorts" if, before selecting his annual camping-ground, the head of the family were to ask for certain information from the local medical officer of health. Even if this course did not commend itself to him he might, as Dr. Niven points out in his recent quarterly report on the health of Manchester, consult the Registrar-General's quarterly return for information as to the deaths from infectious disease in each of the principal watering-places of Great Britain, and thus avoid localities where these diseases have been recently prevalent. If parents will not take these very elementary and easy precautions they must be prepared at times to pay the penalty of their negligence.

THE VENTILATION AND WARMING OF DORMITORIES, WORKSHOPS, ETC.

AN important report to the Local Government Board has recently been issued in the form of a blue-book on this subject. The inquiry, which was obviously a practical one, was undertaken by Mr. W. N. Shaw, M.A., F.R.S., Lecturer in Experimental Physics in the University of Cambridge. The object of the inquiry was to ascertain whether, where improvements were found to be necessary, they could be carried out in such form that general principles might be laid down applying to the various requirements to which the guardians or managers to whom the schools belong might give effect with the assistance of their respective architects. The observations referred to dormitories, workshops, and other rooms in certain of the Metropolitan Poor-law schools. The appendices contain details of calculations and full particulars and notes as to dimensions, aspects, &c., of the rooms indicated. The report suggests not only the need of improvement and attention to provisions already made, but the possibility of applying better principles without any serious structural alterations. The recommendations in many instances are extremely simple; in other cases it is remarked that ordinary

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provisions, simple though they may be, are very often ignored. Mr. Shaw incidentally refers in the section on Infirmaries to our own inquiry into the plenum system of ventilation which is now in practice at the General Hospital, Birmingham.[1] Speaking of this system he says that it has had its failures and also its successes, but assuming that the building is under careful supervision by an architect and engineer of repute a very successful result would seem certain, "and it is probable that some form of the mechanical system will be extensively used in the future." The bulk of the report, however, relates more to the requirements and existing conditions of the metropolitan Poor-law schools than to buildings on the scale of a hospital or infirmary. New schemes of ventilation and warming can only be adequately applied to new buildings or buildings in course of construction, but Mr. Shaw's report contains a mass of material which should be a useful guide to many who have to contend with archaic buildings, and therefore with all sorts of structural obstacles in attempting to make any system of ventilation and warming satisfactory.

THE first annual dinner of the North-West London Clinical Society will take place on Thursday, Oct. 27th, at the Café Royal, Regent-street, at 7.30 P.M. The President, Mr. Victor Horsley, F.R.S., will take the chair and will give the annual address, on "The Rational Treatment of Goitre," at 6.30 P.M. at the same place.

AN interesting link with the past has been severed by the death last Saturday, at the great age of ninety-five years, of Mr. John Lettsom Elliot, the "father" of the Athenæum Club. He was the grandson of Dr. Lettsom, the founder of the Medical Society of London, and one of the original group of members of the Athenæum.

THE introductory lecture at the opening of the session of the Royal Veterinary College will be delivered by Professor Shave, F.R.C.V.S., on Monday, Oct. 3rd, at 1 P.M. The chair will be taken by Major-General Sir Henry Ewart, K.C.B.

SIR JOSEPH EWART, M.D. St. And., has declined the invitation of the Liberal party in Brighton to be their candidate for Parliament at the next election.

SOME EXPERIENCES OF AN AUSTRALIAN COUNTRY GENERAL PRACTITIONER.

BY LEONARD W. BICKLE, M.R.C.S. ENG., L.R.C.P. LOND., F.R.C.S. EDIN.

JUST after having completed arrangements to take up life in Adelaide, the capital of South Australia, after many years' experience as a country practitioner, I have jotted down short notes of some of the more important surgical cases which have been under my care. These notes will serve to show that successful surgical work can be undertaken in the country without the appliances of any hospital, but I am bound to admit that the anxiety and fatigue entailed is far beyond the remuneration obtainable. All the amputations (and four of them were in men over sixty-five years of age) were done with the simple assistance of one other medical man to give the anæsthetic and my groom as dresser. One cholecystotomy was performed single-handed with only the help of a village untrained nurse, and a cholecystectomy with the help of one qualified man and a fourth year's student in addition to my groom to hand the instruments. When home on a visit to the old country last year I was asked by more than one old friend to publish brief notes of some of my cases and it is on their suggestions that I have drawn up this paper. In three cases I had the helpful assistance of a trained nurse, for others the devoted attention of relatives and close friends, and in many others the assistance of the ordinary untrained nurses, who were willing to learn and then act.

Cholecystotomy twice, followed by cholecystectomy on the same patient; recovery.—The patient was a woman about thirty-eight years of age. She had had repeated attacks of gall and renal colic and constant shivering attacks with occasional jaundice and was said to have brought up matter and blood several times with great relief (the vomit was never seen by me). Occasionally a gallstone was felt in the flaccid state of an enlarged gall-bladder, it was not to be felt when the bladder was tense. After a time it was impossible to feel it. A large rounded tumour, reaching to below the level of the umbilicus, was found when next the patient was seen after some months' interval. This moved up and down with the respirations and was so tense as to suggest that it was solid. Her sufferings being now severe and constant an operation was consented to. On opening the abdomen a tense thin-walled cyst was seen. Enough thin opalescent fluid was drawn off to allow the walls to be sewn to the edges of the abdominal incision. The cyst was then freely opened and found to contain another tumour. This was incised and found to be thick-walled and full of pus. At the bottom was found a large gallstone of the size of a small nutmeg. The wall was secured to the skin wound by sutures; after a while the fistula closed and the patient felt comfortable. Symptoms of gallstones recurred and one afternoon I injected cocaine and opened up the scar; another stone was felt, this time just in the duct. Cauticus attempts at dividing the commencement of the duct having failed I gave chloroform and by the help of a bullet forceps and a gimlet succeeded in removing piecemeal the stone, which was rather larger than the former one. The sinus closed. After a while attacks of gall colic recurred. The wound was opened up but no further stone was felt. There was a valve-like growth over the entrance to the duct allowing bile to come in, but obstructing the return flow to the bowel. Scraping this away gave temporary relief. Finally, the fistula kept patent. The constant outflow of bile and mucus was very troublesome. Then blood and matter were often discharged. The condition was miserable in the extreme. The risks were explained to, and accepted by, the patient. On Dec. 4th, 1893, I opened the abdomen below the fistula. No stone could be felt in the duct. The walls of the gall-bladder were greatly thickened (over ½ in.). The bladder was laid open and a probe passed right down the duct. Using this as a guide, the bladder was dissected off the liver and the duct was ligatured and divided. Bile came from the wound for three or four days after the operation and then ceased. The patient made a good recovery. Now (August, 1896) she can do her household work and walk several miles. There is some amount of ventral hernia; with the exception of the trouble required in adjusting the belt for this, life is as enjoyable as before it was miserable.

AMPUTATIONS.

1. *Through the knee-joint; recovery.*—The patient was a man, aged seventy years. He was seen in consultation, suffering from a compound fracture below the knee caused by a kick from a horse. There was uncontrollable hæmorrhage. The patient had never made a will; we had therefore to act as lawyers before proceeding with the operation. At 1 A.M. in the small cottage bedroom and by the light of a kerosene lamp and candle I amputated through the knee, which was partially ankylosed from rheumatism. The patella was excised for fear of prolonging the operation too long at that age by sawing through it. The popliteal artery stood out like a pipe stem from atheromatous changes. The patient was out and about in less than one month after. There was no secondary hæmorrhage.

2. *Circular through the lower one-third of thigh.*—The patient was a man, aged sixty-five years. He had been bedridden for three years with a huge ulcer of the leg exposing several inches of tibia and fibula. The patient was in the habit of cauterising the growth with a red-hot poker. The skin was affected above the knee, hence operation so high up at that age. It was dressed with iodoform and vaseline on lint and salicylic wool. Union was by first intention. Sixteen days after the operation the drainage holes were so far healed that no further visits were paid.

[1] See THE LANCET, May 11th, 1895.

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The patient died from cystitis some years after. In this case I had the assistance of a trained nurse.

3. *Osteo-myolitis of the tibia; ? metastasis; amputation through the lower one-third of thigh; lardaceous changes; albuminuria; recovery.*—The patient was a girl, aged ten years. The child had been kicked on the shin by a schoolfellow when she was suffering at the time from cold. When seen next day there were fever, cough, pneumonic expectoration, tubular breathing, and fine crepitation and dulness over the upper half of the left lung. There was a tender spot on the skin. Two days later the lung signs had all cleared. The leg was very tender and there was a localised swelling. Chloroform was given and an incision was made down to the bone; puriform fluid with oil globules escaped. The condition extended and numerous free incisions were made under chloroform two days after. The whole shaft of the tibia was necrosed. The question of removing it entire through the periosteum was debated, but friends would not consent. The patient was going downhill; amputation was refused. Quite half the tibia was removed as a sequestrum. Both knee- and ankle-joints were involved. With albuminuria present and the condition desperate friends consented to amputation. I amputated through the lower third of the thigh by oval skin-flaps and circular division of muscles. For twenty-four hours the patient hovered between life and death, only kept up by nutrient enemata; then youth prevailed. On the twelfth day after the amputation the patient was well enough to be out on a couch and dressed, union having taken place by first intention. There was no rise of temperature, although the operation was performed in the room saturated with the effluvium of bone pus for weeks. The dressings were of iodoform and salicylic wool. The albumin cleared away and the patient is now well and strong.

4. *Amputation of the forearm.*—The patient was a man, aged sixty-seven years. The hand above the wrist was mangled off by a chaff-cutter. The patient was seen on a cottage sofa in a small room. As I pulled out the sofa it collapsed, so a box was hurriedly brought in from a small shop near and the couch was propped up. I performed the amputation kneeling. The medical man who gave chloroform was one of the old school and had not seen a drainage-tube used; he thought it would act as a *foreign body*. Now, ten years later, the modern (?) idea is to use a drain-tube as little as possible for the very reason given by my esteemed old friend. Union was by first intention.

5. *Disease of the metacarpo-phalangeal joint in the left index finger.*—The patient was sixty-one years of age, the subject of chronic fibroid phthisis. The finger and half the metacarpal bone were removed. Union was by first intention. There was no recurrence of the disease in any other joint.

6. *Amputation of the breast.*—The patient was a very stout woman, aged about fifty years, with a cystic sarcoma. There was some slight suppuration in the centre; the other parts healed by first intention. Four years later the scar was freely moveable; there was no thickening. The patient is now well.

7. *Amputation of the cervix uteri.*—The patient was a married woman, aged about fifty years. She had had no children, but had had one early miscarriage in the first year of married life. Conical cervix with pin-hole os projected from the vulva; it was removed by Paquelin's cautery. There was a long-standing history of spinal trouble. Beyond relief from removal of the protruding cervix no other benefit followed operation.

OVARIOTOMY.

The patient had a large multilocular tumour apparently of the right ovary, a tense cyst projecting into Douglas's pouch—fixed on vaginal examination. At operation the tumour was found to be of the left ovary twisted on itself. The right was small but cystic and firmly adherent to the under surface of the upper cyst. On reducing the size of the lowest cyst by tapping the adhesions between it and the pelvis were separated with rather free hæmorrhage. Several inches of bowel were adherent to the upper and larger cyst and were dissected off with care. A glass drainage tube was used. The rest of the wound was closed by silkworm gut and silk sutures. The pedicle was tied by a Staffordshire knot. The right ovary and tube were also removed. On the fourth day after the operation the opening for the drainage tube (which closed directly the tube was removed on the second day) burst open and the patient and nurse were both alarmed. The noise of air passing in and out was like the breathing through a tracheotomy tube. After this recovery was uneventful. She went to her home on the twenty-eighth day. She now rides horseback with comfort. There is no trace of hernia. The abdominal wound was supported with broad strips of window plaster. Menstruation came on four days after the operation. Although both ovaries were removed it has continued regularly and painlessly every month since from a portion of the tube or third ovary. In this case I was well off for assistance, three other medical men being present. (I also had the assistance of a trained nurse, who was most unremitting in her care.)

GUNSHOT WOUNDS.

1. *Right lung.*—The patient was a youth, aged about sixteen years, who received the whole charge of a muzzle-loading shot gun in the back, the gun being only a few feet away. When seen he was in a pitiable condition. There was a large hole in the back capable of admitting two or three fingers. There were numerous small holes around. No attempt was made to find the depth of those to the left of the spine. There was much general emphysema; breathing was very laboured. His distress was relieved by small doses of morphia and he gradually came round. The lung expanded again. The patient was very indiscreet; three weeks after the accident he completely disobeyed instructions. The result was a rigor and pneumonia of the injured lung. Effusion followed. He was tapped several times; then the fluid became purulent. A portion of rib was excised for free drainage. He recovered and is able to do ordinary work. There is a lower scar at the site of operation which still discharges at times. Roentgen rays will be used at the first opportunity. A few shot are to be felt under the skin over the front of the right chest; these cause no inconvenience and are therefore left.

2. *Left wrist; medico-legal aspect of case.*—The patient declared that the gun slipped and went off in the fall. On the flexor surface of the wrist was a clean-cut circular wound blackened by powder. On the dorsal surface there was a jagged wound—that of exit. The tip of the right thumb and the end of the nail were blown off. Evidently the patient was leaning with his wrist over the barrel and the tip of the right thumb just overlapping the barrel. The trigger was probably pulled in rubbing one leg against another. The lower end of the radius was blown to fragments, thirteen pieces of various sizes being removed and upwards of sixty shot. The patient was very troublesome. He had two or three attacks of secondary hæmorrhage but eventually recovered.

HERNIOTOMY.

The patient was a woman, over eighty years of age, suffering from strangulated umbilical hernia. She was seen late in consultation one Saturday night. There was a history of strangulation from the Thursday morning previously. Pain had ceased half an hour before my arrival. On the off chance operation was proceeded with. A small knuckle of bowel was tightly strangled. The orifice was nicked and the opening was enlarged. The bowel was not quite dead, as it changed colour a little on releasing the strangulation. The patient died on the Monday; from the report given by the gentleman in charge of the case she seems to have quietly sunk away.

NEPHROLITHOTOMY.

The patient was a man aged fifty-five years. He was first seen in September, 1891. There was a history of some years of pain in the left side, which was worse after exertion. He was much troubled by a localised belt of sweating around the level of the left kidney. The patient looked like a sufferer from chronic Bright's disease. His urine was clear, with a slight amount of albumin. Microscopic examination revealed pus cells and crystals of oxalate of lime. He had never had any hæmaturia. The diagnosis was an oxalate stone in the left kidney. Lithia and other palliative treatment relieved him for a while. In 1894 he had a sharp attack of hæmaturia. Operation was always deprecated from the patient's general despondency—a bad subject for any surgical interference. In 1896 treatment seemed utterly useless and operation was to be risked. On August 6th, 1896, with the kind assistance of Mr. Morier and Mr. Weld, I cut down on the left kidney. The stone could not be felt with the fingers, but I struck it with a mounted needle. The

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kidney was incised and the wound was plugged and enlarged with the finger and the stone grasped with cyst forceps and extracted by rotatory movement. Hæmorrhage was very free and the wound was plugged. For two weeks his condition was desperate. Some urinary infiltration of tissue of the back necessitated opening and draining the abscess. Mentally the patient was very queer till the seventeenth day, when he became completely himself again. The temperature was under 98° F. for the first three days after operation. A small oxalate of lime stone about 1 grain was passed *per urethram* eight days after the operation. The stone removed was a large mulberry calculus of oxalate of lime weighing 241 grains. (In this case I had the assistance of a trained nurse, who was most efficient and assiduous in her care of the patient.)

TRAUMATIC ABSCESS OF THE LIVER.

The patient, a middle-aged man, was kicked on the front of the left chest by a horse. The upper ribs were comminuted and pneumonia with effusion followed. He complained of great pain, too, over the liver. This was enlarged. The chest had to be aspirated three times, clear serum fluid being obtained each time. The enlargement of the liver becoming greater and more painful a teacupful of pus was drawn off by the aspirator; great relief followed. The pus did not reaccumulate and recovery was complete.

EPITHELIOMA.

The patient was a man, aged seventy-one years, with a very large epithelioma. He had been under the care of a woman quack. I had to remove more than half the lip. A new lip was made by bringing up the flaps from both sides of the centre of the chin and the gap was filled in by others taken from the skin of the neck below. Union was by first intention. The patient was most excitable. Over a pound of chloroform and nearly half a pound of ether were used at the operation and then anæsthesia was not complete. The epithelioma recurred twelve months later, but the patient was capsized from his cart and fortunately saved much suffering, his injuries proving fatal. Some smaller ones of the lip have been done with nothing noteworthy.

Epithelioma of the neck.—The position was unusual. The growth was freely excised; there has been no return so far and operation was performed three years since.

Epithelioma of the dorsum of the hand.—This was small; it was excised; there was no return. The patient was a married woman; her husband had a small growth on the lip removed. Both were done under cocaine.

LUXATIO ERECTA.

A man was going home in a cart drunk. The cart capsized, the horse in some way becoming freed. The patient was found under the cart with the right arm extended above the head. The head of the bone was in the axilla. I had to give chloroform single-handed and reduce with only a woman to help. The first attempt at reduction converted the dislocation into a subcoracoid and this was readily reduced by right-angled traction. Despite the length of time (as he was not discovered till morning) no injury occurred and the arm is as useful as ever. The rarity of this form of dislocation is the reason for noting it. I have seen numerous others with no special features. One had paralysis of the deltoid. The reduction in this case was wonderfully easy. The circumflex was injured in the fall.

EMPYEMATA.

1. The patient was a middle-aged medical man. When suffering from bronchial catarrh returning from a country journey one wet night his buggy was capsized turning a corner. His wife was with him instead of his groom, hence much more exertion and exposure were caused, no one being about at the time. Next day pneumonia set in. Both lungs were affected. Evidently there was fluid at the left base. Aspirating, I removed nearly a pint of laudable pus. Fortunately this did not reaccumulate. He has been practising for the eleven years following the use of the aspirator. All other empyemata have had to be treated by free incision with or without resection of the ribs. Those requiring removal of rib are referred to in gunshot cases and hydatid cases. In other cases there was nothing noticeable.

2. A boy, about ten years of age, was seen in consultation. He had recently suffered from acute pneumonia; he was going back—high temperature, sweating, &c., and signs of fluid in the right pleura. A large amount of pus was evacuated by the aspirator. Ten days later he was seen again and it was decided to try tapping once more. About the same amount of pus was removed. When asked to see him again two weeks later his distress was extreme. The right pleura was so full of fluid that the heart was displaced below the ribs. Chloroform was given, and with a fine trocar pus was allowed to flow slowly out. I was afraid that sudden relief from free incision would cause fatal syncope. Tension being thus reduced the chest was freely opened. Drainage-tubes were inserted. The boy made a good recovery. The cavity was sweet throughout. No washing-out was employed. Iodoform and salicylic wool dressings were used. Twelve months later the boy came under my care again with the same signs of fluid in the right side. A preliminary tapping showing pus, the chest was freely opened through the old incision. The boy made a good recovery and the last time I saw him he was actively engaged in playing football.

WOUND OF THE KNEE-JOINT.

A young man whilst engaged in barking missed his stroke and the tomahawk cut into the left knee-joint exposing the inner condyle of the femur. Synovial fluid was freely escaping. The wound was carefully cleaned with carbolic lotion and four stitches were inserted. The wound was dressed with iodoform and vaseline on lint with salicylic wool. A back splint was applied and the patient was kept in bed. On the fifth day the wound was dressed and the stitches were removed. Healing was by first intention. On the seventh day the patient was up and about and the knee was as good as ever.

COMPOUND FRACTURES.

Of these I shall only refer to three, the others having no special features.

1. *Comminuted fracture of the fibula, with compound dislocation of the ankle; fracture of the lower end of the tibia.*—The patient was a young woman. In attempting to mount her horse by herself she fell and sustained the above injuries. Reduction was easily effected under chloroform. Cellulitis followed, necessitating free incisions and drainage. More than six weeks after the injury there was no attempt at the formation of callus and it looked as if the amputation the friends thought inevitable at the first would have to be resorted to. Two weeks later there was evident repair going on. Then occurred an alarm of fire at night. The shock given to the patient caused plugging of the veins of the sound limb. This condition occasioned the greatest trouble both in the immediate and the remote stages of treatment. Several sequestrotomies were necessary, and one sequestrum removed consisted of the whole of the articular surface of the tibia. Bony union at the tibio-astragaloid joint occurred, but after nearly five months' confinement to bed the joints between the astragalus and scaphoid and os calcis and cuboid were quite freely moveable and no adhesions were formed. The patient can now walk many miles with ease; ordinarily there is no limp observable. The length of time in this case was greatly lengthened by the effect of the alarm of fire at night. One can scarcely think of any alarm likely to be more productive of harm than that of a fire to a person in bed with a fractured leg in Neville's splints.

2. A boy, aged about sixteen years, was run over by a dray with more than a ton of fireclay on it at the time. To make matters worse the horse stopped with the wheel on the limb, first passing over it and then backing on to it. There was a comminuted fracture of both bones in the centre with the rupture of a large muscular artery. Plugging had to be resorted to to arrest the hæmorrhage. Counter openings were necessary. The patient recovered with a most useful limb. Two or three small sequestra had to be removed subsequently. This would have been a good case for the use of Mr. Lane's screws, but they were not then known, from the oblique nature of the fractures.

3. *Compound fracture of the left innominate bone (iliac portion).*—A young man was thrown out of a cart on to some jagged rock. There was a large rent above Poupart's ligament and the anterior superior spine was broken off and the rim of the bone was generally comminuted. Many broken fragments were taken away. The skin wound was brought together with due attention to drainage. The peritoneum though exposed was fortunately not opened. The bladder being distended the urine was drawn off with a catheter and found to contain much blood. This gradually lessened. No albuminuria was left, the kidney completely recovering from its

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injury. The youth was able to resume his ordinary employment.

HYDATIDS.

No one practising in Australia would escape getting cases of this, *the* peculiar disease of two such opposite countries as Australia and Iceland. The district which I have been living in is comparatively free from the scourge, but a few of the cases are worth passing attention.

1. The patient was a young girl, aged ten years. She had a tumour of the size of a small orange in the abdomen just above the bladder. The skin and parietes were freely moveable over it. The tumour itself was somewhat moveable. The tumour was cut down upon and the sac sewn to the edges of the abdominal wound. A drainage-tube was inserted. A mother cyst and many daughter cysts came away as the cavity closed. There was some trouble from retention of urine. The patient made a good recovery and has remained well since.

2. The patient was a woman, aged about thirty years. She had a large tumour of the abdomen, considered to be ovarian. This diagnosis was concurred in by such authorities as the late Dr. Davies Thomas, Dr. Gardner (now of Melbourne), Dr. Stirling, Dr. Way, and all who saw the case. Not having any conveniences at that time the patient was sent to Adelaide. Dr. Way operated. I was present at the time. The tumour turned out to be a huge hydatid. This case is mentioned to show how possible it is to make a mistake in the diagnosis of abdominal tumours. Recovery was good.

3. This patient was a child, aged ten years, with recurrent hydatid of the liver. More room being required, a portion of rib was excised. In this case the pleura was opened. The patient did very well for some days and then pneumothorax set in. There was a slight amount when seen one afternoon, but I did not anticipate the rapid way in which this increased, as it must have done from the symptoms described. The patient died during the night. This was one of my earliest cases, but in any future case I should certainly insert a tube into the pleural cavity if there were signs of a pneumothorax coming on in the course of convalescence where the pleura had been opened.

4. This patient was a young woman, aged thirty years. She had a history of cough for some time and pain in the right side. There was a crescentic area of dulness, convexity upwards, in the right axilla. The diagnosis was probably hydatid. A hypodermic needle drew off a little clear fluid; there were no hooklets. Ten days later the patient came again. She looked very sallow and wretched. The tumour was projecting from the epigastrium. Immediate operation was advised. Under chloroform I cut down and sewed the edges of the cyst to the abdominal incision. On free incision there was a large quantity of puriform fluid and collapsed hydatid cysts, very offensive. The cavity was washed out with Condy's fluid. Iodoform and vaseline dressing with pads absorbent salicylic wool. No rise of temperature occurred. Recovery was uneventful. The patient has since married and had a family. The fingers could reach to the axilla on the one side and feel the heart thumping against them on the other.

5. The patient was a German, aged sixty-four years, suffering from hydatid of the lung. Diagnosis was confirmed by the aspirator. For various reasons I had to transfer the patient to hospital in Adelaide. He was very averse to operation. A curious mistake was made in this case. Looking up Dr. Davies Thomas's mortality chart the death-rate from fifty to sixty years of age was read as higher than from sixty to seventy years of age. I sent the patient away in the firm conviction that he had a better chance of recovery at sixty-four years of age than he would have had if he were only fifty-four. I believe this materially helped the old man and I did not undeceive him. He recovered.

6. The patient was a married woman who had had several children. There was a history of hydatids coughed up some years since. She had a sharp attack of pneumonia of the right lung. She was under the care of my locum tenent, Dr. Moule. When I first saw the case I found signs of fluid at the base. There was no improvement after a short further course of treatment. The patient was sallow, perspiring freely when asleep—going down hill. She was five and a half months pregnant. Aspiration in the axilla only drew off a little blood. Below the angle of the scapula I struck thick pus. The patient was removed to Mr. Barker's. Chloroform was given, part of the rib was excised, and a large collapsed hydatid cyst presented. Recovery was most wonderfully rapid. She went to full time and was safely delivered of a healthy child.

7. The patient was a married woman with a large tumour of the liver. It was so irregular and the appearance was so bad that malignant disease was considered an equal possibility with hydatid. When seen a second time a small area of the size of a sixpence gave a peculiar thrill. Aspiration drew off a little typical hydatid fluid showing hooklets under the microscope. Two days later under A.C.E. I opened the abdomen and drew off a little fluid to reduce the tension of the distended part of the liver. The cyst was sutured to the abdominal wall and freely opened. The cavity was full of daughter cysts from the size of a pin's head to that of a goose's egg. Several bowlfuls of cysts were taken out by cyst forceps or irrigated away. Ten days after the operation bile began to be discharged and for some weeks enormous quantities of bile came away. As the cavity contracted this lessened and ceased. When last seen there was a small sinus; the patient was then suffering from an intercurrent attack of influenza. Recovery in this case was slow.

DIABETIC COMA; RECOVERY BY ADMINISTERING OXYGEN GAS.

A very interesting case, though hardly a surgical one, was that of an elderly woman seen for the first time one evening in a comatose state. Fortunately, some urine had been left in the chamber and this contained a large quantity of sugar. There being no improvement after some few hours I thought I would try oxygen gas. Her neighbour was the headmaster of the Government school, who was, I knew, studying chemistry. From him I got a flask and some glass tubing and rigged up an arrangement by which I generated O_2 from chlorate of potash and black oxide of manganese, led it through a wash-bottle and brought it to the patient's face by indiarubber tubing. After a while consciousness began to return. Recovery for the time was complete, the patient dying some eight months later from other diabetic complications.

NÆVI.

The patient was a boy, aged two or three years, with a large venous nævus of the right orbit. Ligature was thought to be the most suitable means of treatment and the growth was tied under chloroform by a triple interlocking thread. The thickness of the growth necessitated a second ligature of the stump. The whole then sloughed away. The line of scar took the fold of the lower lid so that absolutely no scar was to be seen except on very close inspection.

Another patient had a very large one over the upper part of the sternum. Ligature resulted most favourably in this case too. Capillary nævi have been treated by nitric acid and ethylate of soda in the usual way.

SEBACEOUS CYSTS OF THE RIGHT LABIUM MAJUS.

Cysts of this kind in this situation are so uncommon that I venture to record the case. A young woman, aged eighteen years, was brought by her mother. Examination revealed two separate cysts in the right labium. They were removed under chloroform and contained the usual contents of sebaceous cysts. Recovery was uneventful.

I must not unduly prolong this already lengthy communication with any general conclusions. The cases recorded may serve to show to some who are impressed with all the assistance and appliances of the modern operating room that much, very much, can be done by a careful attention to detail with very primitive help in the shape of appliances and nursing and with a minimum of qualified assistance. I cannot conclude without a few words in favour of the old-fashioned poultice. In ordinary surgical work undoubtedly there is but little occasion for it. We do not expect nor do we often see pus in operations conducted with proper regard to asepsis and antisepsis. On the other hand, we are called to cases where nothing is so soothing or so cleansing as a well-made and properly-applied poultice. Under its soothing influence the restless patient often drops off to sleep. The chief argument against it is that it is a rapid breeder of bacilli, bacteria, *et hoc genus omne*. This is the true reason of its value. Why does it cleanse a sloughing ulcer or a foul-smelling abscess cavity? Because of its affinity for germs. They transfer themselves from the less attractive body nidus to the warm linseed and meet the fate worthy of their ficklenes in the devouring fire which is, of course, the only safe depository for a soiled poultice or dressings.

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REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR THE YEAR 1896.[1]

FIRST NOTICE.

THE fact that this voluminous report relates to occurrences making up the medical history of India during 1896 is likely to exercise a somewhat deterrent effect upon the reader in 1898. Looking, however, to the large mass of information which is embodied in it and to the fact that this information has to be collected from all parts of a vast country like India, that it has then to be arranged, compiled, and edited, and that as an official record of the Government these reports have to be accurate and reliable, we presume the delay in their publication is unavoidable; but it naturally takes away any keenness of edge in the interest and appetite of the reader. These reports are, however, by no means a bare record of facts and figures and tabular statements. They are accompanied by a text and commentary of a learned and very useful kind, in which a good deal of reference is made to, and a brief analysis is given of, contemporary medical literature, both foreign and English. It is mainly owing to this fact—apart from the vital statistics and official record of the medical events set forth, which make the reports valuable to the statesman as well as to the medical statist—that these volumes are of interest and practical utility to the professional reader and epidemiologist. A new and excellent map of India is prefixed to the present report, showing a revision of the boundaries of the geographical groups. Section I. deals with the meteorology of the year, which need not detain us long. But meteorology probably holds a much more important relation to the health and well-being of the people of India than it does elsewhere. The regular periodicity of the seasons and, it may even be said, the periodicity stamped upon the character of the diseases, are very notable features of that climate. India is much more dependent than most countries on its rainfall. If there is no monsoon it means famine, and any deficiency even in this respect at once affects the price of food; on the other hand, if the monsoon be excessive it either leads to waterlogging of the soil or to a rise of the level of the subsoil water, with the upward movement and escape of malarial agents (the plasmodium malariæ) from the soil and the concomitant outbreaks or increased prevalence of ague and malarial fevers. The natives of India are for the most part extremely poor; bad crops, with increased dearness of food as a consequence, lead to starvation which greatly increases the predisposition to disease and diminishes the chances of recovery in those attacked. All this, however, is more or less obvious.

Section II. deals with the European army of India, and we may say *en passant* that the reader will find that a comparison between this section and that on the native army of India is worth instituting, because it serves to bring out some striking differences in the nature of the diseases to which Europeans and natives respectively are most liable. In 1896, out of a strength of 70,584 European troops there were 1387 admissions to hospital, 94 constantly sick, 14·84 deaths, and an invaliding of 28 per 1000 of strength respectively, the total loss amounting to 43 per 1000, which is a somewhat higher ratio than for previous years. The chief causes of admission were venereal diseases and ague. The former caused 37 per cent. of the total sickness and ague 17 per cent. The chief causes of death were enteric fever and hepatic abscess, but the mortality from ague, dysentery, diarrhœa, hepatic abscess, and enteric fever was lessened in 1896. Still enteric fever caused nearly 43 per cent. of the total deaths and hepatic abscess 8 per cent. The chief causes of invaliding were syphilis and gonorrhœa, debility, tubercle of the lungs, and malarial fever. Table I. of the report gives the ratios of the four commands placed side by side. Bengal has, we are told, the highest mortality from cholera, enteric fever, ague, dysentery, and hepatic abscess; the Punjab the highest from remittent fever, heat-stroke and pneumonia, and the lowest from cholera, small-pox and dysentery; Madras, the lowest from enteric fever, heat-stroke and pneumonia, and Bombay the highest from small-pox. The percentage of enteric fever in the total deaths was greatest in the Punjab, and the percentage of hepatic abscess in Bengal. The total death-rate of Bengal, which was the highest, was not far from being double that of Madras, which was the lowest. Burma, in 1896 was distinguished by the prevalence of influenza, simple continued fever, and hepatitis. Allahabad had a high death-rate attributable to an increase of enteric fever. Among the British infantry the 1st Norfolk Regiment at this station had the highest mortality; it had 93 admissions and 32 deaths from enteric fever. The first epidemic year of influenza in India was 1890, and a table is given of the fluctuations of the disease since that year. The amount of cholera in 1896 among the troops was higher than in 1895, but the ratios were lower than those of the decennium and there was no marked prevalence of the disease; the death-rate from cholera in 1896 was 0·89, as against 0·43 per 1000 in the previous year. The admission-rate for small-pox was nearly six times, and the death-rate nearly five times, as great as in 1895. There were 122 cases of small-pox with 10 deaths in 1896, as against 19 cases and 2 deaths in 1895. The comments and remarks on this disease in relation to vaccination and the importance of successful revaccination are interesting, but these require to be read in detail. As regards fevers it seems to be established that so-called Malta fever occurs in India. The blood-serum of some soldiers invalided to Netley from some Indian stations was found to react specifically with the micrococcus melitensis. By the use of the method of serum diagnosis it has been shown that the true cause of Malta fever is this micrococcus, and there is now, as we have said, reason to believe that the same form of fever prevails in India. The report then proceeds to the discussion of enteric fever—that scourge of the European army in India and the scourge, indeed, of all armies in the field, as among the American troops in Cuba and the British in the Soudan and Egypt for example. We must, however, for the present defer the further consideration of this report.

[1] Annual Report of the Sanitary Commissioner with the Government of India, 1896, with Appendices and Returns of Sickness and Mortality among European Troops and Prisoners in India for the Year. Calcutta: Office of the Superintendent of Government Printing, India. 1898. Price, 5 rupees.

THE OUTBREAK OF TYPHOID FEVER IN BELFAST.

STATISTICS, as reported to a meeting of the Public Health Committee on Sept. 15th, for the week ending Sept. 10th, show that the death-rate from all causes in Belfast was 27·9 and from the principal zymotic diseases 10·8 per 1000. There had been notified during the same period 378 cases of infectious disease as follows: 10 of diphtheria, 6 of erysipelas, 12 of scarlet fever, 1 of typhus fever, 270 of typhoid fever, and 79 of simple or continued fever. In the face of such a high general death-rate and of such an extraordinary mortality from zymotic diseases the citizens of Belfast have been astounded at the action of the Public Health Committee. Instead of boldly facing these appalling facts laid before them by their own medical officer of health they take refuge in a most absurd piece of special pleading. Firstly, they allege that in certain cases there has been an abuse of the Notification of Infectious Diseases Act, owing to the fact that a second medical practitioner has for some reason or other been called in to consult about, or to take charge of, patients whose cases have already been notified, and he in due course also notifies the fact of which the authorities are already aware and thus cases are duplicated. This is possible, but does anyone for a moment believe that such twice-reported cases are so numerous as really to vitiate the general and authoritative statistics? and does not the very fact of such an excuse being put forward show that in the Public Health Office there is no really competent classification of entries of cases reported, otherwise such slips or mistakes would be at once made right? Secondly, instead of taking the proper and effective course of doing away altogether with pigstyes in the city it is coolly proposed to recommend the City Council to amend their by-laws for the regulation of piggeries so as to render compulsory the registration of the establishment of "pig-culture," in order that the officers of the health department may have the same convenience of inspection and control as they have over cowsheds and dairies. Thirdly, the public are told that "numerous

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complaints were received as to the offensive smells arising from sewer ventilators, the evident impression being that these gratings were expected to emit vapour with a fragrant bouquet and that the Public Health Committee were responsible for the disappointment." Such sarcasm is altogether out of place. Every one knows that sewer-air must find an outlet somewhere and that ventilating shafts would be an improvement on the present street traps, but what is wrong with these Belfast drains that they require in places constantly to be cleaned out and that after heavy rains it is noticed that the health of the population shows a general improvement? Surely it is evident that they allow a great accumulation of filth which is not properly removed. Public opinion is awakening in Belfast; the articles of the Special Sanitary Commissioner in THE LANCET are being reprinted in the public press of the city and are having a most educating effect; and as an evidence of the present tone of public opinion the following from a Belfast morning paper of Sept. 16th may be quoted:—

The Public Health Committee will have to go far beyond ingenious suggestions that some typhoid cases are reported twice, recommendations for the registration of pigstyes, or sarcastic hits at various complainants. Few will have the hardihood to deny that the health of the city has been most unsatisfactory or that the citizens have in great degree been reaping to their sorrow what in the past successive town or city councils, improvement committees, or public health committees have sown. It is certainly no pleasure to us to have to repeat this—quite the reverse. We should be sincerely sorry to sound an unnecessary alarmist note or to give countenance to any exaggeration. Nothing could be further from our wishes than any attempt to "blacken the reputation of the city," as an eminent corporator put it at a recent meeting of the City Council. But the methods of the ostrich are, to say the least, of very doubtful wisdom. The reputation of the city is what it was inevitably made by those who in the past permitted the jerry-builder to work his wicked will, who winked at the erection of houses upon vile, filth-sodden, filling-up stuff—of houses to the number of so many thousands without back passages, and with the disgusting and dangerous system of dry privies. The sanitary sins of the past have been finding us out, but unhappily the innocent suffer for the guilty. It is the duty of the City Council and the committees concerned, instead of attempting to minimise the gravity of the situation, to see that these sins and their evil consequences are not perpetuated. They will have their hands more than full inside the city itself, while they will have to very seriously consider the system under which the lough at our doors, so to speak, has been turned from a picturesque expanse of water into "a stinking cesspool." Beginning with themselves, they will have to deal with a more than Draconian severity with all offenders against sanitary laws, making the interests of the public health, not those of any individual, the sole basis of their action. And they will have to see that while the city is so far as possible cleared of the grossest dangers its filth is not merely swept over the threshold to lie and fester and breed disease on the shores of the lough. This may seem indefinite, but the evils have been often defined and the remedies and palliatives often indicated. They will cost money and labour, but the price is nothing in proportion to the good to be gained—improved health for the citizens and a decent sanitary reputation for the city which will not be liable to suffer at every breath of plain and honest criticism.

The City Corporation will meet on Oct. 1st, when it is expected there will be a very lively discussion on the typhoid fever epidemic. It would be as well if the members of that body who feel that the Public Health Department is totally incompetent to deal with the present deplorable sanitary condition of Belfast were to suggest calling in an extern authority such as Dr. Russell, medical officer of health of Glasgow, Sir Richard Thorne, medical officer of the English Local Government Board, or Dr. Niven, medical officer of health of Manchester, to advise what is best to be done so as to remedy the present sadly disgraceful sanitary state of that city.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Report upon the Sanitary Conditions of the Urban District of Alnwick and upon Housing of the Working Classes therein, by Dr. G. S. BUCHANAN.[1]—The County Council of Northumberland in December of last year made representations to the Local Government Board as to certain unwholesome conditions which had been discovered in Alnwick by Dr. Hembrough, the county medical officer of health. The local medical officer of health shared Dr. Hembrough's views, but the district council took no adequate action. The Local Government Board therefore sent down Dr. G. S. Buchanan, who has recently, through this Board, presented the public with a very detailed account of the shortcomings, *quâ* sanitation, of the Alnwick District Council. As long ago as 1852–54 Alnwick was sewered, but in spite of this no diminution in the general mortality rate took place and the phthisis rate remained inordinately high. This fact seems to have disheartened the sanitary authority, and Dr. Buchanan reports that their later administration has been "conspicuously lax." It would appear, indeed, that the local authority have throughout either been devoid of backbone or, what really comes to the same thing, have had a backbone consisting of those interested in insanitary property who neglected to take proper action when unwholesome conditions were brought to their notice. The late Mr. Spear, who inspected this district in 1885, clearly diagnosed the condition from which the sanitary authority suffered when he wrote: "Wherever individual interests have to be opposed, or seemingly opposed, sanitary administration has been paralysed." Evidently, too, Dr. Buchanan found the same conditions obtaining at the date of his recent visit, and in spite of a sewerage system, a public water-supply, and an isolation hospital we find that the poorer classes are shamefully housed and that a large proportion of the dwellings of the town are to be found huddled together on small areas at the back of the main thoroughfares. Dr. Buchanan paints a graphic picture of the manner in which this overcrowding of houses upon areas was gradually brought about. He tells us how the long strip of garden behind the house facing the main thoroughfares was covered by the operations of the jerry builder of former days and how through the ground floor of the front house the passage was knocked which now gives entrance to the alley or court in which are the overcrowded and dilapidated dwellings which he condemns so strongly. Time after time has the attention of the sanitary authority been drawn by the medical officer of health to this crowding of houses upon areas, and as often has the appeal for remedy been passed over, if not in silence at least without adequate action. As instances of extreme overcrowding Dr. Buchanan mentions a single room of barely 1000 cubic feet capacity inhabited by a family of eight, and a six-roomed house sub-let in tenements which was said to be occupied by thirty-one persons. It is, however, some consolation to find towards the end of the report before us that in January last a "Town Improvement Committee" was appointed who really seem bent on putting an end to the state of affairs revealed in turn by the late Sir George Buchanan, by the late Mr. Spear, by successive medical officers of health of Alnwick, by Dr. Hembrough, and now, let us hope finally, by Sir George Buchanan's son. Many of the dwellings here in question are, it appears, beyond remedy and comprehensive action under the Housing of the Working Classes Act seems the only solution of the difficulty. Dr. Buchanan has, however, mapped out the "insanitary areas" for the district council and told them of the death-rates, &c. He has, indeed, done everything but find the money, and even in this direction we may be sure that he will influence the Local Government Board to deal kindly with the authority in the matter of loans.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 3*d*.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6504 births and 5165 deaths were registered during the week ending Sept. 17th. The annual rate of mortality in these towns, which had increased in the nine preceding weeks from 14·7 to 24·6 per 1000, declined last week to 24·0. In London the rate was 21·2 per 1000, while it averaged 25·9 in the thirty-two provincial towns. The lowest death-rates in these towns were 15·1 in West Ham, 15·8 in Swansea, 16·3 in Croydon, and 16·5 in Portsmouth; the highest rates were 34·8 in Salford, 37·0 in Bolton, 37·2 in Gateshead, and 40·6 in Sunderland. The 5165 deaths in these towns included 1545 which were referred to the principal zymotic diseases, against 1646 and 1578 in the two preceding weeks; of these, 1315 resulted from diarrhœa, 70 from diphtheria, 67 from whooping-cough, 43 from "fever" (principally enteric), 28 from measles, 22 from scarlet fever, and not one from small-pox. The lowest

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death-rates from these diseases were recorded in Portsmouth, Plymouth, Swansea, and Birkenhead; and the highest rates in Norwich, Bolton, Salford, Sunderland, and Gateshead. The greatest mortality from measles occurred in Plymouth; from scarlet fever in Huddersfield; from whooping-cough in Preston, Halifax, and Cardiff; and from diarrhœa in Wolverhampton, Norwich, Salford, Bolton, Gateshead, and Sunderland. The 70 deaths from diphtheria included 29 in London, 10 in Leeds, 6 in West Ham, 5 in Manchester, 4 in Swansea, and 3 in Liverpool. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and only 2 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, Sept. 17th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2319, against 2178, 2240, and 2300 on the three preceding Saturdays; 242 new cases were admitted during last week, against 182, 238, and 273 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 127 and 130 in the two preceding weeks, further rose to 135 last week, but were 21 below the corrected average. The causes of 54, or 1·1 per cent. of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Newcastle-upon-Tyne, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the four preceding weeks from 18·1 to 23·0 per 1000, declined again to 18·8 during the week ending Sept. 17th, but was 5·2 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·4 in Edinburgh and 17·0 in Greenock to 19·8 in Glasgow and in Leith, and 20·4 in Perth. The 567 deaths in these towns included 110 which were referred to diarrhœa, 21 to whooping-cough, 9 to "fever," 9 to measles, 5 to diphtheria. and 3 to scarlet fever. In all, 157 deaths resulted from these principal zymotic diseases against 124 and 140 in the two preceding weeks. These 157 deaths were equal to an annual rate of 5·2 per 1000, which was 2·0 per cent. below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 81 and 92 in the two preceding weeks, further rose to 110 last week, of which 49 occurred in Glasgow, 19 in Dundee, and 15 in Edinburgh, The 21 deaths from whooping-cough were within one of the number in the preceding week, and included 7 in Glasgow, 6 in Edinburgh, and 6 in Aberdeen. The fatal cases of measles, which had been 6 and 9 in the two preceding weeks, were again 9 last week, of which 6 occurred in Edinburgh. The 9 deaths referred to different forms of "fever" corresponded with the number in each of the four preceding weeks and included 6 in Glasgow, where 3 of the 5 fatal cases of diphtheria were also recorded. The deaths from diseases of the respiratory organs in these towns, which had been 72 and 100 in the two preceding weeks, declined again to 68 last week, and were 28 below the number in the corresponding period of last year. The causes of 22, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased from 21·8 to 30·7 per 1000 in the four preceding weeks, declined again to 27·1 during the week ending Sept. 17th. During the past four weeks the rate of mortality in the city has averaged 27·0 per 1000, the rate during the same period being 22·0 in London and 18·7 in Edinburgh. The 182 deaths registered in Dublin during the week under notice showed a decline of 24 from the number in the preceding week, and included 35 which were referred to the principal zymotic diseases, against 39 and 54 in the two preceding weeks; of these, 26 resulted from diarrhœa, 4 from whooping-cough, 3 from "fever," 1 from measles, 1 from diphtheria, and not one either from small-pox or scarlet-fever. These 35 deaths were equal to an annual rate of 5·2 per 1000, the zymotic death-rate during the same period being 6·3 in London and 5·3 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 38 in the eight preceding weeks, declined to 26 last week. The 4 deaths from whooping-cough were within 2 of the number recorded in the preceding week. The deaths referred to different forms of "fever," which had been 1 and 5 in the two preceding weeks, declined to 3 last week. The mortality from measles corresponded with that recorded in the preceding week. The 182 deaths in Dublin last week included 52 of infants under one year of age, and 40 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from the numbers in the preceding week. Seven inquest cases and 7 deaths from violence were registered; and 63, or rather more than a third, of the deaths occurred in public institutions. The causes of 12, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON JOHN SPEARE LAMBERT has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet. The under-mentioned Surgeons have been promoted to the rank of Staff-Surgeon in Her Majesty's Fleet:—Alfred Ernest Weightman, James Walter Octavius Underhill, Charles Hazlitt Upham, Frederick James Burns, Daniel Joseph Patrick McNabb, Charles Strickland, James Mead France, John Menary, Walter Godfrey Axford, George Thomas Broatch, William Bett, Frederick Augustus Brice, John Walter Slaughter, and George Henry Foott.

The following appointments are notified:—Staff-Surgeons: R. M. Young to the *Diadem;* W. Bett to the *Centurion*, for service at Wei-Hai-Wei; C. Strickland to the *Medea;* and J. M. France to the *Briton.* Surgeons: Edward D. J. O'Malley to the *Victory*, additional, for disposal; W. E. Marshall to the *Melita*, additional; N. L. Richards to the *Diadem;* J. C. Durston to the *Wildfire;* and J. W. Bird to the *Impregnable.*

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel W. H. Macnamara to be Colonel, vice C. F. Pollock, retired. Surgeon-Captain Stacey, Army Medical Reserve, assumes the duties of assistant to the medical officer in charge at Norwich. Major Davidson takes over the medical charge of the Female Hospital, officers, women, and children, at Colchester. Captain Profeit has been granted leave, with permission to go to France and Switzerland. Major Beevor has been appointed Surgeon-Major, Coldstream Guards. The authorities appear to have had to overcome a difficulty in announcing this appointment, for this officer is a major of the Royal Army Medical Corps, but not a major of the Coldstream Guards, which is a purely regimental appointment and title, but he is nevertheless acting as a medical officer of that regiment, so he is called by his rank and title of Major R.A.M.C. and appointed to the post of Surgeon-Major in the Coldstreams.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotions in the Indian Medical Service made by the Government of India:—To be Colonel: Brigade-Surgeon-Lieutenant-Colonel William Edward Johnson, Madras Establishment. The Queen has also approved of the retirement from the Service of the under-mentioned officers: *Bengal Establishment:* Colonel Sir George Thomson, K.C.B., Lieutenant-Colonel Joseph O'Brien, and Lieutenant-Colonel Kali Pada Gupta. *Bombay Establishment:* Major Alexander Frederick Ferguson.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major F. F. Moore, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers. Surgeon-Captain D. Lennox to be Surgeon-Major. Surgeon-Captain R. P. MacKenzie, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers.

VOLUNTEER CORPS.

Artillery: 1st Cumberland: Surgeon-Lieutenant R. L. Clark to be Surgeon-Captain. *Rifle:* 2nd (Hertfordshire) Volunteer Battalion the Bedfordshire Regiment: Surgeon-Lieutenant H. A. Rudyard to be Surgeon-Captain. 16th Middlesex (London Irish): Surgeon-Lieutenant E. W. St. V. Ryan to be Surgeon-Captain. 1st (Cumberland)

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Volunteer Battalion the Border Regiment: Samuel Braithwaite is re-appointed Surgeon-Lieutenant. 1st Volunteer Battalion the Prince of Wales's Volunteers (South Lancashire Regiment): Captain John Nesbitt Patterson resigns his commission, and is appointed Surgeon-Lieutenant. 6th Volunteer Battalion the Gordon Highlanders: Surgeon-Lieutenant J. Taylor to be Surgeon-Captain.

THE INDIAN MEDICAL SERVICE.

The *Pioneer Mail* of Sept. 2nd announces that a telegram received in Simla states officially that the name of the Indian Medical Service is to remain unchanged. There will thus be no Royal Indian Medical Corps, though the members of the service receive military titles in common with their *confrères* in the now extinct Army Medical Staff. It is premature at present to decide whether this decision will prove satisfactory or not to officers of the Indian Medical Service. That service has fine traditions and a deservedly high reputation and its members may on that account be desirous of retaining its name. On the whole it seems to us, however, that it would have been preferable at the present time to have changed its title to that of the Royal Indian Medical Corps.

THE LATE SPANISH-AMERICAN WAR.

The President of the United States has decided that an investigation shall be made by a committee into the conduct of the War Department during the late hostilities with Spain. Some of the main objects in view are to examine into the conduct of the commissary quartermaster and the medical bureau of the War Department and to ascertain the extent, causes, and treatment of the sickness which prevailed in the field and camps during the late war. The estimated total of those who died from disease is given as 2086, while the estimated total of those attacked by disease was excessive. During the war 279 men were, it is alleged, killed and 1423 wounded.

THE TROOPS IN THE KHYBER PASS.

The health of the troops in the Khyber has been already much benefited by the approach of cooler weather and it is still improving. There is a growing belief in official circles that the Khyber will be taken over by the Government of India.

THE LATE FRONTIER WAR IN INDIA.

In consequence of services rendered during the recent frontier operations a number of promotions in the Subordinate Medical Department of India have taken place.

Captain Robert Frazer Standage, I.M.S., who did such excellent work in the engagement with the Soudanese mutineers near Mruli on April 26th, has been brought to the notice of the authorities. He was appointed Surgeon-Lieutenant in 1895.

Lieutenant Thomas Henry Matthews Clarke, R.A.M.C., who, we regret to learn, was wounded in the recent disturbances in Crete, is twenty-five years of age and was appointed Surgeon-Lieutenant in 1897.

Captain G. T. Rawnsley, R.A.M.C., has been appointed an Esquire of the Order of the Hospital of St. John of Jerusalem in England.

CORPORATE AND MEDICAL REFORM ASSOCIATION AT STAMFORD.—A meeting of the profession of Stamford and the neighbourhood, convened by the medical staff, was held at the Rutland, Lincoln and Stamford Infirmary on Sept. 15th to hear an address by Mr. R. B. Anderson. Mr. William Newman took the chair. Mr. Anderson traced the policy of the association to resolutions of the medical members of the Civil Rights Defence Committee affirming the obligation of the General Medical Council and qualifying corporations to make good the rights by conferring and guaranteeing which (respectively) they exist, an obligation which he described as fully sustained in a series of articles in THE LANCET in 1896. The chairman contrasted the position and influence of the medical profession in the State with the far greater influence and more advantageous position of the sister profession of the law, and after some questions and discussion resolutions were adopted *nem. con.* supporting the principles and policy of the Corporate and Medical Reform Association and appointing a committee to coöperate in promoting its objects in the locality. With votes of thanks to Mr. Anderson and to the chairman for presiding the meeting terminated.

Correspondence.

"Audi alteram partem."

"THE PLAISTOW MATERNITY CHARITY."

To the Editors of THE LANCET.

SIRS,—We are directed by the Executive Council of the East Suburban Medical Protection Society to reply to Mr. Arthur Pritchard's letter in your issue of Sept. 10th. Although not directly challenged by him, and although we are in official correspondence with the committee of the Plaistow Maternity Charity, the council feel that we ought not to leave unrebuked his somewhat ungenerous estimate of our position and motives. If our position had not an element of dignity and our motives of altruism our views would not have found a place in the columns of THE LANCET; while, on the other hand, we should be unworthy members of the healing profession if we refused our advice and assistance to the benevolent in their attempt to provide gratuitous nursing for the sick poor.

Unfortunately this Plaistow Maternity Charity has hitherto been administered by amateurs and certain errors have in consequence arisen. We are immediately concerned with the three following departments of the work: 1 The midwives' practice. 2. The district nursing. 3. The training of nurses. Now, Mr. Pritchard in his letter to you treats these *en masse*, whereas it is essential that they should be treated separately; for the one is in direct opposition to qualified practice and the other two depend for their success upon the coöperation of medical men. 1. It is in the midwives' practice alone that fees are taken; it is the midwives' practice that is pauperising the district, for even the well-to-do have a colourable excuse or, according to Mr. Pritchard, a "right" to employ the midwives; and it is in the midwifery cases that the nurses are taught to do without medical supervision. Now, we are at issue with Mr. Pritchard on this point. He claims "the right of the patient to choose between a midwife and a local medical man." We will admit the right of an individual to risk his life for a sufficient reason, but surely it is no part of the duty of a philanthropic body to encourage the poor and ignorant in running such a risk, least of all to save their pride or their pockets. It cannot be denied that it is safer to have a qualified medical man in attendance upon a parturient woman than a certificated midwife. Yet the Plaistow Maternity Charity has deprived the Poor-law medical officers of the greater part of their pauper midwifery practice and actually appeals to the board of guardians for support on the plea that it effects a saving in the rates. Mr. Pritchard also says that because the 10*s.* fee only covers the cost to the institution of attendance on a maternity case it is a misrepresentation to say that the patient gets any benefit out of the charity. Is it not generally considered a benefit to obtain an article at cost price? Does not the paying patient take one nurse away from her legitimate work among the poor? We have a right to expect more knowledge of economic laws from Mr. Pritchard. It is manifest abuse to buy or to sell, at whatever figure, that which is dedicated by the benevolent to the uses of the poor. Subscriptions to a charity do not entitle a man to use the charity: there is only one ground of claim—poverty. The fee is said to have been "raised from 5*s.* to 10*s.* with a view to meeting certain objections advanced by this medical protection society." This is a good example of the way the house committee deals with professional criticism. We objected to fees being charged in maternity cases, thereupon the committee raised the fee. Naturally we considered this a challenge, not a concession. 2. The district nursing is handicapped by the maternity department, for the latter makes the doctors loath to call in Sister Katherine's nurses and accustoms the nurses to disregard the doctors, in spite of rules and regulations to the contrary. As to the "few trifling cases" which Mr. Pritchard says the nurses have attended without a doctor we will only state here that the evidence in our possession shows that in some at any rate of these cases the supervision of a medical man would have been of advantage to the patients. 3. To criticise the system of training prevalent in this institution is beyond the scope of this letter, but those of your

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readers who have not seen its annual report for 1897 will be interested to learn that it is described therein as "a nursing school for all England."

The west-end philanthropist, though far too polite to say so, appears to think the east-end doctor neither a man of education nor a man of honour. He does not ask us for help or advice in conducting a most difficult and essentially professional enterprise; he does not deign to employ logical arguments to meet our objections; and, finally, as instance Mr. Pritchard, he is surprised and a little hurt because we are not content to hold our tongues and squeeze what indirect advantage we can from an institution supported by charity. While we are willing to accept the larger share of blame for this as due to our supineness in the past we insist that concession should not be wholly on our side and hope that in the face of recent difficulties and failures the house committee of the Plaistow Maternity Charity will adopt the two initial reforms we are suggesting—viz.: (*a*) abolition of all fees in maternity cases and (*b*) adequate representation of the local medical profession upon the committee of management.

We are, Sirs, yours faithfully,
R. BUKSH.
FRAS. E. BROMLEY.
J. HEFFERNAN.
P. NAPIER JONES.

Plaistow, E., Sept. 20th, 1898.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 17th you publish a report on the Abuse of Nursing Charities from your Special Commissioner which I cannot allow to pass without a brief comment on some of the facts therein shown. Your Commissioner reports: "Thus a general practitioner related to me that a nurse from the Plaistow Maternity Charity came to him and asked for his assistance in a case of retained placenta. The nurse said that she had been to several other medical men and they had all refused to have anything to do with the case. My informant likewise refused. He argued that medical men should not be thus utilised at the last moment to get a nurse out of a scrape."

No doubt this gentleman would attend a case of chronic drunkenness, where delirium tremens or other complications had supervened, though not called in till the very last moment, but he would not attend a poor woman in imminent danger on the supervention of a complication which could not be foreseen and in what may quite well have been up to that point an ordinary case of labour. Would he have refused to attend the woman if when he had got to the house he had for the first time discovered that a midwife was in attendance? and would it have made a difference to him whether that midwife was trained or untrained? From your Commissioner's report it would appear that he would have assisted the untrained woman's patient but not the trained woman's. And yet the object of the training is, to a great extent, to teach the nurse to know when to send for medical assistance, and, indeed, trained midwives are bound to do so. It is evident that much valuable time was wasted in the case while the nurse, who, after all, could only act as the messenger of the patient, was trying to get qualified attendance for her patient.

May I point out some of the logical consequences of such an abuse of medical position? 1. The nurse will in the future not trouble to call in a qualified practitioner if at all doubtful of his opinions, but if the case be urgent will proceed to operate for herself. The first rebuff, at all events, will appear to her to justify her in thus acting. In a more difficult case she will send for a medical man whom she knows is disposed to help her patients, and this will involve the introduction of fresh medical competition into the district. 2. The nurse will be, to a certain degree, compelled to get more highly trained than she is at present and this will not be too favourable to the pecuniary interests of the trades unionists. 3. Medical men who attend people in such emergencies will be boycotted by their (trades-union) neighbours and they will then be between the coroner's warrant and their neighbours' ill-will. 4. The public will not patronise men whom they know to be bound by rules which disregard everything but the pecuniary necessities of trade. Trades unionists cannot stop from obstructing all measures which interfere with the extension of their trade; logically, they are bound to go on. Unfortunately for the pecuniary interests of the medical profession, its duty is to stop the spread of that very condition which fills its pockets. If once we sanction such proceedings as those I have quoted—forced, perhaps, to do so under penalties—farewell to our honour as medical men.

In view of the fact that the parish medical officer is bound to attend under such circumstances it is hopeless to try to prevent the patients of midwives from receiving qualified medical assistance when their condition requires it, and if what is evidently a local agreement to this effect were to become at all general, general practitioners would soon be left to enjoy their own society at their own cost. There is a right and a wrong way of filling one's pocket. These gentlemen have started on the wrong path. Let us hope that they will stop and that their example may prove a warning to others. I am, Sirs, yours faithfully,

F. R. HUMPHREYS.

Fellows-road, South Hampstead, N.W., Sept. 19th, 1898.

"TUBERCULOSIS AND THE MILK-SUPPLY."

To the Editors of THE LANCET.

SIRS,—One of the statements made in the lecture on Tuberculosis and the Milk-supply, published in THE LANCET of Sept. 17th, is slightly inaccurate. It was based on information given to me just before the lecture, but a more detailed examination of the cases show that one of the cow-sheds had not been examined, and in two cases instead of one the veterinary surgeon failed to see evidences of disease of the udder. Page 736, second column, line 10 from the bottom, instead of "Dr. Rivers informs me," read "Dr. Niven informs me that after receiving the results of my examinations the Sanitary Committee asked Mr. King to visit the cow-sheds from which milk had come which had been found tuberculous. Mr. King found that in fourteen out of the sixteen byres he examined there were cows with diseased udders," &c. I am, Sirs, yours faithfully,

Manchester, Sept. 17th, 1898. SHERIDAN DELÉPINE.

SUNSTROKE OR DELIRIUM TREMENS.

To the Editors of THE LANCET.

SIRS,—That sunstroke should be followed by mental derangement is *a priori* probable, and if there have been any authenticated cases of such a sequence during the heat wave it would be very interesting to have them recorded. Sunstroke has for long been recognised as one of the antecedents of insanity and a large number of cases of the latter malady come under care with a history of the former, but upon strict investigation it is almost constantly found that the symptoms of the "sunstroke," while they do not agree with the classical course of that malady, bear a striking resemblance to those of delirium tremens.

I am, Sirs, yours faithfully,

Catford, S.E., Sept. 16th, 1898. CHAS. MERCIER.

ANILINE COAL-TAR DYES.

To the Editors of THE LANCET.

SIRS,—The interesting and important case of death from effects of poison introduced into the skin by the use of stockings dyed with some poisonous dye referred to in an annotation in THE LANCET of Sept. 10th should draw professional and public attention to the serious results which often occur to persons who wear coloured hose, &c. Some years ago I drew attention—in the International Health Exhibition in London, 1884—to the evil effects of wearing hose dyed with aniline coal-tar dyes, showing the stuffs so dyed which I had collected from cases in which the patients had consulted me about certain eruptions caused thereby, and I went thoroughly into the matter with the assistance of my friend Dr. Hind, then medical officer of health to Manchester, and we found not only the aniline dyes such as rose aniline, rocceline, and azo-benzole red were very injurious to the skin if absorbed, producing violent inflammation and dermatitis, but that the fixing products, such as bichromate of potash, arsenic, &c., also produced the same very irritant effects. The septicæmia caused in the above instance at Hull might have been caused by the dye. I may mention two or three

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instances which have quite recently come under my notice 1. A lady, the wife of a medical man, called me to see her She was suffering from great inflammation and an angry wound of the leg followed by acute dermatitis of the whole body, with rise in temperature, after wearing some new stockings from which the dye had become absorbed. 2. Another lady consulted me with almost precisely the same eruptions, having absorbed the dye from a black stocking after an abrasion to the skin. 3. A lady consulted me with a violent eruption all over the shoulders and arms after when heated wearing a red dressing-gown—a portion of which I enclose—no doubt dyed with aniline dye.

The subject is by no means new, but it seems to me a matter of much professional and public interest.

I am, Sirs, yours faithfully,

Harley-street, W., Sept 14th, 1898. JAMES STARTIN.

A QUESTION OF ETHICS.

To the Editors of THE LANCET.

SIRS,—Should I in your opinion be doing anything unprofessional in giving the parent of each child vaccinated by me the following pamphlet: "Mr. A. E. Kennedy will pay the parents of any child £10 who may contract smallpox within ten years of being vaccinated by him"?

I know nothing that would so certainly convince people, and especially my anti-vaccination guardians, of the efficacy of vaccination, and I do not think I should lose my £10. But would it give professional offence?

I am, Sirs, yours faithfully,

A. E. KENNEDY,

Plaistow, E., Sept. 20th, 1898. Public Vaccinator.

*** Our correspondent must be careful to word his pamphlet so as to show that he is not claiming any particular skill for himself as a vaccinator but only acting for the good of the cause of vaccination. If this is made clear we do not think anyone will misconstrue his action.—ED. L.

THE IRISH CLUB.

To the Editors of THE LANCET.

SIRS,—May I ask the favour of a place in your columns for this letter? A number of Irishmen, for the most part resident in London, have joined together for the purpose of establishing a non-sectarian and non-political Irish Club, which will provide a central meeting-place in London for Irish residents and also for the many Irish visitors from Ireland, the provinces, and from abroad. With this object a temporary office has been taken at the address given below and a strong and representative provisional committee is being formed. May I therefore request that all Irishmen who are in sympathy with the movement thus briefly outlined will be good enough to communicate with me, when I shall have much pleasure in giving them any further information they may desire on the subject?

I am, Sirs, yours faithfully,

HENRY LENNANE, Hon. Sec. (*pro. tem.*).

11, Red Lion-square, High Holborn, Sept. 20th, 1898.

"UNTOWARD RESULTS AFTER ADMINISTERING RESORCIN."

To the Editors of THE LANCET.

SIRS,—I am not at all astonished at the experience of your correspondent "L. C." Resorcin is an escharotic of considerable power, acting chiefly on epithelium and therefore on mucous membranes. I have on several occasions employed it for destroying the granulations of rodent ulcer and epithelioma in cases where operation was refused or contraindicated. Resorcin is very soluble in water, 1 in 1, and it is not therefore surprising that, if placed in the unpowdered state, undiluted, on the delicate mucous membrane of an infant's mouth, it should produce caustic or vesicant effects. I should be very much astonished if it did not. The drug for internal administration should be diluted with some inert powder or given in some suitable vehicle. No doubt an adult might take it in the powdered state by swallowing it with a draught of some liquid without injury, but that is a very different thing from placing it on an infant's tongue, where it immediately forms a highly-concentrated and active solution. With regard to the discolouration of the specimen referred to this would either not affect its action at all or make it slightly less active. If your correspondent and his colleague had ordered 2 gr. of pure carbolic acid instead of resorcin, and the former had turned a pink colour as it does on exposure to the light, they might just as well attribute the caustic action that would follow to this discolouration as in the case referred to.

I am, Sirs, yours faithfully,

Sept. 20th, 1898. PHARMACOLOGIST.

"THE JOYS OF PLAGUE NURSING."

To the Editors of THE LANCET.

SIRS,—Will you allow me, as a nurse who has spent a good many years abroad, to say that I think it is hardly fair to so severely criticise the rules made for the plague nurses in Calcutta without knowing the special circumstances under which they were made? If I were living in a town in which rioting were taking place I should feel grave anxiety about my nurses if they went out at night unprotected and I should certainly consider myself obliged to ascertain their destination and the sufficiency of their escort; but, even apart from rioting, the whole social atmosphere is so different in India, especially in large towns like Calcutta, that I doubt very much if the liberty rightly accorded to women working at home would be understood there. I believe, for example, that in Calcutta anyone who likes to call upon anyone else is at liberty to do so, and in a country where a household of young women (apart from missionary settlements) is a complete novelty I can quite understand that the authorities may have feared that some most undesirable people might take advantage of the nurses' ignorance of Indian society and some most undesirable visitors be admitted. It was certainly hard upon the lady doctor to place upon her the onus of refusing to admit some visitors and of defending her nurses from such undesirable acquaintances, but as she was requested by the authorities to act as superintendent of the nurses her position probably brought her more into touch with the authorities and with residents in the place who knew the people and could advise her in such matters. To criticise the authorities and to blame them for "insulting the nurses" is to put a weapon into the hands of those who wish to insinuate that such rules were called for by the conduct of the nurses themselves. I cannot think for a moment that anyone wished to insult women who had come out at the call of duty and at considerable risk to themselves. The harm done was by the indiscretion of one or more among themselves or their friends by rushing into print instead of using proper means to have any rules which pressed hardly upon them altered. They were only to be in force for a short time and as soon as the rioting ceased were withdrawn. The correspondence caused great annoyance to many of the nurses who were thus forced into publicity. I may add that I think the greatest care ought to be exercised in the choice of nurses sent abroad to any position and that there ought to be an experienced committee to choose them, not entirely composed of men, and that the nurses' personal as well as professional qualifications ought to be strictly investigated and no one chosen unless the matron under whom she is working can personally recommend her for such a post. Testimonials are of little use. I know of one nurse chosen for plague duty and the matron of the hospital in which she was working was never asked anything about her: if she had been she would certainly not have recommended her for such a post.

I am, Sirs, yours faithfully,

Sept. 21st, 1898. A MATRON.

*** We did not say anything about "insult." The arrangements to which we took exception were those dealing with expenses.—ED. L.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.—The Secretary of State for the Home Department has made the following further appointments of Medical Referees under the Workmen's Compensation Act, 1897:—England: Circuit No. 6 (further appointment): Mr. Charles Hartley Bedwell Shears, Liverpool. Circuit No. 59 (further appointment): Mr. Thomas William Shepherd, Launceston. Scotland: Sheriffdom of Inverness, Elgin and Nairn: Dr. Murdo Tolme Mackenzie, North Uist.

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THE ORGANISATION OF THE MEDICAL PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

THE grievances against the Plaistow Maternity Charity, as already fully described,[1] have led to the formation of a medical union called the East Suburban Medical Protection Society. The remarkable feature of this movement arises from the fact that no sooner had a few medical men gathered together to deal with one particular abuse than they discovered that there were very many other abuses which could only be met by means of united action. In an incredibly short time the multiplicity of other questions which forced themselves upon the attention of the medical men who met together to discuss their grievances in regard to the Plaistow Maternity Charity was so great that the necessity of forming a permanent union became so self-evident as to be irresistible. The main—indeed, the sole—purpose which originally had brought the east suburban medical practitioners together has now become quite a secondary consideration. If all the abuses of the Plaistow Maternity Charity were abolished or the institution itself ceased to exist the medical union which it was instrumental in bringing into being has now its hands so full of other questions that it would have to continue its work as if nothing had happened. Indeed, there are so many and such various questions claiming its attention that it has been found necessary to place the association on a thoroughly legal basis. During the first six months of its existence the East Suburban Medical Protection Society held no less than twenty committee and four general meetings. Of course, as is inevitable in such cases, a good deal of time had to be devoted to the discussing and drawing up of rules, the selection of officers, and the defining of the objects held in view. Then there arose the great question of liability. What was the legal standing of the society and the responsibility of its members with regard to the expenses incurred?

The financial question is indeed a very serious stumbling block. Of course, it may be argued that a society should be self-governed, that the members should not sanction expenditure beyond the means of the society, and that if there is a deficit this is the members' own fault, and therefore they must subscribe to make up the difference. Several objections can be made against this line of argument. The society, for instance, might be involved in some libel or other legal proceedings occasioning an expenditure altogether beyond its normal resources. Then, again, a minority of members might not be willing or might not be able to subscribe the sums voted by a majority of members. No individual member would care to pledge himself to subscribe his share of any unknown sum which a majority might decide to spend. In a word, it was thought absolutely necessary to clearly define and limit the financial liability of the members. This certainly is not the true union spirit. The members, on the contrary, ought to be ready to pay extra levies in cases of emergency. Workmen, skilled and unskilled, submit to this, and it is a difficult matter to find any arguments to show why medical men should not do as much to defend the interests of their profession as workmen do to defend the interests of their craft. However, medical men are but on the threshold of such forms of organisation, whereas the artisans of this country have had experience extending back for more than a century. In any case, and as matters now stand, it was clear that though many practitioners were willing to join a medical union they did not feel that they were in a position to assume vague uncertain financial responsibilities. Therefore, and after taking legal advice, it was found that this objection could be best met by registering the union under the Companies Acts. Thus the union has become a limited society and the financial responsibility of its members does not extend beyond the amount of their shares. The share, of course, is fixed at £1, or rather at 1 guinea, but the annual subscription is only half a guinea. It is only in the event of the society being wound up or under exceptional stress that the members may be compelled to pay the full guinea. Therefore their legal liability is limited to this small sum. Each member on joining must sign the following application form:—

"I [name in full] wish to be elected a member of the East Suburban Medical Protection and Medico-Ethical Society, Limited, and I hereby agree, if elected, to pay the annual subscription (present subscription is 10*s.* 6*d.*) and such other sums as the society may from time to time require of me, provided that such other sums shall never exceed the sum of one guinea in any year, and to abide by and obey the articles, by-laws, and regulations of the society now in force, or which may from time to time be enacted by the society in a legal manner, as provided by the Articles of Association."

For the purposes of registration the society is declared to consist of 500 members. The members are elected by the Executive Council. Three black balls suffice to exclude a candidate, but he may present himself again at a subsequent meeting. The subscriptions are due on Jan. 1st, but members elected in November or December only pay 5*s.* for that year. Members cannot ask for the help of the society unless they have paid up all dues. Those members who make a written request have a right to appear before the Executive Committee and explain their grievance. The annual subscription must be paid within one month, other calls within two months of the time when they fall due, and if the member fails to do this he *ipso facto* ceases to belong to the society, but may be reinstated at the discretion of the Executive Committee on his paying all arrears. Members wishing to leave the society must send in their resignations in writing and pay all they owe. Finally, if the acts or conduct of any member shall, in the opinion of the Executive Council and after due investigation, be considered unworthy the council may censure, suspend, or expel such member. The Executive Council consists of 20 ordinary members, and the President, vice-presidents, two trustees, a treasurer, and a secretary. These officers and the Executive Council are elected at an annual general meeting of the members. The Executive Council may fill up vacancies if they should occur between the annual meetings. It must meet at least once a month and oftener if summoned by its chairman or by 5 members of the Executive Council or 10 members of the society. It is to be noticed that it has already met 20 times in 6 months. There are, besides, rules for the keeping and auditing of accounts and the books may be inspected by all who have an interest in the society. The Executive Council has the power to employ paid agents.

Such, then, are the general rules for the governing and constitution of this new medical union. Dr. F. J. Smith, senior assistant physician to the London Hospital, was elected President and Mr. Murtaugh Houghton of Ilford secretary of the society. The members are for the most part general practitioners residing in East and West Ham, Hackney, Plaistow, Canning Town, Walthamstow, and in the various towns and districts on the line to Epping and on the line to Romford. Indeed, there is no reason why the action of the society should not extend from Aldgate to Southend-on-Sea and ultimately enroll some 3000 members. The registered office of the society is at the West Ham Hospital. Within six miles of this office there are at least 1000 medical practitioners. More than 200 have already contributed to the society's funds, though no active measures were taken to make members. It was first necessary to settle the legal position of the society. Now that this has been done systematic efforts will be made to enrol all the medical men living in east suburban London.

It was in December, 1897, that a Provisional Committee had been formed, and, as already related, a circular concerning the Plaistow Maternity Charity was issued by Mr. Charles Allen and countersigned by 51 local practitioners. That was the beginning of the society, now formally and legally constituted and governed by the rules described above. Hardly, however, had the matter of the Plaistow Maternity Charity been taken in hand than the profession was much disturbed by the proposal to employ moneys collected during the Jubilee year to open a new hospital, dispensary, and nursing institution at East Ham. 600 circulars were dispatched to practitioners likely to be affected by this new hospital, urging that it should not be supported by the profession unless at least 25 per cent. of the Managing Committee were medical men. After some negotiations this condition was accepted; thus the medical men gained their point, though their organisation was as yet only in an embryonic condition. Then there occurred some

[1] THE LANCET, August 27th and Sept. 17th, 1898.

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difficulty between Dr. Vallance and the West Ham Guardians. The society came to his assistance, so that, whatever may be the merits of this case, the position of the medical man concerned was strengthened and he was not left alone to wage an unequal war against his employers, the board of guardians. Subsequently several cases arose of medical men who were advertising and others who accepted sixpenny fees. The question of a minimum fee has been more especially discussed among the practitioners of Manor Park. The population of this district is about 10,000, the majority of the inhabitants work at the building trades, and there is so much building to be done in this neighbourhood that the men are supposed to earn from 30*s.* to £2 per week. Sometimes men cannot be obtained and wages of 1*s.* 2*d.* an hour have been paid. Other inhabitants are clerks engaged in the city and many among them are poorer than the workmen. Then there are some retired tradesmen, notably publicans, and they generally own and let three or four houses. Thus the population is not poor and there is not much sickness. What, under these circumstances, should be the minimum fee? When dealing with poor people even a shilling fee with medicine included cannot be obtained if there are some other practitioners in the neighbourhood who accept less. The majority of practitioners at Manor Park charge 1*s.* 6*d.* for consultation at their surgeries and 2*s.* 6d. for visits, but some only charge 1*s.* 6*d.* for visits and one or two practitioners have given medicine and advice for 6*d.* This undercutting is so bad that now even the dispensing chemists are beginning to grumble. Thus recently a druggist having made up a prescription charged 9*d.* The customer, however, indignantly complained and argued that had he gone direct to the medical man he would have obtained both advice and the medicine for 6*d.* At Manor Park many of the local practitioners are newcomers and it is not altogether easy to get them into line nor are they yet quite agreed what the minimum fee should be; and this question has already been discussed several times by the East Suburban Medical Society. Some want to organise a medical agency and out of the multitude of suggestions and proposals made it was finally decided to draw up a list of "objects" and embody them in the Articles of Association. These so-called objects constitute a somewhat attractive programme and should help to increase the number of members. They include the obtaining of adequate representation of medical men on the governing and managing boards of medical charities. This principle we have seen has already been successfully applied at the new East Ham Hospital. Then the society is to wage the battle of the clubs, to seek to suppress medical aid societies and clubs which are not managed in an honourable and professional manner, and to do this successfully it is proposed to establish a public medical service somewhat on the same lines as those adopted at Coventry and Eastbourne. The society likewise desires to engage the services of paid trained nurses to be placed under the sole direction of registered medical practitioners. On the other hand, it will seek to prevent the public engaging the services of nurses who are employed by others than medical practitioners. The society will aid in the prosecution of persons accused of infringing any of the laws which protect the interests of the medical profession. On all such questions and whenever necessity may arise it will endeavour to approach the General Medical Council.

A new and important sphere of action will be organised. This consists of collecting outstanding debts due for medical attendance to members of the society. For this purpose it is proposed that one or more collectors should be appointed so as to save members the trouble of having private collectors of their own. Care will be taken to avoid, as far as possible, doing anything which might offend the patient. Such collectors will also receive weekly subscriptions if the patients prefer that form of payment. For this important service it is suggested that the charge should be only 5 per cent. on the amounts actually collected and this is to include postage and travelling expenses. This 5 per cent. may suffice where comparatively large sums are easily collected, but where weekly subscriptions of 1*d.* or thereabouts are paid 5 per cent. on 1*d.* or so is not sufficient for the trouble of collecting. When the collector cannot obtain the money the society's solicitors will take the matter in hand and they also will only charge a commission of 5 per cent. on the amounts collected. If it be necessary to prosecute and nothing is obtained from the debtor the member of the society will only have to pay the court fees, the solicitor's professional charges being paid by the society. Further, and as an alternative, a member may hand over his doubtful accounts if of not more than two years' standing to the society. The society will proceed at its own risks and will pay all the court and other fees, the member having therefore no risk to incur. On the other hand, should the money be recovered the society will keep one-third of the amount as its commission. This is not an exorbitant charge, for the fees payable to the treasury in County-court cases from the issuing of the summons until all useful remedies have been exhausted come to about 20 per cent. on debts which do not exceed £20. Undoubtedly a service of this description, if well organised and managed, would be of great benefit and would materially help to cement the bond of union between the members of the society.

Another form of coöperation is proposed which consists of the establishment of a medical agency for the sale of practices, negotiating partnerships, engaging assistants, locum tenents, &c., and in such cases a nominal fee would be charged. The proposal to keep and communicate where desired a black list of patients who have failed to pay their medical bills is likewise in the programme. The members will be able to obtain legal aid and advice whenever they are involved in a case which concerns the general interests of the profession. Efforts will be made to assist, by monetary donations or other means, members, their widows and orphans, in sickness, adversity, or old age. For this charitable purpose the society, in its Articles of Association, reserves the right to receive special donations and to invest funds. Finally, the society undertakes to organise professional meetings, concerts, lectures, and other entertainments, thus facilitating social intercourse and adding pleasure to business.

All this undoubtedly constitutes a very full and elaborate programme. Its complete realisation will be a work of time. Rome was not built in a day and there is a painful difference between the inception of a scheme and its realisation. Nevertheless, the society, considering that it is but in its infancy, has worked well so far. It has an energetic secretary, and that is an important consideration, nor does there seem to exist within its ranks any feelings of jealousy or any factious divisions. In other towns and districts such elements of discord have unfortunately done much to mar the success of similar movements. Therefore there is good ground to hope that the East Suburban Medical Protection Society is now fairly launched on a long career of moral and material usefulness to the members of the profession.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague in India.—Improved Prospects of Civil Assistant Surgeons.—Medical Inspection of Passengers by Rail and Boat.—The Second Report of the Bombay Plague Committee.

ON the whole plague has increased during the past week. Over 2300 deaths were reported from the Bombay Presidency and about 20 from the rest of India. It does not seem to die completely away in Karachi and in Calcutta the cases may still be described as sporadic. The general mortality is rising in Bombay and there is reason to fear that more cases occur than are reported.

A recent Government resolution with regard to civil assistant surgeons greatly increases their prospects. A senior grade on a monthly salary of Rs. 300 is sanctioned. Promotion to this grade will be made entirely by selection, the lower grades as before requiring examination. In the Bombay Presidency the assistant surgeons specially selected for the highest posts must have rendered at least 21 years' approved service. There will also be 18 civil surgeoncies to be filled by civil assistant surgeons—in Madras 5, Bombay 2, Bengal 5, North-West Provinces and Oudh 2, Punjaub 2, and Burma 2. It is also proposed subsequently to increase the number to 28. The maximum salary of these posts when in independent charge will be Rs. 500, and when temporary Rs. 350 *per mensem*. Medical inspection for plague of passengers whether by rail or sea, while it detects obvious cases of illness and thus deters the sick from travelling,

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cannot ensure against the occurrence of subsequent development.

Two or three cases have arisen on outgoing steamers lately and there must be a considerable number of persons in the incubation stage who successfully pass the railway inspections. At any rate, the system reduces the dangers to a minimum, and the only alternative of quarantine for from seven to ten days is impracticable. At the various camps protecting Calcutta 7911 persons were examined during the past week, of whom 448 were detained as suspects. It is not reported that any case of plague was discovered. As Calcutta itself has shown so few cases these results cannot be put down to medical inspection, but they point rather to the absence of infected persons travelling there. The occurrence of only about 200 cases in Calcutta in three months shows the slightly infectious or contagious nature of the malady and the persistent continuation of plague in the district of Mandvie in Bombay and in Ward 8 in Calcutta emphasises once more that the habitation is the harbour of the poison.

I regret to have to record the death from plague of a lady practitioner, Miss E. Phillips. She graduated at Calcutta, but was at the time house surgeon at the Cama Hospital, Bombay. She was only twenty-three years of age.

The second report of the Bombay Plague Committee just published is of little medical interest. It is elaborately statistical and records the various regulations which were from time to time adopted during the second outbreak in Bombay. During the first three months of the year, when the disease was most prevalent, 5363 persons who had been in immediate contact with plague patients were removed to camp, and out of this number only 131 (or 2·4 per cent.) are recorded as having subsequently developed the disease. With regard to the medical inspection of the passengers and crews of incoming and outgoing vessels it is stated that from July 1st to March 31st 481,250 persons were examined coming into Bombay, of whom 38,223 were subjected to segregation. Out of this enormous number only 27 plague cases were discovered. On outgoing vessels 540,438 persons were examined and 115 plague cases only were detected. The hospital reports are particularly meagre, but they show the utterly worthless returns made from some of the private and caste hospitals. A short bacteriological report indicates how much more might have been done in this direction if some of the English medical men had been posted to this work rather than to the police-like searching for plague-stricken people to which they were allotted. What this volume shows unmistakeably is that the successive measures adopted by the Plague Committee were all carried out too late. The stable door was locked after the horse had been stolen. The measures adopted followed the course of the epidemic instead of anticipating it. Mention of the various regulations which caused dissatisfaction is candidly made, and an explanation of the disturbances which culminated in the riot of March 9th is also given. The whole volume bears witness to the unfortunate policy adopted and to the misfortunes which followed from the beginning to the end of the period with which the report deals.

Sept. 3rd.

THE SOUDAN CAMPAIGN.

(FROM OUR SOUDAN CORRESPONDENT.)

THE BATTLE OF OMDURMAN.

I HAVE just returned from Omdurman with the first convoy of sick and wounded from the battle. As far as we can ascertain the number of killed does not exceed 35, including 3 officers and a war correspondent, Mr. Hubert Howard of the *New York Herald* and the *Times*, and wounded 150.]

You will have received long ere this graphic accounts of the battle, but I may add (as one who saw the start and the finish) that it was one of the most impressive and wonderful sights of modern days, and that never shall I forget the magnificent charges of the Bagarras right up to the bayonets of our men and the splendid heroism and bravery shown by these rude warriors. The regiment that suffered most was the 21st Lancers, which had 21 killed and about 40 wounded, mostly sabre and spear wounds of a ghastly nature, in most cases severing all the structures down to the bone and causing frightful hæmorrhage from which several died. From my own station on the field I passed back during the first engagement between 50 and 60 wounded, all bullet wounds varying in severity from a penetrating wound of the skull or chest down to a concussion by a spent ball. At this early stage it is almost impossible to give any very definite ideas of the working of the various dressing stations and field hospitals, but on every side and from every mouth nothing but praise is accorded to the admirable working. Not a single man was left on the field a moment after his injuries had been attended to, and I can say without fear of contradiction that not a man was left on the field five minutes after the "cease fire" had sounded.

On our way down to this place we had ample opportunities on the boat for operating, and altogether 20 or 30 successful bullet extractions and minor operations were performed, and at the present moment all the wounded officers and men are comfortably established in this excellent hospital with every comfort which can be provided, and directly the men are fit to be moved they will be sent on. Unfortunately there is a great deal of enteric fever up the river, and at Royan Island, beyond Shabluka, they have had several fatal cases. There still remain several cases to be operated on here, where they will have the benefit of the x rays, for which a separate ward has been entirely set apart, the apparatus being one of the latest construction and perfect in every detail. Those cases in which we were unable to detect the bullets on the way down will be examined here by the rays and operated on. There remain several cases which will require operation, and this can be carried out here under the most favourable conditions.

Hospital on Line of Communication, Abadia, Soudan, Sept. 6th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The General Hospital.

THE committee of the General Hospital have decided to appoint an ophthalmic surgeon and a dental surgeon to the staff of the institution. Advertisements stating the conditions of the appointments have been issued and it is expected that some keen competition will be the result. The character and tone of these offices will take their standard largely from the first appointments. The committee are therefore anxious that the best candidates should be elected irrespectively of any other considerations; they desire that they should be worthy of the traditions of this honourable charity.

The Health of the City.

The return of the medical officer of health shows a decrease in the death-rate for the first week of this month, the total being 20·3 per thousand of the population. There were no deaths from small-pox, measles, or scarlet fever. Two deaths occurred from diphtheria and 48 from diarrhœa during the week. 52 cases of scarlet fever were notified and 22 of typhoid fever. The total number of scarlet fever cases in the hospital was 172, a decrease of 9 as compared with the previous week. Considering the state of the weather and the general water-supply the returns are looked upon as gratifying.

The Conscientious Objector.

The new Vaccination Act has already brought a crop of applicants, the majority of whom while weakly reasoning strongly feel. The interpretation of the complicated provisions exhibited in the Act varies much according to the views held with regard to the right solution of the clauses. The grounds of one objector as shown at the city Police-court on Sept. 17th were novel and hardly convincing to a scientific mind. The applicant stated that vaccination would be prejudicial to the life of his child. He considered that if our Creator thought it necessary for man to be inoculated with the cow-pox He would have done so before we were born. The magistrates granted the application, though, as they stated, unwillingly. Certainly if grounds such as these are held to be sufficiently forcible the intentions of the Act will distinctly fail in securing the greatest good to the greatest number.

The Diagnosis of Drunkenness.

At a local police-court on Sept. 16th a case of alleged drunkenness was defended on the ground that the defendant

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was subject to epileptic seizures. The constable who appeared in the case stated that he held a St. John Ambulance certificate and could distinguish a fit from drunkenness. The medical man called proved that he had attended the defendant for the past five years for epilepsy, from which she had suffered since childhood. The disease had become chronic and had affected the patient's mind. Her condition in such seizures might easily lead anyone to believe that she was intoxicated. Upon the evidence adduced the Bench dismissed the case. The problem still remains a difficult one to distinguish drunkenness from some diseases. Any definite signs of a fixed kind would be a welcome addition to our knowledge.

Sept. 20th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Thompson-Yates Laboratories.

THE Council and Senate of University College, Liverpool, have issued invitations for the opening by Lord Lister of the new laboratories of physiology and pathology, presented by the Rev. Mr. Thompson-Yates, on Saturday, Oct. 8th, at 3 P.M.

Distinction for a Liverpool Student.

Lord Lister, the President, and Professor Michael Foster, the secretary, of the Royal Society, have nominated Dr. S. R. Christophers, an *alumnus* of University College, Liverpool, as a member of the commission for the investigation of malaria in the British Colonies. Dr. Christophers is quite a young man, but he has devoted much time to work in the physiological and pathological laboratories of University College, where his career as a student has been a distinguished one. In 1893 he carried off the Torr gold medals for anatomy and physiology, having in the previous year won the junior gold medals in the same subjects. He was elected Holt Tutorial Scholar in 1895-96. Dr. Christophers will proceed to Italy without delay, where he will familiarise himself with the aspects of the disease in that country. Professor Golgi, of the University of Pavia, has kindly offered him all the facilities afforded by the Pavia laboratory for the study of malaria. Thence he will proceed to the Roman Campagna and later to Africa—probably to Blantyre, on the east coast. Dr. Stephens, of Cambridge University, will accompany him to Italy and Africa. His many friends here heartily congratulate Dr. Christophers upon his appointment.

Hospital Sunday in Southport.

Collections were made in the churches and chapels of all denominations in Southport and district on Sunday, Sept. 11th, on behalf of the funds of the Southport Infirmary. The infirmary has lately extended its sphere of usefulness by the addition of special departments for the eye, ear, and throat, consequently the committee appeal for an increase of funds to enable them to carry on the additional work. The weather during the morning was all that could be desired, favouring large congregations; unfortunately, in the evening rain fell for several hours, considerably interfering with attendance at church, and it is feared that the amount expected will not be realised in consequence.

Liverpool Medical Institution.

The first meeting of the session will be held on Friday, Oct. 7th. The President, Dr. W. Macfie Campbell, will deliver the inaugural address on Some Old Authors and their Books, with lantern illustrations. The President will entertain the members of the society, together with visitors who will be present in Liverpool on the occasion of the opening of the new Thompson-Yates Laboratories by Lord Lister, to supper at the rooms of the institution, followed by a smoking concert.

Sept. 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Ambulance Associations in Aberdeen.

THE St. Andrews and Aberdeen Ambulance Associations have now been amalgamated. The title of the new body is of formidable length, but its operations will extend to the counties of Aberdeen, Banff, Elgin, and Kincardine.

Typhoid Fever Epidemic in Aberdeen.

A serious outbreak of typhoid fever has occurred in Old Aberdeen district. This has been traced to the milk-supply from two particular dairies which the authorities have ordered to be closed. 20 cases have already been reported.

Sept. 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Nursing in the Belfast Workhouse.

THE Local Government Board have written to the Belfast Guardians enclosing a copy of a communication received from the visiting medical officers of the workhouse, in which it appears that on the date of their letter there were only 44 nurses for the infirmary for both day and night for 1500 patients, while the medical officers consider that there should be 82 nurses, of whom 22 would be engaged at night duty in order to abolish pauper nursing. The guardians appointed 15 probationer nurses on Sept. 6th, 11 of whom were to replace 11 temporary probationers, which will only increase the nursing staff to 48, while the medical officers think that 34 more would be required. Mr. Agnew, the inspector of the Local Government Board, reports that the proportion of trained nurses is altogether insufficient and the Local Government Board request the guardians to appoint an increased staff. The medical officers are most modest in only asking for 3 day nurses and 1 night nurse per 100 patients, and yet this demand repeatedly made by them has never been granted, and if pauper nursing is abolished they believe that 4 nurses for every 100 patients by day and 3 by night for every 200 patients will be required. The guardians are to consider the matter in a fortnight.

Sept. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Bone Grafting.

THE end of the holiday season is already evident by the improved attendance at the various societies. At the meeting of the Academy of Medicine held on Sept. 13th M. Berger read a paper for M. Ricard upon Living Bone Grafts. The first case was that of a patient in whom M. Ricard had supplied the loss of a portion of the cranium which had been removed on account of an osteo-sarcoma. The graft was taken from the ilium of a dog. Five years later the patient was taken into the Salpêtrière with sarcomatous growth all over her, except that in the original site of operation there was no recurrence. That the graft had persisted was perceptible to the touch. It is well known that heteroplastic grafts often do disappear and are replaced by a fibrous growth so firm as to give the idea that the graft has persisted. It would have been interesting in this case to have radiographed the graft and also to have taken a portion of it for examinations so as to have had direct evidence of the persistence of the osseous tissue. The second case was that of a young woman suffering from destruction of the bony tissues of the nose. On two occasions attempts have been made to restore the shape of the nose by inserting a metal bridge, but the presence of the metal had always set up ulceration. M. Ricard split the nose in the middle line, separated the skin from the mucous tissues, and introduced between them the fourth metatarsal bone from the patient's own foot. He then united the flaps over the bone. This graft caused no irritation, but the bone mass was eventually replaced by a firm fibrous mass, which, however, enabled the nose to preserve its shape to a certain extent, although, as M. Berger remarked, the nose was too short and thick. He considers that autoplastic grafts have no very special advantages over those taken from animals and is himself disposed to use the latter.

Some Consequences of the Heat Wave.

The excessive heat prevailing in Paris for the last two

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weeks has had a markedly injurious effect upon the public health. In addition to the numerous cases of sunstroke gastro-intestinal affections have run up to an unprecedented number owing to the water-supply being temporarily enhanced by water taken from the Seine, the ordinary sources of supply being insufficient to meet the demand. Some cases of gastro-enteritis have been of a very severe type, death occurring in about three days; others have been milder and very few Parisians have escaped an attack of this mild form. Every effort is being made to increase the supply of drinkable water for the town and it is hoped that by next year water from Lunain will be available. Last week an artesian well was bored at the Butte aux Cailles. This well, the boring of which was originally commenced in 1864, gives a minimum supply of 6,000,000 litres per diem at a temperature of 27° C. The water, which is very pure and appears to come from the shell beds of the Jura, will be used in part for a thermal bathing *établissement* and in part, after having been cooled down to 12° C., for drinking purposes.

The Fire at the Central Pharmacy.

A fire broke out on Sept. 14th at the great Central Pharmacy in the portion of the building devoted to the machinery and the storehouses, where are kept the finished products for immediate distribution. It was late when the fire broke out (9.30 P.M.), so that the staff had all gone. The patrol had just been round and observed nothing unusual. The alarm was given by a workman employed in the dispensary whose windows looked out upon the dispensary. The fire brigade, which arrived very quickly, were enabled to report all danger at an end after half an hour's work. The machinery shop is entirely destroyed and the fire is supposed to have originated from a spark from an electric machine having ignited some shavings.

Rabies in Paris.

Owing to the number of cases of rabies recently reported in Paris the Prefecture of Police has taken severe measures with regard to vagrant animals. M. Proust, at a recent meeting of the Board of Hygiene, expressed his approval of these measures, which consist first in the application of the regulations of May 30th, 1892, and secondly in the application of the resolution that the owner of any animal which has bitten a person should be promptly prosecuted. M. Proust has drawn up a table of the cases of rabies reported in 1897 throughout the department of the Seine. There were 351 persons treated at the Pasteur Institute, with 5 deaths—that is to say, 1·4 per cent. In 1896 there were 2 deaths; in 1895, 1; in 1894, 1; in 1893, 4; in 1892, 5; in 1891, 5; in 1890, 1; in 1889, 6; in 1888, 19; in 1887, 9; in 1886, 3; in 1885, 22; in 1884, 3; in 1883, 4; in 1882, 9; and in 1881, 21. In 1897 there were 17,700 dogs seized by the police in the houses of the public, of which number 17,241 were seized in Paris and 529 in the suburbs. Animals known to have bitten people in 1897 in Paris and the suburbs as well number 1826; of these 1594 were dogs, 84 were cats, 146 were horses, and 2 were other animals. 564 were in a state of rabies, 1212 were healthy, and 50 were unknown. 164 adults and 58 children were bitten by animals suffering from rabies, 742 adults and 407 children were bitten by healthy animals, and 34 adults and 9 children were bitten by animals whose condition was not certain. 787 dogs, 212 cats, and 3 other animals were bitten by rabid animals in 1897.

Sept. 20th

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Local Application of Steam in Metrorrhagia.

AT the last Surgical Congress Professor Dührssen of Berlin made a short communication on the Treatment of Menorrhagia by the Local Application of Steam, and he has recently published an article on the subject in the *Berliner Klinische Wochenschrift*. The method was devised by Professor Snegirjeff of Moscow, who applied steam at a considerable temperature in a case of profuse hepatic hæmorrhage after the extirpation of an echinococcus, and he subsequently had recourse to it in uterine hæmorrhages. Professor Dührssen points out that a permanent cure of dangerous metrorrhagia may be effected in this way without an anæsthetic being required, and that the method is applicable in some cases for which severe operations have hitherto been considered necessary. The apparatus employed is quite simple, consisting of a boiler which is heated by a spirit lamp and from which steam is supplied by a caoutchouc tube to a metallic catheter introduced into the uterus, so that the steam from the boiler escapes through the eyes of the catheter into the uterine cavity. When steam has acted for one minute the mucous membrane of the uterus becomes white and hæmorrhages generally stop at once. After four days a second application may be made, but not for more than one minute, as the mucous membrane is liable to be destroyed by the prolonged action of steam. Professor Dührssen's first cases were three patients, one of whom was the subject of hæmophilia and suffered from menorrhagia so profuse that her life was endangered, and extirpation of the uterus had been proposed by her medical attendant. In this case the hæmorrhage was stopped by a local application of steam of two minutes' duration, but after nine days a tubular body was discharged from the uterus which proved to be the entire uterine mucous membrane together with a portion of the subjacent muscle. The patient had a second hæmorrhage thirteen days afterwards, and on the twentieth day steam was applied for the second time, after which no menorrhagia ensued. The exfoliation of the uterine mucous membrane, of course, produced complete adhesion of the uterine walls so that on examination some weeks later no uterine cavity could be found. The same was observed in the two other cases. The method is therefore contraindicated in young persons and of course in hæmorrhages due to malignant growths; but it is specially useful in profuse metrorrhagia at the climacteric period caused by chronic metritis or by interstitial myoma. To avoid adhesion of the uterine walls in young patients Professor Dührssen proposes to apply the steam for a quarter of a minute only and not to repeat it before the next menstruation. This treatment has also been employed successfully in puerperal fever, especially in septic endometritis and in subacute and chronic gonorrhœa of the cervix.

The Death of Professor Nasse.

On Sept. 1st Professor Nasse, the first assistant of Professor von Bergmann, lost his life by an accident. The deceased was an enthusiastic mountain climber and one of the leading members of the Berlin section of the German Alpine Association. Spending his holidays, as he usually did, in the Alps he had made the ascent of Mount Palu, near Pontresina, in company with Dr. Borchard and two guides. When the party were descending and were crossing a glacier a snow-bridge on which Professor Nasse was walking, suddenly gave way. The party being roped together the first guide and Professor Nasse both fell into a crevasse. Dr. Borchard and the second guide also slipped some distance, but at last succeeded in gaining a firm foothold, and both supported their companions by the rope. Unfortunately Professor Nasse had tied the rope round his chest instead of round his pelvis so that his chest was compressed by the tightening of the rope and his breathing soon became difficult. When suffocation was imminent the first guide, hoping to save Professor Nasse by taking the strain off the rope, risked his own life and cut the rope between himself and his unfortunate companion. But this sacrifice was of no avail. The two men standing at the edge of the fissure were now of course able to draw Professor Nasse out of the crevasse, but he was cyanosed and unconscious and after a few feeble respirations he died. The guide, who will become famous for his heroic action and who has justified the old-established renown of the Swiss guides, fortunately escaped death; he was found at the bottom of the crevasse having only sustained some bruises. The news of Professor Nasse's terrible death was received with the utmost sympathy among medical and lay circles in Berlin, where he had a prominent position as head of the out-patient department of the Royal Surgical Clinic. He had made a good many contributions to modern surgery and came especially into notice during the late Græco-Turkish war as leader of the German Red Cross Mission to Constantinople. Professor Nasse resided several months in the Turkish metropolis as chief surgeon to the great military hospital of that city. It was a sad coincidence that on the day of his death the Official Gazette published the news of his being decorated by the Sultan in recognition of the services he had rendered to the Turkish wounded soldiers. Professor Nasse had twice before escaped from imminent death—once on the occasion of a gas explosion on the premises of the surgical clinic, where

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his skull was fractured, and once at Constantinople, where he nearly died from a poisoned wound on one of his fingers.

Spirilla in Pleuritic Exudation.

In a case of pleurisy treated in the military hospital of Munich Dr. Welke detected very peculiar micro-organisms which he has described in the *Münchener Medicinische Wochenschrift*. A soldier presented symptoms of pleurisy and pneumonia; he suffered from rigors, high fever, pains in the chest, cough, &c.; on percussion there was dulness in the left side, auscultation showed bronchial respiration with rhonchi, and an exploratory puncture gave evidence of highly fœtid purulent exudation. Before an operation could be performed a large quantity of this fluid was suddenly discharged through the bronchi, the fever decreased, and the patient recovered although very slowly. During convalescence pleurisy of the other side appeared, but passed off in a few days. In the fluid obtained by the puncture Dr. Welke discovered, in addition to leucocytes and streptococci, a great number of filiform micro-organisms which were extremely motile, displacing the leucocytes in the course of their movements. Some of them had a fusiform process at each end and their length was from 100 to 140 μ ($\frac{1}{250}$ to $\frac{1}{180}$ in.). By-and-by their motility became less and stopped altogether in from 25 to 30 minutes, when the pus had become cold. The fluid discharged through the bronchi could not be examined until after the lapse of two hours, by which time the organisms were, of course, dead. It was not found possible to classify the organisms; their great length proved that they did not belong to the bacilli and Professor Hertwig, to whom they were shown, believed them to be either spirilla or protozoa. How they had come into the pleuritic exudation could not be ascertained; probably they had made their way into the pulmonary abscess during the act of inspiration and finding this medium favourable to their development they had increased very rapidly.

Sept. 19th.

Obituary.

GEORGE WILLIS, M.D. GLASG., L.R.C.S. EDIN., L.S.A., J.P.

BY the death of Dr. George Willis, which occurred at his residence, Oak House, on Sept. 15th, the town of Monmouth loses at once its oldest medical man and one of its most prominent inhabitants. The deceased was the eldest son of Mr. George Willis, of Florencecourt, county Fermanagh, and was born in Ireland in 1828. He was the lineal representative of Captain William Willis, first High Sheriff of Fermanagh (1591), and was related to many well-known Ulster families. Dr. Willis received his medical education at Glasgow, having previously served an apprenticeship to Dr. Mahood of Enniskillen, and in 1850 graduated as M.D. at the university there, but his energetic spirit led him (before becoming qualified) to volunteer for the post of house physician to the cholera hospital during the great cholera epidemic of 1848, an act of devotion which was subsequently acknowledged by a handsome testimonial from the committee. In 1850 he also took the diplomas of L.R.C.S. Edin. and L.S.A., and married Miss Frances Spencer and settled down in Monmouth, having bought the practice of the late Mr. Thompson of that town. Dr. Willis's connexion with Monmouth therefore extended to nearly forty-eight years. He was mayor three times—namely, during the two periods 1861–63 and the period 1886–87. In his first year of office the great cotton famine brought about by the civil war in America caused serious distress in the North of England and he gained much credit by his persevering work in connexion with the local organisation for the raising of funds to relieve the Lancashire operatives. The Queen's Jubilee year was celebrated in 1887, on which occasion Dr. Willis's administrative talent was conspicuous, as he took an active part in the arranging of the festivities and popular rejoicings in the town. Working at first in the Monmouth Dispensary he persevered until the dispensary became a hospital as well as a dispensary and during the whole time his services were constantly rendered to the poor of the district. He was also surgeon to William Jones's Charity, Justice of the Peace for both borough and county, and formerly medical officer of health of the Monmouth Rural District. As a medical man Dr. Willis was shrewd and far seeing; as a friend he was staunch and true. Few practitioners contrived so well to see the best side of human nature as did George Willis, and his good humour, his good nature, and his good sense were almost contagious. Fond of the young, entering into their interests with enthusiasm, obtaining from them and their faults many of his humorous episodes, he was by them beloved, trusted, and looked up to. As a Justice of the Peace he rendered a long and useful service both to the town and the county, and as a medical officer of health he allowed few things to escape observation and remedy. Dr. Willis was a widower, his wife having died in 1892. He has left a son, the Rev. W. Armstrong Willis, rector of Llanrothal in Herefordshire. The deceased's brother, Dr. William Willis, spent the greater part of his life in Japan and Siam. An obituary notice of him was published in THE LANCET of Feb. 24th, 1894, p. 507.

RICHARD ELLIS, F.R.C.S. EDIN.

BY the death of Mr. Richard Ellis, of Rye-hill, Newcastle-upon-Tyne, the north of England loses one of her oldest and most esteemed practitioners. Mr. Ellis was in his sixty-seventh year and had been in failing health for some time past, although he was only confined to bed a fortnight before his death. He was born in Dublin and studied medicine at Edinburgh, Dublin, and London, taking his diplomas at Edinburgh. Commencing practice at Whitby he settled at Newcastle in the year 1860. In his early days he was a great and intimate friend of the late Dr. Marshall Hall and, like him, was keenly interested in the physiology of the nervous system. He was instrumental in raising funds for the scholarship established to the memory of Dr. Marshall Hall and a valued possession of his was the microscope used by that distinguished physiologist. Mr. Ellis also worked assiduously at the subject of diseases of the throat and ear, taking great interest in the Throat and Ear Hospital of Newcastle, to which institution he was at the time of his death senior consulting surgeon. He was for many years a contributor to our columns, acting at one time as our Northern Counties correspondent, and was in 1878 the Special Commissioner of THE LANCET appointed to inquire into the sanitary condition of Sunderland. Taking a great interest in all charitable agencies he was from the very first a warm supporter of the Hospital Sunday Fund. He married the youngest daughter of the late Dr. Richard Ripley of Whitby. She died some two months ago and possibly the beginning of his own illness dated from the time of hers. He was the author of "The Ear and Throat," which reached an eleventh edition, and published in our columns a paper on "The Marshall Hall Method of Treatment in Asphyxia, with case of Asphyxia from Submersion successfully treated," which was eventually embodied in Dr. Hall's work on "Drowning." He was a good microscopist and was for many years President of the North of England Microscopical Society.

DAVID EDGAR JONES, M.D. DURH., F.R.C.S. EDIN., L.R.C.P. EDIN., J.P.

DR. DAVID EDGAR JONES died at his residence, 24, Newport-road, Cardiff, on Sept. 12th. Dr. Jones was born near the town of Aberayron, in Cardiganshire, and received his medical education at Glasgow and University College Hospital, London. He took the qualifications of L.R.C.P. and L.R.C.S. Edin. in 1867 and was admitted to the F.R.C.S. Edin. in 1879. He graduated M.D. of Durham University in 1887. Dr. Jones commenced practice in Cardiff about thirty years ago and soon established a large connexion. The deceased took a great interest in municipal matters and in 1875 was elected a member of the town council; in 1885 he was appointed mayor, and in 1888 he was made an alderman. He was also a justice of the peace for the borough of Cardiff. Dr. Jones was for several years chairman of the market committee, and it was mainly through his efforts that the present excellent market buildings and slaughter-houses were erected. He was an ex-president of the Cardiff Medical Society, Government medical inspector for emigrants of Cardiff port, consulting surgeon to the *Hamadryad* hospital ship, and a visitor at the county lunatic asylum. At the meeting

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of the Cardiff town council on Sept. 12th a vote of condolence was passed with Mrs. Jones, and the Mayor alluded to the assiduous and conscientious manner in which the deceased had performed his duties. On the same day the magistrates at the Cardiff police-court recorded how deeply they felt the loss of their colleague. The deceased, who was only fifty-three years of age at the time of his death, had suffered for some time from diabetes. He will be greatly missed in Cardiff, where the deepest sympathy is felt for Mrs. Jones.

Medical News.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the second examination for the degree of Bachelor in Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

Anatomy, Physiology, and Materia Medica.—First-class Honours: Alfred Parkin, College of Medicine, Newcastle-upon-Tyne. *Second-class Honours:* George Mack, College of Medicine, Newcastle-upon-Tyne; Thomas Young Simpson, Cooke's School of Anatomy; and Thomas Seymour Coates, College of Medicine, Newcastle-upon-Tyne. *Pass List:* Curtis Crispin Adeniyi-Jones and Ernest Bertram Appleby, College of Medicine, Newcastle-upon-Tyne; Arthur John Spiller Brandon and Frederick Clarkson, St. Thomas's Hospital; Francis Bernard Henry Caudwell, M.R.C.S., L.R.C.P., Charing-cross Hospital; Herbert William Dudgeon, M.R.C.S., L.R.C.P., Guy's Hospital; William Robert Davidson Daglish, College of Medicine, Newcastle-upon-Tyne; George Ernest Froggatt, Middlesex Hospital; James Herries Graham, College of Medicine, Newcastle-upon-Tyne; Ivon Henry Skipwith Hawes, St. George's Hospital; Robert Simpson Hindmarch and Albert Ernest Hodge, College of Medicine, Newcastle-upon-Tyne; Evan Llewellyn Jenkins, Cooke's School of Anatomy and Westminster Hospital; John Henry Martin, John Wilson Howard Morrison, William Athol Murray, and Alfred Henry Proctor, College of Medicine, Newcastle-upon-Tyne; Michael Joseph Quirke and Thomas Basil Rhodes, Mason College, Birmingham; Henry Reah, Stanley Raw, Frederick Riddle Scott, and William Waters Stainthorpe, College of Medicine, Newcastle-upon-Tyne; Francis Wheler Sime, Guy's Hospital; Godfrey de Bec Turtle, King's College; and Walter Wakefield, Mason College, Birmingham.

FOREIGN UNIVERSITY INTELLIGENCE.—***Berlin:*** Dr. P. Schultz has been recognised as *privat-docent* of Physiology.—*Erlangen:* Dr. Robert Heinz has been recognised as *privat-docent* of Pharmacology and Toxicology.—*Freiburg:* Dr. E. Block, *privat-docent* of Otology, has been promoted to an extraordinary professorship.—*Giessen:* Professor Karl Gaehtgens, Director of the Pharmacological Institute, is about to retire. He was formerly professor in Rostock.—*Heidelberg:* Dr. Karl Baas, *privat-docent* of Ophthalmology, has been promoted to an Extraordinary Professorship.—*Innsbruck:* Dr. Johann Rille of Vienna has been appointed Extraordinary Professor of Dermatology and Syphilis.—*Königsberg:* Dr. Rudolf Cohn, *privat-docent* of Pharmacology, has been granted the title of Professor.—*Prague (Bohemian University):* Dr. A. Vesely has been recognised as *privat-docent* of Internal Medicine.—*Palermo:* Dr. Giuseppe Cirincione of Naples has been recognised as *privat-docent* of Ophthalmology.—*Utrecht:* Dr. Eijkman, Director of the Pathological Institute in Weltevreden, Batavia, has been appointed to the chair of Hygiene.—*Vienna:* Dr. Arthur Schattenfroh has been recognised as *privat-docent* of Hygiene.—*Würzburg:* Dr. Dieudonné has been recognised as *privat-docent* of Hygiene.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall and Cox announce the following new works and new editions during the forthcoming publishing season:—A third edition of Sir William Broadbent's "Diseases of the Heart," a third edition of Professor Stewart's "Manual of Physiology," a second edition of Mr. Mayo Robson's "Diseases of the Gall Bladder," a fifth edition of Mr. Lennox Browne's "Diseases of the Throat and Nose," an eighth edition of Dr. Muter's "Manual of Analytical Chemistry," a seventh edition of Mr. Gant's "Guide to the Examination of the Conjoint Board," a fourth edition of the "Handbook for Attendants on the Insane" (under the authority of the Medico-Psychological Association), a second edition of Dr. Hime's "Guide to the Public Health Act," and the following new works just ready: "New French-English Medical Dictionary," by Mr. de Méric; a "Pocket Dictionary of Hygiene," by Mr. C. T. Kingzett, F.I.C., and Mr. D. Homfray, B.Sc.; "Cattle Tuberculosis," by Dr. T. M. Legge, secretary to the Royal Commission on Tuberculosis; Max Einhorn's "Text-book of Diseases of the Stomach"; and a translation of Professor Bollinger's "Pathological Anatomy," with atlas containing 120 coloured plates.—The Rebman Publishing Company (129, Shaftesbury-avenue) announce that from Oct. 1st next they have undertaken the publication of *Public Health*, the journal of the Incorporated Society of Medical Officers of Health.

THE DEATH OF ALICE BAYLY.—In this case Mr. John Lloyd Whitmarsh was accused of the wilful murder of the deceased, who is alleged to have died from the results of treatment designed to procure criminal abortion. The jury on Wednesday last were unable to agree on a verdict and were discharged. The accused, for whom bail was refused, will be re-tried at the next sessions.

PAUPERISM IN THE WEST OF ENGLAND.—Mr. Preston-Thomas, the Local Government Inspector for the West of England, reports that the proportion of paupers to the population in the counties of Cornwall, Devon, and Somerset (with the exception of the three unions of Bath, Bedminster, and Keynsham) is no less than 40 per 1000, being larger than in any other poor-law division. He recommended the adoption of such rules of administration as have been found effective elsewhere.

ST. JOHN AMBULANCE ASSOCIATION.—The members of the King's-cross (Great Northern Railway) Division of the Metropolitan Corps of the St. John Ambulance Association have recently presented to each of their honorary surgeons—Dr. J. Brunton, Mr. G. W. H. French, and Dr. R. Main—a cigar and cigarette case as a token of their appreciation of the lectures given during the spring of 1898. This is the sixth presentation made to Dr. Brunton and, in recognition of his services, he has also been made a life member of the association.

TORQUAY MEDICAL SOCIETY.—The president and members of the council request the pleasure of the attendance of all members of the medical profession at a special meeting of the society to be held at the Museum, Babbacombe-road, on Friday, Oct. 7th, at 4.30 P.M., to hear an address on "Gastric Perforation," by Mr. T. Pickering Pick. The seventh annual dinner of the society will be held after the special meeting, at the Torbay Hotel, at 7.15 P.M., when Mr. R. H. Grimbly will take the chair. Any medical man desiring to dine with the society on this occasion should send a postal order for 7*s* 6*d*. to the hon. treasurer of the dinner committee, Dr. H. V. McKenzie, Elm Bank, Abbey-road, Torquay, not later than Oct. 4th.

AN UNFOUNDED CHARGE.—On Sept. 15th Mr. W. E. Ryves, a medical practitioner of Paradise-square, was charged at the City police-court, Sheffield, with using instruments upon Jane Mulhern with intent to procure abortion. It was not denied that Mrs. Mulhern had miscarried, but she admitted that she had fallen downstairs two days before the miscarriage took place. Mr. McElligott said that he had seen the patient after the miscarriage had taken place and there was nothing to show that it had been brought on in any but a natural way. The chairman said that the case was not sufficiently strong to go for trial and the defendant would therefore be discharged. We congratulate Mr. Ryves on the result, for there is no charge so easy to bring, except, perhaps, that of indecent assault. We think, however, that some punishment should be meted out to those who bring such charges without, as was apparently the case in this trial, one tittle of evidence to support their charges.

THE PLAGUE IN INDIA.—We regret to say that the latest telegrams and the Anglo-Indian papers received by the last mail show that there is a recrudescence of the plague epidemic in India. The anxieties and work of the Government and its medical services will consequently undergo no abatement for the present at any rate. Unhappily, from what we know of the history of this disease, it is not surprising that the epidemic, notwithstanding the repressive measures which have been adopted, has not been eradicated and is now in its third year of existence in India. According to a telegram from Simla of Sept. 20th there were during the previous week 149 deaths in the city of Bombay, against 170 registered during the preceding week. The deaths in the districts, however, have risen to nearly 3000. 4 deaths have been reported from Karachi, 2 from Calcutta, 12 from Madras Presidency, and 8 from Bangalore City. M. Haffkine's prophylactic inoculation method has so far apparently been attended with a larger measure of success than any other. In Calcutta we are glad to say there has hitherto been no serious amount of plague.

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BOOKS, ETC., RECEIVED.

BAILLIERE, TINDALL, AND COX, King William-street, Strand, London.
Essentials of Modern Treatment of Disease. By K. M. Nadkarni. Part I. 1898.
A Pocket Dictionary of Hygiene. By C. T. Kingzett, F.I.C., and D. Homfray, B.Sc. 1898. Price 2s. 6d.

BLACKWOOD, W., AND SONS, London and Edinburgh.
The Elements of Physical Education: A Teacher's Manual. By D. Lennox, M.D., and A. Sturrock. 1898. Price 4s.

CASSELL AND COMPANY, London.
Medical Diseases of Infancy and Childhood. By Dawson Williams, M.D. Lond. 1898.

CHURCHILL, J. & A., Great Marlborough-street, London.
Practical Pharmacy. By E. W. Lucas, F.C.S. Illustrated. 1898. Price 12s. 6d.

CLIVE, W. B., Booksellers'-row, Strand, London.
The University Tutorial Series: Text-book of Zoology. By H. G. Wells, B.Sc. Lond., and A. M. Davies, B.Sc. Lond. 1898. Price 6s. 6d.

CONSTABLE, A., AND CO., Westminster.
The Discharge of Electricity through Gases. By J. J. Thomson, D.Sc., F.R.S. With Diagrams. 1898. Price 4s. 6d. net.

CORNISH BROTHERS, New-street, Birmingham.
The Future Water-supply of Birmingham. By Thos. Barclay. Third edition. 1898. Price 3s. 6d. net.

COX, HORACE, Bream's Buildings, London, E.C.
Physical Training at Home. By A. Alexander, F.R.G.S., with an introduction by Lord Charles Beresford. Illustrated. 1898.

DRESSER, W., AND SONS, Darlington.
Zig-Zag Ramblings of a Naturalist. By R. F. Manson. 1898.

HIRSCHWALD, A., Berlin.
Anleitung zur Mikroskopischen Untersuchung des Auges. Von Professor Dr. R. Greeff. 1898.

HODDER AND STOUGHTON, Paternoster-row, London.
The Unconscious Mind. By A. T. Schofield, M.D., M.R.C.S. 1898. Price 7s. 6d.

IMPERIAL PRESS, Surrey-street, London, E.C.
The Imperial Library.—British West Africa. By Major A. F. Mockler-Ferryman, F.R.G.S., F.Z.S. Vol. I., West. 1898.

LEWIS, H. K., Gower-street, London.
Transactions of the Dermatological Society of Great Britain and Ireland. Edited by G. Pernet, M.R.C.S., and W. T. Freeman, F.R.C.S. 1897–98. Vol. IV., with Plates. 1898.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
Clear Speaking and Good Reading. By A. Burrell, M.A., with a Preface by P. A. Barnett, H.M.I. 1898. Price 2s. 6d.

MACMILLAN AND CO., London.
The Cold Bath Treatment of Typhoid Fever. By F. E. Hare, M.D. Illustrated. 1898. Price 6s. net.

REBMAN PUBLISHING COMPANY, Shaftesbury-avenue, Cambridge-circus, London.
Archives of the Roentgen Ray. Edited by W. S. Hedley, M.D., and S. Rowland, M.A. August, 1898. Vol. III., No. 1.

SCIENTIFIC PRESS, Southampton-street, Strand, London.
First Aid to the Injured and Management of the Sick. By E. J. Lawless, M.D., D.P.H. Illustrated. 1898. Price 3s. 6d.

SAMPSON LOW, MARSTON, AND COMPANY, Fetter-lane, Fleet-street, London.
Twentieth Century Practice. Edited by T. L. Stedman, M.D. Vol. XIV., Infectious Diseases. 1898.

SHAW AND SONS, Fetter-lane, and BUTTERWORTH AND CO., Fleet-street, London.
Shaw's Manual of the Vaccination Law, containing the Vaccination Acts, 1867, 1871, 1874, and 1898. By a Barrister-at-Law. Sixth edition. 1898. Price 5s.

SMITH, ELDER, AND CO., Waterloo-place, London.
A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., LL.D., F.R.C.P. In 2 Vols. Vols. I. and II. Ninth edition. 1898. Price 28s.
First Aid to the Injured: Six Ambulance Lectures. By Friedrich Esmarch. Translated from the German by H.R.H. Princess Christian. Sixth edition. 1898. Price 2s.

SPRINGER, J., Berlin.
Reise-Berichte ueber Rinderpest u.s.w. Von Robt. Koch. 1898.

VEIT AND CO., Leipzig.
Die Arteriosklerose. Von J. G. Edgren. 1898.

WRIGHT, J., AND CO., Bristol.
Tests and Studies of the Ocular Muscles. By E. E. Maddox, M.D., F.R.C.S. Edin. 1898. Price 10s. 6d. net.

The Taxpayers' Cashbook: third edition: by A. M. Scarff (The Income-tax Adjustment Agency, Poultry, Cheapside, London; prices 2s. 6d. and 3s. 6d. net).—University College, Bristol: Calendar for the Session 1898-99 (J. W. Arrowsmith, Quay-street, Bristol).—Left-hand Writing, a Complete Course of Exercises: by John Jackson, F.E.I.S. (Sampson Low, Marston, and Co., London, E.C.).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BLACK, J. R., M.D. Edin., C.M., has been appointed Surgeon for the Greenock Infirmary, vice J. Paton.

BROWN, J. F., M.D., C.M. Toronto, has been appointed Medical Officer for the Fourth Sanitary District of the Thingoe Union.

CAIRNS, L. M., M.B., C.M. Edin., has been appointed House Surgeon for the Cumberland Infirmary, Carlisle.

COATS, G. W., M.B., Ch.B. Glasg., has been appointed a House Surgeon for the Royal Hospital for Sick Children, Glasgow.

DAHONS, ANNA, M.D. Paris, L.R.C.P. Irel., has been appointed President of the Ancoats Healthy Homes Society, Manchester.

DELANY, K., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Jamestown Dispensary District, vice T. A. Connellan, resigned.

EASTMENT, J. W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the Saffron Walden Union.

FELLOWS, F. M., M.B., C.M. Edin., has been appointed a House Surgeon for the Manchester Clinical Hospital, vice W. Dyson.

FULLERTON, E. C. R., M.B., C.M., has been appointed an Assistant at the Dispensary in connexion with the Royal Hospital for Sick Children, Glasgow.

GAMAN, F. R. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Caistor No. 1 Sanitary District and the Workhouse of the Caistor Union, vice Alexander Cameron, resigned, and also appointed Medical Officer of Health by the Caistor Rural District Council.

GRIFFITHS, J. C., B.Sc. Lond., M.B., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Tealby Sanitary District of the Caistor Union.

JAMES, WALTER EVELYN, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Adviser to the Monmouthshire and South Wales Employers' Mutual Indemnity Society for the County of Monmouth.

KELLY, M. T., M.D., B.S. Dubl., has been appointed Medical Officer for the Workhouse and the Coddenham Sanitary District of the Bosmere and Claydon Union.

LEITCH, JOHN W., M.A., M.B., Ch.B. Glasg., has been appointed Junior Assistant Medical Officer for the Counties Asylum, Carlisle, vice T. D. Bell, resigned.

MCCULLOCH, EDWARD, M.B., Ch.B. Edin., has been appointed an Assistant House Surgeon for the Royal Albert Hospital, Devonport.

MUIR, D. K., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the South Longbenton Sanitary District of the Tynemouth Union.

NUNN, P. W. G., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Pokesdown District Council.

PROCTER, G. L., M.B., C.M. Edin., has been appointed Medical Officer for the Dawley Sanitary District by the Madeley Board of Guardians.

RENWICK, A. C., M.B., Ch.B. Edin., has been appointed House Surgeon to Noble's Isle of Man Hospital, Douglas.

REYNOLDS, F. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent for the Corporation Hospital by the Bootle Town Council.

SPRAGUE, W. C., M.D. Edin., M.S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Seventh Sanitary District of the Saffron Walden Union.

SUTTON, W. L., has been appointed an Analyst for the Borough of Ipswich, vice J. Napier.

WARREN, ERNEST D., M.R.C.S., L.R.C.P., has been appointed Senior Assistant Medical Officer for the Counties Asylum, Carlisle.

WRENCH, E. B., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Baslow Sanitary District of the Bakewell Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ADDENBROOKE'S HOSPITAL, Cambridge.—Resident House Surgeon.

BURY INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and attendance.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—House Surgeon. Board and residence provided in the Hospital.

CHELSEA, BROMPTON, and BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Surgeon.

CROYDON GENERAL HOSPITAL.—House Surgeon for two years, unmarried. Salary £100, increasing £10 per annum to £120 with board and residence in the hospital.

GENERAL INFIRMARY, Leeds.—Resident Ophthalmic Officer. Salary £50 a year, with board and lodging.

GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £90 per annum, with board and lodging, No wines, spirits, beer, &c., provided.

HEREFORD GENERAL INFIRMARY.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished rooms, board, washing, gas, coals and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—Resident Medical Superintendent for one year. Salary £105 a year, with board and residence in the hospital.

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JOINT COUNTIES ASYLUM, Carmarthen.—Second Assistant Medical Officer. Salary £120 per annum, advancing £10 annually to £140, with board, residence, and washing. £5 per annum in lieu of stimulants.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £50 a year, with board and lodging.

KILBURN PROVIDENT MEDICAL INSTITUTION, 7, Cavendish-road, Brondesbury.—Vacancy on the Medical Staff.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Assistant Surgeon, unmarried. Salary £80 for the first year and £90 per annum afterwards, with apartments, board, and attendance.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £25 for that period, with board and lodging.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Residence in the Hospital, board and washing provided, and an honorarium of 5 guineas conditionally.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House Surgeon for six months. Board, lodging, and washing provided and an honorarium of £10 given conditionally.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, House Surgeon, each for six months. Salary at the rate of £50 per annum, with board and residence.

PARISH OF WESTRAY, Orkney.—Medical Officer and Public Vaccinator. Salary £90 per annum. Applications to Mr. J. Sinclair, Inspector of Poor, Westray, Orkney.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, London.—Assistant Resident Medical Officer for four months. Salary at the rate of £50 per annum, with board, residence, and washing.

ROYAL FREE HOSPITAL, Gray's-inn-road, London.—House Physician and Casualty House Surgeon for six months. Board, &c., provided. No salary. Also Senior Resident Medical Officer for twelve months. Salary £100 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor, Isle of Wight.—Assistant Resident Medical Officer, unmarried. Salary £80 per annum, with board and lodging in the hospital. Applications to the Board of Management, London Office, 34, Craven-street, Charing-cross.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, and 15, Hanover-square, London.—House Surgeon and Anæsthetist for six months. Salary at the rate of £100 per annum, with partial board and residence.

ROYAL SOUTH HANTS INFIRMARY, Southampton. — House Surgeon. Salary £100 per annum, with rooms, board, and washing.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

SOUTHPORT EYE, EAR, AND THROAT HOSPITAL.—Honorary Surgeon to the Throat Department.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ST. THOMAS'S HOSPITAL, London.—Surgeon.

TRIGNMOUTH HOSPITAL, S. Devon.—House Surgeon, to act also as Secretary. Salary £60, with board, lodging, and washing.

UNIVERSITY COLLEGE, Liverpool (Victoria University).—The Chair of Midwifery and Gynæcology.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £50 per annum, with board, residence, &c.

Births, Marriages, and Deaths.

BIRTHS.

DUNCAN.—On Sept. 13th, at Eccleston-street, S.W., the wife of Duncan Duncan, M.R.C.S., of a daughter.

EDWARDS.—On Sept. 18th, at Halling, Rochester, the wife of Arthur Spencer Edwards, M.B., C.M. Edin., of a son.

WHITMORE.—On Sept. 20th, at Bryanston-street, Hyde-park, the wife of W. T. Whitmore, F.R.C.S., of a son.

MARRIAGES.

DEAN—HOPE.—At the Free Church Manse, Banff, on the 16th inst., by the Rev. And. Melville, D.D., Edinburgh, uncle of the bride, George Dean, M.A., M.B., C.M., British Institute of Preventive Medicine, London, to Laura Hope, daughter of the Rev. J. Watson Geddie, B.A., Free Church, Banff.

CHALMERS—CANNINGTON.—On Sept. 21st, at Wesley Chapel, Waterloo, by the Rev. H. J. Pope, D.D., of London, uncle of the bridegroom, assisted by the Rev. T. Hardwick Mawson, of Newcastle-on-Tyne, Albert John Chalmers, M.D., F.R.C.S., younger son of the late Rev. James Chalmers, M.A., to Alice, second daughter of Edwin Cannington, J.P., of Beach Lawn, Waterloo, Lancashire.

GOOD—GORDON.—On Sept. 14th, at St. Paul's, Hammersmith, Hardman Allgood Good, M.R.C.S., L.R.C.P. Lond., second son of the late Rev. Edward Good, R.N., to Frances Louise Innes, youngest daughter of the late James Richard Gordon, Medina-place, N.W.

DEATHS.

ELLIS.—At 100, Rye Hill, Newcastle-on-Tyne, on the 14th inst., Richard Ellis, F.R.C.S. Edin., in his 67th year.

WILLIS.—On the 15th inst., at Oak House, Monmouth, George Willis, M.D., J.P. County of Monmouth, in his 70th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898, bound in cloth, gilt lettered, price 18*s.*, carriage extra; and Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*, can be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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DEATH FROM ABORTEFACIENTS.

AT an inquest recently held upon the body of a woman who died near Godalming evidence was given that the death was due to the deceased having taken some pills to produce abortion. The box containing the pills bore a Government stamp and a label stating that they were prepared by a physician formerly of the "Women's Hospital, Soho-square." The coroner remarked that something ought to be done in the way of legislation to prevent the wholesale sale of such noxious drugs and the jury added a rider to their verdict to the same effect. We quite concur in this, and, moreover, any paper which publishes any advertisements of pills or other means of removing obstructions should be heavily fined. Something ought also to be done to put a stop to businesses such as that of Madame Frain.

COUNTRY HOUSE DRAINAGE.

To the Editors of THE LANCET.

SIRS,—You would confer a benefit on a number of householders by solving the following sanitary problem. Most of the country houses in this neighbourhood drain into separate cesspools, situated generally 50 yards or so from the house and receiving the waste from water-closets, kitchen sinks, and rain-pipes. These cesspools are usually pits measuring about 6 ft. every way, lined with dry stonework—i.e. large stones set without mortar or cement. They are covered in with tarred timbers on which the grass sod is laid. When not too full and in dry weather, percolation disposes of a good deal of the water received, but all are provided with outfalls discharging into field ditches. The problem is how to deodorise the effluent. My house and an adjoining one drain into a common cesspool through a 6 in. pipe furnished with Buchan trap and ventilating shafts. The closets of both houses are fitted with three-gallon syphon cisterns. The two houses combined contain fourteen persons. Owing to faulty levelling the first part of the ditch which receives outfall contains a good deal of water. This portion measures about 90 yards, and is best described as a black-water ditch, offensive when stirred. During a course of another 200 yards the ditch becomes much cleaner, and is ultimately nearly empty and quite inoffensive. Once a year after the leaves have fallen I have the whole ditch cleaned out. I should be very much obliged for advice as to how the black part of that ditch can be deodorised. What is wanted is a direction as to the quantity of deodorising substance to be added to sewage per head of house inhabitants. The cheaper the substance the more widely it will be used. I may mention that the water-supply of the whole district is derived from the Vartry Waterworks, so that no question of water-pollution arises.

I am, Sirs, yours faithfully,

Sept. 10th, 1898. SOUTH DUBLIN.

*** We deal with the subject of this letter in an annotation.—ED. L.

THE NATURE OF DRY-ROT.

To the Editors of THE LANCET.

SIRS,—I shall feel much obliged if any of your readers, more particularly medical officers of health in Scotland, will inform me if dry-rot in a house is considered a reason for serving a notice on a landlord to effect reparations by the sanitary inspector. I can understand that the landlord may be responsible for putting the floors affected into repair and that if an accident were to occur by putting one's foot into it—i.e., the floor giving way and so causing fracture, &c.—he would be responsible civilly. But I should like to know if it is considered that dry-rot in a house is noxious to health, and if a sanitary inspector is justified in serving a notice on the proprietor to remedy it. If any of your readers can give me some hints as to the prevention and cure of that plague I shall feel very much obliged. And there is another point I should like cleared up. I always believed that dry-rot is a fungus attacking wood *only*. Now I am told by practical men that it also attacks stone. This is, I must say, very hard to believe, and I shall be very much obliged for some references to the literature of the subject. Up to the present time it has cost me a great deal of money and is continually breaking out, and I never know when I shall be called upon to pay from £20 to £50 to get rid of it.

I am, Sirs, yours faithfully,

Sept. 17th, 1898. AFFLICTED.

HYGIENE AT ALGIERS.

A TRAVELLER in search of an ideally hygienic city would scarcely direct his footsteps towards Algiers, and yet the chief civic dignitary in that odoriferous town is clearly imbued with some sound if rather advanced notions regarding cleanliness and the spread of disease. Seeing that articles of food are habitually wrapped up in fragments of paper, such as old journals, obsolete registers, pamphlets, and printed or written matter of various kinds which might before being so employed have passed through the hands of people following diverse occupations who may perhaps have been affected with infectious or contagious diseases and in this way have become contaminated, possibly acquiring the most dangerous properties without even appearing soiled, the practice cannot but be considered prejudicial to the public health and should therefore be rigorously interdicted. Having introduced his subject in a preamble to the foregoing effect the Mayor of Algiers recently issued the following *arrêté* for the information and guidance of the citizens under his control. 1. No painted or stained paper of any description whatsoever shall on any account be employed for the wrappage of alimentary substances. 2. Printed paper, old journals, pamphlets, miscellaneous works, registers and other manuscripts can only be tolerated for the wrappage of dry vegetables, roots, or tubers (dry kidney beans, potatoes, &c.), but in every case the sheet must be free from stain. 3. The police, with the help of the municipal laboratory, will exercise a permanent control in order to satisfy themselves of the cleanliness of the paper used. In a postscript to this remarkable ordinance a list as follows is furnished of moist alimentary substances which must invariably be wrapped up in fresh clean paper, which may be either white or straw-coloured but on no account spotted or stained: butchers' meats, meats of all kinds which are sold retail such as rabbit or poultry, pork, pastry, confectionery, butter, grease, cooked or steeped vegetables, vegetables sold in slices such as pumpkins, fresh or early vegetables, salt or soaked fish, and fresh fish sold retail.

VULGAR METHODS.

WE are informed by a correspondent that he has recently seen a bottle decorated with the following three labels:—

[*Red label in front of bottle.*]

Special advantages are offered to Married Women. Twenty years' sound practical experience, during which period over 4000 Midwifery cases have been attended.

[*White label in front of bottle.*]

H. H——, Physician, Surgeon, Apothecary, &c., L.R.C.P.I., L.M., L.F.P.S.G., and L.S.A. Lond., &c.,
111, Plashet-grove, East Ham.

NOTE.—Dr. H——, for many years of the firm of H—— and J——, Battersea Park, formerly of H.M. Transport Service Egyptian Campaign, and late of H.M. West African Military Service, may be consulted daily, morning before 12; evening 6.30 to 9.

[*Red label on back of bottle.*]

Deafness, Diseases of the Ear and Throat, and the Diseases incidental to Women and Children, receive special attention.

There can be no doubt that to label medicine in such a way is to employ methods which are generally considered beneath the dignity of the medical profession.

THE NEW HARVEY.

WE have received a little pamphlet from M. J. Rodormund, M.D., of Appleton., Wis., which is a reprint of his address delivered before the National Medical Association held at Omaha in June, 1898. Dr. Rodermund is described as "the first physician to discover the law and power that propels the blood." He also sends us an illustration of himself from a photograph. The power which propels the blood is not, as we have all been wrongly taught for the last 250 years or so, the heart. No; it is the same power as that "which furnishes the motive power throughout universal nature." We quote Dr. Rodermund's own words:

> "Instead of the blood carrying oxygen through the system it is the oxygen from the air that sends the blood bounding through all the minute capillary blood-vessels, exactly reversing the old theory that has been believed by us all for nearly three centuries. In other words, it is the oxygen we breathe based on the fundamental law of electricity.
>
> "You all know that all positive electric bodies proportionally repel, while all negatives and positives attract each other; hence this oxygen or electricity, both elementary the same, is one of the chief agents and means of life, and is introduced into the system by breathing and nothing else. This air when breathed charges the air-cells of the lungs when the iron in the blood attracts the oxygen; this charges both the air and the blood-cells positively, and thereby generates a powerful self-acting propelling force by each repelling that in the other.
>
> "Is not this problem plain as well as simple? That it is the oxygen from the air we breathe, and not muscular contraction of the heart that gives this tremendous power to push the blood through this fine network of blood-vessels throughout the body. And this force not like dynamic pressure which would strain or even burst the heart, while the other works on a different principle—that of mutual antagonism and not of pressure."

Of course we cannot prove that oxygen is not electricity, but Dr. Rodermund's arguments are not convincing.

WANTED DIAGNOSIS AND TREATMENT.

To the Editors of THE LANCET.

SIRS,—Can any of your readers suggest any cure or palliation of the following miserable condition? Every ten days or a fortnight I am awakened about 4 or 5 A.M. by a headache which gradually gets worse and worse as the morning goes on, until about 1 or 2 P.M., when it becomes unbearable. The pain is generally over first the right, then the left temple, and at the back of the neck and head and upper part of the interscapular regions, chiefly over the seventh cervical and first dorsal vertebræ. At this time, and only when the pain is on the neck, I notice audible cracks on movement, and the feeling is like the pain from a heavy blow at the back of the neck. During the whole time I am unable to eat or drink anything except hot water, which I generally

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drink freely, and which, after a time, by making me vomit, seems to relieve me. As the attack robs one of a day's work it becomes a most serious affair. I have tried all the remedies usually recommended in such cases without effect. The only medicine that gives the least relief is an effervescing draught with some bromide and antipyrin and gripping the neck tightly over the carotid arteries. I come of a gouty race and my father was a martyr to headache most of his life. I am in my fiftieth year. Any suggestions will be most gratefully received by

Yours very truly,

Sept. 20th, 1898. L. M.

"THE MEDICAL DIRECTORY."

To the Editors of THE LANCET.

SIRS,—The desire of your correspondent, "Subscriber of Twenty-five Years' Standing," in THE LANCET of Sept. 17th is one we would gladly comply with were it not for the fact that when in the year 1890 we took steps to know the opinion of the profession we found that less than 14 per cent. of the registered practitioners expressed themselves in favour of an amalgamation of the various local lists. Opinions proverbially differ, but it is evident that we consult the wishes of the majority by an adherence to the present plan.

We are, Sirs, yours faithfully,

Great Marlborough-street, Sept. 19th, 1898. J. & A. CHURCHILL.

To the Editors of THE LANCET.

SIRS,—I agree altogether with the remarks of "Subscriber of Twenty-five Years' Standing" in THE LANCET of Sept. 17th as to the inconvenience of placing Wales in a separate section of the Medical Directory. The inconvenience, moreover, is greatly increased by the remarkable fact that Monmouthshire, one of the 40 English counties, is included in the Wales section. Some time back I ventured to call the attention of the editors to this point and I gave them an instance of a young Monmouthshire medical friend who had been put to considerable inconvenience and had been placed under some temporary suspicion in consequence of his name not appearing in the Provincial section of the Directory. It naturally had not occurred to the inquirer to search for his name in the Wales section. I received a courteous reply that the matter would be considered, but still the Directory, in defiance of history, law, and custom, deprives England of one of her counties and makes Wales to consist of thirteen counties. Perhaps the editors may even now reconsider the matter and remove this blemish from their indispensable and otherwise remarkably accurate publication.

I am, Sirs, yours faithfully,

A MONMOUTHSHIRE SUBSCRIBER OF THIRTY

Sept. 17th, 1898. YEARS' STANDING.

"THE LATE ARTHUR JEFFARES BARLOW."

THE following subscription to the fund for the widow of the late Mr. Barlow has been received by Dr. J. Agar Matson:—Dr. W. Brooks, £1 1s. We are requested to state that Dr. J. W. Moore of 40, Fitzwilliam-square, Dublin; Dr. J. Agar Matson of 119, Holloway-road, London; and Dr. J. P. Henry of 2, Lewisham-park, Lewisham, will continue as heretofore to receive donations on behalf of Mrs. Barlow.

SIC VOS NON VOBIS.....

FILIAL piety received a rude check at Clerkenwell police-court on Sept. 19th. An enterprising dairyman had, it appears, recently been fined £10 12s. 6*d.* for adulterating milk. Accordingly his son, Henry David Welch, and a friend, by name Pettit, started forth with an appeal relating the sad circumstances and expressing a hope that Mr. Welch's friends would rally round him. Unfortunately an unsympathetic constable apprehended the prisoners after they had endeavoured to get a subscription from a dairyman in St. Pancras. Welch junior said he did not think he was doing any harm in collecting money for his father. Mr. Horace Smith, however, took a hard-hearted view and bound over both defendants to keep the peace.

TWO QUERIES.

To the Editors of THE LANCET.

SIRS,—Will you please inform me whether (*a*) when called to a case of cut-throat and having attended it the doctor is found to communicate with the police or see that the police are informed; (*b*) if a woman comes into a consulting-room and asks the doctor to perform abortion or to administer drugs for that object, what is the precise legal obligation of the doctor? I am, Sirs, yours faithfully,

Sept. 15th, 1898. VERAX.

*** General rules will not hold good in these matters under all conceivable circumstances, but (*a*) it is no business of the medical man to act as an informer, and (*b*) he would be legally correct in sending for the police. In the second case he has been distinctly invited to commit a crime and such invitations are themselves criminal.—ED. L.

Mr. Clarence Beesley.—The office of the society is at 19, Buckingham-street, Adelphi, W.C., and all information will be given by the honorary assistant secretary.

Mr. Ernest Cox.—We do not give medical advice. The case is one, as described to us, where the opinion of a physician at a hospital might fairly be sought.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 22nd, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia. in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 16	30·30	S.E.	...	117	85	59	60	62	Hazy
,, 17	30·03	S.E.	...	121	90	62	63	68	Fine
,, 18	30·00	W.	0·15	86	70	66	64	69	Showery
,, 19	30·23	S.W.	0·04	98	66	47	49	53	Cloudy
,, 20	30·13	S.W.	...	106	75	52	59	61	Cloudy
,, 21	30·05	S.W.	...	106	73	54	53	55	Cloudy
,, 22	30·08	N.W.	...	91	68	55	55	57	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (1st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received: *Derby Advertiser, Newcastle Guardian, East Essex Times, Birmingham Mail, Northern Telegraph, East Anglian Daily Times, Cromer Post, Liverpool Daily Post, Wilts Standard, Times of India, Pioneer Mail, Architect, Walsall Observer, Builder, Leeds Mercury, Scotsman, Citizen, Bedford Times, Sussex Daily News, Malvern Gazette, Carnarvon Herald, Birmingham Post, Leicester Post, South Wales Daily News, Yorkshire Post, Bolton Chronicle, Brighton Gazette, Manchester Guardian, Huddersfield Chronicle, Bristol Mercury, Sheffield Telegraph, Western Mercury, Glasgow Evening News, Sanitary Record, Reading Mercury, Local Government Chronicle, Mining Journal, Belfast Evening Telegraph, City Press, Surrey Advertiser, Local Government Journal, South and North Lincolnshire News, Hertfordshire Mercury, Hastings Independent, Framlingham Weekly News, Kelso Mail, Isle of Wight Times, Dunstable Borough Gazette, Fife Herald, Newark Advertiser, Shrewsbury Advertiser, Weekly Free Press and Aberdeen Herald, Manchester Weekly Times, Staffordshire Advertiser, Leek Times, Clifton Chronicle, Teesdale Mercury, Warwick Times, Bridgwater Mercury, Banffshire Journal, Northern Whig, Glasgow Herald, Halifax Evening Courier, Arbroath Herald, Brecknock Beacon, Maidenhead Times, &c., &c.*

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Communications, Letters, &c., have been received from—

A.—Mr. F. Ash, Birmingham; Mr. A. E. Abrahams, Lond.; A. G.; Messrs. Allen and Hanburys, Lond.; Mr. J. Alexander, Lond.

B.—Mr. J. E. Broadbent, Haworth; Messrs. A. Bishop and Sons, Lond.; T. B. Browne, Ltd., Lond.; Dr. L. Beale, Weybridge; Mr. C. Birchall, Liverpool; Bury Dispensary Hospital, Secretary of; Messrs. Baillière, Tindall, and Cox, Lond.; Mr. G. A. Brown, Tredegar; Messrs. Bale, Son, and Danielsson, Lond.; Mr. C. Beesley, Exmouth; Mr. Henry Berger, Milan; Mr. R. Bebb, Lond.; Messrs. Brown, Gould, and Co., Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.

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F.—Miss A. Frith, St. Lunaire, France.

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R.—Dr. J. Ryan, Finea; R. M.; Royal South Hants Infirmary, Southampton, Secretary of; Messrs. Reynolds and Branson, Leeds; Messrs. Richardson Bros. and Co., Liverpool; Messrs. Reynell and Son, Lond.; Royal Veterinary College, Lond.

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T.—Mr. E. Treves, Brighton; Mr. Tallerman, Lond.; Mrs. Annie Thomas, Yaxley; T. J. C., Lond.; Mr. M. Takayasu, Lond.; Thresh's Disinfector Co., Lond.; Torquay Medical Society, Hon. Secretary of; Dr. E. F. Trevelyan, Leeds; Miss Katherine Twining, Lond.

U.—University of Durham College of Medicine, Newcastle-on-Tyne, Secretary of.

W.—West Ham Hospital, Stratford; West Kent Hospital, Maidstone, Secretary of; Wills, Ltd., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. T. G. Atkins, Cork; Mr. R. R. Anderson, Fern Hill; Messrs. C. Ash and Sons, Lond.; A. B., Newcastle-on-Tyne; A. L.; A. M. St. J. W.; Messrs. Armour and Co., Lond.

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Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

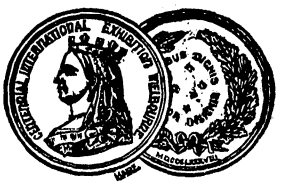
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Agent for the Advertisement Department in France—J. ASTIER, 8, Rue Traversière, Asnières, Paris.

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AWARDS.

GOLD MEDAL, International Health Exhibition, London, 1884.
FIRST ORDER OF MERIT AND MEDAL (Highest Award), Adelaide, 1887.
HIGHEST AWARD, Medical and Sanitary Exhibition, London, 1882.
FIRST ORDER OF MERIT AND MEDAL, Melbourne, 1888.

Liquor Pancreaticus (Benger).

For the preparation of peptonised or partially digested Milk and other articles of food.

Simple directions for use enclosed. In 4 oz., 8 oz., and 16 oz. Bottles.

The *British Medical Journal*, in an article on Benger's Preparations, says:—"Time and use have justified the claims put forward for these preparations."

The *London Medical Record* says:—"These are undoubtedly a great advance on any previous attempt in this direction. . . . The introduction of these preparations is a distinct advance in therapeutics."

The *Medical Times and Gazette* says:—"Benger's Preparations have deservedly a very high reputation, and are all largely used."

Liquor Pepticus (Benger).

An exceedingly active fluid pepsine, without disagreeable taste.

DOSE.—One or two teaspoonfuls with meals. In 4 oz., 8 oz., and 16 oz. Bottles.

Benger's Peptonised Beef Jelly.

A delicious quick restorative for Invalids and the Aged. In patent glass jars, no metallic contamination possible. Retail, 2s. each.

The Lancet says:—"It is a most valuable form of concentrated food."

The *London Medical Record* says:—"Invaluable for old people; also in convalescence from acute diseases."

A Physician writes:—"I feel I cannot express my gratitude to you sufficiently, as your Beef Jelly is the only thing my niece can retain, and it has certainly kept her alive for the last week."

Benger's Peptonised Chicken Jelly.

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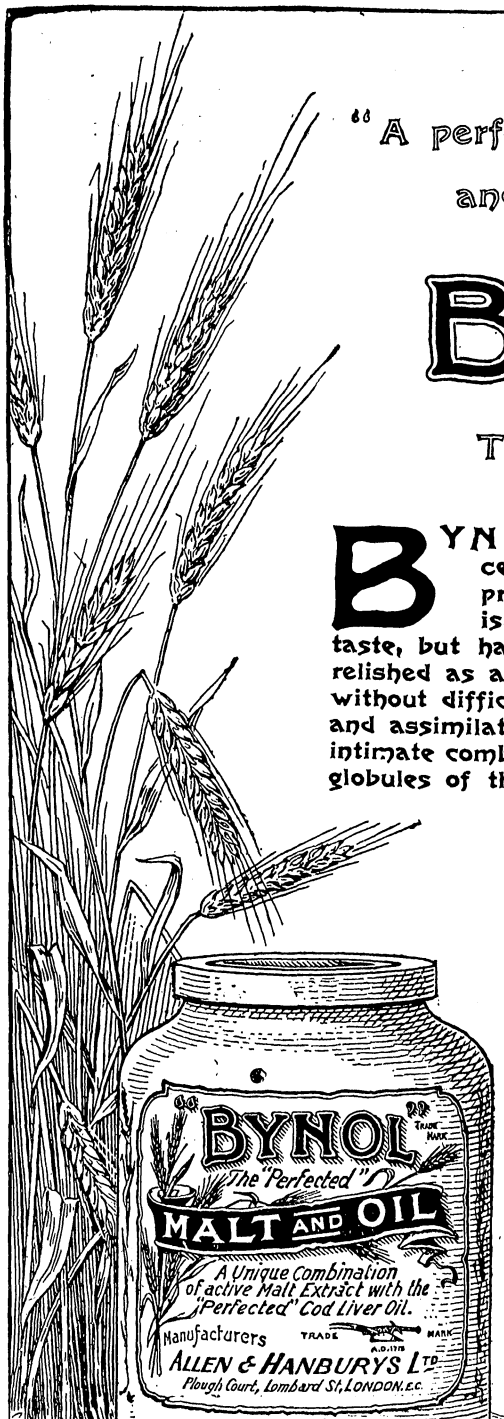
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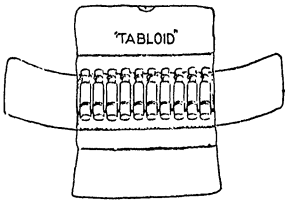
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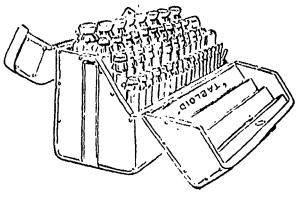
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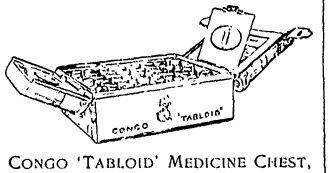
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ABSTRACT OF AN

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ON

THE MEDICAL PROFESSION AND THE STATE: THEIR RELATIONSHIP, ESPECIALLY WITH REGARD TO VACCINAL LEGISLATION.

Delivered by

JOHN C. McVAIL, M.D., D.P.H. CAMB., F.R.S EDIN.,

PRESIDENT OF THE CONFERENCE OF MEDICAL OFFICERS OF HEALTH HELD IN BIRMINGHAM ON WEDNESDAY, SEPT. 28TH, IN CONNEXION WITH THE ANNUAL CONGRESS OF THE SANITARY INSTITUTE.

GENTLEMEN,—In such a meeting as this the subject can perhaps be best approached by referring to the relationship of medical officers of health to their local authorities. As is so well urged by Dr. Alfred Ashby in his article in Stevenson and Murphy's Hygiene, the medical officer must be prepared from time to time to submit with equanimity to the rejection of any advice which he may tender to his local authority, however sound such advice may have been; nor must he be too sensitive in the event of his advice or actions being misunderstood or misconstrued. He must bear in mind that the decision of his local authority may have been subject to considerations which had no weight with him. It is, however, his duty, if he finds that his advice is systematically and persistently ignored and that the health of his district is likely to suffer, to repeat such advice, again and again if need be, firmly but dispassionately. He should further endeavour to look at all questions, not merely from the view point of the specialist in public health, but also from that of the local authority and of the owners and occupiers of premises and of the public. Of course, the medical profession is not related to the State so closely or directly as is the health officer to his local authority. The profession is not paid out of public funds in the same way as the public health service is. But only persons legally qualified in medicine can perform the many functions which bring us as a profession into very close relationship with the State and which give us in great measure the position of advisers regarding the means to be used by the State for the prevention of disease and the improvement of the physical well-being of the people. This is a position, indeed, which the profession has not hesitated in many circumstances to assume as its own. A clear distinction should, of course, be made between this professional position and our individual position as units in the general community; but if there is anything in the analogy which I have ventured to draw, then it is our professional duty to declare with no uncertain voice, and to repeat as often and as urgently as may be necessary according to the greatness of the emergency, our deliberate judgment on methods of disease prevention and health conservation. But it would be a mistake to assume that our conclusions, though their truth be demonstrated and be freely acknowledged by the legislature, will necessarily be embodied in Acts of Parliament and, in their practical application, be enforced by pains and penalties.

Let us apply these considerations to the question of vaccination. Speaking to an audience of health officers—speaking especially after some 1100 of us have testified by signed declaration that vaccination and revaccination prevent and control small-pox and that small-pox cannot be effectually prevented and controlled without these means—I need not spend time in urging the value of the Jennerian prophylaxis. But for the present purpose I shall assume further that the legislature is equally convinced (1) that small-pox is a disease which ought to be prevented; (2) that it can be safely prevented by vaccination and revaccination; and (3) that it cannot be prevented by any other known means. Does it then unavoidably follow that vaccination should be compulsorily enforced? Can nothing be conceived capable of justifying Parliament in refraining from enacting a power of absolute coercion? Small-pox is an evil—a very terrible evil—but there are other evils besides small-pox, and it is sometimes necessary in mundane affairs to make a choice of evils. Let us suppose that Parliament is, rightly or wrongly, of opinion that in many places in England the opposition to vaccination is so deep-seated that its attempted enforcement could be carried out only with the aid of an army of soldiers or would involve the wholesale imprisonment of large communities. Surely, in such circumstances Parliament is right in endeavouring to weigh and measure the two evils and to choose the less. It may make a wrong choice and the country may have to pay for the error, but the medical profession has no need to feel injured or aggrieved. The crucial fact is that the decision of such matters is a function of the legislature and of the legislature only, and where the duty is there the responsibility must rest. The words "expediency" and "opportunism" are not popular. They are apt to suggest the attitude of Bunyan's Mr. Facing-both-ways. But opportunism may after all be the truest Statesmanship, and the man who supports a temporary relaxation of a compulsory law may be the best friend of the administration of that law. In Scotland we are, so far, in the happy position of not requiring this measure of expediency. The vaccination default, instead of being over 30 per cent. as in England, is less than 3 per cent.

Let it be understood that in all this I am not discussing in concrete fashion the merits or demerits of the new Vaccination Act, nor is it my purpose to do so here. In this meeting we are probably all heartily agreed that revaccination as well as primary vaccination requires legal provision; that sanitary authorities instead of poor-law authorities should have charge of vaccinal administration; that all required vaccination prosecutions should be conducted not by local authorities but by public prosecutors; that vaccination certificates of private medical men should be paid for by the State as are similar certificates by public vaccinators; and that all vaccination certificates should place on record the area and number of marks. These points and others, however, have been discussed very fully in the medical press and elsewhere and they need not detain us, especially as there is good reason to hope that next session of Parliament will see the introduction of a Revaccination Bill. Regarding the conscience clause we may as a profession be satisfied that our withers are unwrung. In this country vaccination though called compulsory has never been compulsory. The whole question is between one degree of pressure and another. The greatest pressure has been by repeated penalties. Imprisonment for non-vaccination has never taken place. It is the common law of the land that in the last resort people who refuse to pay legally inflicted fines may be imprisoned, but that applies to fines for infringement of the Vaccination Acts in the same way as to fines for the infringement of other Acts. Therefore, I say, repeated fines have been the maximum legal pressure ever brought to bear in favour of vaccination. Limitation in the number of money penalties means simply a less degree of pressure. The recognition of what is technically called conscientious objection is assumed by most people to be a further step in the same direction. Whether it will really turn out to be so time alone can tell. Under the old system vaccination had within recent years come to be a matter of local option, and in many places where the option went against vaccination no pressure of any kind was brought to bear upon individuals. But under the new law Mr. Chaplin has indicated that where boards of guardians fail the Local Government Board will see that the subject is definitely brought before parents and that if the visit to the petty sessions is not made within the stipulated time the law and the penalties attached thereto will be enforced. In fact, individual option will take the place of local option, and it would be rash to prophesy that under the new system the vaccination default will be greater than, or as great as, under the old. If all legal or artificial pressure were abolished there would come into force increasingly the strongest natural pressure—that of small-pox itself. It was the world's intimate knowledge of the dreadful power of variola and its quickly gained experience of the counteracting power of vaccinia that brought about the wide triumph of the preventive in the early part of this century. It may seem paradoxical, but there is a sense in which it is correct to say that the growing neglect of vaccination is the greatest centenary tribute to the memory of Edward Jenner. A century ago everybody knew and dreaded small-pox. Nowadays not one man in a hundred has ever

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seen the disease and the public acquaintance with history is not so intimate or its imagination so realistic as to provide a motive equal to that which was furnished to our forefathers by everyday experience of the pestilence.

Democracy and autocracy have each their advantages as a form of government, and democracy in some countries adopts methods which even an autocrat might be tempted to envy. A free reading of Dr. Rauch's evidence before the Royal Commission may be given in illustration. Dr. Rauch was executive officer of the Illinois Board of Health. In his country there is no law of compulsory vaccination. Everybody is at liberty to remain unvaccinated if he pleases. In 1882 there was great risk of introduction of small-pox into the State of Illinois by immigrants. A meeting of the authorities of the different States was called and the National Board of Health was asked to require the vaccination of all immigrants. Pressure was brought to bear on the steamship companies and on the health officers at the ports. Very much was done in this way, and it was supplemented by the examination of all immigrants in course of transit by railway. Certificates were required of vaccination on board ship, and the arms of those thus certified were examined on board the trains during the railway journey. If the result was unsatisfactory the operation was again performed. In these ways many thousands were vaccinated. One day three Englishmen objected. Dr. Rauch was on the train. He explained to them that he wanted them vaccinated. They asked if vaccination was compulsory. "By no means," he said; "this is a free country." "Then we won't be vaccinated." "All right," he replied; "when we get to the border of our State I'll let you off the train." "But we don't want to get off." "Just so; but we won't have you in our State. We are a free people and will exercise our freedom in keeping you out." Then the three Englishmen got vaccinated—voluntarily, of course. In the same way the executive of a free people issued an order for the vaccination of all the children both in public and private schools. All the railway employés throughout the State were vaccinated or revaccinated and also the employés of all the manufacturing and mercantile establishments. In one mining town there was much small-pox and Dr. Rauch determined on general vaccination and revaccination. Here are question and answer as given before the Commission. Dr. Rauch says:—

"I issued an order to that effect, and it was enforced in an indirect way. Those who were vaccinated and revaccinated were permitted to leave their houses, but those who would not be vaccinated or revaccinated were compelled to remain inside of their houses. This is the way that I have acted in a number of instances and the result has been that of immediately stopping the epidemic." (Q.) "There is no law, is there, to compel an unvaccinated person to remain in his house? (A.) No; but that comes within the police jurisdiction of the State." (Q.) "You mean that it was absolutely compulsory that they should stay in the house unless they were vaccinated? (A.) Yes; that position has been maintained by the courts. If the local health authorities think it is necessary that persons should remain in their houses so as not to endanger the lives of others, they compel them to remain." (Q.) "And that applied to all the persons in a house where a case of small-pox had occurred? (A.) Yes; the result is simply this, that a person would rather be vaccinated than be compelled to remain in the house." (Q.) "Practically speaking, it operates as a compulsion sufficient to lead to the people being vaccinated? (A.) Yes."

Such are the proceedings of a great democracy. In Germany, where methods much more autocratic than ours are acknowledged to exist, there is an enormous saving of life and health by means of the stringent law of vaccination and revaccination which is in operation there. It is impossible, and would be unprofitable if it it were not impossible, to enter here on the never-ending question of where personal liberty ends and where the rights of society begin, or the similar question as to the relative responsibility of the parent and the State for the protection of the infantile community against disease. In this country a vaccination law such as that of Germany seems in the present state of public opinion impossible. The public have to be educated and they must pay for their education. In so far as they will accept no other schoolmaster than small-pox their education will be all the more costly, but the lesson, once learned, will be all the more thorough. The pity of it is that this schoolmaster accompanies his teaching by punishment and that the punishment so largely falls on helpless children. But it has always been the case, in matters physical, intellectual, and moral, that the sins of the fathers are visited on the children. It is our duty to make the visitation as light as possible, and mention of that duty brings me to the consideration of the relation of the medical profession to the prevention of small-pox in presence of the new law of vaccination. Shall we continue to do our utmost for the protection of the population against itself, or shall we stand aside and sulk because so-called compulsion has been temporarily abolished? Surely the question contains its own answer. It is mere truism to say that as medical practitioners we are bound to do our best for every patient, no matter how refractory and ungrateful he may be; that as health officers we are bound to do our best for the protection of the districts which have been committed to our charge, no matter what may be the attitude of the people or of the local authority; and that as a profession we are bound to persevere in our efforts to shield the nation from pestilence. The principles which underlie the oath of Hippocrates leave us no choice. If our patient be a man condemned to the scaffold we must try to cure him of the disease which threatens to rob justice of its victim; though we have reason to believe that the death of an individual would be a public boon we must endeavour to preserve his unworthy and mischievous life; and surely it is no less our duty to try to protect innocent children from the results of parental error and folly. The State, and not the profession, is responsible for the law, but we must continue to advise the State aright, and whatever be the law, even if there be no law, we must advise the individual aright.

Coming to closer quarters with this aspect of the subject let me refer briefly to certain specific points:—1. In the past a very large number of people though not doubting the efficacy of revaccination have yet contented themselves with a single operation. It is obvious that the risk of trusting to this—without renewal of the premium, as Dr. Bond would say—is all the greater according as the possibilities of infection increase. Now more than ever is it therefore the duty of medical men to advise revaccination as a supplement to primary vaccination. It should be pointed out to the individual that, independently of any law, he can practically defy small-pox so far as he is personally concerned and that under the new conditions there is all the greater need for his maintaining at its highest standard the protection which vaccination is capable of affording. To the guardians of adolescents this fact should be strongly brought home. 2. From this time forward every vaccination should be done as efficiently as possible. No medical man should ever again yield to a parental request to make only one small mark on a child's arm. Let the standard number of typical Jennerian vesicles be produced or let the parent go to the petty sessions and there obtain the relief which the new law allows. There can be no hardship in offering this choice and an incidental result of such a course will be to draw more and more clearly the already very clear contrast between the vaccinated and the unvaccinated in epidemics of small-pox. 3. I come last of all to the consideration of isolation as a means of the prevention of small-pox. A century ago Haygarth held that the atmospheric carrying power of variola did not exceed 18 in. and that isolation could quite well be accomplished and maintained within an ordinary dwelling house. For us isolation means the provision of hospitals, themselves properly isolated. In regard to this matter of hospitals it seems to me that we are in a curiously anomalous position. If vaccination and revaccination were universal we could practically do without small-pox hospitals, and it is a singular fact that one of the effects of national neglect of vaccination is that we have particularly to discuss hospital isolation regarding that particular zymotic disease for which hospitals would be essentially unnecessary, if only we would take full advantage of that preventive measure which is open to us in the case of small-pox as it is in no other malady.

But we must consider the question on practical lines and accept the fact that sanitary authorities cannot in the present condition of this country rely on vaccination and revaccination being so universal as to render small-pox hospitals unnecessary. That is a fact which the ratepayer must also accept. At the other extreme from a condition of universal vaccination and revaccination there would be an entire absence of vaccination and revacination. What part would hospitals play then? I am afraid that, at least as regards epidemic small-pox as distinguished from sporadic small-pox, they would be practically useless. Knowing what we do of the infective power of the epidemic disease it seems only too certain that any possible hospital accommodation would be utterly inadequate and that the infection would overleap all artificial bounds. Whether

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at the close of an epidemic we would be in the position of the town of Chester in the last century is a question which at present is fortunately of only academic interest. But in that town, which, according to Haygarth, was a place of "almost incredible" healthiness, only some 7 per cent. of the population had never had small-pox. In the little village of Ware, under similar circumstances, Mr. Anthony Fage divided the population into three classes at the end of an epidemic in the year 1722. The total population was 2515. These he classifies thus: (*a*) those who "had the small-pox before," of whom there were 1601; (*b*) those who "had the small-pox this time," who numbered 612; while (*c*) the remaining 302 he describes under the suggestive heading, "to have the small-pox." For myself I would be inclined to hope that in spite of the high convectivity and infectivity of small-pox, and in spite of the doubts which have been cast on the value of hospital isolation in preventing the prevalence of so mild a disease as scarlet fever, which has no preventive means analogous to vaccination, yet the differences in the conditions of life between this century and the last would, even in the absence of vaccination, perhaps tend to prevent such experiences as those of Chester and Ware. But we cannot tell and we must fervently hope that we shall never have the opportunity of learning.

My point here is that if vaccination and revaccination were universal small-pox hospitals would be almost or altogether needless, and if vaccination and revaccination were entirely wanting such hospitals would be almost useless, at least against the epidemic disease. The nearer we approach to this last state the larger are our hospitals likely to grow and the more hopeless will it be to rely on them. In the intermediate condition—the condition in which we live—with vaccination and revaccination partly prevalent, hospital isolation is a measure of very great value and must be a routine part of the procedure with regard alike to the sporadic and the epidemic disease. Experience indicates that the administrative part of a small-pox hospital should be large and well-equipped and that around it there should be space for rapid extension of whatever ward accommodation is permanently provided. Needless to say, the word isolation means more than the removal of the patient. It means isolation of the poison by disinfection, or still better by destruction, of infected articles; it means not merely the removal of the patient but his very early removal, and this involves search for persons who have been exposed to infection, and constant watching of such persons during the possible incubation of the disease. All this belongs to the A.B.C. of preventive medicine and must be rigidly attended to. Yet it has to be admitted that though very valuable isolation with its concomitants is essentially a precarious protection. Even if we had a law making isolation more strongly compulsory than vaccination has ever been in this country, and even if there were to be no extension of that destruction of small-pox hospitals by infuriated mobs, of which there were two instances not very long ago in the West of England, yet isolation might fail at any moment. Under such a prophylaxis the individual has to depend not on himself but on other people. As I have said elsewhere his *cordon* of protection is a chain the measure of whose strength is its weakest link, and over not one link has he any sufficient control. Failure of parents to observe the symptoms of illness, failure to call in a medical man, failure of the medical man to diagnose small-pox, failure in promptitude of removal, inadequacy of hospital accommodation, insufficiency of disinfection of persons and things,—these are among the risks to which even a law of compulsory isolation would leave a man exposed. On the other hand, by means of vaccination and revaccination the individual himself is protected. He carries his protection with him wherever he goes and the father has control over the protection of himself and his children. All this, however, furnishes no excuse for refraining from utilising to the very utmost every measure supplementary and complementary to vaccination, no matter how uncertain such measures may be.

Finally, we must endeavour by every means in our power to educate the public, who choose our law-makers, in the very truth about vaccination. It is nearly twelve years since I first pleaded with the profession to undertake this education. The Jenner Society has within the last two or three years done yeoman service here, and more recently the British Medical Association has heartily aided in the work. May I suggest in conclusion that the Sanitary Institute might also now lend a hand?

Remarks
ON
MEDICAL PROGRESS.[1]

Being the Abstract of an Address delivered

BY L. A. WEATHERLY, M.D. ABERD.

GENTLEMEN,—"The *old* are ever learning much from the *new*; may not the *new* learn something from the *old*?" Some of you, possibly, imbued with the pessimism of Max Nordau, may shrug your shoulders at the very thought of the old being capable of either learning, appreciating, or acting upon any new ideas. You may agree with him that you cannot expect novel form of efforts from those stiff old organisms; that you cannot compel their trains of thought to leave the smooth and easy tracks and go bumping along over new and unbroken ground; that the old intellect has first to comprehend the new thought and secondly to conquer the tendency to formulate the idea in question in his old accustomed way; that it is to the minds of the old too much trouble to escape from the habits into which they have fallen and that even if they took this trouble that their central nervous system would be incapable of generating impulses of sufficient energy to enter untried paths. Yes, and to a certain extent you would have reason on your side for such mental argument. But surely the majority of you will believe with me that with the great and wonderful advance of science this class of "automaton" in medicine and surgery is the exception rather than the rule and that however old a medical man in active practice may be he is always willing to be enrolled among the learners and to glean new ideas and apply new methods of treatment for the benefit of his patients, though perhaps he may not be quite so enthusiastically confident as the young practitioner with regard to results.

On the other hand, some of the older school may ridicule the probability of the young men dreaming of learning anything from them and declare that they are far too satisfied with the rapid advance of science in their time to imagine for a moment that any of those who lived in the days before chloroform, antiseptic surgery, the use of the thermometer, the stethoscope, the ophthalmoscope, laryngoscope or the microscope could teach them anything which would in any way help them to do greater good to the patients entrusted to their care. Let us hope that such a young practitioner may be the exception rather than the rule and that if such a one exist he will exercise the intellect God has given him to reason out the evolution of science, and thus recognise that the grand wall of that science upon which to-day he stands had its foundations laid generations ago and that from anyone who has had anything to do with the setting of any one single stone of that structure something may always be learned.

As Kidd, in that most able work of his, "Social Evolution," so clearly points out: "The marvellous accomplishments of modern civilisation do not necessarily imply any extraordinary intellectual development in ourselves at all. They are not the colossal products of individual minds, but rather the results of small accumulations of knowledge, slowly and painfully made and added to by many minds through an indefinite number of generations in the past. In the fulness of time, when the ground has been slowly and laboriously prepared for it by a vast army of workers, the great idea fructifies and the discovery is made." And as Bellamy so well put it, "All that man produces to-day more than did his cave-dwelling ancestors he produces by virtue of the accumulated achievements, inventions, and improvements of the intervening generations." We are now rapidly approaching the close of a century which has seen a far greater advance in scientific evolution than any other in the world's history. In this marvellous advance medicine and surgery have shared and the Victorian era will ever be a striking landmark in the history of our profession and ever be remembered as a period in which science established her

[1] Presidential Address to the Bath and Bristol Branch of the British Medical Association, delivered on June 29th, 1898.

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dominion and lent her powerful aid to the cause of humanity. The older writers on medicine, when physiology was yet in its infancy and thus an exact scientific knowledge of disease unattainable, sounded a warning note lest too much should be made of the principles of medicine to the detriment of its practice; and Sir Thomas Watson in his memorable lectures, from which the most scientific student of to-day may learn much, harped on the same string. If this were necessary in those days, how much more is such a danger signal of use in our own? Our present system of medical education is to my mind erring greatly on the side of devoting too much time to the science of our profession and too little to its art. At the recent Montreal meeting of the British Medical Association Mr. Christopher Heath spoke with no uncertain voice as to the tendency of modern surgical education, declaring that the teaching of the students was getting too much into the hands of professors who were anatomists but not surgeons, and that the practical surgeon has in the present day too little time with his pupils. It takes often three years for the student to get through his primary examination, leaving only two for the study of medicine and surgery; and he declares that the growing tendency of the non-medical teachers of collateral science to regard their particular subject as the one most essential for the medical student must be restrained and the preliminary period of medical study must be cleared of many obstructions if the student is to have the necessary time to devote to the thorough study of those strictly medical subjects which will fit him to be a sound practical physician or surgeon. Weighty words these and who can deny their truth?

There might have been a tendency in the old system of medical teaching to make the student too much a disciple of empiricism and to inculcate in him too great a reliance in what one might aptly call common sense; but could not the scientific book-reading student of to-day benefit much by a little smattering of rational empiricism and the education of common-sense reasoning? Clifford Allbutt recently said: "We must not allow ourselves to be blinded by the light of brilliant generalisation of the laboratory and the lecture room, helpful as such light may be to the value of these empirical rules which have been painfully gathered together in the trials and the errors of generations of men. At the same time it behoves us to continually submit our empirical laws to revision, bearing in mind always that empiricism is, after all, science without roots." Looking back to my student days I remember with true appreciation the value of my apprenticeship to my father. It was hard work to steal a few hours from the day, with the morning lectures and the work at the infirmary, to run off to Portishead to make up bottles of medicines, mix pills and fold powders; to listen to the talk of old women, with their "windy spasms"; to sympathise with old men, with their "coughing and a spitting"; to hear young anæmic girls describing what they called "populations of the heart and digestion of the stomach"; and to visit with my good old father some of his most anxious cases and hear from him an elucidation of the symptoms, the probable outcome of the disease, and the various reasons for his treatment; to watch how acute was his observation and to note how often before he had asked a single question he had come to a more or less definite opinion as to how his patient was. Irksome though I often thought those hurried journeys were, how frequently since that time have I realised the true value of the practical teachings I thus obtained? Yes, indeed, "science," as Oliver Wendell Holmes says, "is a first-rate piece of furniture for a man's upper chamber, if he has common sense on the ground floor; but if a man has not got plenty of good common sense the more science he has the worse for his patients."

The older practitioner sees day by day the instruments of precision growing more numerous, more exact, and more trustworthy. He realises that the themometer rationally used can tell him what his hand could not; he knows the value of the stethoscope and is fully aware of the possibility of more accurate diagnosis by the aid of the ophthalmoscope or the laryngoscope; he contemplates with befitting awe and wonderment the revelations made by the microscope; he bows with admiration before the successful workers in the science of bacteriology, and he pictures the possibilities which have been opened up by the knowledge of the relation of living germs to diseased processes and which at present cannot be calculated; he knows that while this new science is gathering round itself its sister sciences that it is already attacking the very strongholds of dire disease and he wonders how he in the days gone by could have been able to diagnose the cases he believes he did correctly appreciate or pull his patients through their many grievous bodily ailments successfully. Yet, while envying his younger brethren, while listening to their scientific papers and their minute diagnoses of obscure diseases, does he not feel that perhaps it would be well for them could they have some of the difficulties to encounter which fell to his lot before science had so asserted her sway? The Italian painters say, "The eye can only see what it has learned to see." May not we say the same of all the senses? And had not the older men of our profession to depend almost entirely upon their organs of sense, not having our present grand array of diagnostic instrumental armamentaria? And how much can the eye see if properly trained? As Dr. Fothergill wrote: "The youthful gaze may see nothing, though the eye is young and the vision keen, where to the duller eye of advanced life the face may be a written page whose characters are both familiar and distinct." What the trained medical eye can see forms the great portion of that individual experience so valuable and yet so absolutely untransferable.

Professor Laycock always insisted on what he termed carefully cultivated physiognomical diagnosis and there can be no doubt that our older medical brethren were obliged to cultivate this to a very great extent. Might not the younger members of the profession with advantage do the same? By it important hints are given for physical investigation and from it are often furnished most valuable suggestions as to treatment to be adopted. To use the words of the Professor: "Study well the physiognomy of disease—that is to say, all those characteristics in the patient that reach the unaided senses and which are associated with morbid states; whether they be sounds or odours, or visible and tangible modifications of form, complexion, expression, and modes of functional activity; taking cognisance of *minute* modifications as well as of the more obvious, for they are only minute in a popular sense. Technically a shade of tint of the skin; a quickly passing change in the expression, an almost imperceptible modification in the breathing or mode of speaking; the ring of a cough; a local, and in itself trivial, development of a capillary network; a slight twitching of a muscle, or a tremor, may be as clearly significant of structural disease as the most characteristic and undoubted physical sign." The love of scientific detail and ascertained facts often causes the highly educated medical man of to-day to lose sight of the more general characters of constitutional disturbance and consequently handicaps him most seriously both in the prognosis and the treatment of his patient's case. Professor Erichsen not so long ago maintained that at the present time we are apt to pay too strict attention to physical diagnosis, and by so doing the educated student of to-day is making himself actually less useful to the sick man than his less perfectly trained predecessor, who by reason of his more general observation was often a superior antagonist to disease.

I well remember my first case of pneumonia when I started practice and how I hurried home to tell my father with a certain amount of pride what I considered a more or less definite piece of physical diagnosis. My father paid little attention to my recounting the extent of dulness and the characters of the respiratory sounds and more or less abruptly broke in with the simple question, "What are his general symptoms?" and then started a cross-examination as to his general expression, colour of skin, clearness of mind, amount of sleep and length of uninterrupted sleep, how he had taken his nourishment, the amount of urine he had passed and its condition, and on hearing my answers gave me a prognosis diametrically opposite to the one which my physical diagnosis had led me to believe. And he was right. He taught me a lesson which has stood me in good stead.

The druggists of our time have done much for us by their elegant pharmacy to make the administration of drugs far more pleasant for our patients; they are for ever introducing to our notice new remedies, novel preparations of old medicine; they are putting their pills and their tabloids into neatly labelled bottles with the dose to be given and the complaints to be cured by them writ large; they are sending out pamphlets broadcast, with description of diseases which can be quickly defeated by this or that new drug, with some grand sounding Latin or Greek name; and the medical practitioner is getting constant gifts of useful diaries with long lists of therapeutic agents as manufactured by this firm or that, and maybe he is inveighed into carrying about in his

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waistcoat pocket a leather case of little flasks containing different coloured pilules, which he is able to prescribe instanter as occasion arises, yellow for the liver, green for the chest, blue for the stomach, and pink—well, we know by our daily paper what they are for. Is this all an unmixed blessing? I do not deny that in many instances the modern tendency of pocket prescribing may be useful, but is it not too much putting our patients into the hands of the advertising druggist? and is it not getting us out of that art of prescribing, an art which can only be learnt by practical experience in the surgery of the general practitioner or behind the dispensing counter?

And with all these new drugs which are constantly being brought to our notice, are we not perhaps losing sight of the wonderful results the practitioner of bygone days had with some of the old-fashioned medicines simply because perhaps we are not yet able to explain their action and therefore think that they should be rejected? The alteratives which the older practitioner found so useful and prescribed with such good results are, in my opinion, too much neglected in the present day. That grand old drug, calomel, has been allowed by the younger generation to take too much of a back seat in favour of more fashionable remedies. My father never went his rounds without having in his pocket a little box of pilula hydrargyri subchloridi, gr. iii., and many an illness was cut short or limited by the early administration of what I remember some of his club patients called "the old doctor's little scavengers."

Could we wake from his everlasting sleep in this world a surgeon of sixty years ago and place him in one of our modern operating theatres how he would rub his eyes to stare with utter amazement at the daring deeds of the modern surgeon. He would see the patient brought in already unconscious of what was about to be done; he would note the scrupulous cleanliness which antiseptic surgery has taught us in all the surroundings of the room, the appliances of the operating surgeon and his assistant; he would, perhaps, see the abdomen opened and its contents handled with the most perfect confidence; and this or that operation, never dreamt of in his day as being even possible without instant death, brought to a successful termination. And wonderment would be justifiable. Can we to-day believe, as Dr. Playfair recently reminded us, that it was only a comparatively short time ago that the benches of the Royal Medical and Chirurgical Society rang with excited cries of "Down with the belly-rippers!" when Spencer Wells had the temerity to bring before it a paper advocating ovariotomy. All honour, then, to the discoverer of anæsthetics and the pioneer of aseptic surgery. By their work what has humanity gained? Surely, if a successful general had with his army killed as many lives as these men have saved from the grim hand of death a grateful country would have showered upon him honours galore and wealth beyond the dreams of avarice.

And yet with all the marvellous results of modern surgery, with all the quiet confidence with which the operator of to-day takes his knife in hand, with all the truism that anatomically there is nothing impossible to the surgeon and that physiology alone steps in and cries, "Halt, enough," may not the young surgeon learn something from his older brethren? Is he not perhaps a little too much given to elaboration and detail in his operations, making them too long and increasing the chance of shock, and might he not with advantage educate himself in that celerity and dexterity which was absolutely essential to the surgeon who had to deal with his hapless patients before the blessings of anæsthetics had started a new era in this branch of our profession? Is not the young surgeon perhaps a little too prone to use his knife as a means of diagnosis without giving his powers of observation a chance of arriving at a right conclusion, and may not the conservatism of his older brethren be a useful check in some cases to his ardent desire to do what he may think is the only thing for his patient?

Only a few weeks ago Mr. F. Treves read a paper before the Medical Society of London on abdominal section as a remedial measure and in conclusion spoke of the exploratory incision as follows: "That this simple procedure has been of enormous value no one will doubt. That it has been the means of saving many a life has been amply demonstrated. That it has enabled a correct diagnosis to be made and a logical treatment to be carried out in hundreds of obscure cases needs not to be insisted on; but there must arise in the minds of many the question whether the exploratory incision, infinite as its value may be, is an entirely unmixed blessing. I notice that there are indications which tend to allow this ready measure to replace the admirable labour of clinical observation. The incision is so simple, the collecting and arranging and judging of clinical evidence is so difficult and tedious. With a scalpel in the hand the patient, searching examination of the abdomen as practised in the old days is no longer needed and it is a question whether the education of those who wish to become acute clinical observers has not suffered a little thereby." The caustic stick and speculum era will long be laughed at by the younger generation who know now how little of the "ulcer of the cervix" there existed, and the age of "flexions" and the innumerable kinds of pessaries which the practitioner of the fifties, sixties, and seventies carried about with him has more or less passed away. Yet these instruments if properly applied may give comfort to many women and possibly the surgeon of to-day is a little too prone to use his knife and his needle when in many cases he might by the proper application of a suitable pessary do more for his patient. Wholesale acceptation of practice which has been proved to be in many cases opposed to scientific teaching becomes bigotry of the worst order, but may not wholesale condemnation be equally savouring of that fault? We are, I am afraid, while preventing the pendulum swinging too far in one direction, often allowing it too much play in the other.

In the successful practice of midwifery asepticism is playing an important part and the death-rate of women in childbirth when attended by duly qualified practitioners is gradually but surely lessening. We realise now how absolutely necessary is the most perfect cleanliness and we practice it with grand results, and yet in these days of hurry and scurry, of restless desire to do everything in record time, is not the word of warning spoken by Dr. Sinclair to the young practitioner in midwifery a useful one? With the use of anæsthetics, with the knowledge that slight injuries can now be so quickly and surely treated with hope of rapid recovery, is he not too prone to rush to his long forceps for assistance? No doubt, with time precious, with the anxious father longing for the news of his wife's safety and the advent of his first-born, the young medical man is often tempted to assist nature when nature is really crying out for patience and for time. With shirt sleeves turned up, with long forceps in hand, it may be a satisfaction to him to whisper through the keyhole to the impatient and anxious father the news that the trouble will soon be over, but it may not be quite so gratifying if some moments later he has, while congratulating the parent on the arrival of a bouncing "he" or "she," to commiserate with him on the possession of a wife with a ruptured perineum. Patience is what the older practitioners have had to exercise and it is patience that the young medico should try his utmost to inculcate.

These, then, are a few thoughts hastily, and I fear very clumsily, thrown together; and if I have made too many quotations, if I have mentioned too many names of men whose worth and work are known to you, I have done so simply to prove that these thoughts have some substance in fact and do not result from any egoism, but owe rather their creation to the practical school in which, however imperfectly, I tried my best to learn my profession. Much more might be said of the useful lessons to be learned by all from the study of the practices of the past. It is a subject to my mind replete with interest and one which would serve admirably for debate. I only wish it could have to-day been dealt with by one more capable than myself. Dear old "Johnnie Toole" once lunched with the late Lord Tennyson and the late Mr. Gladstone and he told a friend that the conversation of those great men had been of such a highly intellectual order that when he left the house he had to catch hold of the first policeman he met and have a chat in order to bring his mind down to the level of everyday life. I fear to-day the converse will happen and that you are already longing for the close of this trivial address in order that you may link your arm in that of some scientific brother and get quickly rid of the taste of my common-place maxims. And yet I venture to think that if what I have feebly brought before your notice is true its common-place hall-mark need not detract from its utility. To those who have long since believed in these maxims no apology is needed, whilst to any who may be too self-satisfied, too cocksure with their scientific teaching and knowledge of to-day, it may start in their highly intellectual and deep-thinking minds the

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possibility that, after all, in these days of rapid evolution it does not do to cast aside as worthless the lessons taught us in medicine and surgery by our fathers and forefathers, who worked honestly and bravely in the study and practice of our grand and humane profession.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.[1]

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(From the Sears' Pathological Laboratory of the Harvard Medical School.)

THE earliest epidemic of cerebro-spinal meningitis which has been reported occurred in Geneva in 1805 and was described by Viesseaux. In 1806 the disease occurred in epidemic form in Massachusetts and was described by a committee appointed for the purpose by the Massachusetts Medical Society in 1809. Since then epidemics have been described in various parts of Europe and America.

With regard to the etiology, in 1887 Weichselbaum described a diplococcus which be obtained at the necropsies of six cases of epidemic cerebro-spinal meningitis. This organism, which very closely resembles the gonococcus morphologically, he found in the protoplasm of the pus corpuscles and to a limited extent free in the inflammatory exudation in the meninges. The chief difference between it and the gonococcus is that it can be grown on ordinary culture media. The best culture medium is Löffler's blood-serum. Weichselbaum called this organism the diplococcus intracellularis meningitidis. During the last three years the diplococcus intracellularis has been found repeatedly by many other observers both in epidemic and sporadic cases of the disease. As a rule inoculation experiments have been unsuccessful. Injections of pure cultures into the pleural and peritoneal cavities of animals have produced sero-fibrinous inflammations and death in some cases. Meningitis has been produced in goats, in a few instances, by injections of cultures of the diplococcus into the spinal canal, and the organism has been recovered from the exudation in the meninges. The organism appears to be very susceptible to outside influences and it is often difficult to obtain more than a few colonies from the exudation in the meninges at the necropsy. Better results are obtained when cultures are made from the spinal fluid obtained during life by means of lumbar puncture. On culture media the organism rapidly loses its power of growth, and to maintain this power it is necessary to make fresh cultures every day. There have been no cases reported of general blood infection by this organism.

As to predisposing causes, there appears to be little or no influence exercised upon the spread of the disease by bad hygienic surroundings. Most epidemics have occurred in the winter and spring and sporadic cases have been observed throughout the year. A very large proportion of all the cases have occurred between the ages of two and thirty years. Both sexes appear to be equally susceptible to the infection.

Most observers are agreed that the disease is but slightly, if at all, contagious. The way in which infection takes place is not known. The organism has been found in the nose in some cases. The period of incubation has not been determined.

With regard to its pathology, the lesions consist of an inflammation of the pia-arachnoid. The exudation is confined in the meshes of the pia; none is found on the surface of the arachnoid. In the most acute cases the exudation is slight in amount and purulent. In acute cases of longer duration there is more fibrin in the exudation. The pus cells are contained in the distended meshes of the pia. Large cells derived from proliferation of the cells of the lymph spaces and from the connective tissue corpuscles appear. These cells are phagocytic and often enclose numbers of the exudation cells within them. In the very chronic cases the membranes are thickened. The exudation is slight in amount and is marked only by circumscribed whitish foci. The cells in these foci are degenerated and do not stain well. The ventricles are always distended. The ependyma is softened and frequently ragged. The fluid is cloudy and a small mass of fibrin or pus is always found in the posterior cornua of the lateral ventricles if the body has lain on the back. The changes in the brain consist of softening and infiltration of the cortex with pus cells, which extend in from the meninges, and of foci of softening in the interior of the brain. There is also some proliferation of the neuroglia cells of the cortex. The exudation extends along the cranial nerves. The nerves most affected are the second, fifth, and eighth pairs. The meninges of the cord are always affected and the exudation is found chiefly in the meninges of the lumbar cord over the posterior surface. The inflammation extends along the spinal nerves to the spinal ganglia. The changes in the interior of the cord are not so marked as in the brain. Degenerations are found in the cranial nerves and in the spinal nerve roots.

(The above description is a brief abstract of the pathological anatomy of the disease as given by Councilman, Mallory, and Wright, "Epidemic Cerebro-Spinal Meningitis," &c. Report of the Massachusetts State Board of Health, 1898.)

In considering epidemic cerebro-spinal meningitis it is very important to remember that the frequent variations which occur in this disease depend not so much upon the presence or absence of certain symptoms as upon differences in their intensity and the period at which they occur. Strümpell has said that perhaps the most striking feature in the disease is the constant variation in the intensity of the nervous phenomena, not only from day to day, but oftentimes in the same day. Certain symptoms which are almost constant in their occurrence are headache, pain in the neck, retraction or rigidity of the head, pain in the spine, and some degree of mental disturbance. Other symptoms which are not so constant but which occur very frequently are vomiting, hyperæsthesia, herpes, changes in the pupils, and conjunctivitis. The moderate and irregular type of fever is very characteristic and forms a striking contrast to the severe nervous symptoms. To obtain a clear impression of the disease it is necessary to consider it in its entirety, the onset, the sequence of symptoms and the variations in their intensity, the peculiar temperature and pulse, and the course of the disease. The picture thus presented is characteristic and in a large number of cases is unlike any other disease. In order to give an adequate and at the same time a clear impression of the variations in the symptoms the latter will be described in detail and the different types of the disease will be briefly alluded to afterward. These types have been classified clinically as foudroyant, acute, intermittent, chronic, mild, and aborted.

With regard to the onset, epidemic cerebro-spinal meningitis almost always begins suddenly. A number of observers have reported cases in which prodromal symptoms occurred and lasted for several days, in some cases for two weeks. These symptoms consisted of malaise, pains in the extremities, and headache. From the character and distribution of the lesions in the meninges, and from the severity and rapidity with which the symptoms develop in most cases, it is not improbable that in some of these cases at least the apparent prodromal symptoms were merely coincidences.

The earliest symptoms are, as a rule, fever and severe headache. In quite a large proportion of cases vomiting is one of the earliest manifestations, especially in children. In a small proportion of the adult cases the disease begins with a chill, which may be repeated. Convulsions are quite uncommon in adults, but in children they are by no means infrequent as one of the initial symptoms. These symptoms will be considered in detail. There is no definite and constant relation between the height of the temperature and the severity of the other symptoms. This is one of the most characteristic peculiarities of the disease. Very often the temperature is moderately elevated at the onset and may remain so for several days or throughout the disease in acute cases. If a four-hour chart is kept remissions will be found to occur, oftentimes of several degrees. Not infrequently the initial fever is very slight, although the nervous symptoms which rapidly supervene may be very severe; these cases usually occur in adults. Quite a number of cases have been reported in which there were severe headache, pain in the neck and

[1] A paper read at the annual meeting of the Massachusetts Medical Society, June 7th, 1898.

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spine, and mental disturbance, and the temperature remained normal for several days in the early part of the disease. In children as a rule the temperature at the onset is higher than in adults, not uncommonly 104°F. It shows the same tendency to remit as in adults. It is quite rare to find only a slight elevation of temperature in children in the initial stage. After the first few days there are usually marked irregularities in the height of the temperature from day to day. It is rarely more than moderately elevated later in the disease, and very often the exacerbations and remissions occur independently of the other symptoms. Occasionally the temperature assumes an intermittent character for several days. There may be no parallelism between the fever and the other symptoms at these times. In the chronic form of the disease, after three or four weeks, the temperature is very apt to be normal or subnormal, with now and then slight elevations. The nervous symptoms, however, continue with exacerbations and remissions. Ante-mortem rises in temperature are not uncommon, but many patients die with little or no fever. The above description is by no means a complete one of the many variations which occur in the temperature, but enough has been said to indicate how little relation exists between the fever and the nervous symptoms in many cases.

The disease almost always begins with headache. It is often very severe and persistent and in some cases it is the most marked symptom for several days. It is rarely absent. Vomiting is frequently one of the initial symptoms, although it may not appear for a day or two. It may persist for several days, but usually is of short duration. In chronic cases it is apt to recur at intervals and may become a dangerous symptom. Rigors may be one of the initial symptoms and may occur later with exacerbations of the disease. It is not so constant as the other symptoms and is not common in children. Convulsions are quite uncommon in adults but are by no means infrequent in children at the onset of the disease. The occurrence of convulsions is by no means an index of the severity of the disease. They may occur in some cases which are rapidly fatal, but they also occur in cases in which the disease pursues the usual course. Convulsions are rare late in the disease under any circumstances.

As to the later symptoms retraction of the head and pain and tenderness in the neck are constant and usually appear early. It is somewhat exceptional for them to be delayed for several days. A very marked variation is observed in the intensity of the pain and tenderness, not only in different cases, but in the same case from day to day. There is the same pronounced tendency to exacerbation and remission which takes place in the other nervous symptoms. In many cases these symptoms are but moderately severe at any time; in others they are so severe as to cause opisthotonos for a time. There appears to be no constant relation between the quantity, character, and location of the exudation in the meninges and the degree of pain and retraction. This has been demonstrated at necropsies and I have examined spinal fluid which contained many organisms and in which a purulent sediment formed in the bottom of the test-tube in a number of cases which had but moderate pain or tenderness in the neck and only a mild degree of stupor throughout the disease. In other cases the above symptoms were very much more severe and the fluid was only moderately turbid. In some patients the symptoms of spinal irritation are more pronounced than the cerebral.

Some degree of mental disturbance always occurs in the course of the disease and varies from apathy to unconsciousness. This is one of the early symptoms in most cases and usually occurs within a day or two of the onset, in many cases in the first day. In some of the rapidly fatal cases the patient becomes comatose within a few hours. In some severe acute cases there may be temporary unconsciousness early in the disease and subsequently these patients may show varying degrees of apathy or stupor. Often the degree of mental disturbance is milder and varies from apathy to stupor. Delirium is not uncommon and may assume at times a violent character. As the disease continues marked changes occur in the mental condition at short intervals, frequently in the same day.

Hyperæsthesia is not a constant symptom, but is nevertheless of frequent occurrence. It usually appears at an early stage of the disease and may occur later, when there are exacerbations. It varies from moderate general tenderness to extreme sensitiveness.

Herpes occurs very frequently. The lesions are usually confined to the lips and face. Rarely they have been found on the neck and shoulders. The herpetic efflorescence usually appears between the third and sixth days and is not an index of the severity of the meningitis. Other efflorescences are not so common, although roseola has been observed and petechiæ and ecchymoses occur at times. The latter are oftenest seen in severe cases. It would seem from the literature as if efflorescences occurred more frequently in the earlier epidemics than at the present time. It is not impossible that this may be due to greater accuracy in diagnosis at the present time.

Dilatation of the pupils and incomplete reaction to light occur quite frequently, oftentimes early in the disease. These conditions are not necessarily associated with lesions of the eyes and often show the same tendency to variations as the other nervous symptoms. At times the pupils are unequal. Nystagmus is not an uncommon symptom. Strabismus occurs frequently. It may be either convergent or divergent and appears to have no connexion with the severity of the disease. The condition is almost always a temporary one and both varieties of strabismus may occur in the same patient.

Paralyses are not so common as the other nervous symptoms. They may occur early in the disease and usually affect the extremities and at times the face. Ptosis is seen in some cases. The paralyses are not often complete and are very apt to be temporary, sometimes only lasting for a few days. Patients who have had paralytic symptoms and who recover from the disease rarely show evidences of paralysis at the time when they are discharged from observation. It is uncertain whether paralyses recur later in these individuals. General cerebral and spinal symptoms are much more common than localised ones. The reflexes vary a great deal. The deep reflexes may be increased, absent, or normal. There seems to be no connexion between the reflexes and the severity of the meningitis.

Emaciation is a constant symptom if the disease lasts longer than a week or two. In chronic cases the patients are always extremely emaciated; in some cases they are reduced literally to skin and bones. Constipation is a very common symptom and often requires periodic treatment to relieve it. Retracted abdomen and the *tache cérébrale* are present in many cases, especially in children, but are of no diagnostic importance. The urine often contains a slight trace of albumin and occasionally a few hyaline casts. Retention of urine is not uncommon in adults, but is much less so in children.

In adults there is usually a striking contrast between the rapidity of the pulse and the other symptoms. In a large proportion of cases the pulse is slower than normal in spite of the elevation of temperature and severe nervous symptoms. This symptom is not often observed in children, in whom the pulse is often very rapid. In both adults and children there is a marked variability in the pulse-rate at different times in the day. The variations may exceed twenty or thirty pulse beats in a minute. In cases which terminate fatally there is usually a marked increase in the pulse-rate. There is usually nothing striking about the respiration. It may be somewhat increased in rate, but is often within normal limits unless there is some complication in the lungs. The area of splenic dulness is rarely more than slightly increased and the spleen is not often palpable.

Conjunctivitis is such a constant symptom that it can hardly be considered a complication. It usually occurs within a few days of the onset. Severe lesions of the eyes are not rare. They may be caused by degeneration of the nerves or by extension of the inflammation from the meninges into the retina and choroid. Of these severe lesions optic neuritis occurs most frequently and may be followed by atrophy of the disc. The inflammation of the retina may be mild or severe and in some cases produces partial or total blindness. Some cases in which the lesions are severe recover their sight later. A few cases have been observed in which moderately good vision has been restored after some degree of atrophy of the discs. Irido-choroiditis occurs more rarely. Councilman claims that it is caused by direct extension of the inflammation from the meninges and is not metastatic in this form of meningitis. Optic neuritis may occur without showing external evidence of its presence and without much disturbance of vision.

Lesions of the auditory nerves and internal ears are quite common and are caused by extension of the inflammation from the meninges along the auditory nerves to the labyrinth. These lesions are severe and often cause permanent

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and complete deafness. Acute suppurative inflammation of the middle ear occurs quite frequently. It may be caused by direct extension from the brain, or in some cases may be produced by other pathogenic organisms which reach the ears by way of the Eustachian tubes.

There is much variation in the frequency of joint complications in different epidemics. In the epidemic in Nauplia reported by Kotsonopolus this complication occurred in almost all cases. In most epidemics the number was limited. The symptoms consist of acute swelling, redness, and pain, which subside after a few days. The knees, ankles, wrists, and elbows are the joints most often involved. In many cases only one joint is affected. But little is known of the nature of the lesions. Still claims that the disease is not in the joints, but is in the sheath of the tendons in the neighbourhood of the joints. He has found the diplococcus intracellularis in one case.

Complications in the lungs do not occur so frequently as in the eyes and ears. Focal pneumonias are not uncommon and are caused in some cases by the diplococcus intracellularis. In others they are due to a mixed infection by the pyogenic organisms. Croupous pneumonia caused by the pneumococcus is much rarer than focal pneumonia. Lesions of the heart are very uncommon. A few cases of acute endocarditis have been reported in which the cause was not determined. Nephritis is a very rare complication. I have found no record in the literature of cases of septicæmia caused by the diplococcus intracellularis.

Foudroyant cases are not very common. They appear to have been much more frequent in earlier epidemics. These cases prove fatal in a few hours—usually from 12 to 36. The onset is sudden and severe, beginning with fever, headache and vomiting, and at times with convulsions, more especially in children. The initial symptoms are rapidly followed by stupor and unconsciousness. The temperature may be high; the skin becomes grey and there are usually multiple small hæmorrhages in the skin of the body and extremities. The spinal symptoms may not develop and the clinical picture may resemble septicæmia more than meningitis.

Acute cases run their course in from two days to two weeks. Although the general type of these cases is similar there are many individual variations. In some cases almost all of the symptoms which have been enumerated may occur; in other cases several of them may be absent. The cases differ also in the sequence and time of occurrence of some of the symptoms. There are also marked differences in the intensity of certain symptoms. Quite a large proportion of the cases show characteristic remissions and exacerbations in the severity of the symptoms at short intervals, but there still remains quite a number of cases in which exacerbations and remissions do not occur; these patients continue in about the same condition for a varying number of days and then the symptoms either gradually subside and recovery takes place or severe symptoms intervene and prove fatal, or a chronic form of the disease develops.

Intermittent cases differ from acute cases in having one or several acute exacerbations with intervals of several days during which the temperature may be normal or more or less elevated, but the cerebral and spinal symptoms disappear and the patient appears to be convalescing. This is followed by a return of the acute symptoms, which may last for several days as before. Sometimes two or more of these exacerbations occur. The intervals between the acute attacks rarely exceed a few days, but several cases have been reported in which the intervals lasted for from two to three weeks. Some cases die during an acute exacerbation, others recover after one or more attacks, and in some cases a chronic form of the disease develops which may terminate fatally or in recovery. Emaciation is a marked symptom in the intermittent cases.

Chronic cases begin with the usual acute onset and succession of acute symptoms. After a varying number of days the temperature subsides and may remain normal, subnormal, or slightly elevated for weeks. The cerebral and spinal symptoms persist with varying degrees of severity. Sometimes the patients show little or no evidence of meningitis for several days and then the symptoms recur. The increase in severity of the symptoms may be accompanied by rises in temperature, although the latter often remains normal or subnormal. At times elevations of temperature occur without any marked symptoms. The symptoms are generally more or less mental disturbances, headache, pain and tenderness in the neck and spine and retraction of the head. Emaciation is very marked. The patients usually take but little food and gradually grow weaker. At times there is temporary improvement in the cases which end fatally. In the cases which recover there is usually a gradual cessation of the symptoms. When the disease ends fatally death usually takes place suddenly and quietly. When lesions of the eyes and ears occur in chronic cases they do so in the early stage of the disease at a time when the acute inflammation is present in the meninges.

Mild cases may begin with the same sudden onset as the other varieties, so that in the beginning it may be impossible to determine that the disease is going to pursue a mild course. In general, however, the symptoms are milder and subside after a varying number of days.

Aborted cases are described by Strümpell as beginning with sudden and severe symptoms which rapidly subside after a day or two.

Many of the symptoms of epidemic cerebro-spinal meningitis are so constant and characteristic that the diagnosis is not difficult in a large proportion of the typical cases if one takes into consideration the whole picture of the disease: the sudden onset, the constant occurrence of cerebral and spinal symptoms early in the disease, the tendency to variation in the intensity of the nervous symptoms from day to day, the absence of correllation between the nervous symptoms and the temperature and pulse, the eye and ear complications, and the frequent occurrence of herpes. Chronic cases when seen late in the disease are the most difficult to diagnosticate and the diagnosis may depend upon obtaining an accurate history of the onset and earlier symptoms. In several instances a diagnosis of chronic cerebro-spinal meningitis has been made by means of lumbar puncture when all other methods of diagnosis had failed. The diagnosis may be difficult or impossible in the early stage of the disease and in mild cases without the aid of lumbar puncture. Furthermore, it is important, as Councilman has pointed out, to obtain all the information possible about the different varieties of meningitis with regard to their etiology, frequency of occurrence, and termination. This can only be accomplished by means of an accurate method of diagnosis, such as is furnished by lumbar puncture.

When symptoms of any variety of active meningitis are present it is very rare to obtain spinal fluid in which, after standing for several hours, one cannot find fibrin or cells microscopically. In many cases it is even possible to find slight evidence of inflammatory exudation when the patients are convalescent. This method of examination fails at times, as do all methods of examination, but I believe that it does so less frequently than any other clinical means of diagnosis, such as the examination of the sputum, urine, and blood, Widal's serum test, &c. This belief is based upon work done by me during the past three years and includes upwards of 200 punctures. The technique of obtaining and examining the cultures and of making the microscopic examinations of the fluid have been systematically and carefully performed during this period. The results obtained warrant conceding a higher place to this than to other methods of clinical diagnosis. There are fewer sources of error to modify the accuracy of this test than in the others. The spinal fluid either contains cells and fibrin which denote inflammation of the meninges or else the fluid is perfectly clear and contains neither cellular elements nor fibrin. In the other tests various diseases or pathological conditions may give similar results, or at least so modify the results as to make a positive diagnosis impossible in many cases, in addition to the negative results which are obtained in a relatively large number of cases.

It is not necessary to describe again the technique of the operation. It may be well, however, to allude to some of the sources of error. In some cases one fails to obtain any fluid. This may be due to several causes: the needle may not enter the spinal canal; the needle may be in the spinal canal but outside the dura mater—that is, between the dura mater and the wall of the canal; the needle may be in the sub-arachnoid space but may be occluded by a blood-clot or a small particle of skin; the needle may be in the sub-arachnoid space but its point may be buried in the dura mater on the opposite side, or the lumen of the needle may be obstructed by resting against one of the nerves. To control these sources of error it is necessary to have a wire which is large enough to fill completely the lumen of the needle. This wire should of course be sterile. If the wire is much smaller than the lumen it is

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likely to pass through, or to one side of, an obstruction in the lumen and may not remove it. If the lumen is shown to be clear by passing a wire and a slight withdrawal of the needle does not cause the fluid to flow then in most cases it will be found that the needle has not penetrated the dura mater but is outside of it. To obviate this it is necessary to withdraw it for a distance not sufficient for it to leave the spinal canal and then to thrust again, directing the point more towards the median line. If these various procedures be performed one will rarely fail to obtain fluid.

The chief source of error in the examination of the fluid is a reliance upon the macroscopic appearances of the fluid alone, although in many cases they are characteristic. A very slight admixture of blood will render the fluid cloudy. The quantity of blood may not exceed the fractional part of a drop and still will produce a diffuse cloudiness. In most cases even this small quantity imparts a slight tinge of yellow to the fluid and after the fluid has settled the blood collects in a small drop at the bottom of the test-tube. When such a small quantity of blood as this is present there is no formation of fibrin, and it is usually easy to exclude the presence of inflammatory exudation microscopically from the absence of fibrin and leucocytes. If, therefore, blood appears at the end of the needle it is necessary to allow a sufficient quantity of the fluid to escape until the latter appears to be clear. It seldom is necessary to allow more than one cubic centimetre to escape in this way. The fluid after this is done is still very likely to contain a trace of blood, but not enough to interfere with the later examination. If the spinal fluid does not become clearer at once it is generally because the point of the needle is scratching the membranes, and it is necessary to withdraw it a little or to slightly alter its position. If considerable blood is mixed with the fluid there will be a formation of fibrin later. The fluid may be slightly cloudy from particles of dust which may be in the tube or come from the cotton at the upper part. The microscopic examination readily detects this, even if one is not certain from the macroscopic appearances. Not infrequently larger white particles of epidermis are present in the fluid; they should never be mistaken for the very fine diffuse cloudiness due to cells. Sometimes a faint diffuse cloudiness may be caused by the presence of bacteria and their products in cases of septicæmia. In these cases the cultures will show the organisms and there will be no evidences of inflammatory exudation microscopically.

The technique of the microscopic and bacteriological examinations of the spinal fluid are important. After it has stood for some time there is a formation of fibrin in cases in which the fluid is slightly or moderately turbid and a precipitation of pus when the exudation is more purulent. In some instances the quantity of the fibrin is small and may adhere to the bottom of the test-tube. The supernatant fluid is left perfectly clear under these circumstances, and unless the fluid is carefully examined this sediment may be overlooked. It is necessary in all such cases to scrape the bottom of the test-tube with the platinum wire in order to dislodge the fibrin. If the test-tube has been allowed to remain in a slanting position and only a small quantity of exudation is present it adheres to the side and may not be noticed. This may account for some of the negative results obtained in cases of meningitis, in which the fluid was said to have been perfectly clear like normal fluid. In many cases even when the quantity of fibrin is small it adheres to the bottom of the tube by its lower end and the remainder floats in the fluid like a web. The fibrin contains the cells in its meshes. Cover-glass preparations of the fibrin should be made, dried by passing them through the flame of a Bunsen burner, or alcohol lamp, and stained. Löffler's methylene blue gives the best results. By means of this stain the nuclei of the cells are very clearly defined so that the character of the exudation can readily be detected. In addition it stains any organisms which may be present. To differentiate the diplococcus intracellularis from other organisms a second cover-glass preparation should be stained by Gram's method. (By this method the intracellular diplococcus becomes decolourised.) Cover-glass preparations may also be stained for tubercle bacilli by appropriate methods of staining, but the organisms are so few in number that more accurate results are obtained by inoculating guinea-pigs with the spinal fluid. In cases of tuberculous meningitis this produces tuberculosis in the guinea-pig in from four to six weeks.

The cells in the spinal fluid from cases of epidemic cerebro-spinal meningitis are chiefly polymorpho-nuclear leucocytes—"pus-corpuscles." In addition there are found a varying number of small mononuclear cells—"lymphoid cells"—and large phagocytic endothelial cells. These latter cells are very large and have large oval or round nuclei. In the protoplasm of some of them one finds leucocytes, blood-corpuscles and particles of cell detritus. In the protoplasm of some of the "pus corpuscles" one usually finds one or more diplococci. Sometimes a leucocyte contains large numbers of them. In this variety of meningitis the majority of the organisms are contained within the "pus corpuscles" and are found only in limited numbers outside of the cells.

Towards the end of the disease in acute cases which terminate in recovery the "pus corpuscles" show evidences of degeneration. The nuclei do not stain sharply and many of the cells appear to be disintegrated. This appearance indicates that the acute inflammatory process has subsided, at least for a time, and may have some prognostic value. In chronic cases there are fewer "pus corpuscles." The majority of the cells have single round nuclei. Some of them are smaller than "pus corpuscles," have very little protoplasm and are evidently "lymphoid cells." Others are of about the same size as "pus corpuscles," with large round nuclei and considerable protoplasm, and are probably "plasma cells." (Both lymphoid and plasma cells are present in large numbers in the meninges in chronic cases.)

Cultures should be made on blood serum at the time of puncture by allowing one or more cubic centimetres of the spinal fluid to drop into the culture tube. Care must be taken to prevent the fluid from running down the side of the tube at its upper part in order to avoid contamination by wetting the portion of the tube which comes in contact with the cotton. The operator should handle the end of the needle as little as possible over which the fluid runs. After obtaining the fluid in the serum tube allow it to flow over the surface of the serum and to remain in contact with it for at least a minute or two. In a number of earlier cases in which organisms were present in the cells and in which symptoms of active meningitis were also present I have failed to obtain cultures by the use of a small platinum loop filled with exudation because the quantity was too small. Furthermore, it seems probable that in a number of cases failures to obtain a growth of the intracellular diplococcus have resulted from making cultures from the sediment after the fluid has stood for several hours, even when considerable quantities of the exudation were used.

As to the variations in the turbidity of the spinal fluid and their relation to the severity of the symptoms the following results are derived from the examination of the spinal fluid from thirty cases of epidemic cerebro-spinal meningitis. In many of these two punctures were made at different times and in some cases three or four. Within certain limits there is some relation between the degree of turbidity of the spinal fluid and the severity of the symptoms. The acute cases almost always show a markedly turbid fluid during the early part of the disease when the symptoms are severe. In some cases there is an immediate formation of purulent sediment in the bottom of the test-tube, but in the majority of cases the fluid is simply very turbid and after standing contains considerable fibrin and many cells. The cases in which a purulent sediment forms may prove fatal within a few days, but, on the other hand, the same kind of fluid may be obtained in cases which are only moderately severe at the time when the puncture is made.

Moderately severe cases may show well-marked turbidity at first, and later punctures, made at intervals of several days, may show a diminution in the turbidity of the fluid and yet the symptoms may be severer than they were at the time of the first puncture. In other cases the diminution in turbidity may correspond to some extent with the improvement in the patient's condition. If the fluid in acute cases is obtained late in the disease at a time when the acute symptoms have for the most part subsided it may be clear in some cases, and the microscopic examination may fail to detect evidences of meningitis. In other cases the cloudiness may be very slight and very little fibrin and only a few lymphoid cells and "pus corpuscles" may be found by microscopic examination. So that beyond certain limits there is no constant relation between the degree of turbidity and the severity of the symptoms.

In the intermittent cases the spinal fluid may be clear during the intervals that the patient is without symptoms and become turbid again during the exacerbations. This is

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by no means constant, however. The fluid is very likely to show a slight degree of cloudiness in these cases in spite of the absence of symptoms. It is impossible to say how long a slight cloudiness may persist in chronic cases. I have found more or less cloudiness due to cells in a number of chronic cases in which the disease had lasted for several weeks. From my experience thus far I would attach more importance to the results obtained by lumbar puncture than to any other means of diagnosis in the doubtful chronic cases seen late in which even slight cerebral or spinal symptoms still persisted. In mild cases the exudation may disappear from the spinal fluid in a few days. In the questionable cases in which the fluid appears to be perfectly clear it is necessary to make a very thorough examination of the bottom of the test-tube with a platinum wire after the fluid has stood for several hours.

There is no constant relation between the severity of the disease and the number of organisms present in the spinal fluid. If cultures are carefully made at the time of puncture and if the blood-serum is good one may expect to obtain a growth of the diplococcus intracellularis in the majority of acute cases provided the patient has symptoms of active disease. In a number of cases I have obtained a growth of the diplococcus after the disease had lasted for more than two weeks. In one case which lasted for five weeks I obtained growths in every one of five punctures made at intervals of one week. On the other hand, there have been cases in which the spinal fluid was very turbid and in which a purulent sediment formed and no colonies were visible on the serum after twenty-four hours, although a moderate number of diplococci were present in the water of condensation and a very few were obtained by scraping the surface of the serum with the wire. In one such case lumbar puncture was performed three days after the onset of the disease at a time when the cerebral and spinal symptoms were intense. In this case in addition to the very slight growth on the serum no organisms were found in the "pus corpuscles," although the exudation was purulent. It is difficult to give a satisfactory explanation of such cases. It seems improbable that the organisms were dead and therefore did not stain in the cells or grow on the serum three days after the onset with persistence of severe acute symptoms. One rarely obtains a growth of the intracellular diplococcus in chronic cases. In some instances, however, a few diplococci are found in some of the "pus corpuscles," and at times a limited number of organisms can be obtained by scraping the surface of the serum when there are no visible colonies. In mild cases the organisms are apparently not very numerous and one would expect to obtain a negative result so far as the cultures are concerned unless the puncture were made soon after the onset.

SUMMARY.

1. There is no constant and definite relation between the severity of the symptoms and the degree of turbidity of the spinal fluid.
2. There is little or no connexion between the number of organisms and the number of cells present in the spinal fluid.
3. In many cases there appears to be but slight connexion between the number of organisms found in the spinal fluid and the severity of the disease.
4. Unless the subsequent examination of the spinal fluid is carefully performed no deductions as to the presence or absence of meningitis are justifiable.

PROGNOSIS.

It is impossible to say how long the disease will last or what the termination will be in a given case until the lapse of a considerable interval of time during which the patient is free from symptoms. The length of this interval cannot be definitely stated, but in most cases two weeks is a safe estimate. In acute cases it is impossible to say that the disease will not become chronic or intermittent in type later. Furthermore, the disease may be moderately severe at first and increase in severity later and prove fatal. In the intermittent type of the disease the symptoms during exacerbations may be more or less severe than those of the onset. In chronic cases the mortality is estimated to be fully as high as in the acute variety. The patient may die from the results of the lesions produced early in the disease or from complications, such as pneumonia or persistent vomiting. The mortality varies very much in different epidemics. Hirsch estimates it at from 20 to 70 per cent.

TREATMENT.

Prophylactic.—Nothing of practical value is known about the method of infection or about predisposing causes. The disease is a primary infection and frequently attacks apparently healthy people; therefore no definite prophylactic treatment can be formulated. Although the disease appears to be but slightly, if at all, contagious it can do no harm, in the absence of positive knowledge as to the method of infection, to isolate the patients.

Curative.—There is no known remedy which either checks the disease or shortens its course. In a disease like cerebro-spinal meningitis, in which such marked variations in the severity of the symptoms occur at short intervals and in which so many types are observed, one must be very cautious and not confound apparent therapeutic results with coincidences. No effectual method of treatment has been suggested that I am aware of. The older methods—consisting of cautery of the spine, cupping, leeching, purging, ice-bags, and mercurial treatment—all appear to have been faithfully tried. There is no evidence that any of these procedures accomplished anything more than to increase the patient's discomfort in some instances.

Symptomatic.—Some relief from the nervous symptoms has been obtained by the use of sedatives and analgesics. It is difficult to estimate their value in such a variable disease. Delirious and restless patients are sometimes quieted by the bromides. The pain and tenderness in the head and neck may require some preparation of opium at times. Antipyrin and allied drugs have been used, but have not proved of much value unless large doses were given. The danger to be apprehended from the depressant action of these drugs is well known and it is safer not to use them. Salicylate of soda has been tried by various men in cases in which joint complications occurred. There is some difference of opinion as to its efficacy. In the cases which run a long course the most important indications are to sustain the strength of the patient by feeding and stimulation. It is important to keep a daily estimate of the quantity of food taken by these patients. In the long-continued cases the patients often refuse food for several days at a time and it is necessary to use a stomach tube in these cases at such times. This is especially the case in children. Complications must be treated as they arise. The convalescent stage is often long and requires careful supervision. The emaciation, weakness, and anæmia demand appropriate hygienic, dietetic, and tonic treatment.

In conclusion, a few words about the therapeutic value of lumbar puncture may not be amiss. The value of this procedure is purely diagnostic. One reads from time to time of recoveries from meningitis following the operation and of other cases in which the symptoms were ameliorated. I have never seen any such cases although constantly on the watch for them. A temporary relief, lasting for a few hours, has followed the operation in a few cases, but the same remissions frequently occur without any treatment. The fact that in almost all cases no change of any kind is visible in the patient's condition after the operation is strong evidence against its therapeutic value.

An extensive bibliography may be found in Councilman, Mallory and Wright's work entitled, "Epidemic Cerebro-spinal Meningitis," &c. Report of the Massachusetts State Board of Health, 1898.

WATER-SUPPLY OF PLYMOUTH.—The Mayor of Plymouth formally dedicated the new water-storage reservoir on Sept. 21st in the presence of thousands of the citizens. The reservoir, which has just been completed, is at Burrator, on Dartmoor, and was commenced in August, 1893. It has an area of 116 acres and a capacity of 651,000,000 gallons. The cost of the undertaking has been £200,000. The proceedings were of a very enthusiastic character and concluded with a banquet at the Plymouth Guildhall in the evening.

DEVON COUNTY ASYLUM.—At the meeting of the Devon County Council held recently the committee of the lunatic asylum reported that there were 1116 patients in the asylum and that Dr. George Symes Saunders had resigned after 28 years' "most able and faithful service." He has been granted a retiring allowance of £742 per annum and this amount the committee asked the Council to confirm. The report was adopted.

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THE INFLUENCE OF POSITION IN FRACTURES AND DISLOCATIONS AS SHOWN BY A COMPARISON OF THESE INJURIES IN MAN AND ANIMALS.[1]

BY EDRED M. CORNER, B.SC. LOND., M.A., M.B., B.C. CANTAB.

THE various adaptations which have occurred through man adopting the erect attitude are extensively dealt with in the large text-books of anatomy. The effects of position on the soft parts have to some extent been worked out, but so far as I know no work has been done upon the effects of the quadrupedal and bipedal positions upon injuries to the bony parts. These I have tried to work out in their principal directions. The subject matter therefore consists largely of what may be called surgical mechanics, and to this I have added the data drawn from veterinary surgery.

The mechanics of the injuries to the bones and joints in man can be easily studied as there is abundant material, but it is difficult to obtain the accurate data of fractures and dislocations in animals because an attempt is rarely made to rectify these, the animals being destroyed as they have no longer their full working value. This part of veterinary surgery has never been worked up to anything like the extent that it has been in man. The differential diagnosis and treatment are very shortly treated and the etiology of fractures and dislocations is almost untouched. In order to remedy this defect to some extent I have consulted all the cases which I could find reported in British and some American literature. Upon such material it is naturally impossible to build up reliable statistics as to the relative frequency of these injuries. Still, as fractures and dislocations are rare in animals and their study apparently of little practical use, the cases are recorded even when they do not necessarily present only usual features. Again, in consequence of the procedure after injuries in animals being usually to kill and not to cure the reports generally contain, besides an account of the injuries as made out in the living, descriptions of the post-mortem conditions found. These cases which are complete are of the greatest value, and I have neglected as too indefinite most of those in which such an examination was not made. In this way I have examined the records of more than 350 cases. I propose dealing only with those injuries which occur both in man and animals under conditions that are comparable. For example, I have omitted the fractures and dislocations which are peculiar to man owing to his fore-limb being specialised into an arm. Similarly some very interesting fractures in animals have been omitted, as that of the navicular bone in the horse, on account of the fact that there is no corresponding bone in man. Because the horse is the quadruped that is most frequently damaged and has been in consequence most fully studied I have selected it as the type to compare with man.

Broadly speaking, fractures are of rare occurrence in the horse in comparison with man and dislocations are still rarer. Animals agree with man in so far that they suffer less often from dislocations than fractures. The principal mechanical reasons for the fact that dislocations are less frequent in animals than in man are twofold—namely, the very strong muscles and tendons which surround the joints and the simple, limited movements allowed in them. In quadrupeds the presence of four supports to the trunk gives great stability to the animal, but these supports, which are disposed in pairs, are differently arranged with respect to their several segments. The ways in which the different segments of the limbs are placed give rise to the principal differences in the fractures and dislocations which occur in man and animals. It will add to the clearness of the following account if I first briefly state what these arrangements are. The long axes of the ilium and scapula both make angles with the long axis of the body of about 45°, that of the former directed downwards and backwards and the latter downwards and forwards (Fig. 1). From this point the angles in both limbs differ. The ilio-femoral angle is just about 90° and the humero-scapular 105°; the femoro-tibial (knee) 90°, the humero-radial (elbow) 150°; the tibio-tarsal 135° and the radio-carpal is practically 180°, the radius, tarsus, and metatarsal bone being almost in one straight line and the metatarso-phalangeal angle is about 165° and the corresponding carpal angle 135°. Speaking generally the bones of the fore-limb approximate in some degree towards a straight line, which accords with their predominant function of weight-bearing. The hind-limb, which is eminently propulsive, has its several segments set at more

FIG. 1.

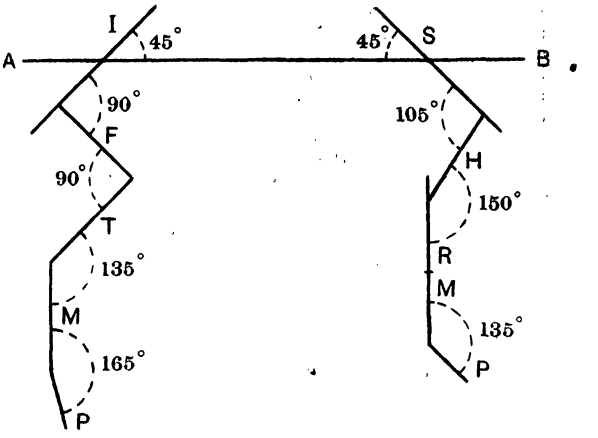


Diagram showing the relations of the segments of the fore- and hind-leg of a horse to each other. A, B, Longitudinal axis of body. Fore-limb: S, Scapula; H, Humerus; R, Radius; M, Metacarpal; P, Phalanges. Hind-limb: I, Ilium; F, Femur; T, Tibia; M, Metatarsal; P, Phalanges.

acute angles and is therefore bent in a zigzag manner like a spring. As the body-weight acts vertically at all these joints a constant strain will be thrown upon the muscles and tendons passing over them. If the ligaments bore this strain, movement in the same direction as the natural condition would be prevented. For example, the knee is naturally flexed to about 90°, and if the tendency of the body-weight to flex it further was prevented by ligaments the animal would be unable to bend its knee beyond this angle. These points will be severally dealt with in respect to their influence in the accounts of the various injuries.

FRACTURES AND DISLOCATIONS IN DIGITIGRADE AND PLANTIGRADE ANIMALS.

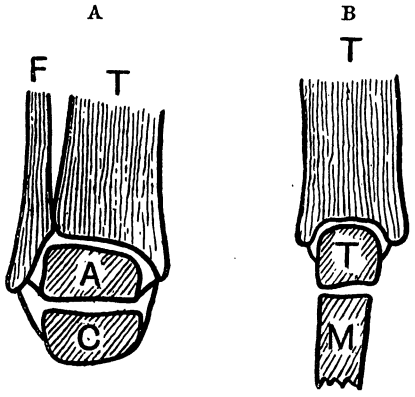
The first problem to be considered is the influence of digitigrade and plantigrade progression upon injuries. To make this clear the mechanical conditions must first be considered. The distance from the ground to the ankle-joint represents the length of the lever which acts on this joint. This lever, or foot-lever as it may be called, in man consists only of the astragalus and calcaneum, the total length of the perpendicular being not more than 3 in. In the horse, however, the foot-lever consists of three phalanges, the metatarsal bone of the tarsus, its length being about 18 in., the corresponding carpal lever being about 18 in. The mechanical value of this lever is, then, six or seven times greater than that in man. Besides the length of the lever its intrinsic strength must also be considered. In man it is short and thick, consisting of only two segments, which are firmly united by an inter-osseous ligament, whereas in the horse it is very long, many-jointed, and comparatively thin. In the latter, therefore, although the foot-lever has from six to seven times the mechanical value that it has in man, it is relatively weaker. The socket in which this lever works will materially influence dislocation in two ways, by its size and depth. Both these conditions must be gauged relatively to the length of the foot-lever, the absolute size and depth being of no value in comparisons. The ankle-joint is relatively larger in man and it is also deeper inasmuch as the malleoli are relatively longer. As in the horse the mechanical advantage of the foot-lever is much greater and it plays upon a relatively small and shallow socket it might be expected that dislocation would occur more commonly than in man. This, however, is not so; Müller says he knows of no cases of such a luxation. The

[1] Thesis for the degree of M.B. in the University of Cambridge.

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explanation therefore must undeniably lie in the weakness of the foot-lever. This, as has been said, consists of many parts which are bound together by very strong ligaments. Instead of these dislocations of the ankle it is found that the foot-lever breaks and the records show that the bones break before the ligaments. The metatarsal and metacarpal bones form just over half the length of each foot-lever and, as might be expected, are the bones most frequently broken. The metacarpal bone is broken more frequently than the metatarsal, probably in consequence of its being more exposed to injuries, such as in stumbles, turning, &c. I examined the records of 15 cases of the former and 5 of the latter. The bone next commonly broken is the long (first) phalanx, 10 cases; then the middle phalanx, 6; and finally the os pedis, 5. It is of interest to note that the order of frequency of fracture decreases with the length of the individual bones. Accordingly these considerations show that fractures of these bones are of greater frequency among those in the horse than they are in the case of man. In man, with his relatively short, broad foot-lever and large ankle-socket produced by the long malleoli, it is to be expected that these latter processes are more likely to be broken off than in the horse (Fig. 2 A). Such is certainly the case, for

FIG. 2.



A, Diagram of bones about the ankle-joint of man. T, Tibia. F, Fibula. A, Astragalus. C, Calcaneum.
B, Diagram of bones about the ankle-joint of the horse. T, Tibia T (on the small bone), Tarsus. M, Metatarsus.

dislocation in man at the ankle is extremely rare without such a fracture. In the horse Leisering records such a fracture found post mortem and Müller suggests that Louchard's case may have been another. These are the only two cases I could find. Besides the dislocation of the ankle-joint with fracture of the malleoli, plantigrade animals differ from digitigrade animals in having the calcaneum fixed by contact with the ground. By virtue of this they are liable to astragaloid and subastragaloid dislocation. Digitigrade animals are exempt from these injuries as the calcaneum is never so fixed. Owing to the plantar arch in man the calcaneum is directed backwards and downwards and is fixed by contact with the ground only at its hindermost part. In consequence, the whole length of the calcaneum acts as a lever to break the inter-osseous ligament between it and the astragalus. There is a similar lever from the heads of the metatarsal bones to the tarsus.

Another point in connexion with dislocation at the ankle-joint is that in man the movements permitted there are more extensive. This certainly gives an additional liability to dislocation but may also save him from injury. For instance, violence applied to the outer side of the foot in man may result in nothing more than a sprain of the ligaments, but in the horse in which the movements at the ankle-joint are limited such violence is very liable to lead to fracture. The ankle-joint in the horse forms anteriorly an angle of 135°, whilst the wrist is practically in one straight line with the arm. There will be a constant strain upon the calcaneum, which is very rarely broken in the horse; it is then usually broken by muscular violence. Such an accident occurs very rarely in man, as for instance when he adopts digitigrade progression, as in running, jumping, &c.

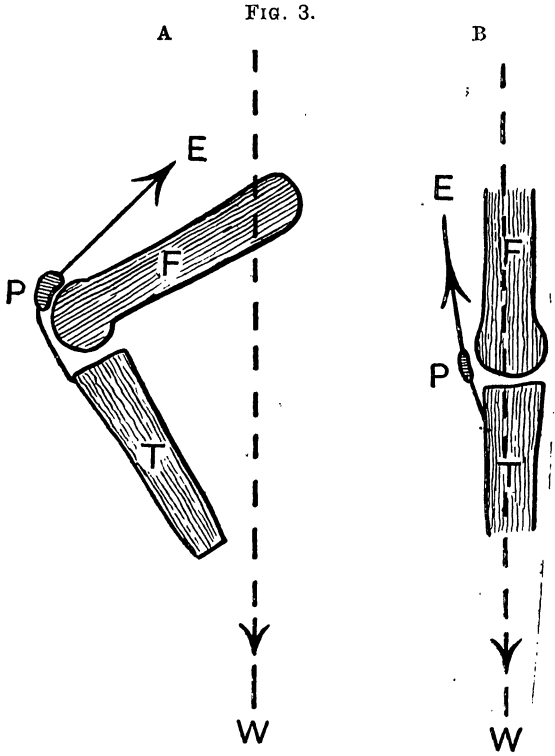
FRACTURES OF THE FOREARM AND LEG.

The tibia is the most commonly broken bone in animals. In its causation it differs from that in man by being almost invariably caused by direct violence, whilst in man such a cause is uncommon. As a result of this transverse fractures are commoner in the horse than in man and in transverse fractures the ends of the bones are not unlikely to remain in apposition. It is not therefore surprising to find cases recorded in veterinary literature in which displacement did not occur for some days after the receipt of the injury. This period is of very variable length, as from five to thirty days or more. Williams asserts that in such cases the damage is probably subperiosteal and that this membrane being very strong is sufficient to retain the two fragments together. Nowhere have I found the possibility of impaction considered, though it is not so likely to occur with direct violence. Cases in which displacement does not occur early, as when the bone is broken transversely, do occasionally occur in man. This cannot occur often, for the most common fracture of this bone is produced by indirect violence and the line of fracture is in consequence more or less oblique. Fractures of the fibula are very common in man, whilst in animals with well-developed fibula it as a rule only occurs as the result of direct violence. In the horse the fibula is defective and only exists in the upper third of the leg; Müller asserts that it is never broken. The tibia of the horse has an outer malleolus as well as an inner supplying the wants of the lower end of the fibula (Fig. 2 B). I have shown above that neither malleolus is at all likely to be broken. The radius in the horse is similarly placed to the tibia and suffers, as would be expected, similar fractures. The ulna is only a fine splint-like bone in the horse in its lower part and is very rarely broken. Like the fibula it is sometimes broken by direct violence in cats, &c. The olecranon will be considered after the patella.

FRACTURE OF THE PATELLA.

Gurlt's statistics give the frequency of the fracture of the patella in man as 1·4 per cent. of all fractures. The veterinary text-books state that this fracture is very rare and that when it occurs it results from direct violence; the more

FIG. 3.



A, Diagram of knee of horse. B, Diagram of knee of man. F, Femur. T, Tibia. P, Patella. E, Line of action of quadriceps. W, Line of action of body-weight.

recent works add muscular violence. In a search through American and British literature I have been unable to find a single case. In the horse the knee is naturally flexed to an angle of about 90°, and as the line of action of the body-weight is vertical there will be a continuous strain on the

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patella. This strain cannot be resisted by the ligaments, as then further flexion would be prevented, and this is certainly not the case. The strain must therefore be borne by the quadriceps extensor, the patella, and its ligament. With the assumption of the upright position such continuous strain will be lost, as the body-weight is transmitted directly from the femur to the tibia. Both Humphry and Goodsir, later also Meyer, obviate muscular action in their theories of the mechanism of the knee in standing. The patella has therefore lost in man a great deal of its function and may therefore be said to be atrophic. A limit is placed to this atrophy by the value of the patella in walking, running, &c.—i.e., when the knee is flexed. Besides this, in the flexed knee of the horse the patella has to transmit the force through an angle (Fig. 3), and consequently must be a much stronger bone than if it had merely to withstand a nearly pure traction force, as in the straight knee. In adopting the erect attitude the ligamentum patellæ has been shortened, so to speak, in order to take in the slack. Man's patella, therefore, rides relatively lower on the femoral condyles than in the horse. This enables it to be in contact with the femoral condyles near its middle and not at the ends. The area between the two horizontal lines on the articular surface indicates this area of contact. The bone is consequently snapped by the contraction of the quadriceps muscle. This is the usual method given to explain the fracture by muscular violence, but a most important factor is not considered. The knee is flexed at the time and in consequence the body-weight will work hand in hand with contractions of the quadriceps.

In the horse, then, we have a stronger patella which by means of a longer ligamentum patellæ rides higher on the femoral condyles. Nearly the whole of it is in contact with the femur at the same time. Therefore it differs from man's in being almost entirely out of harm's way. Considering these points and the extreme rarity of the fracture it is very improbable that it is ever broken by muscular violence. The statement to this effect in the veterinary works in all probability arose from the observations in the treatises on the surgery of man. Mr. Anderson shows that this injury is more common in people of feeble habit of body from the St. Thomas's Hospital returns of 1880–1890. This frequency, he says, "points to the predominant influence of a second factor, a diminished textural resistance in the bone." To this may be added other clinical facts. It is by no means infrequent to find refracture in a different place after wiring has been done. May it not be that here a new piece of cloth has been put in an old garment? Again, one often sees cases of fractured patella in whom the other patella has been broken before or which breaks subsequently. Mr. Anderson has on clinical grounds pointed out an atrophic condition of the patella related to the age and condition of the subject. This is a condition of the individual and differs from the suggestion I have made from our ancestry. To these must be added Poirier's evidence of the great diminution of the compact bone with increase of age.

Comparing the patella of man with that of a typical quadruped it is seen that the former is relatively shorter and broader, its breadth equalling and usually exceeding its length. It is thinner also, as is shown by calculating its thickness even in terms of the relatively shorter length. Thus it may be said to be the weaker, and this is supported by comparing sections of the bones. In man there is less compact tissue round it and the cancellous tissue has wider meshes and weaker trabeculæ. The structure of the patella on all points bears out the weaker condition found in that of man which had been suggested above from *a priori* reasoning.

FRACTURE OF THE SESAMOID BONES.

One of the most interesting fractures in the horse has no counterpart in man, but as the bones are placed under somewhat similar circumstances as in the patella I will give a brief account of them. The sesamoid bones are strong masses in the flexor tendons situated on the metatarso-phalangeal and corresponding carpal joint (Fig. 4). The joint is hyper-extended to an angle of about 135° and in consequence of the vertical line of action of the body weight a constant strain is borne by these bones. As they are situated over the joint they are more similarly situated to the human patella, but they agree with the quadruped's in that they are in contact with the overlying bones in almost their entire length. They are therefore not liable to be broken across the lower end of the metatarsal bone. Fracture occurs by muscular violence and differs from the common results so produced in the extraordinary comminution which takes place. The bones are broken in as many as from 5 to 30 pieces; the fracture may also occur in all the fore-limbs simultaneously. I have analysed eight papers upon this subject. Hart of Calcutta says that it was the commonest] fracture which he had to deal with, and that it occurred chiefly in young horses from Australia after a voyage of from 60 to 70

FIG. 4.

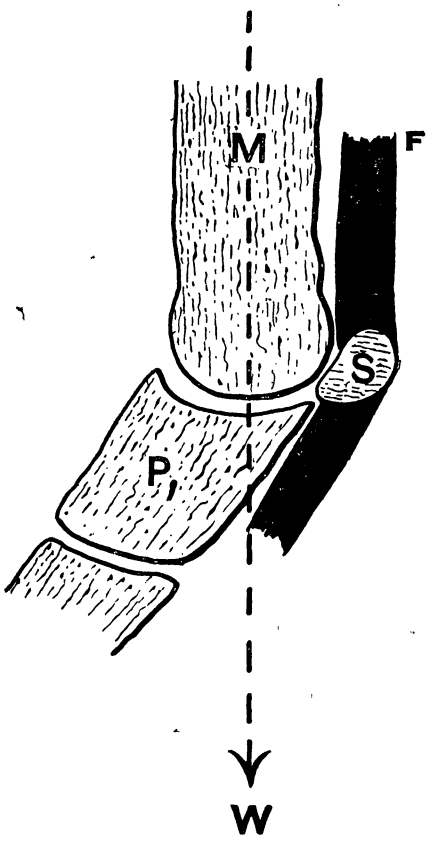


Diagram of metacarpo-phalangeal joint of horse. M, Metacarpal bone. P1, Proximal phalanx. S, Sesamoid bone in flexor tendon F. W, Line of action of body-weight.

days, during which they stood continuously and suffered the greatest privations. When landed they bolt maniacally and after going a short way collapse. Post mortem he demonstrated that the sesamoid bones were lighter and more cancellous than normal. Professor Varnell previously had also described the same morbid condition as predisposing to the fracture, but offered no suggestion as to the cause of it. Hart also showed that if care was taken in landing and for some time afterwards this predisposing condition could be recovered from. Both the above authorities have shown the predisposition, but have not worked out the mechanism of the fracture. The bones are situated over the metatarso- and metacarpo-phalangeal joints and also lie in contact with the bones; the joint is hyper-extended to 135° from the vertical. As the animal gallops, each time its legs touch the ground, a violent strain will be thrown on the flexor tendons and the sesamoids. Also, as the bones lie directly over the joint, the lower end of the metatarsal bone will be driven violently upon them. This action will be somewhat like that of a hammer, and considering the great tension on the bones the resulting comminution may be explained. In Hart's cases besides the predisposing condition of the bones there is the excessively violent muscular action from the excitement of landing after the long voyage.

A point which may deserve explanation is that in from 60 to 70 days of standing could atrophy be induced in the bones? Such conditions should normally produce an hypertrophy, but continuous strain with the malnutrition and greatly impoverished health might produce the atrophy. Leisinger records a case of transverse fracture, the bones being probably broken across the lower

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end of the metatarsal bones. The sesamoid bones, therefore, present an intermediate condition to the patellæ of man and quadrupeds. They agree with those of man in being broken by indirect violence, but by virtue of being completely in contact with the underlying bones and bearing a continuous strain, differ from it in being broken into several pieces and not into two by a transverse break; they are also placed over the joint, and, though very rarely, are broken transversely by muscular violence. They agree with the horse's patella in being subjected to the continuous strain and being in almost complete contact with the underlying bone, but the horse's patella differs, as shown above, in being situated so as to be practically out of harm's way with respect to indirect violence. They also illustrate the influence of the individual's condition as predisposing to fracture. The joints over which they are placed are set at different angles, the foot 165° and the hand 135° (Fig. 1), and it might therefore be expected that the fore leg sesamoids would be more frequently broken than those of the hind leg. This will certainly to some degree be balanced by the fact that in the legs greater muscular action will be experienced.

FRACTURE OF THE OLECRANON.

The olecranon in the arm corresponds in some degree to the patella in the leg. Owing to the specialisation of man's arm the conditions cannot be compared with advantage; in the horse the condition of the fore-limb is to some extent the same as the hind-limb and a comparison may here be made. Though the olecranon is suitably placed for being broken across the trochlea of the humerus it is hardly ever so fractured. Pernaud records such a case in the horse. Cases are occasionally recorded in which fracture has occurred on a level with the upper end of the radius, but they are scarcely cases of fracture by muscular violence. The reason why it is not more frequently broken probably lies in the fact that the fore leg is mainly of use for weight-bearing and the hind leg mainly for propulsion. In this way the olecranon to a great extent is saved from the violent intermittent contractions of the extensor muscles; should the patella have been continuous with the tibia it must inevitably have been broken off. That the fore leg is of less value in violent movements is indicated by the fact that the shoulder-girdle is nowhere in bony connexion with the trunk, the clavicle of course being absent. As the humero-radial angle is only 150° and not 90° (Fig. 1), as in the knee, the olecranon is not so well situated for fracture as a like structure would be at the knee.

FRACTURES OF THE HUMERUS AND FEMUR.

Fractures of the humerus and femur may be dismissed in a few words. They usually result from direct violence. In the case of the femur of animals the neck is not usually so marked as in man, and, as Müller has pointed out, it is probably less commonly broken. When compared with man both these bones form an angle of 45° to the long axis of the body. In consequence a continuous strain is thrown on the glutei, supraspinatus, infraspinatus, &c., which has led to the enormous development of the tuberosities of the humerus and of the trochanters. The presence of the third trochanter in animals is probably accounted for in this way. Steel records a case in which this was torn off by muscular violence. Besides the third trochanter being present and the large size of the other trochanters the constant strain may account for the shorter neck to the femur, for the longer the neck the greater the mechanical disadvantage of the glutei.

FRACTURES OF THE TRUNK.

The scapula is uncommonly broken in the horse on account of its sheltered position and of its mobility due to absence of the clavicle. Excluding chipping of the glenoid cavity I analysed only 6 cases, none of which presented any features of interest. The pelvis in the horse is far more frequently broken than the shoulder girdle, as might be expected. I collected 25 cases of this fracture, 11 of which were multiple, 6 of the ilium only, 4 of the acetabulum only, and 4 of the ischium only. A favourite situation for fracture is at the narrow neck of the ilium. The ratio of the breadth of the neck to that of the expanded part of the ilium is in the horse 1 in 6, in man 1 in 3. The neck of the horse is relatively less broad and is not thicker. Force applied to the crest of the ilium has the length of the bone for a lever and this lever is longer in man and also possesses a relatively weaker point in the neck, and it is here that the fracture occurs most commonly in the horse. This constitutes a most important distinction to the fractures in man. A similar remark would apply, though with considerably less weight, to the fractures of the ischium in the horse. The position of the pelvis in man and in animals seems to exercise little influence upon its liability to fracture.

The ribs in the horse are occasionally broken by muscular violence, but far more commonly by direct violence. Gabriel records a case of fracture of the first rib by muscular violence during turning. In man the clavicle protects the upper ribs; in the horse this bone is absent, but the position of the fore legs protects them. Müller quotes the returns of the Prussian army for 1891 and gives the fractures of the vertebral column as 30 cervical, 6 dorsal, and 3 lumbar. Of the 22 cases I examined 11 were cervical, 4 were dorsal, and 7 were lumbar. Pure dislocation as in man is very rare and occurs only in the cervical region; a partial dislocation or subluxation occurs more frequently in the horse. The cervical vertebræ most commonly involved were the second, third, and fourth. Fracture alone was commonest in the lumbar region and here the first lumbar vertebra was the usual one broken. The twelfth dorsal was the one most frequently broken of this set. So far they agree with the conditions of man's injuries. But owing to the vertebral bodies articulating with each other by means of a kind of ball-and-socket joint the vertebra in front may be split by that behind. Such a case is recorded by Smith, where the fourth cervical vertebra split the body of the third. The coccygeal or caudal vertebræ are for obvious reasons broken more often in animals than in man. The sacrum is quite as true to its name in animals as in man, being rarely if ever broken.

Of 21 cases of fractured jaws in animals 3 were of the upper and 18 of the lower. Of the latter 5 occurred in the symphysis, which is probably a higher percentage than in man and probably due to the weak union found at the symphysis in animals. The squarer jaw in man allows more easily of fractures to occur other than at the symphysis. Of fractured skull there is little to be said, except that I found recorded 10 cases of the vault (2 frontal, 4 parietal, 2 occipital, and 2 general) and 3 of the base.

DISLOCATION OF THE PATELLA.

Though fracture of the patella is one of the rarest fractures in the horse yet dislocation is the commonest luxation. Around this luxation has cropped up a considerable literature. Certain papers illustrate the interesting evolution of the knowledge of this condition and its mechanical causation. I give a short epitome of them. Spooner says that these cases were taken for cramp; Duboisin describes cases of femoro-popliteal neuralgia. In these last papers Professor Youatt adds an editorial note that the cases are those of dislocation outwards of the patella. "An old practitioner" next frankly narrates the trouble he had with a case and Professor Youatt again enlightens us. The luxation was attributed to mechanical causes such as uneven ground relaxing the extensors; similarly fracture of the neck of the ilium was found to cause it. It was then said that ill-health relaxed the ligaments and led to the absorption of the fat behind the patella and its ligaments and so allowed the luxation. This condition disappeared on return to health. With Golding begins a period of inquiry; he asserted that ill-health and non-development of the femoral condyles caused it. Professor Axe wrote a paper on Adynamic Luxation, giving conditions like those mentioned above. Professor McCall then put forward the various mechanical conditions which might lead to luxation. He added several new ones, as vertical position of the femur, hydrops articuli, &c., to the list. Dollar, in a paper written a little later quotes Chuchu, who says that the luxation is only partial and that the patella gets engaged with the knob of the internal femoral condyle. He also quotes M. Violet, who regards spasm of the internal vastus or paralysis of its antagonistic muscles as a factor. Dollar himself advocates Chuchu's views. Tweedley gives a careful account of dissections he did on these subjects. He supports Chuchu in asserting that the luxation is partial and due to the patella's "temporary arrest on the superior entablature of the femoral condyle." This hooking with the internal condyle he says is aided by the various conditions mentioned above and he gives the muscular spasm after galloping as the occasional cause. Müller now divides the luxation into two classes, dislocation upwards and dislocation to the side, nearly always to the outer side. I have come across only one

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notice of the inward luxation of the patella in a horse and that is recorded by Pernaud.

As has been said, in the horse the patella lies relatively higher on the condyles as the ligamentum patellæ is longer and so is thus allowed greater amplitude of lateral movement. In the partial dislocation the flexed knee with the constant strain on the extensors, &c., aids considerably in the locking of the bones. The very large internal condyle prevents the inward dislocations. The continuous strain will also tend to prevent the displacement of the patella round its long axis. I have found no reference to such a displacement in veterinary literature. In man, as in the horse, dislocation outwards is by far the commonest. It also agrees in being most frequently only partial, but owing to the erect position the partially dislocated bone is not fixed by the weight of the body as in the horse. The lower end of the femur in man differs from that in the horse in the external condyle and its articular surface extending higher up the front of the femur than the internal, where it is also more prominent. In the horse precisely the opposite condition exists, yet in both cases outward dislocation is the commonest. The explanation probably is that in assuming the erect attitude the extensor muscles have acquired a more outward pull; the pelvis is broader and the knees are closer together under the body. The same explanation is also a factor in the condition of the external condyle in man mentioned above. The inward pull of the extensors, the knees being widely separated, in the horse will also aid the upward extension and prominence of the internal condyle. The existence of complete inward dislocations of the patella in man has been questioned by Malgaigne and denied by Nélaton and Streubel; Hamilton quotes one case of partial luxation reported by Key. Pernaud's case is the only one which I have found in animals, and this was probably only partial. Many of the mechanical points mentioned in the history of dislocation of the patella in the horse apply equally to man's. The non-development of the femoral condyles may explain some of the cases of congenital luxation in man.

DISLOCATIONS OF THE SHOULDER.

Dislocations of the shoulder are rare on account of the absence of the clavicle allowing more mobility of the scapula besides other general reasons. It shows especially well how simple movements affect the liability to dislocation. In man force transmitted up the humerus, as in falling, is not directed to the glenoid cavity but to the side of it, and so the bone is easily dislocated; in the horse the simple movements practically only allow of the direct transmission to the glenoid cavity. The accident mainly occurs in the hunting field, as when landing from a jump with the fore legs thrust forward. The line of the humerus is then about vertical, as it is normally directed backwards, making an angle of 45° with the long axis of the body. In this position the head of the bone may escape in almost any direction. As the tuberosities are very large from the continuous strain on the supraspinatus, &c., the head of the humerus is more likely to escape inwards—i.e., subcoracoid. Still it is to be expected that subspinous dislocations should be relatively more common than in man. The veterinary text-books unanimously state that subcoracoid dislocation is the commonest and do not mention subspinous at all. Dr. Phineas Abraham questioned this and recorded a case of his own and two under the care of Professor Robertson in which post mortem the humeral head was found on the dorsum scapulæ. In the veterinary literature I found records of 4 other cases, but not one of these can be surely put into any class. In man, as is well known, subcoracoid dislocation is frequent whilst subspinous is rare. Dislocation of the shoulder in the horse is almost invariably associated with chipping of the glenoid cavity, probably due to the very large tuberosities of the humerus or the difficulty that the head of the bone has in escaping owing to the simple and not extensive movements allowed. In man for the very reverse reasons the edge of the glenoid cavity is uncommonly chipped. In him also fracture of the humerus with dislocation is more common, and this is especially true of separation of the epiphysis

DISLOCATION OF THE HIP.

I collected three instances dealing with dislocations of the hip in animals. Two were certainly on to the dorsum ilii and one into the obturator foramen; in the others no post-mortem examinations were made as reduction was accomplished. Cattle have a shallower acetabulum and are more liable to this dislocation. From *a priori* reasons it might be expected that dislocations into the sciatic notch should occur more frequently than in man, and with the head of the femur escaping inferiorly thyroid also. In the skeleton the cotyloid notch in the acetabulum of the horse is extremely large and, though spanned by the transverse ligament, might well aid to a greater frequency of thyroid dislocations in them. In conclusion, it may be noted that in looking through the fractures in animals there appears to be a marked absence of cases in which impaction occurs and again of separation of the epiphyses as compared with man.

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SIX CASES OF MALIGNANT DISEASE OF THE CERVIX UTERI TREATED BY VAGINAL HYSTERECTOMY.

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CASE 1.—A married woman, aged fifty-four years, was admitted into the Samaritan Free Hospital on July 13th, 1896. Her previous history was as follows. At the end of February she had noticed a discharge of blood from the vagina. This continued daily until her admission into the hospital. The discharge was never offensive. She did not complain of any pain and was always able to work. For two months previously to her attendance at the hospital the quantity of the discharge had increased. She stated that she was losing flesh. The menopause had occurred seven years previously. She never had any vaginal discharge until the present trouble commenced. She had had five children (twins twice) and two miscarriages. The last child was stillborn. On examination she was found to be fairly well nourished, with no cachexia. Her appetite, she said, was good and she slept well. On bimanual examination the uterus was found to be freely moveable. There was no infiltration of the broad ligaments. A nodular growth was felt, involving chiefly the posterior lip of the cervix and extending upwards into the cervical canal. The appearance of the growth *per speculum* suggested malignant disease, the surface bleeding readily when touched. On July 17th I performed vaginal hysterectomy. The method adopted was that of ligaturing the broad ligaments with silk from below upwards and separating the uterus with scissors after the application of each ligature. The operation occupied 35 minutes. The convalescence was uninterruptedly good, the patient getting up on the fifteenth day and leaving the hospital three weeks after the operation. Sections made from the growth showed that it was a columnar-celled epithelioma. I saw this patient on May 11th, 1898. There was no trace of recurrence.

CASE 2.—A married woman, aged thirty-one years, was admitted into the Samaritan Free Hospital on Dec. 14th, 1896. For a period of five months she had suffered from loss of blood from the vagina after sexual intercourse. During this period also a profuse, foul-smelling discharge had been flowing from the vagina. Her menstrual periods were regular, lasting from three to four days, until five months previously. She had had two children and no miscarriages. The youngest child was six and a half years old. (It may be mentioned

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that her husband had a chronic gleet.) On examination she was found to be a stout woman of small stature and of somewhat anæmic appearance. She complained of sacrache and loss of appetite and said that she was gradually losing flesh. On bimanual examination the uterus was found to be directed backwards and freely moveable and the broad ligaments were free from disease. A rounded, punched-out surface was felt on the posterior lip of the cervix which extended into the cervical canal. The edges of the ulcerated area were hard and were composed of a series of nodules and similar nodules formed the floor of the ulcer. These nodules could be seen *per speculum* and also the surface of the ulcer, which was bathed with purulent secretion. On Dec. 17th I performed vaginal hysterectomy, adopting the method already described. A portion of omentum was found adhering to the fundus uteri. This was ligatured and dropped back. In addition the vaginal walls were united with silkworm gut sutures, an orifice being left in the centre through which a strip of iodoform gauze was inserted for drainage. The operation occupied 50 minutes. The convalescence was uninterruptedly good, the patient getting up on Jan. 3rd, 1897, and leaving the hospital five days later. Sections made from the diseased area showed it to be a squamous-celled epithelioma. I have seen this patient recently and there appears to be no trace of recurrence.

CASE 3.—A woman, aged forty-nine years, a widow, was admitted into the Samaritan Free Hospital on May 7th, 1897. Nine months previously, after receiving "an injury to her side," she noticed that she had a blood-stained discharge, which continued until Christmas, 1896, when it became offensive. In January, 1897, a quantity of the growth from the cervix was scraped away and portions were sent to the Clinical Research Association. The scrapings were reported to be sarcomatous. After this operation the discharge ceased for four weeks. I saw the patient in consultation with my friend, Mr. Laird-Cox of Southborough, and on vaginal examination we found a growth of about the size of a billiard ball extending from the margins of the cervix uteri into the vagina. Owing to the size of the growth the posterior relations could not be definitely ascertained. The body of the uterus was enlarged and freely moveable. I advised vaginal hysterectomy. The patient, a stout woman, was very anæmic from loss of blood. She had suffered for some time from a winter cough. She did not complain of any pain until a fortnight before the operation, when she had sacrache. She had not lost flesh. She had been married for thirty years and had been a widow for three years. She had had two children, the youngest child being twenty-nine years of age. The menstrual periods were of the regular twenty-eight-day type and the quantity was moderate. Her father, who is alive, had had a rodent ulcer removed from his face four years before, and his four sisters had died from cancer. I performed vaginal hysterectomy on May 11th. The growth, which in appearance resembled wash-leather, was very friable, a considerable portion of it being scraped away by the fingers. The scraping caused free hæmorrhage, which was arrested by ligaturing the base of the broad ligament on either side. The usual incision was made around the cervix and the bladder was with some difficulty separated anteriorly owing to inflammatory thickening. The posterior vaginal wall was separated, and the peritoneum being exposed was snipped with scissors and the finger was introduced into Douglas's pouch. It was found that several small fibroids were attached to the body of the uterus and that larger fibroids were growing into the broad ligaments. These fibroid outgrowths prevented the uterus being pulled down. As the fibroid growths appeared to be smaller on the left side it was decided to free the uterus on that side by ligature of the broad ligament from below upwards. The anterior peritoneal pouch was opened and the bladder and ureters were carefully separated. When the uterus was freed on the left side it could be pulled down by the vulsellum, thus allowing the right broad ligament to be ligatured from above downwards external to the fibroid outgrowths. There was no bleeding after the uterus was removed. The ovaries were left. The operation occupied one hour and forty minutes. The patient was somewhat collapsed after the operation, but she soon recovered. Sections made from the growth showed it to be a round-celled sarcoma. The patient was able to leave her bed on May 27th and she left the hospital on June 8th. I have recently heard that she continues in good health.

CASE 4.—The patient in this case was a married woman, aged thirty years. For a year and nine months she had noticed a profuse vaginal discharge which was occasionally offensive and blood-stained. This discharge was increasing in amount and was kept in check by injections. There was also pain across the sacrum. The menstrual periods were irregular in quantity, of the twenty-eight-day type, and lasted from four to five days. The quantity of the menstrual discharge, she said, had been less for the previous six months and for twelve months she had been getting thinner. The sacrache had increased, and this together with pain in the left iliac region had interfered with her sleep. She had had three children and one miscarriage. The age of the youngest child was three and a half years. The miscarriage occurred six months after the birth of the last child and was at the third month of pregnancy. There was no family history of malignant disease. On May 15th, 1897, a scraping operation was performed and it was then the opinion of two specialists that the disease was too far advanced for any radical operation. I saw the patient about three weeks later and found her to be a well-nourished woman of medium height, anæmic, and very nervous. On bimanual examination the uterus was found to be freely moveable and the cervix to be excavated by a hard nodular growth which bled easily on touching. The disease had spread to the attachment of the vaginal wall anteriorly, and posteriorly it involved the lip of the cervix. The appearance of the growth had been altered by the previous scraping operation. I recommended vaginal hysterectomy, which was performed in a nursing home on June 3rd. The usual anterior and posterior incisions were made and after partial anterior separation of the bladder and the posterior vaginal wall the bases of the broad ligaments were ligatured to arrest the bleeding from the growth. The further separation of the bladder was continued and the anterior pouch being opened the fundus uteri was drawn outwards by a vulsellum and the broad ligaments were ligatured from above downwards, care being taken to remove as much of each ligament as possible. After cutting away the uterus a diseased portion on the left side still remained. This was clamped by a pair of large Spencer Wells forceps, pulled out, ligatured, and cut off. The pelvis was raised during the operation. The pouch of Douglas was carefully sponged out, and all the ligatures were cut short. The vagina was plugged with iodoform gauze. The operation lasted one hour. The patient left the nursing home three weeks after the operation. Sections of the growth showed it to be a columnar-celled epithelioma. The improvement in the condition of the patient was most marked. She had been subject to menstrual headache, and this completely disappeared after the operation. Her weight, too, increased. On Oct. 11th it was 10 st. 8¾ lb.; on Nov. 11th it was 11 st.; on Dec. 11th it was 11 st. 2½ lb.; and on Jan. 10th it was 11 st. 3¼ lb. She was, moreover, enabled to lead an active life. On April 8th, 1898, I made a vaginal examination, finding a papillomatous mass on the left extremity of the cicatrix. I recommended that this should be removed, and accordingly on April 16th the operation was performed, the patient being anæsthetised. There was thickening around the scar which was freely moveable, but whether this was malignant or inflammatory I could not ascertain. The patient has been very well since this operation.

CASE 5.—A married woman, aged forty-six years, was admitted into the Samaritan Free Hospital on June 24th, 1897. For six months previously the patient had had a feeling of enlargement of the internal genital organs with bearing-down pains which interfered with her sleep. She also had a profuse offensive brown discharge which was occasionally watery in consistence. There was no hæmorrhage except at the menstrual periods. The menstrual periods were very irregular. Occasionally they occurred every fourteen days, at other times every twenty-eight days, and were very profuse. Previously to the attack the menses had been regular and their duration had been seven days. She also stated that she had been getting thinner. Her mother was alive and was healthy, and her father had died aged seventy-eight years, as she said from "old age." The patient had two brothers and six sisters, all of whom were healthy. She had had 13 children, the last being born on March 29th, 1892, and eighteen months later she had had a miscarriage at her second month. She was found on examination to be fairly well nourished, but she was anæmic. Bimanual examination showed that the uterus was moveable, and the fundus could be felt about 1½ in. above the pubic symphysis. The cervix was nodular and excavated. The growth encroached on the bladder anteriorly and affected the posterior lip of the cervix. On June 28th I performed vaginal hysterectomy. An

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incision was made posteriorly and the posterior vaginal wall was separated. Then an anterior incision was made, but as the growth tended to invade the base of the bladder considerable difficulty was experienced in the separation of that organ. The base of the broad ligament on each side was now ligatured, the finger being introduced as a guide into Douglas's pouch. As the uterus was not easily pulled down the upward separation of the bladder was continued and after opening the peritoneal cavity the fundus uteri was pulled out by a vulsellum. By this means the left ovary was pulled into the wound and removed after ligature by the Staffordshire knot. The broad ligaments were now ligatured from above downwards. The right ovary was not removed. Considerable separation of the bladder on the right side was required. Owing to the extension of the disease posteriorly and to the right it was found that the ligature first applied to the right broad ligament was not beyond the disease. Another ligature was accordingly applied externally and the diseased portion cut off. Some vessels required ligature after the removal of the uterus. It should be mentioned that during the operation there was a sudden flow of a quantity of muco-purulent material from the uterine cavity. The vagina was swabbed out with corrosive sublimate solution and packed with iodoform gauze. The operation lasted an hour and twenty minutes. The patient rallied well after it and became rapidly convalescent. She was able to leave her bed on July 10th and was discharged from the hospital on the 21st. I saw her again on Oct. 2nd, when she said she felt much better and her appearance had certainly improved, but she had not gained flesh. She had had some abdominal distension and epigastric pain. The tongue was furred. The bowels acted regularly. On bimanual examination there was found to be hard nodular infiltration of the pelvic cellular tissue which could be felt posteriorly and laterally. There was no discharge or hæmorrhage. On Nov. 27th I saw her with her medical adviser, Mr. Huggins of Islington. Her liver was enlarged and nodular, reaching to the level of the umbilicus. The gall-bladder was distended and acutely painful on pressure. She had constant vomiting, which did not yield to the usual remedies. The vomit was green in colour and accompanied by severe pain in the epigastrium and in the left hypochondrium. On Dec. 9th Mr. Huggins kindly wrote to me intimating that the patient had died, "literally starved to death, never retaining any food." No post-mortem examination was obtained. Microscopic examination of the specimen showed it to be a malignant adenoma of the cervix uteri. The growth was composed of tubules lined with a layer of columnar nucleated epithelium. These tubules were embedded in a matrix of fibrous tissue. In this case there was local occurrence together with the formation of secondary deposits in the liver. The disease was therefore of a very malignant type.

CASE 6.—A widow, aged sixty-one years, was admitted to the Samaritan Free Hospital on Jan. 3rd, 1898. Menstruation, it was said, had occurred twice at the age of twelve years. It then ceased until she was twenty-one years of age. After this age the menses were regular and profuse, of the twenty-eight-day type, and lasting one week. Ten years previously she had had "flooding" which lasted for five weeks. She had had a return of the bleeding twice and finally there was entire cessation of this loss of blood until eight months before her admission into the hospital. For eight months she had had a slight loss of blood from the vagina at intervals of from three to four days. This continued until two months before her admission, when she had what she called a "liver attack," there being afterwards no bleeding for a month. After this the bleeding returned and was more profuse. There was also a slightly offensive discharge, but she complained very little of pain. This pain was in the sacral region and the hypogastrium, corresponding to that experienced at her monthly periods. She had been getting thinner for eight months and her appetite was impaired. She had had four children and no miscarriages. The last child was born twenty-eight years before and she had been a widow for twenty-three years. Her father died at the age of seventy-three years from chronic rheumatism and her mother at the age of seventy-four years from "old age." She has one brother and four sisters alive and healthy. She was seen on examination to be a tall, thin woman, markedly sallow in complexion. She admitted that she took too much alcohol. On bimanual examination a nodular ulcerated surface was felt involving chiefly the posterior lip of the cervix and extending to and involving the posterior vaginal wall. The uterus was moveable and was not enlarged. On Jan. 8th, 1898, I performed vaginal hysterectomy. The posterior incision was prolonged downwards along the posterior-vaginal wall in order to excise the disease which had spread in that direction. There was some difficulty in separating the bladder. The broad ligaments were secured, three ligatures being used on each side. The uterus was removed and the vagina was packed with iodoform gauze. The patient made an excellent recovery. She got up on Jan. 24th and left the hospital on Feb. 2nd. Microscopic examination showed the disease to be a columnar-celled carcinoma. This patient has remained well.

Remarks.—These cases illustrate the varieties of malignant disease met with in the neck of the womb. In four of the cases the malignant disease was discovered at a comparatively early stage, thus making the ultimate progress much more favourable. It is difficult, and in many cases impossible, to state the exact duration of the disease. Most cases have at first no symptoms at all or the symptoms are so slight as to attract little attention. The sufferers, therefore, do not seek advice till the disease is far advanced. There is no way of making sure of the beginning even if we were constantly examining, though microscopical examination of excised portions may lead to the detection of the earliest stage. Statements as to the duration of the disease are to some extent mere guesses, for there is no ground for fixing its time of beginning and the earliest data attainable are only indications of disease already considerably advanced. The earliest and most frequent sign of malignant disease is the hæmorrhage. This may occur, as in Case 2, after sexual intercourse or it may be evidenced by increased bleeding at the menstrual periods. Loss of blood between the periods is common. When the discharge from the vagina has become foul, the smell will indicate that sloughing of the diseased surface has commenced and it is therefore a later sign. Pain is a late symptom of cancerous disease, yet it is all-important to the patient, for unless pain exists many patients do not seek advice and hence the reason why cases are so frequently discovered where the disease cannot be removed. When pain exists of a severe character, interfering with sleep and requiring narcotics for its relief, the disease will be found to have spread to the pelvic cellular tissue and peritoneum. It may be taken as proved (1) that the commonest age for uterine cancer is between forty and sixty years and (2) that it more frequently affects the lower ranks of society. Every patient who has had a loss of blood from the vagina after the cessation of the menstrual periods should be carefully examined, as this hæmorrhage may be the initial sign of malignant disease. Further, enlargement of the uterus after the menopause should always give rise to suspicion. It is supposed that the uterus becomes gradually smaller when its activity has ceased. This is true to a certain extent but in many women the process of involution is extremely slow, and when a large uterus is found where the menstrual flow has ceased the patient should be kept under strict observation. It is the exception to find cancer affecting the neck of the womb, where that organ is well involuted after the menopause. For the present we must collect the facts which clinical investigation furnishes, for as to the causation of cancer much has been written but little is really known. It may yet be proved to be a parasitic disease. I am a firm believer in the importance of gonorrhœal infection as a predisposing cause of cancer of the cervix, more especially where that infection leads to a chronic cervical gleet. Lacerations of the cervix are important not because they are the future seat of malignant degeneration, but because they are accompanied by thickening and enlargement of the cervix and body of the uterus from the absorption of septic products and thus predispose the tissue to malignant degeneration. Indeed, the septic subinvoluted uterus pouring forth a copious discharge from its cavity, so frequently found after abortion or full-time labour, especially among the poorer classes, is a most important factor in the causation of cancer.

In conclusion I must add one word of warning as to scraping the diseased surface. Such an operation in the early stages will only increase the growth and do more harm than good. As soon as the disease is diagnosed the proper treatment is early and complete removal. I always recommend total extirpation of the uterus because this allows the broad ligaments to be removed close to the pelvic walls. If this is not done I fail to see the advantage possessed by this operation over that of supra-vaginal amputation.

Curzon-street, W.

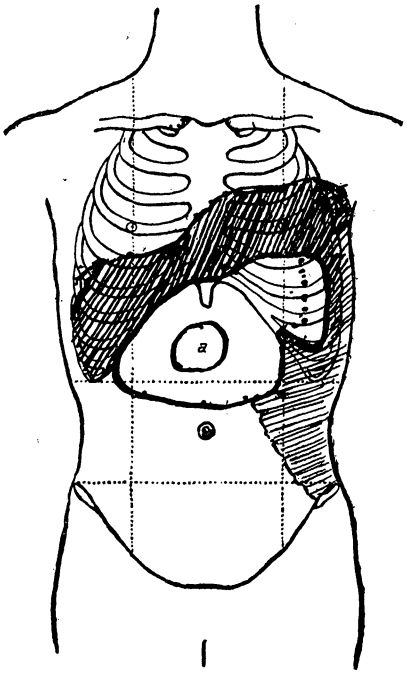
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A CASE OF CANCER OF THE PYLORUS PRESENTING SOME UNUSUAL FEATURES.

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THE patient was a man, aged sixty-one years, who had worked for fifty years as a miner. The family history was unimportant and he had had no previous illness with the exception of being bruised by falling stones and of being burnt some years ago. He came to the hospital on May 22nd, 1894, and stated that the present illness began one week after Christmas quite suddenly with "cramp in the bowels." This shortly afterwards left him and except for an occasional twinge of pain in the abdomen he remained well until a month previously, when the pain again came on suddenly and was attended with swelling of the bowels; the pain was now more severe than before and was aggravated by food. He had been sick once only, on May 13th, after a cup of tea. The onset a month previously was attended with diarrhœa and abdominal tenderness and the diarrhœa returned again for one day a week previously to admission. The pain was excruciating, paroxysmal, and "doubled him up." There had never been hæmatemesis, melæna or hæmaturia, nor, so far as he knew, fever. He had not had jaundice. He could not account for the illness but had wanted sufficient food lately and had suffered much exposure. His appetite was lost; the bowels were regular. The pulse was regular but weak and empty between the beats. The arteries were thickened and tortuous. The respirations were 30. His sleep was disturbed by pain. The temperature was normal. The tongue was large, flabby, and coated with a moist brown fur. During the month he had been able to take very little food and had lost flesh. He was anæmic and emaciated and had an anxious expression. What at once attracted my attention when he walked into the out-patient room was a very large and localised swelling of the epigastrium which was quite evident through his clothes. On examination there were signs of pulmonary emphysema, the chest being barrel-shaped and hyper-resonant in front, and the cardiac dulness was obscured by the lung; the lower ribs on the left side were remarkably bulged out by the epigastric swelling. The heart dulness began above at the third space and ended below at the upper border of the fifth rib, where the percussion note became tympanitic. The cardiac impulse was at the sternal end of the third left intercostal space. Posteriorly, dulness on the left side began at the seventh rib and the lower angle of the scapula, and the breath sounds and the vocal resonance were absent over this area. Air entered the upper part of both lungs freely; the breath sounds were generally harsh over the whole of the right lung. Liver dulness extended 4½ in. in the nipple line; from the fifth rib to the lower costal margin its lower edge could not be felt; the liver dulness ended abruptly in the middle line at the right border of the tympanitic swelling. The epigastric and upper part of the umbilical regions of the abdomen were greatly distended and the flanks and the lower part of the abdomen were hardly distended at all. There was a tympanitic percussion note over the swelling extending upwards to the junction of the ensiform cartilage with the sternum in the middle line to the fifth rib in the parasternal line and to the left as far as the anterior axillary line at the level of the seventh rib; to the right it extended as far as the line joining the nipple with the middle of Poupart's ligament on the right side. Midway between the umbilicus and the ensiform cartilage the abdomen measured 35½ in.; and at the umbilicus it measured 31 in. There was dulness in the left flank; elsewhere the abdomen was resonant. The superficial abdominal veins were greatly distended. Over a small area at the end of the eleventh rib on the left side a tympanitic percussion note was obtained. No change was observed in the shape of the tumour when the patient sat up or in the area of dulness in the left flank. Nothing could be felt over the epigastrium owing to the extreme distension and no tumour could be made out in any other part of the abdomen. The urine was normal; the feet were bluish in colour but there was no œdema. The patient was unable to lie on his right side. On the 23rd the area of tympanitic resonance extended higher on the chest—i.e., as far as the fourth rib; there seemed to be more marked bulging of the ribs in the left hypochondrium; the area of tympanitic resonance at the tip of the eleventh rib had disappeared. Puncture with an exploring syringe in the left eighth intercostal space merely withdrew a little sanguineous fluid. On the 24th the left side of the chest was more bulged and was dull all over at the back, the heart beat to the right of the sternum in the third space, and the mediastinum was pushed over to the right. Two pints of sero-purulent fluid of peculiar opalescent appearance were removed by aspiration; this opalescence was perhaps due to the presence in it of a very large number of leucocytes which were crammed with fat-droplets as if they were undergoing fatty degeneration. Next morning the patient breathed more easily, was in less pain, and felt better. The abdominal swelling remained unchanged. On the 26th it was noted that the right side of the chest moved more freely than the left and that the cardiac impulse was in the third left intercostal space close to the sternum, but could also be indistinctly felt to the right of the sternum. The cardiac area began above at the third rib and ended below at the fifth. The bulging of the lower ribs on the left side and of the epigastrium was the same. The areas of dulness and tympanitic resonance are shown in Fig. 1. The transition from one to the other

FIG. 1.



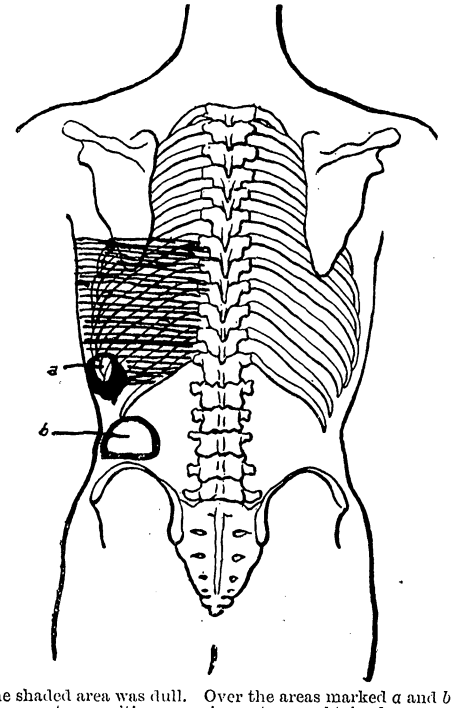
The shaded areas were dull. The circle marked *a* defines the area over which a bell-sound was obtained. The thick black line marks the outline of the stomach. The dotted line marks the shifting of the limits of dulness when the patient lay on his right side.

was quite abrupt except over the lower limit of the epigastric swelling, where it was ill-defined, the right side and the lower parts of the abdomen having now become more distended and yielding also a high-pitched tympanitic note on percussion. Over a circular area in the epigastrium a metallic tinkle was heard and the bell-sound was fairly distinctly obtained. In the sitting posture the areas of tympanitic resonance were unaltered except that dulness extended ½ in. higher over the left false ribs and a line of dulness 1 in. in breadth appeared along the lower border of the epigastric swelling just above the umbilicus. When he lay on his right side the left margin of tympanitic resonance in the chest was encroached upon for about 1 in.—i.e., moved 1 in. to the right. On the left side of the chest in front there were dulness, absence of breath-sounds and of vocal resonance below the

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third rib (above this the note over the chest was somewhat tympanitic) and posteriorly below the fifth rib. The dulness in the left loin had now increased and a fluid thrill could be obtained between the loin and the epigastric swelling. When lying on his right side the anterior edge of the dulness in the loin shifted 3 in. further back and an area of tympanitic resonance of the size of a five-shilling piece appeared over the end of the tenth rib. Later in the same day this disappeared and a fresh tympanitic area appeared just above the middle of the right iliac crest behind (Fig. 2.)

FIG. 2.



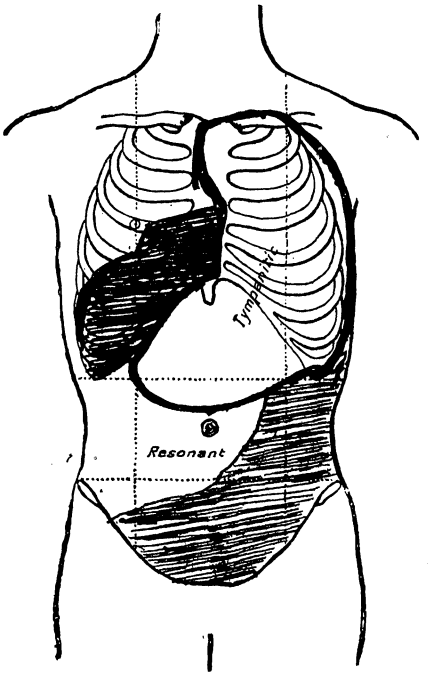
The shaded area was dull. Over the areas marked *a* and *b* a tympanitic percussion note was obtained.

The temperature was normal. On the 28th the left side of the chest was found to be full of fluid, which consisted of thin pus, and the temperature had risen to 100·6° F. After consultation with my surgical colleagues it was decided not to open the abdomen but to evacuate the pus in the left pleural cavity by a free incision. This was done and three pints of thin pus were removed. The next day the wound was discharging freely; the temperature was 102°, the pulse was 96, feeble, with a tendency to dicrotism, and the respirations were 28 to the minute and laboured. There were all the signs of pneumothorax over the left side of the chest. The epigastric swelling had slightly decreased, the abdomen being at this part 32½ in. in circumference. The tympanitic resonance here was continuous with that over the left side of the chest (Fig. 3). There was dulness, shifting with the position of the patient, over the whole of the left side and the lower part of the abdomen. On the 30th the patient was very much worse, there was general abdominal tenderness, and the dulness over the lower part of the abdomen extended to a point 1 in. above the umbilicus. The signs were otherwise unchanged. The respiration was very difficult, at times gasping, the pulse was very weak, and he was obviously failing fast. He gradually sank and died on June 1st. After May 28th his condition was such as not to admit of any attempt at operative interference.

Necropsy.—At the post-mortem examination, twelve hours after death, the tympanitic areas on the chest and the abdomen were observed to be the same as during life. The left pleural cavity was full of air but contained no fluid. The stomach was very greatly distended but lay upwards and to the left, occupying the left epigastric region, its lower edge being at the level of the lower border of this region; it extended under the left lower ribs, pushing up the diaphragm to the level of the fourth rib in the nipple and anterior axillary lines. The tympanitic area was due entirely to the stomach and distended transverse colon which lay immediately below it. The heart was pushed over to the right. The pericardium was normal. The right lung was normal; the left was collapsed with the exception of the apex; its lower lobe was carnified. There was slight general peritonitis; the abdominal cavity contained about two pints of turbid fluid. With regard to the stomach, at the pylorus there was a firm mass of scirrhous cancer completely surrounding it, which where largest was about 1½ in. thick. There was no ulceration but here and there under the mucous membrane were some minute hæmorrhagic extravasations. A mass of hard, pale white retro-peritoneal glands, infiltrated with cancer, lay behind the stomach and just above and around the pancreas; this mass appeared to have prevented the descent of the dilated stomach. The pancreas was not involved. No perforation was anywhere found. Secondary cancerous deposits were numerous in the liver, but none could be seen in the left pleura or on the peritoneum. The other organs were healthy.

Remarks.—The case presented at the time considerable difficulty in diagnosis. The great distension of the epigastrium effectually prevented the palpation of the tumour. In obstruction at the pylorus from malignant disease the greatest degree of dilatation of the stomach is met with. As a rule the dilated stomach passes downwards and is not rarely so much distended that its lower border reaches to the pubes. In this case the stomach passed upwards and to the left and was at the same time pushed forwards by the mass of new growth behind it, hence the great protrusion of the epigastrium and the pushing up of the heart. It will be noticed

FIG. 3.



The shaded areas were dull. Over the area included within the thick black line there was a tympanitic percussion note.

that the area of stomach resonance took, roughly, an hour-glass form and that the lower border of the part behind the left ribs did not extend lower than the upper border of the eighth costal cartilage. Doubtless this portion of the tympanitic area was modified in shape by the presence of fluid in the left pleural cavity. The physical signs thus somewhat resembled those produced by a collection of gas and pus beneath the diaphragm. In both affections the lower part of the normal cardiac dulness becomes tympanitic; in the case just related this was due to the pushing up of the diaphragm by the distended stomach. As a subphrenic pyopneumothorax lies above the left lobe of the liver and pushes it downwards, whilst a distended stomach pushes it upwards, the determination by percussion of the position of this lobe should be of diagnostic importance, but in practice the dulness due to the left lobe is replaced by the tympanitic

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note of the stomach or gas-containing abscess cavity. The fact that the area of tympanitic resonance extended so far to the right was certainly in favour of a distended stomach, but at the time, when viewing the whole features of the case, this did not come out so prominently as on after consideration. Dr. Ewart[1] lays stress on the occurrence in subphrenic pneumothorax of an irregular area of tympanitic resonance at the left base of the thorax posteriorly, whilst a distended stomach has a definite convex outline to the left and does not pass into the back. In my case, however, the small area of tympanites beyond the stomach to the left over the tenth and and the eleventh ribs was difficult to account for. Unless, as above suggested, it was due to the mass of new growth behind the stomach no satisfactory reason was found post mortem to explain why the dilated viscus did not descend into the abdomen in the usual way. Lastly, the making of a free opening into the left pleura was undoubtedly a mistake and by causing pneumothorax hastened the fatal termination.

Clifton, Bristol.

CASE OF INTRA-PERITONEAL RUPTURE OF THE URINARY BLADDER; ABDOMINAL SECTION; SUTURE; RECOVERY.

BY H. LITTLEWOOD, F.R.C.S. ENG.,
SURGEON TO THE GENERAL INFIRMARY, LEEDS.

SUCCESSFUL cases of suture of the urinary bladder after intra-peritoneal rupture are still of rare occurrence; their rarity and the direct saving of life as the result of an operation make cases of this kind of the greatest interest. The method of treatment adopted in this case was very similar to that carried out in other successful cases. Catgut sutures were used and it was never necessary to pass a catheter after the operation. One of the most important factors in obtaining a successful result in cases of this kind and in all intra-peritoneal catastrophes is undoubtedly an early diagnosis. In this case the operation was performed within 36 hours of the accident.

A man, aged twenty-eight years, was first seen by Mr. W. A. Stott at 10.30 P.M. on Nov. 28th, 1897. The patient went home at about 11 P.M. the previous night and could give no account of himself. He was intoxicated and his clothes were very muddy on his arrival home. He complained of a good deal of pain in the body throughout the night and the following day, at 10.30 P.M., he was seen by Mr. Stott, who made the following note: "Some abdominal tenderness and signs of fluid in the peritoneal cavity. Pulse 88, soft; respiration 18. Catheter passed and 2 oz. of urine withdrawn. Patient says he has not passed urine since the previous night." The next day, at 10 A.M., he was again seen by Mr. Stott. There was then some abdominal tenderness. Fluid could easily be detected in the peritoneal cavity and 1 oz. of urine was withdrawn by catheter; the temperature was normal and the pulse was 100. The diagnosis of an intra-peritoneal rupture of the bladder was made. I saw the patient half an hour later, agreed with the diagnosis, and at once made preparations for abdominal section. The operation was commenced about 11 A.M. Mr. J. Nicholson gave ether and Mr. Stott and one of my dressers—Mr. A. Spong—assisted me at the operation.

Operation.—An incision about 3 in. long was made in the middle line just above the symphysis pubis. On opening the peritoneal cavity a large quantity of fluid was found. It was a little turbid and obviously urine. The quantity was not measured, but estimated between 3 and 4 pints. This was rapidly emptied by means of sponges. Some coils of bowel which were seen were inflamed and between some of the coils there were present some flakes of purulent lymph. The rent in the bladder was soon found; it was in the middle line, about 1½ in. in length, and terminated just at the peritoneal reflexion from the top of the bladder. The opening was now easily brought near the surface and closed by means of eight or ten catgut sutures No. 0, by Lembert's method, including all the vesical coats with the exception of the mucous membrane. The vesical wall was thick and appeared quite healthy. It was not thought necessary to test the stitches by distending the bladder. The peritoneum was then carefully sponged, a Bantock's tube was placed in the pelvis, and the abdominal wound was closed. The operation lasted about one hour and the patient did not appear at all collapsed after it.

As to the after treatment, Bantock's tube was emptied frequently during the first twenty-four hours, the quantity of fluid rapidly diminishing, and it was removed at the end of the first forty-eight hours. It was never necessary to use a catheter, as the patient passed urine within six hours of the operation and continued to do so without any difficulty at regular intervals. The temperature was normal after the operation with one exception—on the evening of Dec. 3rd it reached 99·6°F. The patient never had a bad symptom; although there was some peritonitis at the time of the operation there was no further development of it after. The patient got up at the end of the third week and since then he has been quite well. He was shown at the clinical meeting of the Leeds and West Riding Medico-Chirurgical Society in March, 1898.

I have to thank Mr. Stott for kindly giving me the notes of the case before and after the operation.

Leeds.

[1] Clinical Journal, July 25th, 1894.

ONE HUNDRED AND THIRTY CASES OF RINGWORM OBSERVED IN THE SKIN DEPARTMENT OF UNIVERSITY COLLEGE HOSPITAL, LONDON.

BY GEORGE PERNET, L.R.C.P. LOND., M.R.C.S. ENG.

SOME fifty years ago Grüby,[1] a Viennese doctor, settled in Paris, called attention to the parasitic nature of ringworm of the scalp and beard, and demonstrated the fact that the various clinical forms met with in practice were due to microscopically distinct fungi. Owing to the nomenclature adopted by him and to the opposition of the Parisian dermatologists of that period, Grüby's excellent observations appear to have been practically completely forgotten until Sabouraud[2] (1892 and onwards) published the results of his exhaustive investigations, which have been the starting point of so much work in this and other countries. It is not necessary here to once more go over the ground covered by previous English writers on the subject in the light of recent research. For full details the reader is referred to their publications.[3] Shortly, the present views with regard to the fungi causing ringworm are that they are divided into a small-spored (microsporon Audouini) and a large-spored (trichophyton megalosporon) form. The latter is further subdivided into two classes depending on the situation of the fungus inside (endothrix) or outside (ectothrix) the hair. To these an endo-ectothrix form is added by some. The main object of the investigation undertaken in the Skin Department of University College Hospital was to ascertain whether these researches were of any practical value as far as treatment and prognosis were concerned. The method pursued was to note the clinical appearances and there and then microscopically examine diseased hairs, stumps, and scales in liquor potassæ B.P. (i.e., about 6 per cent.). In this paper I propose to give a succinct account of the results

[1] Grüby: Comptes rendus de l'Académie des Sciences, Paris, 1842, tome xv., p. 512; 1843, tome xvii., p. 301; 1844, tome xviii., p. 583. (The paper published in 1841 referred to favus. Grüby's papers on ringworm fungi are in abstract only.)

[2] Sabouraud: Various papers on the subject from 1892 to the present time. See especially his beautiful monograph "Les Trichophyties Humaines" (Paris, 1894), with an atlas of plates.

[3] Adamson: Observations on the Parasites of Ringworm, British Journal of Dermatology, vol. vii., 1895, pp. 201 and 237, with plates. Colcott Fox and Blaxall: An Inquiry into the Plurality of Fungi causing Ringworm in Human Beings as met with in London; ibid., vol. viii., 1896, pp. 242, 291, 337, and 378 (an exhaustive inquiry with numerous plates). Also in book form (Lewis, London). Aldersmith: Ringworm and Alopecia Areata, fourth edition, with plates and illustrations (Lewis, London, 1897). Malcolm Morris: Ringworm in the Light of Recent Research, with numerous plates (Cassell, London, 1898). See also Thin: Pathology and Treatment of Ringworm (London, 1887); and Leslie Roberts: Introduction to the Mould Fungi, parasitic on Man (Liverpool, 1893). For historical details see also Feulard: Teignes et Teigneux (Paris, 1886).

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of the inquiry, which extended from October, 1896, to May of the present year. It must be understood that they apply to ringworm as observed in the practice of a London hospital.

The 130 cases under discussion were distributed as follows:—

	Small-spored (i.e., microsporon Audouïni).	Large-spored (i.e., trichophyton megalosporon).	Totals.
Tinea tonsurans	78	2	80
Tinea tonsurans associated with tinea circinata	18	2	20
Kerion of scalp	—	2	2
Tinea circinata	11	11	22
Tinea circinata (involving the scalp)	3	—	3
Tinea sycosis	—	3	3
			130

Of the 100 cases of tinea tonsurans and tinea tonsurans associated with tinea circinata, the microsporon Audouïni was present in 96 and the trichophyton megalosporon in 4—that is, 24 to 1. These proportions are, of course, approximate only, as they must necessarily vary within limits. Moreover, the 100 cases recorded did not represent all the cases attending the department during the period mentioned; for various reasons some few patients escaped examination. They may, however, be taken as fairly consecutive. These figures, agreeing on the whole with those of other London observers, show that the very great majority of our cases of ringworm of the scalp are caused by the small-spored fungus. With regard to the sex of the microsporon patients, the males were to the females practically in the proportion of 2 to 1. As the greater number of the children were of school-age, this difference in the incidence of the disease may be accounted for by the rougher play of boys, the more frequent interchange of head-gear among them, and the fact, too, that they wear the hair short. The oldest child was twelve years of age. In about a fifth of the cases of tinea tonsurans due to the small-spored fungus, tinea circinata lesions of the body were also present. The 4 cases of large-spored tinea tonsurans were distributed as follows: two boys, both aged thirteen years, and two girls, aged seven and eight years respectively. In the two girls tinea circinata of the body was also present; one of these patients really first came to the department in 1894; her out-patient's letter was renewed in 1897 as the disease was still uncured. The large-spored trichophyton was also found in the two cases of kerion. Both the patients were girls, aged five and eleven years respectively. As to the cases of simple tinea circinata they were practically evenly distributed among the small and the large-spored fungi. One adult, a woman, aged thirty-two years, exhibited the microsporon Audouïni (*vide infra*), and three adults (two women, aged thirty and forty-two years respectively, and one man, aged fifty years) the trichophyton megalosporon. I have placed three cases of tinea circinata in a separate division. They will be referred to under microsporon Audouïni. The three cases of ringworm of the beard (tinea sycosis) in which fungus was found belonged to the large-spored group.

MICROSPORON AUDOUÏNI: TINEA TONSURANS, INCLUDING THE CASES IN WHICH TINEA CIRCINATA WAS ALSO PRESENT.

Clinical.—In the untreated cases the diseased areas were circular, more or less scaly, sometimes densely so, dry, with bent, broken, twisted hairs from $\frac{1}{10}$ to $\frac{1}{4}$ of an inch in length growing usually in various directions. Exceptionally the short diseased hairs were quite straight, in one instance going off to a point, like an inverted note of exclamation, whilst others in the same patch were bent at an obtuse angle. The diseased hairs were usually whitish, opaque, with a powdery sheath about their base. This sheath was well marked in a case with a history of three years' duration. In an early case (a boy aged five years with two patches noticed one week) there was scaliness only, but no powdery spore-sheath at the base of the characteristic bent and broken hairs. As a rule the patches were multiple, well-defined, and not inflamed, but slightly reddened only. Many deviations from the type were observed, either as a result of long duration, or previous treatment, &c. In a boy aged six years with multiple patches of twelve months' duration the diseased hairs were whitish, dull, and curled up like wool. In previously treated cases the powdery spore-sheath was often absent. Rarely small bald areas were noticed; in other cases, again, the disease involved nearly the whole of the scalp. One of the latter looked very much like eczema seborrhoicum when first seen. Where tinea circinata was associated with tinea tonsurans the parts affected were usually the face and neck, more rarely the trunk and upper limbs. The patches were sometimes numerous, as in the case of a boy, aged nine years, with tinea tonsurans of the right parieto-occipital region, who had two small scaly patches on the forehead and about a dozen small, pale, fawn-coloured lesions with slight scaly borders about the body. In another, a girl, aged six years, with well-marked, densely scaly patches on the occiput, there were upwards of a score of circinate lesions scattered about the arms and the back of the neck. The majority of these were from $\frac{1}{2}$ in. to $\frac{3}{4}$ in. in diameter, well defined, but solid; the others were in distinct rings, the largest fully 1 in. in diameter.

Microscopical.—It is important in all cases always to select diseased hairs or stumps. These should be placed on a slide with a drop of liquor potassæ B.P., and the coverslip gently applied. Where ointments or oily applications have been used it is advisable to first get rid of the fat by placing the specimens in a little ether. (These remarks apply to the large-spored cases as well.) The characteristic feature of the small-spored fungus was the sheath of spores which surrounded the hair for some distance. This spore-sheath extended upwards beyond the intra-follicular portion of the hair. The spores were closely aggregated and fairly equal in size. They were not arranged in any special order, and in this differed from the endo-mycelial spores of the trichophyton megalosporon. They were units crowded together, in this way giving rise to a mosaic appearance. Detached single spores, and spores in twos, threes, and in clumps were seen away from the hair, especially when the coverslip was gently pressed down on the preparation. They were then seen to be round. After a time the spore-sheath having been loosened and the spores scattered, the delicate non-sporulated mycelium could be seen within the hair running more or less parallel with it. Where the root-sheath, or part of it, came away with the hair, which was not often the case, the spore-sheath was seen to be situated between the inner root-sheath and the hair itself. The large ghost-like elements mentioned by Adamson[4] were once noted, but the abundant segmented and sporulated mycelium observed by Fox and Blaxall[5] was never seen. A terminal fringe of mycelial threads towards the root-end was sometimes observed, and was probably due to the intra-pilar mycelium being torn away from the portion of hair left in the follicle. In very early patches of tinea tonsurans mycelium was found in the epidermal scales before the hairs were affected. In one instance abundant branched, granular mycelium (for description of the mycelium see tinea circinata *infra*) was present in the scales detached with hairs removed from a patch two days old. In the case of one of the hairs there were numerous spores for some distance up and outside the broken proximal end. In another, a couple of mycelial threads were seen penetrating it at the root-end nearly at right angles to the cross section.

TINEA CIRCINATA.

Clinical.—The lesions due to the small-spored fungus were either small, insignificant, pale scurfy patches, or distinct rings. One or two examples of the latter will be sufficient in this place. In a girl, aged seven years, there was a patch under the left jaw forming a distinct ring with nearly clear centre; she had a similar lesion near the umbilicus. (Her brother, aged three years, seen on the same day, had small-spored ringworm of the scalp.) A woman, aged thirty-two years, who had been bringing her child, aged five and a half years, for diffuse microsporon tinea tonsurans, developed three well-defined circular patches on the flexor surface of the left forearm. They commenced as small irritating pimples which enlarged and spread peripherally. The rings had a raised scaly border and showed signs of slight inflammation. The central portions were depressed and in the case of the two larger patches (nearly half an inch in diameter) scaly. Abundant mycelium of the small-spored kind was found in the scrapings. In three cases in which characteristic small-spored tinea tonsurans was also present some of the circinate lesions exhibited two concentric rings, one within the other. In infants ringworm of the scalp leads, as is well known, to circinate lesions and these may be due to microsporon Audouïni. This appearance was also

[4] Adamson: Loc. cit., p. 210.

[5] Colcott Fox and Blaxall. (British Journal of Dermatology. Loc. cit., plate II., fig. 4).

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noted in a boy, aged seven years, who had a distinct ring on the left temple. It was about 2½ in. in diameter, with a slightly red margin, extending quite back into the hairy scalp, the anterior portion alone being on the free skin. There was abundant typical mycelium in the scrapings; mycelium was also present inside one of the broken, bent scalp hairs, but there were no spores outside it. The patient had been using oleate of copper ointment for ten days.

Microscopical.—Microsporon Audouïni in ringworm of the glabrous parts was present as coarse and irregularly branching mycelium, varying slightly in diameter and greatly in length and shape. The branching usually occurred laterally at right angles to the main filament and the branches were rounded in a spheroidal manner at their free end. (Morphologically, there are some points of resemblance between some of the mycelial elements of achorion Schönleinii (favus), microsporun furfur (tinea versicolor), and microsporon Audouïni as they occur in the human skin.) Further, the mycelium of small-spored ringworm exhibited small refractile dots here and there, which gave it a granular appearance, but it was not sporulated and was usually unsegmented.

TRICHOPHYTON MEGALOSPORON: TINEA TONSURANS.

Clinical.—As already stated, four cases only came under observation. The clinical appearances were much less uniform than in the case of the small-spored fungus. The patches were not so well defined and appeared to develop more slowly. As a rule they were smaller, varied more in shape, and were but slightly scaly. The stumps were few and far between and required careful looking for. They were, as a rule, broken off short very near or at the level of the scalp, in the latter case presenting the appearance of black dots. They did not exhibit a powdery sheath. The following descriptions from the notes made at the time may be referred to here.

CASE 1.—The patient was a boy, aged thirteen years. The duration of the disease was three months. Several small patches were scattered about the scalp. One in the occipital region was elongated, oval, and almost smooth. 2 in. higher up there was a ¼ in. scaly patch with a single stump covered by epithelial scales and broken off level with the scalp. In the left posterior parietal region there was a ¼ in. totally bare patch. The original patch on the left parietal was about 1¼ in. by 1 in. and ill defined; the stumps were very short, almost level with the skin, and very few in number. On the remaining parts the healthy hair was scanty.

CASE 2.—The patient was a boy, aged thirteen years. The duration of the disease was said to be 14 days (the fact is, the patient, who was dirty and neglected, did not know). There had been no previous treatment. The scalp on the left side, in the posterior half, was to a considerable extent bald. The denudation was incomplete and at the borders was distinctly patchy. Some outlying patches were from ½ in. to ¾ in. in diameter. The bald area exhibited here and there a certain amount of ill-nourished but not markedly diseased hair. On the parts which were almost bald there were a few black dots scattered about. There were stumps broken off short, very slightly if at all elevated above the level of the skin, and when removed they were about $\frac{1}{10}$ in. long. A few projected $\frac{1}{10}$ in. or more above the surface, but generally broke off when an attempt at epilation was made; a few other hairs were removed and were ¼ in. long and slightly curved. Several of the patches were reddened and very slightly crusted, like a subsiding kerion. There were also several bald areas about the scalp, slightly scaly and ill defined. In many of these no stumps could be seen.

Microscopical.—The characteristic feature of the trichophyton was the sporulated and segmented mycelium, or, in other words, the arrangement of the spores in chains. The spores were usually larger than those of microsporon Audouïni, but there was much variation in this respect. In Case 2 (*vide supra*) there were numerous spores forming a sheath round a stump; many were not larger than the spores of microsporon. There was sporulated mycelium inside the hair. Another stump had a few spores external to it. At the broken root-end and in the hair there were chains of spores, the latter varying very much in size, some being very large; higher up the mycelium was not so markedly sporulated; some, indeed, was not sporulated at all. This appearance led me to conclude that the fungus belonged to the ectothrix group, although there was mycelium in the stumps themselves.[6] The chains of spores, whether inside (endothrix) or outside (ectothrix), were arranged more or less longitudinally to the diseased hair and the individual spores were more or less square in shape. Where the mycelium was fragile the scattered spores were more oval and rounded. Of the four cases Cases 1 and 2 above described were apparently ectothrix (neither of these was associated with tinea circinata) and the other two were apparently endo-ectothrix (both had in addition tinea circinata patches).

KERION.

Microscopical.—Two cases only of kerion of the scalp were seen. The patients were girls, aged eleven and five years respectively, and in both large-spored fungus was present. In the latter case the segmented and sporulated mycelium were distinctly ectothrix, but in the former it was apparently confined to the internal portions of the diseased stumps examined.

TINEA CIRCINATA.

Clinical.—Usually the patients exhibited distinct rings with well-marked, raised, red scaly borders. The appearances varied from case to case, especially in the adults. A woman, aged thirty years, had a well-defined patch on the back of one hand. It was slightly papular at the border and somewhat depressed and scaly in the centre. She complained that the back of the hand swelled two or three times a day and became red. When the borders were scraped for examination there was a little serous exudation. Another woman, aged forty-three years, came with a patch 4 in. in diameter on the left forearm. It was papular and papulo-vesicular at the periphery, with here and there small sero-pustular lesions. A man, aged fifty years, had a patch over the knuckles and back of the left hand. The greater part was only reddened, but there were slight excoriation and crusting at the periphery.

Microscopical.—The large-spored fungus in tinea circinata was present in the form of jointed, long, usually straight, dichotomously branching mycelium, which was sometimes sporulated here and there. The segments varied in length, being shorter the nearer they were to the sporulation stage. The width also varied, the filaments being at times very slender. In the case of a male child, aged two years, with tinea circinata of the left cheek, sporulated mycelium was lying curled up in the centre of flattened epithelium cells, arranged in irregularly concentric layers around it; this portion of the preparation was dark in contrast to the clear surrounding epithelium, even after half an hour's soaking in liquor potassæ. In the case of the woman aged thirty years, the mycelium appeared to be attenuated, but it was distinctly divided into equal fairly long segments. On the other hand, in the woman aged forty-two years, where there was marked inflammation, the joints of the mycelium were short and thick (sporulation).

TINEA SYCOSIS.

It is not necessary in this place to give a clinical description of the above well-known condition.

Microscopical.—The fungus was not always easy to find and more than one examination of many hairs was sometimes necessary. In the three cases where the search was successful the trichophyton was apparently of the ectothrix kind. Sporulation of the mycelium was the rule, the segments being short and thick.

ETIOLOGY.

Microsporon Audouïni.—In the case of small-spored tinea tonsurans it was usually stated to have been contracted at school or from other children of the same family or in the same house. In several instances the mothers were of opinion the disease had been caught at fever hospitals where the children had been patients (for scarlet fever, &c.). As this may be the fact—in some cases at least—it would be as well in those institutions to keep children suffering from ringworm apart from the others and to avoid the use of the same combs and brushes. No case could be successfully traced to animals.

Trichophyton megalosporon.—Attempts to trace the disease to animals were also unsuccessful. One of the patients suffering from tinea sycosis was a groom, who stated that some of the horses under his care had suffered from ringworm, but the animals could not be seen. In another case of tinea sycosis, the patient stated that his two birds (a canary and a

[6] Colcott Fox and Blaxall: British Journal of Dermatology, loc. cit., p. 296, et seq.

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linnet) were losing their feathers apart from moulting, but no fungus could be found in the feathers subsequently brought to the department. The barber's brush was most likely the *fons et origo mali* in all three cases. In several of the large-spored cases of tinea tonsurans and tinea circinata in children the father was a cabman or a carman; some lived over stables. But this also applied to cases which were distinctly small-spored in character. Moreover, microsporon fungi in the horse and dog have been described. Ringworm in animals is apparently rare in London. Horses are better cared for in London than in Paris; this may perhaps account for the greater proportion of the large-spored cases in Sabouraud's statistics, assuming that their animal origin be correct.

TREATMENT AND PROGNOSIS.

The differential diagnosis of the large and small-spored fungi does not help us much in London. In the first place, nearly all our cases of ringworm of the scalp belong to the small-spored variety, which is admittedly difficult to cure as a rule, especially in hospital practice. As to the few large-spored cases of tinea tonsurans which come under observation some are very obstinate, a fact already noted by several writers,[7] and confirmed by results obtained at University College Hospital. Nor are treatment and prognosis in tinea sycosis modified by the knowledge that the condition is due to a large-spored fungus. Both the cases of kerion were caused by trichophyton megalosporon and ran the usual course. They could not be compared with kerion cases due to microsporon Audouïni. Tinea circinata of the glabrous skin is, as a rule, readily cured, be it of large- or small-spored origin, and need not detain us. Apart from this, however, the question of the plurality of ringworm fungi is an interesting one, but as the scope of this paper is of a practical nature theoretical considerations will not be dwelt upon.

Before concluding I wish sincerely to thank my teacher, Dr. H. Radcliffe-Crocker, not only for placing the cases and notes at my disposal, but for much kindly encouragement during the progress of the inquiry.

CONCLUSIONS.

1. In a general way my results agreed with those of previous London observers (*vide* foot-note 3). The clinical and microscopical descriptions of Grüby[8] and Sabouraud[9] were in the main confirmed. Some points, however, must be more particularly referred to.

2. *Small-spored ringworm.*—In the scalp the diseased hairs were usually found growing in various directions. In this I agree with Malcolm Morris and differ from Sabouraud, Adamson, and Colcott Fox, who state that they grow in the direction of the natural set of the hair. Small-spored kerion did not come under my observation. Adamson, Fox and Blaxall, and Morris have met with it in London. Opinions differ as to the mode in which the hair is attacked. I have seen the mycelium of the small-spored fungus invading a hair at its root end. This is not in accordance with Sabouraud. I agree with Adamson and Fox that the fungus is in the epidermis before the hairs are affected. It appears to me to be natural that it should be so; but Sabouraud and Morris hold a contrary opinion. The abundant segmented and sporulated mycelium depicted by Fox and Blaxall[10] was never seen by me in the case of microsporon Audouïni of the scalp. On the body the lesions were sometimes in distinct rings, with a well-defined border and somewhat depressed centre; moreover, the border was frequently decidedly reddened and even slightly inflamed. This also does not agree with Sabouraud's original descriptions. In the series under consideration small-spored tinea circinata was as frequent as tinea circinata due to large-spored fungi. The view generally held is that nearly all the cases are of the latter kind. In adults this is certainly the case, but not in children. Moreover, small-spored tinea tonsurans may be associated with multiple small patches and rings on the body and limbs, but this is a rare occurrence. This again does not agree with Sabouraud's rule. The microsporon form of scalp ringworm appeared to be more contagious than that of megalosporon origin. This agreed with Sabouraud's Parisian experience.

3. *Large-spored ringworm.*—In tinea tonsurans the diseased hairs are usually broken off at or near the level of the scalp, but occasionally they are found projecting beyond the level of the scalp. This form is not always readily cured. It may be very obstinate and resist treatment for several years, a fact already noted by other London observers (H. Radcliffe-Crocker, Aldersmith, and Fox), but which does not agree with Sabouraud's Paris experience. The clinical appearances both in the scalp and on the body vary. This polymorphism has been insisted on by Sabouraud and confirmed in the case of London. The two cases of kerion belonged to this group and so far confirm Sabouraud's view, but whether they were derived from the horse could not be ascertained; the father of one of the patients was a carman. In tinea sycosis the fungus is not readily found. It may escape detection altogether where suppuration is well marked and when repeated examinations of many hairs are not made. This is generally admitted. The varieties of trichophyton megalosporon (endothrix, ectothrix, and endo-ectothrix) could not always be differentiated with certainty by microscopical examination.

4. *Relative frequency of large- and small-spored tinea tonsurans.*—My figures—viz., 96 small-spored to 4 large-spored—agree closely with Adamson's (178 to 5). Morris states that microsporon Audouïni is responsible for about 90 per cent. Fox and Blaxall give from 80 to 90 per cent., taking *all* ringworms (scalp, body, beard).

5. *Etiology.*—In no single case was it possible to demonstrate an animal origin. Several of the cases of tinea tonsurans had apparently been contracted in fever hospitals.

6. *Diagnosis.*—The differential diagnosis of large- and small-spored ringworm could usually be arrived at on clinical grounds alone and nearly always confirmed by a microscopical examination.

7. *Treatment and prognosis.*—With regard to these two points it is practically "as you were," for the two reasons already given, viz.: (1) nearly all the London cases of ringworm of the scalp (which alone concerns us here) are small-spored, which are admittedly obstinate; and (2) of the remaining rare large-spored cases some are extremely resistant to treatment.

Upper Gloucester-place, N.W.

[7] H. Radcliffe Crocker: Diseases of the Skin, second edition, p. 815, Aldersmith: Op. cit., p. 60, et seq. Colcott Fox: British Journal of Dermatology, July, 1898, p. 253.
[8] Loc. cit. [9] Loc. cit. [10] Loc. cit.

A CASE OF TYPHOID FEVER IN WHICH A FATAL ISSUE FROM EXTREME TYMPANITES WAS AVERTED BY PUNCTURE OF THE TRANSVERSE COLON.

BY J. W. DALGLIESH, M.D. DURH.

THE patient was a man, aged about thirty years. He was first seen by me on Sept. 29th, 1896, and had then been ailing for four days. He complained of severe headache, giddiness, lassitude, bleeding from the nose, free perspiration, and inability to sleep. His temperature was 103° F. His tongue was furred and injected. When he was admitted to hospital on Oct. 1st typical spots were seen on the abdomen and chest. On the 2nd there were tympanites and colicky pains. He undoubtedly had peritonitis. On the 4th vomiting and diarrhœa were present. On the 7th the tympanites was most extreme, displacing the heart and interfering with its action. The apex beat was well above, and to the left of, the left nipple. The pulse was very frequent, irregular in time and force, intermittent, small and short, and devoid of tension. The patient's countenance was drawn, haggard, and pinched, and there were stupor and picking at the bedclothes with muttering delirium. The tongue was dry, raw, and beefy. The temperature was 104·4° and he appeared to be sinking fast. The administration of turpentine by the mouth was useless. Opium had already aggravated the condition. The passage of a long tube up the rectum led to the most tremendous evacuation of typical pea-soupy fluid which was horribly offensive, but no relief was obtained. Could more be done? The transverse colon was beautifully delineated, running across the abdomen in a very distended state. I boldly pushed a Southey's trocar and cannula into it. On withdrawing the trocar much gas escaped with a loud hissing noise for two minutes. At once there was great

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relief to the abdominal distension and the facial expression improved wonderfully. The temperature rapidly dropped to 100°, the pulse became less frequent, regular and stronger, the tongue became moistened, the delirium disappeared, and much flatus began to be passed from the anus. On Oct. 9th the abdomen was quite flaccid and the bowels acted six times, the patient sleeping well. The temperature was 98° and the pulse was 72. On the 14th the tympanites was beginning again, but the albumin had disappeared from the urine. There were fresh spots and a troublesome cough from bronchitis. On the 16th the hæmorrhage from the bowels weighed 4 oz. On the 17th the patient became suddenly cold and collapsed. Internal hæmorrhage was diagnosed. On the 24th there was a fresh crop of spots with a return of fever. A few more interesting features may be related. On the 30th at 4 P.M. a marked rigor occurred immediately after a glycerine enema. On Nov. 1st a fresh rigor was experienced in the early morning for which there was no obvious cause. There was no malarial history and no sign of suppuration or inflammation. On the 2nd there was a rigor in the afternoon immediately after the bowels had been moved naturally. The patient was now put on quinine in large doses, which had previously been taken without benefit, and the temperature at once became subnormal and remained so until he left the hospital, but for several days after the last rigor he vomited after each movement of the bowels. He left the hospital looking remarkably well, but whilst at the seaside in December he was attacked with phlebitis and thrombosis of both femoral veins. He was, however, quite well on Jan. 15th, 1897, and had resumed work.

The case was a very severe one from the first. The patient was most carefully fed and well nursed throughout and the severity of the symptoms and the number of complications and the relapse were apparently entirely due to the severity of the poison of the disease. The patient's temperature from Sept. 30th to Oct. 8th averaged about 102°; on Oct. 9th, 10th, and 11th it was normal; from Oct. 12th to the 21st it averaged about 101°; on Oct. 22nd it was normal; from Oct. 23rd to the 27th it averaged about 101°; on Oct. 28th and 29th it was normal; from Oct. 30th to Nov. 2nd it averaged about 101°; on the evening of Nov. 2nd it was 104·4°; on the morning of Nov. 3rd it was 97·0°; and, as already mentioned, it remained subnormal during the remainder of his stay in hospital.

Bloemfontein, Orange Free State.

VACCINATION AND VACCINATION MARKS.

BY JOHN LOWE, M.D. EDIN.

THE vaccination question has long been drifting into an apparently hopeless tangle, and now that a "conscience clause" has been passed in the new Vaccination Act without any machinery being provided for better informing the public, but leaving it to the teaching of the opponents of vaccination, the position becomes still more perplexing and will, it is to be feared, proceed from bad to worse. It is not cheering for two-thirds of the people of this country to find in their midst a one-third minority of unvaccinated people who assume the right of controlling all legislation and who, being themselves open to the ravages of small-pox, feel no compunction at the idea of spreading it broadcast among their neighbours. That they had some grounds in time past for their objections to vaccination is admissible, and indeed this was freely admitted by the Royal Commission on Vaccination. Henceforth it will be more prudent not to quarrel with the views of these objectors, but to "trim our sails and let old bygones be," and to use every means to meet their objections and prejudices. This can be done only in two ways: firstly, by rendering the operation absolutely harmless and painless, so that no possible exception can be taken to its performance, and, secondly, by fully educating the public in the knowledge of the freedom from pain and risk which it secures and of the enormous benefits which follow from it.

The use of calf-lymph has largely diminished the risks of vaccination and the possible objections to it, but it cannot be denied that much remains to be done before the operation is a perfect one. Lord Lister's suggestion in the House of Lords that the time is not far distant when a completely antiseptic mode of vaccination will be attained commends itself as a valid and wise reason for delaying compulsory legislation until this period arrives. Dr. Copeman's glycerinated vaccine is an important advance in this direction, but, as has been pointed out, it is still on its trial and admittedly does not fulfil Lord Lister's desideratum of a perfectly antiseptic operation. Although the sequelæ have been greatly modified by it, its incompleteness is shown by its leaving the vaccination marks or cicatrices which are, for some inscrutable reason, regarded by the Local Government Board as the essential proof of success. The marks are, however, I think, a palpable proof that the operation has been non-antiseptic. They show that the pustular or suppurative stage has been reached and that the febrile state has been intensified and general irritation set up in the system by the absorption of septic poison from the pustules.

Hence the question arises, Is this suppuration and its attendant blood-poisoning a necessary part of vaccination? To this question I should reply with an emphatic negative, although I am bound to admit that, for a reason to which I shall advert presently, there is no absolute evidence on the subject. The insertion of vaccine lymph into the system produces certain changes of which the outcome is the vaccine vesicle. When this is fully formed and filled with colourless liquid the process is, I take it, complete, and it is difficult to believe that the subsequent change of this fluid into pus and the absorption of septic matter can add anything to the protective influence of the vaccine. That any chemical substance added to the vaccine lymph can make the whole process of vaccination antiseptic is doubtful, and it does not appear how under ordinary conditions, when a vesicle has fully formed, it should fail to go on to the formation of pus, except by direct antiseptic measures applied to the vesicle itself. For more than twenty-five years I have always used a plan of this kind. By means of a fine camel-hair brush a solution of pure carbolic acid is applied to the vesicle on the seventh or eighth day, the surrounding skin having been previously oiled with salad oil. A few seconds after the application tepid water is poured over the spot and a piece of antiseptic wadding is applied and strapped on lightly. The scab separates without a trace of suppuration and therefore without leaving the faintest cicatrix. Long ago I published this plan, but was met with the unanswerable argument, from the public vaccinator's point of view—"Without the cicatrix there will be no grant." Then there was the obvious suggestion that the protective influence of the vaccine may have been diminished by the treatment. I do not believe this. One might as well contend that small-pox treated as it has been by me in the same way was no longer small-pox, but some milder and less protective malady. It is, however, a question requiring examination and full investigation, and the time has come for this to be done, as I have long been sure it must come.

Some years ago, in speaking to a prominent member of the Royal Commission on Vaccination on the subject, he suggested that I should make these investigations, which in a certain degree are experimental though perfectly harmless, requiring only a revaccination after a stated period. I have made endeavours to carry them out with the result that the authorities refuse "to allow any experiment to be made in a public institution." One cannot quarrel with this decision, but it seems a pity that so simple a thing cannot be done, and one is disposed to wonder how Dr. Copeman's great improvement or Lord Lister's suggestion could be carried out without an equal amount of experiment.

The Local Government Board's insistence on the importance of the cicatrix is, I think, illogical. The work of the inspector consists mainly of examining these marks in a certain number of cases taken at haphazard from the public vaccinators' books, and on these the money grants for excellent results are founded. But it would certainly be as easy and much more satisfactory—supposing the antiseptic process to be adopted—for the inspector to pay a surprise visit on a vaccination day. He would then see not only how the cases which had been vaccinated during the previous week had succeeded, but also how the antiseptic provision on the eighth day was carried out. Surely, this would be a more satisfactory inspection than a glance at a scar and one which would give a much better idea of the character of the work done.

Gloucester-place, W.

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DOUBLE EMPYEMA FOLLOWED BY RECOVERY.

BY W. H. COOKE, M.D. BRUX.,
LATE RESIDENT MEDICAL OFFICER, THE ROYAL UNITED HOSPITAL, BATH.

DOUBLE empyema is so rare that I think the following case may be of interest. The patient was a girl, eleven years of age, who was admitted to the Royal United Hospital on Sept. 14th, 1896, her illness having commenced on the 11th with pain in the abdomen and vomiting. On admission she looked acutely ill and had a flushed face, marked dyspnœa with orthopnœa, and a rather tuberculous aspect. Her temperature was 102·6° F., the respiration was 40 and shallow, and the pulse was 114. There were signs of pneumonic consolidation together with friction at the right base. Three days after this friction and signs of consolidation were present at the left base also. The respirations rose to 66 per minute, the pulse to 160, and the temperature to 105°. There were considerable distress and continued crying out from the pleuritic pain. On Sept. 24th signs of fluid at both bases were present, the heart's apex being in the fifth space immediately outside the nipple line. On the 30th the left side of the chest was explored with a syringe and pus was withdrawn. On the next day an incision was made in the ninth space and a soft indiarubber tube was inserted, whereupon much flaky, sweet pus escaped. On the following day the pleura was washed out with 1 in 80 carbolic solution. On Oct. 6th, pus having been discovered on the right side by means of a small exploring syringe, an incision was made in the ninth space and an indiarubber tube was inserted. From this side also a large quantity of "laudable" pus escaped and the side was washed out next day. I regret to say that the pus was not examined microscopically. At both operations the A.C.E. mixture was administered and no unfavourable symptoms occurred. Both sides were washed out daily with iodine water until Oct. 30th, when the tube on the right side was removed and that on the left side on Nov. 9th. On Nov. 25th the girl was up and about; she was putting on flesh rapidly, both wounds having healed up. The temperature was normal and there was no deformity of the thorax, but at both bases there was a want of resonance, together with distant breath sounds which were probably due to thickened pleuræ. The heart's apex came back to its normal position.

From Sept. 14th to 20th inclusive the patient's temperature varied between 100·4° and 103·8°, with the exception that on the evening of the 17th it was 105°. From the 21st to the 28th inclusive it varied between 98° and 101°, with the exception that on the evening of the 25th it rose to 102° and on the evenings of the 27th and 28th to 101·6°. From the 29th to Oct. 13th inclusive it varied between 98° and 102·4°, with the exception that on Oct. 7th it was 97·4° at midday and 103·4° in the evening. On the 14th it varied from 97·6° to 100·6°. From the 15th to the 21st inclusive it varied from 97° to 100°, with the exception that on the 17th it was 100·2° and on the 19th 101·2°. From the 22nd to the 25th inclusive it varied from 97·4° to 99·6°. From the 26th to Nov. 15th it varied from 97° to 99·4°.

It will be admitted, I think, that double empyema is extremely rare—in fact, this is the first case which I have seen during twelve years' connexion with hospitals. Walshe, in his "Practical Treatise on Diseases of the Lungs," writes: "Cases of double empyema are, as a general rule, unfit for operation unless evacuation be rendered necessary for the prevention of asphyxia." Treves, in his "System of Surgery," vol. ii., p. 441, writes: "Double empyema is a very grave condition and, happily, not common. The two sides should not be opened at the same operation, but an interval of a few days or a week should elapse between the two operations." He concludes thus: "It is a striking and apparently a paradoxical fact that an operation (opening both pleuræ) which, if performed on the healthy, would be invariably fatal in its effects is a valuable means of saving life when employed in conditions of disease." That this child should have recovered in the way in which she did was a great surprise to me, for her condition on more than one occasion was extremely critical.

Bath.

A CASE OF ACCIDENTAL OVERDOSE OF CHLOROFORM.

BY EDWARD LAWRIE, M.B. EDIN.,
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THE events now described took place between 8 and 9 A.M. on June 9th, 1898, at the Afzulgunj Hospital. The patient was a male native, thirty-six years of age, upon whom an operation was to be performed for cario-necrosis of the lower jaw. He had not had any food since 6.30 A.M. Immediately before the operation his pulse was found to be 128 per minute and weak; his respirations were 28. The chloroformist was Mr. Hamid-ud-Din, a third-year student of the Hyderabad Medical School. The notes were taken by Lieutenant-Colonel Lawrie until anæsthesia was complete.

Administration commenced in one-drachm doses on a cap as follows (the figures give the hour with the minutes and seconds):—

H.	M.	S.	
8	23	15	Cap applied, natural breathing, patient told to blow into the cap if he had a feeling of being choked.
8	24	0	Chloroform added to the cap; one breath of air taken.
8	24	55	Patient struggling, but breathing regularly.
8	25	0	Chloroform added to the cap; one breath of air taken.
8	25	50	Patient spitting.
8	26	0	Chloroform added to the cap; one breath of air taken. Patient struggling very violently but breathing regularly and deeply.
8	26	45	The patient was struggling so violently and taking such deep inspirations that although they were regular the chloroformist was told to remove the cap and give nothing but air. The patient took three full breaths of pure air and the cap was then reapplied.
8	27	10	Chloroform added to the cap. Two breaths of air taken. The patient became quiet and began snoring before the cap was reapplied.
8	27	25	Cornea insensitive; the cap removed. (It was never put near the face again. The notes were now taken by the assistant house surgeon.)
8	28	0	The patient's breathing stopped suddenly; his eyes were staring, his pupils were widely dilated, and his skin was pallid. The surgeon sprang on to the table and, kneeling astraddle the patient, commenced artificial respiration. The chloroformist pushed forward the patient's lower jaw and opened his mouth, and the house surgeon pulled out his tongue. There was great delay and difficulty in doing this as the teeth of the right half of the lower jaw were all loose, and there was a piece of loose dead bone. Another assistant poured some nitrite of amyl on to a handkerchief and held it over the patient's face, while the artificial respiration was going on, in such a way that it was freely inhaled.
8	30	40	Natural breathing restored. Artificial respiration stopped.
8	32	30	Consciousness returning.
8	35	15	Operation finished. Patient walked out of the room.

In this case the overdose was taken in during the struggling stage, which was due to intoxication, the breathing being quite regular. Overdosing with regular breathing, even if it be abnormally deep, is the rarest form of chloroform accident which is met with clinically, and it is more than ordinarily dangerous because the regularity of the respiration puts the chloroformist off his guard. The fault in the administration consisted in not at once giving the patient more air when the struggling became violent and the breathing abnormally deep. At 26 minutes 45 seconds past 8 o'clock when the chloroformist was told to give the patient air alone—because it was evident that he was inhaling the chloroform too freely—the cap should not have been reapplied until the breathing became normal and it was known

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whether the anæsthesia was becoming deeper or not. The mechanism of the action of an overdose in a case like this is explained on page 17 of the Hyderabad Commission's report: "(2) If the inhalation (of chloroform) is interrupted at any stage the fall of blood-pressure continues at a rate which altogether depends on the rapidity of the fall while the chloroform was being inhaled. This afterfall is probably due to absorption of a portion of the residue of chloroform in the air passages after the stoppage of the inhalation. In this way it often happens, if chloroform is given rather freely (more especially if there has been struggling and deep inspirations), that though the respiration is going on when the chloroform is discontinued it afterwards stops."[1] The restoration of the patient was effected by artificial respiration and the artificial inhalation of nitrite of amyl, and the rapid recovery after natural breathing had recommenced was probably due to the beneficial action of this drug.

Hyderabad.

A SIMPLE AND EFFECTUAL METHOD OF STERILISING CATGUT.

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,
SENIOR SURGEON TO THE GENERAL INFIRMARY AT LEEDS, AND PROFESSOR OF SURGERY IN THE YORKSHIRE COLLEGE OF THE VICTORIA UNIVERSITY.

A GROWING sense of the superiority of readily absorbable material such as catgut for ligatures and buried sutures, if only one could be sure of its absolute asepticity, and the acknowledged uncertainty of the commercial preparations, led me to make some experiments on the effect of heating catgut in substances other than water with the view of determining whether after heating for some time to a temperature of 100° C. it would still be sufficiently strong to be employed as a suture or ligature. At first, I used methylated spirit which was heated in a cylinder made for me by Messrs. Down Brothers and specially prepared to withstand the pressure under which spirit would be when subjected to the temperature of boiling water. The results obtained were satisfactory, the catgut after being heated in alcohol for twenty minutes being quite as strong as before heating. This substance was given up only because it was considered inadvisable to run the risk of an explosion if some fluid equally suitable in other respects could be obtained which had a boiling-point higher than water. Three substances were selected: aniline, the boiling-point of which is 184·5° C.; xylol (di-methyl-benzene), which boils at about 140° C.; and glycerine, the boiling-point of which is above 100° C. and which at ordinary atmospheric pressure decomposes before it reaches its boiling-point. Trials with each of these three substances left the catgut strong, but on the whole xylol has been found to give the best results, and, indeed, when it is used the result is better than with methylated spirit, the catgut shrinking, gaining in strength, and "biting" better when tied. For some time I have used catgut, usually the "00" size, prepared in this way and have had every reason to be satisfied with it. At the outset the ordinary dry chromic carbolic catgut was used, but recently I have employed ordinary unmedicated catgut with equal satisfaction.

The exact method adopted is the following. The catgut is wound *loosely* from end to end round an elongated glass reel made for me by Messrs. Reynolds and Branson of Leeds. Several of these glass reels are then introduced into a metal cylinder, the cap of which screws on, and after more xylol than is sufficient to cover them has been poured in the cap is adjusted. The whole is then put into the boiling water in the steriliser and allowed to remain along with the instruments for from 20 minutes to half an hour. After being thus sterilised the reels with the catgut which has shrunk round them are removed *at once* and kept either in 5 per cent. carbolic acid solution or in methylated spirit, the latter being preferable, as any aqueous solution tends to cause cutgut to swell. In this solution they may be kept on the reels till required. I have kept them as long as five weeks without any diminution in the strength of the gut, but I ordinarily prepare the catgut at the same time and along with the other instruments before each operation. After each heating the cylinder should be dried and the used xylol rejected, as a certain amount of decomposition takes place and catgut will soften if heated in it a second time. Care should be taken that no water is allowed to mix with the xylol, or of course the catgut will gelatinise.

The great advantage of this method of sterilising catgut lies in its simplicity and the ease with which it can be carried out, while, judging from clinical results, especially those in which unmedicated gut was used, the sterilisation seems to be absolutely complete. I have to thank my friend, Dr. Farquhar Macrae, for his kind assistance in carrying out the numerous experiments which had to be performed before arriving at the perfected method which I feel that I can fully recommend to other operators.

Leeds.

[1] It must be remembered that in all the experiments of the Hyderabad Commission chloroform was administered very freely in order to test the effects of overdoses.

VAN ERMENGEM'S METHOD OF STAINING FLAGELLA: A MODIFICATION.

BY J. W. W. STEPHENS, M.B. CANTAB.,
JOHN LUCAS WALKER STUDENT, UNIVERSITY OF CAMBRIDGE.
(*From the Pathological Laboratory, Cambridge.*)

VAN ERMENGEM'S solutions consist of: 1. Osmic acid, 2 per cent. solution, 1 part; tannin, from 10 to 25 per cent. solution, 2 parts; to each 100 c.c. add from 4 to 5 drops of glacial acetic acid. 2. Gallic acid, 5 grammes; tannin, 3 grammes; fused acetate of soda, 10 grammes; distilled water, 350 c.c. 3. Nitrate of silver, from 0·25 to 0·57 per cent. solution.

The method of using these solutions can be found in most elementary text-books of bacteriology. With care precipitates can be avoided and clear, well-stained flagella shown. But at other times, and especially in class work, thick deposits of silver result and very few, if any, flagella are shown. To careful workers, also, with this method failures are by no means unknown. The modification which, in my hands, has given beautiful results consists in using instead of nitrate of silver one of the many compounds of silver and albumin now on the market. I was led to try one of these compounds as it is stated of them that they are not precipitated by chlorides or albumin. The particular compound used by myself is "largin," which contains over 10 per cent. of silver. This body smells of ammonia and when dissolved in distilled water forms a clear brown solution. Chlorides give a mere trace of precipitate. I follow exactly the usual procedure, using as my silver bath a 2 per cent. largin solution, which will contain about 0·2 per cent. of silver. The actual times in each particular solution after the mordant are of little importance and the film may be passed back and fore from silver to gallic acid three or four times or oftener. If this method be tried it will be noticed that a greyish film is formed on immersing in the gallic solution after previous immersion in the silver solution. On replacing in the silver solution this film is dissolved up and the cover-glass is left perfectly clear, the silver solution taking on a deep mahogany colour, but no precipitate forms in the silver bath. The film has thus passed through (1) largin (from 2 to 10 minutes), (2) gallic acid (from 2 to 10 minutes), (3) largin (till clear), (4) gallic acid again if necessary, and so on back and fore. These details may be varied at will—e.g., the film may be rapidly washed in water between each bath (or the film may even be blotted); it is well to drain off excess of silver before putting in the gallic acid bath, but these are points which each observer can easily find out for himself, the "condition" of the cover-slip being the important matter.

In preparing the cover-glasses they should always be burnt on a piece of wire gauze to remove all fat. The case and certainty with which well-stained, clean preparations can be obtained by this method have induced me to publish this brief note in order that others with time at their disposal may find out by trial the best strength of "largin" solution to use and whether "protargon" or other similar bodies could equally well be used. I have stained so far in this way the typhoid bacillus, Gärtner's bacillus, bacillus fluorescens, vibrios, and micrococcus agilis (the latter showing extremely long flagella with large open curves). It is quite possible that an ammoniacal solution of silver nitrate would give the same result, but this I have not actually tried.

Cambridge.

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Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A CASE OF SACRO-ILIAC DISEASE.

BY ARCHIBALD W. CUFF, B.A., B.C.CANTAB., F.R.C.S.ENG.,
ASSISTANT SURGEON TO THE CHILDREN'S HOSPITAL, SHEFFIELD.

THE serious nature of tuberculous disease of the sacro-iliac joint has long been recognised, but its comparative rarity and the failure, until within the last few years, of operative measures devised for the relief of its later and more severe forms, may perhaps invest the record of the following case with some interest.

A youth, aged eighteen years, came under my care in May, 1897, complaining of pain in the lower part of the back and inability to walk. He had first experienced pain over the sacral region eight months before, and this had been getting worse. With the increase of the pain came a sense of weakness in the left lower limb and an inability to bear much weight upon it. Three weeks before I saw him a swelling had been noticed to be present over the region of the sacro-iliac joint. The patient's father and mother had died from phthisis. The patient was very thin and appeared to be in much pain. All the classical signs of disease of the sacro-iliac joint were present. Severe pain and sense of weakness were present in the sacral and gluteal region. The former was made worse by movement and by pressure on the iliac bones. Manipulation of the hip showed that joint to have perfect movement, although owing to the severity of the neighbouring lesion it caused pain in spite of my endeavour to immobilise the pelvis. The lameness, the inability to walk, and the alteration in the shape and the apparent length of the limb were well marked. The glutæi were wasted, as were also the muscles of the limb. An oval swelling, with its long axis almost vertical and about four inches in length, was present over the position of the left sacro-iliac joint. This swelling fluctuated and was obviously an abscess. The diagnosis of left-sided sacro-iliac disease was made and the operation devised by Collier and Golding-Bird was performed for its relief. Under an anæsthetic I raised in a forward direction a large semi-lunar flap, consisting of skin, fascia, muscle, and posterior ilio-sacral ligament, and having thoroughly exposed the bone I proceeded with a half-inch trephine to remove a crown of bone from the neighbourhood of the base of the inferior posterior iliac spine, just above the upper border of the great sciatic notch and immediately over the joint. In raising the flap the abscess, which overlay the joint beneath the muscle and fascia and which communicated with the joint by a sinus, was opened, and its wall was afterwards scraped and cut away. A probe passed into the sinus went into the joint, passing between the iliac and sacral surfaces to do so. On removing the circular crown of bone the joint was opened in its lower part. A distinct though small cavity containing granulations and minute fragments of bone and pus was present. The contents of the cavity were removed with a scoop and with the gouge and mallet the surrounding diseased portions of bone were excised. The disease appeared to have spread laterally, involving the ilium, rather than upwards, and it was confined chiefly to the lower part of the joint. Having removed as far as possible all the morbid material and otherwise cleansed the wound the flap was replaced in position and secured with silkworm gut stitches. Up to the first dressing at the end of a week all went well and the incision seemed to be healed, but at the second dressing tuberculous nodules appeared in the line of incision and in the flap and a collection of opalescent fluid beneath it. The diseased portions were again cut and scraped away and the wound was plugged with iodoform gauze. Iodoform emulsion was injected into the wound every two or three days and the plugging was repeated. The wound steadily but slowly healed. The patient was kept lying in bed with a long outside splint on the diseased side for several months and then allowed up in a wheeled chair. The pain and lameness disappeared and in January, 1898, he resumed his work as a cutler. I saw him in the last week of August. I found him free from any trouble and in good health. A depressed, painless, firm scar, semilunar in shape, marks the site of the operation. The pelvis seems to be perfectly firm though from the amount of bone removed at the operation I had considerable doubts as to its future stability.

Sheffield.

A CASE OF SEPTIC PERITONITIS; LAPAROTOMY; RECOVERY.

BY H. W. MILLS, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient was a strong, well-nourished woman, aged about forty years. There was a history of gonorrhœa many years ago. I had attended her on and off for some eighteen months previously for attacks of pelvic peritonitis, a pelvic abscess forming and discharging each time *per vaginam*. On the present occasion she had treated herself by rest in bed and hot douches, expecting the usual termination to her trouble. Such, however, did not occur; on the contrary, the pelvic abscess broke into the general peritoneal cavity and septic peritonitis resulted. When I saw her she was lying on her back in bed with her knees drawn up. The abdomen was greatly distended; low muttering delirium and constant retching had been present for twenty-four hours. The temperature was 103° F. and the pulse was 140. *Per vaginam* the cervix was felt high up and the uterus was fixed as if in plaster of Paris. There was bulging in the posterior and lateral fornices, especially in the left. On the following day, chloroform having been administered, I opened the abdomen in the middle line. The abdominal walls, omentum, and superficial coils of intestine were densely adherent, and the latter were with some difficulty separated sufficiently to admit three fingers into the general abdominal cavity. On withdrawing the fingers several quarts of brownish, very offensive fluid containing large thick flakes of lymph escaped and subsequently about a pint of evil-smelling brown pus. The upper part of the abdominal cavity was partly, at any rate, shut off by adhesions. The abdominal cavity was thoroughly irrigated with boiled water, the peritoneum was plugged with iodoform gauze, a tight binder was applied and the patient was put back to bed in a collapsed condition. She rallied, however, after a hypodermic injection of strychnine and an enema of hot, strong coffee and brandy. For several weeks her condition was critical, intestinal obstruction threatening on several occasions. The wound was dressed twice a day after the first twenty-four hours, the cavity being irrigated with boric acid lotion and later with lotio sodæ chlorinatæ, and subsequently replugged with iodoform gauze. A considerable amount of pus continued to escape for several weeks. Hypodermic injections of morphia had to be repeatedly given during the first three weeks after the operation for the relief of pain and for the troublesome and persistent attacks of retching. Eventually the discharge became serous and finally it stopped, the cavity contracted, and the abdominal wound granulated up. The patient made an excellent recovery and is now, a year after the operation, in the best of health.

Ruardean.

NOTE ON A CASE OF OXALIC ACID POISONING; RECOVERY.

BY F. J. LORIMER HART, M.B., C.M. EDIN.,
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I WAS recently summoned to a case of attempted suicide and taking the stomach syphon-tube and hypodermic case I arrived within twelve minutes after the poison had been swallowed. I was shown a "tumbler" to the sides and bottom of which were clinging rather less than one and a half drachms of undissolved crystals having the taste and appearance of oxalic acid. The patient, a lad, aged fifteen years, was unconscious; his skin was markedly pallid and clammy and his extremities were cold. No pulse could be felt at the wrist. The pupils were fully dilated and his lower jaw was fixed in tetanic spasm, froth exuding between the teeth. He was said

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by the friends to be just recovering from a strong convulsion. I injected one-tenth of a grain of apomorphia hypodermically. The stomach syphon-tube was then passed after levering the lower jaw open and upwards of a pint of warm water was introduced into the stomach. This was almost immediately expelled, no doubt by the action of the apomorphia. On a second attempt to pass the tube the patient began to struggle — consciousness having partially returned—and it was found impossible to wash out the stomach thoroughly. Vomiting, however, continued and the organ appeared to have been well evacuated. He had by this time sufficiently gained consciousness to be induced to swallow about half an ounce of powdered chalk suspended in water which was shortly afterwards ejected. With the aid of brandy, strychnine, and digitalis administered hypodermically he had recovered so as to be out of danger in two hours, the heart's action, however, failing several times during that period.

On inquiry I found that the lad had purchased half an ounce of oxalic acid from a local druggist and that the whole of this quantity had been used in making the solution, all of which he drank except what had remained undissolved. This made the quantity taken upwards of two and a half drachms. In a previous case of oxalic acid poisoning to which I was called the patient died within a quarter of an hour of swallowing the fatal dose. The quantity taken in that case was unknown, but was probably over half an ounce. According to Taylor, one drachm is the smallest quantity of oxalic acid which has been known to destroy life at the age of sixteen years, death occurring in eight hours. Under three minutes is given as the shortest known period of survival after an unknown quantity of this poison had been taken.

Sydenham.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

A CASE OF CHRONIC GLANDERS; RECOVERY.

(Under the care of Mr. WILLIAM ROSE.)

IN THE LANCET of Sept. 24th we published the history of a case of glanders in which much difficulty was found in arriving at a correct diagnosis. In the following case the diagnosis was greatly simplified by the very definite history of the disease in several horses among which the patient had worked. In this case the infection had occurred at three widely separated spots and at each there was much tendency to spread locally, but no absorption of the poison and generalisation of the disease took place. The difficulty of removing all the local disease by scraping is well shown in the sinus in the leg, which continued to extend for more than a year after its first appearance. The general health of the patient suffered very little considering the extensive and long-continued suppuration, and the favourable result demonstrates that if by persistent operation the local poison can be removed complete recovery may ensue. For the notes of the case we are indebted to Mr. C. A. Sprawson.

A young man, aged nineteen years, was admitted into King's College Hospital on Feb. 8th, 1897, suffering from multiple abscesses. His previous and family histories were quite unimportant and no evidence of syphilis could be obtained. His habits were very temperate and by occupation he was a carman and a worker in stables. About a month before admission to the hospital an abscess appeared, according to the patient's account, on the left side of his forehead; for this he consulted a medical man. A fortnight later two other abscesses appeared, one on the extensor surface of the right arm and the other on the outer aspect of the right leg. The abscess on the forehead was opened and as the patient did not seem to improve he was sent to the out-patient department of King's College Hospital, where he was seen by Mr. Carless, and the next day he was admitted to the ward. When examined on admission he was seen to have on the left side of his forehead a wound resulting from the opening of the abscess; from it pus was still flowing and a "pocket" passed from it downwards beneath the skin. With a probe bare bone could be felt. This cavity was syringed out with solution of carbolic acid (1 in 40) and packed with iodoform gauze. The house surgeon, Mr. G. Atkinson, opened the abscess on the arm and dressed it similarly; it was shallow, but extended under the skin. On the peroneal aspect of the right leg was seen a tense fluctuating swelling nearly 5 in. long; it was extremely tender and was evidently a large abscess. The patient's general appearance was healthy; his temperature was normal on admission, but it rose to 101° F. on the following day. The urine was acid and contained neither albumin nor sugar. There was no discharge from the nose and at first the patient denied that he had ever had any such symptom, but later he acknowledged that during the three weeks preceding admission there had been a watery discharge from the nose, which at the time he attributed to an ordinary cold. The case was not thought at first to be one of glanders, but on the day after admission inquiries elicited that in his work as carman the patient had much to do with twelve horses, and that six weeks before admission six of these horses, one after another, developed swellings in the neck; they were seen by a veterinary surgeon and were killed. In his own mind the patient had never connected the disease of the horses with his own illness and none of his fellow workers seem to have suffered at all in the same way, though about three months earlier one of them had a wound of a finger which took a fortnight to heal. On Feb. 22nd Mr. Rose incised the abscess in the leg and evacuated some blood-stained pus; there was no bare bone; the cavity was packed with gauze. The abscesses were dressed daily; it was found necessary on two occasions to make a counter-opening for the abscess on the forehead, as there was much burrowing; when the first counter-opening was made some pus escaped and some of it was caught in a sterilised tube and sent to the British Institute of Preventive Medicine for examination; the report on this pus stated that though no bacilli were discoverable microscopically in this pus, yet when guinea-pigs were inoculated with it they soon developed the typical symptoms of glanders. By March 12th the temperature had become normal, the patient's general health was good, though he was somewhat troubled with night sweats, but the healing of the abscesses progressed very slowly, and on April 6th it was found necessary to lay open the leg further downwards owing to the burrowing of the abscess. On May 7th the abscess in the arm had nearly healed, but as the burrowing of the abscess on the forehead had increased, the skin between the three sinuses was cut through and the cavity well scraped with a sharp spoon. The sinus in the leg was treated similarly. At first the wounds seemed to improve after this treatment, but later they all continued to spread, and Mr. Rose laid them open again, scraped them, and swabbed them out with liquefied carbolic acid. Every third day after this the wounds were swabbed out with carbolic acid and soon began to look more healthy. On June 14th a note was made that the patient's general condition had not been so good lately; he complained of headache and pains in the back and at the same time he showed a distinct *tache cérébrale*. The wounds also commenced to burrow again; they were therefore once more scraped and wiped out with pure carbolic acid. The carbolic acid was used every other day and all the wounds improved greatly and by July 14th the arm was well. Towards the end of July an attack of pharyngitis caused a temperature of 103° for a few days, but the wounds continued to improve, so that early in August he was able to get about on crutches. The ulcer on the head was smaller, but still discharged some greyish pus, which crusted round the wound causing a peculiar appearance which had been noticed during the whole of the case. The sinus in the leg increased in length and on Sept. 1st Mr. Carless laid it freely open and applied carbolic acid to the interior. By Sept. 20th both wounds were looking better; the ulcer on the forehead had healed except for a patch as large as a sixpenny-piece. The burrowing of the sinus in the leg continued and on Oct. 30th Mr. Rose made a counter-opening immediately below the external malleolus, avoiding the peronei

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tendons. Two further examinations of the pus were made. The first was negative in result, but the second showed the bacilli of glanders. The ulcer on the forehead healed by Nov. 17th, but the sinus in the leg required several other operations, as it had tracked downwards along the tendon of the peroneus longus, but fortunately the process was stopped before it reached the sole of the foot. Healing gradually occurred, but was not complete until the middle of June, 1898.

DORSET COUNTY HOSPITAL.

A CASE OF HERNIA OF THE APPENDIX VERMIFORMIS; OPERATION; RECOVERY.

(Under the care of Mr. WILLIAM ERNEST GOOD.)

ALTHOUGH it is by no means unusual to find the vermiform appendix in the sac of a femoral hernia—as, for instance, in hernia of the cæcum—yet it is certainly rare for the appendix to be the sole occupant of a hernial sac. It is not unlikely that in many cases it may form so slight a swelling that the hernia is not noticed, and if no strangulation takes place the hernia may never be suspected. In addition to the cases quoted by Mr. Good in his remarks we may mention the following. Langton describes a case in which perforation took place.[1] Keetley also had a case,[2] and L. A. Bidwell describes two cases,[3] in neither of which was the appendix strangulated. In a case recorded by W. McAdam Eccles[4] the hernia was found post mortem in a man who died from carcinoma of the stomach; the hernia had apparently given rise to no symptoms. It is somewhat strange that strangulation of the vermiform appendix should cause such severe symptoms as occur in some cases, for there is no obstruction to the onflow of fæces. It is of interest to note that in nearly all the cases the patient was a woman. It is possible for an appendicitis to occur in an appendix while lying in a hernial sac,[5] and it is not improbable that some of the cases thought to be suffering from strangulation were really cases of appendicitis.

A domestic servant, aged thirty-nine years, was admitted to the Dorset County Hospital on March 8th, 1895, with a tense swelling in the right groin. This had existed since the previous day, was accompanied with pain and vomiting, and presented all the appearances of an irreducible, strangulated femoral hernia. The patient having been placed under chloroform Mr. Good cut down on the tumour and on opening the hernial sac it was found to contain a portion of a strangulated and congested vermiform appendix. About 4 in. or 5 in. were drawn out of the wound and after some constricting tissue had been divided the finger easily traced the appendix into the right iliac fossa. It was unusually long, probably at least 7 in. A double ligature of carbolised catgut was applied and about an inch of the appendix was cut off; the ends of the ligature were left long as a drain and the stump was left in the wound, which was partly closed by silver wire. On cutting open the amputated portion the diagnosis of the hernia being that of the appendix was confirmed by the presence in it of a little greenish, feculent-looking slime. The patient made a tedious convalescence, but was discharged well on April 6th.

Remarks by Mr. GOOD.—Hernia of the appendix vermiformis is not common. Mr. Davies-Colley in an article in the Guy's Hospital Reports[6] gives particulars of two cases which occurred in his practice and one which occurred under the care of Mr. Durham, and another under the care of Mr. Clement Lucas, and refers to five others. Recently Mr. Newbolt of Liverpool has published a case[7] and refers to two others, one by Mr. Annandale and one by Mr. Jacobson.

[1] St. Bartholomew's Hospital Reports, vol. xxvii., p. 179.
[2] Medical Press, 1890, p. 85.
[3] Transactions of the Clinical Society of London, vol. xxx., p. 186.
[4] Transactions of the Pathological Society of London, vol. xlviii., p. 87.
[5] Gangolphe: Brit. Med. Jour., April 2nd, 1892.
[6] Series III., vol. xxvii.
[7] Brit. Med. Jour., vol. i., 1897, p. 781.

WATER-SUPPLY OF CHARD.—Mr. F. H. Tullock, of the Local Government Board, held an inquiry at Chard on Sept. 20th relative to the application by the town council to borrow £2500 for works of water-supply. After a lengthened inquiry Mr. Tullock said that there was an obvious need for a proper water-supply for the whole town and added that this would have to be carried out. He also strongly commented on the inaction of the town council.

Reviews and Notices of Books.

Diseases of the Stomach. In Three Parts. By JOHN C. HEMMETER, M.D., Clinical Professor of Medicine in the Baltimore Medical College. London: H. Kimpton. 1898. Pp. xxvii. and 788. Price 30*s.*

Diseases of the Stomach: a Text-book for Practitioners and Students. By MAX EINHORN, M.D., Adjunct Professor in Clinical Medicine at the New York Post-graduate Medical School and Hospital. Second revised edition. London: Baillière, Tindall, and Cox. 1898. Pp. 486. Price 12*s.* 6*d.* net.

IT is significant of the attention now being paid to the subject of digestive disorders and also probably indicative of the prevalence of such maladies in the United States that the publication of an exhaustive treatise like that of Dr. Hemmeter should have been speedily followed by a second edition of Dr. Einhorn's text-book about a year after its first appearance. It is further evident that the endeavour to unravel the problems connected with gastro-intestinal derangements has been the source within comparatively recent times of much fresh knowledge upon the digestive processes. Thus there have been introduced many and more exact methods of examination of the functions of the stomach in health and disease which ought to have a practical application in the treatment of dyspepsia, the besetting malady of civilised mankind. Yet the actual gains to therapeutics due to these scientific methods and researches have been hardly commensurate with the trouble and ingenuity which have been bestowed upon them. To a certain extent they have only served to confirm the opinion formed of the value of old and well-tried measures introduced at a period when gastric chemistry was in its infancy, whilst many of the new methods which may be applied for diagnosis and treatment are so irksome to the patient that it will be long before they come to be universally applied, in spite of the rational basis on which they are founded. Nevertheless we cannot but welcome the insight given into the vital functions of the digestive organs by such patient investigations, with the assurance that every fact thus added to physiology and pathology cannot but have an important influence upon the true conception of these functions and the most appropriate measures to be taken to remedy their derangements.

Dr. Hemmeter's treatise comprises a thorough survey of the whole subject of disease of the stomach, and nothing is omitted which is material to its full comprehension. Indeed, if any criticism be allowable upon what has evidently been a most arduous and painstaking work, it would be that in some parts there is apt to be too much material, as, for instance, in the numerous diet tables which occupy the chapter on Dietetics. The author shows that he has a profound acquaintance with the abundant literature of the subject, and he certainly has brought his book quite up to date. It is, however, far from being a mere compilation, although there are not seldom copious citations, for Dr. Hemmeter has himself contributed not a little to the scientific investigation of gastric affections. The subject matter of the work is treated under three main divisions—namely, (1) Anatomy and Physiology of the Digestive Organs—Methods and Technics of Diagnosis; (2) Therapy and Materia Medica of Stomach Diseases; and (3) the Gastric Clinic. The description of the histology of the stomach is largely culled from the writings of Bensley and Mall, but the physiology of digestion is treated succinctly and more independently. This latter section comprises further the intestinal processes, where, by the way, we note the statement of the author that so-called intestinal disinfection is still "an unsolved

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problem." Several methods for testing gastric peristalsis are described in a chapter devoted to this topic, the opinion being expressed that Ewald's salol method is unsuitable for private practice and that, moreover, the amount of salicyluric acid excreted in the urine by the use of this test, is considerably influenced by the blood-pressure. Klemperer's "oil" method and Fleischer's "iodoform" method are also described, as well as the ingenious mechanical instruments invented by Dr. Einhorn and by Dr. Hemmeter. The latter's "gastrograph" consists of a bag of the shape of the stomach which being introduced into the viscus is so adapted to its interior as to act as a recording apparatus of the latter's movements. The author considers that the motor function of the stomach is of the highest importance, for he thinks most of the disorders of secretion and absorption are to be attributed to defective motor activity. Several tracings (gastrograms) are given. The testing of the power of absorption and the means whereby the size and capacity of the stomach can be estimated are then described, including the ingenious method of "gastro-diaphany" which we owe to Dr. Einhorn. Ample information is supplied upon the use of the stomach tube, the practice of lavage and the several colour tests and other reactions upon the gastric secretion, and also there is an account of the examination of the gastric contents. In point of fulness this account leaves little to be desired. As already hinted, much consideration is given to the subject of dietetics which finds a place in the second part of the work. At the same time the author remarks, with justice, that there is no need to insist upon too harsh measures of restriction in most forms of dyspepsia. It is quite right for cooking to receive the attention here devoted to it, and many hints are given on the preparation of foods for invalids. The subject of alcohol and of the medicinal agents most in vogue in the treatment of gastric disease follows, whilst this portion of the work closes with an account of surgical intervention in organic disease. The third part of the book, which is devoted to the description of the various diseases of the stomach, opens with an account of gastritis, the author agreeing with Ewald and Penzoldt in discarding the term "catarrhal," and the pathology as well as the symptomatology of its various forms is amply discussed. The bibliography of the subject is most copious, and in addition to a lengthy list of authorities on the subject in general, more than four pages are filled with references to writings upon phlegmonous gastritis alone. Ulcer of the stomach is, we learn, associated with hyperacidity in 88 per cent. of cases and the etiology of the lesion is summed up as linked with one of four conditions—namely (1), impaired vitality or resistance of portions of the mucosa; (2) hyperacidity or supersecretion; (3) an altered state of the blood; and (4) local bacterial infection. So far as we could find, no mention is made of the view which has been forcibly put forward that the initial lesion of gastric ulcer is to be found in the solitary glands or lymphoid tissue. Indeed, the pathological anatomy of ulcer is not very fully treated in this work. Considerable space is given to malignant tumours and stress is laid upon the detection and examination of fragments of the mucosa in the vomit or washings of the empty stomach as an aid to diagnosis. The rare lesions of tubercle and syphilis are described from records in literature, and then follows an account of Benign Tumours. The subject of Motor Insufficiency and Dilatation is amply dealt with, and the same may be said of Enteroptosis and Gastroptosis, which are responsible for many ills and discomforts. The "Neuroses" are grouped under the heads of Motor, Sensory, and Secretory, and in each department it is claimed that there may be recognised states of excitation and states of depression of nervous influence. Whether the present state of knowledge is such as to enable the dyspepsias to be divided into the numerous conditions which can be assigned by such a division is questionable, but at any rate the scheme has the merit of being ideally complete, leaving but little room for any fresh additions to the list. We part from Dr. Hemmeter's work with the sense that it embodies the best knowledge of the time, that it is a book which is of inestimable value as a work of reference, and that it will well repay the most careful study which can be given to it. The index is remarkably complete.

Less ambitious in scope but covering the same field is the text-book of Dr. Max Einhorn. This book is more suitable for the practitioner but quite as abreast of modern inquiry as the larger treatise. Here, too, descriptions of methods of examination precede the detailed accounts of gastric disorders. The author's ingenious gastrograph (in some respects preferable to that of Dr. Hemmeter) and his gastro-diaphane are clearly described and their application in diagnosis is well brought out. Lavage and the "tests" of the stomach contents receive adequate and judicious treatment, whilst the amount of information which can be obtained by a careful microscopical examination of the washings of the viscus is a point worthy of the attention of all clinicians. The drawings of fragments of mucous membrane detached from the stomach, which show degenerative, atrophic, and neoplastic changes, are evidence of the value of the practice. The employment of the gastric douche and the use of direct electrisation of the interior of the stomach form new and valuable additions to measures of treatment, nor is their use difficult, as Dr. Einhorn plainly shows. We need not dwell at length upon the chapters dealing with the several morbid states, but it may be of interest to note how considerable is the space devoted to the secretory and other functional derangements which constitute the dyspepsias. In this department terminology is enriched by many new but not euphonious additions—"hyperchlorhydria," "gastrosuccorrhœa continua periodica" and "chronica," "achylia gastrica," and "ischochymia," the two latter denoting mainly the conditions formerly termed "gastric atrophy" and "gastric dilatation." Dr. Einhorn justifies the use of the term "ischochymia" on grounds which may be deemed satisfactory, for by it he implies a hindrance to the due emptying of the stomach, the stagnation of the contents of which is responsible for most of the symptoms of gastrectasia. There is a brief but sufficient account of enteroptosis and, finally, the nervous affections are succeeded by a chapter on Affections of the Stomach in other Diseases. The book is one which can be recommended for the clearness and conciseness with which the whole subject is treated and for its eminently practical character.

Tests and Studies of the Ocular Muscles. By ERNEST E. MADDOX, M.D., F.R.C.S. Edin. Bristol: J. Wright and Co. Pp. 427. 1898. Price 10*s.* 6*d.* net.

THIS work will be found to repay perusal. Without being of a controversial nature it is very suggestive and places many points in regard to the action of the ocular muscles in a new and interesting light. At the same time the author has contrived to give a valuable epitome of the work on this subject which has been done in this country and abroad, and especially in America, during the last few years. Many circumstances render inquiries into the functions of these muscles difficult. Their coördinated action is complicated and difficult to follow even under normal conditions, and in disease the difficulty is greatly increased on account of the symptoms being to a large extent subjective and therefore requiring close attention on the part of even the most intelligent patient.

The author commences with a short description of the ocular

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muscles and their relations, which are exceedingly important, to the capsule of Tenon. In describing the actions of the ocular muscles he introduces some new terms which are useful since they abbreviate descriptions and are at the same time perfectly intelligible. Thus, the rotation of the cornea on its edge outwards like a wheel he describes as extorsion and the muscles which effect this—viz., the inferior rectus and inferior oblique—are termed "extortors," and so the muscles which rotate it inwards, the superior rectus and superior oblique, are intortors. He points out that the insertions of the several recti muscles form, as described by Tillaux, a kind of spiral, for beginning with the internal rectus and proceeding to the inferior external and superior recti in order they are attached at distances of 5, 6, 7, and 8 millimetres from the margin of the cornea. He endeavours to explain the existence of the pulley of the superior oblique by attributing it to the necessity of a contrivance for obtaining length, whilst its presence in association with the superior and its absence in the inferior oblique he believes to be due to our habitually looking downwards in our daily work.

The disposition and influence of the "check ligaments" are given in full detail and should be studied by all those who undertake to perform the division of the tendons of these muscles. A chapter is devoted to Motor Faculties, in which, without any particular novelty in their treatment, such subjects as the fixation of the eye, normal and abnormal projection, the perception of distance, and the stereoscope are dealt with. The succeeding chapters are devoted to Strabismus and Ocular Paralysis. In the treatment of the former the author quotes with approval Javal's course of treatment by means of regular exercise of the muscles. It must be acknowledged, however, that such exercises require great patience, that they take up a great deal of time, and are not always successful.

The eleventh chapter is devoted to Ophthalmoscopic Corneal Images and the mode of utilising them for the recognition of strabismus. Dr. Maddox gives a mode of ascertaining by means of the corneal reflexes whether or not a squint is paralytic which is of practical value. It is to this effect. The palm of the left hand should be laid on the patient's head with instructions to let the head follow the most gentle guidance of the hand without resistance. The exact position of the corneal reflex in the squinting eye is now to be noted, whilst the fixing eye is directed to the central aperture of the ophthalmoscopic mirror and the head is steadily moved in various directions. If the position of the reflection is unchanged the squint is concomitant; if it be changed the squint is paralytic. Priestley Smith's mode of strabismometry is described and the value of photography in the diagnosis of squint pointed out. We recommend Dr. Maddox's work to all who are practising ophthalmic surgery.

Atlas and Essentials of Pathological Anatomy. By Dr. O. BOLLINGER. In 2 vols. London: Baillière, Tindall, and Cox. 1898. Price 12*s.* 6*d.* each volume.

THESE two volumes form part of the Hand-Atlas Series published in German by Lehmann. In our previous notices of other volumes of the series we have commented on the excellence of the plates and the present numbers form no exception. The illustrations are most beautifully executed. The first volume deals with the Circulatory, Respiratory, and Digestive Apparatus, including the Liver, Bile Ducts, and Pancreas, and contains 69 coloured figures upon 60 plates and 18 illustrations in the text. It is impossible to speak too highly of the efforts of the artists and lithographers, nor would it be an easy task in the space at our command to draw attention to as many of the plates as we could wish; but we may mention as some of the best those depicting fatty degeneration of the heart muscle, chronic fibrous and calcareous endocarditis of the aortic valves, adenoma of the thyroid gland, diseases of the lung caused by inhaled dust, &c. The second volume considers the pathological anatomy of the urinary apparatus, sexual organs, nervous system and bones, and contains 63 coloured figures upon 52 plates and 17 illustrations in the text. In this volume again the various pathological conditions are reproduced with wonderful fidelity. Plate 10, showing a cystic kidney, and Plate 12, exemplifying chronic tuberculous pyelo-nephritis, are especially good.

At the end of each volume is a full account of the various pathological conditions figured arranged in a more systematic manner. The student will find this work a most valuable one as an aid to his pathological studies. It can hardly replace the ordinary text-books, but he will be well advised to add these volumes to his library and to constantly refer to them whilst reading his other medical and surgical works.

Atlas of Clinical Diagnosis and Internal Diseases. By Dr. CHRISTFRIED JAKOB. Authorised Translation from the German. Edited by AUGUSTUS A. ESHNER, M.D. London: The Rebman Publishing Company. 1898. 68 Plates and 64 Illustrations in the Text. Pp. 259. Price 12*s.* 6*d.*

THIS also is one of the Series of Hand-Atlases issued by the firm of Lehmann of Munich of which several have already appeared in English dress. The plan of the book consists in coloured plates containing in all 182 illustrations and in some text—which forms about one-half of the volume—treating of the methods of physical examination, and giving also a summary outline of internal diseases exclusive of those of the nervous system. The plates comprise microscopical drawings of the blood, sputum, and urinary deposits as well as the colour-reactions obtainable in testing the gastric juice and urine. Then come a large number of percussion outlines of normal and diseased conditions of the thoracic and abdominal viscera. All these figures are coloured and they tell plainly the conditions which they represent, and as they are all taken from actual cases, of which a brief outline is given on the page facing the diagram, they will be useful as guides to the clinical student in the art of graphic representation of clinical facts. Although such a book may not be really as useful as some of the other works in this series it affords a compendious insight into the methods of clinical investigation and should be welcomed as an addition to a field already occupied by many works of a more pretentious class.

Medical Diseases of Infancy and Childhood. By DAWSON WILLIAMS, M.D., F.R.C.P. Lond., Physician to the East London Hospital for Children, Shadwell, &c. London, Paris, New York, and Melbourne: Cassell and Co. 1898. 8vo. Pp. 626. Price 10*s.* 6*d.*

STUDENTS cannot complain of the lack of excellent manuals dealing with diseases of children. The latest, from the pen of Dr. Dawson Williams, will certainly not be the least popular among students and practitioners. Well arranged and clearly written, it embodies the experience of the author during many years at the Shadwell Hospital for Children. While indicating his own views very distinctly Dr. Dawson Williams gives adequate space to the teaching of others on points of pathology and treatment with which he is not fully in accord.

Commencing with a short chapter on the Hygiene of Infancy Dr. Dawson Williams goes on to give practical directions for the clinical examination and observation of infants and of older children. Diseases incidental to birth

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are described, including such accidents as meningeal hæmorrhage from injuries during labour. A somewhat short chapter is given to the Feeding of Infants. Like most other authorities Dr. Dawson Williams recommends diluted raw cow's milk when its purity and freshness can be guaranteed. In other cases he gives directions for pasteurising or for absolute sterilisation. This chapter scarcely goes far enough, dealing only with feeding during the first six months and containing little guidance for the very important transition period before the child is fully equipped with teeth.

The section dealing with the acute specific fevers is very well done, particularly the chapter on Diphtheria, where there is an excellent concise account of the bacteriology of the disease and of the results of treatment with antitoxin. Curiously, however, no practical directions are given for the clinical bacteriological examination of a doubtful case. The statistics quoted show very conclusively the importance of giving antitoxin early, the mortality not being greatly reduced when it has been delayed till the fifth day of the disease.

Tuberculosis receives full attention and is followed by one of the best chapters in the book, that on Inherited Syphilis. Referring to the possibility of direct infection of syphilis by vaccination Dr. Dawson Williams believes that most alleged instances are cases of inherited syphilis and holds that "no case can be admitted to be an example of syphilis due to inoculation at vaccination unless a primary chancre be discoverable." The account of rickets is somewhat condensed for so important and common a disease.

Diseases of the various systems of the body are described shortly in their turn. A very full and well-illustrated account is given of the acute gastro-intestinal affections of infancy, including a full notice of the recent researches of Professor Baginsky of Berlin. Cretinism is well described, but there is little mention of other forms of mental defect the recognition of which in early life is often as important as it is difficult. Dr. Dawson Williams adheres to the restricted view of rheumatism as a disease of joints rather than a general condition. Although he puts the chapter on Chorea next to that on Rheumatism instead of among nervous diseases he is by no means clear that it is "merely a rheumatic manifestation." His chapter on Rheumatic Fever describes rheumatism rather as it occurs in the adult, but it fails to take account of the slight afebrile rheumatism so often seen in young children which has been so well described by Dr. Cheadle. The book is very complete, containing notices of rare conditions such as the hæmoglobinuria of the newly-born, and also excellent chapters on Malaria and Hydatid Disease, in which Dr. Manson and Mr. Twynam have coöperated.

The book is very well illustrated by reproductions of clinical photographs and photo-micrographs and there is a very full index. It forms a worthy member of the practical series published by Messrs. Cassell and Co., and its convenient size, its completeness, and the excellence of its teaching enable us to recommend it strongly as a trustworthy manual for students and practitioners.

LIBRARY TABLE.

First Aid to the Injured. By Dr. FRIEDRICH ESMARCH, being Six Ambulance Lectures Translated from the German by H.R.H. Princess CHRISTIAN. Sixth edition. London: Smith, Elder, and Co. 1898. Price 2*s.*—*First Aid to the Injured and Management of the Sick.* By E. J. LAWLESS, M.D. Brux., D.P.H. London: The Scientific Press, Limited. 1898. Price 3*s.* 6*d.*—Of these two little books the former is the more elementary, containing practically only such information as may be rightfully made use of by any bystander who has a head on his shoulders. Dr. Lawless's book gives drill instruction for stretcher-bearers and certain information as to field and camp hospitals. Professor Esmarch's book is written with all that emphasis and clearness which those who know that admirable work of his, "The Handbook for the Treatment of the Wounded in War," look for from him. There is only one point to which we take exception, and that is the statement upon page 31 as to the use of the carbolic spray in operations. Surely, this has been altogether given up. Otherwise we have nothing but praise for this work, and the section upon nursing is of special excellence. The translation, so far as we can tell without having compared it with the original, is well done—i.e., unless we knew it were translation we should not think it was. Dr. Lawless's book goes upon much the same lines, only it deals in addition to first aid with such subjects as instruction camps for volunteers, the duties of hospital orderlies as sick nurses, cookery for the sick, and the like. With regard to the making of coffee Dr. Lawless allows two teaspoonfuls of coffee to three-quarters of a pint of water. This may make an infusion suitable for the sick, but to call it coffee is a misnomer. On other points Dr. Lawless's book is admirable; more especially we may note the sections dealing with Life in Camp, How to Manage on the March, and the Appendix—Fresh Air and Ventilation.

Clinical Lectures on Diseases of the Heart and Aorta. By GEORGE WILLIAM BALFOUR, M.D. St. And., LL.D., &c. Third edition. London: Adam and Charles Black. 1898. Pp. 479. Price 12*s.* 6*d.*—Few words are needed to introduce this fresh edition of a well-known work to the notice of our readers. When the lectures first appeared twenty-three years ago they at once attracted attention from the style in which they were written, the wealth of clinical material they contained, and the sound doctrines they imparted. Dr. Balfour's reputation stands high in the department of cardiac diseases and medicine owes to him many valuable hints and wise reflections. The lectures, too, are just those which may have been given at the bedside. Each one is furnished with the records of cases which serve to illustrate the text and point to the enforcement of rules of treatment. The purely clinical descriptions are preceded by two lectures on Diagnosis, which convey in clear language the significance and theory of production of the various physical signs. Dr. Balfour treats of subjects which are most likely to lead to erroneous inferences, and none can peruse the lectures on Curable Mitral Regurgitation, on the Vanishing and Variation of Cardiac Murmurs, or that on the Simulation of Aneurysm without being instructed and assisted in practice. Indeed, this work is eminently suited for the careful perusal of the practitioner, who will gain from it much that is useful to him in matters of diagnosis and treatment, and will, moreover, be enabled to judge more accurately as to the probable course and duration of cases of valvular disease, and often, mayhap, to take a more hopeful view of their prognosis. For to arrive at a right judgment in any case of heart disease many points have to be considered and the least important frequently is the presence of a murmur. This and more is the lesson conveyed by Dr. Balfour's sensible teaching, based as it is upon years of observation and experience. We heartily welcome this new edition of a much valued book.

Rheumatoid Arthritis: its Pathology, Morbid Anatomy, and Treatment. By GILBERT A. BANNATYNE, M.D. Glasg., M.R.C.P. Edin. Second edition. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent and Co. 1898. Pp. 182. Price 7*s.* 6*d.*—The subject to which the author of this book has devoted much study is one that has long formed a sort of debateable ground amongst pathologists and clinical observers. Many and various have been the doctrines put forward to explain the etiology of this

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slowly progressive, painful, and crippling disease that seems to occupy a place apart in nosology. Dr. Bannatyne himself is persuaded that the key to its pathology is to be found in ascribing it to microbic agencies, and strange as it may seem at first sight to refer a chronic disorder of this class to such a cause he makes out a fairly good case in support of his contention. Readers of THE LANCET are familiar with his views, and the fact that his work has reached a second edition is proof that his mode of presentation of the subject has been received with favour. The clinical portions of the book are well written, the salient facts and the variations met with being very systematically treated. Numerous illustrations, including some interesting Roentgen photographs, add to the value of the text. In point of treatment the author finds in the creasotes, phenols and naphthols remedies which act by virtue of their bactericidal properties and thus harmonises their employment with the pathological doctrines which he holds. The value of thermal treatment in the more chronic stages is insisted on and of this the author's experience of the Bath waters enables him to speak with authority.

Zig-Zag Ramblings of a Naturalist. By R. TAYLOR MANSON, L.R.C.P. Edin., M.R.C.S. Eng. Second edition. Darlington: William Dresser and Sons. 1898.—This is a collection of very charming essays dealing with the natural history of a portion of that country of which Kingsley so well says:

"The name of the place is Vendale, and if you want to see it for yourself you must go up into the High Craven and search from Bolland Forest north by Ingleborough to the Nine Standards and Cross Fell, and if you have not found it you must turn south and search the Lake Mountains down to Scaw Fell and the sea; and then if you have not found it you must go northward again by Merry Carlisle and search the Cheviots all across from Annan Water to Berwick Law; and then, whether you have found Vendale or not, you will have found such a country and such a people as ought to make you proud of being a British boy."

This country is perhaps fuller of romance than any other part of England, save possibly portions of Somerset, Gloucester, and Cornwall, and Mr. Manson writes as one who not only knows it but loves it. His derivation of the jeweller's "heart" charm from the flint arrowhead is certainly a plausible one, though we do not remember ever to have seen it noted before. In the chapter called "Our Park" Mr. Manson discourses pleasantly about the differences between the leaves of the beech, the elm, and the hornbeam. The leaf of the last-named is sometimes mistaken for that of the beech, but they are not much alike. Still there is often a difficulty in distinguishing between the leaves of the wych elm and those of the hornbeam, that is to say, unless they be examined together. Neither tree is very common in England, but there are twelve magnificent hornbeams at Temple Lock on the Thames, and there used to be, and we trust still is, a gigantic wych elm in the park at Magdalen College, Oxford. Both town and country dwellers should read Mr. Manson's essays, for both will, or should, profit by them.

New Inventions.

AN ANATOMICAL URETHRAL BOUGIE.

BOUGIES and catheters mapped out to correspond with the anatomy of the male urethra, so as to indicate the situation of strictures or other abnormalities, have been made for me by Mr. Alfred Cox of 108, New Bond-street. An ordinary bougie is encircled with a red line six inches from its extremity, which six inches when passed into the urethra inform the operator that the point of the instrument is about entering the membranous portion. The next three-quarters of an inch of the instrument is marked off with another red line, and as it is being passed the extremity of the instrument is making its way into the prostatic portion, after which the passage of the next marked part—viz., 1¼ in.—tells that the prostatic portion is occupied and that the instrument is about to enter the bladder.

RALPH STONEY, L.R.C.S. Irel., &c.
Gloucester-terrace, S.W.

THE SOUDAN CAMPAIGN.

(FROM OUR SOUDAN CORRESPONDENT.)

THE number of cases of sick and wounded under treatment in this hospital to-day is 139, of which 111 are cases of wounds, gunshot and otherwise, which may be classified as follows: gunshot, 78; sabre and spear, 17; and other wounds, 16. This does not include the 6 wounded officers. The other cases are principally fever (including a few enteric) and dysentery. On the whole, the wounded are doing very well and it is contemplated sending off a sick convoy to Cairo at an early date. The worst cases are those of gunshot wounds of joints, of which luckily there are not a great number. Up to date about 22 operations for the removal of bullets and the suturing of tendons, &c., have been performed, and, thanks to the x rays, the surgeon's work has been much simplified. As I stated in my last letter we have two excellent apparatus, one for a 10 in. spark and one for a 6 in., and they have proved of great service. The bullet wounds were nearly all caused by Remingtons and the amount of splintering of bone has necessarily been great, the only exception that I have noticed being the case of Lieutenant-Colonel Sloggett of the Royal Army Medical Corps; in his case the aperture of entry was one-eighth of an inch above the left nipple and that of exit in a direct line from before back, a little to the outer margin of the axillary border of the scapula. This wound was undoubtedly inflicted by a small-bore French or Italian rifle (to which, in my opinion, Lieutenant-Colonel Sloggett owes his life), as, with the exception of severe shock at the time, accompanied by a high temperature for a few days and slight dyspnœa, his symptoms have never been urgent and I am happy to say that he is gaining ground daily, the consensus of opinion being that the bullet undoubtedly perforated the chest and made its exit at the point described. The other wounded officers are doing well, though the sabre wound of Lieutenant Nesham of the 21st Lancers is a very severe one and had divided all the tendons of the wrist and the median and ulnar nerves. These have been successfully sutured. Of the amputation cases the one at the shoulder joint (for a railway injury) died from shock and exposure to the sun as the patient lay beside the line for some hours before he was discovered, and the only other case up to date, that of an arm at the middle third, is doing well. There is a rumour that the Red Cross Society have prepared a boat to take the wounded from Assouan to Cairo[1] and I can only hope that it is so, as they will benefit more by this route than by the intensely hot, jolting, and dusty journey by train. I cannot conclude this note without expressing how much we were struck on arrival here from the front by the excellent arrangements and order so prominent in this hospital, and it must have been a most welcome change for the wounded after all the discomforts inseparable from the journey down from the front by boat to have been able to occupy the airy and comfortable wards fitted with all the comforts of a hospital in Cairo.

Hospital on Line of Communication, Abadia, Soudan,
Sept. 11th.

[1] We announce in another column that the *Mayflower* left Assouan for Cairo on Sept. 15th with 28 wounded and 24 sick.—ED. L.

BRITISH ASSOCIATION.—At the concluding meeting of the British Association, held at Bristol on Sept. 14th, Professor Schäfer reported that the grants appropriated to scientific societies amounted to £1485, and added that this unusually large amount was able to be given owing to the great success of the Bristol meeting.

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THE LANCET.

LONDON: SATURDAY, OCTOBER 1, 1898.

IN studying the life of PASTEUR on one can fail to be struck with the practical bearing of all his investigations and with the eagerness with which he set himself to improve the industries of the districts in which he happened to be placed. His brilliant investigations upon the diseases of silkworms, upon vinegar, upon the diseases of wine and beer, and upon sewage fermentation are matters of history. He was essentially a patriot and a citizen who delighted to place his knowledge at the service of his country and of his town. Yet we are quite familiar in this country with the criticism that our centres of learning, our universities, are not in touch with the industries of the community in the midst of which they exist. We receive an impression that the teaching of anything technical does not appertain to a university. What has been the result of this old university idea? It has been that the manufacturing chemist has established a laboratory in his own works, a well-equipped research laboratory, the investigations in which are turned to his own profit. The same may be said of the brewing industries. If the seats of learning have not appreciated "technical" education the manufacturers have done so in numerous instances. Instead of the great cities in this country possessing universities of their own in which the student could be trained for a classical, a medical, a legal, a veterinary, or a commercial career, or be thoroughly equipped as a chemist, a brewer, an agriculturalist or a commercial man, we find too often in these cities an apology for a seat of learning in which, perhaps, the only flourishing section is medicine, the other subjects requisite to the life of the citizen being neglected and the great manufacturer of the district in consequence being driven to establish a laboratory exclusively for his own use. The changes which are, however, taking place in Liverpool and in Birmingham, to be probably followed by Bristol and Sheffield, indicate a commencing reaction against the old university system and a determination to found centres of learning more in touch with present-day needs, where research and learning may be prosecuted in a scientific manner and in well-equipped laboratories, whether the subject is butter-making or the study of tropical diseases.

What better indication could we have of the determination to apply scientific methods to commerce than the interesting meeting which was held at Lord VERNON'S country seat on Sept. 15th and reported in THE LANCET of Sept. 17th? It was a gathering of scientific men to see the establishment of a laboratory in connexion with a dairy—a laboratory in which the quality of the milk could be tested regularly, chemically, and biologically, and in which researches on the bacteria present in milk could be conducted. If the chemist or the brewer has found it profitable to establish his own laboratory surely it is a step forward on Lord VERNON'S part and one which is likely to yield much good fruit and have far-reaching effects if the noble lord proceeds on similar lines. It is perfectly certain that perishable food-stuffs, whether dairy products, meat, or jams, when dealt with in large quantities, would yield far greater profits if those who had to deal with them possessed a scientific knowledge. This becomes strikingly apparent if we consider the amount of good food assuredly lost through want of knowledge of biological laws: the jam manufacturer loses half his preserves, a cargo of meat is spoiled, firkins of butter turn out rancid, the milk becomes quickly sour, and so on. Lord VERNON'S effort deserves the greatest praise, although it might cause our Danish friends or American cousins to smile, so used are they to what we must treat as a radical departure; and we hope his example will be followed. His cows are hygienically housed, they are all tested with tuberculin, and the milk is carefully centrifugalised. A further feature is the placing upon the market of sterilised milk. This is most certainly a great desideratum as far as our experience goes. Sterilised milk, even when three or four weeks old, tastes very like fresh milk, and we cannot help thinking that, after all, boiled sterilised milk bears the same relationship to fresh milk as, say, roast beef to raw beef. There is no doubt the raw beef has its value, but no one denies the nutritive use of roast beef, and it is probably similarly the case with boiled milk.

To return to the university question, Lord VERNON'S experiment shows the necessity for better and more scientific agricultural departments than at present exist in the country and that it is incumbent upon the teaching colleges in agricultural districts to make provision for laboratory training. We hope the lesson will not be lost upon our teaching bodies and that they will not allow the matter to be left to individual enterprise. Municipal bodies have become quite alive to the fact that the questions of milk-supply and of water-supply are exceedingly important and developments in technical knowledge are now sure to follow. Let the universities be ready to lead. Liverpool and Manchester have their bacteriological as well as their chemical analyst and other large cities will no doubt follow suit. We deal with the present position of London in relation to a public bacteriological laboratory in another article. That official supervision of the milk-supply is necessary is shown by the fact that from 2 per cent. to 5 per cent. is the frequent average of tuberculous milks. The tuberculous milk is more frequently milk brought into the city from the country and is obtained from cows in shippons which cannot be inspected by the city authorities. Lord VERNON'S example is therefore of great service to other producers and helps further to protect the consumers in the large towns.

IN a communication from a correspondent published in THE LANCET of Sept. 24th, p. 819, a most important question is raised — the possibility of making arrangements for the appointment of an expert or experts who would be available to carry on examinations of material from suspected cases of infectious disease specially with

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a view to afford aid in diagnosis. The necessity for such arrangements being made in connexion with the maintenance of the health of a city like London has long been demonstrated, but the best method of carrying them out has still to be carefully considered. The value of well-equipped and well-manned laboratories has now been most fully recognised in New York, where Dr. SHERMAN BIGGS, the director, has at his command a staff of scientific workers who might well bring credit to any institution. He also has such a laboratory and clerical staff that he is enabled to leave his scientific workers free to carry on their special duties and at the same time to keep record of, and make public in a readily accessible form, the results of the investigations carried on. He is enabled to do all this because he has a free hand and is well supplied with the sinews of war—a sum of nearly £20,000 passing annually into, and out of, the coffers of the laboratory department. How much can be done on a small scale has already been demonstrated in this country, where the Clinical Research Association has afforded very great assistance to private practitioners, whilst to vestry and district boards and the Metropolitan Asylums Board the British Institute of Preventive Medicine and the laboratories of the Royal Colleges of Physicians of London and Surgeons of England have done work the value of which can at present be very inadequately estimated. In Manchester Professor DELÉPINE, working in conjunction with Dr. NIVEN, has organised in the Owens College a system of laboratory investigation which promises to effect a complete transformation in the character of the work of the Health Department in the Manchester district. Liverpool in the same way now utilises the services of Professor BOYCE and his staff, with the result that the medical officer of health, Dr. HOPE, has always at his disposal the best bacteriological and pathological advice to be obtained. In this matter Manchester and Liverpool have followed the lead of such cities as Paris, Berlin, and Lille, where there appears to be a definite arrangement between the municipal authorities and the great pathological and bacteriological institutes by which the former obtain the benefit of the use of the laboratories and workers in the institutes and the latter receive substantial subsidies through the aid of which they are enabled to become vastly more efficient than they could otherwise hope to be.

It would be well that all these various plans should be carefully considered before any step is taken or any scheme put forward which is not based, first, on the needs of the city as a whole, and second, on the feasibility of its adoption and carrying out. The first point at present requires little consideration. The work to be undertaken is already of such magnitude, both as to quantity and character, that search for it is absolutely unnecessary. The second point, however, is one which requires more careful consideration and it is well that it should be taken up at once, as no more favourable opportunity could have arisen.

One important aspect of the matter to be carefully considered is that there are in London at the present time two large institutions, built and supported at considerable cost, in which, were funds at the disposal of the managers, the whole work of a central department could be carried out at an earlier date, more efficiently, and at probably half the cost to the ratepayers, than were an entirely new laboratory to be erected. It is possible that one or both of these institutions may be included in any complete scheme which is adopted by the London University Commissioners, so that ere long they would be in touch with a body on which the London County Council will, if a forecast may be made, be represented. These two institutions—the laboratories of the Royal Colleges of Physicians of London and Surgeons of England on the Victoria Embankment and the British Institute of Preventive Medicine at Chelsea—are, we believe, both well equipped for the carrying on of such work as that referred to in our correspondent's communication and, so far at least as the funds at their disposal have enabled them, have for some years been engaged in carrying on some of the work elsewhere undertaken by public laboratories. At present the only obstacle to the carrying out of the whole programme outlined in our columns is that there are not sufficient funds at the disposal of the managing authorities for the payment of such a staff as would be required, which could only be collected slowly and educated as found necessary. At both places there is already the nucleus of such a staff, a nucleus which could readily be added to as occasion might demand.

In a movement of this kind it would be a grave mistake if the main aim of the foundation of such a central department were lost sight of and money were frittered away on any scheme which might in time become obsolete. It should be understood from the outset that no laboratory in which mere diagnostic work is undertaken could have the slightest chance of permanently fulfilling the functions required of it. That being the case, it is obvious that the staff must be so large that those engaged in doing the diagnostic and other routine work should have time and opportunity for carrying on original scientific work by means of which they may not only keep abreast of what is going on around them, but have the opportunity of utilising the wealth of material which would be focussed in such a department and of giving forth the results of their investigations for public use. Without the stimulus of original investigation there will always be a tendency for anyone carrying out merely diagnostic work to fall into routine methods and to become a mere drudge whose assistance, though sufficient for the immediate end in view, must inevitably become less and less efficient as time goes on and new discoveries are made. It is an almost universal experience that routine scientific work soon loses its character unless the stimulus of one of two occupations be constantly applied. The first of these, teaching, the delight of some men, is little more than boredom to others, whose bent is rather towards original investigation, but a combination of men who, in addition to conducting teaching or research work, should be called upon to supervise diagnostic work and investigate complicated pathological and bacteriological problems would result in the carrying on of an ideal work in this great city of ours.

It must be borne in mind that the work of a laboratory of this kind would in the course of a few years cover an enormously greater extent of ground than it at present does and that the tendency would be for more and more problems to be brought there for examination and solution, whilst the amount of routine work would probably increase

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at an even greater rate than that of a more complicated nature. Consequently any plan at present adopted would have to be of such a plastic and elastic form that under proper guidance it might be moulded or expanded to meet all requirements as they arise. Matters stand, then, much in the following position. There is need for a great central department for the investigation of pathological and bacteriological problems and for assisting medical men in diagnosis by microscopical and cultural methods. Such a department must obviously be in addition to smaller local laboratories, where much of the routine work which requires little special experience may be carried on by men who wish to acquire facility in any diagnostic methods before they commence their final clinical work, in order that such methods may gradually become part of their clinical "outfit." This department must be placed on such foundations and constructed on such a plan that there shall be ample room for later expansion.

The basis of such a department already exists in the buildings and "skeleton" staffs of the laboratories of the Royal Colleges of Physicians of London and Surgeons of England and the British (or Jenner) Institute of Preventive Medicine, which between them could certainly supply all the laboratory room necessary for carrying on (*a*) diagnostic, (*b*) experimental, and (*c*) teaching of training work requisite for the ultimate success of a central department. There would be the great advantage that the work could be commenced at a very early date after the necessary arrangements as to control, management, staffing, &c., had been made. The initial or capital outlay might be looked upon as likely to be very small indeed, whilst an annual outlay of a comparatively small sum would in the first instance ensure such additions to the present staffs as would be ample for existing needs, and only as the needs became greater and the system developed on natural and demonstrably useful lines would greater outlay be called for.

One of the great obstacles to the carrying on of systematic investigation is the difficulty which exists in obtaining sufficient funds for the payment of capable workers. The result is that splendidly equipped laboratories have to depend in great measure for their utilisation on what may be called volunteer workers, men who have all the devotion and enthusiasm necessary to become good workers and who carry to successful conclusion many most valuable investigations, but who are hampered in so doing by the fact that having a living to earn they cannot devote their whole time and undivided energy to the kind of work involved in these researches. Under some central and controlled scheme, taking in the two large laboratories above mentioned and others as might be deemed necessary, this obstacle could be easily and finally removed. Men could give half their time to carrying out routine work of examination and diagnosis and would be able with the pay received for that work to devote the remainder of their time to teaching or to scientific investigation or both, by means of which they would keep themselves well up to date and thoroughly efficient.

The present seems to be an opportunity not to be lightly thrown aside, and it is to be hoped that the example set by Edinburgh, Manchester, and Liverpool will not only be followed but improved upon, and that the facilities for carrying on work already in existence may be utilised in a greatly extended form. An annual subsidy under certain control and conditions, divided by arrangement and set apart for the payment of expenses and salaries incurred for the carrying on of diagnostic work, would not only enable such work to be done, but would also increase in a most marked degree the efficiency of the functions for the performance of which these laboratories were originally designed, and all this at a cost which, compared with the equipment and staffing of new laboratories, would at first be little more than nominal to the bodies interested in this new movement. The gain to the health authorities on the one hand and the benefit to science on the other would, we believe, be simply incalculable. London has moved late and slowly in this matter. It is to be hoped that now the movement will be well directed and thoroughly effective.

WE publish in another column the gist of an address by Dr. J. C. MCVAIL, the medical officer of health of Glasgow, which he delivered as President of a Conference of Medical Officers of Health held in Birmingham on Wednesday last in connexion with the annual meeting of the Sanitary Institute. Dr. MCVAIL chose for the opportune subject of his remarks "The Medical Profession and the State: their Relationship, especially with regard to Vaccinal Legislation," and dealt with his theme in the well-informed, lucid, and bright manner which he has accustomed us to expect from him. In addressing an audience of medical officers of health over 1000 of whom have recently testified by signed declaration their conviction that vaccination and revaccination prevent and control small-pox and that small-pox cannot be effectually prevented and controlled without these means it need hardly be said that the speaker was not obliged to waste time in urging the value of the procedure. Nor did he consider himself called upon to criticise in any detail the merits or demerits of the new Vaccination Act. This Act has no mention of revaccination, an omission which must to some extent condemn it in the minds of the authors of the representation affirming the enormous protective value of revaccination. But Dr. MCVAIL judiciously refused to condemn the Act either because of this omission or because of the abolition of the compulsory element. On the contrary, he warned his hearers against making up their minds too speedily as to what the outcome of the new legislation will be, and this, we think, was wise advice. It must be remembered that under the old system vaccination had come to be, as Dr. MCVAIL happily styled it, "a matter of local option," while it is within the knowledge of all medical men that where the feelings of the community went against the treatment no real pressure was brought to bear against the individual who broke the law. The law was to an appreciable extent in abeyance when Mr. CHAPLIN'S Act was passed, for in many districts the boards of guardians to whom the starting of punitive proceedings had been entrusted under the old law declined to take any step. But under the new Act the Local Government Board may be expected to see that the letter of the law is complied with and that parents who desire to avail themselves of their new right to withhold their children from vaccination do so only

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in accordance with prescribed form. "In fact," says Dr. MCVAIL, "individual option will take the place of local option," and we agree with him in thinking that it would be rash to prophesy that under the new system the vaccination default will be any greater than it was under the old. Certain vulgar inducements to keep children back from vaccination are now wanting, and with the present lack of opportunity to snatch a cheap martyr's crown will come a decrease in the number of persons who resist vaccination unthinkingly and at the expense of their infants' lives for the sake of what they can get out of their pose as the victims of oppression. That most conscientious thinkers will range themselves for the future, as they have done in the past, on the side of medical opinion, is certain; but it is also probable that a large proportion of the community who have hitherto allowed themselves to be led by false prophets will now pause, think, and return to the fold. The absurd statements made recently by "conscientious objectors," on which we comment immediately below, cannot fail to reveal the position of the average anti-vaccinationist as somewhat absurd.

THE conscientious objector has passed from the purview of the Legislature into that of the magistracy, and the rapidity with which he has been hustled from the high court of Parliament into the humbler law courts has caused him to arrive there in a somewhat dishevelled and nondescript condition. So insufficiently, indeed, was he described and labelled before being despatched that there has been some difficulty in recognising him on his arrival, and in various instances the bench, denying his right to use the name which he claims for himself, has sent him away uncertified and dissatisfied. At Lambeth Court he declared his objection to be that vaccination is unnecessary and inefficient; but he added that he would be quite willing to have his child vaccinated if he believed in the efficacy of the operation. The magistrate refused to accept this and told the man to go home and make further inquiry. The same advice was given to a North Londoner who "had heard" that calf lymph sometimes develops consumption. The magistrate here adopted the Socratic method, thus: "Mr. MEAD: What do you do when you are ill? Applicant: Go to a doctor.—Mr. MEAD: Why do not you cure yourself? Because the doctor is skilled in his profession.—Mr. MEAD: If you have confidence in the medical man in one case, why not in another? You had better go away and reconsider the matter." Another applicant averred that he himself had been vaccinated half-a-dozen times, but only once successfully, and though he would not allege that this had done him any harm he complained, "It put me to a lot of trouble." This man also was sent away empty-handed.

Sometimes the objections have been of a religious nature. One man argued at Greenwich "that the child is made in the image and likeness of GOD" and that "it was not meant that GOD'S skin should be cut about." An amateur theologian of Birmingham declared that "if it were necessary for man to be inoculated by beast" the Creator would have done it before the child was born. The magistrate's clerk held that this man might as well expect the Creator to provide him with pocket-handkerchiefs. In the end, however, the required exemption was granted. These objectors belong to the class who opposed small-pox inoculation in Lady MONTAGU'S time on the ground that it tended to "banish Providence out of the world," and to the early opponents of vaccination who held that JENNER'S scheme was "perhaps a daring violation of our holy religion" and that "it was impious and profane to wrest out of the hands of the Almighty the Divine dispensations of Providence," small-pox itself being "a merciful provision on the part of Providence to lessen the burthen of a poor man's family."

At Hampstead the guardians' clerk was himself an objector and here the magistrate—Sir HENRY HARBEN—felt so much difficulty that instead of certifying "We are satisfied that he has such conscientious belief," all the length he would go was "We have no reason to doubt." The applicant then betook himself to the guardians whose clerk he is and requested them to obtain at the public cost counsel's opinion as to the validity of the certificate. His request was not granted and, according to the newspaper reports, the chairman remarked that "if anyone wanted encouragement for a series of fads in the parish he had only to point to the action of their clerk." Perhaps the most reasonable of the objectors was one who declared before Mr. SHEIL, "Well, sir, I lost one child, I thoroughly believe, through vaccination, and I do not wish to run the risk with a second child, not a very strong baby." Mistaken as this parent in all probability was, yet his declaration might well be classed as conscientious. In some other cases a vague general statement that vaccination has a prejudicial effect upon health was accepted as sufficient. There is no doubt that magistrates have been placed in considerable difficulty by the want of definition of the phrase "conscientious objection" in the new Act and by the duty which is laid upon them of "satisfying" themselves that there is conscientious objection. One point which seems to be agreed on by the London magistrates is that testimony upon oath is unnecessary. That is surely unfortunate, as a declaration relating to the health and life of a human being should be made with all the seriousness and solemnity which the forms of the law can provide. The fee of a shilling which is to be charged for a certificate will, we expect, be denounced as the indirect imposition of a fine, but it should be useful in so far as it may act as a deterrent to some who might otherwise be objectors, and if there is anything in this view it indicates how small a part conscience may play in the matter.

In the absence of definition it is likely that magistrates will attach more and more importance to the fact that a man is willing to lose half a day's work in order to get rid of the need for procuring the vaccination of his child. In that case a decision by Mr. MEAD at the Thames court is of very considerable practical importance. The mother of the child applied for a certificate of exemption. Mr. MEAD asked if she had a husband and the reply was, "Yes; but he can't lose a day's work to come here. It makes no difference whether he or I come," to which Mr. MEAD answered, "Yes, it does. If I give a certificate it must be to the responsible guardian of the child." This is as it ought to be, and we trust that every bench of

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magistrates will follow Mr. MEAD'S clear-headed example. It is, of course, much too early to attempt to form any definite opinion as to the effects of the new law or the extent to which recourse will be had to the conscience clause. The action of those boards of guardians which, owing to the want of a conscience clause, have of late refused to administer the Act will be watched with special interest, but some time must elapse before the boards all over the country can be expected to elaborate the details of their procedure under the new system.

Annotations.

"Ne quid nimis."

SOME POINTS IN THE LONDON WATER-SUPPLY.

IT is possible that the present distress occasioned in the North-east areas of the metropolis by the unprecedented drought will do more towards hastening a better state of things in regard to London's future water-supply, its quality, quantity, and administration, than any other event could possibly have done. This is not the first time that the portion of the population of London which is now suffering from a scanty water-supply has been placed in the trying situation in which it finds itself. The Lee as a source of supply has failed under conditions which it must be admitted are exceptional, but it has failed before under less trying circumstances and no margin can be allowed on the question of providing life's first necessity. It remains to be considered whether, taking the sources of supply as a whole, the London watershed can be regarded under all conditions as adequate to the needs of a rapidly growing population. It is said that the other large water companies are not feeling so far any serious effects as a result of the drought, for some of them have enough water to spare, it appears, to relieve the shortage of the East London Waterworks Company. It seems clear, however, that up to the time of the present distress there was practically no provision made by which the mains of one company could be connected with those of another. As will be seen by reference to our Special Commissioner's articles, the East London Waterworks Company has two connexions with the mains of the Grand Junction Company, which company has also a connexion with the Southwark and Vauxhall Company. Recently a main was completed which joined the Kent system with the East London system and further, a junction has been made with the Southwark and Vauxhall Company through the Tower Bridge subway, which together will yield an auxiliary supply of 6,250,000 gallons per day. Other direct means of adding to the supply do not appear feasible, but the West Middlesex Company may join their mains with those of the Grand Junction Company, which will maintain the supply thus indirectly to the East London Company. This, according to Mr. Chaplin, will give an additional million gallons of water, but the connexion cannot be effected for some weeks yet to come. Thus it is estimated that a deficiency of 15 millions of gallons will be partly met by some 12 millions of gallons from these supplementary sources. Mr. Chaplin's comprehensive reply to a deputation representing the districts supplied by the East London Company on Sept. 24th may be taken almost as a declaration of policy, affording, we think, a glimpse at any rate of the attitude which the Government may be expected to adopt in relation to the entire question. He seemed to foreshadow the creation of a central administrative body. He was not content to restrict himself to the water famine in the East-end, for he touched also with no uncertain sound upon the greater questions of new administration, of municipal purchase, and of the scope of the Royal Commission presided over by Lord Llandaff and the probability of the Government dealing promptly and decisively with the matter. It will be admitted that Mr. Chaplin's review of the situation in the East-end of London was perfectly correct. The East London water-supply, he said, had failed on account of an abnormally low rainfall. In other words, the Lee is not equal to the demands of the two great water companies, and the New River Company drawing on the upper reaches of the river has so depleted it as to leave little to flow to the intakes of the East London Company in the lower reaches. The New River Company also derives a large supply of water from wells, upon which, however, the drought is having a very serious effect, so that it may not be convenient to them to sell water to another company for an indefinite period. The minor wells in the neighbourhood have practically disappeared as a source of local supply. This fact introduces a very important element into the question of London water-supply. Those living in the area immediately outside London not unreasonably contend that they should have a voice in the matter relative to the management of the supply, which could not be the case if the new administrative body were composed exclusively of representatives of the London County Council. The deputation urged upon Mr. Chaplin to convene an autumn session of Parliament in order to give the subject full discussion while the present situation was fresh in everybody's mind, but Mr. Chaplin expressed the opinion that an autumn session would be futile, while it should be remembered that the Government was waiting for the results of a practical Commission of Inquiry, that being now held by Lord Llandaff. Putting aside the great questions of policy in the matter of purchase and control it is obvious, we think, that the first step which legislation must take will be the establishment of a system by which the mains of all the different water companies in London could be instantly connected in the event of emergency at any one point. This cannot be a matter involving any large scheme of engineering, and if what has already been done had been done sooner, it would have saved the East-end of London from much hardship and distress. Upon this very important point, to which Mr. Chaplin so emphatically referred, the recent inquiry undertaken by ourselves as to the machinery, plant, and distributing services of the London water companies[1] should afford information of a very pertinent character.

SCHOOL BOARDS AND THEIR MEDICAL OFFICERS.

THE Halifax School Board had a meeting on Sept. 19th when the following report of the committee regarding the duties and remuneration of the medical officer was presented:—

"Reporting as to the duties of the medical officer to be appointed by the board the board in committee recommended that they should be as follows:—'(1) To examine when required by the board or the school attendance committee children who are said to be physically unfit to attend school and all children whom it is proposed to send to the "special" classes, and to make out certificates; (2) to examine probationers and candidates for pupil teachership, also pupil teachers at the end of the second year of their apprenticeship, and to make out the certificates required by the Education Department; (3) to visit and report in writing when required by the board or any of its standing committees on any employé who is absent from

[1] THE LANCET Special Commission on the Metropolitan Water-supply: THE LANCET, vol. i., 1897, passim.

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duty on account of illness; (4) to examine candidates for employment under the board or employés when required by the board or any of its standing committees, and to make out certificates; (5) to examine and report upon cases of blind and deaf children when required and to make out certificates; (6) to visit each department not less than once every three months, or oftener if required, and report in writing on any sanitary defect of the premises to which his attention may be called and on the general health of the scholars; (7) at such periodical visits to examine and test the eyesight, hearing, or other physical condition of any scholar to whom attention may be called by the head teacher.' It was further agreed, 'That the remuneration for the foregoing duties be 75 guineas per annum, the engagement with the board to be for a period of one year.'"

The Rev. Father Quinlan moved, and Mr. Robertshaw seconded, the adoption of these proposals. Mr. Bates moved as an amendment that the salary should only be 50 guineas, and Mr. Braithwaite seconded. The Rev. Father Quinlan said that he did not consider the appointment of medical officer necessary. If, however, they were going to have one he personally would give him a much bigger salary than 75 guineas. Eventually 5 members voted for the motion and 5 for the amendment and the chairman gave his casting vote for the amendment. Another amendment was then moved to refer the matter back to the next meeting of the board and this was carried. Considering the amount of duties the medical officer may be required to do 75 guineas is none too much; in fact, we consider it quite inadequate. The sum proposed is somewhat less than the remuneration of a butler, but, of course, the care of other people's children is a less onerous and responsible office than the care of another person's plate and wine. The population of Halifax is in round numbers 90,000, so we suppose there are about some 9000 children in its Board schools, judging from the case of London, which has 500,000 children out of a population of 5,000,000. Besides looking after the children the medical officer will also have to inspect sundry pupil teachers. If the Halifax board is going to pay at all let it give a decent salary; otherwise let it frankly ask candidates to come forward for the honour and glory of the post.

THE MEXICAN PELVIS.

IN the June number of the *Chronica Medica Mexicana* Dr. Juan Duque de Estrada describes what he believes to be a previously unrecorded variety of contracted pelvis. The patient, a Mexican girl, sixteen years old, was delivered with great difficulty by perforation of the aftercoming head, the child having presented by the breech and the head being completely arrested above the brim of the pelvis. On examination the pelvis presents two striking peculiarities—complete ankylosis of the left sacro-iliac articulation and of the symphysis pubis. The bones of the pelvis as a whole are mal-developed and all the diameters except the antero-posterior of the outlet are markedly diminished. The left iliac fossa is smaller than the right and the left ilium is completely ankylosed to the atrophied left wing of the sacrum. The left ilio-pectineal line is too curved posteriorly, while anteriorly it is too straight and with the whole of the left wall of the pelvis appears to be pushed over to the right by the pressure of the left femur. The two halves of the pubes are completely ankylosed, only a slight trace of the line of the joint being visible upon the anterior surface. The symphysis pubis is directed forward in a keel-like manner and deviates to the right of the middle line. The right sacro-iliac articulation and the right iliac fossa are normal. The right ilio-pectineal line posteriorly is less curved than normal and anteriorly resembles the left in being almost straight. The asymmetry of the sacrum is very striking, the left half, markedly atrophied, is less than half the size of the right half. The whole bone appears to be rotated about both a vertical and an antero-posterior axis, so that the anterior surface looks to the left while the upper surface of the atrophied left wing is some millimetres higher than the upper surface of the right wing. The result of the abnormal curvature of the two ilio-pectineal lines and the flattening of their anterior extremities, together with the deviation of the anterior surface of the sacrum, is to give the inlet of the pelvis an obliquely triangular form. The left pelvic wall is pushed in towards the middle line, so that the left ischial spine and the left ischial tuberosity project inward to a greater extent than normal. The same condition, though less marked, is present upon the right side, so that the transverse diameters of both the cavity and the outlet of the pelvis are diminished. The subpubic arch forms an angle of 52°. The sacrum is not only rotated upon a vertical and antero-posterior axis, but also upon a transverse axis, so that the antero-posterior diameter of the outlet is increased by the deviation backwards of the lower end of the sacrum and coccyx. The pelvis resembles a Naegelé oblique pelvis in the ankylosis of the left sacro-iliac joint, the atrophy of the left wing of the sacrum, the deviation of the sacrum to the affected side and of the symphysis pubis to the sound side, the flattening of the left pelvic wall and the inward projection of the left ischial spine and the left ischial tuberosity. The same conditions, however, though to a less extent, exist upon the opposite side: thus there are some want of development in the sacrum, some flattening of the pelvic wall and some undue prominence of the ischial spine and ischial tuberosity, and these facts show that the diminution in the diameters is not due to a change affecting one side of the pelvis alone but to changes affecting both sides. While in many of its characters the pelvis undoubtedly resembles that of Naegelé it differs from it in the projecting keel-like form of the symphysis pubis, in the slight separation of the two ischial tuberosities and the consequent shortening of the transverse diameters, and in the smallness of the subpubic angle. In these it approaches the type of the transversely contracted pelvis of Robert. Dr. Juan Duque de Estrada thinks that the latter characters are sufficiently marked to show that it is not merely a Naegelé oblique pelvis modified by the ankylosis of the symphysis pubis, but that it represents a type of pelvis midway between that of Naegelé and that of Robert, for which he proposes the name of the "Mexican pelvis." The occurrence of bony ankylosis between the two halves of the pubes is an exceedingly rare event, and even in those cases where from the difficulty experienced in dividing the joint in the operation of symphysiotomy it has been diagnosed as present it is a little doubtful whether the difficulty was not due rather to deviation of the line of the joint than to bony ankylosis.

LUMINOUS SUGAR.

THERE are phenomena attending the formation of crystals which are apparently quite distinct from chemical action. When, for example, a hot saturated solution of arsenious acid is allowed to cool the act of crystallisation is accompanied by a flash of light. As each crystal forms there is a short sharp glow indicating the release of a certain amount of latent energy in the form of light radiation. A related phenomenon would seem to be the case when two pieces of cane sugar are quickly rubbed together. The flash is perfectly distinct and bluish-white in colour, the light extending into the substance itself far below the surface. Some interesting experiments on this manifestation have recently been made by Mr. John Burke, M.A., the results of which were communicated to the recent meeting of the British Association

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of Science at Bristol. By mounting discs of loaf sugar on a lathe and projecting a hammer on the rotating surface an almost continuous luminosity was obtained. The wearing away of the sugar is compensated for by arranging a gradual approach of the piece to the hammer in exact accordance with the amount of sugar scraped away. In this way the spectrum has been observed and photographed. From these observations it would appear that the luminosity cannot be due to the particles of sugar becoming red hot or white hot by the impacts, the indication being that the light produced is due either to some change in the configuration of the crystals of sugar or to some sort of chemical action set up between the sugar and the surrounding air at the freshly formed surface. The fact, however, that the surrounding medium does not seem to affect either the colour or intensity of the luminosity suggests that the effect is not due to any influence of a chemical nature of the surrounding medium on the sugar, but favours the former hypothesis that the luminosity is due to some structural disturbance in the sugar itself. This ingenious and pretty study is being pursued further and the results should lead to some interesting observations. Light is so often a manifestation of physical change that it is probable some day we shall derive it for illuminating purposes in a totally different, much simpler, and less clumsy way than obtains at present.

EGYPTIAN VITAL STATISTICS.

DR. ENGEL BEY, the head of the statistical branch of the Egyptian Sanitary Department, has published the second part of a *résumé* of his weekly bulletins for the quinquennial period 1886–90. The first part, which appeared in 1895, was devoted exclusively to climate, but in his present work he deals mainly with births and deaths, his purview, however, being limited to nineteen of the principal towns of Lower Egypt. Vital statistics in Egypt may be said to be still in their infancy, having been born, so to speak, in 1886, when Dr. Engel first undertook the onerous task which he has so strenuously endeavoured to carry on in the face of countless more or less unavoidable difficulties. It is true that in the time of Clot Bey a system of registration was introduced which in theory was admirably comprehensive, but practically the results could never be depended on owing to the ignorance and corruption of the native officials and also to the absence of a trustworthy census. The latter defect was remedied last year, and now that the Soudan question has been so triumphantly resolved it is to be hoped that funds may be forthcoming to establish the vital statistics of the entire country on an assured basis.

A NOTIFICATION ANOMALY.

FEW provisions of the Public Health Acts afford a better illustration of the oversight of Parliamentary criticism than is presented by that portion of Section 55 (1) (*b*) of the Public Health (London) Act, 1891, which enacts that "when the certificate refers to the inmate of a hospital it shall specify the place from which and the date at which the inmate was brought to the hospital, and shall be sent to the medical officer of health of the district in which the said place is situate." Now, the effect of this provision as to the destination of the certificate is that, although the patient may have been in the hospital in question for even six months or more, when the notifiable condition develops, the medical officer of health of the district in which the hospital is situated must remain in ignorance of the case while the medical officer of health of the place from which the subject was brought, perhaps a year previously, receives the certificate. In other words, if an outbreak of typhus fever occurred in a London hospital amongst patients brought from a distance, the medical officer of health of the district containing the hospital might, in so far as legal obligations go, be unaware of the occurrence. The remedy for this state of affairs is obviously simple, and consists in having a certificate forwarded to each of the medical officers of health who might be concerned, or by leaving it open to the notifying medical man to send the certificate to whichever source he regards the evidence as indicating. Or, again, a certain limit of time might be fixed—say a month—during which a certificate should be dispatched to each district concerned, whereas after the lapse of that interval all certificates should go to the medical officer of health of the district in which the hospital is situated.

THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THIS society has secured considerably extended accommodation for its members in the new wing of the West London Hospital through the kindness of the authorities. Its membership of over 500 produced such a large attendance during the last year that the board-room of the hospital was wholly inadequate. The first meeting of the winter session 1898–99 will be held on Friday, Oct. 7th, at 8.30 P.M., when the President, Dr. S. D. Clippingdale, will deliver his opening address on "Some Considerations of the Life and Work of a General Practitioner."

THE PLAGUE IN INDIA.

THE plague seems to be widely spread in India, and the latest accounts from Bombay show an increase in the total mortality in that city for the week ending Sept. 10th, as well as a slightly increased death-rate from plague over that of the previous week. It has been felt that no system of quarantine and severely restrictive measures for the repression of plague could be carried on for years without inflicting grave hardship on the population and bringing about disastrous commercial consequences. The Government have therefore decided to make certain changes in the regulations with reference to railway travelling. Detention camps and passes will be discontinued, and a strict medical examination accompanied by disinfection of clothing will be instituted at convenient centres and at places of arrival. Persons coming from infected localities will be subject to surveillance for ten days after arrival. Further details from our Special Correspondent will be found in another column

THE USE OF TOXINS IN INOPERABLE SARCOMA.

DR. WILLIAM B. COLEY, of New York, has lately read a paper before the American Medical Association in Denver on the Treatment of Inoperable Sarcoma with the mixed toxins of Erysipelas and Bacillus Prodigiosus, with the immediate and final results in 140 cases. An abstract of the paper is given in the *Medical Record* of New York of August 27th and is worthy the attention of surgeons. He says: "No one could possibly witness a number of hopelessly far advanced inoperable sarcomata, the diagnosis of which had been confirmed by the most skilled pathologists, entirely disappear under injection of these toxins without being convinced that there is something of value in them. The successful cases which have now remained well beyond three years more than offset the many failures." He does not recommend the treatment in cases amenable to operation "unless it be in a few cases in which a brief period of treatment was advised with the idea of avoiding amputation of a limb." He thinks it advisable to try to save a limb if the tumour be in the soft parts and especially if spindle-celled. He gives a case which excites hope and justifies the treatment—that of a patient, now well for nearly two and a

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half years, with rapidly recurrent spindle-celled sarcoma of the right hand in which amputation would have been performed had not the growth disappeared under the injections. He gives the following summary of results: "Well over three years, 8 cases; well from one to three years, 9 cases; well from six months to one year, 4 cases; recovered after having once disappeared, 4 cases; 2 of these patients died, 2 are still living in good health after further treatment." He has collected from published reports and personal communications from other surgeons 35 cases of inoperable sarcoma in which the tumour completely or very nearly disappeared as a result of this treatment. The chief dangers of it are too large a dose of the toxins and pyæmia from insufficient precautions as regards asepsis.

THE GUILD OF ST. BARNABAS.

THE objects of the above guild are the encouragement of a high ideal of faith and practice amongst students of medicine who are members of the Church of England. The guild services are open to all medical students. Further information may be had on application to the honorary secretary, Mr. B. E. G. Bailey, 14, Woburn-square, W.C. We are asked to give publicity to the following. There are monthly guild services in the North-West Chapel, St. Paul's Cathedral (entrance by west door), at 6.15 P.M. on the first Wednesday of every month—namely, on Oct. 5th, Nov. 2nd, and Dec. 7th. Tea in the Chapter House (north side of Cathedral) at 5.45 P.M. Sessional Corporate Communion in the Jesus Chapel, St. Paul's Cathedral (entrance by small south-east door), at 7.30 A.M. on Thursday, Oct. 6th. The chaplain of the guild is the Rev. Canon Newbolt.

COMBINATION HOSPITALS FOR INFECTIOUS DISEASES.

ALTHOUGH sanitary authorities, such as urban and rural district councils, may combine together under the Isolation Hospitals Act of 1893 very few authorities have availed themselves of the opportunity. When a number of authorities do so it is gratifying to record such a step which is in the direction of progress in the prevention of infectious disease. Chorley Corporation and Chorley Rural District Council, at the suggestion of Dr. Harris, medical officer of health of both bodies, have combined with Adlington and Leyland District Councils to build a joint hospital for infectious diseases, and the foundation-stone was laid recently at Heath Charnock, Lancashire. The hospital will be under the control of the Chorley Joint Hospital Board which will consist of representatives of the four authorities mentioned. The plan of the hospital is on the pavilion system, three of the pavilions being for the accommodation of patients; besides these there will be one block for administrative purposes and another for laundry, electric lighting supply, disinfecting rooms, harness and van rooms, &c. The blocks will be 50 ft. apart. The infectious diseases provided for are diphtheria, scarlet fever, and enteric fever. The diphtheria block will contain 4 wards, 8 beds, and 2 nurses' rooms; the scarlet fever pavilion will have 2 wards, 16 beds, and a nurse's room; and the enteric fever block will comprise 2 wards, 12 beds, and a nurse's room—a total of 36 beds and 4 nurses' rooms. The contract for the building is £10,000, the total cost of the whole buildings to be erected being £17,000. This joint hospital is to make provision for a population of 50,240, according to the last census in 1891, a total acreage of 48,445 acres and a rateable value of £272,559. 24 townships are to participate in the benefits of this hospital. We congratulate Dr. Harris, the medical officer of health of Chorley and Chorley Rural District Council, upon his perseverance in recommending the authorities to combine and provide a suitable hospital for infectious cases. His recommendations were first made in 1892, and now, six years after, he has the pleasure of seeing a commencement of the necessary work. We regret, however, that the accommodation is not greater, but probably this can be easily remedied afterwards. 16 beds for scarlet fever and 12 for enteric fever in a population of over 50,000 is not sufficient; 1 bed per 1000 has been found to be quite little enough for isolation purposes, but no doubt these pavilions will be built so as to admit of their enlargement in the future. We trust that other district councils will follow this example.

THE HEALTH OF THE PRINCE OF WALES.

IN the letter from our Paris correspondent which we publish this week will be found some criticism from the pen of Dr. Lucas Championnière with regard to the treatment of the Prince of Wales's fractured patella. We need not comment on this criticism, but are glad to be able to say, on the authority of Sir William MacCormac, who has just returned from visiting His Royal Highness at Mar Lodge, Braemar, that His Royal Highness is progressing most favourably both as regards his general health and the local injury.

LONDON POST-GRADUATE COURSE.

THE winter term of the above course will commence on Monday, Oct. 10th. Courses of lectures and demonstrations will be given on Skin Diseases (Hospital for Diseases of the Skin, Stamford-street, Blackfriars), on Mental Diseases (Bethlem), on Diseases of the Throat, Nose, and Ear (London Throat Hospital), on Bacteriology (King's College), on Public Health (Parkes Museum), and on General Medicine and Surgery (Cleveland-street). All the classes can be taken out or a portion of them. The fees are from £1 1*s.* to £3 3*s.* It is hoped that the work of the course will be merged in that of the Medical Graduates' College, which it is expected will be opened early in the new year. Particulars can be obtained from, and fees paid to, the secretary, Dr. Fletcher Little, 32, Harley-street, W.

PTOMAINE POISONING.

AT this period of the year symptoms of ptomaine poisoning after the consumption of decomposing meat are by no means infrequent and we have more than once drawn attention to the uncertainty with which meat containing these poisons can be detected, and also to the fact that if several people eat portions of the same joint some may be seriously affected while others escape completely. On Sept. 16th Mr. Walter Schröder, the deputy coroner for Mid-Surrey, concluded an inquiry concerning the deaths of two people, a cook and a nurse employed in the same household. The women died on August 23rd and 27th respectively from the effects of ptomaine poisoning. A local butcher had supplied to the family a tongue and some lamb. All the members of the household, including a visitor, were in good health until August 19th. On the morning of that day the lamb was cooked for lunch and partaken of by eight people. Later in the day all were taken ill and two of the cases proved fatal. After the sickness had occurred the tongue, which had been purchased on the 10th, was found to be "putrid and maggoty." The lamb, before being cooked, had been put in the same larder but not in close proximity to the tongue. After hearing evidence the jury found "that the deceased died from exhaustion and gastro-enteritis consequent upon ptomaine poisoning due to a joint of lamb eaten by them on August 19th, that the contagion was due to the presence of a portion of an ox-tongue in the larder in a putrid state, and that the said deaths were the result of misadventure, nobody being to blame." 4 gr. to 5 gr. of a ptomaine were

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found in the viscera of the deceased and the analyst expressed the opinion that the lamb had become contaminated through being put in the larder with the tongue and it was highly probable that the contagion was conveyed from one to the other by flies. This suggests a startling possibility and may throw considerable light on the exceedingly toxic character of meat which otherwise to taste and smell and by other evidence appears perfectly wholesome. Flies should always be rigorously kept out of the larder and meat stores because there is never any certainty as to the character of the last place of their alightment. The adoption of gauze safes and covers is therefore a wise precaution.

ANNUAL DINNERS OF THE MEDICAL SCHOOLS.

IN addition to the list we have already published—see THE LANCET of Sept. 10th, p. 706—we wish to announce that the annual dinner of the St. George's Hospital Medical School will be held to-day (Saturday, Oct. 1st) at the Whitehall Rooms of the Hôtel Métropole at 7 30 P.M., under the chairmanship of Mr. Timothy Holmes, Treasurer of, and Consulting Surgeon to, the Hospital; that of King's College Hospital Medical School at Limmer's Hotel on Monday, Oct. 3rd, at 6.30 for 7 P.M., Mr. Boyce Barrow in the chair; and that of Westminster Hospital Medical School also on Oct. 3rd, at the Holborn Restaurant, at 7.30 P.M., Sir G. S. Robertson, K.C.S.I., in the chair.

THE SIXTH INTERNATIONAL OTOLOGICAL CONGRESS.

THE Sixth International Otological Congress will be held in London on August 8th, 9th, 10th, 11th, and 12th, 1899. President, Dr. Urban Pritchard, Professor of Otology at King's College, London. The meetings will, by permission, be held at the Examination Hall of the Royal Colleges of Physicians and Surgeons, Victoria Embankment. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media." A large and influential British organisation committee has been formed, the treasurer being Mr. A. E. Cumberbatch, 80, Portland-place, London, W., and the honorary secretary, Mr. Cresswell Baber, 46, Brunswick-square, Brighton. The International Otological Congress, which assembles every four years, met last in Florence, where a very successful gathering was held under the Presidency of Professor Grazzi.

A NEW SYSTEM OF NOTIFICATION OF MEASLES.

WHAT may be called the orthodox notification of measles is being pursued in sundry sanitary districts with varying degrees of perseverance and with varying results. Those who do nothing but sit still and gaze at the certificates as they arrive, and who grumble periodically as often as the notification bill becomes due are naturally somewhat uncertain as to the value of notification. So, too, are those who adopt the notification of measles but who at the appearance of the first account strike off the disease from the list. Again, those who are endeavouring to deal in some degree with the notified cases are somewhat divided in their opinions. Here they are satisfied as to the value of the proceedings; there they are hesitating. In the borough of St. Helens the notification of measles is partial and what must be termed unorthodox. But in spite of both these facts we shall watch the system with interest. The head teachers of the several schools in the borough are supplied with properly prepared postcards addressed to the medical officer of health, Dr. Drew Harris. On these cards the teachers are requested to notify any suspected cases of measles which may come to their notice. If the suspected case turns out to be measles the teacher receives the sum of 3*d.* for his or her trouble, and as an illustration of the hopeful character of this new system it may be related that out of 988 suspicious cases which were recently reported 582 proved to be cases of measles. Each case was visited by the female sanitary inspector, the necessary particulars were procured, and advice was given; all children from infected houses were excluded from school attendance. There can be no doubt, Dr. Harris reports, that by this means many lives were saved and that the epidemic which prevailed was materially curtailed. The cost of the system was not great.

PAPILLOMATA OF THE URETHRA.

IN the *Boston Medical and Surgical Journal* of July 7th Dr. F. G. Balch has published a case of this rare form of urethral disease. Tumours of the urethra are comparatively infrequent. Papillomata, polypi, and carcinomata occur. Of these papillomata are the most common. According to Klotz they occur frequently in or near the meatus, but are much less common farther down. Papillomata are usually multiple, bleed easily, and are sometimes tender. A young man, aged twenty years, had a mild gonorrhœa, and four years afterwards had sounds passed for seminal emissions. He noticed a wart growing from the edge of the meatus and a slight purulent discharge from the urethra. He had not been exposed to venereal infection. The wart was cauterised with chromic acid but returned. There was considerable obstruction to the flow of urine, which came in a small scattered stream. The meatus was divided, and by means of the endoscope the anterior urethra was found to be thickly studded with papillary growths, the deepest being 2 in. from the meatus. They varied in size from that of a pin's head to that of a cherry-stone. Under cocaine they were removed with a curette. There was some trouble in scraping away the bases which were very firm. The raw surface was touched with glacial acetic acid. A week later the anterior urethra was painted with a solution of nitrate of silver (10 grains to the ounce). After two weeks two or three minute growths appeared near the meatus and were touched with glacial acetic acid. The result was completely successful.

AN AMERICAN VIEW OF THE VACCINATION ACT, 1898.

OUR contemporary the *New York Medical Record* is evidently much shocked with the new principle introduced into our vaccination laws by Section II. of the Vaccination Act, 1898, as gradually abolishing the compulsory principle. The editor says: "If false beliefs conscientiously held are to be allowed to stand in the way of the safety of the community there is an end of all sanitary legislation. A person who is allowed to refuse vaccination on conscientious grounds may refuse to isolate a patient with small-pox and the State cannot consistently force him to do so. And this in the country of Jenner!" In a later number (Sept. 10th) the editor returns to this subject and says that "by far the most important event which has occurred in the English medical world within the memory of the present generation has recently been consummated. The Compulsory Vaccination Bill has been practically rendered of no effect in England." The writer contrasts this action with the sentiment of the United States and with the universal faith in vaccination in the leading countries of Europe. "All countries of the civilised world," our contemporary says, "will watch with interest the tremendous experiment." In spite of the law, however, the "tremendous experiment" will have its limitation, for it is found that the medical officers of health of the most rabidly anti-vaccinationist communities are quite sound on the vaccination question.

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They have extra early intimations of actual cases and vaccination and revaccination and severe isolation are immediately set in motion. The most conscientious objector revises his faith and takes the benefit of the doubt, and only hundreds die where, if he had his way and retained his faith, thousands would succumb. Thus the most guilty communities are saved by medical men and the laws which they have promoted, including that of vaccination.

UMBILICAL ERYTHEMA.

A SHORT paper by Dr. P. Bar is quoted in the *Journal de Clinique et de Thérapeutique Infantiles* of Sept. 15th, 1898, in which the writer directs attention to the not infrequent occurrence of umbilical erythema, sometimes attended by septic absorption, in newly-born children. He believes that this condition is due in many cases to septic infection induced or encouraged by the practice of bathing infants during the first days of life. More especially is this cause accountable in some maternity hospitals where one bath is used for a succession of children and is not always properly cleansed. Such at least is his experience. On the other hand, he has had highly satisfactory results by adopting the following method. The segment of umbilical cord left attached to the child after ligature is at once wrapped in cotton-wool and bound in the usual way. No water is used. The skin is cleaned of its caseous coating by means of a cotton-wool swab soaked in an alcoholic solution—eau de cologne, for example. After two days the segment of the cord has practically withered and, with the exception of a small portion next the umbilicus, is cut away, the stump being dressed with iodoform gauze and absorbent wool. No bathing is done till after the cicatrisation of the umbilicus on or about the fifth day, save that the hips and groins are cleansed with boiled water when needful. After this date the child is bathed as usual. This method is avowedly intended more for hospital than for private practice for the reason stated above. Practitioners in this country may, perhaps, consider that Dr. Bar's abhorrence of the bath is excessive, and they will probably prefer to entrust even the dried umbilical segment to the natural efforts for separation. They are certain also, however, to appreciate the principle of a dry and aseptic umbilicus which underlies his observations, a principle which is still apt to be forgotten in the practice of midwifery nurses.

THE annual medical service of the Guild of St. Luke will be held in St. Paul's Cathedral on Wednesday, Oct. 19th, at 7.30 P.M., when the Bishop of London will preach the sermon. All practitioners who are graduates are requested to wear hood and gown whether they have a medical degree or otherwise, and Fellows of the Royal College of Surgeons of England are requested to wear their Fellows gowns.

ACCIDENTS TO MEDICAL MEN.—On Sept. 23rd, at the South-Western Railway Station at Salisbury, an engine dashed into a carriage in which were members of the Teign Naturalists' Field Club who had been on a visit to Salisbury, conducted by Mr. C. H. Wade, L.R.C.P. Lond., M.R.C.S. Eng., vice-president of the association. The party included five medical men, Dr. F. C. H. Piggott (of Teignmouth), Mr. C. H. Wade (Torquay), Dr. Brushfield (Budleigh-Salterton), Mr. Skardon (Paignton), and Mr. P. Q. Karkeek, the medical officer of health of Torquay. Mr. Skardon received injuries to his head and Mr. Karkeek suffered from shock and contusion of the neck and shoulders.—On Sept. 20th Mr. Joseph Harper, L.R.C.P. Lond., M.R.C.S. Eng., J.P., of Barnstaple, was badly bruised in a carriage accident. Mrs. Harper, who accompanied him, was severely injured and is suffering from cerebral concussion.]

PROFESSOR KOCH ON TROPICAL MALARIA.

ONE of the most interesting of his "Reise-Berichte," noticed in THE LANCET of Sept. 24th, p. 825, is the report sent by Professor Koch from Daressalam, German East Africa, on Feb. 25th of the present year. It is devoted to the subject of malaria, which he points out is the common endemic of the country, where typhoid fever and diphtheria are almost unknown and even dysentery occurs but rarely, at least on the coast. But from 1891 to 1896, in the Daressalam Hospital of 899 patients, 485, or 54 per cent., were cases of malaria. The variety is that known as tropical malaria, causing anæmia and weakness with great tendency to recurrence, not seldom appearing in a fatal pernicious form, as the so-called "blackwater fever." Professor Koch, in investigating the affection, selected only those cases which clinically ran the characteristic course and were influenced by quinine. In all such he found the malaria parasite in the blood, whilst he never succeeded in detecting this in other cases regarded as malarious but not possessing the characteristic clinical features. Thus of 154 cases examined 72 were true malaria and exhibited the parasite, 63 of them being tropical malaria, 7 were tertian, 1 quartan, and 1 "irregular" malaria. He came to the conclusion that blackwater fever could not be regarded as truly malarious and proposed to make a special report on that affection. The solitary examples of quartan and irregular fever were, he thought, imported cases, whilst the proportion of tertian to tropical forms—7 to 63—showed that the type which is most common in Europe is least so in East Africa. Tropical malaria is, he says, distinguished from other forms by its peculiar course and the particular kinds of blood-parasites which are regularly found in it. As most of the cases in hospital were already under treatment by quinine when he examined them it was not easy to obtain a correct notion of the natural course of the disease, and it was not until he had the opportunity of seeing cases at a sufficiently long interval after quinine had been suspended that such a view of the characteristic type of tropical malaria could be gained. He was then surprised to find the paroxysms approximating to the tertian type, but differing from European malaria in the long duration of each individual attack, the fever lasting over two days and remitting more or less markedly on the morning of the second day. The temperature curve thus comes to have a superficial resemblance to quotidian, especially when the remission on the second day is strongly marked, but a true quotidian was not observed, and he thinks it likely that such rarely, if ever, occurs in East Africa. It is singular that the onset of the fever is almost invariably at midday or in the evening, whilst the apyrexial period regularly commences in the forenoon. The course of development of the parasite accords with the type of the temperature curve. It has the characters described by other observers in the quotidian malaria of other tropical countries, assuming the signet ring form, and it increases in size, a point not hitherto noticed but of importance in determining the nature of the attack. The smallest size of the ring-shaped parasite is from one-eighth to one-sixth the diameter of a red blood corpuscle, and when it attains its largest size its diameter is about one-half that of the corpuscle it inhabits. The smallest (and youngest forms) present only a single nodular thickening at one part of the delicate ring, which stains deeply and appears as a dark spot on the circumference of the circle. As the sphere enlarges its border becomes thickened along a certain distance, and always at the opposite pole to the site of the nodule or nodules. This thickening increases until a portion of the sphere has the shape of a sickle and vacuoles appear in the thickened part. The parasites of tertian and quartan fever contain pigment in amount corresponding to the size and age of the parasite, but in tropical malaria the parasite is colourless, or rather its pigment is concealed, occurring in such fine granules that it is only in the most advanced stages and by most careful inspection that it can be detected as a brownish tint in the thickened area. That they do contain pigment is further evident from the examination of the spleen in fatal cases; here the organisms were seen to contain abundant pigment, whereas during life this was scarcely visible. Professor

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Koch explains this by the suggestion that the parasites being deprived of oxygen either die or pass into a resting state in which they contract and their pigment accumulates in masses. The parasite of tropical malaria resembles those of tertian and quartan in forming spores when it ceases to grow. He has never observed this spore formation in the living blood, but in the spleen of subjects who have died from tropical malaria it can be observed. The spore-containing parasites are about half as large as those of tertian fever. Thus there were circular organisms with a central mass of pigment, others with a crenate or lobulated outline, others in which a small sphere of pigment was surrounded by a rosette of spores, and finally numerous free spores scattered amongst pigment residues.

The relation of these forms to the stages of the fever is as follows. During the febrile stage the blood only contains the young simple ring-shaped parasites. Their number is small, requiring careful search to detect them, and that may be fruitless. This paucity may explain the failure of many observers to detect parasites in tropical malaria. Towards the end of the paroxysm the parasites begin to grow but are still few in number, but when the attack is subsiding they assume the aspect of large rings. Their number corresponds with the severity of the attack, prolonged research being requisite to discover them in milder cases. As a rule, one parasite can be found in several microscopical fields, and sometimes every field contains from five to ten. In the two fatal cases which were examined there were about 10 per cent. in the one and 50 per cent. in the other of the red corpuscles in which parasites were seen. Where they are numerous one corpuscle may contain two or more parasites. The further stages of development cannot be observed in the blood drawn from the finger, but in the spleen and other organs, where the spore stage can be traced, the dissemination of spores and their attaching themselves to the blood corpuscles marks the onset of a fresh febrile paroxysm, the large forms having all disappeared. Professor Koch thus sums up these facts:—

1. Since the developmental process of the parasite lasts two days and the temperature curve is concomitantly repeated regularly every two days tropical malaria is a true tertian, which is distinguished from the tertian of Europe by the kind of parasite and the longer duration of the paroxysm.

2. If it be desired to determine the presence of parasites of tropical malaria the examination must be made as early as possible in the apyrexial period, because there is more certainty then to find the largest and most numerous parasites.

3. Since experience teaches that quinine acts best against malaria when it is given a few hours before the commencement of the attack, it should be employed in tropical malaria just when the large ring-shaped parasites appear in the blood.

In respect to the semilunar forms of parasites described by Laveran Professor Koch cannot agree in the idea that they have anything to do with a new generation of the parasites and a return of fever. He describes one case in which the fever spontaneously subsided, no quinine being given, and where the temperature remained low. Here, as in other cases, the early small rings were succeeded by larger ones as the paroxysm terminated, and then with the continuance of a lower temperature the ring-shaped organisms were entirely replaced by crescents which persisted for days without any fresh access of fever. And as this patient did not have any recurrence, but long remained perfectly well, Professor Koch thinks that in his case the crescents pointed to a condition of immunity having been established. So, again, in another case the presence of crescents corresponded with freedom from fever, the re-appearance of "rings," with a recurrence of the paroxysm. Moreover, cases of ring-shaped parasites were just those where the fever returned and where repeated doses of quinine were needed to prevent such recurrence. Relapses generally took place after from ten to twelve days, but they might be postponed by quinine short of actual arrest of the disease; but relapse was never seen later than a month. A recurrence of fever at a longer interval could not be with certainty considered a relapse; it might be a fresh infection. The shortest interval before a relapse may be taken as identical with the incubation period of tropical malaria on the hypothesis that the relapse is caused by a few germs left behind from the former attack. Erroneous views prevail as to the incubation of tropical malaria; thus it is often thought that exposure at a day's hunting or a wetting can be followed next day by a malarial attack, but this is hardly conceivable having regard to the fact that infection takes places through a few germs, which do not multiply like bacteria, but after two days' development increase only about tenfold. The time required for them to produce sufficient metabolic products to give rise to the characteristic febrile attack is therefore relatively long; in certain cases, such as the appearance of malaria on board ships which have been only a short time in contact with the land, there has been an incubation period of at least from ten to twelve days. This is borne out by an instance for which he was indebted to Dr. Spilker of H.M.S. *Condor*. On March 10th, 1897, the *Condor* anchored in the Moa Bay on the boundary of German and British East Africa, and in the evening of the 11th two boats with an officer and ten men were sent to shore. The boats went up a river surrounded by mangrove swamp and the crews had to pass the night in its vicinity. On March 23rd, or eleven days after this expedition, almost simultaneously in the afternoon, four men, and two days later two other men, from these boats' crews were attacked with typical tropical malaria. It is instructive that on the evening of the expedition the men had each taken 1 grm. of quinine and next morning 0·5 grm. as a prophylactic and yet some of them were attacked by malaria.

Professor Koch says that he has no positive proofs of the mode of infection, although he remarks that many surmises have been made. These various possibilities tend to become more and more restricted as knowledge of the nature of malaria increases, and as regards tropical malaria there may be said to be only two factors which can seriously be considered as media of infection. These are conveyance of the germs through drinking water and by mosquitos. The more he has studied the disease the more has he come to the opinion that the latter is probably the sole cause. It will be found that there is invariably a local and seasonal association between tropical malaria and mosquitos. There are places on the coast which are free from malaria, such as the island of Chole, to the south of the large island of Mafia. He visited this island, formerly used by the Zanzibar Arabs as a health resort, and found it to be the only place where he could sleep without a mosquito net. There is no malaria on the hills, where mosquitos, too, are absent. In the interior malaria diminishes together with mosquitos. At the seasons of the year when there are most mosquitos malaria is the most severe. His opinion is strengthened by the analogies between malaria and Texas fever and other tropical diseases of man and beast in which the parasites exclusively inhabit the blood. In all these diseases the infection is conveyed by blood-sucking insects and not by the direct transference by the insect from the blood of an infected animal to the other, but by the parasite developing in the insect's body and being thence transferred to the special host. Thus or similarly do mosquitos act in malaria, not that the mosquito immediately transfers the blood of one person to another, but that it first infects its own species. From numerous observations on hæmatozoal diseases in the lower animals and on attempts to infect animals with the malarial parasite Professor Koch came to the conclusion that for each parasite there is a special host and that man is the sole host of the malarial organism. Not that every man is equally susceptible to malaria. There occur in the tropics persons who have lived there many years without ever contracting malaria and it would seem as if there are whole races thus immune—for instance, the negro population of the East African coasts. The only case he met with in a coast-negro was that of a boatman of the Customs at Rufidjimundung, who had a mild attack, rapidly cured by a single dose of quinine. In this patient the ring-shaped parasites were in small number. On the other hand, the negroes of the Usambara region have no such immunity, although they in great part come from the same stock as the coast negroes. The other coloured folk, such as Indians and Chinese, who inhabit the region are not so immune, although he knew of some Indians who had been at Daressalam for years and were quite healthy. Bearing these facts in mind and also what has been said about the crescent-shaped bodies it seems clear that there is an actual immunity against malaria, which among the coast-negroes may be partly congenital, but with those who come from malaria-free countries must be acquired. Here, again, there is a remarkable analogy with Texas fever and Professor Koch ventures to express the hope that as in that disease so in tropical malaria an artificial immunity will one day be attained.

Tropical malaria is not so dangerous a disease as is

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generally thought. There were but 2 deaths out of the 63 cases observed by Professor Koch, and he does not doubt that had these cases been recognised earlier and appropriately treated by quinine that they would have recovered. In all the other cases the effect of quinine was rapid and striking. As a rule 1 grm. sufficed to cause the disappearance of the parasites from the blood. It may be followed by another rise in temperature, but this rapidly subsides and during this final access he never found any parasites in the blood. This "after-fever" is probably due to the presence of the residues of the parasites and not to their vital activities. And it may be that the febrile paroxysms generally are due, not to the young parasites, but to the products set free by the death of the older generation. To ensure no recurrence of fever it is necessary to give another dose of quinine at the close of the "after fever." However, in order to exert its full action the drug should be given when the blood contains the ring-shaped organisms, and although the temperature serves as a guide the most certain test is that derived from microscopic examination. Hence the microscope is essential to the physician in the tropics both for early diagnosis and for treatment. For the earlier the quinine is given the better, the constitutional effects being in proportion to the number of attacks of fever which the patient has experienced. As the digestive organs are directly affected there is less chance of rapid absorption of quinine in cases where it is given after several attacks than when it is given quite early. It is important that the quinine should be of good quality and in a form for ready absorption. There is great tendency to relapse in tropical malaria. for even after quinine some germs may remain behind which serve to revive the infective process. These relapses weaken the power of the patient. The measures directed against such relapse serve also as prophylaxis and Professor Koch regrets that he has not been able to advance far in his researches in this important direction. He found that a dose of 0·5 grm. of quinine daily did not prevent relapse, but that 1 grm. given every fifth day in one case ensured freedom from relapse; in another there were slight and brief recurrences. Although he usually considers a dose of 0·5 grm. every third day sufficient for prophylaxis he cannot say that this is always sufficient, and that a single large dose does not ensure freedom from attack is evident from the cases which occurred amongst the crew of the *Condor*. If it should be finally found that a dose of 0·5 grm. is insufficient it might be preferable to give other drugs, as arsenic, since most patients do not bear well the long-continued dosage with quinine. In any case a prophylaxis so obtained can only be temporary, sufficing for the traveller or those who are only passing through the malarious districts. In the case of others exposed to infection so long as prophylaxis by drugs is not quite proved there are two other measures to be enforced. Firstly, all water used for drinking should be boiled, a fundamental thing essential in the prophylaxis of dysentery and other tropical diseases. Secondly, people must be protected during sleep by good mosquito nets. By "good" Professor Koch means one with sufficiently close meshes, which are often not used. Besides these personal measures the dangers of malaria may be mitigated by drainage, the cultivation of swamps, the proper disposal of fluid waste, and, above all, the fit construction of dwellings. In closing his report Professor Koch remarks that he has not seen in the subjects of tropical malaria any case of so-called malarial dyscrasia such as commonly occurs in other malarial districts. The attack itself is more severe, but the patient suffers less from after-effects than in tertian fever. Even children who have passed through the disease remain in good health. He also makes a few remarks on the cases of tertian which he had occasion to observe.

THE SANITARY PROGRESS AND INSTITUTIONS OF JAPAN.

THE Central Sanitary Bureau of the Japanese Ministry of the Interior has issued a report on the sanitary institutions of the Imperial Government of Japan. From this document it would appear that the unparalleled progress accomplished by Japan in the adoption of western civilisation includes all the leading phases of sanitary reform. It was in 1868 that the great Japanese revolution took place by which the feudal system was abolished. Government was then centralised in the hands of the Mikado. The Constitution was granted in February, 1889, and the first National Parliament met that year. The earliest attempt to establish a central authority to deal with sanitary matters was made in 1873, when a medical bureau was attached to the Education Department. Two years later this was transferred to the Home Office and was named the "Sanitary Bureau." Since 1875 all matters dealing with public health have been relegated to the Ministry of the Interior. Then also chemical laboratories were opened for the analysis of foods, drugs, &c. Japan is divided into forty-five prefectures or provinces, each having a governor depending on the Home Minister; then there are numerous subdivisions which correspond to our counties, urban and rural districts, wards, &c. The police office of these local authorities carries out sanitary measures and appoints local sanitary boards to study technical questions and advise. The Central Sanitary Bureau is divided into three sections, the health office, the epidemic prevention office, and the medical office. The first deals with drainage, water-supply, food-supply, &c.; the second with quarantines and epidemics; and the third with the control of medical education, midwives, pharmacies, &c. Previously to the organisation of this Bureau and since the revolution or commencement of the Meiji era the Government had issued many ordinances concerning the sale of opium, the vaccination of infants, &c., but there was no central control to see that these laws were uniformly applied. Also, although the Government was willing to apply the law, the nation was still ignorant and experience in England has taught us that the best of laws are of but little avail if the population are uneducated and indifferent. The Japanese Government therefore rightly concluded that education must precede legislation. Consequently the Government published the *Sanitary Bureau Magazine*, which was circulated among all officers, State functionaries, and others. Thus some knowledge as to the principles of sanitary administration was spread in the right quarters. This publication was commenced in April, 1876. In the course of time interest in public questions began to spread so rapidly that the *Magazine for the Improvement of Sanitary and Medical Knowledge* was started by private enterprise. Then many sanitary and medical societies were founded and these bodies also issued various publications and magazines. Thus by the year 1884 the Government found that it was no longer necessary to publish a magazine of its own; education on sanitary matters was now being actively spread independently of such Government intervention.

Needless to say that most of the knowledge thus acquired was imported from abroad. The European and American technical press was ransacked for data and information, and in the course of time a great number of Japanese were sent abroad to learn, observe, and report. The first investigator who received an official mission of this description was Dr. S. Nagayo, a professor at the Japanese Medical College, and he accompanied Prince Twakura, who was sent as Ambassador to Europe and the United States in 1871. Since then we have often had the opportunity of welcoming various Japanes delegates at sanitary and medical congresses and exhibitions. It may be remembered that there was a Japanese Section at the Health Exhibition held at South Kensington in 1884. Several Japanese medical men have studied at Professor Koch's laboratory in Berlin and in other European centres of scientific research. Also European men of science have been employed in Japan. For instance, Mr. Burton is Professor of Sanitary Engineering at the Japanese Imperial University and Sanitary Adviser to the Japanese Ministry of the Interior. Laboratories under the control of the Home Office have been established at Tokyo, Osaka and Yokohama, where chemical analyses are made both for the authorities and the public, and to which engineers are attached who undertake sanitary inspections. These laboratories have also their medical section, where drugs are tested and where some control is exercised over the sale of patent medicines. There is a very useful regulation to the effect that tradesmen must not quote any one sentence from the analyses made of their goods in these Government laboratories. If they wish to allude to the analyses they must quote it in its entirety, instead of only selecting a few favourable words.

The spread of Western ideas in Japan has not proved an unmixed blessing. Adulteration and fraudulent trading have followed in the wake. As the demand for European medicaments increased dishonest foreign merchants introduced a large quantity of inferior and adulterated drugs into Japan. Consequently a law had to be enacted to the effect that all

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drugs landed in Japan must be taken to the State laboratories before they could be sold to the public. The first laboratory of this description was opened at Tokyo in 1874. In the following year another laboratory was established at Kyoto and a few months later a third was opened at Osaka. At first the analytical chemists were all foreigners, but in a few years the native chemists were fully qualified to take the work in their own hands and the employment of foreigners was gradually given up. The last of the foreign chemists was employed at the Yokahama Laboratory, but he died in 1884 and since that date the work of chemical analysis has been entirely in the hands of the Japanese. The most numerous analyses were of quinine and iodide of potassium, for these drugs were not only in great demand but were easily adulterated. At first a stamp was affixed to the drugs which had been examined, but in 1877 written reports were given instead mentioning the trade mark of the drug and stating whether it was suitable as a medicine. This caused the druggists to be more careful as to the quality of the chemicals, &c., which they imported into the country. Originally the examinations were gratuitous, but as the result was an increase of confidence, of sales, and of price, the Government felt justified in making the importers pay a fee for the analysis of the medicines, foods, drinks, &c., which they sold.

During the civil war and in consequence of cholera epidemics there was a greater demand for carbolic acid than could be supplied by foreign importations. The Government consequently started a factory of its own, and as Japan is rich in materials this manufacture of carbolic acid in time began to extend to other drugs and a general medicine manufacturing department was attached to the Tokyo Hygienic Laboratories. Subsequently a botanical garden for medicinal plants was established, and all these institutions were naturally also of great use to the students of medicine.

It was in 1884 that the Sanitary Museum was opened, and it contains not only a large library, but models of houses, sewers, drains, crematoria, waterworks, &c. In 1896 a Serum Institute was set up at Tokyo, under Dr. Tomaye Takagi, where the diphtheria antitoxin is produced. Two vaccine farms—one at Tokyo and one at Osaka—were likewise organised, whence vaccine lymph, taken from the calf, can be supplied throughout the country. This was commenced so far back as the year 1874, but foreign calves had to be procured, as the skin of the Japanese calves is generally too thick and too hard. The vaccine now produced in Japan in considered of such good quality that a large quantity is exported to Hong-Kong and other Chinese ports. The production of calf lymph was so great that in 1892 vaccination from the human arm was altogether abolished. But as there was money to be made many private persons began to make vaccine from calves, with the result that the quality soon became deteriorated and the Government had to interfere. The lymph is now provided by the National Vaccine Lymph Manufactory.

In dealing with epidemic diseases the Government gave a subsidy for the creation of an "Institution for the Investigation of Infectious Diseases," and in 1885 Dr. S. Kitasato was sent to Europe to study these questions. It was on his return in 1892 that this institution was opened in the park of Shiba, Tokyo. In 1877, during the civil war known as the South-West War, there was a terrible cholera epidemic and then many regulations were made to cope with the disease. Now the "Epidemic Prevention Board," which is a section of the Central Sanitary Bureau, deals with such matters and has the right to sanction the creation of any number of temporary epidemic inspection committees in all localities where their services are needed. They help to carry out the Law No. 36 of March 30th, 1897. This law applies to cholera, dysentery, typhoid fever, small-pox, typhus fever, scarlet fever, diphtheria, and plague. Other diseases may be added to this list, should occasion arise, by a special order from the Home Minister. According to this law it is the duty of all medical men to give instructions to families in which there are cases of epidemic disease as to the methods of disinfection which they must employ and also to notify the cases to the sanitary police. Whenever a case of infectious disease is believed to have occurred a physician must at once be called to examine the house and the patient. The medical man must report the results of such investigations at once to the sanitary police. The owner of the house is responsible for the carrying out of all measures of disinfection according to the directions of the medical practitioners or sanitary authorities. The same responsibility falls on the owners of neighbouring houses if the inhabitants have communicated with the infected person or house. If the measures of disinfection, &c. ordered are not carried out by the person concerned the local authority will undertake the work and recover the cost from the house-owner. The local authorities have the right to remove patients to fever hospitals and to isolate the patient's family in a house set aside for that purpose. When judged necessary a house or block of houses and all the inhabitants may be isolated from the rest of the community by a sanitary cordon for a period of five days in cases of cholera and for a period of seven days in cases of typhus fever. No clothing, &c., infected, or presumed to be infected, must be used, thrown away, given away, or be sent to be washed. Nor must the body of any person dying from infectious disease be removed in the ordinary manner. Such corpses must be cremated unless special permission has been given for their burial. Sanitary officers can obtain a written order giving them the right of entry into any private house in case of epidemic disease. The local authorities must organise staffs of disinfectors under the direction of medical men and provide isolation hospitals and isolation houses.

With regard to quarantine regulations ships arriving from ports declared to be infected by the Ministry of the Interior must proceed to one of the five ports where quarantine hospitals, &c., have been provided—namely, Nagasaki, Shimonoseki, Kōbe, Yokohama, and Hakodati. Here they must display the yellow flag and await the arrival of the port sanitary authorities. Ships which have been five days at sea and are in a satisfactory condition are not detained after inspection. If there is disease on board then the ship must be disinfected and the passengers and crew kept in quarantine for seven days in cases of plague or typhus fever and for five days in cases of cholera. Somewhat similar regulations are applied to railway trains. If a death occurs in a railway carriage the goods and passengers may be isolated and disinfected. Should this happen at a small station where no means of disinfecting exist the railway carriage must be sealed up and its passengers and contents sent on to a larger station, where all that is required will be found. Inspectors may accompany the carriage to see that these regulations are duly observed and that the passengers do not attempt to escape.

The local authorities have the right to isolate a part or the whole of a town or village. They can also forbid meetings, religious festivals, or theatrical performances when such gatherings may tend to spread an epidemic. They may stop any goods in transit which are likely to be infected, such as old rags, personal linen, &c., and these may be destroyed if necessary. In the same manner they can stop the sale or distribution of any food or drink which may be contaminated and they have the right to destroy the same. The local authority can also enforce general sanitary measures, such as the improvement of drains, the closing of wells, &c.; and to assist small local authorities the provincial authorities must bear a sixth of the expense entailed. If all such duties are not performed in the proper time the persons responsible are liable to be fined; and medical practitioners who do not notify cases of infectious disease within twelve hours are liable to a fine of from 5 to 50 yen and a yen is equal to about 3*s*. 6*d*. All householders and others who, by bribery and other means, seek to avoid disinfection, &c., are to be fined at least 2 yen. In disinfecting all drains, dust heaps, &c., must be cleaned out, the contents burnt on the spot or removed to a suitable place in closed vessels, and the walls and floors must be washed with solutions of carbolic acid or corrosive sublimate. Other objects must be disinfected by boiling, by steam, or by burning. In the isolation or fever hospitals there should be one head physician and an assistant physician for every 15 to 20 patients.

Vaccination and revaccination are rendered compulsory by the law of 1885 and the first clause is as follows: "After a child is born he or she must be vaccinated within one year, and if unsuccessful vaccination must again be performed within the next year; and even if successful revaccination must be performed every five or seven years afterwards." A fine not exceeding 50 yen is imposed on persons who do not observe this law.

With regard to syphilis, the first hospital for venereal disease was established at Yokohama in 1867 by the Feudal Government of Tokugawa and shortly afterwards similar hospitals were opened at Kōbe and Nagasaki, and here prostitutes were examined. The Home Office issued instructions in April 1876, to other local authorities besides those of the

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three ports mentioned, instructing them to make arrangements for the medical examination of prostitutes. These examinations generally take place once a week and women who are found to be diseased are immediately taken to the hospital and their licences confiscated.

Such, briefly, are some of the principal regulations relating to the preservation of public health in Japan. Some of them, it will be seen, are more severe than our English sanitary laws, and there is hardly a phase of sanitary improvement attempted in Europe which has not been imitated by the Japanese. In some instances the Japanese legislature has been more bold and sweeping in the measures he has approved than the more experienced and older legislatures of Europe. Of course, it still remains to be seen how far these paper reforms have been carried out in actual practice; but it is only those who have made careful investigations on the spot who can venture to express an opinion as to the practical results. In any case, it is most satisfactory to see that the Government has taken the lead. If the people have not yet fully appreciated the advantages of the sanitary legislation offered them they have differed in this respect from the people of most other countries. In time the advantages of good laws obtain recognition and the whole community helps to carry them out. In the meanwhile their enactment serves as an object lesson in the education of the people.

THE SANITARY INSTITUTE: MEETING AT BIRMINGHAM.

THE seventeenth annual congress of the Sanitary Institute was opened in Birmingham on Tuesday, Sept. 27th, under the Presidency of Sir JOSEPH FAYRER, Bart., K.C.S.I., M.D. Edin., F.R.S. Councillor C. G. Beale, the Lord Mayor of Birmingham, received the members in the Council House, and afterwards took the chair at a public luncheon.

PRESIDENTIAL ADDRESS.

In the afternoon the general meeting of the congress took place at the Birmingham and Midland Institute, when Sir Joseph Fayrer delivered his Presidential Address on

The Progress of Preventive Medicine.

Sir JOSEPH FAYRER commenced by pointing out that in an age of progress and discovery, when intellectual activity was very great and when the practical applications of science were most remarkable, nothing in Her Majesty's glorious reign formed a fitter subject for congratulation than the improvements which had taken place in the vital statistics of our country as shown by the reduced mortality rate, the improved expectation of life, and the disappearance of potential causes of death. In bringing about these desirable results the Sanitary Institute, he claimed, had taken an important part. Public health was now cared for in a sense which was utterly unknown in the past; houses were better built; sewerage, drainage, and ventilation were provided for; the land was better cultivated, the subsoil better drained, the absolute importance of pure drinking water was recognised, food was more varied and more nutritious in its character, and clothing was better adapted to climate. Were all the existing official provisions enforced little would remain to be desired on the part of the Government, but as some of these Acts were not compulsory, and as others were neglected, much of their benefit was lost. Though education had done much, as far as the better classes were concerned, and upwards of 200 millions had been spent on sanitary work, with great benefit to the public health, popular teaching and example and the general diffusion of education were still necessary in order to convince the proletariat of what so intimately concerned their vital interests. The death-rate was susceptible of further diminution, expectancy of life might be enhanced, and the general conditions of living and exemption from certain forms of disease were by no means as perfect as they might be. Tainted water was still drunk, as was illustrated by the outbreaks of typhoid fever at Maidstone and Lynn last year, chimneys still vomited forth chemical fumes, rivers were still polluted, cesspools and imperfect drains, badly-constructed and ill-ventilated houses still defied alike sanitary law and common sense; and it would perhaps not be until the more complete organisation of the public health administration under a Minister of Public Health had been effected that the full benefits of sanitary legislation would be realised and the people attain to that standard of health and duration of life for which they had a right to hope.

Nevertheless, when we contrasted the present state of our country with its 29,000,000 of inhabitants with that of the Elizabethan era with its 4,000,000 we had ample proof of the ignorance of science in those days and of the great improvements which had taken place in these. A brief inquiry into the statistics of some well-known diseases would show that they had become less severe in their incidence, if not less frequent in their recurrence. In small-pox, for example, there had been a great reduction, more so than in any other disease. Since the passing of the first Vaccination Act in 1841 the death-rate had fallen from 576 per 1,000,000 to 20 per 1,000,000 in 1891–95. Vaccination, isolation, attention to rational treatment, whether therapeutic or hygienic, had preceded or accompanied, and, as most people believed, induced these results; and theories which ignored vaccination as a preventive must, it appeared to him, necessarily be rejected until a better explanation of the cause of the diminished incidence and mortality from the disease could be offered. As to the value of vaccination, all the evidence which was forthcoming seemed to show that there could be no doubt of it. As to the methods by which every individual was to be vaccinated or revaccinated, that was a subject for the State to determine. That the Acts in existence up to the present time were inadequate to this end was plainly shown by the fact that large and increasing numbers of the population were known to be unvaccinated despite their compulsory character. Lord Lister said in his speech in the House of Lords last August that one-third of the children born were unvaccinated and that one-fourth of the boards of guardians did not put the law in force. The most recent Vaccination Act, whatever might be its advantages, was certainly defective in this: that it made no provision for revaccination, the necessity for which was universally admitted by the medical profession, whilst it was very doubtful whether the modification of the compulsory clauses would have the effect of extending vaccination. This remained to be seen during the five years for which the new Act was to be in operation. Whatever the Government might have thought proper to enact, there seemed good reason to believe that as far as it was concerned faith in vaccination was as unshaken as it was in the minds of the Royal College of Physicians of London, who had recently expressed their unaltered conviction that vaccination "properly performed and duly repeated is the only known preventive of small-pox." Sir Joseph Fayrer then went on to consider the death-rate. In 1838, he said, the death-rate from fever at all ages was 1053 per 1,000,000, in 1891–95 it was 185 per 1,000,000. Fevers notably flourished where sanitation was defective, and as dirt, overcrowding, and destitution had been diminished so had typhus fever disappeared, whilst with improved drainage, the removal of excretal filth, and the supply of pure water enteric fever had become less. There was reason to think that cholera was similarly influenced, for though it had appeared in England several times since its first invasion in 1831, as in 1845–49, 1853–54, 1865–66, and even since at Grimsby in 1893, yet its virulence and activity had been gradually diminishing. Happily, the antiquated system of prevention by coercion had in England been replaced by that of sanitary measures and isolation and it was to the wise and judicious exercise of those by the medical authorities of the Local Government Board and of the local authorities throughout the kingdom that whilst neighbouring countries in the full practice of coercion and quarantine were decimated England had lately remained almost exempt. Since 1861 the scarlet fever death-rate had been reduced 81 per cent., but the diphtheria death-rate was now very much the same as it was over thirty years ago. In 1835–42 the death-rate from tuberculous disease was 3959 per 1,000,000; in 1891–95 it was 2124, not so remarkable a diminution as in the other diseases, but serving to show that sanitation had done good by helping to improve the ill-ventilated crowded dwellings, damp, water-logged soil, and impure water, and that protection against noxious trades had been of value. As to malarial diseases, they might include them in England among those which had become all but extinct. It was not to be supposed that zymotic disease could be altogether exterminated, but they could modify and diminish its incidence. But the scope and aim of sanitary science in its preventive

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aspects should not be limited to the consideration of zymotic disease. It should extend to the results of abnormal social conditions arising out of the strain and struggle for existence, involving over competition in various occupations by which life was supported, and under the pressure of which so many lost their health or even succumbed. The over-pressure now exerted on the younger of the rising generation might not only involve the risk of miscarriage of true education, but dangers against which it was as much the duty of preventive medicine to guard young people as it was to protect them from scarlet fever, small-pox, measles, cholera, or any other disease. One indication of the effect of sanitary work was observed in the death-rate of the country. In 1841–50 it stood at 22·4 per 1000; in 1891–95 at 18·7 per 1000; though for the four years 1890–93 it had risen owing to epidemic influenza.

The condition of India, continued Sir Joseph Fayrer, speaking from great personal experience, presented an admirable example of the value of preventive medicine and hygienic methods. In 1859 an inquiry was instituted into the mortality of the European and subsequently the Indian army and gaol and civil populations. It was ascertained as one result of the investigation that the ordinary death-rate of the British soldier had stood for a long period of time at the appalling figure of 84·6 per 1000 from 1800–30 and at 56·70 per 1000 from 1830–56. Certain sanitary changes and improvements in the housing, clothing, food, and discipline of the soldiers were then enforced and were followed by a signal decline in the death-rate, though marked by fluctuations. In 1886 it was 15·8 per 1000 and in 1895 15·26 per 1000, the intervening years showing slight fluctuations. The death-rate of the native army did not show so great a diminution, but here, too, there was improvement. In 1889 the death-rate was 12·94 per 1000 and in 1895 11·60. After referring briefly to the unfortunate spread of syphilis among our Indian troops Sir Joseph Fayrer concluded by an eloquent exhortation to his hearers not to consider that a knowledge of bacteriology, in spite of the magnificent work of bacteriologists, would solve all sanitary problems. There were, he pointed out, other factors of no less importance to be considered. While it was of the utmost significance that we should be able to demonstrate the actual cause, whether a micro-organism or not, on the other hand it was not of less importance that we should know all the conditions under which this cause became effective. It was not enough to know the seed: it was necessary that we should also know the nature of the soil and all the conditions which determined whether the seed was to grow and multiply or to remain inert and harmless. If we could learn how to destroy the seed of disease or sterilise the soil in which it attained its full development, or if we could neutralise the favouring conditions and so prevent or impede its growth, then we should have solved a great problem and conferred a lasting benefit on mankind. Much of this had already been done and the splendid work of Pasteur, Koch, Lister, Burdon Sanderson, and Sims Woodhead, among others, was almost daily adding to our knowledge of zymotic disease. It could not be doubted that the Sanitary Institute had contributed its share to the advance which public health had made since its foundation.

Earl BEAUCHAMP proposed a vote of thanks to the President and remarked that he was sorry that no member of the Government was present to have heard Sir Joseph Fayrer's views upon the subject of vaccination.

Councillor MARTINEAU seconded the motion, which was carried with acclamation.

CONFERENCES.

A conference of medical officers of health was held in connexion with the congress under the presidency of Dr. J. C. McVail, the substance of whose inaugural address we publish on page 849 of this issue.

A conference of municipal representatives was held under the presidency of Alderman Cook, chairman of the Health Committee of the Birmingham City Council, at which some interesting papers were read. Dr. J. F. J. Sykes, medical officer of health of St. Pancras, read a paper on the Dwelling Accommodation of the Working Classes in Large Cities, and Mr. E. Parkes, M.P. for Birmingham (Central Division), read a paper upon the Municipal Management of Public Slaughter-houses.

A conference of municipal engineers was presided over by Mr. T. de Courcy Meade, whose presidential address dealt with the By-laws concerned in the Construction of New Streets and Buildings.

A conference on Domestic Hygiene was presided over by Mrs. Beale, the Lady Mayoress, at which Miss Mary Sturge read a paper on the Claims of Childhood, which excited some discussion.

EXHIBITION OF SANITARY APPLIANCES.

In the evening of the opening day the Lord Mayor opened a Health Exhibition in Bingley Hall in the presence of members of the congress and many of the leading citizens of Birmingham. The exhibition, which included all descriptions of sanitary appliances, was illustrative of the advances which have been made during recent years in public health.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6520 births and 5072 deaths were registered during the week ending Sept. 24th. The annual rate of mortality in these towns, which had been 24·6 and 24·0 per 1000 in the two preceding weeks, further declined last week to 23·6. In London the rate was 21·6 per 1000, while it averaged 24·9 in the thirty-two provincial towns. The lowest death-rates in these towns were 15·9 in Portsmouth, 16·2 in West Ham, 16·4 in Swansea, and 18·5 in Leicester; the highest rates were 32·4 in Manchester, 35·8 in Salford, 37·0 in Sunderland, and 38·7 in Gateshead. The 5072 deaths in these towns included 1454 which were referred to the principal zymotic diseases, against 1575 and 1545 in the two preceding weeks; of these, 1238 resulted from diarrhœa, 65 from whooping-cough, 51 from diphtheria, 45 from "fever" (principally enteric), 28 from scarlet fever, and 27 from measles. The lowest death-rates from these diseases were recorded in West Ham, Derby, Cardiff, and Portsmouth; and the highest rates in Bolton, Salford, Sunderland, and Gateshead. The greatest mortality from measles occurred in Plymouth; from whooping-cough and from "fever" in Sunderland; and from diarrhœa in Norwich, Salford, Bolton, Hull, Sunderland, and Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 51 deaths from diphtheria included 29 in London, 5 in Swansea, and 4 in Liverpool. No fatal case of small-pox was registered during the week under notice in any of the thirty-three large towns; and only 1 small-pox patient was under treatment in the Metropolitan Asylum Hospitals on Saturday last (Sept. 24th). The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2353, against 2240, 2300, and 2319 on the three preceding Saturdays; 288 new cases were admitted during the week, against 238, 273, and 242 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 130 and 135 in the two preceding weeks, further rose to 157 last week, but were 19 below the corrected average. The causes of 50, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leicester, Bradford, Leeds, Newcastle-upon-Tyne, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Preston, and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·0 and 18·8 per 1000 in the two preceding weeks, rose again to 19·7 during the week ending Sept. 24th, but was 3·9 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Perth and 14·1 in Aberdeen to 20·1 in Edinburgh and 21·4 in Glasgow. The 595 deaths in these towns included 104 which were referred to diarrhœa, 22 to whooping-cough, 13 to "fever," 7 to diphtheria, 6 to scarlet fever, and 4 to measles. In all, 156 deaths resulted from these principal zymotic diseases against 140 and 157 in the two preceding weeks. These 156 deaths were equal to an annual rate of 5·2 per 1000, which was 1·6 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had increased from 81 to 110 in the

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three preceding weeks, declined to 104 last week, of which 55 occurred in Glasgow, 20 in Edinburgh, 13 in Dundee, and 7 in Greenock. The 22 deaths from whooping-cough exceeded by one the number in the preceding week, and included 10 in Glasgow, and 5 in Aberdeen. The deaths referred to different forms of "fever" which had been 9 in each of the five preceding weeks, rose to 13 last week, of which 6 occurred in Paisley, 4 in Glasgow, and 2 in Edinburgh. The 7 fatal cases of diphtheria showed a further increase upon those recorded in recent weeks, and included 5 in Glasgow; and of the 6 deaths from scarlet fever 4 occurred in Edinburgh and 2 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 100 and 68 in the two preceding weeks, rose again to 85 last week, but were 11 below the number in the corresponding period of last year. The causes of 29, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·7 and 27·1 per 1000 in the two preceding weeks, further declined to 27·0 during the week ending Sept. 24th. During the past four weeks the rate of mortality in the city averaged 28·1 per 1000, the rate during the same period being 22·0 in London and 19·5 in Edinburgh. The 181 deaths registered in Dublin last week were within one of the number in the preceding week, and included 32 which were referred to the principal zymotic diseases, against 54 and 35 in the two preceding weeks; of these, 20 resulted from diarrhœa, 6 from "fever," 4 from whooping-cough, 1 from measles, 1 from scarlet-fever, and not one either from small-pox or diphtheria. These 32 deaths were equal to an annual rate of 4·8 per 1000, the zymotic death-rate during the same period being 5·1 both in London and in Edinburgh. The fatal cases of diarrhœa, which had been 38 and 26 in the two preceding weeks, further declined to 20 last week. The deaths referred to different forms of "fever," which had been 5 and 3 in the two preceding weeks, rose again to 6 last week, a higher number than in any week since March last. The 4 fatal cases of whooping-cough corresponded with the number in the preceding week. The 181 deaths registered in Dublin last week included 61 of infants under one year of age, and 32 of persons aged upwards of sixty years; the deaths of infants showed an increase, while those of elderly persons showed a further decline from recent weekly numbers. One inquest case and 1 death from violence were registered; and 51, or nearly a third, of the deaths occurred in public institutions. The causes of 14, or nearly 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: Benjamin G. Heather to the *Pembroke*, additional for disposal; E. R. Grazebrook to the *Empress of India;* and J. H. Fergusson to the *Thunderer*. Surgeons and Agents: Andrew Cluckie at Stranraer and Cairn Ryan, and Welby J. Anson at Whithaven.

ROYAL ARMY MEDICAL CORPS.

Major Maurice O'Connor Drury having joined at Netley on Sept. 23rd is posted to the Medical Division of the Royal Victoria Hospital. Lieutenant-Colonel Peyton proceeds from Holywood to Limerick for duty.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Captain Deare, Officiating Civil Surgeon of Midnapore, are placed temporarily at the disposal of the Chairman of the Corporation of Calcutta. Mr. Fink, Officiating Civil Medical Officer of Bhagalpur, is appointed temporarily to act as Civil Medical Officer at Midnapore during the absence on deputation of Major Walsh, or until further orders. Colonel A. Stephen (Bengal), Principal Medical Officer and Sanitary Commissioner, Assam District, is appointed to officiate as Inspector-General of Civil Hospitals, Punjab, during the absence on furlough of Colonel D. O'C. Raye until further orders. The services of Major Bannerman are replaced at the disposal of the Government of India.

VOLUNTEER CORPS.

Artillery: 1st Cornwall (Duke of Cornwall's) (Western Division, Royal Artillery): John Alfred Fox is re-appointed Surgeon-Lieutenant. *Rifle:* The Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment): The undermentioned Surgeon-Lieutenants to be Surgeon-Captains:—J. A. Clark, A. Macdonald, C. B. Ker, and J. Pirie. 1st Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant C. J. Jacomb-Hood to be Surgeon-Captain. 5th Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant A. A. Abraham to be Surgeon-Captain.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The following officers have recently passed the proficiency examination for volunteer medical officers, thereby earning the higher capitation grant for the corps and becoming entitled to promotion after completing the necessary period of service:—Surgeon-Major W. H. Webb, 5th Volunteer Battalion Devonshire Regiment; Surgeon-Lieutenant J. Jackson Clarke, Commanding Bearer Company, North London Volunteer Brigade; Surgeon-Lieutenant W. G. Owen, 1st Cheshire and Carnarvonshire Volunteer Artillery; Surgeon-Lieutenant R. Mair, 1st Roxburgh and Selkirk Rifle Volunteers; Surgeon-Lieutenant G. Black, 2nd Volunteer Battalion Royal Sussex Regiment; Surgeon-Lieutenant J. A. Wilson, 3rd Volunteer Battalion Highland Light Infantry; Surgeon-Lieutenant H. Syers, 3rd Middlesex Volunteer Artillery; Surgeon-Lieutenant C. S. de Segundo, 20th Middlesex (Artists) Rifle Volunteers; Surgeon-Lieutenant F. S. Hogg, 20th Middlesex (Artists) Rifle Volunteers; Surgeon-Lieutenant E. Goddard, 9th Middlesex (Harrow) Rifle Volunteers; Surgeon-Lieutenant A. Duke, 1st Tynemouth Volunteer Artillery; Surgeon-Lieutenant E. C. Palmer, 1st Volunteer Battalion Lincolnshire Regiment; Surgeon-Lieutenant J. D. Farquharson, 1st Newcastle-on-Tyne Volunteer Artillery; Surgeon-Lieutenant D. J. Lawson, 1st Dorsetshire Volunteer Artillery; Surgeon-Lieutenant J. N. Brown, 5th West Middlesex Rifle Volunteers; Surgeon-Lieutenant D. R. Dobie, 2nd Volunteer Battalion the King's Scottish Borderers; Surgeon-Lieutenant C. J. Beattie, 18th Middlesex Rifle Volunteers; Surgeon-Lieutenant I. McBourke, 18th Middlesex Rifle Volunteers; Surgeon-Lieutenant H. L. Wilks, 1st Wiltshire Rifle Volunteers; Surgeon-Lieutenant W. Boyd, 1st Volunteer Battalion the Royal Scots Fusiliers; Surgeon-Lieutenant P. Shaw, 1st Volunteer Battalion Highland Light Infantry; Surgeon-Lieutenant A. Abraham, 5th Volunteer Battalion the Durham Light Infantry; Surgeon-Lieutenant W. J. Edwards, Tees Division Submarine Miners Royal Engineer Volunteers; Surgeon-Lieutenant E. G. Peck, 2nd West Riding of Yorkshire Volunteer Artillery; Surgeon-Lieutenant D. King-Smith, 48th Highlanders of Canada; Surgeon-Lieutenant R. L. Clark, 1st Cumberland Volunteer Artillery; Surgeon-Lieutenant S. L. Potter, 1st Volunteer Battalion the King's Own Yorkshire; Surgeon-Lieutenant E. V. Eames, 1st Volunteer Battalion the Derbyshire Regiment; Surgeon-Lieutenant J. C. Fenwick, 3rd Volunteer Battalion the Durham Light Infantry; Surgeon-Lieutenant J. G. Ronald, 4th Volunteer Battalion the Argyll and Sutherland Highlanders; Surgeon-Lieutenant W. H. Vickery, 3rd Volunteer Battalion the Northumberland Fusiliers; Surgeon-Lieutenant E. Farr, 2nd Volunteer Battalion Middlesex Regiment; Surgeon-Lieutenant R. Shearer, Robin Hood Rifle Volunteers; and Surgeon-Lieutenant F. Grindon, Bearer Company, Home Counties Volunteer Brigade.

THE RED CROSS SOCIETY AND THE NILE CAMPAIGN.

The *Mayflower*, a stern-paddle steamer, 140 ft. long, has been chartered by the National Society for Aid to Sick and Wounded in War (the British Red Cross Society) to convey sick and wounded soldiers from the Soudan between Assouan and Cairo. She carries two medical officers and eight men of the Royal Army Medical Corps, lent by the Government, and two nurses sent out by the society. Reconstructed from a pleasure vessel into a hospital ship to hold 52 sick and wounded and on an emergency 72 patients, she is fitted out with the most modern medical and surgical appliances and medical comforts of every description. The sick and wounded will thus enjoy the luxury of being conveyed by river, and will be saved the heat, choking dust, and the severe discomforts of the railway journey of about 600 miles between Assouan and Cairo, which a high authority has described as the worst part of the transit between Khartoum and Cairo. The ship was inspected by the general officer

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commanding, and she started on Sept. 6th on her first voyage of mercy, leaving Assouan for Cairo on Sept. 15th with twenty-eight wounded and twenty-four sick, including the following officers: Molyneux, Hopkinson, Clark, Geoghegan, Sloggett, and Dyke.

WINTER SESSION OF THE ARMY MEDICAL SCHOOL, NETLEY.

The seventy-seventh session of the Army Medical School will commence on Monday, Oct. 3rd. The surgeons on probation will join at Netley on Oct. 1st. The following are the lists of those who are to attend the school, having obtained places at the recent competition. In addition to these gentlemen we understand that others will attend the school, sixteen nominations having been offered among the medical schools of the United Kingdom under Article 350 of the Pay Warrant.

ROYAL ARMY MEDICAL CORPS.

F. Warren.	G. W. G. Jones.
J. E. Hodgson.	J. W. H. Houghton.
H. P. W. Barrow.	H. S. Taylor.
M. H. G. Fell.	A. L. Scott.
T. C. Lauder.	J. W. Leake.
J. G. Gill.	R. H. Lloyd.
W. B. Winkfield.	D. E. Curme.
G. H. Goddard.	G. M. Goldsmith.

INDIAN MEDICAL SERVICE.

J. C. H. Leicester.	L. E. L. Parker.
H. Innes.	T. S. Ross.
W. S. Willmore.	J. N. Walker.
L. T. R. Hutchinson.	D. C. Kemp.
A. E. Walter.	V. H. Roberts.
C. Hudson.	J. E. Robinson.
A. M. Fleming.	G. P. T. Groube.
H. M. Cruddas.	G. King.
C. F. Weinman.	P. P. Atal.
E. L. Ward.	W. McM. Pearson.

A PEERAGE FOR THE SIRDAR.

Medical officers, in common with everybody else, will have been much gratified at the announcement that the Queen has been pleased to confer the dignity of a Peerage of the United Kingdom upon the Sirdar, Major-General Kitchener, in recognition of his brilliant military services in Egypt, more especially in connexion with his late battles at Atbara and Omdurman and the taking of Khartoum. The Sirdar has been very thorough in all that he has undertaken, he is a first rate organiser, and has shown that he possesses strategical and tactical skill of no mean order. He has successfully carried out his intentions with what may be fitly termed a scientific precision, which reflects great honour and credit on the scientific corps to which he belongs and awakens the sympathetic admiration of the other scientific branches of the service and of the army in general. It was fitting that he should receive a national recognition of the services which he has rendered to the Queen and to the country.

THE INDIAN TROOPING SEASON AND THE ROYAL ARMY MEDICAL CORPS.

The *Times of India* of Sept. 10th announces the following as the order in which the officers of the Royal Army Medical Corps will proceed home this trooping season:—

Term expired, in Nubia, Oct. 7th—Majors Lucas and Stables and Captains Mason and Potter; Simla, Oct. 14th—Majors Russell and Baird and Captains Poole and Faichnie; Dilwara, Nov. 11th—Majors Gerrard and Birch and Captains Knaggs and Begbie; Dunera, Nov. 26th—Majors Kirkpatrick and James and Captains Tacker and Buist; Nubia, Dec. 8th—Majors Winter, Anderson, and Hathaway, and Captain Alexander; Simla, Jan. 3rd—Majors Nichol, Johnston, and Daly, and Captain Crawford; Dilwara, Jan. 13th—Majors Nicholson, Burtchaell, and Fryer, and Captain Symons; Dunera, Jan. 20th—Lieutenant-Colonel Thomsett, Majors Mills and E. Davies, and Captains Holt and Lawson; Nubia, Feb. 10th—Lieutenant-Colonel Bennett, Majors Cree and Skinner, and Captains Buchanan and Hennessy; Simla, March 3rd—Majors Poole, Keogh, and Melville, and Captains Pilcher and Tyacke; Dilwara, March 18th—Lieutenant-Colonel May, Majors Wills and Woodhouse, and Captains Faichnie and Kellie; Dunera, March 25th—Lieutenant-Colonel Anderson, Majors Fitzgerald and A. M. Davies, and Captains Withers and Martin.

THE KHYBER.

The improvement in the general health of the troops in the Khyber still continues and their health may now be said to be fairly good. The question of the control of the Khyber and the settlement of the frontier has been referred home to the Secretary of State for final decision. It is practically settled that the control will be handed over from the Punjab to the Imperial Government and that a large fort will be built at the entrance of the Khyber Pass.

The following officers of the Royal Army Medical Corps will, under the terms of the Royal Warrant, retire from the Army this month: Lieutenant-Colonel A. Anderson (Madras), Surgeon-General J. B. Hamilton, P.M.O., Western District, and Lieutenant-Colonel R. H. Robinson.

Lieutenant-Colonel C. Swaine, I.M.S., has been confirmed as Principal Medical Officer, Hyderabad Contingent.

Correspondence.

"Audi alteram partem."

"THE PLAISTOW MATERNITY CHARITY."

To the Editors of THE LANCET.

SIRS,—It was perhaps excusable that Mr. F. R. Humphreys should have fallen into the error which produced his lengthy letter in THE LANCET of Sept. 24th; it is comprehensible that, having fallen into this error, he should have communicated his opinion on the subject to THE LANCET: but that he should, on such slight grounds, have attacked a large and representative body of his brother practitioners with that species of sneer concerning the filling of pockets which is most often heard amongst the more ignorant section of the laity, is hardly either excusable or comprehensible.

The action of the individual practitioner quoted and commented upon by Mr. Humphreys was never advocated or endorsed by the Executive Council. The incident was related to THE LANCET Commissioner and repeated by him, not as an example of the methods of the society, but rather as an illustration of the extremely unsatisfactory state of things fostered by the abuses at present prevalent in the system of the Plaistow Maternity Charity—a state of things which might easily lead an individual practitioner to a course of action which on reflection he might regret.

If Mr. Humphreys will make himself acquainted with our official methods and literature he will recognise that his fulminations concerning men "bound by rules which disregard everything but the pecuniary necessities of trade" are irrelevant and somewhat ridiculous. The members of our society are bound by no rules whatever as to personal conduct, except those of the generally accepted unwritten codes of personal honour and professional ethics.

In conclusion, I may state that I shall be glad to forward copies of the registered objects and rules of the society to any medical man who is interested in the subject.

I am, Sirs, yours faithfully,

MURTAUGH HOUGHTON,

Hon. Secretary, East Suburban Medical Protection and Medico-Ethical Society, Limited, West Ham Hospital, E.

Sept. 27th, 1898.

THE OPERATIVE TREATMENT OF MYOPIA.

To the Editors of THE LANCET.

SIRS,—To those who during the last few years have taken some pains to test the value of this method of treatment Dr. Kenneth Scott's[1] reasons for condemning it will appear wholly inadequate. These he sums up in the concluding paragraph of his article:—

The method of treatment in question is one which is avowedly sound in theory and also quite feasible in practice, but it is absolutely imperative that it should be entirely regarded from the patient's point of view, and *consequently* should be placed in abeyance until the operation for the extraction of the lens from the eye by whatever method has been resolved into one which is entirely free from all risk of the onset of any after inflammation.

That this and every other treatment should be considered entirely from the patient's point of view is a platitude, but the conclusion that the writer draws from it is surely unsound. If absolute freedom from risk is to be a *sine qua non* of an operation every surgical proceeding will "remain in abeyance" till the Greek Kalends. It is for the surgeon to weigh the risks and advantages of the treatment and to place them before the patient in such a way that he may be able to form a wise decision.

Dr. Scott compares the operation for high myopia with that of the extraction of a senile cataract and because failure occasionally results from the latter he thinks the former should not be attempted. The failures after extraction, however, are under 5 per cent., the patients are all past middle life, and many of them are in feeble health. There

[1] THE LANCET, Sept. 24th, 1898, p. 805.

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is, moreover, little analogy between the operation of extraction and that of discission with subsequent evacuation of the lens matter, which is the recognised proceeding for high myopia. It will seem to most who have seriously considered the subject that the chief question to be considered is that which has been excluded by Dr. Scott—namely, Does the operation render the eye more liable to detachment of the retina? The treatment has been extensively practised both on the continent and in this country and the results hitherto have been very satisfactory. It not merely enables many patients to dispense with glasses—in itself a great boon to individuals in some walks of life—but it gives them good vision without glasses in place of bad vision with them.

It is, of course, possible that in after years eyes operated on in this manner may go wrong; there does not, however, seem to be any reasonable ground for such an apprehension. Such an objection might be urged with equal force against any new proceeding, but we shall best consult the interests of our patients, not by refusing to adopt new methods on account of objections which are purely hypothetical, but by adopting them cautiously and selecting at first only the most promising cases. Although I am myself much impressed with the value of this treatment in suitable cases I think it prudent at present to confine it to one eye.

I am, Sirs, yours faithfully,

Cavendish-square, W., Sept. 26th, 1898. W. ADAMS FROST.

EAST LONDON WATER.

To the Editors of THE LANCET.

SIRS,—The following is a report on a series of samples taken at 6, Holly-road, Leytonstone. Five samples were taken: the first on Sept. 9th at 7.30 A.M.; the second on Sept 11th at 12 noon; the third on Sept. 12th at 2 P.M.; the fourth on Sept. 14th at 8.30 A.M.; and the fifth on Sept. 19th at 8.15 A.M. The samples were taken with the following precautions: six bucketfuls of water were drawn from the tap on the service pipe and a sample was then taken in a vessel sterilised at 160° C. for an hour. A given quantity was then measured off in a sterilised pipette and added to a tube of liquefied gelatin and plated; the plates were incubated at from 20° to 23° C. The colonies were enumerated upon the second day. The gelatin used was 10 per cent. gelatin in nutrient broth (0·5 kilo. of meat per litre) and with an alkalinity of 3 c.c. normal NaOH per litre. The amount of water taken varied from 0·5 to 0·05 c.c.

Sample 1, taken on Sept. 9th at 7.30 A.M. 0·5 c.c., 0·2 c.c., and 0·1 c.c. were added to liquefied gelatin and plated; 0·5 c.c. of the sample was also treated by the method of Pakes for the detection of the coli group. On Sept. 10th 0·5 c.c. and 0·2 c.c. were entirely liquefied, and in 0·1 c.c. the colonies were so close as to be almost uncountable; from enumerations of portions of the plate more than 15,000 were estimated to be present per c.c. The portion of the sample treated by Pakes's method and subsequently plated gave flat, thin, greyish-white colonies with irregular edges. The organism thus isolated is slightly motile, does not stain by Gram's method, gives a large quantity of gas, does not liquefy gelatin, and produces acid. It is therefore referable to the coli group.

Sample 2, taken on Sept. 11th at 12 noon. 0·1 c.c., 0·1 c.c., and 0·05 c.c. were added to liquefied gelatin and plated. On Sept. 13th 0·1 c.c. and 0·1 c.c. were liquefied. 0·05 c.c. = 100 colonies—i.e., an estimation of 2000 per c.c.

Sample 3, taken on Sept. 12th at 2 P.M. 0·05 c.c., 0·01 c.c., and 0·1 c.c. were added to liquefied gelatin and plated. On Sept. 14th the colonies were enumerated as follows: 0·01 c.c., 4; 0·05 c.c., 20; and 0·1 c.c., 42; total 66 = 412 per c.c.

Sample 4, taken on Sept. 14th at 8.30 A.M 0·1 c.c., 0·1 c.c., and 0·1 c.c. were added to liquefied gelatin and plated. On Sept. 16th the colonies were enumerated as follows: 0·1 c.c., 20; 0·1 c.c., 23; and 0·1 c.c., 19; total 62 = 200 per c.c.

Sample 5, taken on Sept. 19th, at 8.15 A.M. 0·2 c.c., 0·1 c.c., and 0·1 c.c. were added to liquefied gelatin and plated. On Sept. 21st the colonies were enumerated as follows: 0·2 c.c., 80; 0·1 c.c., 40; and 0·1 c.c., 50; total 170 = 475 per c.c.

I therefore claim from the foregoing that (1) the number of organisms present per c.c. is a constantly variable quantity and may vary from 15,000 to 200 in a few days, a fact pointed out by other observers; (2) that on one occasion at least—e.g., Sept. 9th—the numbers were abnormally high; and (3) that on one occasion—Sept. 9th—organisms of the coli group were present in 0·5 c.c. of water.

I am, Sirs, yours truly,

KENNETH W. GOADBY.

Bacteriological Laboratory, Guy's Hospital, Sept. 28th.

"ITALY AND POLITICAL ASSASSINATION."

To the Editors of THE LANCET.

SIRS,—In your excellent leading article on the above subject there is one statement which in fair criticism, and I am sure you do not object to such, I must protest against with all my heart and soul and strength and mind, as it is contrary to fact, insulting (no doubt unintentional) to every loyal Roman Catholic, and a libel upon his Church. These are the words I object to: "Given the much-abused resource of the confessional, which whitewashes crime and rehabilitates the criminal on easy terms." This is one of the "conditions" from which you drew the inference that Italy is Senior Wrangler in, and is the nursery of, political assassination. To speak of the Sacrament of Penance whitewashing crime, &c., could only be a delusion on the part of those who had no knowledge of it. I take it for granted, Sirs, that in the opinion of every unprejudiced English judge or gentleman your Catholic readers and subscribers can speak the truth and are as worthy of belief in matters of fact as are any of their Protestant *confrères*, and I am sure they would repudiate your postulate as too absurd for Continental consumption and if uttered by an apostate of their own Church as blasphemous. Roman Catholics are in a minority in this country, Sirs, but minorities have rights, and when such a widely-read and excellent journal as THE LANCET traduces and insults their holy religion, whilst in the next breath it blesses and curses everything that they bless and curse, it is time for them to rub their eyes and protest against this want of proper accommodation and insular view of Peter and his keys. Sirs, if I have in any measure lifted the veil from your congenital myopia as regards the Sacrament of Penance, against which the gates of anarchy have never prevailed and never will prevail, God be thanked. The first step to anarchy, and the final loss of the Image of God and the gain of the stamp of hell, is due to the abandonment of the Sacrament of Penance by the anarchist. He has not even the remorse of Judas. Is he mad? Probably he is. Italy is reaping the whirlwind of her persecution of the Church and the Pope. Her anarchists as well as those of Spain find refuge in England. The right of asylum, except it be a lunatic one, to such outlaws is not fair to other nations. We may have to do penance for it yet.

I am, Sirs, yours faithfully,

R. G. MCCALMAN, M.D., C.M. Aberd.

Coldharbour-lane, S.E., Sept. 22nd, 1898.

*** We print the above letter, but our correspondent should understand that THE LANCET is a purely professional journal which does not interfere in questions of faith or general politics. The reflection was intended to apply to unworthy members of the Roman Catholic Church who abuse the rites of that communion.—ED. L.

ROYAL MASONIC INSTITUTION FOR GIRLS.

To the Editors of THE LANCET.

SIRS,—As candidates for the election of Oct. 13th I notice the names of two daughters of deceased surgeons and of one daughter of a deceased hospital steward. Many medical brethren would doubtless wish to support them. If any Masons care to send me their balloting papers duly signed I shall be pleased to divide the votes equally between the three candidates in question and so avoid waste.

I am, Sirs, yours faithfully,

F. TAYLOR SIMSON, Past Master.

Craven House, Northumberland-avenue, W.C., Sept. 26th, 1898.

UPLAND VILLAGE WATER-SUPPLIES.

To the Editors of THE LANCET.

SIRS,—Will your readers who reside in our large towns credit the following? The parish of Southstoke-cum-Woodcote, with a population of about 700, is situated partly

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on the banks of the Thames and partly on the Chiltern Hills in Oxfordshire. The Woodcote division, with a population of between 200 and 300 souls, lies about 400 ft. above and 3 miles away from the river. The cottagers depend for water upon the drippings from their thatched or tiled roofs and upon roadside ponds filled in winter by the washings from the fields and from the highway. At the present time both ponds and tanks are absolutely dry and water has to be fetched from the river or from lowland wells, involving daily journeys of from six to eight miles. A deep well might be bored, from which an ample supply could be secured, but this has been opposed partly on the ground of expense and partly on the plea that the existing sources have been "satisfactory" for many years and that no excessive amount of disease has prevailed.

The inhabitants can see no objection to the use of roadside pond water for drinking purposes, but now that the ponds are absolutely dry they are inclined to consider the matter. But they are by no means unanimous as to discarding their beloved ponds and substituting a deep well instead.

In my opinion surface drainage from cultivated fields and high roads must always be a dangerous source from which to obtain drinking-water, but it would be of interest to hear the opinions of men who have given special attention to the question of water-supplies. It is stated that the medical officers of health in various districts similar in situation and water-supply to our own do not consider it imperative to condemn the roadside pond. Should you be able to insert this communication possibly some useful replies may be forthcoming. I am, Sirs, yours faithfully,

CHARLES REINHARDT, M.D. Brux., L.S.A. Lond.

Southstoke, Oxon., Sept. 27th, 1898.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Further Abandonment of Restrictive Plague Measures.—Comparative Mortality of the Diseases causing most Deaths.—Future Plague Policy.—Antitoxin Serum.—The Sanitary Commissioner's Report.

THE station master at Poona has received orders, to date from Sept. 7th, not to issue a ticket to any person without the production of a pass from the plague authority. This edict is to apply without distinction to all, Europeans and natives alike. Considering that there is no indigenous plague in Poona such an indiscriminate rule must only raise opposition to plague measures and, like dozens of other hard and fast regulations, will have to be modified sooner or later. I made the above note two days ago and now it is announced that the Bombay Government have decided to abandon the system of passes as well as that of detention camps. The detention camps were costly and unsatisfactory and the system of passes was almost unworkable. This action may be criticised on strictly sanitary grounds, but under all the circumstances it has become not only justifiable but imperative. The prospect of plague being among us for a number of years compels the abandonment of quarantine except for a limited period. Theoretical sanitarians imagined that the system would prove completely efficacious, but practically it has not been so and we are now confronted not only with a rising plague mortality, but with a reappearance and spread of the disease in various districts of the Mofussil.

At certain places a rigid medical inspection of travellers will be conducted. This will secure the obviously sick and the suspiciously sick and will doubtless deter all except the healthy from travelling. It is probable that the necessity for economy of expenses has determined this new policy. It was impossible that the previous rate of expenditure could last long. Every place was being ruined and the excessive inconvenience to which traders were subjected was more than desirable except for a temporary period.

Now that plague has come among us—and apparently to stay—it is interesting to note some of the figures in the Sanitary Commissioner's Report. What with plague, cholera, and famine the deaths in the Bombay Presidency for 1897 rose to 749,916, or 153,444 more than in 1896, giving a rate of 39·84 per mille, the decennial mean being 29·56. The birth-rate was low—33·46, there being 62,154 fewer births than in the previous year.

Cholera caused 57,109 deaths and plague 46,944. While deaths from plague in Bombay city are shown at only 10,237, the mortality of the year exceeded the quinquennial average by 22,666. Part of this excess was doubtless due to plague. It is to be observed that even then plague would not be shown to be more destructive than cholera. The deaths from dysentery and diarrhœa show an increase of no less than 49,920 over those of the previous year. But in India we deal with large figures. From its first appearance to the present time—a period of two years—plague has claimed over 100,000 victims, but cholera in 1896 alone caused 471,779 deaths, small-pox carried off 141,443 people, and "fevers" showed the enormous mortality of 4,578,944. Dysentery and diarrhœa are entered for 240,189 deaths, and while a separate return is not made for phthisis its prevalence and fatality are known to be extreme. The fear of plague may be over-estimated. Being strange to us and being attended with such a high mortality it created panic. We have come to regard cholera and consumption, fevers and dysentery, with such inevitableness that we fail to recognise that they are much more serious than plague. Then, again, there was the fear among sanitarians that plague would spread all over India. After two years it is still almost entirely confined to the Bombay Presidency. In the olden days, when nothing in the way of sanitation was in vogue, plague pursued its course unchecked; and from a study of outbreaks we find that it moved slowly—it spread slowly and while it frequently repeated itself in several places it did not extend over very large areas. The western part of India has always been chiefly attacked. It is reported that Dr. Simond, working with serum prepared by Dr. Roux at the Pasteur Institute, Paris, has obtained 47 per cent. of cures. It is stated, however, that no results have been obtained in the so-called pneumonic cases or in those cases where the generalisation of the microbe either in the lymphatic system or in the blood took place before the treatment. Under these circumstances I do not consider the result satisfactory because in hospitals 50 per cent. die within forty-eight hours, and of those who live over three days 50 per cent. recover. I am unable to report any further progress in the treatment of plague from any other quarter. Prophylactic inoculation is practically at a standstill both in Bombay and Calcutta.

Sept. 9th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The New Thompson-Yates Laboratories of Physiology and Pathology in University College, Liverpool.

THE development of the Liverpool Medical School has steadily progressed since its establishment in 1834. On the foundation of University College, Liverpool, in 1881, the Royal Infirmary School of Medicine (as the medical school was then termed) was incorporated with that body, becoming its medical faculty. In 1884 University College became an integral part of the Victoria University as one of its affiliated colleges, and since that time the history of the medical faculty has been one of continued success. The endowments of the chairs of anatomy, physiology, and pathology, were quickly followed by the gifts of the Tate Library, the Gossage chemical laboratories and Ashton Hall, the gift of the late Mr. George Holt, which that gentleman fully equipped for the use of the pathological department pending its removal to larger premises, and which in future will be known as the School of Hygiene, and, lastly, came the new laboratories of physiology and pathology, the noble gift of the Rev. S. A. Thompson-Yates, which are to be opened by Lord Lister on Oct. 8th. All these improvements show the great strides made in Liverpool in recent years in the direction of the advancement of medicine and its collateral sciences. The Thompson-Yates laboratories are located in a handsome building within the precincts of the grounds of University College. There is a spacious entrance-hall with tiled pillars extending all the way up the main staircase, a basement, ground floor, first and second floors and three mezzanines adjoining the main staircase. The ground floor is L-shaped, with the object of admitting a greater amount of window space than could be obtained by a rectangular form of building. This floor will be devoted to the department of pathology, and it contains the morbid histology class-room, 56 ft. in length by 26 ft. in breadth, to accommodate sixty students. This room opens at one end into the

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pathological museum which has been considerably enlarged. In another part of the ground-floor is the bacteriological room, 53 ft. in length by 19 ft. in breadth; the benches in this room are covered with opaline tops as a sanitary precaution against the absorption of infective materials. Close by are rooms for pathological chemistry, pathological private research, a constant-temperature room for experimental pathology, and a room for photography. The large theatre is situated on the first floor and will accommodate 180 students. In winter the theatre will be devoted to physiology and in summer to pathology. The arrangements in the theatre are simply admirable. There is a liberal supply of electric lights, an interesting feature of which is an adjustable horizontal aerial bar which can be tilted round in any direction so as to bring the light to bear on any requisite object. There is also a switch at the back of the theatre for use with an arc lamp. On this floor is also situated the large physiological chemical laboratory, the best lighted room in a well-lighted building. Close by are the preparation, the research, and the electrical rooms. There is a large room for classes in recording drum work, each student in which will be provided with one of Professor Sherrington's drums. The histology class-room on the second floor is 60 ft. by 40 ft. and will accommodate 80 students, each of whom will be supplied with his own gas, water, electric light and microscope. This room is well lighted, and there is also an aquarium at one end. The north wing on the top floor contains the small animal room (the windows of which are guarded by wire cages), the preparation room, a combustion room, and a photograph room. The basement contains a cold storage room kept cool by the ammonia process, also a laboratory for the work of the clinical investigation society, and other rooms for experimental work. There is also on the basement a student's common room which can be altered in such a manner as to meet the purposes of a debating society. The laboratories are splendidly equipped all through and will afford every opportunity for the study of modern research. It is possible to say that the Thompson-Yates Laboratories of Physiology and Pathology in University College, Liverpool, are certainly equal to, if they are not superior to, any other institution of the kind in the kingdom and that they cannot be surpassed either here or on the Continent. Liverpool in particular and the community in general are much indebted to the noble generosity of the Rev. S. A. Thompson-Yates for the gift of this valuable building and its equipments, upon which he has expended the large sum of £35,000. The architect is Mr. A. Waterhouse, R.A., of London, who also designed the Liverpool Royal Infirmary.

Sept. 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Belfast Drainage System.

AT a joint meeting of the Improvement and Public Health Committees of the Belfast City Council held on Sept. 20th it was decided that a systematic test of all the drains should be made and that a weekly return of the drains so tested should be made to the two committees. I am afraid that unless a very large staff is appointed this will take a long time to accomplish. The addition of from three to six additional inspectors as proposed in order to efficiently carry out the work is not by any means sufficient. The following returns brought before the Improvement and Public Health Committees on the same date show a deplorable laxity in the prevention of insanitary defects. It appears that 4279 new houses were built during the past two years and of these only 1279 had the drains tested by water or smoke, while 3000 houses, although passed, have not had the drains tested. I trust that the corporation at its meeting on Oct. 1st will confirm this resolution passed at the combined meeting of the Public Health and Improvement Committees, insisting on the systematic and thorough testing of all the drains of houses in Belfast.

The Belfast Guardians and the Medical Profession.

Dr. E. C. Bigger having made a satisfactory report to the guardians of Belfast in reference to the treatment of fever patients in their hospital, in which he dispelled the impression conveyed in one of the papers that patients sent into the Union Fever Hospital and certified to be suffering from fever, but in whose cases the diagnosis may be wrong, are exposed to infection by being placed in a ward where other patients are so suffering, a most extraordinary discussion followed, in which some members of this truly remarkable board surpassed themselves in the violence of their attack on the medical profession. One guardian said he would suggest that Dr. Bigger should separate these classes in his list—the typhus fever cases, the typhoid fever cases, and those who were sent in for the purpose of getting the medical men the half-crowns. He also said that the "iniquitous system" (money paid for the notification of infectious diseases) was a "perfect swindle," while another guardian said that the medical men outside (in the city) were reaping a perfect harvest (i.e., notifying cases), and he added, "the doctors were great scoundrels"; and on being mildly asked by a medical guardian to withdraw that expression he boldly replied, "I'll withdraw nothing." One of these gentlemen who attacked the medical profession is reported in the public press to have remarked, in reference to an article which appeared in a Belfast newspaper dealing with the workhouse graveyard, that knowing the ground well "he would say there was just a sufficient ground of truth in the article to keep him from calling it a d——d lie from beginning to end." Truly, the Belfast guardians form a wonderful board!

The Health of Belfast.

For the week ended Sept. 17th the death-rate from all causes in Belfast was 30·6 and from the principal zymotic diseases 12·2. There were 247 cases of typhoid fever notified during the week, or 23 less than the previous week, and 341 less than the week before that. For the same week it appears from the Registrar-General's table that the total births and the total deaths in Belfast were the same—179. These figures, I regret to say, show an extremely bad state of affairs, for although, as compared with the previous week, there were fewer cases of typhoid fever notified (247 as against 270), the general death-rate has gone up from 27·9 to 30·6, and the mortality from zymotic disease has increased from 10·8 per 1000 to 12·2, which is really appalling. At the present time Dr. Lorrain Smith is making a most careful bacteriological examination of the water-supply of Belfast to see if it has any bearing on the typhoid fever epidemic, but up to the present no definite results have been announced. It is interesting to note that in the present outbreak of typhoid fever in Belfast Widal's reaction has in many cases failed, and in some of the fatal cases in whom during life Widal's test could not be obtained the spleen removed at the post-mortem examination has been subsequently found to teem with bacilli. This most interesting scientific observation would seem to confirm similar results observed in reference to certain recent outbreaks of enteric fever in England.

Ballycastle Sanitary Officer.

At a meeting of the Ballycastle Board of Guardians, held on Sept. 24th, Mr. Ewing was elected consulting sanitary officer.

Lunacy in Ireland.

It would appear from the forty-seventh report of the inspectors of lunacy in Ireland that lunacy there, as in England and Wales, is on the increase. On Jan. 1st the number of persons known to be insane in Ireland was 19,588, as against 18,966 in 1897. They were distributed as follows: 14,598 are detained in the district or county asylums; 170 in the Central Asylum, Dundrum; 691 in private asylums at the expense of relatives; 4030 in the workhouses; only 3 in prisons; and there were 96 single Chancery patients in unlicensed houses.

Sept. 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Diagnosis of a Bullet in the Subhyoid Region by Means of the X Rays.

M. CHOISEUL read a paper before the Academy of Medicine on Sept. 20th in reference to a case reported by Surgeon-Major Boisson and Surgeon-Major Mercus. The patient was a soldier who during an hysterical attack shot himself in presence of his family with a revolver

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of 7 mm. calibre. The wound was in the neck. Hemiplegia followed together with constant pain in the subhyoid region which was increased by any attempt to swallow. Four weeks later he was seen by Surgeon-Major Boisson and Surgeon-Major Mercus. The scar was plainly visible but palpation gave no sign of the whereabouts of the bullet, so recourse was had to the x rays. Two skiagrams, taken respectively from the right and left sides, revealed a dark well-defined shadow situated at a point marked by a line joining the middle of the inferior border of the lower maxilla to the body of the hyoid bone and about one centimetre above the upper border of this latter. It was also evident that the foreign body was close to the skin upon the left side and thanks to these indications it was easily removed. The tissues were divided layer by layer until the hyoglossus was reached, when the bullet was seen and easily extracted. It weighed 3 grammes and was only slightly out of shape. The after progress of the case was uneventful and appropriate mental treatment entirely did away with the hysterical hemiplegia which had affected the patient since the accident.

The Abortive Treatment of Gonorrhœa.

At the same meeting of the Academy of Medicine M. Chauvel read sundry papers which had been sent in for the *prix Herpin* with reference to the abortive treatment of gonorrhœa. He came to the conclusion that these papers showed that there was no such thing as a really efficacious abortive treatment.

Mutiny at the Bicêtre Hospital.

On Sept. 24th 20 young patients at the Bicêtre Hospital, who were epileptic and were working in the locksmith's shop, broke out into open revolt. They all met contrary to the regulations, which prohibit any patient going into the shop except during working hours. When the attendants told them to go they refused and having armed themselves with the various iron implements which were lying about drove out the attendants and barricaded themselves in the shop. The chief of the hospital then sent for the firemen and the rebels, soaked with water, were easily disarmed by the attendants, who got in through the windows. The two ringleaders were handed over to the police.

The Cinematograph at the Faculty of Medicine.

M. Tuffier, Professor of the Faculty of Medicine and surgeon to the hospitals, has been using the cinematograph after the manner of Dr. Doyen to show the various phases of a surgical operation at his lectures. The photographs were all taken from the cases of M. Tuffier at the Pitié and the practical school of the faculty and the results were excellent.

An Ingenious Quack.

A most ingenious quack who was in the habit of "practising" with great success on board the boats running between Dover and Calais, has just been arrested in Paris. His method was as follows. He embarked on board the boat and during the crossing a woman, his accomplice, pretended to be violently seasick, so bad, indeed, that she collected around her a group of sympathising passengers. The swindler then turned up with a small bottle containing, as he affirmed, a drug of marvellous efficacy, which he offered to the sick lady. She having swallowed one mouthful declared herself miraculously restored. The bystanders never failed to ask the quack for his secret, and he, giving himself out as an inventor who was going to England to dispose of his patent, said that nevertheless for humanity's sake he would dispose of a few bottles of his medicine just before the boat arrived in port for the sum of 20 francs each. The silly people who bought them had thus no time to discover that the "drug" was only coloured water, an unlucky discovery reserved for their return voyage. This *chevalier d'industrie* was arrested while walking in Paris, where he was recognised by one of his dupes.

The Case of the Prince of Wales.

Dr. Lucas Championnière, the celebrated senior surgeon at the Beaujon Hospital and a member of the Academy of Medicine, has published in his paper, the *Journal de Médecine et de Chirurgies Pratiques*, under date August 10th, a noteworthy article entitled "The Prince of Wales and his Fractured Patella." He there states in bitter language that recent advances in surgery are not enough to make the medical attendants of the Prince undertake the responsibility of applying them in this case to a patient of such high degree whose successful treatment puts their reputation at stake. He is perfectly astonished that at the consultation in which Lord Lister himself took part the idea of operative interference was unanimously rejected, especially as the distance between the fragments was more than two inches. It is amazing that in the country of Lister, to whom is due the first idea of treating this form of fracture by direct suture, the Sovereign (*sic*) should not enjoy in the same degree as the least of his subjects the benefit of this admirable treatment—unless, indeed, there was something in the general health of the patient to contra-indicate any surgical operation whatever, and such contra-indication has never been hinted at. Dr. Championnière would without doubt have freely opened the joint and brought the bony fragments together by two stout sutures. He has himself treated 53 cases of fractured patella in this way, who have all recovered perfect use of their joints and are able to do the hardest work. Among these was an acrobat who two months after the operation used to perform in a circus *le saut périlleux*. Even elderly persons rapidly recovered after the operation. On the other hand, he has always seen immobilisation leave stiffness in the limb for the remainder of life as well as muscular atrophy and diminished physical activity, leading at a certain time of life to all those cardio-pulmonary and gastric complications which come from want of exercise. The article finishes in the following words: "These are the reasons why I consider, until more ample information is forthcoming, that one must regret that we have not seen this operation performed upon a prince who possesses the respectful sympathy of all Frenchmen, and whose proverbial activity is so desirable for all, and not merely in his own interests but those of humanity."

Sept. 27th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Coloured Race in Life Assurance.

THE Atlanta University has investigated the comparative mortality-rates of the negro race. In respect to phthisis and pneumonia the coloured population had a death-rate of 75·5, as compared with that of the white population, 32·8. In fevers, as typhoid, scarlet, malarial, &c., the excess was 30 per cent. on the same side; in cholera infantum, convulsions, &c., it was 165·1. As to phthisis the percentage of the excess of deaths per 10,000 in the case of blacks over the deaths of whites, covering periods of four years each, from 1881 to 1895, was from 143 to 172 in Atlanta, from 90 to 137 in Memphis, from 162 to 239 in Charleston, from 128 to 149 in Baltimore, and from 87 to 114 in Richmond. The Prudential Company has had experience in both equal and discriminated insurance for blacks and whites. For a term of years it has been in the habit of giving one-third less insurance for the same money to coloured than to white adults, from 12 to 70 years. During the period in question the mortality was separated and tabulated by colour and special study and search among health reports and census reports was made. From 1884 to 1893 inclusive the company's experience showed an average loss per $1000 at a risk of $16·96 among whites and $21·63 among blacks. The causes were found to be mainly: comparatively higher actual mortality resulting from lack of physical vigour, inherited tendencies to disease, neglect in sickness, improper food, unwholesome habits of life and unhealthy localities; a heavy lapse rate, in which the "selection" was against the company as usual; a low moral sense; and ignorance of its attendant evils, although the last-named cause might seem to be included in the others. Even among the small number of negroes who are thrifty, intelligent, and on a high comparative level of moral and social living, the Prudential Company is satisfied that mortality still exceeds that among whites, owing to low vitality and inherited weakness of constitution. The Sun Life Company has reported a similar experience and belief, adding that southern whites object to joining any company which accepts negro risks freely, not from race prejudice, but because they do not believe insurance of the two races on equal terms to be equitable.

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The New York State Pathological Laboratory.

During the spring of 1898 the Legislature of the State of New York appropriated a sum of money to the purpose of equipping and maintaining a laboratory to be devoted to the study of the causes, mortality-rate, and treatment of cancer. This laboratory is now being conducted under the supervision of the medical department of the University of Buffalo. The laboratory is equipped with every possible facility for investigating the disease, both in its clinical and pathological aspects. The officers of the institution invite correspondence with physicians throughout the country in regard to statistics and all matters connected with this study; they also desire to secure reprints of all monographs pertaining to this subject for its library. They furthermore particularly wish to learn the names and addresses of the various quacks, charlatans, and institutions advertising as curing this disease, as well as the methods in use amongst them. Such correspondence will be regarded as absolutely confidential if so requested. It is desired also to secure specimens of tumours from all varieties of the lower animals, either gross specimens or fragments for microscopical examination. These should be sent securely packed, the former immersed in weak alcohol or formaline solution, the latter in pure alcohol. They will be gratefully acknowledged or even paid for in exceptional cases.

Medical Department of Cornell University.

Through the munificent gift of $1,500,000 arrangements have been perfected by which Cornell University is to establish a medical department in the City of New York. The donor is Colonel Oliver H. Payne, formerly a member of the board of trustees of the New York University. The condition which has made the establishment of this new college possible arose from the controversy which raged a year ago in the Council of the University of the City of New York over the treatment of its medical department, which led to the withdrawal not only of almost the entire medical staff but also of nearly half of the active members of the council, of whom Colonel Payne was one. The faculty of the new college includes the entire governing faculty and most of the instructors and professors of special branches lately connected with the University of the City of New York and also several of those associated with the Bellevue Hospital Medical College. The full four years' course of the Cornell University Medical College is given in the City of New York and the course of the first two years is also given in Ithaca, where the University is located. As co-education of the sexes is allowed in Cornell University, the following provision has been made. Men students may take half the course in Ithaca and the other half in New York; women students must take the first half of the course in Ithaca (where a home is provided in the Sage College for Women) and the latter half in New York. The proposed Cornell Medical College will be situated on the block bounded by Twenty-seventh- and Twenty-eighth-streets and First-avenue. It will be an imposing building 200 ft. by 100 ft., five stories high and some 85 ft. to the cornice. The interior of the building will be simple and severe in character, but the materials used will be those specially fitted to the purposes of a medical college, glazed brick and tile predominating in the finish of the different rooms. The ground floor will be partly occupied by the dispensary, which forms a complete and separate department, with general waiting-rooms for males and females, small theatres for operation and separate rooms for the eye, ear, nose, and throat departments, for the apothecary, &c. The second floor contains the rooms for the skin, gynæcological, and orthopædic departments, and orthopædic workshop, and two section demonstration theatres. The third floor will contain physiology students' and private laboratories, chemistry students' and private laboratories, recitation rooms, amphitheatres, and private rooms for professors. The fourth floor will contain the workshop, museum, dark room for preparing and mounting specimens, manikin room, materia medica laboratory, bacteriology laboratory, room for operative surgery, lavatories, &c. The fifth floor will contain the dissecting rooms for male and female students.

Sept. 19th.

BRISTOL ROYAL INFIRMARY.—An anonymous donor has promised £1000 if twelve others will give a similar amount towards the liquidation of the debt of £13,000 owing by the Bristol Royal Infirmary.

THE INDIAN MEDICAL ASSOCIATION AND REFORM IN MEDICAL EDUCATION.

IN May, 1898, the Council of the Indian Medical Association decided upon sending to the Government of India a memorandum as to reform in medical education. The points which the Council wished chiefly to lay stress upon were as follows:—

1. A unified standard of preliminary examination in general education for admission to medical study for all universities in India. As the F.A. of Calcutta and the Intermediate of Lahore are already accepted by two universities the other academical bodies should be asked to raise their preliminary education standard to this level.
2. That the medical degrees granted by Indian Universities be of one standard and one nomenclature—namely:
   (*a*) Licentiate of Medicine and Surgery or L.M.S.
   (*b*) Bachelor of Medicine or M.B.
   (*c*) Master of Surgery or C.M.
   (*d*) Doctor of Medicine or M.D.
   No imitations of these degrees should be permitted.
3. A unified standard of preliminary examination (the Entrance or Matriculation of Indian Universities or the High School Certificate) a full curriculum (5 years), and a unified diploma (Diplomate in Medicine, Surgery, and Midwifery, or D.M.S.M.) for all Military Assistant Surgeons.
4. A unified standard of preliminary examination (the Middle School Examination of the Government European Code of its equivalent entrance), a curriculum of four years' medical study, and a unified professional examination and certificate of qualification for all hospital assistants, whether civil or military, and for all junior medical schools, whether State or private. Certificate in Medicine, Surgery, and Midwifery (C.M.S.M.).
5. The formation of a General Medical Council for India (with powers similar to the General Medical Council of Great Britain) composed of an equal proportion of Government officials and independent medical practitioners.

The memorandum, which was drawn up by the secretary of the association, Dr. James R. Wallace, also remarked upon the fact that in India almost everything was in the hands of the Government and that therefore it was the duty of the Government to see that medical education was kept at a high level, whereas it was willing "to accept anything in the shape of a 'diploma' as good enough for its own local services and for the medical requirements of the public." It also deals with the licences in Medicine and Surgery granted under the auspices of the Dufferin Fund and says that the question must be raised as to the legality of these licences.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON. — In September the following candidates passed in the subjects indicated:—

Surgery.—G. H. Bedford (Section I.) and F. P. Bush, Guy's Hospital; H. H. Cotman (Section I.), Aberdeen and London Hospital; H. L. Heath (Section II.), Toronto and Cambridge; J. W. King (Sections I. and II.), Charing Cross Hospital; E. C. Scarlett (Section I.), Royal Free Hospital; and A. E. Shaw, Cambridge and St. Thomas's Hospital.

Medicine.—C. G. Catterall (Section I.), Leeds and Westminster Hospital; H. Cooper, Aberdeen; H. H. Cotman (Section I.), Aberdeen and London Hospital; H. L. Heath (Section II.), Toronto and Cambridge; and W. M. Hocken, Liverpool.

Forensic Medicine.—C. G. Catterall, Leeds and Westminster Hospital; and W. M. Hocken, Liverpool.

Midwifery.—C. G. Catterall, Leeds and Westminster Hospital; H. H. Cotman, Aberdeen and London Hospital; E. L. D. Dewdney, King's College Hospital; L. Liebster, Vienna; and A. H. Safford, King's College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—H. L. Heath and J. W. King.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the third examination for the degree of Bachelor in Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

Second-class Honours.—James Robert Burn, Frederic William Lambelle, Richard Henry Dix, Thomas Smirk Percival Parkinson, and Robert Peart, College of Medicine, Newcastle-upon-Tyne.

Pass List.—Reginald Alderson, College of Medicine, Newcastle-upon-Tyne; Clifford Harold Brookes, St. George's Hospital; Henry Eggleston and Joseph James French, College of Medicine, Newcastle-upon-Tyne; Duncan Matheson Johnston, St. Bartholomew's Hospital; Fred Stuart, College of Medicine, Newcastle-upon-Tyne; Eleanor Shepheard, London School of Medicine for Women; William Johnston Symes, Sheffield School of Medicine; Leonard Satchwell Smith, Mason College, Birmingham; and Ralph Harry Vincent and Edgar Sheldon Wilkinson, St. Bartholomew's Hospital.

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THE REGISTRATION OF PLUMBERS AND DOMESTIC SANITATION.—The Lord Mayor of Manchester presided at a public meeting in Manchester on Sept. 19th, at which Dr. Mansel-Howe delivered an address on "The Registration of Plumbers and Domestic Sanitation." We must, he said, feel sure that it was upon the efficiency of a system ensuring the qualification of plumbers and enabling the public to recognise the qualified man that sanitary plumbing actually depended. The registration of the plumber deserved to come under the recognition and the protection of Parliament. Mr. Lees Knowles, M.P., said that all parties in the House of Commons were committed to the principle of the Bill, the main object of which was to afford additional safeguards to the public health by enabling persons employing plumbers to select, when they desired to do so, those who had given evidence of their qualification for plumbers' work.

PRESENTATIONS TO MEDICAL MEN.—At a well-attended public meeting of subscribers held on Sept. 16th in the Council Chamber, Banff, Mr. George Wilson, M.B., C.M. Aberd., of that town, was presented with a gold watch and chain and a purse of sovereigns on his leaving the district. The inscription on the watch is as follows: "Presented to Dr. George Wilson, along with gold albert and purse of sovereigns, on the occasion of his leaving Banff, by friends and well-wishers in Banff and district. Sept. 16th, 1898." On the front of the watch there is engraved the monogram of the recipient. It may also be mentioned that Dr. Wilson was subsequently the recipient of a valuable study chair, bearing an appropriate inscription, from the superintendent and officials of the Ladybridge Asylum.—Mr. Reginald Wade, M.R.C.S. Eng., L.S.A., of Highbridge, Somerset, has been presented with an ink-stand, suitably engraved, by the members of the class of the St. John Ambulance Association consisting of employés of the Great Western Railway Company in appreciation of his services as honorary lecturer.—On Sept. 21st the children of the Chulmleigh (North Devon) Board Schools presented the chairman, Mr. Joseph Tucker, M.R.C.S. Eng., L.S.A., with a silver water-jug as a mark of respect and esteem on the occasion of his marriage. The Chulmleigh Cricket Club presented him with a toilet set and the children of Week School with a biscuit box. Lieutenant Gibson, on behalf of the G Company of Devon Volunteers, gave an address and a case of silver dessert knives and forks. Mr. Tucker was largely instrumental in establishing at Chulmleigh the G Company Volunteers of which he is the Lieutenant in command.

DIPHTHERIA IN LONDON.—Diphtheria in London has been a diminishing quantity during many weeks past, as shown by successive four-weekly periods, both as regards amount of disease and recorded numbers of fatal cases. In the four weeks ended on July 16th there were notified 849 attacks in London, all the several sanitary districts having been invaded, five of them having an aggregate of 290 cases, while five other areas had only 9 cases in all. The weekly average of attacks was 212, that of registered deaths was 29, the total being 116. The resulting case mortality was 13·7 per cent. In the four weeks next succeeding the total number of notified cases fell to 785, giving a weekly average of 196, and two sanitary districts escaped invasion. Only one district had more than 50 attacks notified, while in five other areas only 12 cases were heard of. The registered deaths fell to 96, a weekly average of 24, and the case mortality also fell to 12·2 per cent. The next similar period, ended on Sept. 10th, revealed a still further decline of attacks, the total having been 699, a weekly average of 175 being the result. All the sanitary districts were invaded, but not one had as many as 50 cases, whilst five areas had only single attacks recorded. The registered deaths, however, increased to 107, or 27 weekly, and the case mortality became 15·3 per cent. In the Outer Circle the course of fatal diphtheria has been erratic, the figures for the several weeks of the three periods dealt with having been 11, 11, 10, and 9 in the July period, or 41 in all; 11, 11, 15, 8, and 13, or 47 in all, in the August period, and 13, 9, 7, and 10, or 39 in all, in the period ended on Sept. 10th. In each of the two complete weeks which have since elapsed the registered deaths from diphtheria in London have been identical in number—namely, 29. But while the corrected decennial average was exceeded by 13 in the earlier of those weeks that average was exceeded by as many as 18 last week. In the Outer Circle there were 11 recorded deaths in the earlier week and 12 last week. Of the 23 deaths thus registered 14 belonged to the West Ham district.

ICE-CREAMS.—On Sept. 19th a man was fined 30*s.* for manufacturing ice-cream amidst dirty surroundings at Port Talbot, South Wales.

TYPHOID FEVER AT HONICKNOWLE.—At the meeting of the Plympton Rural District Council, held on Sept. 23rd, Mr. Noy Scott, the medical officer of health, reported that typhoid fever had broken out in the hamlet of Honicknowle, in the parish of St. Budeaux. There are at present 23 cases of the disease in the village, which has 506 inhabitants and 106 houses. He attributed the outbreak to the insanitary and offensive condition of the main sewer, the pollution of the stream, and minor insanitary matters in the houses.

ABERDEEN CORPORATION LODGING-HOUSE.—This establishment, which will assist materially in the solution of the problem of house accommodation for the poorer classes, is almost finished. It will be opened probably in November next. The charges per cubicle have been fixed at rates varying from 6*d.* to 4*d.* per night and the manager to be appointed will have a salary of £80 per annum, with residence, fire, and light. There will also be an assistant manager, a cook, a laundrymaid, and six other servants for cleaning the dormitories, &c.

LITERARY INTELLIGENCE. — MESSRS. J. & A. Churchill's announcements for October include the following new books and new editions:—A Manual of Ophthalmic Surgery and Medicine, by Mr. Walter H. H. Jessop, ophthalmic surgeon to St. Bartholomew's Hospital. The work contains over 100 illustrations, 5 coloured plates, and test types. A second revised and enlarged edition of Morris's Anatomy, with 800 illustrations, of which 200 are new or altered. The fifth edition of Taylor's Practice of Medicine, revised throughout with improvements in size and type. The fifth edition of Clouston's Clinical Lectures on Mental Diseases. A new work on Diet and Food considered in relation to Strength and Power of Endurance, Training and Athletics, by Dr. Alexander Haig, physician to the Metropolitan Hospital. A Synopsis of Surgery, by Mr. R. F. Tobin, surgeon to St. Vincent's Hospital, Dublin. A Textbook of Histology, including the Microscopic Technic, by Dr. Philipp Stöhr, Professor of Anatomy at the University of Würzburg, and edited by Dr. Alfred Schaper, demonstrator of histology at the Harvard Medical School. The sixth edition of Goodhart's Diseases of Children. Vol. iv., and reprints of vols. i., ii., and iii., part 1, of Allen's Commercial Organic Analysis. Vitality: an Appeal, an Apology, and a Challenge, by Dr. Lionel Beale, Emeritus Professor of Medicine in King's College.—We notice in connexion with Mr. John Poland's forthcoming work upon "Traumatic Separation of the Epiphyses" that Messrs. Smith, Elder and Co. are about to publish a Skiagraphic Atlas by the same author. It illustrates the development of the bones of the wrist and hand as displayed by the Roentgen rays. This is the first instance in which a series of skiagrams showing the ossification of the bones of these parts has been traced over a period of years from early infancy. Such an atlas may well be of great practical use to the surgeon and student.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALFORD, H. J. MARMADUKE, L.R.C.P. Lond., M.R.C.S., has been appointed Resident Dispensary Medical Officer to the Weston-super-Mare Hospital.

BAILEY, MATTHIAS, M.R.C.S., L.R.C.P., has been appointed Senior House Surgeon to the Bootle Borough Hospital.

BOULTON, A., L.R.C.P. Lond., M.R.C.S. Eng., D.P.H., has been re-appointed Medical Officer of Health by the Horncastle Rural District Council.

BUIST, R. C., M.D., C.M. Edin., has been appointed a Medical Officer in the department of Gynæcology for the new Hospital for Women in connection with the Dundee Royal Infirmary.

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CRIBB, C. H., has been appointed Analyst for the parish of Fulham, vice E. G. Clayton, resigned.

CROSSLEY, H. J., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Junior Resident Medical Officer for the Crumpsall Workhouse Infirmary, Manchester.

DOMMISSE, F., M.B., Ch.B., has been appointed Clinical Assistant for the Chelsea Hospital for Women, Fulham-road, London, S.W.

DOWN, ARTHUR REED, L.R.C.P. Lond., L.S.A., has been appointed Medical Officer for Bampton by the Tavistock Board of Guardians.

GRANT, J. E. R., L.R.C.P. Irel., M.R.C.S., Eng., has been appointed Chief Medical Officer for the South-Eastern and London, Chatham and Dover Railways.

HEADLEY-HARDING, C., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for the Whittlesea Urban District.

JONES, T. C., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer of Health by the Ruthin Rural District Council, vice J. M. Hughes, resigned.

KYNOCH, J. A. C., M.B., C.M., F.R.C.P. Edin., has been appointed a Medical Officer in the department of Obstetrics for the new Hospital for Women in connection with the Dundee Royal Infirmary, and also appointed to the chair of Midwifery at St. Andrews University.

PALMER, J. M., M.R.C.P., F.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Armagh.

PATON, B. LEWIS, B.A., M.B., C.M., has been appointed Clinical Assistant for the Chelsea Hospital for Women, Fulham-road, London, S.W.

PERROTT, C. J., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Sanitary District of Kingswood, Oldland, and Hanham Abbots of the Warmley Union, vice R. W. Brimacombe, retired.

RANDLE, JAMES MAYNE, L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer of Health by the Ivybridge (Devon), District Council.

REID, STUART B., M.A. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon for the East London Hospital for Children and Dispensary for Women, Shadwell, E., vice Mr. William Evans, resigned.

SMITH, R. E., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Finchingfield Sanitary District of the Braintree Union.

TURNER, PERCY E., M.B., B.S. Durh., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Kent County Ophthalmic Hospital, Maidstone.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

AYR COUNTY HOSPITAL.—House Surgeon for one year. Salary £50 per annum, with residence, board, and washing.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street, Birmingham.—House Surgeon for six months. Honorarium £21, and board, lodging, and washing provided.

BOOTLE BOROUGH HOSPITAL.—Assistant House Surgeon. Salary £40 per annum, with board, washing, lodging, &c.

BURY INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and attendance.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—House Surgeon. Board and residence provided in the Hospital.

DISTRICT OF SOUTH HORNSEY.—Medical Superintendent for the Infectious Diseases Hospital at St. Ann's-road, N. Applications to the Clerk to the Council, Offices, Milton-road, South Hornsey, N.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary commencing at £100 a year, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the Casualty Department for six months. Salary at the rate of £100 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—Resident Medical Superintendent for one year. Salary £105 a year, with board and residence in the hospital.

JOINT COUNTIES ASYLUM, Carmarthen.—Second Assistant Medical Officer. Salary £120 per annum, advancing £10 annually to £140, with board, residence, and washing. £5 per annum in lieu of stimulants.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Third Assistant Medical Officer, single. Commencing salary £120, with board, washing, and furnished rooms.

LEEDS UNION.—Assistant Medical Officer for the Workhouse Schools and Infirmary, Beckett-street, Leeds. Single. Salary £100 per annum, with board, washing, apartments, and attendance, subject to statutory deductions. Applications to the Clerk, Poor-law Offices, East Parade, Leeds.

LEWISHAM UNION.—Second Assistant Medical Officer for the Infirmary, for six months. Salary £30 with usual resident allowances. Applications to the Medical Superintendent of the Infirmary, 282, High-street, Lewisham, S.E.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 for the first year, and £110 for the second year, with board and residence.

NORTH RIDING INFIRMARY, Middlesbrough-on-Tees.—House Surgeon, without a family. Salary £100 a year, with lodging, board, and washing, and £5 a year instead of beer.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

PORTSMOUTH DOCKYARD AND STEAM RESERVE (EQUITABLE) MEDICAL SOCIETY.—Surgeon. Applications to the Secretary, 47, Liverpool-road, Kingston, Portsmouth.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, London.—Assistant Resident Medical Officer for four months. Salary at the rate of £50 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, London.—Resident Medical Officer for twelve months. Salary £70, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL SOUTH HANTS INFIRMARY, Southampton. — House Surgeon. Salary £100 per annum, with rooms, board, and washing.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon for one year. Salary £50 per annum, with board, apartments, washing, and attendance.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon, to act also as Secretary. Salary £60, with board, lodging, and washing.

UNIVERSITY COLLEGE, Liverpool (Victoria University).—The Chair of Midwifery and Gynæcology.

UNIVERSITY COLLEGE, London.—The Sharpey Physiological Scholarship. Applications to the Secretary.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon, for six months. Honorarium £12 10s., with board and residence.

Erratum.—In our last week's issue the vacancy at the Addenbrooke's Hospital, Cambridge, should read Resident House Physician and not Resident House Surgeon.

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On Sept. 20th, at Aldersgate-street, E.C., the wife of John Adams, F.R.C.S., of a daughter.

DINGLEY.—On Sept. 24th, at Upper Woburn-place, W.C., the wife of Allen Dingley, F.R.C.S., of a daughter.

EVELYN.—On Sept. 26, at 24, Micklegate, York, the wife of W. A. Evelyn, M.D., of a daughter.

LANGDON-DOWN.—On Sept. 21st, at Carina, Teddington, the wife of Reginald L. Langdon-Down, M.B., M.R.C.P., of a daughter.

MELLERSH.—On Sept. 22nd, at Faireholme, Esher, the wife of W. Francis Mellersh, L.D.S. R.C.S. Eng., of Surbiton-hill, of a son.

MARRIAGES.

BLABER—DAWSON.—On Sept. 22nd, at St. Patrick's Church, Hove, by the Rev. Daniel-Tyssen, M.A., Vicar, assisted by the Rev. T. R. Hall, M.A., Curate, Percy Leonard Blaber, M.R.C.S. Eng., L.R.C.P. Lond., of "Sunnybank," Shoot-up Hill, West Hampstead, third son of William Blaber, of 34, Cromwell-road, Hove, and Lindfield, Sussex, to Agnes Frances, second daughter of Richard Dawson, M.B. Lond., of 15, Brunswick-square, Hove.

CHALMERS—CANNINGTON.—On Sept. 21st, at Wesley Chapel, Waterloo, Albert John Chalmers, M.D., F.R.C.S., younger son of the late Rev. James Chalmers, M.A., to Alice, second daughter of Edwin Cannington, J.P., of Beach Lawn, Waterloo, Lancashire.

GASKELL—HARVEY.—On Sept. 21st, at Deal, Leonard Sadgrove Gaskell, M.A. Cantab., M.R.C.S., L.R.C.P. Lond., younger son of Dr. Gaskell, J.P., St. Helens, to Edith Mary, only daughter of Troward Harvey, Esq., Deal.

HUNTLEY—ROPER.—On Sept. 29th, at the Church of the Ascension, Blackheath, by the Right Rev. the Lord Bishop of Southwark, assisted by the Rev. S. Bache Harris, Vicar of St. James', Kennington, and the Rev. Alfred L. Lambert, the Vicar, Edgar Huntley, M.B., B.S. Lond., fifth son of G. T. Huntley, Esq., of Tulse Hill, to Eleanor Alice Margaret (Daisy), eldest daughter of Dr. Roper, of Colby, Lewisham Hill, S.E.

JEFFREE—LIVERSIDGE.—On Sept. 21st, at St. Luke's, Caterham Valley, Frank Jeffree, M.B., of Clapton, to Ethel Maud, eldest daughter of William Liversidge, Flintfields, Whyteleafe.

ROANTREE—MACCABE.—On Sept. 19th, at the parish church, Sandyford, Joseph Roantree, M.D., of Newbridge, Co. Kildare, to Mary, eldest daughter of Sir Francis MacCabe.

WALLERS—HOLT.—On Sept. 21st, at the parish church, Blackburn, by the Right Rev. Bishop Cramer Roberts, D.D., assisted by the Rev. F. W. E. Chadwick, B.A., William Wallers, M.R.C.S., Blackburn, youngest son of the late Thomas Wallers of Manchester, to Lily, only daughter of Geo. H. Holt, A.M.Inst.C.E., Helmsley, Blackburn. At home Thursdays and Fridays, Oct. 20th, 21st, 27th and 28th.

WILLIS—NICHOLSON.—On Sept. 22nd, at Christ Church, Burbage, W. Morley Willis, F.R.C.S. Eng., of Park-street, Nottingham to Mary Eleanor, eldest daughter of Mr. J. W. Nicholson, of Burbage House, Buxton.

DEATHS.

HACON.—On Sept. 22, at Christchurch, New Zealand, Walter Edward Hacon, M.R.C.S., L.R.C.P., aged 47 years.

LEWIS.—On Sept. 5th, at West-terrace, Folkestone, Henry Lewis, M.D., aged 63.

N.B.—A fee of 5s. is charged for the insertion of Notice of Births, Marriages, and Deaths.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898, bound in cloth, gilt lettered, price 18*s.*, carriage extra; and Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*, can be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
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Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

THE MUNYON CASE.

ON Sept. 23rd at the London County Sessions, James Edward Deane, forty-four years, described as a medical practitioner, surrendered to an indictment charging him with stealing three small sums of money—3*s.*, 3*s.*, and 4*s.*—belonging to his master, James Monroe Munyon, of "Munyon's Homœopathic Remedies," 121 and 123, Shaftesbury-avenue. It was alleged that the accused whilst employed as a "consulting physician" at the establishment named, sold "cures" taken from the stock efore they were stamped and in some cases failed to acco for the money. The London manager for Munyon said his employer engaged "Doctor" Deane. The accused was under him and commenced with a weekly wage of £4, increased subsequently first to £5 and then to £6. In cross-examination he stated that Munyon had an honorary degree from the University of Tennessee. He (witness) repudiated the suggestion that it was not possible to get a qualified man to occupy the position of manager. He could get half a dozen reputable doctors. For the defence it was submitted that Munyon instructed Deane to act as he thought best and to recoup himself out of the sales for any expense he was put to in his position. The jury returned a verdict of "Not guilty."

FUCUS VESICULOSUS.

To the Editors of THE LANCET.

SIRS,—Would any of your readers who have had experience in its use give me information about fucus vesiculosus—whether it does really reduce fat and what its general action is? Are there any indications to guide its use? Has it any wasting effects on normal glands? I should be obliged by any information before prescribing it for general obesity.

I am, Sirs, your faithfully,

Sept. 27th, 1898. ENQUIRER.

A REVEALED CURE.

IN THE NAME OF ALLAH, THE MOST MERCIFUL AND THE MOST COMPASSIONATE.

A REVEALED CURE FOR THE BUBONIC PLAGUE.

UNDER the above stimulating heading a gentleman of Gurdaspur, Punjab, named Mirza Ghulam Ahmad, who places in brackets by the side of his name as an alternative title "The Promised Messiah," has published a little pamphlet explaining that Almighty God has been pleased to choose him as a medium through which to reveal "by direct inspiration" the specific remedy for the plague. The following are the words in which Mirza Ghulam Ahmad makes his revelation:—

> "The cure which I proclaim for the plague consists of two different medicines. One of them called the *Tiryaq-i-Ilahi* or the Divine treacle has been prepared solely by me, and it is to be taken as hereafter suggested. The other which is to be applied externally to the glands is an ointment called *Marham-i-Isa* or the ointment of Jesus. It would not be out of place to give a brief history of this wonderful ointment. It was originally made, about nineteen hundred years ago, after the crucifixion of Jesus Christ (peace be with him). It was prepared by the disciples of that prophet for applying it to the wounds on his hands and feet; and it turned out to be wonderfully efficacious in curing the said wounds within forty days. There is not the least doubt that Jesus did not die upon the cross. He had, however, received severe wounds which had rendered him so senseless when taken down, that he was generally believed to be dead. But it is a fact that the body was on account of the presence of the Sabbath taken down from the cross sooner than it was usual—so soon, indeed, that even Pilate marvelled if he (Jesus) were already dead, and moreover when one of the soldiers pierced his side with the spear, blood came out. These and such other circumstances go a long way to prove that Jesus came down alive from the cross. In short when this ointment, the *Marham-i-Isa*, had restored Jesus to complete health, he went out to preach the Gospel to those sects of the Jews that had scattered far and wide and had settled in other countries. It is for this reason that in Islamic Theological Literature Jesus is known under the name of *Masih*, a word which means one who travels much."

Then follows a lot of gibberish about the dosage of the "divine treacle," and at the end are placed half-a-dozen common-sense regulations as to domestic hygiene in the presence of infectious disease. The shrewdness which led Mirza Ghulam Ahmad to combine simple sanitary suggestions, bound to do good if followed, with the rhodomontade from which we have quoted leads us to suspect him of being a designing scamp and not merely a blasphemous idiot. We note that he is receiving subscriptions.

"INCARCERATION OF THE PENIS."

To the Editors of THE LANCET.

SIRS,—The account of the above in THE LANCET of July 23rd has its parallel in my own practice. A respectably dressed man, a widower, presented himself one morning evidently in great distress. His tale was that "the night before he had been larking and had passed his late wife's wedding ring over his penis." The ring, an unusually heavy one of the gipsy pattern, was seen tight up against the suspensory ligament of the urethra, the penis was swollen and œdematous, hanging below

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like a big sausage, and the urine was dribbling away drop by drop. An attempt had been made with a file to remove the ring, but had evidently been soon abandoned as considerably more cuticle than gold had been removed by the process. I had in my tool chest a pair of sharp-cutting pincers such as are used for clipping through nails or wire. With these I cut through the massive ring and while one cut end impinged against the inner side of the blades which acted as a fulcrum I seized the other end with a strong pair of pliers, and opened out the ring which fell to the floor, much to the man's relief. As he did not turn up again I concluded that the penis soon resumed its normal appearance and functions.

I am, Sirs, yours faithfully,
Leicester, Sept. 26th, 1898. J. HEADLEY NEALE.

"THE MEDICAL DIRECTORY."

To the Editors of THE LANCET.

SIRS,—Your correspondent, "A Monmouthshire Subscriber of Thirty Years' Standing," thinks it a blemish that we include Monmouthshire in the Wales section. We agree with him that the position is anomalous, but the anomaly is due to the fact that we follow the example of Parliament, which has included the county of Monmouth in various statutes passed on behalf of the Principality. We may also refer as an example to the official title of the University College of South Wales *and Monmouthshire*.

We are, Sirs, yours faithfully,
J. & A. CHURCHILL.
Great Marlborough-street, W., Sept. 26th, 1898.

To the Editors of THE LANCET.

SIRS,—I am of opinion that an alphabetical list is after all the least troublesome. If you want to find the address of a man you have, with the present arrangement, to look through five or six different lists.

I am, Sirs, yours faithfully,
Cardiff, Sept. 26th, 1898. T. GARRETT HORDER.

DEVON COUNTY COUNCIL: MEDICAL EVIDENCE AT INQUESTS.

AT the meeting of the Devon County Council held on Sept. 22nd the Finance Committee reported that they had interviewed Mr. J. Tucker, M.R.C.S. Eng., L.S.A., of Chulmleigh, who had complained that the coroner for the Crediton district systematically omitted to call him to give evidence at inquests upon people whom he had attended. The committee had received a letter from the coroner explaining his conduct, and although they did not consider the Council had any jurisdiction in the matter, still the committee were of opinion that much stronger and more serious reasons than those given by the coroner were needed to justify his omission in the cases complained of to take the evidence of the medical attendant who was indicated by the Coroner's Act as generally the best and the proper witness to be summoned for the purpose. Sir John Phear, in moving the adoption of the report, said the explanation of the coroner was most remarkable, his excuse being that two years ago Mr. Tucker had passed a personal affront upon him which he visited upon the medical man by "boycotting" him and forbidding the deputy coroner to summon him, although the medical attendant was the proper person indicated by Act of Parliament to give evidence. After some discussion, during which Mr. Lambert, M.P., asked whether the County Council could not take some action in the matter, Lord Clinton, who presided, remarked that he thought sufficient had been said and the coroner would take this as a serious warning, adding that if the Council took any further action it would raise a very large question and after the strong remarks of the Finance Committee it would be well to let the matter remain where it stood. The report was then adopted.

"THE NATURE OF DRY-ROT."

To the Editors of THE LANCET.

SIRS,—Dry-rot is the cancer of buildings and can be successfully treated only by the treatment of cancer—total extirpation of the diseased structure. Dry-rot usually begins in wood, but it passes through brick with the greatest ease and less easily through porous stone. It cannot penetrate Portland cement. My house was badly affected some years ago and has been completely freed by the following measures: 1. Cut out and burn all affected woodwork, being careful to follow it into joists, lathing, wall-plates, plugs, &c. 2. Face all affected brickwork with Portland cement, carrying the cement a foot beyond the infected area. 3. As an additional precaution it is well to sluice the neighbouring woodwork for a couple of feet beyond the excised portion with saturated aqueous solution of corrosive sublimate. After this the fungus does not recur. After applying strong solution of chloride of zinc (Burnett's disinfecting fluid) the fungus does in time recur. To prevent recurrence it is well to attend to ventilation under floors and in other confined spaces.

I am, Sirs, yours faithfully,
Southend, Catford, S.E., Sept. 26th, 1898. CHARLES MERCIER.

M.D. Edin.—If the gentleman in question took the L.R.C.P. under the old regulations he possesses a registrable qualification. If, however, he took it under the new regulations—i.e., after the inception of the Conjoint Scheme—he is not fully qualified and therefore can only be employed as a pupil. Our correspondent had better apply to the General Medical Council.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 29th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 23	30·24	E.	...	98	67	48	49	53	Fine
,, 24	30·15	E.	...	96	61	48	48	52	Hazy
,, 25	30·07	E.	...	89	62	50	50	56	Hazy
,, 26	30·05	E.	...	100	65	47	48	53	Hazy
,, 27	29·79	S.E.	...	92	65	46	48	51	Hazy
,, 28	29·93	N.W.	...	100	66	47	48	51	Fine
,, 29	29·96	S.	...	101	65	47	48	53	Hazy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (8th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (5th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown. Papers:—Dr. J. Walters and Mr. A. R. Walters: Case of Puerperal Septicæmia treated by Antistreptococcic Serum.—Dr. Cullingworth: Early Ectopic Gestation (? tubo-uterine) complicated by Fibro-myomata of the Uterus.

FRIDAY (7th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—Dr. S. D. Clippingdale: Some Considerations of the Life and Work of a General Practitioner (Presidential Opening Address).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

THURSDAY (6th).—LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical Demonstration to Senior Students.

During the week marked copies of the following newspapers have been received: *South Wales Daily News, Bramley Telegraph, Manchester Guardian, Leicester Post, Wolverhampton Chronicle, Worcester Echo, Devon Gazette, Cheltenham Examiner, Times of India, Pioneer Mail, Builder, Walsall Free Press, Sheffield Telegraph, Yarmouth Independent, Newcastle Chronicle, Dundee Advertiser, Yorkshire Post, Architect, Glasgow Herald, Berkhamsted Times, Midland Counties Express, Liverpool Daily Post, Derby Telegraph, Nottingham Express, Beverley Guardian, Brighton Gazette, Portsmouth Times, Essex Telegraph, Bristol Mercury, Hove Gazette, Cambridge Express, Bedford Mercury, Falkirk Herald, Scotsman, Western Mail, Birmingham Gazette, Leeds Mercury, East Anglian Daily Times, Blackpool Gazette, Newcastle Daily Leader, Sanitary Record, Local Government Chronicle, Reading Mercury, Mining Journal, Hertfordshire Mercury, City Press, St. Bartholomew's Hospital Journal, Oxford Times, Surrey Advertiser, Bolton Evening News, Local Government Journal, Weekly Free Press and Aberdeen Herald, Cork Examiner, Skibbereen Eagle, Warwick Times, Weekly Sun, Evesham Standard, Hull Times, Peterborough Standard, &c., &c.*

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The Huxley Lecture

ON

RECENT ADVANCES IN SCIENCE AND THEIR BEARING ON MEDICINE AND SURGERY.

Delivered at St. Martin's Town Hall at the Opening of the Winter Session of Charing-cross Hospital Medical School, Oct. 3rd, 1898,

BY PROFESSOR RUDOLF VIRCHOW,

DIRECTOR OF THE BERLIN PATHOLOGICAL INSTITUTE.

THE second Huxley Lecture, which constituted the inaugural address on the occasion of the opening of the Winter Session at Charing-cross Hospital, was delivered, in English, on Monday, Oct. 3rd, by Professor Rudolf Virchow, of Berlin, at St. Martin's Town Hall, Lord Lister occupying the chair. The hall was completely filled in every part and Professor Virchow was accorded an enthusiastic reception on his entrance and again when he commenced his oration. Lord Lister, in opening the proceedings, said the reception which they had given showed how grateful they all were to Professor Virchow for making the journey all the way from Berlin for the purpose of giving this Huxley Lecture. Professor Virchow required no introduction to an audience like that, and he was sure he would best consult the wishes of all if without further preface he asked him to address them.

Professor VIRCHOW said: Lord Lister, my Lords, and Gentlemen,—The honour of being invited to deliver the second Huxley Lecture has deeply moved me. How beautiful those days of remembrance will be, which the English people keep in a manner which has become a national custom, and through which the memory of their intellectual heroes is kept alive to posterity! How more touching could this act of gratitude be than by this celebration at the same place where the genius of the great man was developed? We are filled not alone with admiration towards the hero, but at the same time with grateful recognition of the institution which planted the seed of high achievement for the benefit of the student. That you, gentlemen, should have entrusted to a stranger the task of giving these feelings expression seemed to me an act of such kindly sentiment, implying such perfect confidence that I at first hesitated to accept it. How am I to find in a strange tongue words which shall perfectly express my feelings? How shall I, in the presence of a circle of men who are personally unknown to me, but of whom many knew him who has passed away and had seen him at work, always find the expression which I wish as well as a member of that circle itself could do? I do not believe I shall succeed in this, but in spite of that I repress my scruples, and it is because I know how indulgently my English colleagues will judge my often incomplete statements and how fully they are inclined to pardon any deficiency in diction if they are convinced of the good intentions of the lecturer. I may assume that such a task would not have been allotted to me had not those who imposed it known how deeply the feeling of admiration for Huxley is rooted within me, had they not seen how fully I recognised the achievements of the dead master from the time of his first publications, and how greatly I prized the personal friendship which he extended towards me. In truth, the lessons which I received from him in his laboratory —a very modest one according to present conditions—and the introduction to his work which I owe to him form one of the pleasantest and most lasting recollections of my visits to South Kensington. The most competent witness of Huxley's early period of development—Professor Foster—presented in the first of these lectures a picture of the rapidly increasing extension of biological knowledge which must have excited not only our admiration but particularly the emulation of all who study medicine. Upon me is incumbent the duty of incorporating with this presentment the newer strides of knowledge and of stating their influence upon the art of healing. So great a task is this that it would be presumptuous even to dare to attempt in a single lecture to accomplish it. I have decided, therefore, that I must confine myself to merely sketching the influence of biological discoveries upon medicine and in this way presenting an example of Huxley's work which will be most intelligible to us. I must here make a confession. When I tried to ascertain how much time would be required to deliver my lecture as I had prepared it I found, to my regret, that its delivery would occupy nearly double the time assigned to me. I had therefore to reduce it to about one-half of its original dimensions. This could only be done by means of very heroic cuts, seriously damaging in more than one place my chain of ideas.

Huxley himself was trained in the practical school of Charing-cross Hospital, but he won his special title to fame in the domain of biology. As a matter of fact, at that time even the name of biology had not come into general use. It was only recently, as I showed in my lecture on the position of pathology amongst biological studies, that the idea of life itself obtained its full significance. Even in the late middle ages it had not sufficient strength to struggle through the veil of dogmatism into the light. I am glad to be able to-day for the second time to credit the English nation with the honour of having made the first attempts to define the nature and character of life. It was, as I have pointed out in the Croonian Lectures, Francis Glisson who, following expressly in the footsteps of Paracelsus, investigated the *principium energeticum*. If he could not elucidate the nature of life he at least recognised its main characteristic. He was the first to describe as "irritability" the property on which the energy of living matter depends. He thus succeeded in setting aside the mystical idea of the spiritualistic "Archæus" which Paracelsus and his followers had placed in the forefront of their deliberations in venturing to locate the *principium energeticum*. in matter itself. How great was the step from Paracelsus to Glisson, and I may add from Glisson to Hunter. According to Paracelsus life was the work of a special *spiritus*, which set material substance in action. To Glisson matter itself was the *principium energeticum*. Unfortunately he did not confine this dictum to living substances only, but applied it to substance in general—to all matter. It was Hunter who first announced the specific nature of living matter as contrasted with non-living, but he also did not attain perfect clearness of vision because in the development of English medicine the idea has been allowed to take root and grow that life was not bound up with structure. So that John Hunter, also, was led to place a *materia vitæ diffusa* at the head of his physiological and pathological views. Hence he arrived at the assumption of so-called plastic substance, and so it happened that in place of the old Greek humoral pathology there arose a new humoral pathology—hæmatology. According to the teaching of Hewson and Hunter the blood supplied the plastic materials of physiology as well as the plastic exudates of pathology. Such was the basis of the new biological method—if one can apply such an expression to the incomplete doctrine of 1842, when Huxley was beginning his medical studies at Charing-cross Hospital. Of pathology in England John Hunter was the accepted master and so remained for many years thereafter. So great was his influence that Continental medicine also recognised it. To this I can myself testify as I was at this time at the end of my university studies. It would lead too far afield were I to recount in this place how it happened that I myself, like Huxley, was early weaned from the pernicious doctrine of humoral pathology. It must suffice to say that salvation lay in the same science which had already once before—in the sixteenth century—brought about deliverance from humoral pathology. It thus came about that Vesalius threw over authority and founded human anatomy upon direct investigation. Since then anatomical studies have been much improved. When Huxley himself left Charing-cross Hospital in 1846 he had enjoyed a rich measure of instruction in anatomy and physiology. How great this was can be gathered from the interesting statistics which Professor Foster has collected with the aid of Huxley's distinguished fellow-student, Sir Joseph Fayrer. Of the lectures which junior students attended in the three years much time was devoted to anatomy and physiology. Thus trained, Huxley took the post of naval surgeon, and by the time that he returned four years later he had become a perfect zoologist and a keen-sighted

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ethnologist. How this was possible anyone will readily understand who knows from his own experience how great is the value of personal observation. For the development of independent and judicial observation is of the highest importance to young men who desire to collect rich treasure of positive knowledge. Good judgment and a long sea voyage afforded a valuable opportunity for original work and deep reflection. Freed from the formalism of the schools, thrown upon his own intellect, compelled to test each single object as regards properties and history, he soon forgets the dogmas of the prevailing system and becomes first a sceptic and then an investigator. This did not fail to affect Huxley, the Huxley whom we commemorate to-day, and in alliance with whom we can point to Hunter and Darwin. The path on which these men have achieved their triumph is that which biology in general has trodden with ever-widening strides since the end of the last century: it is the path of genetic investigation. We Germans point with pride to our countryman who opened up this road with a full conviction of its importance and who directed towards it the eyes of the world, the poet-prince Goethe. He did for plants what was done in the case of animals by Wolf, Meckel, and other members of the German embryological school. These men began with the study of the "ovulum," but this very soon showed that the egg itself was organised and that from it arose the whole series of organic developments. When Huxley after his return came to publish his observations he found the history of the progressive transformation of the contents of the egg already verified, for it was by now known that the egg was a cell, that from it fresh cells and then organs arose. The second of his three famous papers—that on the relationship between man and the animals next beneath him—limned in exemplary fashion the parallelism in all animal beings. But beyond this, stepping boldly across the border-line which tradition and dogma had drawn between man and beast, Huxley had no hesitation in filling the gap which Darwin had left in his argument and explaining that "in respect of substance and structure man and the lower animals are one." Whatever opinion one may hold as to the origin of mankind the conviction as to the fundamental correspondence of the human organisation with that of animals is at present universally accepted.

All biological science, especially physiology and pathology, and in particular all that has to be based upon experimental research, must first be investigated in animals. That which requires morphological confirmation finds support in comparative anatomy, histology, and embryology. The basis of our comprehension of the theory of medicine actually rests nowadays on minute microscopic investigation, for the elaboration of which the animal tissues form the indispensable control-object. Suffice it to say that in scientific biology the division between man and beast becomes less and less defined. But only let it be remarked that the division between the abstract man and the abstract animal is the same relation as, in a different form, obtains between plants and animals. How many definitions of this have been put forth in the course of time! If we place a given animal and a given plant side by side difficulties vanish which we had only raised by our own definition.

The greatest difficulty in the advance of biology has arisen in this way: mankind, following the natural tendency, has set the search after the unity of life in the forefront of its consideration. As a matter of fact, what is more natural than the conclusion that life as a special phenomenon must also have a special basis, and that the material process of life must be derived from a common cause? During last century an assumption was made, with ever-increasing conviction, of a special force—vital force. Nowadays we can still perceive the logical errors which this assumption rendered possible. Time has, however, passed judgment upon it and to-day no one continues to speak of vital force. And yet the necessity for a single basis of all vital manifestations remains. How is this to be satisfied? This is a question which is not alone of great theoretical interest, but which has become the indispensable foundation for practical work, and especially for medical practice. In order to reach this it is first of all necessary to dispense with all the dogmas of the schools and to seek to construct an objective picture of the nature of vital processes. As regards material construction, men and the higher animals and plants are not simple beings—on the contrary, they are put together from many units. The specific activity is present in the organism not alone in its perfect and fully grown form but also during its development and growth. How can a single power, whether we call it in the spiritualistic sense spirit, soul, or in the physical sense "vital force" or electricity, build up the organisms? Or if this power resided in a single organ, whether it is brain, spinal cord, or heart, how could those brainless, heartless creatures be explained which at the beginning of this century were the battle-ground of the mystics? There is here, in my opinion, only one theory possible. The life possessed by the higher organisms is not a single one; their life and all their activities only become intelligible when we go back to an exact representation based upon a kind of instinctive observation of the life of their parts. Each constituent part of a living organism has its special life. No one of the older authors proclaims it more distinctly than Paracelsus, but he destroyed this good idea by attributing to each living part a particular *spiritus*. The best of the succeeding biologists were held by this notion as in a snare instead of busying themselves in the explanation of this action. Those in medicine have completely turned their attention, like true observers, to the study of individual parts. As I pointed out at the Medical Congress at Rome it stands most clearly revealed in the history of pathology that the division of a body into its larger regions, then into organs and tissues, and then cells and cell territories, was the step which helped to the comprehension of disease. The study of regions was followed by that of organs and this again by that of tissues, and finally by that of the cell itself. But what is true in pathology must hold also for physiology, and, as a matter of fact, physiology has passed through the same development and phases. One gradually comes to understand that the life of intermediate parts is perfectly clear if one looks away from the *Archæi* of the organs and tissues and keeps in view only the life and the activities of the single cells. For the life of an organ is nought else than the sum of the lives of the single cells which are gathered together into it; and the life of the whole organism is not an individual, but a collective function. If such a collective being is analysed, no matter if it be a whole organism or a single organ, or only one tissue which is presented, the first requisite for it is that one should regard the single parts and cells as the factors of existence. Unicellular plants and animals have during this century been continually more fully and better studied; botanists and zoologists have become the teachers of the biologist and the pathologist. The discovery of the development of complete beings from the ova of animals and the corresponding germ cells of plants has bridged the gap between isolated living cells and higher organisms. In a medical school, where the teaching is almost entirely concerned with human beings, we might put this sentence very prominently, "The organism is not an individual but a social mechanism." An exact analysis of this mechanism always brings us at last to cells; they are the ultimate constituents of all tissues. Hence we call them living elements and regard them as the anatomical basis of all biological analysis, whether it has a physiological or pathological object in view. Now, two particular propositions must be stated: (1) that living organisms, like every organ and tissue, contain cells; and (2) that the cells are composed of organic chemical substances which are not themselves alive, but the mechanical arrangement of which determines the direction and power of their activity. The old students with their theory of the so-called plastic exudates in their earliest studies translated into our latter-day paths would recognise this continuity in most pathological new formations. It would establish the grounds for the dogma of the origin of life from non-living matter. Experience has taught us the exact opposite.

I may here speak a little more personally than is elsewhere my intention. Perhaps it will be more intelligible to the students of this hospital and will make more impression if I relate how I myself arrived at my views. It was towards the end of my academical studies, more than fifty years ago, that I had to take up the work of assistant in the ophthalmic clinic of the Charité Hospital at Berlin. We had severe cases of keratitis, but I saw in them no exudation. Numerous cataract operations were performed; the wounds were closed, but not by plastic exudation; this was absent from all corneal scars. Could this be explained by the circumstance that the cornea, apart from its circumference, is a non-vascular tissue? I then turned my attention to the non-vascular tissues; first to the articular cartilage, and behold, here also I found the greatest changes without the presence of exudation, or at any rate of plastic exudation. My experimental studies then extended

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to the walls of the larger arteries and then also in part to the veins, and they showed equally that they can undergo great changes without even a trace of exudation. Later investigations on endocarditis led to the same result, provided that paricta1 thrombi are not regarded as exudation. In all these cases and in every place we found changes in the tissue cells—active, such as multiplication of nuclei, or passive, such as fatty degeneration. It is not necessary to go further into the matter to show how great is the action of these pseudo-exudative processes. Most of these processes are of the nature of proliferations. Whoever calls a proliferative layer an exudation will never obtain an objective view of the proceeding. There is not the slightest necessity for the genuine observer to hold to the arbitrary and totally erroneous formula of a plastic exudation; there is no such thing as plastic exudation which is ever simply amorphous, the cells which have been found in it have not arisen there. It is proved in numberless places. The doctrine of the discontinuous origin of pathological new formations is set aside. Every such new formation presupposes tissue from which its cells arise, that is, its matrix. Pathology has been late in arriving at a knowledge of this correspondence, but I think it has acquired special value for biology in general. Proliferation is an active property of special cells but it cannot be performed by all cells alike. That in no way alters the fact that it can only be performed by cells. It is just as little a function of the entire organism, for this would then have to be unicellular. In this property lies the explanation of origin from a single egg, the wonderful process which comes to pass but once in the life of the animal. Once the tissues have arisen each cell of the tissue may, in respect of proliferation, be compared to an ovum; it brings forth a new progeny from which new tissue grows, this tissue bearing, as a rule, the stamp of its matrix; it is built on the maternal type. And here lies the key to the knowledge of heredity, that puzzling appearance with which mankind has ever busied itself.

It is the custom to describe as hereditary all diseases which reappear in different generations of the same families. Thus, one speaks of hereditary tuberculosis and hereditary cancer. It is, in fact, not difficult to produce genealogical tables which demonstrate the recurrence of paternal maladies in children and grandchildren. Much trouble has been devoted—in my opinion without result—to the seeking of the germs of such diseases in the ovum or the semen. One is compelled to pass on to generations of cells which took origin after conception. As we pass from the time of conception the more numerous do we find the alterations in the formation of cells and in the formation of embryonic tissue. At the same time there is a greater possibility of the alteration having arisen after the formation of the first cells and hence that the existing cause may have commenced to act at that time. If we set aside this possibility nothing else remains but to assume that from conception from the organs which produce the disease a predisposition is transmitted which is already present in the earliest cells, even if it cannot be recognised in them.

There is a highly remarkable question which every year claims the attention of medical men more and more, and this is what is described as *heterotopia*. It has long been known that hairs are present not only on the external skin, to which they properly belong, but also in internal organs, where they are quite out of place. Such structures are known as dermoids. As a matter of fact, in fœtal life the smaller or greater rudimentary fragments can be separated from all their natural places of abode and removed to other spots, where they, so to speak, find a new home and can undergo all the further changes which are dependent on their cutaneous nature. It is thus that cysts and tumours can arise from them. But the most remarkable examples of such are found in certain glandular organs which present the unities of similar parts. Amongst these a high place is taken by two organs which have recently demanded much attention—the thyroid and suprarenal glands. On their surface may often be observed the crushing forward and progressive isolation of separate parts in the form of nodules or small lobes. But occasionally these nodules pass completely out of association into the main body of the gland, and are found disconnected in a perfectly strange place more or less removed from their seat of origin. In the case of the suprarenals the cells travel to neighbouring spots in the interior of the kidneys and the deeper parts of the peritoneum as far as the pelvis. And at all these phases they may undergo further change as a further starting-point for tumour formations.

It is inadvisable to go into minuter details; only a few of the greater landmarks can be referred to. One of them I will mention briefly, as I have written many long papers upon it—the necessity for distinguishing between the cause and the essential nature of infectious diseases. The nature of the disease depends upon the behaviour of the organs and tissues with which the bacteria and their metabolic products meet. From my point of view this distinction is of paramount importance. First, there is the general relation of the smaller parasites to the diseases determined by them. Under one name which takes us back into the old days of humoral pathology, and which I was the first to introduce into common parlance, are grouped all the processes which are produced by the invasion of morbid substances under the general designation of infection. The relation between infection and intoxication was presumed and it was not without good reason that the designation was retained. Among the innumerable infectious diseases which affected not only man but animals this remarkable property in contagia came to the front—that they multiplied in the body and so, besides infection as such, produced an immeasurable quantity of fresh virulent substance. In this respect they approach the living beings and the idea arose that they were themselves alive. With the discovery of parasitic animals conjecture became fact and nothing was easier than to generalise this fact and assume the presence of independent organisms in each contagious disease. It became known that parasitic animals and protozoa can so give rise to infection. Between bacteria and fungi there is more than a slight difference, but for convenience the name of bacteria is retained as a general designation. Owing to the novelty of the circumstances in which they are placed botanists have not even yet succeeded in their customary duty of giving every new plant its special name. This omission is understood and forgiven, but it does not in any way alter the erroneousness of the theory which attributes every impurity to bacteria on the sole ground of its contagiousness. It may be said that the contagious nature of disease shows suspicions of bacterial origin, but it should not be simply called that, though it allows the conscience to sleep. Some of the most important contagious diseases have succeeded in resisting the struggle to find in them a parasitic contagion. For example, many have been the sanguine hopes of finding the parasite of syphilis and as many have been the failures; the coccus of gonorrhœa alone has been discovered, the bacterium of syphilis remains a desideratum. You will remember the certainty with which it was expected that a parasite was the causal agent of variola. More than one was found, but none pathogenic. In hydrophobia all appearance seemed to promise that it would prove to be a micro-parasitic disease. Its contagion is undoubted; the vaccine has been prepared and yet no one has been able to cultivate a specific bacillus. The same may be said of some other specific diseases. Painful as it may be one can do nothing but observe. Perhaps the pathogenic bacteria will be found, but as long as they are not discovered all assumption is useless if not dangerous. To have learned this is to have made a mighty stride in the biology of disease.

A further question is the mode of infection. As long as infection by animal parasites was regarded as the type of infection generally the destructive action was described as the result of a mechanical action just comparable to a bite or devouring. The exact study of the larger entozoa soon brought about a complete conversion.

The feeding of bacteria and vegetable and plant-like parasites has to be regarded in the same way. They certainly injure the tissues in which they reside by the consumption of materials, but their action is not limited to this. This much has been already learned in the study of fermentation and putrefaction. It is admitted that organic matter is destroyed by them, but in addition they produce new substances, some of them eminently poisonous. It has been known for centuries that alcohol is produced by fermentation, but the putrefactive poisons could not for a long time be isolated. To the whole group the new term of toxins has been applied. They are in part crystallisable, invariably diffusible substances, which are bound up neither in cells nor other formed elements, though they are produced by the cell action of the parasites. They are now described as metabolic products, a term which has far more

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sound than sense. In former times people were content to call them secretory products, and I think it would be better to stand by this term.

It would be called carrying coals to Newcastle were I to sketch in London the beneficial effects which the application of methods of cleanliness has exercised upon surgical practice. In this city, where the man still lives and works who by devising this treatment has introduced the greatest and most beneficent reform that the practical branches of medical science have ever known, everyone is aware that Lord Lister has had results which the new theory of fermentative and septic processes fully confirms. Before anyone had succeeded in demonstrating by exact methods the microbes which are active in various diseases, or in establishing the special functions which they performed, Lord Lister had learned in a truly prophetic revelation the means by which protection against the action of putrefactive organisms can be obtained. The opening up of further regions of clinical medicine to the knife of the surgeon and a perfect revolution in the basis of therapeutics have been the consequence of the work of Lord Lister, whom I am proud to be able to greet as an old friend to-day. Already and always he will be reckoned amongst the greatest benefactors of the human race. May he be long spared to remain at the head of the movement which he called into existence.

It remains for me to say a little word concerning the other great problem, the solution of which the whole world is awaiting which anxious impatience. I refer to the problem of immunity in the sense of practical artificial immunisation. It has already happened once that an Englishman has succeeded in applying this to the nearly complete destruction of at least one of the most deadly infectious diseases. Jenner's noble discovery has stood its trial as successfully as he hoped. In our hands vaccination is, with the aid of the Governments, spreading continually. In the same way the work of Pasteur also raises our admiration and the new doctrine of antitoxins is continually acquiring new adherents, but it has not yet emerged from the conflict of opinion. Still less is the secret of immunity itself revealed. We must still become well accustomed to the thought that only the next century can bring perfect light and certainty on those points. The homœopathic notion that toxin and antitoxin are one and the same seems so foreign to our biological ideas that very many experimental and practical proofs will be required before it can be admitted into the creed of the future. We must succeed before then in finding the means of strengthening the cells in their fight against bacteria.

We must, in conclusion, turn once more to the special cells which build up the body and which arise from proliferation within the body. These have numerous analogies with microbes. They also are independent living beings, or, as they say, elemental organisms implanted in the social structure of the body. They can be removed and transplanted into new situations. The process is always bound up with a certain number of living elements. It is always cellular in character. It is not the flowing blood which makes the tumour or cells; it is the mother cells from which all new formation arises. From this consideration I have drawn this conclusion on the local action of the cells bound up in certain parts. Cellular pathology admits the principle of destroying local disease by local measures, be those measures medical or surgical. It is with great joy I see this becoming more generalised. Hence follows in surgery the recommendation of early operation for the destruction of the focus of disease. Those cells also, just as do bacteria, exercise chemical influences apart from the destruction which they effect by absorption. They secrete chemical substances and these appear first as tissue fluids, passing later into the circulation. Thus arises a change in the composition of the flowing juices, particularly of the blood—in fact, a dyscrasia. This is, as I have always explained, a secondary dyscrasia, quite distinct from the primary dyscrasias of the humoral pathologists, by localization of which topical diseases, and especially tumours, were supposed to arise. According to my view, each dyscrasia is determined by the taking in of products of tissue secretion which may now be called metabolic products or recrementitious substances. The tissue juice and excreted material has obtained of late years much attention and has provided materia medica with thyroid juice and thyroidin. New substances resembling alkaloids or albuminoids are isolated from various organs, experimentally tested, and technically worked up. So arose injection therapeutics, on the results of which we are not yet in a position to pass a final judgment. But everyone who is sufficiently unprejudiced must admit that they have in many cases been good. Experience will determine the value of these methods. You must learn by the aid of practice to deduce lasting theoretical proofs. But never forget that the source of all these substances and secretions is the cell activity of living tissue, and that its therapeutical or pathological remedial action on the organs or tissues can accomplish no result besides that of exercising a regulating influence on cell activity. May the Medical School of Charing-cross Hospital continue upon the newly opened paths and do so fortunately, and at the same time may its students never forget that neither the physician nor the naturalist dares to dispense with the cool head and calm spirit of practical observation and critical judgment.

Dr. T. H. GREEN (physician to the hospital), in the unavoidable absence of Sir Joseph Fayrer, proposed a vote of thanks to Professor Virchow. He thought it would be very difficult to adequately represent the measure of their indebtedness to the lecturer for coming over from Berlin, whereby he conferred a great honour not only on their medical school but also on the whole medical profession of this country. He believed that never in this city had the session of a medical school been opened under such favourable auspices as theirs was that day. Thirty years ago he had the good fortune to be a pupil of Professor Virchow in Berlin and it was therefore a source of great gratification to him to be allowed to propose that vote.

Dr. BLACK seconded the motion, remarking that he also could look back with pride at having been a pupil of the distinguished lecturer.

The motion was put from the chair and carried by acclamation, Lord LISTER expressing his sense of the profound debt they owed to Professor Virchow for his learned, profound, and beautiful address.

Professor VIRCHOW, in reply, said: Gentlemen, allow me to express only somewhat of the thanks I feel for this glorious reception. It was one of my warmest wishes to see Charing-cross Hospital, as the scientific birthplace of such great men as Livingstone and Huxley and others who followed, and I promise you that I will never forget this reception and the days when I was in your midst. And may you, also, my young colleagues and students of this hospital, see in these great examples of whom I have spoken this evening prototypes of a good, honest, scientific life.

An Introductory Address

ON

THE IMPORTANCE OF PERSONAL CHARACTER IN THE PROFESSION OF MEDICINE.

Delivered at the Opening of the Winter Session of the Medical Department of the Yorkshire College, Leeds, on Oct. 3rd, 1898,

BY CHARLES J. CULLINGWORTH, M.D. DURH., F.R.C.P. LOND.,

OBSTETRIC PHYSICIAN TO ST. THOMAS'S HOSPITAL, LONDON.

MR. DEAN AND GENTLEMEN,—I consider it a very great honour to have been invited to take so prominent a part in the interesting ceremony of to-day. As an old Leeds student and a native of this city it is with both pride and pleasure that I observe the unmistakeable signs of healthy prosperity in my old school, now the Medical Department of the Yorkshire College. Your buildings, your laboratories, your teaching appliances, and, of course, your fine hospital, will not only bear comparison with other similar institutions in this country but are so modern and so complete as to warrant a passing twinge of envy in the breast of a London teacher. I should, however, be making but ill use of an exceptional opportunity if I wasted the few minutes at my disposal in elaborate compliments, however well deserved they may be. My desire to-day is to say a few words which

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shall if possible be encouraging and helpful—first to those of my younger brethren who are still *in statu pupillari*, and, secondly, to those who have just completed their curriculum and are about to engage in that struggle for existence which is apparently becoming every year more severe and more hazardous to the well-being of the individual practitioner both "in mind, body, and estate."

First, then, allow me to address myself to those who are still students. It is now a good many years since Sir James Paget published in the St. Bartholomew's Hospital Reports a short paper embodying the results of an inquiry as to what became of a thousand of his pupils within fifteen years of their entrance at St. Bartholomew's Hospital. It was a most interesting article and is still well worth reading in its entirety, for what was true of the medical student of thirty years ago is, in the main, equally true of the medical student of to-day, and, so far as I am aware, no similar inquiry has been made either before or since. Of the total number of Sir James Paget's pupils during the period embraced in the inquiry (1839–59) many had, of course, been lost sight of, but the career of 1000 of them was known either to Sir James Paget himself or to his colleagues, the late Mr. Callender and Mr. (now Sir) Thomas Smith, both of whom were engaged with him in the investigation. Of the 1000, 23 had achieved distinguished success; 66 had achieved considerable success; 507 had achieved fair success; 124 had achieved very limited success; 56 had failed entirely; 96 had left the profession; 87 had died within twelve years of commencing practice (21 of them from diseases incurred in the exercise of their professional duties); and 41 died during their pupilage (17 of them from phthisis). It may be explained that in this summary "distinguished success" means that those classed under this heading had gained leading practices in counties or very large towns, or held important public offices, or had become medical officers of large hospitals or teachers in great schools. Those are stated to have attained "considerable success" who had gained, and still held at the time the paper was written, "high positions in the public services or leading practices in good districts," or who had already retired on their earnings, or who had won for themselves "much more than ordinary esteem and influence in society." The rest of those who could be said to have achieved any sort of real success constituted the third class. This class, which might be called the moderates, embraced more than half the total number of those whose histories were known. Of the other classes I need not here speak in detail beyond calling attention to the curiously large number that left the profession, nearly 10 per cent. of the whole. Most of those who are classed under this heading discarded the medical profession for other pursuits—the Church, the army, the stage, commerce, and agriculture. It was the concluding portion of the paper, however, which made at the time the strongest impression on my mind and which has induced me, even after this lapse of years, to bring it before you to-day. "Of course," says Sir James Paget, "in watching and reflecting on the careers of my pupils I have come to some strong beliefs on subjects of medical education, but this is not the place for publishing them. Only one I will set down, which may be of use to future pupils and is justified by some hundreds of personal recollections. In remembering those with whom I was year after year associated and whom it was my duty to study, nothing appears more certain than that the personal character, the very nature, the will of each student had far greater force in determining his career than any helps or hindrances whatever. All my recollections," he continues, "would lead me to say that every student may draw from his daily life a very likely forecast of his life in practice, for it will depend on himself a hundredfold more than on circumstances. The time and the place, the work to be done, and its responsibilities will change; but the man will be the same except in so far as he may change himself."

It may be said that this was all very well thirty years ago, but that times have changed and that whereas it may have been and, no doubt, was then possible for a man with character and perseverance by sheer force of good behaviour and steady plodding to come eventually to the front, no man could do so to-day unless he also possessed a more than average share of intelligence. For the general standard of knowledge in our profession has been raised and the range of knowledge greatly widened, so that much more is required to-day both in quantity and quality even of the ordinary pass man, to say nothing of the honours men and prize-winners. This way of putting the matter sounds exceedingly plausible, but it leaves out of view the fact that entrance into the profession is now guarded in a way in which it was not guarded during the period of which Sir James Paget was writing and that whereas a man could then enter upon his course of medical study without having given any proof of having received a fairly liberal education it is impossible for him to do so now. The preliminary examination in general education which must be passed before a student can register, though not a very severe test, is quite severe enough to keep back the hopelessly ill-educated man whatever good qualities he may possess. Hence the struggle is not, as might be supposed, between the man who has character without intellectual training and the man who has character with it, but between the man who has intellectual training *with* character and the man who has intellectual training without. In such a struggle victory rests in the end with the man who, to his intellectual attainments, adds character. As Sir James Paget says, "the time and the place, the work to be done, and its responsibilities" may change, but the personal character of the student remains now as then the chief factor in determining his ultimate career.

It is sometimes said that the men who win prizes during their student life are not the best men and seldom fulfil the expectations of their teachers and friends. I have a shrewd suspicion that the author of this dictum was some ingenious but lazy man who thought to cover his own deficiencies by belittling the successes of his more industrious fellow-students. Let anyone who is interested in the subject and anxious to arrive at a correct estimate of the amount of truth in this statement take up a London University Calendar and refer to the honours lists in the various subjects of examination for the degrees in medicine. Here and there, of course, he will find an unfamiliar name amongst those who from year to year have taken the highest honours, but he will probably be astonished at the comparatively large number of names which have since become well known and, in many cases, even distinguished as those of recognised leaders of our profession. Amongst those, for instance, who in the years long gone by obtained scholarships and exhibitions in the examination for the degree of Bachelor of Medicine will be found the familiar names of Richard Quain, Edmund Parkes, George Johnson, Alfred B. Garrod, William S. Savory, Samuel Habershon, John S. Bristowe, J. Russell Reynolds, Henry Thompson, Joseph Lister, William Roberts, and William H. Broadbent, all of whom may certainly be said to have fulfilled the promise thus given of future distinction and success. I speak of the London University because I happen to know it best. I have no doubt the same is true of the other universities, including your own still youthful Victoria University, in which, as some of you know, I take a special interest as having borne a somewhat active part in the work of administration during the anxious and perilous years of its early infancy. Holding this view of academic distinctions, the spectacle of a student stepping forward to receive a prize has for me far more than a mere passing interest. I am conscious of having witnessed an important scene in the drama of a life. He must be a singularly unemotional person who can, for instance, witness such a ceremony as we have witnessed to-day without having his pulses stirred and his sympathies excited. For surely no study is so absorbing as that of the development of the story of a human life, especially when events have shown that life to be one of more than ordinary promise. I shall certainly hope and expect to hear again of the recipients of to-day's honours and to learn that the successes of to-day have been a mere forecast of the many which are to follow. The conditions of success are pretty much the same in student life as they are elsewhere. The essentials—those conditions, namely, upon which all the others necessarily rest—have long ago been summarised in the well-known motto, "Mens sana in corpore sano." There is at present no need to emphasise the latter part of this motto. The tendency appears to me rather in the direction of giving it undue prominence. I do not yield to any in my sense of the importance both to the race and to the individual of out-door games, athletic exercises, sports, and all the various means of developing the capacities of the body, and keeping them at their best. But when I find them the all-absorbing topic of conversation, when I realise that athletic achievements are the surest way to distinction and popularity, when I observe that an increasingly large part of

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our newspapers is filled with the record of them and that no part of the day's news is read so widely or so eagerly, and when I am actually assured that schools and colleges are selected on considerations affecting their athletic fame rather than their reputation for scholarship, I am tempted to wonder whether the first part of the motto I have quoted is receiving sufficient attention and whether the needs of the body are not absorbing a little more than their share.[1] "Propose this test—," says Browning,

> "Thy body at its best,
> How far can that project thy soul on its lone way?"

I have said enough, however, on this head. The strong common sense of our English-speaking race may be depended upon for sooner or later adjusting the balance and for taking care that whilst the body receives its due share of cultivation the needs of the mind shall not be seriously overlooked.

"There is no profession," said an English bishop, preaching recently to a medical congregation in St. Paul's Cathedral, "except perhaps that of the Church, in which character counts for so much as it does in the profession of medicine." If that be true, and I feel certain that it *is* true, it becomes of the highest importance to keep up during student life a high moral standard. The true greatness of any school or college, medical or otherwise, must always depend in the long run not upon its athletic or academic achievements, but upon the high standard of its moral tone. If you desire your own college to enjoy the best kind of pre-eminence, it must be by every one of you, senior and junior, helping to keep up the standard. You who are here to-day for the first time will find it a great change from ordinary school or college life, with its discipline and supervision, to the life of a medical student. During a great part of every day you will be free to go where you like and do what you like, and your future much depends upon the use you make of this freedom. And you who are seniors must remember that the juniors will take their tone from you. The influence of the senior students upon the junior is incomparably greater than that of the teachers on either and gives the senior student a position of great responsibility.

I must now, however, pass on to say a word to those of you who will no longer be students in the technical sense of the word—those, I mean, who have completed their curriculum and obtained their diplomas to practise. Students in the broader and equally true sense of the word you will, I hope and believe, continue to be to the end of your lives. In fact, your experience will be very different from that of the majority of your brethren if, after being a few years in practice, you do not find that you have learnt more of your profession since you became qualified than you did before. At present, no doubt, the feeling uppermost in your minds is one of thankfulness that you have at last come to the end of what at one time must have appeared to be an almost interminable series of examinations. I entirely sympathise with my old friend and teacher, Mr. Pridgin Teale, in his opinion that the medical student is over-examined. And yet it is difficult to see in what other way than by examination his knowledge and his fitness to practise his profession can be adequateiy tested. I am quite sure of this, however, that although Mr. Teale did not succeed in carrying his resolution in the General Medical Council, his forcible speech in moving his proposition and the discussion which followed will prove to have had an excellent effect upon the examiners. It is well that examiners should be reminded from time to time of the main object of examination—namely, to test the fitness of the candidate to be entrusted with the care of the sick. The importance of keeping this in view was brought home very forcibly to all who were present by an amusing incident which took place at a meeting of the board of studies when the regulations of the Victoria University were under discussion. A member of the board, overflowing with compassion for the unfortunate candidate, proposed to lower the pass standard for the M.B. degree from one half of the maximum number of marks obtainable to one-third. It was a bold suggestion, and after the resolution had been duly seconded, there was for a few moments an ominous silence. Then one of the arts professors rose and asked the chairman, in the most innocent manner, if he was correct in supposing that this degree would confer upon its possessor a legal qualification to practise his profession. The chairman replied that it would. "Then I presume," continued the professor, still in the blandest tone, "that if we vote in favour of this resolution it will be equivalent to saying that we shall be quite satisfied if, when the newly qualified graduate has become the medical attendant in our own families, he is correct in his diagnosis and treatment once out of three times." It is needless to say that nothing more was heard of the resolution. Obviously the community must be considered in this matter as well as the candidate. But I am now addressing those more especially to whom the question of examinations has fortunately ceased to be of immediate personal concern and I may therefore leave a subject which is always liable to awaken at least *some* unpleasant recollections.

It is well for those of you who are about to enter upon the practice of your profession to be reminded at the outset that the practice of the medical profession is not altogether a life of luxury and ease. You will have a great many unpleasant experiences. You will find, for example, that you will not have one hour out of the twenty-four which you can positively call your own—in the sense, that is, of being free from the liability to interruption by a professional call. You will sometimes feel, when you have an anxious case under your care, overwhelmed by a sense of awful responsibility. You will then realise what it is to have in *your* hands, resting on *your* decision, the issues of life and death. Nothing can make these things endurable but enthusiasm. You must love your profession with a devotion not merely sufficient to counterbalance all its difficulties and drawbacks, but intense enough to make you blind to them. Given this devotion and the vocation of the medical man becomes, to my mind, the finest in the world.

I spoke a few moments ago of the danger of men during their student life, in their eagerness to promote the health of the body neglecting the cultivation of the mind. This danger is by no means at an end when a man has left the school and hospital and has entered upon active practice. Henceforward it takes the form of a tendency to become absorbed in his profession and to neglect other means of mental cultivation. None of us is strong enough to bear with impunity the strain of professional life without some kind of habitual mental recreation. It is therefore of the highest importance to set up a hobby. It does not much matter whether the hobby be a branch of natural science, or a department of general literature, or something different from either. The essential thing is to have an intellectual hobby of some kind, so as to be saved during the absorbing activities of our professional life from professional narrowness and that partial atrophy of the mental faculties which comes of disuse, and also in order to be provided when our working days are over with an unceasing source of wholesome interest.

The keenness of the struggle for existence is constantly in danger of making us forget our high calling, forget that we are members, not of a trades' guild but of a learned profession. I would not on any account utter one word in disparagement of trade. It would particularly ill-become me to do so in a city whose trade is the source of her greatness. But I hope I may, without offence, venture to point out that the commercial code of ethics differs in some important respects from the professional code. The first consideration of the business man, for example, in regard to any given transaction is how it will affect his own interests or the interests of those whom he represents. It is for his customers to judge for themselves how far *they* are likely to benefit by the bargain. The professional adviser, on the other hand, is expected to make his patients' well-being his chief care and not to be influenced in the advice he gives by motives of self-interest. Mr. Brudenell Carter tells us that the late Sir Prescott Hewett was in the habit of saying that it was not enough for a medical man to be honest—he must be chivalrous. We are ready enough to take to ourselves the title of a noble profession, but we must remember that to be truly noble our profession must set before it, and act up to, a high ethical standard. Its spirit and its methods must leave no room for the taunts of cynicism. There must be amongst its members no mean attempt to displace professional rivals by offers of cheaper service or to discredit them by whispered suggestions of professional incompetence. There must be no aping of the advertising methods of the charlatan or lowering our professional societies by the introduction of some of the more objectionable features of trades'

[1] To show that this is not an over-statement of the exaggerated and even absurd importance at present attached to these matters, let me give an instance in point. In the university cricket match a representative of Oxford made a heavy score, what in cricketing language is called "a century." I am told that this gentleman thereupon received two telegrams, each of them offering him a mastership in one of our public schools.

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unionism. There must be no practising for private gain under the misleading name of a dispensary or indiscriminate recommendation of costly methods of treatment in which the prescriber has a pecuniary interest. And yet, I fear, some of these things are not altogether unknown amongst us. We want you of the coming generation to realise that the fair fame of our beloved profession in the immediate future rests with you. We trust to you to keep up its best traditions and to maintain that reputation for nobility of aim and conduct which it has hitherto possessed and which of right belongs to it.

Let me conclude with one or two extracts from a very ancient document, dating from the fifth century before the Christian era, and known as the Oath of Hippocrates. The best authorities consider it highly probable that it was written by the great sage himself. If not, it is practically certain, from internal evidence, that it was written in the Hippocratic age. It appears to be in the nature of a declaration made by the pupil when the master is about to undertake his instruction in the art of medicine. "I swear," says the youth, "by Apollo the physician, and Æsculapius, and Hygeia, and Panacea, and all the gods and goddesses, that according to my ability and judgment I will keep this oath and stipulation. I will reckon him who taught me this art of medicine as dear to me as my parents. I will share my substance with him and relieve his necessities if required. I will look upon his offspring as my brothers and if they wish to learn medicine will teach them without fee. ..... I will prescribe such a regimen for my patients as shall, according to my ability and judgment, conduce to their benefit. I will avoid whatever is evil and unjust. ..... In innocence and in purity I will pass my life and practise my art. ..... Whatever houses I enter I will enter them for the benefit of the sick, and I will abstain from every intentional act of mischief and corruption. ..... If I see or hear in the exercise of my professional practice, or even apart from it, anything in the life of men which ought not to be spoken of abroad I will not divulge it, regarding in such case discretion as a duty. While I continue to keep this oath unviolated may it be granted to me to enjoy life and the practice of the art, held in perpetual respect by all men. If I violate it and perjure myself may the contrary be my lot."

Is it possible to conceive a finer testimony to the high standard of professional conduct aimed at in those remote days? May you and I throughout our professional lives emulate the generous and pure spirit which inspired these famous words. If in the battle of life that is before you anything that I may happen to have said to-day may help you to fight manfully and to win your way to honour and success I shall indeed be glad. "I have great confidence," says our dear old friend Wendell Holmes, "in young men who believe in themselves. ..... When a resolute young fellow steps up to the great bully, the world, and takes him boldly by the beard, he is often surprised to find it come off in his hand and that it was only tied on to scare away timid adventurers." And so, with these closing words of encouragement, I bid you one and all God speed.

PRACTICE IN AUSTRO-HUNGARY.—Notice has been given by the Austrian Minister of the Interior that after the beginning of next year the right to practise medicine will be granted to Doctors of Medicine in Austria proper only or in Hungary only. Hitherto the privilege of practice has extended throughout the empire.

DURHAM UNIVERSITY COLLEGE OF SCIENCE.—An ordinary general meeting of the governors of the Durham University College of Science was held on Oct. 3rd, the Dean of Durham, warden of the University, presiding. The balance-sheet showed that the donations had amounted to £44,552, the scholarship endowments, bequests, &c., to £7419, and loans to £32,000. With other items the total receipts on account of the College amounted to £85,707. Investments amounted to £2704, the value of ground and houses bought with the College site was £13,526, and the value of the College buildings was £59,050. There was a deficiency of £9406 on revenue account. The revenue account showed the total receipts to be £16,224, the total payments amounting to £16,453. The retiring councillors—Mr. William Cochrane, Professor Philipson, and Dr. Spence Watson—were re-elected. There were two vacancies on the council by the deaths of Dr. Charles Mitchell and Mr. John Philipson. Mr. Crawford Smith and Mr. Watson-Armstrong were elected to fill these vacancies.

Abstracts
OF
INTRODUCTORY ADDRESSES, ETC.,
DELIVERED AT THE
LONDON AND PROVINCIAL MEDICAL SCHOOLS
AT THE
Opening of the Session 1898-99.

MASON COLLEGE, BIRMINGHAM.

INTRODUCTORY ADDRESS BY PROFESSOR MICHAEL FOSTER, F.R.S., PROFESSOR OF PHYSIOLOGY IN CAMBRIDGE UNIVERSITY, ON "THE NATURE AND FUNCTION OF A UNIVERSITY."

GENTLEMEN,—So soon as I began to strive to put together a few words to speak to you on this occasion there came into my mind, not once only but again and again, the thought that Birmingham is soon to have a University of its own. I have the honour this evening to give the signal for the commencement of the winter session of medical studies. For many years in the past the medical school connected with the General Hospital and the Queen's Hospital pursued an honourable career as a provincial school of medicine. Of late years that independent school has become—may I not say happily become?—the Queen's Faculty of Medicine in the Mason University College. Soon, we hope and believe, yet another step will be taken and the teaching of medicine in Birmingham will be carried on not as the action of an isolated hospital, not as part of the work of what some would call a mere college, but as the labour of the constituent Faculty of a Midland University. Hence I have been led to consider how this step will affect medical studies here, and this consideration naturally began with the question—What is the real nature of the step? What does it mean? This, again, leads in turn to the question—What is a university? How does it differ from a college or from a school, or from any other institution devoted to learning? What are its essential features? What are the central ideas running through it which distinguish it from everything else? Many would say: "A university is a machine for granting degrees."

[There were others, Professor Foster went on to say, who thought that a university was a place dealing with all knowledge. Others thought that it was a place where all benefit by what is learned and taught without any one receiving profit for any particular line of life. To answer the question of what is a university we must consider what the original universities were. They were guilds or corporations of learned men—a number of men bound into a body for some special purpose. Inquiry was their main object, and secondly came teaching—teaching their scholars to succeed in one of three walks of life, the Church, law, or medicine. The old trade guilds had two degrees—one the apprentice, the other the master. So had the guild of learning, only it adopted special names and the apprentice became the scholar while the master (*magister*) retained the same name or else rose still higher in the scale of learning, being called "Doctor." Admission to the "degree" was only granted after "repeated and prolonged interviews" of the scholar with a troop of learned masters. Professor Foster continued:—]

"The university of old was a guild by means of which the beginner was brought under the influence of the sage; a guild in which those who knew gave of their knowledge to those who wished to learn, amid surroundings which were rich in aspirations for wider and fuller truth; a guild continually made young by the continual bringing into the fold of new members, but only such as had proved upon trial their love of knowledge and their power to grasp it. Are not these things the aim and the tokens of the university of to-day?

[Professor Foster, after urging the point that too much value should not be placed upon a degree, for it could have only a relative and not an absolute value, and advising that examinations must not be strained overmuch, proceeded:—]

Let me, however, turn aside from generalities such as the above to say a few words about the particular degrees which are special to the present occasion—degrees in medicine. I

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shall, I trust, carry you with me when I say that the object of the institution of medical degrees is to select out of those who press forward to join the medical profession the men who give promise of becoming real doctors. It is a means of marking those who may be expected to show by their subsequent careers that they possess the power to heal the sick. When in the early days of the universities the academic rulers prescribed certain studies for those who sought to be doctors of medicine and insisted on those studies being diligently and successfully pursued, they did so under the conviction that each and all of these studies gave power to the arm of the doctor in his struggle with disease. As I have said, they believed that what they taught was useful and necessary for practical life. The degree they bestowed was undoubtedly honourable, but they never looked upon it as ornamental. They gave the doctor a special robe that men seeing it might know at once through what studious labours the wearer had passed and how he thereby differed from other men. They never thought of it or of the degree as a thing to be flaunted, for pride's sake, in the face of the people. Let us follow their example. Let us, as they thought they did—they may have been mistaken in their details, but this does not detract from the value of their purpose—see to it, that the studies which are demanded of the doctor are those which are calculated to fit him in the best possible way for his task in life. Now, success in a medical career, and that is the real proof of the possession of power to heal or to relieve the sick, is contingent on many things, on the concurrence of many diverse qualities. Of these some, and those by no means unimportant, cannot be taught by any professor, cannot be tested beforehand in any school; of such, the world is the only schoolmaster and life itself the only examiner. One need not live long to have come across men brimful of knowledge, quick to see, sure in judgment, and nimble of hand, who yet have failed to gain power over patients, because they have lacked something. At the very best any test which a university can apply is a partial one, and is, viewed as a guarantee that the patient will find what he expects, in many ways imperfect.

[This being so, went on Professor Foster, our tests should be of such a kind as to anticipate as far as possible the judgment of the world. There was so much to be learned nowadays that some choice must be made in the things which he who sets out to be a doctor is bidden to learn. He continued:—]

An examination for a medical degree, as I have asserted, is or ought to be a test whether the examinee gives adequate promise of being able to cure or relieve the sick, whether he possesses the knowledge and ability to apply the teachings of science to the removal, mitigation, or prevention of disease. It is not to be used, as some other examinations are or may be, to test a man's mental agility and alertness, his power of rapid and correct expression, his coolness and presence of mind amid difficulties. It ought to be directed solely to appraising his professional skill; simply this, all else is irrelevant. Now I can quite conceive that this might be satisfactorily accomplished by a final clinical examination—a prolonged and searching examination it may be, but one essentially clinical, or at least professional in nature. It would, I believe, be possible to conduct such an examination in such a way that the candidate must show by his attitude towards clinical problems whether he had rightly grasped pathological truths, and this in turn in like manner would show how far he had laid hold of pathology and therefore of chemistry and physics. Our justification for insisting on the study of these preliminary sciences is that a knowledge of them leads up to, being the basis of, clinical insight and skill. If this be so the effects of those studies ought to be recognisable at the end. If our system of training be really a sound one, if at each step an indelible stamp is left on the learner, then at the end we ought to be able to trace backwards the road along which he has trod. I say I conceive it possible to test the fitness of the candidate at one step by one adequate final test. But there are obvious reasons, on which I need not now dwell—reasons pertaining to the economy of time, to the advantages of more continually watching over the wayward student and of early estimating the hopeless ones—in favour of the plan of arranging that the degree should be the final goal of successive examinations at the several stages of study. It will be the duty of the authorities of the new University, when it comes into being, to prepare regulations for its medical as for its other degrees. It is not for me, and even if it were so this is not the occasion, to dwell on the details of the regulations which ought to be adopted. But perhaps I may be allowed to make some general suggestions, to give utterance to some reflections which my experience, now not wholly brief, has borne in upon me.

As I said just now, it has already become impossible to insist by the tests of an examination on the student gaining a knowledge of everything which has a bearing—even a very direct bearing—on the medical art. We must not attempt to make the field of examination conterminous with the field of knowledge; we must restrict the field within narrower limits, and as years go on and science grows more and more the restriction must become more and more decided. The wise man will look ahead and strive not to frame regulations which within a relatively short time circumstances will compel him to mend. Looking ahead, we may be sure that our efforts at restriction can only be conducted along certain lines. Far away in the future it will remain as true as it is to-day, and perhaps appear even more clear, that sound practices must rest on a wise pathology; this in turn on an enlightened biology; this, again, on a firm basis of chemistry and physics. It is not possible to-day, nor will it ever be possible in the future, to lighten the burden of the medical student by throwing out any one of the sciences which in ascending series form the basis of the science of medicine; if you attempt to draw any one of these sciences out and away from among its fellows the educational edifice falls to pieces. Yet it is already absolutely impossible, in view of the expenditure of time and money, to say nothing of brain capacity, that each student on his way to become a doctor should become, in turn, a physicist, a chemist, an anatomist, a physiologist, and even a pathologist. A cutting away must be done within each science, and as time goes on the pruning knife must be used with greater and greater effect. How shall the cutting away be done? There is, I venture, to think, a bad way and a good way.

One way is to pass in review each of the sciences and pick out the bits, the separate facts, and even the disjointed laws or doctrines which are known at the present time to be used in the construction of medical science or in the applications of medical art. We might, for instance, ranging over the wide and varied field of physical science, choose the particular bits—bits of mechanics, bits of hydraulics, bits of electricity, bits of optics, and the like—which the teacher to-day in physiology or in pathology takes for granted as known and acknowledged when he is expounding the solution of a physiological or pathological problem, or which are called into play in the sick room as part of, or guide to, some therapeutic means. And so with the other sciences. We could thus undoubtedly lighten the overloaded medical back. But with what result? I will say nothing of the task of getting these disjointed fragments, held together by no logical ties, deprived of all suggestive connexions, securely lodged in the learner's head—a task of great and disheartening hardness, a task, moreover, which would probably through its repellent difficulties be found to consume well-nigh all the time and energy which the proposed restriction was supposed to save. It will be enough, I cannot help thinking, if I ask the question, Who is to be the authority to decide which bits of this and that science are pertinent to medicine? Who is to pick them out and frame them into a schedule? It will be enough at least if I add the reflection that when we have gathered these various bits together we find them a shifting mass. Each science is for ever changing; new facts are being discovered, new truths are coming to the light. That which to-day is unknown, or if known would be rejected as having no relation to medicine by the builders of a schedule such as I am imagining, may to-morrow become the corner-stone of new medical truths. Were such a schedule in existence few years would pass before the man in active practice would be heard lamenting his misdirected education in which while he was taught much which he now finds to give him no help in his daily life that which he would now find most useful even though then known was left untaught. Moreover, the wheels of the academic machinery which enacts and changes regulations move slowly with much friction. Again and again it would be found that medical theory, and therefore medical practice, was being powerfully swayed by some bit of chemistry or physiology long before the academic authorities had time to insert it in their schedule. Am I not right in saying that this is a bad way?

But there is another way. From time to time the man of

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science is, according to his mood, pained or amused at a man of letters of repute or even of eminence—a poet, a historian, or a novelist—delivering himself upon a difficult, disputed question of science. The man of letters may be acute and logical, may have diligently studied the special facts bearing on the problem; and yet to the man of science his conclusions merely raise a smile or a sigh: they are so preposterous and obviously wrong that they will not bear for a moment the test of rigid scientific scrutiny. So again, within a narrower circle the physicist or the chemist from time to time flounders conspicuously when he attempts to solve biological problems; the biologist when he pronounces judgment on physical or chemical theories; and either of them when he delivers himself of his views on questions of abstract philosophy. And that though each in his treatment of the subject may show talent, acumen, and knowledge. There have been instances to the contrary, but it is this which often happens. A master in one branch of learning, if he attempts to go beyond the tether of his accustomed thinking, is apt to expose himself to defeat at the hands of a mere disciple. For each kind of learning, each branch of science, has what may be called its own way of thinking. Different phenomena observed by different methods, different ideas born in different ways, different devices for overcoming different obstacles, all these go to create different attitudes of mind and different modes of laying hold of truth. Not until the mind has been accustomed to watching the phenomena which constitute the subject of a branch of science, not until have been learnt by practice the ways in which in the past the problems presented by these phenomena have been solved, is it ripe for the attack on problems yet to be solved or for critical judgment on solutions of those problems offered by others. This is at once the only real and the royal road to learning a science, getting to be able to think in it, to grasp the ideas which form the body of it in such a way as to be able if opportunity offers to add to it new consonant ideas, or at least to judge truly new ideas offered as being so consonant. This is the kind of learning which the doctor wants. His life is, on one side of it, one prolonged investigation—not a continued inquiry into one homogeneous problem, but a repetition of attempts to solve the multitude of diverse problems presented to him day by day. His success, on this side of his life at least, will depend on his power of right thinking; and his power of clinical thinking is in part the outcome of his being trained to think in other things. He needs to be trained to think in physics and in chemistry in order that he may use these sciences aright when he attempts to study biological or physiological problems. He needs to be trained to think in physiology in order that he may think aright in pathology, and so, with his feet set in the right path, may in his future life be able, through the instincts as it were of a well-ordered mind, to recognise swiftly the value of the right views and the worthlessness of the wrong views which from time to time will be offered to him touching the nature and causes of disease. It is not the facts of physics, of chemistry, and of physiology which form the most important part of the medical man's training during his novitiate of study (the facts of anatomy stand on quite a different footing); it is the right way of viewing these facts, the right way of thinking about them, which is the essential need. If the mind be put in the right way the facts can be gathered up and put in their proper place at any time, even in late after-life. But the mind can be fixed aright only in the early years of training.

Here I think I hear some one say: "I thought you were proposing to lighten the burdens of the medical student; surely it is not a blessing but the reverse which, if I rightly understand you, you are now offering to him. We are groaning under the heavy burden of having to compel the student to study those sciences auxiliary to medicine; we hitherto have been content that he should know; you are proposing that he should not only know but understand. Do you call this a help?" Yes, much help every way, but only on two conditions touching the way in which the affairs of a university are conducted. The first condition is that the authorities to whom is entrusted the appointment of the teacher, professor—call him what you will—of each of these sciences, should recognise in the selection of the holder and in the award of the emoluments of the chair, and that the teacher himself should recognise, that the office is one not of teaching only, not of didactic exposition only, but of learning, of inquiry and research. I know very well that the gift of investigation and the gift of facile exposition do not always—possibly do not often—go hand in hand. But the power of thinking in a science on which I have been dwelling is not taken in as drops falling softly from the lips of the teacher into the open mouths of the passively recipient hearer; it has to be gained by the exertions of the learner and largely by active work in the laboratory, and I never heard of any-one having in him the true spirit of inquiry who in the quiet studies of the laboratory failed to carry his pupils with him onward from truth to truth, however sorry a figure he might cut when he attempted in a formal manner to thump the professorial pulpit. On the other hand, if the spirit of inquiry be lacking an exposition clear as crystal, aided by elaborate diagrams or a projection lantern, while it seems to be wholly luminous may leave the mind of the hearer really dark. The art of teaching in the true sense of the word is not the art of pouring into empty vessels; it is the art of awakening latent powers, the art of nursing that feeble infant the desire to know, until, growing strong in limb, it is able to walk alone and go on its own way. The only teacher who can truly teach is one who is himself bent on going forward, to whom each bit of new knowledge which comes before him is not something to be stuck in its proper place in the catalogue of things known, but a stepping-stone from which to make a new stride. The second condition is that the tests, trials, examinations—call them what you will—by which the progress of the student is measured should be directed to appraising his intellectual growth, not his accumulated knowledge; to determining how far he has got on the road, not the amount of luggage he has gathered on the way. This cannot be achieved solely by means of one or two trials of written questions and answers, even with the aid of a string of manipulative puzzles, often called a practical examination. By hypothesis we are striving to lighten the burdens of the medical student; we are desiring to find out the minimum of knowledge of any one science, say physics, possessing which he may be permitted to pass on to the study of the other sciences based on that. I am arguing that it will be enough if we can be assured that he has learnt to think in physics, that he has grasped the methods of physical inquiry to such an extent that when in some other science—in pathology, for instance—a problem is treated by physical methods he can comprehend that treatment. No stranger examiner, even though he had the skill of an angel, could gain that assurance by merely shooting questions at the student on one or two formal occasions. One person only is in a position to form a judgment on the matter, the teacher who has really taught the student, who has brought him on his way not by formal lectures only, useful as these are in their proper place, but by frequent intercourse in the laboratory, watching him at his repeated exercises, sounding again and again by quiet talks the stream of his thoughts. He alone is in a position to say that which we are supposing is all that need be said—that such and such an one understands what he has been taught and may now safely pass on to other studies. If it be feared that such a judgment is a responsibility too great to be laid on the shoulders of one person, seeing how personal predilections or other motives might come in to warp it (though in a well-ordered mind and a well-ordered university loyalty to the science on the one hand and to the university on the other ought to be a safeguard strong enough to render such a fear of little moment), let his results be checked by someone else and the student's fitness be declared by the mouth of two witnesses of his work. But, so far as I can see, it is only by taking the teacher into full confidence and making large use of him that we can hope so to adjust the increasing demands of the sciences auxiliary to medicine to the fixed and stationary capacities and opportunities of the student as to train up men in such a way that their purely scientific studies shall be wholly a help to, and not at all a drag upon, their strictly professional learning.

Here it may be said: "This proposal to lessen in the case of the medical student the demands on the auxiliary sciences will bear hard upon the teacher. It lessens the time to be given up to each science and so virtually lessens the number of the teacher's students and his fees, while at the same time it increases the labour which he spends on each student; moreover, it cuts away, as far as the medical student is concerned, the higher teaching of science. The

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life of the teacher is a hard struggle as it is. If the artificial props by which he is supported be taken away he will fall to the ground." Here comes in the idea of the university. A university is not an educational institution directed by the principle of "payment on results." It does not set itself up as a rival to a system of classes which proposes at the least expenditure of time, money, and, it may be added, of brains to drive a head through the same narrow gateway of this or that formal examination. The one reason for its existence is the encouragement of learning, and that irrespectively of the immediate benefits of new truths. It is because it works for ends the good of which may not be seen at once that it cannot be conducted as a "paying concern." If it is to flourish it must not be expected to live from hand to mouth, its livelihood must be assured to it by the gifts of its friends or, failing that, by the aid of the State. As the university looks to be treated by the world, so it must treat those who do its work. Since it lives for the advancement of knowledge, it must see to it that the men who are for the time being its flesh and bones are placed in circumstances as far as possible favourable for their doing their best to push forward the limits of the known. Part of these men's work is, as we have seen, available for immediate use, and as such may be duly appraised; but the value of much of it lies hidden in the future. It is just this uncertain moiety which needs the most kindly care. The worth of a university is to be measured not alone by the number and quality of the graduates which it turns out into the world, but also, and even more so, by the number and quality of the new truths which go out into the world from its laboratories and lecture rooms; by its work of research will it in the end be judged. Research grows on leisure and quiet; only in rare cases will it flourish in the midst of turmoil and with the wolf crying at the door. By all means, as I have already urged, let teaching and learning stand side by side; bid the teacher investigate and the investigator teach; but let the teaching be so ordered and so rewarded that the teacher has ample time and repose for his research, and, content with his line, is placed beyond the temptation of giving up to the search for gold the time and energy which ought to be spent in the pursuit of truth.

You here, in Birmingham, have a great opportunity before you. You are not trammelled by historic bonds, or by vested interests, or by ties of the State. You are free to mould your new University as your judgment directs. May I bid you not to copy slavishly the outward lines of any model, old or new? Do not attempt to wear the clothes of the old universities, the fashion of which has been determined by a past which you have not. Do not be led to think that when you have spread a net of examinations you have built a lasting house. Let the spirit of inquiry be your guiding spirit; you shall find that as you follow it other things will come in its wake. If your teachers be men busy garnering new truths, their pupils will gain real knowledge. With such teachers and such pupils you may safely throw aside many of the present devices, at once irksome and insufficient, for testing the work of the scholar. You will be able to afford to make your degrees at once efficient and economical, inasmuch as they will be remunerative not merely by the possession of them, but in the very getting of them. If you do this it will be strange if you do not reap the reward not of honour alone, but also of material success.

I fear that I may have been preaching heresy and that in many things which I have said I have been very bold, but I have been encouraged to think that I might speak freely in a place which in times past and in other things has shown that it is not afraid of leading the way. One word more and I have done. I have been speaking this evening chiefly of matters medical and have been urging the claims of scientific development, but I would not wish to be thought the advocate of science alone. Though it is true that the term "university" does not mean the care of universal knowledge it is equally true that the full good which a university may gain cannot be gained if it narrows itself to one line or even to a few lines of study. For each branch of learning nothing is so good as to be continually in touch with other branches. The ideal university is that to which whosoever comes finds what he wants to learn, whatever it be. May I hope that your university, when it comes, will draw near to the ideal, that it will set itself to nurse every kind of learning, disdaining no kind of knowledge because it seems useless, being afraid of no kind of knowledge because it is openly, even glaringly, useful.

ST. GEORGE'S HOSPITAL.

INTRODUCTORY ADDRESS BY MR. G. R. TURNER, F.R.C.S. ENG., SURGEON TO THE HOSPITAL, ON "THE VALUE OF MEDICAL WORK TO THE COMMUNITY AND ITS INADEQUATE PECUNIARY REWARD."

AFTER some introductory remarks, in which allusion was made to the deaths of Dr. Wadham and Mr. Henry Lee of the consulting staff, and that of Dr. Leonard Remfry of the acting staff, of St. George's Hospital, it was pointed out that education for the medical profession demanded now an industry on the part of the conscientious student greater, perhaps, than that required by any other vocation but which was well repaid by the greater interest of the study. "Walking the hospitals" necessitated of the modern student the attendance on more than 1000 lectures and demonstrations during five years quite apart from his purely hospital work. In a review of the past St. George's Hospital year reference was made to the recently published "Life of Sir Benjamin Brodie," an old surgeon of the hospital, by Mr. Holmes, the treasurer. The extreme value of a medical treasurer who had already spent many years of his life on the honorary staff was insisted upon and for the benefit of hospitals such appointments should be more frequently seen. A review of the athletic achievements of the St. George's Hospital students for the past twenty-five years showed of what stuff the modern medical student was made. This comparatively small school had produced amateur champions in running, rowing, boxing, cycling, cricketers who had played for their counties, many university oarsmen and runners, international football players, a lawn-tennis champion, and authors of books on mountaineering, skating and cycling. More than natural aptitude and physical development is wanted for such athletic success; self-denial, self-restraint, perseverance, and patience must accompany these—qualities the public are not wont to credit the medical student in his lighter hours with, but which he possesses to a marked degree. His work, too, has a distinct pecuniary value; it saves his hospital the employment of extra staff and nurses and in this work he may have opportunities of showing disregard of danger, devotion to duty, and self-sacrifice. The courage of the medical man is tested without accompaniment of the skirl of the bagpipe or the beat of drum, but it may equal that of the soldier. In his struggle with disease no publicity awaits the wounds he may receive, his life he may lay down in doing his duty, and those near and dear to him are too often left in poverty with no grateful country to provide for them. Save to a very few honoured with the rank Sir Gorgius Midas accepted with indignation as that given to a successful sawbones there comes no rank, no title, no distinction to mark the experienced veteran from the latest recruit. The medical student, so amusingly and graphically portrayed by Dickens and Thackeray, has too long been taken by the public to be typical of a low fastness, uneducated, unclean, redeemed only by the saving grace of humour and a love of practical jokes. The worst types of a bygone age, when anyone who chose could call himself a medical student, have led in the past to this conception of him. To-day students are largely recruited from public school and university men. At Cambridge alone in the last ten years 9437 undergraduates have matriculated. No less than 1253 are registered students of medicine—more than 13·2 per cent., nearly one in every seven—a splendid tribute this to the work done by the late Sir George Humphry. At Oxford in nine years but 212 undergraduates out of 7330 have elected to follow medicine. This number, now that the claims of science are to be more recognised there, will doubtless be materially increased. The behaviour of the 3000 London medical students compares not unfavourably with that of the admittedly well-behaved undergraduates of Oxford and Cambridge who have less temptation and more restraint. Not only Dickens and Thackeray have been hard on the medical student, but Tennyson in his poem, "In the Children's Hospital," has been unfair to surgery. Thousands have read the poem and pictured the surgeon; very few are aware that Tennyson expressed to the late Sir Andrew Clark his regret that he ever wrote it. The writings of Molière, like those of Dickens, Thackeray, and Tennyson, live after him, and careless readers may forget that the medical men whose pretentious ignorance he ridicules were those of 240 years ago, who had the ignorant confidence of empiricism combined with a fatal activity of treatment, now happily absent. To live down the writings of such masters of literature would have been a hard task for any

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class of students for any profession; the medical one is now very fit for any one with high ideals, good health, good intellect, and a capacity for hard work. It is as philanthropic as the clerical profession, but receives less State and social recognition. Surely the fascination of scientific study should attract more of the intelligent well-to-do than it does. By the triumphs of preventive medicine, hygiene, and sanitary science the overstocked medical profession is rightly and honourably doing all it can to prevent work for itself. This unselfish action is too often misunderstood and medical men are said to "have fads" and are suspected of furthering instead of standing in the way of their own interests. The profession is infested by quacks, forestalled by prescribing chemists, sweated by clubs and medical aid associations, and the hospitals which are so largely gratuitously served by its members lend themselves, however careful may be their supervision, to an abuse which diverts many a fee from the struggling practitioner. In London alone nearly 17,000 maternity cases are treated at the general hospitals, more than 1,200,000 out-patients and casualty cases and nearly 70,000 in-patients. Here must be an enormous number of unsuitable cases for charity at the expense of the involuntary philanthropist, the general practitioner. No wonder that the building of a hospital in a new locality is regarded by him with very mixed feelings. We of the profession know these things, for are they not written every week in our chronicles? Has not everyone with experience been a personal sufferer? The public, however, who subscribe to the various Hospital Saturdays and Sundays, to royal, emergency, and other funds; the public who by their liberality and legacies have hitherto prevented the institution of State-aided hospitals and their inmates being a burden on the rates—that liberal public which supports by voluntary contributions 23,204 beds in the 716 hospitals of the British Isles on which more than one and a half millions of pounds sterling (£1,629,114) is spent annually, is it aware of what "the doctors" do? Not only are there 716 hospitals, but dispensaries and convalescent homes swell the number to 1155 institutions, spending nearly three millions of pounds a year (£2,825,376).

The immortal Darwin, by means of the brightness of his genius and patient research, first threw light on the dark places of the earthworm, showed how ceaseless is the good, silent work that the lowly, humble creature does, how greatly vegetable and animal life are indebted to it. Sir Henry Burdett, to whose great statistical work on hospitals and charities I am indebted for the figures I have quoted, has made himself a benefactor to the medical profession by the mere enumeration of its ill-rewarded labours in all the centres, in all the out-of-the-way dark corners of the United Kingdom, wherever there is suffering, wherever there is poverty or distress, wherever, in short, there must be medical charity. He has done much by compiling statistics to tell of the ubiquity of medical gratuitous labour, the unlimited potentiality of the poor and others who are not poor, and should be ashamed to pauperise themselves to command the best advice in their neighbourhood. In London alone there are, I find, 7540 hospital beds and 14,597 in Poor-law infirmaries, making 22,137 beds for the poor man and his family. Something has been done by Sir Henry Burdett to show how the medical labourer is rewarded, but statistical tables on this last point are almost necessarily absent. I have made inquiries at the various general hospitals in London, numbering some 24, and having an annual expenditure of £487,248—nearly half a million. Of this amount I find that there is paid to medical men, resident and non-resident—there being in all some 165 resident and 466 non-resident appointments—a total sum of under £13,000, that is to say, 2·66, a little more than 2½ per cent., of the whole amount. An analysis of these payments at hospitals with medical schools attached to them shows that there are 256 unpaid and 170 paid medical officers. Were it not that one institution pays every one of its 64 officers this proportion of the (inadequately) paid to the unpaid would be much less; thus 11 hospitals have 256 unpaid officers and they pay only 106. They expend £6890 annually in doing this at an average of £65 to each paid officer. Curiously enough, the average of payment at St. Bartholomew's Hospital, paying £4188 to its 64 officers, is also just over £65 a head; but there all are paid something. The payment even when existing is admittedly inadequate; hard work of from three to six hours a day requiring a highly qualified, trained, skilled man to do it is rewarded perhaps by £50 a year—such, for instance, is the work of a registrar. Only 4 hospitals pay anything to their visiting staff. The other 8 hospitals pay only 38 out of their 240 officers. The total expenditure of these hospitals with their medical schools is £392,488 per annum—£11,078 pays their 426 medical officers. Probably hospitals with no schools attached are even less generous to their medical staff. The truss and surgical aid societies expend £20,492, paying their medical officers as far as I have been able to ascertain £850. I do not say that it is wrong that so little should be given for so much—that hospitals are so literally *medical* charities—but I do say without fear of contradiction that such pecuniary facts as I have collected are not generally known by the public and that were they known and taken as a type of what our profession—the only one save the clerical profession that habitually and constantly gives its services for practically nothing—does, I say that that profession would be more widely respected, more esteemed, more honoured, and have more social consideration shown to it than it has at present. Those in authority and power might possibly not only compliment us on our noble calling, but by occasionally actually ennobling our really scientific leaders give a bench of bishops and distinguished law lords suitable companions in that Upper House where now Lord Lister sits alone. Who could be a more worthy representative and more typical of the profession at its best than this man, who has already by his practical application of the discoveries of science restored the health of more people and saved more lives than the greatest warrior lord of any time has ever crippled or destroyed?

These pecuniary facts are not generally known by the subscribing public nor is the enormous private charity of even the poorest general practitioner. Hospital service is more onerous, demands more time, and is not now indirectly paid for as much as formerly, nor is there much profit to the teacher from medical education. So-called "pay hospitals" are too often patronised by the comparatively rich and the pay is diverted from the medical man. This state of things is not confined to England. Dr. Wiggin of New York, in a paper on the existing abuse of medical charity, considers that it is established that not far from 50 per cent. of all applicants for free medical relief in the larger cities of America are not persons who require it. The cult of altruism is a luxury getting beyond the means of the ordinary member of the medical profession, and well might the medical man with an execution in prospect paraphrase Madame Roland and say: "O Charity, what things are done in thy name." There has come a time when this charity is no longer requested but demanded of him, sometimes by locally powerful organisations, such as clubs and friendly societies. It is his duty to his medical posterity to resist this and to see that an abuse admitted by all is not allowed to spread.

How would the great profession of the law regard the erection of suitable law-courts by public subscription all over the country, the payment of all engaged therein save solicitors, counsel, and judges, the unpaid to wait for years before being allowed to practise to show their capacity, being liable if thought or found incapable to lose their reputation and to be cast in damages to be paid to the pauper and other litigants, the reward of the successful few being a private practice elsewhere, and even those who succeeded to still give their services in the gratuitous courts? What is done all over the kingdom by the medical profession, not by any means a rich body of men, and which I am far from saying is wrongly done by them, seems Gilbertian and grotesque when applied to any other profession, save perhaps only the clerical. In the latter, however, there are Lord Archbishops, one of whom takes precedence of all but the blood royal, there are lawn-sleeved bishops in the Lords, there are plums and palaces, and the clergyman, poor though his stipend and emoluments may be, humble, too, perhaps his origin, is received into rural and city society because of his profession, where his brother philanthropist, the modern missionary, the medical man, is often excluded because of his.

The medical profession must be militant also and militant not only against disease. Too long has sufferance been the badge of all our tribe. The world is governed by sentiment, not by science, and sentiment, her appetite growing by what she feeds upon, demands rather than asks for gratuitous scientific service. Many laymen resemble the old lady who was so much moved by the sermon that she borrowed from her neighbour a sovereign, not perhaps ever returned, to put into the plate which was presented for her charity.

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The profession has too long been lending that sovereign and on too many days of the week, the old lady partaking meanwhile of the satisfaction born of good works, the good work of using the services of another.

So-called hospital scandals, where sometimes the committee and sometimes the medical officers have erred, and sometimes erred together, usually seem to end in resignation of the medical and the continuance in office of the lay element; the medical scapegoat is brought to the door of the tabernacle, has the sins of the people laid on him, and is sent away with his burden into the wilderness. Would this scapegoat be found so often in our ranks were they firmer, more animated by *esprit de corps*, more determined to stand shoulder to shoulder and to resist to the last? It is a great thing and conduces to peace to be known to be ready, if necessary, with the pistol. *Noli me tangere* should sometimes be a medical motto, and any one of us or any body of us justly struggling for some right should be able to be sure that whatever the result there will be no underselling, no supplanting by those from whom moral support at least should come—the medical profession. That this is not so is one of the sources of our weakness, one of the reasons of the rarity of successful resistance, one of our obvious faults. Such resistance should not be limited to those immediately concerned, but should be supported, led, and if need be initiated by the well-to-do and prosperous of a profession too often and in too many places unable to assert itself because of its very numbers, its keen competition, and its poverty induced thereby.

The methods and manners of trade unions are to be deprecated. The profession is admittedly something nobler than a trade; but medical charity has outgrown its proper limits and its further extension and multiplication will kill what little independence remains in a sorely tried profession. We must all be in some sense dependent; none can be absolutely free; but there is a servile dependence ignoble and dishonourable as there is a dependence which is honourable, right, and worthy of the labourer, as he himself is worthy of his hire; a dependence worthy of a profession at all times and in all places ready to give its services to the really poor and needy in all walks and ranks of life; a dependence which will still allow of the maintenance of that which should belong to all of us and is the due of each member of an honourable calling—self-respect.

ST. MARY'S HOSPITAL.

INTRODUCTORY ADDRESS BY DR. H. A. CALEY, PHYSICIAN TO OUT-PATIENTS AT THE HOSPITAL, ON "PREVENTION IN MEDICINE: THE NEED FOR A FORWARD MOVEMENT."

GENTLEMEN,—Instead of more abstract advice I invite your attention to-day to one single principle, which by virtue of its intrinsic importance as a moulding force and its far-reaching beneficial results in practical operation has had so much to do with the triumphs of medicine and surgery. I refer to the principle of Prevention. My chief aim is to emphasise the need for a forward movement in applying this principle of prevention, and by way of illustration I shall, as far as possible, refer to matters of current interest or which have attracted attention during the past few months. Our knowledge of the causation and processes of disease is to-day such as it has never been before, hence never was there a time more opportune than the present for increased attention to this subject of preventive medicine—using the term in its most comprehensive sense. The occasion is likewise opportune in that the formal opening of the Winter Session is one of the very few occasions upon which we have the opportunity of expressing our views in the presence of representatives of the non-medical public, without whose intelligent and energetic coöperation this great principle can never have free course or produce its full results. I anticipate the criticism that this subject would be more appropriate for an address introductory to practice than for an address introductory to the student's medical curriculum—for the fifth-year student rather than the first-year student. The fact remains that there is but one such address, and it is my firm conviction that the earlier the student appreciates the responsibilities which the practice of medicine involves, and the range of influence which may one day be his, the more intense and earnest will be his interest in the successive phases of that course of study and experience which are designed to fit him for a life-long conflict with disease and death.

Owing to the restricted and specialised sense in which preventive medicine is frequently regarded I fear that this aspect of medical work does not receive due attention. To cope with preventable disease is regarded too much as the business of those who devote themselves to public health work and too little as the concern of every practitioner of medicine, still less as that of the community. It is not, however, by the foresight and expert knowledge of the few, but by the energetic coöperation of the many, acting under the guidance of expert knowledge, that a decisive blow can be struck against the forces of preventable disease. Whilst we look for and work for fuller light and more perfect knowledge it is unquestionably the fact that vast results in the prevention of disease are within reach, if we could but persuade men to act up to the light they already possess. In the popular conception of preventive medicine in this country no disease occupies a more prominent place than typhoid fever. It is a matter of common knowledge that sudden epidemic outbreaks of typhoid fever are most commonly due to water-borne infection, and next most commonly to milk-borne infection, and that consequently the surest means of prevention against such outbreaks is purity of water-supply and of milk-supply, whether that purity be due to absolute purity of source or be induced by efficient sterilisation.

On the basis of these simple facts much has been done to prevent epidemic outbreaks of this disease; how much yet remains to be done the events of the last twelve months can testify. Epidemics such as those which have so recently involved the sacrifice of hundreds of lives, incalculable suffering, and great material loss are essentially preventable if local authorities, communities, and individuals would but do their duty in the sanitary sense—a high and costly standard of duty it may be, attainable it certainly is. Whilst, however, we can speak confidently of purity of water-supply and of milk-supply combined with efficient sanitation as certain preventives of most epidemic outbreaks, we have to recognise that the origin and therefore the prevention of some of the comparatively isolated cases, of limited and recurrent outbreaks, or of the more or less persistent prevalence of the disease in certain localities, is by no means so clear. To Sir William Broadbent, in the first instance, we owe the explanation of the origin of some of these cases—conveyance of typhoid infection by specifically contaminated oysters, and the relation of shellfish to typhoid fever infection has rightly attracted much attention. But there are in this country districts, towns, and even dwellings where enteric fever repeatedly occurs or is rarely entirely absent. During the past year evidence has been accumulating in favour of the view that organically polluted soil by favouring the persistence in more or less active form of the typhoid organism has much to do with the tenacity of typhoid fever in such localities—a view to which Sir Richard Thorne gives prominence in the last report of the Medical Department of the Local Government Board. The researches recently undertaken by Dr. Sidney Martin, at the instance of Sir Richard Thorne, certainly demonstrate that the condition of the soil is of prime importance in modifying the vegetative activity of the bacillus typhosus. Dr. Martin finds that in certain samples of organically polluted soil the bacillus is capable, not only of retaining its vitality for as long a period as seven or nine months, but also of multiplying and permeating the adjacent soil, whereas with virgin soils no sign of vitality could be discovered as the result of testings 14, 20, and 23 days after inoculation. These and other experimental observations warrant the inference that "whilst one soil and set of circumstances are highly favourable to the vitality and propagation of the typhoid bacillus, another soil and set of circumstances are rapidly destructive to it." Striking collateral evidence which tells in the same direction is afforded by a study of the topographical distribution of typhoid fever. It is remarkable that whilst the disease has been undergoing enormous diminution in this country, the areas of both its maximum and minimum incidences have remained practically the same during the 20 years 1871-90, and further that much of the persistence of the disease is associated with those sanitary conditions which involve organic pollution of the soil.

The bearing of such considerations as these on prophylaxis is obvious, having reference not so much to

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direct channels of infection as to the conditions of environment which are most favourable to the vitality and multiplication of the organism of the disease. It is of interest to note in passing that energetic preventive measures may prove their efficacy long before their precise *modus operandi* is known. The introduction of impermeable pavings in yards about small cottages and tenement properties in towns and the prevention of soil contamination were measures of proved efficacy before any such explanation as that now suggested was forthcoming. My last words on the subject are to direct attention to the necessity for more reliable and rigid disinfection in the management of individual cases of typhoid fever. It has for a long time past appeared to me that there is very great danger from partial or perfunctory disinfection, and quite recently attention has been directed to the subject by Dr. Franklin Parsons of the Local Government Board and also by Dr. Robertson, medical officer of health of Sheffield.

In face of the officially expressed opinion of the medical adviser of the Local Government Board that the death-rate of this "typically preventable disease" would seem to be coming to a standstill we are bound to advocate a fresh forward movement towards the eradication of the disease. To be successful it must be comprehensive and take account, not only of infected water, milk, and other articles of diet, but also of factors of another kind, the influence of soil and other circumstances on the vitality and multiplication of the typhoid organism, the dangers of lax disinfection, and, under certain circumstances, of infected dust also. Did time permit we might refer to what has been accomplished in the prevention of cholera or to the vast and practically new field for preventive medicine which the study of tropical diseases is opening out. What possibilities as to the prophylaxis of malaria—that great barrier to civilisation and colonisation—are suggested by Major Ross's recent observations on the relation of the mosquito to the malarial parasite.

Preventive medicine in the field of tropical disease is of national importance to this country with its world-wide empire, and the recent decision of the Colonial Office to send out in conjunction with the Royal Society a Commission to investigate the dissemination and prevalence of malaria shows that this is now appreciated in the highest quarters. On this occasion it is impossible not to digress for a moment to express our appreciation of what foresight and efficient organisation have accomplished in the medical arrangements of the Soudan campaign, recently so brilliantly concluded. The newly constituted Royal Army Medical Corps had not long to wait before it received its baptism of fire at the battle of Khartoum, and I feel sure that I express the unanimous opinion of my colleagues in saying that we hope that many of our present students will elect to serve their Queen and country in the Royal Army Medical Corps as well as in the Naval and Indian Medical Services. Since October of last year the whole aspect of affairs in regard to the Medical Department of Her Majesty's army has changed, thanks to the Marquis of Lansdowne and those associated with him in this great reform. There is now every reason why some of the best of our students—the best all round men—should be proud to serve in the Royal Army Medical Corps.

To return, if much yet remains to be done to prevent typhoid and other infectious fevers, what shall be said of that essentially preventable but far more disastrous disease, tuberculosis, which is still allowed to a large extent to run riot in our midst? So long as phthisis was regarded as "constitutional," due to a special diathesis, as an hereditary disease, or among the misfortunes incidental to particular climatic conditions, an attitude of hopeless indifference as to its prevalence was perhaps intelligible. But with the knowledge that tuberculosis in its varied forms and diverse manifestations is a specific and infective disease—i.e., that it cannot arise *de novo* or from accidental causes, but only from the infection of and development within the body of the specific organism of the disease—a policy of inaction is indefensible and active measures for combating its prevalence are imperative. Long before Koch's memorable discovery of the bacillus tuberculosis in 1882 far-seeing workers in preventive medicine had initiated hygienic measures of the utmost importance which have done much to reduce the mortality from phthisis in this country. During the last fifty years the deaths from all forms of tuberculosis have diminished by about 40 per cent. and the death-rat from tuberculosis of the lungs alone much more than that; but when it is remembered that the number of deaths per annum due to various forms of tuberculosis is between 50,000 and 60,000 the necessity for grappling with this problem is clear.

That further advance is called for in the direction of improved general hygiene is evident not only when we consider the substantial successes already secured, but equally so in view of the established fact that the incidence of human tuberculosis is intimately connected with insufficient or impure air, deficient sunlight, overcrowding, insanitary houses, damp subsoil, and other hygienic defects—conditions which are especially to be found in densely populated cities. Much has of recent years been done by owners of property and employers of labour to improve the conditions of life for those of the lower classes, much more might have been done had not avarice been at times allowed to stifle philanthropy. I cannot say that I agree with the opinion expressed by some that the limit of progress in the direction of improved hygiene has been nearly reached, but I do say most emphatically that a campaign for the repression of tuberculosis will not meet with success unless the attack is developed and pushed forward in other directions. In my judgment, one great bar to progress at the present time is the inadequate recognition of the essentially infective nature of tuberculosis. Not that tuberculosis is, in the popular sense of the word, infectious, so that those who come in contact with the victims of phthisis are to be in dread of contracting the disease, but infective in the sense that the disease cannot exist in the absence of the specific organism of the disease, however strong the predisposition to it may be. The first step in advance is the practical recognition that by the adoption of systematic measures to destroy or limit the dissemination of the specific organisms on the one hand and to remove associated factors and predisposing causes which favour its prevalence on the other the prevention of tuberculosis is actually attainable.

The relation of phthisis to climate is still much misunderstood. The fact is, that though influenced by climate it is to a very large extent independent of it, being practically an ubiquitous malady but closely connected with aggregations of the population. Where people are aggregated together in imperfectly lighted, badly ventilated, and insanitary houses, there tuberculosis is rampant, whilst a population which can live a healthy open-air life enjoys comparative immunity. It has been shown by Ransome, Cornet, and others that even in the same town there may be local "infected areas" or even "infected houses," notorious for their persistent phthisis mortality.

Much has of recent years been done towards the adoption of systematic measures for disinfection in the management of phthisical patients, which is the very starting-point of efficient prophylaxis, as yet but little towards disinfecting rooms, dwellings, and belongings which may harbour and maintain in a state of latent activity the deadly germs of the disease. Important to all, this is doubly so to delicate or predisposed subjects and should never be lost sight of in the selection and preparation of dwelling houses. Measures to ensure efficient cleansing and free resort to nature's own disinfectants—fresh air, air in motion, and sunshine—should always be employed wherever tuberculosis is or has been. In this matter of disinfection we are far behind some other countries; for example, Italy and France. I note that at the French Tuberculosis Congress, held in July last, M. Martin stated that, whereas in 1892 only 4000 dwellings tenanted by tuberculous patients in Paris had been disinfected, in the first six months of 1898 no less than 7000 had been dealt with. Some of the speakers at this Congress severely criticised the apathy of the medical profession in the matter of an aggressive movement against tuberculosis. Can we say that the members of the profession on this side of the channel are as enthusiastic as the situation demands? We certainly cannot hope to cope with the almost absolute apathy of a large section of the public if there is relative apathy on our part.

The danger, more especially to children, of infected milk is now widely recognised and the Report of the Royal Commission on Tuberculosis, issued this year, has given prominence to the extent of the danger by laying stress upon the extraordinary virulence which such infected milk may possess. Fortunate as it is that sterilisation by boiling is so reliable a safeguard, the aim of the future must be to secure an uncontaminated milk-supply to start with, and it is to be hoped that the Government will in the near future take steps to carry out the recommendations of the Commission as to dairies and dairy stock, matters in which we

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are far behind some of our continental neighbours and colonial *confrères*. The danger from meat has, as the Commissioners point out, been much over-estimated, and it seems clear that it could be reduced to insignificant proportions by provision for systematic meat inspection by properly qualified inspectors—a matter urgently requiring the attention of the public authorities. It is not a little surprising to find that this important duty may, under existing conditions, be entrusted to carpenters, bricklayers, plumbers, or stonemasons—a state of affairs which will soon be remedied if the recommendations of the Royal Commission are carried out. It is noteworthy that the Commissioners have emphasised that the only way to strike at the root of this matter of food in relation to tuberculosis is to make an organised attempt at the elimination of bovine tuberculosis.

The advisability of making tuberculosis a notifiable disease has been much discussed; no drastic steps in this direction seem practicable or even desirable, but in my opinion regulations for a modified notification, similar to those in force in New York since 1893, might with advantage be adopted in this country, particularly in our large cities. I refer to the regulations of the New York Board of Health, by which the authorities of all public institutions were *required* to notify all cases of pulmonary tuberculosis and all private practitioners were *requested* to do the same, every facility being at the same time afforded for bacteriological examination of tuberculous cases at the public expense, for efficient disinfection by the sanitary authorities and for actual renovation of premises which had been occupied by phthisical patients. Such measures would probably, in time, pave the way for more comprehensive measures, as has been the case in New York. Since last year, 1897, the notification of tuberculosis has become compulsory in that city—a broad distinction being, however, intentionally made between it as a "communicable" disease and the common infectious fevers. The death-rate from all tuberculous diseases in New York has fallen from 4·42 in 1886 to 2·85 it 1897, and, according to Dr. Herman Biggs, who has done so much to bring this about, the present year promises to chronicle a still more decided advance in the same direction.

In any organised attempt to control tuberculosis protection of the healthy and facilities for the efficient treatment of the diseased must go hand in hand. Hence there is a pressing need for the provision in this country of suitable sanatoria for phthisical patients where open-air and dietetic *régime* can be carried out under strict medical supervision and under the most favourable hygienic conditions. That sanatoria for pulmonary tuberculosis are not dependent for their success on particular climatic conditions is evidenced by the diversity of latitude, altitude, and surroundings of many noted sanatoria. It is not only at Davos or at Denver that such success is obtained—Falkenstein, Nordrach, and Goerbersdorf can claim similarly favourable results. If Falkenstein within sight of the chimneys of Frankfort-on-the-Main has accomplished so much, thanks in the first instance to Dettweiler's foresight and administration, why should we not have similar sanatoria in this country? With due care in the selection of sites, the essential requirements of purity of air, a relatively large amount of sunshine, dryness of subsoil, and protection from cold winds, can certainly be fulfilled. In passing we may remark that in many quarters the importance of climate has been over-estimated and that of diet and nutrition under-estimated. This reference to the sanatorium treatment of pulmonary tuberculosis naturally involves the question of the curability of the disease. Contrary to the opinion of a past generation and to the belief, or at least the practice, of many in our own day, we know that whilst the great hope for humanity lies in its prevention, the arrest of tuberculous disease amounting to a practical and permanent cure is a matter of common occurrence. It may be thought that reference to the cure of phthisis is irrelevant to the theme of prevention—as a matter of fact it is but an instance of the successful operation of prevention. Every pathologist knows that it is the rule for the tissues of the body when invaded by tuberculosis to make a definite attempt to overcome the morbid process and to prevent the further inroads of the disease. It is ours to reinforce this natural attempt at cure, and victory or defeat will, other things being equal, turn upon the stage of the conflict at which such aid is forthcoming. Similarly in the case of those who have a predisposition to tuberculosis, inherited or acquired, prevention is everything.

The prevention of tuberculosis is second to none in importance in the whole range of preventive medicine, and the recently constituted Association for the Prevention of Tuberculosis has ample scope for its operations. A well-organised and comprehensive forward movement must soon make an appreciable difference in the ravages of this disease, already steadily declining, and ten years of earnest and sustained effort should mean the saving of tens of thousands of lives.

When one is engaged in urging the necessity for a vigorous forward movement against preventable disease it is not inspiriting to recall that in the case of small-pox the highest executive authorities have within the last three months carried out a "strategic movement to the rear," which has placed the nation in the illogical position of watching a "tremendous" and, as most of us think, uncalled-for "experiment" in a matter of literally vital importance. No doubt moral suasion and the logic of facts would be preferable to compulsion in any form in a community of ideal intelligence and open-mindedness, but with the conspicuous inability on the part of so many to distinguish between the *post hoc* and the *propter hoc* in the matter of the alleged ill-effects of vaccination the prospect is not particularly bright. It is true that owing to the attitude of local authorities the state of affairs as regards vaccination under the previous Act was becoming increasingly unsatisfactory, but surely the rational remedy was not in the direction of the very open door of a "conscience clause." In matters of public health we look to the Government of the country, influenced by the weight of expert evidence, to lead the way in the path of progress, and not to modify its policy in the face of an adverse wave of popular opinion. However, the law being as it is, we must make the most of the good features of the Act of 1898 and, for the time being, concentrate attention on pressing home the true facts of the case respecting vaccination and re-vaccination, so that the number of those availing themselves of the conscience clause shall not be such as to put to the full test the potentialities of this remarkable innovation in public legislation.

Thus far we have for the most part considered instances of the principle of the operation of the prevention in connexion with the group of specific infective diseases, and it is in this field that we see its importance illustrated in the most striking way and on the largest possible scale. But the same principle is also capable of widespread and increasing application in the case of affections of toxic or degenerative origin. The prophylaxis of affections of toxic origin is a wide and complicated subject, which is attracting increasing attention and which is full of promise for the future. Again, many degenerative changes, for example, in the central nervous system which appear to be primary are in reality secondary to infective or toxic processes which either exercise a directly destructive action on the nerve tissue or pave the way for premature decay by initiating that slow process of retrogression which terminates in nervous death, as so ably emphasised by Dr. Clouston in his recent address on the "Neuroses and Psychoses of Decadence." It is not going too far to say that our present-day knowledge of the causation of many of the most formidable diseases of the spinal cord and of the brain brings them within range of a comprehensive preventive medicine. The mention of three all too common examples—locomotor ataxy, general paralysis of the insane, and the neuroses of chronic alcoholism, is sufficient to illustrate this, and may also serve to remind us that in the prevention of disease we must assign due importance to moral as well as to physical agencies. In passing, allusion must be made to the vast influence of alcoholic excess in causing, aggravating, or predisposing to disease. It is difficult to over-estimate the importance of this subject, and to leave it out of account is to surrender an impregnable position in preventive medicine.

One more illustration of the importance of the principle in relation to the preservation of health of the individual will suffice—the application of the principle of prevention to diseases of the heart and circulation. How many deaths due to apoplexy, to angina pectoris, and to other heart affections might be averted or postponed if timely preventive measures were taken to arrest insidious processes which go on unperceived for months or years before they culminate in grave or hopeless conditions? Men are appalled in the presence of a tragic and apparently unavoidable sudden death, or deplore the limitations of the healing art in dealing with the consequences of a paralytic stroke, but for the most part they do not stop to consider that the result might have been very different had an opportunity been afforded for prevention. There is the curious anomaly of a man who periodically visits his dentist every six or twelve

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months in order that any commencing decay may be detected and arrested before it has gone too far, whilst he considers it quite superfluous to remember that there may be commencing in his person some morbid process, controllable at first, but which if allowed to go on unchecked will in time lead to the arrest of some vital function. In the former instance, where the issue is comparatively a minor one, he applies the principle of prevention, but his attitude is one of *laissez faire* when the heart, the arteries, or some internal organ are at stake. Have you ever thought of the number of lives annually sacrificed prematurely through simple neglect of this great principle? Upon you who to-day embrace the profession of medicine and upon all who practise it this places great responsibility. It is our duty to be ever on the look-out for the first warnings of serious tendencies, not to be content with treating patent derangements of health, but to discover the often less obtrusive indications of potentially grave disease. To the student I would also say—give particular attention to the earliest manifestations of disease, to conditions which are on the borderland between the physiological and the pathological, and to anomalous cases, and—when you know enough—do not be too much fettered by classical types of disease. Again, cultivate a knowledge of perspective in diagnosis and prognosis, do not be content with an array of symptoms and physical signs, however exhaustive, but single out in your mind which are of primary and essential importance and which are but of secondary or incidental significance, then make your diagnosis as accurately as may be, but remember that you must not stop there—the recognition of the true nature of the disease is but a step to ascertaining to what extent and in what precise ways it threatens the physiological integrity of the body.

It is noteworthy and true both of acute and chronic disease that very often danger—preventable danger, too—comes not from the steady advance of the primary malady, but from secondary or incidental development, all the more formidable because unexpected. The basis of what goes by the name of "cure" is very often a series of preventive acts. To a very considerable extent in serious disease our efforts are necessarily limited to warding off threatened dangers incidental to the disease which as such is beyond our control. To use a classical simile, our *rôle* is as that of the pilot—to steer the ship and not quell the storm. That man will best treat a case of typhoid fever or pneumonia who is on the look-out for the first sign of an approaching squall and who navigates accordingly, and the frail bark of a heart embarrassed by valvular disease can only be safely steered by him who realises how to avoid the sunken rocks and cross-currents which threaten to arrest its course.

To some it may appear that the need for prevention will become less with increasing knowledge of specific remedies and more radical treatment. But our clinical experience thus far entirely negatives this and serves to enhance the importance of prevention, though in a somewhat different way. The skilled surgeon may by early operation remove the cause and thus prevent a threatened fatal peritonitis, though the same operation would be of no avail if the peritonitis had fully developed and the efficacy of diphtheria antitoxin in the treatment of diphtheria is in direct proportion to the timeliness of its administration. In each instance the point is to anticipate a further and more formidable development. Instances might be multiplied, but this at least is clear, that in the treatment of disease the principle of prevention is as fundamental as it is in the preservation of the health of the individual, or in the prophylaxis of the plagues of humanity in the aggregate. The community needs to appreciate that in all these three directions there is need for a forward movement—an advance in practice commensurate with the advance in knowledge.

To some of the more junior students the thought will probably occur that at least two years must elapse before they have any opportunity of studying at the bedside the operation of this principle. To such I would say that to recognise without delay its essential importance and far-reaching influence will be to ensure a serious view of your studies from the start. You cannot afford to trifle with any part of your course. The deeper your knowledge of anatomy and physiology the better will be your insight into the facts and laws of life, the only basis of an art of healing which can lay claim to be called scientific, and the deeper your insight into the processes of the healthy organism the better will you be equipped to take your place later as its guardian and protector. You will, I hope, love your work for the work's sake, whether in laboratory, ward, or class room, but it will not be amiss if now and again you pause to ask, What bearing may this have on the prevention of disease? To do this will, if I mistake not, tend towards a deeper and more enthusiastic interest in the work you have in hand; it will ensure your looking beyond the test of examinations to the more searching ordeal of hand-to-hand conflict with disease, and it will also serve to keep before you that unity of purpose which permeates and coördinates every department of your work.

You, gentlemen, who to-day enter the portal of medicine have agreed to take upon you a duty at once noble and responsible. It is no cant to call it noble, because your life work will be to prevent and to relieve the sufferings of your fellow men and one which affords unique opportunities for seeking to consider the interests of others before your own. But let us never forget that the more noble the office the more ignoble does he become who unworthily fills it. With our calling it is true indeed—

> Noble is that's nobly done.

The duty is a responsible one, for the material upon which you work is none other than man himself. The results of our work which we see day by day are enough to impress upon us something of the measure of that responsibility, but we must regard our life-work in yet another and higher light—in the light of a stewardship that has hereafter to be accounted for when we shall have exchanged the "seen and temporal" for "the unseen and eternal." "It is required in stewards that a man be found faithful."

MIDDLESEX HOSPITAL.

INTRODUCTORY ADDRESS BY DR. ARTHUR VOELCKER, ASSISTANT PHYSICIAN TO THE HOSPITAL, ON "A RIGHT MEDICAL EDUCATION."

Dr. VOELCKER, after mentioning that the introductory lectures afforded opportunities to medical men to give advice to those entering the profession, pointed out that they also enabled the public to learn more of the aims and needs of the profession. Although it was undesirable to dwell too much on the virtues of the medical profession as a whole or to bewail their hardships, it was necessary that the public should ask themselves whether they were doing their duty to the profession. To engage in acts of charity was one of the highest privileges of the profession, but if under this plea medical men were imposed upon and exploited by so-called philanthropists he warned them that the relations of the profession to the public would be placed on a much more business basis in the future. After welcoming the new students on behalf of his colleagues he offered them his congratulations on having chosen a school whose past was the record of the work and lives of some of the greatest ornaments of the profession, whose present bore the impress of growth and the recognition of the necessity for thorough equipment in all the branches of practical and scientific medical study, and whose future was in their own hands. Those who were continuing their medical studies would find additional facilities for work in the new laboratories of anatomy, physiology, pathology, and bacteriology. It was most important to learn how to make use of opportunities, for, as Goethe says:

> "Doch der den Augenblick ergreift,
> Das ist der rechte Mann."

The student of the present day was too apt to expect all his information to be condensed and rendered easily assimilable for him by his teachers, instead of educating his own powers of observation and assimilation. A medical education on such prepared food was very apt to have the same result on the student's mind as artificial food-substitutes too often had on the infant's body. Ruskin recognised this tendency and reproved it. "To be excited for an hour," he wrote, "if possible amused, to get the knowledge it has cost a man half his life to gather, first sweetened up to make it palatable, then kneaded into the smallest possible pills, and to swallow it homœopathically and be wise—it is not to be done." Lectures were unpopular among students, who preferred demonstrations and who claimed that they could read the subject up much better in a text-book, but who forgot that the lecturer was enabled to point out the relative importance of the different facts and could give his hearers the benefit of his personal experience.

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Attendance on lectures was rightly insisted on, and parents and guardians had a right to expect it. The habit of note-taking should be carefully practised. The demand for increased practical instruction was well justified and the new school buildings of the Middlesex Hospital were an eloquent expression of the recognition of the desirability and necessity of expansion in this direction. When spoken of by some hostile critics as a decaying school, for answer we may point to our new laboratories and ask if these are the sign of decay. Does a dying tree send out fresh branches? Laboratories were absolutely essential for the adequate teaching of the medical man, not only for the acquaintance it gave him with the manipulation of instruments of precision and the habits of observation, but also for the habits of self-help and concentration of his energies. There was a danger lest an unchecked enthusiasm should lead to the encouragement of a fatal faculty for flirtation with work instead of keeping one object in sight at a time. Some short-sighted people have asserted that it was an injustice to the patients of the charity that the Middlesex Hospital should have taken any part in the erection and furnishing of these new buildings, but they forget that the aim and object of all these buildings was to enable those in whose hands the maintenance of the health of the community in the near future will be placed to be thoroughly trained, and just as a well-trained and equipped navy and army were the best guarantees for peace so the hospital was best studying the interests of those it desired to help by providing them with a well-trained and equipped medical force to protect them from and aid them against the onslaughts of disease. In commercial undertakings it has been found advantageous to secure the services of highly-trained scientific men who by their researches in laboratories equipped and maintained at the expense of the proprietors of such undertakings were enabled to give such advice as amply to repay the outlay involved, and in medical undertakings the same would hold good. It was practically impossible for the medical man to live on the return from the pursuit of the purely scientific side of his profession and he should not be asked to devote himself to such work without being offered some return which might at least enable him to pay his way. Medical men were entitled to look to their profession for the earning of their livelihood and if the public only knew what their indebtedness was to those who, often under great disadvantages, work at the scientific side of medicine many would come forward and encourage and render possible the continuance of that work by the endowment of laboratories and lectureships. Laboratories and other increased facilities for work laid the students under increased responsibility for their proper employment. No laboratory or lecture-room alone ever made a good man; they must be used as adjuncts to clinical work and not as substitutes for it. Disease could only be studied at the bedside. Here not only disease but human nature was studied and the medical man learnt how to deal with the people—how to give them confidence and sympathy as well as how to relieve them.

The student should be very careful of the way in which he spoke of medical matters in lay circles. The public were inclined to regard everybody connected with a hospital as a "doctor" and the loose and random talk of an irresponsible student acquired the weight attached to a medical opinion. The public, though much informed, was not well informed on hospital matters and modern sensational journalism while it attracted readers gave them a very false impression of actual facts. It was easy to give a gruesome account of any operation and to mistake calmness for indifference, interest for curiosity, and satisfaction for "gloating," but it was incumbent on the student, both from his sense of loyalty to his hospital and the knowledge of the high aim of the profession he had chosen, to avoid anything which might give those outside any cause to accuse him of callousness, cruelty, or any behaviour unworthy of a gentleman. Besides difficulties connected with work the student had difficulties connected with play. He had to strike the happy mean between the claims of Æsculapius and Hercules. The danger was perhaps greater in the direction of over-work than over-play. The legitimate engagement in any branch of true sport harmed no one; by true sport was meant that the man should engage in it himself and not merely be a hanger-on. In mapping out his work the student should leave a margin, and that a not too small one, for other things than strictly professional work. To allow recreation to usurp the place of work was disloyal to the hospital and dishonourable to those who enabled him to study at the hospital. In sport as in work it was steady, consistent effort which succeeded, and the training of the mind, like that of the body, was a gradual process, too much of either making a man "stale," too little making him "soft." For some sport had no attractions; let them as well as their sporting colleagues cultivate some hobby, something apart from their work which would give relaxation without idleness, and whatever form this hobby took let it be done as well as possible and without interfering with work. The medical student would do well to use his opportunities in London to cultivate his æsthetic tastes, for now was the time when relaxation from work was to be found in recreation and recreation not only in athletics but in the cultivation of the mind. In no profession was it more desirable to resist the all-absorbing interests of professional work. The cultivation of a suitable hobby added years to life, breadth to the mind, health to the body, and pleasure to those around us. These benefits reacted on strictly professional work and enabled it to be done all the better. The student might ask what advantage he was to gain from all this and for answer was reminded of a translation of some lines by Goethe, bidding him "Do thine own task and be therewith content and all beside leave to the Master Power."

UNIVERSITY COLLEGE.

INTRODUCTORY ADDRESS BY MR. SIDNEY SPOKES, M.R.C.S. ENG., L.D.S., R.C.S., DENTAL SURGEON TO THE HOSPITAL, ON "THE PRESENT STATUS OF THE MEDICAL PROFESSION."

[AFTER introductory remarks Mr. Spokes quoted Ruskin that man's proper business in this world falls mainly into three divisions. First, to know themselves and the existing state of things they have to do with. Secondly, to be happy in themselves and in the existing state of things. Thirdly, to mend themselves and the existing state of things as far as either are marred and mendable. Applying these rules to the medical man Mr. Spokes discussed the existing state of things and the status and authority of the profession, and continued:—]

Quite recently we have had an opportunity of observing the value which is placed upon medical authority and expert opinion by the passing of the Vaccination Act. In spite of weighty official representations as to the necessity for vaccination the conscience clause was accepted by both Houses. But the impression left upon one's mind by the discussion was that the majority did not really dispute the value of vaccination, but from some reason or other succumbed to the views of so many of their constituents and boards of guardians throughout the country. Whilst we may express gratification at the protest by the House of Lords, I think we need not on the whole feel too much regret at the new legislation, especially if supplemented by an insistence upon revaccination. Without going into the questions of "the liberty of the subject" and "conscientious objection," one may recollect the unpleasant task it always was to vaccinate the offspring of an unwilling parent. There is still one danger remaining under the new Act which seems to have escaped attention. In spite of improved lymph I venture to prophesy that there will still occur occasional instances of "bad arms." As in the past, certain ignorant mothers will endeavour to rub the lymph away directly the operator's back is turned, and the fact that vaccination is now to be performed in the private dwelling-house instead of at a public station will, in my opinion, conduce quite as much to the introduction of other inoculation than vaccinia. In any case, the antivaccinationists have now provided the nation with a monster experiment upon the living subject which, whilst not needed by the majority, will be none the less interesting to watch from the ratepayer's point of view if from no other.

Let us conclude our brief sketch of the existing state of things by a more pleasing reference to the new Army Regulations for the Medical Service. The number of army surgeons is slightly over 800—too small probably, but their recognition now as something better than "camp followers" reflects honour on the profession to which they belong. The formation by warrant of the Royal Army Medical Corps will do something towards giving the surgeons a proper standing; they have, I believe, a larger proportion of Victoria Crosses than any other arm of the service and will doubtless continue

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to maintain the high reputation for devotion to duty which army medical men have always held.

Can we, then, take Ruskin's advice and be happy? I think so, but it is of course a question which each will answer for himself. That we are not completely satisfied and content need not make us unhappy. It is said that the happiest man is he with the least ambition and therefore with the fewest disappointments. That is not the kind of happiness the medical profession should enjoy and we may perhaps remember that our text allows us to alter the existing state of things so far as they are "marred and mendable." There is no difficulty in framing a list of needed improvements—one is embarrassed only at having to select examples.

Leaving on one side the question of representation in Parliament and on the General Medical Council, I would suggest that one of the great necessities in the future is a continuance of the struggle to keep the practice of medicine upon professional lines. It is essential that the patient should feel that he is being treated by one whom he may trust to do the best for him with the least possible admixture of the commercial spirit, whose diagnosis, treatment, and prognosis run no chance of being vitiated by any ulterior motives of increased pecuniary gain. With these objects in view it might be well, for instance, that as far as possible the medical man should dispense with dispensing and that the supplying of drugs should be left in the hands of pharmaceutical chemists, who may properly claim by their training to do this work. I know that in some country districts it is impossible and that in some particular cases the patients themselves might prefer the present method. But I think the time has come for the medical practitioner to charge his fee for the actual attendance and skill and not for supplying material. The sweating of medical men by certain medical aid societies is another phase of commercialism for which it must be hoped some remedy can be found.

Passing from this subject one may next notice the existence of unqualified practice by absolutely irresponsible persons which brings much discredit. Nothing short of preventing unregistered persons practising "for gain" is, I am afraid, likely to stop this, and even then unless there is some amendment of the Companies Act there would be an opportunity for escape. Many are not aware that under the present Act an unregistered man who has been successfully prosecuted can proceed with the help of half-a-dozen relations to "turn himself into a company," and as such may legally do exactly the same thing which was illegal for him as an individual. This is perhaps the most "marred and mendable" thing before us, and fortunately there is reason for thinking that the present Government intend to deal with it.

In regard to the question of public health may we not hope that before long a Minister may be charged by Government with full control and responsibility in the conduct of this vast service? By a combination of districts medical officers of health should be appointed as such and debarred from private practice. The work to be properly performed requires special and expert knowledge and training and there are several reasons why the officer should not be in general practice, although some previous experience of that would be an advantage.

The question of coroners' inquiries affords another instance where some change would probably be beneficial. The fact that the jury is impanelled to ascertain the cause of death would surely lead one to think that medical evidence or direction was necessary in every case. A medico-legal coroner is apparently the best for the work and there would be no lack of medical men willing to undergo the necessary amount of legal training if this matter ever receives the attention it deserves.

Time bids me cut short our list of grievances because I wish to close with a few remarks of a more personal nature to old and new students. To the latter I would say: Get rid as soon as possible of the idea that lectures are a waste of time. Do not neglect the auditory pathway by which information can be conveyed. But do not, on the other hand, rely alone upon the lecture; indeed, it is a good plan to read a text-book in advance, and then to take notes of the principal headings of the lecture, to be elaborated afterwards. Study well any graphic illustrations the professor may present by diagrams, and you will, by a combination of ear, eye, and hand, find yourselves able to reliably register in the brain the facts presented to you. The majority of old students are probably thinking of going into general practice, and as one who has been through the mill I venture to address them. I commenced with a pupilage in the country, and although the times are out of joint for a continuance of that system it had many advantages. The first lesson was upon the necessity of professional secrecy. One soon saw the wisdom and utility of the Hippocratic oath and learned to appreciate William Cowper's saying that "confidants in general are like crazy firelocks which are no sooner charged and cocked than the spring gives way and the report immediately follows."

Much is required of the modern practitioner by an exacting public. A confession of ignorance is sometimes necessary, although this requires some pluck and is misunderstood by parents and friends, who expect a medical man to know everything connected with the human body, and that he should be able to work miracles and should not require a holiday. He must be prepared to deal with everything—from advising on the dangers or advantages of cycling to the examination for life insurance. Indeed, one could almost be serious in saying that, of course, the intelligent practitioner will have made himself acquainted with the arguments and experiments of Professor Schenk, for he must now be prepared to stand an examination by the British matron upon the subject of the determination of sex. The authorised English translation (under the supervision of a London physician) is advertised and noticed, I am told, in the ladies' journals and there will be many mothers anxious to try the experiment of securing a son under the guidance of the family medical man. Before entering upon practice it is an advantage to make a voyage or expedition; it gives a wider view of men and things, although some argue that it makes it difficult to settle down afterwards. But, as Hazlitt said, "You will bring with you from your books and solitary reveries a wrong measure of men and things unless you correct it by careful experience and mixed observation"; but this advice should have the emphasis on *careful* experience and should not be taken as an excuse for making observations of too mixed a character. Those students, sons of medical men, going back to practise with their fathers should let them down lightly and not fire off all their lately acquired knowledge to the disparagement of their progenitors. Do all that is possible to secure and maintain a good feeling with fellow-practitioners. Nothing makes matters go easier than a real friendship with others similarly situated.

With respect to a "good bedside manner," if it is natural so much the better, but something may be done to cultivate it without affectation. Lord Chesterfield was of opinion that manner is of more importance than matter, and most of us can possibly recall instances where this seemed to hold good in the practice of medicine. To quote Hazlitt once more, "Gravity is one great ingredient in the conduct of life, and perhaps a certain share of it is hardly to be dispensed with. Few people can afford to be quite unaffected. At any rate, do not put your worst qualities foremost." At all events none of you, I am sure, will wish to imitate that personage of whom Tourguéneff said, "He had the air of his own statue erected by national subscription." Those within reach of such advantages will no doubt avail themselves of the excellent arrangements now made for "post-graduate" instruction, and they have also the advantage of getting the aid of the consultant in serious cases. This relief in responsibility is more often denied to the remote country practitioner, who should, I think, be considered himself as a specialist of specialists, and be an exceptionally strong man.

In these days of anæsthetics, provincial practitioners should be prepared to administer them with the confidence begotten of practical experience, and certainly they will do well to make themselves as expert in the use of nitrous oxide as is the dentist. The latter sometimes complains that at present he has really to administer the gas whilst the family medical adviser can merely sit on the window-sill and look on. To all I would recommend an early attendance upon midwifery cases. When once summoned you will not feel comfortable until a visit has been paid and when once it is recognised that such is your rule and that it is unnecessary to give a long warning to ensure attendance it will be found that false alarms will not occur so often and any leisure time thus gained can be legitimately enjoyed. Another point of importance is to have a good knowledge of children's diseases, a matter too often neglected. It is not too much to say that the young practitioner who can show that he is a capable obstetrician and understands the treatment

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and right feeding of children has the best of introductions to general practice, and it will be his own fault if he does not become the trusted family attendant on all occasions when one is required.

Do you ask me what is the reward for your efforts? I think not; neither is it necessary to speak of punishment for failure. No hope of "making a fortune" has led your footsteps into Medicine. An honourable competence in return for a conscientious and self-denying life well spent in the service of your fellow-creatures is what you aspire to, and no eloquent quotation as a peroration to my remarks can add to your zeal. But in the name of the Medical Faculty of University College I can assure you all of their best wishes for your success.

ROYAL FREE HOSPITAL: SCHOOL OF MEDICINE FOR WOMEN.

INTRODUCTORY ADDRESS BY DR. J. WALTER CARR, ASSISTANT PHYSICIAN TO THE HOSPITAL, ON "FASHION IN MEDICINE."

I CAN well imagine that many now present who are new, and some perhaps who are not new, to the study of medicine will start at the mention of the word "fashion," and especially at the suggestion that in medical questions we are subject to its rule. But those who take this view forget that we are human beings first and medical men or women afterwards, and that loftily though we may talk of medical science yet we necessarily bring with us to its study all our natural weaknesses, prejudices, and superstitions; also that it comes to but few to make new departures, to take a fresh initiative, or to get out of some old rut of thought or practice. The great majority must necessarily be followers, not leaders, and hence it comes to pass that in medicine, quite as much as in any other sphere of life, we are subject—often helplessly and hopelessly—to the bondage of fashion, custom, habit, and authority. It is as requisite to be orthodox in medicine as in theology; in fact, I am not sure that lawlessness in the medical world does not bring down more severe punishment, and certainly gets less appreciative sympathy, than lawlessness in the Church.

It is an interesting and instructive, albeit somewhat humiliating, study, even if we confine ourselves to comparatively recent times, to follow the influence and vagaries of fashion in pathological theories and dogmas and still more in the domain of treatment. Let us deal merely with a few of the chief methods which have been popular in the treatment of fever and inflammation as exemplified, say, in such well-marked and relatively common diseases as pneumonia, typhoid fever, and rheumatic fever.

Little more than fifty years ago a fever was regarded as a sort of morbid entity to be expelled from the body by thoroughly drastic measures. The sheet-anchor of the treatment was venesection, but this was assisted by the free use of depressant and nauseating drugs such as antimony, by mercury pushed to the limits of tolerance or beyond, by purgation and by blistering, and by semi-starvation as a further inducement to the fever to depart. With present-day notions and experience these things may sound almost incredible, but read the directions laid down by eminent authorities for the treatment of pneumonia: "You bleed early from the arm and if necessary you bleed a second or a third time, and if under this treatment resolution does not speedily take place you bleed locally by leeches or by cupping and likewise give tartar-emetic more or less freely, to all of which counter-irritation may be superadded in the more advanced stages. Mercury is also to be given freely, even to salivation, combined with opium." Sir Thomas Watson, the leading physician of his day, lecturing a little over half a century ago, at a time when bleeding was becoming rather less popular, recommends blistering for pneumonia, but says it should not be done in a half-hearted fashion: "The patient should have a waistcoat almost, or at any rate a breastplate of blistering plaster." Speaking of the treatment of pleurisy he says: "Cover the side with leeches and when they have sucked forth what they can let their bites continue to discharge blood into a thick, absorbing poultice." Patients suffering from acute rheumatism seem to have undergone even more heroic treatment, probably because it naturally runs a more protracted course than does pneumonia. We have the notes of the case of a man, aged twenty-eight years, treated in King's College Hospital in 1840 for two attacks of rheumatic fever; for the first attack he was in the hospital six weeks and for the second fourteen weeks, with an interval of only about a month between. I will not weary you with the details of the numerous bleedings, cuppings, leechings, and blisterings to which he was subjected; suffice it to say that in all 110 oz. of blood were withdrawn besides that which was lost by leeches, and that the latter was no inconsiderable amount may be inferred from his having as many as ten leeches applied at once to an inflamed joint. The additional fact that at one time he was also given 3 gr. of calomel every 3 hours is to be regarded as a mere detail of treatment scarcely worthy of note. The result hardly seems to have been satisfactory, for 2 months later he was readmitted, but the notekeeper appears to have got tired, for though the patient is said to have ultimately recovered the date of his discharge is not recorded. A few years later the treatment had become less heroic, but a vigorous administration of calomel was believed in by some. In Sir Thomas Watson's lectures we read: "Some have given large doses of calomel in the outset of the disease, such as half a scruple or a scruple, repeating the dose daily or oftener with occasional purgatives perhaps till the urgent symptoms gave way, and in this manner I have seen the disease apparently cut short. But I have also known many instances in which the disease was painful and protracted and obstinate, although this practice was adopted early and fairly prosecuted." Yet in these degenerate days I have already well-nigh grown tired of encouraging cautious house physicians to give a single small dose of calomel at the commencement of the treatment of a case of rheumatic fever. It would be easy to multiply examples of this kind of thing; I will add but one more. "A child of twenty-eight months took in nine days 350 grains of calomel and in six of these days 136 grains of jalap"; she was suffering from cerebral symptoms, upon the cause of which it is useless to speculate. The point is that the child recovered; under modern treatment she might not have done.

What was the meaning of all this energy? Our medical predecessors were by no means fools and we must not imagine that all their treatment was useless or barbarous. One reason for the continuance of this heroic treatment was doubtless the fact that in a certain number of cases it was successful, sometimes eminently and strikingly so. Now from these instances of success two fallacious arguments arose: one is the idea that because a little blood-letting sometimes did good that more would do more good, or that if one venesection failed to give relief repeated withdrawals of blood might attain the desired end; the other, that because venesection was beneficial in some cases of fever or inflammation that therefore it would probably do good in all, forgetful that other circumstances might be entirely different. No one of course would dream now of bleeding a typhoid fever patient, yet in one of the worst cases I have ever met with a moderate intestinal hæmorrhage was followed by marked improvement in the mental state, the patient regaining consciousness for the first time for over a week. On another occasion an attack which gave every indication of being a very severe one became exceedingly mild after a profuse epistaxis. Of course, the improvement in each case may have been a coincidence merely, none the less it was very marked, and it is easy to imagine the medical men of a former generation pointing to such cases as conclusive evidence of the value of blood-letting.

As was inevitable, a tremendous reaction set in against the lowering treatment of fevers; Dr. Graves in Dublin taught that fever patients should be fed and not starved and desired that the epitaph on his tombstone should be, "He fed fevers." But the reaction went further and an actively stimulant treatment became the fashion. Dr. Todd of King's College Hospital, one of the leaders of the reactionary movement, thus describes his treatment in 1851 of a severe case of typhoid fever in a strongly built man, aged thirty-two years. From Jan. 21st to the 27th the patient took half an ounce of brandy every hour. "I now," says Dr. Todd, "doubled the quantity of brandy and ordered ammonia and chloric ether every fourth hour. On the 29th I felt it needful to increase the stimulant to 5 drachms every half hour, or 30 oz. in the day. On Feb. 3rd the stimulant was reduced by 6 oz., so that he now took 1 oz. every hour instead of 10 drachms; the chloric ether was omitted." After this the patient slowly sank and eventually died from intestinal hæmorrhage on Feb. 9th. "Under the highest stimulation all the symptoms improved, the chest became more free, the head clearer, the fever

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less, the tongue cleaner." Says Dr. Todd, almost pathetically: "I do not see what more we could have done; we cannot plead guilty to the charge of *nimia medici diligentia*." Again, a girl of fourteen years was given 1½ oz. of brandy every hour for three days together, and for the next fortnight ½ oz. was administered hourly, this being sometimes much increased as occasion required; she recovered. An eminent physician, not dead many years, used to teach: "There is one drug for pneumonia, it is in your Pharmacopœia—brandy, give it." It is true that not all cases were treated in this heroic fashion; still, as the idea grew that alcohol was *the* drug for fever, so the fashion spread, until it was given more and more freely, more and more indiscriminately.

Again, and naturally, came the reaction, and just as vegetarianism is to be looked upon as the practical protest against our excessive meat-eating habits, so the outward and visible sign of the reaction against unreasonable alcoholic stimulation is the temperance hospital. And yet surely so extreme a protest is as unscientific as the practice protested against. Disease may undoubtedly be treated, and successfully treated, without venesection and yet a timely resort to bleeding may certainly be of the utmost value. Why abandon the practice altogether because it has been abused? So no doubt we can to a considerable extent substitute other things for alcohol, and yet why deliberately deprive ourselves of even a single remedy which may at times at any rate be of the greatest utility?

The next fashion in the treatment of fever was the endeavour to reduce the temperature, mainly in two ways—either by the direct application of cold or by the administration of drugs. With regard to the cold treatment little need be said: its tendency on the whole has been beneficial, and though, like everything else, it may be carried too far, yet excess and undue enthusiasm are largely cooled by the practical difficulties in the carrying out of the treatment and by the natural prejudices of the patient or his friends, more especially against cold bathing. Still we need to beware of the old fallacy that because cold baths may undoubtedly save life in hyperpyrexia therefore external cold is necessarily equally useful in milder cases of fever. There is really but little in common between the two conditions. A very different matter is the artificial reduction of temperature by powerful drugs—antipyrin, antifebrin, phenacetin, &c. When first the antipyretic action of these bodies was discovered men thought that fever was for ever robbed of its terrors—that once keep down the temperature all other bad symptoms would disappear. The result was that any rise of temperature was merely regarded as nature's invitation for a knock-down blow from a well-chosen and well-administered antipyretic drug. As a consequence the therapeutical art never perhaps in this century reached a lower level. If a patient had fever, no matter from what cause, very little matter of what degree, the practitioner's one idea was to reduce his temperature. Is it any wonder that when the influenza epidemic appeared, with its great and sudden rises of temperature, the public should think that they had the key to its successful treatment in their own hands and that sufficiently large doses of antipyrin would soon cure them? Can they be blamed for endeavouring merely to improve upon the teaching of their professional advisers? However, the discovery was soon made that even though it was possible to reduce the temperature it was not equally possible to relieve the attendant symptoms; that although we might cut short a pyrexia we could not cut short the disease of which the pyrexia was merely one of the symptoms; and, further, that whilst we were attempting exclusively to relieve the one symptom, the high temperature, other symptoms might get worse and even new ones might develop. We began even to learn the lesson that nature has always been trying to teach us in some of the worst and most fatal varieties of peritonitis and pneumonia, the apyrexial forms, that moderate fever is a friend rather than an enemy, that its absence is often one of the most serious of symptoms, and that its presence is to be regarded as nature's defensive reaction and method of bringing the disease to a natural and fortunate termination; and although like so many reactions even that of fever may be excessive and fraught with its own dangers, yet our safest plan is not hastily to interfere with the indications furnished by that safest of all guides—nature herself.

Leaving for a time the various methods of treating fever, it would be an easy task, and one which might conduce to a little needful humility in matters medical, to refer to some of the various ways in which from time to time fashion has swayed pathology, diagnosis, and treatment—the manner in which it has influenced the drugs we have administered, the dietary we have advised, the quantity and form of alcoholic stimulant we have sanctioned, and the special climate, watering-place, or health resort we have recommended. What an opening is afforded for the medical cynic by the way in which newly discovered drugs are boomed, recommended as remedies in every possible disease, and lauded as sovereign cures for a dozen diverse conditions, utterly forgetful of the fact that most medicines are successful when the patient is tending to recover or is merely suffering from some temporary functional disturbance. Finally, in a longer or shorter time most of these much vaunted drugs are consigned to oblivion until possibly their virtues are rediscovered by some future investigator. A whole address might easily be devoted to a record of the different pathological views held as to tubercle and phthisis and an account of the various remedies advocated for their cure, from the specific of some obscure empiric whom we contemptuously designate a quack up to the scientific remedy elaborated by some leading pathologist whose discovery, under most august and imperial patronage, sets the whole civilised world in a flutter of excitement until it, too, is relegated to the limbo of useless discoveries. Of course, in these up-to-date times it is beneath us to read old books. We are content to pay large prices for them as curiosities for our libraries, just as we do for the skeleton of a dodo to preserve in a local museum; otherwise Jonathan Swift's account of the philosophers and projectors in the Academy of Laputa might even now be found interesting and not unprofitable reading.

Just at present there are two especially fashionable tendencies in medical treatment. The first is the use of antitoxins and animal extracts; those of us who are not unnecessarily sceptical may, in fact, look forward to the medicine of the future being enormously simplified, somewhat on the following lines. Most diseases will be grouped under two heads, those in which some organ or tissue is diseased so that its internal or external secretion is suppressed or altered and those due to a micro-organism or the toxin produced by it. In the first case the treatment will, of course, be the administration of the suitable animal extract; the remedy is ready to hand, for already, according to a recently published work, we can select from extracts of bone marrow, lymphatic glands, heart muscle, brain, spinal cord, kidney, liver, pancreas, parotid, pituitary body, spleen, suprarenals, thymus, thyroid, and even other less likely organs. Such is the vast superstructure which has been built up on the success of the thyroid treatment; again the old fallacy that because one animal extract has done good others will be equally useful. If, on the other hand, the body be invaded by a pathogenic micro-organism it will only be necessary to inject the requisite antitoxin—that of cholera, diphtheria, glanders, plague, rabies, septicæmia, tetanus, tubercle, pneumonia, typhoid, &c., &c., as the case may be. How delightfully simple will therapeutics be in the future.

[Dr. Carr here argued at considerable length that the highest function of medical practitioners is not to attempt to cure diseases by means of specifics but to be apostles and preachers of hygiene. He continued:—]

Any consideration of the recent developments and tendencies of medicine would obviously be incomplete without some reference to the extraordinary growth within the last generation of the nursing system, to which all medical men owe so much. For the present nursing and nurses of our great hospitals and of an increasing number of our large infirmaries there is little but good to be said; of course they are not perfect, because no individuals are perfect, and doubtless there are slight differences in the standard of efficiency in various institutions. Necessarily also the presence of medical students in a hospital introduces fresh difficulties and complications. We now recognise the trained nurse as an important factor not only in hospital but also in social and domestic life. There has been during the last few years an enormously increased demand for and a proportionately increased supply of, nurses in private work, and it is in this direction, I think, that a danger exists of the movement being carried too far, and with any such excess comes necessarily in the future the even greater danger of a disastrous reaction. As nurses increase so enormously in number there is almost inevitably a falling off in quality. Some nurses again, and not a few in private employment, are in danger of thinking of themselves more highly than they

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ought to think; as has been well said, they have a profound contempt for the general practitioner, barely tolerate the physician, and have a real respect only for the operating surgeon, provided always that he uses the particular dressing to which they have been accustomed. What their feelings would be towards a female practitioner I cannot find adequate words to express. Perhaps the most serious danger of all is a growing tendency towards allowing the nursing of the sick in the houses of the middle classss of our country to pass entirely into the hands of strangers, so that domestic nursing is likely to become a thing of the past. I do not speak of the upper classes, for the smart ladies who try to escape the cares and troubles of maternity are not likely to seek the responsibilities of nursing either their husbands or their children and amongst such trained nurses are a necessity, but with the middle classes it is different and one great feature of woman's influence in the home will be lost if she wholly abandons to strangers the nursing of those near and dear to her and especially the nursing of her children when ill.

My surroundings to-night urge me to inquire into the position and future of one of the latest, and to many here the most important, of all recent medical fashions—the movement which has led to the medical education of women and which brings us together now. Is this to be only a passing fashion, like others to which reference has been made to-night, or is it a true and natural evolution, destined to grow to greater proportions and to take a permanent place in the future history and progress of medicine? I can imagine that many will think it very superfluous to ask such a question at a moment when the cause, having successfully weathered the storms and perils of its earlier years, seems now to be passing into the sunshine of prosperity: when royalty smiles upon and gives its patronage to the movement; when the number of students is steadily increasing; when a new medical school is rapidly rising to bring to the highest attainable standard of excellence our professional education; when public bodies all over the kingdom are throwing open appointments to our graduates; when the Indian Government, the Post Office, the Metropolitan Asylums Board, the London County Council, and boards of guardians in all parts of the country alike welcome the services of the medical woman; and when the opponents of the movement maintain from their last stronghold in that most exclusive, conservative, and aristocratic of medical bodies, the Royal College of Physicians of London, a hopeless and almost pathetic resistance, well knowing that the fates are against them and that though they may retard they cannot much longer hold out against the flowing tide of public and professional sentiment. Nevertheless, our cause is even yet not so firmly established that we can afford to be in the slightest degree negligent or careless. In the early days when openings were few and obstacles many the quality of our students was, I think, proportionately high; difficulties attracted and developed—as difficulties always will—a strong and indomitable race; but when good fortune and popular favour await us—when our movement, in short, becomes fashionable—then comes the danger that though the number of our students may increase there may be a falling off in quality. When women begin to come here not for genuine love of medicine, not with earnest purpose of work, not with a fixed determination to overcome all obstacles and surmount all difficulties, but because it is fashionable to come, because it is a recognised mode of passing time which hangs too heavily, of obtaining a larger measure of freedom, or of escaping from a home which for some reason or other has become uncongenial; if the work is pursued in a merely dilettante spirit, if students enter and, worse still, become qualified, whom nature never intended for medical pursuits, then indeed our position will be in jeopardy and a reaction might speedily arise which, if it did not submerge the cause, might easily set it back many a year. In a more than ordinary degree, therefore, a great responsibility rests upon each individual student here, as indeed must always be the case with the pioneers and early adherents of any comparatively new movement, no matter what its character, be it religious, educational, philanthropic, political, or social. Collectively you are somewhat in the position of a young practitioner just established behind a brass plate who is called upon in an emergency to attend a new patient as compared with the old-established family medical attendant. In the latter all kinds of eccentricities and even trivial errors will be overlooked or condoned—if he has once gained the family confidence and respect he will not easily forfeit it; whereas in the young practitioner the slightest indiscretion, the most venial mistake, may be sufficient to ruin his reputation and wreck his career, however promising. As it is with the youthful practitioner individually so it is with the cause of medical women as a whole. Amongst male practitioners the public recognise that there are sure to be some failures, some doubtful characters, some foolish or ignorant persons, some disreputable individuals, and the existence of a few such does not materially injure the reputation or position of the profession as a whole; but, for the present at any rate, whilst the women's movement is still young, were there to be any serious falling off in the character and quality of the students, were we to send out into the world practitioners ill-qualified or unsuited for their work, were any medical women to be guilty of serious moral or professional indiscretion or to show themselves unworthy of the responsibility thrown upon them, then we may be assured that a thoughtless and indiscriminating public would at once jump to the conclusion that female practitioners were a failure. Once again, therefore, I would most earnestly impress the immense responsibility which rests upon each one here, first of all during student life and still more when, duly qualified, you have to act on your own resources, being assured that any untimely frivolity, any want of tact or discretion, any carelessness or dereliction of duty, will not only injure your own professional career but may seriously damage the entire cause of the medical education of women; for instance, anyone who is a failure in a resident post in a hospital, infirmary, or asylum will almost certainly ensure that post not being again given to a woman and will probably prevent other similar openings being provided in the near future.

In one respect at least medicine must ever be the most trying of vocations, because to us is entrusted that greatest of all responsibilities, the responsibility for human life, and we need ever to keep before us the fact that whilst in so many of our cases life hangs in the balance and the smallest factor may turn the scale this way or that, yet the flickering spark which the least mistake may so easily extinguish, no skill, no effort, no devotion, no regret of ours can ever restore. I urge you, then, to use every advantage and every opportunity of acquiring knowledge during your hospital career, so that in after-life you may never have the painful recollection of neglected opportunities in student days.

ST. THOMAS'S HOSPITAL.

AT this hospital no address was given by a member of the medical staff, but on Oct. 3rd, in the presence of a large audience, the Bishop of Rochester, presented the prizes won during the recent examinations at the school. Mr. WAINWRIGHT, the treasurer, who presided, said that we lived in times when we could not stand still, and no one, he thought, could say that that institution had stood still, for during the last twenty years the hospital had been the centre of great activity. They had only recently established a clinical laboratory, which was unique of its kind in London, and would be of the greatest utility in assisting students to carry on their work. They had during the year reopened another ward which would provide increased accommodation for 150 patients a year, while they were opening another ward which was to be christened the City of London Ward. He wished it to be known that that was a City hospital and hoped that the example set by the Mercers' Company in giving them £10,000 would be followed by other City bodies.—The prizes having been distributed the secretary, Mr. G. RENDLE, pointed out that during recent years large sums of money had been spent on the schools, and consequently it was not anticipated that any further considerable expenditure would have to be incurred for some time to come.—The Bishop of ROCHESTER in his address said he had always felt the close affinity between the medical and clerical professions. Both were constantly acquainted with the more squalid and less attractive side of human life and both could not protect themselves, as members of some professions could, by rules, but they had to be always ready at every call, and family comfort, rest, and even health, had often to be sacrificed to the call of duty. Beyond that also he found the work of the two professions similar, as they both aimed at wholesome life.

THE Pharmaceutical Society of Great Britain is closely allied in its work with one side of the work of the medical schools, and we have pleasure in publishing an abstract of Sir James Crichton Browne's address to students delivered

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before the society at the opening of the winter session. We also give a brief *résumé* of Mr. Walter Long's remarks at the Royal Veterinary College.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

INTRODUCTORY ADDRESS BY SIR JAMES CRICHTON BROWNE, M.D. EDIN., LL.D. ST. AND., F.R.S., ON "POISONS AND POISON LEGISLATION."

GENTLEMEN,—It is my privilege this afternoon to address to you a few words of exhortation and encouragement on the occasion of your entering on a course of study which is the appointed avenue to that manor of usefulness in which you propose to dwell and earn your subsistence. I cannot in doing this hope to speak to you with the insight and exactitude of one who has actually followed the calling which you have chosen, but I can, at any rate, bring to the performance of the duty I have undertaken a sympathetic interest in your life work and a knowledge of its needs, trials, and opportunities second only to that of those who have personally borne the burden of them. For the view which a medical man takes of the business of the pharmacist is not altogether exoteric. He has been behind the scenes if not the counter; the mysteries of the mortar are well known to him; the language of drugs is ever on his lips, their actions and reactions daily occupy his thoughts, and the responsibility attaching to their use weighs upon him incessantly. It is indeed sometimes difficult to say where the medical man ends and the chemist and druggist begins, and while, for my own part, I trust that the line of demarcation between them will become more and more sharply defined as time goes on, so that we shall have fewer prescribing chemists on the one hand and fewer dispensing medical men on the other, there must always remain a close alliance between your calling and mine. They have common aims, they use the same weapons, they are complementary to each other, and it is to be hoped that they will be always animated by mutual good feeling.

[Sir James Crichton Browne here referred to the raising of the standard of education for dispensing chemists which had been brought about of late years. He continued:—]

But while we rejoice at the rectification and sublimation of chemists and druggists that is going on we must see that this process is not carried too far or unduly accelerated. In this, as in so many other matters, it may be well to hasten slowly, for, remembering the very special circumstances under which the studies of embryo chemists and druggists are carried on, there would seem to be a special danger in submitting them to sudden or severe mental strain. They are earning their bread all the time; they are able to give to their studies but brief periods carved out of toilsome days; they bring to them brains, not fresh and nimble, but fatigued and sluggish; they pursue them, not with entire devotion, but harassed by the petty troubles of the shop, and they are liable, therefore, to be injuriously affected by a degree of mental pressure which would be harmless and even stimulating to young men who have nothing but their studies and their pleasures to attend to and whose daily life is ordered with a single eye to their schooling. We are suffering largely in this country to-day from stupidity which has been manufactured by examinations, and I do not doubt that a point may be reached in the examination of chemists and druggists which will conduce rather to dulness than alacrity of thought, which will sacrifice to temporary mental engorgement, with a subsequent life-long disgust at learning in any form more concentrated than the newspaper, the well-regulated and wholesome nutrition of all the faculties and an enduring appetite for knowledge, and which will at the same time stunt bodily growth and sow the seeds of ill-health. I do not for one moment suppose that the examinations to which you are exposed have reached that point or are approaching it. As far as I am able to judge they are moderate and reasonable. I only wish to indicate certain risks which lie ahead—risks which will, I trust, as they arise, be obviated by the wisdom and caution of the Council of the Pharmaceutical Society.

[Sir James Crichton Browne then discussed the examinations in question. The first, he said, was quite a reasonable one; the second, the "minor," examination, might, he suggested, be divided into two parts, and he earnestly entreated all masters to see that their apprentices had plenty of time not only for study but also for that leisure without a sufficient supply of which good work is impossible. As to the "major" examination, although it was not necessary that it should be taken yet he hoped that more and more persons would continue to avail themselves of it. After referring in laudatory terms to the work done by the Pharmaceutical Society in bringing out the new British Pharmacopœia Sir James Crichton Browne continued:—]

Another notable event of this year in your department besides the appearance of the new Pharmacopœia has been the addition to the statute-book of a Pharmacy Amendment Act, which, owing to the determined exertions of your President, Mr. Walter Hills, has survived the slaughter of the innocents. It is a modest measure providing for the election of apprentices or students as Student Associates, and for registered chemists and druggists as Members of the society, and for the retirement by rotation of members of the council, and I have no doubt it meets felt requirements. Unlike all previous pharmacy enactments it has nothing to say about poisons, which have invariably been the real motive power in legislative measures affecting your trade. It is not so much as pharmacists as vendors of poisons that you have secured the attention of Parliament, and as that branch of your avocation is the most anxious and hazardous of any, has a peculiar interest for the public, and is very likely to be made the subject of a Bill next session at Westminster, it occurs to me that I may not inappropriately make poisons and poisoning the theme of some remarks to you this afternoon.

What, it may be asked, is understood by the term "poison"? And the first answer to that question which presents itself is any substance that, when introduced into the body, produces injurious or fatal effects. But for practical purposes that definition is much too comprehensive, for certain articles of food and drink, when taken too freely or in disordered states of the system, or by persons of peculiar idiosyncracies, may prove detrimental and even kill, while almost all the drugs in common use, if given in excessive doses, may cause symptoms of poisoning and death. The question of quantity enters into our conception of a poison which may be described as a substance which in small amount and by chemical action has hurtful or lethal effects on the animal economy. This description cannot pretend to strict accuracy, for some poisons perhaps act mechanically, as, for instance, certain microbes which block up the blood-vessels, and ground glass, which in some parts of the world has not infrequently been used as a slow irritant poison. But the vast majority of poisons destroy the living tissues by means of chemical action. Even thus restricted, however, the word "poison" covers a multitude of agents, for on every shelf in your shops stand chemical assassins capable in small bulk of undermining health or taking life. Indeed, so numerous are the drugs which must be scientifically regarded as poisons that it has been said that to select and schedule a few of them which may not be sold without reservations while the rest are left unguarded is like prohibiting the carrying of knives while allowing stilettos. But although, as you and I know very well, there remain outside Schedule A many drugs as mortal as any included in it, and more difficult of detection, and although with the advance of science the field from which the poisoner may cull his simples is ever widening and becoming more variegated in its crop, it must still be maintained that Schedule A has done great public service. It may be logically indefensible, but it is practically useful. During the present year we have had an illustration in the St. Neot's case of the way in which a faithful observance of the regulations connected with it may bring a criminal to justice, for it is quite likely, I think, that Horsford would have escaped conviction had Mr. Payne failed in keeping an accurate record of the sale of the strychnine to him. As a matter of fact, the poisons enumerated in Schedule A are those which have been, and are almost invariably, employed for felonious purposes.

In looking over the history of poisoning—I am speaking now of homicidal poisoning—nothing strikes me more than the way in which this kind of history repeats itself from generation to generation. The same old implements are used again and again and there is an absence of anything like originality or ingenuity in the choice of ways and means. Servile, clumsy imitation is the rule and fashion reigns supreme. Little or no advantage has been taken of the discoveries of science. No doubt we hear about the subtleties and mysteries of slow and secret poisonings in bygone times. We are told that Henry VI. was killed by a pair of poisoned gloves and that victims were in those days simply and expeditiously got rid of by causing them to smell

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a poisoned rose or to wear or suck a tainted ring like the one that now figures in "The Termagant" at Her Majesty's Theatre, but such stories are on a level with those which we sometimes read in the newspapers of the instantaneous production of insensibility by holding a chloroformed handkerchief to the nose: they are simply incredible. We cannot believe that in pre-scientific days unscientific persons were in possession of powerful agents of which modern science knows nothing, and when we investigate such cases of secret poisoning in these days as we have any record of, we find, as I have said, that there was nothing occult or wonderful in the process and that in nine cases out of ten it was some preparation of arsenic which was employed. It was arsenic which was used by Wonderton in 1384 in his attempt to poison the King of France, Charles VI., and the Dukes of Valois, Berri, Burgundy, and Bourbon. It was arsenic which was the active constituent in La Sarpa's wonderful elixir that played such havoc in Rome in the seventeenth century; it was arsenic which formed the basis of the *acquetta* or manna of St. Nicolas of Bari and of Toffania of Naples, which caused the death of 600 persons; and it was arsenic which was the leading ingredient in the succession powders of Sainte Croix, which were used by the Marquise de Brinvilliers, and with which she removed her father, two brothers, a sister, and several other persons. It was arsenic which was no doubt mainly instrumental in carrying off Sir Thomas Overbury in the Tower, although in his case it was combined with cantharides, lunar caustic, and spiders—the *coup de grâce* being given by corrosive sublimate. Wherever we turn in mediæval toxicology or that of the Renaissance it is arsenic, arsenic, arsenic, which was the mainstay, not merely of the murderous fortune-telling hag, but of homicides of commanding intellect and power, like the Borgias and Catherine de Medici. Of course, in those days, and well up to the early part of the present century, it was impossible to distinguish arsenic with any certainty in the bodies of persons who had died from it, while only the vaguest notions prevailed as to the pathological effects caused by it in the viscera, so that it could be used as a poison with considerable impunity. But since Orfila, Reinsch, Marsh, and others have carried out their researches it has become of all poisons the most easily recognised by chemical tests, while its symptoms and morbid anatomy are familiarly known to the medical profession. And yet, notwithstanding this, it is still, no doubt owing to the facility with which it may be procured and its old-established reputation, a favourite with the homicide. Mrs. Cotton, who was executed at Durham in 1873, was arraigned on four separate charges of poisoning by arsenic. Mrs. Maybrick was convicted of having administered it to her husband in 1886. Mrs. Sherman, of New Haven, United States, was proved at her trial in 1885 to have disposed of three husbands and some seven or eight children and step-children by means of it, while in the same year Mrs. Robinson, of Somerville, Massachusetts, was shown to have been indebted to it for the disappearance of six members of her immediate family. I am sorry to have to say so, but it is true that women and medical men are the classes which have supplied the most numerous and most notorious poisoners. Man—in this connexion *minus* medical men—bold and militant, is disposed to crimes of violence; woman, weak and timid, when she stoops to crime inclines to craft and cunning, and hence she has often sought, by the arrow that flieth in darkness, to remove a rival, to resent infidelity, to avenge her wrongs, to hide her shame, or to gratify her cupidity. At certain periods poisoning by women has been epidemic and has anticipated the decrees of our modern divorce court. About the middle of the seventeenth century it was observed that young widows were extraordinarily abundant in Rome, and that most of the unhappy marriages were speedily dissolved by the illness and death of the husband; and inquiries set on foot by the clergy, who felt bound to make representations to Pope Alexander VII., resulted in the discovery of a secret society of young matrons, who met at the house of a reputed sorceress for technical instruction in toxicology and mutual improvement in marital euthanasia. A little later a similar organisation was brought to light in Paris, again by the action of the clergy, and here it was shown that under the guidance of two nominal midwives, La Voisin and La Vigoroux, large numbers of married women had hastened the decease of their husbands. It was not until upwards of a hundred culprits of this description had died at the stake or on the gallows that this epidemic was stamped out. In Hungary, in the latter half of the seventeenth century, and again only a few years ago, extraordinary disclosures were made as to wholesale husband poisoning by women of the peasant class who, like the Roman and Parisian matrons, employed arsenic to compass their ends.

We can understand in some measure the partiality of female poisoners acting individually and in numbers for arsenic, and their rigorous adherence to ancient methods by remembering that arsenic has long been employed in many countries as the most popular domestic exterminator of vermin and has also been extensively recognised as an article of toilette, so that women have been able to obtain it and explain their possession of it on these pretexts; but it is difficult to comprehend why poisoners of the other group alluded to, medical men, should have displayed such poverty of resource as is manifest in their published misdeeds and should have confined themselves so strictly to the contents of Schedule A. One would have thought that medical men, with their knowledge of drugs and command over them, would have been able to ring the changes in an infinite variety of ways and to employ alkaloidal and other organic poisons in such a manner and in such combinations as to perplex the clinical observer, baffle the pathologists, and set at nought the skill of the analyst. But not so. With what might almost be called infatuation they have all but invariably worked on in the old grooves and carefully prepared a net for their own ensnarement. For the most part they have trusted to the inorganic poisons, which, owing to their unalterable character, ease of purification, and definiteness of reaction, can be identified in the body with mathematical certainty; and when an alkaloid has been essayed it has been strychnia, which, of all the alkaloids, in unalterability and definiteness of reaction, approaches most closely to the inorganic poisons, and to which, too, very conclusive physiological tests can be applied. The rarer and more fugacious alkaloids, which I am not even going to name, and which when detected it would be impossible to affirm might not be putrefactive products—ptomaines, albuminoses, and peptones which result from the decomposition of the tissues or of ingested food—have, as far as we know, never been tried, and even nicotine, the most widely diffused of alkaloids, with which, I suppose, a third of the population is always poisoned more or less has not been resorted to with premeditated malice except in one case—that of Count Bocarne, who poisoned with it in five minutes his wife's brother, Fougnies, although in the body of a murdered smoker it might well pass as a relic of the pipe or cigarette. I cannot recall a case in which a medical poisoner has gone beyond Schedule A. Palmer used strychnine, Smethurst used antimony, Pritchard used antimony, Cross used arsenic, Lamson used aconite; Chantrelle, who, although not a medical man was a chemist, used morphia; and Tawell, who was a chemist and druggist, used hydrocyanic acid. Such are the ignorance, stupidity, and rashness revealed in a review of the trial of these medical poisoners that one is forced to conclude that they were like the miscreants who carry on illicit lines of practice at the present day—medical men only in name, professional pariahs and failures beneath contempt, and that in them, as in the criminal classes generally, intellectual incapacity was associated with moral debasement. Not one instance have we amongst them of average ability, to say nothing of originality or genius, in their nefarious transactions. True, it may be said that the medical poisoners who have been brought to justice have been the clumsy and incompetent members of their class. The bunglers, it may be argued, have been caught, while the adepts have escaped suspicion. It is, I fear, correct that there have been and are cases of undetected poisoning. In almost every instance in which a medical poisoner has been convicted there have been good grounds for believing that he had had other victims besides the one whose death was brought home to him, and several medical men in large practice have told me that in their professional experience they have come upon cases in which they have had grave misgivings that poisoning was being or had been attempted. It may be that medical men have availed themselves of the discoveries of modern science for wicked and unlawful ends and have lived on in the odour of professional sanctity unsuspected; but there is some consolation in the reflection that the more scientific a man is the less likely is he to stoop to any abuse of power that science puts in his hands; and that the improved education of the medical profession renders its members more expert than they have hitherto been in the recognition of the symptoms

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of poisoning of various kinds. But here I must point out to you that as regards the future of toxicology very serious considerations arise, for numerous new poisons are being yearly added to our list, and many of these it is and must perhaps always be impossible to track and identify. Henceforth the medical man or scientific expert desiring to remove any human stumbling-block in his way, if able to shake off old traditions, will not, unless demented, select his weapon from Schedule A, but from the recently discovered organic poisons that may be used with absolute impunity as regards detection.

[Sir James Crichton Browne here entered on the question of disease toxins and pointed out how the poisoner of the future would in all probability use these agents as the ministers of his vengeance. He continued :—]

You will admit, gentlemen, I think, after what I have said that the science of toxicology is becoming infinitely more complex and intricate than it has ever hitherto been and that very difficult and curious problems are not unlikely to arise in connexion with it in its relation to medical jurisprudence, problems that may puzzle the discernment of even a twentieth-century Sherlock Holmes. "Chemists," exclaimed Count Fosco with an eye to their toxicological attainments—"Chemists—I assert it emphatically—might sway if they pleased the destinies of humanity. ..... On my sacred word of honour it is lucky for society that modern chemists are by incomprehensible good fortune the most harmless of mankind. The mass are worthy fathers of families who keep shops. The few are philosophers, besotted with admiration for the sound of their own lecturing voices, visionaries who waste their lives on fantastic impossibilities, or quacks whose ambition soars no higher than our corns. Thus society escapes and the illimitable power of chemistry remains the slave of the most superficial and the most insignificant ends." But if Count Fosco thus estimated the empire of chemistry and the boundless power which it places in the grasp of its votaries, what would he not have said of bacteriology and of the hidden and thaumaturgic control over their fellow-men which those initiated into its mysteries possess? Into what rhapsodies would he not have risen over these microbic poisons of superlative virulence and subtlety to which we have now attained, the very existence of which may suggest to you that it is superfluous any longer to surround with special safeguards the sale of such comparatively harmless substances as are contained in Schedule A. But in entertaining any such suggestion you would be in error, for whatever the future—the remote future—may bring forth it is certain that for a long time to come a large majority of poisoners will cling to old methods and stake their necks on arsenic, antimony, and strychnine. For one bacteriological Mephistopheles who can possess himself of a microbic poison and use it dexterously there will be at least a dozen despicable wretches who will take what comes to hand most readily in common life and blunder with it egregiously. And beyond all this we must remember that Schedule A is not intended solely for the prevention of murder but is meant to act as a check on suicide and to avert, as far as may be, deaths due to carelessness and accident. Those bent on self-destruction are not likely, unless to cheat an insurance company, to attempt to induce a lingering illness or to seek out an inaccessible and inscrutable toxin, but are certain to prefer "such soon-speeding gear" of yours "as will despatch them straight," and the obstacles which this schedule enables you to put in their way may occasionally frustrate their object or afford them that brief interval for reflection in which the suicidal impulse, when it has reached a crisis, often suddenly dies out. And independently of this schedule, members of your calling are, I believe, not rarely instrumental in preventing miserable beings from shuffling off this mortal coil, for some of them have acquired a quick eye for a would-be suicide and, as in instances which have fallen within my own knowledge, by refusing altogether to supply him with the poison asked for or by substituting for it an innocuous fluid or powder not unlike it in appearance have given him pause and so saved his life. Then, as regards accidental poisoning, which has become more frequent in recent years as the demands of our advancing civilisation have become more complex and various, there can be no doubt that the provisions of the Pharmacy Act, when rigidly observed, tend to limit it, and that they will be still more efficacious in this direction when the recommendation which the Pharmaceutical Society of Great Britain has repeatedly pressed upon the Privy Council to include in the schedule carbolic acid, to which so many deaths are now attributable, has been adopted. A Bill to regulate the sale of certain poisonous substances was introduced into and passed through the House of Lords last session, but failed, I cannot regret to say, to pass the House of Commons, for the Bill seemed to me to be retrogressive in permitting the sale of the substances named in its schedule and of others that the Privy Council might from time to time add thereto, subject to certain regulations, by any person without any licence or evidence of special qualification. The sale of poisons hitherto has been confined to chemists and druggists, who have been trained to caution in dealing with dangerous commodities and who have proved their fitness for such work by passing a stringent examination, and the wise policy would seem to be to entrust to them the sale of other poisonous substances which have come into vogue and in regard to which the public require protection. No regulations, however carefully worded, can make up for the want of knowledge and a sense of personal responsibility, and free trade in poison is not to be desired any more than free trade in alcohol. Labelling alone is not a sufficient safeguard and indeed it may be argued that whenever it becomes very general in its use it will in great measure cease to be protective, for familiarity breeds contempt, and the warning word "Poison" is apt to lose its effect when it is incessantly cropping up. The fact that a particular substance has to be procured at a druggist's shop with certain formalities is, to my thinking, much more likely to create caution in its storage and use than the most flaring superscription of poison if it can be purchased of any ordinary dealer. Of course, one would wish to put no unnecessary obstacle in the way of the distribution of carbolic and cresylic acids, which are so largely used as disinfectants, or of the materials sold for the purpose of destroying insects and vermin, which are now acknowledged to play some part in the dissemination of disease, but it should always be borne in mind that cleanliness is the best of all disinfectants and vermin-destroyers and that sound sanitation should render the use of chemical antiseptics only occasionally necessary. There can, I think, be no hardship in confining the sale of these chemical antiseptics to properly qualified chemists and druggists; indeed, there would seem to be great danger in permitting them to be retailed under any conditions by grocers, by drysalters, by oilmen, or by general dealers, in whose shops they would necessarily be mixed up with various other kinds of goods, in regard to the vending of which no special care is requisite. The habitual caution of the chemist and druggist counts for much—an habitual caution which has become second nature to him and enters into all his doings, even, I fancy, into the sale of a sponge or a bottle of perfume; for anyone who has bought such an article over a chemist's counter must have felt that the transaction was conducted with great circumspection and solemnity and that in making the purchase he was regarded almost as an object of suspicion.

I venture to believe that all the advantages sought by the Bill of last session could be secured by the inclusion of the substances named in its schedule in Schedule A of the Pharmacy Act and I feel strongly that the Council of the Pharmaceutical Society of Great Britain should continue to advise the Privy Council as to the articles to be comprised in that schedule. The Privy Council must have special technical guidance in such a matter and I know not where they could obtain more trustworthy guidance than from the chosen representatives of that body of men who have an intimate practical acquaintance with all the difficulties and dangers attending the sale of poisons and who will not, I am sure, allow their trade interests to stand in the way of the public welfare.

[After mentioning recent researches as to antitoxins Sir James Crichton Browne proceeded as follows :—]

Step by step, armed with our antitoxins and our serums and our lymphs, we are encroaching on the ghoul-haunted regions of disease and bringing hope and healing where before all was darkness and despair. There is no extravagance in the prediction that all the infective diseases will before long be brought under control more or less and have their power of evil vastly restricted if not abolished. And that means more than might at first sight appear, vast although even then is the prospect of benefit to mankind, for diseases hitherto not regarded as infective are being brought into that category or shown to be of toxic causation and therefore amenable to our new methods of treatment. Should it prove, as Nissl and Mr. Lane Hamilton have alleged, that

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a considerable number of cases of mental disease are due to auto-intoxication, the antitoxins may be instrumental in checking that alarming increase of insanity which is going on amongst us and which statistical ingenuity can no longer explain away. Should Dr. Westura Sambon be correct in maintaining that sunstroke is an infective disease we shall shortly be combating insolation by an antisiriasic serum. If Dr. Buzzard is right in arguing that anterior poliomyelitis is due to a bacterium we shall soon teach that bacterium to circumvent itself and leave little limbs unwithered. It is within the bounds of possibility that by means of an antitoxin we may yet restrain the course of cancer, that "perilous stuff which weighs upon the heart" of the present generation, for we may counteract a poison which it generates and which is perhaps more pernicious than the structural changes associated with it. And this brings me to a consideration in connexion with antitoxins which should not be omitted in any survey of their therapeutic powers, and that is that in some instances, besides saving life, they mitigate the sequelæ which infective diseases so often leave behind them. Given, therefore, to patients who might survive without their aid they still promote speedy and complete recovery by warding off secondary structural alterations in muscle and nerve fibre and in the viscera. We are all aware of the disasters which small-pox leaves in its trail—blindness, deafness, and lameness, although, happily, we see less of these than our forefathers did and than our children may do, unless the faddists be effectually muzzled and effect given to the conscientious objection of the country to the conscientious objector. We know something of the kidney disorders and disorganisation of the middle-ear which so often follow on scarlet fever and of the paralysis which dogs the footsteps of diphtheria, but perhaps we scarcely realise that every infective disease leaves its mark upon the system. I have heard the late Sir William Gull say—and most of his sayings were worth remembering—that it takes a man ten years to recover perfectly from an attack of typhoid fever, and it is certain that the health and happiness and kinetic energy of the community at large will be sensibly augmented by the employment of medicaments which not merely diminish the mortality of a large group of diseases but limit their secondary ravages.

[Sir James Crichton Browne then proceeded to the question of prevention in disease by means of immunisation. Vaccination had done immense damage to the trade of the dispensing chemist, but yet everyone would, as medical men did, hail with delight any falling off in their earnings that corresponded with a prolongation of human life. He continued:—]

When I stood on the brink of this address I proposed to myself, after a few preliminary remarks, to plunge into a subject of some depth but of great allurement and of special interest to you in relation to your present studies. I proposed to speak to you of a great philosopher who was also a practical pharmacist and to show you how Bishop Berkeley's treatise on Tar Water, published in 1744, has a bearing on the medicine and surgery as well as on the speculative thought of to-day. But my preliminary remarks have run away with me. What have, I fear, proved the ill-favoured and lean-fleshed kine of my introduction have eaten up what I flatter myself must have proved the well-favoured and fat-fleshed kine of my main discourse and I find myself beyond bounds both as regards time and your patience without having as much as mentioned Berkeley's name. I must postpone, therefore, to some future opportunity what I have to say about "Siris," its rational empiricism, its optimism, its curious antiseptic anticipations, its learning, its lucidity, and its marvellous chain of philosophical inquiries and reflections, leading up from a humble nostrum to the throne of the Divine Ruler of the universe. Meanwhile I may recommend it to the private reading of such of you as are not afraid of metaphysics, sure that you will find food for thought even in its therapeutical extravagance, and that it will help you in some measure to escape from that dreary materialism to which your avocation perhaps somewhat disposes you. Its pure and lofty idealism, which you may trace flowing on in a continuous and differently reflective stream in the writings of Carlyle and Emerson, may help you, as it has helped many a man, to lay hold of a sustaining faith. Berkeley said, "He who hath not much meditated upon God, the human soul and the *summum bonum*, may possibly make a thriving earthworm, but must indubitably make a sorry patriot and a sorry statesman." It is not, perhaps, within your visions of your lot to be statesmen, but one and all of you should aspire to be good patriots and something more than thriving earthworms and in all your laudable ambitions "Tar Water" will prove a safe stimulant and roborant. Let me thank you for the indulgent audience you have given me and wish you all with all my heart a prosperous and pleasant journey on the road which is opening out before you.

THE ROYAL VETERINARY COLLEGE.

REMARKS BY MR. WALTER LONG, M.P., PRESIDENT OF THE BOARD OF AGRICULTURE, ON TUBERCULOSIS IN CATTLE.

AT the Royal Veterinary College the inaugural address to the students was delivered on Oct. 3rd by Mr. SHAVE, Professor of Anatomy in the College.

Mr. WALTER LONG, who presided over the meeting, in reply to a vote of thanks for taking the chair, said that he believed the veterinary profession could do a great deal to forward the movement of diminishing tuberculosis apart from any step which it might be necessary for the Government to take. All that the Royal Commission recommended that the Government should do was, in the first instance, to provide tuberculin at what would be, comparatively speaking, small cost, and, in the second place, to pay the fee in order to secure properly qualified veterinary surgeons to carry out the operations. The Royal Commission estimated that the cost of the tuberculin would be 3*d*. per dose and that of the individual testing application to cows another 2*s*. 3*d*., making a total of 2*s*. 6*d*. for each case. He did not in any way seek to evade responsibility—that must always rest on the Executive Government in matters of this kind—but he now said what he had stated elsewhere that if he could only be satisfied that there was a general desire to make use of this particular remedy there would certainly be no unwillingness on his part to obtain the necessary consent of the Government to grant the fee. He would, however, like to impress on them that if a remedy of this kind was as effective as science alleged, surely it could hardly be necessary for the Government to pay the 2*s*. 6*d*. per cow in order to induce the owners of horned stock to take advantage of it. The real truth of the matter was that the men who had the scientific knowledge did not make sufficient use of the opportunities presented to them to infuse their own beliefs and confidence into the minds of the general public. This was one of the most important discoveries which had ever been made, because if it were carried out with the success which was foretold, not only would it eradicate the disease which was causing great loss to the owners of stock, but scientists told us that simultaneously would come the eradication of consumption among human beings, which had brought sorrow to so many homes and which had for so long been regarded as an incurable disease.

THE PREVENTION OF TUBERCULOSIS.[1]

BY CHARLES EGERTON FITZ-GERALD, M.D. ST. AND.,
PRESIDENT OF THE FOLKESTONE MEDICAL SOCIETY.

THE time is, it is to be hoped, fast approaching when the medical profession will assume its proper position as guide, philosopher, and friend, not only to the individual, but to the community at large. There are already indications in America, Germany, and elsewhere that public opinion is trending in the direction of not only allowing medical men to offer advice as to the prevention apart from the cure of disease, but also to enforce its acceptance. Already something has been attempted in this direction by the passing of the Contagious Diseases Act, the Vaccination Act, and the Infectious Diseases Compulsory Notification Act. The first two have unfortunately been stultified and nullified in obedience to the mischievous outcry of a minority of well-meaning but ignorant and sentimental faddists. The Compulsory Notification Act requires to be more comprehensive, and especially should it be rigidly enforced in all cases of tuberculosis. Why should not we in England

[1] A paper read before the Folkestone Medical Society.

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follow the noble example so admirably and successfully inaugurated in New York by Dr. Hermann Biggs, Dr. Loomis, and Dr. Mitchell Prudden in combating this fell disease? The greater number of the following observations are founded on the reports of this excellent work which have been placed at my disposal by Dr. Hermann Biggs. Of course, there would be at first the usual outcry about interfering with the liberty of the subject, but such protests are comparatively harmless, as has already been proved in America, where there is little or no opposition to the rigorous enforcement of the law by the New York Board of Health. The liberty of the subject has to be curtailed in the case of individuals who are imperilling the safety or lives of the community; why, then, should there not be restrictions on those who, by their carelessness, ignorance, or wilfulness, entail sickness, suffering, and death on millions of their innocent fellow-creatures, aye, and on millions yet unborn? Syphilis and tuberculosis are the greatest scourges of humanity—the former sapping the vigour of the flower of the land, stunting our youths, degrading our women, contaminating our children, and ruining the army on which our empire depends. But it is specially to the notification and prevention of tuberculosis that I wish to call attention—tuberculosis, which causes from 15 to 30 per cent., and in some exceptional cases from 50 to 60 per cent., of all deaths between the ages of fifteen and fifty years. I would ask if it be not time for us, as a profession, to unite at least for the good of others, if not for ourselves, and proclaim to the public with no uncertain voice that they must and shall take heed to the voice of sanitary science and take measures to prevent under rigorous penalties the reckless dissemination of tuberculosis? This they will the more readily do when they are taught to understand that it is an ever-present danger to which each and all are exposed, and this truth should be unceasingly impressed on both the classes and the masses, who should be educated by our profession by mouth and broadcast pamphlets. Ransome, in the Milroy Lectures, estimates that 70,000 persons perish annually from tuberculous disease in this country alone and that in the form of phthisis it is the cause of death between the ages of fifteen and forty-five years (the most useful stage of human existence) of more than one-third, and between the ages of fifteen and thirty-five years of nearly one-half of all who die annually. The monetary loss to the country by this mainly preventable sickness and death must be something enormous. Dr. J. M. Lindsay, in an excellent paper on the Problem of the Consumptive Poor, estimates from reliable data that the persons suffering from phthisis at the present time in the British Isles cannot be less than a quarter of a million. He also laments the lack of hospital accommodation for them and quotes Dr. Hermann Weber that "well-arranged special hospitals for the treatment of consumption can accommodate only 1 sufferer in 1000." Professor Leyden is quoted as calculating the deaths from phthisis in Germany as 170,000 per annum and the number of the living who are suffering from phthisis he estimates at 1,300,000. The fearful mortality in prisons, asylums, and convents from tuberculosis is shown in Dr. Hermann Biggs's reports by copious extracts from well-known authorities on the subject too numerous to be mentioned here; suffice it to say that the death-rate in these institutions from phthisis averages from 38 to 62 per cent. of all deaths.

The first and main point which I want to emphasise is that the public must be educated as to the nature, cause, and curability of phthisis, and taught that by far the most usual method of its dissemination is by dried sputum—tuberculous meat and milk taking a secondary place. It is only by making the public fully alive to the source and danger of the present state of things that they, and through them the Government, can be moved to act, and this can only be done by us as a united profession. Every medical society, association, or organisation should be a nucleus for disseminating knowledge of the more recent views as to the prevention of tuberculosis and its usual origin, and these views should be respectfully but firmly urged on the various corporate bodies, local government boards, county councils, &c., by memorials praying that the public should be instructed by means of pamphlets and *vivâ-voce* teaching. Attention would then be aroused and the medical profession would be given a free hand in the matter, and measures in accordance with medical sanitary science would be promptly adopted. This is no visionary scheme; it has already been acted on and efficiently carried out in America, notably in New York, where notification of phthisis exists, and the public board of health not only affords every facility to medical men for the gratuitous examination of sputum but is able to insist on thorough disinfection of premises in which a victim of phthisis has either lived or died. It also insists on these premises not being let or tenanted until such disinfection has been carried out to the entire satisfaction of the inspector. It also issues for free distribution leaflets and pamphlets in four languages giving instructions to patients and their relatives and friends as to the contagiousness of tuberculosis, its dissemination from dried sputum, together with directions for its disinfection and destruction, and moreover it rigidly enforces an effectual inspection of all meat and milk-supplies for the security of the public against tuberculous meat and milk. If all this can be and is done elsewhere, why can it not be effected in England? Leprosy, plague, and cholera have been almost stamped out in the British Isles, and although it is now almost universally admitted that tuberculosis is a communicable and infectious disease and by far the most fatal to which our race is exposed yet we take no precautions against its spread. Statistics prove it to be the most easily controlled of all the infectious disorders, while it is more fatal in its ravages than all the principal diseases put together. In London alone, with its 4,500,000 inhabitants, tuberculous disease causes upwards of 10,000 deaths annually, the death-rate for London from tuberculosis being one-seventh of the entire death-rate, and the majority of those 10,000 lives might and should have been saved. According to our present knowledge tuberculosis is chiefly disseminated by the dried, pulverised sputum of those suffering from the complaint being inhaled into the lungs of those already susceptible, and this is the point we should constantly impress on the public. We have, of course, a Board of Health, but we need a body such as I have already described in New York, with power not only to lay down sanitary laws but also to enforce them. These are, briefly, compulsory notification of all cases of tuberculosis, stating age and sex, duration of disease, and place of residence; gratuitous examination of sputum; isolation in special hospitals and disinfection of premises; prompt disinfection and destruction of sputum; and rigid inspection of all meat and milk-supplies. The Government of the United States is democratic, but the sanitary measures adopted are sometimes autocratic and the functions performed by sanitary authorities paternal in character. I freely admit that in this country public opinion is not yet ripe for radical measures, but surely a beginning might be made if only our profession put all their united energies into so good a cause. Why should not we adopt the same precautions with regard to tuberculosis that we do not hesitate to enforce in the case of small-pox, scarlet fever, and diphtheria? We should thus, perhaps, become in time, as a profession, not simply medical advisers but a species of "beneficent autocrats" with the power of enforcing our salutary policy in spite of the prejudice, timidity, and sentimental conventionality which step in and ofttimes prevent us from carrying our scientific convictions to a philosophical conclusion. Surely he who robs us of our health is not less guilty than he who robs us of our wealth and both should be equally amenable to the law.

Folkestone.

A METHOD OF ADMINISTERING NITROUS OXIDE GAS FOR THE PRODUCTION OF ANÆSTHESIA, AVOIDING THE USE OF A CLOSED MASK OR OF VALVES.

BY GEORGE FLUX, M.D. BRUX.,

ANÆSTHETIST TO THE GREAT NORTHERN CENTRAL HOSPITAL AND TO THE BRITISH LYING-IN HOSPITAL; ASSISTANT ANÆSTHETIST TO THE DENTAL HOSPITAL OF LONDON; LATE ANÆSTHETIST TO THE NATIONAL DENTAL HOSPITAL.

IT is usually regarded as an accepted fact that the special aim in giving nitrous oxide gas should at first be to exclude air and that in order to achieve this the patient's face must be enclosed in an accurately fitting mask so constructed that respiration can only be carried on through valves and under pressures differing from that of the normal atmosphere. Experience has shown that to get good results with nitrous

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oxide gas a sufficient supply of oxygen must be provided by nature or art. The old "laughing gas" was impure and when mixed with oxygen produced great excitement; the modern gas, being pure, when mixed with oxygen rarely produces undue excitement, so that the objection to mixing it with air no longer holds good.

I have found that pure nitrous oxide gas administered in the following manner produces most excellent results. The patient being seated in a chair with the head slightly thrown back, a napkin folded to a width corresponding to the height of his face is passed round his head and lightly secured in such a manner that, while the lower border of the napkin is in contact with the chin and lower part of the face, the upper border at a level with the patient's eyes bulges forward several inches so that a cup-like cavity, open at the top and closed at the bottom, is formed. The patient is now ready to receive the gas. The gas is supplied by merely holding the end of the supply pipe over the cup-like cavity, the amount being regulated by a stopcock; the gas by its own weight falls into the cavity, and is thus easily inspired at the normal atmospheric pressure and thoroughly mixed with as much air as the patient requires. At each expiration the patient blows the face-piece nearly empty, and on inspiration breathes both fresh air and fresh gas; it is only necessary to turn on fresh gas when inspiration occurs. I find that from eight to ten gallons of gas are used for a single administration, but with a less porous and a better-fitting face-piece than a folded napkin the consumption should be considerably less.

So far my operations in this direction have been conducted without any specially constructed apparatus, but now that I am convinced of the practicability of the method I am having one made; it consists of a cup-shaped face-piece completely open at the top with a suitable stopcock for regulating the supply of gas.

The number of cases in which I have used this method has so far been limited, but in all of them the most striking feature has been the extreme tranquillity of the patient, who passes easily by almost imperceptible stages from consciousness to anæsthesia and back again to consciousness and has all the appearance of being merely asleep. The face keeps its colour, the breathing continues gentle, and sleep becomes deeper and deeper till the usual signs of anæsthesia appear, lasting from forty-five to sixty seconds, when the patient quietly wakes up. In none of these early cases has there been any jactitation, stertor, or noise, nor any hurrying of respiration, nor any complaint of the slightest feeling of inconvenience to respiration. I have tried this method upon myself and, apart from a sense of drowsiness, I was unaware of any unusual sensation. In addition to the action of the face-piece in conveying the gas to the patient, its being wide open at the top has the great advantage that it enables the whole of the patient's face to be under direct observation and it also adds to his comfort. It allows his respiring under ordinary conditions, thus relieving all sense of oppression; he is free from the transmitted hiss from the gas bottles and from the disturbing bruit of valves, to say nothing of his escaping from the odour which seems inseparable from all ordinary forms of gas apparatus and from the discomfort and risks of breathing into and out of an apparatus which many have used before him.

Old Burlington-street, W.

THE TREATMENT OF RINGWORM OF THE SCALP.

BY H. LYLE, M.R.C.S. ENG.,

SENIOR ASSISTANT SURGEON TO THE HOSPITAL FOR CANCER AND SKIN DISEASES, LIVERPOOL.

THE treatment of ringworm of the scalp, especially if the case has become chronic, is most tedious and tiresome. Much has been written about the subject, but the treatment still remains as unsatisfactory as ever. Dependent as the disease is on the implantation and subsequent growth of the spore of the trichophyton tonsurans it commences as a small spot and generally escapes notice until it has become a patch of more or less considerable size. As this spore has probably been simultaneously implanted at different points the patches are usually multiple, being more or less circular in form and presenting a roughened appearance. The hairs on the infected areas are short and stubbly and are easily removeable. Of course, many cases of ringworm of the scalp are fairly easily cured, but others drag on month after month in spite of every kind of treatment. Among the remedies which have been recommended for this intractable disease are daily epilation and the application of various drugs, some in the form of ointments and others as oils. Formalin has been very highly spoken of, but I have found its application so painful that I no longer employ it. Chrysarobin has been much used alone and in combination, as well as *huile-de-cade* and iodide of sulphur. Oleate of mercury dissolved in olive oil has likewise been extensively tried. Of course, in places where there is a special hospital the medical adviser, disgusted and wearied with the seeming futility of his treatment, can either recommend his patient to a specialist or, if the patient is too poor for that, he can send him to the hospital. But in the country such a course is mostly out of the question and the medical man has to do the best he can.

Hoping that it may be useful to the country practitioner, who has no one to whom to send his chronic cases of ringworm, I venture to lay before the readers of THE LANCET a plan of treatment which I have found most satisfactory. Tired of seeing children come week after week and month after month with no improvement in their condition I determined to try what painting with a solution of silver nitrate would do. Among others on whom I used it I chose two of the most chronic cases which I could find; in one case the patient had been attending hospital twice a week for many months and in the other not quite so long. Neither of these patients had improved much in spite of their long attendance. The usual changes had been rung on the drugs generally employed—namely, ointments, oils, &c. The method I adopted was this. I had the heads entirely shaved and kept so. I scraped each patch with a Volckmann's spoon and then, by means of a piece of cotton wool rolled round the end of a glass rod and tied there, I applied a solution of silver nitrate of the strength of a drachm in an ounce of proof spirit and well rubbed it in. This of course turned all the places of application black. This was done twice a week and after removing the black layer each time (which came off fairly easily) I scraped off as much of the underlying parasitic growth as I could with the spoon before repainting with the solution. The smarting after its use was not much and only lasted a short time. An oil of oleate of mercury, 5 per cent. in strength, was rubbed into the heads night and morning as well. In the two cases which I have mentioned I had to paint almost the entire scalp so large was the extent of the growth. The heads were washed before the application and, as stated above, were kept shaved. Of these two cases after about fourteen weeks of this treatment one is quite well and the other is nearly so. I have tried this method on heads *de novo*, but I have found it very difficult to get the mothers to persevere with the attendance. In all the cases, however, in which I used it the improvement was remarkable. One boy who had numerous patches when he first came under treatment has now (after about fifteen weeks) no spots at all. As the diseased areas became smaller and on the wane I increased the strength of the solution from one drachm of the salt to two drachms to the ounce of spirit, but I always scraped the patches before applying it. I am of opinion that the remedy in addition to the destructive effect of silver nitrate on organic matter acts by depriving the growth of air. I should like to say that I often see cases of alopecia areata which have been sent as tinea. I need hardly remark that the remedy is not likely to be of much use to them.

Liverpool.

EXHIBITION OF OPTICAL AND OTHER INSTRUMENTS AT THE LONDON MANSION HOUSE.—On Monday last, Oct. 3rd, the Lord Mayor opened an exhibition of optical, mathematical, and scientific instruments under the auspices of the Spectacle Makers' Company. Among the objects of interest to be seen are astrolabes of the fourteenth to seventeenth centuries, sun dials from England, France, Germany, Italy, and the maximum and minimum thermometer used by Captain Ross in his various voyages round the world. Among the exhibits of interest to medical men are those of Messrs. W. Harry Cox, Ltd. (electrical and scientific apparatus), Messrs. Raphael and Co., Messrs. R. W. Paul, Messrs. Carpenter and Westley, Messrs. R. and J. Beck, Ltd., and Messrs. George Culver.

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A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ROYAL FREE HOSPITAL.

A CASE OF ACUTE MEMBRANOUS LARYNGITIS IN A CHILD REQUIRING TRACHEOTOMY AND INTUBATION; RECOVERY.

(Under the care of Dr. SAINSBURY.)

THE following case is well worthy of being recorded, especially in connexion with the very similar case reported in THE LANCET of August 13th. Although the failure to find the bacillus of diphtheria is no certain proof of the absence of that disease, yet if the examinations have been careful and numerous we are fully justified in saying that the case is in all probability not diphtheritic. Theoretically it is by no means impossible for an inflammation caused by streptococci to be accompanied by a membranous exudation; all that is required is that the inflammation should be of sufficient intensity to give rise not merely to a "serous" exudation but to an exudation which can coagulate. In the analogous case of inflammation of the serous membranes the degree of coagulability of an exudate varies greatly. There is much to be said in favour of the view of the existence of a membranous laryngitis not due to the Löffler bacillus, but its existence can only be proved by the putting on record of all cases which have been carefully observed and bacteriologically examined. For the notes of the case we are indebted to Mr. Allan C. Parsons, house physician.

A child, aged one year and four months, was admitted to the Royal Free Hospital on April 10th, 1898, at 2 A.M. with difficult and noisy breathing of three days' duration. On examination the patient was found to be suffering from marked laryngeal obstruction, as shown by the stridor on inspiration and sucking in of the lower ribs. There was slight cyanosis and the alæ nasi were working vigorously. The child was breathing 22 to the minute: examination of the lungs revealed nothing abnormal. The pulse-rate was 120 and the heart's action was well maintained. The temperature was 96° F. The fauces were reddened and slightly swollen, but no membrane could be seen. Though the child was restless the general condition was fair and there was no albumin in the urine. The child was isolated with steam-kettle and tent, and at 2.30 P.M. on April 10th 10 c.c. (4000 units) of antitoxin were injected. The same dose was repeated twelve hours later. The child took food very badly and nasal feeding was resorted to. On the day after admission a culture was made from the mucus of the pharynx with a negative result as regards diphtheritic bacilli, streptococci alone being found. By the 13th the general condition of the child had improved considerably, though the breathing was noisy and difficult at times. Nasal feeding was no longer necessary. On the 15th, five days after admission, the child became very restless and suffered from attacks of spasmodic dyspnœa. The cough was dry and croupy in character, and on listening to the chest rhonchi were heard over both lungs. The pulse-rate had increased and the temperature rose to 101°. A second culture was made, but no specific organisms were found. The breathing became more and more difficult and the child was standing up in the cot fighting for breath. An operation was deemed advisable and tracheotomy was accordingly performed on the 16th at midnight. The breathing at once became easier and the child slept for twelve hours after. Three days later the metal tube was replaced by a soft rubber one. About this time some "membrane" was coughed up through the tube, but though a careful bacteriological examination was made no diphtheritic bacilli were found. The child continued quite well and comfortable so long as the tube remained in, but attempts to remove it at once brought on dyspnœa and cyanosis. As this difficulty got worse it was decided to try intubation, therefore on May 2nd the smallest sized O'Dwyer's tube was passed without an anæsthetic. Twelve hours later the tube was removed and the child was seen to be breathing quite naturally through the larynx. From now onwards the child made a rapid recovery and during convalescence iron and strychnine were given. The patient was seen three months after admission, in good health and without any sign of paralysis.

Remarks by Dr. SAINSBURY.—This case presents one or two points of special interest. In the first place it would seem to be an instance of a non-diphtheritic membranous laryngitis arising independently of any direct damage to the part, as by scalding or other form of mechanico-chemical irritation. In favour of this conclusion there are (1) the negative results of cultures taken from the fauces and the direct negative examination of the membrane coughed up; (2) the absence of any albumin in the urine; (3) the absence of any paralytic sequelæ; and (4) the fact that no history pointing to contagion could be obtained. Non-diphtheritic membranous laryngitis, contended for by many, amongst others by Fagge, denied by many others, and in any case regarded as a rare event, would seem to have been present here. In the next place the case is of interest on account of the speedy relief, obtained by intubation, of that troublesome condition which makes it sometimes so difficult to remove the tube after tracheotomy. It is not a question here of discussing the relative merits of intubation and tracheotomy and the case is an instance simply of the value of intubation as a supplement to tracheotomy. Lastly, assuming the case to have been non-diphtheritic, we may note the complete harmlessness of 8000 units of diphtheria antitoxin.

ROYAL CORNWALL INFIRMARY.

TWO CASES OF DISLOCATION OF THE LENS INTO THE ANTERIOR CHAMBER OF THE EYE; REMOVAL.

(Under the care of the late Dr. GEORGE F. HELM.)

THE displacement of the crystalline lens into the anterior chamber of the eye can only occur with a dilated pupil and is certainly much less common than the dislocation into the vitreous. Though cases do occur in which the displacement is not followed by any other ocular disturbance, and the lens may even remain transparent, yet usually the irritation set up requires the removal of the lens, and especially is this advisable if the displaced structure has become opaque. The risk of escape of vitreous in removing the lens is less if the dislocation has taken place into the anterior chamber than if the lens has passed backwards. The second case is of interest as having followed the crude "operations" of the "Indian oculists" who practised in England a few years ago. The operation they performed was evidently the old "couching for cataract."

CASE 1.—A man went to the Royal Cornwall Infirmary stating that three weeks previously he had received a blow on the left malar bone from a piece of stone which he was breaking with a hammer. The eyeball was not struck by the stone. He had experienced terrific pain in the eye. The lens of the left eye was displaced forwards into the anterior chamber. The centre of the lens was quite opaque and was placed obliquely in the anterior chamber, the upper margin being more backward than the lower. The pupil was widely dilated and there was great ciliary injection. The tension was quite + 1. Perception of light was fairly good. The anterior chamber was free from inflammatory products. The patient's consent for an attempt to be made to extract the lens with enucleation to follow if unsuccessful was readily given. A Graefe's knife easily passed across the anterior chamber, the obliquity of the lens facilitating this. A slight escape of vitreous followed the incision, but with a fine scoop Dr. Helm secured the lens and withdrew it. The eye recovered perfectly well and the patient left the infirmary with vision equalling $\frac{6}{36}$ with a convex lens.

CASE 2.—Dr. Helm was consulted in 1891 by a man about his left eye. There was no vision with this eye, which, moreover, was very painful. It was evident that his lens was in the anterior chamber. The history of the eye was as follows. Some years ago the patient had an injury to this eye which caused traumatic cataract. For the cure of this he consulted the "Indian oculists," then in Cornwall, who operated upon it. The pain being so dreadful he begged to be relieved. By means of a Graefe's knife and a scoop

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Dr. Helm extracted the lens without the loss of any vitreous. The eye progressed perfectly well, but the patient refused any spectacles, being contented with the vision of the other eye.

Remarks by the late Dr. HELM.—The treatment of cases of dislocation forwards of the lens appears to admit of no doubt: (1) the dislocated lens must be removed by extraction—it can be of no use trying to replace it, for the eye does not tolerate even a dislocated lens; but (2) if as the result of the incision of the cornea there follows a considerable loss of vitreous it then becomes a question as to whether it is not best for the ultimate welfare of the patient to enucleate the eyeball. This I was prepared to do in either case supposing that my efforts to extract were not successful. In both the above cases the fact that the lens had become opaque was a decisive reason for extraction. I had an opportunity of examining the instruments which the "Indian oculists" use in the couching of cataracts. They are two in number. Their operation consists, first, in making an incision in the sclerotic behind the ciliary attachment of the iris. This they do with a huge old-fashioned lancet which in their case was rusty and very dirty. Into this incision the second instrument is inserted—viz., a large copper probe with a conical end of the size of a No. 4 Couper's lacrymal probe. This is passed through the pupil at its upper portion and the lens is made to "lie down"—their own words. Sometimes they fail and, as in the instance of the patient in Case 2, the lens slips through the pupil, with the result which I have described.

Reviews and Notices of Books.

Dictionary of National Biography. Edited by SIDNEY LEE. Vol. LIII. Smith—Stanger. London: Smith, Elder, and Co. 1898. Pp. vi. and 486.

THE biographies in this volume include one of Edmund Spenser, the celebrated author of "The Faerie Queene." Spenser was born in London about 1552 and lived in Ireland as a Government official from 1580 to 1598. Of the two poems on which his fame mainly depends, "The Shepheards Calender" was the first to appear in print, the date of publication being 1579. "The Faerie Queene" was issued in two successive portions, the first in 1590 and the second in 1596; the biographers (Professor J. W. Hales and Mr. Sidney Lee) claim for it "a place among English narrative poems not far below the greatest of them—Milton's 'Paradise Lost.'" Spenser died in Westminster in 1599. Adam Smith, well known as the author of the "Theory of Moral Sentiments" and the "Wealth of Nations," was born at Kirkcaldy in Fifeshire in 1723. In 1751 he was appointed Professor of Logic in Glasgow University, and in the following year he was transferred to the chair of Moral Philosophy. He was a patron of James Watt, the inventor of the steam-engine, who was enabled by the University to set up as a mathematical instrument maker in Glasgow. The "Theory of Moral Sentiments" was published in 1759 and the "Wealth of Nations" in 1776. Adam Smith died in 1790.

The biographies of medical men are thirty-two in number. John Flint South was born in London in 1797, studied medicine at St. Thomas's Hospital, having been apprenticed to Henry Cline the younger for the usual sum of £500, and was admitted a member of the Royal College of Surgeons of England in 1819. He held various appointments at St. Thomas's Hospital and was eventually, in 1841, made full surgeon, a post which he resigned in 1863. He was also in 1841 elected a member of the Council of the Royal College of Surgeons of England and in 1843 was nominated one of the first Fellows of the College. He acted as Professor of Human Anatomy and Surgery in the College for 1845 and he was Hunterian orator in 1844. "His oration made no mention of the man he was called upon to eulogise; he gave a retrospect of the history of medicine, beginning at so early a period that the time expired before he had arrived at the eighteenth century." Mr. South was President of the Royal College of Surgeons of England in 1851 and again in 1860; he resigned his official connexion with the College in 1873. He published several original works and translations of treatises by Otto and von Chelius. The last twenty years of his life were spent in gathering materials for a history of English surgery. The project was on too large a scale to enable him to make much progress, but his work was edited by Mr. D'Arcy Power in 1886 under the title of "Memorials of the Craft of Surgery." He died at Blackheath Park in 1882. Samuel Solly was born in London in 1805. In 1822 he was articled to Benjamin Travers, surgeon to St. Thomas's Hospital, and was one of the last of the surgeons to a London hospital who succeeded to his post by the payment of a large apprenticeship fee. He was admitted a Member of the Royal College of Surgeons of England in 1828. From 1833 to 1839 he was lecturer on anatomy and physiology in the medical school of St. Thomas's Hospital; he was appointed assistant surgeon to the hospital in 1841; twelve years later he became full surgeon and was appointed lecturer on surgery. Elected a Fellow of the Royal College of Surgeons of England in 1843, he became a member of the Council in 1856 and was twice a vice-president. He was admitted a Fellow of the Royal Society in 1836 and became President of the Royal Medical and Chirurgical Society in 1867–68. He died in 1871. James Spence was born in Edinburgh in 1812. He studied medicine in Edinburgh University and in the extra-mural school and in 1832 he received the diploma of the Royal College of Surgeons of Edinburgh, having previously spent some time in Paris studying anatomy and surgery. As soon as he was qualified he made two voyages to Calcutta and on his return to Edinburgh he passed about 22 years teaching anatomy and surgery in the extra-mural school until in 1864 he became Professor of Surgery in the University. He was appointed a Fellow of the Royal College of Surgeons of Edinburgh in 1849 and was President in 1867 and 1868. He was made surgeon-in-ordinary to the Queen in Scotland in 1865 and became a member of the General Medical Council in 1881 as representative of the Royal College of Surgeons of Edinburgh. He died in 1882. The writer of the biography (Mr. D'Arcy Power) says of him: "Spence must be reckoned among the great operating surgeons who have rendered Edinburgh famous throughout the world. Like Liston, Fergusson, and Syme, he had so intimate a knowledge of anatomy that every step in a difficult operation was foreseen. ..... He was essentially a conservative surgeon, and, like his great contemporary, Sir William Scovell Savory, he maintained that in skilled hands the simpler methods of the older school were preferable to, and gave as good results as, the more complicated system adopted by the disciples of the antiseptic school of Lister." John Spurgin, born in Essex in 1797, studied at Cambridge University and in Edinburgh, graduating at Cambridge as M.D. in 1825. He became a Fellow of the Royal College of Physicians of London in 1826, Censor in 1829, conciliarius in 1851–53 and 1862–64. He delivered the Harveian Oration in 1851 and the College lectures on Materia Medica in 1852. He enjoyed an extensive practice, was physician to the Foundling Hospital and St. Mark's Hospital, and died in 1866. Andrew Smith, born in Roxburghshire in 1797, studied medicine at Edinburgh University and graduated as M.D. in 1819. From 1821 to 1837 he was an army medical officer in Cape Colony, during which time he superintended exploring expeditions in Central Africa, collected the materials for his "Illustrations of the Zoology of South Africa," and wrote papers on the Bushmen. It was due to his representation and counsel that Natal became a colony of the British Crown. Returning to England in 1837, he was made Inspector-General and

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Superintendent of the Army Medical Department in 1851 and was nominated Director-General of the Army and Ordnance Medical Departments in 1853. The evidence laid before the Sebastopol and other committees did much to vindicate his reputation as an administrator during the Crimean campaign. He was created K.C.B. in 1858 and died in 1872. Aquilla Smith, born in county Tipperary in 1806, studied medicine at Trinity College, Dublin, and received the degree of M.D. *honoris causâ* in 1839. He was Professor of Materia Medica and Pharmacy in the School of Physic from 1864 to 1881, and from 1851 to 1890 he represented the Royal College of Physicians of Ireland in the General Medical Council. He was a copious writer on antiquarian subjects, mainly numismatics. He died in 1890. Edward Smith, born in Derbyshire about 1818, was educated at Queen's College, Birmingham, and graduated at London University as M.D. in 1843. In 1853 he was appointed lecturer on anatomy at Charing-cross Hospital and in 1861 assistant physician to the Brompton Hospital for Consumption. His first researches were on questions connected with physiological chemistry, several memoirs on which were presented to the Royal Society, and he was admitted F.R.S. in 1860. Dietetics formed the subject of most of his subsequent literary work, and after being consulted by the Government on Poor-law and prison dietaries he was appointed medical officer of the Poor-law board. He died in 1874. John Gordon Smith, born in 1792, was educated at Edinburgh, graduated at the University there in 1810, and was present at the battle of Waterloo as surgeon to the 12th Lancers. He lectured on medical jurisprudence at the Royal Institution of Great Britain in 1825 and 1826 and in 1829 was elected the first Professor of Medical Jurisprudence at the London University (now University College) in Gower-street. None of the licensing bodies in London required any evidence of instruction in forensic medicine and there was consequently no class. Smith lectured for two years and then resigned his office. For a time he edited the *London Medical Repository*. He died in a debtors' prison, after fifteen months' confinement, in September, 1833. Thomas Southwood Smith, born in Somerset in 1788, studied medicine in Edinburgh and graduated as M.D. at the University there in 1816. From 1812 to 1820 he was a Unitarian preacher, partly in Edinburgh and partly in Yeovil, Somerset. In 1820 he removed to London and entered on an active career as a writer for the Useful Knowledge Society and as a pioneer of sanitary reform. In 1832 he was placed on the Central Board for Inquiring into the Condition of Factory Children, an inquiry the precursor of the existing Factory Acts, and in 1848 was appointed medical member of the "General Board of Health." He died at Florence in 1861. William Tylor Smith, born in 1815 near Bristol, was educated at the Bristol School of Medicine and graduated as M.D. at London University in 1848. When St. Mary's Hospital was founded he was appointed obstetric physician and lecturer on obstetrics and taught there for the allotted term of twenty years. "He was long engaged upon the editorial staff of THE LANCET, at first only as an occasional contributor, but soon as one of its sub-editors. Among his contributions were valuable papers 'On Quacks and Quackery' and a series of biographical sketches of the leading physicians and surgeons of the metropolis." His Manual of Obstetrics published in 1858 immediately became, and long remained, the favourite textbook in this country. He raised the position of obstetric medicine, not only by his teaching, oral and written, but by the foundation of the Obstetrical Society of London, of which he was elected President in 1860. He died in 1873. John Snow was born at York in 1813 and studied medicine in London. In 1838 he was admitted a Member of the Royal College of Surgeons of England and in 1844 he graduated as M.D. at London University. To him is due the theory that cholera is communicated by means of a contaminated water-supply, and his essay upon the Mode of Communication of Cholera, which was first published in 1849, was awarded by the Institute of France a prize of £1200. In 1846 he demonstrated the use of ether as an anæsthetic in St. George's Hospital and the ether practice in London came almost entirely into his hands. He also administered chloroform to the Queen at the birth of Prince Leopold in 1853 and again at the birth of Princess Beatrice in 1857. He died in 1858.

Two names of medical men who have won a purely literary celebrity deserve to be mentioned. Albert Richard Smith, son of a surgeon, was born in Surrey in 1816, studied at the Middlesex Hospital, and became qualified in 1838 as M.R.C.S. Eng. and L.S.A. He commenced medical practice but was soon diverted from it to the writing of numerous novels, sketches, dramas, extravaganzas, entertainments at the Egyptian Hall, contributions to *Punch*, &c. He died in 1860. Tobias George Smollett was born in 1721, near the town of Bonhill, Dumbartonshire, studied medicine at Glasgow University, and after serving four years as a surgeon in the Royal Navy settled in practice in London. His first novel, "Roderick Random," appeared in 1748; his second, "Peregrine Pickle," in 1751; and his third, "Ferdinand Count Fathom," in 1753. In 1770 he took a house near Leghorn, where "Humphrey Clinker" was written the same year, and where he died in 1771.

LIBRARY TABLE.

A Treatise on the Science and Practice of Midwifery. By W. S. PLAYFAIR, M.D. Edin., LL.D. St. And., F.R.C.P. Lond. Ninth edition, with over 200 Illustrations and 8 Plates. Two vols., demy 8vo. London: Smith, Elder and Co. 1898. Price 28*s*.—It is pleasing to see from the appearance of a ninth edition of Playfair's Midwifery that this favourite and well-known text-book still holds its own amongst the numerous competitors with which at the present time it has to contend. The reason is, however, not far to seek when we see how thoroughly this new edition has been brought up to date. The author has been fortunate in accomplishing this without unduly increasing the number of pages, only some 36 having been added to the whole, so that the work still retains its handy form and size. Two new plates and some 17 new illustrations have been introduced. The plates are one of a section of the frozen body towards the termination of the second stage of labour, after Barbour, and one illustrating streptococci, after Bumm and Crookshank. Dr. Playfair has secured the valuable assistance of Dr. Eden in revising the section upon Conception and Generation, and the outcome is a chapter of great interest, including the results of all the most recent work upon the subject. Amongst other changes we note that the treatment of cases of ectopic gestation has been revised in accordance with the latest views. The author is in favour of treating cases where the tube has ruptured extra-peritoneally and where operative interference is called for by Kelly's method of vaginal incision followed by plugging of the cavity with iodoform gauze, and subsequent irrigation with antiseptic lotions. In the chapter upon Ovarian Tumours causing Obstruction during Labour Dr. Playfair quotes Dr. McKerron's recent paper upon the subject, and while in the main agreeing with his conclusions thinks that in cases of small tumours vaginal extirpation might often be possible. The cases recently reported of vaginal Cæsarean section followed by total extirpation of the carcinomatous uterus at full term show that tumours of considerable size can safely be extracted in this way owing to the great relaxation of the passages which occurs in connexion with pregnancy. It is possible, therefore, that vaginal ovariotomy may turn out to be a successful mode of treatment where small ovarian cysts impacted in the pelvis are causing obstruction to labour.

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In Dr. McKerron's paper 3 cases treated in this way are recorded, all of which recovered. Many other portions of the text besides those which we have noticed bear evidence as to the care with which the whole has been revised, and the book well maintains its reputation of being one of the most readable and reliable works upon the subject of which it treats.

Elements of Sanitary Law. By ALICE RAVENHILL, Lecturer to the National Health Society. With an Introduction by Sir RICHARD T. THORNE. London: The Sanitary Publishing Co. Price 6*d.*—This is an unpretending little pamphlet of 44 pages containing various provisions from the Public Health Acts set out in plain and simple language. All the references are given so that authority for the statements can be easily looked up if necessary. Our sanitary laws are very good as a whole and the only fault we have to find with them is that in too many cases they are permissive, that is to say, the sanitary authorities are told that they *may* do this or that instead of *must* do it. Concerning one form of negligence which has been much in evidence of late, the magistrates have shown a weakness in convicting or, if they have convicted, have inflicted ridiculously light penalties, which is certainly not the way to get the nuisance abated. Miss Ravenhill has done a very good work in thus laying before the ordinary citizen the rules and regulations which make, if properly carried out, for his health.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) GRANULATED GLYCERO-PHOSPHATES (ROBIN); (2) KOLA BINSCE; AND (3) PEPTONATE OF IRON (ROBIN).

(AGENCY: C. JOZKAU, 49, HAYMARKET.)

As is well known, the glycero-phosphates in the form of calcium and sodium salts have been administered with excellent results in improving the general nutrition of the nervous system. Lecithin yields on suitable chemical treatment and by the process of digestion also the calcium salt of glycero-phosphoric acid and this has doubtless suggested its value in neurasthenia and as a specific restorative in general debility. The preparation described above occurs in granular form and contains both sodium and calcium salts. It is a beautifully white, clean, crystalline powder, which is quite stable in character. It possesses a slightly sweetish taste. Chemically pure glycero-phosphate of lime may be had also in the form of tablets which are slightly effervescent. Each tablet contains about 5 gr. of the salt. "Kola Binsce" is essentially a granulated preparation of the glycero-phosphates which, however, in addition, contains an important amount of the active principles of the kola nut. We found that by extracting the compound with chloroform a distinct quantity of caffeine was obtained. This is to some extent a proof of the statement that kola nut is part of the combination. The grains are delicately coffee-coloured. According to the formula "kola binsce" should be a valuable tonic combination. Peptonate of iron is well known and the preparation submitted to us gave evidence of care in its elaboration so as to exclude the objectionable properties common to the ordinary iron salts. Pure peptonate of iron is not astringent and does not disturb the digestive functions and while it is known as the most easily assimilated form of iron it does not produce constipation.

KLOESTERLE MINERAL WATER.

(FIEBER BROTHERS, 14, MINCING-LANE, E.C.)

Kloesterle water is drawn from a spring near Carlsbad, Bohemia. It contains a slight excess of free carbonic acid gas and a notable proportion of alkaline salts, with which is lithia in small but distinct quantity. The proportion of common salt is small and does not exceed 0·064 gramme per litre. The alkalinity of the water is equal to 1·26 grammes of carbonate of soda per litre. Carbonate of soda indeed is the chief constituent, the lime and magnesium salts occurring in trifling quantities. It is on this account probably that the water is so peculiarly soft to the palate. The saline residue obtained on evaporating a few ounces of the water gave a marked lithium line when examined spectroscopically. The water presents an interesting composition and is quite free from organic matter. It ranks with those alkaline carbonated waters of which a course is known to be useful in certain gastric disorders, while it also exercises a beneficial action on the urinary functions.

VICTORIA VIOLETS SOAP.

(EVANS GADD AND CO., 97, 98, 99, AND 100, FORE-STREET, EXETER.)

The materials in this soap are well chosen, pure and combined in proper proportion. We could trace no injurious ingredients or foreign substances, minute tests for the presence of free alkali being attended with negative results The soap is stained apple green and possesses an agreeable odour of violets. It lathers somewhat freely and is pleasantly emollient.

FALIÈRES PHOSPHATINE.

(AGENCY: 64, HOLBORN-VIADUCT, E.C.)

Though so far little known in this country this preparation appears to have been employed as a valuable infants' and invalids' food on the continent. It is essentially a farinaceous food prepared by a special process which adds to its digestibility and it is enriched by the addition of very finely comminuted phosphate of lime and is finally sterilised. According to our analysis its composition is as follows: moisture, 9·66 per cent.; mineral salts, 1·16 per cent.; nitrogenous constituents, 9·0 per cent.; dextrine sugars and soluble starch, 35·03 per cent.; insoluble starch, cocoa, &c., 41·53 per cent.; and fat, 3·62 per cent. Over one-third part therefore is soluble in cold water, a result which is largely due to the action of careful baking. The flavour is somewhat sweet with a suggestion of cocoa and vanilla. The statement is quite correct that the phosphate of lime is present in a highly comminuted form and in such a condition as to offer no difficulty to assimilation. Added to milk it affords a food admirably adapted for the requirements of infants. Phosphatine, in fact, supplies just those important elements in nutrition upon which the proper growth and development of infants so much depend.

HOOBA DIGESTIVE TEA.

(THE HOOBA TEA CO., DUNSTER HOUSE, MINCING-LANE, E.C.)

Why this tea is described as "digestive" we are not certain. It yields normal results of analysis and apparently has undergone no special treatment. The mineral matter was quite an average amount, being 5·5 per cent. The alkalinity of the ash was equal to 1·53 per cent. calculated as potash K_2O. On complete exhaustion with hot water the astringent matters given up were normal in amount. An infusion prepared in the ordinary way was agreeable and delicate in character and free from the harsh properties of powerful Indian tea. It is a good specimen of tea and probably a specially selected leaf, but we do not consider that it possesses properties of a more "digestive" character than choice Ceylon or China growths.

(1) RIOJA BRILLANTE PALOMA (RED WINE); AND (2) LAS NAVAS (WHITE WINE).

(P. DE OTADUY AND CO., 20, HIGH HOLBORN, W.C.)

On analysis these specimens of Spanish wine gave the following results:—Rioja Brillante Paloma: extractives,

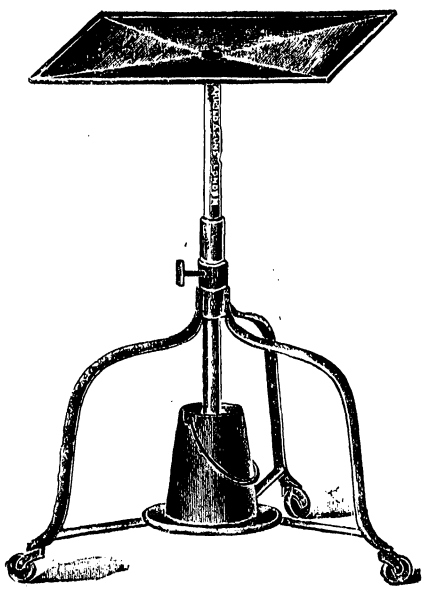
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1·66 per cent.; mineral matter, 0·21 per cent.; tartaric acid, 0·72 per cent.; acetic acid, 0·15 per cent.; sugar, 0·10 per cent.; alcohol, by weight 9·36 per cent., by volume 11·61 per cent.; equal to proof spirit, 20·35 per cent. Las Navas: extractives, 1·65 per cent.; mineral matter, 0·22 per cent.; tartaric acid, 0·53 per cent.; acetic acid, 0·19 per cent.; sugar, 0·31 per cent.; alcohol, by weight 13·15 per cent., by volume 16·24 per cent.; equal to proof spirit, 28·46 per cent. There can be little doubt of the purity of these wines. They are quite sound in character, practically free from volatile acidity, and somewhat "full-bodied," but devoid of any excess of sugar. In this regard the red wine is practically free, while the white wine contains an insignificant amount. Neither is an old wine, but both promise an excellent development. The red wine, from the point of view of alcoholic strength, is lighter in character than the white wine. Spain is a country with a prolific production of grapes, and the above specimens are representative of some amongst the excellent and genuine wines which are now imported to this country and which are deservedly increasing in popular favour.

New Inventions.

A SURGICAL DRESSING-TABLE.

MESSRS. ARNOLD AND SONS have made an antiseptic surgical dressing-table at my suggestion for use in the consulting-room as well as in the operating theatre. It is constructed throughout of enamelled iron and runs easily on rubber-tyred wheels. The table can be raised or lowered to a convenient height and fixed in the required position by a screw. It is drained somewhat like a post-mortem table, and



all fluid passes down a central tube into a convenient receiver which can readily be removed. In private practice one has often to attend to surgical cases; and for dressing wounds and in minor operations I have found the table very convenient. In the operating-theatre it can be run alongside the operating-table and raised to any convenient height for the requirements of the surgeon or his assistants. I think it would be found very useful for military hospitals and on field service, as it can be easily carried about and is practically unbreakable. It can be made in various sizes.

HERBERT W. G. MACLEOD, M.D., M.S. Edin.,
Streatham, S.W. Late Her Majesty's B.M.S.

THE MEDICAL SCHOOLS.

SCHOLARSHIPS AND PRIZEMEN.

Charing-cross Hospital Medical School.—The following Entrance Scholarships have been awarded: Livingstone Scholarship (100 gs.), to Mr. G. E. Bellamy; Huxley Scholarship (55 gs.), to Mr. B. R. Bickford; and Universities Scholarships (each 60 gs.), to Mr. H. C. Gabb and Mr. B. G. Fiddian. Entrance Scholarships have also been awarded to Mr. R. H. Cooper (60 gs.), Mr. D. M. Davies (40 gs.), and Mr. T. Law (30 gs.), and Exhibitions of 30 gs. each to Mr. A. C. Ingram, Mr. G. O. Lambert, and Mr. B. R. Lloyd.

Guy's Hospital Medical School.—The following Entrance Scholarships and Certificates have been awarded: Scholarship for University students: Mr. H. S. French, Christ Church, Oxford, £50; Mr. E. J. Claxton, King's College, Cambridge, Certificate. Open Science Scholarships: Mr. E. H. B. Milsom, Guy's Hospital Medical School, £150; Mr. F. Rogerson, Guy's Hospital Medical School, and Mr. N. J. Spriggs, private study, equal, £30 each; Mr. H. D. Smart, Guy's Hospital Medical School, Certificate; and Mr. H. S. Brown, Guy's Hospital Medical School, Certificate. Open Arts Scholarships: Mr. R. F. MacDonald, Bancroft's School, £100; Mr. W. G. Taylor, Aberdeen University, £50; Mr. J. W. Walton, Folkestone Grammar School, £30; Mr. G. Hamilton, Aske's School, New Cross, Certificate; Mr. G. A. Horton, University Tutorial College, Certificate; and Mr. J. James, St. Bees School, Certificate.

London Hospital Medical College.—The following are the results of the examinations for the Entrance Scholarships: Price Scholarship, £120, Mr. F. W. Jones; Epsom Scholarship, £126, Mr. Colmer; Price University Scholarship, £60, Mr. Bousfield; Science Scholarship, £60, Mr. J. W. Fox; and Science Scholarship, £30, Mr. Rainforth.

Middlesex Hospital Medical School.—The First and Second Entrance Scholarships have been awarded to Mr. W. Cameron Macaulay and Mr. William Gordon Taylor, M.A., respectively. The Leopold Hudson prize and the Lyell gold medal have been awarded to Mr. A. J. Knowlton; the Hetley clinical prize to Mr. P. Gardiner and Mr. B. H. Slater; and the John Murray gold medal and scholarship to Mr. C. G. Pugh. Mr. H. R. Dutton, Mr. C. E. Lakin, Mr. C. H. Reisman, and Mr. C. G. Pugh have been elected Exhibitioners.

St. Mary's Hospital Medical School.—The following Entrance Scholarships have been awarded:—Natural Science: Mr. E. W. C. Bradfield, £144; Mr. N. T. Spriggs, £78 15*s.*; Mr. H. A. Haig, £78 15*s.*; Mr. J. H. Burgess, £52 10*s.*; and Mr. E. L. Ash, £52 10*s.* University Scholarships: Mr. H. E. Corbin, B.Sc., £57 15*s.*; Mr. W. H. Clayton Greene, £57 15*s.*; and Mr. W. V. Shaw, B.A., £57 15*s.*

St. Thomas's Hospital Medical School.—The First Entrance Scholarship and the William Tite Scholarship have been awarded to Mr. W. H. Harwood-Yarred the University Scholarship to Mr. F. C. Eve, and the Peacock Scholarship to Mr. C. N. Sears. Entrance Scholarships have also been awarded to Mr. Charles Michael Roberts, Scholarship, £150; Mr. Harry Mellor Woodcock, Scholarship, £60; Mr. Charles Hugh Latham, Exhibition, £20. The Mead Medal for Practical Medicine to Mr. E. F. Buzzard, the Cheselden Medal for Surgery to Mr. S. O. Bingham, and the Bristowe Medal for Pathology to Mr. A. D. Sikes. Medals have also been awarded to Mr. C. W. Pilcher, Mr. A. Bevan, and Mr. H. E. Hewitt.

University College, London.—The following Medical Entrance Scholarships have been awarded: Mr. H. A. Haig, 131 guineas; Mr. M. Stewart Smith, 55 guineas; Mr. W. M. Sadler, 55 guineas.

DEVON COUNTY ASYLUM.—There were nearly forty applications for the appointment of medical superintendent to the Devon County Asylum, Exminster, rendered vacant by the resignation of Dr. Symes Saunders. Six of this number were selected, and finally Mr. Arthur Nathaniel Davis, L.R.C.P., L.R.C.S., L.M. Edin., who has for the last seven years been medical superintendent of the Plymouth Borough Asylum, Ivybridge, was appointed.

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THE LANCET.

LONDON: SATURDAY, OCTOBER 8, 1898.

IT was a happy inspiration which led the authorities of Charing Cross Hospital to invite Professor VIRCHOW to deliver the Huxley lecture on the occasion of the opening of the medical session. They could not have better honoured the name of the eminent man whose medical education was obtained in their institution than by linking it in this manner with that of the foremost living exponent of pathological science. HUXLEY, whose life was devoted to the search after truth, whose keen intellect dispersed so many dogmas and illumined the obscure places of biological problems, and whose strenuous and single-minded advocacy did so much to establish the most notable scientific conception of his time; and VIRCHOW, whose name and fame have been known to all the world for more than half a century as those of one who, gifted like HUXLEY with more than common insight, applied the teachings of biology to the elucidation of morbid processes and effected for pathology as great a change almost as Darwinism did for the science of life,—it is well that these two names should thus be brought into conjunction; whilst on many other grounds there could not be found one better fitted to give such a lecture than Professor VIRCHOW, whose wide knowledge and liberal sympathies entitle him to speak with an almost unique authority on the progress of medical science. For who is there among us who can tell of his own knowledge the wondrous tale which has been unfolded before the eyes of this master during the years in which he has been engaged in scientific investigation? Nor has he been a mere passive onlooker whilst the tide of discovery has been bringing fresh treasures to his feet. All the world knows that had it not been for Professor VIRCHOW pathological science would have remained in a state of crudity and of vague speculation. The fundamental idea of the "cellular pathology" which he promulgated awakened a new interest in, and gave a new meaning to, morbid processes. It remains essentially unshaken to the present day, although in matters of detail modifications have been made from time to time, many of these accessions to knowledge having been made by men directly inspired by Professor VIRCHOW himself.

Our position to-day in regard to this question is that it dominates all our views of organic life. We can no more conceive of organised structures, exhibiting vital phenomena, whether the simplest or the most complex, without reference to the "cell" as the unit, than we can conceive of the sun apart from light and heat. Nevertheless, the biologist and the pathologist are bound to confess their inability to solve the whole problem of existence. It was much, very much, to impress on the imagination the fact that the cell is the simplest form in which life is manifested; that the changes wrought in the organism by disease can be referred to changes in which these ultimate living elements take part, but the nature of life itself baffles the keenest intelligence. Professor VIRCHOW alluded to the overthrow of the theory of "free-cell-formation," which, as he said, amounted to a revival of the older doctrine of spontaneous generation. He defined the organism as a "social" not an "individual" mechanism, made up of cells themselves composed of inert chemical substances; but he did not pretend to say—and herein we have the best example of the ignorance of the wisest—to what the cell owes its life. All we do know and all we can say is that since life first appeared on this earth there has been a continuous and unbroken ever-extending chain of living elements derived from pre-existing elements similarly endowed. The application of the doctrine to pathology was, as we have said, Professor VIRCHOW'S great service, and nowhere has it been more surely confirmed than in the domain of new growths. It may be that the actual cause of these abnormal and destructive formations will some day be discovered; but whatever it be it cannot upset the certain knowledge which we have of their intimate structure and their origin from pre-existing elements in the body. That the problems of hereditary transmission, whether of actual characteristics or deformities, or of tendencies to disease, are better explained by virtue of the potencies contained within the parent cells than by any fancied changes in the blood or fluids of the body, can hardly be questioned. These fluids are but the media whereby the tissue cells obtain their nutriment and whereto they part with their products. The cells themselves are the active and living entities which exist in the ovum before the formation of blood and lymph and are directly derived from the two sexual elements without the conjunction of which no new organism can be built up.

Perhaps the most interesting portion of this lecture—if one part could be said to be of greater interest than another—was the exposition of parasitism and the great extension which has been given to this in the discovery of the minute parasitic agents which excite the infective diseases. Professor VIRCHOW did well to remind us that the reaction of the tissues and organs to the bacterial poisons forms an essential part of these diseases, and he, perhaps wisely, bade us remember that there may be some infections in which bacteria have no share. But to the incalculable gains to humanity arising from the recognition of these agencies he bore ample witness, and instanced the work of LISTER and the introduction of serum therapeutics as evidence of this. We must not conclude without expressing our gratification that Professor VIRCHOW should have selected this theme for his address, which is sure to dwell in the memory of the young students who formed the essential part of his audience. Certainly they could have no better examples to follow in their pursuit of medical science than those set by HUXLEY and VIRCHOW.

THE military despatch of Lord KITCHENER of Khartoum on the battle of Omdurman was published last week in the *London Gazette*, accompanied by one from Sir FRANCIS GRENFELL, the General Commanding in Egypt, and an Order from Lord WOLSELEY, the Commander-in-Chief. The

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General Officer Commanding in Egypt having previously held the post of Sirdar of the Egyptian Army, and having had ample experience of Soudan warfare, was peculiarly fitted to form a correct estimate of the difficulties which his successor had to encounter and of the admirable skill and success with which these had been overcome. Sir FRANCIS GRENFELL tersely sums up the subject and the situation, together with the impression he had derived from the perusal of the despatch describing the latest phases of the Soudan campaign and the final action on Sept. 2nd last. The Sirdar, he says, in his despatch recounts in brief, simple terms the events of the closing phase of one of the most successful campaigns ever conducted by a British general against a savage foe, resulting in the capture of Omdurman, th destruction of the Dervish power in the Soudan, and the reopening of the waterway to the equatorial provinces.

The Sirdar in all he did was thorough. He had, no doubt, already had experience of the tactics and fierce intrepidity of his foe and an intimate knowledge of the country, but what was perhaps more to the purpose he possessed the initiative capacity and judgment requisite to turn these to the best account. Having left nothing to chance it appeared that the campaign would be run with the regularity of machinery; and, that being the case, he foresaw and boldly declared what the end would be—and he was right!

It is eminently gratifying to find that a general has been found endowed with such high military qualities and the necessary force of character to have the courage of his opinions, endowed at the same time with a spirit of justice and even generosity in regard to all those who had so largely contributed to the success of his undertaking. Nor should it be forgotten that, from a political standpoint also, he has apparently acted throughout with excellent discretion and judgment. The medical services—British and Egyptian—are to be congratulated on the handsome way in which they are mentioned in his despatch.

"The Medical Department was administered with ability and skill by Surgeon-General TAYLOR, principal medical officer, who was well assisted by Colonel MACNAMARA, whilst the medical organisation of the Egyptian army fully maintained its previous excellent reputation, under the direction of Lieutenant-Colonel GALLWEY and his staff. The general medical arrangements were all that could have been desired and I believe the minimum of pain and maximum of comfort procurable on active service in this country was attained by the unremitting energy, untiring zeal, and devotion to their duty of the entire medical staff."

We are glad to notice that while the zeal and administrative capacity of Surgeon-General TAYLOR, as principal medical officer, are appreciatively recognised, the services of Colonel MACNAMARA are not forgotten, for he had all along laboured hard and well at his work. It was also fitting that Sir FRANCIS GRENFELL, in calling attention to the arduous duties performed by the staff and departments at Cairo, should have included the name of Surgeon-General H. S. MUIR, upon whom much extra responsibility and work must have fallen in connexion with the Soudan expedition. The previous Nile expedition for the rescue of GORDON—the most chivalric figure of this century—at Khartoum was unhappily, as we all know to our cost, unsuccessful. The Egyptian war of 1882 was, however, most successful, and notwithstanding that almost everything had to be sacrificed to celerity of movement on that occasion, the surgical and medical results attained were splendid. Still, the medical service was very differently treated then—"but that's another story." We may allude, in conclusion, to one gratifying feature in the Sirdar's despatch which we do not remember to have seen before—namely, the frequent mention of non-commissioned officers and privates, and among them of men of the Royal Army Medical Corps, in the long list of names appended to the despatch.

DIFFERENT minds will be differently affected by the various discourses upon subjects more or less intimately connected with the medical calling, as given in the Introductory Addresses which we report to-day There certainly is a great variety of topics. Professor MICHAEL FOSTER, to whose address we shall refer on another occasion, restricted himself very much to one point—the nature of a university as distinguished from that of a college or a school. But for the most part the lecturers allowed themselves a free scope, descanting on various subjects, from the value of a "good bedside manner" to the deepest questions of medical science and medical duty. After all, it does not greatly matter on these occasions what particular subject is taken. The medical art is so wide in its relations, it concerns human life so deeply, it so affects States and armies and society itself, it touches so nearly questions of philosophy and morals and politics, that from whatever point of view the introductory lecturer may look at his theme he can scarcely fail to excite interest in his audience and in that larger audience outside, to which many of the addresses are obviously directed. Medical matters are evidently becoming of more and more interest to the public. With all its criticism of the profession and in spite of the tendency of certain minor sections to regard themselves as equal without medical guidance to cope with the problems of disease, whether affecting the nation or the individual, there is a growing perception of the importance of the medical calling and of everything affecting the efficiency of the schools in which its followers are trained.

We do not now attempt to discuss or even summarise all the points raised in addresses of such varied scope, but we select a few which appear to us to be of special interest and importance. We note with much satisfaction that several of the lecturers referred to the subject of over-examination. Sir JAMES CRICHTON BROWNE, who may be supposed to speak on this subject with special authority, spoke of the stupidity manufactured by examinations. Dr. CULLINGWORTH expressed entire agreement with Mr. TEALE'S expressed opinion that the medical student is over-examined. We are sure that students will be grateful to such authorities for speaking so clearly on this subject, though there would have been greater cause for gratitude if some practical remedies for an evil which is now generally admitted had been indicated. The students who are now beginning another session must not count upon any immediate change in the system of examinations which has now grown to such proportions.

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This system cannot be altered in a day or by any individual body; but with a consensus of opinion against it it is certain to be modified. We are not apologists for ignorance and still less for idleness in students. We are under no delusions as to the justice with which many of them are "referred" for further periods of study. But it is clear from the opening addresses this year and from other sources of evidence that Mr. TEALE has a large following in thinking that the existing system of examinations is excessive and injurious. For all fair examination few students will be unprepared who enter into the spirit of the words of the oath of HIPPOCRATES, which might well be hung in the room of every student for the remainder of the session, or, for that matter, for his lifetime. He will attain to no age and to no position in which the spirit of that oath will not be helpful to him. But more modern wisdom than that of HIPPOCRATES will be found in this year's addresses, and the observance of but a fraction of the advice which they contain will make all study interesting and will do much to secure success in practice as well as in examinations. There is a danger, said Dr. VOELCKER, in his address at Middlesex Hospital, of students forgetting their own essential share in the success of their studies. There is a risk in the very care with which every lesson and demonstration is now elaborated for them. Every fact in anatomy and every feature of disease should be ascertained by the observation of the student and not merely read about in a book. The risk of prepared food for infants, with its rachitic results, is not more real than is the risk that work done for students in a way which leaves them no work to do for themselves will destroy their power of working.

Amid much that is dispiriting in the circumstances of the profession and in the attitude of the public it is impossible not to refer to the responsible nature and wide functions of the medical life. These points were very strikingly brought out in the address of Dr. H. A. CALEY, who spoke at length on the preventive as distinguished from the curative function of medicine. People are apt to think that the preventive function applies only to infectious and notifiable diseases. But the duty of the true physician is far wider than this. He must impress upon his patients that degeneration as well as infection can be prevented. Neither will he find this impression easy to convey, for there is a singular want of intelligence in the public in this respect. It will take great pains and go to great expense to arrest the degeneration of a tooth, as Dr. CALEY says, while it will take no thought for the degeneration of an aorta or a kidney. We may hope that with improved education such apathy will not exist and that the public will learn to prize a physician who averts disease as much as it respects him who heals. The more the practitioner fits himself for such high duties, the more in the long run will he be respected by the public and by his patients, and the more will he be differentiated from all quacks and nostrum-dealers.

At St. George's Hospital Mr. TURNER chose a very practical topic. He exposed with much force the abuse of medical charities and denounced with much justice the cult of altruism which is pursued at other people's expense. The question is a very large one and one calling for the serious consideration of hospital surgeons and physicians. We hope that Mr. TURNER and his colleagues will take other opportunities of raising the subject.

Annotations.

"Ne quid nimis."

THE DANGEROUS TRADES COMMITTEE.

A FURTHER blue book containing the third interim report of the Departmental Committee appointed to inquire into, and report upon, certain miscellaneous dangerous trades has been issued. From a glance at the contents of the report it is clear that the committee have not yet inquired into the use of lead in certain arts and of its effect upon the operatives concerned. It may fairly be presumed, since this subject has been brought so prominently into public notice during the last year, that the committee will devote more than ordinary attention to it and extend their inquiries to the potteries. For this they will, we anticipate, await the findings of Dr. T. E. Thorpe and Dr. Thomas Oliver, who have recently been appointed as experts to inquire into the conditions obtaining at the potteries where lead glaze is employed. Dr. Oliver serves also on the Dangerous Trades Committee. The report under notice deals with file cutting, galvanised iron works, sole stitching by American machinery, glass polishing, the use of converters in metal works, the manufacture and use of grindstones, the testing of bottles by compressed air, and the "ending and mending" in velvet works. In regard to the industry of file cutting the committee find that the situation is full of difficulty and complexity. The spirit of the law is now constantly violated, and they venture confidently to recommend legislation on certain lines sketched in the report which, if adopted, will provide a means of adequately safe-guarding the health of persons engaged in this industry. In regard to galvanised iron works the committee do not consider the industry one which should be scheduled as a dangerous trade and while making certain observations they do not think it necessary to recommend special rules for its control. In the same way there is little evidence to show that any specific injury to health is caused by the American method of sole stitching. Several recommendations are drawn up in regard to providing better conditions for the operatives engaged in glass polishing, the chief and perhaps most important of which is that every facility for washing should be provided by the employers and that no man should be allowed to eat his meal without having previously washed his face and hands. The dangers attending the operations connected with the use of converters, as in the Bessemer process of steel manufacture, have been thoroughly gone into. The chief danger appears to be the spilling of molten metal and recommendations guarding the workers against this are drawn up. A considerable proportion of the report is devoted to the dangers of working involved in the manufacture and use of grindstones. Here the chief risk appears to be the "flying" of grindstones of defective composition. Accordingly it is recommended that the stone should be thoroughly tested before being employed for grinding or smoothing purposes. To this end attention should be paid to the detection of cracks and flaws by special means. In regard to the testing of bottles by compressed air the committee have not found any serious record of accident, but they remark that it is desirable that legal powers should be given to Her Majesty's inspectors to require the adoption and use everywhere of gauze veils and

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gauntlets. Lastly, the committee find that the operations attending the "ending and mending" in velvet works are without injury to health, so that the committee have requested and obtained the permission of the Secretary of State to have this trade withdrawn from their reference.

THE WINTER SESSION OF THE MEDICAL SOCIETIES.

DURING the present month the various medical societies of London will reopen their doors. The first to resume will be the Medical Society, the opening meeting of which will take place on Monday, the 10th inst. The newly elected president, Mr. Edmund Owen, will deliver an inaugural address, and Dr. Allchin will read a paper on Some Considerations Preliminary to the Study of Dyspepsia. The secretaries have already secured papers from Mr. Marmaduke Sheild, Dr. Sidney Martin, Dr. Sidney Phillips, Mr. Pearce Gould, and others to be read early in the session. The Royal Medical and Chirurgical Society will open on the 25th inst. under the presidency of Mr. Thomas Bryant. Some important papers are promised but at present no arrangements have been made for any special discussions such as that on enteric fever which attracted such large audiences last session. The Clinical Society will meet for the first time on the 14th inst., when the president, Mr. John Langton, will deliver the opening address which he postponed last year. The second meeting, on the 28th inst., will be a clinical evening. The Pathological Society, with Dr. J. F. Payne for the second time in the chair, will start the work of the session on the 18th inst.

THE INFECTIVENESS OF MILK IMPORTED INTO MANCHESTER.

A REPORT recently presented to the sanitary authorities of Manchester by Dr. James Niven, the medical officer of health, upon the Bacteriological Condition of Imported Milk with Special Reference to Tuberculosis, reveals a very serious state of matters. Samples were taken at railway stations and other places to the number of 100 and of these 93 were carefully examined by Professor Delépine. Of these 93, 17, or over 18 per cent., were proved to be tuberculous. The next step was to examine the condition of the cows at the incriminated farms and the results of the investigation confirmed in a most remarkable way the bacteriological examination. 16 farms were investigated and in 14 of these one or more cows were found to have indurated udders, presumably tuberculous. In a previous report presented to the committee it was mentioned that on the examination of one cow with tuberculin the udder, which had not previously been found to be tuberculous, gave a marked local reaction. It is, in fact, evident that an udder may be infectious and yet give no palpable indications of disease, a consideration which may well explain those instances in which Bang and others have found the milk to be infective without any appreciable disease of the udder. The report goes on to advise the sanitary authorities to apply to Manchester the provisions existing in Glasgow for the safeguarding of the purity of milk. These provisions, which are under the Glasgow Police Amendment Act, 1890, give power to sanitary authorities to enter byres, to compel the owners of cows to assist the medical officer in his investigations, to make it necessary for intimation to be given of diseased cows, and to provide penalties for selling the milk of diseased cows. The question of tuberculosis among dairy cattle is a very serious one. Although we have had a Royal Commission on the matter the only person who appears to have even attempted to act upon it is Lord Vernon. Medical officers all over the country are agreed upon the necessity of steps being taken to minimise the plague, and we may well ask, if a small and poor country like Denmark can do what she has done to stamp out tuberculosis in cattle, why should not Great Britain and Ireland do the same?

COMPARATIVE LONGEVITY IN THE COUNTRIES OF EUROPE.

ACCORDING to the *Bulletin Général de Thérapeutique* the average duration of life amongst the chief nations of Europe is as follows, the figures being based upon the bills of mortality for the decade 1881-90: Sweden and Norway, 50 years; England, 45 years and 3 months; Belgium, 44 years and 11 months; Switzerland, 44 years and 4 months; France, 43 years and 6 months; Austria, 39 years and 8 months; Prussia and Italy, 39 years; Bavaria, 36 years; and Spain, 32 years and 4 months.

STREET RUFFIANISM.

HOOLIGANISM has culminated, as is only natural, in murder. Early on the morning of Oct. 2nd a policeman on point duty near the Regent's Canal heard sounds of quarrelling in Wilmer-gardens. On proceeding to the spot he found a crowd of persons angrily disputing. Picking out an apparent ringleader he attempted to arrest him, when a man promptly stabbed him. Two more policemen then came up and arrested the alleged assailant. The injured constable was taken to the Metropolitan Hospital where he died. Tinkering with this sort of thing is no use. Short, sharp, and decisive measures are necessary; the police should be better armed, with revolvers if necessary. In all cases of brutal assault, whether on ordinary citizens or the police, magistrates should have power to order—or rather should be compelled to order—a sound flogging. Amusements, free drinks, free libraries, free education, six months' holiday at the seaside paid for by people who work, and other softening influences, may possibly be considered at a later date; but in the meantime the wild beasts of London should be treated as harmful animals are elsewhere and suppressed. In saying this it must not be supposed that we are insensible to the lack of healthy amusement for portions of the community which is evident in London. Mrs. Ormiston Chant points out in a very sensible letter in the *Times* of Oct. 4th that there is no reason why a "hall" should not supply a bright, cheerful, and elevating entertainment. Everyone will allow that within the last twenty years the standard of entertainment by the halls has been enormously raised. Mrs. Chant's plea for a good and cheap restaurant to be opened in connexion with a music hall is a very good one. But before ameliorating the ruffian's general condition he must be made to understand by the medium of bodily suffering that "Hooliganism" will not be allowed any longer.

INFANTILE DIARRHŒA.

AN article on the Summer Diarrhœa of Infants by Dr. G. Variot in the *Journal de Clinique et de Thérapeutique Infantiles* of Sept. 22nd derives an especial interest from the prevalence of that disease during the recent hot weather. The writer, as might be expected, has limited his attention practically to one form of diarrhœa, that which is associated with lactic fermentation and which is naturally most prevalent during a warm summer or the after-glow of a mild autumn. It is true that Dr. Variot's views on the influence of a high external temperature are at least novel, since he regards the pathological changes in the intestine which give rise to this form of diarrhœa as due to actual insolation. He believes that those changes are thus produced in the case of infants nourished on sterilised milk as well as in those fed on milk not sterilised and even in

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those suckled at the breast. He admits nevertheless that the loose motions observed in the last case are unattended by any of the local or general distress associated with fermentative or choleraic diarrhœas. The main argument in his paper, moreover, is employed to promote the use of cows' milk sterilised by heat as opposed to that not so treated where the breast is not available, and this on the ground of its freedom from morbific organisms prior to its use. In support of this argument he quotes a series of 110 recorded cases of diarrhœa in children fed on sterilised milk which gave a total mortality of 9. He considers that even that low figure should not have been reached had the children, out-patients at a dispensary in Paris, been tended by their parents with a more intelligent accuracy and amid sanitary surroundings. He alleges that the majority of fatal cases occurring under his care at the Hôpital Trousseau were patients brought up on ordinary sterilised milk. From these facts he draws the only possible conclusion—namely, that any approach to certainty in the prevention of infantile diarrhœa can only be attained by sterilisation of the milk used. Exposure to a temperature of 115°C. will suffice for this purpose, but 100°, which is with many the customary standard, will not suffice. Unfortunately sterilised milk is somewhat expensive, but its place may commonly be filled with little if any risk to the consumer by ordinary milk delivered fresh and boiled. It is also to be remembered that however sterile the milk may be it is constantly liable to contamination by the feeding-bottle or other vehicle of administration. The importance of keeping this thoroughly cleansed, of using different bottles alternately, of frequently boiling them and any tubes attached to them, can be hardly exaggerated. We are pleased to observe, as a result of constant reiteration by medical men and other instructed persons, a marked extension of knowledge on this subject. To this more than to any other agency we must look for the prevention of what is probably the most deadly scourge of infant life. Whatever importance we may attribute to the action of heat on the body or to variations in subsoil moisture it is, we believe, indisputable that such influences operate—certainly as a rule—not on the body itself so much as by vitiating the natural food of infancy.

THE NICE ADJUSTMENT OF CORPORAL PUNISHMENT.

IN the *Times* of Oct. 4th there is a short letter by an anthropologist who thinly veils his identity under the initials "F. G.," pointing out that in estimating the amount of pain inflicted by corporal punishment it must be borne in mind: (1) that the worse the criminal the less sensitive he is to pain; and (2) that the pain produced does not vary with the force of the blow, but "approximately, according to Weber's law, four times as heavy a blow only produces about twice as much pain." "F. G." does not state what conclusions or modifications of existing practice should be deduced from this, but we may be allowed to point out a fallacy with regard to each of the points which he raises. It is quite true that the habitual criminals and degenerates studied by Lombroso were proved to be less sensitive than normal individuals, but we doubt if the after-part of a boy who for amusement risks wrecking a train by placing stones on the line is less sensitive than that of his better-behaved schoolmates. And there are many first offenders who would certainly feel a whipping as acutely as any average man. With regard to the deduction from Weber's law, even assuming that the law holds with stimuli of such intensity, "F. G." seems to be thinking merely of the sensation produced by the contact of the birch or "cat" with the skin. But every boy who has been caned knows that the after-smart is a very serious item in the punishment, and with the heavier blows, owing to the injury of the deeper tissues and the resulting inflammation, the total amount of suffering produced would certainly be greater than that theoretically deduced by an application of Weber's law. The frequent use of the "cat," on account of the injuries and lacerations it produces, is repugnant to modern ideas, but a cane or a good birch wielded by a strong arm will inflict very severe punishment without serious risk of injury. We fear that physiological psychology has not advanced sufficiently to enable even an expert to adjudge so many units of suffering, and at present the matter may safely be left to the common sense and discretion of the judges and magistrates, who might wisely, we think, have a much wider discretion in the matter than they at present possess.

THE PLAGUE IN INDIA.

WE regret to state that there is at the present time no sign of improvement in regard to bubonic plague in India. According to the latest telegrams the plague returns for the week ending Oct. 1st show a serious recrudescence of the disease in Bombay city, 209 deaths being reported, as compared with 127 in the previous week. In Bombay Presidency the number of deaths increased from 3000 in the previous week to 4000, chiefly in Dharwar, Belgaum, Satara, and Kolhapur. Calcutta is free, and only one death is reported from Karachi, but the plague is becoming epidemic in Bangalore city, where 124 deaths have occurred. 3 cases are reported from Hyderabad State, 3 from Wallunden in the Punjab, and 16 in 4 districts of Madras. The quarantine and severely repressive measures which have been favoured hitherto have, as we all know, given rise to a great deal of native discontent and opposition, and as they have not been attended with the successful results which were anticipated or hoped for, the Government of India has had to relax them. The progress of the epidemic in India is conforming to what has been the history of plague elsewhere in the past and in China, the enforcement of land quarantine is attended with serious hardships and is, moreover, simply impracticable; the natives would prefer to run the risk of contracting plague to submitting to the severely repressive measures hitherto enforced. As a matter of policy the Government is justified in relaxing them under the circumstances in which it is placed.

THE FIFTH INTERNATIONAL CONGRESS OF HYDROLOGY, CLIMATOLOGY, AND MEDICAL GEOLOGY.

THIS Congress was held during last and part of the present week at Liége (Belgium), under the patronage of H.R.H. the Crown Prince of Belgium and the presidency of M. de Bruyn, Minister of Agriculture. The Congress was well attended by representatives of various nationalities. Many important communications were read and discussed in the various sections, but the most interesting was a conference given before the whole Congress by Walthere Spring, the distinguished Professor of Chemistry at the University of Liége, on the Colours of Natural Waters, in which he showed experimentally that the true colour of pure water is blue, as in the Lake of Geneva, and that this colour is the colour proper to the water and is not due to a mere reflection from the surface or to suspended particles in the water; and that when pure water has a very slight cloudiness due to the presence of finely divided nearly white or colourless particles in suspension, even if these are absolutely colourless, as in the case of very finely divided rock crystal, a yellow tint is given to the water, which, together with the natural blue proper to the water itself, produces a green colour, as in the cases of the lakes of Neufchatel and of Constance. He remarked that

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it had been noted by various observers that the waters of certain lakes ordinarily green became occasionally absolutely colourless, and this he showed was due to the washing into the lakes of a fine mud of a reddish tint, due to oxide of iron, which neutralised the green colour of the water, rendering it for the time being perfectly colourless. Interesting excursions were undertaken to view the bathing establishments and sanitary arrangements of Ostend and Middlekerke, Spa, Chaudfontaine, and Aix-la-Chapelle. The Sanitary Institute was represented at the Congress by Dr. Corfield, the Professor of Hygiene and Public Health at University College, London, who was elected an honorary vice-president of the Congress and was also appointed the English member of an international committee which was formed for the purpose of inquiry into the means to be adopted for the preservation of the purity of the sources of natural mineral waters.

RAIN-MAKING.

THE drought still continues but the bright clear sky during the present week has disappeared, very little sunshine has been recorded, and the British Isles have been wrapped in clouds. But the clouds seem loath to part with their load of precious water, a reluctancy which must be most exasperating to water directors and water engineers. The atmospheric pressure is high and the conditions have been such as to militate against the coalescing and ultimate descent of the particles of water which are so near at hand in large quantity and yet apparently beyond realisation. Scientific research has not been, so far as we are aware, seriously turned to the possibility of tapping the clouds, but in these days when it is considered feasible by the leaders of science to derive the food of man indirectly from the air the suggestion is not so absurd as it might seem. Ordinary raindrops are formed by the coalescing of a number of the smaller particles which compose cloud. Can, therefore, no means be devised of effecting this coalition, of uniting the smaller particles into particles which at length become so large as to drop to the earth in the form of a blessed rain? The water companies might devote a sum of money towards the practical investigation of this matter or at any rate might institute a committee of inquiry of scientific men with a view to discussing the possibility of being able to induce a result on the lines indicated.

THE COMPARATIVE ETIOLOGY OF DIPHTHERIA.

THERE is no section of comparative pathology of such great importance to the medical practitioner as that which deals with the interchanges of disease between man and the lower animals. A series of observations recently collected by the French Conseil supérieur d'Hygiène and quoted in the *Journal de Clinique et de Thérapeutique Infantiles* of Sept. 22nd, 1898, is therefore of particular interest. The subject under examination is diphtheria and the facts recorded are at least significant. From these it appears that the cat is especially liable to contract this disease and is also necessarily a ready medium for its propagation. Other animals, however, are also liable to it. Thus Gerhardt relates the case of a number of fowls imported into a village near Baden which on arrival developed signs of a disease resembling diphtheria, half of them dying from it. 4 cats which lived among them died from the same disease and 4 out of 6 attendants at the poultry farm suffered severely in like manner. No case occurred in the village itself. Another case is mentioned by Dr. R. Jacobi in which 5 children had diphtheria and 3 kittens which had played with them during their illness died with false membrane on the pharynx. In another instance recorded by Dr. Bruce Low a cat appeared to have carried diphtheria to children. It is noteworthy that the bacillus of Klebs and Löffler cultivated by these observers in the rabbit has given rise to the usual signs of diphtheria, including the subsequent paralysis, and that the observations of Klein on the cat have confirmed their results. Such facts as these are certainly not without meaning when we consider to how large an extent the lives and habits of children are associated with those of their various domestic pets. They may also serve to explain the occurrence of some sporadic cases of diphtheria for which no recognisable cause can be found, but where it is learnt after a time that a sick rabbit or cat was being nursed for a time before the child's illness appeared. It would seem also that in some cases a connexion exists between the yards or kennels in which animals are housed and the occurrence of tonsillar sore-throat in adjacent dwellings. We would commend these considerations to the attention of practitioners and of local sanitary officials, more especially since that which happens in the propagation of diphtheria probably occurs also in the case of other infectious diseases.

THE OUTGOING LORD MAYOR.

WE wish to add a few words to the vote of thanks which the Corporation of the City of London has accorded to Lieutenant-Colonel H. D. Davies, M.P., Lord Mayor, on the occasion of the election of his successor, Sir John Voce Moore. The Lord Mayor in his reply to the thanks of his brother aldermen modestly omitted reference to his hospitality at the Mansion House, but there is one circumstance about this hospitality which calls for a few words of reminiscence. By the medical profession the year of office of Lieutenant-Colonel H. D. Davies, M.P., will be remembered as the year when the City of London through their Lord Mayor publicly honoured the medical profession by inviting to dinner at the Mansion House the presidents of the Royal Colleges and other representative members of the medical profession. This was the first time that the medical profession had received attention from the chief magistrate of the City of London and we owe Lieutenant-Colonel Davies thanks for the precedent and for his graceful hospitality.

COMPLETE RUPTURE OF THE TRACHEA.

AN instance of this rare lesion occurred recently in a man, aged seventy-three years, who was struck by a lift on the back of the head as he was looking down the shaft, with the result that he was knocked down, breaking his sternum. He survived the accident in St. George's Hospital fourteen days, and at the necropsy it was found that the trachea was torn completely across. Although the injury is very rare many cases have been recorded in medical literature. The cause of the accident has generally been a severe blow or the passage of a cartwheel over the throat; in one case it was due to a forcible bending backwards of the head. Urgent dyspnœa and much subcutaneous emphysema are the usual symptoms and death generally occurs within a short time, but, though death is the common termination, recovery has ensued in at least 3 cases—in 2, recorded by Lang and Wagner, without tracheotomy, and in 1, recorded by Lauenstein, in which the trachea had to be opened. It is not improbable that in the case referred to above the fatal result was due to the other injuries sustained rather than to the rupture of the trachea.

PROFESSOR KOCH ON MALARIA.

OUR Rome correspondent writes: "After forty days' unremitting work in the clinical offices of the Santo Spirito Hospital and in the laboratories of the Public Health Department, Professor Koch, on Saturday evening (Oct. 1st), took grateful leave of the Premier (General Pelloux) and the Minister of Public Instruction (Dr. Baccelli), who had

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aided him so materially in his researches, and, accompanied by his coadjutors, Professor Pfeiffer and Professor Kossel, started direct for Berlin. One of the objects he had in view was to ascertain how far the Italian malaria coincides with the tropical form of the same malady, and he has satisfied himself that in all essentials they are identical. He has also been able to indicate properties hitherto unnoticed in the pathogenic germ of malaria as found external to man—properties possessing a distinct prophylactic value towards limiting the diffusion of the malady if not in arresting it at its point of origin. He has, however, to supplement this part of his researches by others on the same lines, and with this object he intends to return to Italy in the spring of 1899. So far he has found nothing to add on the clinical side of the subject; and the Roman school do not disguise their satisfaction at this frank testimony to the practical worth of their painstaking contributions to treatment. They, in turn, are profuse in their acknowledgments of Professor Koch's scientific elucidation of points hitherto left obscure and are grateful for the impulse he has given to the investigation of problems the solution of which seems now 'within measurable distance.'"

THE ROYAL COMMISSION ON SEWAGE DISPOSAL.

THE Royal Commission which has been appointed to study and report on the question of sewage disposal is now engaged in visiting a number of sewage works. Recently the members of the Commission were in Exeter, where they thoroughly examined the "septic tank" process which has for some considerable time past been dealing with a portion of the sewage of Exeter, and they also inspected the same process in operation at the country seat of Lord Iddesleigh, chairman of the Commission, a few miles from Exeter. The Commissioners have inspected the Manchester Sewage Works at Davyhulme, and also the works at Oldham, at Chorley, and at Rochdale. We understand that shortly after these visits are completed the Commission will resume its work of taking evidence in London and of inaugurating a series of scientific experiments on its own account. The Commissioners engaged in these inspections have been Lord Iddesleigh, Sir Richard Thorne, General Carey, Dr. Russell, Professor M. Foster, Professor Ramsay, Colonel Harding, Mr. Killick, and Mr. Cotton.

THE LOCAL GOVERNMENT BOARD FOR SCOTLAND: THE NEW MEDICAL MEMBER.

DR. JAMES B. RUSSELL, the distinguished medical officer of health of Glasgow, has been appointed to the important post of medical member of the Local Government Board for Scotland. The long and valuable services which Dr. Russell has rendered to sanitation in Glasgow and in Scotland are well worthy of the highest honour and reward which it is in the power of the Government to bestow. Dr. Russell was appointed to the health officership of Glasgow on the retirement from that post of Professor (now Sir William) Gairdner in 1872, and before that time he had been in the service of the city as physician to its fever and small-pox hospitals. He had much to do with the huge municipal improvement scheme which has so greatly and so beneficially changed the face of Glasgow and he was among the earliest to demonstrate on a large scale the conveyance of infectious disease by means of milk-supply. In all the literature of small-pox and vaccination there is perhaps no finer monograph than his "Study of 972 Cases of Small-pox," published in 1872. Many of his writings are among the classics of public health literature and it is difficult to say whether they are more distinguished by the true spirit of the sanitary reformer or by their writer's rare mastery of the English language. Dr. Russell will bring to his new duties a unique experience in Scottish sanitary administration and he will find before him a field well worthy of the exercise of his highest powers. While very much has been done within the last few years to improve the condition both of the large cities and of the rural districts of Scotland, more yet remains to be done, and many of the smaller burghs are, sanitarily speaking, still untouched. Dr. Russell's post will therefore be no sinecure and it would, indeed, be impossible to imagine him making a sinecure of any post. Not seldom it falls to a new official to map out his own sphere of duty and to inform those with whom he is brought most closely into contact as to the true scope and bearings of his own work. Dr. Russell may quite conceivably meet with this experience, and if so there is no one to whose views more weight will be given by those who are in authority. The office to which he has been appointed is a great one and in his hands it will be greatly magnified. In wishing him God-speed we venture to think that we are expressing the sincere desire of every member of the public health service of Scotland.

STREET NOISES.

TWO new by-laws passed by the London County Council for the better regulation of street noises became law on Oct. 1st. The first deals with steam organs, shooting galleries, roundabouts and the like, and provides that they shall not be used or played in any street or on any land adjoining thereto to the annoyance of residents or passengers or to the obstruction or danger of traffic. The second by-law deals with noisy animals, to secure the removal or abatement of which a somewhat complicated process has to be gone through. These by-laws are small mercies but they are something to be thankful for. They leave untouched the piano organ, the German band, the Salvation Army, and that greatest curse of all, the newspaper "runner" and the wandering voice which yells "Winner" almost incessantly from two until six P.M. The publication of a "Winner" card apart from a newspaper is a new torment. The immunity accorded to the newspaper fiend is a blessing for which Londoners have to thank Professor Stuart in the main, for it was owing to his opposition that the admirable by-law introduced by the Council in the summer was defeated. The wandering costermonger is comparatively harmless and fills a useful place in the economy of London. But newspapers can be sold and are sold every day and all day in the streets without howling, therefore there is no reason why the streets should resemble the parrot-house at the Zoological Gardens. But we sincerely congratulate the Council on having attempted to deal with this nuisance, and even have hopes that before very long the selfishness of those who consider that everyone has a right to annoy anybody else will be overcome. If the objectors to the by-law were compelled to work in the Strand or Piccadilly-circus for a time they would change their tune. Meantime we must possess our souls in patience.

THE GREIG SMITH MEMORIAL THEATRE AT BRISTOL ROYAL INFIRMARY.

THE Greig Smith memorial operation theatre was opened by Sir William MacCormac, President of the Royal College of Surgeons of England, in the presence of a large gathering of the citizens on Sept. 30th. The new operation theatre stands on the site of the old one and consists of a principal operation theatre with students' gallery, smaller operation theatre, anæsthetic room, and surgeons' room, also a small ophthalmic operation room. The size of the principal theatre is 21 ft. 4 in. by 15 ft. 6 in. and 26 ft. 6 in. high; a bronze medallion of the late Mr. Greig Smith has been inserted

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in a prominent position of the wall. The cost of the undertaking has been about £2700. The High Sheriff (Mr. Richardson Cross, F.R.C.S. Eng.) presided at the ceremony and amongst others present were the Duke and Duchess of Beaufort, the Dean of Bristol, Sir W. H. Wills, M.P., and Mr. J. S. Fry. Sir William MacCormac, in the course of an interesting address, said that it gave him much pleasure to open the beautiful new operation theatre; it was worthy of their ancient infirmary, which was one of the oldest in the country out of London. Sir William McCormac added that not only Bristol, but England—surgery, indeed, everywhere—deplored the premature loss of Greig Smith. He was a great surgeon and a modest man. His indomitable energy wore out the machine at the early age of forty-three years, but his work on abdominal surgery lived after him and would continue to live. At the conclusion of the address the Duke of Beaufort proposed a vote of thanks to Sir William MacCormac; this was seconded by Dr. Shingleton Smith and carried with hearty applause.

HONOURS FOR THE PRINCE OF WALES'S MEDICAL ADVISERS.

SIR WILLIAM MACCORMAC, Bart., and Sir Francis Laking have been appointed Knights Commander of the Royal Victorian Order, and Mr. A. D. Fripp and Fleet-Surgeon A. G. Delmege, M.D., have been appointed Members of the Fourth Class of the same Order, in recognition of their services in connexion with the recent accident met with by H.R.H. the Prince of Wales. It may be well to remind our readers that the Royal Victorian Order is bestowed upon "such persons, being subjects of the British Crown, as may have rendered extraordinary, important, or personal service to Her Majesty, her heirs and successors, and who have merited Her Majesty's royal favour." In the case of Sir William Mac Cormac, additional pleasure was, we are sure, given to the recipient by the fact that the Order was graciously bestowed upon him by Her Majesty personally. As far as we know only two other medical men are members of this Order—namely, Dr. William Allen Sturge and Dr. Henry Charles Woods, Deputy Inspector-General, R.N.

THE DINNER TO PROFESSOR VIRCHOW.

THE large and influential gathering, representative of all departments of the medical profession of Great Britain and Ireland—assembled at the Whitehall Rooms on Wednesday evening to do honour to Professor Virchow—embodied something more than the spontaneous homage which all men delight to render to one who has achieved great things. This dinner was no mere complimentary function, as was evident from the tone of the speeches which were made. It was the recognition by our profession of the inestimable services rendered to science by the distinguished guest, and also a tribute of personal attachment to him as a man whose life and character cannot but evoke as much affection as admiration. Very fittingly did Lord Lister, whose occupancy of the chair was most appropriate, propose the health of "Our honoured and beloved master, Professor Virchow"—terms which express so well the relationship which he bears to the whole medical world. For justifiably proud as Professor Virchow may well be of the many eminent pupils—some too early lost to science and the world—who have reflected a lustre on his personal teaching, he must be still prouder at the thought that there is not one of the medical fraternity who has not been influenced by his work. Lord Lister, in proposing the toast of the evening, dwelt very happily upon the versatility of the genius of the distinguished guest, his eminence as a pathologist being equalled by his reputation as an anthropologist and antiquarian, whilst during his whole career he has been prominent in the field of politics, where his voice has ever been raised in defence of liberty, truth, and righteousness. Loud and long-continued cheers, mingled with "Hochs," accompanied the drinking of this toast, and were renewed as Professor Virchow rose to reply, which he did in a speech full of expression of attachment to England—"the land of civil and religious liberty"—and to Englishmen, with especial and appropriate allusion to Huxley whose name is held in such high honour in German scientific circles. Equally happy were the speeches made by all the other eminent men selected for this purpose. Sir William Broadbent's allusion to the high state of medical organisation in the army; Surgeon-General Jameson's testimony to the enormous gains to life by the application of antiseptic surgery in the field; Sir Samuel Wilks's reference to the late Dr. Chance, the translator of Virchow's memorable book; Professor Chiene's reminder of the studies of John Goodsir; and finally Sir William Turner's well-chosen remarks in proposing the health of the chairman, these and many another feature of the evening will make it remembered as one of the most successful reunions of our profession which may be said to have inaugurated the medical session. The best thanks of all present must be due to those who so well organised the meeting—Mr. Andrew Clark, Dr. Rose Bradford, and Mr. D'Arcy Power.

THE REPORTED CARRIAGE ACCIDENT TO THE QUEEN.

WE are glad to be able to state on excellent authority that Her Majesty did not meet with any carriage accident as has been erroneously reported and that she is happily quite well.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE Harveian Oration will be delivered by Sir Dyce Duckworth on Tuesday afternoon, Oct. 18th, 1898, at 4 o'clock. Dr. W. M. Ord will deliver the Bradshaw Lecture on Thursday, Nov. 10th, at 5 o'clock P.M., his subject being Myxœdema and Allied Conditions.

THE report of the committee appointed by the Treasury to consider the desirability of establishing a National Physical Laboratory has been issued. The committee consider that the principles underlying the proposal to establish such a laboratory have been tested on a small scale at the Kew Observatory with most satisfactory results. They also record the high opinion which the Royal Society enjoys among practical workers, for they report that "nearly all the witnesses expressed the opinion that those interested in industry as well as persons devoted to the study of pure science would be willing that the Royal Society should be ultimately responsible for the proposed institution" provided that industry were suitably represented on the governing board.

A WINTER course of lectures will be delivered at the West-end Hospital for Diseases of the Nervous System, Welbeck-street, W., on Tuesdays, at 4 P.M., throughout October, November, and December. The course will consist of demonstration of cases of special clinical interest and will begin on Oct. 11th. The fee for the course is one guinea, and further particulars, cards of admission, &c., may be obtained from the hon. secretary of the Post-Graduation Course, 60, Upper Berkeley-street, W.

AT Cheltenham recently, where some 20 antivaccinationists presented themselves, the Bench refused to be "satisfied" with anything less than a sworn declaration and the question

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there has been narrowed down to whether the fee of 6*d*. for administering the oath and 1*s*. for the certificate can be legally exacted. It is said that this point is to be tested, but the mere fact that objection is taken to these charges should help to open the eyes of the public to the eagerness of opponents of vaccination in searching for grievances. It will hardly be easy, we fancy, to get up much sympathy for martyrdoms due to refusal to pay the eighteenpenny fees of local courts.

THE Lettsomian Lectures of the Medical Society of London will be delivered on Feb. 6th, Feb. 20th, and March 6th, 1899, by Dr. Samuel West, who has announced as his subject "Some of the Clinical Aspects of Granular Kidney." The Annual Oration of the Society will be delivered on May 15th, 1899, by Mr. Alban Doran.

A SYSTEMATIC course of lectures and demonstrations for sanitary inspectors has been arranged at King's College, London, and the introductory lecture will be given by Dr. W. J. Simpson on Friday, Oct. 14th, at 8 P.M., when the chair will be taken by Mr. T. McKinnon Wood, Chairman of the London County Council.

THE second Hunterian Society's lecture will be delivered by Dr. J. F. Payne on Wednesday, Oct. 12th, at the London Institution, Finsbury-circus, at 8.30 P.M. Dr. Payne will take for his subject "The Increase of Cancer." Members of the medical profession are invited to attend.

THE demonstrations of cases at the Clinical Museum were resumed on Wednesday last, at 4 o'clock P.M., and will be continued weekly at the same hour. Patients should be there at 3.30. All members of the profession are invited.

MESSRS. G. JERRARD AND CO., of 107, Regent-street, announce that they have taken a photograph of Professor Virchow. Some of our readers may like to possess a portrait of the eminent pathologist.

THE Duke of Cambridge will open some time in December the new Kingston-on-Thames Victoria Jubilee Hospital, the site for which his Royal Highness presented to the borough.

WE are asked to announce that the Thursday afternoon lectures at the Hospital for Sick Children, Great Ormond-street, are free to all qualified medical practitioners.

DR. H. B. DONKIN has been appointed a Commissioner of Prisons for England and Wales in place of Captain W. J. Stopford, C.B., retired.

SHEFFIELD SCHOOL OF MEDICINE.—Dr. Dyson vice-president of the University College of Sheffield, delivered the introductory address in connexion with the opening of this school of medicine. Referring to the Vaccination Act he said its principal aims—to provide calf lymph and to facilitate the operation—had his hearty support. The much-discussed conscience clause was the one about which the fiercest contest raged. He was glad he was not a magistrate to have to adjudicate on this clause. In medical treatment he found it sometimes extremely difficult to diagnose a real subjective symptom, such as pain in the back, from an unreal one, and he felt sure many magistrates would have difficulty in diagnosing the real conscientious objection. If the profession were polled he thought there would be a large majority against this clause. The general opinion was that the clause was a retrograde step. The experiment was risky and the profession disclaimed any responsibility if an epidemic of small-pox occurred.

FOOD- AND WATER-SUPPLY AND TRADE NUISANCES IN THE ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD (1897-98).

THE twenty-seventh annual report of the Local Government Board was published last week and we may proceed to deal with three interesting sections contained therein, embracing subjects which have come more or less prominently before the public of late. Probably the question of the adulteration of food will shortly become the subject of debate by the Houses of Parliament with the view of amending the present Sale of Food and Drugs Act (1875).

THE SALE OF FOOD AND DRUGS ACT.

The annual report of the Local Government Board has become during recent years of greater interest in connexion with the Sale of Food and Drugs Act owing to the deliberations of a Parliamentary Committee which concluded its inquiry last year and presented its recommendations to the House of Commons. On more than one occasion has a Bill as the outcome of this inquiry been brought in, but no progress has been made. It is confidently expected, however, that a Bill will be introduced next session which will embody, to some extent at any rate, the recommendations of this committee and so strengthen the present Act as to reduce the practice of fraud and adulteration in all its branches to as low a figure as legislation can be hoped to accomplish. The yearly report of the Local Government Board on this branch of public health administration shows the direction in which the Act works satisfactorily and the direction in which it does not. We have again and again expressed the opinion that the failure of the Act in many particulars has in a great number of instances been the result of the negligence of the authorities to avail themselves of its provisions. Invariably when pressure has been brought to bear upon the local authorities to make use of the powers vested in them the rate of adulteration has been very materially diminished. But, as the present report shows, there are still some districts in which the Sale of Food and Drugs Act is allowed to remain inoperative. In eight jurisdictions no action whatever was taken under the Act, while in seventeen districts the number of samples examined was too small to enable a judgment to be formed of the purity of the food-supply or to have any deterrent effect upon the practice of adulteration. On the whole, however, the number of authorities who neglect to exercise their powers under the Act is becoming fewer every year. The net result of all this is that a slight increase in the percentage of adulteration over the previous year's returns is recorded. The total number of samples examined was 46,856, and of these 18,896 were samples of milk. Milk showed an adulteration of 10·4 per cent., while in the last official year the proportion of adulterated samples was 11·1 per cent. This is a slight though distinct improvement, which, moreover, occurred chiefly in the metropolitan returns. Five years ago 22·5 per cent. of the samples submitted for analysis in London were classed as adulterated. We may find in this, we think, distinct evidence of the fact of the power of the present Act to deal with offences so long as the authorities carry out the provisions with a due amount of vigilance. The report still records the imposition of small fines which are utterly incommensurate in most cases with the nature of the fraud or adulteration committed. There was, however, a slight increase in the amount of the average penalty imposed. In what particulars the Act requires revision is plainly evident from the statement that out of the 4383 samples reported by the analysts as adulterated prosecutions were instituted in respect of 2777 only. In one case, that of a sample of gin which had been sold at a strength of 4 degrees below the legal limit, the magistrate expressed the opinion that it was absurd to prosecute for so slight an offence and dismissed the case, ordering each side to pay its own costs. The authorities were thus placed in the perfectly absurd position of being fined for carrying out a statutory duty. Another point of importance in connexion with new legislation upon the subject is well brought out in the case of butter. The number of samples of butter

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submitted to the analyst by private purchasers was 320 and of these as many as 175, or 54·7 per cent., were condemned. It is true that this enormously high return in regard to adulteration may be accounted for by the fact that only those samples which had aroused suspicion had been selected for analysis. Still, the results suggest an improved system of collecting samples for analysis. It should be added also that 34 per cent. of the general samples obtained by private purchasers were condemned. This figure is nearly four times the figure given as representing the extent of adulteration of samples obtained in the official manner. Further, there are probably many classes of offence which the operations of the present Act do not reach at all, and it is with these that a new Act will deal if it be based on the lines of the Bill introduced but dropped last session. Coming to drugs, the number taken for analysis is altogether inadequate and quite out of proportion to the number of samples of food. There were only 1964 examined and of these 10·5 were condemned.

THE METROPOLITAN WATER-SUPPLY.

The reports of Major-General Scott and of Sir Edward Frankland on the quantity and quality of the water-supply respectively are of especial interest at the present time in view of the critical state of affairs in the East-end of London, although, of course, they were written before the drought occurred. A comparison of the present reports with the reports of 1896 will show very little difference in their import. Indeed, many of the paragraphs are precisely the same, word for word. This probably accounts for an official blunder. Major-General Scott's report opens in the usual stereotyped way, and afterwards when he refers to Sir E. Frankland's report he says, as he said in exactly the same terms last year, that "at the request of the Associated Metropolitan Water Companies Sir E. Frankland has extended his monthly examinations to the chemical, physical, and bacterioscopic condition of the raw river water at the intakes of the several companies and to the bacteriology of the water as it issues from the filters of each company and before it is pumped into the distributing mains." Now, Sir Edward Frankland has not presented a bacteriological report at all in this year's statement of the work of the Local Government Board. We find absolutely no bacteriological data or references, and in the first paragraph of his report to Mr. Chaplin, Sir Edward Frankland simply states: "I have to report to you the results of the chemical analysis and of the physical examination of the water supplied by the eight metropolitan water companies and the Colne Valley Company during the year 1897." Putting aside any conjecture as to why a bacteriological examination was not conducted this year—or, at any rate, if it was it is not reported in the Blue-book—we are at a loss to understand why Major-General Scott points to a report which does not exist in official print. Sir Edward Frankland's report is again almost identical, word for word, with last year's report. The dates are of course different and some of the figures, but the interpretation is almost precisely the same, and last year's paragraphs have in a large measure served for the purposes of the present report. It will be remembered that two years ago the chemists to the London County Council reported that they had found suspended matter in the London water-supply which forced the conclusion that the filters were inoperative as regards removing the suspended matter peculiar to raw river-water. This evidently prompted Sir Edward Frankland in his report for 1896 to take up the question, and he stated among other things his opinion that the presence of the bacillus coli communis in water was no proof of sewage contamination because this organism is one of the most ubiquitous and persistent of harmless microbes. Then he added some remarks on the occurrence of suspended matter—remarks which are repeated in exactly the same terms in the report just issued. We reproduce the last sentences because a year ago we considered them in the light of a rejoinder to the London County Council's report two years ago and they were couched in similarly popular language:—"The amount of this suspended matter in the efficiently filtered river-water supplied to the metropolis rarely if ever exceeds 0·0002 grain in a tumblerful, and therefore in order to imbibe a single grain it would be necessary for the consumer to drink no less than 5000 tumblerfuls of the water. Such excessively minute quantities of matter which is presumably harmless may safely be neglected; indeed, it is impossible practically to obtain water free from it." We think that this and other continual reiteration is likely to cast discredit on official reports. The remarks of Major-General Scott as to his examination of the water supplied by the several companies and as to the condition and degree of efficiency of the works for its purification practically coincide with the points raised in the previous report of 1896. These turn largely on the daily discharge of the rivers and the relative quantity of water withdrawn, on the employment of cisterns, the extension of constant supply, the question of waste, and lastly on the desirability of securing a connexion between the mains of one company and those of another. "Such interconnexion of the mains of the several companies has been effected to some extent but not so fully as is desirable." This remark in particular occurs in the report of 1896 as well as in the one before us. According to Sir Edward Frankland the quality of the water-supply is free from reproach and here again practically the same remarks are made as to the points brought out in the series of analytical tables.

CHEMICAL TRADE NUISANCES.

The supervision exercised by the Local Government Board staff of special inspectors in regard to the working of the Alkali, &c., Works Regulation Acts continues to be attended by good results. The chief inspector states that reviewing the industry as a whole he has every reason to be satisfied with the care displayed and the competency of management shown and that complaints of damage to crops in the neighbourhood of works have almost ceased. The increased employment of electrolysis for the production of chlorine from common salt appears to be reducing very materially the risk of chlorine escaping in the air. One cause of nuisance to residents in the neighbourhood of chemical works appears to be the method of concentrating and rectifying sulphuric acid. There is a difficulty attending the suppression of this nuisance, but the matter has engaged, and is still engaging, the serious attention of the special officials appointed to see that the provisions of the Alkali Act are carried out.

THE OUTBREAK OF TYPHOID FEVER IN BELFAST.

THE monthly meeting of the city corporation of Belfast was held on Oct. 1st, and, as anticipated, there was an interesting discussion on the health of the city arising principally out of the reports of the Town Improvement and Public Health Committees. The report presented by the medical superintendent of health (Dr. Whitaker) for the period between August 21st and Sept. 17th was as follows: The number of cases of zymotic disease notified was 1121 cases of typhoid fever, 254 of simple continued fever, 46 of scarlet fever, 32 of erysipelas, 27 of diphtheria, 8 of membranous croup, 7 of puerperal fever, and 1 case of typhus fever. In the four weeks ending Sept. 17th there were 878 births and 673 deaths, a natural increase of 205. There were 234 deaths from zymotic disease, 81 from phthisis, and 83 from diseases of the respiratory organs, making a total of 164 from these two latter causes. In the corresponding period of 1897 the deaths from zymotic disease were 154. The annual death-rate from all causes was 28·8 and the mortality from zymotic diseases was 10·0 per 1000. While the number of cases of typhoid fever notified as well as the deaths from that disease are more numerous than in the preceding month, it is satisfactory to find that for the week ending Sept. 24th the number of cases notified was 164, or less than one-half that existed in the last week of August. The improvement in the health of Belfast in respect of typhoid fever appears in all the dispensary districts. The epidemic apparently reached its acute stage in the last week of August, and since then its diminution has been gradual until now it is less than one-half it was at the period referred to. The Public Health Committee in their defence claim that the epidemic has been put down by the measures adopted by them. They say they appointed a sub-committee on Sept. 1st and that the notifications of typhoid fever for the week preceding the assumption of their duties were 333, while in the week ended Sept. 24th the number was reduced to 124. The measures adopted by the Public Health Committee were (1) the employment of all the experienced officers of the Health Department; (2) the provision of vessels in houses where typhoid fever was present for the reception of dejecta, and their

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subsequent removal and disinfection; (3) the more liberal flushing of the drains (through the kindness of the water commissioners) with water containing disinfectants in solution; and (4) the employment of Dr. Lorrain Smith to test water-supplies, milk-supplies, and to examine soil gathered from the infected areas, and to find out, if possible, the cause of the outbreak. His report has not been received. It is only fair, we think, to the Public Health Committee to state these facts; whether they are right or warranted in drawing the conclusion that by these means they have brought about a diminution in the cases of typhoid fever from 280 cases per week for the four weeks ended Sept. 17th to 164 for the week ended Sept. 24th is very doubtful. The impression of many people is that the improvement does not by any means indicate that the conclusion of an epidemic is being reached, but rather that the normal state of things in Belfast is being resumed, which unfortunately shows that, owing to the soil being laden with the germs of typhoid fever, due to past insanitary defects, the disease is always present—is, in fact, endemic; and that the so-called epidemic of typhoid fever in Belfast has been simply a recrudescence (due to the dry warm weather) of the normal condition of typhoid fever in Belfast, which is endemic. This is the problem the Public Health Committee have to face, and it is very pleasant to find that certain steps were decided on at the corporation meeting on Oct. 1st in this direction. For it was passed, "That a systematic test of all the drains of the city be made and that the head officers of the Public Health and Improvement Committees report what additional officers are necessary for this purpose and that such officers be appointed and a weekly return of the drains so tested be made to the above committees." A leading member of the Public Health Committee in moving this resolution confirmed what has been stated by the special sanitary commissioner of THE LANCET. He said that the Improvement Committee had in the past allowed drains to be constructed of the most imperfect character. In some cases ordinary field drains had been laid down for the purpose of carrying sewage away, and in one district with which he was formerly well acquainted large numbers of people were living in houses to which there were no drains whatever except into the street, where they terminated, there being no connexion between the street drain and the main drain. The Improvement Committee has up to the present neglected one of the provisions of the Public Health Act, which decreed that no house should be allowed to be inhabited until it had been examined and a certificate given as to its sanitary condition by the borough surveyor. The Public Health Committee were receiving the blame for the present insanitary state of the city and for the prevalence of typhoid fever in their midst, but they were in this position—the sins of their fathers who were the members of that corporation thirty years ago were being visited upon the present Public Health Committee and the corporation in general. He believed that the epidemic of typhoid fever was probably due to defective sewers and to the fact that the soil was saturated with filthy matter which had been there from time immemorial. The result, he said, of an examination of Belfast water negatived the idea that the epidemic was caused by the water. These opinions of a prominent member of the Public Health Committee corroborate fully the views put forward in THE LANCET as to the typhoid fever in Belfast being not merely epidemic but really endemic. Another most important project sanctioned on Oct. 1st was the erection of refuse destructors for getting rid of 200,000 tons of dry house refuse collected annually. Some of this has in the past been removed as farm manure; a good deal of it, it is said, has been used as the horrible material to "fill up" grounds in various parts of the city. A committee has been investigating this matter, and the corporation have sanctioned tenders being issued for the erection of refuse-destructor plant at an estimated cost of £10,000. It is arranged that this plant shall be erected at the pumping station output works of the city main sewage, and that the destructors shall provide sufficient power to work the pumping machinery and an electric plant for the lighting of the station. The work is to be begun at once.

It is regrettable to find that an attack was made by some members of the corporation on the medical profession in reference to the duplicating of returns under the Notification of Infectious Diseases Act, but the good sense of the great bulk of the corporation asserted itself on behalf of the medical men and the majority refused to allow the City Council to be made a vehicle for an attack on our profession. There may have been mistakes made by medical men notifying infectious diseases, due in many cases to the way the Act is framed, but the general results of notification have not been vitiated by such slips; and it should also be remembered that last winter when such charges of errors in notification were first made the Western Medical Society sent a circular to each of its members drawing their attention to what had been said. It is pleasant to be able to report that the city corporation of Belfast, aroused at last by a determined public opinion and the medical press have begun to grapple with the insanitary state of that city due to the sins of the past. Full credit must be given for the two most necessary reforms which they initiated last week, but they must go a great deal further, until typhoid fever ceases to be endemic in their midst, and until they have removed the reproach hurled so often at the inhabitants of a modern city that its death-rate from a preventable disease like typhoid fever is the highest in the United Kingdom.

OPENING OF THE MEDICAL SCHOOLS.

Guy's Hospital.—In accordance with the usual custom the session was opened by a meeting of the Physical Society. This was preceded by a house dinner in the college at which Mr. Charters J. Symonds took the chair in the absence of Dr. P. H. Pye-Smith, the president of the Students' Club. Sir Samuel Wilks, Bart., Mr. H. Cosmo O. Bonsor, M.P., and many members of the staff and students were also present. The large company afterwards adjourned to the new physiological theatre, where, after a short address of welcome to the new students from Sir Samuel Wilks, Mr. W. H. Crosse, F.R.G.S., late principal medical officer to the Royal Niger Company, read a paper on the Treatment of Malaria and Blackwater Fever.

King's College Medical School and Hospital.—The beginning of the medical session was, as usual of late years, marked by the annual dinner of the old students and their friends, who met at Limmer's Hotel on Monday, Oct. 3rd. The chair was occupied by Mr. A. Boyce Barrow, and he was supported by a very large gathering, which included almost all the members of the staff and many others who had travelled great distances in order to be present. In proposing the toast of "The Navy, Army, and Reserve Forces," Mr. Barrow alluded to the recent Egyptian campaign, and to the excellent work which had been done by King's men in the Royal Army Medical Corps. His allusions to Colonel A. T. Sloggett, who was seriously wounded at Omdurman, to Captain G. A. Bray, and to Captain H. E. H. Smith were received with enthusiasm. Colonel R. H. Jelf, C.B., and Captain H. L. Hughes responded to this toast. The toast of the evening, "King's College Hospital and its Medical School," was proposed by the Chairman and responded to by the Rev. Dr. Robertson, Principal of King's College and by Mr. C. Awdry, treasurer of the hospital. The toast of "The Chairman" was proposed by Mr. Richardson Cross, High Sheriff of Bristol, and it was greeted with musical honours. In the course of the evening Mr. Percy Webster and Mr. Herbert Schartau gave a selection of songs which was much appreciated. The proceedings were brought to an harmonious conclusion with the singing of "Auld Lang Syne."

Middlesex Hospital.—The annual dinner of the past and present students was held on Oct. 3rd at the Café Royal. The Right Hon. Sir Ralph Thompson, K.C.B., presided and the attendance was exceptionally large. After the usual loyal and patriotic toasts Sir Ralph Thompson proposed the "Middlesex Hospital and Medical School." A review of the past year, he said, showed that the hospital and school had steadily pursued a career of usefulness and prosperity. In the near future its sphere of usefulness would be still further increased by the addition of the new cancer wing. Dr. Cayley, in responding, spoke of the training of students and said that the desire was to send forth men into the world as thoroughly equipped as possible for their struggle with disease. Dr. Pasteur, the Dean, spoke of the great advance made by the new buildings which would make the school one of the best in the metropolis. Mr. T. W. Nunn proposed the "Past and Present Students,"

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and alluded to the success which seemed to attend Middlesex men in every corner of the globe. Mr. E. A. Fardon, in replying for the past students, pointed out that both past and present were always united as students of disease. He alluded in feeling terms to the many who had passed away. Mr. C. G. Pugh replied for the present students. Mr. Stephen Paget proposed "The Visitors" and warmly thanked Mr. Wilhelm Ganz for his kindness in providing such a delightful programme of music and to this toast Mr. Ganz made an appropriate reply. Mr. Pearce Gould proposed the health of the chairman and dwelt on the skill and courtesy with which Sir Ralph Thompson always managed the affairs of the hospital and school. An excellent programme of music was provided during the evening under the direction of Mr. Wilhelm Ganz.

St. Bartholomew's Hospital.—The opening of the present session was inaugurated by the usual dinner of old students, which was held in the great hall of the hospital on Oct. 4th. Sir William Turner was in the chair and was supported by Sir Trevor Lawrence, the treasurer of the hospital, Sir H. F. Norbury, K.C.B., the Director-General of the Medical Department of the Royal Navy, and Surgeon-General Jameson, C.B., the Director-General of the Royal Army Medical Corps, Surgeon-General Hooper, Professor Ray Lankester, the Master of the Society of Apothecaries, Mr. Trimmer, Professor Arthur Thomson (Oxford), and Professor MacAlister (Cambridge). Of members of the staff there were present Dr. Church, Dr. Gee, Sir Dyce Duckworth, Dr. Brunton, Dr. Norman Moore, Dr. Herringham, Dr. Ormerod, Dr. Champneys, Dr. Griffith, Sir Thomas Smith, Mr. Willett, Mr. Langton, Mr. Marsh, Mr. Butlin, Mr. Walsham, Mr. Bruce Clarke, and Mr. Bowlby. Altogether there sat down 129. There were only five toasts and at the conclusion of dinner everyone adjourned to the library for coffee and smoking.

St. George's Hospital.—The annual dinner was held at the Whitehall Rooms, Hôtel Métropole, on Saturday evening, Oct. 1st. Mr. Holmes, treasurer of, and consulting surgeon to, the hospital, was in the chair. Covers were laid for 124 guests, a number which included past and present students and a few visitors. The meeting was an eminently successful one. The toasts proposed were the following: "The Queen and the Royal Family," "The Medical School," "The Governors of St. George's Hospital," "The Orator of the Day" (Mr. G. R. Turner), "Past and Present Students," and "The Chairman." Songs were sung during the evening by Dr. Llewellyn Powell and Mr. Trevor.

St. Mary's Hospital.—The annual dinner of the past and present students and of the athletic clubs was held at the King's Hall, Holborn Restaurant, on Oct. 3rd, Mr. J. N. Moore, J.P., being in the chair. Amongst the 211 present were Sir William Broadbent, Bart., Dr. Cheadle, Mr. Owen, Mr. George P. Field (Dean), Dr. Lees, Mr. Herbert Page, Dr. Sidney Phillips, Dr. Handfield-Jones, Mr. Juler, Mr. Anderson Critchett, Dr. Waller, F.R.S., Mr. H. G. Plimmer, Mr. Pepper, Lord Granville Gordon, Dr. Danford Thomas, Colonel Belemore, Colonel Myers, Mr. W. H. Cundell, Mr. J. R. Walker, Dr. Franklin Parsons, Dr. Caley, Dr. Scanes Spicer, Dr. Gow, Mr. H. S. Collier, and Dr. Luff (Sub-Dean). The toast of the "Queen and Royal Family" having been duly honoured on the proposal of the Chairman, that of the "Services" was proposed by Mr. Havell and responded to by Fleet-Surgeon T. J. Preston, R.N., Lieutenant-Colonel A. B. Myers, and Captain Whitcombe respectively. The Chairman then proposed "St. Mary's Hospital." Dr. Cheadle, senior physician, made a spirited speech in reply and proposed "The Dean" (Mr. G. P. Field), to whom so much of the success of the school was due. Mr. Field replied and proposed "Past and Present," responded to by Mr. Noble Smith and Mr. C. W. Buckley respectively. Mr. Edmund Owen, senior surgeon, then proposed "Athletics," to which Mr. J. E. Lane and Mr. A. G. Butler responded. "The Chairman" having been then proposed by Dr. Handfield-Jones the proceedings terminated with a short but enjoyable musical programme. A special feature of interest at the dinner was the presence of certain students specially invited by the School Committee as guests who had distinguished themselves during the past year in scholarship and athletics.

St. Thomas's Hospital.—The St. Thomas's Hospital Old Students' Annual Dinner took place on Oct. 3rd at the Whitehall Rooms of the Hôtel Métropole, Dr. Leonard W. Sedgwick being in the chair. The attendance was large and the dinner in every way was most successful. The chairman having proposed the toast of the "Queen and Royal Family," was followed by Sir William Mac Cormac, the President of the Royal College of Surgeons of England, who, in proposing the toast of "The Hospital and Medical School," gave some interesting reminiscences of the hospital as it was when he joined it twenty-five years ago. The treasurer, Mr. Wainwright, in response, commented on the thorough equipment of the hospital, and in thanking Sir William Mac Cormac for his appreciative remarks on the interest taken in the hospital by the Governors said that they had in view various schemes for still further improvement. Dr. Hawkins, the dean of the medical school, referred to the steadily increasing entries as an indication of the school's efficiency; the number of medals gained at London University and the very successful results at the College examinations also attested the same fact. He commented on the loss the hospital had sustained by Dr. Toller's appointment as physician to the hospital at Cairo. Mr. Mackellar also had resigned through ill-health. Dr. A. F. Stabb had been appointed assistant obstetric physician to St. George's Hospital. He also referred to the appointment of Dr. Perkins as fourth assistant physician. Dr. Bulstrode having spoken was followed by Dr. Crosby, who proposed the "Chairman." Dr. Sedgwick, in reply, spoke of the staff as it was when he joined the hospital fifty-three years ago, when Green, Grainger, and Marshall Hall were prominent figures. The toast of the "Secretaries" was proposed in a most amusing speech by the Rev. Dr. Merry and suitably responded to.

Westminster Hospital.—The annual dinner of the medical staff, members of the House Committee, past and present students of the school, and their friends was held on Oct. 3rd. The chair was taken by Sir George Scott Robertson, K.C.S.I., a former student and teacher in the school. A very pleasant evening was spent. After the usual loyal toasts those of the "Westminster Hospital Medical School," the "Old Students," the "Visitors," and the "Chairman" were duly honoured and replied to. Sir George Scott Robertson, in acknowledging the toast of his health, remarked that there was one thing which medical training did for a man. It taught him both to incur and face responsibility whenever it came upon him.

Medical Faculty of University College, London.—The annual dinner of the past and present students was held on Monday, Oct. 3rd, at the Hotel Cecil, Dr. Frederick Roberts being in the chair. About a hundred sat down. The chairman, in proposing the toast of the evening, "Success to University College and Hospital," referred to the many distinguished men who had been connected with the hospital, and mentioned that every London hospital, with the exception of Guy's, had an old University College student on its staff. Dr. Roberts, Dr. Beevor, and Dr. Philip Turner sang during the evening.

REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR THE YEAR 1896.[1]

SECOND NOTICE.[2]

THE most serious question which confronts the Government and the military authorities of India so far as the health of the European army is concerned is without doubt the great prevalence of venereal disease and of enteric fever in that country; the one gives rise to a large amount of present inefficiency followed by grave future consequences and the other to a long and severe illness and a very serious loss of life. While venereal diseases caused 37 per cent. of the total sickness enteric fever caused nearly 43 per cent. of the total deaths. As regards enteric fever the Sanitary Commissioner tells us that the differentiation of the bacillus and the treatment of the disease by enteric

[1] Annual Report of the Sanitary Commissioner with the Government of India, 1896, with Appendices and Returns of Sickness and Mortality among European Troops and Prisoners in India for the Year. Calcutta: Office of the Superintendent of Government Printing, India. 1898. Price, 5 rupees.

[2] The First Notice appeared in THE LANCET of Sept. 24th, 1898, p. 831.

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serum, the diagnosis of the fever by the patient's serum-reaction to a true cultivation of the specific bacillus, preventive inoculation or vaccination, and the question as to how wide may be the dissemination of the enteric bacillus in nature continue to be the chief topics of interest. But first let us consider the prevalence of this disease in India. There were 1795 admissions from enteric fever with 445 deaths in 1896, against 1870 and 477 in the previous year, showing a slight decrease in the admission and death ratios per 1000 of strength in 1896. The average number of men constantly sick from enteric fever was 260, and the average duration of a case was 53 days (which does not of course show, however, that the men were fit for efficient service at the end of that time). The total loss to the service due to the disease was about 95,109 days. A table is given of the total fever mortality in the years 1895 and 1896 as compared with the two periods 1870–79 and 1881–90, which shows an increase of mortality from enteric fever and a decrease in mortality from other fevers in 1895 and 1896 as compared with the decennia.

These results are ascribed in the report under review, and probably quite rightly, to an increased susceptibility to enteric fever on the part of the army due to youth and recent arrival and partly to the increasing frequency with which the diagnosis of enteric fever has been made. Be the explanation what it may, however, a glance at the table shows that a progressively grave increase in the amount of fatal cases of enteric fever in India has been taking place. Turning to the section on the native army of India we find that the ratios for European troops in this respect are very unlike those for native troops and prisoners:—

	1886-95.		1896.	
	Admissions.	Deaths.	Admissions.	Deaths.
European troops ...	19·6	5·28	25·5	6·31
Native troops... ...	0·2	0·08	0·1	0·04
Jail population ...	0·3	0·12	0·2	0·06

It must be borne in mind that nearly every fatal case of disease in the jail population is subjected to post-mortem examination and, as has been so frequently pointed out in these reports, the fact that the ratios of prisoners and native soldiers are almost identical leaves little or no doubt on one subject—namely, that the amount of enteric fever among our European troops serving in India is altogether out of proportion to that in the native troops and the jail population. Moreover, the total fever mortality in the two armies—European and native—is not the same in amount, which is strongly corroborative of the view that the difference is real and not a mere matter of diagnosis. Among European troops enteric fever stands at 42·5 in the percentage of deaths from all causes, whereas among native troops it is represented by 0·4. It is frequently alleged that the natives of India nevertheless suffer from enteric fever to an unsuspected extent, but that they pay their tribute to that disease in infancy or early life and acquire immunity thereby from subsequent attacks. It may be so, but the assertion rests rather upon conjecture than upon any scientific basis or actual observation, for it has never been proved. It is possible, of course, that the continued exposure of the natives of India from earliest life upwards to the causes of enteric fever and an insanitary environment may tend to make them immune; that is also a plausible but unproved explanation. Still the fact remains that the relative insusceptibility of the native as compared with the European to enteric fever seems to be established, and we suspect that a difference of diet—the native's abstinence from meat and alcohol—may have some influence in this respect in a hot climate like that of the plains of India. Be this as it may, a great deal still remains to be done in the way of the scientific differentiation of the fevers of India. That typhoid fever largely prevails there cannot be doubted; the fever has all the clinical features, and when fatal all the special anatomical lesions, which characterise typhoid fever elsewhere. But there are some observers who are not yet convinced that every case of fever in India attended with ulcerative disease of the glands of the small intestine is absolutely identifiable with the typhoid fever of other climates and attributable to the same causes—the typhoid bacillus of Eberth and Gaffky, the life history and dissemination of which in nature has still to be thoroughly worked out. It is often urged, and undoubtedly with much force and justice, that soldiers do not get enteric fever in barracks, but in the native bazars and from the drinks they obtain there; but young officers do not commonly have recourse to native drinks or native bazars, and yet they are notoriously very liable to contract and to die from enteric fever. A great deal has been done of late to advance our knowledge of this fever, but the difficulties which have to be overcome in prosecuting our inquiries in India are both very numerous and great. The reports of the Sanitary Commissioner are calculated to do much good in this direction. Meanwhile enteric fever is a terrible scourge in India, which country we are compelled to be periodically supplying with a highly susceptible material in order to maintain the strength of the British Army serving there.

With regard to two fatal cases of enteric fever may be mentioned the existence of a single abscess of the liver in one case and of multiple abscesses in the other. The fact is somewhat interesting, because looking to the causal connexion between dysenteric ulceration and hepatic suppuration it has often been asked why abscess of the liver should not be more frequently seen in cases of typhoid fever. This brings us to the subject of hepatic abscess. Speaking generally, dysentery and hepatic abscess march together; groups of stations and districts which have a high admission rate from dysentery have also a high rate from abscess of the liver, but they are nevertheless not exactly conterminous with one another. The natives of India suffer very much from dysentery but rarely from hepatic abscess, nor is the latter disease a common sequence of dysentery in other countries where dysentery prevails. It is said that the Spanish troops in Manilla and Cuba suffered much from dysentery but not commonly from hepatic suppuration. Hepatic abscess is more frequently met with in the Madras than in the other presidencies of India. Of the cases of abscess of the liver in the army in India 34 per cent. were returned as having been associated with dysentery, or 52 cases out of 153. It used to be assumed that where an abscess of the liver was not associated with dysentery or a history of that disease the abscess was almost always single, whereas when hepatic suppuration was so associated that there were multiple abscesses. The bearing of this on prognosis is obvious, especially in the case of surgical operation being had recourse to; but the figures in the sanitary officer's report do not bear out this view. It cannot as a matter of fact be said that dysentery invariably or even commonly gives rise to multiple hepatic abscesses and not to a liver abscess.

THE SANITARY INSTITUTE: MEETING AT BIRMINGHAM.

(Concluded from page 896.)

Food Preservatives.

IN the section of Sanitary Science and Preventive Medicine Dr. ALFRED HILL, the President, dealt in his address with the question of food preservatives. In his opinion the use of chemical preservatives ought to be prohibited altogether. They enabled foods to be sold as fresh which were stale and which had undergone such putrefactive changes as to make them frequently harmful and sometimes actually poisonous. One of the difficulties in the way of putting down the use of preservatives was the different ways in which it was regarded by the justices in adjudicating on these cases. All additions to food the influence of which on health was doubtful ought to be prohibited and their use supplanted by refrigeration. A resolution was agreed to recommending the Sanitary Institute to present a memorial to the proper authorities calling attention to the recommendation of the Food Products Commission and urging that investigations by recognised scientific authorities into the effect of preservatives upon health be forthwith set on foot and that a court of reference be established.

The Birth-rate.

Dr. DAWSON WILLIAMS took for his subject "The Decline in the Birth-rate." He pointed out that when the census was taken in 1891 it was discovered that we had been making

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an over-estimation of our population in England and Wales, and that whereas the estimate expected an increase since 1881 in round numbers of 3,750,000, the actual increase as ascertained by enumeration was only just over 3,000,000. The growth of a population was determined by the balance between births and deaths and the balance between immigration and emigration. The decline in our rate of growth had been due to a disturbance of both these factors. The births were 290,000 below expectation and emigration was 412,000 above expectation. The death-rate was lower, so that, in fact, the natural increase on balance of births and deaths ought to have been larger. He ascribed the diminished birth-rate to a progressive decrease in the number of children born to married English and Welsh women, and mentioned as a curious fact that the proportion of bachelors in a given number of males decreased steadily, not only during early adult life and maturity, but afterwards also. There were more infants born in towns than in the country in proportion to the population; but the infant mortality in the towns was so much higher than in the country that the town excess of births failed to maintain an excess in proportion to the total population.

The Progress of Sanitary Science.

Dr. G. SIMS WOODHEAD, President of the Physics, Chemistry, and Biology section, delivered an address in which he passed in review some of the more important advances which had been made in sanitary science in recent years. Twenty years ago, he said, tuberculosis was looked upon as a disease with which it was almost hopeless to contend with any great prospect of ultimate success—a conviction which was only now being gradually eradicated from the lay mind. With regard to diphtheria the outlook was equally gloomy up to five years ago. The spread of the knowledge of the laws of health amongst medical men, amongst corporate bodies, public societies, and individual laymen had, during the last few decades, done something to illumine a very great darkness, and tuberculosis and diphtheria were being systematically sapped and mined by most earnest workers.

The Pollution of Streams and Rivers.

Dr. CHRISTOPHER CHILDS said the evil of pollution had existed from time immemorial and it was admitted that the Rivers Pollution Act of 1876 had generally and persistently failed in the purpose for which it was intended. The chief difficulties in the way of the much-desired reforms were the ignorance and indifference of the people, the great cost of sewage purification, and the uncertainty with regard to the best means to be employed, the defects in the law itself, and the impotence of the measures provided for its administration. We could not, however, hope for thorough and effective legislation until the people had been roused from this indifference—until they were made fully conscious of the disgusting contamination to which their water-supplies were so commonly liable, until they were convinced of the consequent danger to which they were so constantly exposed, and until they insisted upon those reforms which would afford them reasonable protection.

Hospital Reform from a Sanitary Point of View.

Mr. T. GARRETT HORDER, honorary secretary of the Hospital Reform Association, read a paper on this subject, placing before his hearers the proposition that the aggregation of large numbers of sick people in the out-patient departments of our hospitals and infirmaries is detrimental to the well-being of the patients, is unnecessary, and is likely to cause the spread of infectious disorders. After describing the usual waiting-room of a large city hospital, in which men, women, and children suffering more or less from every conceivable disease congregate, mixed indiscriminately together, patiently waiting their turn to be called before the physicians and surgeons in attendance, he put the question, Can the waiting-room attendants be expected to distinguish between infectious and non-infectious cases? In the Clinical Hospital, Manchester, in 1895, Mr. Horder said, the following cases were treated in the out-patient department: measles, 8; whooping-cough, 9; chicken-pox, 6; enteric fever, 2; erysipelas, 2; pediculi, 40; and scabies, 50. In the Liverpool Infirmary for Children in 1896 the following cases were treated in the out-patient department: typhoid fever, 9; scarlet fever, 15; measles, 7; whooping-cough, 55; chicken-pox, 32; mumps, 17; diphtheria, 17; pediculi, 47; and scabies, 32. It might therefore be assumed that a similar condition of things occurs in the majority of the out-patient departments.

Infected Milk.

Dr. SCURFIELD (Sunderland) dealt with this question, remarking that it seemed very desirable that the Somerset House analytical authorities should adopt a higher standard for genuine milk, as there could be no doubt that the present low standard of 2·75 per cent. for fat and 8·5 per cent. for non-fatty solids allowed a large amount of adulteration to go on unchecked.

Tuberculous Meat.

Dr. JAMES NIVEN (Manchester) said that from careful inquiries which he had made he was able to show that the rule might be broadly laid down that healthy people did not contract phthisis except on prolonged and intimate exposure to sources of infection. The amount of meat actually containing tuberculous infective matter was, he believed, understated, but definite information could be obtained with regard to milk. A resolution was agreed to that all public institutions, hospitals, asylums, and public services ought to obtain milk from herds guaranteed free from tuberculosis by a competent veterinary surgeon, and that a Bill should be introduced at the earliest possible date for giving effect to the recommendations of the Commission.

The proceedings of the annual meeting were concluded with a popular lecture delivered by Dr. ALEX. HILL, Vice-Chancellor of Cambridge University, upon Unnatural Death. It was not the dangers of railway travelling or the few murders that occurred which brought down the average longevity of human life from 100 years to 50, he said. Something more subtle and murderous than that must be sought for. Every year 900,000 babies were born in England and Wales. If we took 1,000,000 children and saw what was likely to be the end of them we should find that 30,000 would die a violent death by accident, about 120,000 would succumb to the mysterious disease which we know now to be absolutely preventable—phthisis in its many forms—and only 45,000 would be allowed to live out their natural lives. One-quarter of all the diseases which destroyed life were absolutely preventable. If the practice of hygiene were only on a level with its theory the average longevity would be raised at once from fifty to sixty-five years. It was desirable that every citizen should have the same exact knowledge of the causes and properties of preventable diseases that the medical officer himself had.

"CONSCIENTIOUS OBJECTION" TO VACCINATION.—At the Cardiff Police-court on Sept. 24th a young man was granted a certificate of exemption on the ground of conscientious objection to the vaccination of his child. Dr. J. Mullin, who was one of the presiding magistrates, said that he took that opportunity of stating that they as magistrates had "conscientious objections" to the granting of these certificates. He added that the magistrates had a conscientious belief that the law permitted an act of gross injustice to the child, and they regarded the conscience clause as a great farce which would one day end in a tragedy and then they would hear no more about this conscience clause.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—A meeting of the Northern and Midland Division of this association will be held at the Derby County Asylum, Mickleover, near Derby, on Oct. 12th. A paper will be read by Dr. James Middlemass of the Sunderland Borough Asylum on the Treatment of Insanity by Thyroid Extract. An omnibus will leave the Midland Station, Derby, at 12 o'clock, reaching the asylum (five miles distant) in time for lunch, and Dr. Legge will provide lunch for members at 1 P.M. After the meeting members will be shown through the asylum by the medical officers. Dinner will be served at the Midland Hotel, Derby, at 8 P.M. Morning dress. Price 5s., exclusive of wines.—The autumn meeting of the South-western Division of this association will be held at the Grand Pump Room Hotel, Bath, on Wednesday, Oct. 19th, at 2.45 P.M. After the business meeting there will be a discussion on Dr. Blachford's paper read at the last meeting: Dr. Bristowe will read a paper on Lunacy in Private Practice; and Dr. Weatherly will contribute a paper on Lunacy and the Public. Dinner will be supplied at the Grand Pump Room Hotel at 5.30 for 6 P.M.

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THE THOMPSON-YATES LABORATORIES OF PHYSIOLOGY AND PATHOLOGY IN UNIVERSITY COLLEGE, LIVERPOOL.

FIG. 1.

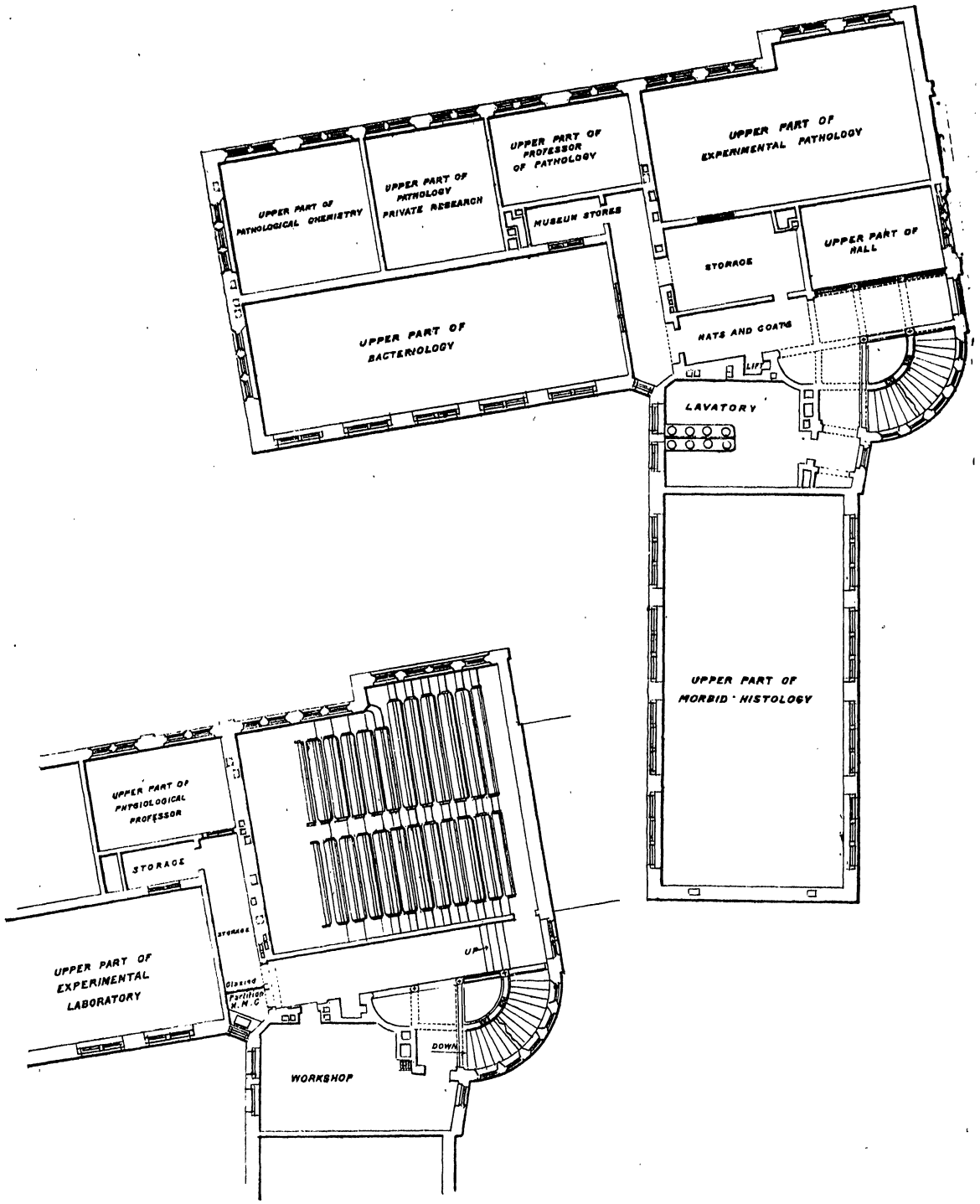


FIG. 2.

Fig. 1, plan of the floor between the ground and first floors; Fig. 2, plan of the floor between the first and second floors.

OUR Liverpool correspondent described last week at some length the noble gift which the Rev. S. A. Thompson-Yates has made to University College, Liverpool. We give above diagrams of two of the floor from which our readers can comprehend something of the completeness of the accommodation which is now offered to student and teacher alike in physiology and pathology at Liverpool. The laboratories will be opened to-day, Saturday, Oct. 8th, by Lord Lister.

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COMPLIMENTARY DINNER TO PROFESSOR VIRCHOW.

A LARGE and representative gathering of members of the medical profession of Great Britain and Ireland assembled in the reception-room at the Hôtel Métropole on Wednesday, Oct. 5th, to receive their distinguished colleague, Professor Virchow. The following is a list of those present:—Lord Lister, who subsequently presided, Sir Samuel Wilks, Sir William Mac Cormac, Sir William Turner, Sir William Broadbent, Sir John Williams, Professor Chiene, Sir Henry Norbury, Surgeon-General Jameson, Sir Trevor Lawrence, Sir Henry Thompson, Sir William Roberts, Sir Thomas Smith, Dr. Hare, Mr. Timothy Holmes, Dr. Lionel Beale, Dr. Watt Black, Dr. Pavy, Dr. Saundby, Sir Douglas Powell, Sir William Gairdner, Sir William Gowers, Sir Dyce Duckworth, Sir Robert Craven, Mr. Hutchinson, Dr. W. H. Dickinson, Dr. Robert Barnes, Dr. Bastian, Dr. Herman Weber, Dr. Lauder Brunton, Dr. Sansom, Dr. Crookshank, Dr. Althaus, Dr. Dawson Williams, Dr. Luff, Professor Kanthack, Mr. D'Arcy Power, Dr. Holman, Mr. Shirley Murphy, Dr. Glover, Dr. Coupland, Dr. Buzzard, Mr. Watson Cheyne, Mr. Malcolm Morris, Mr. Brudenell Carter, Dr. Ferrier, Dr. Poore, Dr. Radcliffe Crocker, Dr. Sims Woodhead, Mr. T. W. Nunn, Mr. Macready, Mr. Noble Smith, Dr. Ferguson, Dr. Meek, Dr. Dupont, Dr. Leeson, Dr. Allison, Dr. H. Williams, Dr. R. Jones, Dr. Abraham, Dr. Percy Smith, Dr. Dakin, Dr. Newton Pitt, Major McLaughlin, R.A.M.C., Dr. A. Jamison, Dr. E. H. Williams, Mr. Robert Jones, Mr. Ernest Clarke, Dr. L. M. Griffiths, Dr. P. Horrocks, Dr. Galloway, Dr. W. Hill, Mr. Ernest Lane, Mr. Howard Marsh, Mr. Cowell, Dr. Ewart, Dr. John Anderson, Dr. Habershon, Mr. James Berry, Mr. Swinford Edwards, Mr. M. Ling, Dr. Scanes Spicer, Dr. Haydn Brown, Mr. Work Dodd, Mr. H. J. Curtis, Dr. Wynter, Mr. W. T. Lister, Mr. Spokes, Dr. A. G. Phear, Dr. Hunter, Dr. G. F. Blacker, Mr. L. Cheatle, Dr. V. Harris, Mr. R. Johnson, Dr. Washbourn, Dr. G. Murray, Mr. H. G. Plimmer, Dr. C. J. Arkle, Dr. Bradford, Professor Ray Lankester, Mr. Owen Lankester, Mr. Bowlby, Mr. Fripp, Dr. James Taylor, Mr. Walsham, Dr. S. West, Dr. Sainsbury, Mr. G. Barling, Mr. B. Pollard, Dr. Mott, Dr. Spencer, Dr. Pye-Smith, Mr. W. Anderson, Dr. T. Williams, Dr. G. Fletcher, Mr. Crichett, Mr. Field, Dr. Ogilvie, Dr. Briscoe, Dr. R. W. Burnet, Dr. Chapman, Dr. Nix, Dr. Slimon, Mr. Andrew Clark, Mr. Pickering Pick, Mr. Willett, Dr. E. Seaton, Dr. Caton, Mr. R. Harrison, Dr. Bowles, Mr. Butlin, Dr. Goodhart, Dr. S. Mackenzie, Mr. Page, Mr. Tweedy, Dr. F. T. Roberts, Dr. Oliver, Dr. Allchin, Professor Corfield, Mr. W. H. Bennett, Surgeon-General Hooper, Dr. Biss, Dr. Gibbons, Dr. E. H. Hare, Dr. Abercrombie, Mr. Adams Frost, Mr. Gould, Mr. G. H. Makins, Dr. T. H. Green, Dr. Dreschfeld, Dr. Payne, Dr. Charlewood Turner, Dr. Haviland Hall, Dr. Sharkey, Mr. Barker, Mr. H. P. Symonds, Sir Hugh Beevor, Dr. W. R. Smith, Dr. Shingleton Smith, Dr. McCall Anderson, Dr. Whipham, Dr. Champneys, Dr. Eastes, Dr. Charters Symonds, Sir Felix Semon, Dr. Church, Mr. Croft, Mr. Langton, Dr. Eustace Smith, Mr. Howse, Dr. Gee, Mr. Alfred Cooper, Mr. C. Stonham, Dr. Owen Fowler, Dr. Voelcker, Dr. Penrose, Mr. J. H. Morgan, Mr. W. Braine, Mr. Michels, Dr. Chavasse, Mr. Freyer, Dr. O'Brien, Mr. Mirhead Little, Dr. Kingston Fowler, Mr. Waterhouse, Dr. Brockman, Mr. Bidwell, Mr. H. B. Robinson, Dr. Griffiths, Mr. Arbuthnot Lane, Mr. F. Durham, Dr. Perry, Dr. Herringham, Dr. C. Beale, Mr. J. Griffiths, Dr. T. R. Cross, Mr. Storer Bennett, Mr. B. Roth, Dr. Angell, Dr. W. A. Davies, Dr. T. Duka, Dr. C. Godson, Mr. Nettleship, Dr. Cheadle, Mr. Clutton, Dr. Acland, Dr. Leech, Dr. Mitchell Bruce, Mr. Godlee, Mr. S. Boyd, Dr. Pasteur, Dr. Beevor, Dr. V. Voss, and Dr. Montague Murray.

During the evening an anonymous telegram was handed to Professor Virchow, containing the following words: "Get thee hence, vile vivisector! England spurns thee!"

The toast of "The Queen" having been duly honoured,

Sir WILLIAM BROADBENT proposed the toast of "The Naval and Military Medical Services." The wording of this toast, he said, showed an important deviation from the toast recorded on the toast list. It was the first time that the medical departments of the two Services had been recognised by a special toast. Even at medical dinners the toast had usually been "The Navy and the Army," and the medical departments had been dragged in apologetically. He was glad to see a departure from this custom because the medical departments of the two great Services were well worthy of a special toast when the dinners were so pre-eminently, if not exclusively, medical. As medical men they were proud of the medical departments of the Navy and the Army, and he thought the prominence given to this toast was propitious. There was a growing recognition of the importance of the medical services in the conduct of campaigns. Campaigns had been ruined for want of medical knowledge and professional skill, but in our latest campaigns—in central Africa, in the wilds of Afghanistan, and more particularly in the last brilliant campaign—the medical department had shone conspicuously. The medical department of the navy was universally recognised as efficient, and a department which had given to the profession and to the world such men as Darwin and Huxley was well worthy of every recognition.

Sir HENRY NORBURY, Director-General of the Medical Department of the Royal Navy, in responding, said the navy as it existed to-day was never in a more efficient condition. He referred to the work which had been done by the blue-jackets in recent engagements and concluded by remarking that the navy was worthy of the greatest confidence of the country.

Surgeon-General JAMESON, Director-General of the Army Medical Staff, in responding, said that it had been frequently said of late that the responsibilities of Her Majesty's army were ever increasing, and he could positively state that the responsibilities as far as his department was concerned were increasing in corresponding degree. Responsibility begot experience, and often we got experience through our own misfortunes and the misfortunes of others. Our good friends the Americans had just afforded us an object-lesson of how to improvise an efficient medical service from outside material. He did not assert that the task was impossible, because the Americans had performed it before. They succeeded in that task during the great War of Secession, but they did so after an expenditure of life and money unparalleled in the history of the world and after four years of bitter experience. Our estimates were framed on the assumption that success in battle was a certainty; but war was full of strange chances and the unexpected often happened. The work of the medical department during the late frontier war in India and Egypt was exceedingly good and in the case of the war on the Indian frontier there was not a case of septic disease from beginning to end. He need hardly state at that gathering that that result had been obtained only by following the principles laid down by the chairman, Lord Lister.

Lord LISTER, who read communcations of regret for unavoidable absence from Sir John Simon, Sir James Paget, and Sir Thomas Grainger Stewart, proposed the toast: "The Health of our Honoured and Beloved Master, Professor Virchow." Many of those present, he said, had had the advantage of his personal instruction; all might rank as his disciples, for the truths which he has enunciated have been studied and learnt by us all. Comparatively few in the present company recollected the effect which was produced by the first production of his *Cellularpathologie*, which swept away the false and barren theory of structureless *blastema* and established the doctrine that every morbid structure consists of cells which have been derived from pre-existing cells as a progeny. No part of the great discourse which they had heard two days ago was of deeper interest than Professor Virchow's observations which led him into the true path. Cellular pathology was now universally recognised as a truth. One portion of Virchow's doctrine had, indeed, required some modification—that portion in which he ascribes suppuration to proliferation of cellular elements. Certain collections, which we must admit to be of pus, were now known to be the result of the migration of leucocytes; but that all suppuration is produced in that way he did not himself believe. From his own investigations he came to the conclusion that there was a great deal more truth in Virchow's original view than has been generally assumed. Another kind of cellular pathology had come into existence in comparatively recent years—that abnormal conditions of tissues and functions were very often induced by the actions of parasitic cells, whether vegetable or animal, introduced from without. Those who heard the Huxley Lecture two days ago would know that Professor Virchow was thoroughly

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alive to the progress of this new cellular parasitic pathology. In pathology Professor Virchow reigned supreme, but there were various other departments of human activity which he had made his own. No man was better versed in the history of medicine. He was an acknowledged authority in anthropology, a distinguished antiquarian, and a great politician. He did much to ameliorate the governmental conditions of his own country and later on in life his activity in the Reichsrath was so powerful that he became leader of the Opposition. One thing must be admitted by all—that Virchow's voice was ever heard in defence of liberty, truth, and righteousness. Lord Lister concluded by dwelling upon the large-hearted benevolence of Professor Virchow and his amiable character, which made him always ready to recognise work done by others, whosoever they might be. The toast was honoured with great enthusiasm.

Professor VIRCHOW responding said: The most kind and flattering words of your chairman have much surpassed not only my expectations, but my merits. I was prepared to find a friendly reception in your country, in which I have so often been hospitably received and where I always feel at home. I am no stranger amongst you. You all know that I have always been a friend of England. Even long before I had had the privilege of friendly relations with many of its best sons I had learned to admire the country and the people which, steadfast amongst the storms of the political movements of Europe, has preserved and developed the principles of civil and religious liberty—a glorious example for the whole of mankind. My inclination towards historical studies had made me familiar with the long roll of clever and successful investigators who had opened up to an unexpected degree the knowledge of nature in general and more particularly the knowledge of the nature and the internal processes of man. With respect and admiration I gazed at the work perfected by so many leading spirits. And then it was that I learned with delight how generously this people appreciates the work of foreign science, and how solid and lasting is the friendship accorded to those whom it considers to be its friends. Thus I have gladly accepted the invitation which has called me here now, and thus I feel again as if I were at home. Again I am under the hospitable roof of my old friend and pupil, Sir Felix Semon, who has so often been my guide and *fidus Achates* amongst you. Thus I see again the large number of distinguished men who are never tired of showing me that they are fond of me. Above all I wish to return my heartiest thanks to my venerable friend Sir James Paget, whom neither age nor infirmity prevented from calling on me. I salute with genuine emotion Lord Lister, whose immortal claims to glory outshine even his exalted position. I see around me the representatives and members of the oldest and greatest medical corporations of Great Britain, from whose works I have derived much instruction, much instigation to further labours. To-day, I think, I may say how much I have been touched by the confidence you have placed in me in choosing me to renew the remembrance of the great investigator whose commemoration we have just been celebrating. My task the other day demanded that I should demonstrate Huxley's influence upon the development of mental science. To-day I wish to emphasise that his merits in anthropological and ethnological respects are so great in the eyes of German *savants* that they alone would suffice to procure immortal reverence for his name. We shall not cease to follow in his footsteps and to defend the place which he has assigned to man in nature. Together with you we will try to clear up in every direction the biological history of man. May this task still further confirm and strengthen the solid union of English and German science. May the corporations of Great Britain and Ireland, which form the bulwark of medical science and practice that has remained unshaken for centuries, continue to give the world by teaching and example a guarantee that the results of our science may benefit mankind in an ever increasing degree. Before I sit down I ask you to drink with me to "The Health and the Prosperity of the Medical Corporations of Great Britain and Ireland," coupling with that toast the names of the Presidents of the Royal Colleges of Physicians and Surgeons, my old friends Sir Samuel Wilks and Sir William Mac Cormac, as well as of that distinguished representative of Scotch science Professor Chiene, the President of the Royal College of Surgeons of Edinburgh.

Sir SAMUEL WILKS, President of the Royal College of Physicians of London, said he claimed for the college which he represented a relationship with Professor Virchow, a distinguished Fellow of their body, the late Dr. Chance, having been the translator of the first English edition of Professor Virchow's chief work. Their guest belonged to no nation, time, or age. Pathology made the whole world kin. When English pathologists met men like Professor Virchow they felt that they were in sympathy with him, that their brains as it were were attuned to the same string. He remembered the time, now somewhere about forty years ago, when he was beginning to study the subjects which Professor Virchow had so advantageously taken up. He and his contemporaries were groping their way in the dark, when a light came upon them suddenly from afar—a light which illuminated everything and penetrated into the interior and gave them a new insight into physiology and pathology. Professor Virchow came to generalise like another Newton and gave them the *Principia* of medical science. If he might change the names he might say with Pope:—

> "Nature and Nature's laws lay hid in night:
> God said 'Let Virchow be!' and all was light."

Sir WILLIAM MAC CORMAC, President of the Royal College of Surgeons of England, said he was sure that everyone desired to do honour to such a man as their honoured guest and that he trusted that Professor Virchow would take back to his own country the belief that nothing which it was in their power to offer him was wanting. In Professor Virchow there was only one thing greater than the position which he held, and that was his modesty and his kindness.

Professor CHIENE, President of the Royal College of Surgeons of Edinburgh, who also responded to the toast, said that science knew no boundary, it recognised no nationality; its sphere was the universe, its object the good of humanity. In honouring Professor Virchow they were also honouring themselves.

Sir WILLIAM TURNER, President of the General Medical Council, proposed "The Health of the Chairman," and Lord LISTER briefly acknowledged the toast, concluding by handing Professor Virchow a book containing the names of all those present.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6652 births and 4695 deaths were registered during the week ending Oct. 1st. The annual rate of mortality in these towns, which had declined in the three preceding weeks from 24·6 to 23·6 per 1000, further fell last week to 21·8. In London the rate was 19·7 per 1000, while it averaged 23·3 in the thirty-two provincial towns. The lowest rates in these towns were 13·8 in Croydon, 15·5 in Cardiff, 16·4 in West Ham, and 16·5 in Leicester; the highest rates were 28·8 in Hull, 32·3 in Sunderland, 33·7 in Gateshead, and 35·5 in Salford. The 4695 deaths in the thirty-three towns last week included 1119 which were referred to the principal zymotic diseases, against 1546 and 1455 in the two preceding weeks; of these, 884 resulted from diarrhœa, 66 from whooping-cough, 60 from diphtheria, 53 from "fever" (principally enteric), 30 from measles, and 26 from scarlet fever. The lowest death-rates from these diseases were recorded in Croydon, Leicester, Halifax, and Birkenhead; and the highest rates in Norwich, Salford, Hull, and Gateshead. The greatest mortality from measles occurred in Norwich; from scarlet fever in Salford; from whooping-cough in Gateshead; from "fever" in Huddersfield, Bolton, and Birkenhead; and from diarrhœa in Norwich, Manchester, Salford, Hull, Sunderland, and Gateshead. The 60 deaths from diphtheria in the thirty-three towns included 33 in London, 6 in Swansea, 5 in Leeds, 3 in Birmingham, and 3 in Liverpool. No fatal case of small-pox was registered during the week under notice in any of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals on Saturday last (Oct. 1st). The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2459, against 2300, 2319, and 2353 at the end of the three preceding weeks; 300 new cases were admitted during the week, against 273, 243, and 288 in the

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three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 135 and 157 in the two preceding weeks, further rose last week to 200, and were slightly above the corrected average. The causes of 48, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bolton, Oldham, and in ten other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·8 and 19·7 per 1000 in the two preceding weeks, declined again to 19·1 during the week ending Oct. 1st, and was 2·7 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·7 in Leith and 17·6 in Glasgow to 25·5 in Greenock and 28·2 in Paisley. The 577 deaths in these towns included 75 which were referred to diarrhœa, 17 to whooping-cough, 14 to "fever," 11 to scarlet fever, 6 to measles, and 4 to diphtheria. In all, 127 deaths resulted from these principal zymotic diseases against 157 and 156 in the two preceding weeks. These 127 deaths were equal to an annual rate of 4·2 per 1000, which was 1·0 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 110 and 104 in the two preceding weeks, further declined to 75 last week, of which 32 occurred in Glasgow, 14 in Edinburgh, and 14 in Dundee. The 17 deaths from whooping-cough showed a decline of 5 from the number in the preceding week, and included 10 in Glasgow, and 4 in Edinburgh. The deaths referred to different forms of "fever" which had been 9 and 13 in the two preceding weeks, further rose to 14 last week, of which 6 occurred in Glasgow, and 5 in Paisley. The 11 fatal cases of scarlet fever also showed a further increase upon recent weekly numbers, and included 6 in Glasgow and 3 in Aberdeen. Of the 4 deaths from diphtheria 3 occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 68 and 85 in the two preceding weeks, further rose to 87 last week, but were 50 below the number in the corresponding period of last year. The causes of 36, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the three preceding weeks from 30·7 to 27·0 per 1000, further fell to 24·6 during the week ending Oct. 1st. During the thirteen weeks of the quarter ending on Saturday last the death-rate in the city averaged 24·3 per 1000, the rate during the same period being 19·4 in London and 18·7 in Edinburgh. The 165 deaths registered in Dublin during the week under notice showed a decline of 16 from the number in the preceding week, and included 38 which were referred to the principal zymotic diseases, against 35 and 32 in the two preceding weeks; of these, 27 resulted from diarrhœa, 5 from whooping-cough, 5 from "fever," (principally enteric), 1 from scarlet-fever, and not one either from small-pox, measles, or diphtheria. These 38 deaths were equal to an annual rate of 5·7 per 1000, the zymotic death-rate during the same period being 3·9 both in London and in Edinburgh. The fatal cases of diarrhœa, which had declined from 38 to 20 in the three preceding weeks, rose again to 27 last week. The deaths referred to different forms of "fever," which had been 3 and 6 in the two preceding weeks, were 5 last week. The fatal cases of whooping-cough, which had been 4 in each of the two preceding weeks, rose again to 5 last week. The 165 deaths registered in Dublin last week included 42 of infants under one year of age, and 39 of persons aged upwards of sixty years; the deaths of infants showed a decline, while those of elderly persons exceeded the number recorded in the preceding week. Four inquest cases and 5 deaths from violence were registered; and 44, or more than a fourth, of the deaths occurred in public institutions. The causes of 13, or nearly 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced: — Staff Surgeon Ernest E. Bray to the *Dido*. Surgeon Shirley H. Birt to the *Icarus*, additional.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Captain Green, Officiating Civil Surgeon of Howrah, are placed temporarily at the disposal of the Chairman of the Corporation of Calcutta. This cancels the notification placing the services of Captain Deare at the disposal of the Chairman. Captain Brown, Civil Surgeon of Purnea is appointed to act as Civil Surgeon of Howrah, during the absence on deputation of Lieutenant-Colonel Murray until further orders. Captain Vaughan, Deputy Sanitary Commissioner, Western Bengal Circle, is appointed to act as Civil Surgeon of Burdwan, during the absence on leave of Lieutenant-Colonel Gregg until further orders. Major J. Shearer, D.S.O., Bengal Establishment, 27th (Punjab) Regiment of Bengal Infantry, to be Secretary to the Principal Medical Officer, Her Majesty's Forces in India, *pro tem.*, vice Lieutenant-Colonel C. H. Beatson, whose tenure of appointment has expired. Major Moscardi Bellarmin Braganza (Bombay), 30th Regiment of Bombay Infantry (3rd Baluch Battalion), retires from the service.

VOLUNTEER CORPS.

Rifle: 1st (City of Bristol) Volunteer Battalion the Gloucestershire Regiment: Surgeon-Lieutenant J. Young to be Surgeon-Captain.

NATIONAL SOCIETY FOR AID TO THE SICK AND WOUNDED IN WAR.

The following is a letter dated from ss. *Mayflower*, Cairo, Sept. 18th, 1898, and addressed to the above society by Major W. A. Cowen, R.A.M.C.: "I beg to submit the following report *re* the trip of the National Aid Society's steamer *Mayflower* for the conveyance of sick and wounded from Assouan to Cairo. On Sept. 6th I took over medical charge of the ship, having under my command one medical officer, one serjeant, one corporal, and six privates of the Royal Army Medical Corps. The medical and surgical equipment was supplied from the military hospital at Cairo and proved adequate for the purpose. Three civil nurses were sent out from London by the society; they gave great satisfaction and were zealous in the performance of their duties. The sick and wounded received military rations for the journey, which were supplemented with the society's stores or substituted where necessary. The ship had accommodation for 52 men; double-berthed cabins on the upper deck to accommodate 30. On the lower deck the arrangement of the cabins has been altered, the partitions between the cabins being taken away and the berths arranged in two tiers, 12 on the starboard and 10 on the port side. This proved of great convenience, as it enabled stretchers to be taken inside the cabin and right up to the berth's side. All cases confined to bed, such as wounds of the leg and dysentery, were treated, as far as accommodation permitted, on the lower deck. Assouan was reached midday, Sept. 13th. At 10 A.M. on the 15th a sick convoy, consisting of 6 officers and 44 men, arrived by train from Shellal. The embarkment took place at once and within an hour the ship left for Cairo. Of the 6 officers 4 were wounded, 3 by bullets, 1 by a sword, while 2 were suffering from dysentery. Of the 44 men, 27 were wounded and 17 had dysentery and fever. The wounds consisted of bullet, sword, and spear, some of the men being wounded in two and three places. The great feature in the ship, in my opinion, is that wounds could be kept at physiological rest, this being conducive to treatment and comfort not to be obtained in a railway journey. Then, again, wounds could be, and were, dressed daily on strictly antiseptic principles, thereby minimising considerably deleterious after-effects. In conclusion, I beg to express the surprise and delight of both officers and men at the ship and its comforts provided for them, and which I feel sure will be most gratifying to the society. The ship arrived at Cairo on the afternoon of Sept. 18th, when the sick and wounded were conveyed by ambulance to the hospital." The following telegram has been received: "Society's hospital steamer *Mayflower* reached Cairo on Saturday evening, Oct. 1st, with the last of the wounded

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from the battle of Omdurman—namely, 3 officers (Brinton, Nesham, and Nicholson), and 44 men; also 2 officers (Graham and Archer) and 2 men, sick, all benefited by the care bestowed upon them while on the steamer, which left on Sunday (Oct. 2nd) for Assouan to bring back the remainder of the sick from the front."

SURGEON-GENERAL CLEGHORN, C.S.I., I.M.S.

Although no official intimation had reached India up to the date of the reception of the last mail from that country it seems certain that Surgeon-General J. Cleghorn, M.D. St. And., C.S.I., the Director-General of the Indian Medical Service and Sanitary Commissioner with the Government of India, has announced his intention of retiring at the end of his furlough in this country. Surgeon-General Cleghorn, who has just been appointed honorary surgeon to the Queen, vice Deputy Surgeon-General S. B. Partridge, C.I.E., deceased, has had a long and distinguished career in India, where he will be much missed. He held the post of civil surgeon at Lucknow for a long time and, it will be remembered, was the delegate appointed to represent the Indian Empire at the Sanitary Convention at Geneva, where he did excellent service in connexion with the outbreak of plague in India. Surgeon-General R. Harvey, who has been filling the post of Director-General of the Indian Medical Service, and that of Sanitary Commissioner with the Government of India during the absence of Surgeon-General Cleghorn, will, no doubt, be confirmed in the appointment, and, from all that is known of him and of his eminent and varied services, he should prove a worthy and competent successor to and occupant of the post. Surgeon-General Churchill, R.A.M.C., officiating principal medical officer, Bengal command, has proceeded to England on three months' leave, Colonel Price, R.A.M.C., meanwhile officiating in his stead. It is understood that Surgeon-General Catherwood, R.A.M.C., now serving in this country, will be nominated to the post of principal medical officer of the Bengal command.

THE NILE EXPEDITION AND THE ROYAL ARMY MEDICAL CORPS.

A despatch has been received by the Secretary of State for War from the General Officer Commanding the Force in Egypt, Sir H. Kitchener, K.C.B. The following officers of the Royal Army Medical Corps are specially mentioned in the despatch: Lieutenant-Colonel A. T. Sloggett (wounded), Lieutenant-Colonel G. A. Hughes, Major C. A. Webb, Major G. Robinson, Major G. F. A. Smythe, Major D. Wardrop, Major R. W. Barnes, Major E. M. Wilson, Major A. Dodd, Major M. O'D. Braddell, Major C. R. Kilkelly, Major W. H. Pinches, Major H. M. Adamson, Major D. M. O'Callaghan, Major H. B. Mathias, Captain A. Y. Reily, Captain R. H. Penton, Captain H. E. Hill Smith, Captain C. S. Spong, Captain P. H. Whiston, Captain G. A. T. Bray, Captain J. W. Jennings, Captain H. N. Dunn, Lieutenant E. W. Bliss, and Lieutenant S. L. Cummins. In reference to Lieutenant-Colonel Sloggett an amusing story was related by Surgeon-General Jameson at the dinner to Professor Virchow on Wednesday evening last. Lieutenant-Colonel Sloggett was shot at Sir H. Kitchener's great battle, the bullet entering immediately above the left nipple. The ordinary aseptic dressing was applied and the wound healed in three days. When he reported himself to the Director-General in London, Surgeon-General Jameson asked him how it was that the bullet did not enter his heart, and remarked that Lieutenant-Colonel Sloggett ought to apologise for being alive. The latter replied that he thought his miraculous escape must be accounted for by the fact that his heart was in his boots at the time!

THE LATE SOUDAN CAMPAIGN.

The Sirdar evidently agrees with Marshal Saxe that an army marches on its belly, for he specially alludes in his late despatch to the excellent way in which the soldiers composing his force were rationed in the field and to the favourable effect this had in fortifying their health and strength. If an army is well fed and looked after, suitably clad and not habitually overworked, it is generally healthy, although it cannot, when the excitement of the struggle is over, be expected to escape altogether the sickness incidental to campaigning in a hot climate. As so frequently happens, no sooner is the nervous exertion and strain over than the troops begin to manifest and harvest the sickness they have contracted during active operations in the field. The latest advices from Cairo, however, state that the health of the troops has been much better than was expected. The death-rate from dysentery and enteric fever is lower than it was after the Dongola campaign.

THE MEDITERRANEAN SQUADRON.

We see by the papers that some dissatisfaction has been caused among naval medical officers serving with the Mediterranean fleet at the promulgation of an order that every ship is to have a surgeon on board at all hours of the day. We do not know, of course, what reasons the admiral may have had for this order, although he is quite within his power and rights to enforce it. The custom has hitherto been, where several ships were together, for a certain proportion of medical officers to remain on board their ships after working hours so as to be at once available if and when required. So far as we know this has hitherto worked very well. A rigid enforcement of the order that every ship is to have a medical officer always on board would practically make a prisoner of the medical officer where there happened to be only one on board a small ship; but there is probably some explanation forthcoming.

MAJOR MARCHAND'S MISSION.

It seems that Major Marchand's command at Fashoda is to be reinforced. At all events, the gallant adventurer is to have the services of another medical officer in addition to the Dr. Emily whose special promotion was recently mentioned in this column,[1] and doubtless the new candidate for Soudan distinction will not travel without an escort. According to a Ministerial order dated August 23rd, 1898, Dr. Ascornet, naval surgeon of the second class, has been struck off the strength of a marine battalion at Toulon in order that he might be "attached to the Marchand mission."

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The winter work of the school commenced on Monday, Oct. 3rd, when two large classes paraded for instruction under Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., and Surgeon-Captain E. Ryan. Both classes were so well attended on the first night that the brigade-surgeon announced that no more men would be taken in either class after Monday, Oct. 10th. The officers' class recently held at the headquarters of the 1st Middlesex Rifle Volunteers has also been well attended and nearly 300 officers have now passed through the school.

THE LATE SPANISH-AMERICAN WAR.

The *Saturday Review* of Oct. 1st contains the first of what promises to prove an interesting series of articles on the above war by "an eye-witness." It is certainly lamentable to read of the state of things which apparently prevailed among the American troops. The writer says that the saddest instance of American official blundering was connected with the Army Medical Department, with which he proposes to deal in his article next week—the current number of the *Saturday Review*.

DEATHS IN THE SERVICES.

Brigade-Surgeon James Edward Tierney Aitchison, M.D. Edin., C.I.E., F.R.S., LL.D., Bengal Army (retired), on Sept. 30th, at his residence at Kew, in his fifty-fourth year. He entered the Bengal Medical Service in 1858 and served in the Afghan war of 1878.

It is announced that the tenure of appointment of the Directors-General of the Army Medical Department and the Army Veterinary Department shall in future be for five years unless the term is specially extended by the Secretary of State for War for a further period not exceeding two years.

In consequence of two officers of the Militia Medical Staff Corps having been seconded for service in the Niger Protectorate under the Foreign Office there are now vacancies for commissions.

Lieutenant-Colonel A. Kirwan, retired pay, R.A.M.C., has been appointed to the medical charge of the Leicestershire Regimental District.

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[1] THE LANCET, Sept. 17th, 1898, p. 778.

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Correspondence.

"Audi alteram partem."

"THE PRACTICAL APPLICATION OF BACTERIOLOGY TO COMMERCE."

To the Editors of THE LANCET.

SIRS,—May I be allowed to add a footnote to the leading articles which appeared in THE LANCET of Oct. 1st? I have read with especial interest your remarks upon the practical application of bacteriology to commerce, as I have had occasion to follow the developments which have taken place in this branch of bacteriological investigation during the past few years. You have rightly emphasised the benefits which the labours of Pasteur have conferred on the industries of his country. This side of Pasteur's work has received too little attention in England though it has had more far-reaching effects than even his investigations upon disease. The impulse derived from the researches of Pasteur in this field has made itself but little felt amongst us if we take the achievements of foreign laboratories as a standard. I need only refer to Hansen's investigations which led to the introduction of pure yeast cultures and reduced brewing to an accurate scientific operation. The work also which is being carried on in Denmark and America upon dairy bacteriology is gradually placing the methods employed in the dairy on an accurate basis. In Germany the possible utilisation of bacteria in agriculture is receiving the closest attention, as well as the study of the living agents which play an active part in various fermentations—e.g., tanning, wine preparation, tobacco manufacture, &c. In this field of work we lag behind the continent and America. The methods practised on Lord Vernon's estate furnish an example of what must be done if our dairy produce is to be brought to the level of that of Denmark.

The laboratory of M. Duclaux at the Pasteur Institute, along with the instruction of M. Fernbach, is worthily upholding the Pasteur tradition and is yearly training a body of men to approach their work in a scientific spirit. M. Calmette at the Pasteur Institute of Lille, which I have visited, is carrying on the same work and is cordially supported by the municipality and the manufacturers of the district. M. Calmette's investigations upon snake venom are widely known, but fewer know of his investigations upon alcoholic fermentation, which promise to reduce distillation to a scientific method.

It may be of interest in this connexion to announce an important departure at the British Institute of Preventive Medicine. A large laboratory has been assigned to instruction and investigation in zymotechnical questions. In this laboratory it is hoped that the agriculturist, brewer, and chemist may find the instruction individually required for successfully employing the living agents of fermentation. Investigations will also be undertaken under competent direction, and it is hoped that when the department is fully organised many will be willing to avail themselves of its facilities and that it will become a centre of useful work on the lines you have indicated. The article upon a Central Bacteriological Laboratory for London has also a special interest for the British Institute of Preventive Medicine. This institute was amongst the first to undertake the examination of material on behalf of medical men and sanitary authorities and the requests for its aid have come from all parts of the United Kingdom. The institute is likewise doing similar work for important London districts—e.g., Marylebone, St. Pancras, Islington, Fulham, &c.—as well as conducting the systematic examination of water-supplies for a number of public bodies. The work is being done economically and with satisfaction to the various authorities concerned. The plea for a central laboratory for such investigations must appeal strongly to the community. At the same time, as you suggest, the need could be adequately and more economically met by utilising existing institutions. This institute was established by private enterprise to provide a national centre for bacteriological investigation and in its new home at Chelsea possesses a bacteriological department, a zymotechnical laboratory, research rooms, and a laboratory which it is desired to make a centre for investigations bearing on the public health. The question is a natural one: Why multiply new institutions if the work it is desired to do can be satisfactorily and economically carried out by those already in existence? The fees received would help to support a staff of men devoting their whole time to investigation and would be the means of increasing the output of valuable research work. I trust, having regard to the importance of the matters in question, you will allow me to take the opportunity of stating my views and of saying how heartily I endorse the suggestions you have made for the direction of this new movement. I am, Sirs, yours faithfully,

ALLAN MACFADYEN,
Director, British Institute of Preventive Medicine.
Grosvenor-road, London, S.W., Oct. 3rd, 1898.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—In his letter published in THE LANCET of Sept. 10th Dr. Lionel Beale does not meet the objections I have advanced against his views on vitality. I ask, whence comes the augmentation in the sum of vitality possessed by an organism as it develops from a one-celled to a myriad-celled being, unless it be from the food and oxygen conveyed to it from without? For vitality, as Dr. Lionel Beale employs the term, is, I take it, a species of force, and force cannot be created out of nothing. Seeing, moreover, that force cannot be annihilated, what becomes of the vitality of an organism after death unless it be transmitted into some chemical, physical, or kindred force? But Dr. Beale would deny the possibility of such transmutation since he denies any correlation between vitality and the forces belonging to matter.

I contended that Dr. Lionel Beale is illogical in assuming that bioplasm is structureless, but my reason for this is not the one given by him. I say that in our journey into the world of the infinitesimal we, with our very limited means of investigation, come sooner or later to a point at which we cease to detect structure, but that this is a purely arbitrary point, that it merely marks the limit of our perceptions and *bears no relation whatever to any grand fact of nature.* Does Dr. Beale suggest that the nucleus of the ovum and spermatozoon that are destined to develop into a Newton or a Shakespeare cannot possess an elaborate structure simply because they appear so small to us? If he does I must repeat my assertion that his position is wholly illogical. The nucleus of the genital cell is no nearer the limit of smallness than it is to the limit of greatness, for we may go on dividing or doubling it *ad infinitum* without reaching the confines of the one or the other. We must not be hampered in our biological speculations by false conceptions of space. Bearing these considerations in mind Dr. Lionel Beale must of necessity admit that his bioplasm *may* be structural, and if he admits this he will more readily allow the possibility of "vitality being a peculiar play of forces belonging to the inorganic world," and depending upon the nature and arrangement of the atoms of bioplasm (= structure) and other purely physical conditions.

Dr. Lionel Beale asks what, on the assumption that "vitality is a peculiar play of forces belonging to the inanimate world," governs and controls these forces in living matter. I would reply that the behaviour of living matter depends upon the material conditions as represented by the living matter and its environment, just as the behaviour of a planetary system depends upon material conditions—upon the size and relative position of the worlds, &c., constituting it (= structure) and upon its relations to other systems (= environment). To call in a power, a governing, controlling, in short, an intelligent agency, which is quite distinct from the forces of the inanimate world, is but to deepen the mystery of life. Dr. Beale, instead of seeking to explain the behaviour of living matter by reference to known laws, postulates a power which is as great a mystery as the thing he seeks to explain by it.

I ought here to say that I used the term "spiritualist" not in the vulgar but in the modern psychological sense, as distinguished, namely, from "materialist." The former assumes that mind can act upon matter and the latter that matter can produce mind; and I compared Dr. Beale to the spiritualist in that he assumes that vitality is a controlling agency existing apart from matter, but yet capable of guiding its operations so that it shall *live.* By thus assuming that the immaterial can act on the material Dr. Beale takes up

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a position which many great thinkers have regarded as untenable. I am, Sirs, yours faithfully,

Wimpole-street, W., Sept. 26th, 1898. HARRY CAMPBELL.

CONSCIENTIOUS OBJECTION AT KEIGHLEY.

To the Editors of THE LANCET.

SIRS,—We have this week the first example of the wholesale working of the new Vaccination Act in an anti-vaccinationist community. Keighley has for more than twenty-five years been one of the strongholds of anti-vaccination. On Tuesday, Oct. 4th, 660 parents and guardians succeeded in gaining exemption for about 1670 children. At a similar court to be held on Oct. 18th no doubt a large number of additional exemptions will be granted. As the population of Keighley is about 35,000 it will be seen how large a proportion of the population has already exercised its right (granted by the wisdom of Parliament) to allow children to become potential dangers to public health.

Conscientious objectors forsooth! How were the proceedings carried out? The parents were brought into court in batches of from 10 to 20 at a time and asked whether they had conscientious objections. Some replied verbally, and in many cases a nod of the head was deemed sufficient proof of their deep-rooted convictions. A fee of 2*s.* was exacted in each case. With such rapidity were the proceedings carried out that in two courts the whole of the 1670 children were exempted in two hours and a half! A pure farce from beginning to end. It savours more of a Gilbert and Sullivan comic opera than the administration of laws of the realm. All these people and their children have now received the sanction of the Government to be a medium for the maintenance and diffusion of small-pox, whereas before the passing of the present Act they were tolerated by a negligent and apathetic board of guardians. One wonders how long the comedy will go on before it becomes a tragedy and wakens up the Government to a due sense of its responsibility. Should there be a serious outbreak of small-pox among these "conscientious objectors" the promoters and supporters of the exemption clause among the Government must consider that the responsibility lies at their door. If vaccination is of any use let it be absolutely compulsory, with imprisonment as punishment for non-compliance; if, on the other hand, it is useless, let it be voluntary.

I am, Sirs, yours faithfully,

Oct. 6th, 1898. CLEMENT ROGERSON, M.D. Lond.

"HOSPITAL REFORM ASSOCIATION."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 10th Mr. T. Garrett Horder, the hon. secretary of the Hospital Reform Association, solicits the opinion of your readers as to "whether it would be desirable and useful to hold a congress in London some time during the ensuing year to discuss the subject." I, for one, answer decidedly, Yes, and it is sincerely to be hoped that both the medical profession and the subscribers who should be so deeply interested in this important question will combine in making the meeting a success. I have been moving in this matter for the last few years and I feel convinced that we cannot too often draw the attention of the public to the increasing evil of hospital abuse.

I am, Sirs, your obedient servant,

Hove, Oct. 3rd, 1898. FRANCIS J. A. WARING.

RESONANT SPLEENS.

To the Editors of THE LANCET.

SIRS,—In his interesting case reported in THE LANCET of Oct. 1st, p. 866, Dr. J. Michell Clarke remarks that a "small area of tympanites beyond the stomach to the left over the tenth and the eleventh ribs was difficult to account for." The situation described and that depicted in Fig. 2 corresponds so exactly with the normal splenic surface area that in the absence of a reference to the presence of any splenic dulness the view might perhaps be entertained that the tympanitic note was due to the spleen. This suggestion is made on the strength of a series of observations in which the dulness of the spleen was converted into a boxy tympanitic resonance. The resonance referred to by Dr. Michell Clarke may have been brought about in an entirely different way; but the case reads as though it might illustrate a peculiarity which it may be sometimes useful to bear in mind at the bedside and to which reference has been made in a note on the Diagnostic Uses of Percussion of the Vertebral Spines,[1] and in a Lecture to Advanced Students on Pleximetry and on Pleximetric Bones and Viscera,[2] where the "boxy spleen" is further discussed.

I am, Sirs, yours faithfully,

Curzon-street, Mayfair, Oct. 3rd, 1898. WILLIAM EWART.

SPHINCTER STRETCHING IN CONSTIPATION.

To the Editors of THE LANCET.

SIRS,—The subjects of fissure *in ano* have usually suffered from prolonged constipation. This would seem to be permanently relieved by dilatation of the sphincter and that to an extent which is incompatible with the supposition that hygienic and drug treatment have been the only agents in causing success. The consideration of this fact has led me to employ sphincter stretching in several cases of intractable constipation in children with, so far, good results. I would suggest that there are two factors making for this result: (1) the destruction of what was mechanically a relative stricture; and (2) the presence of a nervous connexion between the anal orifice and the large bowel analogous to the so-called polarity of the uterus. I have been unable to give this method a trial in adults and should be glad to learn the experience of others in the matter.

I am, Sirs, yours faithfully,

SIDNEY VINES,
Assistant Resident Medical Officer, St. Mary's Children's Hospital, Plaistow, E.

Plaistow, E., Oct. 2nd, 1898.

SANITARY INSTITUTE CONGRESS.

To the Editors of THE LANCET.

SIRS,—The newspaper reports of the Congress at Birmingham are in error in attributing to me a motion regarding sanitary administration in Ireland. The motion was made by Mr. J. H. Fergusson, Killygordon, Donegal. Your insertion of this correction will oblige.

I am, Sirs, yours faithfully,

Glasgow, Oct. 3rd, 1898. JOHN C. MCVAIL.

THE LIMITS OF PROFESSIONAL SECRECY.

To the Editors of THE LANCET.

SIRS,—Some months ago I was called upon as a Poor-law medical officer to attend an unmarried woman suffering from septic metritis. I found the uterus to contain a decomposed fœtus. She absolutely refused to communicate her condition to anyone except a woman (a relation) in attendance. Her state was too serious to admit of delay and I could not refuse to attend her without divulging her condition to the board. I therefore procured the help of two colleagues, curetted the uterus, and returned the case as "septic metritis." In consequence of neighbourly gossip the guardians have now applied to me for information as to whether the late illness was produced by her own misconduct. I refuse all information as a violation of professional secrecy. Can you advise me if any conditions of relationship or employment warrant a medical attendant giving such information to any third person and if any statutory or common law protection against action is afforded to a Poor-law medical officer in such a case? Could I have acted otherwise in dealing with the matter? I am, Sirs, yours faithfully,

Oct. 2nd, 1898. "JOHN DOE."

*** We consider that "John Doe" was quite right in not divulging the cause of the metritis. He is not a censor of morals as well as a Poor-law medical officer. If he makes the return asked for we doubt if he would be protected by "privilege." Probably a defence in a civil action of giving information "without malice" would be successful, but we

[1] THE LANCET, July 2nd, 1898, p. 23.
[2] Clinical Journal, July 13th, 1898.

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advise him not to run the risk. If he is pressed for further information he should refer the matter to the Local Government Board and await events.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Progress of the Plague Epidemic.—Statistics of Inoculation.

THE heavy rainfall of the past week in Bombay city, amounting to over 20 in., has been accompanied by a slight decrease in the total mortality. The official returns, however, show 175 deaths from plague against 168 last week, and as the total mortality is above the average by considerably more than this number of plague deaths there is strong reason to suppose that many cases are recorded as due to other diseases. This especially applies to the Mohammedans, whose record of plague deaths is obviously incorrect. Registration is admittedly very faulty and the total number of weekly deaths is the only thing which can be relied on. It is unfortunately too plain that plague is again developing, although the successive increases each week have not been large.

In the Madras Presidency a few cases keep cropping up, but it has not yet been officially declared in the city. The excessively high rate of mortality is, however, very suggestive. Some disturbances have occurred at Bangalore, panic with regard to plague measures having seized the people, and troops have had to be called out.

In the Bombay Presidency 3637 cases and 2749 deaths were recorded against plague during the past week. The total mortality from plague since the commencement of the epidemic in September, 1896, is 105,512.

With regard to inoculation remarkable success is reported from Hubli. It is stated that no less than 32,000 people have gone through the process and that during the existing outbreak in that city only 69 of these have been attacked, while among the 8500 uninoculated there have been 417 attacks. If these figures be reliable they speak for themselves. In the district around, however, there has been a large number of deaths—the Dharwar district, in which Hubli is situated, being credited with 1047 cases and 892 deaths. To show how differently inoculation has been received at different places there remains only to compare Calcutta and Bombay, each with about 750,000 inhabitants and with about 2000 and 20,000 persons inoculated respectively, against Hubli, with a population of about 40,000 and no less than 32,000 inoculations. In Bombay there have been 27,305 deaths from plague and in Calcutta about 200. Amongst the inoculated in Bombay there were :—

		Population in 1891.
Brahmins	827	 37,982
Jains	132	 25,225
Hindus of other castes	2,331	 451,465
,, of low caste	2,434	 45,169
Mussulmans...	5,023	 155,101
Parsees	6,056	 47,458
Jews...	129	 5,021
Europeans	88	 11,290
Eurasians	27	 4,330
Native Christians	852	 29,712
Other nationalities	182	... ... —
Unclassed Hindus	573	... ... —
Total	19,554	Total... ... 812,753

Sept. 16th

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Birmingham Medical School.

THE present session was opened on the 3rd inst. at Mason University College, the inaugural address being delivered by Professor Michael Foster of Cambridge.[1] The dean of the medical faculty, Dr. Windle, presided and a large attendance included the Lord Mayor of Birmingham (Mr. C. Beale), several members of the council, a number of the professors, and others interested in the cause of medical progress. The address dealt with the rise of universities and guilds, their development, aims, and functions. A sketch was given of the proposed university for Birmingham, in which it was insisted that it should not be an educational institution directed by the principle of payment by results; nor should it be a system of classes "which proposes at the least expenditure of time, money, and, it may be added, of brains to drive a head through the same narrow gateway of this or that formal examination." The encouragement of learning and research was indicated as the object to be kept in view—the spirit of inquiry, the guiding spirit. Some valuable hints and counsel as to the future were given and attentively listened to. The address was marked by a thoughtful accuracy of expression and intimate experience of the subject, the outcome of the wise and deliberate reflection of a master mind. We hope to see it in a permanent form, so that we may be enabled to dwell upon the eloquent truths it proclaimed. The prizes of the clinical board will be distributed by Sir William Mac Cormac on the 6th inst. at the General Hospital. The same evening Sir William Mac Cormac is to be entertained at dinner by the members of the Midland Medical Society, who celebrate their jubilee on this occasion. They look forward to the honour of having the learned President of the Royal College of Surgeons of England as their guest. The inaugural address of the same society will be given by Mr. Treves on the 20th inst.

Oct. 4th.

[1] See page 915 of this issue.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Insanitary Board Schools.

DR. WOODCOCK, who is a member of the Manchester School Board, did good service at the meeting of the board held on Sept. 20th by calling attention to serious sanitary deficiencies in several of their schools. The playground into which 198 boys are turned out for air and exercise at one school contains 180 square yards. At the same school 212 girls have to find space for fresh air and active games in 147 square yards. A sub-committee has recommended the increase of these "playgrounds" to 264½ and 239½ square yards respectively and it can be imagined how the children will revel in the sense of boundless space when these additions are made. In one class-room, 15 ft. 9 in. by 11 ft. 9 in., affording proper accommodation for 18 children, there were present when Dr. Woodcock visited it 50 children and their teacher, and in the boys' department he found 27 boys and their teacher in a room with proper accommodation for 18. At another school, in which the only ventilation is by open windows, the odours from a deposit of manure are wafted in from the confined space at the back of the buildings and this manure is stirred up for removal, it is said, three times a week. At St. Michael's Board School in Hulme, "the cellar communicating with the offices was occupied by 57 boys and 2 teachers. There were 5 gas-lights burning." The boys had to wear their caps as a protection against the draught from the open windows, through which the filth from the street "was freely blown." In an adjacent room he "found 30 boys and their teachers in a 'poisonous den'—a dark room below the level of the street, 16 ft. by 11 ft., and only 8 ft. high. There is not an inch of playground to this school." This state of things, of which examples could easily be multiplied, has not been suspected by the ratepayers of Manchester, and now that it has been at last revealed by a medical member of the board no doubt some energy will be displayed in removing evidences of—to say the least—gross disregard for the bodies, whatever may be the case as to the minds, of the poor children under the fostering care of the School Board. One of the older members of the board said, truly enough, that "the statement of Dr. Woodcock constituted a terrible indictment." Some people complain of lavish and unnecessary expenditure on the part of the School Board, but clearly there has been none too much done for the health of the children. More attention should be given to securing space and light, even if it should entail less expenditure on the costly decorative features so attractive to public-spirited members of "boards." It may be well, perhaps, if some candid friend will look to the sanitary conditions of the voluntary schools.

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Typhoid Fever at Leigh.

A serious outbreak of typhoid fever has taken place at Leigh, near Manchester. Up to a few days ago 28 cases had been reported and several deaths had occurred. The Leigh District Council Health Committee are urging the Leigh Joint Hospital to complete their typhoid ward as quickly as possible. There is also a "rivers pollution" question in that neighbourhood, and the Hindley District Council have received 28 days' notice to stop the discharge of untreated sewage into the West Leigh brook under threat of legal proceedings. Whether this is connected with the outbreak does not appear, but striving for purity of streams is always good and increasingly important.

Poisoning from Bad Food.

Deaths from "bad food" have been unusually frequent during the hot period through which we have just passed. The city coroner held an inquiry on Sept. 22nd as to the death of a young fellow, aged eighteen years, who ate some pork for supper on the Monday and died on the Tuesday evening from gastro-enteritis. He was seized during the night with vomiting, diarrhœa, and cramp, and in the opinion of Dr. E. S. Reynolds, who made a post-mortem examination, "the pork said to have been eaten ..... on Monday evening might have set up the disease." The evidence of the person who is said to have sold the pork throws a little sidelight on food customs in the "slummy" parts of the city. The meat was bought on the Friday evening and kept on a stove in the back kitchen till Monday morning, when it was cooked. She "gave 2*s.* 3*d.* a dozen for it, which was a very good price." 2½*d.* a pound may have been a very good price for that special piece of pork, but most of us would look with suspicion on meat offered at such a "sacrifice."

"Carbolic Poisoning."

"Carbolic poisoning" is such a common newspaper heading that it is apt to pass unnoticed. The city coroner made some remarks on it, as he has frequent opportunities of doing, at an inquest on Sept. 23rd. The deceased and his wife for some time past had lived a miserable life and had drunk heavily; the latter came drunk to the court to give evidence which, however, was not taken. The man, forty-three years of age, goaded by drink and misery, bought sixpennyworth of carbolic acid, drank it, and threw away the bottle. He was taken to the infirmary, where he died. The coroner spoke of the frequency of this mode of suicide, which he could scarcely understand, seeing that it was like swallowing red-hot coals. The jury suggested that some restriction should be placed on the sale of carbolic acid, and he said "the legislature had no more contemplated that people would poison themselves in this way than that they would swallow live coals," but these cases were becoming so common that he thought its indiscriminate sale should be prevented. A cynic might perhaps say that the lives lost through carbolic acid are scarcely worth preserving, but that ought not to be the attitude of a "parental Government."

Vaccination: a Ray of Light.

At the meeting of the Salford Board of Guardians on Sept. 23rd permission was given to terminate the tenancy of certain vaccination stations on the introduction of home visits by the vaccination officers. One of the guardians distinguished himself by a prose pæan on the discomfiture of the vaccinationists. He congratulated the board that in the future they need not imprison people for not vaccinating their children. They never had done so and now there would be really no necessity for it—i.e., they never had done what there was a necessity for their doing. "The new law respected every man's conscience" (perhaps he should have said every man's ignorance and prejudice, as conscience has so very little to do with it) "as it ought to do, and he was glad they had got this ray of light in the nineteenth century." We cannot congratulate Salford on the possession of a guardian whose ray of light seems to be darkness.

Sept. 30th.

DEVONPORT WORKHOUSE.—On Sept. 30th the Devonport Board of Guardians discussed the alleged dark and insanitary condition of the punishment cells at the workhouse, and eventually it was decided to ask the Works Committee to effect certain improvements in them.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Vacant Professorship of Midwifery and Gynæcology in University College, Liverpool.

THE appointment by the Council of the Senatus Academicus to the professorship of midwifery and gynæcology in University College which became vacant by the demise of Dr. John Wallace on Sept. 1st is looked forward to with some interest. The candidates for the post are Dr. Henry Briggs, Dr. T. B. Grimsdale, Dr. Arthur Wallace (son of the late professor), and Dr. John E. Gemmell. All the four applicants are fully qualified for the office, but it is anticipated that the contest will lie between the first two candidates. As the winter session has already commenced the election will take place at an early date.

The West Derby Board of Guardians and the Treatment of Tuberculosis.

The West Derby Board of Guardians are taking an active interest in the question of the "open-air" treatment of tuberculosis. On the initiative of Mr. J. C. Bradshaw, the chairman of the Mill Road Infirmary, the board have addressed a communication to the medical officer of health of Liverpool, enclosing a copy of a report from Dr. Raw, the medical superintendent of the Mill Road Infirmary, on the open-air treatment of tuberculosis. The guardians, however, are not satisfied that the number of cases under treatment in their infirmary is sufficient to justify them in establishing a separate institution on the lines laid down by Dr. Raw, but they would be glad if Dr. Hope would lay the report before the health committee in the hope that the committee may consider the advisability of establishing a municipal institution for the out-door treatment of tuberculosis on similar lines.

The late Right Hon. Sir Arthur B. Forwood, Bart., M.P.

The late Sir A. B. Forwood, who was an alderman of the city council, took an active interest in local sanitary affairs and during his chairmanship of the health committee, a post filled by him for many years, he brought about many important improvements contributing to the health of the city in general. He was largely instrumental in retaining the Ladies' Charity and Lying-in Hospital for maternity cases, although an active party moved to change its constitution with the purpose of converting it into a hospital for gynæcological patients only, assigning as a reason for the proposed conversion the excessive rate of mortality among the lying-in patients (which was afterwards discovered to be due to defective drainage). As a result of the contest between the opposing parties among the subscribers to the charity it was decided to separate the departments of midwifery and gynæcology and to locate their respective patients in different buildings. This led to the foundation of the hospital for women in Shaw-street in 1880, which was placed under separate management and is devoted exclusively to gynæcological cases. The lying-in patients were soon afterwards transferred to a new building in Brownlow-hill, adjoining University College. The old building in Myrtle-street was purchased by the committee of the Cancer and Skin Hospital, and when making necessary alterations in the basement it was discovered that the drainage was in a most insanitary condition, fully accounting for the excessive mortality among the lying-in patients in past years. The lying-in hospital has done much good work and since its removal to its present habitation the health of the patients has been excellent.

The Conscientious Objector "at bay."

The "conscientious objector" received his first check in Liverpool last week at the hands of two county justices who failed to be convinced that "disbelief in the efficacy of vaccination" by an applicant for exemption was a sufficient plea to put forward to enable them to issue their certificate. On a subsequent day the same individual renewed his application through counsel but the magistrates could not be persuaded to reopen the case. The presiding magistrate, in giving the decision of the bench on the application, said that contempt for vaccination was not in the opinion of the justices a matter of conscience but one of opinion, a plea which was not provided for in the Act of Parliament. A similar case came before the Lancaster magistrates during the week with a similar result.

Oct. 4th.

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SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

New Hospitals in Aberdeenshire.

THE Aberdeen District Committee of the County Council has been authorised to acquire a site (five acres) at Summerfield, near Old Skene Road, on which to erect a new hospital. Tenders have also been accepted for building additions at Gordon Hospital, Ellon.

Aberdeen Water-supply.

The corporation's water committee, having considered the bacteriological and analytical reports on this subject—recently noticed in THE LANCET—resolved that before deciding upon any works for the improvement of the present supply inquiry should be made as to the practicability and cost of obtaining a sufficient supply of pure water from a source other than the River Dee. In this connexion the committee's attention has been called to the question of obtaining a supply from the River Avon, near Inchrory (about 60 miles from the city), and the committee accordingly resolved to recommend that the town council should remit to them to report upon the subject of the supply from that source, it being understood that they are to be entitled to obtain such professional assistance in connexion with the matter as the committee may deem necessary. The town council on Monday last adopted the report.

Proposed Public Slaughter-house at Aberdeen.

The corporation's slaughter-house committee have recommended that a private Bill be introduced in the next Parliamentary session authorising the municipality to erect at Central Park, Kittybrewster, on ground already belonging to the town council, a public slaughter-house to supersede all the existing private slaughter-houses, the borrowing power to be sought by the Bill to be £50,000. On Oct. 3rd the town council deferred the settlement of the matter owing to pressure of other business.

Aberdeen Corporation Lodging-house.

As this extensive building is almost finished, the rates per cubicle per night have been fixed, the charges varying from 6*d.* to 4*d.* A superintendent, assistant superintendent, and other servants are to be appointed at an early date.

Oct. 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal University of Ireland.

THE medical examinations of the Royal University are now in progress, the lists of candidates who have passed the second examination in medicine having just appeared.

St. Vincent's Hospital, Stephens-green, Dublin.

The address inaugurating the medical session at this hospital was delivered by Mr. J. S. McArdle on the 4th inst.

Mater Misericordiæ Hospital, Dublin.

The clinical lectures of the session commenced at this hospital on Oct. 3rd. The new prospectus includes arrangements by which the two operation theatres will for the future be used simultaneously. The greatly increased number of patients who now seek admission to the hospital for operation has rendered the addition of a second operation theatre necessary. On Oct. 3rd a lithotomy, by which no less than 117 separate and distinct uric acid calculi varying in size from that of a filbert to that of a pea were removed, was performed by Dr. Coppinger, one of the surgeons to the hospital. The patient, a man aged sixty-four years, is progressing well.

The Irish Workhouse Association.

A meeting of the executive committee of this association was held on Sept. 29th, the president, Lord Monteagle, being in the chair.

Mr. T. W. Russell, M.P., on Citizenship.

At a conference in Belfast on Sept. 28th Mr. T. W. Russell, M.P., Parliamentary Secretary to the Local Government Board, in an address on the Duties of Citizenship, spoke of the question of the Poor-law system and in doing so praised very highly the way in which in England this cast-iron system is being transformed. He said that in everything human the Irish workhouse is as inferior to the companion institution in England as it is possible for an institution to be. He also spoke of the question of sanitation and, engaged in, as he was, and having some responsibility for, the Public Health Department of the sister country, he could affirm that the science of sanitation was in its infancy in Ireland. He said in such questions as water-supply, housing of the very poor, and sewage Ireland compared very unfavourably with England. The reform of all these questions formed part of the duties of good citizens.

Londonderry Dispensary.

At a meeting of the Londonderry Dispensary Committee held on Sept. 30th Dr. Cunningham was elected medical officer of No. 1 district, in succession to Sir Acheson MacCullagh, M.D., who has been appointed an Inspector under the Local Government Board.

Effect of the Local Government Act on the Administration of the Cork General Hospitals.

At a meeting of the trustees of the Cork South Infirmary held last Friday, Mr. Maurice Healy, M.P., occupied the chair, and after the special business of the meeting had been disposed of the treasurer requested the chairman to inform them as to the alterations in the government of the hospital to result from the passing of the Local Government Bill. Mr. Healy then explained that the present board of trustees, consisting of ex-officio and elected trustees, would continue to exist, with the exception that the church dignitaries and rectors who are now trustees in virtue of their ecclesiastical offices will cease to be ex-officio trustees. The other ex-officio members will continue to be trustees and the elected members will as heretofore be eligible for re-election by the subscribers annually. But the functions of the board of trustees so constituted will be entirely different from those of the board of trustees which now administers the affairs of the hospital. After the Local Government Act comes into operation a new board of governors will be appointed, and practically the only function the board of trustees, as distinct from the board of governors, will have to perform will be to elect a certain number of governors to represent the ordinary subscribers to the hospital. The new board of governors will comprise three sections, one consisting of the members elected by the board of trustees, another consisting of those nominated by the County Council of the County of Cork, and a third consisting of those nominated by the County Council of the Borough of Cork. The number of governors to be elected by each section will be decided by the Irish Local Government Board, and the latter Board will doubtless be mainly influenced by the amount of the contribution from each body represented to the funds of the hospital. For years past the county Grand Jury and the Cork Corporation have each contributed £700 a year voluntarily towards the maintenance of the Cork South Infirmary, and under the Local Government Act the county councils will be compulsorily obliged to contribute a similar amount unless the Local Government Board decides otherwise. Furthermore, the County Council for the County of Cork will have power to contribute another £700 a year towards the maintenance of the South Infirmary or any other hospital which in their judgment is deserving of support. A vote of thanks to Mr. Healy for his lucid explanation was unanimously passed.

Erratum.—In the last letter, under the heading "The Health of Belfast," in the fourth line "341" should have been *34*.

Oct. 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Agglutination of Koch's Bacillus by Human Serum.

AT the meeting of the Academy of Sciences held on Sept. 19th MM. S. Arloing and P. Courmont communicated a paper dealing with the final stages of their researches upon the agglutinative action of human serum upon the bacillus of Koch. To obtain this reaction by means of the blood of a tuberculous subject certain precautions have to be observed which can be neglected when dealing with other diseases, such as typhoid fever for instance. The serum must be used with fully developed cultures, of which only the upper layers are taken, for the lower layers almost always contain extraneous growths. To get a marked reaction

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perfectly fresh and colourless serum must be employed. The blood collected with aseptic precautions is first centrifugalised so as to separate the clot. The reaction is made to take place in sterilised tubes of very small diameter, which are laid on their sides in a sloping position so that the clusters may fall more rapidly and at the same time cover a larger area of the tube. With every serum three mixtures of different strengths are made—i.e., 1 drop of serum to 5 drops of culture, 1 to 10 and 1 to 20. The agglutinative action produced in mixtures more concentrated than 1 to 5 or less than 1 to 20 has no diagnostic significance. The interval before reaction takes place is variable, but as a rule it takes longer than in typhoid fever. The tubes are examined two hours, ten hours, and twenty-four hours after the mixture has been made. Any changes observed at a longer interval than twenty-four hours may be neglected. The tubes are examined both with the naked eye and under the microscope. A control tube of culture without any admixture of serum should always be used, which ought never to show any precipitate. At the end of twenty-four hours reaction is considered as certain if the tube contains well-marked clumps and the liquid is quite clear or presents only a trace of cloudiness. Even with all these precautions the reaction is by no means easy to get and it is always as well to compare results with the agglutination obtained with the serum of a patient undoubtedly tuberculous. The results obtained by Arloing and Courmont are remarkably interesting but are not yet sufficiently definite to draw absolute conclusions from. They examined 26 patients suffering from advanced tuberculosis, with high temperature and other infective signs. Of these 92 per cent. gave the reaction, 69 per cent. with a mixture of 1 in 10 or 1 in 20 and 23 per cent. with a mixture of 1 in 5. In 2 cases out of the 26 where no reaction was obtained the patients were in a condition of very advanced tuberculosis, a phenomenon of which the cause is at present to seek. Out of 22 patients suffering from slight pulmonary or pleural diseases 95·5 per cent. gave the reaction, 82 per cent. with mixtures of 1 in 10 or 1 in 20 and 13·5 per cent. with mixtures of 1 in 5. The only person who did not react was one with a pleuritic effusion and marked pleural thickening in whom tubercle was very doubtful, inoculation of the pleuritic fluid into a guinea-pig having produced no effect. Of 12 patients suffering from surgical tuberculous affections 50 per cent. reacted very strongly and 50 per cent. feebly; of 21 patients suffering from various disorders 14 gave no reaction and 7 a very feeble one; of 13 typhoid fever patients 6 gave a negative result; of those which did react 2 at least were suspected of being tuberculous; of 16 patients aged from eighteen to thirty years, and all apparently healthy, a reaction was given in 5 instances.

Hospital Abuse in Paris.

For a long time past the medical men of Paris have protested against the system whereby the gratuitous advice to be obtained at hospitals is abused. A system only intended for the poor and needy is exploited by persons in easy circumstances, thus depriving the medical practitioners of their lawful gains. The syndicate of medical practitioners in the Department of the Seine has sent in many unavailing protests to the Director of the Assistance Publique asking that either he should prevent any patient who did not bring incontestable proof of poverty from attending the hospital or that he at least should put up a notice that persons in easy circumstances who attended in this way and robbed both the poor and the medical men should be prosecuted and fined. In the poorer quarters of Paris many a medical man is willing to see working-class patients for a fee far less than the amount which the average working man spends daily in drink; nevertheless, it is considered quite right for all such workmen to attend the hospitals for nothing. Not only, however, do workmen attend but also tradesmen in easy circumstances and far richer people, especially when the medical man for the day happens to be a well-known practitioner. In view of the fact that all these protests have been in vain Dr. Variot, the head physician to the Hospital Trousseau for Sick Children, has decided to charge every person who is well off and comes to the hospital for gratuitous advice the sum of 20 fr. The fees thus collected will be expended in buying toys and delicacies for the poor children in his wards. Not long ago two ladies richly dressed applied at his clinic, bringing with them a child whose frock was trimmed with lace. On being asked whether they were poor they replied in the negative and Dr. Variot thereupon demanded 20 fr., being his usual fee for a consultation at his own house. They angrily refused and went away uttering threats. Some days afterwards they sent in a complaint to the Director of the Assistance Publique as to the behaviour of the medical man who had refused to give them gratuitous advice. The director promptly demanded an explanation from Dr. Variot, who replied that he did not in the least regret what he had done and that he should act in a like manner in every similar case until the director took steps to see that the interests of the poor and also of medical men were safeguarded.

Medical Aid in Theatres.

The prefect of police has just issued an edict with regard to the medical organisation for the theatres. Up to the present time the choice of medical men bound to be present in turn at theatrical representations so as to be able to give aid in case of any accident occurring among the audience or staff of the house has been left to the manager save in the case of the four national theatres—i.e., those subsidised by the Government. It has happened that on several occasions when an accident did take place that there was either no one in attendance at all or else that the proper medical man had supplied his place by some non-medical friend who was absolutely useless. The prefect has therefore given orders that in future all nominations to these posts must be submitted for his approval—a regulation which has been the cause of a great outcry among medical men. Most likely, however, the prefect only wishes to have the opportunity of being able to revoke the appointments of such medical men as shirk their duties, for hitherto the managers have appointed their own friends and have not been able to exercise any serious control over them.

Oct. 4th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Antitoxin Monopoly.

PROFESSOR BEHRING'S application for a patent for his antitoxin, which was so severely criticised in a leading article in THE LANCET of August 27th, has been much discussed in the German newspapers, both lay and medical. The charges made by the American papers induced Professor Behring to declare in a periodical published in Marburg, his place of residence, that he did not concern himself about what the American chemists had said against him because they had spoken *pro domo*. His claim for a patent was legal and he could not understand that to make profit out of an invention in a legal way might be an immoral action. The American public would not suffer in consequence of his patent, as the serum would now be obtainable of better quality and at lower prices than before. These views of Professor Behring are strongly disapproved of by the *Münchener Medicinische Wochenschrift*, the leading medical paper of South Germany, which maintains that some methods of making money, though legal enough in themselves, are nevertheless impossible for a medical man who desires to conform to the laws of medical ethics. The criticisms of the American and English press were to be regretted, but were not unfounded. Among the leading non-medical papers, the *Berliner Tageblatt* has severely blamed Professor Behring. In an article entitled "Science and Business" a medical contributor to this periodical asked: "What would have become of the ophthalmoscope if Helmholtz had made a claim to patent his invention? What would have become of the methods of immunisation devised by Pasteur, or of the antiseptic dressing introduced by Lord Lister, if these gentlemen had acted like Professor Behring? Medical men ought not to be dealers in medical commodities." To these charges Professor Behring has replied, writing in the *Deutsche Medicinische Wochenschrift*. In his usual plain language he said that Helmholtz of course could not have attempted to patent the ophthalmoscope as there were no patent laws at that time; what Pasteur and Lord Lister would have done, supposing that it had been possible for them to obtain a patent for their discoveries, he really did not know, and he wished to ask if the medical correspondent of the *Berliner Tageblatt* knew.

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From his personal acquaintance with those two gentlemen he thought himself entitled to suppose that they would have declined to defend the interests of foreign traders. He went on to mention that he did not belong to the medical profession in the strict sense of the term, as he was not engaged in medical practice and did not attend patients. He had therefore to provide means for continuing his experiments, and he was the more compelled to do so as he had received no assistance from the public in his studies. In France more than 1,000,000 francs (£40,000) were collected by the French nation and 200,000 francs (£8000) were given by the Government to the Pasteur Institute. On the other hand, what had been done in Germany? He would not have been able to continue his work if the Höchster Farbwerke had not supplied the necessary means, and he must confess that an inventor in Germany would risk very much if relying on the gratitude of the nation he should neglect to look after his own interests. The American public, he repeats, would benefit by the monopoly because the Höchst factory would now sell a better antitoxin and charge no more than the American chemists. An answer to this argument was published in the *Allgemeine Medicinische Centralzeitung* by a writer who declares that there was no need for Professor Behring to experiment at his own expense as there is a special State laboratory for such studies, and that his remarks about the ingratitude of his countrymen were quite uncalled for because very soon after he made his discovery he was not only appointed an ordinary professor with a fixed salary but was also left at liberty either to lecture or not to lecture entirely at his own option. With regard to tuberculin Germany had shown an enthusiasm which unfortunately was not justified by the results and in consequence the public had learned to be more reserved. According to the author of this communication Professor Behring was well provided for at the time when he applied for a patent in the United States. It will thus be seen that the controversy is rather animated.

Dum Dum Bullets.

At the last German Surgical Congress, which, as will be remembered, was held in Berlin, Professor von Bruns of Tübingen made a communication relative to the so-called Dum Dum bullets of the British army, recommending that their use should be prohibited by an international convention. It may therefore be of interest to hear the opinion of a German army medical officer, Dr. Körting, surgeon-general of the first German army corps, who has dealt fully with the question in a report on the war between Italy and Abyssinia, published in the *Deutsche Medicinische Wochenschrift*. He draws attention to the fact that whilst the Italian rifle of 6·5 millimetres calibre made small wounds and did not splinter the bones the 11-millimetre weapon of the Abyssinians caused lacerations of the muscles and comminuted fractures of the bones, Therefore the Abyssinians when wounded were not rendered incapable of fighting, and of 100 wounded about 80 could make their way to the surgeon without assistance, some of them being men with perforating wounds of the chest. Notwithstanding the very primitive dressing thousands of Abyssinians recovered within three weeks. The soldiers of the Negus very soon became aware of these facts and when arms captured from the Italians were distributed to them they did not hesitate to remove the hard mantle from the tip of the bullet. This example was then followed by the British soldiers in the Chitral campaign and it is in Dr. Körting's opinion an act of self-protection against an enemy who is not sufficiently disabled by the original projectile. Rifles having a calibre of less than 8 or 9 millimetres are incapable of effectually disabling an enemy. Dr. Körting therefore considers that there is no ground for the indignation expressed by Professor Bruns.

Treatment of Headache.

It is proved by experience that headache may sometimes be relieved by compression of the head; persons suffering from headache instinctively put their hands on their temples and feel great benefit therefrom. To make this compression more efficacious Dr. Sarason has suggested an instrument which he describes in the *Deutsche Medicinische Wochenschrift*. It consists of two plates which by a spring are firmly pressed on the temples and it looks very like a double truss. By the compression of the temporal arteries the circulation of the blood in the head is regulated and pain is relieved, especially in angiopathic hemicrania. The apparatus, which has proved useful in many cases, is termed "Migrainator" and may be had from Messrs. Schönlin and Co., Munich.

Oct. 4th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Oysters and Sewage Contamination.

BESIDES her objectionable habit of consuming oysters all the year round, allowing them no "close time," as in the British Isles, Italy has been far from careful to keep the beds in which they breed, still more the beds in which they are fattened, exempt from sewage contamination. Not a moment too soon Dr. Guido Bordoni-Uffreduzzi, Professor of Hygiene and Director of the Hygienic Laboratory in the University of Turin, has sounded a note of warning and the public has not been slow to give it due heed. Great centres of population like Milan, for example, which gets four-fifths of her large oyster-supply from the Gulf of Spezia, are filled with alarm and considering how severely the Lombard capital has been visited with typhoid fever her dread of a fresh importation of the disease through the molluscous dainty is all too intelligible. On the other hand, the oyster-breeding and oyster-vending interests are in a panic over their threatened loss of custom and have challenged the soundness of Professor Bordoni-Uffreduzzi's facts and inferences. He in turn is able to cite the evidence adduced by Dr. Cartwright Wood and Dr. Klein[1] in confirmation of his position, while the "oyster interest" replies by reference to M. J. Chatin's demonstration before the Paris Academy of Medicine[2] that "in natural sea-water the typhoid germ dies rapidly" before it can injuriously affect the oyster. True, oyster breeders, in order to fatten their wares more effectively, deposit the mollusc at river mouths in a mixture of salt and fresh water and this latter infects the oyster with the germs it has accumulated in its course. The breeders, however, assert that such practice has long been discontinued, that at Taranto and Spezia, for instance, the oysters are taken from beds placed far out at sea, away from all urban contamination, whence they are taken directly for transport to the inland towns. Both Professor Bordoni-Uffreduzzi and the breeders draw largely on British experience, and while the former urges his antagonists to adopt the procedure of their British contemporaries and to court a commission of inquiry into the whole subject, these gentlemen protest that such is their own intention and that they have nothing to fear from the most searching scrutiny into their methods. However the controversy may terminate the oyster-consuming public cannot fail to benefit. Already the oyster-baskets which used to be moored off Santa Lucia on the Neapolitan strand are protected from the sewage which gave them an evil name, the sewage being carried away in pipes to Cumae; and a similar deposit at Savona, a Ligurian seaport, *non funziona più* (is no longer in existence).

Tardy Honours to a Medical Worthy.

Lake Como reflects in its still waters few lovelier villages than Bellano, with its picturesque harbour—whence the choice abundant fruits of the Monte Grigna are exported—with its attractive edifices, its busy market-place, its thriving silk factories, and its Duomo, the *chef-d'œuvre* of Giardino Loria, dating from 1348. The place, too, has its historical, its literary, and its scientific celebrities, prominent among whom are Tommaso Grossi, the dramatist, and his yet greater predecessor, Sigismondo Boldoni, physician, philosopher, and poet as well. Born at Milan in 1597, Boldoni graduated in literature and medicine at Padua, lived for some time in Urbino and Rome, returned in 1623 to his native city, where he received an appointment in the Collegio dei Medici, and shortly thereafter was called to the University of Pavia to fill the chair of philosophy. He died at his post in 1630 the victim of epidemic disease which he had striven heroically to circumscribe. Young as he was he had made himself famous far beyond the scene of his activity. He was a brilliant lecturer and his "Orationes Academicæ" found readers throughout contemporary Europe. In poetry his chief work is his "Caduta dei Longobardi" (Fall of the Lombards), still admired and commented on. His native Bellano has now erected a bust of him in her midst and its unveiling evoked a numerous attendance of

[1] THE LANCET, Jan. 9th, 1897, p. 124.
[2] THE LANCET, March 27th, 1897, p. 922.

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literary, medical, and civic notables from the chief Lombard centres. The spokesman of the occasion was Professor Mario Cermenati, who dwelt on the distinction brought to the much frequented Lake Como by the celebrities who lived or were born on its banks. From Pliny in antiquity to Alessandro Volta in the nineteenth century the Larian community never lacked illustrious representatives, among whom the "physician, philosopher, and poet" Boldoni was now if all too tardily yet worthily recognised. At the evening banquet the Senator Achille Polti once more commemorated the merits of the hero of the day and Bellano concluded the "festa inaugurale" with an effective illumination of her streets, her harbour, and her lovely lake margin.

Killed by Lightning.

Year by year the thunderstorms which accompany the transition from summer to autumn increase in violence, causing greater damage to cattle and crops and even numbering more human victims. Within the last few days the rural districts have suffered heavily from these visitations. From Palermo I hear that in the neighbourhood of Villalba a lightning stroke killed a youth seventeen years of age and severely injured two others when at work in the fields. At Amelia on the same day (the 28th ult.) a group of agricultural labourers, suddenly overtaken by torrential rainfall, fled in various directions, and one of them imprudently seeking shelter under an oak tree was almost immediately struck dead by lightning. Near Caserta the previous day a peasant was killed by a similar visitation while gathering in his crop of maize. The tale of such casualties is already an unusually long one, and taken in connexion with the abnormal frequency and violence of hailstorms and cyclones, especially in the Alta Italia, adds greatly to the interest with which preventive legislation in the shape of bills for "rimboschimento" (reafforesting) and regulating the river courses is awaited in Parliament and in the country. For if one thing is more certain than another it is that atmospheric disturbance, taking the form of torrential rainfall, thunderstorms, and cyclones, increases in the direct ratio of tree-felling without compensative replanting—a fact so impressively borne in upon the Italian public that, impatient of official delays, it has through many of its more enlightened and energetic representatives—mainly medical, I may add—organised associations "Pro Silvis" and "Pro Montibus" to conserve the forest growth and arrest the denudation of hillsides so as to obviate at their source the meteorological changes which have altered the climate of provinces and made the annual floods an ever-augmenting evil. In six weeks Parliament will reassemble, and amid the many urgent questions which clamour for serious attention and salutary solution are the hydraulic and reafforesting innovations to be proposed by the Ministers of Public Works and Agriculture respectively. Effective reform in both these directions would assuredly go far to solve the difficulties, industrial and economic, which, if unsurmounted, must perpetuate and aggravate the social malaise which breaks out in bread-riots, in brigandage, and in the thousand and one retarding causes of Italy's prosperity and peace.

A Gynæcological Tour.

At the instance of the Minister of Public Instruction (His Excellency Dr. Guido Baccelli) the professor of gynæcology, theoretical and clinical, in the Neapolitan School of Medicine (Dr. Giuseppe Spinelli) is about to start on a visit to the leading universities of Austria, Hungary, and Germany, with the special object of studying the methods there adopted in teaching obstetrics in class-room and maternity hospital. Italy, well represented in other departments of medicine, is certainly behindhand in gynæcological practice, and has much to learn in that particular from such admirably-equipped seats of learning as Vienna, Berlin, Munich, Dresden, and Leipsic. Proficiency in obstetrics, theoretical and practical, is still, I believe, an "optional" qualification on the part of her medical graduates, and it is only in exceptional instances, mainly in her chief centres of population, that the gynæcologist attains the professional standard so generally reached by his colleagues in surgery and medicine proper. To no better hands could Dr. Baccelli have entrusted the "mission of inquiry" than to those of the Neapolitan professor, whose report embodying his experiences is looked forward to with much interest, as the prelude to innovations fraught with signal benefit to the medical student and practitioner throughout the peninsula and islands.

The Medico-Military Officer in Africa.

The Dark Continent excites a weird fascination over young Italy, particularly over those of her sons who, medically trained, are gifted with tastes and aptitudes in the various fields of anthropology, climatology, and natural history. Scientific exploration already owes much to her youth so endowed and so minded, and nothing but the limited extent of her African possessions, still further curtailed by the abandonment of her "forward" equatorial policy, explains the comparative diminution in the number of her "medical paladins" witnessed of late years. Denied the coveted opportunity of such service by their own Government they seek it under the ægis of other powers and become competitors together with young French, or still more with young Belgian, graduates for posts in the exploring or political expeditions fitted out from Paris or Brussels. From Milan I hear that four of her medically qualified youths—Dr. Avezza, Dr. Caravaggi, Dr. Monti-Martini, and Dr. Paravicini—have after a severe competition been nominated "medici militari" for three years in the colonial expedition about to start from Belgium for the Congo, and it is not too much to expect that we may ere long receive from them such contributions to anthropological science and nature-study as their compatriot colleagues have already made in the latitudes south and west of Abyssinia.

Oct. 1st.

Obituary.

JOHN THOMAS NICHOLSON LIPSCOMB, M.D. ST. AND., F.R.C.S. ENG.

DR. J. T. N. LIPSCOMB, of St. Albans, whose death occurred there on Sept. 21st, belonged to a family which had been connected with the town for more than eighty years, being the eldest son of Mr. John Thomas Lipscomb, who went to St. Albans in 1815 to practise as a medical man. Mr. Lipscomb, senior, was elected alderman in 1818 and mayor in the following year. He continued to be an alderman for more than fifty years and was the first mayor under the Corporation Reform Act of 1835. Dr. Lipscomb, the subject of the present notice, was born in St. Albans in 1819, his mother being a daughter of the Rev. John Nicholson, rector of the Abbey parish church. He received his medical education at Guy's Hospital and in 1841 became qualified as M.R.C.S. Eng. and L.S.A. The same year he entered on practice in partnership with his father. In 1844 he graduated as M.D. at St. Andrews University and in 1856 he became a Fellow of the Royal College of Surgeons of England. Dr. Lipscomb continued in active practice from 1841 until about four or five years ago, when his strength became unequal to the fatigues of professional work, and for the last two years he had been in obviously failing health. Among his various appointments may be mentioned those of medical officer to the prison both before and since it was taken over by the Government, honorary consulting physician to St. Albans Hospital, and medical officer under the Factory Acts. Notwithstanding his numerous professional engagements Dr. Lipscomb took an active part in the public life of the town. He was first elected to the town council in 1855 and was the last survivor of the corporation of that date. At the expiry of the period of three years for which he was elected he withdrew from the council and did not return to it till 1869. Mr. Lipscomb, senior, was one of the four aldermen, and on his death, in September, 1869, the position was given to his son, who retained his seat on the bench of aldermen for fourteen years, only retiring in 1883. In 1870 Dr. Lipscomb was elected mayor. For forty-one years he was rector's churchwarden in connexion with the Abbey church, holding that office under three different rectors. He was also senior Justice of the Peace for the city and one of the original members of the Abbey Restoration Committee.

SOUTH DEVON AND EAST CORNWALL HOSPITAL.—A very successful bazaar was held on Sept. 27th and 28th at the Plymouth Guildhall in aid of the funds of the South Devon and East Cornwall Hospital, Plymouth. The receipts for the two days were nearly £1400.

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Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Columbia University, Missouri:* Dr. Paul Kaufmann, formerly of the Cairo Medical School, has been appointed Professor of Bacteriology and Pathological Anatomy.—*Innsbruck:* Dr. Ludwig Kerschner, Extraordinary Professor of Histology and Embryology, has been granted the rank and title of Ordinary Professor.—*Gratz:* Dr. Alphons Edler von Rosthorn, of the German University of Prague, has been appointed Professor of Midwifery and Gynæcology, in succession to the late Dr. Rokitansky.—*Lemberg:* Dr. Emanuel Muchek has been appointed Professor of Ophthalmology.—*Vienna:* Dr. A. Mosetig R. von Moorhof has been appointed Extraordinary Professor of Surgery with the title of Ordinary Professor.

LITERARY INTELLIGENCE. — Messrs. William Green and Sons, publishers, of Edinburgh, announce the publication early next year of an Encyclopædia Medica by authoritative writers on the lines of their two legal encyclopædias.

COMPLIMENTARY BANQUET.—On Sept. 24th many of the colleagues and other friends of Mr. D. Edgar Flinn, M.R.C.P., F.R.C.S. Irel., D.P.H., of Kingstown, entertained him at a banquet as a mark of esteem and an expression of their pleasure on his appointment to the office of Medical Inspector to the Local Government Board, Ireland. Mr. R. L. Swan, F.R.C.S. Irel., Vice-President of the Royal College of Surgeons in Ireland, occupied the chair, and in proposing the toast of the evening, "Our Guest," stated that Mr. Flinn had all the qualifications to eminently fit him for the important post to which he had been appointed. He had been for some years a medical officer of health in England, and they all knew his thorough knowledge of sanitary science.

DEATH OF A MEDICAL PRACTITIONER THROUGH THE BITE OF AN INSECT.—On Sept. 27th Mr. George Hart, M.R.C.S.Eng., aged thirty-eight years, died at Bolton from septicæmia and septic pneumonia the results of an insect bite. He was in his usual health up to about ten days before he died, when he complained of a sharp pain near the right eye, the skin over which afterwards began to swell and a small pustule to form. Upon his return from a professional night visit he had a rigor which was followed by extensive cellulitis in the neighbourhood of the pustule and by the development of pneumonic symptoms. Septicæmia was diagnosed by his professional colleagues and confirmed by Dr. Jones, surgeon to the Manchester Royal Infirmary, and anti-streptococcic serum was resorted to, together with free incision of the affected part, but despite unremitting medical attention and the most careful nursing he succumbed. He leaves a widow but no family. Mr. Hart was a native of Bolton and had been in practice thirteen years there, and his genial, open nature had endeared him to a large circle of friends and patients, by whom his loss is very deeply felt. He studied medicine at Owens College (now Victoria University), Manchester, and qualified as M.R.C.S. Eng. in 1885.

THE LATE DR. K. N. BAHADURJI.—At a meeting of the Bombay Medical Union and of the native medical profession, which was held at Readymoney Building, Appolo Bunder, on August 27th, it was announced that from all parts of India telegrams and letters expressing deep regret for the loss sustained by the union and the medical profession throughout India had been received. The following was passed as a resolution: "This meeting desires to place on record its sincere and deep sense of sorrow at the great loss sustained by the medical profession, the public, and the country by the sudden and untimely death of Dr. K. N. Bahadurji, President of the Bombay Medical Union, and expresses its appreciation of his eminent, varied, and lasting services to the cause of medical education, reform, advancement of science, and the welfare of the profession. And it further records his zealous, devoted, and self-sacrificing work for the good of the city and in the cause of humanity during the last two plague epidemics, and resolves that a copy of this resolution, with the expression of the sympathy of this meeting, be communicated to his father, Mr. Nusserwanji Dorabji Bahadurji, by the honorary secretaries of the union."

THE MEDICAL OFFICER OF HEALTH OF BOLTON.—Dr. John E. Gould's salary as medical officer of health of Bolton has been increased to £600 and he has been at the same time relieved of the duties of public analyst. The salary formerly was £350 as medical officer of health, with £50 added for acting as public analyst.

DEATH FROM OIL OF CLOVES.—An inquest was held at Cardiff on Sept. 27th upon the body of a man, aged forty-eight years. The widow stated that he had drunk "about a quarter of a half-pint bottle" of oil of cloves, she being under the impression that it was whisky. After hearing the medical evidence the jury returned a verdict that death resulted from an overdose of oil of cloves taken by misadventure.

WEST HARTLEPOOL AMBULANCE CLASS OF THE NORTH-EASTERN RAILWAY.—On Friday, Sept. 30th, Mr. W. Gray, M.D. Edin., the lecturer to this class, was presented with a marble clock and bronzes. In the course of presenting the medallions and certificates to the members of the class Mr. Jackson, the general secretary, said that 28 candidates had passed the first year's examination, 17 the second year's examination, and 8 the third year's examination—a total of 53. During the existence of the North-Eastern Railway Centre, which was formed in 1896, 2083 candidates had passed the first year's examination, 971 the second year's examination, and 587 the final examination. There were now close upon 4000 members distributed over the system, and there were 168 properly equipped stations. The number of cases which had been attended by members was 1128 in 1896, 2451 in 1897, and 2605 for the first half of the present year.

LEEDS MEDICAL PRACTITIONERS' DINNER.—On Monday, Oct. 3rd, in the Queen's Hotel, Leeds, a representative gathering of the medical men of Leeds and the surrounding district assembled to entertain to dinner Dr. Cullingworth, who had given the introductory address at the Yorkshire College on the occasion of the opening of the winter session. The chair was occupied by Professor C. J. Wright, who was supported by the Dean of the Medical Department (Mr. Scattergood), Principal Bodington, Mr. Teale, and others. Professor Wright, who proposed the toast of the health of the guest of the evening, alluded to the esteem in which Dr. Cullingworth was held by the profession at large and to the interest with which his successful career had been watched by his old Leeds fellow-students. Dr. Cullingworth, in replying, expressed his sense of honour in being called to visit his old school and showed his warm attachment to it. He referred in eulogistic terms to the work of Dr. Hardwicke, to whose example and influence much of his success was due. In conclusion Dr. Cullingworth proposed "Success to the Medical Department of the Yorkshire College." The toast was responded to by Dr. Wardrop Griffith.

LEEDS INFECTIOUS HOSPITALS AT MANSTON.—Accompanied by the Lady Mayoress, the Lord Mayor of Leeds opened on Saturday, Oct. 1st, the infectious diseases hospitals which have been erected by the corporation on their Manston estate at a cost of some £40,000. The hospital buildings cover an extent of 100 acres. The chairman of the Hospitals Committee, after the reception of the Lord Mayor, said the want of accommodation had undoubtedly been acutely felt by the wage-earning classes in Leeds. For many years Leeds had been content to possess some 100 to 120 beds for infectious diseases, which represented roughly about one bed for every 3000 inhabitants. It had been laid down more or less as a rule that industrial centres like Leeds should have not less than one bed per 1000 of the population. This would mean that Leeds should have 400 beds for the present estimated population. The accommodation now provided, with the accommodation already available at the Beckett-street Hospital, would bring the total number of beds available up to 194, or some 200 less than the accommodation actually required. The Lord Mayor said the city was to be congratulated on the completion of such excellent buildings as those in which they were assembled. The study of the history of infectious disease clearly proved that it was rifest where men were most crowded and where fresh air failed to penetrate. Knowledge which had been gained by painful experience was now being used for the benefit of our large cities, but could be hindered by ignorance, carelessness, and dirt.

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Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALLINGHAM, W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the First Sanitary District of the Salisbury Union.

CAHILL, M., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the No. 2 Division of the Fethard Dispensary District.

CHALLENOR, H. S., M.R.C.S., has been appointed a Medical Officer by the Abingdon Urban and Rural District Councils.

CLARK, ANDREW, F.R.C.S., has been appointed a Consulting Surgeon for the St. Marylebone General Dispensary, Welbeck-street, London.

CUNINGHAM, H. W., M.D., B.Ch. Irel., has been appointed a Medical Officer for the City of Derry Dispensary District, vice Sir A. Mac Cullagh, resigned.

DAVIS, ARTHUR N., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Superintendent of the Devon County Asylum, Axminster, vice G. J. S. Saunders, resigned.

DE RENZI, HENRY C. C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Visiting Physician to the Christchurch Hospital, New Zealand, vice P. S. Bolger, resigned.

DONKIN, H. B., M.D. Oxon., F.R.C.P. Lond., M.R.C.S., has been appointed a Commissioner of Prisons for England and Wales, vice Captain W. J. Stopford, C.B., retired.

EASTMENT, J. W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Pelhams Sanitary District of the Bishop Stortford Union, vice J. P. Wagstaff.

GRINLING, F. N., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Walker Urban District Council.

HARRISON, C., M.D. St. And., M.R.C.S., D.P.H. Camb., has been appointed Medical Officer of Health by the Bracebridge Urban District Council.

HITCHON, H. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Borough of Heywood, vice H. Wisken.

HUGHES, J. M., M.B., Ch.M. Edin., has been appointed Medical Officer for the Workhouse and Ruthin Sanitary District of the Ruthin Union.

INNES, J. C., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Crawford Rural District Council.

MACQUEEN, A., M.D. Edin., has been re-appointed Medical Officer of Health by the Blore Heath Rural District Council.

MUIR, DAVID CLARK, M.D., C.M. Glasg., D.P.H. Cantab., has been appointed Medical Officer to the Abertillery (Mon.) District Council.

PARSONS, LAWRANCE D., has been appointed Junior Medical Officer to the Cornwall County Asylum.

POLLOCK, J. R. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Tiverton Rural District Council.

RAY, JOHN HOWSON, M.B., Ch.M. Vict., F.R.C.S., has been appointed Medical Officer for the Salford School Board.

REEDE, A. K., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Churchstanton Sanitary District of the Taunton Union.

ROWLANDS, HUGH PUGH, M.D. Durh., L.R.C.P. Lond., M.R.C.S., has re-appointed Medical Officer for the Llanegryn District of the Dolgelly Union.

RUSSELL, JAMES R., M.D., F.F.P.S. Glasg., has been appointed a Medical Member of the Local Government Board for Scotland.

THOMAS, WILLIAM, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Llanfechell Sanitary District of the Anglesey Union, vice G. J. Jones, resigned.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ADDENBROOKE'S HOSPITAL, Cambridge.—Resident House Physician. Salary £65 per annum, with board, lodging, and washing in the Hospital.

BETHLEM HOSPITAL.—Two Resident House Physicians for six months. Apartments, complete board and washing provided. Applications to the Treasurer, Bridewell Hospital, New Bridge-street, London, E.C.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street, Birmingham.—House Surgeon for six months. Honorarium £21, and board, lodging, and washing provided.

BURY INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and attendance.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—House Surgeon. Board and residence provided in the Hospital.

COUNTY BOROUGH OF CROYDON.—Resident Medical Officer at the Croydon Borough Hospital for Infectious Diseases for one year. Salary £120 per annum, rising to £140 at the end of six months, with board and residence. Applications to Dr. Wilde, Town Hall, Croydon.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary commencing at £100 a year, with board and lodging.

DUNDEE ROYAL LUNATIC ASYLUM.—Two Medical Assistants. Salary £100 each, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the Casualty Department for six months. Salary at the rate of £100 per annum.

GRAVESEND HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £90 per annum, with board and lodging, but no wines, spirits, beer, &c., are found.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—Assistant House Surgeon for six months. Gratuity of £10, with residence, board, and laundry.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

INFIRMARY FOR CONSUMPTION AND DISEASES OF THE CHEST AND THROAT, Margaret-street, Cavendish-square, London.—Physician-in-Ordinary.

INFIRMARY OF THE CITY OF LONDON UNION.—Assistant Medical Officer at the Infirmary, Bow-road. Single or widower without children. Salary £150 per annum, with furnished apartments at the Infirmary, rations, and washing, subject to statutory deductions. Applications to the Clerk to the Guardians, 61, Bartholomew-close, E.C.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Third Assistant Medical Officer, single. Commencing salary £120, with board, washing, and furnished rooms.

LEEDS UNION.—Assistant Medical Officer for the Workhouse Schools and Infirmary, Beckett-street, Leeds. Single. Salary £100 per annum, with board, washing, apartments, and attendance, subject to statutory deductions. Applications to the Clerk, Poor-law Offices, East Parade, Leeds.

LEICESTER INFIRMARY.—House Surgeon. Salary £120 the first year, rising £10 per annum until the third year. Board, apartments, and washing provided.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer for one year. Salary 100 guineas per annum, with board, lodging, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street.—House Surgeon (non-resident) for six months. Salary at the rate of £25 per annum.

MACCLESFIELD UNION.—District Medical Officer and Public Vaccinator for the Bollington District. Salary £45 per annum and Public Vaccinator at such fees as the Local Government Board may allow. Subject to statutory deduction. Applications to the Clerk to the Guardians, Macclesfield.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland-street, London.—Anæsthetist.

NORTH RIDING INFIRMARY, Middlesbrough-on-Tees.—House Surgeon, without a family. Salary £100 a year, with lodging, board, and washing, and £5 a year instead of beer.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, London.—Resident Medical Officer for twelve months. Salary £70, with board, lodging, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor, Isle of Wight.—Assistant Resident Medical Officer, unmarried. Salary £80 per annum, with board and lodging in the Hospital. Applications to the Board of Management at the London offices, 34, Craven-street, Charing-cross.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon for one year. Salary £50 per annum, with board, apartments, washing, and attendance.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon (to act also as Secretary). Salary £80, with board, lodging, and washing.

UNIVERSITY COLLEGE, London.—The Sharpey Physiological Scholarship. Applications to the Secretary.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W., and the VICTORIA CONVALESCENT HOME, Broadstairs.—House Surgeon. Honorarium £50, with board and lodging in the Hospital.

WEST LONDON SCHOOL DISTRICT.—Dentist to attend the children in the District School at Ashford, near Staines, Middlesex. The remuneration at the rate of £60 per annum, including travelling expenses. Applications to the Clerk to the Managers, Ashford, Middlesex.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Physician.

Births, Marriages, and Deaths.

BIRTHS.

HEWAN.—On Sept. 4th, at Cinnamara, Assam, India, the wife of John Hewan, L.R.C.P. Lond., M.R.C.S. Eng., of a daughter.

LANGDON-DOWN.—On Wednesday, Sept. 21st, at Carina, Teddington, the wife of Reginald L. Langdon-Down, M.B., M.R.C.P., of a daughter.

LAWSON.—On Sept. 30th, at Chislehurst, the wife of Hugh Lawson, M.R.C.S., of a daughter.

MARRIAGES.

FALLA—CAVE.—On Sept. 27th, at the parish church of St. Saviour, Jersey, Walter Falla, M.R.C.S. Eng., L.R.C.P. Lond., of Adelaide Lodge, St. Helier, to Clara Evelyn, eldest daughter of Lieutenant-Colonel Walter Cave, late Royal Irish Fusiliers, of St. Saviour's-crescent.

TAYLOR—WINK.—On Sept. 28th, at St. Paul's, Grove-park, Frederick Ryott Percival Taylor, M.D., B.S. Lond., to Edith, elder daughter of John A. Wink, Clevelands, Chiswick.

DEATHS.

AITCHISON.—On Sept. 30th, at Priory-terrace, Kew-green, Surrey, James Edward Tierney Aitchison, M.D., F.R.S., LL.D., retired Brigade-Surgeon of H.M. Bengal Army.

APPLETON.—On Oct. 1st, at The Lizard, Cornwall, John Ellis Appleton, M.R.C.S., L.R.C.P. Lond., aged 32 years.

FISHER.—On Sept. 28th, suddenly, at South Queensferry, N.B., Octavius Stephens Fisher, aged 35, Staff-Surgeon R.N., H.M.S *Rodney*.

N.B.—A fee of 5s. is charged for the insertion of Notice of Births, Marriages, and Deaths.

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Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (15th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (10th).—MEDICAL SOCIETY OF LONDON.—8 P.M. General Meeting. 8.30 P.M. Ordinary Meeting. Mr. E. Owen (President): Remarks Introductory to the Work of the Session.—Dr. W. H. Allchin: Some Considerations Preliminary to the Study of Dyspepsia.

WEDNESDAY (12th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Dr. J. F. Payne: The Increase of Cancer. (Hunterian Society Lecture.)

THURSDAY (13th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Specimens will be shown by Mr. A. Giles, Mr. R. H. Hodgson, Mr. F. B. Jessett, Mr. J. M. Laurie. Mr. C. Martin, and Mr. J. W. Taylor. Paper: Mr. C. Martin: On some Moot Points in the After-treatment of Cases of Abdominal Section.

FRIDAY (14th).—CLINICAL SOCIETY OF LONDON (20, Hanover-sq., W.).—8.30 P.M. Presidential Address. Papers:—Dr. Herringham: A Case of Myositis Ossificans with Skiagraphs of the Patient.—Dr. A. Garrod: Cases illustrating the Association of Congenital Heart Disease with the Mongolian Type of Idiocy.—Dr. Still: Erythema Enematogenes (Enema Rash) in Children.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.15 P.M. Election of Officers and Council for Session, 1898-99. Exhibition of Clinical Cases, Specimens, &c., by Dr. Herschell, Mr. E. Clarke, Dr. Dockrell, Dr. Toogood.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. E. Law: Examination of Ear, Throat, and Nose.

TUESDAY (11th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4 P.M. Dr. T. D. Savill: On the Diagnosis of Disorders of the Nervous System, illustrated by Cases of Syphilitic Affections.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Beevor: Cerebral Localisation.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Prurigo and Pruritis.—Bethlem Hospital, 2 P.M., Dr. Craig: Mania—Acute, Hysterical, Acute Delirious.

WEDNESDAY (12th).—LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Refuse Removal and Disposal.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: Surface Anatomy of the Head and Neck.

THURSDAY (13th).—LONDON POST-GRADUATE COURSE.—Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Mr. J. Hutchinson: Clinical Lecture.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Mitchell Bruce: Clinical Demonstration on Cases in the Wards.

THE LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—Mr. J. Startin: Gouty Eczema.

FRIDAY (14th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: The Microscope and Methods of Cultivation.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: Surface Anatomy of the Abdomen and Thorax.

KING'S COLLEGE (London).—8 P.M. Dr. W. J. Simpson: Introductory Lecture to a Course of Lectures and Demonstrations for Sanitary Inspectors.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

ADENOIDS AND LARYNGISMUS.

MR. LENNOX BROWNE, referring to the account of a case of laryngeal stridor published in THE LANCET of August 27th (p. 552), writes to us to state that so long ago as Feb. 15th, 1890, he expressed in the columns of the *British Medical Journal* "a tolerably sure conviction that in almost every case of laryngismus, as well as in those of tetany and convulsions, the subject would be found to be a mouth-breather and that if sought for adenoid growths would always be discovered."

WHAT IS A *BONÂ-FIDE* STUDENT?

To the Editors of THE LANCET.

SIRS,—A gentleman whom I have for some time employed as dispenser and bookkeeper, and who has sat two or three times for the final examination of the triple qualification without complete success, has now passed in midwifery and is exempted from appearing in that subject again. I should like to ask you your opinion, taking into consideration the recent resolution of the General Medical Council, whether I am justified in allowing him to attend midwifery cases under my supervision. He is an excellent accoucheur and could be very useful in this capacity while he is preparing himself for examination in the remaining subjects of the final. In the notice from the General Medical Council to general practitioners forbidding the use of unqualified assistants there is a clause which appears to me to countenance the use of *bond-fide* medical students in this respect, but I should like my opinion confirmed. I am, Sirs, yours faithfully,

Oct. 4th, 1898. L.R.C.P.

*** We doubt if the employé in question is the sort of student contemplated by the General Medical Council and think that to allow him to attend cases of midwifery might subject "L.R.C.P." to censure.—ED. L.

A QUESTION OF DIAGNOSIS.

To the Editors of THE LANCET.

SIRS,—Three days ago I was called to see a woman, aged thirty-six years, whom I had been attending for some time for various minor ailments, chiefly dyspepsia. On my arrival I found her in bed, having been lifted therein after a fall. She had been attending to her household duties as usual and was just about to cut some bread when suddenly without a moment's warning she fell to the ground. I found her speechless and with the right arm and leg paralysed. She was not unconscious nor was there loss of sensation on the paralysed side. The tongue pointed to the paralysed side. Taking all the facts of the case into consideration, and especially as I found on examining the heart that there was mitral stenosis, I made a diagnosis of embolism. The friends expressed a desire to have a second opinion, and accordingly a colleague was called in, a man of many years' experience (I am myself only a little more than two years qualified). He disagreed with the diagnosis of embolism and suggested that the condition was one of "congestion of the brain due to biliousness" (these are his exact words). I should say th the day before the stroke the patient had had an

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attack of vomiting and diarrhœa. But I never in my student days heard of hemiplegia and aphasia brought on in such a way nor can I find any reference to such a case in any books at my command, I should therefore be very grateful if you or any of your readers would tell me if such a thing has ever occurred in their experience or if it is possible. I may say that there has not yet been the slightest improvement in the patient's condition as regards the paralysis although I have acted on my colleague's suggestion and treated the "biliousness."

I am, Sirs, yours faithfully,

Sept. 28th, 1898. DUBITANS.

P.S.—Of course, I am not asking you to decide between my colleague and myself nor shall I make any use of any opinions I may receive. I merely seek for information for my future guidance.

'FUCUS VESICULOSUS."

IN reference to the letter of "Enquirer," published in THE LANCET of Oct. 1st, page 906, Messrs. Parke, Davis, and Co., of 451, Oxford-street, write to us that they sell large quantities of it and receive favourable accounts from those who use it. They will be glad to reply to any communication which "Enquirer" may make of them, either personally or by letter, and they enclose us a small brochure on the seaweed in question. M. Duchesne-Duparc is said to have been the first to recommend it as a means of reducing obesity. According to him the remedy is best taken in the morning fasting, and its use requires no change in the ordinary diet; much farinaceous food, beer, prolonged baths, and sedentary habits should, however, be avoided. Dr. Griffith, author of "Corpulence, or How to Get Lean," describes his personal experience of the treatment in the *Baltimore American* (New Preparations, 1878). A patient under his care who had been drinking an infusion with the expectation that it would cure psoriasis informed him that it had done no good, but that it had diminished his fat quite considerably. Dr. Griffith then himself commenced drinking an infusion of it. He says: "In the course of a few weeks my burdensome form grew 'small by degrees and beautifully less,' much to my satisfaction. ..... I administered it to three of my corpulent neighbours with the following results. In neither of the cases was it administered with any regard to regularity. In one case the loss was from 12 lb. to 15 lb. in about two months; in another the diminution in weight was 30 lb. in three months; in the third case there was decided relief from the discomfort under which the patient laboured."

"THE PATHOLOGY OF HERPES ZOSTER: 'ABERRANT VESICLES.'"

To the Editors of THE LANCET.

SIRS,—In an annotation in THE LANCET of Sept. 24th it is said, in discussing the prevalence of "aberrant vesicles," "for these vesicles have never been observed, as far as we know, in this country." My colleague, Dr. W. A. Mackay, described such in a paper entitled "An Unusual Case of Zona," which was published in the *Glasgow Medical Journal* for October, 1897.

I am, Sirs, yours faithfully,

ALEX. JOHNSTON.

City of Glasgow Fever Hospital, Sept. 27th, 1898.

"POISONOUS SHRIMP PASTE."

To the Editors of THE LANCET.

SIRS,—It would be interesting to know the precise history of the preparation of the shrimps which when consumed at St. Anne's-on-the-Sea produced symptoms of acute poisoning. Some years ago, when holding a dispensary appointment in Liverpool, I happened one day to be shown into a ground-floor room of the most filthy description, where a dirty old Irishwoman was busily engaged in peeling shrimps. It was a hot summer day and her hands looked as if they had not been washed for months. I asked her whether she was peeling the shrimps for her own consumption or for others and was told that she did it for her living. "What becomes of them then?" I asked, and was informed that they were potted and sold in Southport. Then I remembered having noticed in the windows of various restaurants in that town tempting-looking white pots containing shrimps embedded in butter which I had innocently supposed to have been a native product prepared on the premises. I have never eaten potted shrimps since that day.

I am, Sirs, yours faithfully,

Clifton, Sept. 30th, 1898. C. J. WHITBY, M.D. Cantab.

URÆMIA.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 4th, 1898, an article was published on the Prognosis and Treatment of Uræmic Convulsions, with notes of two cases. My attention has been drawn to the first case, viz., that of a Derbyshire clergyman, and I am disposed to question the diagnosis of uræmia. In my opinion the history of the case—the facial congestion, the stertorous breathing, the high tension pulse, the hypertrophied heart, and the coma—all point to one cause—viz., increased vascular tension, an overfilled and rigid system putting an extra strain upon those vessels which anatomically are least able to withstand the same. The patient being of plethoric habit it is possible that an excess of urea or uric acid in the blood would predispose to increased arterial tension. In such a manner also would the active physical habits, and in other cases the gouty habits, the absorption of lead, the use of alcohol, and such like factor induce cardiac hypertrophy and arterial rigidity; but they are but factors, and in the above case the history of an active physical life is as important as the history of a healthy appetite, and taken together in his case with possible other factors unknown or non-stated (such as the use of alcohol), tend to produce the same condition—viz.: arterial degeneration. As regards the urine only the faintest trace of albumin was detected, the specific gravity was 1030 and there was a free deposit of urates. Now, from the point of view of failure of renal function it appears, on the contrary, from the scanty evidence produced that the kidneys were healthy and were discharging both water and urea freely. By the fact that there was no albumin found in the urine—the evidence is in favour of a normal secretion by the tubes. Moreover the treatment showed that as soon as the vascular tension was relieved by active purgation the patient regained consciousness, recovered, and lived for two years, whereas in uræmia a patient may suffer from profuse diarrhœa for several days previously to death, the blood and tissues being loaded with urea, and in nowise influence the ultimate result; and should the condition of the kidneys by disease be accountable for so serious a condition of coma by retention of urea in the blood, the fact that there is little or no evidence of such disease so detected by examination of the urine is hard to explain away. And the term "uræmia" has been associated hitherto with a definite renal lesion, whereby the accumulation of urea in the blood and tissues is due to faulty elimination by the tubal epithelium and acting on centres either directly or indirectly by peripheral stimulation. To sum up, Was the coma due to toxæmia (such as uræmia) or to cerebral hæmorrhage?

I am, Sirs, yours faithfully,

A. P. WALTERS, M.R.C.S. Eng.

Tilt Cove, Newfoundland, Sept. 13th, 1898.

*** We have omitted the re-statement of the case made by our correspondent, as the original paper (The Prognosis and Treatment of Uræmic Convulsions and Coma, with Special Reference to the Senile Kidney, by Arthur T. Wilkinson, B.A., B.Sc., M.D. Lond.) will be found in THE LANCET of June 4th, 1898, page 1524.—ED. L.

"WANTED DIAGNOSIS AND TREATMENT."

To the Editors of THE LANCET.

SIRS,—In reply to the letter under the above heading signed "L. M." in THE LANCET of Sept. 24th I beg to say that the diagnosis is "gouty migraine." If "L.M." will read my paper headed "On Migraine" in THE LANCET of Jan. 14th, 1893, p. 79, he will find the puzzle explained. Three weeks at Harrogate will probably set him up for the next six months, if not for a longer period.

I am, Sirs, yours faithfully,

Colchester, Sept. 26th. ALEXANDER WALLACE.

To the Editors of THE LANCET.

SIRS,—The gouty headache that "L. M." complains of would probably be controlled by the following treatment: complete absence of alcohol and butcher's meat from the diet and 5 gr. of salicylate of soda one hour after meals. Let him take a Turkish bath two days before the paroxysm is due.

I am, Sirs, your faithfully,

Oct. 2nd, 1898. F. N.

"THE MEDICAL DIRECTORY."

To the Editors of THE LANCET.

SIRS,—In reply to the letter of the publishers of the "Medical Directory" in THE LANCET of Oct. 1st will you permit me to say that it is no doubt true that Parliament has for administrative convenience caused certain statutes to apply to Monmouthshire as well as to Wales? These statutes are, however, exceptional in character and insignificant in number and in every instance Monmouthshire is specifically named—an indication that Parliament has not considered Monmouthshire to be a part of Wales. On the other hand, in general statutes applying to Wales alone—the Sunday Closing Act for Wales, for example—Monmouthshire is never included in the area affected by the Acts. Messrs. Churchill practically give their case away in adducing the example of the Cardiff College, for, as they correctly state, the title of the College is "The University College of South Wales and Monmouthshire," an indication, if any were needed, that Monmouthshire is not a part of South Wales, and no one, I suppose, would consider it a county of North Wales. Will you, of your courtesy, allow me to make a last appeal to them? If they be determined to retain a Wales section in the Directory will they follow the example to which they appeal and entitle that section "Wales and Monmouthshire"? If they will, then we Monmouthshire men will have little cause to complain.

I am, Sirs, yours faithfully,

A MONMOUTHSHIRE SUBSCRIBER OF THIRTY

Oct. 1st, 1898. YEARS' STANDING.

To the Editors of THE LANCET.

SIRS,—Of the various references required to be made to the Medical Directory two only are of sufficient importance to be considered seriously in any re-arrangement. These are (1) the location of a medical man being unknown, the desire to find it, and (2) the location being known, the desire to know all about him, as, for instance, his address, qualifications, &c. After mature reflection I have come to the conclusion that both these requirements would be met,

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with less loss of time and money, by the adoption of the following arrangement than is the case under existing conditions. I suggest (1) that all the names now sectionally separated be alphabetically arranged under one general list of British (and Irish) qualified medical men. (2) That a capital letter be placed in the margin opposite each name, sufficiently prominent to catch the eye, suggesting the location of each, as follows: L, E, W, S, I, F, N, and M, representing London (postal district), England (provincial, including Monmouthshire), Wales, Scotland, Ireland, Foreign (practitioners resident abroad), Naval, and Military. This would obviate the objection which might be raised against having to search through a long list of names where the location is known; all letters except the one denoting the locality required would be passed over. (3) That the local lists be converted into one general localised list, excepting the London street list, which would be more convenient to be kept separated. (4) That the universities, colleges, and medical schools be placed under the heading "Medical Education." It appears to me that under this re-arrangement the book itself would be less cumbersome, and much labour would be saved to those who are engaged in preparing it. It would certainly be more convenient to the profession at large.

I am, Sirs, faithfully yours,

A SUBSCRIBER OF TWENTY-FIVE YEARS' STANDING.

Oct. 3rd, 1898.

A POINT IN MEDICAL EVIDENCE AT CORONERS' INQUESTS.

To the Editors of THE LANCET.

SIRS,—I was called out one night at 11.35 to see a man who was said to be dead; I went and found that he was dead. It seems that before they came for me they had sent for another medical man, who had attended the man a month before for some affection of the heart. Two days after my visit to the man a coroner's officer called to say that the other medical man was to attend at the inquest. I should like to know what your view of the matter is.

I am, Sirs, yours faithfully,

Oct. 3rd, 1898. R. M. R.

*** It is not necessary that the last medical man who saw the dead body should give evidence at the inquest, for it often happens that he is not the regular medical attendant whose evidence may be required to explain the death.—ED. L.

BARKOO-ROT?

To the Editors of THE LANCET.

SIRS,—Could you or any of your correspondents give me any information as to a disease called in Western Australia "barkoo-rot," and also the best remedy for the same? It is apparently a skin disease affecting the hands of miners who use instruments made of a certain kind of wood.

I am, Sirs, yours faithfully,

Sept. 28th, 1898. Z.

INCORRECT MEDICAL CERTIFICATES.

To the Editors of THE LANCET.

SIRS,—From time to time we read in the daily papers of medical men giving certificates of inability of patients through sickness to attend as witnesses in the law courts, and later in the day such witnesses calmly walking into the court, thus proving the medical man either to be a fool or a liar. A case in point is that concerning a jury list related in the *Daily Telegraph* of Sept. 28th. A gentleman attended and claimed to be taken off because he was deaf. Hitherto his name had been taken off, he said, on his sending a medical certificate. On examination, however, the chairman found that he was not deaf and the story ends by saying that he was retained on the list. I think, Sirs, that the name and address of these blackguards who will write a false certificate for a fee of 2*s.* 6*d.* should be posted up at the end of THE LANCET every week with an editorial remark. Will the daily papers please copy?

I am, Sirs, yours faithfully,

St. Day, Cornwall, Sept. 29th, 1898. E. H. WORTH, M.R.C.S. Eng.

*** In our experience such cases are but seldom heard of. Nor does the "case in point" impress us much. For if a wily citizen called on a medical man and said he was deaf, and if it appeared from ordinary tests that he could not hear, it would be the duty of the medical man to give a certificate to that effect. We do not see any evidence that the medical man knew that an imposition was being attempted or that he sold his signature from corrupt motives.—ED. L.

WEIR-MITCHELL TREATMENT.

To the Editors of THE LANCET.

SIRS,—Will one of your correspondents kindly inform me of the address of a private institution where a lady patient may undergo the Weir-Mitchell method of treatment for neurasthenia or chronic neuralgia?

I am, Sirs, yours faithfully,

Oct. 3rd, 1898. W.

THE CLIMATE OF UGANDA.

To the Editors of THE LANCET.

SIRS,—I want information on the climate of Uganda—its temperature and statistics as to fever and death-rate among Europeans. Can any of your readers help me in the matter?

I am, Sirs, yours faithfully,

Oct. 3rd, 1898. ASHBY.

POLARITE.

To the Editors of THE LANCET.

SIRS,—(1) Is polarite a reliable filtering medium? (2) If it does not act as a filter what is its action in the purification of water, if any?

I am, Sirs, yours faithfully,

Christchurch, Hants, Sept. 29th, 1898. R. LLOYD LEGATE.

PRURITUS ANI.

To the Editors of THE LANCET.

SIRS,—In reading a report of one of the medical societies lately which was reported briefly in THE LANCET I noticed that the subject of pruritus ani was touched upon by several of the speakers and the statement was made by Mr. Allingham that in 50 per cent. of the cases where no obvious cause was found an acrid rectal secretion would account for its etiology. I have been a sufferer from the complaint for many years and am confident that the condition named is the cause o it. I have tried innumerable remedies with little or no benefit. My object in writing to you is to ask if Mr. Allingham or some other competent authority will be good enough to state their views as to the appropriate treatment for the conditions above mentioned. Theoretically, a weak carbolic or astringent injection seems indicated, but I shall esteem it a favour if an opinion would be given on the subject.

I am, Sirs, yours faithfully,

August 20th, 1898. A TWENTY YEARS' SUBSCRIBER.

THE NEW PHARMACOPŒIA.

THE British Pharmacopœia of 1898 is having as favourable a reception as it well could have had. The sales of it up to Sept. 22nd were 18,220.

Bijou can obtain full information from her medical attendant.

Mr. J. O. Neumann.—We cannot notice an instrument which we have had no opportunity of testing or seeing at work.

Cantab. should apply to the dean of some medical school for a tutor but we are not quite sure whether he could get signed up by private teaching. He might also consult the list of medical teachers on page 657 of the Students' Number of THE LANCET.

Subscriber.—Inasmuch as the dentist in question is not registered in this country he must be looked upon as an unregistered practitioner. The administration of an anæsthetic by a medical man for an unqualified dental practitioner is to be regarded as an act of unprofessional conduct.

Microbe will find a full account of the Exeter septic tank system in "Purification of Sewage and Water" (Sanitary Publishing Company, Limited, 5, Fetter-lane), by Mr. W. J. Dibdin. Mr. C. G. Moor has also written a small pamphlet on the subject which is published by Mr. W. H. Hewlett, Wivenhoe.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 6th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 30	29·65	S.E.	0·22	64	60	53	53	54	Overcast
Oct. 1	30·23	N.E.	...	93	64	49	48	51	Hazy
" 2	30·37	W.	...	90	66	45	48	50	Foggy
" 3	30·28	E.	...	104	71	49	55	57	Hazy
" 4	30·31	E.	...	73	64	57	58	60	Raining
" 5	30·23	E.	...	64	62	59	57	59	Raining
" 6	30·09	S.E.	...	65	62	59	58	60	Overcast

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An Address

ON

VARIX: ITS CAUSES AND TREATMENT, WITH ESPECIAL REFERENCE TO THROMBOSIS.

Delivered on Oct. 6th at the Inaugural Meeting of the Nottingham Medico-Chirurgical Society, Session 1898-99,

By WILLIAM H. BENNETT, F.R.C.S. Eng.,

SURGEON TO ST. GEORGE'S HOSPITAL; MEMBER OF THE COURT OF EXAMINERS, ROYAL COLLEGE OF SURGEONS OF ENGLAND; EXAMINER IN SURGERY IN THE UNIVERSITY OF CAMBRIDGE, ETC.

MR. PRESIDENT AND GENTLEMEN,—The difficulties which present themselves to one called upon to give an address upon an occasion like this are of necessity considerable, not the least of them being that involved in the choice of a suitable subject. It is my good fortune in the present instance to have been entirely relieved of anxiety in this respect by the kindness of your secretary, Dr. Kingdon, who has been good enough to intimate that some matters relating to varicose veins might form an acceptable topic. I am grateful for this help, not merely because it has relieved me to some extent of the responsibility of choosing a subject, but because it enables me to deal with a common and, in the minds of some, I fancy, unimportant surgical complaint, to which, if the selection of a subject had been left altogether in my hands, I fear I should have had some hesitation in asking the attention of such an audience as this. Surgery at the present time deals with so much that is great in its conception and performance that there is a danger of the minor and more common matters being somewhat neglected and, indeed, sometimes of being almost overlooked—a most unfortunate tendency, paricularly from the educational standpoint. The observations which I am about to make must, I fear, be more or less of the nature of an epitome only, since the time at my disposal will not allow of more than that. I do not know that I have anything actually new to bring forward for your consideration; nevertheless, I venture to hope that the views which I shall express, since they differ to some extent perhaps from those commonly held, may be at least of sufficient interest to justify the trespass I am making upon your time. For obvious reasons I shall confine myself for the most part to varix of the lower limbs; I do not propose to weary you with statistics, but I must claim your indulgence when, in order to make my position clear, I have to refer to certain elementary details which must be familiar to all.

The Causes of Varix.

The origin of varicose veins has until comparatively recently been generally considered to be something of a mystery; speculations as to their causation have from time to time been made, but nothing very definite with regard to the cases commonly met with has been forthcoming. In some lectures published in 1889 [1] I arrived at certain deductions based upon the consideration of a large number of cases; increased experience during the past ten years has led me to form more positive conclusions than were quite justifiable at the time I have mentioned. A distinguished surgeon, lately deceased, who was himself a sufferer, in the course of a conversation not long ago went so far as to say that he did not believe that anything whatever was known about the origin of varix, and, further, that very little more was known about its proper treatment; and it must be admitted that the information obtainable from the ordinary sources is very meagre. I venture to think that a little consideration will show that the causes of the disease are not so obscure as to be, at all events in the majority of cases, insusceptible of explanation. For practical purposes, so far as their causation is concerned, varicose veins may be divided into four classes: (1) those which are congenital; (2) those due to obstruction of blood-current; (3) those caused by strain without thrombosis (traumatic); and (4) those the result of thrombosis.

1. The congenital cases form a large percentage of those usually met with and consist of two varieties: (*a*) those connected with the subcutaneous veins only, and (*b*) those having a direct and gross communication with the deep venous trunks. The second of these varieties is, for reasons presently to be mentioned, by far the more important. As an example of the first variety, the local mass of varix often seen in the calf of the leg may be mentioned, and of the second kind the convoluted collection of varicose veins about the inner side of the knee, which, turning towards the middle of the popliteal region, ends in a large vessel which joins the deep vein directly by passing through the normal opening in the fascia over the popliteal space. A third variety of congenital varix is that in which the whole venous apparatus of a limb is over developed with or without corresponding increase in size of the main artery. Such cases vary in degree from what is nothing more than a little exaggeration in the size of the vessels to a morbid condition which may, without inaccuracy, be termed diffuse nævus. Congenital varix is sometimes very extensive. A patient who occasionally comes to see me at St. George's Hospital has the most exaggerated varix of all the superficial veins of the right side of the body with which I have met, some of the vessels on the chest being of enormous size. He is now about forty years of age, very strong and entirely free, so far as our means of examination allow one to judge, from any visceral abnormality; there is a large varicocele, but there are no piles. The condition, he is certain, has existed since childhood, and he says that his father was similarly affected. The congenital cases are, as a rule, not noticed until about or after the time of puberty, when a rapid increase of the abnormality often occurs. In connexion with these congenital cases the question of the influence of heredity naturally arises. So far as I can judge heredity is a considerable factor (mainly on the father's side), although I am prepared to admit that the decision upon this point must be difficult in a complaint so common. Nevertheless, when it is possible, as is not infrequently the case, to trace the same form of varicosity through successive generations, and in several members of the same family at the same time, it is difficult to conclude otherwise than that in a large number of cases at least heredity is a strong influence.

2. Cases due to obstruction of the blood-current by external or internal pressure. The most familiar examples of this type are afforded by the varix resulting from pressure of the gravid uterus in successive pregnancies in some women and by the varicosity produced in the veins at a lower level by the pressure of tumours above. In such cases, if the pressure is sufficiently transient and not too complete, the whole of the dilatation may subside permanently upon the removal of the pressure; if, however, the tension in the veins is enough to cause the valves to give way, or if, as may happen, aseptic thrombus forms immediately below the seat of pressure, permanent varicosity results. The gradual increase in varix which occurs after successive pregnancies is, I believe, to be explained upon one of these hypotheses, the occurrence of aseptic thrombus being, in my judgment, more common than is generally thought.

3. Cases caused by strain. There is, I believe, no doubt that, *cæteris paribus*, the veins of persons who when young are subjected to abnormal, and especially sudden, strain, such as may occur in hard "training," in gymnastics, particularly the lifting of heavy weights, or in any violent exercise, as, for example, heavy football playing, tend to become varicose more than the veins of persons whose occupations or amusements throw less strain upon the vascular apparatus. The greater the strain in proportion to the strength of the individual the greater will be the tendency to the development of varicosity. The most exaggerated varicosity arising in this way that I have seen was in an enthusiastic football player in whose ancestors there were no traces whatever of a similar condition; in his case no sign of the defect showed itself until a distinct feeling of something having "given way" in the thigh had occurred on two or three different occasions, after which first mere enlargement and then tortuosity of the long saphena and its tributaries followed. After careful observation I have formed the opinion that the immediate cause of the development of varicosity in cases of this kind is the giving way of the vein valves, usually the proximal pair, which under condition of great general tension naturally have to bear the greatest pressure, although they are not unfrequently imperfect

[1] Clinical Lecture on Varicose Veins.

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anatomically. To produce proof of this contention is necessarily difficult, but the evidence of a case like the following is undeniable.

A young man, aged eighteen years, of strong physique and in perfect health, whilst doing some heavy gymnastic work felt something "give way" in the upper part of the right thigh. No discomfort worth mentioning followed, but as he felt some weakness about the part he consulted me three weeks afterwards. Upon examination the saphena from the groin to a point just above the knee was at least twice the size of the vein below that point, which was apparently normal; the enlargement above ceased abruptly at the point named. The veins in the opposite limb were normal. There could be no doubt that the proximal saphenal valves had become incompetent by reason of the strain and that the vessel had become enlarged in consequence down to the next competent valves. Circumstances, apparently unavoidable, made it necessary for the violent exercise to be continued, and a second strain was distinctly felt a fortnight after I saw the patient. A month after the second strain the whole saphena from the groin to the ankle was very large, later it became tortuous, assuming all the characters of ordinary varix.

I have seen other cases of the same kind. In one of these I removed a considerable length of the saphena, which was as large as my index finger; the valves, of which there were three pairs in the portion removed, were incompetent and one flap had been apparently torn almost off the vein wall, so that it must have been floating nearly free in the blood stream. In connexion with this last remark it is noteworthy that in some cases of varix arising in this way from sudden strain *a soft bruit* is perceptible upon auscultation, although no pressure of any kind is made upon the vein; indeed, it may be possible to hear the bruit by placing the stethoscope on a limb a short distance from the affected vessel. Included in the category of varix arising from strain are those cases of varicose veins in the lower limbs occurring in persons whose occupations entail long-continued standing without much variation in position—girls and young men serving in shops, for example. In these cases the strain is, of course, very slight, but it is so continuously applied by the long column of blood in the saphena that the ultimate effect is to produce varicocity of various degrees in different subjects. There is, however, sufficient reasons for believing that varix of this kind occurs only in subjects whose veins are in some way defective, congenitally, from previous traumatism, or from pathological change.

Some years ago I had an opportunity of ascertaining the condition in relation to varix of the lower limbs in a number of persons selected at random who were employed in a large business house. 15 per cent. were grossly affected and of these nearly half were very robust; on the other hand, amongst those free from the defect were some of the most anæmic and delicate looking of the number examined. Bearing in mind that the occupation of all these subjects was identical and that the defect was not confined to the weak but occurred with apparent indifference in the strong and weakly, it must, I submit, be conceded that there is here strong presumptive evidence in cases of this kind that the origin of the disease lies in some inherent defect in the veins themselves. The fact that the condition when once started tends to become more exaggerated in weakly subjects in no sense affects the validity of this contention.

4. Thrombosis as a cause of varix. The effect of thrombosis of the large venous trunks, such, for example, as the iliac vein or inferior vena cava, especially as a complication of enteric fever, in the production of general varicosity of the limb below is too familiar to call for comment. The importance, however, of thrombosis as a factor in the causation of a certain type of varicosity in the leg is not, I venture to think, commonly recognised, nor am I aware of any mention of the matter in surgical literature. Strains and other similar injuries of the leg or ankle followed by pain and acute tenderness down the middle of the calf, sometimes insufficient to cause more than momentary or very transient trouble, but at times enough to render the limb practically useless for a considerable period, are not infrequently followed very soon by dilatation of the saphena veins, which, if more than very temporary, passes subsequently onwards to tortuosity, with the development of characteristic varix which rarely extends above the knee, terminating generally at the point at which the great saphena of the thigh is completed by the junction of the two trunks at the upper end of the leg. The cause of this development is thrombosis of the main deep veins—i.e., the venæ comites of the posterior tibial artery, &c. The primary saphenal dilatation is merely the result of the establishment of the collateral circulation. If the thrombus clears up or if the unaffected deep veins take up the collateral function this dilatation is temporary only and soon disappears; if, on the other hand, as not infrequently happens, the thrombus leads to occlusion of the deep channels, the superficial dilatation remains permanently and sooner or later a state of ordinary acquired varicosity of the leg follows, which extends, as a rule, no higher than the junction of the two branches already mentioned, which complete the formation of the femoral saphena, as at this point the blood current becomes so free that no appreciable change is produced higher up. The clinical importance of these cases is considerable and lies rather in the history of the cases than in the local symptoms. A proper appreciation of the condition is essential in relation to treatment, as I shall presently show.

A characteristic case of this kind is the following. A man, aged thirty-six years, whilst walking slipped off the kerb and "sprained his ankle"; he paid no attention to the injury at the time. On the following morning on attempting to leave his bed he felt so much pain in the calf of the leg that he could not do so. I saw him a day later—i.e., about 48 hours after the accident; he was then suffering acute pain on the least movement in the middle of the calf; there was tenderness as well as other unmistakeable symptoms of deep thrombosis. Just behind and below the internal malleolus there was slight puffiness; over this area some bruising appeared a few days later. In three weeks he was well enough to get about, but the superficial veins of the leg were full and considerably larger than those on the opposite side. I saw nothing more of the patient for two years, when he again came to see me giving the following account of himself. Although he had apparently recovered from the injury and could do practically anything he desired in the way of exercise he had experienced at times after a heavy day's work a feeling of fatigue in the affected leg, and a year before seeing me he observed that the veins about the leg were much swollen. By degrees this swelling increased until it became so marked that he felt bound to seek advice. Upon examination I found well-marked varicose veins of the leg of the kind I have mentioned and about the inner ankle was a pad of small dilated vessels. The whole leg was slightly larger than its fellow, but there was no tenderness, œdema, or other unnatural manifestation. The thigh was precisely as that of the opposite side.

In the course of some investigations as to the condition of the deep veins on the cadaver in persons who showed obvious signs of varicose veins in the leg I found in two cases the venæ comites of the posterior tibial artery completely occluded by organised thrombus. At the time (now some ten years ago) I attached no importance to the condition, but in the light of subsequent clinical experience it is of distinct significance in relation to the point I am discussing.

THROMBOSIS IN VARIX.

It is commonly stated that varicose veins of the lower limbs are not in any way dangerous to life although they may be productive of discomforts and complications sufficiently serious to incapacitate a patient from following any active employment. Speaking generally this statement is without doubt true, but there are exceptions to it of enough importance to make the matter worthy of some consideration. There are certain well-defined types of varicosity which certainly afford an ever-present source of danger which, if the condition be recognised, is easily obviated by the removal by operation of the veins concerned. That the existence of this danger is not recognised by some practitioners is abundantly clear from the obstacles which even now are often thrown in the way of operations which, being practically devoid of risk, are suggested as a preventive measure before local changes have occurred which rapidly tend to disastrous results. In the course of a comparatively short time I have seen 1 case in which life was sacrificed and 7 others in which it was placed in jeopardy by the failure to recognise the importance of certain conditions to which I shall presently refer. For practical purposes the only immediate dangers to life arising from varicose veins are: (1) the occurrence of profuse bleeding from the "bursting" of a thinned vein; and (2) the formation of thrombus which may either rapidly extend to the great venous channels or lead to the detachment

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of emboli, which if large enough may cause immediate death, or if they pass through the heart lodge in the lungs, giving rise to pulmonary lesions which are sometimes fatal.

It is, I believe I am right in saying, a rather common belief—which is in a general way justifiable—that thrombosis of a vein which is varicose is of less importance than of a vein which is normal, since extension of the clot or its disturbance in the former condition is less likely to happen. Indeed, it is a common experience to find patients allowed to get about and follow their ordinary vocations with comparatively recent clots in varicose veins of the leg, which if they existed in veins which were not varicose would inevitably lead to the prescription of long-continued complete rest. There is no doubt that so far as the limb below the knee is concerned, in the absence of very gross neglect, results serious to life rarely follow immediately from thrombus in varix. In the thigh and at the knee, however, the matter is altogether different since a recent clot in varicose veins in those regions is always a serious and sometimes a fatal lesion; in certain types of varix the gravity of thrombus cannot be over-estimated. The local conditions predisposing to thrombosis in varix are—(*a*) cysts or acute bends in greatly dilated vessels; (*b*) peculiarity of situation with regard to mobility; and (*c*) liability to injury. Now traumatic thrombus in varix almost invariably begins either in cysts, cystic dilatations, or in the acute bends of very tortuous and greatly dilated vessels. In situations in which the affected veins, especially if very large, are continually subject to mobility—e.g., alternate bending and straightening—thrombus is prone to form. The effect of traumatism as a cause of thrombosis is too familiar to require comment. The tendency of thrombosis in varix to spread and invade the great deep venous channels increases with the size of the vein, the absence or inadequacy of the vein valves, and especially with the existence of a gross lateral communication between the part in which the clotting occurs and the main deep venous channel nearest in relation to it. The liability to embolism will of necessity be increased by the same conditions; upon these conditions, therefore, may be said to depend the gravity of thrombosis in varix. Of the constitutional states predisposing to thrombosis it is unnecessary to speak; they act in the same way, but with more force, in varix as they do under normal local conditions.

THE DANGEROUS REGION IN VARIX.

If a portion of the inner half of the circumference of the lower limb be marked off by two transverse lines one about the middle of the thigh and another three inches below the line of the knee-joint—i.e., at the point where the two main subcutaneous veins of the inner side of the leg join to form the main femoral trunk of the internal saphena—an area will be included in which the local conditions predisposing to thrombosis in varix are present in a remarkable degree; indeed, for practical purposes they may be said to be limited to that area. Cysts, often of great size, are there common; huge dilated tortuous vessels, valveless and with abrupt bends, are frequent, and are constantly being subjected to the straining movements produced by flexion and extension at the knee. The special liability to injury of the affected vessels about the inner side of the thigh and knee in riding and numberless other amusements and occupations is obvious. So far as my experience goes all cases of thrombosis in varix of a grave nature, apart of course from those dependent upon acute inflammation or other septic conditions about the limb, with hardly any exceptions originate within the limits of the area described. I have therefore been in the habit of designating it the "dangerous region of varix," employing the term "dangerous" to imply risk either to life or to the integrity of the limb. In order that the importance of the dangerous region may be fully understood it is necessary to briefly indicate the several varieties of varix which are found within its limits. Excluding slight tortuosities of unimportant venous radicles there are eight distinct varieties of varix met with in this region; all are either connected with or actually involve the long saphena.

1. An extensive arrangement of tortuous and dilated veins, containing many small cystic dilatations, which commences at the outer side of the knee and running upwards and inwards just above the patella, joins the saphena a little below the middle of the thigh. This varix is often joined at its commencement, where there is also sometimes a deep branch connecting it with the deep veins, by an afferent tortuous vessel proceeding across the front of the leg or knee from the saphena below or opposite the latter point.

2. A large mass of varix above and to the inner side of the knee, sometimes extending down into the upper part of the leg; the mass is quite superficial, attached above to the saphena, upon which it lies and conceals. It has running into its lower end large superficial varicose veins, beneath which the saphena of about the normal size can usually be seen to run.

3. Two, three, or more distinct venous cysts, varying in size from that of a horsebean to a large cherry, connected to one another by intervening tortuous and dilated veins. This arrangement generally extends from a little below the middle of the thigh and reaches to the level of or below the line of the knee-joint; it is quite superficial, overlying the saphena, to which it is attached above; below it receives varicose veins from the leg.

4. A mass of varicose veins turning round the inner side of the knee connected with the saphena either above or below and ending nearly always by direct communication over the middle of the popliteal space, either with the popliteal vein itself or with the short saphena immediately before it joins the deep vessel.

In these four types the saphena, although it may in exceptional cases be large and tortuous, is, as a rule, normal.

5. A similar condition to that described in Variety 1, but as a rule smaller. It terminates above in a considerable cystic dilatation of the saphena just below the middle of the thigh and receives below varicose veins from the leg. The saphena itself, large and sometimes tortuous, runs beneath the superficial varicose mass and often presents a second cystic dilatation just below the knee. The valves of the saphena are inadequate and there is sometimes a varix at the saphenous opening.

6. The saphena is very large throughout, its diameter being sometimes three-quarters of an inch. From the middle of the thigh to below the knee it is extremely tortuous, the bends of the tortuosities being often very abrupt. The valves are practically non-existent and a varix at the saphenous opening is common.

7. A single large cyst of the saphena situated immediately below the middle of the thigh or just above the knee, of a size varying from a cherry to that of a pigeon's egg. The saphena itself is moderately dilated throughout and may be slightly tortuous at the inner side of the knee. As a rule, however, the cyst is the only abnormality *visible* in the thigh, although in the leg the radicles of the saphena are varicose, sometimes to an extreme degree. The saphenal valves are entirely inadequate and when the cyst is situated low down it not uncommonly communicates with the femoral or popliteal trunk by means of an ascending or descending branch of large size.

8. Two large cysts of the saphena, one situated below the middle of the thigh, the other opposite the knee. The saphena is much dilated and between the cysts is tortuous, standing out prominently. The lower of the two cysts often communicates with the femoral or popliteal trunk. There is almost always a varix at the saphenous opening and the saphenal valves are virtually wanting. The veins of the leg are varicose generally to a considerable degree.

It will thus be seen that these eight variations embrace three distinct classes of venous abnormality—one in which the varix is local and limited, the saphena being for practical purposes natural; a second in which the saphena is largely if not solely affected, its valves being wanting or inefficient; and a third class, in some respects the most important, in which direct lateral communication exists between some portion of the abnormal veins and the nearest deep venous channel—i.e., the femoral or popliteal vein as the case may be.

I have already explained the reasons for the proneness to thrombosis which each of the varieties of abnormality mentioned undoubtedly shows. In the cases in which the saphena is normal and no other gross communication with the deep veins exists the varicose mass is so isolated that there are, if ordinary care be observed in treatment, no serious grounds for fearing that extension of clot to the great vessels will take place. In the cases, however, where the saphena is seriously involved, its valves being virtually non-existent, and in the cases associated with a direct lateral communication between the varix and the nearest deep trunk, the rapidity with which thrombus invades the deep channels is remarkable and sometimes appalling. I may perhaps venture to

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say here, in parenthesis, that the extension of a thrombus in a vein is not checked only by the nearest collateral branch, as would be inferred from the teaching of the books, but also by the vein-valves provided that they are perfect—a fact which, although I believe it is not commonly recognised can be easily verified by any intelligent person who will watch the progress of a thrombus creeping along the length of a normal saphena vein. The rapidity with which a greatly enlarged valveless saphena will fill with clot from the knee to the groin is very extraordinary. The existence of a distinct sacculation of a vein, although primarily conducive to clotting, is up to a certain point antagonistic to the spreading of the clot, since this tends at first to confine itself to the sacculation, but the usual methods of treatment are not such as to take advantage of this help, and the thrombus therefore frequently extends into the vein and grows up its channel in the ordinary manner. A characteristic example of cyst thrombus, showing the disastrous results which may follow inadequate treatment, is afforded by the following case.

A woman, aged thirty years, a cook, unmarried, was sent to me at St. George's Hospital on account of varix of the lower limb. Upon examination there was found to be a large saphenal sacculation a little below the middle of the thigh, the saphena itself being very large throughout. I advised removal of the cyst and adjacent portions of the saphena in consequence of the risk of thrombosis entailed by her occupation. Her own disinclination and the advice of others led to the operation being declined. Three months later she was admitted with thrombosis entirely limited to the cyst, the saphena being quite soft and free from clot. Feeling certain that sooner or later the clot would invade the saphena and travel to the deep main vein I urged either the removal of the cyst with its contained clot or ligature of the healthy saphena above to prevent the upward progress of the thrombus. Again the operation was declined. Treatment by the usual methods was therefore carefully carried out. On the fourth day after admission the saphena became almost suddenly filled with clot from the cyst to the groin and blocking of the femoral and iliac veins followed immediately. She subsequently died from septic pneumonia the result of three successive embolic infarcts.

I presume there can be no reason for doubting that if I had been allowed to operate whilst the thrombus was confined to the cyst the life of this patient would have been saved. Although this may possibly be regarded as an extreme case it is not the only one of the kind which I have known to end fatally. Of similar cases in which permanent crippling of the limb has resulted from the invasion of the deep veins by thrombus in consequence of the importance of energetic treatment not being realised I could give many examples. Of the gravity of the lateral communication between the varix and the nearest deep venous channel I have had considerable clinical experience; the following is a good illustration.

A healthy young woman consulted me with reference to varicose veins behind the knee. She was an energetic horsewoman and she was induced to seek advice because at the end of a day's hunting the mass of veins became full and sensitive in consequence of the pressure of the pommel of the saddle. Upon examination there was well-marked varix of the kind indicated in Type 4; it occupied the inner side of the popliteal space and obviously dipped down as a large branch to end in the popliteal vein or the extreme end of the short saphena. I strongly urged removal of the varix, because I felt sure that unless riding was given up thrombus of the varix would occur some day, a crippled limb and possibly risk to life probably following in consequence of the invasion of the popliteal and femoral veins by the clot. Operation being at the time inconvenient to the patient it was postponed to a future date. About three months later thrombus of the varix occurred in the way I had anticipated, the femoral vein becoming very quickly involved; the saphena remained quite healthy and free from clot. The patient progressed in the ordinary way with rest, but the limb has never recovered its normal condition. It is larger than its fellow and becomes œdematous towards the latter end of the day; the saphena has become dilated and tortuous.

It is quite clear that the extension to the deep veins in this case took place through the immediate communication with those vessels and not through the saphena; it is, I think, equally certain that had the treatment I recommended been carried out the crippling of the limb would have been avoided. This particular type of varix may be regarded as especially important in horsewomen. I have no knowledge of any fatal case but I could quote other instances in which permanent crippling has occurred in the manner described. The crampy pains not uncommonly associated with varix of the legs, especially in persons of middle age, are, I believe, due to thrombus of the intramuscular veins. I called attention to this point in a lecture published in January last.[2] These crampy pains are acute and transient, but they often leave a sense of stiffness about the part, over which there is usually slight tenderness occasionally followed by local spots of discolouration; they are therefore easily distinguished from ordinary cramp. The occurrence of these pains is a sure indication of coming increase in the varicosity and has a definite bearing upon treatment.

THE SPONTANEOUS DISAPPEARANCE OF VARIX.

At present I have spoken of thrombosis in varix as a harmful factor only, which as a rule it undoubtedly is, the degree of mischief occasioned by it varying from temporary inconvenience to a fatal lesion. Sometimes, however, a thrombus exercises a beneficial influence which is deserving of recognition since it leads at times to what may in a sense be termed spontaneous cure. For the attainment of this desirable end organisation of the thrombus with complete occlusion of a considerable length of the affected vessel is essential. Few things are more remarkable than the changes which constantly take place in the varicose veins in the legs of old people in whom passive thrombus is of frequent occurrence and generally gives rise to so little discomfort when confined to unimportant vessels that it barely attracts notice. A careful examination of varicose veins in old people will often reveal the existence of innumerable obliterated venous areas with or without phleboliths which are the outcome of thrombosis. In a subject of any age the effect upon a varicose limb below the knee of a thrombus of the saphena which ends in organisation and occlusion of the vessel is remarkable, being in fact the same up to a certain point as that which follows the removal of a portion of the saphena by operation. Unfortunately in varix of the saphena organisation of thrombus is the rare exception, softening being the rule. The most complete example of spontaneous cure of varix by thrombus is seen in varicocele, in which occasionally a cure as perfect as can be effected by the most radical operation will follow thrombosis which is commonly traumatic in origin but may in gouty subjects be spontaneous. Extensive thrombosis in varicocele is more common than is generally supposed; sometimes the condition is, I fancy, not recognised when it does occur. I have myself seen a case in which a diagnosis of gouty orchitis had been made in consequence of some effusion in the tunica vaginalis which is prone to occur in thrombosis of the spermatic plexus of veins. The most striking case of spontaneous cure of varix following upon thrombosis with which I have met is the following.

A man, aged twenty-seven years, came to St. George's Hospital for advice concerning a varicocele which had begun to give discomfort after he had been lifting heavy weights. There was a large varicocele which I caused to be photographed, as it illustrated a point in which I was interested; it was arranged that the patient should be admitted into the hospital for operation at a later date. Three weeks after I saw him he returned, his varicocele having been struck by a heavy box which slipped as he was lifting it. The left side of the scrotum was bruised and a small, sausage-shaped, slightly tender and somewhat boggy swelling, extending from the groin to the testicle, occupied the place of the varicocele; the testicle was unaffected but there was a little fluid in the tunica vaginalis. He was prevented for reasons which were to him sufficient from coming into the hospital for treatment and I saw nothing more of the man until a year later, when he came for advice because he thought his left testicle was dwindling away. Upon examination the testicle was certainly smaller and softer than that on the opposite side, although at first sight it seemed of the same size as there was some slight effusion into the tunica vaginalis. The varicocele had entirely disappeared; just above the testicle was an elongated hard mass of the size and shape of a date-stone. There was neither pain, tenderness, nor discomfort of any kind. He stated that the swelling resulting from the

[2] Clinical Journal, Jan. 19th, 1898

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injury had gradually disappeared after he had laid up for a fortnight and that since its disappearance he had suffered no inconvenience whatever although he had been doing his ordinary heavy work.

I have memoranda of 5 other cases (one in a medical man) of spontaneous cure of varicocele following upon thrombosis, in 3 the result of traumatism, and in the remaining 2 apparently spontaneous in gouty subjects. In the case described above there was certainly some testicular wasting in the true sense, and in one of the gouty cases the testicle atrophied to an extreme degree, nothing remaining beyond a small insensitive nodule. I have no knowledge of any mention elsewhere of the spontaneous cure of varix in this way. It is sometimes stated that varicocele disappears in old age, and I have been assured that this is the case by a surgeon of great experience who tells me he has never seen a varicocele in an old man. This is entirely opposed to my own experience, for I have seen varicoccles in old people not very rarely; an old gentleman, for example, of whom I had seen a great deal for many years, who recently died at a great age, had a very large varicocele for which he wore a support to the day of his death. At the same time it must be admitted that varicocele does at times undergo changes which tend to great diminution in size upon the decadence of testicular function, but I am strongly inclined to the belief that the changes which lead to complete disappearance of varicocele in old age are due to passive thrombosis of the spermatic veins, a view which receives some support from the frequency with which phleboliths and local occlusions are found in the veins of the spermatic cord in persons advanced in years.

THE TREATMENT OF VARIX.

The remarks I have to make upon the ordinary palliative treatment of varix are, I fear, rather elementary but they will not detain you long. In the early stage of the complaint, especially if there be a tendency to œdema, the results of massage properly applied are beneficial often to a remarkable degree; in its employment some discrimination is requisite. It is to be avoided in cases in which obvious cystic dilatations are present, and when any indications of recent thrombosis are manifest it is therefore, for example, inapplicable during the occurrence of the crampy pains to which I have referred. Moderate exercise in the absence of recent thrombosis is in all cases good; excessive exercise or overstrain is necessarily bad; worst of all is standing for a long time in the same position. In all cases rest in the recumbent position with the legs raised for an hour or so in the afternoon of each day is advantageous if practicable. Electricity in addition to massage is said by some to effect great results; personally I have seen no permanent good in excess of that obtainable by massage alone come of the combined method.

There is probably hardly anything which produces so much harm in varix as the routine use of elastic support, whether this takes the form of stockings or of bandages. I believe I am right in saying that 25 per cent. of the cases of varix in which real trouble arises are due to the use of elastic and other supports which are either unneccessary or ill-fitting. In individuals following ordinary occupations varix which causes no trouble and shows no tendency to increase should be left alone unless for reasons presently to be mentioned operation is indicated. At first sight it may appear that an elastic support, if it is not actually necessary, can at all events do no harm. Nothing, however, is farther from the fact than this assumption. That varix is often discovered quite accidentally is a matter of common knowledge and the discovery, unless ignored altogether by the subject, is generally followed by the wearing of an elastic support of some kind, often with the worst result possible.

It is not uncommon in my experience to find people who have been the subject of varicose veins in the lower limbs for years which have never given trouble of any kind begin to complain of discomfort and perhaps increase in the condition not long after having taken to the use of elastic stockings recommended casually by some friend. These stockings are frequently obtained after a rough-and-ready measurement from a druggist, coöperative stores, or wholesale house, where they are kept in "stock" sizes; hence they rarely if ever fit and the almost inevitable result of the wearing of an ill-fitting stocking in varix is an increase in the disease or the occurrence of some undesirable complication. It is essential if an elastic stocking be used that it should fit perfectly, and it is, so far as I can judge, one of the most difficult of appliances to obtain perfect. In varix confined to the leg the harm done by ill-fitting supports or badly-applied bandages is less than in varix affecting the thigh. I have seen 4 cases of grave thrombosis in the thigh undoubtedly caused directly by ill-fitting appliances. I therefore never allow a patient suffering from uncomplicated varix of the thigh to use any support above the knee, not only because serious complications are sometimes so caused, but because all the comfort obtainable in uncomplicated varix of the lower limb can be afforded by a properly arranged support which does not extend beyond the upper limit of the leg. In certain cases of œdema of the whole lower limb elastic support throughout may be indicated; in such circumstances the thigh piece of the support should invariably be made distinct from that of the leg, the two parts should never be continuous.

In passing I must here mention that there is a well-marked type of varix met with in a considerable percentage of the cases coming under observation in which the vessels are abnormal only inasmuch as they are large and somewhat tortuous, the valves being natural and the functional properties perfect. This is especially the condition found in the varix of the lower limbs which is often accidentally discovered either soon after puberty or at about the age of twenty or twenty-one years. In some of these cases the main artery of the limb is abnormally large. It is, in the absence of symptoms pointing to its desirability, as unreasonable in a case of this sort to use an artificial support as it would be to do so in a normal limb. Varix of the leg arising from deep thrombosis after injury in the manner already indicated requires gentle elastic support from the beginning with intelligent massage as soon as any tenderness has disappeared; by these means a cure in the true sense can often be effected, the use of the elastic support being generally necessary for about twelve months, after which it may be discontinued. The operative treatment of varix has now been freely practised sufficiently long to enable a proper estimate of its value to be made. It is a treatment with very distinct limitations in its scope and application, more discrimination being required in its successful employment than is, I venture to think, commonly supposed.

There are few treatments which, speaking generally, are liable to cause more disappointments to the patients than operations upon varicose veins, but with reasonable care these disappointments can be avoided, since when occurring they are inevitably due either to exaggeration on the part of the surgeon in the estimate of the benefits obtainable by the treatment, to want of judgment in the selection of cases, to the performance of unsuitable operations, or to the wrongful attribution of symptoms to varix which are in reality dependent upon some other condition. With regard to the first of these reasons it must at once be admitted that excepting certain cases of isolated cysts and local congenital masses of varix anything like a cure in the sense in which patients usually understand the term is impossible. In general varix the utmost which can be achieved by operation may be summed up in the relief of certain discomforts, a partial diminution in the objective defect or arrest of its progress if it be increasing, the prevention of subsequent inconvenient complications, and the removal in some instances of conditions which may prove dangerous to the integrity of the limb or possibly to life—prospects assuredly sufficient to justify the operative treatment when properly applied, but not of a kind to justify the use of the word "cure."

In discussing the question of operation with patients two points in particular cannot be too prominently borne in mind; the first being that if the disease has involved the saphena in the thigh the operation will not necessarily enable the use of an elastic support to be entirely dispensed with; the second is that in a case of long existing varix which has given rise to inconvenience an operation, although it will if the case is suitable effect improvement and give great relief, does not necessarily place the patient in the condition of a sound person. If these points be insisted upon much disappointment will be avoided, for there is no doubt that at the present time the tendency of the public is to expect very much more perfect results from surgical operations generally than can in the great majority of instances be effected by them. Operation in uncomplicated varix is to be regarded as a measure for the prevention of certain complications and as a check to the progress of the disease and not in any sense as a cure, excepting in the local conditions which I have indicated.

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From the point of view of operation varix of the lower limbs may be divided roughly into two classes—one in which the defect is local with well-defined limits, the other in which the disease is more or less general, the long saphena being considerably implicated. There is no doubt whatever that local masses of varix, which are always congenital, occurring in persons of active habits should be removed, especially if situated in positions liable to injury or if there is any evidence of a direct communication with the deep main venous channels, in consequence of the danger connected with thrombosis under those circumstances; isolated cysts or dilatations, with the exception of those occurring in insignificant venous radicles, should be removed for the same reason. Cases in the second class, again, come under two denominations—one in which the disease is confined to the leg, the other in which it affects the thigh, the saphena being grossly involved. Speaking generally, if the disease is confined to the leg operation is useless; sometimes it is harmful. All the benefit obtainable from treatment of general varix of the leg can be obtained by properly applied elastic support which would still be necessary in the vast majority of cases if an operation were performed. In cases, however, which are not very unfrequently met with, in which in general varix there exists either a cystic dilatation of the long or short saphena about the middle of the leg operation in active subjects is certainly indicated. The condition, however, in this class of case which most urgently calls for removal is a very tortuous and dilated thin-walled vessel passing obliquely across the shin, which is especially dangerous in footballers and other persons liable to injury in the locality concerned. I have known this particular vessel to be the starting-point of serious thrombosis in three cases, and extensive subcutaneous hæmorrhage resulting from its laceration or rupture from traumatism is in my experience not very rare.

When the saphena in the thigh is involved, there being at the same time, as is practically always the case, extensive varix of the leg, the results of operation are most striking. The conditions mentioned as occurring in the "dangerous region" can be entirely removed, all risks to the integrity of the limb or to life being thus obviated. It is, moreover, perfectly clear from my experience that the discomforts felt in the leg in general varix and the tendency of the disease to increase depend almost entirely upon the pressure of the long column of blood in the valveless saphena. In practice it will be found that if this column be sufficiently interrupted the discomforts felt below are in all cases greatly modified and in the majority entirely removed, the tendency to increase in the varicosity is as a rule checked and in many cases very considerable shrinking of the varicose vessels above and below follows. In the selection of a plan of operation the point to which I have just alluded becomes of paramount importance, for although I know that there is room for difference of opinion in the matter I have proved in my own practice and have sufficiently corroborated the results of my own experience by what I have seen occurring in cases operated upon by others, that operative measures confined to the parts below the knee in general varix are useless. I have therefore long since abandoned them. My practice is to remove a length of the saphena extending from the point below the knee at which the two venous trunks from the leg join to a point a little above the lowest third of the thigh. In no case, so far as I can recollect, has there been reason to be disappointed with the result, although in many cases the amount of varix in the leg has been enormously in excess of that in the saphena above. On the other hand, I have seen instances in which thirty or more small pieces of vein have been removed from the leg in cases of this kind without any benefit whatever resulting until the saphena in the thigh has been dealt with. Indeed, in two cases which have come under my observation after having been operated upon in this way the subsequent state has been far worse than the condition before the treatment. The operation which I recommend occupies a comparatively short time in its performance, the wound is in a part which heals quickly, and the difficulty sometimes met with in keeping a large number of small wounds aseptic does not, of course, arise. I have a vivid recollection of a varicose limb in which not less than fifty short pieces of vein had been excised, the operation, it was stated, having occupied two hours; the limb when I saw it three months after the operation was œdematous, some of the scars were hypersensitive and irritable, whilst between some of them were thrombosed veins; the thrombi, it is true, were comparatively harmless as they were quite isolated, but they were distinctly antagonistic to rapid progress.

It is, I presume, needless to say that operation in varix the result of thrombosis so long as the dilated veins are concerned in carrying on the collateral circulation is unjustifiable—hence no operation should be performed in such cases if there is œdema or if the limb is manifestly increased in size generally. If, however, in cases of varix due to thrombosis there is no sign of œdema and the limb is not appreciably larger than that on the opposite side, they may be dealt with as ordinary cases of uncomplicated varix.

In those who are the subjects of extensive varicosity of the lower limb, whose occupation or amusements are such as to throw great or sudden strain upon the abnormal vessels, resection of a portion of the saphena in the manner which I have mentioned is strongly indicated if any feeling of tension in the vessels is perceptible to the person concerned during great exertion, although at other times no trouble or discomfort of any kind may be experienced. Failing operation in such cases, an elastic support extending only to the upper end of the leg should be worn during the continuance of the conditions leading to the liability to strain.

At first sight it would seem almost impossible to attribute to varix symptoms caused by some other condition, but in practice this is not altogether difficult. I have myself, somewhat against my will it is true, operated upon a case in which symptoms ascribed to varix were undoubtedly in no way connected with it. The case has already been recorded, but it affords such an excellent clinical illustration that I repeat its salient points. The patient was a man engaged in an active occupation, to whom, therefore, the ability to take a large amount of exercise was a necessity. He consulted me on account of general varix of both lower limbs and he described symptoms which might with reason have been thought due to the condition of the veins. His principal complaint was a feeling of fatigue and general fulness of the limbs at the latter part of the day; sometimes he suffered from cramp, and he described a puffiness about the ankles which was stated to occur after more than ordinary exercise. The symptoms are, I need hardly say, similar to those very commonly seen in varix. In this particular case, however, I could not satisfy myself that the abnormal veins were the cause of the trouble. I therefore advised him against operation. A few weeks later he returned having assured himself that the whole of his trouble was connected with the condition of the veins; he consequently asked me to operate. I stated that I was still averse to the operation and that I must not be blamed if no material good followed the treatment. The operation was subsequently performed with considerable benefit so far as the varix was concerned, but the symptoms complained of were not affected in any way so far as I could judge. A year later the patient was seen again. The symptoms had increased, and it was clear that they were due to an obscure nervous degeneration which was presumably incurable.

THE TREATMENT OF THROMBOSIS IN VARIX.

I have already indicated the local conditions which tend to the formation of thrombus in varix and have also shown how by the removal of certain abnormalities all risk of the complication may be avoided. I now come to the final and, in some respects, the most important matter to which I wish to call attention—viz., the treatment of thrombosis in varix. Having regard to what has been said of the tendency to thrombus in varicose and valveless veins to travel rapidly and invade the main deep veins, there can be no doubt that in the vast majority of cases the interest of the patient is best consulted by the removal at once, if practicable, of the thrombosed vessel with the whole of its contained clot, in cysts and in local masses of varix in which there is reason to suspect gross direct communication with the deep veins this treatment being peculiarly appropriate. Not only does the extirpation of the thrombosed vessel remove the liability of the deep veins to become involved and ensure a speedy recovery, the convalescence being represented by the time occupied by the healing of the operation wound instead of the tedious delay of weeks or even months involved in the orthodox treatment by rest, but it also prevents recurrence of the thrombosis, a matter of no small importance, seeing that in the majority of cases in which thrombus has once formed recurrence happens, sometimes frequently, each recurrence involving the same risks to the integrity of the limb or perhaps to life which were

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associated with the original attack. Moreover, it is undeniable that in those cases in which recurrence occurs crippling of the limb, if nothing worse, finally ensues, for although it may be true that actual lameness need not follow, so much care has to be taken in the ordinary use of the limb to guard against further thrombosis that it can hardly in the true sense be considered sound. Complete removal of the thrombosed vein in some instances may not be desirable, the portion of the vessel concerned being, for example, so long that the operation requisite for its removal may be under certain circumstances considered too severe. The main object of the surgeon should then be to prevent the extension of the thrombus to the great deep veins of the part. In the lower limb this access to the deep vessels in varix is usually through the large valveless saphena. Writing ten years ago, I strongly advocated in creeping thrombus of the saphena the placing of a ligature around the vessel on the proximal side of the clot with a view to arresting its progress. At the time of making this suggestion no opportunity for carying it out had offered itself, but I have since practised the method (modified to the extent of dividing the vessel between two ligatures) in several cases, in none of which has the thrombus extended beyond the point of ligature, although in each case it rapidly reached the point of artificial occlusion. It is not, I think, unreasonable, seeing the rapid extension of the clot to the point of ligature, to conclude that the integrity of the limb, and possibly life, in these cases was saved by the energetic treatment which was carried out. After ligature thus applied the portion of the vessel thrombosed may be subsequently removed at a convenient time if necessary. If there is any evidence of the existence of a direct communication between the varix and the deep veins excision of the part affected and not ligature of the saphena is obviously indicated.

A certain number of cases of thrombosis in varix lead to embolism resulting in sudden death or in pulmonary lesions of more or less gravity. In the former case the surgeon, of course, is powerless, but in the latter condition, when there is a tendency, as is not unfrequently the case, to repeated detachments of emboli, I have sufficient proof to show that incalculable good can be done by surgical means provided that action is taken speedily and boldly. As the result of practical experience I have come to the belief that when embolism has followed upon thrombosis of any of the conditions referred to as existing in the "dangerous region of varix" it is the duty of the surgeon at once either to remove the source from which the emboli are derived or to interrupt by ligature if possible the channel by which they reach the central parts. It is at once clear that such treatment must, if it is to be successful, be in the majority of cases carried out before the thrombus has invaded the deep veins. With reference to this point it is interesting to note that if embolism does follow thrombosis in varix it almost always, so far as I have seen, occurs before the clot has invaded the deep vessels. The implication of the deep vessels, if it has already taken place at the time of the detachment of the embolus, does not negative the possibility of good from the radical treatment which I recommend if the original seat of the thrombus has more than one communication with the deep vessels. For example, a cyst of the saphena in the dangerous region which has become thrombosed may have a direct communication with the deep vessels which has given rise to their rapid implication, whilst the saphena itself may be free and be the channel by which thrombus or embolism may be conducted to the central parts. In such a case removal of the original seat of thrombosis is rationally indicated, especially if the thrombus is showing signs of softening, the period of softening of course being the time at which the tendency to embolism is the greatest. The following will serve as a good clinical illustration of the apparent benefit derivable from operations under the circumstances just indicated.

I was consulted by a tall, heavy subject, about forty-three years of age, with reference to varix of the left lower limb. The whole limb was affected; the long saphena was very large and just above the level of the knee it was involved in a cystic dilatation of about the size of a walnut. The main object of the consultation was to ascertain whether the condition of the veins was any bar to cycling, very little other exercise being taken. I strongly urged the removal of the cyst with the neighbouring part of the saphena, because although I could not of course say with certainty that trouble would arise from it I thought it very probable that such would be the case. My opinion was considerably influenced by the fact that the cyst was in the situation in which a direct communication between the varix and the deep veins sometimes exists. Although the patient himself was inclined to submit to operation the adverse counsels of others prevailed and I saw nothing further of him until about twelve months afterwards, when I received a summons from the country asking me to meet him at his house as he was in trouble. Upon seeing him I found the large saphenal cyst packed with clot, the result, he declared, of a slight strain which he distinctly felt whilst cycling. There were acute local pain and redness with a high temperature (102°). The patient was extremely sensitive and nervous and although I felt that immediate operation was indicated seeing the very large size of the saphena it was deferred for reasons at the time sufficient. A week later the thrombus passed a short distance up the saphena and then remained stationary for another week. At this time without any increase in the thrombus in the saphena a very severe attack of sudden cardiac pain followed by acute dyspnœa occurred; two other very slight attacks succeeded rapidly and three days later an attack of cardiac pain and dyspnœa which nearly proved fatal suddenly supervened. After each of these attacks the local signs of pulmonary lesion from embolic infarct were present. The patient was by this time desperately ill and it seemed quite clear that if another embolus became detached the case must terminate fatally. I therefore, with the concurrence of a distinguished physician, removed the thrombosed portion of the saphena and cyst. An immediate improvement followed the operation, no further embolism occurred, and a steady although slow convalescence succeeded in spite of some indication of thrombosis of the deep veins which was just beginning to show itself at the time of the operation. The parts after removal showed that the saphena was quite free from thrombus at a point about 2 in. above the cyst, being packed with firm, healthy clot up to that level. The cyst was full of clot, which towards its inner side was softening. This softened clot, which to the naked eye was indistinguishable from pus, extended down a branch of considerable size which, leaving the cyst wall, passed deeply into the limb, extending, so far as could be judged from its length and direction, in the upper part of the popliteal or the commencement of the femoral vein.

It can hardly be denied that this is a very striking case. I suppose there is little room for doubting that the emboli which nearly killed the patient were derived from the softened clot extending along the branch passing directly to the deep vessels. Taking all the circumstances of the case into consideration it is, I submit, perfectly reasonable to assume that the removal of the parts concerned saved the patient's life. I have had experience of other similar cases in which the detachment of emboli ceased after operations of the kind now described. It must not be understood that I wish to recommend operation in all cases of thrombosis in varix, since every case must of necessity be judged according to its merits, but speaking generally the principle is, in my opinion, sound and the treatment is one which should always be carefully considered in cases of the kind.

Such are the views upon some of the points of interest connected with varix which I venture to submit as worthy of attention. It would be, I fear, unreasonable to assume that they will meet with the approval of everyone; they are, however, based upon the careful study of a great number of cases of a common complaint in which a large experience is not very difficult to obtain. I can at least say with certainty, unless my experience is strangely at fault, that the treatment of varix, if conducted upon the lines which I have endeavoured to indicate, will prove entirely satisfactory alike to the patient and the practitioner.

WATER-SUPPLY OF PONTYPRIDD.—At a meeting of the Pontypridd Town Council held on Oct. 4th Mr. Howard Davies, M.R.C.S. Eng., L.S.A., medical officer of health, stated that although the water supplied to the town was free from evidence of animal or sewage contamination it was largely impregnated with vegetable impurity. The principal ill effects manifested from drinking the water had been due to gastro-intestinal irritation. Mr. Davies added that the Pontypridd Waterworks Company supplied 80,000 persons with water and he had frequently been obliged to complain of its quantity and quality. Other complaints were received from medical men in reference to the water. After a lengthy discussion the council resolved to refer the matter to the Sanitary Committee.

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An Introductory Address
ON
MODERN UNIVERSITIES.

Delivered at the Opening of the Winter Session of the Medical School at University College, Cardiff, on Oct. 7th, 1898,

BY ROBERT SAUNDBY, M.D. EDIN., LL.D. (*hon. causâ*) MCGILL, F.R.C.P. LOND.,
PROFESSOR OF MEDICINE AT MASON UNIVERSITY COLLEGE; PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM; AND PRESIDENT OF THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION.

GENTLEMEN,—I am honoured by being asked to address you at the opening of your winter session and to have this opportunity of seeing your College, of meeting your teaching staff, and of saying a few words of welcome to those who commence as well as to those who rejoin their classes in the medical school. Before going on I desire to say how much I regret the absence from ill-health of our friend Professor Haycraft, and I am sure you share my hope that he may speedily be restored to health and to those studies by which he has built up a brilliant reputation for himself and has conferred lustre upon this College.

I should like to congratulate you, as students of medicine, upon the career you have chosen. There may be professions in which the work is better paid and less exacting, but there is none the practice of which affords the same varied interest if we come to our work in the proper spirit, that of naturalists or observers of nature. The present is the time for you to cultivate this faculty, and for this purpose may I urge you to study botany, not in books only, but in the laboratory and the field on every opportunity. This practice will not only initiate you into scientific methods and familiarise you with the great principles of organic structure and function, but will form the groundwork of a study which in many of the phases of life opened up by a medical career may very reasonably be pursued with pleasure and profit. Therefore neither despise this study nor regard it as of merely passing interest. Make a point of going to every botanical excursion, for you will find that you can learn more from these pleasant holidays than from much reading of books.

I hope you will excuse me for having fallen into the temptation which such an opportunity as the present affords to offer advice. But as I have said so much, will you bear with me if I make another suggestion? Learn to read French and German with such facility that the periodical scientific literature of these two great nations shall be open to you. Nothing is easier than the acquisition of this amount of knowledge, as it requires only a dictionary, a reading book, and a sufficient stock of perseverance. Above all, recollect that you are not here merely to learn how to pass certain examinations, although that is a duty which has to be kept in mind. Most of you will have in these few years of study your only opportunity of obtaining systematic instruction in scientific principles. You may not learn here how to diagnose measles or to treat whooping-cough, but you ought to acquire what is of far more importance, those habits of scientific thought which will make you accurate diagnosticians and rational practitioners.

You are fortunate in the conditions under which you are beginning your professional studies. You are students in a College possessing faculties of Arts and Science, in which students may proceed to the degree of B.A., B.Sc., &c., so that you are associated at the outset of your professional education with a broader culture than that of a purely medical school. I hope many of you have taken advantage of that wider instruction before beginning your present studies. You are alumni of a College which is a constituent part of a university. The University of Wales is the youngest institution of its kind in the kingdom, and, like all young things, it is interesting because of the immense possibilities for good or evil which lurk behind the veil that hides its future. My interest is of the most sympathetic kind, for no one recognises more than I do the influences for good which such a university may exercise under proper conditions. Doubtless for sufficient reasons your College does not attempt to give a complete course of medical instruction, but it limits its functions to the first two years of professional study—that is to say, you are taught here only botany, geology, chemistry, physics, anatomy, physiology, materia medica, and pharmacy. I should like to suggest the addition of bacteriology to this list as being most fittingly taught in its broad general principles during these preliminary years. Although there can be no difficulty in completing your school by the addition of chairs of medicine, surgery, &c., whenever your council shall see fit, there is such a well-marked natural line dividing the subjects taught from those omitted that students may without disadvantage study here for two years and then proceed to some other great school for the concluding part of the curriculum. The Principality of Wales may be proud of these first steps in the development of its medical school and should rejoice that that school is connected with its university.

English medical education has unfortunately proceeded upon other lines. The English medical schools have been purely professional training places and have grown up in connexion with our great hospitals. They have given an excellent practical training, but their deficiencies in other respects have of late years become too obvious to be denied. Hence has arisen the demand for a university for London which shall be really a place of teaching and with which the medical schools of London may become properly related. In Scotland the national universities having their seats in populous centres and not despising the encouragement of "bread-studies" have fostered flourishing medical schools which have derived great advantages from their university connexion and have contributed no little in return to the prosperity of those seats of learning. At St. Andrews alone has medical education stagnated, no doubt on account of the small size of the town; but the munificence of a nobleman well known in Cardiff, the Marquis of Bute, has now provided a building well equipped for the provision of just the same limited medical course as you have here, and it is to be hoped and anticipated, in view of the crowded state of the other Scottish medical schools, that a career of usefulness now lies before the St. Andrews Medical School.

Why is it that England should have shown herself in the past so strangely indifferent to university education; nay, one might say, so indifferent to education of all kinds? One hardly likes to say with the Bishop of London that the English public cares nothing for education, because it is difficult to conceive any apology for such an attitude which would not be too uncomplimentary to my fellow-countrymen. I am inclined to think better of them than this and to believe that it is mainly because of the sort of thing which has been so long associated in their minds with the word "education" that they care so little for it. What wonder is it if John Bull undervalues education when he sees how little learning results from four years at a great public school followed by three years at a greater university, each claiming to give the best education in the country? The day has hardly yet passed in which education at a great public school consisted in practising the art of writing bad Latin verses and the after years spent at a university still implied for the great majority no substantial addition to the scanty store of school-acquired learning. With universities and public schools in which play takes the place of work and the art of teaching is held of no account, why reproach the British public with want of care for education? The fault lies with our educationists, who neglect to teach, who despise the duty of preparing for the professions, and who have allowed the pursuit of athletics to be elevated to such a height that the future captains of the schools will not be the heads of the sixth forms but the captains of cricket, football, or boating clubs. Such an exaggerated estimate of athletics as at present finds favour in English public schools and universities is madness. It amounts to a vast waste of enormous national resources and is little short of a breach of trust on the part of heads of schools and colleges who cannot conscientiously believe that they are doing their duty to the boys confided to their care. We who, as teachers and examiners, have to do with the unfortunate products of the present public school system, know the extraordinary difficulty which they find in passing their examinations and we attribute this to their having undergone no previous mental discipline. They come to us without having acquired the power of application which it is above all the business of a schoolmaster to develop. No doubt there are hard-working grammar schools in our great cities, such as St. Paul's School in London and King Edward's

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School in Birmingham, where teaching is still regarded as the duty of the teacher and application is required from the taught, but such schools have no corresponding universities to which to send their boys. They must go either to Oxford or to Cambridge, where the demon of athletics reigns supreme and where professional studies are deprecated if not despised. These universities, moreover, by reason of their remoteness from the paternal home and the consequent increased expense involved, are in many cases beyond the reach of those who desire and would profit by the educational opportunities which a university affords. In spite of public indifference and class prejudice the demand for more universities has made itself heard so far at least that charters have been granted to the Victoria University and to the University of Wales. In your own case there has been a recognition, if parsimonious, of the principle that the State must provide the necessary funds. We in Birmingham believe that a university is a necessary complement to the educational system of our city, and we are endeavouring with some success to take the needful steps for its establishment. But the great difficulty is the want of money. No one wishes a shabby, half-starved university, with a poor library, badly equipped laboratories, and an underpaid teaching staff. The ideal modern university must of necessity be an expensive institution. A few class-rooms grouped round a common hall can no longer suffice for its installation. Let me describe to you one of the smaller German universities—that of Strasburg—which has an annual attendance of about 1100 students and may therefore fairly serve as a model of a provincial university such as we should like to see, not only in Birmingham, but in other great English cities. The university buildings comprise forty special institutes fully equipped for teaching theology, law, philosophy, philology, geography, archæology, ancient and modern languages, chemistry, physiology, pathology, geology, physics, botany, pharmacy, pharmacology, bacteriology, &c. The maintenance of these buildings costs the University about 360,000 marks, or £18,000 sterling, per annum. The library contains 730,000 volumes and possesses an annual budget of 127,000 marks, or over £6000 sterling. The teaching staff consists of 56 ordinary professors, who divide among them 523,000 marks, or an average income of £465 per annum. There are 30 extraordinary (honorary) professors, 33 *privat-docenten*, and 2 lecturers, the last two classes of teachers being paid by students' fees. The total annual expenditure of the university amounts to 1,052,370 marks, or in round figures £52,000 sterling, of which sum the State contributes more than nine-tenths. No one who knows the Germans will say that they are an extravagant people and it is certain that money in many respects goes further among them than with us, so that we may assume that £50,000 a year is not an excessive estimate for the expenditure of a properly equipped modern university.

Where is the money to come from? There can only be one answer to this question—from the State. The State which has given free elementary education must complete its work and give not free but State-organised and State-equipped secondary and university education. The Lord President of the Council is reported to have said in a speech delivered by him not long ago in Manchester that it was impossible, and in his opinion undesirable, that universities should derive their main financial support from the State, for the reason that State assistance to such an extent would involve State control, and this he thought incompatible with the perfect and complete efficiency of an independent college. He admitted the indignity of colleges having to canvass for subscriptions and he saw no other source upon which they could rely than the generosity of private donors. It is not encouraging to have such opinions expressed by the official head of the educational business of the country. One can hardly believe that the speaker has got beyond the common English idea of a university as a luxury for the well-to-do. If the establishment of universities is for the benefit of the nation at large the nation must and will pay for them. Are they or are they not beneficial? This is the only question worthy of discussion. The objection that State control is opposed to university efficiency is contradicted by the experience of all civilised countries, England alone excepted, where, be it observed, it has never been tried. In Scotland the universities receive very substantial assistance from the State and this has not been accompanied by any paralysing effect. On the whole there is much to be said for a certain amount of State control, as in all university matters a Minister is a fairly impartial referee, able and willing to hear all sides of a question and to decide without respect to local considerations, and in the long run it is certain that national rights will never be sacrificed to those of a class, as has happened so often when funds have been placed in the keeping of private trustees. The worst of all evils in a university is the want of adequate funds, and I would rather see the establishment of our Birmingham University postponed for a generation than get one to-morrow which would be badly equipped and cramped in every direction, or, worse still, that it should under pressure of competition attempt too much and do nothing well. I trust we shall show a strong determination to work within modest limits until the public comes to our aid and insists upon proper State support being given to institutions able to put forward such claims upon the national purse.

What are these claims? The national importance of the work done and the impossibility of raising sufficient money in any other way. There are only three possible bases upon which a university can be carried on. The first of these is a commercial basis. University experience has failed to produce a satisfactory example of this type of institution, nor need we go to America for illustrations of the bad results which the commercial spirit, stimulated by want of funds, can produce in university affairs. The second basis is private benefaction or endowment, by which means great universities have been founded in America, but there is not the same rapid growth of wealth in this country, nor is there any modern instance here of the gift of such a vast sum as would be needed to build and endow a single university. No doubt there have been several cases in America, notably the Universities of Cornell and Johns Hopkins. To build and endow a modern university would require about two millions sterling, but even if this vast sum could be obtained it would not be under proper public control and there would be no guarantee that it would always be applied for the national benefit. Permanent endowments in private trusts are not the most desirable social institutions, and no country has more illustrations of money misapplied in this way than has England. To tell us, as did the Lord President of the Council at Manchester, that we must wait until some benevolent persons provide these vast sums is equivalent to postponing the foundation of suitable modern universities to the Greek Kalends. The third and only practicable basis for a university is that of State support, which has in its favour the very strong argument that it has been accepted by every civilised country in the world, England alone excepted. France spends 7,500,000 francs (£300,000) on university education, having nearly doubled the State contribution during recent years, for in 1870 it amounted to only 4,215,521 francs (£168,620). She has, moreover, found it desirable to encourage provincial towns to find funds for university buildings and has granted to each provincial faculty the title of "university," so that there are now 15 universities in France expending over 12,000,000 francs (£480,000), of which 7,500,000 francs, as already stated, are derived from the national exchequer. These 15 universities educate 26,000 students, which is in the proportion of one student to 1400 of the population of France, the cost of each student to the State being about £11 10*s*. Taking the population of France at 38,000,000 she has one university to about 2,500,000 of people. In the whole of Germany there are 21 universities, educating 30,000 students, giving a proportion of 2,100,000 persons to a university and one university student to 1400 of the general population. I cannot give you the total expenditure, but the Government contributions amount to upwards of 14,000,000 marks (£700,000) and the annual cost to the State of a university student is something like £23. England possesses 4 universities, not one of which is equipped so as to fulfil modern requirements. They are in the proportion of 1 to 6,500,000 of the population and they educate 9000 students, which number gives one university student to every 3000 persons. I am quoting these figures in order to show you what vast sums two great nations are now spending upon university education and to contrast with them the miserable £25,000 which our Government deems sufficient for the needs of England with a population of 27,000,000, whose welfare, livelihood, nay, very existence, depends upon the maintenance of the commercial and the industrial supremacy which the country has enjoyed for more than a hundred years, but which is in danger of ebbing away to better educated rivals. I may be told that the sort of education the university affords is not of much use in trade. This is the often heard fallacy, but even were

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it true it is also true that education proceeds from above downwards and not from below upwards, and that if you want to improve our national education and to give it that practical character which is needed you must have teachers who are imbued with the modern spirit and have been educated in universities of the modern type. We hear a great deal of nonsense talked about the danger to a university if studies are pursued there for any other purpose than the love of learning, but we do not hear of the danger of stagnation which results when the university excludes from its walls all interest in the busy active life of the world. Does Oxford, where this doctrine is carefully cherished, contrast favourably with the universities of Germany, where professional training is not despised? Which is more in touch with modern thought? which contributes most to the progress of science or even of scholarship? The answer cannot be doubtful. I admit that in a country like ours, which is saturated with the commercial spirit, there cannot be so great a devotion to pure science and scholarship as in Germany, and it may be conceded that students, professors, and governing bodies in this country are all alike too apt to consider what will pay them best; but although this tendency needs a check it does not lead to the stagnation which takes place when an institution is shut off completely from the main stream of human interests and ambitions. In the modern university, just as the students go there not to play but to learn, the professors should be appointed to teach and to inspire a love of learning, not to enjoy leisured ease or the empty dignity of an academic title and position. Heaven forbid that I should suggest that the sole duty of a professor is the oral delivery of lectures in a class-room. I admit with regret the existing tendency in some quarters to impose far too much class-room teaching upon the professors, but there is the opposite extreme where the titular professor gives no lectures, takes no part in training anybody, or only delivers an occasional brief course which forms no part of the work of the student for his degree. The professor must not only teach but must be capable of inspiring a love of learning, to do which he must be himself a student, working at the head of his class, leading the way to new ideas, fresh facts, and broader inductions. The teaching of the professor must be supplemented by tutorial classes—*conférences* on the French and German plan, where all the talking is not on one side, where questions and answers bring out and test the student's knowledge, clear his ideas and fix them in his mind. Finally, there must be compulsory attendance at frequent written class examinations. Such work in the class-room should be in part the preparation for, in part the complement of, the work in the museums and laboratories. The modern student must not only read about the thing taught, but he must see it, and, if possible, handle it. This condition demands space and materials which cost money, but such a real and truth-promoting method will surely have the approval of a practical people and will not be allowed to lack the necessary means. I believe that the more the nation hears about modern educational methods the sooner the prejudice against university education will die away and the demand for the establishment of the necessary institutions will become irresistible. Unfortunately, it is not possible to demonstrate to a popular audience the work done in a laboratory. For popular instruction the lecture system is alone fitted, and popular lectures, that is, lectures which seek to be intelligible to persons who possess no previous training on the subject, must give a poor idea of the practical side of modern scientific education.

The passage through Parliament of the University of London Reconstruction Bill has given a final blow to the hapless idea that a university might be merely an examining board, whose students could be left to acquire instruction how and where they pleased. But a not less objectionable makeshift is now popular—namely, that of uniting together a number of different colleges, heterogeneous in essential features, situated perhaps in widely separated cities, composed of persons who cannot be expected or desired to see everything eye to eye with each other, possessing different aims and aspirations. From this ill-assorted union is formed a so-called federal university. The chief merit of the plan is that it economises parchment, but this hardly seems a sufficiently important ground for such a departure from the lines upon which universities have hitherto been successfully established. The failure of this method in Ireland is most conspicuous, and it is much to be regretted that it still finds favour with our educational rulers. It is of course for the State to determine in which centres universities shall be established, but it is impossible for a university to distribute itself satisfactorily over several different and distant places. The unfortunate result is a plurality of second-rate colleges and nowhere that superiority of at least some one department which gives character to a university and raises the tone of the whole of its teaching. I am aware that your university has been patched together in this way, but you are still in the early days of the experiment. I recognise that there may have been a difficulty in adopting any other plan, but it will be most unfortunate if the precedents of Victoria and of Wales are regarded by the Government as a justification for the extension of the process to other localities where no such reason exists. In reading the charter of your university I was much surprised at the prohibition against the possession of real property to a greater value than £10,000 per annum. At the present time the restriction is probably not very burdensome, but it is difficult to understand why a royal charter should impose a disability from which other corporate bodies are free, or why it is that the State which takes such a narrow view of its financial obligations towards university education should seek to hamper such institutions in the nature of the bequests they may receive or the investments they may hold. This restriction is in the spirit of the Mortmain Act, which, whatever its utility in the Middle Ages, is now out of date. The other disability imposed by your charter is the clause withholding the power to grant degrees in medicine. I suppose the reason for this was the non-existence of a medical school in connexion with either of your colleges, but I think it would have been better if the power had been granted subject to the supervision of the General Medical Council, which has statutory control over all qualifying examinations and courses of study. The relation of universities to medical education can be solved in only one of two ways: either the State as represented by the General Medical Council or some other statutory body must itself conduct qualifying examinations, or this work must be left to the universities and the State content itself with the right of supervision. On the whole the latter seems to be the plan which has the advantage, for it is not only that which at present exists, but it is the one which most civilised nations have adopted. I suspect that there was no great anxiety on the part of those who had to do with procuring this charter for what they perhaps considered the doubtful privilege of engaging in medical education. Unfortunately we know that such an objection exists in certain quarters and has played no small or doubtful part in hindering the progress of medical education in England. If Cambridge has within the last generation burst asunder the bonds of prejudice and has founded a flourishing medical school, Oxford still misapplies its medical endowments and declines to reorganise its medical faculty. I hope the University of Wales will always welcome medical students and I hope that when circumstances permit the completion of this medical school steps will be taken to acquire the necessary powers for conferring degrees in medicine.

The modern university, if it is to have popular support and to play the part that it should do in our national life, must not despise what the Germans call "bread-studies," but must feel pride in training men to be useful as well as learned citizens. Law, medicine, engineering, architecture and music are not unworthy to be associated with the most distinguished culture, and while those who study them in a university gain incalculable educational advantages, the university which undertakes these functions can be no loser from being thus brought into relation with the highest and best of the secular professions. I do not wish to disparage Oxford or Cambridge, which are delightful places for study and for amusement, affording a choice of either to those so fortunate as to be able to live there, but they are not and cannot be popular universities such as the nation needs. These must be seated in our great and populous cities and be near the homes of the youth of both sexes who demand university education. In such universities the study of ancient languages and higher mathematics cannot be allowed so preponderating a position as has been assigned to them at Oxford and Cambridge, although their educational value must be duly recognised. In this respect the University of Wales has begun well, the syllabus of its course of arts studies offering much worthy of imitation by similar bodies. There should be universities in Manchester, in Liverpool, in Birmingham, in Leeds, in Newcastle,

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and in Bristol, and we should look forward to seeing one before long in Nottingham and another in Norwich or in some city of East Anglia. As already contended the new universities must be mainly supported by the State, but the Government may fairly claim that a certain proportion of both capital, expenditure, and income should be provided locally. This would afford some evidence of the reality of the demand. In the expenditure upon sites and buildings the Government might ask that half the cost should be borne by the localities, but a smaller proportion of the annual budget, such as a third or two-fifths, would be enough to stimulate local liberality and to prove the seriousness of the promoters. Once these institutions are established and get into working order I do not fear for their future. The good they will do will secure public recognition and will make it impossible for any Government to refuse whatever sums may be necessary to maintain their efficiency. This question of modern universities for our great cities is one in which all classes may be asked to interest themselves, for all are members of the commonwealth and share in the well-being. But it is a matter which especially concerns those who live by their own labour, whether of head or hands. This class is much larger than any other and under our democratic constitution is able to control the Government. The one thing necessary is to rouse it to a sense of its needs, and this work of awakening can be effectively carried on by every man who believes what I have said to be true. Our task is to explain the aim and the method of a modern university, to show the people the advantage to them of having near their reach such institutions in which their sons and their daughters may gain the advantages of a splendid practical education, and to urge that, following the example of other civilised Governments, it is the duty of our Government to aid by substantial money grants the formation without further delay of such universities in our principal English cities. I think the establishment of the succession duties affords an additional claim for Government help, as this heavy tax is levied upon those very sources of charitable bequest which the Lord President regards as the only available means for providing more universities. This tax has been so successful and the total amount of revenue now raised is so enormous that it is incredible we should go on spending so much upon the navy which is to protect our trade and so little upon the education which is needed to keep any trade to be protected.

Just one parting word to you to whom I am especially speaking to-night, the medical students of Cardiff. You have made choice of a noble profession. See to it that you live nobly, for if you wish to understand goodness or beauty or religion you must, as Schopenhauer says, evolve them in your lives. Time will bring its roses to all of you, but not to all fame or wealth. But if I cannot promise that you will all become medical baronets, or even medical knights, I can assure you that there is no profession in which success most certainly attends attention to business or in which so good an income can be as readily secured. Do not despise the expression "attention to business," for it is just in business qualities so many of us fail, and whatever the sphere in which your talents place you, the common virtues of industry, order, and punctuality will more than anything else determine the relative amount of your success. Bear in mind that success has its dangers and that the "millstone of poverty" (to quote Carlyle) may often be "the necessary ballast that keeps our centre of gravity right." No profession is more exposed to the temptation to petty acts of injustice or more in need of the prayer against envy, hatred, malice, and all uncharitableness. We are given to magnify trifles and quarrel over twopenny-halfpenny matters, talking much about ethics and doing things which are truly feminine in their petty meanness. We are prone to cry out against all that exists and to say with Jack Cade, "There shall be in England seven halfpenny loaves sold for a penny, the three-hooped pot shall have ten hoops, and I will make it felony to drink small beer." This revolutionary spirit, be it well understood, applies only to matters medical, for in general politics we are usually very conservative. The clamour for better pay and greater privileges depends in part upon inability to recognise the true position which we hold in society. That position depends mainly upon the public belief that we are a disinterested profession and that belief rests upon the vast amount of public work we do for nothing. But if we follow the advice of some of our friends and seek to put the market price upon all our services must we not reckon upon a change upon the part of the public which may not be to our advantage? Many acts which are full of grace and are accepted gratefully as free gifts become of doubtful value when the value has to be appraised in hard cash. Would not our relations with the public lose their character of friendly intimacy which now distinguishes them and in return for a more strict debit and credit account should we not find ourselves placed upon a purely business footing? Is it, therefore, certain that we should improve our position by seeking the uttermost farthing of the debt due to us? In your relations with your colleagues avoid giving offence and if you have any difference strive to make as little noise about the matter as possible. Do not indulge in personal controversies and shun the men who do.

"Surely after all
The noblest answer unto such
Is perfect silence when they brawl."

Be honest men and gentlemen. In time to come you will know the joy of wife and child, and with that substantial basis for your happiness you will find pleasure in your work and sufficient human and scientific interest to satisfy you so long as your lives shall last.

A CASE OF HYSTERICAL CONTRACTION OF THE FOREARM SUCCESSFULLY TREATED BY SUGGESTION.

BY SARAT K. MULLICK, M.B., C.M. EDIN.,
ASSISTANT PHYSICIAN AND REGISTRAR TO THE NATIONAL HOSPITAL FOR DISEASES OF THE HEART AND PARALYSIS, SOHO-SQUARE.

A GIRL, aged nine years, attended the out-patient department of the National Hospital for Diseases of the Heart and Paralysis on Oct. 21st, 1896, and was found to be suffering from mitral regurgitation with considerable enlargement of the heart. As she complained of faintness, dyspnœa, and palpitation on exertion it was obvious that there was a certain amount of failure of compensation, although the physical examination showed that the right side of the heart was still sound. The left arm was rigidly flexed at the second phalangeal joint with the hand extended on the forearm, and she was unable to open her hand or straighten her arm. The toes of her left foot were also crooked, and there was evidently loss of power in the flexor muscles, as the foot dropped to a certain extent in walking. The muscular affection appeared to date from eighteen months previously when she was said to have fallen down and to have been unconscious for some hours. On recovery her arm and leg were found to have lost power and she complained of pain in the back of her head. Seven months afterwards she had a similar attack and was unconscious for four or five days. The muscular condition was considered as probably due to hemiplegia of embolic origin and she was treated for the cardiac trouble as an out-patient. On Dec. 2nd, 1896, she was admitted into the hospital. After about two months' treatment she was discharged, her condition being greatly improved, but the fingers and toes being in much the same condition as when she was admitted. She continued to attend as an out-patient and was treated with citrate of iron and quinine. In March, 1897, she was put under electrical treatment and was faradaised regularly twice a week for about eleven months with no obvious benefit. In February, 1898, she was again admitted as an in-patient. The fingers and toes were, if anything, more contracted, the former being in the position shown in Fig. 1. In a few days I observed certain signs which led me to believe that there possibly might be an hysterical element in the case. I observed one night when she was soundly asleep that her fingers and toes were not flexed and that without disturbing her I could move them with the greatest ease. I further observed that when she walked about as she thought unobserved or when her attention was directed away from herself she could walk much more naturally and with greater facility than at other times. This instantly changed whenever she was watched. Moreover, on making a careful examination the muscles both of the arm and of the leg were found to be in no way abnormal as regards their electrical reaction nor was there any wasting. Taking these facts into consideration in conjunction with the history of recurrence I came to the conclusion that the spasmodic

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contraction was not, as was originally supposed, a post-hemiplegic rigidity due to embolism resulting from the cardiac lesions but to hysteria. On arriving at this conclusion I determined to attempt to influence her by suggestion and made the first experiment on Feb. 15th.

Before being operated upon the patient was asked to open her fingers voluntarily, which she was unable to do. Then one by one her fingers were quickly forced open, but they at once went back to their original positions. Then the suggestion was tried in the presence of a nurse. Screens were put round the patient who was asked by me to look steadily into my eyes for a few minutes. Thereafter I opened out the fingers one by one, first the little finger, which offered the greatest resistance, then the others in their turn

FIG. 1.



which became increasingly easy to open. It was then suggested to her that she could keep them open, which she did for five minutes, after which they remained half flexed. Again they were put straight and remained so under my suggestion. The conviction was then brought home to the patient that if she liked she could always keep them open. In order to make this conviction lasting her affected hand with fingers extended was put upon a padded splint for nine hours. When taken off the fingers were quite straight. At first simple and then complicated manipulative exercises were tried. Gradually the stiffened fingers became pliable and in a week she was able to perform the most complicated movements. The toes were treated in the same way, with the exception that the padded splint was not used. When they

FIG. 2.



were half straight she was put on tip-toe exercises for ten minutes at a time. In the beginning of these exercises she was allowed to place her left hand on the table, flexing and extending her fingers with the double object of supporting the body and strengthening the fingers. As the toes became stronger the hand support was taken away. When in bed she was made to flex and extend her toes and fingers voluntarily for twenty and thirty minutes off and on daily. She left the hospital in a couple of months with her general condition greatly improved and her fingers and toes strong, pliable, and useful (see Fig. 2).

This case possesses considerable interest inasmuch as it is a typical example of a certain form of hysteria occurring at an unusually early age, and it is, moreover, an object-lesson in the danger of overlooking the true cause of a morbid condition in the presence of another adequate antecedent. The motor symptoms of hysteria are tremor, incoördination, spasm, and paresis, and in practice we commonly find the last two in combination as in the above case. The special points of interest in the case may be summarised as follows: 1. The age of the patient. It is only of recent years that we have recognised the fact that it is comparatively common to get well-marked hysteria in children. According to the statistics of Clopatt (quoted by Gilles de la Tourette), out of a total of 272 cases of hysteria occurring in children under fifteen years of age only 15 were in girls nine years of age. 2. The onset. Hysterical paralysis may commence suddenly or come on gradually. In this case it was ushered in by what was in all probability an hysterical fit, which was followed by a brief period of unconsciousness. 3. The recurrence. The patient recovered from the first attack and had a similar one seven months later the effects of which were more enduring. Such a recurrence is rare, but when it does occur it is absolutely diagnostic of hysteria. Richer in his work, "Paralysie et Contractures Hystériques," under the heading of "Paralysie Erratique," records such a case and others may be found scattered through the journals, but they are not frequent. 4. The electrical reaction of the muscles. In Richer's case there was abolition of the electrical contractility of certain groups of muscles. In the present case the electrical reactions were absolutely normal. 5. The parts affected. In hysterical spasm affecting the arm and leg it is usually the latter which is most affected. In this patient the contrary was the case. 6. Sensibility. Hyperæsthesia and anæsthesia so common in hysteria were not present in this patient. 7. The special senses were normal. 8. The type of the contraction. In most of the recorded cases of hysterical contraction of the forearm the hand has been flexed. In this case, on the contrary, the extensor muscles were chiefly involved and the hand was carried right back into a position at right angles with the forearm. 9. Tremor was entirely absent. 10. Treatment. After the failure of galvanism the patient was cured by simple suggestion. There was no attempt made to induce the state of trance, nor do I think it necessary. I have always found that cases which could be influenced for good by hypnotism could also equally benefit from simple suggestions if repeated often enough.

Soho-square, W.C.

PERFORATIVE APPENDICITIS; DIFFUSED PERITONITIS; DOUBLE LAPAROTOMY.[1]

BY ARTHUR MAUDE, L.R.C.P. LOND., M.R.C.S. ENG.,
AND
J. RONALDSON RUSSELL, M.R.C.S. ENG., L.R.C.P. LOND.

THE mortality from diffuse peritonitis secondary to perforative appendicitis is still so high that any individual cases saved by laparotomy are of value for statistical purposes. Of the 36 cases collected by Dr. H. P. Hawkins no less than 27 died, and according to Treves[2] of these cases (Hawkins's) those which died within a week of the onset of symptoms presented general peritonitis probably from the beginning. Out of 340 cases of appendicitis at the Methodist Episcopal Hospital[3] in ten years 11 had diffuse peritonitis, were operated on at an average of five days' duration, and 9 died. The dangers arising from early operation in the hands of even operators of very moderate experience, such as ourselves, are infinitesimal compared with the danger of diffused peritonitis. The good effected by merely draining the abdominal cavity was in this instance most striking.

A delicate boy, aged sixteen years, had presented no previous signs of abdominal trouble. On April 23rd, 1898, he began to ail, complaining of general colicky pain in the abdomen; micturition was frequent and painful. On the 25th he was worse and constant vomiting began. No action

[1] From notes by Mr. Maude.
[2] Perityphlitis, p. 36.
[3] Brit. Med. Jour., Epitome, Aug. 27th, 1898 S. 146.

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of the bowels occurred after the 23rd. He was seen by Mr. Russell, who considered that he had probably a volvulus or some form of acute obstruction, though he was suspicious of general peritonitis from the first. He asked me to see him on the night of the 28th, when I found the abdomen distended, tympanitic, and intensely painful and tender. There was constant vomiting, not fæcal, no signs of intussusception, and no special signs pointing to typhlitis. We considered diffuse peritonitis certain and probably secondary to a volvulus or some appendix trouble. We tried large enemata gently administered and arranged for a laparotomy next day. His condition was then very threatening—vomiting was constant, the pulse was rapid and failing, and his general state was very bad. I decided to open in the middle line in the absence of any defined typhlitic symptoms and in order to be able to explore the peritoneum thoroughly. The peritoneal cavity was distended with intensely fœtid sero-pus. There were no adhesions in the upper part, but the right iliac fossa was almost shut off by loose recent adhesions. Finding no band or apparent intussusception and the boy's condition being very bad we decided not to explore the cæcum further but passed a drain down to it, flushed out the peritoneum with hot water, and closed the wound with fishing-gut sutures for the peritoneum and silk twist for the abdominal parietes. He rallied in a few hours and by next day the bowels acted naturally, his pulse fell to 80, and the vomiting ceased. The discharge from the general peritoneal cavity rapidly decreased, but intensely fœtid, necrotic-smelling pus coming still from the cæcal region, on May 18th I made an incision of 3½ in. parallel to Poupart's ligament, having its middle over McBurney's spot, and cut down into a double abscess cavity, at the bottom of which I found the appendix firmly bound down, curled up, shrivelled, and lying in contact with it a stercolith exactly resembling a cherry-stone. The median drain was removed and a fresh one inserted into the second wound. The median wound healed rapidly. The patient made a tedious but uneventful recovery, but the cæcal abscess cavity was slow in filling and a residual sinus remained for many months. In July he threatened a relapse of perityphlitic suppuration, the sinus being still open. As his circumstances were very poor we removed him to St. Bartholomew's Hospital, where Mr. Marsh kindly admitted him. Mr. Marsh opened up the sinus, and finding it superficial decided very judiciously not to explore further but to pack the sinus, which accordingly healed slowly by Sept. 2nd. The patient is now fat and well.

Remarks by Mr. MAUDE.—These operations were performed in a poor cottage in the country, where we had to bring even the sterilised water necessary. The patient had no professional nursing the whole time, though a trained and highly skilled nurse was in charge at each operation. The case reflects great credit on Mr. Russell, who conducted the dressings and assumed charge during this long period from April 30th to July 17th.

Westerham.

A CONTRIBUTION TO THE PATHOLOGY OF BERI-BERI.

BY W. GILMORE ELLIS, M.D. BRUX., M.R.C.S. ENG.,
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FOR years past beri-beri has been endemic in the Singapore Asylum, defying all efforts to effectually stamp it out. 50 per cent. of the total deaths in 1896 were due to this cause alone, nearly 60 per cent. in 1897, and up to the end of June in the current year there have been 129 cases out of a daily average number of 228 resident patients with 25 deaths. Though the disease occurs principally in the damp, low-lying, ill-ventilated wards of the lower levels, no part of the asylum is free from cases, and though it is most widespread during the rainy periods, yet it crops up all the year round. The large majority of cases have been, in the first instance, of the so-called moist variety of beri-beri—viz., that in which there is no tenderness of the calves or forearms, no hyperæsthesia or anæsthesia so far as one can make out (but the symptoms connected with sensation are always difficult to determine among the insane), no muscular atrophy—in fact, no obvious neuritis, but in which there is considerable general or localised œdema with great weakness and loss of knee-jerks, the superficial reflexes being usually unaffected. The œdema frequently clears up in the course of a few weeks under treatment by free purging, with diuretics (especially digitalis) and full doses of strychnine, but unfortunately relapses nearly invariably occur, patients only recovering to be again struck down in from a month to a few months' time, and so cases may continue for a year or even longer. But sooner or later serious symptoms supervene, these being lung œdema, hydrops pericardii, cardiac failure, functional murmurs, reduplicated heart sounds, epigastric tightness with præcordial and substernal pains, dyspnœa, and vomiting, this latter symptom being generally of grave import. It should be noted that the degree and extent of the œdema are not proportioned to the gravity of the attack; patients completely water-logged often make good recoveries, while others who are but slightly swollen frequently die.

The degeneration which is found in the nerves of the extremities in patients who have suffered from the so-called dry or paralytic beri-beri is not to be found in many of the cases seen here, and at one time I, with others, was somewhat in doubt as to whether these were really cases of beri-beri, but noticing the fact that many of the patients soon after losing all or some of their œdema developed all the symptoms of peripheral neuritis led me to wonder whether other nerves than those commonly affected were not involved in some cases, and I was strengthened in this conjecture by a paragraph in a short paper on beri-beri by Dr. M. Simon, published in the *Journal of the Straits Medical Association* for 1891–92, in which he states his impression that the œdema may be caused by neuritis of the vaso-motor nerves. I commenced therefore to examine some of the nerves of the sympathetic system. I have now examined a large number of nerves removed from patients dying from the disease and have met with many cases in which all the peripheral nerves were healthy, but in which some or all of the following nerves were markedly degenerated — viz., the phrenic, branches of the cardiac and pulmonary plexuses, the splanchnics, branches of the solar and renal plexuses, branches to the mesentery, and vaso-motor branches to the aorta, renal, splenic, and tibial arteries. In no case of death from beri-beri have I failed to find degeneration of either the phrenic, pneumogastric, or branches from the cardiac plexuses, showing, it seems to me, definitely that death invariably occurs in the disease from implication of some of these nerves. The phrenic is the nerve most frequently involved.

Many exceedingly fine fibres are often to be noticed in carefully teased-out specimens of sympathetic nerves and I have considered these to be degenerated Remak's fibres, the sheath only remaining, and in this I agree with Dr. von Tunzelmann, who has expressed a similar opinion in an interesting paper on Beri-beri published in THE LANCET of Dec. 22nd, 1894. Other Remak's fibres show a proliferation of their nuclei probably pointing to commencing disease. Fibres not quite so fine are also to be noticed among medullated fibres from peripheral nerves which have undergone advanced degeneration and are probably collapsed Schwann's sheaths. In one case which had been for a long time prior to death affected with peripheral neuritis I found in the peroneal nerve a new fibre passing through an old nerve fibre sheath showing cessation of degeneration and recovery in progress. One patient under my care who has been paraplegic for over a year is now commencing to walk.

It may be mentioned that many examinations of blood from beri-beri patients have failed to show the bacillus which Pekelhäring and Winkler claim to have discovered, and unfortunately cultivations from the blood, and after death from the spleen, stomach, nerves, and other organs, have as yet given no useful results in my laboratory. Examination of blood with Gowers's hæmacytometer has shown the corpuscular richness to be normal in nearly every case, whilst the hæmoglobinometer has indicated in every case examined a deficiency of from 15 to 20 per cent. of hæmoglobin. Control experiments were made upon healthy persons living under the same surroundings.

In 125 necropsies of patients dying from beri-beri I found the average weight of the heart to be 13·37 oz., the right side in nearly every case being much enlarged; over the same period of time 204 hearts from patients who had died from other diseases were examined and they averaged just under 9 oz. In the 125 cases of beri-beri referred to the

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spleens averaged 9·27 oz. in weight; the spleens of the 204 other cases averaged 6·28 oz. The kidneys and liver were sometimes, but rarely, congested. In the same 125 cases of beri-beri I found œdema of the lungs (usually to a slight extent) 78 times, hydrops pericardii (varying from 1 oz. to over half a pint) 86 times, hydrothorax 10 times, and ascites 5 times.

Latterly I have been paying attention to the condition of the stomach and have found the lining membrane of that organ congested 31 times in 57 cases post mortem, in most of the cases intensely congested, especially on the ridges of the corrugations. In 4 cases there were blood-clots present in the stomach, possibly due to the persistent vomiting, from which all had suffered prior to death.

In conclusion, it seems to me that the degeneration of the peripheral nerves in the paralytic cases and of the sympathetic, phrenic, and vaso-motor nerves in the moist cases is the cause of the obvious symptoms of beri-beri; that mixed cases are most common; and that beri-beri is a most recoverable disease so long as the pneumogastric, phrenic, and branches from the sympathetic ganglia in the neck are unaffected, but that when these nerves, all or any of them, once become attacked death is imminent.

I have to thank Mr. H. J. Gibbs, assistant medical officer, for much assistance in preparing a very large number of the microscopical specimens.

Singapore.

UTERINE HÆMORRHAGE AS AFFECTED BY THE CLIMATE OF ALTITUDES.

BY SEPTIMUS SUNDERLAND, M.D.,

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CHRONIC bleeding from the uterus is oftentimes so difficult to overcome that one grasps at any hopeful plan of dealing with it satisfactorily. I have therefore thought it necessary to bring to the notice of the profession the strikingly beneficial, though temporary, effect of a high altitude in three cases of obstinate menorrhagia, which was recently forcibly brought to my notice.

A patient, aged thirty-nine years, with chronic enlargement of the uterus causing severe menorrhagia, for which I have frequently prescribed during the past few years, was sent by Dr. Symes Thompson to winter at St. Moritz (about 5800 ft. above sea-level) in 1896–97 on account of contraction of a lung caused by influenzal pneumonia. She was accompanied by her daughter, aged thirteen and a half years, who had been under my care for several months for the menorrhagia of puberty, which was with difficulty kept in check by drugs.

CASE 1.—The mother when she first came under my notice four years ago had for some years been obliged to use as many as 40 sanitary towels at each period, and in addition suffered from irregular attacks of hæmorrhage. Treatment abolished the latter and reduced the periodical flow, which, however, had always remained excessive, as many as from 25 to 30 towels being necessary at each period. During the three and a half months passed at St. Moritz three periods were seen; their duration was shorter, there were fewer clots, and the flow was diminished in quantity about one-half, only from 12 to 14 towels being worn.

CASE 2.—The daughter's menstrual function had begun six months before leaving for the Engadine. The periods had been very profuse with a fortnight's interval between them and had lasted five days, about 15 towels being worn at each flow. During her stay at St. Moritz there was an interval of a month between the periods, which lasted only four days instead of five, and the quantity was reduced to about one-half.

So far so good, but after their return to England at the end of March the periods returned both in mother and daughter in the same quantities and with the same frequency as before. Drugs, however, have now diminished the quantity in the girl.

CASE 3.—A patient who suffers from climacteric menorrhagia, for whom I have prescribed on several occasions during the summer of 1897, has recently returned from a stay of five weeks at Arosa (altitude about 5500 ft.) whither she accompanied her son, who had been sent there by his medical attendant. During her stay at Arosa she had one period which lasted four days instead of the usual time, seven or eight days. She states that she lost only about half the quantity of blood which she had been in the habit of losing during the previous fifteen months and that instead of having repeated sudden gushes there was a steady flow throughout.

I have not been able to find any recorded statement of the usual effect of a high altitude on chronic uterine bleeding, and Dr. Holland of St. Moritz, under whose care the first two patients were placed during their stay, has favoured me with the information that he has made no special observations on this point. But the marked diminution in the amount of the menstrual flow in these three cases raises the question whether residence at a high altitude should not be recommended in certain cases of chronic uterine hæmorrhage where ordinary methods of treatment, including curetting, are of no avail, and in which it is important to check the hæmorrhage in order to spare the patient the more serious operation of extirpation of the ovaries or of the uterus. There are many cases of uterine hæmorrhage in debilitated subjects, especially from fibroids, in which the risk of a major operation is dreaded by some surgeons as much as by the patient, and it is for such that I myself in future shall feel disposed to advise residence for a time at a high altitude. I would also suggest a trial in menorrhagia due to subinvolution of the uterus after childbirth or miscarriage which do not respond to treatment or curetting. Sufferers who can bear the expense would be glad to avail themselves of the chance of relief afforded by such a change of climate, and it is possible if benefit be experienced from a short stay that a prolonged residence might produce a curative effect which was not found in the three cases which I have related. At any rate, even a temporary cessation from the draining and debilitating sanguineous flow would improve the anæmia and consequent feeble condition of such patients and give a little time for recuperation of strength and health which would assist them materially to bear their ailment, even if it should recur on returning to their ordinary place of residence. Further, the attendant anæmic state would be improved because both the number of red blood-corpuscles and the amount of hæmoglobin are considerably increased directly after arriving at an elevated region from a plain, probably (up to a certain point) in direct proportion to the altitude. The experiments of Paul Bert proved that the blood of animals living in high altitudes absorbs more oxygen than that of similar animals living at ordinary elevations, and successive experiments of Müntz, Viault, Egger, Mercier, and Miescher have gradually proved the facts which I have just stated with regard to the increase of red blood-corpuscles and hæmoglobin.

It will be interesting to determine whether the highest elevations available in Great Britain can be made use of to any extent in such conditions, and I believe they may. In seeking for a rational explanation of the causes of the lessened menstruation in the cases I relate it must be conceded that a low temperature was certainly one important factor in diminishing the amount of the menstrual flow. I have frequently noticed that many women menstruate less in winter than in summer, and we know that "some English-women of feeble development menstruate in summer only, and others too freely in hot countries, though not at home" (Robert Barnes), while some menstruate in hot countries and not in England. And since the temperature falls in ascending mountains about one degree Fahrenheit for every 300 feet (with certain exceptions in connexion with situation, shelter, &c.), I consider that it is certainly worth while trying such elevations in our own country for many patients who cannot bear much expense and do not care for exile to more elevated localities abroad, especially for those who habitually reside in moist, relaxing, and low-lying neighbourhoods. These moderate elevations would be also worth trying for numerous nervous and excitable patients who cannot reside at a very high spot without suffering from distressing nervous symptoms. In selecting such a place in Great Britain an elevated region with a low mean temperature should be chosen where the air is as free from moisture as possible and the soil well drained and dry, for in addition to a low temperature as a factor in the diminution of the flow in the cases which I have related one must conclude that the dry, tonic, and bracing climate had a beneficial effect by improving the general condition of the patients. Possibly this bracing effect may also act through

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the nervous system, controlling and regulating menstruation.

Whether the improvement in the quantity and quality of the red blood-corpusules (which I have already referred to) caused by residence at a high altitude, had any effect or not in preventing free exudation of blood from ruptured or unruptured capillaries of the uterine mucous membrane it is not easy to determine. One might imagine this to be the case, remembering that on descending to plains after residence on mountains the red blood-corpuscles in human blood diminish again in number and quality (though usually only to the normal standard) and that in 2 of the cases under consideration the menorrhagia recurred soon after the patients returned home. We may, I think, at least assume that during residence at a high altitude the muscular tissue of the uterus and the walls of the uterine capillaries and small veins become firmer and less liable to rupture, in common with the increased nutrition and generally improved condition of all the tissues of the body; also that there is less venous congestion, owing to the more frequent pulsations of the heart and to the better tone and contractile force of the heart and of the arteries supplying the uterus, and to improvement in the whole circulatory apparatus.

But apart from all these causes I would suggest that the lessened barometric pressure which obtains at a high altitude may have an important effect in warding off and in diminishing hæmorrhages. I have not been able to find any written opinion on this point, but Dr. Theodore Williams in his book on "Aerotherapeutics" gives the results of experiments which he once made on the use of compressed air-baths in phthisis. His results appear to show that the compressed air-baths are not beneficial in cases complicated with hæmoptysis. He quotes 2 cases in which hæmoptysis came on during the bath and 4 cases in which hæmoptysis came on during the treatment. Dr. E. Hugh Snell in his book on "Compressed Air Illness" gives some instances, reported by various observers, of hæmoptysis, epistaxis, and congestions of various organs of the body occurring in men during or directly after working in diving-bells or in "caissons" (these latter are cylinders used for the foundation of piers and bridges in which two, three, or four atmospheres are compressed into one); also in tunnelling and excavating when compressed air is used to keep out water, hæmoptysis, epistaxis, and congestions have been noted. In a most interesting article contributed to the *British Medical Journal* (in 1896 I believe) Dr. Thomas Whitelaw of Edinburgh stated that he "had come to the conclusion that there is a marked affinity between a high barometer and hæmorrhages of various kinds, especially when the blood-vesssls are not in a healthy condition," and he gives sufficient evidence to be impressive, quoting various cases of hæmorrhage occurring on days when the pressure of the atmosphere was unusually high.

The writings and observations of these gentlemen support my impression that the low atmospheric pressure at an altitude may be an important factor in the prevention of certain hæmorrhages from the uterus, though the exact explanation is not easy to determine. As an example of the lowered atmospheric pressure at altitudes I give the following. Assuming the barometer to stand at 30 in. at sea-level the corresponding reading at an altitude of 5,800 ft. would be about 24 in., therefore about one-fifth of the weight of the atmosphere would be removed. Roughly speaking, we must deduct 1 in. from the sea-level reading for every 1000 ft. of altitude, a very slight correction being made for the difference in temperatures.

Now, in seeking for an explanation of the lessened hæmorrhage due to any possible change in arterial tension, one finds that the careful experiments of Fraenkel, Geppert, and Paul Regnard appear to prove that there is no appreciable change in arterial tension during residence at a high altitude. Personally, I think there must be slight variations in arterial tension (probably diminutions) occurring during the first few days which may have escaped notice. How, then, can we account for such a beneficial effect on hæmorrhage being due in some measures to the diminished atmospheric pressure? I think that possibly the diminution in the weight of the superimposed column of air on the surface of the abdomen and in the lungs may act by lessening the pressure on the internal abdominal organs and large veins, thus allowing a more free flow of blood through the large veins and portal system and diminishing uterine congestion. Dr. Paul Regnard says that hepatic congestion and hæmorrhoids are improved at a high altitude, and this he attributes to improvement in digestion; perhaps diminished pressure on the abdominal organs and large veins may also account partly for this; also, indirectly owing to diminished air-pressure (on account of the smaller quantity of oxygen contained in the air of high altitudes), during the first week of residence at an altitude the pulsations of the heart and the respirations are quickened and then gradually fall to the normal and the quantity of rarefied air also which enters the lungs is increased but falls gradually to the normal after the first week. Now, books on physiology teach that the acts both of inspiration and expiration are favourable to the venous circulation, assisting the flow of the venous blood into the heart; therefore, assuming this latter to be correct, I consider that the increased respirations which always occur at high altitudes should materially assist in relieving congestions of the pelvic and abdominal organs and be of benefit in preventing uterine hæmorrhage.

This note may help to dispel from the minds of some medical men the fallacy—which is fairly common—that a high altitude is provocative of hæmorrhages. Dr. Theodore Williams with his large experience has found high altitudes especially beneficial in hæmorrhagic phthisis. Haller and others have conclusively shown by carefully handled and criticised statistics that hæmorrhages from the lungs of phthisical patients are much less common on mountains than on plains. Dr. Paul Regnard of Paris, in his fascinating book on "La Cure d'Altitude" deprecates the common idea that the lessened air-pressure produces hæmorrhages from the air-passages and he gives excellent reasons to explain the very rare hæmorrhages from the nose and ear which occasionally occur in healthy mountain climbers.

In conclusion, therefore, considering the evidence which I have brought forward of (1) Dr. Theodore Williams's experiments, (2) Dr. Snell's writings and careful collection of facts, (3) Dr. Whitelaw's observations, (4) the scarcity of hæmorrhages from the air passages both in healthy mountain climbers and of phthisical patients (as proved by various authors), in conjunction with (5) my own observations of the decrease of menorrhagia in the cases I have related, I will say that I feel justified in believing for the present (1) that a high dry climate is beneficial to certain cases of chronic uterine hæmorrhage which do not respond to ordinary treatment and that, if practicable, residence at a high altitude should be tried for as long a period as possible in cases where operation is not absolutely necessary or is inadvisable from various reasons or would prove unusually dangerous; (2) that a high altitude would probably be found useful in certain hæmorrhages and congestions other than pulmonary or uterine; and (3) that in addition to other causes which produce the effect of diminishing uterine bleeding at a high altitude the lessened air pressure is an important aid.

ADDENDUM.

CASE 4.—Since writing the above I have within the last few days seen a lady suffering from a bleeding fibroid tumour who has consulted me occasionally during the past three years. She lives in a moist, relaxing neighbourhood in a southern county, but she passed the latter part of September and the whole of October (in 1897) in a very high part of Yorkshire. During that time she had one period and she reports that she was much surprised to find that there was a very marked decrease in the amount of the flow.

This encourages me to suggest more strongly that trial should be made in such cases of the moderate elevations at our command in Great Britain, such as the available parts of the Kent chalk hills, Malvern, Hindhead, Grayshot, Buxton, Harrogate, Llandrindod Wells, and many other localities. Possibly a permanent residence at such places might materially alter the future progress of some fibroid growths in which one fears a rapidly unfavourable issue. I hope to bring forward later other notes which I am collecting on the effect of climate on menstruation.

Cavendish-place, W.

PLYMOUTH INFECTIOUS HOSPITAL.—At the meeting of the Plymouth Board of Guardians held on Oct. 4th the alleged mismanagement of the Borough Infectious Diseases Hospital was further considered and a report of the Visiting Committee was adopted which vindicated their action and protested against the strictures of the hospital sub-committee of the town council as being uncalled-for and out of place.

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SOME FURTHER NOTES ON THE USE OF BROMIDE OF STRONTIUM IN EPILEPSY.

BY ANTONY ROCHE, M.R.C.P. IREL.,
PROFESSOR OF MEDICAL JURISPRUDENCE AND PUBLIC HEALTH IN THE CATHOLIC UNIVERSITY MEDICAL SCHOOL, DUBLIN; EXAMINER TO THE ROYAL UNIVERSITY OF IRELAND.

IN 1894, and again in 1896, I published some notes, with cases, on the use of the bromide of strontium in epilepsy. I have many of the cases then mentioned still under my observation, with a considerable number of others. Perhaps therefore some remarks founded on a more extended experience in the use of this bromide may be of interest to the profession. Unfortunately I cannot give the results in all my cases, as some of my patients communicated with me only by letter, and I am therefore unable to follow the course in all. In the majority of cases, however, I have been able to learn the results of the treatment.

I have not met any case in which the bromide of strontium given in the doses and method I will mention has failed to diminish the number of the attacks. In many instances there has been no return for periods extending to two, three, and even four years. Some of these cases may be considered "cured"—that is, that there will be no return of the attacks when the medicine is permanently left off. I cannot say definitely that this is so, for the reason that I always recommend the patients to continue the medicine, even though there has been no return for a long period. I do this all the more as I have not found the continued use of bromide of strontium to be followed by any bad consequences, and many of the patients have been taking 1 drachm daily without intermission for more than three years without any complaint. In this respect the strontium salt has an immense advantage over the potassium salt, which has frequently produced serious physical and mental changes when continued for long periods. Moreover, patients taking bromide of potassium frequently suffer from intense depression. Several of my patients were obliged to leave it off owing to this; in fact, several expressed their feelings by assuring me that they would rather suffer from the fits than from the depression produced by the medicine. I have not noticed this at all in those using the bromide of strontium. The potassium, too, is poisonous in large doses; the strontium is not. On this point I may quote one of the most recent authorities, Dr. Dixon Mann, who in the second edition of his excellent "Manual of Medical Jurisprudence" says that "strontium salts cannot be regarded as poisonous." I have myself given 3 drachms daily for weeks without any unpleasant symptoms. I consider, therefore, that the strontium salt excels that of potassium in being more efficient and in not being followed by dangerous consequences when it is continued over a lengthened period; and as it is not poisonous it can be given in as large a dose as may be required to control the attacks.

In my earlier cases, being influenced by the remark of Brown-Séquard that the combined bromides were more useful, I gave the bromide of strontium combined with one or more of the other bromides, but for a long time I have given that of strontium alone. I usually commence the treatment by ordering half a drachm night and morning in some vegetable tonic infusion. Should that dose not control the attacks I rapidly increase it till I have found the quantity which will suit the individual case. I direct the patient to take 30 grains at once in those cases where there is any warning of the attack and to repeat this every hour if required. By this means I have no doubt the attack has been frequently prevented. I may repeat that in my experience in order to get the full benefit of the medicine I have found it necessary to give it in large doses and to continue it for a long period. Since my first communication several members of the profession have written to me saying that in their cases they have not found the same good results. I invariably find that in these cases the dose given has been too small and consequently that my practice has not been followed. I need not say that each case requires to be studied on its own merits and any exciting or predisposing cause lessened or removed. I do not think it necessary to go any further into this question, as these notes are not upon the general medical or surgical treatment of epilepsy, but upon a special medicine, nor need I give my experience in the use of any other of the many remedies proposed. Many of these I have tried, but none have given me the same good results as I have found by the use of bromide of strontium.

I should say, however, as I have more fully explained on a former occasion, that I regard the question of diet as one of much importance. I direct my patients to restrict themselves to fish and vegetables, and I generally find no great difficulty in having my orders carried out. When the attacks diminish in number, if I am pressed to do so I allow the more easily digested meats twice or three times in the week.

I propose to return to this subject in a subsequent communication and to give details of some of my cases.

Dublin.

THE X RAYS IN DISEASES OF THE CHEST.

BY HUGH WALSHAM, M.A., M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST; ASSISTANT MEDICAL OFFICER IN THE ELECTRICAL DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL; AND CLINICAL ASSISTANT TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

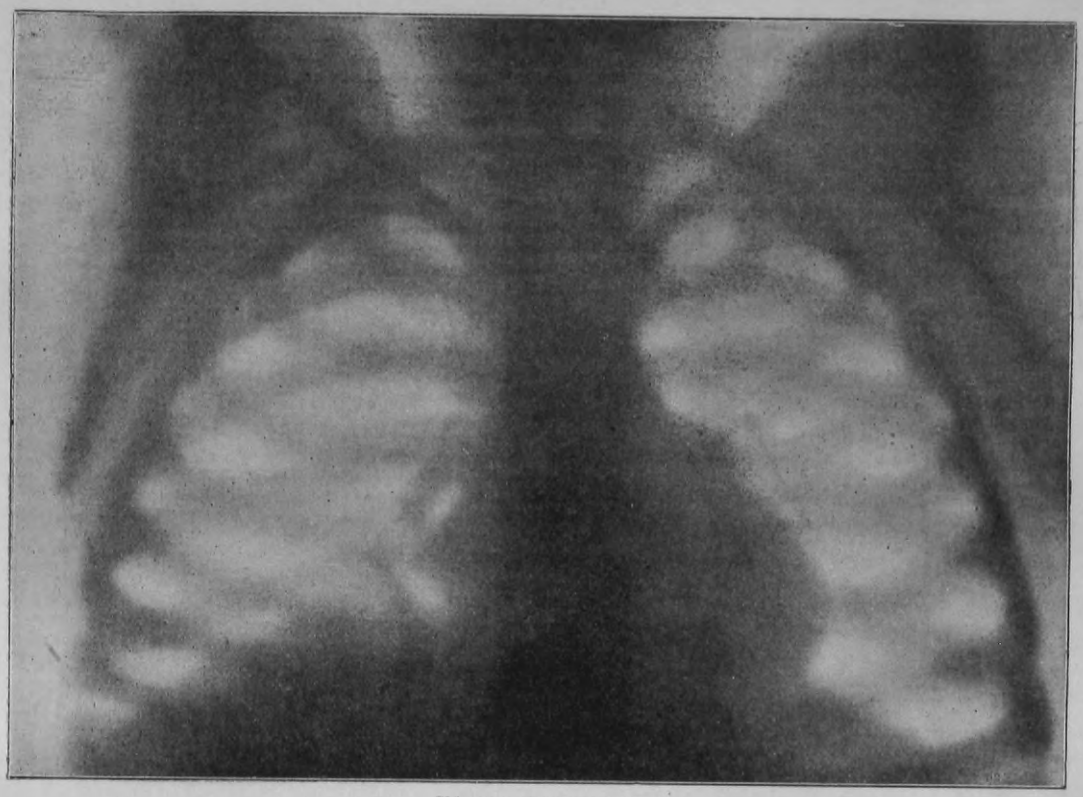
THE experience of the last three years has been quite sufficient to prove beyond question the usefulness of Professor Roentgen's discovery to the surgeon. I venture to think, however, that a systematic application of the rays to the diagnosis of chest disease will prove of equal value to the physician. From some cause the x rays have up to the present time not been so extensively used by the physician as they have by the surgeon, and yet they are capable of showing very distinctly pathological conditions within the chest. Unfortunately at present we have not the apparatus necessary at the City of London Hospital for Diseases of the Chest to examine patients; but what little I have been able to do thoroughly convinces me of their great value in chest disease, more especially in diseases of the lung. This, I think, will be quite apparent from an examination of the two accompanying skiagrams.

The first (Fig. 1) is from the chest of a perfectly healthy boy, aged nine years. It is seen at once that both lungs in a healthy condition are perfectly transparent to the rays from apex to base, allowing the posterior portions of the ribs to be clearly seen. Some slight shading will be seen on each side corresponding to the position of the larger bronchi, but with this exception the healthy lung is quite transparent to the rays. Whether this transparency continues with advancing life I am not quite sure, probably it does not. I think that as life advances the lung becomes somewhat less transparent, but this of course affects the whole lung equally. If we now turn to Fig. 2 we see at once that there is a great difference. The skiagram is from the chest of a boy, aged fifteen years, who came under my care when I was in charge of Dr. Harrington Sainsbury's wards during the past summer. Physical examination of the chest gave signs of a cavity at both apices. On the left side the physical signs of the cavity extended from the apex downwards to the level of the third rib. I was therefore much surprised on examining this patient with the fluorescent screen to find that the cavity was, comparatively speaking, a small one, certainly not extending so far downwards as auscultation led one to suppose. The cavity at the right apex was also smaller than one would have thought from auscultation signs. The cavities are well marked in the skiagram as two more or less round clear spaces surrounded by a dark shading. On looking at the lower parts of the lungs we see varying degrees of transparency mixed up with tracts of shading. This shading corresponds, no doubt, with consolidated lung tissue, but partly perhaps with pleural adhesions.

I have quite lately had the opportunity of taking a skiagram of a pleural effusion (serum). It shows a uniform darkening of the whole of the affected side, quite unlike the mottling of the lung in tuberculosis. This darkening stands out in marked contrast to the transparent lung tissue on the unaffected side. The diaphragm also stands lower on the affected side. I think it is very probable that with the aid of the x rays one may be able to distinguish between serum

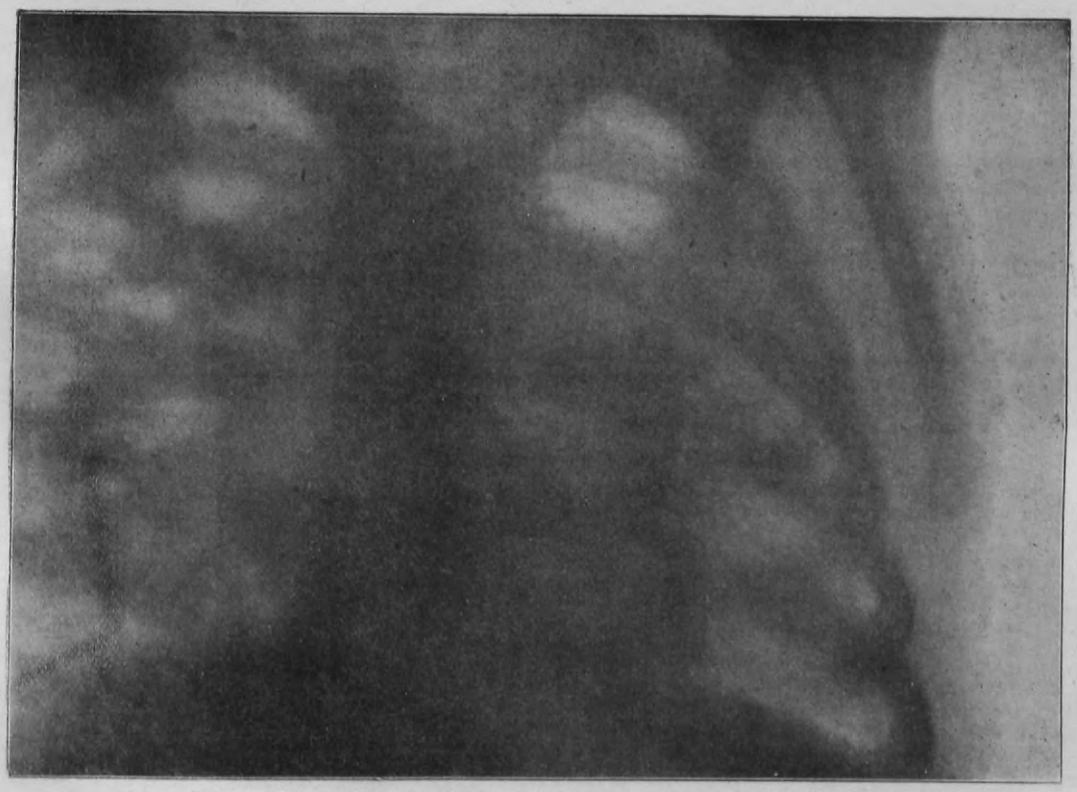
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FIG. 1.



Skiagram of normal chest.

FIG. 2.



Skiagram of chest of chronic pulmonary tuberculosis, showing cavities at both apices.

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and pus, but at present I have not had an opportunity of making the observation. I think it is doubtful if the rays can enable one to distinguish between consolidation of the lower lobe of a lung and an effusion into the pleura.

Early cases of tuberculous consolidation of one or other apex display its presence by a dark shading at that apex, probably before physical signs become apparent. Enlarged bronchial glands, especially in children, are, according to Professor Bouchard and Professor Claude, easily distinguishable by the x rays, but of this I have had no experience. It does not appear likely that the x rays will be of much use in the examination of the heart. True, they will show enlargement of the organ, but of this we have abundant proof without their aid. I think it is in lung disease, especially in tubercle of the lung, that they will be found of great use both in diagnosis and prognosis. Both the accompanying skiagrams were taken by myself in the electrical department of St. Bartholomew's Hospital.

Harley-street, W.

NASAL OBSTRUCTION AND EAR AFFECTIONS.

BY MAYO COLLIER, M.S. LOND., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO THE NORTH-WEST LONDON HOSPITAL.

THE admitted difficulty in treating affections of the middle ear associated with deafness, tinnitus, or chronic discharges and the unsatisfactory results which follow in many cases the usual methods of treatment are due in a large measure to an improper understanding of the relationship and bearings of nasal obstruction as a primary cause or starting-point of most aural affections. If this be so it naturally follows, seeing that the study of aural diseases and their treatment dates back to a period long before a nasal speculum was dreamt of and long before a line of literature recorded a single observation or examination of the nose, that a minute and careful study of affections of the nasal chamber is a necessary preliminary to a proper understanding of most of the commoner affections of the ear.

"Throat deafness" is a well-recognised and significant term used and understood by professional and non-professional persons alike to indicate a state of things which may be literally interpreted as Eustachian obstruction the result of catarrh and swelling of the orifice of the Eustachian tube, usually a sequela or extension of nasal catarrh and consequently of nasal obstruction. Simple obstruction of the orifice of one or both Eustachian tubes following nasal catarrh is the starting-point or antecedent of a very large percentage of the commoner affections of the ear which make themselves apparent to the patient, as deafness, noises in the head, and "running" from the ear.

It is perfectly obvious that if the antecedent condition of Eustachian obstruction and catarrh were effectively treated and its cause was removed the more lasting and grave affections of the middle ear would be prevented and their subsequent treatment rendered unnecessary. I will enlarge my proposition and go one step further. Given chronic and well-marked affections of the middle ear set up and induced by an original Eustachian catarrh and obstruction no permanent improvement can be hoped for or attained unless the *fons et origo mali*, the Eustachian obstruction, and its *causa causans*, the nasal obstruction, be removed.

I never find chronic deafness with or without noises in the head and discharges from the ear unassociated with nasal obstruction and I seldom have failed even in the most chronic and intractable cases to attain some degree of improvement either in the deafness, tinnitus, or discharge by removing the cause of the Eustachian obstruction—i.e., by ventilating the nose. To some persons it may not be apparent how an obstructed nostril can cause Eustachian obstruction and catarrh.

During inspiration the free ingress of air is requisite to fill the chest cavity on expansion of the thorax. An obstructed ingress means rarefaction of the air in the chest cavity and the passages leading thereto. During impeded nasal respiration the air in the post-nasal space is consequently of lesser density than the outside air. As a result of this the intravascular and extravascular pressures are not equilibrated (as in dry cupping) and swelling of the parts with engorgement of the vessels takes place. This vascular engorgement and consequent swelling of the orifice of the Eustachian tubes involves obstruction to the free passage or ingress of air to the tympanic cavity as well as often an extension of the catarrhal process through the Eustachian canal to the tympanic cavity.

To follow this apparently simple catarrh a step or two further, the fact of obstructing the free inlet of air to the tympanic cavity causes a serious physical disturbance. The air present in the tympanic cavity becomes shortly absorbed, causing a negative intra-tympanic pressure. This causes engorgement of the whole lining membrane of the tympanum, with possible and probable effusion into that cavity according to the degree of the vacuum. Added to this the unsupported drum-head is driven inwards by the unbalanced atmospheric pressure and deafness with or without tinnitus is the probable result. The sequence of trouble is not yet complete. The extension of the catarrhal process to the tympanic cavity may mean the introduction of certain pathogenic organisms and the consequent more acute state known as abscess of the middle ear.

The formation of pus is usually associated with pain in the ear, severe in character; high temperature with or without delirium; and sooner or later bursting of the drum-head with discharge of pus from the external ear.

The vista of possible consequences of our original Eustachian obstruction from catarrh is not yet obscured. The immediate result of an acute abscess of the middle ear is usually perforation of the drum-head with cessation of the acute symptoms and relief to the patient. Not so always with infants and children, convulsions and death are a common termination of the acute stage.

The after-stage of a tympanic abscess may be short or long. Healing of the perforation may take place, to re-open with the next cold in the nose and throat and again discharge, lapsing ultimately into a chronic ear discharge. The chronic ear discharge may, but rarely does, end in spontaneous cure. More often a chronic discharge from the ear is kept up for many years and either ends in death from abscess of the brain or septicæmia from infection of the lateral sinus, but more often in caries of the petrous bone and impairment of the general health and death from some indirect cause.

In drawing this sketch of a simple cold in the nose leading to throat and post-nasal catarrh and the consequent Eustachian obstruction I have not exaggerated in the smallest degree. My object is to impress upon those who have the care and the treatment of these cases that simple and appropriate treatment applied to the original catarrh and obstruction would prevent and save this long sequence of aural troubles. An astringent and antiseptic wash to the nose would restore nasal respiration, relieve Eustachian congestion and obstruction, and permit a free ingress of air to the tympanic cavity. In chronic cases of deafness with tinnitus and discharge due originally to Eustachian catarrh and obstruction the same treatment applies, and is absolutely essential and a *sine quâ non* of any permanent improvement and success in these cases. A wash followed by the galvano-cautery or other methods of ventilating the nose is the first step in treating these chronic aural affections. Then and then only will the Politzer bag and the Eustachian catheter avail anything.

Harley-street, W.

GIFT OF A WATER-SUPPLY.—Mr. D. R. Scratton on Oct. 6th presented a water-supply to the village of East Ogwell, near Newton Abbot, Devon. The cost of the gift is about £3000. Mrs. Scratton turned on the water with a golden key presented by the villagers. The day was observed as a general holiday and Mr. Scratton was presented with an illuminated address of thanks.

CLINICAL SOCIETY OF MANCHESTER.—At the annual meeting of this society, held on Oct. 4th, the following office-bearers were elected for the session 1898–99:—President: Dr. A. Hill Griffith. Vice-presidents: Dr. E. S. Reynolds and Mr. E. Roberts. Treasurer: Dr. C. H. Braddon. Secretary: Dr. T. A. Helme. Librarian: Mr. J. W. Smith. Auditors: Mr. C. F. H. Kitchen and Dr. T. Porter. Committee: Dr. Alfred Brown, Dr. R. Crean, Dr. J. Daniel, Dr. J. W. Hamill, Dr. T. Harris, Dr. J. Holmes, Dr. T. N. Kelynack, Dr. M. P. Ledward, Mr. H. Lund, Mr. C. T. B. Maisey, Dr. E. T. Milner, Dr. R. T. Parkinson, Mr. J. E. Platt, Mr. J. Rust, and Mr. F. H. Westmacott.

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A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

A CASE OF HYDATID CYST OF THE LUNG.

(Under the care of Dr. F. G. PENROSE and Mr. T. H. KELLOCK.)

HYDATID of the lung, though fairly frequent in some parts of the world, is distinctly rare in this country. The diagnosis is often far from easy, though an examination of the expectoration, should there be any, may in some cases prove of value. The prognosis in cases not operated on is very grave and the mortality has been given as two out of every three. In patients on whom an operation has been performed the death-rate is much less. Lopez gives only 5 deaths in 32 operations and Reclus[1] gives it as 2 cases out of 11. There can be no doubt that incision of the lung is the correct operation to perform and it is seldom accompanied by hæmorrhage of any moment. The alternative method, aspiration, was formerly employed to some extent, but in no small number of the cases the cyst has burst into the lungs as a result of the aspiration before much fluid had drained away by the cannula, so that the patient has been practically drowned in the hydatid fluid.

A thin, anæmic girl, aged five years, was admitted to the Hospital for Sick Children, Great Ormond-street, on March 21st, 1898, complaining of cough and pain in the left side of the chest. There was a history of phthisis in the mother's family. The patient was born in Melbourne and was brought to this country when she was three years old; she was breast-fed for two months and was then given cow's milk. She had always been delicate, suffering from colds and cough; when she was one year old she had an attack of measles, when two years old whooping-cough, when three years old meningitis (?), and when she was four years old she attended a hospital as an out-patient on account of her chest. Seven weeks before admission she had influenza, since which the mother had noticed that she was more pale, coughed a good deal, and complained of pains in the left side, right shoulder, and legs. A month later the mother's account was that a medical man had told her that the left lung was solid, but three weeks afterwards — i.e., one week before admission — he said that there was fluid in the left side of the chest. On admission the child was in no distress, but complained of occasional pain in the left side. The temperature was 99·8° F. and the respirations were 30. There was no obvious difference in the shape or in the measurements of the two sides of the chest. The respiratory movements were better at the lower part of the right lung than of the left. At the lower part of the left lung there was an area of absolute dulness, the upper limit beginning at the sixth rib in the nipple line in front and sloping upwards to the fifth rib in the axilla; crossing the scapula at this level it turned suddenly downwards and reached nearly to the base of the lung two and a half fingers' breadth from the vertebral column. There was impairment of resonance below the fourth rib in front, hyper-resonance in the first two intercostal spaces, and a band of resonance at the extreme base below the absolute dulness. Tactile vocal fremitus was feeble everywhere, being absent over the dull area. The breath and voice sounds were weak over the impaired area, the former being absent and the latter feeble over the dull area. There was no ægophony or bronchial breathing. No fluid thrill was obtained; the thoraco-parietal glands were not felt. The heart was displaced, the dulness extending two and a half fingers' breadth to the right of the sternum; the sounds were abnormally conducted over the right side of the chest. There was a little impairment of resonance at the base of the right lung. Both the liver and spleen could be felt below the costal margin, but nothing else abnormal was detected in the abdomen. An exploring needle inserted into the dull area withdrew hydatid fluid. On the same evening, chloroform having been administered, a curved incision was made over the sixth and seventh ribs in the posterior axillary line; about 1½ in. of each of them were removed and the pleura was freely opened. Adhesions were found posteriorly and below the opening, but above and in front there were none. The presenting lung tissue was pale in colour and many vessels were visible on its surface. A few stitches having been inserted to unite the visceral and parietal pleuræ a trocar and cannula were introduced into the lung and clear fluid escaped. The opening was then enlarged and it was found to lead into the adventitious cyst which was of about the size of an orange and full of hydatid fluid, which, together with the true cyst which was found to be collapsed and empty, was removed. The edges of the opening were sutured to the parietes, the rest of the wound in the chest wall was closed by sutures at either end, the cavity was packed with cyanide gauze and a dressing was applied. It was noticed that the walls of the adventitious cyst in the lung showed no tendency to collapse when its contents had been removed. There was no hæmorrhage of any severity at any stage of the operation, which the patient bore fairly well. For three days after the operation retention of urine was a troublesome feature and had to be relieved repeatedly by the application of fomentations to the abdomen. The cavity showed no tendency to contract. There was very little discharge from it, but on March 25th it was noticed on dressing the wound that when the plug of gauze was removed some air and mucus came from the opening. On the 26th and 27th the child on three occasions passed about half an ounce of quite clear fluid from the rectum independently of defecation. Chemically this was identical with hydatid fluid, but no hooklets could be found in it. Rectal examination revealed nothing abnormal. On the 27th some air and mucus were still coming from the wound. The heart had returned somewhat towards the left, although there was no apparent alteration in the size of the cavity. On the 28th and 29th the patient passed a good deal of pus with the motions. The abdomen was quite supple and not tender, and she seemed to be altogether brighter and better. The liver was felt about two fingers' breadth below the costal margin, its surface being quite regular. After the 30th there was no more fluid or pus from the rectum, the patient gradually improved, and the cavity in the chest began to contract; there was a little air coming and going through the wound for a short time. On April 9th she developed measles, but this apparently in no way interfered with her recovery and when she left the hospital on the 26th the wound in the side had healed; there was a little falling in of that side of the chest as well as some straightening of the spine in the situation of the fifth, sixth, and seventh dorsal vertebræ. The liver was still somewhat enlarged, but no definite tumour could be felt in it.

Remarks by Dr. PENROSE.—I think that the most interesting point in this case is the fact of a discharge *per anum*, first of a clear fluid evidently hydatid on March 26th and 27th followed by pus in the fæces on the 28th and 29th. The most probable explanation seems to be that a second cyst ruptured somewhere into the lower part of the intestinal tract and subsequently sloughed away. It is well known that hydatid cysts are frequently multiple. Up to the present there is no evidence of the presence of any more, though there is no obvious cause for the persistent enlargement of the liver.

Remarks by Mr. KELLOCK.—The comparative rarity of the operation for hydatid cyst of the lung in this country makes me think that this case is worth recording. The operation itself was rendered easy by the fact of the cyst lying so near the surface of the lung that only a very thin layer of the latter had to be divided. The conditions found when this stage of the operation was reached had been rendered rather confusing by the puncture of the cyst; the adventitious cyst formed of condensed lung tissue was found to be full of fluid, the hydatid itself being collapsed and separate from the wall of the former. So little of the lung substance having been incised at the operation it was rather difficult to account for the occurrence and persistence of the aerial fistula. A noticeable feature in the after treatment was the

[1] La Presse Médicale, Oct. 19th, 1895.

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length of time which the cavity in the lung took to close; it would appear that the wall of the adventitious cyst had become so rigid that it was able to resist for some time the expansile force of the surrounding lung tissue.

TEDDINGTON COTTAGE HOSPITAL.

A CASE OF CÆSAREAN SECTION; RECOVERY.

(Under the care of Mr. T. B. LUSCOMBE.)

THE case reported below is remarkable in that the unusual expedient was adopted of removing the head from the uterus by abdominal section after the rest of the fœtus had been delivered by the vagina and decapitation had been performed. It can be but rarely that such a method is justifiable, for as a rule if the pelvis and shoulders of the child have succeeded in passing through the mother's pelvis it is easy for the head to follow, unless by undue traction the aftercoming head has become extended. The result of the operation seems to have been very satisfactory.

On March 26th Mr. Luscombe was asked by Dr. Theodore Günther to see a case of protracted and difficult labour. The patient was thirty-one years of age and had had three previous confinements. The first labour was said to have been "a very bad one and the child had to be taken away in pieces." The two subsequent labours appear to have been uneventful, but she said that the children were small. The patient was anæmic and had a troublesome cough. Labour commenced on the evening of March 24th; there was a breech presentation, the child lying in the left dorso-anterior position. On the next day the membranes ruptured and the os uteri was fully dilated, but very little progress had been made. Mr. Hermann Günther also saw the patient. The fœtal heart sounds were distinctly heard. The pelvis was measured and was found to be 3 inches in the conjugate diameter. On the morning of the 26th the fœtus was a little lower, the pains were not strong, and some meconium was found in the vagina. As the patient was getting tired it was decided to bring down the legs with the view of accelerating matters and chloroform was given. The left leg was brought down and then with more difficulty the right leg. The body was now delivered, the shoulders giving much more trouble than the legs. To deliver the after-coming head traction on the body was of no avail. Jaw traction was tried with a like result. Then forceps were applied, but with a negative result. As the head did not seem to be abnormally large when grasped with the forceps it was thought that if decapitation were performed the manipulations with the forceps would be easier as more room and possibly a more advantageous grip would be obtained. This was done, but repeated efforts failed to extract the head. It was at this stage that Mr. Luscombe saw the patient at about 3 P.M. She was somewhat exhausted, the pulse was fairly good, and feeble pains occurred every few minutes. The uterus was in a condition of more or less tonic contraction and the chin of the fœtus had rotated on to the pubes. The neck was gripped by the os uteri, so it was not possible to make much examination internally. Above the pubes could be seen a swelling of about the size of a small orange—the outline of the distended bladder; behind and slightly above this the hard fœtal head and the placenta could easily be felt, and still higher there was a large semi-fluctuating mass filling the upper part of the uterus. This was afterwards found to be blood-clot. An attempt was now made to empty the bladder, but the chin was so firmly fixed upon the pubes that a catheter could not be passed into the bladder.

The surroundings of the patient were not suitable for any further operative measures, so it was decided to remove her to the Teddington Cottage Hospital with the object of placing her under an anæsthetic and if necessary to perforate and crush the head or perform Cæsarean section. At about 6 P.M. the A.C.E. mixture was administered. Mr. Luscombe was then able by external manipulation to push the head just far enough upwards to allow of a catheter being passed and about a pint of blood-stained urine was obtained. After further consultation with his colleagues who had not seen the case before admission it was decided that to alter the position of the head, without using unjustifiable force, would be practically impossible, and that the risk of abdominal section would be less than perforation and cephalotripsy. This opinion was probably strengthened by the good recovery in this hospital of the patient whose case was reported in THE LANCET of April 16th. After the usual cleansing of the skin, &c., Mr. Luscombe opened the abdomen along the linea alba. There was scarcely any hæmorrhage. The uterus was then opened by a corresponding incision, but the tissue was so soft and friable that it was not easy to avoid tearing it. As soon as possible the skull was grasped on either side over the parietal eminences with the fingers of each hand. It required some force to dislodge it and it slipped through the hands of the operator out of the abdominal incision. In the sudden escape of the head a rent occurred in the lower part of the uterus, about 2 in. long, to the left of, and at a right angle with, the previous incision. The placenta (which was not adherent) and a mass of blood-clot lying above it were then removed. There was moderate hæmorrhage for about a minute or two and the blood was allowed to escape through the vagina. The cavity of the uterus was irrigated with hot water until the bleeding had practically ceased and dusted with iodoform powder. The incision and the rent made by the sudden escape of the head were sewn up with silkworm gut sutures ½ in. or less apart; a few blood-clots and some blood-stained fluid were sponged out of the peritoneal cavity and the abdominal incision was closed with deep silkworm-gut and superficial horsehair sutures. In the lower part of the wound a piece of alembroth gauze was left for drainage and the dressing was completed with iodoform, alembroth wool, and a broad flannel bandage. The patient was then removed to bed. The fœtus was a male and on examining the head it was found to be larger than normal and well ossified; the fontanelles were obliterated, as the edge of one parietal bone overlapped the other to the extent of nearly ½ in., this being probably the result of pressure exerted by the forceps. The patient passed a quiet night, had no pain, but slept very little. She drank several teaspoonfuls of water and brandy (½ oz.) mixed with water. On the 27th the catheter was passed, the urine withdrawn being dark and thick. The temperature was 98° F. and the pulse was 100 and feeble. During the day she took chicken jelly (2 oz.) and brandy (1 oz.) mixed with water. In the evening she was restless and complained of abdominal pain. The gauze was removed from the lower part of the wound without disturbing the dressings. There was a very slight serous discharge. The catheter was passed and the urine was found to be much clearer. The temperature was 98·2° and the pulse was 96 and weak. The subsequent progress of the case has no special interest. The cough, without sufficient chest trouble to account for it, was the chief difficulty for the first few days, whilst later obstinate constipation supervened. The temperature and the pulse-rate were highest on the sixth day after the operation, being 101° and 104 per minute respectively. The patient did not seem to be ill on that day, and the rise in the temperature from 99° in the morning was presumably due to constipation, as the temperature did not again rise above 99°. The patient left the hospital recovered at the end of May.

Remarks by Mr. LUSCOMBE.—The result of this operation, following so soon after the other above referred to, and the present condition of both the patients, I venture to think prove that the risks to the patients from abdominal section were less than would have been incurred had any other method of delivery been resorted to and the treatment had, moreover, the advantage of avoiding the danger of lacerating the uterine or vaginal mucous membrane.

PAUPER CHILDREN IN PLYMOUTH.—At the meeting of the Plymouth Board of Guardians held on Oct. 4th it was decided to adopt the "scattered home system" for the pauper children in the borough. The details of the scheme have yet to be settled, but doubtless it will be on lines similar to those adopted by the Sheffield board.

FATAL CARRIAGE ACCIDENT.—Much regret is felt throughout North Devon at the death of Mrs. Joseph Harper, which occurred on Oct. 7th. Mrs. Harper was the wife of Mr. Joseph Harper, L.R.C.P. Lond., M.R.C.S. Eng., J.P., of Barnstaple, and she sustained an injury to the brain as the result of a carriage accident mentioned in THE LANCET of Oct. 1st, p. 891.

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Medical Societies.

MEDICAL SOCIETY OF LONDON.

Annual Meeting.—President's Address.—Study of Dyspepsia.

THE annual general meeting of this society was held on Oct. 10th, the retiring President, Dr. SANSOM, being in the chair.

The balance-sheet was presented and showed that after the redemption of debentures to the amount of £200 an increased balance was present at the bank. Votes of thanks were passed to the retiring officers, and Dr. HECTOR MACKENZIE proposed, and Dr. CALVERT seconded, a very hearty vote of thanks to Dr. Sansom, which was carried by acclamation. Dr. SANSOM replied, and inducted his successor, Mr. Edmund Owen, into the chair.

An ordinary meeting was subsequently held, Mr. OWEN being in the chair.

The PRESIDENT delivered an inaugural address. He urged the Fellows to make more use of the library, which, among many other treasures contained fifteen leather-bound manuscript volumes, which formed the commonplace book of the Rev. John Ward, M.A., vicar and doctor of Stratford-on-Avon from 1662 to 1681. He studied practical anatomy at the "Barber Chyrurgeons' Hall" in Monkwell-street under Dr. Scarborough, the friend of Harvey, who gave demonstrations there on the bodies of persons executed for crime. Taking up his work in Stratford-on-Avon in the forty-sixth year after Shakespeare's death he must, both as vicar and doctor, have been told of many facts concerning the Bard by those who had been personally acquainted with him. What little he said in these memorandum books had been already seized upon by Halliwell Phillipps in his "Life of Shakespeare." One of the extracts is of undoubted biographical value: "I have heard that Mr. Shakspear was a natural wit without any art at all; hee frequented the plays all his younger time, but in his elder days livd at Stratford and supplied the stage with two plays every year, and for that had an allowance so large that hee spent at the rate of £1000 a year." And again: "Shakspear, Drayton, and Ben Jhonson had a merry meeting, and itt seems drank too hard, for Shakspear died of a feavour there contracted." In those days it was customary to call all obscure diseases "feavours," just as they are now called "influenza" or "neuroses." In this commonplace book Ward records that some man at Cambridge cured ague by injections into the veins "just as Mr. Wren did into the veins of a dog." He was not satisfied with Oxford as a school, leaving it for London for his clinical education, and quotes Sydenham to the effect that "one had as good send a man to Oxford to learn shoemaking as practising physic." Possibly he thought the teaching too speculative, for he wrote: "A schollar att Oxford applying himself to an elderly physitian of that university to know whether he was in a consumption or not, hee askt the schollar whether hee spitt blood or not? He answered negatively. 'Then,' said he, ''tis but a physick cough and I will warrant you from a consumption'; but three months after his body went to the wormes." He took a lively interest in practical pharmacy and said it would be an excellent thing for physicians to make up all their physic in troches. He insisted on the need of fresh air for children, advised the scraping of chronic ulcers, and gave a graphic account of subcutaneous tenotomy by a mountebank who "cutt wry necks by making an orifice with his launcet and lifting up the tendon for fear of the jugular veins, then by putting in his incision knife and cutting them upwards they gave a great snapp when cut. ..... When he hath cut it he bends the child's head the other way and so by constant bending it becomes straight." Subcutaneous tenotomy therefore was not altogether a modern invention. It had now had its day and was rapidly giving place to a less speculative treatment. Constant reference was made in Ward's diary to small-pox and its ravages, but in view of the "tremendous experiment" which it had just pleased the Government to make with regard to this loathsome disease Mr. Owen said he had not the heart to refer further to it. Government had indeed sown the wind, but when the reaping of the whirlwind came the plentiful harvest would, unfortunately, be composed of the innocent, helpless, and ignorant—the very people whom a civilised Government was most bound to protect. In concluding Mr. Owen said he hoped that the suggestion made in his oration eighteen months ago would be carried out and that the last meeting should be an unreported "surgical confessional evening" at which mistakes and failures only should be brought before the society.

Dr. ALLCHIN read a paper on Some Considerations Preliminary to the Study of Dyspepsia. He first of all referred to the need for a more careful nomenclature. He reminded the society that digestion took place in the whole course of the alimentary canal and not in the stomach only and that the term "indigestion" or its synonym "dyspepsia" should not be restricted to disorders of gastric digestion only. Schlatter's case of total excision of the stomach showed that it was not an essential organ and that the importance of the *rôle* of hydrochloric acid had been exaggerated. The immediate causes of indigestion might be grouped as follows:—1. Errors in quantity or character of the food. 2. Diseases of the digestive organs, either (*a*) structural, (*b*) due to impaired nervous control, or (*c*) abnormal blood or lymph-supply. 3. Improper bacterial action. 4. Defective absorption. 5. Abnormal intestinal excretory processes. After enumerating the "protean symptoms" of dyspepsia Dr. Allchin pointed out that one of the chief difficulties in studying the subject was that many totally different conditions gave rise to similar symptoms. He contended that an attempt must be made to base diagnosis on knowledge of the anatomy and physiology of the alimentary canal. No single symptom was diagnostic, but the association of symptoms was very significant. Dr. Allchin considered the use of the term "functional" dyspepsia as mischievous, believing there was always correlated structural defect. He thought the bearing of his remarks would be best appreciated by considering one conventional variety of indigestion, the so-called "nervous dyspepsia," about which there was such divergence of teaching in standard text-books. Under Dr. Allchin's scheme nervous dyspepsia would be defined as that form of disturbed digestion due to impaired innervation of either mouth, stomach, intestines, or associated glands, leading to imperfect changes in any or all of the different food constituents. The disordered nervous control might be due to: (*a*) disturbances of central origin, such as emotional states, anxiety, hysteria, neurasthenia, &c., or gross structural lesions such as cerebral tumour, meningitis, locomotor ataxy, &c.; (*b*) disturbances of reflex origin, as from the kidneys or ovaries; and (*c*) peripheral irritation of the nerves of the alimentary canal. The term "nervous dyspepsia," therefore, would not denote a group of symptoms, but indigestion primarily of nervous origin. It would be expected that the symptoms would be such as are directly traceable to disturbed motility and secretion, and such actually is the case in the vomiting due to fright or anxiety, the obstinate eructations of the hysteric, the vomiting from cerebral tumour or in the crises of locomotor ataxy, and in increased rectal peristalsis from fright. Flatulence is not a marked symptom and is a secondary result of the improper digestion of amylaceous constituents. The remote nervous symptoms, such as headache, vertigo, drowsiness, &c., were due to the formation and absorption of toxic substances. Dr. Allchin admitted that even by grouping symptoms the ascertainment of the cause was a matter of extreme difficulty, but he felt convinced that before any rational treatment could be propounded with any view of success these difficulties must be overcome.—Dr. MAGUIRE thought that it was instructive and of practical value to consider the subject from an embryological standpoint. It was recognised in neurology that the function latest developed was the first to disappear under conditions of strain and the first to reappear when health was re-established. In the embryo the first food was the albumin in the yelk sac, which required no digestion. After birth the child took milk, the proteid constituent, casein only requiring digestion, as the lactose and finely emulsified fat were readily absorbed. It was not till the age of six months that carbohydrates were digested, and power to digest fat in the mass was not developed till much later. In dyspepsia fat digestion, the last acquired, became impaired first, then carbohydrate digestion became disordered, but the power of digesting proteid in some form persisted. In cases of fat and carbohydrate dyspepsia great benefit was often obtained by putting patients for a time on an exclusively lean meat diet. Afterwards carbohydrate digestion might be aided by giving some active preparation of diastase, and he thought that acids such as lemon

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juice aided the digestion of fat.—Dr. ALLCHIN, in reply, thought that more evidence was required in support of Dr. Maguire's very taking theories. He was not convinced that distaste for fat was lost before inability to digest starchy food showed itself. In some cases he thought that impairment of digestion of proteids occurred first.

OBSTETRICAL SOCIETY OF LONDON.

Puerperal Septicæmia treated by Anti-streptococcic Serum.—Early Ectopic Gestation complicated by Fibro-myoma of the Uterus.

A MEETING of this society was held on Oct. 5th, the President, Dr. C. J. CULLINGWORTH, being in the chair.

Dr. J. WALTERS and Mr. A. R. WALTERS communicated a paper on a case of Puerperal Septicæmia treated by Anti-streptococcic Serum. The patient, a multipara, aged thirty-four years, gave birth to a child in April, 1895. She again became pregnant in March, 1897. Severe flooding set in in May, followed by irregular hæmorrhages and foul discharge which lasted till April, 1897. The uterus was dilated and freely curetted on May 9th with strict antiseptic precautions and it was afterwards swabbed with carbolic lotion and with iodine liniment. On the 10th the patient was comfortable and the temperature was normal. During the next five days there was slight fever and the remains of a macerated fœtus were passed. On the 16th the patient had intense headache and an urticarial rash, and the discharge was more offensive. The temperature varied from 98·5° to 102·5°F., and the pulse was 100. The uterus was washed out with perchloride of mercury (1 in 2000). At 10.30 P.M. the patient had a severe rigor and the temperature rose to 104·5° and the pulse to 120. On the 17th the tongue was dry, the temperature ranged from 101° to 103°, and the pulse was 120; 10 c.c. of anti-streptococcic serum were injected. At 8.30 P.M. the patient was bright and cheerful and the skin was moist. The temperature was 98° and the pulse was 80. On the 18th the headache returned and the temperature rose to 100·5° and the pulse to 100. A second injection of 10 c.c. of serum was given and the temperature fell to 98° and the pulse to 75. The second injection was followed by very great depression which lasted for several days; there was also transient albuminuria. The patient recovered and there seemed no reasonable doubt that the recovery was entirely attributable to the use of the serum.—Dr. AMAND ROUTH said that it was difficult to be sure in any given case when several methods had been adopted that the successful ending was due to one of the methods only. Out of five or six cases treated by himself one had recovered from the septicæmia as a result of the anti-streptococcic serum alone. It was not wise to inject so potent an agent unless it had been previously ascertained that the infection was due to streptococci, and the ordinary treatment, especially removal of all débris, should not be omitted.—Dr. EDEN also thought it very important to ascertain the nature of the infection before using the serum. In Dr. Haultain's series a different form of infection was present in each case; in one the Löffler bacillus was present and the case was successfully treated by the diphtheria antitoxin.—Dr. G. H. D. ROBINSON agreed that it would be interesting to ascertain what microbe was producing the disease; but he feared that this would be practically impossible. He had investigated a number of cases bacteriologically but the results had been unreliable. Out of 7 cases which he had treated with the serum 5 of the patients had died, the treatment apparently having had no effect. 2 of the patients recovered; in one of these the only effect was that the patient seemed to sleep better afterwards; in the other patient, who had on the eleventh day a temperature of 104° and a pulse of 120 and membranous vaginitis, the injections of the serum were followed at once by a fall of temperature and the patient rapidly convalesced.—Dr. MCCANN said it was probable that more than one microbe was the cause of puerperal septicæmia. He suggested that the serum should also be used as a preventive in cases where sepsis would be likely to follow.—The PRESIDENT said that he did not quite agree with the opinion which had been expressed that the serum ought not to be administered until it had been definitely ascertained that the offending microbe in the cases under observation was the streptococcus. He thought, as streptococci were usually present, the serum ought to be given without waiting for bacteriological investigation. The safe rule of practice was to explore the uterus digitally with the finger under an anæsthetic (decomposing débris should be removed by the finger and reliance must not be placed upon the douche) and then to administer the serum without delay.—Dr. JOHN PHILLIPS had administered anti-streptococcic serum in several cases, but in only one was he certain that the patient's recovery could be attributed to its use. The patient had been for many weeks suffering from acute septicæmia. Curettage had failed to produce benefit. Twenty injections were given in the course of twelve weeks. The temperature, which was very high, was always lowered, the delirium ceased, and the skin acted, the effect lasting several hours. In this case repeated examinations of the discharges for streptococci gave a negative result.—Dr. TATE had seen several cases treated by the serum and in some of them the results appeared to be good. In one case the first injections were followed by improvement, but afterwards failed to give relief; possibly this case was one of mixed infection.—Dr. J. WALTERS replied.

The PRESIDENT read a paper on a case of Early Ectopic Gestation (? tubo-uterine) complicated by Fibro-myoma of the Uterus. The patient, aged thirty-three years, was admitted into St. Thomas's Hospital on Sept. 4th, 1897, said to be suffering from retroversion of the gravid uterus. Attempts had been made to reduce the supposed displacement but without success. The patient had had one child nineteen years before and had last menstruated during the last week of April, 1897. Five weeks later she fell down some steps and had pain in the back and in the abdomen. This passed off, but returned three weeks later and continued gradually increasing in severity. A fortnight before admission clots were passed and since then there had been an offensive discharge and for the last five weeks sickness every evening. Further attempts were made to reduce the supposed displacement. On Oct. 5th the patient was examined under ether and the diagnosis was made that the uterus was enlarged by fibroids and that there was also a pelvic hæmatocele due to an arrested tubal gestation. On the 21st an operation was performed and the fibroid uterus and gestation sac were removed. After careful examination of the parts removed it was concluded that the gestation was originally tubo-uterine and that the fœtus had been extruded either into a diverticulum of the tube (which was more probable) or into the abdominal cavity.—Mr. ALBAN DORAN observed that in pure tubal pregnancy the fœtus and placenta have been found to be in separate dilatations (Chaput's case). Hence in Dr. Cullingworth's case the fœtus possibly lay in a true diverticulum of the tube. Rupture had occurred early, but the membranes had partly protruded to stop up the leak and the fœtus had slipped into the protruding part, the placenta remaining behind.—Dr. AMAND ROUTH thought that Mr. Doran's explanation was probably correct.—Dr. ARTHUR GILES referred to a case which he had published in the Transactions of the society last year which also simulated retroversion of the gravid uterus.—The PRESIDENT, in his reply, said that this was the first case which had occurred in his practice in which a tubal pregnancy had involved the intra-mural portion of the tube.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—The inaugural meeting of this society for the session 1898–99 was held on Oct. 6th, Mr. T. D. Pryce, President, being in the chair. An address was delivered by Mr. William H. Bennett, surgeon to St. George's Hospital, on Varix, its Causes and Treatment, with especial reference to Thrombosis, which appears in full at p. 973. The President, at the conclusion of the address, called on Mr. Anderson to propose a vote of thanks to Mr. Bennett for his admirable address, and this was seconded by Dr. Handford and carried with much enthusiasm.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—This society held the first meeting of its seventeenth session on Oct. 7th at the West London Hospital. The President, Dr. S. D. Clippingdale, delivered the inaugural presidential address, choosing for his subject Some Consideration of the Life and Work of a General Practitioner. This address will be published in a future issue. A vote of thanks to the President for his address, proposed by Mr. F. Lawrence and seconded by Dr. H. P. Potter, was carried by acclamation.

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Reviews and Notices of Books.

Outlines of Practical Surgery. By WALTER G. SPENCER, M.B., M.S. Lond., F.R.C.S. Eng., surgeon to the Westminster Hospital. London: Baillière, Tindall, and Cox. 1898. Demy 8vo. Pp. x. and 694. Price 12*s.* 6*d.* net.

NUMEROUS are the blessings which flow from the recent great progress of the medical sciences, but these beneficial results are accompanied by one disadvantage, and that is a great increase in the size of the modern treatises dealing with any one of these sciences. Pathology has made enormous strides during the last few decades, and its youngest and most important offspring, bacteriology, has only recently come into existence. Facts have accumulated to such an extent and so many theories have been evoked to explain them that it is not possible to include within a volume of reasonable size all the facts and all the theories with which the examiners expect a student to be acquainted. The difficulty of dealing satisfactorily with pathology in a treatise on surgery has induced the author of the volume before us to exclude from its pages the details of pathology and bacteriology; for these he refers the student to special treatises on these subjects, while he treats in this book only of those portions of surgery which are distinctly practical in nature. We must confess that there is much to be said in favour of this view, and a perusal of Mr. Spencer's volume goes far to make us agree with him on this point. Of course there are obvious advantages in having in one book all the pathology as well as all the surgery which the student will require, but if both subjects are to be treated thoroughly the bulk of the volume will militate greatly against its value. It is also true that the writing of a book limited to practical surgery is not without great difficulties. In mentioning the etiology of any morbid condition it is impossible to avoid reference to its pathology, and the same remark applies equally to the treatment, and therefore a writer would have to make a careful distinction between those facts of pathology which must be brought forward and those which may safely be left in special pathological treatises. This difficult task has been excellently performed by Mr. Spencer, and we have in several parts of the volume noticed with admiration the skilful descriptions with which we have met. To sum up the whole work we may say that it gives a good general account of modern surgery from the practical point of view; no space is wasted by descriptions of discarded methods of procedure, but the surgical treatment of the present day is presented to the student. Occasionally, perhaps, we cannot help thinking that the descriptions of some of the operations might have been fuller, though it is difficult to put a finger on any individual passage.

Before proceeding to a more detailed discussion of some of the points noticed during the reading of the book we should mention the illustrations. These are numerous, more than 100 in number, and they are, we should imagine, all original. They are in white on a black background and are certainly striking; in some instances the method brings out small points which would not be so clearly visible in an ordinary engraving and in all the object of the illustration can be readily seen. It may perhaps be considered captious criticism to say that the general effect is not always artistically pleasing, but this is not of great importance so long as the illustration conveys its meaning to the reader.

On page 3 we are told that gangrene of fingers has been caused by the use of even a weak solution of carbolic acid, owing to the power possessed by this drug of contracting the superficial blood-vessels. Of course it depends somewhat on what is meant by a "weak" solution of carbolic acid, but the statement surely is liable to give a wrong idea of the danger arising from the use of this antiseptic. In an account of the knots employed in surgery the author calls the reef knot the "simple knot," by no means a good name for it, and the "surgeon's knot" described does not need the third loop mentioned, for it adds nothing to its security or strength. It might well have been pointed out in the section devoted to sutures that suppuration along a suture is in general attributable either to the suture not having been completely sterilised or to the skin through which it was passed having contained pyogenic micro-organisms. We must protest against the spelling "leukocyte" which is employed throughout the work; there can be no justification for transliterating in the same word one *kappa* by a *k* and another by a *c*.

The section on General Anæsthesia is very good indeed. It would have been well, however, if the proportions of the ingredients in the A.C.E. mixture had been given. In the description of the methods of inducing local anæsthesia no mention is made of freezing with subsequent injection of a solution of cocaine; this is by far the most convenient method and has been employed even for abdominal sections.

In the account of "wound diphtheria" Mr. Spencer relates an interesting case which we do not remember to have seen before: "A house surgeon was doing a circumcision when his nose began to bleed and a drop of blood fell on the wound. The next day the child had a thick membrane covering the wound, and the house surgeon was ill with a severe attack of naso-pharyngeal diphtheria." It would be of interest to know if the diphtheria bacillus was found in the membrane which formed on the wound. With reference to infectious new growths it is not long ago that text-books on surgery laid it down as a rule almost without exception that carcinomata always affected the lymphatic glands and that sarcomata did not. Mr. Spencer expresses very clearly the general present opinion when he says that the milder forms of both carcinomata and sarcomata do not involve the lymphatic glands, but that in the severer cases of both forms of growth the lymphatic glands are nearly always affected. The author, in describing the lymphatics of the breast, mentions that it is rare for the glands of the anterior mediastinum to be involved in the early stages, and he appears to attribute it to there being only a few lymphatic vessels running with the perforating intercostal arteries, but the most probable reason of the rarity of the early involvement of the mediastinal glands is that nearly all carcinomata of the breast appear primarily in the outer segment of the organ and the lymphatic vessels from this part all drain into the axillary glands. A useful account is given of the treatment of retention of milk by "expression." This method is much too little known, for it is of great value and its employment would probably prevent many abscesses of the breast. The author, though advocating incision of a new growth of the breast before excision, does not explain that this is especially of value in diagnosing scirrhus from chronic abscess; a student is much more likely to remember and follow a rule of practice if he is told the reason for it.

The following sentence appears on page 334: "It is evident that since operations for the cure of hernia have come into practice the number of strangulation cases, and therefore the mortality from hernia, has been much diminished." We are not aware of any statistics which support this statement though it is by no means improbable. We should be interested to learn on what it is founded.

Is it not somewhat overstating the case to say that "an artificial anus in the small intestine is more hopeless than immediate suture"? The danger from an artificial anus in the small intestine depends entirely on its position in the bowel; if it is high up in the jejunum the wasting is great and death is almost inevitable, but low down in the ileum the

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patient may be hardly the worse for it. Occasionally the phraseology employed is a little unhappy and the following may be quoted as a specimen: "The general causation of stone in the kidney is attributed to the uric acid diathesis, or to the water in districts where stone in the bladder is common."

It is surely a mistake to omit from the complications of gonorrhœa the most important of all—namely, gonorrhœal conjunctivitis. Though the surgery of the eye is not included in the compass of the volume, yet this severe complication should at least have been mentioned.

In quoting a few instances where we have not been quite able to agree with the views expressed by the author we have not intended to detract in the least from what we have said above as to the general value of the book. It would be best read, we think, in addition to, rather than in place of, other works, and its perusal should prove of benefit to every student of surgery.

Text-Book of Histology, including the Microscopic Technic. By Dr. PHILIP STÖHR, Professor of Anatomy at Würzburg. Second American from seventh German edition. Translated by Dr. EMMA L. BILLSTEIN, Director of the Laboratories of Histology and Embryology, Women's Medical College of Pennsylvania. Edited with additions by Dr. ALFRED SCHAPER, Demonstrator of Histology, Harvard Medical School, Boston. With 292 Illustrations. London: J. and A. Churchill. 1898. Pp. 424. Price 14*s*.

Dr. STÖHR'S treatise is one of the recognised text-books on histology for the German medical student. We learn from the preface that it has been translated into Italian, French, and Russian, and those who speak English are indebted to Dr. Billstein for having made a very readable translation, and to Dr. Schaper for adding considerably to the value of the work by the introduction of a chapter on the Placenta, and for sundry other improvements. It cannot, of course, be compared with Kölliker's monumental treatise, which, moreover, is not yet completed, but rather with that of Professor Schäfer recently published in this country and with those of Piersol, Satterthwaite and Miller in America. The description of the several tissues is clear but rather short, so that several points are omitted in each section. In that of muscle, for example, nothing is said of the disposition of the capillaries or of the intimate structure of Krause's membrane—in fact, the practice is adopted, which is commendable in a work intended for the guidance and instruction of a beginner, of stating only that which has been satisfactorily established, all controversial points being omitted. The general plan of the work is that it is divided into two parts, with several chapters in each. The first part is devoted to general technique, including the selection of a microscope, the preparation of microscopic specimens according to whether it is required to examine them in the fresh state or to harden or decalcify them, with a description of the various modes of sectioning, staining, injecting, mounting, and preserving them. The second part is occupied with the microscopic anatomy of cells and tissues, including epithelial, connective, muscular, and nervous tissues, which is followed by what constitutes the bulk of the work—the microscopic anatomy of the organs, as the brain, lungs, kidneys, and organs of sense. Finally, there is an appendix giving the details of microtome methods. The brevity of the descriptions is in part compensated for by the number and excellence, as well as the originality, of the illustrations and for the additional remarks that are given under the head of Technic. The "technic" describes the best mode of dealing with each organ to enable the beginner to obtain sections, to prepare them for mounting, and to preserve them.

We give an extract which will show the manner in which the "technic" is treated. It deals with the gastric mucous membrane and is written with the object of instructing the student in the method of demonstrating the "chief" and "parietal" cells of the fundus glands. The mucous membrane is directed to be cut vertically and horizontally and the sections to be stained with Hansen's hæmatoxylin. Then they are to be "thoroughly washed in 30 c.c. of distilled water which must be changed as often as it becomes bluish—about once or twice. Transfer them to 5 c.c. of a $\frac{1}{10}$ per cent. solution of Congo red for from three to six minutes, wash two minutes in distilled water, and mount in dammar. If the sections are too thick everything appears red; the large red parietal cells cover the smaller chief cells. Examine the thinnest parts of the sections, especially the fundi of the glands, where the parietal cells are not so exceedingly profuse. The parietal cells can be recognised with the low power as isolated red spots on a rose-red ground. With the high power the pale-blue smaller chief cells can be seen. The very narrow lumen of the fundus glands may be best seen in cross sections (sections parallel to the surface of the mucosa). The lateral twigs of the chief lumen can only be perceived in very favourable sections." References are made to another section for the preparation of Congo red and there is a reference to one of the woodcuts. The general get-up of the book reflects great credit on the publishers, for the illustrations are so delicate as to require very smooth paper and careful printing to obtain good impressions.

Aphasia and other Speech Defects. By H. CHARLTON BASTIAN, M.A., M.D. Lond., F.R.S. London: H. K. Lewis. 1898. Pp. 366. Price 15*s*.

THE basis of this most important work is the Lumleian Lectures delivered before the Royal College of Physicians last year and published at length in our columns at the time.[1] These lectures are supplemented by the consideration of fresh problems and the addition of numerous cases elucidating or illustrating many points of the subject, and in its present form Dr. Bastian's treatise must be regarded as one of the most complete and perhaps the most philosophical of all our treatises on speech and its anatomical, physiological, psychological, and practical relations. After an introduction which deals in a very interesting manner with the relations existing between thought and language, the different forms of speech defect are considered, and in the succeeding chapters the various structural and functional disorders correlated with them. Modes of recovery from aphasia are then discussed and such interesting problems as are afforded by the state of the musical faculty, amimia, mirror-writing, &c. In conclusion the etiology of speech defects, their diagnosis, prognosis and treatment, and their relation to capacity for exercising civil rights are exhaustively dealt with.

Such a brief examination of the contents of this book will be sufficient to indicate its scope. The views on speech problems with which Dr. Bastian's name is so inseparably connected have been discussed in our columns on more than one occasion, and while in this volume no material modification of these views has been made, fresh confirmatory evidence of their reasonableness is abundantly furnished. Dr. Bastian's view is that the so-called motor areas in the brain are really sensory centres "of kinæsthetic type," and in connection with speech processes he believes there are two centres of this type—a glosso-kinæsthetic centre related to articulatory processes and a cheiro-kinæsthetic centre in connexion with writing processes. Besides these there are an auditory word centre and a visual word centre—sensory centres—and lesions accounting for speech defects

[1] THE LANCET, April 3rd, 10th, and 24th, and May 1st, 1897.

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are to be looked for in those centres or in the fibres connecting them with each other or with the motor centres in the bulb, or in these motor centres themselves. Such a scheme leaves no necessity for the "propositionising centre" formulated by Broadbent and those who think with him, and on this Dr. Bastian firmly insists. This is not the place to discuss the *pros* and *cons* of the two theories. Suffice it to say that in the work before us the author's view is clearly enunciated and is supported by a coherent, closely reasoned argument which will no doubt carry conviction to many. But besides this main theme the numerous and interesting subsidiary problems are most clearly discussed and elucidated, and we congratulate the author on this the crowning edifice of his brilliant and philosophical labours on the subject of speech.

On Maternal Syphilis, including the Presence and Recognition of Syphilitic Pelvic Disease in Women. By JOHN A. SHAW-MACKENZIE, M.D. Lond. London: J. and A. Churchill. 1898. 8vo, pp. 223. Price 8*s.* 6*d.*

THE etiology of the numerous forms of pelvic inflammation to which women are liable was for many years very obscure, but it was gradually proved that in many cases the inflammation was due to the extension locally of a gonorrhœal vaginitis or endometritis; in many other cases the condition results from some form of septic infection occurring especially in connexion with parturition; but it cannot be said that these two causes will account satisfactorily for all the cases of pelvic disease. The author of this volume is of opinion that in no small proportion of the cases pelvic inflammation is syphilitic in origin. Frequently no history can be obtained of any primary sore, but it is not always easy to find a chancre in women even when it is present, and therefore it is not surprising that no account can be obtained of the presence of such a lesion when several years have elapsed since the time when it probably appeared. In some cases, as Dr. Shaw-Mackenzie shows, undoubted secondary signs may follow a vaginal discharge which was considered to be gonorrhœal in origin. In other cases, again, the author thinks that the syphilis may not have been acquired, but was hereditary in origin. The results of treatment certainly support in many instances the contention that pelvic troubles are due to syphilis. All who see much of syphilis must have met with numerous cases in which lesions certainly syphilitic occur and yet no trace of any syphilitic history is obtainable. Dr. Shaw-Mackenzie is also of opinion that through a mother suffering from inherited syphilis the disease may be transmitted to a third generation. It is very difficult to prove this proposition, but he adduces many cases which certainly afford it some support. In the treatment of the obscure cases of syphilis with which this work deals the author attaches most value to fumigation and inunction.

The whole subject is difficult, but we think that Dr. Shaw-Mackenzie has done much by the publication of this work to clear up some of the difficulties which it presents.

Text-book of Zoology. By H. G. WILLS, B.Sc. Lond., and A. M. DAVIES, B.Sc. Lond. London: W. B. Clive. 1898. Pp. 366. Price 6*s.* 6*d.*

THIS work is the first of a series, to be soon followed by a text-book of Botany, intended to minister to the wants of students preparing for the intermediate science and preliminary scientific examination of the University of London and other similar tests. The method adopted by the authors is that of the selection of certain types beginning with the rabbit, to which more than a third of the book is devoted, which are carefully worked out. The other types of the vertebrata selected are the frog, dogfish, and lancelet, and of the invertebrata the paramœcium, polype, earthworm, anodonta, and crayfish, which are given in less detail. There is a very good chapter on Development. The book is not intended, and should not be used, as a mere cram-book, but the student should read it with the specimens before him; if this be diligently practised, he will obtain a good idea of some of the principal groups of the animal kingdom. Questions which have been asked, or are likely to be asked, are appended to each chapter, and we must add a word of praise for the many clear and excellent woodcuts illustrating the text, the drawings for which have been prepared by Mrs. Davies.

New Inventions.

NEW URETHRAL SYRINGE.

AT my suggestion Messrs. Arnold and Sons, London, have made a urethral syringe which is a modification of one made by them for me and described in THE LANCET of Oct. 17th, 1896. To repeat, the syringe consists of a reservoir to hold 2 oz. with a pipe 5½ in. in length, size No. 8 or 9 catheter. The previous syringe had the pipe channelled on the exterior to allow of the free return of the injection; I find this channelling can be dispensed with if my instructions for using the syringe are carefully carried out, which are as follows. The syringe being filled in the usual manner the pipe is to be dipped in carbolic oil; now, gently insinuating the nozzle into the meatus by a rotatory motion, the pipe is made to glide slowly in to its full length. No pressure is to be made on the penis, which is allowed to lie in the hand. The reservoir is to be slowly compressed and the injection will be found to return back by the side of the pipe. To the many advantages which I claimed for the syringe in the treatment of gonorrhœa over other syringes I may add another—viz., that the passage of a pipe 5½ in. in length and stated diameter tends to prevent the possibility of stricture in the spongy portion. This syringe will be found much cheaper in price than my previous instrument and less formidable to a nervous patient. I have prescribed this form of syringe for the last ten years in the treatment of gonorrhœa and my having found it most efficacious is my reason for bringing it under the notice of the profession.

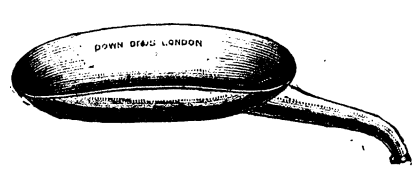


RALPH STONEY, L.R.C.S. Irel., &c.

Gloucester-terrace, S.W.

NEW DRESSING TRAY.

THE accompanying illustration represents a useful kidney-shaped tray for receiving the washings during uterine or vaginal douching and conveying it through rubber tubing to a pail beside the bed or operating table. The spout forms the handle which is curved so as to allow it to be easily held



in one hand close to the buttocks without bringing the patient over the edge of the bed. By using this tray, which can be carried in the obstetrical bag, the operator can avoid soiling his hands or the bed. It will also be found useful in syringing ears or douching wounds. It is manufactured by Messrs. Down Brothers, of St. Thomas's-street, London, S.E.

STRANGMAN GRUBB

Ealing, W.

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THE LANCET.

LONDON: SATURDAY, OCTOBER 15, 1898.

THE city of Liverpool kept Saturday last, Oct. 8th, as a gala day, the occasion being the opening of the new THOMPSON-YATES Laboratories of Physiology and Pathology by Lord LISTER and the conferring upon him at the same time of the degree of Doctor of Science of the Victoria University. We give in another column a report of the proceedings, but no mere account of what happened, of speeches which were delivered, or of addresses which were read, conveys any idea of the enthusiasm of the people of Liverpool over these two events. The city identified itself with each function in the closest manner. Within the walls of St. George's Hall crowds watched the ceremony which added to the long list of scientific titles enjoyed by the President of the Royal Society the title of Doctor of Science of the Victoria University; without the hall crowds lined the streets, taking the greatest possible interest in the arrival and departure of the distinguished guests of the University College of Liverpool—guests many of whose names are a synonym for learning all over the world; in the Town Hall the Lord Mayor entertained those who had assembled in honour of the occasion with the heartiest of civic welcomes; and every house where the numerous visitors were billeted was the scene of luncheons, dinners, and friendly receptions. What does all this connote? It is certain that if any university, from the most ancient to the most modern of the seats of learning in the kingdom, had five-and-twenty years ago out of its own resources or out of private munificence made some addition to its teaching facilities not a small fraction of the cordial excitement which prevailed last week in Liverpool would have been aroused. A few persons professionally interested in education would have attended the ceremony; a few citizens, struggling against the feeling that the donor might have made a more practical use of his wealth, would also have been present; and the enthusiasm of the community would have been level with that aroused by, say, the election of an alderman or the gift to the populace of a new drinking-fountain.

Only two weeks ago we referred in a leading article to the tendency towards a fusion of interests between the university and the city in which it is placed as forming one of the most significant as well as one of the most recent developments of modern education, and now we have in Liverpool a remarkable illustration of this spirit of sympathy. University College, Liverpool, has received from Liverpool the sum of £400,000 or thereabouts during its comparatively short life. This great sum has been given ungrudgingly and established at once a bond beween the College and the city, but the sentiments of gratitude on the one hand and of satisfied generosity on the other will not account for all the mutual goodwill expressed at Liverpool. The princely present of the Reverend SAMUEL ASHTON THOMPSON-YATES to the College of furnished and equipped laboratories for the study of physiology and pathology cost him no less than £28,000, and Liverpool, or, rather, all England, may well be proud of this open-handed citizen, as the University College has a right to be proud of such a signal and munificent mark of confidence in its work and belief in its future. But the words of Mr. R. B. HALDANE, M.P., and Professor MICHAEL FOSTER at the Town-hall in the evening, no less than the appreciation with which those words were received, show that wider sentiments even than these have been at work in Liverpool to evoke the universal enthusiasm manifested. It is clear that to all gathered together for the inauguration ceremony of the THOMPSON-YATES Laboratories the real significance of the occasion was that another and a great step forward in national education and national progress was being taken, that another practical proof was being furnished of a new educational spirit. One more nail—nay, many and strong nails were being driven into the coffin of the old-fashioned university education which inculcated a spirit of aloofness into its disciples, which led to a division of interests between the best workers and the highest thinkers, and which deprived practical men of the counsels of the learned, while it shunted the learned into careers of compulsory sterility. Medical men will experience a feeling of profound gratification at any successful blow which is dealt at such a system, for it is in the modern curriculum of the medical student that all the good in the old theories of education is most closely combined with all the good in the new. Let us not be found laughing at the belief cherished by our grandfathers and probably by our fathers that the real man of culture was the man who could write correct Greek verse. The reason for this error is obvious. One of our greatest schoolmasters and most original thinkers, EDWARD THRING, in an essay defending the study of the dead languages, says roundly that no sane person holds himself a poet because he writes good Iambics. But THRING immediately proceeds to show in his own convincing way that the study of Latin and Greek forms the finest mental exercise known to him and the most convenient medium for inculcating into lads the virtues of industry and accuracy. He acknowledges that but few of the many who read classical literature ever arrive at any real comprehension of its supreme excellence; but, while revering this literature himself as consisting of consummate masterpieces of artistic skill and beauty of form, he treats the study of it simply as means to the end and not as the end itself. This is what the older university men were, so many of them, unable to do, and as a consequence that most stupid article, the man who thought that a first-class university degree would stamp him as a first-class man for the rest of his life, was produced by them in considerable quantities. The real ability of such men was lost to the nation, while in places where learned guidance would have been most valuable the guides were wanting.

Now the modern education of the medical man forms a close link between the old and the new theories of education. It is an education which is living and progressive, which in its higher degrees produces men of indisputable learning and culture, and which is none the less utilitarian. The

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most tangled passage of a corrupt Greek author requires no more absolute care for its right rendering than a physiological experiment asks from the student. No study in the world demands greater accuracy than anatomy. The worker in the vast fields, explored and to be explored, of bacteriology must add to care and accuracy both inventiveness and resource. These qualities when displayed in the acquirement of a classical education were too often wont to lead to practical failure in life, though perhaps associated with distinct academic success, because the student was allowed to believe that his attainments constituted in themselves an equipment to face the world. But the highly trained scientific man grows in use to his community as he grafts on to the lessons of his education the experiences of his work, and this, which is true of all scientific men, is true of none more strictly than of medical men. These are the facts which explain the popular enthusiasm excited by the recent ceremonies in Liverpool. The effusive approval manifested by the citizens of the direction of Mr. THOMPSON-YATES'S generosity may be taken as a proof that the inhabitants of Liverpool see growing up in their midst an institution which will furnish them with leaders of thought and leaders of work, who will conduct them to commercial successes and sanitary well-being instead of spending a lifetime in arid combats with aorists.

WE cannot in the public interest forbear to call attention to the facts elicited at an inquest held on Oct. 8th by Mr. G. F. ROUMIEU on Major CECIL LESTER, an Instructor in Military Topography at the Royal Military College, Sandhurst, who died on Oct. 5th after being attended for a month by a lady "Christian Scientist." From the evidence given at the inquest it would appear that Major LESTER suffered from tuberculous peritonitis and that from August 19th to Sept. 5th he was under the care and treatment of Dr. CLARKE, Principal Medical Officer at the College, and his colleague, and they, recognising the gravity of the case, had called into consultation a physician from Reading and another from London. The condition of the patient gradually grew worse and the physicians felt it to be their duty to inform Major LESTER'S wife and father that he was in a most critical state, and that, although recovery was not absolutely hopeless, it could scarcely be expected. On Sept. 5th Dr. CLARKE was informed that a Christian Scientist had been sent for and that further medical attendance would not be required. Mrs. GRANT, a widow lady, stated to the jury that she received a telegram asking her to attend Major LESTER to give "Christian Science Treatment," and that she commenced her treatment at once before she saw the patient. In reply to the Coroner she said that she treated the patient "by what we should call taking up the right thought of the omnipotence and love of GOD." She stated that she had never had any experience in the management of peritonitis. No drugs of any kind were administered by her, nor did she give any material remedy whatever to alleviate the pain; yet she believed her treatment had the desired effect. General LESTER, in his evidence, said that there was a marked improvement in his son's condition after the treatment of Mrs. GRANT commenced, but he did not know whether that was merely a coincidence.

On Oct. 5th Major LESTER died and Dr. CLARKE, not having seen the patient for a month, rightly and properly refused to give a medical certificate of the death. A post-mortem examination testified to the accuracy of the medical diagnosis and the jury found that the deceased died from tuberculous peritonitis. They added the following riders to their verdict: "1. The jury express their entire satisfaction with the treatment and action of Dr. CLARKE and Dr. GILLESPIE throughout the entire case. 2. The jury also desire to express their sense of abhorrence at the so-called treatment of the deceased by Mrs. GRANT as representing the Christian Scientist Society in not using material means for the alleviation of his suffering." Dr. CLARKE'S high repute and the close attention which he gives to his cases in the office which he has so long and so honourably held are in themselves a guarantee that no consideration or kindly thought was likely to be overlooked in the efforts made on behalf of his suffering brother officer. Fortunately the case is not one where the skill or the treatment of the medical advisers was at any time in question. They themselves recognised the fact that, humanly speaking, recovery was well-nigh hopeless and scarcely to be expected and they said so honestly to the anxious relatives. It is not for us to say that at this stage of apparently hopeless despair it was unnatural in the relatives to wonder if there was anything more that they themselves could do; nor as a mere matter of sentiment dare we blame them for cherishing at a sorrowful crisis what General LESTER described to the jury as a rational and reasonable hope" that there might be something in the "Christian Science" treatment which would lead to recovery. But the contemplation of his death-bed leads us to pass briefly in review the reasons given by the exponent of the Christian Science Treatment for the hope that is in Christian Science Treatment —an excellent and taking phrase but surely a misnomer from beginning to end. Mrs. GRANT told the jury that she gave no material remedy to alleviate the pain. Where was the treatment? Mrs. GRANT told the jury that she had no experience in the treatment of peritonitis; yet she commenced her treatment directly she got the telegram and before she had seen the patient. Where was the science? Mrs. GRANT, "taking up the right thought of the omnipotence and love of GOD," told the jury that she did not believe that suffering was sent by GOD, and she contended that JESUS CHRIST never sent the sick to physicians. If the agony at Calvary for man's redemption was a GOD-sent reality, and if the Miraculous Healer told the Pharisees that "they that be whole need not a physician, but they that are sick," where is the Christianity of the Christian Scientist?

Though sufficiently vital to demand notice we have no desire here to labour this aspect of the question. We fee it rather to be our duty, our solemn duty, to warn Christian Scientists of the grave responsibility which they incur in regard to the health and lives of their fellow-beings. We must point out that their methods of so-called treatment are ignorant devices, spurious in themselves and altogether unscientific and opposed

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to common sense. The Christian Scientist talks as if his (merely human) activities were set in motion and pervaded by an atmosphere of Divine potentialities. In an almost flattering way he, as it were, "stands in" with GOD, or, as Coroner ROUMIEU bluntly put it at the inquest, he "tries to usurp the special power which CHRIST had." We feel it, further, to be our duty to point out that apart from evils which may result to individual members of the community from it, the Christian Science treatment is neither more nor less than a *fin de siècle* fad, a drawing-room cult, and that it is the counterpart of the culpable negligence which has brought the Peculiar People of the less educated classes within the range and operation of the criminal law of the country.

THE Public Health Committee of the Lond n County Council are, we are glad to see, properly impressed with the need of an active administration for reducing the risks to the London community from the milk of tuberculous cows. That this risk is in every sense a substantial one there is no manner of doubt. The subject has been fully inquired into by two Royal Commissions, whose recommendations only await the action of Parliament. If the London County Council adopt, as we anticipate that they will, the suggestions of their Public Health Committee, they will seek at once the necessary powers for dealing with this matter, and it is not probable that they will be refused by the Government.

The Public Health Committee have included in their recommendations to the Council the advice to deal with the inspection of the meat-supply of London also. Such inspection is obviously needed, not only on account of tuberculosis, but in respect of other and obvious conditions. The Committee have been for some time under an instruction from the Council to report as to the desirability of establishing public slaughter-houses throughout London and as to the facilities which such a system would afford for the better inspection of the meat-supply of the metropolis. In consequence of this instruction Mr. SHIRLEY MURPHY, the medical officer of the Council, has utilised such opportunities as his holidays have given him—a piece of public spirit, by the way, which cannot be too highly commended—in visiting certain cities in this country and on the continent and has thus made himself acquainted with the system adopted in each for insuring a wholesome meat supply to the inhabitants. The result of his visits to Edinburgh, Manchester, Liverpool, Berlin, Hamburg, and Copenhagen, among other great and important cities, was incorporated by him last summer in a report to the Public Health Committee, in which he showed the inadequacy of the inspection employed at present in the case of meat consumed in London, and pointed out that for the protection especially of the poorer inhabitants, who are the purchasers of the meat which is most likely to be tainted, it was necessary that a system of examination of all dead meat brought into the metropolis should be instituted, save in cases where the meat could be shown to have already undergone examination in a public slaughter-house. In order to insure the inspection of meat killed in London Mr. SHIRLEY MURPHY considered it absolutely necessary that all animals should be killed in public slaughter-houses, where alone an adequate and systematic inspection of the meat could be made. The Public Health Committee now report that they concur in Mr. SHIRLEY MURPHY'S views—views which, it should be remembered, and which the Public Health Committee remind the Council, have received quite recently very exact endorsement in the report of the Royal Commission on Tuberculosis. The Royal Commission on Tuberculosis held the use of public slaughter-houses in populous places to the exclusion of all private slaughter-houses to be a necessary preliminary to a uniform and equitable system of meat inspection, and recommended that powers should be conferred on local authorities to declare, as soon as a public slaughter-house was erected, that no other place should be used for slaughtering, a certain short space of time being allowed for the owners of private slaughter-houses to turn their property to some other purpose.

The resolution which the Public Health Committee invite the County Council to adopt is as follows and defines exactly what the Committee aim at: "That, in the opinion of the Council, it is desirable that as a first step towards insuring the proper inspection of meat private slaughter-houses should cease to exist in London and that butchers should in substitution be afforded such facilities as are necessary for the killing of animals in public slaughter-houses to be erected by the Council." We cannot doubt that the Council will adopt this resolution of their Public Health Committee, founded as it is upon the personal investigations of their medical officer and supported by the report of a very able and painstaking Royal Commission. It may be expected that in London, as elsewhere, opposition will be shown by butchers owning private slaughter-houses. But the record of the County Council is so good in matters concerning the public health, their actions have been so judicious and so open-eyed, that we look forward with confidence to their support of a much-needed sanitary reform in London. Questions of compensation may arise and some expense will have to be incurred in building new public slaughter-houses in convenient situations, but these are small matters compared to the getting rid of private slaughter-houses, which are the only obstacles to the introduction of an efficient system for preventing the sale in London of meat unfit for human food.

Annotations.

"Ne quid nimis."

THE VENTILATION OF UNDERGROUND ELECTRIC RAILWAYS.

THE substratum of the metropolis is being pierced in all directions radiating from the City for the construction of underground electric railways. The electric railway running from the north end of London Bridge to Stockwell has been in working order for some years now, and apparently without any serious hitch having happened in the arrangements. This is the more satisfactory because this line was the first in London, we believe, to apply electric motive power on an underground railway. Not very long ago another line was opened between the Mansion House and Waterloo which has already proved a great convenience to the public.

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Other lines are in progress. So far the lines completed show the indisputable advantage of electric traction over steam traction, at least for underground railways. The passages are free from choking sulphurous smoke and the atmosphere is as satisfactory as could be expected under the circumstances. A recent occurrence on the Waterloo and City Electric Railway would, however, seem to show that while the pollution of the underground air by smoke is of course avoided no extra precautions have been made for securing the adequate ventilation of the tunnel in the event of emergency. It must not be forgotten that visible smoke and plainly discerned smells serve after all in the ordinary underground railway as an excellent index of the state of the air, but in the absence of these things, as on the underground electric railways there is no such guide, and insidious poisoning by repeatedly inspiring human exhalations is possible, if not, indeed, suffocation. To some extent these conditions were realised last week on the Waterloo and City line in consequence of the breakdown of a train. It appears that a train going Citywards was full to overflowing by reason of a crowd returning from viewing the Guards on their coming home from the Soudan. The motive power was unequal to the load and the train stopped. The delay was sufficiently long to cause a marked sense of suffocation to the passengers and a degree of panic, while it is reported also that the lights failed. It was fortunate that the stoppage occurred within a comparatively short distance of the City end, so that ultimately the passengers could escape by leaving the train and walking the rest of the distance. It is assumed, and correctly, that the advance of a train through a tube which it closely fits is sufficient to maintain an adequate change of air in the tunnels, in which case no extra provision for ventilation need be made, but in the event of a breakdown the supply of air would soon be exhausted and the result might be disastrous and comparable with the awful historic tragedy of the Black Hole in Calcutta. Either an improved system of keeping up a supply of air must be adopted on the underground electric railways or else a relay of motors must be immediately at hand at both ends of the tunnel to draw the trains out in the event of a breakdown. The former course would be safer, for in the event of a train leaving the rails the delay would be necessarily great and correspondingly serious to the imprisoned passengers. The matter must be referred to the Board of Trade, which we hope in the present instance has not committed a serious oversight. Steps must be taken, if such by some inconceivable want of perspicuity is not already the case, to remove the awful possibility of suffocating a train-load of people. It would be interesting to know whether the underground electric lines in course of construction have included in their plans the provision of an air-supply should any necessity arise.

THE BIRMINGHAM CLINICAL BOARD.

THE prizes awarded by the Birmingham Clinical Board for success in clinical studies in the Birmingham hospitals were distributed on Thursday, Oct. 6th, in the clinical lecture theatre of the General Hospital, by Sir William Mac Cormac, President of the Royal College of Surgeons of England, who delivered a brief address on the Scientific Progress of Surgery and the Importance of Accurate Clinical Observation. Sir William Mac Cormac told his audience that he had been trained at a provincial hospital and that it was therefore with the greatest pleasure that he came to Birmingham to award the prizes. Proficiency in clinical work Sir William Mac Cormac considered to be a most important part of all teaching in medical schools:—

"It was to obtain that proficiency in order to cure others that the student examined the framework of the human body and the functions of every part of it. It would be well if that knowledge were more extensively acquired, and he was sure that the better equipped by preliminary training in general knowledge and general culture in science they were when they came to their studies the better able would they be to secure the advantages which clinical studies presented. In order to obtain this proficiency they must, above all, develop and train that very precious quality—the faculty of observation. Many persons saw while they did not observe. In the wards and elsewhere they had opportunities of cultivating the faculty of observation and all the great physicians and surgeons of our time and of past times had possessed it in a large degree, and had cultivated it to the highest possible point. He need only refer to one who was recognised not only in this country but all over the world as one of the greatest of surgeons, the founder of scientific surgery. The record of his life showed what a profound and regular observer he was. Even in his boyhood he used to take his observations of the common things about him, of things that, perhaps, most of them would pass by unheeded, and probably he was a very unpleasant companion, for he often pestered people with questions about which nobody cared and probably nobody knew anything about. That quality of observation, when they had cultivated it, would lead them to see things which otherwise would be quite beyond their ken, to notice and appreciate facts which others would pass by. No doubt many students had been amazed at seeing a physician or a surgeon in a ward 'spot' at once some disease, or injury, or malformation which they themselves would not have noticed. It seemed to them a kind of instinct or intuition, but it came from a long habit of observation and the long experience which had cultivated that power. He could not too strongly commend to them the great advantage which it would be to cultivate this faculty."

Sir William Mac Cormac concluded by describing to his audience the new clinical laboratory of St. Thomas's Hospital.

URBAN BURIAL.

THE *North American Review* for August contains an article by Dr. Louis Windmüller entitled "Graveyards a Menace to Health," which has attracted considerable attention. It will probably be news to a large number of the readers of THE LANCET to learn that New York City is as plentifully supplied with graveyards situated in crowded parts of the town as almost any old English or continental town, but, according to Dr. Windmüller, in the early part of this century graves were in evidence in New York to such an extent that an Englishman who visited the United States speedily returned when he found every street in New York lined with headstones. In regard to the objection raised against cremation by members of the medical and legal professions on the assumption that poison cannot be detected in the ashes the writer of the article says that this view is now generally abandoned and considers that in suspicious cases intestines might be preserved before the rest of the corpse is consigned to the furnace, but that in any case fire would scarcely consume a mineral poison. Here the writer seems to us to under-rate the heat of the furnaces usually employed, under which many minerals would certainly be volatilised. Dr. Windmüller goes on to say that when mineral poison is found in the stomach of a disinterred body which has been embalmed it cannot be considered a conclusive proof of crime because the fluid injected into such bodies usually contains arsenic, but such a small percentage of bodies undergoing interment have been previously embalmed that the fact is hardly worth adducing as an argument. Dr. Windmüller next expresses anxiety as to the soil in the neighbourhood of great cities if the usual system of burial is persisted in. If 4000 corpses are crowded into the space of one acre, the limit in the case of the most populous graveyard, and if the present rate of mortality in New York—20 per 1000 inhabitants—be accepted as the standard, with a population of 3,500,000 New York

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must provide room for 70,000 burials annually and would require annually 17½ acres to bury them in. Unless custom is changed the available room in the vicinity of large cities will, he thinks, gradually be absorbed by the remains of the dead. Dr. Windmüller then proceeds to review the earth burial from a sanitary standpoint and remarks: "Innumerable proofs furnished by scientific men of all ages, recently by Dr. Pasteur, show that earth retains instead of destroying the germs of disease contained in a body and that it in some degree will vitiate its surroundings." Among other points he cites in support of this contention one that the French Academy of Medicine located the origin of diseases of the lungs and throat in putrid emanations from the Parisian cemetery of "Père la Chaise," and, again, that drainage from cemeteries in Philadelphia has polluted water in Fairmount reservoir. The second of these points does not amount to much, for no one doubts that a cemetery can damage a water-supply. The article concludes with these words: "Since thirty years ago cremation has been reintroduced in civilised communities many thousand bodies have been thus disposed of, including those of Hans von Bulow, George du Maurier, Jacob Moleschott, F. Gregorovius, and Anton Seidl. Instead of condemning their memory because they refused to allow their corpses to become offensive, let us follow their noble example and help to remove one of the most odious stains on our civilisation." As a single-minded plea for cremation regardless of the arguments of controversialists on the other side Dr. Windmüller's paper is worth perusal.

THE RIGHTS OF EXPERT WITNESSES IN THE UNITED STATES.

SOME consternation has been caused in the profession of the United States by the decision of the Supreme Court in the case of J. N. Dixon *versus* the People of the State of Illinois, which was filed in 1897, and is the subject of a paper read recently to the Illinois State Medical Society and reported in the *Medical Record* of August 27th. In January, 1895, Dr. Dixon of Sangamon County, Illinois, in answer to a subpœna appeared in the Circuit Court as an expert witness. He was confronted with a hypothetical question relating to injuries, of which he had no personal knowledge, said to have been sustained by a woman whom he had never known. He was asked as to the probable results of a fall on a defective side-walk in producing certain injuries, and after receiving the assurance of the court that he was called as an expert witness only he respectfully declined to answer, basing his refusal on the ground that an expert witness is entitled to a different and greater compensation than an ordinary witness is allowed and that an expert is not required to give expert testimony without compensation as an expert unless a reasonable compensation shall have been paid and provided for. The court held his refusal to be contempt of court and fined him $25. An appeal was allowed to the Appellate Court. This court upheld the judgment of the Circuit Court, stating that the statute has fixed the compensation to be paid to all witnesses and "the law requires every person when duly subpœnaed to appear as a witness and accept as full compensation the statutory allowance, however inadequate it may be." The court took occasion to state that knowledge gained by study, observation, and experience is not "property" within the meaning of the word in the sense that "private property shall not be taken or damaged for public use without just compensation"—"the word property means tangible things and rights which accompany, or are incident to, the use, enjoyment, or disposition of such things." In June, 1896, the case came to the Supreme Court on a further appeal, when Dr. Dixon's attorney referred to the custom of the ancients and quoted the authorities and practices of every civilised country according to which expert testimony is either property or "particular service" entitled to full and just compensation. The court came to the same decision as the courts below and decided "that a physician when subpœnaed and interrogated as an expert witness may be compelled to testify without any pay other than the statutory fee. He must testify in civil as well as in criminal suits, since in either case the object is to promote public justice and ensure the peace and good order of society." Refusal to testify is contempt of court. Fortunately this is only the law of the State of Illinois, and we venture to hope it will not be adopted by other States. According to it the busiest and most skilful medical men may be subpœnaed by any party in any case and will be obliged for a miserable fee to leave proper and greater work without any adequate remuneration. What would lawyers say if an eminent master of their profession were summoned from his ordinary duties by subpœna and paid the fee of an ordinary witness?

A "QUESTIONABLE SHAPE"—A POPULAR ERROR.

UNDER the title of "In Dead Eyes" an evening contemporary recently made a statement which carries its own confutation with it. It is to the effect that a physician and enthusiastic photographer, being desirous of testing the amount of truth in the theory that dead eyes retain complete images, had carefully examined the eyes of hundreds of dead people, and though he had never seen anything like a distinct picture mirrored he had certainly distinctly traced both letters and objects on the *iris* of the eye, and that when the photographic test was applied these images became visible. In one case a capital letter of peculiar form was shown which could be traced to a Testament held in the hands shortly before death. In another case a numeral was distinctly pictured which was traced to a clock face in the room. The article in question continues: "The chief scientific paper of France only the other day gave full particulars of a case where a woman who died in one of the hospitals had two numbers, 10 and 45, mirrored in the *iris* of her eyes." These absurd stories originate in the well-known experiments of Kühne on the visual purple of the retina, in the course of which he showed that by making special arrangements the cross-bars of a window focussed on the *retina* could be brought into relief. The enthusiastic photographer, if he be not misquoted, ought to have known that no well-defined images of the external world are cast upon the iris and none, therefore, could be preserved. The surface of the iris is far too uneven to act as a mirror. Moreover, as no arrangement were made to prevent the further action of light after death they would if formed be certainly obliterated as the image on a photographic plate would be if permanently exposed. The only mode in which an image impressed on the retina could be rendered visible would be to adopt the method of Kühne—viz., by exposing the eye previously kept in the dark for a minute or two to an illuminated object, then extirpating it, opening it, and immediately plunging it into a solution of alum. The image develops in the course of twenty-four hours.

SYPHILITIC PHLEBITIS.

IN *La France Médicale* of August 12th Dr. Barbe very truly remarks that syphilitic phlebitis is not often described, perhaps because it is imperfectly known and passes unnoticed. Sometimes the lesion is localised (venous gumma), sometimes it affects a certain extent of the vein. Langenbeck was one of the first who drew attention to syphilis of the veins. In 1881 he extirpated a tumour in the neck as a cancer. The microscope and ulcerations in the mouth and throat which followed showed it to be a gumma. It grew from the external coat of the jugular vein. He relates

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another case in which a similar diagnosis was made and a gumma of the femoral vein was removed. The patient died from pyæmia. In 1872 Gosselin observed in a syphilitic woman, aged sixty-five years, a painful and tender swelling in the upper part of the calf beneath and not adherent to the skin. Palpation revealed a cord 4 centimetres long and 1 broad. There were no varices. He diagnosed gumma in the external coat of the external saphenous vein and under specific treatment the patient was relieved in 15 days. Gosselin further observed in a case of secondary syphilis precocious gummata in the cellular tissue and in both internal saphenous veins. Dr. Heuzard, in his *Thèse de Paris*, 1898, describes secondary and tertiary phlebitis; in the former several veins are affected together or one after the other, in the latter the phlebitis may be circumscribed (gumma) or diffuse. Secondary phlebitis affects principally the saphenous veins. It manifests itself at first by congestion which may take the form of red lines corresponding to the course of the veins. Palpation reveals tender cord-like induration of the veins and œdema of the leg. Specific treatment is rapidly successful; sometimes there is a relapse. The veins usually remain permeable. In tertiary phlebitis the veins are sometimes obliterated, sometimes varicose and elongated. Recovery is not always complete; sometimes induration remains.

THE "SATURDAY REVIEW" AND MEDICAL STUDENTS.

WE do not know why the *Saturday Review* should have gone out of its way to indulge in some offensive and insulting remarks regarding medical students as a class, for we do not hesitate to say that the writer's experience in this respect is quite opposed to that of other people who, as far as social position and opportunities for observation and judgment are concerned, are quite as well, and probably much better, qualified to form an opinion. *Apropos* of Mr. G. R. Turner's recent introductory address at St. George's Hospital (in which reference was made to the portraits of medical students in the pages of Dickens and Thackeray as having been drawn from the worst types of a bygone age and in which it was asserted that the behaviour of the London medical students would compare not unfavourably with that of the undergraduates of Oxford and Cambridge) our contemporary gives us the benefit of its experience as follows: "At any rate, we have usually found the medical student to be an individual who combines the maximum of ill-breeding with the minimum of sobriety and who may be generally classified under the genus 'cad,' though doubtless Mr. Turner regards the few exceptions as a hopeful and promising sign for the future." Medical students are drawn from the same social stratum and are educated at the same schools as members of the other professions and they very commonly have relatives in the church, navy and army, law, literature, science, and journalism. These are not "generally classified under the genus cad," although there are doubtless to be found cads, snobs, and prigs among them. Mr. Turner was perfectly justified in saying that the medical profession was now only fit for those with high ideals, good health, good intellects, and a capacity for hard work.

THE RELATION OF THE GROWTH OF THE INFANT TO THE COMPOSITION OF THE MILK.

IN an article contributed to the *Zeitschrift für Physiologische Chemie* (Band xxiv., p. 285) Dr. Pröscher has, at Professor Bunge's suggestion, set himself to corroborate by further research on a large scale an observation made by Professor Bunge himself to the effect that the rapidity of growth in the suckling is dependent upon the proportion of albumin in the milk. Professor Bunge believed he had demonstrated this to be correct in the case of man, horse, cow, and dog. Dr. Pröscher ascertained by experiment, on the one hand, the time required for the newly-born young to double its weight, and, on the other hand, the percentage of albumin in the milk in various animals with the following results. The human infant doubled its weight in 180 days and the percentage of albumin in the mother's milk is 1·86. The foal doubled its weight in 60 days and the milk contained 2·3 per cent. of albumin; the calf in 47 days with 4 per cent. of albumin; the pig in 18 days with 6·89 per cent.; the lamb in 10 days with 7 per cent.; the pup of the dog in 8 days with 8·28 per cent.; and the kitten in 5 days with 9·53 per cent. of albumin in the milk. This law appears also to hold good for the development of the individual. Thus the amount of albumin in human milk on the first and second days after childbirth is 8·6 per cent.; from the third to the seventh day 3·4 per cent.; from the eighth to the fourteenth day and onward during the first three or four months 2·5 per cent., whilst in the second half year after childbirth it falls to 1·6 per cent., which is in correspondence with the gradually falling rate of increase in weight of the infant. In a further series of researches Dr. Pröscher treats of the influence of climate on the composition of milk. He finds from a comparison of a large number of analyses that the milk of animals living in the south of Europe is poor in fat but rich in sugar, whilst the converse obtains in those of the north. The large percentage of sugar in human milk is, he suggests, an indication that man was originally an inhabitant of a warm climate.

THE GORDON BOYS' HOME.

WHILE the reconquest of the Soudan is still fresh in the minds of our readers it is appropriate that we should bring under their notice the institution which is in every sense our greatest national memorial of the heroic Gordon—the Gordon Boys' Home at Chobham. It is satisfactory to learn from an article recently published in the *Charity Record* that the expectations which were founded on the progress of this establishment have not been disappointed. The arrangements within the Home, it will be remembered, are of the most comprehensive character. Provision is made not only for the ordinary course of study as in other schools, but it is amply supplemented by technical instruction—a fact which has probably not a little to do with the success of Gordon boys in after-life. The chapel, which is a Royal foundation in memory of the late Duke of Clarence, and the hospital, containing three wards endowed by Mr. and Mrs. Hamilton-Yatman, are among the most attractive edifices within the grounds of the Home. The boys' band has proved itself a great success and the superintendent, Colonel Walker, has many more applications from the military authorities for boys who have been trained in it than he can satisfy. It is to be noted that due account is taken of any natural bent in the ultimate disposal of the boys. Some particulars given in this connexion are interesting. Up to the present date 363 boys have entered the Army, 20 the Royal Navy, and 14 the mercantile marine; 250 are in civil employ, 13 have emigrated, and 19 have joined the Cape Mounted Rifles. These youths, it is hardly necessary to add, have been rescued from those who often from no fault of their own constitute the broken and wandering wreckage of civilisation. The revelations of juvenile atrocity in Lambeth and elsewhere have shown us what they may become if left to wander. In the results obtained by the Gordon Home we see the converse of that picture. Surely it needs no laboured argument to explain the teaching of this forcible contrast. Hitherto a gratifying measure of support has been accorded to the Home, the popularity of which is, we trust, assured. It is always needful to remember, however, that such a work as that which it carries on cannot be done for nothing, or even at a small

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cost. As matters now stand the institution can only afford accommodation to 240 boys instead of 360, the number which it is intended to provide for, and it is, moreover, confronted with building and other needful expenses amounting to £2500. Under these circumstances, and in consideration of a past so meritorious and a future so promising, we earnestly hope that the British people in their giving will well remember this eminently practical charity. Lieutenant-Colonel Beatty-Pownall, 20, Cockspur-street, we may mention, will be happy to receive contributions to the Home.

THE CHARITY ORGANISATION SOCIETY AND MEDICAL RELIEF.

AS will be seen from a letter published in another column the Charity Organisation Society have set on foot a course of eight lectures dealing with the subject of medical relief. The fee for attending the course is 5*s*., or for a single lecture 1*s*. The opening lecture will be free. The subjects chosen are certainly of interest to medical men and the names of the lecturers are a guarantee that the various matters will be dealt with by those who have a knowledge of what they speak about.

THE PLAGUE IN INDIA.

THE latest returns from India for the week ending Oct. 8th show no decrease of plague for Bombay city and Presidency. The epidemic continues to spread at Bangalore, where 371 cases have occurred since Sept. 28th last. The disease also still prevails at Karachi and to a slight extent in some Madras districts. Calcutta, which has hitherto suffered but little, is now, we are glad to say, officially declared free from plague, no cases having occurred there for ten days. The local government and municipal authorities are wisely alive to the fact, however, that experience has shown that the accession of cold weather is apt to be accompanied by a renewed activity of the disease and are consequently not relaxing their precautionary measures.

MORBID ANATOMY OF YELLOW FEVER.

IN the *Medical News* (New York) of Sept. 3rd Dr. Eugene Wasdin gives a detailed account of the results of numerous necropsies which he has performed in cases of yellow fever and makes some interesting observations as to the post-mortem diagnosis of this disease. He remarks that the yellow fever cadaver has certainly a most characteristic appearance. All subjects dead from the disease bear a close resemblance to each other; indeed, it would not be difficult to make a diagnosis, other facts being favourable thereto, from the cadaver alone. Post-mortem rigidity comes on early and persists. The colour is invariably more or less intensely yellow, which is due to a mixed hepatogenous and hæmatogenous jaundice. This yellow tint is always contrasted with the deep purple discolourations from hypostasis which quickly appear in the skin of the dependent portions of the body after death. Dr. Wasdin's experience in necropsies in subjects dead from malarial fever in the South has shown him that there are externally many points of resemblance in them to the yellow fever cadaver, and he feels assured that at times the decision between them would be very difficult or even impossible. Dependence must then be placed upon the conditions found in the internal organs. A good account is given of the changes which are seen, but which we have not space to notice here. He draws attention to a very notable congestion of the vasa vasorum of the great vessels at the base of the heart, these minute vessels forming a delicate tracery over the serosa and upon the walls of the auricles, which at times present minute ecchymoses. Dr. Wasdin deems this a very constant and characteristic appearance. He further says that a yellow fever necropsy is usually considered to be a bloodless one, but this is by no means the case. In reality, the full influence of the toxin falls upon the vaso-motor system and results in an incomparable congestion of the vessels of the abdomen and when complete the section presents an appearance quite the reverse of bloodless. The question naturally arises as to the diagnostic value of the conditions described in this paper. Is it possible to arrive at definite conclusions from an isolated case presenting all the signs usually found in cases of death from yellow fever? Should we be justified in such cases either in withholding quarantine protection from a community or in initiating quarantine to the possible detriment of commerce? From his recent observations Dr. Wasdin feels safe in asserting that it is not possible to diagnose this disease from the post-mortem appearances and the gross microscopic findings alone. He does not undervalue their importance, when taken in due consideration with the history of the case, the clinical charts, and the history of albuminuria, in assisting the observer to form an opinion, but in the absence of these accompanying facts they are not sufficient to enable him to name the disease, although a diagnosis may be safely ventured upon in the absence of any other known cause of infection.

FEMALE HEALTH VISITORS AS AIDS TO SANITARY PROGRESS IN MANCHESTER.

WHAT may be termed the lay element in sanitation is not always an unmixed blessing, but if this force can be kept within proper channels much good may conceivably result from it. Such at any rate is apparently the lesson to be learnt from the efforts of the Ladies' Health Society in the city of Manchester, an organisation which was started in 1862. The health visitors of this society live in their respective districts and each devotes six hours daily (Saturdays excepted) to visiting, a report of the work done being received each morning by the medical officer of health. Amongst the duties devolving upon the visitors is to supply lime for limewashing, and the loan of brushes, &c., for use; and as an instance of what is done in this direction Dr. Niven tells us that one visitor alone succeeded in bringing about in 1897 the limewashing of 50 bedrooms as well as numerous sculleries, kitchens, &c. In the matter of advice and guidance the visitors are most active, and much burning of refuse, washing of clothes, &c., is done under their supervision. They are the bearers of disinfecting powder and of printed instructions concerning the feeding of children, while any sanitary defects which they discover on their rounds are at once reported to the medical officer of health. The promotion of ventilation is naturally within their province and the fact that one visitor sold 50 blocks of wood for fitting beneath the lower sashes of windows will afford an indication of the success of their efforts. In a word, their work is, in the main, educational, and everyone familiar with the conditions of the poor in our large towns knows the importance of a movement such as this.

THE CAUSE OF THE DEATH OF GEORGE II.

AT a time when England was resounding with proclamations of naval and military glories George II. died suddenly at Kensington from a rupture of the right ventricle of the heart whilst preparing for a walk in the gardens. This was on Oct. 25th, 1760. In the *Phonographic Record* for October of the present year Dr. G. F. Atchley publishes a reprint from the *Royal Magazine* of 1760 giving an account of the necropsy made upon the body of the King. The report is dated Kensington Palace, October 16th (*sic*), 1760, and is as follows:—"In obedience to the order transmitted to us by the Rt. Hon. Mr. Vice-Chamberlain,

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we, the undersigned, have this day opened and examined the body of his late Majesty, in the presence of Sir Edward Wilmot, Bart., and Dr. Nicholls, two of his late Majesty's physicians; and first on opening the belly we found all the parts therein contained in a natural and healthy state, except only that on the surface of each kidney there were some hydatids or water bladders, which, however, we determined could not have been at this time of any material consequence. On opening the breast we observed the pericardium or bag which contains the heart extremely distended, which was owing to a large effusion of blood that had been discharged therein from a rupture in the substance of the right ventricle of the heart. The quantity of the blood in the pericardium was at least a pint, the most part of which was strongly coagulated. The rupture of the ventricle and the consequent effusion of blood in the pericardium were certainly the immediate cause of his late Majesty's sudden death. The brain, lungs, and all the other parts were in a perfect state. (Signed), E. Wilmot, John Ranby, Fr. Nicholls, and C. Hawkins."

ANTI-RABIC INOCULATION IN BRAZIL.[1]

DURING the eleven years which elapsed from the opening of the Pasteur Institute at Rio de Janeiro in February, 1888, to the end of last April 3973 persons presented themselves for treatment, but of this number no fewer than 1326, or 33 per cent., were refused admission chiefly because it was found that the animals they had been bitten by were not suffering from hydrophobia; and after the treatment had been inaugurated there was, for various causes, a further elimination of 106 cases. The number of persons who underwent the preventive process in its entirety was consequently 2541, and amongst these there were 20 deaths from hydrophobia, a percentage equal to 0·78. In view of the pains taken to exclude all illegitimate cases this would seem to be a sufficiently satisfactory death-rate, but in the opinion of Dr. Ferreira dos Santos, the Director of the Institute, the true rate was considerably lower. 9 of the 20 deaths occurred within a fortnight of the final inoculation—that is, before the protective influence of the injected virus had had time to become fully established, and he contends that these should on that account be withdrawn from the calculation. In that case the "definitive statistics" of the first decade of the Rio de Janeiro Pasteur Institute would read as follows: Number of persons treated, 2532; deaths, 11: percentage of fatal cases, 0·43. Generally speaking the mode of procedure adopted at the Brazilian institute is precisely the same as at the Parisian, only a few slight modifications as o matters of detail having been introduced by Dr. Ferreira dos Santos. The inoculations take place at 8 o'clock in the morning, but in urgent cases a second inoculation may be administered at 5 o'clock in the afternoon for a few days at the outset of the treatment. The marrows employed for first inoculations are of fourteen days' standing, and for the last of three days'. In dangerous cases, however, more especially when the temperature of the air exceeds 70° F., thus conducing towards rapid desiccation, the final inoculation of the series should be performed with a second-day marrow. The virus now in use was derived from rabbits which were inoculated in Paris in July, 1887, and since then has passed through 360 sets of these animals without a break, the rabbits invariably developing symptoms of the disease on the sixth day. Instead of veal broth a 1 per cent. solution of chloride of sodium in filtered sterilised water is used, and the director maintains that he thereby almost entirely obviates pain even in the most sensitive of his subjects. The following compressed statistical items will be found interesting. Out of the 2647 persons who were accepted for treatment only 96 had been efficiently cauterised, although in 1900 cases the bites were inflicted on exposed parts. In 236 of the attacking animals hydrophobia was experimentally proved to be present, and in 1173 more the symptoms exhibited during life were pathognomonic of the disease. 59 of the persons who presented themselves at the institute withdrew on learning the nature of the treatment, one of them subsequently dying from hydrophobia. 65 individuals left the institute prematurely after commencing the treatment, and of these 3 died from the same disease; 6 patients developed hydrophobia while undergoing the inoculations, 5 of them having been bitten in the head. Among the rejected applicants there were 51 persons who presented more or less severe contusions but no abrasions or other solutions of continuity, and also 9 who came because they had been bitten by animals which subsequently became rabid.

[1] Annales de l'Institut Pasteur, Paris, August, 1898.

THE MIDLAND MEDICAL SOCIETY.

THE Midland Medical Society attained its jubilee this year and in order to celebrate this event a dinner was held at the Grand Hotel, Birmingham, on Thursday, Oct. 6th. Mr. J. W. Taylor, president of the society, was in the chair and the company included Sir William Mac Cormac (President of the Royal College of Surgeons of England), Sir Benjamin Stone (M.P. for East Birmingham), the Right Rev. E. A. Knox (Bishop of Coventry), Mr. T. H. Russell (the President of the Birmingham Law Society), and many prominent members of the medical profession. Sir William Mac Cormac proposed the toast of the evening and spoke with enthusiasm of the success and ability of Birmingham medical men. Of the Birmingham General Hospital he said that "as far as his humble judgment went he thought that not even in London was there any hospital equal—he would not say superior, but not one equal—to the hospital which Birmingham now possessed. Everyone connected with the hospital might be congratulated, as well as the town to which the institution belonged." This is high praise, but there is no one better fitted to give such an opinion than the President of the Royal College of Surgeons of England, for he has had opportunities of seeing hospitals in every capital in Europe, while, as reference to our columns will show, he is indefatigable in his visits to the institutions of our provincial capitals.

ANTI-VIVISECTIONISTS AT BRADFORD.

DURING the recent Church Congress at Bradford the Church Anti-Vivisection League called a meeting at which the chair was taken by the Rev. T. Perkins. The reverend gentleman made a speech of a curious character for a chairman, for it was throughout a strong indictment of the practice of vivisection. Mr. Perkins has, of course, every right to his own opinions, but we should have thought that the duty of a chairman was to be impartial. Be this as it may, Dr. Hime proposed the following resolution, which was carried by an overwhelming majority:—

"That in the opinion of this meeting human interests are of paramount importance as compared with those of other living creatures, and therefore we are justified in utilising the lower animals for the preservation of human health and life, all unnecessary suffering being avoided."

We have on a previous occasion had a passage of arms with the Church Anti-Vivisection League concerning a leaflet which it circulated in regard to Hospital Sunday. In THE LANCET of June 6th, 1896, will be found a reply from Miss Woodward, the secretary, to an annotation published in our columns on May 30th, 1896. It will be seen by the leaflet issued by the League that information and proof will be supplied to any of the clergy who may

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doubt the assertions of the League. We applied for proof, but unless Miss Woodward's letter can be considered as such we did not procure it. A second appeal has also failed to get any information from Miss Woodward—but then we are not clergy. We are, therefore, reluctantly compelled to the belief that the Church Anti-Vivisection League is one of those secret societies with which the Church, according to a recent correspondent in the *Times*, is honeycombed. A society which only supplies information to the clergy is evidently sacerdotal to a most dangerous degree.

YELLOW FEVER IN AMERICA.

THE situation caused by the spread of yellow fever in the state of Mississippi is somewhat threatening. There have been 470 cases and 36 deaths in the state since the outbreak of the disease. It is curious to notice the interdependence existing between sickness and commercial interests. The price of several of the United States railroad shares in the London market was no doubt affected by the reports of the spread of the yellow fever epidemic in the South. It seems probable, however, that the accession of colder weather in Mississippi will repress the spread of the disease and allay the fears entertained that the entire State will be infected.

THE FRIENDLY SOCIETIES AND THE GENERAL MEDICAL COUNCIL.

WE gather from a paragraph in the *Times* that at a conference of the leaders of friendly societies the interim report of the General Medical Council on Medical Aid Associations was under discussion. A sub-committee was appointed to go into the whole subject, from which we may hope for the existence of a desire on the part of the friendly sòcieties to adopt reasonable proposals for the adjustment of differences between them and the medical profession.

MISLEADING ADVERTISEMENTS AND SCIENTIFIC CRITICISM.

A CASE of great interest and importance with regard to the publication of scientific criticism of proprietary articles has recently been decided in France. The decision was arrived at in March last, but was not publicly known until a certain time for appeal had been allowed in accordance with the requirements of French law. The findings of the court have recently been made public. The facts of the case are briefly as follows. A firm of opticians in Paris were the proprietors of a glass containing baryta, from which lenses described as "isometropic" were prepared. With the view of testing the statements made in favour of those lenses by the proprietors, Dr. Javal, the director of the Ophthalmological Laboratory of the Sorbonne, instructed his assistants to make a careful examination of the glass and lenses and to report to him the results. Subsequently these results were published and presented to the French Academy of Medicine, the conclusion being that the differences between baryta glass and ordinary glass were insignificant; there was nothing in favour of the former, and the "isometropic" lenses did not offer any advantages to purchasers. The proprietors brought an action for damages to the extent of 20,000 francs, but the court decided that a scientific man might rightly examine and criticise on public grounds any manufactured article for which special merits were claimed, and they found for the defendant upon all the issues, condemning the plaintiffs in costs. Nothing could be more satisfactory than this decision and we could wish to see this example followed in this country. How instructive and useful to the community at large would it be if the Fellows of the Royal Society or the Chemical Society could leave abstruse pursuits for a while and present papers, say, on the composition of "Munyon's Remedies," "Pink Pills," "Siegel's Syrup," "Blood Mixture," "Microbe Killer," and so on *ad nauseam*. Could, indeed, this be realised we might at last hope that the scales would be removed from the eyes of a remarkably gullible public.

RELAXATION OF MUSCLES IN ORGANIC HEMIPLEGIA.

IN 1896 M. Babinski read a paper on this subject at a meeting of the Société de Biologie. He observed in several cases of hemiplegia and monoplegia due to a cerebral lesion a relaxation of muscles which allowed passive movements in the affected limbs of greater extent than in the sound. His observations particularly refer to the degree of passive movement of flexion of the forearm, which could be carried to a greater extent on the paralysed side. He observed this phenomenon at first in recent cases of hemiplegia with flaccid paralysis without increase or with decrease of tendon reflexes. In a case of twenty hours' duration when the legs were hanging the angle formed by the foot with the leg was greater on the paralysed side; when the forearms were horizontal and pronated flexion of the hand was also greater on this side. In none of the cases was there amyotrophy. Afterwards he observed this phenomenon in several cases of hemiplegia of several months' duration with exaggeration of reflexes. M. Babinski thinks that the phenomenon is of the same nature as the drooping of the angle of the mouth which is observed in hemiplegia; it is due to a loss of tonicity of muscles. It is somewhat singular that relaxation of muscles should occur with exaggerated reflexes. In the various cases of hysteria which he observed since his attention was directed to the phenomenon it was absent. He is therefore led to believe, without being dogmatic, that it may serve to distinguish organic from hysterical monoplegia and hemiplegia.

THE TREATMENT OF SPASMODIC TORTICOLLIS.

IN the *Boston Medical and Surgical Journal* of August 18th, 1898, Dr. H. J. Hall relates two cases of spasmodic torticollis—one cured and the other much relieved by the use of a spring to press on the cervical muscles. A woman, aged thirty-six years, was seen five months after the onset of spasmodic torticollis. Whilst recumbent there were no unnatural movements of the head, but on sitting up rhythmic contraction of the right sterno-mastoid muscle and of all the posterior rotators and retractors began. The head was turned with much force to the left and was markedly retracted. He observed that a firm grasp of the hand on the neck greatly diminished the spasm. The application of a spring clamp to the back and sides of the neck at once decreased and controlled the spasm, which recurred on removal of the pressure. The clamp was of simple construction, being made of light spring steel broader than, but similar to, that used as trousers' guards by bicyclists. A tail-piece ran from the middle of the spring about 6 in. down the back so as to keep it in position. A gentle pressure was thus exerted on the back and sides of the neck as far forward as the anterior border of the sterno-mastoid muscles. After a month the spring could be discarded for several hours a day. As a final result there remained slight painless and fixed left torticollis due to permanent contraction of the affected muscles, but the patient could turn her head freely and there was no retraction. The second was a severe case of five weeks' duration which was relieved at once and in three months was practically cured by the clamp and gymnastic exercises.

THE opening lecture of the winter session of the Hospital for Consumption and Diseases of the Chest, Brompton, will be on Aneurysm of the Aorta, and will be delivered by

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Dr. Mitchell Bruce on Wednesday, Oct. 19th, at 4 P.M. The lecture is open to students of the hospital and to all qualified members of the medical profession. The forthcoming lectures will be announced week by week in our Medical Diary.

THE annual public night of the Medical Society, University College, London, will be held on Oct. 19th, when an address will be delivered by Professor F. T. Roberts, M.D., F.R.C.P. Lond., on "The Personal Factor." The chair will be taken at 8 P.M. by the President, Dr. H. Batty Shaw. There will be an exhibition of Medical and Surgical Appliances.

AT the quarterly meeting of the Directors of the Naval Medical Supplemental Fund, held on Oct. 11th, Dr. W. H. Lloyd, Inspector-General, in the chair, the sum of £56 was distributed among the several applicants.

HENRY ALFRED ALFORD NICHOLLS, M.D. Aberd., C.M.G. (medical officer of the public institutions), has been appointed an Official Member of the Legislative Council of the Presidency of Dominica.

THE OPENING OF THE THOMPSON-YATES LABORATORIES AT LIVERPOOL.

LIVERPOOL on Saturday last, Oct. 8th, was the scene of two imposing ceremonies—the opening of the Thompson-Yates Laboratories of Physiology and Pathology by Lord Lister and the conferring upon the founder of antiseptic medicine the degree of Doctor of Science of the Victoria University. The two ceremonies were blended into one by the happy management of the authorities of University College, Liverpool, who thus displayed for the consideration, not only of scientific men and not only of Liverpool, but of all civilised and progressive communities, a highly impressive event. When the Rev. S. A. Thompson-Yates furnished the noble sum of money necessary for the erection of these laboratories and also came forward, as he did, to meet the great additional expenses necessary to provide furniture for them and equip them from top to bottom with every fitting and every instrument known to modern science as useful either in educational work or in the most recondite and speculative departments of research, it was felt that one man was marked out as the right person to declare the buildings open to students for the advancement of science in general and of scientific medicine in particular—that person was Lord Lister. It was therefore with great pleasure that Liverpool—the city every whit as much as the University College—heard that the President of the Royal Society was able to fall in with their unanimous wish and perform the opening ceremony, while the opportunity was readily seized by Victoria University to do honour to Lord Lister, and to themselves, by conferring upon him the honorary degree of Doctor of Science.

THE CONFERRING OF A DEGREE UPON LORD LISTER, P.R.S.

At three o'clock on Saturday afternoon St. George's Hall was an imposing sight, being crowded with an assembly representative of all the prominent classes in Liverpool, academic, political, social, professional, and commercial, who had gathered together to see the degree of Doctor of Science of Victoria University conferred upon Lord Lister—the first degree, we believe, which has been conferred by the University in Liverpool. Shortly after three a procession of gentlemen who for the various reasons suggested by their names, which will be for the most part familiar to our readers, had been invited by Victoria University to be present, walked slowly up the body of the Hall to the strains of one of the finest organs in the world and took their seats upon the platform. The following is the official list of the procession, and but very few of those invited failed to be present, a fact which, when the serious nature of the daily work of many of these gentlemen is remembered, makes it manifest that there must have been a general feeling abroad that the occasion was one of more than ordinary significance. All the members of the procession were in full academic attire, and the prevailing hue of scarlet signifying the doctorate of science or medicine was gorgeously diversified by hoods and facings of every tint. The procession was headed by the Vice-Presidents of University College, Liverpool, Mr. W. Rathbone and Mr. Edward Lawrence, after whom came the following in order:—

The College Council.—Mr. Alsop, Canon Armour, Mr. A. Booth, Mr. R. Gladstone, Mr. C. W. Jones, Mr. E. K. Muspratt, Mr. George Rathbone, Sir Edward Russell, and Mr. A. F. Warr, M.P.

The Registrar.—Dr. Londini.

The Chairman of the School of Commerce.—Mr. P. E. J. Hemelryk.

The Chairman of the School of Architecture.—Mr. Hartley.

The Chairman of the Board of Legal Studies.—Vice-Chancellor Hall, Q.C.

Honorary Members of the Staff.—Dr. Lloyd, Mr. Parker, Dr. Dickinson, Dr. Nevins, and Dr. Waters.

Emeritus Professors.—Professor Mitchell Banks, Professor Caton, and Professor Davidson.

Guests.—Professor Dunstan, Mr. P. M. Smith, Professor Kauffmann, Mr. A. Cope, Mr. Bokenham, Professor Thompson, Professor Vaughan Harley, Mr. James Ritchie, Professor Oliver, Dr. Leonard Hill, Professor Meldola, Professor Bower, Mr. Ballance, Mr. Stiles, Professor Rose Bradford, Professor Finney, Professor Murray, Dr. Noel Paton, Professor Allen, Mr. W. Thorburn, Dr. Sims Woodhead, Professor Poulton, Dr. Mott, Dr. Isambard Owen, Dr. W. Hunter, Dr. S. Sprigge, Professor Marshall Ward, Mr. Makins, Dr. Dawson Williams, Professor Purser, Professor Coats, Dr. Pavy, Dr. Ferrier, Dr. Copeman, Professor Cunningham, Mr. Scott Keltie, Dr. Saundby, Professor Hamilton, Dr. Bastian, Sir Henry Littlejohn, Professor Schäfer, Professor Forsyth, Mr. W. F. Lawrence, M.P., Dr. Gaskell, the Mayor of Birkenhead, Sir R. Thorne Thorne, the Mayor of Bootle, the Mayor of Preston, Mr. Ashton Bostock, Professor Rücker, Mr. A. T. Bentley, Professor T. R. Fraser, President of the Medical Institution of Liverpool (Dr. Macfie Campbell), Dr. Bickersteth, Professor Waller, Professor Crookshank, Professor Yeo, Professor Kanthack, Principal Lloyd Morgan, Principal Heath, Principal Reichel, Sir James Russell, Dr. Isaac Roberts, Mr. Alfred Waterhouse, R.A., Mr. G. Rodie Thompson, Mr. Heywood Thompson, Professor Rutherford, Dr. Lauder Brunton, Mr. R. D. Holt, Dr. Rendall, Mr. Justice Kennedy, the Vice-Chancellor of Cambridge University (Dr. A. Hill), Sir J. Crichton Browne, Captain Abney, Sir D. Calton, Professor Gotch, Sir A. Geikie, Sir W. Gairdner, Mr. E. P. Thompson, the President of the Royal College of Surgeons of Edinburgh (Professor John Chiene), Lord Kelvin, the President of the Royal College of Physicians of Edinburgh (Sir J. Batty Tuke), the Bishop of Carlisle, Sir William Turner, Professor Michael Foster, the Bishop of Chester, Mr. R. B. Haldane, the Bishop of Liverpool, Professor Burdon Sanderson, the President of the Royal College of Physicians of London (Sir S. Wilks), and Professor Virchow.

Assistant Lecturers and Demonstrators of University College.—Dr. Abram, Dr. Armour, Dr. Buchanan, Mr. Cole, Mr. Douglas Crawford, Dr. R. C. Dun, Dr. Grünbaum, Mr. A. G. Gullan, Mr. C. E. Jones, Dr. Hugh R. Jones, Mr. Lovegrove, Dr. Manby, Mr. Marsden, Mr. Nelson, Dr. Stockdale, Mr. Stratton, Mr. Thelwall Thomas, Dr. Titherley, Dr. A. J. Wallace, Dr. Warrington, and Mr. Woods.

College Lecturers.—Dr. Barr, Mr. Councell, and Mr. Phillips.

The Librarian of the College.—Mr. Sampson; after whom walked a group of University graduates of less than three years' standing.

Convocation.—Mr. Stuart, Miss Marsland, Mrs. Brown, Mr. Hardwick, Miss Broadbent, Miss Sandford, Mr. W. E. Livsey, Mr. Lackland, Mr. J. Jones, Mr. Clubb, Mr. Winstanley, Mr. O'Hagan, Mr. W. E. Hoyle, Mr. W. P. Steinthal, Miss Ellis, Dr. Coutts, Miss Auld, Mr. F. E. Taylor, Dr. J. H. Shaw, Miss Roper, Mr. J. C. Quinn, and the Rev. C. C. Lundie, Mr. A. Carey, Miss Buckley, Dr. Martin, Dr. Gilbody, Dr. Kelynack, Miss Crompton, Mrs. Ashburner, Mr. C. T. Needham, Mr. A. Schloesser, Mr. Willis, Mr. Charles Hughes, Dr. Pierce, Rev. C. T. Poynting, Dr. Rayner, Mr. J. H. Thompson, Mr. W. R. Innes, Miss C. D. Tennant, Dr. Gerland, and Mrs. Tout.

University Lecturers.—Mr. O. Elton, Dr. Friedel, Mr. Hebblethwaite, Mr. Woodward, Mr. Gwyther, Dr. T. L. Bailey, Mr. Hay, Dr. Howard, Dr. Kohn, Mr. Sharpe, Mr. Stanton, Mr. Owen, Mr. Edgar Browne, Dr. Peter Davidson, Dr. Wiglesworth, Dr. Campbell, Dr. Hellier, Mr. Ward, and Dr. Hiles.

Professors.—Faculty of Arts: Professors Alexander, Davies, Gonner, Mac Cunn, Mackay, Meyer, Raleigh, Simpson, and Strong. Faculty of Science: Professors Core, Dixon, Hickson, Lamb, Campbell Brown, Carey, Harvey Gibson, Hele-Shaw, Herdman, Lodge, and Beaumont. Faculty of Law: Professor Emmott. Faculty of Medicine: Professors Delépine, Dreschfeld, Jones, Leech, Dixon Mann, Sinclair, Stirling, Young, Carter, Glynn, Hope, Rushton Parker, Paterson, Paul, De Burgh Birch, Hartley, Trevelyan, Wright, Boyce, and Sherrington.

External Examiners.—Professors J. Reynolds Green, Halliburton, and S. Martin, Mr. Bilton Pollard, Professors Symington and Walker.

University Court.—Miss Cook, Mr. N. Clegg, Mr. W. Mather, Rev. J. Sephton, and Sir Francis Powell.

The Chairman of the Board of Studies.—Professor Tout.

The Principal of Owens College.—Mr. Alfred Hopkinson.

The Principal of University College.—Mr. R. T. Glazebrook.

The Vice-Chancellor of Victoria University.—Principal Bodington.

The Pro-Vice-Chancellor.—Professor Wilkins.

Immediately behind the Pro-Vice-Chancellor came Lord Lister in the robes of his new degree, followed by the stately

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figure of Earl Spencer in the blue and gold of his official position as Chancellor of the Victoria University.

The Registrar, Mr. Alfred Hughes, brought up the rear.

Lord SPENCER opened the proceedings in a dignified and sensible speech. He recalled briefly the benefactions which University College, Liverpool, had received during its comparatively short life from Liverpool men and referred to Mr. Thompson-Yates's splendid munificence as "putting a magnificent crown in a magnificent manner upon the proceedings of his fellow citizens." Coming then to the particular purpose for which the assembly was present in St. George's Hall—namely, the admission of Lord Lister to the degree of Doctor of Science of the Victoria University—Lord Spencer held that it would be unbecoming in him to enlarge upon the merits of the President of the Royal Society, particularly as the gentleman who would shortly introduce his lordship to receive his degree would necessarily allude to his great public and scientific claims, but, he concluded, "we of the Victoria University feel with one of the most distinguished men of science in the world, Professor Virchow, that in saluting Lord Lister with enthusiasm we are honouring a man whose career has been one of conspicuous glory here and all over the world."

Dr. CATON, Emeritus Professor of Physiology in University College, Liverpool, and late Dean of the Medical Faculty, then pronounced an eloquent panegyric upon Lord Lister's work. "Possessing a heart and mind," he said, "full of sympathy, benevolence, and humanity, our visitor of to-day, from an early period of his career as a surgeon, witnessed with pain and sorrow the mortality and suffering which was wont to attend surgical injury and disease in man and no less in the lower animals. He determined to devote his life to an inquiry into the causes of this suffering and mortality and brought to his task scientific abilities and knowledge of the highest order, and in particular a profound acquaintance with the work of Pasteur, the great French observer. After long years of patience and conflict with difficulties he was privileged, not only to discover the cause of all this suffering, but also the remedy. To-day there is not a hospital in the civilised world which has not been transformed through Lord Lister's teaching and in which death and suffering have not been to a very large extent banished. To-day there is not a case of serious surgical disease or surgical operation in man or woman in any rank of life, or even among the lower animals, in which Lord Lister's work has not diminished the liability to suffering and death. The work of Lord Lister is of extraordinary value in time of war. The field and base hospitals for the wounded were in former times the scene of a mortality from septic fever far greater than that occurring in the field. But how is it now? The Director-General of the Royal Army Medical Corps has recently said that during and after the recent war in the North-West Provinces of India not one single case of septic fever occurred. Formerly as many as one-half of the wounded succumbed to this cause. Lord Lister has doubled the utility of the work of the surgeon and lightened the burden of pain and death. Work of this order is far above recompense or reward; the nobility of such a life is for us to imitate rather than to praise. But still the court and council of our University desire to confer on Lord Lister the degree of doctor of science, in recognition of the fact that never has science been more nobly enlisted in the cause of humanity and of human progress than in the work of his life."

Lord LISTER was then formally presented to the Chancellor amidst loud and prolonged applause and signed the roll of the Victoria University.

Mr. R. T. GLAZEBROOK, the recently appointed Principal of University College, then made a brief statement concerning the new laboratories, the opening of which was the primary object of Lord Lister's visit to Liverpool. Mr. Thompson-Yates, he said, came forward in 1894, when it was clear that the work of the professors of physiology and pathology, whose chairs had already been endowed by the generosity of the late Mr. George Holt, was being seriously hampered for want of rooms in which to lecture and laboratories in which to work. He then offered to build the laboratories and theatres. The structure cost £18,000. A second gift was made immediately afterwards of £6000 for furnishing the building and a final gift rapidly followed of £4000 for apparatus, the noble sum of £28,000 in all. Principal Glazebrook concluded, amidst applause, by reminding his audience that there was still scope for their generosity in many directions, and his words had all the more weight from the fact that he was able to speak not only as Principal of the College but as a late assistant director of the Cavendish Laboratory at Cambridge.

LORD LISTER'S ADDRESS.

Lord LISTER then read the following brief address:—

My Lord Chancellor, my Lord Mayor, my lords, ladies, and gentlemen,—When I was honoured by the authorities of the Liverpool College with the request that I would open the Thompson-Yates Laboratories I little imagined that I was asked to take part in so imposing a ceremonial as the present. That it should have attracted so large and brilliant a company seems to me a matter of great importance, full of good augury for the future of the scientific practice of the healing art; in other words, of treatment based on real knowledge as contrasted with the blind gropings of empiricism. We have before us to-day evidence that the cultured sections of the British public are alive to the necessity of providing adequate means for the practical study of the knowledge which confers the power to recognise and treat disease. If an engineer is to qualify himself for detecting and correcting anything wrong in a machine of human construction no verbal description or drawings will give him the requisite information; he must see and handle the details of the mechanism and watch them at work. And it might seem the veriest common sense that the more practically familiar a man is with the structure and working of that marvellously complicated mechanism, the human body, the better fitted will he be to deal with its disorders. Yet, obvious as this is, it is only in recent periods that its truth has been generally recognised. I am old enough to remember the years before the passing of the Anatomy Act, and I recollect being told as a child of the fiendish deeds of Burke and Hare—horrors which, it would appear, were needed to arouse a prejudiced and apathetic public to the imperious necessity of making it legally permissible for the intending surgeon to become acquainted in the only possible way—i.e., by dissection—with the sacred structures which he would be called upon to invade with his knife. A dissecting-room well provided with the needful material for study has since been an essential equipment of every medical school, and a thorough course of dissection is demanded of every medical student. Meanwhile, another kind of anatomy than that which the scalpel displays has come into being — the anatomy which the microscope has revealed and is revealing. This microscopic anatomy, both of healthy and of diseased structures, has assumed the greatest importance and requires special provision for its successful study. The materials to be studied cannot well be obtained by the student in his lodgings, and the processes involved in the study are often of a complicated character which he cannot learn unaided and which require more costly apparatus than he can provide. The requisite facilities for this work will be amply supplied by the laboratories which are to be opened to-day. The necessity for special pathological institutions has long been recognised on the Continent, and nowhere has such an establishment been conducted with more signal success than in the Pathological Institute of Berlin, which has been presided over for many long years by the illustrious man whom Liverpool is, I am sure, as glad to welcome with reverence as London has been. Many present to-day have sat at the feet of Professor Virchow, but we may fairly anticipate that Liverpool students, at all events, will for the future be able to dispense with pilgrimages to Germany. While the minute anatomy of normal and morbid structures will be thus effectively taught in the new laboratories much may also be done in them to demonstrate and explain the actions of the living organism. I well remember the effect produced upon me, as a member of Dr. Sharpey's class in London, by the repetition before us of Bernard's great experiment on the local circulation. The sympathetic nerve in the neck of an animal being divided, the ear of that side instantly became red and hot and the blood-vessels turgid, while on the application of galvanism to the severed nerve the opposite effect immediately followed, the ear becoming white and cool and the vessels less conspicuous than those on the other side. Thus was impressed upon us, as mere oral teaching could hardly have done, the immensely important fact that the contractions of the arteries are as much under the control of the nervous system as are those of the muscles of a limb. I need, perhaps, hardly add that the animal being completely under an anæsthetic during such a demonstration no pain whatever is inflicted. In the study of the new science of bacteriology the pathological laboratory will render most

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important service. The student will see with his own eyes by aid of the microscope the minute living beings which we now know to constitute the essential cause of many infectious diseases and he will learn to "cultivate" these microbes, which, while it will impress upon him the reality of their existence and the characters by which the various species may be recognised, will be invaluable as an exercise of the habits of accurate observation and manipulative skill. The new laboratories will also serve as a centre to which practitioners of a wide surrounding district may refer for the authoritative determination of the nature of doubtful specimens of diseased materials which they have neither the needful equipments, time, nor special knowledge to decide for themselves. As important as the services which the laboratories will render to the education and medical practice will be the opportunities which they will afford for research. I had occasion, in the address which I gave two years ago in this city, to refer to some of the benefits which have been secured to mankind by recent biological investigation, and I need not say more on the subject at present; but I would remark that every step in advance in science only opens up wider fields for exploring the infinite resources of nature, and these laboratories will afford ample means for the further prosecution of such beneficent inquiries. Some, perhaps, may be disposed to object to such researches because they involve the sacrifice of animal life. This, however, I need hardly remark, is as nothing compared to what occurs for the supply of food to man. Of animal suffering I need hardly speak because, in truth, the actual pain involved in these investigations is commonly of the most trifling description. Anæsthesia has come to the aid of experiment on animals and enables needful operations to be performed without disturbance from the struggles of the animal, while it affords to the operator the unspeakable comfort of knowing that he inflicts no pain. I am bound to add that antiseptic treatment of the wounds has had a similar doubly beneficial influence; by preventing inflammation it renders healing painless, while it leaves the parts uncomplicated by inflammatory changes and allows the results of operative procedure to be rightly estimated. I greatly surprised a former Chancellor of the Exchequer when, on a deputation to him on this subject, I explained to him that operations for the removal of parts of the brain of monkeys, which he had imagined to be attended with horrible torture, had, thanks to anæsthetics and antiseptics, been probably from first to last unattended with a twinge of pain. Such operations thus painlessly conducted have, by indicating the precise function of different parts of the organ and thus guiding the surgeon in his operations, already led to the saving of many human lives. While I deeply respect the humane feelings of those who object to this class of inquiry I assure them that if they knew the truth they would commend and not condemn them. The laboratories, though they will be formally opened to-day, have for some time been in practical operation, with the result that the Biological and Pathological School of Liverpool is ranking very high among similar institutions in other parts of the world. As an illustration I may mention the fact that a committee of the Royal Society, acting with the approval of the Secretary of State for the Colonies, has lately selected a pupil of this school as one of two men specially qualified to undertake investigations in Africa on the deadly malaria of those regions. I cannot conclude these remarks without congratulating the Liverpool College on the mighty addition which these laboratories afford to its powers for usefulness. I believe they may be pronounced, both in structure and equipment, equal to any in existence. I must also congratulate you on having so nobly generous a benefactor as Mr. Thompson-Yates. I trust he will be rewarded by the deep satisfaction of knowing that he is doing incalculable good to mankind. If I may make one more observation it is that while these institutions have been so nobly constructed and equipped there is yet much to be desired as regards the means for maintaining them in efficiency. And if any wealthy inhabitant of Liverpool is anxious to bestow his wealth in some manner calculated to do good to his fellow-men he could hardly do better than by devoting a portion of his resources to the permanent maintenance of these fine institutions.

The LORD MAYOR of LIVERPOOL (Mr. Alderman John Houlding), in the absence of the Earl of Derby through a family bereavement, then proposed a vote of thanks to Lord Lister for his address, which was seconded by Mr. WILLIAM RATHBONE and passed with acclamation.

THE OPENING OF THE LABORATORIES.

The proceedings in St. George's Hall terminated with a few words of graceful thanks from Lord Lister for the cordiality with which he had been received, and the company adjourned to University College for the opening of the laboratories. Most of the guests and official representatives of various public and scientific bodies elected to walk from St. George's Hall to the College in their full academic costume, and the outward signs of the doctorates of science and medicine formed a decidedly conspicuous picture in the streets and one which afforded considerable excitement to the citizens. The College being reached the formalities connected with the opening of the laboratories were commendably brief. Mr. Lawrence, a Vice-president of the College, presented Lord Lister with a gold key and asked him to unlock the door closing the main entrance to the building and declare it open. This being done the company made a tour of inspection of the laboratories, which have been described so recently in the columns of THE LANCET that nothing more need be said of them here save to register the opinion of all that in completeness and convenience they have not their superior in any centre of education. Tea and coffee were then served in the College to a very large concourse of guests who afterwards dispersed.

THE LORD MAYOR'S DINNER

The Lord Mayor of Liverpool entertained at dinner on Saturday evening Earl Spencer, K.G., the Chancellor of the Victoria University, Lord Lister, Professor Virchow, Lord Kelvin, Sir William Turner, Sir Samuel Wilks, Sir Richard Thorne, K.C.B., Sir William Gairdner, the Vice-Chancellor of Cambridge University (Dr. A. Hill), Mr. R. B. Haldane, Q.C., M.P., Professor Michael Foster, Principal Glazebrook, the Professors of University College, and a large number of Liverpool citizens and of the invited guests of the College.

After an admirable dinner and the drinking of the usual loyal toasts, which were submitted by the Lord Mayor, Mr. R. B. HALDANE proposed the toast of "The Victoria University." This he did in the happiest and most polished manner, his text being that whereas in the olden days the tendency of university education was to make those who had received it consider that a certain aloofness from less fortunate persons was a mark of culture, now it was perceived that refinement and sterility of result did not necessarily go hand-in-hand and that a university education was no less valuable as an education because it enabled the man who had received it to be useful in the arts and commerce of his country. It was out of this spirit, Mr. Haldane said, that the movements arose which had their practical result in the Victoria University, the splendid addition to the teaching resources of which they were this day met to celebrate.

Lord SPENCER, in a short reply, testified to Mr. Haldane's knowledge of the subject by recalling the fact that the speeches of the learned Member for Haddingtonshire were some of the best made in the House on the difficult question of the reform of the London University.

The toast of "Our Visitors" was then given by Mr. EDWARD LAWRENCE and responded to in suitable terms by Professor VIRCHOW and Sir WILLIAM TURNER, the former of whom, while modestly allowing that his own labours counted for something in recent developments of pathological knowledge, took occasion to refer in terms of the warmest admiration to the life-work of his "old friend of many years—Lord Lister."

Professor MICHAEL FOSTER, in a speech which was none the less serious in intent because the speaker occasionally allowed his humorous vein to come to the surface, then proposed "University College and the Thompson-Yates Laboratories." His words had for their general motive much the same as Mr. Haldane's words. He urged all interested in the welfare of University College to leave no stone unturned to continue the work of progress, and while he reminded them that the College was still but a young institution he congratulated them upon the vigour of its growth. He pronounced the new laboratories to be the most perfect which he had ever seen and confessed that the sight of them that day had produced "a double physiological effect upon me. They took my breath away and made my mouth water." He added, amidst general applause, that whereas it was a temptation to older men to think that only in times gone by were

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there giants at Liverpool, the College possessed at the present moment scientific giants in the persons of Professor Sherrington and Professor Boyce, for whose special branches of work the new laboratories were designed, while of Principal Glazebrook, who had come from Cambridge during the last few months to be Principal of University College, he said that "in Cambridge he was always setting them straight, while in Liverpool he would only have to keep them straight," a great compliment to the high level of efficiency at which the College is working.

The proceedings terminated with replies from Principal GLAZEBROOK and Professor SHERRINGTON and a unanimous vote of thanks to the Lord Mayor for his hospitality.

RECEPTION BY THE LIVERPOOL MEDICAL INSTITUTION.

The President of the Liverpool Medical Institution, Dr. Macfie Campbell, started the social proceedings in association with the inauguration of the Thompson-Yates Laboratories by inviting the guests of University College who had assembled in Liverpool to the opening meeting of the session of the institution. Dr. Macfie Campbell delivered an interesting and learned presidential address upon the older medical writers, his remarks being well illustrated by a lantern demonstration. Supper followed, and then a merry and informal smoking concert. Among the gentlemen who gave their musical assistance may be mentioned Dr. Permewan and Professor Rutherford, whose appearance on the platform was the signal for much hearty applause. Dr. David Smart gave some happy imitations of well-known teachers and professors in the Edinburgh Medical School and elsewhere—a performance which was much appreciated.

SANITARY WORK IN THE PORT OF LONDON.

THE recently issued half-yearly report of Dr. W. Collingridge, medical officer of health for the Port of London, contains much interesting information relative to the work of his department for the six months from Jan. 1st to June 30th, 1898. During that period the sanitary officers visited 15,531 vessels of all classes, 9000 of which were lying in the river and 6000 in the various docks. There were 6762 visits made to vessels arriving from abroad and 8769 to those trading coastwise, and 21 sick seamen were referred to hospital. Of the total number of visits 13,901, or 84·28 per cent., were made to British vessels, Scandinavian being next in order of frequency with 1047, or 6·74 per cent. There were 303 structural alterations for improvement of sanitary conditions, affecting 281 vessels, carried out by order of the medical officers; these alterations in 33 cases were for the purpose of improving ventilation, 23 affected the storage of water, and 247 the arrangements for lighting and heating. A firm of shipowners having complained that it was vexatious for the Port of London Sanitary Authority to call upon shipowners to alter the internal fittings of a vessel after they have been passed by the Board of Trade, it was, in reply, pointed out to the complainants that the Board of Trade is not a sanitary authority and has but very limited powers for dealing with the sanitary arrangements of a vessel, their principal interest being in its safety. The control of sanitary arrangements is the duty of a sanitary authority, and the Board of Trade has no cognisance of the cases in which sanitary arrangements either are deliberately altered or fall into disrepair. During the half year 4876 vessels arriving from abroad were visited by the medical officers. Of these 586 were medically inspected, such inspection involving the individual examination of 2733 passengers and 6135 persons forming the crews of such vessels; 47 cases of infectious disease were discovered. The cases of infectious disease dealt with in the port included 10 of small-pox, 3 of scarlet fever, 30 of enteric fever, 3 of diphtheria, and 10 of measles. One of the cases of diphtheria was landed at the Port Sanitary Hospital from a Norwegian ship on March 13th, and Mr. Hancock, the medical officer who examined and removed the case, caught the infection and had to be removed to hospital on the following day. His attack, however, was comparatively mild. There were 39 cases admitted to the hospital during the half year—namely, 7 of small-pox (with 1 death), 1 of scarlet fever, 2 of diphtheria, 18 of enteric fever (with 1 death), and 11 of other diseases. The disinfecting apparatus was in use on 62 occasions for the treatment of 4101 articles. Reference is made in the report to the smoke nuisance caused by tugs and passenger boats in the river. Where distinct negligence was manifest proceedings were taken against the owners, and in some cases convictions were obtained, but owing to differences of opinion among magistrates and to an appeal to quarter sessions considerable difficulty has been experienced by the sanitary committee in their efforts to repress the nuisance. With reference to overcrowding, a Danish ship is mentioned which arrived in London with 39 passengers all berthed in a space measuring 29ft. by 9ft. by 6ft. 9in., giving roughly 45 cubic feet of air space for each. The floor space (clear of bunks) measured 80 square feet. It being impossible to deal satisfactorily in this country with such a serious offence, the matter was brought to the notice of the Government of the country to which the vessel belonged. The articles of food condemned and destroyed during the half-year amounted to a considerable total.

CALENDAR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual Calendar has just been published by the Council of the College. It shows that there are 1195 Fellows on the roll of the College (as compared with 1191 last year), 1047 of whom obtained the Fellowship by examination, 17 were elected as Members of twenty years' standing under Section 5 of Cap. 15, Vict., 129 are Fellows by election, and 2 are *ad eundem* Fellows. There are 17,199 Members (against a total of 17,333 last year) and 574 Licentiates in Midwifery—the examination for this Licence having been discontinued since 1876. The Licentiates in Dental Surgery are stated to number 1283 (an increase of 97 over last year) and the Diplomates in Public Health to number 306.

During the past collegiate year only 3 candidates presented themselves in elementary physiology, all of whom passed. 415 candidates presented themselves in elementary biology, of whom 282 passed and 133 were referred. Of 435 candidates who presented themselves in chemistry, 263 passed and 172 were referred; in materia medica, of 81 candidates, 44 passed and 37 were referred; in practical pharmacy, of 281 candidates, 207 passed and 74 were referred. The proportion of the fees paid by candidates for these examinations receivable by the College amounted to £1882 13*s.*, the examiners elected by the College receiving £210. The examiners in elementary biology are appointed by the Council of the College, those in elementary physiology in conjunction with the Royal College of Physicians of London, and those in chemistry, materia medica and practical pharmacy by the Royal College of Physicians of London under the scheme for an Examining Board in England.

The examiners in anatomy and physiology for the Second Examination are appointed in conjunction with the Royal College of Physicians of London; they have conducted the Primary Examination under the Old Regulations as well as the Second Examination of the Examining Board. 639 candidates presented themselves for examination in anatomy, of whom 345 passed and 294 were referred. 638 presented themselves in physiology, 341 of whom passed and 297 were referred. The proportion of fees paid by candidates to the College for these examinations amounted to £2889 1*s.* 6*d.*, of which the examiners received £1046 14*s.* 8*d.*

The Board of Examiners in anatomy and physiology for the diploma of Fellow, elected annually by the Council of the College, held two meetings for the examinations of 181 candidates, of whom 65 passed whilst 116 were referred. The fees paid by candidates amounted to £1181 5*s.*, of which the Board of Examiners received £724.

The Court of Examiners, 10 in number, are elected by the Council from the Fellows of the College for a period of five years. They conduct the Third or Final Examination in surgery of the Examining Board in England as well as the Second or Final Examination for the diploma of Member under the Old Regulations and the Pass or Final Examination for the diploma of Fellow. During the past collegiate year the Court held two examinations for the Fellowship and four for the Membership. At the former there were 81 candidates, 42 of whom passed; 28 were referred for six months and

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11 for one year. For the Membership 781 candidates presented themselves in surgery, of whom 463 passed and 318 were referred. The fees paid by candidates for these examinations amounted to £9325 14*s.* 6*d.* and the fees paid to the Court of Examiners and the examiners in midwifery amounted to £4980 10*s.* The examiners in medicine under the scheme for an Examining Board in England are elected by the Royal College of Physicians of London. Of 709 candidates who presented themselves 464 passed and 245 were referred. The examiners in midwifery are appointed in conjunction with the Royal College of Physicians of London and have examined 893 candidates, of whom 547 passed and 346 were referred.

The Board of Examiners in dental surgery, under the Old Regulations, have held two meetings for the examination of 142 candidates, 100 of whom received the licence and 42 were referred. The fees received from candidates amounted to £1050, of which the examiners received £596 8*s.* Under the new regulations in preliminary science one examination has been held at which 2 candidates presented themselves, of whom 1 passed and 1 was referred. (This examination is identical with Part I. of the First Examination of the Examining Board in England and is conducted by the chemistry examiners appointed under the scheme.) The fees received for the examination amounted to £6 6*s.*, of which the examiners received £1 10*s.*

The examiners in public health appointed in conjunction with the Royal College of Physicians of London examined 39 candidates in Part I., 26 of whom passed and 13 were referred; in Part II., of 37 candidates 28 received their diploma and 9 were referred. The fees received by the College for both parts of the examination amounted to £180 1*s.* 6*d.* and the amount paid to the examiners to £114.

With regard to the finances of the College it appears that the income from all sources amounted to £26,613 12*s.* 5*d.*, the largest item being derived from the fees paid by candidates for the diploma of the College—viz., £16,515 1*s.* 6*d.*; the next largest being dividends on the Erasmus Wilson bequest, £4915 2*s.* 8*d.*; investments, £836 16*s.* 10*d.*; rent from chambers adjoining the College produce £750; hire of rooms, sale of questions, &c., at the Examination Hall, £683 18*s.* 2*d.*; incidental receipts at the College, £38 18*s.* 9*d.*; receipts from trust funds, £290 14*s.* 5*d.*; dividends from sinking fund for Savoy Estate, £8 2*s.* 2*d.*; fees retained for candidates, £488 5*s.*; expenses repayable by Metropolitan Asylums Board, £295 17*s.* 10*d.*; balance at Midsummer day, 1897 (including half balance of Goldsmiths' Company grant), £1790 15*s.* 1*d.*

The expenses for the year amounted to £25,406 7*s.* 9*d.*, leaving a balance at the bank and in hand at Midsummer day, 1898, of £1207 4*s.* 8*d.*, the largest item being (as in the receipts) in connexion with the examinations—viz., examiners' fees, £7673 2*s.* 8*d.*; half expenses of Examination Hall for the purposes of the examinations, £4029 3*s.* 8*d.* (this amount includes rent, rates, taxes, and insurances, which absorbs the no small amount of £2097 9*s.* 8*d.*); expenses of Fellowship and dental examinations, £400 18*s.* 1*d.*; expenses of public health examination, £36 4*s.*; half expenses of the Scientific Research Laboratories on Victoria Embankment amount to £728 19*s.* 5*d.* (this amount does not include any part of the rent, rates, taxes, insurance, fuel, or light). At the College rates, taxes, and insurance stand at £1300 6*s.* 8*d.*; extraordinary expenses—i.e., reconstructing lift to museum workrooms, College dinner, restoration of pictures, &c., £451 16*s.* 11*d*; repairs to museum, conservator's house, &c., £928 8*s.* 7*d.*; fees to members of Council, £269 17*s.*; stationery, printing, postage, &c., £380 11*s.* 4*d.*; law expenses, £393 2*s.* 11*d.*; salaries, wages, and pensions in the three departments—Museum, Library, and College, £4604 19*s.* 11*d.*; lectures, catalogues, specimens, &c., for museum, £431 10*s.* 2*d.*; purchase and binding of books, &c., for the library, £791 17*s.* 2*d.*; trust funds, £208 3*s.* 8*d.*; purchase of stock, £1293 5*s.* 5*d.*; fees returned to candidates, £294; Metropolitan Asylums Board, repayable, £240 0*s.* 2*d.*; disbursement of Goldsmiths' Research Grant, £78 8*s.*; half balance of Goldsmiths' Grant retained at the Examination Hall, £145 6*s.* 5*d.*; printing calendar, fuel, and light and miscellaneous items, £726 5*s.* 7*d.*

The Secretary's report contains an abstract of the work done by the Council and committees, the Committee of Management of the two Royal Colleges, the Research Laboratories on Victoria Embankment, also reports of meetings of Fellows and Members, elections, &c. From the annual report of the finance committee we find that the gross income of the College for the past year is £1601 less than the gross income of the previous year. As in the previous year the decrease is due to a falling off in the receipts from examinations of the combined Examining Board. Under this head there is a decrease of £50 on the first examination, of £312 on the second, of £502 on the third, and of £433 on the diploma fees paid by University candidates, a total decrease on these examinations of £1297. The amount of the receipts from examinations must not, however, be taken as an index to the number of candidates examined. There have been 65 fewer admissions to the examinations in anatomy, 61 fewer to the examination in physiology, and 42 fewer to the examination in midwifery, but there have been 24 more admissions to the examination in elementary biology, while the number of admissions to the examination in surgery is exactly the same each year. It will be seen that while the receipts on the First Examination are less the number of admissions to that examination has actually been greater. The receipts from the Fellowship examinations are £141 less and those from the dental £27 more than in the previous year. The expenditure of the College for the past year is £266 less than the previous year. The amount expended in fees to the examiners under the Combined Examining Board is only £125 less than in the previous year. As the examiners are paid a capitation fee for the number of candidates examined the small difference in the expenditure under this head for the two years shows that the large decrease in the receipts has arisen not so much from a corresponding decrease in the number of candidates as from the fact that the fees paid by them are not distributed over each year proportionately to the number of examinations for which they enter—e.g., a candidate may in one year pay the whole fee for medicine, surgery, and midwifery, being only examined in one subject that year, and may consequently in the next year be examined in the other two subjects without paying any fee. There is little difference in the expenditure at the Examination Hall and at the laboratories, that at the former being slightly less and that at the latter slightly greater than in the previous year. As regards the expenditure at the College in Lincoln's Inn-fields, there is a decrease of £45 in the special expenses of the museum and of £69 in the special expenses of the library. The expenditure on books is larger than it has been for some years, but this is more than counterbalanced by the reduction under salaries and wages. In the case of the general expenses several causes have contributed to make the total under this head an exceptionally high one. In the first place the petition of the College for exemption from payment of corporation duty has been accountable for an increase of some £360 in the law expenses of the College. Secondly, a sum of £200 has been expended upon the redecoration of the conservator's house, an outlay not likely to occur more than once in seven years. Thirdly, there has been an expenditure of £364 upon structural repairs of an extensive character to the part of the museum building abutting upon Portugal-street. In addition to these exceptional expenses the lift to the museum work-rooms has during the year been reconstructed and connected with the mains of the London Hydraulic Power Company at a cost of £260. The balance on the "income and expenditure" account amounts this year to £683, and has not been so small for some years past. It will, however, be seen that the exceptional expenses mentioned by the committee amount to £1184 and when this is borne in mind the net result of the year can hardly be considered other than satisfactory.

From the report of Dr. G. Sims Woodhead, the Director of the Research Laboratories of the two Royal Colleges, it appears that on June 3rd the number of those working or having received permission to work in the laboratories during the past year was 18.

The preparation of antitoxic serum for the treatment of cases of diphtheria in the hospitals of the Metropolitan Asylums Board has been carried out during the year and arrangements have been entered into whereby the director has been relieved of much of the routine work and much better accommodation has been obtained for the horses under treatment; so successful has the new method of preparation been that at the present time the average strength of the serum (i.e., a mixture of the sera of the horses now in use) is 375 antitoxin units per c.c.

The grant entrusted to the committee by the Goldsmiths' Company is still being administered for the furtherance of

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the antitoxin treatment of diphtheria. Special apparatus for use by Dr. Brodie, Dr. Cartwright Wood, and the Director, has been purchased, and several important results have been obtained therewith. During the year special attention has been paid to the question of the standardisation of antitoxin. As a result of a careful study of the various methods which have from time to time been recommended, first in connexion with a special committee the work of which was carried out in the laboratories and then in connexion with Professor Ehrlich at the Government testing stations in Steglitz, Berlin, the Director decided to use only Ehrlich's new method, a report of which has already appeared in THE LANCET.[1] In order to facilitate the testing of anti-diphtheria serums in this country the laboratories committee authorised the Director to make arrangements for the testing of any serum sent for examination. It is satisfactory to note that two firms have availed themselves of this privilege and that all the samples of serum sent for examination have proved to be of excellent strength and quality. In fulfilment of one of the conditions of the grant from the Goldsmiths' Company that diphtheria antitoxin should, if possible, be available for use among the poorer classes of the community, antitoxic serum has been supplied to various general and children's hospitals in London during the past year, as well as to certain medical practitioners for cases fulfilling the necessary conditions. In this way 2003 doses containing 4,267,000 units have been distributed.

THE HEALTH OFFICER'S REPORT FOR THE PORT OF BOMBAY FOR 1897.

THE annual report of the Health Officer of the Port of Bombay for the year 1897, published as an appendix to the Report of the Sanitary Commissioner with the Government of Bombay for that year, shows what a vast amount of labour and care has been taken in regard to the inspection of the shipping and persons leaving that port, more especially in connexion with the epidemic prevalence of plague. To begin with, many reports have been written on the Bombay plague, but so far it has not been proved conclusively whence Bombay received the disease. Some say it was imported from China, while others affirm that it came from the slopes of the Himalayas. The acting health officer of the port, Major J. Crimmin, V.C., pertinently remarks that it seems to have escaped notice that plague is endemic in the Persian Gulf and the Red Sea coast—places much nearer home than China—and that quarantine is imposed by Egypt and Aden almost yearly against that part of the Red Sea coast between Leith and Lohaya and known as Assyr. On reference to the records it will be found that plague was epidemic in Assyr in October, 1893, July, 1894, August, 1895, and October, 1896.

The organisation for the medical inspection of all vessels and persons leaving Bombay by sea has been already described in detail in a special report by Lieutenant-Colonel MacCartie, M.B. Dub., C.I.E., in an appendix to the official account of the plague administration in the Bombay Presidency for 1897, and the acting health officer draws upon this document in his brief account of the harbour operations. As indicative of the extent of these inspections and the enormous amount of labour entailed it may be stated that the total combined results of the inward and outward inspections as well as those in the harbour show altogether that 72,752 vessels of all sorts were inspected, 1,313,117 seamen and passengers were examined and 169 cases of plague were discovered.

As regards, however, the outward inspections in connexion with plague it should be mentioned that during the earlier part of the epidemic and up to Feb. 6th, 1897, only vessels and persons bound for European and other quarantine ports were inspected. As an exodus of the plague-stricken population of the city had set in Government decided to have an examination of every vessel and native craft as well as of every crew and passenger leaving Bombay by sea for anywhere. These wholesale inspections commenced on Feb. 6th. It is, of course, impossible to gauge with any accuracy what is the exact value to be attached to any system of medical inspection as a preventative to the spread of disease. It cannot discover the disease in its incubating stage, but it can remove all suspicious cases from a vessel, and this appears to have been done. That the work was onerous enough appears from the fact that upwards of 40,000 vessels, including native craft, were inspected and a total of over 700,000 outward bound seamen and passengers were examined. The inspection had to be of a rigid and very thorough kind, the objects aimed at being the prevention of the spread of plague by sea to other Indian ports, to ports outside India, and above all to Europe, with its incalculable effects on Indian commerce.

Too much publicity cannot be claimed for the efforts made in Bombay to confine the plague within its own borders and to prevent any plague export. The description given by the Indian delegate at the Venice Convention of the searching nature of the measures followed out was received with "satisfaction mingled with incredulity"; but the description was absolutely correct, and a medical officer of the Italian Government who had been sent to Bombay to report on the measures taken there expressed, we are told, his surprise on the evidence of his own eyes at the completeness of the inspection system pursued. It may be added that in all cases where plague developed among people who had been rejected from a ship a telegram was sent to the next port of arrival warning the authorities there that a case of plague had been removed from the vessel. The two ocean-going steamers mentioned as plague-infected were the s.s. *Pekin*, which left Bombay with 1045 pilgrims for Jeddah on Dec. 28th, 1896, and the hired Government transport s.s. *Dilvara*, which left Bombay for Southampton on March 10th with 172 crew and 1063 passengers. The pilgrims in the *Pekin* had been in Bombay and living for weeks in a plague-infected locality, and all things considered it is wonderful that more cases did not occur.

No one who knows anything of the hard and monotonous and often nauseating drudgery connected with such inspections can fail to appreciate the amount and disagreeable nature of the work which fell on the medical staff and establishment of the port, and they are to be congratulated on the ability, tact, and success with which it was performed. We are compelled to pass over a great portion of Major Crimmin's narrative and details. It must suffice to say that, in our opinion, it is an excellent and interesting document.

MEDICAL UNION IN EAST LONDON.

THE East Suburban Medical Protection Society, Limited, have held their first general meeting since the registration and legal constitution of this newly formed medical union. The members assembled at the West Ham Hospital on Oct. 6th and included representatives from Leytonstone, West am, Tidal Basin, Romford-road, Walthamstow, Stepney, Ilford, Forest Gate, Barking-road, Leyton, Custom House, Plaistow, Romford, Dalston, Bow, &c.

The President, Dr. Frederick Smith, senior assistant physician at the London Hospital, occupied the chair. After the minutes of the first statutory meeting had been read and confirmed the quarterly report of the Executive Council was presented. It showed that four council meetings had been held during the quarter and that the scheme for debt collecting had been practically applied to the material benefit of several members of the society. In regard to the Plaistow Maternity Home, the position of the society in relation with this institution had been the subject of a carefully-prepared report which showed that the organised members of the profession proposed two reforms. First, the abolition of all maternity fees, and, secondly, that the medical profession should be adequately represented upon the governing body of the maternity. It was further explained that solicitors and standing counsel had been appointed to act for the society in all matters for which legal aid and advice were required. The chairman commented at length on this report and together with the treasurer's report it was unanimously approved by the meeting. The chairman then referred in grateful terms to the aid the society had obtained from THE LANCET and spoke in complimentary terms of the energy

[1] THE LANCET, Oct. 23rd, 1897, p. 1071

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and enterprise shown in the endeavour to collect in all parts of the country useful evidence as to the position of the medical profession.

THE MEDICAL SCHOOLS.

London Hospital.—The annual dinner of the old students of the London Hospital was held at the Medical College Library on Monday evening last, when there was a large attendance under the chairmanship of Mr. C. W. Mansell Moullin. After the usual toasts Mr. Moullin proposed the health of the London Hospital and its medical school, and in a few eloquent words spoke of the great improvements which are being at the present time carried out at this great institution of the East-end. On behalf of the House Committee of the hospital Mr. W. Douro Hoare (chairman of the College Board) replied and explained to those assembled that the first work to be undertaken would be the rebuilding of the operating theatres and the rearrangement of the two wards in the centre block. This work will be begun as soon as ever the temporary wards for 96 beds—which are being erected in the garden—are completed. Plans for these new theatres have been most carefully developed, and as no expense will be spared the most perfect arrangement of theatres possible is aimed at. Mr. Hoare concluded with a few cordial remarks on the pleasant relations existing between the House Committee and the medical staff of the London Hospital. On behalf of the medical staff Dr. Stephen Mackenzie (senior physician) replied and expressed the obligation under which the staff considered themselves to be to the governors of the hospital for the great liberality with which it had been decided to improve the hospital and to give scope for the teaching for which there is such abundant and excellent clinical material. Dr. Sansom proposed the health of the chairman, who suitably replied. Amongst those who were present were Mr. Carr-Gomm (a former chairman of the House Committee), Mr. Brudenell Carter, Mr. Hurry Fenwick, Dr. Herman, and other members of the staff and of the House Committee.

St. Bartholomew's Hospital and College.—The entrance scholarships have been awarded as follows:—Junior Scholarship in Chemistry, Physics, and Biology (value £150): C. C. Robinson and J. Burfield (equal). Senior Scholarship in Biology and Physiology (value £75): L. J. Picton. Preliminary Scientific Exhibition in Chemistry, Physics, and Biology (value £50): H. F. Forster. Jeaffreson Exhibition in Latin, Mathematics, &c.: T. Jefferson Faulder. Shuter Scholarship in Anatomy, Physiology, and Pharmaceutical Chemistry (value £50): F. C. Shrubsall.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Durham County Sanitary District.—Dr. Eustace Hill has now the satisfaction of being able to report that all the sanitary authorities throughout the county have adopted the Infectious Diseases Notification Act and we congratulate him on the success of his efforts. The estimated population of the county at the middle of 1897 was 786,400 and the general death-rate was 16·8 per 1000. The death-rate for the six boroughs was, it is of interest to note, considerably lower than that of the other urban districts in the county. There was a marked decrease on former years in the death-rate from zymotic diseases, and certainly one of the most hopeful signs for the future is the fact that there has been a considerable reduction in the mortality from enteric fever. Durham, as our readers are probably aware, has for many years enjoyed an unenviable notoriety for its enteric fever death-rate. Dr. Hill regards the decrease recorded as in the main due to the abolition of a large number of privy middens and the carrying out of other improvements making for the purification of polluted soil. The only isolation hospital erected in the county during 1897 was a "temporary" iron structure, but the Local Government Board constituted a joint hospital board, and in other instances sites have been procured. Important progress was made during the year in the matter of water-supply and purification in certain parts of the county, and much improvement was effected in the housing of the working-class population. But little was done in 1897 towards the prevention of river pollution, and Dr. Hill hopes that, as a result of the present Commission on Sewage Disposal Methods, the Local Government Board will be able to dispense with the use of land in cases where biological methods are to be carried out. With regard to dairies, cowsheds, and milkshops Dr. Hill reports that absolutely no precautions are taken in the county to guard against the consumption of milk from tuberculous cows, and he trusts, as do we all, that the recommendations of the recent Royal Commission on the subject will soon be embodied in a Government Bill. The inspection of factories and workshops seems to be a dead letter in the county of Durham, but in the direction of new by-laws there has of late been much activity manifest.

Essex County District.—The population of this county is increasing very rapidly and it was estimated to the middle of 1897 at close upon 700,000. Dr. Thresh thinks that at the next census Essex may be found to have developed at a greater rate than any other county in the country. Much attention was given during 1897 to the important question of water-supply in the several districts of the county, chemical and bacteriological examinations being made more frequently than heretofore. We are glad to see, too, that in their zeal to have the water tested many of the sanitary authorities have not overlooked the necessity of examining the areas or localities from which the supplies are derived. Dr. Thresh is evidently getting somewhat anxious as to the future water-supply of the county. The London clay, which in most parts of the county overlies the chalk, is, Dr. Thresh tells us, being pierced in all directions by deep wells, and he anticipates that this will soon result in a considerable and permanent lowering of the water level. When this is brought about there is danger, he thinks, that the character of the deep well water hereabouts may be materially altered by its being impregnated with sea water through the agency of the outcrops of chalk under the Thames and perhaps in the German Ocean. The water at present yielded by the deep wells varies materially in character in different parts of the county. On the north, towards the outcrop, it is hard and a characteristic chalk water. As, however, the distance from the outcrop increases the water becomes soft and contains much salt and carbonate of soda. Near the coast and tidal river some of the deep wells yield brackish water. Dr. Thresh is carefully pursuing this interesting subject by making analyses of water from the chalk wells in the county and collecting sections showing the thickness of the overlying ground and London clay in the several parts of the county.

St. Pancras Sanitary District.—Dr. J. F. J. Sykes discusses in his annual report for 1897 the question as to whether or not patients suffering from diphtheria and enteric fever should be admitted into the general hospitals—a practice which still obtains in some London hospitals. With regard to diphtheria there is certainly, as Dr. Sykes remarks, a decided objection to treating cases of this disease in the general wards of a general hospital and, assuming that such cases are admitted at all, they should be treated in special isolation wards. As to enteric fever, however, Dr. Sykes thinks that there is a "considerable amount of leading opinion that cases of this disease should be treated in the general wards of a general hospital." We should hardly be prepared to go all the way with Dr. Sykes in this last statement, although there are certainly still many who believe that enteric fever may be treated without danger to other patients suffering from a different disease. Whatever may be the correct method of expressing the state of feeling existing upon this subject we must express our agreement with Dr. Sykes that the treatment of enteric fever side by side with cases of other diseases is, to say the least of it, undesirable, and this is much more the case when the same nurse attends enteric fever patients and others at the same time. Certainly, if this practice is carried on the importance of rigid regulations and of the strict enforcement thereof cannot, as Dr. Sykes observes, be too much insisted upon.

The Isle of Wight Rural District.—The most pressing necessity—in a sanitary sense—of this district, one of considerable area and of no little sanitary importance to the

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large number of visitors who annually visit it, is isolation accommodation. We wonder if visitors thoroughly comprehend that in the greater part of this island there is no proper isolation provision wherein to isolate a case of scarlet fever or diphtheria which may perchance occur in a house or hotel in which they may be lodging. The rural district council are said by Dr. Joseph Groves, in his very complete report on this district, to have for the last twelve years regarded the provision of a hospital as a sanitary necessity, but, as far as we are able to gather, the efforts which they have made to carry into effect their conscientious scruples would seem to have been of a somewhat lukewarm nature. It is by no means clear that they are not glad to be possessed of some excuse to leave things in their present unsatisfactory state, and their medical officer of health may understand the neutral attitude of the members when he remarks, "After the expenditure of infinite labour and time through a long series of years you have declined as a sanitary authority solemnly charged with serious obligations to advance in this matter along the path of progress upon which you have entered." Clearly this district council prefer to waste time rather than to make a judicious investment; but we trust the time is coming when visitors before they take their children to a health resort, be it an urban or a rural one, will ascertain beforehand what manner of isolation accommodation exists in the locality.

Berkshire Combined Sanitary District.—Dr. W. T. G. Woodford in reporting upon this large area, which embraces 17 sanitary districts, has been at pains to contrast the mortality for the five years 1893–97 from the chief zymotic diseases, notifiable and non-notifiable, as illustrated by the 15 districts accepting notification, and the 2 districts, Maidenhead and Newbury urban, which reject it. The results are at least very suggestive. For the period in question the mean yearly death-rates from the chief zymotic diseases and from erysipelas were for the notifying districts 9·96 per 10,000, as against 22·22 per 10,000 for the non-notifying districts. It is true that the comparison is between 2 urban districts on the one side as against 13 rural and 2 urban districts on the other. But Dr. Woodford states that the general sanitary condition of the non-notifying districts is not below that of the rest of the combined district and he is inclined to regard the discrepancy as due to the control exercised over infectious diseases in the one case and the absence of such control in the other. The fact, too, that the difference is much more marked in the case of notifiable diseases than in non-notifiable diseases is in support of this view.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6532 births and 4408 deaths were registered during the week ending Oct. 8th. The annual rate of mortality in these towns, which had declined from 24·6 to 21·8 per 1000 in the four preceding weeks, further fell last week to 20·5. In London the rate was 18·8 per 1000, while it averaged 21·7 in the thirty-two provincial towns. The lowest rates in these towns were 12·2 in Croydon, 12·6 in Cardiff, 14·9 in Brighton, and 15·6 in Portsmouth; the highest rates were 27·5 in Norwich, 27·6 in Salford, 29·0 in Liverpool, and 30·4 in Sunderland. The 4408 deaths included 774 which were referred to the principal zymotic diseases, against 1455 and 1118 in the two preceding weeks; of these, 530 resulted from diarrhœa, 70 from diphtheria, 65 from "fever" (principally enteric), 43 from whooping-cough, 41 from measles, and 25 from scarlet fever. The lowest death-rates from these diseases were recorded in Brighton, Derby, Birkenhead, and Halifax; while they caused the highest rates in Norwich, Swansea, Sunderland, and Gateshead. The greatest mortality from measles occurred in Norwich and Gateshead; from "fever" in Leeds, Newcastle-upon-Tyne, and Sunderland; and from diarrhœa in Blackburn, Salford, Burnley, Sunderland, Hull, Gateshead, and Norwich. The mortality from scarlet fever and from whooping-cough showed no marked excess in any of the large towns. The 70 deaths from diphtheria included 34 in London, 5 in West Ham, 5 in Swansea, 4 in Leeds, 4 in Sheffield, 3 in Portsmouth, 3 in Birmingham, and 3 in Leicester. No fatal case of small-pox was registered during the week under notice either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 2606 on Saturday last, the 8th inst. against 2319, 2353, and 2459 at the end of the three preceding weeks; 358 new cases were admitted during the week, against 242, 288, and 300 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 157 and 200 in the two preceding weeks, further rose to 226 last week, and were 7 above the corrected average. The causes of 42, or 1·0 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Salford, Bradford, Hull, Newcastle-upon-Tyne, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·7 and 19·1 per 1000 in the two preceding weeks, rose again to 20·6 during the week ending Oct. 8th, and slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 18·7 in Perth and 19·6 in Aberdeen and in Greenock to 22·7 in Paisley and 24·3 in Dundee. The 621 deaths in these towns included 62 which were referred to diarrhœa, 19 to whooping-cough, 14 to scarlet fever, 14 to "fever," 7 to diphtheria, and 7 to measles. In all, 123 deaths resulted from these principal zymotic diseases, against 156 and 127 in the two preceding weeks. These 123 deaths were equal to an annual rate of 4·1 per 1000, which was 0·5 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had declined from 110 to 75 in the three preceding weeks, further fell to 62 last week, of which 22 occurred in Glasgow, 16 in Dundee, and 9 in Edinburgh. The 19 deaths from whooping-cough exceeded by 2 the number in the preceding week, and included 10 in Glasgow and 6 in Edinburgh. The fatal cases of scarlet fever, which had been 3, 6, and 11 in the three preceding weeks, further rose to 14 last week, of which 9 occurred in Glasgow, 2 in Dundee, and 2 in Aberdeen. The 14 deaths referred to different forms of "fever" corresponded with the number recorded in the preceding week, and included 10 in Glasgow and 4 in Paisley. Of the 7 fatal cases of diphtheria 4 occurred in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 85 and 87 in the two preceding weeks, further rose to 105 last week, but were 57 below the number in the corresponding period of last year. The causes of 23, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the four preceding weeks from 30·7 to 24·6 per 1000, further fell to 23·1 during the week ending Oct. 8th. During the thirteen weeks of last quarter the death-rate in the city averaged 23·1 per 1000, the rate during the same period being 19·4 in London and 18·7 in Edinburgh. The 155 deaths registered in Dublin during the week under notice showed a decline of 10 from the number in the preceding week, and included 19 which were referred to the principal zymotic diseases, against 32 and 38 in the two preceding weeks; of these, 14 resulted from diarrhœa, 3 from whooping-cough, 2 from "fever," and not one either from small-pox, measles, scarlet-fever, or diphtheria. These 19 deaths were equal to an annual rate of 2·8 per 1000, the zymotic death-rate during the same period being 2·4 in London and 2·8 in Edinburgh. The deaths from diarrhœa, which had been 20 and 27 in the two preceding weeks, declined again to 14 last week. The 3 fatal cases of whooping-cough were below the number recorded in any recent week. The deaths referred to different forms of "fever," which had been 6 and 5 in the two preceding weeks, further declined to 2 last week. The 155 deaths in Dublin last week included 46 of infants under one year of age and 34 of persons aged upwards of sixty years;

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ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING SEPTEMBER, 1898.

(Specially compiled for THE LANCET.)

Sanitary Area.	Estimated population in the middle of 1898.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	2	1362	980	—	293	4	11	408	12	3072	8·9	—	46	30	120	125	—	40	—	1417	1778	5·1	7249	21·0	303
West Districts.																										
Paddington	127,480	—	18	20	—	9	1	—	12	—	60	6·1	—	1	—	5	2	—	—	—	31	39	4·0	170	17·4	330
Kensington	172,174	—	39	20	—	14	—	—	13	1	87	6·6	—	—	—	1	3	—	—	—	31	35	2·6	196	14·8	272
Hammersmith	107,370	—	40	23	—	7	-	—	8	—	78	9·5	—	1	1	2	1	—	2	—	40	47	5·7	188	22·8	409
Fulham	125,275	—	42	29	—	—	—	—	6	—	77	8·0	—	1	1	2	1	—	—	—	54	59	6·1	198	20·6	270
Chelsea	96,713	—	26	16	—	4	—	—	6	—	52	7·0	—	—	3	1	2	—	1	—	25	32	4·3	146	19·7	345
St. George Hanover-square	80,608	—	18	11	—	—	—	1	3	—	33	5·3	—	—	—	2	—	—	1	—	9	12	1·9	79	12·8	154
Westminster	52,574	—	9	8	—	6	—	1	1	—	25	6·2	—	—	—	1	2	—	1	—	9	13	3·2	84	20·8	275
St. James Westminster	22,200	—	3	2	—	—	—	—	2	—	7	4·1	—	—	—	—	—	—	—	—	3	3	1·8	27	15·9	219
North Districts.																										
Marylebone	140,483	—	27	33	—	4	1	1	17	—	83	7·7	—	—	1	6	4	—	1	—	19	31	2·9	182	16·9	184
Hampstead	78,755	—	25	7	—	7	—	—	—	—	39	6·5	—	—	—	—	—	—	—	—	11	11	1·8	74	12·2	304
St. Pancras	243,416	—	92	31	—	20	—	1	25	2	171	9·2	—	4	3	5	11	—	4	—	69	96	5·1	439	23·5	320
Islington	344,616	—	128	44	—	26	—	—	23	—	221	8·4	—	5	3	6	10	—	2	—	117	143	5·4	543	20·5	309
Stoke Newington	34,660	—	23	1	—	1	—	—	3	—	28	10·5	—	—	—	—	—	—	1	—	7	8	3·0	38	14·3	218
Hackney	219,630	—	85	50	—	19	1	1	17	—	173	10·3	—	2	—	4	3	—	2	—	50	61	3·6	294	17·5	264
Central Districts.																										
St. Giles	37,519	—	3	3	—	1	—	—	10	—	17	5·9	—	—	—	—	1	—	—	—	10	11	3·8	62	21·5	238
St. Martin-in-the-Fields	12,424	—	—	—	—	1	—	—	1	—	2	2·1	—	—	—	—	—	—	—	—	1	1	1·0	12	12·6	500
Strand	23,284	—	7	2	—	2	—	—	—	—	11	6·2	—	—	1	—	—	—	—	—	4	5	2·8	41	23·0	292
Holborn	30,056	—	10	22	—	1	—	—	4	—	37	16·0	—	—	—	7	1	—	—	—	6	14	6·1	66	28·6	286
Clerkenwell	66,120	—	17	20	—	3	—	—	6	—	46	9·1	—	2	1	3	—	—	2	—	33	41	8·1	135	26·6	376
St. Luke	41,076	—	15	20	—	3	—	—	5	—	43	13·6	—	—	—	2	1	—	—	—	18	21	6·7	79	25·1	206
City of London	29,088	—	8	2	—	1	—	—	—	—	11	4·9	—	—	—	1	—	—	1	—	3	5	2·2	36	16·1	282
East Districts.																										
Shoreditch	121,485	—	42	25	—	11	—	1	18	—	97	10·4	—	4	—	3	—	—	4	—	56	67	7·2	254	27·3	396
Bethnal Green	129,027	—	32	16	—	11	—	—	34	—	93	9·4	—	10	—	—	—	—	1	—	44	55	5·6	256	25·8	322
Whitechapel	80,559	1	22	13	—	5	—	—	13	—	54	8·7	—	3	1	1	—	—	1	—	25	31	5·0	145	23·5	318
St. George-in-the-East	48,241	—	5	5	—	3	—	—	7	—	20	5·4	—	—	—	—	3	—	—	—	16	19	5·1	113	30·5	310
Limehouse	58,661	—	13	10	—	5	—	1	11	—	40	8·9	—	1	—	1	2	—	—	—	30	34	7·6	121	26·9	329
Mile End Old Town	112,528	—	27	46	—	6	—	—	22	—	101	11·7	—	3	—	9	1	—	2	—	49	64	7·4	198	22·9	237
Poplar	170,220	—	36	43	—	17	—	—	16	2	114	8·7	—	2	1	9	2	—	—	—	71	85	6·5	324	24·8	360
South Districts.																										
St. Saviour Southwark	24,562	—	11	4	—	1	—	—	2	—	18	9·6	—	—	—	—	1	—	1	—	12	14	7·4	55	29·2	472
St. George Southwark	60,466	—	31	30	—	3	—	—	6	1	71	15·3	—	—	1	2	2	—	—	—	29	34	7·3	143	30·8	386
Newington	123,183	—	73	44	—	18	—	—	12	—	147	15·7	—	—	2	8	9	—	1	—	45	65	6·9	210	22·2	261
St. Olave Southwark	11,288	—	6	1	—	—	—	—	—	—	7	8·1	—	—	—	—	—	—	—	—	3	3	3·5	13	15·0	167
Bermondsey	85,738	—	60	30	—	3	—	—	9	—	102	15·5	—	—	5	8	3	—	1	—	26	43	6·5	151	23·0	229
Rotherhithe	40,849	—	6	1	—	1	—	—	6	—	14	4·5	—	—	—	—	—	—	—	—	7	7	2·2	67	21·4	374
Lambeth	304,073	—	74	84	—	9	—	—	23	4	194	8·3	—	1	—	11	11	—	1	—	91	115	4·9	508	21·8	287
Battersea	171,921	—	46	63	—	9	—	—	13	—	131	9·9	—	—	—	9	6	—	—	—	36	51	3·9	225	17·1	231
Wandsworth	202,526	1	33	49	—	10	—	—	8	—	101	6·5	—	3	—	6	9	—	1	—	49	63	4·4	236	15·2	259
Camberwell	261,189	—	94	63	—	8	—	2	11	—	178	8·9	—	1	1	1	15	—	2	—	86	106	5·3	405	20·2	314
Greenwich	180,441	—	35	44	—	27	1	—	18	—	125	9·0	—	1	3	3	8	—	6	—	93	114	8·2	369	26·7	454
Lewisham (excluding Penge)	88,562	—	18	11	—	4	—	1	5	—	39	5·7	—	1	1	—	5	—	—	—	36	43	6·3	144	21·2	352
Woolwich...	41,478	—	17	7	—	2	—	—	3	—	29	9·1	—	—	—	—	4	—	1	—	24	29	9·1	85	26·7	340
Lee	39,717	—	14	20	—	2	—	—	4	—	40	13·1	—	—	1	1	1	—	—	—	11	14	4·6	45	14·8	318
Plumstead	62,531	—	32	7	—	3	—	1	5	2	50	10·4	—	—	—	—	1	—	—	—	28	29	6·0	93	19·4	291
Port of London	—	—	—	—	—	6	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 15 cases of membranous croup.

† Including deaths from membranous croup.

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the deaths of infants showed a slight increase, while those of elderly persons showed a decline from the number in the preceding week. Six inquest cases and 3 deaths from violence were registered; and 40, or more than a fourth, of the deaths occurred in public institutions. The causes of 10, or more than 6 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1898.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during September in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis last month it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 8·9 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 7·1, 8·1, and 6·5 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in St. George Hanover-square, St. James Westminster, St. Martin-in-the-Fields, City of London, St. George-in-the-East, Rotherhithe, and Lewisham; while they showed the largest excess in Stoke Newington, Holborn, St. Luke, Mile End Old Town, St. George Southwark, Newington, and Bermondsey. Two cases of small-pox were notified in London during September, against 6, 2, and 5 in the three preceding months; of these, 1 occurred in Whitechapel and 1 in Wandsworth sanitary areas. One case of small-pox was admitted into the Metropolitan Asylum Hospitals during September, but none remained under treatment at the end of the month. The prevalence of scarlet fever in London showed a marked increase upon that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Stoke Newington, Hackney, St. Saviour Southwark, St. George Southwark, Newington, St. Olave Southwark, Bermondsey, Woolwich, and Plumstead. The Metropolitan Asylum Hospitals contained 2425 scarlet fever patients at the end of September, against 2146, 2255, and 2207 at the end of the three preceding months; the weekly admissions averaged 270, against 208, 242, and 202 in the three preceding months. The prevalence of diphtheria in London during September showed a considerable increase upon that recorded in the preceding month; this disease was proportionally most prevalent in Holborn, St. Luke, Mile End Old Town, St. George Southwark, Newington, Battersea, and Lee sanitary areas. There were 1024 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of September, against 971, 1014, and 865 at the end of the three preceding months; the weekly admissions averaged 163, against 134, 146, and 107 in the three preceding months. The prevalence of enteric fever in London showed a further increase upon that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in Westminster, Hackney, Shoreditch, Poplar, Newington, and Greenwich. The Metropolitan Asylum Hospitals contained 155 enteric fever patients at the end of September, against 53, 87, and 118 at the end of the three preceding months; the weekly admissions averaged 28, against 11, 16, and 21 in the three preceding months. Erysipelas was proportionally most prevalent in St. Giles, Bethnal Green, Whitechapel, Limehouse, and Mile End Old Town sanitary areas. The 11 cases of puerperal fever notified in London during September included 2 in Camberwell sanitary area.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, Oct. 1st, the deaths of 7249 persons belonging to London were registered, equal to an annual rate of 21·0 per 1000, against 14·6, 14·7, and 20·7 in the three preceding months. The lowest death-rates in the various sanitary areas were 12·2 in Hampstead, 12·6 in St. Martin-in-the-Fields, 12·8 in St. George Hanover-square, 14·3 in Stoke Newington, 14·8 in Kensington and in Lee, and 15·0 in St. Olave Southwark; the highest rates were 26·7 in Woolwich, 26·9 in Limehouse, 27·3 in Shoreditch, 28·6 in Holborn, 29·2 in St. Saviour Southwark, 30·5 in St. George-in-the-East, and 30·8 in St. George Southwark. During the four weeks of September 1778 deaths were referred to the principal zymotic diseases in London; of these, 46 resulted from measles, 30 from scarlet fever, 120 from diphtheria, 125 from whooping-cough, 40 from enteric fever, 1417 from diarrhœa, and not one death from small-pox, typhus, or any ill-defined form of continued fever. These 1778 deaths were equal to an annual rate of 5·1 per 1000; among the various sanitary areas the lowest zymotic death-rates were recorded in St. George Hanover-square, St. James Westminster, Hampstead, St. Martin-in-the-Fields, City of London, and Rotherhithe; and the highest rates in Clerkenwell, Limehouse, Mile End Old Town, St. Saviour Southwark, St. George Southwark, Greenwich, and Woolwich. The 46 fatal cases of measles were 33 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Bethnal Green and Whitechapel sanitary areas. The 30 deaths referred to scarlet fever were less than half the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Chelsea and Bermondsey. The 120 fatal cases of diphtheria were 58 below the corrected average number; this disease showed the highest proportional fatality in Holborn, Clerkenwell, Mile End Old Town, Poplar, Newington, Bermondsey, and Battersea sanitary areas. The 125 deaths from whooping-cough slightly exceeded the corrected average number; among the various sanitary areas this disease was proportionally most fatal in St. George-in-the-East, Newington, Lewisham, and Woolwich. The 40 fatal cases of enteric fever were 21 below the corrected average number; this disease showed the highest proportional fatality in Clerkenwell, Shoreditch, and Greenwich sanitary areas. The 1417 deaths referred to diarrhœa were as many as 1062 above the corrected average number; this disease was proportionally most fatal in Clerkenwell, Shoreditch, Limehouse, St. Saviour Southwark, St. George Southwark, Greenwich, and Woolwich sanitary areas. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was just double the corrected average, owing to the excessive fatality of summer diarrhœa.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to registered births, was equal to 303 per 1000, which, owing to the continued prevalence of summer diarrhœa, very considerably exceeded the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in St. George Hanover-square, St. James Westminster, Marylebone, Stoke Newington, St. Luke, and St. Olave Southwark; and the highest rates in Hammersmith, St. Martin-in-the-fields, Clerkenwell, Shoreditch, St. Saviour Southwark, St. George Southwark, and Greenwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced: — Staff Surgeons: William Spry to the *Impregnable;* J. W. Slaughter to the *Cleopatra;* and William Tait to the *Mars.* Surgeon Alfred H. L. Cox to the *Cambridge.*

ROYAL ARMY MEDICAL CORPS.

The following gentlemen have been nominated for entrance to the Army Medical School at Netley as surgeons on probation from the Royal Army Medical Corps:—F. Ashe, Owens College, Manchester; H. E. Haynes, St. Thomas's; L. Humphrey, Guy's Hospital; G. J. A. Ormsby, Dublin University; H. D. Packer, Guy's Hospital; H. K. Palmer, St. Bartholomew's; R. S. Rodger, Edinburgh University; N. J. C. Rutherford, Trinity College, Dublin; A. O. B. Wroughton, St. Bartholomew's; Mr. T. J. Jordan and Mr. W. W. Scarlett, Royal College of Surgeons in Ireland.

Surgeon-General John B. Hamilton is placed on retired pay. Colonel William D. Wilson to be Surgeon-General, vice J. B. Hamilton. Lieutenant-Colonel Alexander Anderson is placed on retired pay.

Major L. Haywood has joined at Mullingar for duty. Major J. C. Culling is posted to the Station Hospital, Western Heights, for duty. Lieutenant-Colonel A. Kirwan, retired pay, A.M.S., is appointed to the medical charge of the Leicestershire Regimental District. Lieutenant-Colonel

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R. Exham is appointed Principal Medical Officer Western District, vice Surgeon-General J. B. Hamilton, retired. Surgeon-General W. Taylor, late P.M.O. of the Khartoum expedition, will succeed Surgeon-General A. A. Gore as P.M.O. of the British Forces at Army Headquarters in India.

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel Carr-Calthrop, Bengal Establishment, is granted the temporary rank of Colonel while officiating as Principal Medical Officer and Sanitary Commissioner, Assam, vice Colonel A. Stephen, appointed officiating Inspector-General, Civil Hospitals, Punjab. The services of Major Bannerman (Madras) are replaced at the disposal of the Government of Madras.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain E. W. St. V. Ryan to be Surgeon-Major.

VOLUNTEER CORPS.

Artillery: 2nd East Riding of Yorkshire (Western Division, Royal Artillery): Thomas Cameron to be Surgeon-Lieutenant.

THE LATE SPANISH-AMERICAN WAR.

The indictment which "an eye-witness" brings against the Washington War Office authorities in his second article in the *Saturday Review* of Oct. 8th is anything but pleasant reading. If all which he has to say regarding the sufferings of the sick and wounded at Santiago, owing to the want of medical attendance in Cuba, the absence of any prompt aid to the wounded, the insufficiency and distance of the hospital accommodation and the inadequacy of the hospital stores and supplies be correct, there must have been grave mismanagement somewhere on the part of those responsible for the medical service. We must now, however, await the result of the official inquiry into the subject. Making every allowance for the state of unpreparedness which existed, the mixed nature of the force—composed, however, as it certainly was, of fine fighting material—and the hurried nature of the expedition altogether, there still seems to have been a lamentable want of administrative and organising capacity. That war was almost certain must have been foreseen, and the nature of the service, the climate, and the topographical features and diseases of the country were known, therefore the want of any proper provision seems inexplicable under the circumstances. It is to be feared that political considerations had too much influence and led to jobbery on the part of contractors and to wrong appointments being made. At any rate, a writer in *Scribner's Magazine* for this month does not hesitate to attack General Shafter's conduct and generalship during the San Juan campaign. In another column will be found an extract from an editorial article in the *Philadelphia Polyclinic* supporting the Medical Corps of the United States army.

We notice in a telegram from Manila of Oct. 8th that there has been a small but sharp outbreak of small-pox among the American troops there, 14 cases and 6 deaths having been returned in the course of a few days. That scourge of all modern armies on field service, typhoid fever, is also prevailing, 8 deaths therefrom having been reported.

THE LATE CAMPAIGN IN THE SOUDAN.

As might have been confidently expected, and was indeed foreseen, the troops returning from the Soudan to Lower Egypt and elsewhere have begun to harvest the results of the sickness sown and contracted during their late campaign. The medical service may, however, fairly congratulate itself on the favourable results, for the loss of life from sickness has so far been much less than might have been expected; still, it always happens, as we have already said, that sickness and mortality follow in the wake of a campaign like that lately conducted on the Upper Nile. There have been a number of cases of enteric fever among the British troops returning from Atbara and Omdurman, some of which have been fatal, but the number of these has been much exaggerated. If we may judge from the appearance of those officers and men we have seen, the heat-exposure, strain, and fatigue have told upon them, for they look what is termed rather "drawn." Colonel Young, Commissioner of the National Aid Society, in addition to the aid which the society has afforded in the way of Nile transport for the sick and wounded, has presented the Sirdar with £300 for the benefit of the sick and wounded among the Egyptian soldiers engaged in the Soudan campaign, and a further sum of £200 for the purchase of articles urgently needed for the treatment of the Dervish wounded now under medical treatment at Omdurman.

THE INDIAN MEDICAL SERVICE.

The annual medical service dinner took place at the United Service Club, Simla, on Sept. 19th, Surgeon-General Harvey, C.B., D.S.O., presiding. The President made an excellent as well as a sensible and inspiriting speech in proposing prosperity to the service. During the last four years the Indian Medical Service had been severely tried by the exigencies of famine, plague, and war, but the service always rose to its duty and was always true to itself. There was no evidence of decadence—quite the contrary. In the frontier operations an immense amount of admirable work was done. The names of Young, Hugo, Fisher, and Selby, said the chairman, might well be bracketed with those of Crimmin and Whitchurch. In addition to those who had distinguished themselves at the front many officers had struggled with plague and famine and some of them had lost their lives in doing their duty. We may add that the Royal Warrant conferring the new titles on officers of the Indian Medical Service has reached Simla although not yet officially published.

DEATHS IN THE SERVICES.

Staff Surgeon Octavius Stephens Fisher, R.N., at South Queensferry, N.B., in his thirty-sixth year. He was appointed Surgeon in the Navy in 1885, and promoted Staff Surgeon in 1897.

Colonel Randolph Caldecott, I.M.S., Bombay, on Sept. 29th, aged fifty-one years. He entered the service in 1869, was promoted Surgeon in 1873, Surgeon-Major in 1891, Surgeon-Major (ranking as Lieutenant-Colonel) in 1889, Brigade-Surgeon in 1895, and Surgeon-Colonel in 1897.

The *Pioneer Mail* for Sept. 23rd has the following items of intelligence regarding the movements of officers in the Medical Services serving in India:—Brigade-Surgeon-Lieutenant-Colonel J. Young, Indian Medical Service, has been appointed Principal Medical Officer, Malakand Field Force, *vice* Brigade-Surgeon-Lieutenant-Colonel W. J. Charlton. Surgeon-Colonel W. P. Warburton, Inspector-General of Civil Hospitals, North-West Provinces and Oudh, goes on furlough. Surgeon-Colonel Hall, Inspector-General of Jails, will officiate, and Surgeon-Major MacTaggart will act as Inspector-General of Jails. Brigade-Surgeon-Lieutenant-Colonel J. Moran, I.M.S., retires from the service this month (October). Lieutenant-Colonel A. Anderson, R.A.M.C., officiates as Principal Medical Officer, Secunderabad district, vice Colonel Major, who proceeds home on sick leave.

The Queen has granted unto the under-mentioned officers Her Majesty's Royal licence and authority to wear the Insignia of the following Orders conferred upon them by His Highness the Khedive of Egypt, authorised by His Imperial Majesty the Sultan of Turkey: Captain Richard Hugh Penton, D.S.O., Royal Army Medical Corps, Osmanieh (Fourth Class); Captain Philip Henry Whiston, Royal Army Medical Corps, Medjidieh (Fourth Class).

DIPHTHERIA IN LONDON.—In the week ended on Oct. 1st the registered deaths from diphtheria in London were 33, as against 30, 29, and 29 in the three weeks preceding, but were 22 below the corrected decennial average for the corresponding weeks of the ten years 1888–97. Bermondsey, Hackney, and Wandsworth sanitary areas were respectively credited with 4 deaths, while Poplar and Battersea had each 3 deaths. The admissions of diphtheria cases to hospital in the week numbered 197, as compared with 148, 158, and 155 in the preceding three weeks. In all 33 fatalities the age was under twenty years, 23 being of children under five years of age. In the Outer Circle 17 deaths from the disease were registered, of which 7 belonged to West Ham registration district. Last week the registered deaths from diphtheria in London rose to 34, but were still 18 below the corrected decennial average. 4 belonged to Islington and 3 each to Limehouse and Wandsworth sanitary areas. All were of persons aged under twenty years. The fresh cases admitted to hospital during the week numbered 180. In the Outer Circle the registered diphtheria deaths fell to 10, of which 6 belonged to West Ham registration district.

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Correspondence.

"Audi alteram partem."

MEDICAL CHARITIES.

To the Editors of THE LANCET.

SIRS,—The series of lectures arranged for the next two months by the Joint Lectures Committee of the Charity Organisation Society will, I believe, be of interest to members of the medical profession and their friends. I venture, therefore, to send you a note about them. They are eight in number and will be delivered at the Portman Rooms, Baker-street, at 4.30 P.M. on Fridays, beginning on the 21st inst., when Sir William Broadbent has kindly consented to preside and give a short introductory address. The lectures are on the following subjects: The Growth of Medical Charities (Oct. 21st), Mr. C. S. Loch; the Dispensary (Oct. 28th), Dr. L. A. Hawkes; the Hospital (Nov. 4th), Mr. Clinton Dent; the Poor-law Infirmary (Nov. 11th), Dr. T. D. Savill; the Lunatic Asylum (Nov. 18th), Dr. Rayner; District Nursing (Nov. 25th), Miss Amy Hughes; Sick Insurance (Dec. 2nd), Mr. F. G. P. Neison; and the Provident Dispensary and District Nursing (Dec. 9th), Dr. J. B. Hurry.

Mrs. Hill, the hon. secretary, 19, Park-mansions, Battersea-park, S.W., will gladly send prospectuses to all inquirers.

I am, Sirs, your obedient servant,

C. S. LOCH,
Secretary, Charity Organisation Society.

Buckingham-street, Strand, W.C., Oct. 12th, 1898.

THE CONSCIENTIOUS OBJECTOR.

To the Editors of THE LANCET.

SIRS,—The extraordinary legislation of the past session in the matter of vaccination—which has made us the laughing-stock of all other civilised nations in consequence of the surrender by Parliament of scientific truth to the prejudices of the ignorant—has compelled me to be a "conscientious objector" in the opposite sense to the one created by the recent Acts of Parliament. I have the honour to be a magistrate as well as a physician and I have, after very careful consideration, determined that (knowing what I do) I cannot conscientiously sign a certificate of exemption from compulsory vaccination except in a case of proved bad health. I have therefore determined to retire from the bench whenever an application comes before me for such a certificate. I venture to hope that my medical brethren who are magistrates will see their way to pursue the same line of action. I am, Sirs, yours faithfully,

THOS. W. THURSFIELD, M.D. Aberd., F.R.C.P. Lond.,
J.P. for the County of Warwick.

Leamington, Oct. 8th, 1898.

THE EXCLUSION OF INFECTION FROM SCHOOLS.

To the Editors of THE LANCET.

SIRS,—Will you be good enough to give publicity to the following facts, which I think should be widely known in the interests of parents and schools?

I have a preparatory school for boys and for some years I made use of the following certificate which I asked parents to fill up before the beginning of each term, and this was regularly done.

CERTIFICATE.

"I certify that ..... is quite fit to return to school, that he has not had any infectious illness during the holidays, neither has he to the best of my knowledge been exposed to any danger of infection during the three weeks preceding his return to school."

During these years measles (twice), chicken-pox, and whooping-cough were introduced into the school and could all be traced unmistakeably to the holidays in spite of this certificate, and as a climax a boy returned with scarlatina in its very mildest form but with throat slightly ulcerated and a faint rash. The consequences were disastrous to me, resulting in no less than 15 cases and involving me in a pecuniary loss of over £500, besides all the inconvenience and loss to parents caused by illness leading to breaking-up of the school. I have now obtained the almost unanimous consent of the parents to a still more stringent precaution. I require a medical examination and certificate dating not later than *the day previous* to the boy's return to school. The certificate appended to the one quoted above reads thus:—

"I certify that I have this day carefully examined ..... who returns to school to-morrow, and that there are no signs of any infectious complaint about him." (Signature of medical man.) .....

In addition to this I get my own school medical attendant to see all the boys immediately on their arrival at school.

On Sept. 30th, a Friday, my boys came back to school; 21 of us travelled together in a saloon from London. On our arrival my medical man found that one boy admitted having some spots on his body; he examined him and found well-developed chicken-pox, some of the spots being obviously about a week old. The boy knew he had been having "heat-spots" for some time. The medical man at home saw him on the Thursday, after which he was poorly and his temperature rose to 100·1° F., so the medical man was sent for to see him again the same evening and again on Friday to satisfy the mother that he was fit for school. I hold the medical man's certificate worded exactly as above. Chicken-pox being what it is and the boy having been for over an hour in the train with so many others I fully expect that every boy in the school who has not previously had the illness will have it now and all their parents and the school must suffer accordingly.

But this is not all. Finding that this particular boy said the medical man had not examined his body at all on the Thursday I pushed my inquiries further, with the following results. Out of 32 boys whose certificates I hold only 14 had been examined on their chest, 17 in the throat, several had simply been told to put their tongues out, 5 had not been examined at all as to either tongue, throat, or chest, and none at all were examined on the head. The net result is that out of the 23 medical men from various parts of England and Scotland only 7 (including 2 distinguished London practitioners) made a thorough examination before signing this explicit declaration, "I have carefully examined." Such a cursory examination as satisfied most of these gentlemen would have failed to discover the case of scarlatina referred to above quite as surely as it failed to discover the chicken-pox on the present occasion.

My object in writing to you, Sirs, is to ask your assistance in bringing this matter before the medical profession, who are in so many ways the best friends of schoolmasters, whose sympathetic help is so necessary to us, and with whom we wish to work in complete harmony. But my recent experience seems to show that many scarcely quite realise yet the importance of safeguarding schools from epidemics or the ease with which the first symptoms of infection may escape even the professional eye. For obvious reasons I can only sign myself, Sirs,

Yours faithfully,

Oct. 3rd, 1898. A PREPARATORY SCHOOLMASTER.

P.S.—It is only fair to the medical man mentioned above to say that just before posting this I have received a letter from him saying that he examined the boy's lungs both back and front on the Thursday and there were no chicken-pox marks upon him then. He intimates that the spots were only "a pustular eruption."

"ULCERATING GRANULOMA OF THE PUDENDA."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 9th last attention is drawn to the disease termed "ulcerating granuloma of the pudenda" which appears to be prevalent in the West Indies. There is no doubt that the disease is similar to anaffection which is prevalent in India, a description of which was given by myself in the *Indian Medical Gazette* of May, 1898, under the term "chronic venereal sores." In India it is believed that the disease is venereal in origin—the ulceration originating as a chancre or bubo—although not syphilis. The disease is of a most inveterate character and very difficult to cure. I am, Sirs, yours faithfully,

J. MAITLAND,
Lieutenant-Colonel, I.M.S

General Hospital, Madras, Sept. 19th, 1898.

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LYMPH-GLAND JUICE IN THE TREATMENT OF CANCER.

To the Editors of THE LANCET.

SIRS,—Will you permit me to indicate a new principle in the treatment of malignant disease which may afford important results? The nuclear particles of epithelioma are, as everyone knows, carried by the lymph to the adjoining glands, which arrest them and so prevent a general blood-contamination. Individual examples of this lesion (which only retrogressive pathology would confuse with carcinoma) manifest a remarkable difference in the speed with which these glands are infected. Thus ordinary "cancer of the tongue" establishes active growth within the glands in six weeks, often less; whereas epithelial lesions on the foot or hand set up no secondary gland metastases for at least several months, and those on the external genitals hardly for a year. A mammary carcinoma beginning close to the axilla involves gland enlargement almost simultaneously. One arising at the sternal border does not implicate those organs for eight or ten weeks later.

Turning to another cancer variety, true sarcoma, we find that the lymph glands are never distally infected at all, although many of the cases are remarkably virulent, and it is impossible to doubt that nuclear fragments are carried to them in large numbers. There is no gland deposit with a sarcoma unless either by direct infiltration or concurrently with general blood contamination. The case cited at p. 87 of my "Recurrence of Cancer" proved that there had been irritation of the lymph glands sufficient to induce enlargement and greatly to modify structure, yet without the survival of any malignant protoplasm. I am therefore impelled to the conclusion that it is the function of the lymph-glands, not only to arrest, *but actually to destroy*, the protoplasm of cancer. In the ordinary course of events this takes place only up to a certain point. Eventually the gland is overpowered by stress of numbers. But under some circumstances, as above indicated, the resistance is long-continued and the number of infective particles killed must be considerable.

On the supposition that a natural secretion is the active agent Messrs. Warrick Brothers have made for me an extract of fresh lymph-glands warranted to contain, as far as possible, the vital qualities of the living organ. I have administered this to sundry cases with apparent benefit and never with any bad symptom. A gentleman seen in July, 1897, going down hill very fast with advanced cancer of the stomach, and very unlikely to survive beyond November or December, had his life prolonged until last April. I hope later to furnish further details. I have no facilities whatever for physiological research. The object of my letter is to appeal to some competent physiologist to take the matter up and to test it in the laboratory. He would require to ascertain whether a secretion of the gland, as I suppose, is the active agent; or whether, on the other hand, the destruction is effected by a phagocytic action of the lymph-cells. Medicine is learning more and more to seek its best weapons in the natural secretions of the body itself. The above principle tallies with the most recent lines of advance.

I am, Sirs, your obedient servant,

HERBERT SNOW.

Gloucester-place, Portman-square, W., Oct. 9th, 1898.

"SPHINCTER STRETCHING IN CONSTIPATION."

To the Editors of THE LANCET.

SIRS,—Mr. Sidney Vines's letter in THE LANCET of Oct. 8th brings into prominence the treatment of constipation by free sphincter stretching. It is a method well known but too little practised. If carried out in suitable cases it greatly assists and in many cases absolutely cures perplexing constipation. In my book on Diseases of the Rectum, sixth edition, I have devoted a chapter to Persistent Constipation considered from a Surgical Point of View. In a letter of this kind the subject is too lengthy to enter into fully.

In children constipation is often caused by a congenitally small but otherwise normal anus. Sometimes the child has only just missed an imperforated anus and in these cases there will be found a rigid narrow ring just inside the anus. In adults fissure is a common cause of constipation. It starts the trouble in this way. The fissure sets up a spasm with hypertrophy of the sphincter and the hypertrophy in time causes the sphincter to become indurated and so it loses its elasticity, which does not recover even if the fissure is healed by palliative methods. Treatment by free dilatation or division of the sphincter—which causes it to return to its normal condition—will often cure bad constipation arising or kept troublesome from the above causes.

I am, Sirs, your obedient servant,

HERBERT W. ALLINGHAM.

Grosvenor-street, W., Oct, 10th, 1898.

To the Editors of THE LANCET.

SIRS,—In answer to the inquiry of Mr. Sidney Vines in THE LANCET of Oct. 8th I beg to inform him that during my residence of two years in Los Angeles, California, I learnt that sphincter stretching in obstinate cases of constipation in adults was by no means an uncommon procedure. I myself have adopted this method in two cases with satisfactory results. I am, Sirs, yours faithfully,

Macclesfield, Oct. 12th, 1898. J. WESTMORLAND.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—Dr. Harry Campbell has answered his own question, "Whence comes the augmentation in the sum of vitality?" by telling us "from the food and oxygen conveyed (to the organism) from without." I know nothing about "the sum of vitality" and cannot conceive how food and oxygen can give vitality or add to it. I do not know how to measure or weigh vitality, which I believe to be without weight and immeasurable. I have said nothing about the creation of force, but have endeavoured to show why vitality cannot be derived from non-living matter or from force.

Dr. Harry Campbell asks, "What becomes of the vitality of an organism after death *unless it be transmitted (transmuted?) into some chemical, physical, or kindred force?*" I do not know, but in the present state of knowledge must deny the possibility of any such transmutation. The instant Dr. Harry Campbell or anyone shows that any such transmutation does occur I shall, of course, give up the idea of vitality and very much besides of what I now believe to be true. I certainly hold that no living matter in nature possesses structure—not even that "destined to develop into a Newton or a Shakespeare."

"Structure" as referred to by me in various papers and books has been *seen* by myself and can be *seen* by all who can use the microscope. "Structureless" is that in which no structure can be discerned when examined in the same way by the same magnifying powers.

I think I have proved that all "structure" in living nature has been formed from *Structureless Living Matter* and that the arrangement, character, composition, and action of all structures, tissues, and organs of all organisms are determined by changes in the living matter caused by the *direct action* of vital power upon the matter. Tissue, structure, does not form or add to itself, but living matter may form it and many other things. Muscle, nerve, fibrous tissue, &c., were all once in the state of structureless living matter.

Lastly, I do believe that the "immaterial" does act, has acted, and will continue to act upon the "material" in every particle of matter that is alive, even though, as Dr. Harry Campbell assures your readers, by "many great thinkers" my "position" has "been regarded as untenable" and by himself as "wholly illogical."

I am, Sirs, yours faithfully,

Oct. 9th, 1898. LIONEL S. BEALE.

To the Editors of THE LANCET.

SIRS,—Having read Professor Virchow's Huxley Lecture and also Dr. Beale's recent papers on Vitality one wonders what the author of the latter will have to say on one of Dr. Virchow's particular propositions: "The cells of living organisms are composed of organic, chemical substances which are not themselves alive but the mechanical arrangement of which determines the direction and power of their activity." Dr. Beale in his papers would lead us to infer that with Paracelsus he believes each living unit has a

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spiritus which, however, is not of the supernatural tinge of the Paracelsian world but is rather a form of energy alignable with physics and chemistry. Dr. Virchow scouts the idea. Who is right, the German or the Englishman?

I am, Sirs, yours faithfully,

JOSEPH H. ROWE, M.B. Aberd.

Cowling, Yorkshire, Oct. 11th, 1898.

THE PUBLIC APPLICATION AND USES OF BACTERIOLOGY.

To the Editors of THE LANCET.

SIRS,—In reading the interesting leading articles at pp. 882-84 of THE LANCET of Oct. 1st one cannot help feeling that their writer has, doubtless unwittingly, done much less than justice to the eminent bacteriologist who is admittedly the pioneer in this country of the practical application of bacteriology to purposes of local public health administration and commerce. I refer to Professor Delépine of Owens College, who, as long ago as 1891, assisted the Manchester Public Health Department with his special knowledge, and in 1892 suggested to Dr. Tatham an official arrangement for the bacterial examination of diphtherial products and the like. In the summer of 1893 Professor Delépine's aid was invoked in the investigation of certain choleraic cases in Manchester and in 1894 the borough of Stockport was materially assisted by his advice and skill in regard to its water-supply. During the following summer (1895) a definite arrangement was entered into between Professor Delépine and the corporation of the last-mentioned town for the systematic bacterial examination of doubtful diphtheria cases. A little later a similar arrangement was made by Manchester and more recently by most of the other large Lancashire towns, and at the present moment Professor Delépine is fully realising his cherished desire that his splendid laboratories at Owens College should exist, not merely for academic purposes, but for the very real benefit of suffering humanity in the district of which the college is the scientific centre. The work has been with Professor Delépine entirely a labour of love; he has ungrudgingly devoted time, money, and his great abilities to its development without one single farthing of personal remuneration. He has assisted many other towns (Liverpool, Edinburgh, Belfast, Aberdeen, &c.) by sending them all the information they required and a complete account of his procedure, and in many public health matters on which he is specially competent to advise he is the kind and ready "guide, philosopher, and friend" of every health officer who has occasion to consult him. Surely, then, it is hardly fair that in regard to the bacteriological public health service of the country his work should be placed in a second line, so to speak, with that of cities such as Liverpool, and commercial ventures such as the Clinical Research Association, which have merely followed the lead he has so ably and modestly given them. *Palmam qui meruit ferat.*

I am, Sirs, yours faithfully,

Health Office, Stockport, Oct. 9th, 1898. CHARLES PORTER.

WHAT IS "FIRST AID"?

To the Editors of THE LANCET.

SIRS,—To prevent the remedial assistance of "first aid" passing beyond its bounds and encroaching upon remedial treatment I have found it desirable as well as necessary to define what "first aid" really consists of. As this definition might be of use to many of your readers I herewith enclose the same. "'First aid' consists in the immediate relief of suffering and the temporary dressing of all injuries sufficient to enable the sufferer to proceed to where authoritative advice can be obtained from some qualified medical man or to remain on the spot when removal is unjustifiable until that advice can be obtained."

Under this comprehensive definition the arrest of hæmorrhage, the temporary application of splints to fractures, the first dressing of burns, and the application of antiseptic dressing to wounds would take first place. Immediate assistance would include the resuscitation of the apparently dead and the first succour requisite in cases of poisoning or fits. The immediate relief of suffering would include the giving of one dose of medicine for diarrhœa, colic, or other severe pain, as well as for shock, collapse, or temporary failure of the heart's action. No redressing of wounds or injuries nor operative interference of any kind is here included; in fact, the surgical aid is limited to what would be done by bearers at the front on a battlefield before the injured are sent to the base or station hospital for final redressing and surgically approved treatment.

I am, Sirs, yours faithfully,

Devonshire-street, W., Oct. 11th, 1898. SAMUEL OSBORN.

"GAS AND AIR."

To the Editors of THE LANCET.

SIRS,—I shall be very happy to show Dr. Flux my gas apparatus—now, alas, over twenty years old—by which he need not employ any napkin over the face or touch the patient's face with any of the apparatus. I have never suggested this very old method to my colleagues, much less the public, as I do not think the fees admit such a waste of gas. It reminds me of a letter I once received from the late Mr. Clover, who was taken in (by the recommendation of the committee of the British Medical Association) to use dichloride of ethidene, in which he related that a case had cost him 30*s.*, and that out of a two guinea fee. *Verb. sap.*

I am, Sirs, yours faithfully,

TOM BIRD,

Instructor in the Use of Anæsthetics to Guy's Hospital.

Brook-street, W., Oct. 11th, 1898.

THE ETHICS OF CLUB PRACTICE.

To the Editors of THE LANCET.

SIRS,—I should be glad to have an expression of your opinion on the following case.

I have been surgeon for over thirty years to a very large friendly society and my connexion with this society has always been most amicable till about twelve months ago. Then I was called in to see a member of the society suffering from quinsy. I saw him on the Monday morning and promised to call again on the Tuesday morning, but owing to stress of other work I was unable to get there and sent my assistant (M.R.C.S., L.R.C.P. Lond.) to see the man in the afternoon. (According to the patient's own statement the man was not seen for 26 hours.) On arrival at the house my assistant was told that the patient had called in another medical man who lived nearer. In the evening this medical man telephoned to me and I said I was quite willing he should take the case, and I remarked that to me it was a club case, but he must see he got his fees. I have since found that the throat trouble disappeared in a day or two and then brain symptoms set in—it was thought as a result of an accident received some months previously. The medical man in attendance wished for and obtained a consultation with a surgeon in the town with a view to trephining and the patient was removed to the infirmary for operation, where he fortunately recovered without operation in a few days. But I heard nothing more of the case from the time the second practitioner was called in till a few weeks later, when the patient wrote a letter to the secretary of the society in which he complained of neglect, and demanded from me payment of the second medical man's bill and the consultant's fee (amounting altogether to six guineas) and said he thought the way he was "treated was not fit for any human being" and he further complained of my sending my assistant. I refused to pay the bill and denied neglect. I consider I was under no contract to see the man at any given time, although I promised to call in the morning. It is impossible to work a practice on these lines and the medical man himself must, in my opinion, be the best judge as to the relative urgency of each particular case.

The second practitioner who was called in, in reply to a note from me, writes as follows: "In answer to your letter I may say that when called to see the man S—— I found him suffering from acute tonsillitis, and in following out my routine practice in such cases I put him on anti-rheumatic treatment with a gargle of guaiac., &c. If I remember correctly the quinsy had cleared up by the next evening; at no time was it a bad one nor did it tend to suppurate. I should say that it was a rheumatic throat pure

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and simple. When I first saw S—— he was a bit excitable, but it was not until after the throat cleared up that I noticed symptoms of brain irritation. Thinking that an operation would relieve the symptoms I called in Mr. A—— (surgeon). We both were of the opinion that an injury S—— received by walking against a peg in the dark was the exciting cause of the irritation. He was removed to the infirmary with the view of being watched carefully for localising symptoms when trephining was to be done, but luckily the case cleared up without. The case in the first instance was perfectly simple and straightforward. The brain irritation coming on after the tonsillitis was a coincidence, as I should say it would have come on in any case. The throat probably had a turn for the better before I saw him; hence the rapidity with which it cleared up."

What I want to know is, can I be compelled to pay this account? I am, Sirs, yours faithfully,

Oct. 11th, 1898. BETA.

MAIDSTONE AFTER THE EPIDEMIC.

(FROM OUR SPECIAL COMMISSIONER.)

A YEAR has now elapsed since the great typhoid fever epidemic of Maidstone. It is time, therefore, to inquire what practical lessons have been learnt and applied as the result of this calamity. As a rule epidemics prove an efficient form of chastisement—they are sometimes a blessing in disguise. They awaken the local authorities to a proper sense of their duties, they make the population realise the need of good sanitation, and public improvements are then undertaken which formerly would not have received the sanction of the ratepayers. An epidemic often conveys the moral that good sanitation, though expensive, is, in the long run, the truest form of economy. How far has this been the case at Maidstone? Of course, much time has been spent in discussing the cause of the epidemic. This is well and needful in its way, but such theoretical discussions are often apt to be taken as an excuse for postponing the application of practical measures. In the present instance there has been a tendency to gravitate towards two opposite extremes. On the one side the water is considered not merely the principal but almost the only cause of the epidemic. Others, and especially the friends of the water company, are anxious to show that the epidemic might have been due entirely to the condition of the drains and that there is no positive evidence to prove that the water was specifically contaminated. The truth probably lies between these two extremes. The defective condition of the drains may have rendered the population susceptible to typhoid fever; and when the water was contaminated this receptivity was made manifest by the rapidity with which the disease spread. But there is evidence to show that the disease continued to spread when there is every reason to believe that the water was no longer contaminated. From the commencement of the epidemic at the end of August, 1897, up to Jan. 20th of this year, when the last case occurred, there were altogether 1908 cases of typhoid fever notified. Allowing for the period of incubation, the effect of cutting off the supply of water from the sources stated to have been contaminated should have made itself felt by Oct. 10th, and it was from Sept. 9th to Oct. 5th that the great majority of the cases occurred. The epidemic went from bad to worse up to Sept. 20th and the improvement, though slight at first, commenced before any alterations were made in the water-supply. After Oct. 10th, when the effect of cutting off the suspected water-supply should have been felt, there occurred 357 cases. Thus the number of cases decreased while the people were still drinking the bad water, and they continued after they had ceased drinking this water. Probably the water was the vehicle by which the epidemic was so widely and suddenly spread, but it was not the only cause. This, nevertheless, is quite sufficient to warrant a severer control being exercised over the water-supply.

The first good result of the epidemic is the determination of the town council to obtain powers for the compulsory purchase of the water companies' property and thus bring the supply under their own control. But it would be a fatal mistake to imagine that this is all that need be done. The borough surveyor has very wisely urged the necessity of a house-to-house inspection of the whole town, and by this he means that every domestic drain is to be submitted to the water test where possible and to the smoke or "stink test" where water cannot be utilised for the purpose. This, indeed, has been already done with regard to a third of the houses and is one of the most useful and practical measures which could be adopted. Unfortunately, and in spite of the terrible warning received, the landlords are still in many cases very recalcitrant. In 1892 the medical officer of health reported that two-thirds of the houses were not properly drained; and it may safely be said that at the time of the epidemic half the closets in the town had no water-supply. These closets were only flushed by hand—that is, when the inhabitants thought fit to empty a pail of water into the drains. It is obvious that notices should be served on the landlords of all these houses to compel them to apply to the closets a 2-gallon waste preventer flush tank receiving a constant supply of water. Efforts have been made in this direction, but they have not met with the success which might be expected after the terrible lesson received. Notices to provide water for the closets have been served by the sanitary inspectors, but they are carried out very slowly. On the other hand, the town council hesitates to prosecute. Nor do the population appreciate the laws enacted for their own protection. Thus, for instance, when the vendor of milk proved to be adulterated was acquitted because of some legal quibble the people in the court applauded. There is still much narrow-mindedness prevalent among the population. The interests of the till too often predominate, and the petty tradesman fails to see that it is his duty to submit to some inconvenience and control so that the interests of the community at large may be protected. The milkman may desire to adulterate his milk, but he may not be so anxious to eat tuberculous meat. Yet the previous year the town council failed in a prosecution in respect of an alleged sale of diseased meat. If the butcher could only be made to understand that he has to drink adulterated milk and the milkman that he has to eat tuberculous meat there might be less applause in the court on the acquittal of the tradesmen. But this view of the situation seems to be too broad and far-reaching to come within the narrow mental grasp of some of the inhabitants. The pity of it is that the magistrates show that they are inclined to let matters slide instead of being eager to apply the law on every possible occasion. The lukewarmness of the magistrates has to a great extent paralysed the local authority. This was the complaint made before the epidemic, but it was natural to expect that such a disaster would have brought about a great alteration and that the magistrates would now have readily convicted whenever there was any transgression of the sanitary laws. Such, however, is not the case and the town council still hesitates to prosecute. As a consequence the work of supplying water to the closets is only progressing slowly.

To exercise a better control over domestic drainage it is proposed to permanently increase the sanitary staff at Maidstone. All new drainage is submitted to the water test, which is applied by the sanitary authority before anyone is allowed to inhabit the newly built house. When the same has been done to all the old houses and a proper supply of water provided for flushing purposes a very great improvement will have been realised, but the magistrates must give more efficient help in the accomplishment of this work. There will then still remain the question of the public sewers. It is proposed to dig up all the old brick sewers which existed previously to the adoption, some twenty years ago, of the general drainage scheme and replace them by hardware pipe drains. Doubts, however, may well be entertained whether this is sufficient. The fact that a sewer is of comparative modern build does not prove that it is free from defects. There is reason, on the contrary, to believe that some of the sewers of the new drainage scheme were badly laid and constructed, and these as well as the older sewers require repairs, if not reconstruction. Then there is the question of the ventilation of the sewers. In dealing with the epidemic last year I pointed out that the districts affected with the fever corresponded, not merely with the distribution of the Farleigh water-supply, but also with the higher levels of the town. It then occurred to me to suggest that perhaps the sewer air had a tendency to travel upwards and that therefore the houses on the higher levels were more impregnated

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with emanations from the sewers than those situate lower down; indeed, it was most remarkable that the low-lying districts were almost entirely exempt from the fever. The only answer made to this suggestion is that the direction of currents of air in sewers is frequently from the higher to the lower levels. It is difficult, however, to see what this most obvious remark has to do with the question. Surely no one would be so foolish as to urge that currents of air always went in the same direction; it would be as reasonable to state that the wind always blew from the same quarter. The point is whether, at the higher levels, there is a greater escape of sewer air in the houses and streets than in the lower districts and at what time of day does this escape take place. The downward current of air is likely to be most frequent when there is the greatest flow of sewage, for the air is attracted by the water current. As the current decreases in bulk and strength the air is more free to follow its natural bent and travel upwards. This is more likely to happen at night, just at the time when vitality is reduced by sleep and the inhabitants are more susceptible to any noxious influence. Then, again, it is when the sewers are empty or nearly empty that the sewer air is likely to be affected by the deposits on the sides or walls of the sewer. Thus the outward flow of air takes place at the worst moment and this it is which should be considered when comparing the high with the low levels. Therefore the question arises whether some measure should not be adopted so that the sewers in the higher levels of the town should not serve as ventilating shafts for the sewers in the lower levels. This is the more important as it is now proved that several hundred cases of typhoid fever were not due to water contamination, though the great majority of these cases did occur in the higher districts of the town. In the conclusions of the Local Government Board report on the epidemic it is stated that probably Oct. 10th is too early a date for the limit of the influence of the Farleigh water-supply; Oct. 18th is suggested instead, and even then there remain 280 cases due to causes other than the Farleigh water-supply. But if 280 cases occurred and were due to other causes after this supply was cut off, how many cases due to other causes occurred before the Farleigh water-supply was cut off? It is absurd to conclude that these other causes came into operation only after the water from Farleigh was cut off. The probabilities are that when this was done their force was in a great measure spent, just as the force of the contaminated water was to a large extent exhausted and this some time before the effects of its suppression could be felt. But with regard to these other causes, whether partially exhausted or otherwise, whether acting during the distribution of the Farleigh water or after the supply of that water had ceased, in both and all cases the victims were nearly all residents living on the higher levels. Now, the old brick sewers which it is proposed to replace by hardware pipes are nearly all on the low levels; therefore this measure, though good enough in itself, does not meet the case.

The policy of the town council is to obtain a loan in order to purchase the waterworks, to rebuild the old brick sewers, and to increase its sanitary staff. This is all very good so far as it goes, but, as just indicated, it does not deal with all the phases of the problem at issue. It is also unjust to seek to spread the repayment of the loan over a long period of years. The blunders, I might almost say the crimes, have been committed by the present generation and the penalty must be paid by them. The inhabitants of Maidstone have neglected their public duties, they have consequently brought upon themselves a public calamity, and they want to relegate to the next generation the care of paying at least a part of the cost. Even now they are not doing their duty in full. There is unjustifiable delay in providing flushing apparatus to household drains, and transgressors against the laws of health are not punished with quick and certain speed. There is no ground, therefore, for putting in a plea to be relieved from the burdens which are the natural consequence of past and even present neglect. The true position of affairs must be looked boldly in the face. In the long run this will be the cheapest as well as the best policy.

NEWPORT (MON.) WATERWORKS.—Up to the present the expenditure by the Newport Corporation on the Wentwood waterworks scheme has been £128,228. The works are reported to be progressing satisfactorily.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Medical Reform in India.—The Progress of the Plague.

THERE being absolute freedom of medical practice in India qualified men have to contend against an unlimited competition from quacks. As the public and the State to a certain extent call for some guarantee of education and knowledge the same feeling has arisen here as in England that irregular practice should be put a stop to. The same arguments apply in the one case as in the other. There is at present no registration but this might be provided for at the same time as the suppression of any further creation of quacks. In the city of Bombay there are about half a dozen civilian British practitioners, there are the officers of the Indian Medical Service holding civil appointments, who are allowed private practice, and there are about 80 native qualified practitioners. The quacks and unqualified men are numerous, but their exact number is difficult to estimate. It has been urged also, as so many native practitioners have been educated in England, several of them holding very high qualifications, that some of the teaching and hospital appointments should be thrown open to competition. At the present time these posts are held exclusively by officers of the Indian Medical Service.

The course of the third plague outbreak in Bombay has shown a sudden and unexpected improvement. While it has been gradually developing week by week until for the week ending Sept. 13th the number of deaths from plague was recorded at 175, the number for the past week has fallen to 126. The total general mortality (748) has fallen also, although it is still considerably above the average (523). There is no cholera, the cases of remittent fever recorded are much fewer, and there are fewer deaths from phthisis and diseases of the respiratory organs. The present death-rate is 45·37 per 1000. A steady development of the recrudescence was looked for and perhaps, after all, the diminution may be only temporary. It is argued that the machinery for registration is improved, that from the absence of compulsory segregation the people are less afraid of plague and its consequences, and that consequently there is less concealment of cases. Notwithstanding the withdrawal of all severe measures the plague authorities are active. No less than 6543 houses were inspected last week, 326 were disinfected and, most important of all, 50 were vacated. These measure have been going on steadily for some time and it i probable that the continued vacation of the worst houses is now showing good results. In the Dharwar and Belgaum districts the epidemic is raging with increased severity. In other parts of the Presidency it is better. A record of 3731 cases and 3134 deaths in one week shows, however, the extreme virulence of the disease. Of these numbers Belgaum contributed 745 cases and 557 deaths, and Dharwar 1642 cases and 1300 deaths.

A fresh example of the value of prophylactic inoculation is given by the action of the Southern Mahratta Spinning and Weaving Company with regard to their employés at Hubli. Out of 1173 persons on the muster roll 1040 were twice inoculated, and of this number 22 died from plague, giving a mortality of only 2·1 per cent.; of the 58 once inoculated 8 died, giving a mortality of 13·8 per cent.; and of the 75 who refused inoculation 20 died, giving a mortality of 26·6 per cent. At Dharwar inoculation is now proceeding actively.

Calcutta being almost free from plague the staff has been largely reduced. The general mortality keeps low. Madras has now been admittedly attacked, as what are termed indigenous cases have occurred in the Anantapur and Bellary districts. In Madras city itself the general death-rate is abnormally high, being 56·3 per 1000, against an average of 48·1. Out of the 490 deaths recorded for the past week 41 occurred from cholera. There were no recorded cases of plague. Endeavours are being strenuously made to introduce inoculation into the various divisions.

Sept. 23rd.

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IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mercer's Hospital, Dublin.

THE dispute between the board of governors of Mercer's Hospital and the Dublin Corporation has recently been revived. It will be remembered that the municipal authorities refused many months ago to continue their annual grant of £300 to that hospital unless three members of the corporation were elected as annual governors of the institution. The hospital authorities replied that the terms of their charter rendered it impossible for them to comply with the wishes of the corporation. The matter, as far as the public was informed, remained in that condition until, at a meeting of the board of governors of Mercer's Hospital, which was held on Oct. 4th, a notice of motion was handed in: "That the governors of Mercer's Hospital regret that the Dublin Municipal Council, by withdrawing from the hospital the usual grant out of the Corporate funds, have inflicted a serious injury upon the poor of this city, and they feel bound on behalf of the poor to appeal from the municipal council to the Local Government electors of the city of Dublin." This elicited a letter from the chairman of the Finance and Leases Committee of the corporation, which appeared in the morning papers of Oct. 7th, in which it is stated that—

> The vote in favour of Mercer's Hospital has never been withdrawn. It is obtainable at any time that the governors comply with the very reasonable request of the corporation that three members of the corporation, nominated by the municipal council, should be elected to seats on the board. This the governors so far have declined to do. The position therefore is that sooner than elect as vacancies occur three governors from the members of the municipal council the board of Mercer's Hospital will deprive that institution of the sum of £300 per annum. The names of the members of the corporation nominated have been supplied to them long since. In exchange for a notification of compliance with this very reasonable condition the Finance and Leases Committee will issue a cheque for £300.

One of the governors of the hospital, Mr. Theodore Ryland, replied at once that they,

> The governors, were willing to comply with the request of the Municipal Council and were ready to elect the three members chosen by the Council, and so stated in a letter dated Oct. 25th, 1897, addressed by the Registrar to the Town Clerk. In order to carry out their intention in the proper way the governors took the opinion of eminent counsel as to the manner in which the three representative governors should be elected and were advised by him that they were bound by their charter and have not power to comply with the wish of the Municipal Council, however anxious they might be to do so.

Other letters and even leading articles have appeared in the public journals, but the difficulty seems as far from satisfactory solution as ever. The charter of the hospital will only permit the election of governors for life, while the expedient of electing for life with an understanding that the governors would retire after one year has been declared by eminent counsel to be illegal. No one seems to have suggested that the charter of the hospital might be altered in order to legalise the election of annual governors. If the board of Mercer's Hospital proposed to take the necessary steps the grant from the corporation would doubtless be paid at once.

St. Vincent's Hospital, Dublin.

The annual dinner of the medical staff and past students of St. Vincent's Hospital took place on Oct. 10th, when the proceedings were enlivened by a rather novel speech from Mr. M'Ardle. Referring to the question of what fee should be charged to a man who, though not a pauper, could not afford a guinea, Mr. M'Ardle is reported to have said:—

> There was a notion abroad that unless a man stuck up for a guinea fee his status was lowered. He (Mr. M'Ardle) would wish it to go forth from that meeting—if they all agreed to it—that there was no indignity in accepting such a fee as your *clientèle* could afford, and there were no by-laws of any club or association of their profession that limited in any way the fee for a medical practitioner. The rules and regulations of professional dignity in regard to fees were made for the purpose of circling around the higher members of the profession and keeping a barrier between them and their younger brethren. The sooner that that barrier was broken down the better it would be not alone for the profession themselves but also for the public.

There are many members of the medical profession here who do not share in the views of Mr. M'Ardle, but to whom it seems improper and unfair to his less fortunate brethren that a hospital visiting physician or surgeon of position should give advice for a lower fee than £1 or for practically anything that he can get.

The Meath Hospital and County Dublin Infirmary.

The inaugural address for the session was delivered at the Meath Hospital by Dr. Ormsby, one of the surgeons to the hospital, on the afternoon of Oct. 10th. The Lord Mayor occupied the chair, and a large audience, which included the President of the Royal College of Physicians and the President of the Royal College of Surgeons, was present. Dr. Ormsby's lecture, which dealt with the changes which had taken place in medicine during the last 100 years of progress, contained amongst many other instances an allusion to the system of bleeding for almost every ailment which prevailed a century ago. Lord Powerscourt, who was present, remarked that he remembered as a child "his father, who was ill of consumption, being bled constantly."

Pauper Nursing in Workhouses.

At a special meeting of the Armagh Guardians, held on Oct. 4th, to consider a letter from the Local Government Board in which they stated that they could not permit the continuance of an arrangement under which paupers with illegitimate children are employed in immediate attendance on sick persons of good character, and asking the guardians to reconsider their decision on the matter, failing which they would have no option but to call upon the medical officer to exercise the power vested in him by the rules and to see that the Board's regulations are carried out, an interesting discussion followed. The guardians decided to direct the master of the workhouse to remove all healthy paupers who have illegitimate children from the sick wards and to locate them in the department of the house to which they belong, and where such inmates are required to discharge menial duties in the infirmary, that they are to do so under the personal supervision of the nurses or paid attendants and to return to their department in the main building when no longer required in the sick wards. They further decided to write to the Local Government Board that they are of opinion that the nurses and attendants already appointed are quite sufficient for the duties which have to be discharged. Accordingly they emphatically decline to appoint any more until a trial is given to their suggestions. The whole question resolves itself into one of whether or not there shall be pauper attendance or nursing, and it is certain that the Local Government Board will insist that the pauper attendance must cease.

Clonavaddy Dispensary.

Mr. Gill, L.R.C.P. & S. Edin., has been appointed medical officer of Clonavaddy District of the Dungannon Poor-law Union, in the place of Mr. Thomas M. Jamieson, L.R.C.S. Irel., who lately retired after forty years' service

Resignation of Dr. Croker.

One of the oldest medical practitioners in Belfast, Dr. Croker, has owing to failing health been obliged to resign his appointment as medical officer of the Castlereagh Dispensary, a post he has held for thirty one years.

The Monaghan Water Scheme.

The Toghan scheme for supplying Monaghan with water has been adopted. By this plan a reservoir could be made by excavating about 10 acres and there would be an altitude of 220 feet. The site would be 3¼ miles distant from Monaghan and the pipes could be laid principally along the road, and the estimated cost would be about £7075. The Local Government Board have still to sanction the scheme.

The Notification of Infectious Diseases

One of the Belfast morning newspapers, in giving a report of a meeting of the City Health Committee, which, they add, they learned unofficially, states that the question of the notification of the infectious diseases again formed the subject of discussion, and the action of certain medical practitioners who, it was alleged, had reported cases as typhoid fever which were probably "bogus" was criticised. It was suggested that these medical men should be prosecuted for obtaining money under false pretences, and some remarkably strong language was used concerning them by members of the committee. The chairman declared that there were undeniably some black sheep in the medical flock of Belfast, adding that the sooner they were pitched out the better. It was ultimately decided that a caution as to future conduct would suffice for the present. On public as well as professional grounds the action which certain members of the Public Health Committee are taking in reference to the

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charges they are making against medical men is to be regretted, and instead of wasting their time in such a way they would be much wiser in trying to undo the terrible mistakes of the past. When the press, lay and medical, pointed out the insanitary condition of Belfast and when the outbreak of typhoid fever reached an alarming extent the Public Health Committee made their first charge against the profession. They said the medical men were duplicating the cases, forgetting altogether that in February, 1897, the medical officer of health at their request sent a circular to every medical man in Belfast calling attention to clauses in the Act which says that "every medical practitioner attending on or called in to visit the patient shall forthwith ..... send to the medical officer of health ..... a certificate ..... or shall be liable ..... to a fine not exceeding forty shillings." Further, the medical officer of health in this circular added: "As the benefits accruing from this Act will largely depend on the action of the members of the medical profession he would earnestly request their coöperation in the working thereof." The medical men had no other course, no matter how many saw a case, but to report it; if the Public Health Committee had a competent clerical staff any duplication of returns would have been corrected. The next charge against medical men is much more serious: it is that of reporting "cases as typhoid which were palpably 'bogus.'" This is a very strong charge to make and the Public Health Committee should give the names of the medical men whom they incriminate in order that they might have the right of making a defence. The truth is that the Public Health Committee, by making these aggravating insinuations, as well as by their apparent incapacity to deal with the very grave insanitary condition of Belfast, are losing completely the confidence of the public as well as of the medical profession, who could afford them so much help in dealing with a confessedly difficult problem. The sad part of the matter is, that typhoid fever is not being stamped out; on the contrary, it still is very prevalent in the city. The Public Health Committee should coöperate with the medical profession and should show their gratitude to the press and to medical journals like THE LANCET, which has taken such pains to point out the insanitary condition of Belfast and their duty regarding it.

The Belfast Asylum.

At a meeting of the Belfast Asylum Governors, held on Oct. 10th, a report of the Visiting Committee was submitted in which they reported with pleasure the marked improvements they had observed since their last visit eighteen months previously. The present medical superintendent, at comparatively small cost, has made wonderful changes in the Purdysburn Asylum. Further, they said they could not speak too highly of the improvements in the old building at Belfast, notably the new baths and the arrangements for carrying out the bathing. The committee say they confess they did not think it possible to effect such a transformation in the old building and they congratulate the medical superintendent on the energy, skill, and good judgment he has displayed in generally affecting such reform.

Oct. 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Congress of Gynæcology, Obstetrics, and Pædiatrics at Marseilles.

ON Oct. 8th the opening sitting of the Congress of Gynæcology took place in the large theatre of the School of Medicine. Dr. Pinard, of the Faculty of Paris, presided, and was assisted by Dr. Pozzi and M. Broca of the University of Paris. The opening address was given by the Mayor of Marseilles as a welcome to the members of the Congress. Dr. Pinard, who followed, described the objects of the Congress, one of which was to further the protection of women and children. He expressed the opinion that every large town should have an asylum for pregnant women and special provision for children of tender years. After him Dr. Pozzi, a member of the Senate, spoke on the subject of Gynæcology and laid down as an axiom that this branch of medicine was of special value in preserving the life of woman without neglecting the preservation of her creative faculty. M. Hoffa of Würzburg read a paper upon Orthopædics and drew special attention to the perfection at which this science has arrived in France. Professor Solovieff of Moscow said a few words of thanks to the Congress and Professor Jonnesco of Bucharest, the official delegate of the Roumanian Government, spoke very happily as to the reciprocity in thought and feeling which existed between the two countries. Lastly, Dr. Livon, the director of the School of Medicine of Marseilles, thanked all the members of the Congress for having attended in such numbers. The Congress is to last throughout the week. It is divided into three sections to deal with the following subjects:—Section 1: Gynæcology; President, Dr. Pozzi. Diagnosis and Treatment of Extra-uterine Pregnancy. Section 2: Obstetrics; President, Dr. Pinard. Auto-intoxication of Pregnancy. Section 3: Pædiatrics; President, M. Broca.

The Pasteur Institute.

On the third anniversary of the death of Pasteur, Professor Metchnikoff, the acting director of the Institute in the rue Dutot, owing to the absence of M. Duclaux and Dr. Roux, called together the professors, the medical men, the laboratory assistants, the administrative staff, and the servants of the Institute. With Professor Metchnikoff at their head they all descended into the crypt where rest the remains of the master and walked in solemn silence round his tomb. Opposite the Institute in the rue Dutot the administrative council is constructing a building upon a plot of land given by an anonymous benefactor, the expenses of which are defrayed by the gift of 2,000,000 francs (£80,000) made two years ago by the Baroness Hirsch. The material is red brick and the buildings are almost exactly like the Pasteur Institute except that they are one storey higher. They contain theatres and laboratories. For patients affected with diseases which have been specially investigated by Dr. Roux a hospital is being built at the end of the rue Vaugirard, and the director of it will be M. Martin, the brother of the architect in charge of the works. The opening, however, cannot take place before the end of 1899, and as a matter of fact there are only 20 workmen employed on the building at present. The foundations are nearly completed and but for the stoppage of work due to the strike it was hoped that the masonry work would have been finished before the beginning of the winter, so that once the roof was on work could have been continued during the winter, however cold it might be.

The Oil Motor Tricycle for Medical Men.

A question much debated among medical men at present is how far a carriage and horses may be replaced by the oil motor tricycle. In the review of the French Touring Club, Dr. Leon Petit said a greal deal about the evils of the tricycle at present in fashion. On the other hand, Dr. Boulle of Buis has written an answer full of figures showing considerable advantages in the tricycle. According to him a tricycle of 1½ horse power is far superior to a carriage. He balances his statement as follows: purchase price of 2 horses, 2 carriages, and harness, 3300 francs (£132); various annual expenses, 2400 francs (£96); primary expense of a tricycle, 1250 francs (£50). This would be second-hand, it is true, but it is quite possible to get a new one of the very first rank for 1500 or 1700 francs; upkeep, 730 francs (£29); to which must be added 150 francs (£6) for twenty days in the year when, on account of bad weather, Dr. Boulle has been compelled to pay his visits by means of a hired horse and carriage. The total expense of upkeep, therefore, amounts to 880 francs (£35). Dr. Boulle ran 20,000 kilometres (12,500 miles) over abominable roads without any serious wear and tear. The whole subject is of interest as clearing up in some measure a question of great importance to country practitioners.

The Increase in the Number of French Specialists.

At the congress recently held at Nantes Dr. Polo remarked upon the manner in which specialist practitioners have increased in France to a far greater degree than general practitioners. In Paris in 1892 there were 2125 medical men, of whom 234 were specialists. At Nantes at the same time there were 100 medical men and 7 specialists. At the present time the number of specialists is doubled in both those towns, although the number of general practitioners has increased in a very much smaller proportion.

The Training of the Corps de Santé.

The three days' training of the Corps de Santé took place on the plain of Avaron on Oct. 6th, 7th, and 8th, and the

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members of the medical reserve, including the civil medical practitioners of Paris, took part in it. Everything had been admirably organised beforehand. The opposing forces were divided into two, one to attack the position on the plain of Avaron and the other to defend it. After the battle the Corps de Santé proceeded to pick up the wounded on the field, and to make the task of the bearers easier every wounded man was duly labelled with a ticket showing the nature of his injury, as, for instance, "fracture of the skull," "punctured wound of the thorax." The wounded men were told off to go to that ambulance which was specially appropriated to the gravity of their case and the urgency of their symptoms. Some were treated on the field itself, others were carried on stretchers to the ambulance of their own division, and others were sent to the temporary hospital—that is to say, the field hospital. On the day following various experiments were made in the transport of the wounded by means of ordinary country waggons transformed into temporary ambulances by means of special appliances, while other wounded were carried in the coal barges on the canal. A large crowd "assisted" at the manœuvres, which were very successful.

The Admission of Well-to-do Patients to Hospitals.

The action of Dr. Variot, as reported in my letter of last week, continues to occupy public attention, and the political press in general blames his conduct. They argue on the one hand that it is not possible for the medical man to decide merely by the dress whether the patient is indigent or not—which is a perfectly reasonable opinion, but it only proves that some steps ought to be taken by the administration of the hospital before the patients are admitted to get some proof of their poverty from would-be patients. But at the same time these papers uphold the dangerous theory that the medical officer of the hospital has no right to refuse gratuitous attention to anybody who comes, and some of them argue that the hospital ought to be perfectly open and free to everybody, whether poor or not. This extraordinary pretension would result in the State-supported hospitals coming into bitter conflict with the ordinary medical men in the town, who are already not so very well off, and for those medical men practising in working-class quarters, who already have to content themselves with very small fees, the result would mean ruin. To those practitioners who work among the higher class the loss would be very considerable if everybody had a right to gratuitous advice, for many of their patients would then come to see them at the hospital instead of consulting them at their own homes. The Director of the Assistance Publique, to whom complaint was made by the would-be patient of Dr. Variot, has referred the case to the governing body of the Assistance Publique, who will decide on the matter. Meantime the daily papers credit the Director with a policy which is certainly disquieting to medical men—namely, that it is intended to hang up in the consulting-rooms a box in which well-to-do patients may place a sum proportionate to their means and satisfactory to their consciences. The only result of this will be that non-indigent persons will be able to exploit the medical men in perfect security.

Oct. 10th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Egyptian Army Medical Staff.

THE medical arrangements of the late campaign were well organised and excellently carried out and reflect the greatest credit on Colonel Gallwey, C.B., who is now the fifth medical officer on the seniority list of the Egyptian army. The whole of the *personnel* were concentrated at the Atbara on August 20th ready for the forward movement. Captain Penton was made senior medical officer of the infantry division, and Captain Whiston, Captain Spong, Captain Jennings, and Captain Dunn were each placed in medical charge of a brigade. Each had under his orders 16 non-commissoned officers and men, a section of field hospital, all extra dressings, stretchers, cacolets, medical comforts, and a Congo chest. Every regiment carried with it a native medical man with his pocket case and morphia syringe, first field dressings, field panniers, medical comforts, and two stretchers per company with drilled bearers. Captain Hill Smith was made responsible for the mounted troops, which carried with them cavalry haversacks of surgical instruments, extra field dressings, and a mounted orderly with his belt full of drugs for emergencies. Captain Bray and two British non-commissioned officers were in charge of two hospital boats, carrying extra hospital equipment, tents, filters, and cooking and invalid necessaries. On the eventful fighting day, Sept. 2nd, the sections of field hospitals were not in action but were in their proper place with the main baggage camels. All the medical staff was ordered after the battle to concentrate at one spot with their wounded and the two hospital boats. This spot was fixed next morning at a place about four miles north of Omdurman and a hospital was then formed to accommodate 600. As a matter of fact the total number of sick and wounded during the first week after the battle was 584. All the day of the fight the wounded came dropping in and were attended to at the original zareba, the Nile bank, and on the barges. The total number of wounded was 286, half being blacks and the other half Egyptians. The whole number of killed and of those who were so dangerously wounded that they died within a week after the battle was only 49. Only 50 of the Egyptian army were wounded in the zareba and 6 were killed; the remainder of the wounded were injured at the time when the Dervishes tried to rush Colonel Macdonald's brigade. It is an old story now how well he and his Soudanese behaved at that time, but honour must also be given to Colonel Pink's battalion of Egyptians who formed part of that brigade. There were only 8 British medical officers at the battle, with 18 native medical men and apothecaries and 150 non-commissioned officers and men. Captain Spong and Captain Hill Smith have now been in all the engagements since Dongola and are already entitled to 6 clasps, being among the 13 officers who will receive the maximum number of clasps. Among other work done by the Egyptian army 8 gunboats were equipped with medical and surgical necessaries, though the English army had to supply the medical officers. 2 communication hospitals were established at Nasri Island and Gebel Ryan for the reception of the sick during the advance. When the British troops had left Omdurman 150 Egyptian sick were at once sent to Cairo, and now 100 slightly wounded Egyptians have been removed to Cairo, whence they will be sent to their village homes to convalesce. The black sick and wounded have all been left at Omdurman, because they are quite at home in that climate and because the whole of the medical staff is still concentrated there. The wounded are in tents on clean desert ground and the sick are in houses supplemented by shaded huts of straw and wood built by the Soudanese.

Present Medical Arrangements.

Captain Penton remains as the senior medical officer at Omdurman with Captain Jennings, Captain Spong, and Captain Dunn. Captain Whiston is with the mounted troops at Wad Hamad, Captain Hill Smith is marking time at Fashoda, Captain Bray at the Atbara, and Captain Wanhill at Wady Halfa. While all this has been going on Captain Fleming has been at Kassala, and now he telegraphs that all his 50 wounded are doing well. At the recent battle of Gedarif the Kassala garrison had 40 killed by the Dervishes, but no British officer was hurt. Now General Hunter has gone up the Blue Nile to join hands with Kassala and the railway between Atbara and Khartoum is being surveyed on the east bank of the Nile. These 200 miles will be in working order in about a year's time and where the Atbara is low a bridge will be built. As an instance of how rapidly events follow just now in the Soudan it may be pointed out that 800 blacks who fought with the Dervishes against us less than a year ago at the Atbara formed part of the Egyptian army which smashed the Khalifa last month. Of these 800 only 13 tried to desert; they were shot.

Port Said Hospitals.

The Egyptian Government hospital with its 100 beds is now under the care of Mr. W. B. Orme, Mr. F. R. Milton having been promoted to the post of junior surgeon at Kasr el Aini Hospital, Cairo. The hospital does very good work and natives come from great distances to get surgical aid. Dr. E. Cuffey, at present a naval surgeon at Crete, has been elected to the post of resident officer at the British Hospital, to succeed Mr. Foster-Foster, who died recently. This hospital is a wooden building of about 30 beds which has almost served its term of years. It is unbearably hot in the

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summer, but there do not seem to be any funds forthcoming to provide a permanent structure.

Cairo, Oct. 3rd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Infectious Diseases in New South Wales.

MEASLES, scarlet fever, and influenza are exceptionally prevalent in New South Wales. Scarlet fever alone is notifiable and the number of cases reported for the fortnight ending August 12th was 230, and the same number was reported for the preceding fortnight. Measles seem to be almost pandemic. The disease is raging in all the Australian colonies and has broken out in Fiji, where it is exceedingly fatal to the native population. In New South Wales, as in Victoria, a large proportion of adults have been attacked (about 1 adult to 9 children has been estimated as the probable proportion). Influenza has also been again very prevalent in New South Wales, chiefly in its catarrhal form, while pneumonia as a sequel of all three forms of epidemic disease has been a prominent factor in the mortality bills. It need hardly be said that the general medical practitioner has been kept very busy in the chief centres of population in New South Wales during the last month or two.

Metaphysical Healing and its Results.

Some time ago a so-called "Professor" Mills and his wife arrived in the Australian colonies from America as apostles of "Metaphysical Healing." They had a moderate amount of success in Melbourne, but in Adelaide the movement "caught on" in a remarkable manner. A "Metaphysical Society" was founded and a sort of hospital, known as the "Home of Truth," was established, where patients willing to submit to the new treatment were received. Everything went on satisfactorily until the beginning of August when a somewhat sensational case occurred. A girl who had undergone several operations for hydatids and had made arrangements for another operation by Dr. Poulton was induced to go into the "Home of Truth" without her mother's knowledge. When the mother discovered her and brought her home she was insane and had to be sent to the Parkside Asylum. Needless to say the hydatid was not cured. Her brother on meeting one of the founders of the "Home of Truth" gave him a sound thrashing, to which no resistance was offered.

Presidential Address.

In his address to the South Australian branch of the British Medical Association the retiring President, Dr. Anstey Giles, dealt at some length with the difficulties at the Adelaide Hospital, giving a *résumé* of the main facts of the squabble up to date and from the point of view of the old honorary staff. He denied emphatically that the action of the late staff was influenced by political considerations and he also denied that by the action of the staff on resigning the hospital patients were left without medical aid, as the staff expressly notified their willingness to attend until suitable arrangements were made for carrying on the work. Reference was then made to existing difficulties among members of the branch arising out of the hospital dispute. Some of the members of the branch had accepted positions on the honorary staff of the hospital and certain other members had requested the council to call a special meeting for the purpose of expelling the members who were on the staff. The meeting was held and decided not to adopt any extreme measures and in consequence seven of the most active members of the branch resigned. Dr. Giles regretted very much that these members should have been compelled by a stern sense of duty to such a course, but admitted that they had acted with the very highest motives and at great self-sacrifice in the interests of the profession.

Eye Specialists to Lodges.

The Council of the New South Wales branch of the British Medical Association having had its attention directed to an advertisement calling for applications from eye specialists to attend the members of a friendly society asked the opinion of the ophthalmic surgeons practising in Sydney on the subject. The following reply was received and approved by the Council: "At a meeting of medical men practising as specialists in the diseases of the eye it was unanimously resolved, 'That the Council of the B.M.A. should condemn the appointment of eye specialists by lodges and that the Council be requested to discountenance the introduction of the principle of club practice in connexion with special work.'"

Pulmonary Hydatids.

At the last meeting of the Medical Society of Victoria Dr. A. J. Wood read notes of three interesting cases of hydatid of the lung in children. In the first case the Russell-Bond method of treatment was adopted, the wound in the parietes being closed after removal of the endocyst; in the second case the wound was only partially closed but not drained; in the third case the wound was drained. All did well, but in the first case the recovery was most rapid, and Dr. Wood was of opinion that the other two cases might have been more satisfactorily treated by the Russell-Bond method. In the discussion which followed Mr. Russell objected to treating pulmonary hydatids by his method owing to the danger of producing general emphysema. Dr. Wood pointed out the danger of exploring pulmonary hydatids with a needle. Bronchial tubes open on the adventitious capsule and when the intracystic pressure is lowered the cyst is apt to rupture and the fluid contents escape inside the adventitia and then into the bronchi and so asphyxiate the patient. The risk of operating on pulmonary hydatids is also well exemplified in a case recorded by Dr. H. C. Hinder in the *Australasian Medical Gazette* for August. The patient was a girl, aged eight years. When a knife was passed into the cyst over the dulled area the opening was stopped with the finger and the fluid allowed to escape slowly. When about 1½ oz. had escaped she coughed and blood escaped from the mouth and from the cyst in large quantity and she died almost immediately. Post mortem it was found that the adventitia communicated directly with the left bronchus and pulmonary artery, each communication admitting a No. 12 catheter. During life the tense endocyst completely blocked the opening, but of course the moment the tension was relieved the artery was opened.

Inguinal Hernia in Childhood.

In a very able and thoughtful paper read before the August meeting of the Medical Society of Victoria Mr. Hamilton Russell strongly advocated the necessity of radical operation in every case of inguinal hernia in childhood. He maintained that in the normal and properly developed canal of a child where the funicular process is obliterated a hernial protrusion is impossible owing to the sphincteric action of the muscular fibres of the internal oblique. The main factor in the occurrence of inguinal hernia in childhood is a patent funicular process. Truss treatment fails to cause obliteration of this process and a patient so treated is always liable to the sudden descent of the hernia and especially to acute strangulation. The only satisfactory method of treatment and all that is required is to remove the congenital sac by operation.

Removal of Scapula.

The new operating theatre at the Melbourne Hospital was crowded to excess on August 25th, when Sir T. N. Fitz-Gerald removed the arm, scapula, and clavicle (by Berger's operation) for an enormous sarcoma of the upper end of the humerus which had followed an injury received three years previously. The interest in the case was the immense size of the growth, the anatomical relationship of the parts being greatly disturbed by its invasion of the axilla and root of the neck. The patient is doing well. In the *Inter-colonial Medical Journal* for August Dr. R. H. Marten records a case in which in April, 1896, he amputated at the shoulder joint the left arm of a woman, aged twenty-six years, for a spindle-celled sarcoma of the upper end of the humerus. In August, 1897, the growth recurred on the scapula, and on August 23rd he removed the scapula by a modification of Berger's method, the subclavian artery being tied at the end instead of the beginning of the operation. Recurrence took place in the lungs a year after the second operation and proved fatal. The original onset and each recurrence was coincident with pregnancy and her eldest child had sarcoma of the eyeball.

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Dr. Marten believes the pregnancy influenced the growth and when the patient became pregnant after the second operation felt justified in inducing abortion.

August 28th.

Obituary.

MAURICE DAVIS, M.D. ST. AND., M.R.C.S. ENG., L.S.A., J.P.

ON Sept. 29th, at his residence, 11, Brunswick-square, Bloomsbury, in the seventy-seventh year of his age, Dr. Maurice Davis peacefully passed away. Born in Oxfordshire in 1821, he entered King's College, London, as a matriculated student in 1849 and received the diploma of Associate of the College in 1852. In the same year he received all his medical qualifications — M.R.C.S. Eng., L.S.A. Lond., M.D. St. And. On the completion of his curriculum he betook himself directly to the practice of medicine and threw all his energies into the building up of a splendid practice instead of seeking appointments at at his hospital and medical school. Had he sought such appointments he would doubtless have been as successful a teacher as he was a practitioner. In October, 1887, he was placed on the Commission of the Peace for the County of Middlesex and Liberty of Westminster and became by statute a justice of the peace also for the new County of London. By this appointment he became an *ex-officio* member of the board of guardians of the parish of St. Pancras. He served for a time on the committee of the infirmary at Highgate. He was a member of the council of the Metropolitan Branch of the British Medical Association and also of the board of directors of the Society for the Relief of Widows and Orphans of Medical Men. He occupied for some years a seat at the Jewish Board of Guardians until obliged to resign by stress of work, retaining, however, his connexion with the board through the sanitary and industrial committees as its medical adviser. For a considerable period he served as a member of the council of the Anglo-Jewish Association and of the medical staff of the Jewish Convalescent Home. Dr. Davis possessed literary gifts of a high order. He contributed to the *Sanitary Record* and a series of valuable communications on "Sanitary Defects in Houses" from his pen appeared in that paper from 1884 to 1890. In 1875 an interesting essay appeared in the *Jewish Chronicle* entitled "The Cosmopolitanism and Longevity of the Jewish Race." In some addresses for dramatic performances and extravaganzas he was happy in subjects and methods of treatment. These were written for the benefit of King's College Hospital and the Great Northern Central Hospital, of which latter he was a life governor. He possessed a technical and wide knowledge of architecture, and perhaps there is not a cathedral in Europe worth seeing which he has not visited. One of the truest of friends, ever ready to help in any difficulty, he was a staunch supporter of the honourable traditions of the medical profession and on every occasion displayed a whole-hearted loyalty towards his medical brethren.

He married in 1854 Esther, daughter of James Graham Lewis, founder of the firm of Lewis and Lewis, solicitors, Ely-place. On the death of his wife in 1891 he retired from the active duties of medicine, but not into idleness. He devoted much time to judicial work and especially (in his magisterial capacity) to the examination of lunatics. The number of cases examined in his district, together with those arising out of his duties as one of the committee of visiting justices at Holloway Prison, amounted to from 300 to 400 every year.

WILLIAM RUTHERFORD ANCRUM, F.R.C.S. ENG.

IT is with regret that we announce the death of Mr. William Rutherford Ancrum, which took place at his residence, St. Leonards Court, Gloucester, on Oct. 9th. For a very long period the name of Mr. Ancrum was closely associated with some of the most important matters of administration in the county of Gloucester, and it would be well nigh impossible to overrate the value of the public work which he accomplished. It is just three years ago since the state of Mr. Ancrum's health compelled his retirement, and deprived the county of his eminent services. He was taken ill at a meeting of the county council in October, 1895, and since then his health had been gradually getting worse.

The late Mr. Ancrum had attained the advanced age of eighty-two years, he having been born at the Manor House, in the village of Weston, near Bath, on Feb. 5th, 1816. He was educated at private schools and he entered University College Hospital, London, in 1834. In 1839 he took the M.R.C.S. Eng. diploma, and became house surgeon at the hospital. Three years later he went to Mexico, and was in practice in the city of Mexico and surrounding district for five years. In 1848 he was appointed surgeon to the Naval Hospital in Valparaiso, where he also had a large and lucrative private practice. He held that appointment for eleven years, coming home on one occasion to pass the examination for the Fellowship of the Royal College of Surgeons of England. On his return to England Mr. Ancrum spent three years in London. Early in 1863, having retired from practice, he purchased St. Leonard's Court, where he resided until his death. Two years after he had taken up his residence in the county he was placed on the Commission of the Peace for Gloucestershire and for thirty years he took an active interest in his magisterial duties, both as regarded the police-court and the quarter sessions, and on the death of Sir William Guise he became chairman of the Gloucester County Bench. Mr. Ancrum took a very great interest in the Gloucester Infirmary, of the governing body of which he was chairman for twenty-seven years, and on his retirement a special resolution was passed recording the invaluable services which he had rendered and the great practical good which had resulted from his wise administration during that extended period. Subsequently a ward in the infirmary was designated the "Ancrum Ward" in recognition of his distinguished services to the institution.

On the death of Mr. S. S. Dickinson in 1878, Mr. Ancrum was appointed chairman of the committee of Wotton County Asylum, and it was through his influence and direction that the Second County Asylum was built and successfully financed in 1882. He was elected chairman of the Barnwood House Private Asylum also in 1878, and under his guidance the institution was considerably enlarged and several important additions were made to the buildings. He was a member of several committees of the old court of quarter sessions and then of the county council, of which he was an alderman, and he succeeded Mr. Brooke Hunt as chairman of the prison committee of visitors. In 1852 he married the youngest daughter of Mr. Arthur Lewis, of Brighton, who survives him, and he leaves a family of three sons and two daughters. The funeral took place on Thursday, Oct. 13th, at Upton St. Leonards.

DR. JEAN CROCQ.

THE death of Dr. Jean Crocq occurred very suddenly in Brussels on Sept. 18th. The Brussels University loses in him one of its oldest and most eminent professors, and he was without doubt one of those who have contributed most fully to spread the fame of that University throughout not only his own country but also foreign lands. Dr. Jean Crocq was born at Brussels on Jan. 23rd, 1824, and studied at the Universities of Ghent and Brussels, obtaining the degree of Doctor of Medicine, Surgery, and Midwifery in May, 1848, and *docteur agrégé* in October, 1848. In 1849 he became prosector in the anatomical department and he published his great work on "White Swellings of the Articulations" in 1853. Of all his work this is without doubt the most important and that which placed him obviously on a par with his most illustrious colleagues De Roubaix and Thiry. In 1855 he was nominated extraordinary professor and in 1856 surgeon to the Grand Hospice, where he had charge of the wards for the aged until 1860, in which year he was made professor and visiting physician to the Hospital of St. Pierre. For twenty-five years he gathered around him a host of pupils attracted by his lectures and, dowered as he was with perfect scientific knowledge, with a prodigious memory, wonderful power of observation, and above all with a fluency of language, he was enabled to communicate to his pupils some portion of his own enthusiasm and to produce a profound impression by his

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lectures which inspired his youthful hearers with admiration and warm affection for their master.

In his capacity of professor he occupied successively the chair of mineralogy and geology in 1861 and in 1866 that of general anatomy, and towards the end of 1868 he succeeded M. Le Beau in the department of pathology and therapeutics—a post he held for thirty years, to the end of his life, and in the carrying out of the duties of which he displayed an assiduity and earnestness which were universally recognised.

Having been elected a member of the Belgian Academy of Medicine in 1862 he took part in all the important discussions, notably that upon the case of Louise Lateau,[1] and those on the organisation and re-creation of faculties of medicine and the bringing about of a Central Institute for advanced studies. He was an indefatigable worker and almost to the last day of his life he devoted himself to the duties which he had undertaken. Busy as he was with much practice and with his hospital work he yet found time to establish a medical journal *(La Presse Médicale)* and an anatomical and pathological society, and to write numberless articles and papers, such, for instance, as Studies upon Anthracosis, on Vaccination and Contagious Ophthalmia, on the General Paralysis of Mania, on Cholera, on Fermented and Distilled Drinks, on Alcoholism, on Syphilis, on Hypnotism, on the Therapeutic Action of Digitalis, on the Action of Ergotine in the Treatment of Tuberculosis, and many other papers. Although everyone will not agree with the manner in which he treated all these subjects, yet whatever he investigated was handled in the same vigorous style, with the same absolute conviction and the same logical clearness of discussion. He was a strong partisan of his teachers and defended the ideas put forth by Broussais with an ardour and conviction which compelled the admiration even of those who did not agree with him. To the end of his life he remained bitterly opposed to the microbial theory of disease, though it must be allowed that he knew how to defend his opinions both in speech and in writing with a dialectical talent which made him no unworthy adversary. Apart from this point he was for a long time at the head of every medical scientific movement in Belgium. Despite his seventy-four years he had preserved much of the vigour of youth and his professional activity was such that his death came quite unexpectedly. The medical men of Brussels had decided to celebrate in his honour the fiftieth anniversary of his entrance into the profession, and this occasion would certainly have bound together the great majority of his medical brethren, for just as in his capacity of professor he had shown an example of absolute devotion to science, so as a physician he occupied the very first place and as a practitioner he leaves behind him the remembrance of one who was always a kindly colleague in whose hands the honour of the profession was perfectly safe. We need only further point out his devoted action in defending professional interests in the association of Brussels medical men and how at every discussion he was always attentively listened to. Among other marks of honour bestowed upon him the King of Belgium appointed him a Commander of the Order of Civil Merit.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. C. Morris Fisher, Professor of Histology in the Cooper Medical College, San Francisco.—Dr. Wiener, Extraordinary Professor of Midwifery and Gynæcology in the University of Breslau.—Dr. D. Toscani, Professor of Forensic Medicine in the University of Rome.—Dr. Simone Fubini, Professor of Materia Medica and Pharmacology in the University of Pisa.—Dr. A. J. M. de Hondt, chief medical officer of the Ostend Municipal Hospital and President of the local Medical Commission. He was Knight of the Order of Leopold and had the First-class Civic Cross. His age was sixty-five years.

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[1] For an account of this case see THE LANCET of April 22nd, 1871, p. 543.

MANCHESTER MEDICAL SOCIETY.—At the request of the committee of this society an address was delivered on Oct. 5th by Mr. W. H. A. Jacobson, entitled "Some Remarks on Accuracy in Diagnosis or Clinical Precision—Some of the More Common Causes of Failure." Mr. G. Wright, President, was in the chair.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination in October the following candidates passed in the subjects indicated:—

PART I.

Biology.—F. W. March, Durham, and Z. Rowlands, Royal Free Hospital.

Chemistry.—W. P. Allen, Birmingham; E. M. Forsyth, Royal Free Hospital; F. P. Joscelyne, Leeds; and J. S. Ward, Sheffield.

Materia Medica and Pharmacy.—G. M. Crockett, Royal Free Hospital; H. C. Jones, St. Mary's Hospital; M. E. Martin and L. G. Simpson, Royal Free Hospital; J. S. Ward, Sheffield; and A. F. Weston, St. George's Hospital.

PART II.

Anatomy.—A. O. Ashe, King's College Hospital; J. B. Bradley, Birmingham; J. Brownrigg, Liverpool; E. J. Crew, Guy's Hospital; B. M. Dunstan, St. Thomas's Hospital; C. A. W. Egan, Dublin; L. C. Ferguson, St. Bartholomew's Hospital; V. J. Glover, Liverpool; K. Heanley, Royal Free Hospital; B. I. Rahim, King's College Hospital; J. E. Skey, Westminster Hospital; L. K. Tickner, Durham; E. D. Townroe, St. George's Hospital; J. Waters, Middlesex Hospital; J. H. Williams, London Hospital; H. F. Willington, Manchester; and E. Yoxall, Birmingham.

Physiology.—A. O. Ashe, King's College Hospital; J. C. Baggs, St. Thomas's Hospital; J. Brownrigg, Liverpool; L. C. Ferguson, St. Bartholomew's Hospital; V. J. Glover, Liverpool; D. R. T. Griffiths, Guy's Hospital; K. Heanley, Royal Free Hospital; W. J. H. Hepworth, Edinburgh and St. Mary's Hospital; G. J. W. Keigwin, London Hospital; D. A. H. Moses, St. Bartholomew's Hospital; B. I. Rahim, King's College Hospital; H. H. Serpell, St. Bartholomew's Hospital; J. E. Skey, Westminster Hospital; H. O. Sutcliffe, Cambridge; E. D. Townroe, St. George's Hospital; J. Waters, Middlesex Hospital; H. F. Willington, Manchester; and E. Yoxall, Birmingham.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Convocation held on Sept. 24th the following degrees were conferred:—

Doctor in Medicine.—Gilbert Goolor, M.B., B.S. Durh.; George Rome Hall, M.B., M.S. Durh.; Thomas George Smith Hodson, M.B. Durh.; Hugh Meyrick Meyrick-Jones, M.B., B.S. Durh.; Thomas Brice Poole, M.B., B.S. Durh.; Tom Sanderson, M.B., B.S. Durh.; George William Scott, M.B., B.S. Durh.; John Dee Shapland, M.B., B.S. Durh.; Frederick Hampson Simpson, M.B., B.S. Durh.; Charles Stewart, M.B., B.S. Durh.; Thomas Streatfeild, M.B., B.S. Durh.; William Rowland Thurnam, M.B., B.S. Durh.; Frederick Septimus Walker, M.B., B.S. Durh.; and Allan Warner, M.B. Durh.

Doctor in Medicine (Practitioners of Fifteen Years' Standing).—Thomas Wilson Aird, M.R.C.S. Eng., L.R.C.P. Lond.; Richmond Robert Allen, L.R.C.P. Edin., F.R.C.S. Irel.; Arthur Frederick Blagg, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.; William Edward Cree, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.; Edward Octavius Croft, M.R.C.S. Eng., L.R.C.P. Lond.; George William Hamilton Cumming, M.R.C.S. Eng., L.R.C.P. Edin.; Henry Peers Dimmock, M.R.C.S. Eng., L.R.C.P. Lond.; Alfred Wilson Emms, M.R.C.S. Eng., L.S.A.; George Frost, M.R.C.S. Eng., L.R.C.P. Lond.; William Henry Gimblett, L.R.C.P. Irel., L.S.A.; Benjamin John Glissan, L.R.C.P. Edin., L.F.P.S. Glasg.; Stanley Stenton Hoyland, M.R.C.S. Eng., L.S.A.; Albert Samuel Morton, M.R.C.S. Eng., L.S.A.; Thomas William Scale, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.; Henry Fraser Stokes, M.R.C.S. Eng., L.R.C.P. Lond.; Arthur Warburton, M.R.C.S. Eng., L.R.C.P. Lond.; and Thomas Wingrave, M.R.C.S. Eng., L.S.A.

Master in Surgery.—Wilfred Ernest Alderson, M.D., B.S. Durh.

Bachelor in Medicine.—Arthur Samuel Arthur and Joseph Ellis Baker, College of Medicine, Newcastle-upon-Tyne; Gerald Burton Brown, L.S.A., Guy's Hospital; Frank Anthony Cooke, Henry Coxon Coxon, and Leopold Stanley Davison, College of Medicine, Newcastle-upon-Tyne; Howard Henry Congreve Dent, M.R.C.S. Eng., L.R.C.P. Lond., Mason College, Birmingham; Charles Edward Fenn, King's College, London; Henry Adamson Fielden and John Maxwell Gover, College of Medicine, Newcastle-upon-Tyne; Herbert George Harris, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital; Margaret Joyce, London School of Medicine for Women; George Whitson Middlemiss, College of Medicine, Newcastle-upon-Tyne; Robert Fletcher Moorshead, University College, Bristol; William Byron Milbanke, College of Medicine, Newcastle-upon-Tyne; Claudia Anita Prout Rowse, London School of Medicine for Women; Grace Harwood Stewart, London School of Medicine for Women; George Grey Turner, College of Medicine, Newcastle-upon-Tyne; Leslie Herbert Walsh, M.R.C.S. Eng., L.R.C.P. Lond., King's College, London; and William Henry Warwick, College of Medicine, Newcastle-upon-Tyne.

Bachelor in Surgery.—Arthur Samuel Arthur and Joseph Ellis Baker, College of Medicine, Newcastle-upon-Tyne; Gerald Burton Brown, L.S.A., Guy's Hospital; Frank Anthony Cooke, Henry Coxon Coxon, Leopold Stanley Davison, Henry Adamson Fielden, and John Maxwell Gover, College of Medicine, Newcastle-upon-Tyne; Herbert George Harris, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital; Margaret Joyce, London School of Medicine for Women; Alfred Phillips Lloyd, M.B., and George Whitson Middlemiss, College of Medicine, Newcastle-upon-Tyne; Robert Fletcher Moorshead, University College, Bristol; William Byron Milbanke, College of Medicine, Newcastle-upon-Tyne; Grace Harwood Stewart, London School of Medicine for Women; George Grey Turner, College of Medicine, Newcastle-upon-Tyne; and Leslie Herbert Walsh, M.R.C.S. Eng., L.R.C.P. Lond., King's College, London.

Bachelor in Hygiene.—John Wreford, M.B. Durh., M.R.C.S. Eng., L.R.C.P. Lond.

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FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Alfred Goldscheider, *privat-docent* of Internal Medicine, and Dr. Karl Horstmann, *privat-docent* of Ophthalmology, have been appointed Extraordinary Professors.—*Innsbruck:* Dr. W. Türk, Extraordinary Professor of Histology and Embryology, has been appointed Ordinary Professor.—*Lemberg:* Dr. Anton Mars of Cracow has been appointed Professor of Midwifery and Gynæcology and Dr. J. Wiczkowski has qualified as *privat-docent* of Internal Medicine.—*Naples:* Dr. Vincenzo de Meis has qualified as *privat-docent* of Medical Pathology.—*Prague (Bohemian University):* Dr. J. Hnâtek has qualified as *privat-docent* of Internal Medicine.—*Rio de Janeiro:* Dr. Miguel de Oliveira Couto has been appointed Assistant Professor of Pathology and Clinical Medicine.

UNIVERSITY COLLEGE, BRISTOL.—Professor R. Fanshawe delivered the opening lecture of the winter session at University College, Bristol, on Oct. 3rd. The subject was the English and Roman Empires. Professor Lloyd Morgan presided over a large audience.

CHORLTON UNION COTTAGE HOMES.—The cottage homes and schools at Styal built by the Chorlton Guardians were opened on Oct. 4th by the Marquis of Lorne. They are situated in a pleasant part of the neighbouring county of Chester and, so far as situation goes, are free from the suggestion of workhouse association. There is a probational lodge where new-comers will undergo a fortnight's quarantine to guard against the importation of infectious disease. The cottages, of which there are 17, are of red brick with terra-cotta facings and separated from each other by gardens where the children will be taught the cultivation of vegetables and flowers. Each cottage contains a day-room, a dining-room, offices, a bathroom, and bedrooms, and is in charge of foster-parents carefully chosen. Accommodation is provided for 310 children; there is a small Kindergarten school for the little ones, while for the older children there is a school planned to accommodate 500. There are workshops for the boys, where plumbing, bootmaking, carpentry, &c., will be taught, and swimming-baths, all good and useful arrangements, but all very different from the associations of family life, which it is impossible to produce wholesale, though the guardians have tried to create a passable imitation. The girls will be taught household work and domestic economy. There is also an isolation hospital with sixteen beds. The buildings and ground about them cover fifty acres. The whole is lighted by electricity. The cost to the guardians has been a little more than £50,000.

THE ABERNETHIAN SOCIETY OF ST. BARTHOLOMEW'S HOSPITAL.—The annual opening address of the above society was given at the hospital on Oct. 6th by Sir Thomas Smith. There was an enthusiastic audience of nearly 500 people. Sir Thomas Smith described his earliest impressions when he entered the hospital some fifty years ago, and from these comparatively remote times he traced the progress which had taken place in its administration, practice, and teaching, and he dwelt upon the gradual improvement in the manners and morals of its students. The first conclusion he drew as a student was that the good old days had passed away and that his "lot had fallen on evil times." This was the spirit which overshadowed the whole hospital and continued up to the time of Humphry, who was wont to exclaim, "Where are the giants of the past?" But this was not the right way to approach surgery. Too much stress was laid upon the dicta of their great predecessors and it must always be borne in mind that surgery has no fixed principles. Sir Thomas Smith spoke, too, of the great changes which had taken place in the curriculum required for examinations. In his time two and a half years was sufficient, now the minimum for any diploma was five years. He welcomed the emancipation of women, by virtue of which movement the nursing of the sick was now done by the educated and refined, to the benefit of patients and all concerned. The introduction of chloroform as a general anæsthetic and of antiseptic methods in surgery was also touched upon. After the address Sir Dyce Duckworth proposed a vote of thanks to Sir Thomas Smith, which was seconded by Mr. Bowlby, and cordially responded to by those present.

INFECTIOUS DISEASES HOSPITAL FOR NEWPORT (MON.).—On Oct. 7th a Local Government Board inquiry was held into the proposal of the Newport Corporation to borrow £7500 for the purpose of extending the Infectious Diseases Hospital.

A NEW COTTAGE HOSPITAL.—Mr. G. Wills has offered to endow a cottage hospital for Moreton Hampstead, Devon. A committee formulated a plan which the Hon. W.F.D. Smith so much approved of that he has proposed to give a site and erect the building.

THE STUDY OF THE SPANISH LANGUAGE.—With a view of helping the young men and women of England to obtain a commercial education fitting them to compete on equal terms with those of other nations, Sir Isaac Pitman and Sons, Ltd., announce another language weekly, in addition to their already popular French and German weeklies. The title of the new venture will be "Pitman's Popular Spanish Instructor," to be published weekly at 1½*d*. The idea is to thoroughly popularise the study of the Spanish language by furnishing from week to week useful matter for both the beginner and the advanced student in the form of business interviews, correspondence, commercial terms, &c.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—This society met for the first time this session on Oct. 7th, when the President, Dr. G. S. Middleton, gave a demonstration of cases. He showed (1) a case of Paralysis illustrating the difficulty of diagnosis between functional and organic disease; (2) a slightly marked case of Myxœdema in which the diagnosis had at first been missed, the patient having been treated for Bright's disease; (3) a case of Progressive Muscular Atrophy accompanied with Bulbar Paralysis; (4) a case of Paralysis Agitans affecting chiefly the left side and sparing the head; (5) a case of Disseminated Sclerosis in an Early Stage; and (6) a well-marked instance of Dermography.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The School of Surgery has resumed work for the Winter Session. The following is a list of the prize-winners:—Barker's Anatomical Prize: Miss K. F. Lynn, £26 5*s*.; and J. S. P. Stewart, £15 15*s*. Carmichael Scholarship: C. R. Boyce, £15. Mayne Scholarship: D. Hadden, £15. Gold and Silver Medals in Operative Surgery: G. W. Little, gold medal; T. G. N. Stokes, silver medal; and S. R. Godkin, certificate of merit. Descriptive Anatomy: Junior—A. Charles, first prize (£3) and medal; and R. H. Oulton, second prize (£1) and certificate. Senior—J. P. Byrne, first prize (£3) and medal; and C. R. Boyce, second prize (£1) and certificate. Practical Anatomy: First Year—R. H. Oulton, first prize (£3) and medal; and T. C. Fitzgerald, second prize (£1) and certificates. Second Year—C. R. Boyce, first prize (£3) and medal; and J. F. Peart, second prize (£1) and certificate. Third Year—J. S. P. Stewart, first prize (£3) and medal; and T. C. Fitzgerald, second prize (£1) and certificate. Practice of Medicine: G. W. Little, first prize (£3) and medal; and J. S. P. Stewart, second prize (£1) and certificate. Surgery: D. A. Fitzgerald, first prize (£3) and medal; and H. H. Swanzy, second prize (£1) and certificate. Midwifery: D. A. Fitzgerald, first prize (£3) and medal; and M. Gavin, second prize (£1) and certificate. Physiology: J. F. Peart, first prize (£3) and medal; and J. P. Byrne, second prize (£1) and certificate. Chemistry: Miss M. J. Shire, first prize (£3) and medal; and L. C. E. Murphy and W. J. O'Doherty (equal), second prize (£1) and certificate. Pathology: J. S. P. Stewart, first prize (£3) and medal; and S. R. Godkin, second prize (£1) and certificate. Physics: Miss M. J. Shire, first prize (£3) and medal; and W. B. A. Moore, second prize (£1) and certificate. Practical Histology: J. P. Byrne, first prize (£3) and medal; and R. H. Oulton, second prize (£1) and certificate. Practical Chemistry: W. Delaney and Miss M. J. Shire (equal), first prize (£3) and medal. Public Health and Forensic Medicine: D. A. Fitzgerald, first prize (£3) and medal; and Mrs. H. L. Hennessy, second prize (£1) and certificate. Materia Medica: J. Levis, first prize (£3) and medal; and W. R. Meredith, second prize (£1) and certificate. Practical Pharmacy: E. Evatt, first prize (£3) and medal; and Miss M. J. Shire, second prize (£1) and certificate. Biology: Miss M. J. Shire, first prize (£3) and medal; and R. E. Humphrey, second prize (£1) and certificate. A supplemental entrance examination will be held on Nov. 1st.

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ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the monthly meeting of the College, held on Oct. 7th, William John Thompson, M.D.Dub., was admitted as Member.

FREEMASONRY.—*Rahere Lodge, No. 2546:* A meeting of this lodge was held at Frascati's Restaurant, W., on Oct. 11th, W. Bro. Burns, P.P.G.D. Surrey, being in the chair. Bros. Carnall and Hoyland were admitted to the third degree. Bros. Briggs, Mackintosh, Heath, Keats, Brewerton, and Burrows were admitted to the second degree and Mr. Coventon was elected a member of the Lodge. Two communications were read from the United Grand Lodge and the Deputy Master of the Sancta Maria Lodge, No. 2682, was elected an honorary member. The Brethren afterwards dined together.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The following gentlemen have been elected officers for the ensuing year 1898-99:—President: Dr. Middlemas Hunt (Liverpool). Vice-presidents: Dr. Davison (Bournemouth), Mr. John Bark (Liverpool), and Mr. Wyatt Wingrave. Council: Dr. Dundas Grant, Dr. W. Hill, Dr. Greville MacDonald, Dr. Abercrombie, Mr. Percy Jakins, Dr. H. Woods (Dublin), and Dr. A. B. Kelly (Glasgow). Treasurer: Dr. McNeil Whistler. Honorary secretaries: Mr. St. George Reid and Dr. Furniss Potter.

PRESENTATIONS TO MEDICAL MEN.—Dr. Francis J. Waring, of Eaton-road, Hove, honorary physician to the Police Seaside Home, Hove, has been presented with a black marble timepiece with Corinthian pillars of black bronze, with inscription, from many of the convalescents at the home, to which he has given his voluntary services during the past eight and a half years. Inspector Foot, C Division, Metropolitan Police, came from London to make the presentation in the presence of the policemen now resident in the home, Colonel Philips (chairman of committee), Mr. W. Berners Wilson, Miss Griffen (hon. lady superintendent), and others. Inspector Foot, in presenting the timepiece, said that the gift was in no way proportionate to the gratitude which hundreds of convalescent policemen felt for Dr. Waring's kind and efficient medical treatment, but they hoped he would accept it as a slight token of their deep appreciation of his valued and unwearied labours on their behalf. The inscription on the clock was as follows: "Presented to Francis J. Waring, Esq., M.D., M.R.C.S., by many of the visitors to the Convalescent Police Seaside Home, Hove, in recognition of his unwearied and voluntary services to them and their comrades for nearly nine years. September. 1898."—On Sept. 27th, at the Great Western Railway Station, Cardiff, after the annual distribution of certificates and medals for those employés who had successfully passed the examination for "first aid" in connexion with the St. John Ambulance Association, Mr. William Taylor, M.D., L.R.C.P. Edin., M.R.C.S. Eng., was presented with a silver cigarette case engraved with his initials in appreciation of his services as honorary lecturer of the class. —On Sept. 26th, in the council chamber, Macduff, a large number of the public assembled for the purpose of bidding farewell to Mr. A. B. Lyon, M.B. Aberd., on his leaving Macduff. Provost Bisset presided, and presented to him, on behalf of the subscribers, a gold watch and a purse of sovereigns, speaking in eulogistic terms of Mr. Lyon's personal character and ability.

BOOKS, ETC., RECEIVED.

BAILLIÈRE ET FILS, Paris.
Chirurgie des Voies Urinaires. Par Dr. E. Chevalier. 1899.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
A Short Manual of Analytical Chemistry. By John Muter, Ph.D., F.R.S.E. Eighth edition. Illustrated. 1898. Price 6s. 6d.
A Manual of Physiology, with Practical Exercises. By G. N. Stewart, D.Sc., M.D. Edin., D.P.H. Camb. Illustrated. Third edition. 1899. Price 15s. net.

BAUERMEISTER, F., Glasgow.
Methods of Staining the Nervous System. By Dr. B. Pollack. Translated from the second German edition by W. R. Jack, M.D., B.Sc. 1899. Price 4s.
Verhandlungen des sechzehnten Congresses für Innere Medicin. 1898. Price 12s.
Ernährung, Stoffwechsel und Kissinger Kuren. Von Dr. R. Brasch. 1898. Price 1s. 9d.
Verwertbarkeit der Bindehaut. 1898. Price 4s. 9d.
Gesichtsstörungen und Uterinleiden. Von Dr. A. Mooren. 1898. Price 2s.
Ergebnisse der Allgemeinen Pathologie und Pathologischen Anatomie des Menschen und der Tiere. Von O. Lubarsch und R. Ostertag. 1898. Price 25s. 6d.
Tafeln zur Diagnose der Farbenblindheit. Von Dr. W. A. Nagel. 1898. Price 1s. 6d.

BLACKIE AND SON, London.
The Principles and Practice of Modern House Construction. Edited by G. Lister Sutcliffe. Illustrated. Divisional. Vol. 2. 1898.

CHURCHILL, J. & A., Great Marlborough-street, London.
Text-book of Histology, including the Microscopic Technic. By Dr. P. Stöhr. Second American from seventh German edition. Translated by Dr. Emma L. Billstein. Edited, with additions, by Dr. A. Schaper. Illustrated. 1898. Price 14s.
Diet and Food. By A. Haig, M.D. Oxon., F.R.C.P. Illustrated. 1898. Price 2s.
A Manual of the Practice of Medicine. By F. Taylor, M.D., F.R.C.P. Fifth edition. 1898. Price 16s.
Manual of Ophthalmic Surgery and Medicine. By Walter H. H. Jessop, M.B. Cantab., F.R.C.S. Eng. 1898. Price 9s. 6d.
A Synopsis of Surgery. By R. F. Tobin, F.R.C.S. Irel. 1898. Price 6s. 6d.
Commercial Organic Analysis. By A. H. Allen, F.I.C., F.C.S. Second edition. Vol. IV. Proteids and Albuminous Principles, Proteoids, or Albuminoids. 1898. Price 18s.

CONSTABLE, A, AND CO., Whitehall-gardens, London.
Emin Pasha, his Life and Work. By George Schweitzer, with an Introduction by R. W. Felkin, M.D., F.R.S.E. Vols. I. and II. 1898. Price 32s.

FISCHER, GUSTAV, Jena.
Die Krankheiten des Mundes. Von J. Mikulicz und W. Kummell. 1898.
Ueber die Wirkung des Neuen Tuberkulins TR. Von Dr. H. Stroebe. 1898.
Die Cholera Indica und Nostras. Von Dr. Th. Rumpf. 1898.
Handbuch der Therapie Innerer Krankheiten. Von Dr. F. Penzoldt und Dr. R. Stintzing. Parts 13, 14, 15, 16, and 17. 1898.

KIMPTON, H., High Holborn, London, W.C.
A Manual of Modern Surgery, General and Operative. By J. C. Da Costa, M.D. Illustrated. 1898. Price 21s. net.
Essentials of the Diseases of the Ear. By E. B. Gleason, S.B., M.D. Second edition. 1898.
A Text-book upon Pathogenic Bacteria. By J. McFarland, M.D. Illustrated. Second edition. 1898. Price 16s. net.
A Manual of Obstetrics. By A. F. A. King, A.M., M.D. Seventh Edition. Illustrated. 1898. 10s. 6d. net.

MACMILLAN AND CO., London.
The Living Organism: an Introduction to the Problems of Biology. By Alfred Earl, M.A. 1898. Price 6s.
A Clinical Treatise on Diseases of the Breast. By A. M. Sheild, M.B. Cantab., F.R.C.S. 1898. Price 15s. net.

METHUEN AND CO., Essex-street, London, W.C.
University and Social Settlements. Edited by W. Reason, M.A. 1898. Price 2s. 6d.

OBSTETRICAL SOCIETY OF LONDON, 20, Hanover-square, W.
Transactions of the Obstetrical Society of London. Vol. XL. For the year 1898. Part III., for June and July. Price 4s.

PERCY LUND, HUMPHRIES, AND CO., Amen-corner, London, E.C.
The Illustrated Annual of Microscopy. 1898. Price 2s. 6d. net.

ROJAS, R., Madrid.
Higiene de la Inteligencia. Por Dr. N. Mariscal y Garcia. 1898.

SIMPKIN, MARSHALL, HAMILTON, AND CO., London.
Clinical Observations on 2000 Obstetric Cases. By Porte Mathew, M.D. Cantab. Price 2s.

SMITH, ELDER, AND CO., Waterloo-place, London.
Dictionary of National Biography. Edited by Sidney Lee Vol. LVI. Teach—Tollet. 1898.
Skiagraphic Atlas, showing the Development of the Bones of the Wrist and Hand. By John Poland, F.R.C.S. 1898. Price 5s.
Traumatic Separation of the Epiphyses. By John Poland, F.R.C.S. 1898. Price 52s. 6d.

SOCIÉTÉ D'ÉDITIONS SCIENTIFIQUES, Paris.
La Tuberculose: sa Prophylaxie et son Traitement. Par Dr. E. Vigenaud. Prix 3 francs. 1898.

STOCK ELLIOT, Paternaster-row, London, E.C.
The People's Progress; In the Light of Concrete Revealings of the Mind. By the Rev. W. G. Davies, B.D. 1898.

SWAN SONNENSCHEIN AND CO., Paternoster-square, London.
Common Salt: its Use and Necessity for the Maintenance of Health and the Prevention of Disease. By C. G. Gümpel. 1898. Price 5s.

THE IMPERIAL PRESS, Surrey-street, Strand, London.
The Imperial Library.—Imperial Britain. By the Rev. T. Johnson In two vols. Vol. I., with Maps and Illustrations. 1898.

WATTS AND CO., Johnson's-court, Fleet-street, London.
A Plea for the Unborn. By Henry Smith. Second edition, with Appendix. 1897.

The Marlborough Series of Foreign Commercial Correspondence—German and English: by Mathias Meissner: edited by C. A. Thimm,

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F.R.G.S. (E. Marlborough and Co., 51, Old Bailey, London); price 1s.—German Self-taught with Phonetic Pronunciation: by C. A. Thimm, F.R.G.S. (E. Marlborough and Co., Old Bailey, London); price 1s.—The Journal of Mental Science: October, 1898 (J. & A. Churchill, London): price 5s.—Current Observations on Essential Oils: by W. J. Bush and Co., Distillers of Essential Oils, Artillery-lane, Bishopsgate, London (Little and Son, printers, Bishopsgate-street Within, London, E.C.—Magazines, &c., for October: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian, St. Peter's Magazine, North American Review.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BLUMFELD, J., M.D., B.C. Cantab., has been appointed Surgeon at the Chelsea, Brompton, and Belgrave Dispensary, S.W.

BULLMORE, CHARLES CECIL, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed *pro tem.* Medical Officer for Mylor by the Falmouth Board of Guardians, vice E. Head-Moore.

BUTTERWORTH, J. J., M.B., Ch.B. Vict., has been appointed a Second Assistant Medical Officer for the Monsall Hospital.

CHANCE, A., L.R.C.P., F.R.C.S. Irel., has been appointed Consulting Surgeon for the St. Michael's Hospital, Kingstown.

CROWLEY, RALPH H., M.D. Lond., has been appointed Honorary Physician for the Bradford Royal Infirmary.

DE JERSEY, W. B., M.B. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed an Honorary Assistant Medical Officer for the Royal Surrey County Hospital, vice J. P. A. Gabb.

DOWDEN, J. W., M.B., F.R.C.S. Edin., has been appointed a Medical Officer in the University Surgical Wards, Royal Infirmary, Edinburgh.

ELDER, G., M.D., F.R.C.P. Edin., has been re-appointed a University Clinical Tutor, Royal Infirmary, Edinburgh.

FAIRWEATHER, W. E., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Resident Medical Officer for the Guest Hospital, Dudley.

FORDYCE, W., M.D. Edin., has been re-appointed a Medical Officer in the Gynæcological Wards, Royal Infirmary, Edinburgh.

FOWLER, J. S., M.B., M.R.C.P. Edin., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Medical Officer in the Extra-mural Medical Wards, Royal Infirmary, Edinburgh.

GENGE, G. GILBERT, M.D., B.S. Lond., D.P.H. Camb., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Medical Officer for the Croydon General Hospital.

GILL, J. S., L.R.C.P., L.R.C.S., Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Clonavaddy District, Dungannon Union.

HEDLEY, A. S., M.B., B.S. Durh., has been appointed Medical Officer for the Workhouse and the Rothbury East Sanitary District of the Rothbury Union.

HICK, HENRY, L.R.C.P. Edin., M.R.C.S. Eng., has been appointed Medical Officer of Health for the New Romney Borough.

HONEYBURNE, R., M.D. Lond., M.R.C.S. Eng., has been appointed an Honorary Medical Officer for the Bradford Infirmary, vice J. Kerr.

HOWARTH, WILLIAM J., M.D., D.P.H. Vict., has been appointed Medical Officer of Health for the County Borough of Derby, vice Wm. Iliffe, deceased.

LACKIE, J. L., M.D., F.R.C.P. Edin., has been appointed a Medical Officer in the Gynæcological Wards, Royal Infirmary, Edinburgh.

MARSTON, F. E., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Officer for the Welshpool Sanitary District of the Forden Union.

MILLER, G. V., M.B., C.M. Edin., has been appointed Eye, Ear, and Throat Specialist, North Riding Infirmary.

ORME, W. BRYCE, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Principal Medical Officer to the Government Hospital, Port Said, Egypt, vice F. R. S. Milton.

POGSON, BUCKLEY, M.D., has been appointed Visiting Medical Officer for the Protestant Dissenting Charity Schools, Birmingham.

PURVES, R. B., M.B., C.M. Edin., has been appointed a Medical Officer to the Extra-mural Surgical Wards, Royal Infirmary, Edinburgh.

RAINY, H., M.B., C.M., F.R.C.P. Edin., has been re-appointed a University Clinical Tutor, Royal Infirmary, Edinburgh.

ROBERTS, KILHAM, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer of Health for the Ampthill Rural District Council.

SCOTT, J., M.B., D.P.H. Edin., has been appointed a Medical Officer to the Extra-mural Surgical Wards, Royal Infirmary, Edinburgh.

SKIRVING, A. A. S., M.B., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Medical Officer to the Extra-mural Surgical Wards, Royal Infirmary, Edinburgh.

WALTER, R. H., M.B., C.M. Edin., has been appointed Medical Officer for the Sixth Sanitary District of the Yeovil Union.

WATERSTON, D., M.B., C.M. Edin., has been appointed a Medical Officer to the Extra-mural Surgical Wards, Royal Infirmary, Edinburgh.

WELSH, D. A., B.Sc., M.D. Edin., has been re-appointed a University Clinical Tutor, Royal Infirmary, Edinburgh.

WHITAKER, E. T., M.B., Ch.M., B.Sc., Edin., D.P.H. Camb., F.C.S., has been appointed Medical Officer of Health for the Ellesmere Urban and Rural District Councils, vice G. J. Glasson, resigned.

WOODHEAD, T. FIELDING, M.R.C.S., L.R.C.P., has been appointed Certifying Surgeon to Factories for the Meltham Urban District, vice T. A. Haigh, resigned.

YULE, G. P., M.B., M.S. Edin., has been appointed a Third Medical Assistant Officer for the Monsall Hospital.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum with board and apartments in the Hospital.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary £150 per annum, with an allowance of £30 per annum for cab hire, and furnished rooms, fire, lights, and attendance.

BOROUGH OF RICHMOND (Surrey) and HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the new Isolation Hospital at Mogden, near Kneller Hall, Twickenham, unmarried. Salary £100 per annum, with furnished apartments in the Hospital, rations, and washing. Applications to the Clerk to the Joint Committee, 172, High-street, Hounslow, Middlesex.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

COUNTY BOROUGH OF BURY.—Medical Officer of Health for the Borough and Urban Sanitary District of Bury. Salary £300 per annum, with actual disbursements. Applications to the Town Clerk, Corporation Offices, Bury.

DUNDEE ROYAL LUNATIC ASYLUM.—Two Medical Assistants. Salary £100 each, with board and lodging.

GRIMSBY AND DISTRICT HOSPITAL, Great Grimsby.—Resident House Surgeon. Salary £80 per annum, board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—Assistant House Surgeon for six months. Gratuity of £10, with residence, board, and laundry.

HERTFORDSHIRE COUNTY ASYLUM at Hill-end, near St. Albans.—Medical Superintendent. Salary to commence at £500 a year. Certain arrangements as to accommodation until the asylum is completed will be made, and also as to furnished residence, &c., in addition to the salary. Applications to the Clerk to the Hertfordshire County Council, Hertford.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

INFIRMARY OF THE CITY OF LONDON UNION.—Assistant Medical Officer at the Infirmary, Bow-road. Single or widower without children. Salary £150 per annum, with furnished apartments at the Infirmary, rations, and washing, subject to statutory deductions. Applications to the Clerk to the Guardians, 61, Bartholomew-close, E.C.

KENT AND CANTERBURY HOSPITAL, Canterbury.—Assistant House Surgeon. Unmarried. Salary £50 a year, with board and lodging.

LEICESTER INFIRMARY.—House Surgeon. Salary £120 the first year, rising £10 per annum until the third year. Board, apartments, and washing provided.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer for one year. Salary 100 guineas per annum, with board, lodging, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street.—House Surgeon (non-resident) for six months. Salary at the rate of £25 per annum.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum attaches to the senior post.

ROTHERHAM HOSPITAL AND DISPENSARY.—Resident House Surgeon for three years. Salary £105 per annum, board and washing.

ROYAL FREE HOSPITAL, Gray's-inn-road, London.—House Surgeon for six months. Board, &c., provided.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, London.—Resident Medical Officer for twelve months. Salary £70 a year, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, and 15, Hanover-square, London.—House Surgeon and Anæsthetist for six months, unmarried. Salary at the rate of £100 per annum with residence and partial board.

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ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL, Portsmouth.—Assistant House Surgeon for six months. Board and residence and an honorarium of £15 15s.

ROYAL SOUTH LONDON DISPENSARY, St. George's-cross, S.E.—Dispenser. Salary 30s. per week and use of furnished apartments, with coals, gas, and water.

SCHOOL BOARD FOR LONDON.—Qualified Medical Practitioners to give Lectures on First Aid and Home Nursing to the pupils of the Evening Continuation Schools. Applications to the School Board for London, Victoria Embankment, W.C.

SOUTH LAMBETH, STOCKWELL, AND NORTH BRIXTON DISPENSARY, Wilkinson-street, Albert-square, Clapham-road, S.W.—Vacancy on the Visiting Medical Staff.

TORBAY HOSPITAL PROVIDENT DISPENSARY AND EYE INFIRMARY, Torquay.—House Surgeon. Salary £80 and board, lodging, washing, and attendance (wines, spirits, and beer excepted).

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

Births, Marriages, and Deaths.

BIRTHS.

ATTLEE.—On Oct. 8th, at 58, Brook-street, London, W., the wife of John Attlee, M.D., of a daughter.

BOGLE.—On Oct. 4th, at New Ferry Park, near Birkenhead, the wife of James Linton Bogle, M.D., of a son.

BRIGHTMAN.—On Oct. 4th, at Aspley House, Broadstairs, the wife of Frank Brightman, M.R.C.S., L.R.C.P., of a daughter.

BROOKE.—On Oct. 3rd, at Buxton House, West Bridgford, Notts, the wife of Frederick Brooke, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

CHEYNE.—On Oct. 12th, at 75, Harley-street, W., the wife of W. Watson Cheyne, F.R.C.S., F.R.S., of a son.

HOLCROFT.—On Oct. 7th, at Tramore, St. Leonards-on-Sea, the wife of Edgar Holcroft, M.A., M.B., of a daughter.

HUTCHINSON.—On Oct. 6th, at Loneside, Haslemere, the wife of Roger J. Hutchinson, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BUIST—HUTCHISON.—At the cathedral church of St. Mary, Edinburgh, on Oct. 11th, 1898, by the Rev. Hugh J. Lawlor, D.D., Professor of Ecclesiastical History in the University of Dublin, John Brown Buist, M.D., to Helen, younger daughter of the late Henry Hutchison, 4, Grosvenor-street, Edinburgh.

CANDLER—WHISTLER.—On Oct. 4th, at Stockland Church, near Bridgwater, George Candler, B.A. Cantab., M.R.C.S., L.R.C.P., son of John Candler, M.R.C.S., of Harleston, Norfolk, to Edith Benedicta, daughter of the late Rev. R. F. Whistler, of Elton, Peterborough.

DEANESLY—MARSTON.—On Oct. 5th, at St. Peter's Collegiate Church, Wolverhampton, Edward Deanesly, M.D., B.Sc., F.R.C.S., to Ida Margaret, second daughter of John Marston, J.P., The Oaks, Wolverhampton.

MACMULLAN—THOMAS.—On Oct. 6th, at St. James's, Piccadilly, James Neil Macmullan, L.R.C.P. & S.E., L.F.P.S.G., of Drybrook, Glos., to Fanny Maude, eldest daughter of Richard Thomas, of Penarth.

STEDMAN—HETHERINGTON.—On Oct. 6th, at St. Peter's, Hull, Bernard Stedman, M.D. Lond., of Leighton Buzzard, to Clara Edith Hetherington.

TURNER—BARRY.—On Oct. 5th, at St. Stephen's, South Dulwich, John Sidney Turner, M.R.C.S., F.L.S., of Stanton, Anerley, S.E., to Emily Jane, only daughter of the late Dr. John Boyle Barry of Calcutta.

DEATHS.

BLACKFORD.—On Oct. 1st, at Cannock, John Cromwell Blackford, M.R.C.S., L.S.A., aged 76.

GOLDTHORP.—On Oct. 8th, at her residence, Howard House, Upper Norwood, in her 86th year, Laetitia Goldthorp, eldest daughter of the late William Browne, Esq., of Stanton's Wharf, Bermondsey, some time widow of the late Samuel Radcliffe, Esq., M.D., of Leeds, and afterwards widow of the late Robert Goldthorp, Esq., of Leeds and Norwood.

JACKMAN.—On Oct. 11th, at 11, Stoke Newington-road, N., Sarah, wife of T. S. H. Jackman, L.R.C.P. Lond., M.R.C.S. Eng.

NEWCOMBE.—On Oct. 2nd, at Woodhall Spa, Lincoln, Henry Newcombe, F.R.C.S.E., of Dalrymple-crescent, Edinburgh.

REW.—On Oct. 6th, at Western-road, Bexhill, James Rew, M.R.C.S., L.S.A.

WILKINS.—On Oct. 5th, at Brixton-road, Gilbert Hamilton Wilkins, M.D., aged 48.

N.B.—A fee of 5s. is charged for the insertion of Notice of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (18th). — PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. F. W. Andrewes: Follicular Enteritis due to Streptococci and Bacillus Enteritidis Sporogenes.—Mr. S. G. Shattock: Acromegalic Skull.—Dr. W. S. L. Barlow: Carcinoma (?) arising in an Accessory Thyroid Gland.—Mr. H. B. Robinson: Button Cyst of the Breast.—Dr. H. Walsham: On the occurrence of Bony and Cartilaginous Nodules in the Tonsil.—Mr. P. de Santi: Multiple Primary Sarcomata of the Scalp of nineteen years' duration, Removal, Recurrence in the Lungs.

CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, S.W.).—8.30 P.M. Dr. J. F. Palmer (President): On certain Undefined Factors in the Spread of Disease (Opening Address).

WEDNESDAY (19th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Papers:—Mr. J. N. Coombe: The Reproduction of Diatoms.—Mr. F. W. Millett: Report on the Recent Foraminifera of the Malay Archipelago (Part III.).

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8.30 P.M. Monthly Demonstration of Clinical Cases.

THURSDAY (20th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Edgware-road).—8.30 P.M. Clinical Meeting. The following Cases will be shown: Dr. A. P. Luff: A Case of Great Enlargement of the Spleen.—Mr. S. Collier: (1) Congenital Dislocation of Patella; (2) A Case for Diagnosis.—Mr. J. Clarke: Cases of Spinal Caries.—Dr. J. Taylor: A Case of Paralysis.—Dr. L. Guthrie: Left Hemiplegia associated with Atrophy of Right Optic Nerve.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Cases and Card Specimens. 8.30 P.M. Papers:—Mr. J. F. Bullar and Mr. C. D. Marshall: Tumours of the Optic Nerve.—Capt. Herbert: The Tension of the Eye in Irido-Cyclitis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (17th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. H. Tilley: Demonstration of Selected Cases (Ear, Throat, Nose).

THE SANITARY INSTITUTE, (Parkes Museum, Margaret-street, W.).—8 P.M. Sir Douglas Galton (Chairman of Council): Introductory Address to Twenty-sixth Course of Lectures and Demonstrations in Sanitary Science for Sanitary Officers and Students.

TUESDAY (18th).—ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Sir Dyce Duckworth: Harveian Oration.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4 P.M. Dr. H. Campbell: On the Motor Tract, with Cases of the Different Types of Paralysis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Buzzard: Peripheral Neuritis.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Pityriasis Rosea and Tinea Versicolor.—Bethlem Hospital, 2 P.M., Dr. Craig: Melancholia and Hypochondriasis.

WEDNESDAY (19th). — LONDON POST-GRADUATE COSURE. — Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Construction of Dwelling Houses.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Mitchell Bruce: Aneurysm of the Aorta.

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THURSDAY (20th). — LONDON POST-GRADUATE COURSE. — Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Mr. F. Taylor: Clinical Lecture.
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Batten: Demonstration of Selected Cases.
CHARING-CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post-Graduate Class.)
LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical Demonstration to Senior Students.
FRIDAY (21st).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Examination of Air, Soil, and Water.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: Surface Anatomy of the Lower Extremity.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 13th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Oct. 7	29·99	S.E.	...	68	61	55	55	57	Overcast
,, 8	29·91	S.E.	...	80	60	53	53	56	Overcast
,, 9	30·05	N.E.	0·20	93	62	50	50	55	Hazy
,, 10	30·09	N.W.	...	75	58	50	50	51	Overcast
,, 11	30·00	N.	...	63	55	45	47	48	Foggy
,, 12	29·96	W.	...	91	61	45	46	48	Bright
,, 13	29·88	N.E.	...	65	54	45	46	47	Foggy

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

NICOTIANA.

SINCE James I. began the attack with his famous "Counterblast" there has been no lack of fulmination against users of the plant which Sir Walter Raleigh describes as "ye herb called by ye natives yppowoc," and yet not only do smokers still abound but they actually seem to be becoming more and more numerous every day. Anti-tobacconists are doubtless for the most part actuated by praiseworthy motives, although in some cases they may be seeking to "compound for sins they have a mind to," as Butler has it, but it is nevertheless a fact that moderate indulgence in sound tobacco has never been shown to be injurious to grown people. But if the nicotian citadel has proved itself impregnable, there are sundry outworks, so to speak, where a measure of success, if not absolute victory, has been claimed by the stormers in spite of strenuous denials on the part of the besieged. According to Dr. Etienne of Nancy the mortality prevailing among the children of women who are employed in manufacturing tobacco is more than double that of the infantile population in general, amounting to as much as 100 per cent. when the mothers resume work immediately after their confinement and sinking to about normal when they refrain from re-entering the factory until their infants have been duly weaned. The poisonous character of a woman's milk while she is in the habit of manipulating tobacco is thus, in Dr. Etienne's opinion, conclusively proved, but in the opinion of M. Darquier, who thirty years ago founded a *crèche* in a tobacco factory at Toulouse, the conclusion is by no means justified. Having successfully administered his *crèche* ever since its foundation the nicotian advocate writes to the *Revue Scientifique* in order to protest against the Nancy practitioner's assumptions. According to M. Darquier, "tobacco exercises no injurious effect whatever on the milk of the workwomen who are engaged in manufacturing it," and he is able to adduce figures which seem to sustain his argument. Often since the *crèche* was started there have been as many as 1800 infants accommodated in a single year, but instead of the excessive mortality given by Dr. Etienne the average death-rate for the whole period is only 17·94 per cent. It is true that some of the children were aged eighteen months and upwards on admission, but when these are eliminated from the calculation the results are still favourable to tobacco, as will be seen by the following statement: death-rate among infants nursed in the *crèche* by their mothers, 22·10 per cent.; death-rate among infants brought up in the *crèche* by hand, 41 per cent. Apparently M. Darquier has most successfully defended his outwork, but no doubt his antagonist will resume the assault.

A FRENCH VIEW OF THE VACCINATION ACT.

UNDER the heading of "La Vaccination en Angleterre" the *Revue Scientifique* of Oct. 8th has an article in which the following remarks occur:—

> "We all know that according to a recent law which has been passed owing to the efforts of the antivaccinationists it is from henceforth legal for anyone not only to refrain from having himself vaccinated, but also to refrain from having his children vaccinated. Whoever can prove before a magistrate that he has a "conscientious objection" as to vaccinating himself or his children can escape vaccination. We do not quite see how the magistrate is to weigh the value of the conscientious objections but that does not matter. ..... What the anti-vaccinationists want to do is to perform an experiment which no medical man would have dared to suggest and the expenses of which they will have to pay. ..... So much the worse for the ignorant, for those who do not wish to learn, ... their experiment will only fortify the partisans of vaccination in their opinion."

THE HISTORY OF PULSE COUNTING.

IN the course of an address on the nerves of the heart published in the *Deutsche Medicinische Wochenschrift* of August 4th Professor von Leyden mentioned, on the authority of Professor Pagel, that John Floyer (1649–1734) is spoken of as the first who employed a watch in practice for determining the pulse-rate, although William Harvey (1578–1657) had already used a watch for a similar purpose. In the issue of that journal of Oct. 6th Professor C. Binz draws attention to an earlier originator of the same idea—namely, the German cardinal Nikolaus Krebs, of Cues (pronounced Cuhs) on the Moselle, well known in the history of the fifteenth century as Cusa or Cusanus. Of course, timekeepers suitable for pulse counting did not exist in Cusa's day, as the earliest form of the watch was the "Nuremberg egg" invented by Peter Henlein, who died in 1542. The cardinal lived from 1401 to 1464. In his dialogue "De Staticis Experimentis," which he wrote in 1450, he recommended the use of the balance in scientific experimentation, and Professor Binz gives a lengthy quotation taken from a copy of the treatise bound up with an edition of Vitruvius "De Architectura," published at Strassburg in 1543. The following is an extract, immediately after which comes a suggestion that the respirations in health and in illness might be compared in a similar manner.

> "Nonne putas, si aquam ex stricto foramine clepsydrae in pelvim permitteres, quousque sani adolescentis pulsum centies sentires et similiter ageres in adolescenti infirmo, inter aquas illas ponderis cadere differentias? Ex pondere igitur aquarum ad diversitatem pulsuum in juvene, sene, sano et infirmo perveniretur, et ita ad morbi veriorem notitiam, cum aliud pondus in una infirmitate, aliud in alia necessario eveniret. Unde perfectius fieret judicium ex experimentali pulsuum tali differentia et pondere urinae, quam tactu venae et colore urinae tantum."

Floyer practised at Lichfield and was knighted in or before 1686. The account of him in the "National Dictionary of Biography" is by Dr. J. F. Payne, who says: "Floyer was the first to make regular observations upon the rate of the pulse, counting the number of beats in a minute by the watch. Before his time, though other points connected with the pulse had been carefully studied, this had been neglected. The pulse-watch was merely a watch constructed to go for exactly one minute. ..... Floyer did good service also by his advocacy of cold bathing in a work published under different titles in several editions. ..... The work on Asthma is also very noteworthy, not only as containing excellent clinical observations, but as giving the first account, derived from dissection, of the change in the lungs now called emphysema."

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THE AMERICAN ARMY IN CUBA.

AN editorial article in the *Philadelphia Polyclinic* of Sept. 10th says: "We are among those who trust that the request of Surgeon-General Sternberg for an investigation will be granted and that the investigation will be thorough and judicial. We have never doubted, and we do not doubt now, that its result will be creditable to the medical corps of the United States Army, from the Surgeon-General to the youngest and most inexperienced of the surgeons appointed from civil life. Accumulating evidence seems to show that failure upon the part of camp officers to heed the warnings and obey the suggestions of the regimental surgeons is responsible for the epidemics of typhoid fever, and that the outbreak of yellow fever was due to General Shafter's brutal and ignorant course, seemingly prompted entirely by a spirit of childish opposition, in disregarding the warnings and the advice of Dr. Senn, Dr. Wood, and his own chief medical officer."

"WHAT IS A *BONÂ-FIDE* STUDENT?"

To the Editors of THE LANCET.

SIRS,—Your reply to my letter under the above heading in THE LANCET of Oct. 8th, if it correctly interprets the meaning of the General Medical Council, practically closes the door of the profession to my employé and to all like him who, having no means, are deprived of the power to make use of the knowledge they have gained to earn sufficient money to see them through their final. I do not think I am exaggerating when I say that hundreds of medical students complete their curriculum and do not feel themselves equal to pass the final, and when they do face it are often referred. What are these men to do if they have no money? They are no longer *bonâ-fide* students if your opinion is correct, and consequently not eligible for pupil assistantships. If medical men employ them, even in that capacity in which they have proved themselves to be efficient, the former are liable to be censured by the General Medical Council, though it would appear that *bonâ-fide* students of less experience and unproved efficiency could be legitimately so employed. If I am not trespassing too much on your space I shall be glad if you will give me your opinion as to whether any further employment in medical practice beyond bookkeeping and dispensing can be found for men in the position of my employé.

I am, Sirs, yours faithfully,

Oct. 10th, 1898. L.R.C.P.

DURHAM UNIVERSITY AND THE M.D. FOR PRACTITIONERS.

To the Editors of THE LANCET.

SIRS,—As I have just had the good fortune to obtain the above degree, and as Durham is the *only* university in England which kindly and liberally widens her portals so as to reward the general practitioner after he has attained the age of forty years, I write with your kind permission to shed a little light upon the matter for the benefit of others who wish to graduate, as there are some points which do not seem to be well understood. First, *either* the Latin or the Professional may be taken separately or first. To one who has forgotten the former I would say, take it up first and *alone*, so as to be free for the professional subjects afterwards. The time allowed for the latter will of course depend upon the abilities and opportunities of the candidate, say three or four hours' reading daily for six or twelve months. A list of books is to be obtained in the University Calendar, which will be forwarded by the kind and courteous secretary, Dr. Howden. Get the latest editions. Be sure and get up the urine and urinary microscopic, and pathological and histological work thoroughly, also the uses and names of all surgical instruments and appliances, and if at all shaky in clinical work do not venture to present yourself before doing a certain amount of ward-work. And last, but not least, do not think that because you *are* forty years of age and practise in London *anything* will do for Durham, or you will regret it.

I am, Sirs, yours faithfully,

Oct. 3rd, 1898. M.D.

SAVE US FROM OUR (CLERICAL) FRIENDS.

MR. CLAGUE, of Castletown, Isle of Man, is to be sincerely sympathised with on account of the, doubtless kindly meant, advertisement given to him by Canon Christopher, of Oxford, in the *Record*. The worthy canon's article is headed "Sleeplessness: A Prescription." He explains that after a number of eminent London medical men had failed to relieve him "Dr. Clague, of Castletown, Isle of Man, took me in hand. He prescribed for me a sedative mixture which not only, under God's blessing, cured me, but also keeps me cured. I have never had a really sleepless night for eleven years. ..... Dr. Clague's 'Sedative Mixture' never interferes with any regular habit and I have never had a headache or any other ache for eleven years. I do not know what ingredients are combined in the mixture, but if any one of your readers wishes to know, let him send a P.O. for 2s. to Mr. R. K. Kermode, chemist, Malew-street, Castletown, Isle of Man, and ask him to send a small bottle of the 'Sedative Mixture' which he has sent me for about eleven years and the prescription. No one must expect an answer if he merely writes for the prescription. . . . If any sleepless sufferer can afford to take a bed for a week at Fort Island Hotel, near Castletown, Isle of Man, he will enjoy the sea air, and can consult Dr. Clague, whose fees are very moderate. . . . Dr. Clague's ability is well known to his medical brethren in Douglas, who occasionally call him in for consultation in specially difficult cases." Really, as Canon Christopher says he is seventy-eight years of age, it might have been supposed that he was old enough to know better than to write such a letter. A postal order sent as directed brought an 8 oz. mixture labelled "The Sedative Mixture as recommended by Canon Christopher. . . . N.B.—The Prescription is not supplied."

"THE MEDICAL DIRECTORY."

To the Editors of THE LANCET.

SIRS,—The Medical Directory is such a useful and generally admirable publication that any question which tends to eliminate blemishes will, I am sure, be welcomed by the editors. The list of hospitals and schools of medicine in London is apparently arranged alphabetically, only on a very mixed system. It commences thus: Bartholomew's Hospital (St.), then follow Charing-cross, Guy's, King's, London, Middlesex, and then come St. George's, St. Mary's, and St. Thomas's. Now, if all the hospitals called after a saint are to be inserted alphabetically under S, why should the Apostle Bartholomew be ignored? If the alphabetical arrangement is to be taken from the names of the saints, then St. George's should precede Guy's and St. Mary's precede Middlesex. The present arrangement is a hopeless mixture.

I am, Sirs, yours faithfully,

Oct. 10th, 1898. C. P. H.

To the Editors of THE LANCET.

SIRS,—There is something to be said for and against the present arrangement of the Medical Directory, but it would be quite easy with the addition of a few extra pages to increase its usefulness. All that is required is an alphabetical list of names at the beginning of the book and an indication of the section where the full names and qualifications, &c., can be found.

I am, Sirs, yours faithfully,

Oct. 3rd, 1898. OPS.

POWDER PUFFING.

WE have received the wrapper of a packet of baking powder upon which is printed a testimonial signed "W. Tibbles, M.R.C.S., L.R.C.P., L.S.A." Mr. Tibbles would do well if he took steps to have his name removed from such undesirable publicity.

ADVERTISING.

A CORRESPONDENT has forwarded to us a card, of which we reproduce a portion:—

Notice of Removal.

Dr. Burslem Rotheroe

has removed from

.....

to

.....

1st Sept., 1898. .....

The card was forwarded in an envelope addressed to (we omit the name) "Col. ——, Esqre." It is not usual to put "Esq." after a name bearing a preceding title. Moreover, the envelope was unstamped and surcharged. Our correspondent informs us that he has never been a patient of the medical man in question. Mr. Rotheroe must know that it is not professional for any medical man to send "change of address" cards to others than his own patients.

Mr. R. Eustace will find the names of the examiners in the current Calendar of the College under the heading of Officers, &c. It is very unlikely that the qualified man stands any better chance than the unqualified, or that the man who has been rejected stands any better chance than the virgin candidate.

A Registered Medical Student has omitted to enclose his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Kingston News, Bradford Observer, Birmingham Gazette, Scotsman, West Middlesex Advertiser, Manchester Guardian, Western Morning News, East Anglian Times, Nottingham Guardian, Woolwich Herald, Warwick Times, Leicester Post, Westminster Gazette, Times of India, Pioneer Mail, Walsall Advertiser, Glasgow Herald, Sheffield Telegraph, Watford Observer, Galloway Advertiser, Sussex Daily News, Dundee Advertiser, Brighton Gazette, Builder, Liverpool Daily Post, Citizen, Architect, Leeds Mercury, Lincoln Chronicle, City Press, Yorkshire Post, Grimsby Daily Telegraph, Bristol Mercury, Radnorshire Standard, Household Words, Western Mail, Sanitary Record, Local Government Chronicle, Mining Journal, Hertfordshire Mercury, Reading Mercury, Daylight, Chelsea Mail, Local Government Journal, Surrey Advertiser, Eastern Daily Press, Weekly Free Press and Aberdeen Herald, The Evening Reporter, Pontypridd Chronicle, Arbroath Herald, Redworth Observer, Dereham and Watton Standard, Isle of Man Examiner, Whitehaven Advertiser, Bristol Times and Mirror, Barry Herald, Chard News, Fish Trade Gazette, Paddington Gazette, Daily Chronicle, &c.,*

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The Harveian Oration

ON

THE INFLUENCE OF CHARACTER AND RIGHT JUDGMENT IN MEDICINE.

Delivered before the Royal College of Physicians of London on Oct. 18th, 1898,

BY SIR DYCE DUCKWORTH, M.D., LL.D. EDIN.,

FELLOW AND TREASURER OF THE COLLEGE; HONORARY FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND; PHYSICIAN AND LECTURER ON MEDICINE AT ST. BARTHOLOMEW'S HOSPITAL; HONORARY PHYSICIAN TO H.R.H. THE PRINCE OF WALES.

SIR SAMUEL WILKS (President of this College), FELLOWS, AND GENTLEMEN,—The honourable task which is imposed upon me to-day carries with it, year by year, a heavier burden and an increased responsibility. I suppose that not fewer than 180 Harveian Orators have taken their places in this venerable College to carry out the project of that great man whose character and work we so appropriately commemorate on this festival of "the beloved physician." When we reflect that the orators have in nearly every instance come fresh to the task, have brought all their learning and literary skill to bear upon it, have not seldom in the past clothed it in the purest Latin or the most classical English, and have no less enriched both the science and art of medicine by many of these efforts, the latest of that band may well invoke to-day some of the divine *ἐνθουσιασμός* to descend upon him as he sets out to follow the well-worn road which lies before him. For myself I may say that I yield to none in the interest which this duty has for me. As Physician to the great hospital which Harvey served,[1] as his successor in this College, *longo intervallo*, in the capacities of its Treasurer[2] and Lumleian Lecturer,[3] and as one of the eight Fellows, of whom only three now survive, who on this day fifteen years ago had the privilege of bearing his body, "lapt in lead," to its final resting-place on the occasion of the translation of his remains at Hemel Hempstead, I find myself in particular sympathy with the object and circumstance of our meeting to-day.

Inasmuch as Harvey himself conceived the idea of this Oration[4] and definitely laid down the specific objects of it, I take it to be the plain duty of the orator to obey his directions as loyally as possible, and in doing so I hope to find suggestive lines of thought for interesting and fruitful comment. It is therefore my duty first to commemorate some of the greatest benefactors of this College; secondly, to incite our Fellows and Members to search out and study the secrets of nature; and thirdly, to urge a spirit of gracious courtesy and kindliness amongst ourselves. Harvey's primary consideration in this matter was without doubt to maintain the position and dignity of his beloved College, to foster its usefulness, and to keep it well abreast of the knowledge and learning of the day, so that by its influence it might impart a high and beneficial tone to the whole commonwealth of medicine in England. It was a high ideal, but not too high for the best spirits in this College; and that, sir, and no less, I will venture to say, is our ideal of its position to-day—a day in which we bear witness to many and radical changes of circumstance indeed, but in which, notwithstanding, we are still full of energy and good purpose, full of strong will and intention to hold that position and, if possible, to add to it.

When Harvey enjoined upon the orator the duty of commemorating the chief benefactors of the College the task was comparatively simple, but happily for us, thanks to the many benefits our Fellows have conferred upon our commonalty, it would now be little less than wearisome to enumerate them and allude even briefly to their varied benefactions. Few will demur to the statement that Harvey himself has been our greatest benefactor, whether by reason of the immortal lustre he shed upon us by his epoch-making discovery and teaching, or in respect of his substantial gifts and the bequest to us of his patrimonial estate. And no less, I would add, has been the boon he conferred upon this College for all time by the legacy of his personal character and qualities—qualities which none of his successors here can afford to forget or neglect. Some of our greatest benefactors have not been, so far as I can learn, recently commemorated by our orators. I will, therefore, claim your indulgence while I praise some of the good men to whom we are indebted for many of our privileges and opportunities of usefulness.

Foremost I place Thomas Linacre, our founder and first President in 1518. Let it be remembered that he designed this Corporation as well for the benefit of the public as of the profession. His wisdom, scholarship, and moral excellence rendered him, as has been said, "the ornament of his age." The College meetings were held in his private house,[5] which he made over to the Physicians, and this was our first building, subsequently enlarged and used till 1614. The Lumleian Lectures were first delivered there. As our learned orator two years ago showed, Linacre may be regarded as "the intellectual grandfather of Harvey," and in virtue of his translations of Aristotle and Galen, Dr. Payne placed him in the front rank of the medical Humanists, pointing out, further, as we well remember, how out of these scholarly efforts grew the scientific movement which led to a truly fertile study of biology.

John Caius, nine times elected President, must ever be revered here for his beneficent efforts. He erected a monument in St. Paul's Cathedral to Linacre, whom he is held to have taken as his model in life. Caius began our volumes of Annals and thus set an example to all succeeding registrars which has certainly been well followed to the present time. He instituted those "ensigns of honour" by which our President is distinguished amongst us. He was the first to introduce and teach practical anatomy in England. His scholarship and literary works, his method and precision, rendered him one of the most noteworthy men our profession has ever had in any country. We recall his efforts and munificence in refounding Gonville Hall at Cambridge, a college which has sent to us here, and still continues to send, some of our most distinguished Fellows and Members. Harvey's lines of thought and study were probably, as Dr. Payne suggests, much projected under the posthumous influence of the second founder of his college.

I merely mention the names of Caldwell and Lord Lumley, the founders in 1581 of our Lumleian Lectures which Harvey held for forty-one years and in which he expounded his original investigations on the circulation of the blood, and refer next to William Gilbert, sometime Treasurer, and President in 1600. Gilbert was the father of experimental philosophy in England. His famous work "De Magnete" first directed the mind of Galileo towards this and kindred subjects. He bequeathed to the College his library, globes, and instruments, most of which perished in the great fire of 1666, only 140 volumes of his books being rescued.

We commemorate Theodore Goulston as the founder, in 1632, of the lectures bearing his name, which he designed to be delivered in each year by one of the four youngest doctors of the College. He was excellent both as a physician and a scholar and published translations from Aristotle and Galen.

Baldwin Hamey, junior, ranks with Harvey amongst our greatest benefactors. He redeemed at his own cost the first College building in Amen Corner from a possible confiscation to the spoliators of Church property in 1651, contributed largely to the fund for rebuilding the College after the great fire, and wainscoted the coenaculum with Spanish oak, some of which now lines the walls of our Censors' room. In 1672 he made over for ever his Essex property of Ashlyns, an estate of 400 acres, for its immediate benefit, including, by the way, an equivalent sum to that appointed by Harvey as the honorarium of the Harveian Orator. Hamey's bust executed in 1684 and his portrait both look down upon us to-day from these walls. The agricultural depression of recent years has unfortunately affected the property so nobly bequeathed to us, but we still count it amongst our best certain sources of income.

We honour the memory of Francis Glisson, sometime President.[6] Working on the lines of research laid down by Harvey, Glisson enlarged the knowledge of anatomy and pathology, and of the fruits of his studies we avail ourselves in daily practice. In thus wresting veritable secrets from

[1] 1608?—1633. [2] 1628, 1629. [3] 1615—1656. [4] 1656.

[5] The Stone House, No. 5, Knightrider-street.

[6] 1667—1669.

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nature[7] he was truly a benefactor to this College, and in respect of his work on the subject of rickets, still known as the English disease, a benefactor to his countrymen.

We may not omit to recall to memory the benefactions of the Marquis of Dorchester. A diligent and widely read student in the learning of his day he was urged by Harvey and others to join this College in 1656. Two years later he was admitted to the Fellowship. Sympathising with the College in the loss of its library, and to show his respect for the profession, he bequeathed a collection of books of the value of £4000 and contributed £100 towards the library. What a splendid example was this, and how little has it been followed in the last two centuries.

It is a fact to note here and now, for while we have had in recent times some noble instances of beneficence for the institution of lectureships and prizes we have had hardly any gifts or bequests in the form of endowments for the College itself—endowments which I, as your treasurer, can well certify are more than is commonly believed necessary to enable us to maintain our position, our fabric, and our library. Those of us who are engaged in teaching in this metropolis have to acknowledge that in these days the vital interests of higher learning make little appeal to the sentiments or generosity either of wealthy peers or commoners whose interests lie largely in London; while we take note of the fact that learned institutions in the provincial cities, void as yet of traditions, have no difficulty in arousing and stimulating such qualities in the hearts of their citizens and enlisting from them noble gifts and benefactions. This is a Royal, but unendowed, College, yet it is constantly appealed to for advice by the several offices of the State which thus receive gratuitous assistance for the benefit of the public. I venture to think that a corporation such as this well commends itself to the consideration and substantial liberality of persons of wealth and patriotic intelligence resident in London. We might at least look for one such donor as Lord Dorchester in each century, and the College will welcome such benefactors and not fail to commemorate their good deeds in the days to come, thus securing for them an enviable immortality.

Let us praise William Croone, Fellow of Emmanuel College, Cambridge, a Censor of this College in 1679 and founder of the lectureship which bears his name. With his memory we associate that of his widow, Lady Sadlier, who loyally carried out his wishes in providing a fund for the endowment of the lectures.

I turn now to hold up in honour some others of our distinguished Fellows who by their attainments and splendid personal characters have conferred undying benefits upon our College and through it upon the profession of physic. We are perhaps too much disposed to commemorate the scientific achievements of our great men, but let us not be unmindful of their characters. We know that genius is not always coincident with the highest moral or spiritual perfection, but when both these qualities are graciously combined in anyone we feel that we are in the presence of a truly great man, of one who becomes a personage and a power for good in his day and generation. In such a profession as ours we can never afford to lose sight of the preponderating influence of character in all who join our ranks and have to minister to every grade of our common humanity. The training which enabled Harvey to be the man we know him to have been, the scholarly, wise, even-minded, and unworldly man, was that which best begets men of his mould. No mere technical or narrow training could by itself have produced him. His mind was expanded by wide reading, by travel, by knowledge of men and manners, by contact with the best spirits of his age, and by honest service to both rich and poor. His character, too, was formed by deep religious sentiment, by a pure faith, and by gentle sympathy with his fellow-men. He probably owed much, as many great men do, to the influence of his mother, for we know that she "was reverensed of her children."

In Harvey we have indeed a splendid model of the ideal physician, for not only have we to cultivate wide learning for its own sake, and its unquestionable influence upon us, but we have to see to it, if anything more assiduously, that we be men of the highest character. If the factor of high character was a great one in Harvey, and a gracious achievement in the seventeenth century, can it be doubted that it is a less imperative quality for us in the declining years of the nineteenth? I almost fear that in this restless age, so prolific in novel developments, there have opened out before us, more than is easy to steer clear of, many new channels wherein our moral integrity may be severely tried; and we may not seldom be tempted by a thoughtless and credulous public to deviate into courses which a strictly disciplined and finely tempered nature must ever recoil from. Yes, character must always be the mainstay and regulator of our conduct both amongst ourselves and towards the public whose servants we are. This requirement should receive emphatic recognition in every commemoration of Harvey. We may well learn from the examples of Harvey and from others which I shall venture to present to you what manner of men physicians should strive to be. If time permitted me I might say much in praise of Arbuthnot and Mead, of Hale, who left us £500 for our library, and of Freind; but I pause to commemorate William Heberden, author of the famous "Commentaries,"[8] who, by his learning, wisdom, and high character, left us a legacy of which the College may be proud. We may understand what manner of man he was if we realise what Dr. Macmichael wrote of him: "From his early youth he had entertained a deep sense of religion, a consummate love of virtue, an ardent thirst for knowledge, and an earnest desire to promote the happiness and welfare of all mankind. By these qualities, accompanied with great sweetness of manners, he acquired the love and esteem of all good men in a degree which perhaps very few have experienced."

Sir George Baker, President for ten years, was pre-eminent as a scholar and practical physician. His method of research on the nature of Devonshire colic has truly been pronounced to be a model for the conduct of scientific medical work. Greatly appreciated and honoured in his time, his memory remains with us a precious heirloom.

I speak next of Matthew Baillie, who delivered the Harveian Oration exactly a century ago, but, so far as is known, did not publish it. Baillie was at that time thirty-seven years of age and engaged in teaching anatomy. We may perhaps assume that some anatomical exposition formed the subject of his oration, for though he had then been in practice for twelve years he did not begin to record his clinical experiences for twenty-one years afterwards, hoping to secure the leisure, which he never did, to elaborate this work. We may greatly regret this inability, for his clinical records were admirable and in advance of their time. Baillie's energies were therefore devoted to his patients when his powers and intellect were at their best, and, as is not seldom the case when physicians of eminence are eagerly sought by numerous patients, but little time and strength were left to pursue fresh study or publish newly acquired experience. Of such men little remains to tell of their special skill or of the qualities they exhibited in practice. Baillie worked seventeen hours a day. His benefactions to this College were great. He gave in his lifetime his private collection of morbid specimens, now in our Museum. He bequeathed at his death, in 1823, a legacy of £300, with all his medical books and the copper-plates of his work on "Morbid Anatomy." This book was the product of his industry in his uncle William Hunter's museum and is of especial value because in his later editions of it he described the clinical features of the cases which furnished the morbid specimens. He was thus one of the pioneers of the modern school of physicians, trained on the lines laid down by Harvey to prosecute research by observation and experiment. I conceive that Baillie may be regarded as the English Morgagni of his time, but he was even more lucid and precise than his great predecessor.[9] He left on record a very pregnant sentence which we shall do well to remember, for we need its wisdom now as much as in the days when it was written.[10] "I am persuaded," he remarks, "that the most successful treatment of patients will

[7] "I am glad to be able to-day for the second time to credit the English nation with the service of having made the first attempts to define the character of life. It was Francis Glisson, who following expressly in the footsteps of Paracelsus, investigated the *principium vitæ*. If he could not elucidate the nature of life he at least recognised its main characteristic. This is what he was the first to describe as 'irritability,' the property on which the energy of living matter depends."—Professor Virchow, Huxley Lecture, delivered in London, 1898.

[8] Commentarii de Morborum Historia et Curatione"—a posthumous work, 1802.

[9] Morgagni was born twenty-five years after Harvey's death. Baillie was born seventy-nine years after Morgagni.

[10] "Lectures and Observations drawn from my own experience upon a considerable number of diseases." London. 1825. (A posthumous work, of which only 150 copies were printed for private circulation in accordance with the directions in Dr. Baillie's will.)

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depend upon the exertion of sagacity,[11] or good common sense,[12] guided by a competent professional knowledge; and not by following strictly the rules of practice laid down in books even by men of the greatest talents and experience." Baillie acknowledged that he owed a good deal to Dr. David Pitcairn of St. Bartholomew's Hospital, who was his firm friend. He learned from him that rheumatism was frequently the cause of disease of the heart—a fact which had not been previously recognised; also, that ague was often not amenable to the influence of bark unless a course of calomel preceded it. An example of Baillie's sagacity is furnished by his conjecture that hydatids were animals, an opinion not held at that time. To tell only of Baillie's scientific work, however, is to disclose but a part of his illustrious career. As Sir Henry Halford said of him in announcing his bequests to the College, "Justice cannot be done to his medical character unless that important feature in it which appeared in every part of his conduct and demeanour—his religious principle—be distinctly stated and recognised." As in Harvey, so in Baillie: "Ample converse with one of the most wonderful works of the Creator—the formation of man—inspired in him an admiration of the Supreme Being which nothing could exceed." He had indeed "looked through nature up to nature's God." His moral loftiness and his splendid character secured for him the deepest regard and affection of his professional brethren. We cannot neglect to commemorate and praise the man of whom so much could be said by a contemporary who knew him well. May Baillie's spirit and influence ever prevail in this College!

It would be a pleasant task to illustrate further the value and charm of high character when blended with learning and skill in our profession by the splendid examples of Henry Halford, Peter Mere Latham, Thomas Watson, and George Burrows, who have lived and laboured in our own day, shed lustre on this College, and earned places amongst our worthiest benefactors. But I must desist. By Harvey's direction I exhort you, and I exhort myself, to imitate such men as we have praised and commemorated; and in striving to this end we shall find help and inspiration if we look back and discover what manner of men the English physician was in the earlier part of this century. He was then regarded as combining in his person, "not only the qualifications necessary for the successful practice of physic, but those which give dignity to his professional and respectability to his private character. He was distinguished by large attainments as a scholar, by sound religious principles as a Christian, by practical worth and virtue as a good member of society, and by polished manners as a well-bred gentleman."[13] I trust that I may be pardoned for dwelling at some length on this part of Harvey's charge, since, to the best of my belief, it has not received prominent notice from my predecessors during the last thirty years.

I have next to repeat to you to-day our great master's injunction "to search and study out the secrets of Nature by way of experiment." It may truly be said that there is no lack of research in our time into the secrets of nature. On the contrary, we are presented with a plethora of products emanating from our laboratories as the result of the original inquiries; and our difficulty now is to discover their true value and to find a fitting employment for the knowledge thus brought to light. The younger men amongst us are naturally attracted both to fresh research and the application of its fruits in clinical work. The elders, by their longer experience of humanity, both in its well-being and its woes, are less eager to engage in experimental methods and prefer to practise the hard-earned principles which have gradually commended themselves to them.[14] Do what we will, however, truths either new or in fresh aspects move steadily onwards and come in the fulness of time to occupy the field. For our purposes as physicians, the secrets of nature disclosed in the laboratory require to be brought to the touchstone of clinical experiment and observation. If they be veritable facts they serve at once to advance our art by enlarging our powers to cope with diseased conditions; while if the results of laboratory experiments have been incompletely wrested from Nature they will fail to aid us, though, perchance, they may prove suggestive. Of some, I think, it may be said that they fail *primo visu* to commend themselves to our common sense. I will support this assertion by a reference to some recent laboratory researches undertaken in America. With a view to determine the influence of alcohol in morbid conditions certain rabbits were inoculated with streptococci and other microbes and then kept daily in a state of acute intoxication by alcohol. These animals showed the effects of the inoculation earlier and more severely than rabbits which were similarly infected, but not alcoholised. It has been proved that alcohol in poisonous doses exerts a negative chemiotaxis in the tissues and it is also well known that a prolonged abuse of it by man causes widespread degenerations.

On the strength of these and similar phenomena we are gravely warned from the laboratory that it must be disastrous to employ even moderate doses of alcohol in inflammatory conditions of disease in the human subject. I trust that we may keep our minds clear on this matter and pray daily for a right judgment in all things. The laboratory operator may tell us that alcoholic stimulants are bad for this or that disease, but we shall maintain that they are sometimes very good for the patient. The practitioner who could allow the teaching of such experiments as I have quoted to influence his bedside treatment of patients suffering from acute diseases would, in my opinion, possess neither clinical instinct nor knowledge.

Yes, clinical instinct or intuition, for I maintain that none can be skilful in medicine without it. Call it sagacity, common sense, or what you will, the physician must possess it, and it must direct his methods, whether they proceed from the laboratory or elsewhere. The present danger in this matter—and it is a real one—is that the modern spirit of research tends in some degree to withdraw our attention from facts and principles which have been well established for us by the clinical acumen of past masters of our art, and which in the best interests of our patients we can ill afford to lose. New methods thus come to displace old ones and not always with benefit. While keeping open minds we must not dispense with the caution that the new is not necessarily the true. I have ventured to utter this note of warning, but I would not for one moment be regarded as indifferent to the unquestioned triumphs of modern laboratory research in all directions. While Harvey clearly intended the orator of each year to be in the first part of his discourse *laudator temporis acti*, he was the last man to plant himself down immoveably, and rest content as though the goal of research had been reached. Knowing too well in his own day the evil and tyranny of stereotyped traditions and beliefs,[15] and shrewdly foreseeing the necessity of perpetual progress in medicine, he definitely charged us to encourage fresh research; and therefore I will express my entire agreement with the words used by one of my esteemed predecessors and former colleagues eight years ago in his oration: "It will be an evil day for medicine and physiology if ever the results of laboratory work are held to have no bearing upon

[11] ἀγχίνοια (Aristotle).

[12] "Common Sense (a faculty of more use to the practical physician than all the science of a Newton), and approved by the experience of every age." "A proper decision as to treatment requires experience, tact, and long-headedness."—John Goodsir, "Anatomical Memoirs." W. Turner, M.B., with biography by H. Lonsdale, M.D., p. 77. Edinburgh: 1868.

[13] Obituary notice of George Williams, M.D., Vice-President of Corpus Christi College, Oxford, and Professor of Botany; Fellow of this College.—Gentleman's Magazine, March, 1834.

[14] "No man who had attained the age of forty years was found to adopt Harvey's doctrine of the circulation; it had to win its way under the safeguard ..... of the youthful and unprejudiced spirits of the age."—Life of Harvey, p. xlvii., R. Willis.

[15] "The facts cognisable by the senses wait upon no opinions. The works of Nature bow to no antiquity; for, indeed, there is nothing either more ancient or of higher authority than Nature." "We are to strive after personal experience, not to rely on the experience of others. ..... Nature is herself to be addressed, the paths she shows are to be boldly trodden, for thus, and whilst we consult our proper senses, from inferior advancing to superior levels shall we penetrate at length into the heart of her mystery." "True philosophers, who are only eager for truth and knowledge, never regard themselves as already so thoroughly informed but that they welcome further information from whomsoever and whencesoever it may come; nor are they so narrow-minded as to imagine any of the arts and sciences transmitted to us by the ancients in such a state of forwardness and completeness that nothing is left for the ingenuity and industry of others." (Letter to Dr. Argent and the Fellows of the College). "Nature—the word that stands for the baffling mysteries of the universe. Steadily, unflinchingly, we strive to pierce the inmost heart of Nature, from what she is to reconstruct what she has been and to prophesy what she yet shall be. Veil after veil we have lifted and her face grows more beautiful, august, and wonderful with every barrier that is withdrawn."—Presidential Address at the British Association Meeting, Bristol, 1898: Sir William Crookes. "Nature is the art of God."—Sir Thomas Browne. 1635.

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medical practice."[16] So long as we prudently avail ourselves of these results we shall not fail to add to the credit and beneficence of our art. The so-called "practical" man is the one likely to avail himself of immature laboratory researches. As Professor Kanthack remarks: "Paracelsus is not yet dead. He snatches incomplete researches out of the laboratories and applies them in the treatment of diseases, the pathology of which he does not understand, and his influence makes itself felt in laboratories to the discredit of medicine."[17] What we greatly need now in England are research laboratories attached to our hospital wards and post-mortem theatres, and no less a select staff of fully-trained investigators available for service throughout the empire. It is surely humiliating that we permit researches to be made for our benefit in various parts of our dominions by foreigners, while many of our countrymen and countrywomen, owing to ignorance and mawkish sentimentality, are doing their best to debar the training of such men in England.

The day in which it has been affirmed that there is a gulf fixed between physical and spiritual science is, I think and hope, fast drawing to its close. The temper of mind which leads, however honestly, to such a belief was not that of Harvey nor, indeed, has it been that of the majority of physicians of this College whom we reckon among the most exemplary men of the past. I will venture to say, further, that it is not the aspect in which such matters are viewed here and now. As Willis observes, Harvey "seized every opportunity of giving utterance to his sense of the immediate agency of the Divine in Nature."[18] He had no fear either of the processes or the results of research. We can imagine his approval of the following sentences in the "Religio Medici" which he must have read: "There is no danger to profound these mysteries, no *sanctum sanctorum* in philosophy. The world was made to be inhabited by beasts, but studied and contemplated by man; 'tis the debt of our reason we owe unto God, and the homage we pay for not being beasts. ..... Those highly magnify Him, whose judicious inquiry into His acts, and deliberate research into His creatures, return the duty of a devout and learned admiration. Therefore:

> "'Search where thou wilt; and let thy reason go,
> To ransom truth, e'en to the abyss below;
> Rally the scattered causes; and that line
> Which Nature twists be able to untwine.
> It is thy Maker's will; for unto none
> But unto reason can He e'er be known.'"

I will now refer to some researches which are of especial interest to us at the present time. They relate to bacteriology. Starting with the conception of bacillary invasion of the body,[19] and the mischief thereby engendered, we naturally seek to destroy the germs themselves and to undo their evil effects. Preventive medicine has for its aim the provision for us of an environment destitute of noxious germs and is now achieving brilliant success in its progress; but in practical medicine the physician has as yet to be satisfied with the endeavour to combat the ill effects of such germs as have gained entry to the body by restoring to the natural standard that impaired vitality of the system which has enabled the bacteria to gain the upper hand. In the gravest cases, where bacillary invasion is widespread and rampant, as in the exanthemata, continued fevers, or pyæmia, we are in the presence of a dosage of toxins so overwhelming that it cannot be met by any adequate systemic resistance. We have as yet but few antitoxins available in practice, though we look with confidence in the future to the fruitful labours of our laboratories for more of such agents.

Our present inability, then, leads us to consider the solitary factor on which we have to depend and which is in each case to determine the issue. We term it the bodily, or tissue, resistance. What is the full significance of it? The varying vulnerability of the individual is the factor before us in each patient and we have to gauge this as nicely as we can. A toxic dosage which is certainly lethal for some is not so for others. The soil, so to say, is, or has somehow become, favourable for the full development of the toxin in the one case, while in the other a degree of immunity exists which proves adequate to overcome the noxious dose, the soil being unfavourable for its full development. This is a matter of the constitution, a personal peculiarity or proclivity, either inherited or acquired. We call it the personal factor in each case and therefore a physician never speaks of treating *diseases* but of treating *patients*.[20] Our knowledge of these personal factors is not large and as yet not very accurate. Theoretically, we might conceive that the highest condition of health, with full integrity of the vital organs, should provide the fullest measure of immunity against all forms of bacillary toxin, whereas in practice we know that in the case of many of them, as in that of small-pox, cholera, or diphtheria, such immunity is of little or no avail and that death may result from an overpowering multiplication of the specific peccant matter. Happily, we can now control the invasion of small-pox and are able materially to counteract the diphtheritic virus by an antitoxin. And so with some other diseases.

Let us take the case of persons of that habit of body in which tuberculosis is apt to occur. We must regard them as presenting in some of their textures an appropriate *nidus* for the cultivation of the specific bacilli. Could we shield them from all possible contact with these germs we might fairly anticipate for them an average longevity, though, as I shall presently show, their textures constitute a bad soil for the inroad of most diseases. We know that under certain depressing conditions, whether of climatic or other environment, the tissues even of fairly healthy bodies lose their resistance and become a prey to the activity of various bacillary parasites, affording examples of sundry specific disorders. The problem before us in all such cases is to determine, if we can, the ratio of the force of resistance to that of the infection. Too often we have but to study the course of the disease in order to decide this point, and while treating the patient, as we watch the contest,[21] we sometimes discover evidence of inhibiting factors which prove adequate to check the mischief arising from parasitic invasion. We have an example of this in the case of a proclivity to gout, which tends markedly to check tuberculous invasion, and when this occurs to protract its course.[22] There is reason to believe that some constitutions are practically invulnerable against the infections of tuberculosis, rheumatism, marsh-poison, and others. We need to study carefully the causes of such immunity since, as Harvey urged, many problems are to be solved by the investigations of exceptional cases.[23]

The subject of scrofula is just now engaging the attention

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[16] Dr. James Andrew.

[17] "The Science and Art of Medicine." Address to the Abernethian Society of St. Bartholomew's Hospital. St. Bartholomew's Hospital Journal, August, 1898.

[18] "Nempe agnoscimus Deum, Creatorem summum atque omnipotentem, in cunctorum animalium fabrica ubique presentem esse, et in operibus suis quasi digito monstrari."—"De Gen. Animalium," Exerc. liv. "Harvey's education and his epoch made him, as a believer reverential: he was by nature modest, and being a sound observer he was neither superstitious nor illogical. ..... Far above all he was taught by Nature."—Harveian Oration, 1865, Sir Henry Acland. "Physical and spiritual science seem to the world to be distinct. One sight of God as we shall one day see Him will show us that they are indissolubly and eternally the same."—Charles Kingsley. "Science is great, but she is not the greatest. She is an instrument and not a power—beneficent or deadly, according as she is wielded by the hand of virtue or vice. But her lawful mistress, the only one which can use her aright, the only one under whom she can grow and prosper and prove her Divine descent, is Virtue, the likeness of Almighty God."—"Roman and Teuton," Charles Kingsley, 1860.

[19] Athanasius Kircher, a Jesuit, wrote in 1659, two years after Harvey's death, that "the propagators of the plague are little worms, so small, fine, and delicate that they cannot be recognised by the senses." It was left for a Japanese bacteriologist, Kitasato, to discover in 1894 the bacillus specific to plague.

[20] This is no new idea, although it is necessary even now to emphasise it. It was clearly in the mind of Aristotle, as may be gathered from the following passage: Φαίνεται μὲν γὰρ οὐδὲ τὴν ὑγίειαν οὕτως ἐπισκοπεῖν ὁ ἰατρός, ἀλλὰ τὴν ἀνθρώπου, μᾶλλον δ'ἴσως τὴν τοῦδε· καθ' ἕκαστον γὰρ ἰατρεύει'—Nicomachean Ethics, I. 6, xvi.

[21] A passage in Harvey's Anatomical Exercise (lvii.) on the Generation of Animals affords a remarkable prevision on his part respecting the reaction of the bodily tissues to the intrusion of irritants. Referring to the effect of spider poison when introduced by a prick under the skin he wrote: "Erat tamen in cute quod discerneret, quippe eodem loco, ubi venenata punctio contigerat, subito sese in tuberculum contraxit, induitque mox ruborem, calorem, atque inflammationem, tanquam ad *pugnam* et nocentis mali expugnationem se roboraret et accingeret." What have we here but a forecast of the modern researches of Metchnikoff and others upon the action of phagocytes in inflammatory foci? The idea of a contest in the involved textures was, I think, singularly prophetic of the histological discoveries to be made some 230 years later and displays the intuition of Harvey in his study and interpretation of the secrets of Nature without any other aid than his simple vision.

[22] That this is not due to the fact that tuberculosis is a disease mainly of youth, while gout occurs chiefly in middle or later life, as has been alleged, is, I think, proved by the practical immunity of the children of gouty inheritance from strumous manifestations and tuberculosis. Senile struma is certainly recognised and blended conditions of gout and struma may be met with in advanced life.

[23] He wrote to Vlackveld of Harlem within a few weeks of his death: "There is no better way to advance the proper practice of medicine than to give our minds to the discovery of the usual law of nature by the careful investigation of rarer forms of disease."

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of some pathologists and I propose to consider briefly some facts in relation to this condition. Koch's great discovery is supposed by many to have explained its pathogeny and to have laid to rest the old disputes respecting the connexion of struma and tuberculosis. In my opinion this matter is by no means disposed of solely on a bacteriological basis. The presence of a few tubercle bacilli in the lympharia may be a factor in a given case, but their presence does not explain all that we recognise as constituting the obvious condition of struma. Our predecessors took a wider view of the matter and we must still hold by some of their conceptions. The old belief was that scrofula—that is, an obvious manifestation of tuberculous disease—was a condition capable of transmission from parent to child. The indications of this state were then rightly determined, though now we interpret them differently, and were recognised by the ill-developed alar thorax, long, clumsy limbs, downy forehead and back, precocious intellect, and various other characteristics. But in 1846 Dr. Robert M. Glover pointed out that a careful distinction should be made between the predisposing constitution and the actual processes of strumous disease, between the *ens in potentia* and the *ens in actu*, and that thus such subjects widely diverged from health before tuberculous deposits took place.[24] This brings us to our view of the matter to-day, since we now believe that the heredity of scrofula means no more, but no less, than an inherited feebleness of bodily textures in which tuberculous bacilli are apt to thrive if they gain entrance at any point, a vulnerability of tissues affording little or no resistance to such an invasion. This diathetic condition or tissue-proclivity is what is transmitted, and it may be the outcome of long antecedent inheritance from an ancestry in which tuberculosis has from time to time manifested itself. We know that direct transmission of bacillary tuberculosis is possible, but that it is of the extremest rarity; also, that direct transmission of tubercle from patient to patient is possible, but very difficult of absolute proof. There is reason, too, for the belief that infection may occasionally spread from the impregnated air of certain dwelling-houses, leading to repeated cases amongst the occupants, provided they present the necessary degree of susceptibility.[25]

Our present point of view could never have been reached till we were made familiar with the infecting parasite which, as we believe, alone brings us in face of the *ens in actu*. Eighty-eight years ago Matthew Baillie, by naked-eye observation alone, fully recognised the fact that the caseous matter in the lympharia and in the lungs was identical and now we have the explanation of it. It has been suggested that the condition of struma is dependent on a latent state of tuberculosis. This idea must be discarded if we regard all tuberculous activity as due to bacillary influence. Yet another theory, recently advanced, deserves consideration, as it opens up a large question in bacteriology. It is urged that the condition of struma may be due to the presence in the body of tubercle bacilli in some early or pre-existing stage of development, which lead to other manifestations than those recognisable as tuberculosis. It is true that we have as yet but little knowledge respecting the exact biological position of the bacillus as commonly met with. In this condition it may possibly, as Woodhead and others suggest, merely represent one phase in the life-history of a higher fungus, allied to the actinomyces, which in certain stages of its existence leads a saprophytic life, its parasitic and pathogenetic phases being merely temporary. Without following up this suggestive hypothesis some support is added to the idea of latency, or of an unrecognised, spore-like (resting stage) condition of the tubercle bacillus by the fact that cases of tuberculous outbreak sometimes supervene when caseous structures or their vicinity suffer from injury and a consequent lowered vitality. This occurrence points to the general dissemination of microbes from some distant focus of long-past or forgotten disease, a development and migration, dependent, possibly, on some law of which we are at present ignorant. We have instances illustrating it in tuberculous meningitis following injuries to the head, in acute pulmonary tuberculosis following injuries to the testis, or to joints, once the site of tuberculosis, or supervening on operations for tuberculous anal fistula, while in cases of Addison's disease (adrenal tuberculosis) injuries to the spinal column are sometimes suspected as the primary exciting cause.[26]

In many of the enlarged lympharia of strumous persons neither tubercle bacilli nor caseous matter can be detected. This fact suggests that the tendency to react vigorously to irritants other than tuberculous is a specific factor and quality of the lymphatic system in strumous individuals. These swollen lympharia doubtless present a good soil wherein tubercle bacilli may lodge and induce caseation should they gain entry. This peculiarity of the lymphatic system in the strumous subject justifies us, in my opinion, in retaining in the old sense the term "strumous inflammation" without affixing to it, as we are now prone to do, the modern idea of tuberculosis. A strumous habit of body has doubtless a marked influence in modifying other morbid conditions which may occur in earlier or later life. The specific reaction to simple irritants, giving rise to strumous inflammation of lymphatic glands, which is common in youth, may sometimes remain in the adult and extend into advanced life, and the consequences of infections, as by scarlet fever, or syphilis, or of irritation by gout, may be, and probably are, greatly modified by this tendency, giving rise to varieties in the several manifestations of these diseases. Thus, gout appears to have a tendency to linger in strumous subjects and in its articular form to be attended with greater effusion than is commonly witnessed, while chronic tubal nephritis in such subjects is apt to be more than usually grave and uninfluenced by treatment. In short, the strumous diathesis is a bad one for the incidence of most morbid conditions. Guided by our present knowledge of this condition, and of its relation to tuberculosis, we have at once suggested to us the supreme value of preventive methods in the management of strumous persons, and a *methodus medendi* for those of them who may become tainted with tuberculosis—to wit, an aseptic euvironment, good food, tonic remedies, and the free removal by the surgeon of disordered lymphatic glands. The beneficial influence of sea air has long been recognised in these cases and it led over a century ago to the institution of an admirable hospital which, though its need and usefulness are as great as formerly, has somehow been suffered to languish for want of public appreciation and support. There is still a great need for small seaside hospitals to supply the requirements of poor patients, whether scrofulous or not, from this metropolis, and a grand sphere of beneficence in this direction lies open to wealthy persons who will found and endow such institutions.

Amongst the secrets wrested from nature in recent times is the discovery of the Roentgen rays, which have already proved of great practical use to surgeons for the detection in certain parts of foreign bodies and the exact determination of injuries to the skeleton. To the physician these scrutinising rays have as yet yielded little new information. Some varieties of renal calculi may sometimes be detected by them, but they afford no evidence of biliary concretions. We may, however, obtain indications of solid tumours and aneurysms, and of enlargement of certain viscera. The therapeutic influence of these rays, if any exists, is as yet not determined. According to Rieder of Munich, rays emitted from "hard," *i.e.*, high vacuum, tubes kill bacteria. Such rays have the highest penetrating power. With the assistance of my colleague, Dr. Lewis Jones, I have examined radioscopically the lungs of several patients with tuberculous disease in various stages. The physical signs were well-marked and readily detectable by ordinary methods of examination. The consolidated portions of the lungs gave no further evidence of their condition than a somewhat dark opacity, in mottled tracts, as compared with the luminous clearness of the unaffected parts. Pleural effusions and

[24] Fothergillian Prize Essay, p. 141. London, 1846.

[25] Harvey regarded phthisis as a contagious disease and placed it with leprosy, lues venerea, and plague as "creeping through the ranks of mortal men and by mere extrinsic contact exciting disease similar to itself in other bodies." He did not believe that actual contact was necessary, since a mere halitus or miasm sufficed to cause an "univocal" like itself.—"De Gen. Animalium," Exerc. xlix. Art. "Tuberculosis," Quarterly Medical Journal, April, 1896, by Dr. Norman Moore. (Address delivered before the Medical Society of Lincoln. 1895.) It has been surmised by Dr. Archdall Reid (quoted in Dr. Arthur Ransome's Essay, awarded the Parkes-Weber gold medal of this College in 1897) that in countries where tuberculosis has existed for many generations a certain tolerance has been secured whereby resistance to the microbe has been acquired and that the inhabitants escape the full influence of the disease. Native races of other countries have possibly, he thinks, not yet acquired this degree of immunity.

[26] Dr. Parkes Weber has recently directed attention to some cases of this kind.

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pneumothorax are detectable, also pneumonic consolidations, and even early and limited areas of tuberculous deposit. In a recent report on this subject MM. Bouchard and Claude of Paris [27] declare that cavities can readily be discovered and even enlargements of bronchial lymph-glands.[28] The free movements of the diaphragm are well displayed and are worthy of study, since it is found that this structure is lowered on the affected side in cases of consolidation of the apex of the lung and rendered dense and immoveable in diaphragmatic pleurisy. The most startling revelation by means of the x rays is that of M. Kelsch, who declares that he discovered the existence of pulmonary tuberculosis in 51 out of 124 military patients who presented none of the ordinary signs of the malady. With respect to these observations I will only say that I desire more detailed evidence and, with it, confirmation.

It may be affirmed that radioscopy and skiagraphs tell but little to the physician that could not be ascertained by other methods of physical examination, but they certainly afford additional means for accurate clinical determination. Thus, in a case of mitral valvular disease with great cardiac hypertrophy which I examined the melon-shaped outline of the heart could be seen to bulk more largely in the thorax than the physical signs alone led one to believe. With improved apparatus we may come to better results than any yet attained, and, indeed, there may be other secrets in the domain of electrical science awaiting diligeat research, of which perchance some may serve to revolutionise our present methods of clinical investigation.[29] Recent researches have been fruitful in respect of improved methods of vaccination and of securing the absolute purity of vaccine lymph. Our Milroy Lecturer of this year,[30] to whom is due the credit of the work, has made us fully aware of the steps by which the bacteriology of both human and calf lymph has been studied. The result has been the introduction of glycerinated calf vaccine lymph which now meets every requirement, whether demanded by the scientific bacteriologist, the medical practitioner, or the reasonable portion of the public. This discovery appears to me to open up new fields of study. The influence of glycerine in destroying some of the most noxious microbes which may gain access to ordinary vaccine lymph in various ways is very noteworthy and important, and I cannot but imagine that this agent may yet be found of more extended usefulness as a bactericide. It is surely significant that some of the most virulent germs, including those productive of tuberculosis and suppuration, should they contaminate vaccine lymph, can be completely disposed of by this simple medium within three or four weeks. We might have anticipated that such a discovery would have promptly disposed of most of the objections raised against the universal and compulsory practice of vaccination in England did we not know that ignorance and prejudice, fostered by misrepresentation and stimulated by paid agitation, require a strong hand for their repression. I speak advisedly of *repression* in a matter so vital as this, for there are varieties of ignorance and prejudice, some of which may safely be left for time and education to disperse. But here we are in face of a terrible danger with accredited succour at hand, and the *mens medica* has no hesitation as to the course to follow.

And, Sir, what I am now about to say I venture to say in my private capacity, not committing the College to the opinion, although I know that it is shared by the majority of those whom I have the honour of addressing. I refer to the recent Parliamentary treatment of the Vaccination Bill and I make bold to stigmatise it as a piece of panic legislation, a lamentable concession to ignorance, fraught with serious peril to the whole community, and unworthy of the duty and dignity of any British Government. By many of us the report of the Royal Commission on Vaccination was considered by no means too strong, but, alas, it has been left to the countrymen of Edward Jenner, by sanction of what has well been termed "a tremendous experiment," to place England, hitherto foremost in State medicine, in a humiliating position before the world. Let us try to imagine today the contempt our Harvey would have felt for the men who so treated the revelations of truth sought out from nature. Of Harvey's skill as a practical physician we have little actual knowledge. This is mainly owing to the loss by robbery and destruction of his papers, including what must undoubtedly have been a storehouse of wisdom, his "Medical Observations," to which he occasionally makes allusion in various treatises. Our art is not improbably the poorer to-day for this untoward circumstance. We know that his "therapeutique way" did not commend itself to the practitioners of his time, but we may fairly believe that his natural powers of insight, quickened by constant and accurate biological studies, suggested to him methods of treatment which his contemporaries, still held in the bondage of dogma and routine, failed to comprehend. We may, however, form an opinion as to his clinical sagacity from the following sentence taken from his second "Disquisition on the Circulation of the Blood," written to Jean Riolan: "How speedily is pain relieved or removed by the detraction of blood, the application of cupping-glasses, or the compression of the artery which leads to a part? It sometimes vanishes as if by magic." And then he proceeds: "But these are topics that I must refer to my 'Medical Observations' where they will be found exposed at length and explained." These facts are assuredly as true to-day as they were 250 years ago, but I will venture to say that they are not adequately recognised in practice at the present time, and that in consequence some of our patients do not receive the prompt measures of relief which are available for them. The fierce controversies which have raged in this century on the subject of blood-letting have had for their result a serious neglect of its appropriate application. Guided by modern physiology with its teaching in regard to the physics of the circulation, no less than by our larger knowledge of morbid conditions, we have now a full warrant for the judicious employment of a practice which has always commanded the assent of the best clinical observers.

I have barely alluded to the scientific achievements of Harvey's long life. The full scope of his original discoveries is possibly even now imperfectly realised by those who connect his name merely with the doctrine of the circulation of the blood.[31] Yet this discovery was but the final exposition of a fact, only disclosed to him after assiduous anatomical labour, directed and pondered over by his surpassing intellect. The steps which led to it slowly elicited, not only the mechanism of the circular course of the blood, but the important fact previously unknown that this fluid was uniformly diffused and common to all the blood-vessels of the body.[32] Harvey, moreover, was the first to interpret correctly the physiology of the heart. His great work on "Animal Generation," of which he was so diffident and which was, as it were, dragged from him by his admiring friend, Sir George Ent, for the purpose of publication, would by itself have raised him to the first rank of biologists, although, as Willis remarks, to complete and perfect such a task as this was impossible even for Harvey with the means at his disposal in the seventeenth century. His minor treatises show, equally with his greater ones, the same originality and intellectual power. But I will not dilate on these topics, they have been often discussed before us here. I have preferred on this occasion rather to present to you the pre-eminent qualities of the mind and character of Harvey and to indicate the wholesome lessons which they afford for us. Harvey himself best summed up his great characteristic and guiding principle in a concise sentence which might even now be fitly inscribed on his sarcophagus, and it is this: "I avow myself the partisan of truth alone." That was the great moral of his life—truth eternal, ever to be sought for, to be held and to be passed on. Let us ask ourselves if the orator of 1998 will be able to say that such was our ideal in this College at the close of the preceding century? We may fairly hope that he will not hesitate so to speak of us. In my belief nothing will better tend to foster and maintain such a standard amongst us than the disclosure year by year

[27] Congress for the Study of Tuberculosis, Paris, July, 1898.

[28] These observations have been quite lately confirmed by Dr. Hugh Walsham at St. Bartholomew's Hospital. (See THE LANCET, Oct. 15th, 1898, p. 988.—ED. L.)

[29] "Nor do I doubt but that many things still lie hidden in Democritus's well that are destined to be drawn up into day by the ceaseless industry of coming ages." (Letter to John Daniel Horst, Principal Physician of Hesse-Darmstadt. Harvey, 1654.)

[30] Dr. Sydney Monckton Copeman, a Member of this College.

[31] "The old humoral pathology has lost its roots since Harvey showed that the blood is a circulating fluid and not a parenchymatous juice."—Professor Virchow. (Address delivered at the Tercentenary Festival of the University of Edinburgh. 1884.)

[32] I remember that my esteemed teacher, Professor Goodsir, of Edinburgh, was wont to describe the blood as an organ. His successor, Sir William Turner, has confirmed my recollection and writes to me as follows: "Goodsir regarded the blood as an organ and the blood corpuscles as the tissues of the organ. His mind was so full of the importance of the cell as a force in nutrition that to him the collective cells of the blood represented an organ, although they were not fixed in their place, but moved with the blood-stream. His conception was, I believe, a true one."

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in this place of the character and works of our immortal Harvey. To have had him, to be summoned regularly to peer into his great mind, to learn his methods, to be counselled by his wisdom, and to participate in the benefactions he so affectionately designed for us, constitutes, indeed, a high responsibility of which we must ever feel sensible in this his beloved College.

I have now, lastly, in accordance with Harvey's direction, "to exhort the Fellows and Members for the honour of the profession to continue in mutual love and affection among themselves, without which neither the dignity of the College can be maintained nor yet particular men receive that benefit by their admission into the College which they might expect, ever remembering that *concordia res parvae crescunt, discordia magnae dilabuntur.*" According to Willis, "every act of Harvey's public life that has come down to us is marked not merely by propriety but by grace." I venture to think that we in this College are well knit together in mutual regard and sympathy and thus maintain in these respects what Harvey desired should ever exist here. The concord which we enjoy truly preserves our dignity, for it adds weight to our deliberations and our efforts. It is a good deal the fashion in these days to deride dignity and its symbols, but wise men in all times have realised the risk which the loss of them entails, and have had cause to learn that when the symbol is dropped the reality also is only too apt to disappear. But our life work as the physicians of England is not done here. Our duties take us to serious and responsible ministrations to all classes of our countrymen. Our various positions demand that, with perfect freedom and independence, we bring our best knowledge and influence to bear on all human interests. May we indeed be careful to carry with us in all the relations of life, professional and otherwise, the tone and bearing which are demanded of all who belong to this College. May we strive to be like-minded with those whose memory we have just praised, and, not least, with the simple, unselfish, Christian gentleman before whose life work and beautiful character we have once more bent to-day in solemn admiration.

A Post-Graduate Lecture

ON

CORNEAL ULCERS AND THEIR TREATMENT.

Delivered at the West London Post-Graduate College on July 16th, 1898,

BY PERCY DUNN, F.R.C.S. ENG.,

OPHTHALMIC SURGEON TO THE WEST LONDON HOSPITAL.

GENTLEMEN,—One of the commonest forms of disease met with among ophthalmic out-patients is that of ulceration of the cornea, but despite the frequency with which it occurs it should never be lightly regarded inasmuch as it constitutes a most fertile source of diminution of vision among the poorer classes. Ulcers of the cornea, speaking generally, are an indication of malnutrition; that is to say, the patients, both children and adults, are either suffering from the effects of overwork and under-feeding or they are markedly anæmic from some other cause. It is this depression of vitality which explains the occurrence of ulcerationof the cornea after certain of the exanthemata, such as measles, scarlet fever, and small-pox; in fact, anything which lowers the general health is prone to be followed by corneal ulceration. In curious contrast, however, with the frequency of this disease among the poor is its absence among the better classes. In private practice ulcer of the cornea is a very rare affection. Sometimes, of course, it occurs, and in this connexion I recollect a well-known surgeon telling me that during his student days he read with so much assiduity for his examinations that he at length developed an ulcer on each cornea. On the other hand, traumatic ulcers of the cornea are not infrequently seen in private practice. Only recently a gentleman was sent to me with an ulcer of this kind caused by the branch of a thorn bush. He was passing through a hedge carrying his gun when the branch suddenly flew back and struck his right cornea. The ulcer soon healed and left a barely perceptible opacity. But shortly after this he came to see me one evening with the following curious history. While dressing for dinner he somehow succeeded in injuring his left eye with the sharp edge of his shirt front, which caused him much pain. On examination there was a small abrasion of his cornea. The pain, however, was soon relieved by a few instillations of cocaine and atropine and he was able to fulfil his engagement without much discomfort.

The clinical aspects of corneal ulcers may be dealt with so far as their immediate and remote effects are concerned. Let me refer to the latter first. Inasmuch as ulceration of the cornea involves a loss of corneal tissue it necessarily follows that the process of repair must result in the formation of an opacity and the extent to which the opacity interferes with the vision mostly depends upon that part of the structure on which it is situated. If the ulceration has been marginal no loss of vision ensues, but the closer it has approached the centre—that is, the pupillary area—the greater is the interference with the sight. Sometimes it is curious to note the declension of vision associated with opacity of the cornea. A patient may come complaining of imperfect sight and on testing the vision by the distant types we find that no glass improves; then it remains for the examination with oblique illumination to reveal the cause. A faint though perfectly definite central cornea haze is found which at the time of the first examination was not apparent.

In discussing the next question—namely, that of the immediate effects of corneal ulcers—the first point to consider is the causation of the lesion, and here I think that it is quite unnecessary to embark upon an elaborate classification. The more simple one can be the better, for, after all, whatever the etiology may be the main thing is the treatment, and this, except in complicated cases, does not vary much in the majority of instances. For all practical purposes, then, corneal ulcers may be divided into (1) traumatic, (2) simple, and (3) complicated. I have assigned to the traumatic variety a distinct class inasmuch as the primary treatment which they demand differs from that of the rest. The essential detail to bear in mind with regard to traumatic ulcers is that they may be, and commonly are, infected with pathogenic micro-organisms at the time of the receipt of the injury. Clearly, therefore, it is wise to treat them antiseptically from the beginning and apply to them those principles of cleanliness such as regulate the treatment of traumatic lesions elsewhere in the body. If the ulcer has resulted from a foreign body or a scratch or from some similar cause cocaine should be instilled into the conjunctival sac and afterwards a warm chinosol solution (1 in 2000) should be douched over the eye until thorough cleansing has been secured. Atropine drops (of the strength of 2 gr. to an ounce of water) may then be instilled and a pad of chinosol gauze applied and secured with a bandage. The drops may be used night and morning and the sac washed with chinosol solution at the same time until the eye is well. Perhaps the most serious examples of traumatic ulcer which I have seen have been those in which the cornea has been scratched by the finger nail. Infants sometimes inflict this injury upon their mothers, but in one case under my care an elderly man came to the hospital whose story was that his eye had been accidentally scratched by his landlady. On examination there was a large ulcer of the left cornea in the lower and outer quadrant, and commencing hypopion. Eserine drops (½ gr. to an ounce of water) were ordered, but the case was not then treated antiseptically and only hot poppy fomentations were ordered. He was told to return in two days. At that time I found that he was complaining of much pain, the ulcer was decidedly larger and partially sloughing, and the anterior chamber was full of pus. He was admitted into the hospital; I then made a small incision through the cornea from below with a Graefe's knife and evacuated the pus from the anterior chamber, hot boric acid fomentations were applied and the eserine was continued. Under this treatment improvement quickly began and in about a week's time he was able to leave the hospital with the ulcer nearly healed. The explanation of the infectivity of these cases presumably is that the nail while inflicting a wound on the corneal surface affords the opportunity to the pathogenic micro-organisms collected under its free edge to inoculate the lesion. It is evident, then, that these and other traumatic ulcers demand careful antiseptic treatment

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from the first in view of the trouble arising from their liability to septic infection.

Simple ulcers of the cornea may be described as those in which the ulceration is unaccompanied by any distinguishing feature, such as vascularity, hypopion, sloughing, &c. This form of ulcer is most commonly seen among weakly school-children. Perhaps the most troublesome symptom associated with it is photophobia, which, however, is very variable in degree. Sometimes the intolerance of light may be extensive; on the other hand, there may be very little or hardly any to speak of. At any rate, the size of the ulcer bears no relation to the intensity of the photophobia. In young children, for example, in whom acute blepharospasm has been present for some days, careful examination of the cornea under an anæsthetic may disclose an ulcer not larger than the head of a pin. Again, these simple ulcers are seen in connexion with phlyctenular ophthalmia. They are generally superficial and after healing scarcely leave any opacity in the majority of cases. Their treatment is quite simple. If much photophobia be present cocaine and atropine drops may be used twice a day and the eye at the same time bathed with warm water. A shade should also be worn with a thin layer of cotton-wool under it in order to exert some pressure upon the closed upper lid, thus keeping the eye in a condition of physiological rest. Internally a tonic should be given, nothing being so efficacious as a preparation of iron; the tincture of the perchloride with glycerine answers admirably. If the photophobia be not troublesome some atropine drops (2 gr. to an ounce of water) may alone be used, and it is useful to bear in mind that their instillation should be continued until all injection of the globe has subsided. Afterwards some dilute yellow ointment may be placed in the conjunctival sac every night at bed-time as a stimulant to the processes of repair. In the majority of cases this treatment amply suffices to effect a cure. But it is useless to expect a good result if the child be permitted to attend school. All school work should be interdicted until the eye has made a good recovery.

Complicated ulcers may be divided into the sloughing, vascular, and infective varieties. Any ulcer of the cornea may pass into a sloughing condition and when this occurs the cause is due to pathogenic infection. One of the sources of such infection is stated—and repeated—in text-books to be chronic dacryocystitis; the condition, therefore, of the lacrymal passages should always be examined into in these cases. Sloughing ulcers are not infrequently seen during lactation in weakly young women, whose anæmic, underfed condition altogether unfits them for continuing the duties of nursing their offspring. In bad cases the ulcers may be multiple and both eyes may be involved, and inasmuch as the ulceration extends into the deeper layers of the cornea perforation with prolapse of the iris may supervene and add still further to the seriousness of the destructive effects of the disease.

Coming to the question of treatment I have repeatedly found that sloughing ulcers of the cornea are best treated from the first with eserine. The strength of this drug which I use is half a grain to an ounce of sterilised water and this I never exceed. With drops of such strength no irritation is caused, while the full benefit of the drug is obtained. Practically the effect of the drops can be regulated by the frequency of their instillation. Speaking generally, two instillations a day will be found to be sufficient, but if more are considered to be advisable these can be administered without fear of pain or irritation being induced. I shall refer to this use of eserine more fully later. Again, heat in the form of hot fomentations is absolutely needful; nothing so effectually relieves the oftentimes acute pain accompanying these ulcers. The cornea likes warmth. A large pad of chinosol gauze dipped into boiling water and wrung dry should be placed over the lids of the affected eye and the applications continued for half an hour or more twice or thrice a day. A few words may now be said regarding hot fomentations. It should be remembered that belladonna in this form is best avoided. For example, belladonna fomentations are contraindicated when the eye is under the influence of eserine, for the one drug would counteract or neutralise the effects of the other. Again, it is inexpedient to use belladonna when the eye is under the influence of atropine, for the combination of the two is apt to cause atropine irritation. Lastly, a fomentation is not usually intended for the application of a drug, but as a means for the employment of heat; hence if any drug be used it is best to employ some antiseptic, as chinosol, by which the conjunctival sac will be kept as far as possible in an aseptic condition and the repair of the ulcer more directly promoted. In addition to the local treatment the patient should have good food in abundance, as well as a preparation, say, of quinine and iron, while it is very needful to remember that in bad cases occurring in connexion with lactation the weaning of the infant becomes an essential element of treatment.

A vascular ulcer is distinguished by a leash of vessels, presumably of repair, running from the conjunctival margin across the cornea to the lesion. These vessels while coursing over the cornea naturally disturb the nutrition of the epithelium beneath them and thus opacity is often the result. The opacity so remaining has been compared to a "snail track," the mark, that is, which a common or garden snail leaves in its course while moving about at night. These ulcers are generally chronic and in earlier days were regarded as very intractable to treatment. All local treatment not infrequently failed to cure them, and then there was only one other method left, which, however, seldom failed to be successful. I allude to the use of a seton. But it is now some years since I resorted to this practice. Indeed, the mere idea of such a method is repulsive in these days of aseptic non-suppurating wounds. How can any surgeon whose faith is firm in Listerism voluntarily bring himself to inflict a wound with the deliberate intention of providing for its continuous suppuration. Still, such is the effect of a seton. The more loathsome-looking the septic silk of which it was composed became and the freer it was bathed in pus the more efficient was its action supposed to be. Every time that the surgeon dragged the seton to and fro in its fistulous track, as was the custom, he introduced a fresh supply of septic matter and thus added to the suppuration. I do not know to what extent this loathsome method is still resorted to, but for the credit of our art the hope may be expressed that it has metaphorically been relegated to the lumber room of obsolete remedies where it may be allowed to remain and be forgotten. Vascular ulcers, as I have for some years repeatedly proved, are readily amenable to treatment with eserine. A short time after I first adopted this method I was asked by the then medical superintendent of one of the metropolitan Poor-law infirmaries to see a case of vascular ulcer in one of the patients under his care. The ulcer had resisted treatment for a long time and all kinds of local remedies had been tried but had failed. Nevertheless, a seton had not been used nor had eserine. However, I recommended the latter and in a short time afterwards I heard that the case was well.

The infective ulcer of the cornea, commonly called the serpiginous, is a form of ulceration which tends to spread over the surface of that structure with an infective edge suggestive of the course pursued by phagedæna of the skin which used to be seen not infrequently some years ago. The disease is very destructive and in the majority of cases calls for vigorous treatment. Commonly it has a crescentic outline and begins at the corneal margin. The corneal tissue surrounding the ulcer may or may not appear infiltrated. The progress of the disease is strongly suggestive of its micro-organic origin and it is now believed to be due to a specific diplococcus. Much pain, photophobia, and injection of the globe usually accompany this form of ulceration, and the patients are mostly men of middle age. In advanced cases hypopion, perforation, and much destruction of the corneal tissue may ensue, leaving the patient with an irretrievably damaged organ. If seen early the disease may be arrested by treatment and a good result obtained before much damage has been done. Recognising therefore its infective nature the best plan is to treat the ulcer antiseptically from the first. Cocaine having been instilled a warm chinosol solution (1 in 2000) should be allowed to play over the surface of the ulcer and the conjunctival sac thoroughly irrigated. Then eserine drops should be instilled and afterwards finely pulverised iodoform may be dusted over the corneal surface. Lastly, some chinosol ointment should be smeared over the margins of the closed lids and a pad of chinosol gauze and a bandage applied. If after trial these measures fail and it is evident that the ulcer is spreading then the following plan must be resorted to. The eye having been cocainised a drop of a solution of fluorescin must be instilled; the area of the ulceration will then appear as a bright green surface. To the surface thus delineated the actual cautery must be applied, the margins being especially dealt with. When

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healing satisfactorily follows this treatment much opacity of course remains. Among out-patients these infective ulcers are, perhaps, the least common, but they are said to occur with frequency among agricultural labourers, especially during harvest time.

In the foregoing remarks it will have been observed that I have more especially referred to two drugs—namely, chinosol and eserine—and about each of these I now propose to add some further details. With regard to chinosol, concerning the advantages of which I have been repeatedly asked, I believe it to be the best antiseptic agent which is now in the market, and the longer I use it the more I prefer it and the closer does it seem to me to fulfil the requirements of an ideal preparation of the kind. There are certain reasons for doubting whether in ophthalmic surgery the principles of antisepticism are followed in the present day to the extent which their importance demands, and it is probable that the want of precision in this regard is partly due to the fact that among the multiplicity of antiseptic agents there is none which has actually found general favour with ophthalmic surgeons. The perchloride of mercury, carbolic acid, boric acid, each has its drawbacks. Each is undoubtedly useful in its way, but neither the one nor the other has ever excited sufficient enthusiasm to cause thorough antiseptic principles to prevail in the domain of ophthalmology. The importance of this matter I believe to be such that I hold sympathetic ophthalmia would be an impossible complication in eye surgery were a wound of the ciliary region to be treated from the first with every antiseptic precaution. In fulfilment of this belief I have treated within the past year several severe wounds in the dangerous zone, and in each case the eye made an excellent recovery. The results I attributed to the systematic antisepticism practised by means of chinosol. The chemical name of this drug is potassium oxyquinoline sulphonate and one of its chief advantages is the potency of its germicidal action—a fact which has been incontestably proved by bacteriological investigation. In addition, it is freely soluble in water and thus is handy for use. Moreover, it is non-caustic, does not injure the skin of the hands, does not coagulate albumin, and is non-hygroscopic. Again, it is one of the most economical preparations in the market, for owing to its potency only weak solutions of the drug are necessary. Mixed with 1 in 20 of boric acid it forms an admirable antiseptic ointment. It might, perhaps, seem that in saying all this I am praising chinosol inordinately. The fact, however, is that a lengthened experience has taught me that it is an excellent preparation, possessing advantages which in time must commend it to every operating surgeon. With respect to eserine, there is some unanimity of opinion among the authors of modern text-books on ophthalmic surgery that the drug should be avoided in the treatment of corneal ulcers. But my experience, as will have been gathered, does not accord with that view. On the other hand, I believe that the feeling which prevails against eserine in this connexion has arisen in consequence of misconception regarding its use. The great point to remember is to use it in a weak solution. The evil repute of the drug has been mainly gained by employing solutions of greater strength than were necessary. Formerly eserine drops of the strength of four grains to an ounce of water used frequently to be prescribed, and then troublesome symptoms were nearly always induced. But it is seldom, if ever, necessary to resort to a higher strength than half-a-grain to an ounce solution, and for continuous instillation in cases of chronic glaucoma even a less strength than this may be satisfactorily employed. Experience has fully demonstrated that there are certain forms of ulceration of the cornea which atropine fails to benefit but which, on the other hand, readily yield to eserine. To define what these particular forms are is a question which has been repeatedly asked in my out-patient room and the answer may here be given as follows: all sloughing, infective and vascular ulcers are best treated with eserine as well as, of course, those situated at the corneal margin at which perforation is threatening. This may be regarded as a broad rule for guidance, but there remain other cases concerning which no rule can be expressed in words. I have in my mind those cases of simple ulcer in which atropine has been used and apparently failed. In many of such I have found eserine to act like a charm, the injection of the globe quickly clearing up in consequence and the ulcer rapidly beginning to show improvement. A typical case may here be mentioned. A short time ago a man wearing a shade was led in to my out-patient room by his wife. The history was that he had been under treatment at an ophthalmic hospital for five weeks. There was a superficial central ulcer of each cornea with photophobia and some injection of the globes. The pupils were widely dilated from atropine. This seemed to be a case in which eserine was clearly indicated. Accordingly eserine drops (½ gr. to an ounce of water) were ordered to be instilled twice a day. At the end of the week when the patient again presented himself the improvement was very manifest. Two days after using the drops the patient discarded the shade and the photophobia had gone as well as the injection of the globes. Before the end of another week he had returned to his work. Undoubtedly in cases where photophobia is troublesome eserine is of service by contracting the pupil and cutting off light to the eye, while atropine increases the trouble by dilating the pupil, thus placing the patient with his damaged cornea in a helpless condition in the presence of light beyond a low degree. It is quite possible that the utility of eserine in the treatment of corneal ulcers is partly due to the fact that the drug reduces the tension of the globe. This is only a reasonable assumption when we recollect that atropine tends to raise the tension and that an eye in which increased tension has occurred is not one in which healthy nutrition is likely to be present. By lowering the tension, then, in these cases just the difference may be made in securing the establishment of those nutritional changes necessary for the complete repair of the ulcers.

A CONTRIBUTION TO THE PATHOLOGY OF INFECTION BY THE PNEUMOCOCCUS.

BY W. H. BRODIE, M.D. ABERD.,
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AND
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IN 1894, in a paper read before the Transvaal Medical Society under the title of "Acute Specific Rhinitis," we communicated the result of an investigation we had made on an epidemic which had occurred amongst the Kaffirs employed in one of the mines here. At least 100 cases came under our notice. These were mostly of a mild form; many, however, were severe; and out of 15 deaths we were able to perform 9 post-mortem examinations. The salient features of the disease were purulent discharge from the nostrils and, in a large majority of the cases, pneumonia. Our special attention was first drawn to this epidemic by the sudden and unexpected deaths, unaccounted for by any premonitory constitutional disturbance or signs of sufficient local disease, even when pneumonia was present.

In order to lead up to our recent work a recapitulation of our previous inquiry is desirable. A summary of the post-mortem examinations is as follows. In 1 case we found purulent meningitis and pneumonia, with a large quantity of pus bathing the mucous membrane of the nasal cavities and filling the sinuses and ethmoidal cells. This Kaffir had worked seemingly well on the day of his death; he was quite conscious and could articulate up to within a few hours of his death. In 2 cases we found meningitis without pneumonia, with a small quantity of pus in the nasal regions and sinuses. One of these patients had worked on the day of his death; the other had only complained of feeling ill for a day or two. In 2 other cases there was pneumonia without meningitis and a very large quantity of pus in the nasal sinuses and fossæ. In 1 there was slight pneumonia without meningitis and nowhere was there pus formation. This Kaffir had complained of pain in the head and loins for three days before he was seen; twelve hours before death he showed great constitutional disturbance. His temperature was 104° F. and his pulse was 130. He was sensible. Incessant vomiting set in and he gradually became comatose and there was incontinence of urine and fæces. We expected to find cerebral lesions, but they were absent. In one case we found neither meningitis nor pneumonia, and in this case again the constitutional disturbance was grave; the patient had lain unconscious for three days with incessant vomiting. In all the above

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necropsies we found one condition present—a livid, injected, swollen condition of pituitary membrane. One especially interesting post-mortem examination was made. This was on the emaciated corpse of a Basuto, aged about forty-five years, who had been sent to hospital suffering from double pneumonia. He had had purulent nasal discharge and injected and livid-coloured mucous membrane over the turbinate bones. The double pneumonia was extensive, but the constitutional disturbance was slight in comparison. The temperature fell to normal on the eighth day. Sixteen days after admission he had a severe attack of dysentery which lasted about a week. When discharged a month after admission he was well except that dulness persisted over the bases of the lungs. He died a month after leaving hospital; the immediate cause of death was epistaxis. At the post-mortem examination some recent pneumonia was found at the apices, also some old consolidation going on to gangrene, but the condition of the nasal cavities chiefly arrested attention. The whole of the diseased mucous membrane had exfoliated in the form of sloughs, leaving a pallid surface; the mucous membrane of the sinuses was pale and thin, and parts of the ethmoidal cells were denuded of mucous membrane and periosteum. The apertures were remarkably patent. In one or two places the sloughs still adhered, with petechiæ in their neighbourhood. We sent 9 cases to hospital; all of the patients had red and turgid mucous membrane of the nose with more or less discharge and increased temperature; 6 had pneumonia with an abundant fine frothy expectoration—in one case four pints in twenty-four hours; 2 had no pneumonia. Jaundice was a marked feature in some of the cases and it was present in 2 at the post-mortem examinations. There was no evidence of disease of the nervous system in any of the hospital cases and they all recovered except the one case already alluded to. None of them had great constitutional disturbance, not even those with severe pneumonia. From a study of this epidemic we came to the conclusion that it was the result of a poison circulating in the blood, infecting first the nasal region and causing death by the toxæmic state which it produced, the meningitis and pneumonia being secondary and accidental—the result of the poison circulating in the blood.

Since the occurrence of that epidemic we have had many sporadic cases and have performed several necropsies, meeting the same characteristics, but there had been no serious outbreak until about six months ago, when the increased working of the mine demanded a large number of fresh hands. During the last four months about 800 raw Kaffirs came in batches into a new, commodious, and well-cared-for compound and among these new arrivals another epidemic occurred. They were nearly all of poor physique and came from the neighbourhood of Inhambane on the east coast, 100 miles north of Delagoa Bay, thence by train four days to Johannesburg, including a day's stoppage at the border to obtain passes. They suffered severely from sea-sickness and according to their report began to get ill with coughs on leaving the steamer. The winter had been exceedingly cold and they must have suffered severely from the low temperature, travelling insufficiently clad from the sea-coast to this high altitude. In fact, the only protection each had against it was a cotton handkerchief. Like their fathers for generations, at home they did no work, living on wild vegetables, sugar-cane, plantains, and occasionally the flesh of wild pigs and a little milk. After a short but trying journey they arrived from a warm and comparatively moist sea climate to this high, dry, and cold one to work in a mine 1000 ft. below the surface, their diet consisting of an unlimited quantity of mealie meal varied with fresh meat, and a supply of lime-juice. Their powers of resisting disease must have been considerably weakened by this sudden change in their habits, diet, and surroundings. A large majority on arrival were suffering from nasal catarrh and coughs, with pneumonia in one or two cases, but whether this was due to the specific organism infecting them before arrival or only acting as one factor in predisposing them to the attack here we have not yet been able to determine. During the months of June and July, the coldest months, the average number off work was about 100. They appeared to be suffering from ordinary colds complicated in various cases with pneumonia, dysentery, diarrhœa, parotitis, and in two cases with meningeal symptoms. Out of the total number of sick 40 died, and we were able to obtain 17 post-mortem examinations

One batch of 93 emaciated Kaffirs arrived in the beginning of July, when the temperature, except for a few hours during the day, persisted below freezing point; a fortnight later only 16 were working and some of them were ailing. Altogether of this batch 8 died. Owing to our being now able to pursue our study into the bacteriology of the disease we have advanced a large step towards its elucidation, and although we were unable to make bacteriological examinations in the first epidemic a comparison of the clinical and pathological characteristics of the two outbreaks leaves no doubt that they were due to the same cause. The only differences were that in the first epidemic there were several cases of jaundice and only 1 with dysentery, and this only exemplifies what we wish to emphasise—i.e., how protean the manifestations of the disease are. At first sight it was natural to suppose that the various cases of pneumonia, dysentery, parotitis, diarrhœa, and spinal meningitis were distinct and independent illnesses brought on according to the idiosyncrasy of the individual by his being unable to withstand the new conditions of life. We performed post-mortem examinations on cases in which each of the above conditions was the immediate cause of death and the pathological and bacteriological examinations proved that we were dealing with only one disease. In our former paper we gave each case in detail, its history and clinical features, as far as we were able to observe them, and the post-mortem appearances, showing the charts with notes of the cases treated in the hospital. We think it superfluous, even if space allowed, to describe *seriatim* each of the numerous cases of the later epidemic. We shall therefore only enumerate the various symptoms.

The most prominent symptoms were nasal catarrh and coughs. The compound was sonorous with coughing. This was unaccompanied by signs of bronchitis or lobular pneumonia, but in a great many cases, even when the men were at work, it was associated with lobar pneumonia. Although all cases of nasal catarrh may not have been specific, yet as a diseased condition of the mucous membrane of the nose was found in all the necropsies it is fair to assume that the large majority were due to specific rhinitis. The same can be said of the pneumonias. In nearly all the necropsies pneumonia was found and proved to be of specific origin; there can therefore be little doubt that the majority, if not all, of the cases were due to the same cause. Indeed, to reason otherwise would mean that the disease we are considering is invariably fatal—that only the 40 dead were attacked by this specific organism. The mere presence of pneumonia was not a dangerous symptom. In the large majority of cases in which it was present it involved only a small part of the lung, generally at the bases, and the Kaffirs contentedly worked with lungs in this condition. In cases in which the lungs were extensively invaded recovery took place and only in one necropsy was the pneumonia found of sufficient extent to account for death. There was always coexisting pleurisy. Parotitis was a common symptom, but, like pneumonia, was not a guide to prognosis. Diarrhœa, not noted in the previous epidemic, was prevalent. It was not of a severe form, but it was of serious import, because in some of the cases the motions gradually assumed a dysenteric character and in all of the cases in which there was dysentery which came under our notice the patients died. In the great majority of the fatal cases dysentery was the immediate cause. A characteristic of this phase of the disease was that the evacuations towards the end of the illness became entirely hæmorrhagic, mostly dark-coloured, sometimes black, and simulating the motions found in purpura hæmorrhagica. When they were of this nature they were passed involuntarily. No treatment was of avail in lessening or modifying the discharge. The following case shows that when dysentery is the pronounced symptom there is a tendency to hæmorrhage in other organs.

A Kaffir had worked for two weeks after arrival without complaining of feeling ill; he then came into the mine hospital seemingly suffering from ordinary dysentery. A few days after admission dulness with tubular breathing developed at the bases of the lungs, but there was never a large area involved. He was never heard coughing or seen expectorating. The motions, at first of the usual dysenteric type, gradually became hæmorrhagic and twelve hours before death he was passing involuntarily large quantities of very dark-coloured blood. He had no signs of disease of the nervous system. At the post-mortem examination the mucous membrane of the nose was found to be less altered than usual. Parts of the lung at the bases had red hepatisation. An abscess in

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the wall of the sphenoidal sinus, pus in other sinuses, and hæmorrhagic cerebral effusion were found. Considered as a symptom of the disease, cerebral meningitis could almost be excluded. We had only two cases with well-marked signs of meningeal mischief and in both spinal meningitis was found post mortem. This latency is remarkable when we think of the number of cases in which we found extensive purulent cerebral meningitis at the necropsies; it was almost as often found as pneumonia.

We suggested in our former paper that the brain of the uncivilised Kaffir may be less responsive to disease than that of the white man, but the lung mischief showed the same latency; we only knew of its presence in most cases because it was easily discoverable by physical examination. It has yet to be decided whether this latency is due to a peculiarity of the disease or of the individual. Before entering into the pathology and bacteriology we will draw attention to a case which illustrates the latency of the meningitis and how easy it is to miss the diagnosis of the disease.

A Kaffir was absent from work for two weeks suffering from painful swollen legs; he was only seen two days before death and then only perfunctorily examined. Scorbutus was suspected. He never appeared very ill and an hour before death he was seen sitting before the fire joining with animation in a conversation. He must have then methodically rolled himself in his blanket near the fire, for he was found dead in this condition. He had died quietly. At the post-mortem examination the femoral veins were full of thrombi. There were general purulent cerebral meningitis, slight pneumonia, and the usual condition of pituitary mucous membrane.

Another case illustrating the acutely toxic nature of the disease was that of a fine Kaffir who had only been in the compound a week. He had not been working. For two days before death he had complained to his friends of feeling sick, but on the day preceding his death he said he was better and announced his intention of going to work on the morrow. He was found dead in the middle of the night. The following is from the notes of the post-mortem examination made ten hours after the death. The face was swollen. There was emphysematous crepitation along the course of the large veins. There was a bloody nasal flux. The nasal mucous membrane was swollen and livid. There were from seven to eight ounces of hæmorrhagic pericardial effusion almost black. Red hepatisation was present at the upper part of the lower lobe of the left lung; there was no consolidation of the right lung. There was recent pleurisy on both sides. The spleen was enlarged and very soft. The muscles showed marked post-mortem staining; the blood was tarry throughout the body. There was neither jaundice nor meningitis. The bacteriological examination in the three cases cited showed that they were the result of acute general infection by the pneumococcus.

Morbid anatomy.—The 26 necropsies made in the course of our investigations were in all cases commenced by sagittal section of the skull. The thoracic and abdominal viscera were examined in every case, and the spinal cord in 5 cases. The morbid conditions observed were noted at the time of examination and the present account is a *résumé* of those notes. The necropsies were made as soon as possible after death and in many cases the bodies were still warm. Many of the examinations had to be conducted within the walls of a mine compound and it is of some psychological interest to record the fact that the Kaffirs viewed our operations with favour, pleased with the idea that we were seeking "strong medicines" to heal them in their sickness, which, indeed, was ultimately if not primarily true. Their own habit is in accordance with this conceit, for they are accustomed to lay under tribute to this end the lions or other large game which they succeed in killing in their native districts. They subsequently, however, resented our taking organs for preservation from emaciated subjects.

In all the cases after death we observed a greenish, thick, purulent discharge coming from the nostrils. In many cases emission of semen had occurred about the time of death. The nasal mucosa, including that of the adjacent sinuses, showed every stage of inflammation. We found œdema, hyperæmia with purple colouration, purulent infiltration, and ulceration. In more chronic cases there was atrophy to such an extent that the tissue was pallid and the various apertures leading from the nasal fossæ were abnormally patent. This appearance was specially marked at the orifices of the Eustachian tubes, the margins of which were in these instances remarkably sharp and pallid, being covered by the thinnest of mucous membranes. On the contrary, in other cases so great was the thickening that these openings were obscured by tumour-like masses. In many of the cases the bones forming the walls of the nasal fossæ were bare and necrotic. Sloughs were observed in the vault of the pharynx and on the upper turbinated bones. In one case the walls of the sphenoidal sinus were quite denuded of muco-periosteum. Indeed, this sinus in the majority of the cases showed severe changes, being generally filled with gelatinous, greenish pus, or exhibited a collection of pus between the periosteum and the bony wall. It was always gravely implicated in the meningitis cases. The same conditions were observed in the frontal sinus and in the other air spaces communicating with the nose. Within the skull cavity purulent infiltration of the arachnoid and pia mater extended backwards, usually from the optic groove, or in some cases from the crista galli to the foramen magnum; from the base it spread over the convexities to involve the mesial surfaces of the hemispheres. The pus was seen in the processes of the pia mater dipping into the sulci and followed the reflexion covering the choroid plexus of the lateral ventricle; the membrane in this position was thick with œdema. Over the cribriform plate of the ethmoid in some cases the meningitis was especially marked; also along the ophthalmic veins at their entry into the cavernous sinus. The cranial nerve-sheaths of the first eight pairs were often profoundly affected; sometimes the intracranial part of the optic nerve was obscured by the exudation. The under-surface of the pons was involved in some instances and in both of the spinal cases. The cerebellum usually escaped. In one case referred to in the clinical part of this paper, we found hæmorrhagic effusion into the choroid plexus and velum interpositum; in the subarachnoid cisterna between the posterior surface of medulla and cerebellum; also in the fourth ventricle and on the ventral surface of the pons round the basilar artery. In 1 case examined otitis media was associated with the rhinitis and meningitis. Spinal lepto-meningitis was found in 2 cases out of 5 in which the cord was examined. In 12 cases out of 26 meningitis was present. The exudation in some cases was jelly-like, homogeneous, and clear both in the spinal and cerebral meninges. In others, however, the inflammatory material present was fluid rather than jelly-like, opaque and granular rather than clear; and we surmised at the time that these latter characters might be dependent upon the presence of the commoner pyogenic organisms in addition to that of the specific diplococcus.

The condition of the lungs and pleura varied; croupous pneumonia was present in the majority of the cases, but in a few the lungs were healthy. All stages of the pneumonic process were represented, from congestion to gangrene, and the extent of lung involved differed within very wide limits. Recent pleuritic lymph always accompanied the pneumonic consolidation. Effusion into the pleural cavity was often present but never exceeded a few ounces. In no case was endocarditis found. The pericardial sac contained excess of fluid in the majority of instances; the great vessels often showed excessive post-mortem staining. In one case œdema of both legs was noticed during life, and on examining the common femoral veins ante-mortem coagula were found. The peritoneal cavity usually showed a considerable amount of fluid. Perihepatitis and perisplenitis were marked features in one case, in which, however, there was also extensive recent pleurisy on both sides accompanying red hepatisation; the spleen weighed 12 oz., and both it and the liver were firmly adherent to the diaphragm. The infection was obviously general, for both cerebral and spinal meninges were involved. We examined the joints in some of the cases, always with a negative result. Double parotitis was observed once. In those cases in which dysenteric symptoms had been present no gross change was seen on inspection of the intestine and the mesenteric vessels appeared to be healthy. A question of interest is the inquiry as to the path taken by the organism from the nose to the brain and other viscera. As a result of our examinations we think the most usual course to the interior of the skull is from the muco-periosteum of the sphenoidal sinus to the sheaths of those nerves embedded in the wall of the cavernous sinus and thence by direct extension to the arachnoid and pia mater. In other cases undoubtedly the organism infects the meninges by extension along the nerves or vessels traversing the cribriform plate of the ethmoid; for it has been shown that the nasal lymphatics are in communication with the subdural and subarachnoid spaces by

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means of perineural paths. Another possible route is by the Eustachian tube to the middle ear and petrous bone, thence by the seventh and eighth nerve sheaths.

The parotid glands are possibly infected from the mouth, though we think it more likely that they share the general infection when that is established. The lungs suffer in the same event, but probably sometimes by direct extension along the respiratory tract. We arrived at this conclusion from the rarity of antecedent laryngitis, tracheitis, or bronchitis, from the general distribution of the specific organism throughout the body, and from the character of the pneumonia, which was lobar, basal, and fibrinous. We remember having seen some years ago in the post-mortem room, several cases of purulent meningitis in which a primary focus of suppuration was diligently sought for without success. We remember one case in particular, that of a man who had twenty-four hours before admission first evidenced illness in change of conduct and sentiment. He died next day and on inspection suppurative meningitis was found without any apparent source of infection. We are inclined to believe that a bacteriological examination of the pus in this case would have revealed a pneumococcal infection.

Pathology —Fifteen cases were subjected to a complete bacteriological examination. 1. In every case cultivations were made on gelatin, agar agar, blood agar, and in broth. These were taken (*a*) from the pus in the nasal fossæ and in the nasal, frontal, sphenoidal, ethmoidal and superior maxillary sinuses; (*b*) from the purulent exudate in the arachnoid, cerebral and spinal; (*c*) from the fluid in the cerebral ventricles; (*d*) from the pericardial, peritoneal, and pleuritic fluids; (*e*) from the heart blood and blood in the cranial venous sinuses; and (*f*) from the lungs, kidneys, and spleen. In all cases we were careful to exclude the possibility of infecting our cultures by using the hot iron freely and subsequently making incisions with sterilised instruments. We were also fortunate in being able to conduct the bacteriological examinations very soon after death.

In our cultivation experiments we obtained the organism described below in pure culture from either the spleen, the pericardial fluid, or the heart blood of 7 cases. In some of the cases we obtained the organism in pure culture from all three sources named. In the remaining 8 cases we obtained no organisms of any kind in these (pericardial, heart blood, and spleen) tissues in our cultures (one tube inoculated from each). In 2 cases we obtained pure cultures of the organism from the cerebral exudate, in 5 others examined it was associated with streptococci and staphylococci. The characters of the organism thus obtained are as follows.

Morphology.—Microscopical examination showed the pure cultures to consist of lanceolate micrococci, nearly always united in pairs and tending in old cultures to grow into chains, rarely occurring as single cocci. In recent cultures, particularly on blood agar, the cocci are surrounded by a transparent halo-like capsule which is most obvious in coverslip preparations from the recent tissues and which disappears in cultures on any media. Since the organism most commonly occurs as such we have called it a diplococcus throughout this paper. It stains well with aniline colours and by Gram's method. The capsule is also well seen after double staining with methylene blue and eosine.

Biological characters. — The diplococcus grows in the presence of oxygen. It is not motile. We find that it grows best in media having a slightly alkaline reaction and that the capsule is retained longest when the organism is grown on blood agar prepared according to the method advocated by Dr. Washbourn and Dr. Eyre, of London. Of its growth on gelatin we would prefer to reserve our opinion. Our experiments were made in the autumn and the room temperature very often varied 20° F. in the twenty-four hours. Once or twice we thought we were getting a growth on gelatin but we were never satisfied on this point. In broth it grows well, rapidly producing a cloudiness throughout the medium. In this medium we found that the organism was still pathogenic for rabbits at the end of four days. Upon blood agar the diplococcus forms minute, almost colourless colonies at the end of from twenty-four to forty-eight hours. Numerous coverslip preparations were made from the fresh tissues in every case and from the same sources from which cultures were taken. Microscopical examination of these coverslips showed the presence of the diplococcus which we have described throughout the body. In 9 of the cases we found this organism and no others in the heart blood, the pericardial fluid, and the spleen. The preparations taken from the nasal fossæ were, of course, always very mixed, but even in these the diplococcus was in great excess. In the pus from neighbouring sinuses various organisms were found, but here next to the diplococcus the most numerous organisms were streptococci and staphylococci. In the purulent exudate involving the arachnoid in 8 cases we found only the diplococcus; in the remainder streptococci and staphylococci were associated with it. From our microscopical examinations it seemed that the diplococcus first invaded the cerebral tissues, followed very speedily by the streptococci and staphylococci. In the two cases in which we examined the spinal arachnoid only the diplococcus was present. Preparations from the lung were always very mixed, but as before the diplococcus was in great excess. In the kidneys and the liver the diplococci were not as numerous as in the spleen.

Inoculation experiments.—Cultures and spleen juice injected into the peritoneal cavity of rabbits killed the animals in from twelve to forty-eight hours. After inoculation the temperature of the animal speedily rose to from 3° to 5° F. above normal and continued so until shortly before death, when it usually fell. Post-mortem examination showed an œdematous infiltration of the cellular tissues, chiefly about the seat of inoculation, while small hæmorrhagic spots were common throughout the body, the whole appearances being exactly as we had seen them in Dr. Washbourn's laboratory at Guy's Hospital after inoculation with the pneumococcus of Fränkel. In the spleen, the heart blood, and the œdematous infiltrations in these animals we found the diplococcus in immense numbers and again obtained it in pure culture. We also injected a virulent blood agar culture into the subcutaneous tissue of the neck of a horse. Six hours later the animal appeared to be very ill. The temperature was 107° and the respirations were from 50 to 60. He refused his food and continued in this condition for five days, when the temperature fell, his appetite returned, and he slowly recovered after an abscess had formed at the seat of inoculation.

Conclusions.—From these observations and experiments we conclude:—1. That the diplococcus we have described is identical with the pneumococcus of Fränkel but that probably it is of a more virulent type. 2. That the pneumococcus is the specific factor in the causation of cerebro-spinal meningitis. 3. That in these cases the pneumococcus first affects the nasal mucous membrane and produces there a definite local lesion (rhinitis), and that all other subsequent pathological effects—infection of frontal and nasal sinuses, middle-ear suppuration, parotitis, pneumonia, meningitis, &c.—are merely the result of the extension of the organism along various anatomical channels of infection—e.g., continuity of tissues, lymphatics, and blood-stream. The post-mortem appearances of the nasal region which led us in our first observations on this disease, before we had made any bacteriological investigations, to name it acute specific rhinitis will serve to show how strongly we were convinced of its local origin. 4. That a pneumococcic septicæmia the result of a pneumococcic rhinitis, even when unattended by such secondary effects as pneumonia or meningitis, is sufficient to cause death. May not this explain the "fulminating attacks" of epidemic cerebro-spinal meningitis of previous writers? It is interesting to compare the pathology of the disease under consideration with that of infection by the bacillus tuberculosis. In the latter the presence of a definite bacillus in every case of attack, whether the field be lung or brain, proclaims the specific nature of the invasion. We think that the observations here recorded are simply further illustrations of the multiform effects produced in the body by the life activity of an equally definite micro-organism and that further research will establish the contention that a general infection by the pneumococcus with its diverse lesions is often the complement of an unsuspected acute specific rhinitis.

In drawing this communication to a close we are conscious that there are many points which yet require attention and which we feel confident will throw further light on the apparent vagaries of this striking disease. We have been unable, for instance, to work out the history of the not infrequent presence in the cerebral meninges of streptococci and staphylococci, but from the fact that we have never found these organisms in the blood, the spleen, or the tissues we are inclined to the belief that they invade the brain only after the pneumococcus has prepared the way—an opinion which microscopical results appear to confirm. Neither have we had time to trace by means of histological sections the course of the pneumococcus from the nose to the brain. We have as yet done no work on immunity, but we

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hope that the high virulence of this pneumococcus will facilitate the preparation of serum which may be efficient in cases of ordinary "pneumonia" as occurring in Europeans. In excuse for these many shortcomings we can only say that the present work was carried out in the spare time snatched from our private practices, and that we feel constrained to publish our results thus early in the hope that other observers will establish our chief contention that infection by the pneumococcus is primarily a purely local phenomenon.

Johannesburg, South Africa.

THE USE OF FORMALIN LAMPS FOR THE DISINFECTION OF ROOMS (ALFORMANT LAMPS AND FORMOGÈNE RICHARD).

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THE disinfection of rooms, furniture, and bedding is a matter of great importance to all general practitioners and especially to those who live in the country. It must be the desire of all to possess a method which is both simple and certain and, at the same time, not destructive in its action. Numerous papers have appeared recently which have occupied themselves with the question of the disinfecting power of formalin vapour. It is generally allowed that formalin vapour is a powerful disinfectant and it therefore promises to replace those gaseous substances which have hitherto been in use and of which some are useless and others injurious to man and the objects around. Lately simple and complicated forms of apparatus have been designed for the rapid and continued production of formalin vapour, and these by their manufacturers have been recommended as being unfailing in their disinfecting action. Writers abroad, however, are gradually recognising the limitations of the formalin process and there is now an almost general consensus of opinion that formalin in the manner in which it is produced by almost all the different apparatus in use has only a limited power of penetration. There is no necessity for me to survey the extensive literature upon this subject of disinfection of rooms by means of formalin vapours, since it may be found in almost any recent volume of the *Centralblatt für Bacteriologie* and the *Zeitschrift für Hygiene*.

In this country three formalin lamps are in use, and having been frequently asked regarding their respective value I undertook a series of experiments in order to satisfy myself on this point, especially since others have already spoken with unveiled enthusiasm of these lamps. The Formalin Hygienic Company supply two simple apparatus—viz., the Alformant Lamps A and B; and the Germicide Disinfecting Association a somewhat more complicated lamp, the Formogène Richard Lamp. In this paper I propose to describe a number of experiments which were made under laboratory conditions with the purpose of independently testing the efficiency of these three lamps, which all profess to accomplish similar results. By means of laboratory experiments, however, we can only decide under what conditions formalin vapours are likely to act; the final verdict must be pronounced when an apparatus has been tested under practical conditions. The principle of the Alformant lamps depends upon the conversion of solid paraform into active formalin gas by means of heat in the presence of water and carbonic acid. Alformant Lamp B is a small, toy-like apparatus, and it is stated in the directions for use that one tablet of paraform is required for the ordinary sterilisation of 1000 cubic feet of air and ten tablets are required for thorough disinfection and certain destruction of all pathogenic germs in 1000 cubic feet of space, whether these be scattered about superficially or hidden in bedding, stuffed seats, books, &c. Alformant Lamp A is merely a larger model; otherwise it is said to act in exactly the same manner as Alformant Lamp B. In the Formogène Lamp the formalin is obtained by means of the incomplete combustion of strong wood spirit. It is unnecessary for me to describe the mechanism of the lamps and I shall at once proceed to state my results.

1. *Alformant Lamp B (small pattern).*—Two sets of experiments were made and in each case 25 tablets were burnt. A room was used, the windows, fireplace, and other openings of which were carefully closed and sealed, so that little or no formalin could or did escape. It has recently been stated that such stringent precautions are not necessary, but it seemed advisable under the circumstances to prevent any loss of the formalin vapour. The measurement of the room was 18 ft. by 12 ft. by 9 ft.—that is, its capacity was well under 2500 cubic feet, so that, according to the instructions, 25 tablets should have amply sufficed for complete disinfection. As test objects I used small strips of linen which had been dipped (1) in 24 hours old broth cultures of anthrax bacilli; (2) in 24 hours old broth cultures of typhoid bacilli; (3) in 24 hours old broth cultures of staphylococcus pyogenes aureus; (4) in sewage effluent; and (5) in an old typhoid stool. These were subsequently dried over sulphuric acid at 38° C. The dust of the room also served as a test object and animals were placed in the room during the experiment. The strips were distributed in the room at different places, some openly exposed on the benches and on the floor, others wrapped up in ordinary dusters. After 24 hours the room was opened and the strips at once dropped into broth, and the latter was then incubated at 38° C. The results of these 2 experiments are given in tabular form.

Experiment I. (Alformant Lamp B).

Test material.	Exposed on table or floor.	Wrapped in dusters.
Linen strips dipped in sewage	+	–
Linen strips dipped in a typhoid stool	+ –	–
Linen strips dipped in culture of typhoid bacillus	+	–
Linen strips dipped in cultures of anthrax bacillus	+	–
Linen strips dipped in culture of staphylococcus pyogenes aureus	+	–
24 hours old culture of anthrax bacillus on agar-agar	–	–
Dust	+ –	...

+ = completely sterilised; – = not sterilised; and $\frac{+}{-}$ = sometimes sterilised, at other times not sterilised.

We learn from this experiment that only the most superficially exposed material was disinfected and that the formalin failed to penetrate even through thin dusters.

A second experiment was arranged in exactly the same manner, 25 tablets being used as before. In this case all the linen strips, whether superficially exposed or not, had escaped the action of the formalin, so that this experiment was altogether negative, although all possible precautions had been taken.

Experiment II. (Alformant Lamp B).

Test material.	Exposed on table or floor.	Wrapped in dusters.
Linen strips dipped in sewage	–	–
Linen strips dipped in typhoid stool	–	–
Linen strips dipped in 24 hours old broth culture of typhoid bacillus... ...	–	–
Linen strips dipped in 24 hours old broth culture of anthrax bacillus	–	–
Linen strips dipped in 24 hours old broth culture of staphylococcus pyogenes aureus	–	–
24 hours old agar-agar culture of anthrax bacillus	–	–
Dust	–	...

In this experiment disinfection failed completely.

It is evident, especially when we also consider Experiment I., that Alformant Lamp B is uncertain in its action and therefore untrustworthy. Hence this lamp, however

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tempting in its modest simplicity it may appear, cannot be used for the disinfection of rooms, for certainty in its action must be a necessary condition.

2. *Alformant Lamp A.*—Having obtained such unsatisfactory or at any rate untrustworthy results with the smaller lamp I took the large Alformant Lamp A and using 50 tablets on this occasion I arranged the experiment almost exactly as the previous ones.

Experiment III. (Alformant Lamp A).

Test material.	Exposed on table or floor.	Wrapped in dusters.
Linen strips dipped in 24 hours old broth cultures of typhoid bacillus	+	-
Linen strips dipped in 24 hours old broth cultures of anthrax bacillus	+ -	+ -
Linen strips dipped in 24 hours old broth cultures of staphylococcus pyogenes aureus	+	+
Linen strips impregnated with spores of the hay bacillus	-	-
Dust	-	...

The previous experiment was repeated with the Alformant Lamp A, using again 50 tablets. The result was as follows:—

Experiment IV. (Alformant Lamp A).

Test material.	Exposed on table or floor.	Wrapped in dusters.	Placed in small book.	Placed in a blanket.*
Linen strips dipped in 24 hours old broth cultures of bacterium coli	+	-	-	...
Linen strips dipped in 24 hours old broth cultures of anthrax bacillus	+	+ -	-	-
Linen strips dipped in 24 hours old broth cultures of staphylococcus pyogenes aureus	+	-	...	-
Linen strips impregnated with spores of the hay bacillus	-	-	-	-
Linen strips dipped in typhoid stool	-	-	-	...
Dust in room	-	...	...	...

* The blanket was hung over a cord and the strips were placed between the two layers.

We learn from these experiments that Alformant Lamp A is almost as uncertain in its action as Lamp B, that at best it only affects the most superficial organisms or materials, that it has little or no penetrating power, and that a single sterilisation is certainly insufficient.

It is difficult to explain how others, in this country especially, succeeded in getting better results; in my hands, however, numerous failures had to be recorded, so that although the lamp is infinitely better than SO_2, as ordinarily applied, it is not trustworthy enough for practical use when employed as indicated in the "directions for use." It may be mentioned that animals left in the rooms during the experiment invariably survived.

3. *Formogène Richard.*—Preliminary experiments showed that with a single lamp the results were uncertain and therefore I performed three complete experiments, using two lamps. In this case the odour of the gas which is given off is much stronger than is the case with the Alformant lamps, so that the cultivations at the end of the experiments were always made under considerable personal suffering on account of the strong irritant action of the gas, which made a prolonged sojourn in the room impossible. Animals left in the room during the process of disinfection invariably died, so that undoubtedly we are here dealing with a much more powerful gas. The following results were obtained:—

Experiment V. (Formogène Richard—2 lamps).

Test material.	Exposed on table or floor.	Wrapped in dusters.	Placed in a small book.	Placed in a blanket.	Placed in a covered glass dish.	Placed in a bundle of cotton wool.
Linen strips dipped in 24 hours old broth cultures of bacterium coli	+	+	+*	+	...	-
Linen strips dipped in 24 hours old broth cultures of anthrax bacillus	+	+	+†	+	-	-
Linen strips dipped in 24 hours old broth cultures of staphylococcus pyogenes aureus ...	+	+	-‡	+	...	....
Linen strips impregnated with the spores of the hay bacillus	+	+ -	...	...	...	....
Dust	+ -	...	...	...	...	...

* Between pages 24 and 25. † Between pages 10 and 11. ‡ Between pages 100 and 101.

Experiment VI. (Formogène Richard—2 lamps).

Test material.	Exposed on table or floor.	Wrapped in dusters.	Placed in a small book.	Placed in a blanket.	Placed in a covered glass dish.	Placed in a bundle of cotton wool.
Linen strips dipped in 24 hours old broth cultures of bacterium coli	+	+	+*	+	...	-
Linen strips dipped in 24 hours old broth cultures of anthrax bacillus	+	+	+†	+	...	-
Linen strips dipped in 24 hours old broth cultures of staphylococcus pyogenes aureus...	+	+	+‡	+	...	...
Linen strips impregnated with spores of the hay bacillus ...	+	+ -	...	...	...	...
Dust	+ -	...	...	...	...	...

* Between pages 24 and 25. † Between pages 18 and 19. ‡ Between pages 10 and 11.

In the following experiment the flue of the gas stove was left open in order to test whether it was necessary to observe the strictest precautions in sealing the room.

Experiment VII. (Formogène Richard, 2 lamps; flue open).

Test material.	Exposed on table or floor.	Wrapped in dusters.	Placed in a small book.	Placed in a blanket.	Placed in a covered glass dish.	Placed in a bundle of cotton wool.
Linen strips dipped in 24 hours old broth cultures of bacterium coli	+	+	-*	...	...	...
Linen strips dipped in 24 hours old broth cultures of anthrax bacillus	+	+ -	+† -	-	-	-
Linen strips dipped in 24 hours old broth cultures of staphylococcus pyogenes aureus...	+	+ -	+‡ -	+	...	...
Linen strips impregnated with spores of the hay bacillus ...	+	+	...	...	...	...
Dust...	+ -	...	...	...	...	...

* Between pages 24 and 25. † Between pages 10 and 11. ‡ Between pages 18 and 19.

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In this experiment the results were not quite so good or certain as in the previous cases and probably this was due to the fact that much of the formalin vapour escaped through the open flue.

Experiment VIII. Effect upon fæcal stains and blood-stains.—Experiments were also made as to the effect of formalin vapour on fæcal stains or blood-stains. It is important to know whether such stains are rendered indelible or not, for if they are it is obviously impossible to disinfect sheets or other materials soiled with fæces or blood without previously washing them. It was found that, as has already been shown by others, handkerchiefs stained with blood or fæces, although completely sterilised by the vapours produced by two Formogène Richard lamps, are ruined, because no amount of washing afterwards will remove the stains. It is therefore impossible to use formalin vapours for the direct disinfection of linen soiled with fæces or blood.

Experiment IX. Effect upon aniline dyes.—Silks dyed with aniline colours, as supplied by the "Farbwerke vorm. Meister Lucius und Brüning, Höchst," as patterns (standard colours on silk, 1894, No. 360), were exposed for 24 hours to the action of formalin vapours produced by two Formogène Richard lamps. It was found that the dyes were not destroyed or even altered in the slightest degree. Weak solutions of the following stains—methylene blue, gentian violet, Victoria blue, dahlia, methyl violet, thionine, Hoffmann's blue, Ehrlich's hæmatoxylin, and hæmalum—were similarly exposed for 24 hours, with the result that hæmalum alone was bleached. Therefore the formalin gas evolved by this lamp was perfectly harmless to the dyes in general use. It may be remarked also that metal and polished wood were in no way affected.

These results show the limits of room disinfection by these formalin lamps and I shall reproduce them in the shape of final conclusions. In other experiments which need not be detailed here I was able to confirm the view expressed by others, that active formalin vapours act best in a warm atmosphere, for I found that when I kept the gas burning during the twenty-four hours there were generally less failures with the sterilisation of dust than when the experiment was carried out under ordinary conditions.

FINAL CONCLUSIONS.

So far as my experiments go, Formogène Richard lamps are much more certain in their action than Alformant lamps A and B. Of the latter, B appears to me to be valueless, except as a deodorizer and A is too uncertain.

1. With regard to the Formogène Richard lamp it is necessary, as numerous preliminary experiments have shown me, to use two lamps, even for so small a room as the one in which these experiments have been made.

2. Formalin does not penetrate deeply and, as admitted by all competent observers, cannot be used for the sterilisation of blankets, linen, &c., heaped one upon the other; it is merely a superficial disinfectant.

3. It must be pointed out that blood and fæcal stains are indelibly fixed in handkerchiefs and linen and such like material. Such articles must therefore be disinfected by means of boiling or steaming.

4. Metal, dyes, and most colours are not destroyed, although some aniline dyes may be slightly altered.

5. Dust and soil are not sterilised with certainty.

6. I agree, therefore, with F. Abba and Rondelli,[1] that formalin, if efficiently produced, is useful for the superficial disinfection of such substances as are injured by steam or liquid disinfectants or by irritant gaseous bodies such as chlorine.

When using the Formogène lamp for disinfection of a room strips of linen impregnated with staphylococcus aureus must be placed in the room as indicators; the disinfection is not complete unless these strips are sterile (Pfuhl's test).

A table has been prepared which allows of a ready comparison between the results obtained by the Alformant Lamp (A) and those obtained by the Formogène Lamp. It is evident from the table that results obtained with the latter are much more favourable than those obtained with the former. The experiments were conducted under identical conditions; the strips were exposed in the same places, they were prepared in the same manner, and subsequently tested by the same method. Recently Schlossmann has described a new process of disinfection by formalin vapours which was tested in the Institut für Infectionskrankheiten and was pronounced to be highly efficient. As yet I have found difficulty in procuring this apparatus and therefore propose to report upon the same later. Trillat's apparatus I do not intend to discuss, because it is but little known in this country. It also, as shown by others, is useful only for superficial disinfection, and in this respect, provided that active formo-chloral has been used, works as well as, and no better than, the Formogène Lamp.

[1] Zeitschrift für Hygiene, 1898, vol. xxvii., p. 49.

Tabular Comparison of Experiments IV., V., and VI.

Nature of organism.	Locality where strips were placed.	Alformant A, Experiment IV.	Formogène, Experiment V.	Formogène, Experiment VI.
Strips impregnated with bacillus anthracis.	Table I.	+	+	+
	Table II.	+	+	+
	In duster I.	+	+	+
	In duster II.	-	+	+
	In blanket.	-	+	+
	In book.	-	+	+
	In sawdust.*	-	+	+
	Under newspapers.*	-	+	+
	In wool.	...	-	-
Strips impregnated with bacterium coli.	In book.	-	+	+
	Table I.	+	+	+
	In duster I.	-	+	+
	In duster II.	-	+	+
	Under wool.*	+	+	+
	Under paper.*	-	+	+
	In wool.	...	-	-
Strips impregnated with staphylococcus pyogenes aureus.	Table I.	+	+	+
	Table II.	+	+	+
	Table III.	+	+	+
	Table IV.	+	+	+
	In duster I.	-	-	+
	In blanket.	-	+	+
	In book.	...	-	+

+ = successful disinfection. - = unsuccessful disinfection.
* These experiments have not been specifically mentioned in the previous tables.

Cambridge.

OBSERVATIONS ON AN INFECTIOUS DISEASE IN LASCARS HAVING CLOSE RELATIONS WITH VARIOLA AND VARICELLA.

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THE following observations made upon a number of lascars admitted to the City of Glasgow Small-pox Hospital, Belvidere, in the spring of 1898 are of considerable interest in so far that the clinical features of the disease from which these men were suffering suggested in certain cases variola and in others varicella, while in all some of the symptoms presented were alien to both. 16 cases of the disease were observed in various stages. Some came under observation as early as the second day of illness, while others were not admitted to the wards till the fifth or sixth day. In one case only was the whole course of the disease observed from its onset till its termination. The patients were lascar seamen from a steamship trading between Calcutta and Glasgow. On board this vessel 69 lascars were employed, who were accommodated in the forecastle and came little into contact with the European members

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of the crew. So far as could be ascertained none of the lascars left the vessel during the voyage and the outbreak of the disease did not become manifest till after the arrival of the ship in Glasgow, when it was thoroughly overhauled and certain extensive alterations were carried out. During the progress of this work about 250 British workmen were employed and these, entering the forecastle freely and even cooking some of their food there, came into intimate contact with the lascars. It is important to note that the lascars and Europeans mixed together thus freely, even at a time when some of the former who were suffering from the disease were presumably in a highly infective condition. We should observe that, as far as could be ascertained, not one of the European artisans employed on board had been revaccinated. The cases were admitted to hospital between April 1st and May 7th and occurred in successive groups separated by periods which might be justly regarded as representing those of incubation. Owing to the fact that the earlier cases were certified as cases of small-pox the forecastle and other parts of the ship frequented by the lascars, as well as all clothing, were thoroughly cleaned and disinfected, consequently it seems legitimate to conclude that the infection in the later cases took place from man to man and was not the result of fomites. During the earlier part of the outbreak the precautions taken by the sanitary authorities were those which would have been carried out had the outbreak been one of small-pox, the disease from which the lascars, at least at the outset, were supposed to be suffering. With this diagnosis in view revaccination was offered to the British workmen but was refused absolutely by them all, though revaccination was carried out on all the crew. It thus appeared that the artisans were exposed to the infection without any recent protection against small-pox and that they came into personal contact with those of the lascars who were sickening from the disease or who were in its later stages. Contact with the latter class of cases certainly occurred, as some of those who were admitted to hospital were persons who had been going about freely for some days after the disease had declared itself and who were presumably, therefore, in a highly infective state.

History of the outbreak.—The steamship in question left Calcutta on Feb. 10th, 1898, Colombo on the 18th of the same month, Suez on March 1st, Port Said on the 2nd, Malta on the 6th, arrived at London on the 15th, and finally reached Glasgow on the 22nd. Small-pox was present in Calcutta, Port Said, and Suez while the ship was in these ports, and hence there was a possibility of infection from each of these sources, but, as already observed, the lascars were not permitted to land and could have been infected by small-pox directly only in Calcutta or indirectly at the other ports through the European members of the crew. This greatly reduced the chance of infection from small-pox and it must further be noted that, as will be seen later, the period of incubation of this disease, so far as it can be ascertained, excludes the likelihood of infection at intermediate ports, leaving Calcutta only as the centre from which the disease was carried. The first case of illness among the lascars was noted on board ship about March 10th. On April 2nd three lascars were admitted to the hospital presenting an eruption in various stages of desiccation. Judging from subsequent experience it is probable that these patients had already been ill for five or six days, their illness presumably commencing about March 27th. A single case had been admitted on April 1st, but this was of more recent origin than the others. A second group of 8 cases came under observation between April 13th and April 19th. The later members of this group were possibly infected by a member of the lascar crew who had been overlooked and who was not admitted to hospital till April 7th. A third group of 3 cases came under observation between May 3rd and May 7th. There were no deaths.

Features of the disease.—The eruption was the most outstanding feature of the disease. Speaking generally, it may be described as consisting of three stages—a papular, a vesicular, and a desiccative or crusting stage. While it is convenient for purposes of description to classify the phases of the eruption in this manner, it is important to note that the papular and vesicular forms were frequently seen together on adjacent parts of the body at the same time. In the cases which came early under observation the great bulk of the eruption was papular, but even on the first day of the eruption a few vesicles could in some of the cases be seen in various parts of the body, but notably on the trunk. Whether these vesicles were invariably preceded by a papular stage it is very difficult to say, owing to the limited number of cases observed, but if this were so then in some instances at all events the papular stage must have been very evanescent. The papules themselves were mostly of considerable size, hard, somewhat shotty, and acuminate. No distinction of colour could be made out between them and the surrounding skin in their earlier stage of development; in fact, at this period they were more palpable than visible. Later, however, they became of a deep-red or dusky colour. While in each case a considerable number of the papules vesiculated, yet in most of the patients the bulk of, and in two cases practically all the papules showed no tendency towards vesicular change. When thus arrested in development the papules gradually disappeared as convalescence advanced without crusting, evidently undergoing a process of direct absorption. In the later stage of papulation these eruptive elements which were about to vesiculate became surrounded by a well-marked red areola and this process was also observed in the case of a small number of papules which did not undergo further change before all trace of them was lost. The vesicles in most instances, and possibly in all, developed from papules, the process of vesiculation beginning at the apex. In some elements the change seemed to be early arrested, the vesicle becoming crusted while still very small and before the base of the papule had undergone any appreciable change. When vesiculation had advanced to its fullest extent the eruptive elements were somewhat irregular in outline though occasionally almost circular. They measured from $\frac{1}{8}$ in. to $\frac{1}{4}$ in. in diameter, but a few were larger than this. The vesicles contained an almost clear fluid, but they did not present the brilliant glassy appearance so characteristic of the early varicellar vesicle, more closely resembling small bullæ such as might have been produced by drops of scalding water sprinkled over the skin. These vesicles on palpation presented a very marked sense of resistance or "body" and in this respect reminded one very forcibly of small-pox vesicles, the fragile character of the varicella vesicle being almost entirely absent. The vesicles were unilocular, but the interior cavity in most cases examined was partially divided by fine trabeculæ. Umbilication was absent altogether from the fully developed vesicle, but as desiccation commenced in the oldest parts of the element—i.e., those nearest the centre—those parts became depressed, giving rise to a pseudo-umbilication. Each vesicle was surrounded by a dark-red areola, often of considerable width and presenting a very decided sense of infiltration to the touch; this areola persisted well into the stage of desiccation. The fluid within the vesicle, while originally clear and serous-looking, became cloudy later and distinctly sero-purulent, but in no instance was a true pustule formed. A microscopic examination of the fluid in the earlier stage revealed no detectable micro-organism, even the staphylococcus being absent. The course of the vesicle was practically the same in every instance, with the exception of a few which were ruptured by direct violence. The vesicles gradually developed, as above described, attaining their fullest growth in from twenty-eight to forty-eight hours from their first appearance, at which time they were extremely tense and unyielding. Thereafter the tenseness slowly subsided, evidently as the result of absorption, the vesicle becoming softer and more flaccid, as so frequently occurs in small-pox. The whole duration of the vesicular stage varied from thirty-six to seventy-two hours. In the case of those vesicles in which rupture occurred the base was found dense and infiltrated. The process of crusting, as already remarked, began in the central part of the vesicle and gradually extended outwards. This process occupied a considerable time and in most cases the periphery of the vesicle remained soft and moist for several days, while the centre was covered with a brownish crust. The scabs had the appearance of those seen in some cases of modified small-pox, being of a reddish brown colour and of some little thickness; they resembled neither the thin superficial crust so familiar in varicella nor the coarse crusts so characteristic of unmodified small-pox. These were not readily separated even after complete desiccation had taken place and when forcibly removed they left behind a bleeding surface. Later, when complete cicatrisation of the subjacent tissue had taken place, removal of the crusts revealed a moderately deep and well-marked pit

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penetrating through the Malpighian layer of the skin, as was evident from the complete destruction of the pigmented tissue, the cicatrices having a white colour slightly tinged with pink. These pits were foveated, persistent, and well marked when the patients left the hospital at the end of three weeks.

Period and distribution of the eruption.—In one case[1] in which the disease developed after admission to hospital the eruption was present on the first day, and in a second case, in which the patient was admitted on the first day of illness, the eruption was also found. It is difficult to say exactly at what period of illness the eruption first appeared among those who were not observed from the onset, but there seems little doubt that in a certain proportion at any rate of these cases the eruption appeared on the first day. On the second day of illness the eruption was well marked in all the cases which came under observation within that period, by which time, at least in the majority of cases, it seemed to have attained its maximum so far as the number of elements on the trunk was concerned; papules appeared on the lower extremities rather later than on the trunk and other parts of the body. It is exceedingly difficult to say whether the eruption invariably appeared in what might be regarded as one crop or whether in some instances more than one crop appeared; but it is certain that in a great majority of the cases, and more especially in those in which the bulk of the eruption remained papular throughout, the tendency was for one crop and one only to develop. This was true of 9 of the 16 cases which came early under observation, while in 2 cases it was thought that a second crop might have developed, but the evidence of this was not regarded as conclusive. In 5 cases the illness was so far advanced when the patients were admitted to hospital that this point could not be decided. The eruption appeared first upon the face and trunk but did not seem to have any special affinity for the former. It was usually most abundant on the back. Elements of eruption likewise appeared on the scalp, chest, and arms, but were especially sparse over the abdomen. In none of the cases was the eruption found on the palms and soles. On the legs the elements were more sparsely scattered and appeared later than elsewhere. In the throat in 7 out of 13 of the cases which came under observation at a sufficiently early period of the illness a variable amount of eruption was seen on the fauces and palate. The remaining 3 cases were admitted when any faucial eruption which might have been present earlier in the case must have completely disappeared.

Temperature.—Some of the cases were admitted to hospital so late that the febrile period had entirely passed when they first came under observation. In about half the cases, however, where admission followed the onset almost immediately it was possible to observe the whole of the pyrexial movement. In every case observed at this early time there was a decided elevation of temperature, which, however, varied in amount in different cases and seemed to have little relation to the amount of the eruption. In different individuals the highest febrile point attained varied from 100°F. to 104°, and the duration of the febrile period from three to six days. The termination of the fever was marked by a short lysis and in one case by a very decided critical fall. The eruption appeared within a few hours of the onset of the febrile symptoms and there was nothing in the course of the temperature at all suggestive of that defervescence which is so characteristic a feature of many cases of unmodified small-pox with the first appearance of the eruption. The fever had more or less of a remittent character, the difference between morning and evening temperature sometimes amounting to as much as 2° or 3°. In some of the cases the highest temperature registered was 101°; in others, however, the febrile disturbance was very marked, the evening temperature in 2 cases reaching 104° and varying between that and 103° for five or six days. The actual rise of temperature at the period of onset was observed in one case only and in this the temperature attained its maximum of 104° in the course of a few hours.

General course of the attack.—The onset of the disease was sudden and associated with general symptoms of fever, as headache, sickness and vomiting, thirst, loss of appetite, malaise, muscular weakness, and febrile pain. Headache in one or two cases was very severe and in some backache was a clamant symptom. Sleeplessness was marked in several of the cases but delirium was not observed. The eyes were suffused in several instances, but this condition passed off with the fever. The tongue was covered with a whitish or slightly yellowish fur and the bowels were constipated. The urine presented febrile characters, but though two samples from each case were examined daily albumin was found in only one case early in the febrile period and had completely disappeared by the beginning of the fifth day of illness. There was nothing abnormal found in the liver or spleen, the lungs or heart, on careful physical examination. The pulse was moderately rapid, but not more so than might have been expected to be associated with the febrile state in each case. In addition to the fauces presenting eruptive elements in some cases, the mucous membrane of the fauces, pharynx, and palate was found congested in nearly every case which came under observation early in the attack. As already stated, the disease ran a febrile course of from four to seven days, the general symptoms disappearing with the fall in the temperature. No complications were observed in any instance.

Relation to vaccination and antecedent small-pox.—3 of the 16 cases presented evidence of antecedent small-pox—namely, deep pitting, especially on the face. Of these 1 had suffered from an attack of small-pox evidently of a very severe type twenty-six years before he came under our observation, while the other 2 had suffered from milder attacks at periods varying from two to three years before their admission to the wards. With regard to the first patient, vaccination had apparently been successfully performed at some period subsequently to the small-pox attack. A second patient presented two well-marked vaccinia cicatrices, but it was impossible to discover whether vaccination had been performed before or after his attack of small-pox. No evidence of vaccination could be found in the third case. The remaining 13 had all been successfully vaccinated in early life and showed proof of this by the presence of well-marked and in most cases good vaccinia scars. 5 of the patients were revaccinated during the earlier period of the disease or while crusts were still adherent. This was done rather as a test than as a prophylactic measure. In 4 cases vaccination proved completely successful and in 1 case it failed. This case was one of those already referred to as having suffered from a comparatively recent attack of small-pox. The other 11 cases were successfully revaccinated on board the ship from two to four weeks before the onset of the disease we are now considering, and in all the revaccination had completed a typical course some little time before the first appearance of symptoms.

Specific characters of the disease.—Having described in detail the eruption and general symptoms of the disease the nature of the diagnosis now falls to be decided. As stated in the early part of this paper, the disease presented some characters suggestive of small-pox and others suggestive of chicken-pox, while certain points, notably in the character and course of the eruption, presented features differing from both of these. That the disease was a specific one is evident from the manner in which the cases occurred in successive groups separated by periods varying from ten to fifteen days. The first of these periods between the outbreaks extended to fifteen days, the second to ten days, and the third to thirteen days. The last two intervals represent minimum periods. If, as we are quite entitled to do, we exclude possible infection from clothing there seems little reason to doubt that these must be regarded as representing a period of incubation which, while it would be impossible to fix its actual duration from the data at our command, might be approximately represented by from ten to fifteen days—a period of incubation with which we are familiar as occurring very frequently in other forms of specific infectious disease. The gradual development of the eruptive elements on the skin, coupled with the definite course presented by the disease and the similarity of the eruption among different cases, point to the same conclusion. Another circumstance bearing in the same direction is to be found in the gradual increase in the number of cases in the second and third groups; the first case was followed by a group of 5, and that again by a group of 8, while the last was followed by a group of 3, the falling off being probably due partly to the precautions taken and partly to a lack of susceptible individuals.

On admission of the cases to the hospital the question

[1] This patient was admitted to hospital on account of the presence of two small scars over the ensiform cartilage which it was supposed might have been due to a recent attack of the malady.

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which presented itself for decision was whether the patients were suffering from small-pox. After an examination of the cases, a careful consideration of the history, and a study of the course of the attack, it was decided that small-pox (as an alternative diagnosis) must be entirely excluded on the following grounds:—1. The coincidence of the rash with the onset of the general symptoms, the temperature rising and advancing to some extent at least with the development of the eruption. 2. The entire absence of anything like a secondary fever such as we find even in some cases of modified small-pox. 3. The absence of any special predilection of the eruption for the face and scalp, the bulk of the rash appearing mostly on the back, chest, and arms. 4. The entire absence of eruption from the palms and soles in every case observed. 5. The rapid transformation of the papules in certain cases into vesicles, the latter being occasionally present even on the first day of illness. 6. True pustules were not seen in any instance. In addition to these clinical reasons for putting small-pox entirely out of consideration a certain amount of weight was given in the decision to the fact that three of the patients had already passed through an attack of severe small-pox, 2 of them comparatively recently. The small-pox in at least 2 of the cases was unmodified. 4 of the patients were revaccinated successfully during the crusting stage, while the others had been revaccinated with success from two to four weeks before the first appearance of symptoms. It may be supposed that comparatively little value should be attached to this point, but the successful vaccination of small-pox convalescents as well as the occurrence of small-pox so soon after successful revaccination is entirely contrary to the experience of small-pox in Glasgow. An examination into this question among the cases treated in the hospital during the last five years shows that 52 small-pox patients were vaccinated at various periods during the stage of eruption and convalescence, some twice or even thrice, but in no single instance was any reaction manifested, except in some cases a slight redness of the skin such as might occur in the neighbourhood of any superficial wound. As already stated, these patients came into intimate contact with 51 other lascars on board ship, of whom 2 were unvaccinated, and 250 British workmen of varying ages, of whom none had been revaccinated, and yet not one of these contracted the disease. This exemption of over 300 intimately associated persons, many of whom from absence of revaccination and a few from absence of primary vaccination were probably susceptible to the small-pox poison, is likewise entirely opposed to our experience of the behaviour of small-pox under similar conditions. The complete exemption of Europeans both on board ship and in hospital from this disease is noteworthy.

Varicella is the only other specific disease suggested by the clinical features of the cases under consideration. In some respects the resemblance of the disease to chicken-pox was very striking, notably the coincidence of the onset with the first appearance of the eruption as well as the general character of the fully developed rash and the rapid evolution of certain of its elements. On the other hand, the bulk of the signs and symptoms showed little or no resemblance to those which we are accustomed to regard as most characteristic of chicken-pox. The papules which constituted the first stage of the eruption were quite unlike those seen in varicella. In the disease which we are discussing these were large, hard, dense, and frequently cone-shaped, the apex being more or less pointed. At first they were colourless and not readily detected by the eye, though they could be felt in the skin as small, hard, and somewhat shotty masses; later, as already explained, they assumed a dusky-red colour. In all these points they differed from the papules of true varicella, which are small, soft, and somewhat velvety to the touch, flat, and of a bright-red colour, and which present an entire absence of that shotty feeling which was so notable a feature of the former eruption. Further, we find that in some of the cases the great bulk of the papular elements, and in one case the whole of them, showed no tendency to vesiculation, but gradually disappeared by absorption of their solid constituents in a manner similar to that which is occasionally seen in modified small-pox.

The majority of the elements which underwent progressive growth did not vesiculate till the second or even the third day from the first appearance of the papules. The frequency of the eruption in the throat with the very marked catarrhal condition of the fauces and the invariable absence of the eruption from the palms and soles are also, in view of the age of the patients, unusual features of varicella. In the latter eruptive stage the very wide areola, the slow process of desiccation, and the deep pitting without any evidence of secondary infection (as gauged by the absence of pyogenic organisms from the vesicles) cannot be explained on the supposition that the disease was varicella. With regard to the symptoms the high temperature observed in most of the cases, with the severe pain in the back and vomiting, while not to be insisted on are yet in favour of the view that the disease is not varicella; besides, the fact that it occurred in so many adults points in the same direction. The following report of one of the cases furnishes a clear clinical picture of the condition under consideration.

The patient, a seaman, aged twenty-five years, who had been vaccinated in youth was revaccinated successfully on April 2nd. He was admitted to hospital on April 16th, having fallen ill the day before with symptoms of fever, including malaise, headache, debility, &c. There was no pain in the back and no vomiting. The eruption was seen for the first time on the same day. The temperature on admission was 103° F. When seen in the hospital there was a marked eruption of papules on the face, presenting the usual variolous character and distribution, though less marked along the roots of the hair than is often seen in small-pox. There were a few papules on the scalp. On the trunk, back and front, there was a similar papular eruption, mixed, however, with varicella-like vesicles of about the size of a split pea, a few of which had begun to show commencing crusting in the centre; in addition a few of the elements contained opalescent fluid. The eruption was moderately abundant on the trunk but very sparse on the limbs, the more advanced elements being surrounded by a dusky-red areola. There was no eruption on either the palms of the hands or the soles of the feet. The fauces and the soft and hard palates were markedly congested and they presented an abundant eruption of vesicles. There was pain on swallowing. By April 18th the elements on the face were vesiculating, while the vesicles on the trunk were advancing in the process of crusting, those less advanced being sero-purulent, hard, tense, and indistinguishable from those of varioloid. Umbilication was present only in the vesicles in which crusting had begun. On the morning of the 19th the temperature, which had been 104° on the preceding night, was 101°. The eruption on the face was crusting in parts, the most advanced vesicles showing a small reddish crust in the centre, while the less advanced were still sero-purulent. Some of the original papules on the trunk continued unchanged. The malaise was passing off. On the 20th the temperature was normal. Desiccation of the vesicles had continued but was not yet complete. Some of the original papules remained unchanged, there being no indication of vesiculation, and these were becoming gradually absorbed. On May 2nd the patient was dismissed. The general health was good and the only remains of the eruption were to be found in the presence of a number of moderately deep cicatrices of a pale reddish colour on the face and trunk.

An examination of the literature dealing with variola, varioloid, and varicella fails to furnish any allusion to a disease similar to that which we have just described, except in a paper read before the Epidemiological Society of London by Dr. Izett Anderson in 1866 and published in the Transactions of that society in 1867.[2] Dr. Anderson's description applies to an outbreak in Kingston, Jamaica, of a disease which was evidently neither variola nor varicella and which presented features closely resembling the disease from which the above patients suffered. The following points of resemblance in the description referred to are very striking. 1. The period of incubation amounted to about fourteen days. 2. The febrile period was short, up to five or six days being its usual duration, while the temperature was of a decidedly remittent type. 3. There was an absence of secondary fever. 4. There was a constant catarrh of the throat with the presence of an eruption on the soft parts in many cases. 5. The eruption presented a papular stage, a vesicular stage, and in some cases a pustular stage. (*a*) The papular stage was of considerable duration, vesiculation occurring in from twenty-four to forty-eight hours from the first appearance of the rash, which showed itself first on the face and extended to other parts, though in some cases it was absent from the

[2] On Epidemic Varioloid Varicella in Jamaica: Transactions of the Epidemiological Society of London, vol. ii., p. 414.

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face throughout; (*b*) the vesicles were mostly hemispherical, tense and ranging in size up to that of a split pea, showing in some cases slight umbilication, in some cases the fully developed vesicle resembling that of variola, in others that of varicella; (*c*) a pustular stage occurred only at times and does not seem to have been constant. This was followed by the formation of crusts, and these on separation left cicatrices which were still present when the cases were examined some months later. 6. The various stages of the eruption were observed at the same time closely associated on the same parts of the body. 7. The disease occurred equally in vaccinated and unvaccinated subjects, as well as in those who were deeply pitted by antecedent small-pox. Dr. Anderson's description contains symptoms not observed in the cases which came under observation at the Belvidere Hospital. In his patients (1) the date of appearance of the eruption as stated in his paper is a little indefinite, but it seems in some instances to have appeared in the course of the third day; (2) no mention is made of the persistence of papules and the whole of the eruption is said to have vesiculated; and (3) a true pustular stage seems to have been observed (the nearest approach to this among the cases here dealt with was a sero-purulent condition of the contents of some of the eruptive elements). From Dr. Anderson's statement that the pustules ruptured and in some cases gave rise to superficial sores it is quite possible that the purulent condition may have resulted from secondary infection by pyogenic organisms; but, on the other hand, it must be remembered that as Dr. Anderson observed 115 cases it is likely he would have had the opportunity of noting greater variation in the type of the rash than ourselves. A due comparison of the clinical features observed in these cases by us with those set forth in Dr. Anderson's paper warrants the belief that the disease is neither variola nor varicella, but is probably a third disease of a specific character presenting resemblances to both, while at the same time it possesses certain features which entitle it to be placed by itself as a specific entity and bearing the same relation to both the diseases mentioned as exists between the more familiar forms of small-pox and chicken-pox. It is, of course, possible that the condition may be merely a modification of varicella the result of racial difference, and Dr. Anderson gives no clue in his paper as to whether the disease limited its attacks to the dark race or involved the white population also, but as he refers to cases occurring in his private practice similar to those which he observed in the prison and penitentiary it is quite likely that whites as well as negroes were victims of the disease. If this inference be correct then the argument that the disease is merely a modified varicella due to racial conditions must fall to the ground, although in connexion with this point it must not be overlooked that climatic rather than racial conditions might result in modifying varicella at least to some extent. Our opinion, based upon observation of a large number of cases both of variola and varicella, is that almost certainly the disease should be regarded as a specific entity. This conclusion, if correct, would explain certain peculiarities from time to time reported as occurring among small-pox patients in the East — e.g., susceptibility to vaccinia after passing through what is supposed to have been an attack of small-pox as well as other somewhat anomalous conditions with which we in this country are unfamiliar.

Glasgow.

THE STERILISATION OF CATGUT BY DRY HEAT.

BY J. H. DAUBER, M.A., M.B., B.CH. OXON., M.R.C.P. LOND.,
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IN the issue of THE LANCET of Oct. 1st Mr. Mayo Robson drew the attention of the profession to his method of sterilising catgut by boiling it in di-methyl-benzene and thence transferring it before use either to a 5 per cent. solution of carbolic acid or to methylated spirit. As the details are not known to everyone I should like to mention another method of sterilisation—i.e., that by dry heat, which also has the merits of simplicity and efficacy. It is much in vogue on the continent and also I believe in America. (Boxes and sealed tubes of dry sterilised catgut can be purchased at many instrument makers in this country, but personally I have a preference for using, in a matter of such importance, an article the preparation of which need not be taken on trust.)

The following is the method of sterilising catgut adopted by Professor Tscherning of Copenhagen, who recently very kindly showed me the details observed by himself in its preparation at the Kommune Hospital in that city. The ordinary commercial catgut as it comes from the manufacturer is placed on trays in the steriliser between sheets of cellulose paper. It is then heated for six hours consecutively, for the first hour at a temperature of 60° C., for the second and third hours at 100° C., and for the fourth, fifth, and sixth at 140° C. It is then removed, wrapped up and closely sealed in an envelope of cellulose paper which is again placed in another envelope of slightly larger size and similarly closed. The catgut now encased within two firmly sealed envelopes is a second time placed in the steriliser and subjected for another two hours to a temperature of 140° C. The envelopes are placed in racks in the steriliser and contain various sizes of catgut labelled on the outside, some of a size for ligaturing the pedicle in ovariotomy, others for fine buried sutures or other purposes where absorption is desired within a short period. These envelopes can be taken from the steriliser and placed in the pocket or bag of the operator and need not be opened until the time of operation. Thus they are very handy and portable. It is to be remembered that catgut ligatures prepared by any of the wet methods become, if kept in spirit for any length of time, hard and need more time for absorption. If, on the other hand, they are kept in an antiseptic aqueous solution they tend to become soft and lax, whereas if kept in any preparation of glycerine they are somewhat difficult to manipulate owing to their extreme slipperiness. The dry catgut is without these disadvantages. The method of raising the temperature by slow degrees prevents the catgut becoming brittle—the grease and oil in the gut being driven off gradually at the lower temperatures.

Charles-street, W.

REMOVAL OF A CALCULUS FROM THE COMMON BILE DUCT 2 IN. LONG AND 3½ IN. IN CIRCUMFERENCE WITHOUT SUTURING THE DUCT.

BY H. J. THORNTON, L.R.C.P. LOND., M.R.C.S. ENG.,
FORMERLY HOUSE SURGEON TO THE MIDDLESEX HOSPITAL; SURGEON TO THE PASSMORE EDWARDS COTTAGE HOSPITAL, ACTON.

THE patient was a man, aged fifty-eight years, a gold prospector by trade, and was one of the early pioneers of the Western Australian goldfields. He was a man of splendid build, spare in frame, strong, and active. His life had been full of hardship from rough food, bad water, &c., on his travels. Except accidents he never suffered from any serious illness until four years ago, when being in Adelaide he began to get attacks of pain, vomiting, and slight jaundice. These occurred often at intervals of only a few days, sometimes weeks. Sometimes after attacks he passed small gallstones by the bowel. The pain was so severe that he had to have hypodermic injections of morphia, and it was so continuous about two years ago that he became reduced to an extreme degree of emaciation. After undergoing rest and medicinal treatment at a hospital in Melbourne, with careful diet, he improved a good deal, but the attacks still recurred at longer intervals, and just previously to coming to England twelve months ago they became of daily occurrence. He stated that he could not prevail upon the Australian surgeons to operate, so he determined to come home. On examination there was distinct tenderness and a sense of obscure fulness over the region of the gall-bladder, but deeper than that organ. Although the patient was very thin, no enlargement of the liver or gall-bladder could be detected on palpation or percussion. The patient was jaundiced, having recovered from a severe attack of biliary colic only a few days previously. As the history seemed so plain it was determined to open the gall-bladder and to explore the cystic and common bile ducts.

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Mr. Bland Sutton, assisted by myself, chloroform being administered by Mr. Owen Coker, made an incision from the margin of the ribs on the right side down in a line with the outer border of the rectus muscle, about 3 in. in length, and the peritoneum was incised. There was no enlargement of the gall-bladder but a small stone could be felt in it. The gall-bladder was opened and this was removed. It was quite loose in the viscus. Behind the gall-bladder, underneath the liver could be felt indistinctly a large resisting body in the situation of the common bile duct. The abdominal wound was enlarged, the liver was pulled up as high as possible, and the pylorus was pulled aside. After cautiously working down with the finger Mr. Bland Sutton came on the greatly distended common bile duct, and in this, just past the opening of the cystic duct, was felt a large stone. Strong efforts were made to push it back into the gall-bladder or onwards into the bowel, but, owing to its size, without avail. An incision about 1½ in. long was made in the long diameter of the duct and the stone was easily expressed. It was composed of cholesterin, was 2 in. long and 3½ in round, was quite smooth, ovoid in form, and weighed 7 drachms. There was but slight bleeding. The incision in the duct was not sutured. A large indiarubber drainage-tube was put in down to the bottom of the abdominal wound, the gall-bladder was closed and stitched to the parietes, and the abdominal walls were closed by three layers of sutures—fine silk for the peritoneum, silkworm gut for the muscles and fascia, and silk for the skin and subcutaneous tissues. It was dressed with the usual antiseptic dressing. After the operation the patient suffered a good deal of pain, which was relieved by small hypodermic injections of morphia for the first twenty-four hours. The temperature never rose above 100° F. and the pulse kept good. There was for the first three days a profuse discharge of bile, at least 2 or 3 pints daily, requiring frequent dressing of the wound. The tube was gradually shortened and it was removed altogether in about seven days. There was no discharge of bile after the third day. The abdominal wound closed by first intention and the patient made an uninterrupted recovery, with the exception that several of the buried silkworm gut sutures caused small abscesses and were gradually in the course of some months brought to the surface and removed quite undissolved. Since the operation he has never had another attack of biliary colic. He has gained 3½ st. in weight and can eat any ordinary food with impunity. The scar is firm and strong and there is no ventral hernia.

Acton, W.

A CASE OF PYÆMIA TREATED WITH INJECTIONS OF ANTI-STREPTOCOCCIC SERUM.

BY HERBERT M. RAMSAY, F.R.C.S. EDIN.

A GIRL, aged fourteen years, developed measles on Feb. 27th, 1898. She went on well, it appeared, until March 3rd, when, at about 4 A.M., she complained of pain in the right ear. The pain continued to get worse, the child throwing herself about in bed all through the day and night of the 3rd. On the morning of the 4th the pain got better and the nurse noticed some discharge from the ear. In the evening the temperature was 104° F. and the patient complained of pain behind the ear. I saw her for the first time on the evening of the 5th, when her temperature was 105°. She had had a "shivering fit." Her pulse was 120, the respirations were 24, and she was very restless. There was some pain behind the right ear, but this was not increased by pressure and there was no redness or swelling there. On examining the ear I found the meatus filled with inspissated pus and débris and on clearing this out the membrane was seen to be white and sodden and there was a perforation situated at the anterior and inferior part of the membrane. After this her temperature fell to 103° and she had some sleep. The ear was ordered to be kept syringed out with a perchloride of mercury lotion (1 in 4000) and a 2-gr. pill of quinine was directed to be given every six hours. When I saw her again on the evening of the 6th the patient's temperature had gone up to 104° again, her pulse was 120, and the respirations were 26. I found that the meatus was again blocked with pus and after cleaning this out her temperature fell during the night to 99° and there was a profuse discharge from the ear. In spite of her ear being kept well syringed her temperature rose on the evening of the 7th to 106°. Her pulse was then 130, the respirations were 30, and some dulness was detected at the base of both lungs. She still complained of pain behind the ear and the tip of the mastoid was very tender on pressure. On the 8th her temperature kept at about 103° and there was free discharge from the ear. She was restless and sick several times after food, but there was no delirium. The quinine was increased to 2 grs. every four hours and she was given a drachm of brandy with each quinine pill. Mr. Bowlby saw the patient with me on the evening of the 8th, and we decided that there was no immediate indication for opening the mastoid cells. Her temperature was then 105·4°. She complained of pain at the tip of the mastoid, and this spot was tender on pressure, but there was no pain or tenderness over the mastoid cells and no headache. She was restless but she had no cerebral symptoms and there was no tenderness over the course of the jugular vein. She had been sick several times after her food and she had had a slight rigor. She slept fairly well and was better on the 9th, but there were patches of dulness all over both lungs, with fine crepitation and tubular breathing. She had a slight cough but very little expectoration. Her temperature in the evening was 104·6°, her pulse was 104, and the respirations were 32. On the morning of the 10th her temperature was 99° but it rose again in the afternoon to 104·4°, when Mr. Bowlby again saw her with me. The patient was now very ill and it was decided to open the mastoid cells, which was done at 4.30 P.M., when Mr. Willett administered the chloroform. Mr. Bowlby opened the mastoid cells and found nothing there except some muco-purulent secretion, but not sufficient of this to account for the high temperature, so no attempt was made to open up the tympanum. The skull was then opened but the dura mater did not bulge and the lateral sinus was evidently not occluded and the wound was therefore closed. The patient took chloroform well and she went to sleep after ⅓ gr. of morphia had been injected subcutaneously. Her temperature rose to 105° in the evening, but on the morning of the 11th it fell to 99·4° and she seemed to be much better. In the afternoon, however, she had a slight rigor and her temperature rose once more to 105°. The respirations were 38. On the 12th she was troubled a good deal by cough and had some purulent expectoration. Her temperature in the morning was 96·4° and in the evening it was 104·4°. She had well-marked pneumonia in patches over both lungs. Her condition on the 13th and 14th was much the same. The patient was troubled by cough and she was restless and took her nourishment badly. On the night of the 14th she slept very little and complained of pain in her right wrist and hand. The temperature on the morning of the 15th was 101·4°. The right wrist being swollen and very painful it was dressed with belladonna and glycerine and put up on a light cardboard splint. The wound behind the ear was almost healed. She had a rigor in the afternoon and her temperature went up to 104°. On the 16th and 17th the patient was very ill. She had frequent rigors and her temperature ranged from 96° to 105°. She was very sick and restless. On the 18th the morning temperature was 96°, the pulse was 120 and very weak and the respirations were 32. She was constantly sick and took no notice of anything.

Dr. Herringham saw the patient with me at 6 P.M. on the 18th. Her temperature was then 104° and though the lungs were clearing up she still seemed very ill. It was decided to try injection of anti-streptococcic serum and Dr. Herringham accordingly injected 5 c.c. into the loin. For a short time she complained of pain at the site of the injection, but this soon passed off and she slept well and more naturally. The blood was examined and was found to contain numerous streptococci and a few staphylococci. There were streptococci in the sputum but no organisms were found in the discharges from the ear. On the 19th the patient had three injections of 10 c.c. each of serum at 8.30 A.M., 1 P.M., and 6.30 P.M. She seemed to have improved and she took her nourishment better. The urine was examined; it contained no albumin. On the 20th and 21st she had three injections each day, at 8.30 A.M. and 1.30 and 6.30 P.M. She was now decidedly better, but though she had no rigors her temperature remained high in the evening, though it was lower than it had been. The lungs were clearing up well

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and she slept better. She was not sick and she took her nourishment more freely. There was no trace of albumin in the urine. On the 22nd her temperature in the morning was 98·6° and in the evening 102·5°. The pulse was 100 and the respirations were 26. As she was so much better and as, being a very nervous child, the thought of the injections distressed her so much, it was decided to discontinue them. The specific gravity of the urine was 1020 and there was a trace of albumin. On the 23rd she was much brighter and better and she took her nourishment well, though her temperature in the morning was 95° and in the evening 101·8°. The wrist was much better and she was able to leave off the splint. On the 24th the patient was not so well and her temperature was 102·4° in the evening. The urine contained no trace of albumin. She was given an injection of 10 c.c. of serum at 6.30 P.M. On the 25th she had three injections of 10 c.c. each and she again seemed better. Her temperature was still very low in the mornings and high in the evenings (104°), but her general condition was much improved. She complained of pain in the left buttock, where there was some fulness but no definite lesion could be made out. Belladonna and glycerine and hot fomentations were applied. On the 26th, 27th, and 28th she had one injection each day of 10 c.c. and she seemed to be steadily improving, though her temperature ranged from 104° to 95°. On the 29th she was not so well, her temperature was 102·4°, and two injections each of 10 c.c. were given at 8.30 A.M. and 6.30 P.M. On the 30th she was better, but she still complained of pain in the left buttock. She was given an injection of 10 c.c. at 8.30 A.M. and this was the last administered as the blood on examination showed no micrococci. Her temperature still varied from 95° to 104° but she ate and slept well. The chest was quite clear and the pulse was good and steady. On April 3rd and 4th she complained a good deal of pain in the left buttock and was quite unable to lie on that side. There was fulness, and as the skin was so tender that it was quite impossible to examine the place it was decided to put her under an anæsthetic for that purpose and this was done on the 7th. Fluctuation being detected Mr. Bowlby cut down and opened a large abscess situated beneath the glutei and evacuated about 10 oz. of pus. A counter opening was made and a large drainage-tube put in. Her temperature rose to 105° in the evening but she slept fairly well. On the 8th the patient was very sick all day and also on the 9th, on the evening of which day her temperature rose to 105·6°, her pulse was small (130) and running, and her respiration was shallow. She was very restless and delirious. The abscess was dressed but there was apparently no retention of pus and nothing to account for her condition. Morphia (¼ gr.) was administered subcutaneously, and after this she became quiet and slept for the greater part of the night. On the 10th she was much better, the sickness being less. There was little discharge and the wounds looked healthy. The temperature in the evening was 103·8 and she slept well. On the 11th her temperature did not rise above 100° and she was much better, but she had œdema of the right eyelid and the right side of her forehead. She took her nourishment well and with an appetite. From this time the patient continued to improve; the œdema of the eyelid disappeared and she was well enough to go to the country on April 23rd with the wounds almost healed. The drainage-tube was taken out on April 14th as there was no discharge. The patient was last seen on June 5th, when she had quite regained her strength and the hearing of the left ear was much improved. The perforation was healing, the site of the abscess in the buttock was quite sound, and the wrist was quite well.

The interest in this case lies in the great improvement manifested in the patient's condition after the serum treatment was commenced. The temperature did not fall though the average altogether was lower than before the injection but the continued high temperature was accounted for by the presence of the abscess in the buttock. When this was evacuated the temperature almost immediately fell to normal. In spite of the temperature being high the patient's general condition improved markedly. From the time the injections were commenced she slept better, took her nourishment better, and was altogether more natural. The wrist cleared up, her pulse improved, and she was brighter and better, whereas before she seemed in an almost hopeless state. This improvement was, I think, shown to be due to the anti-streptococcic serum treatment, as when for two days the injections were discontinued (from 8.30 A.M. on March 22nd till 6.30 P.M. on March 24th) she was manifestly not so well, and she improved again with the recommencement of the injections. Another point of interest is the complete disappearance of the organisms from the blood within twelve days of the commencement of the treatment. It is also interesting to note that streptococci were demonstrated in the blood and anti-streptococcic serum was used, as I think some cases of failure when anti-streptococcic serum has been tried may have been due to the organisms not having been streptococci. Altogether 205 c.c. of serum were injected by Dr. Herringham, to whom and to Mr. Bowlby my best thanks are due.

Hertford-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

SUDDEN AND COMPLETE INVERSION OF THE UTERUS AND CERVIX AFTER THE MENOPAUSE; VERY SMALL FIBROID NODULE IN THE FUNDUS; GANGRENE; OPERATION; RECOVERY.

BY JAMES OLIVER, M.D., F.R.S. EDIN., F.L.S.,
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THE patient was a widow, aged fifty-eight years, who had had six children and three miscarriages. The last child was born twenty years ago and the miscarriages occurred prior to that time. The menstrual discharge, which had always been rather profuse, ceased twelve months ago. During the last three months the patient had observed a slight and constant hæmorrhagic discharge from the vagina and had experienced occasionally "a feeling as though something were coming down in the front passage." Fourteen days ago there suddenly protruded from the external genitals a lump. The presence of this lump had been associated more with a feeling of discomfort than of pain and with the support afforded by a diaper the patient had performed her household duties as usual. Since the lump appeared the discharge had greatly increased and had become purulent and during the last four days it had been extremely offensive. There had been no bladder symptoms, neither had there been any disturbance of the rectum. There protruded from the external genitals a very sloughy mass which emitted an offensive odour and was composed of three lobes. The lower lobe, which was of the size of a walnut, was solid, the middle one, which measured roughly 3 in. vertically, had a somewhat cystic feel, whilst the upper one, which measured vertically about 2 in., had a membranous feel. Immediately above the upper limit of the mass the vaginal mucous membrane displayed anteriorly a dusky red line of demarcation, which extended a little way laterally but was absent altogether posteriorly. In the right lower half of the middle lobe, about an inch above the base of the lower lobe and slightly anteriorly, a small depression was discovered, into which a probe was passed for nearly an inch. As, however, it caused free hæmorrhage no attempt was made to pass it further, but it was evident that this was the uterine opening of the right Fallopian tube. The mere manipulation of the tumour caused free oozing of blood from the depression between the middle and upper lobes. Posteriorly this depression, which marked the level of the internal os uteri, was almost obliterated. The bladder sound passed straight up towards the pelvis and could not be made to descend towards the vaginal mass; the bladder retained, therefore, its normal position. The body temperature was 101° F. and the pulse numbered 90 per minute, but the patient otherwise appeared to be in good health.

The tumour and vagina were thoroughly washed with suds made from sapo mollis and afterwards douched well with carbolic lotion. The mucous membrane of the vagina was incised transversely immediately above the dusky red line of demarcation, and this incision was extended in depth until the peritoneum was reached. The peritoneal cavity was then opened anteriorly but sufficiently only in the first instance to allow of the introduction of the left forefinger. To prevent retraction of the peritoneum a fine

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silk stitch was passed through the whole thickness of the tissues incised and was tied before the peritoneal sac was further opened. With scissors I carefully extended the incision to the right and left and again stitched the peritoneum to the mucous membrane of the vagina. The succeeding steps of the operation were similar to those adopted in vaginal hysterectomy, but it had to be borne in mind that the broad ligaments were displaced. After removing the tumour I closed the peritoneum with fine silk sutures. The ovaries were not removed. The temperature rose to 103° thirty-six hours after the operation, but the convalescence otherwise was most satisfactory and the patient made an excellent recovery.

The small sessile growth at the fundus was undoubtedly the exciting cause of the inversion in this case, yet it seems remarkable that it should have proved capable of this result after the menopause and so long after the birth of the last child. The tumour, although in a gangrenous state, was producing very little disturbance and the symptoms caused by it were so trivial that the patient did not seek advice until the odour of the discharge became practically unbearable. The peritoneal pouch, which measured about 5 in., showed no inflammatory change.

Gordon-square, W.C.

THE TREATMENT OF RINGWORM OF THE SCALP.

BY GEORGE STEELE PERKINS, M.D. EDIN., L.R.C.P. LOND., M.R.C.S. ENG.

MR. H. LYLE, in his paper on this subject in THE LANCET of Oct. 8th, points out the value of a simple method of treatment of chronic cases. For the past fifteen years I have treated every case of ringworm which has come under my care with chloride of sodium, and with complete success in every case. The first case in which I adopted this treatment was a chronic one of five years' standing. The child was well in three weeks and had no return. Many of the cases which I have attended since have been of a chronic character. The method I adopt is the following. Have some chloride of sodium finely powdered and then mixed with a little vaseline to make an ointment. The affected part having been shaved, rub this ointment in well night and morning until the place is sore; this takes from two to four days. Then apply some simple application to aid the healing of the part. When well from the soreness, the hairs will be found growing healthily and the tinea trichophyton destroyed.

Wimpole-street, W.

A CASE OF PUERPERAL SEPTICÆMIA.

BY HENRY K. DAWSON, M.D. DURH.

A HEALTHY countrywoman, aged twenty-five years, was attended by me in a normal labour on Oct. 25th, 1897. This (her fourth) confinement was of short duration and the placenta came away without any difficulty. The liquor amnii had escaped some days previously, since which time she had had, I was informed, more or less constant pain. On Oct. 27th there was a rigor and the temperature as recorded by a trained nurse rose to 102°F. During the next few days the temperatures were as follows: Oct 28th, morning, 103·8°; evening, 105·0°. Oct. 29th, morning, 101·4°; evening, 106·2°. Oct. 30th, morning, 103·0°; evening, 104°. Oct. 31st, morning, 102·0°; evening, 104·6°. Nov. 1st, morning, 103·4°; evening, 105·0°. From this date until Dec. 6th the temperatures showed a wide daily range, being almost invariably normal in the morning and varying from 101° to 103° in the evening. On and after Dec. 6th they were subnormal for five days and recovery was then established. The patient complained of slight pain in the left iliac region, becoming more severe for three or four days towards the latter part of the illness. The lochia remained healthy throughout, except that they occasionally contained some small shreds which were never offensive. The uterus continued large and tender to touch for some considerable time. Rigors were experienced every evening for nearly a month, of more or less severity. The tone of the pulse was good throughout, the rate rarely exceeding 100. There was no diarrhœa or sickness. The milk was not suppressed and the appetite remained good. The patient slept well, very little wasting took place, and the expression of the face could not be termed anxious. The patient's knees were never drawn up. On palpating the abdomen slight tenderness and some indistinct resistance were felt in the left iliac fossa. Per vaginam there was marked fulness in the left lateral fornix. The treatment adopted consisted of frequent intra-uterine douches of corrosive sublimate, the introduction of iodoform pessaries into the vagina, and 5 gr. doses of quinine every two or three hours. I regret that no bacteriological examination of the lochia or blood was made. Mr. Sumpter, of Sheringham, saw the case with me, and it was decided not to use anti-streptococcic serum, as the symptoms, with the exception of the temperature, were never urgent. The patient resumed her household duties at the end of February, 1898, with every appearance of good health. She, however, complained of some pain in the back.

Sheringham, Norfolk.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

A CASE OF BLEEDING FIBROID IN WHICH ARREST OF THE HÆMORRHAGE AND SHRINKING OF THE TUMOUR FOLLOWED LIGATURE OF THE UTERINE ARTERIES.

(Under the care of Dr. G. E. HERMAN.)

THE anastomosis which exists between the branches of the uterine and ovarian arteries would have suggested that the collateral blood-supply after ligature of the uterine arteries would be great, but the effect in some cases at least produced by this ligature leaves no room for doubt that this collateral circulation is not established at all readily. Possibly some of the discordance in the results obtained in the treatment of fibroids by Martin's operation is to be explained by the ligature having included only one branch and not the main trunk of the uterine artery, as division occurs at some distance from the uterus. The two great arguments in favour of the operation are the absence of mutilation and the comparatively slight risk to life; these in themselves will be sufficient to render it a suitable operation in cases where patients or friends object to methods more likely to be followed by success. The effect in Dr. Herman's case was very striking and one such would outweigh many in which no benefit might result. For the notes of the case we are indebted to Dr. H. M. Rigby, resident accoucheur.

A patient, aged thirty-five years, was admitted into the London Hospital on Oct. 28th, 1897. She was married, but had never been pregnant. Her complaint was that for the last three years she had been "flooding" at intervals of about three weeks and for the last eight weeks she had been losing blood continuously. She complained also of pain in the right side and back. She had been treated for the hæmorrhage by ergot, but without benefit. On admission the patient was seen to be markedly anæmic. A moveable tumour composed of hard rounded nodules was felt rising out of the pelvis and reaching to within three fingers' breadth of the umbilicus. By bimanual examination this tumour was found to be continuous with the cervix and with other masses felt behind and at the sides of the cervix. The uterus was as freely moveable as was consistent with its size, and the cervix was low down. On Nov. 3rd, the cervix having been previously dilated with tents, the interior of the uterus was examined, but it was found that no tumour projected into the uterine cavity. The patient was advised that the best way of stopping the hæmorrhage was by an abdominal operation—either removal of the ovaries, or of the tumour, or of both, according to what the operator might judge to be safest after the abdomen had been opened. However, she absolutely refused to undergo any operation which would deprive her of the possibility of

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pregnancy. Dr. Herman therefore decided to tie the uterine arteries. On the 10th a transverse incision was made through the vagina in front of the cervix, and with the fingers the bladder and ureters were separated from the uterus in front and the broad ligaments were opened up at its sides. When this had been done the uterine arteries could be felt pulsating. A ligature was passed over each from above downwards with an aneurysm needle and was tied. Oozing was checked by packing the wound with iodoform gauze. On Dec. 10th, one month later, the note was recorded that no hæmorrhage had occurred since the operation and that the uterus could be barely felt above the pubes. The patient menstruated after the operation about once in five or six weeks and not more copiously than was customary when she was in good health. She was seen last on July 5th, 1898, and then the uterus was not larger than at the end of the third month of pregnancy.

Remarks by Dr. HERMAN.—When the main artery of a limb is tied a collateral circulation is established so quickly that the nutrition of the part below is hardly affected. This consideration has made me think it so improbable that ligature of the uterine arteries would affect the nutrition of a fibroid that I have not before performed the operation, nor should I have done it in this case had not the patient refused more radical treatment. Ligature of the uterine arteries was first proposed and practised by Franklin H. Martin, of Chicago, in 1892, and the results reported from it[1] vary so considerably that it is difficult not to think that some of the observations must have been misinterpreted. But in this case there seems little room for doubt that dwindling of the fibroid and arrest of hæmorrhage have been produced by ligature of the uterine arteries, and should this be a frequent result of the operation it may prove very useful, for it has the obvious advantages of not mutilating the patient and of being attended with less danger than abdominal section.

DEVON AND EXETER HOSPITAL.

OLD TRAUMATIC DISLOCATION OF THE HIP; OPERATION; RECOVERY.

(Under the care of Mr. CHARLES E. BELL.)

A GREAT change has taken place during the last twenty years in the treatment of old dislocations of joints. The treatises on surgery used to contain time limits beyond which it was undesirable to attempt the reduction of a displaced bone, though cases were on record in which dislocations had been reduced several months after the infliction of the injury, but these were the exceptions until antiseptic surgery made it possible to operate on old dislocations without undue risk to the patient. At the present time every dislocation should be reduced (by an operation if necessary) unless the displaced bone has succeeded in obtaining sufficiently free movement in its new position or the age of the patient contra-indicates operative interference. In Mr. Bell's case the acetabulum was found to be filled with new tissue, and this would probably have prevented the head of the femur returning to its normal position, even if it could have been brought down by manipulation.

A boy, aged thirteen years, was admitted into the Devon and Exeter Hospital in November, 1897, with what proved on examination to be a dislocation of the head of the left femur on to the dorsum of the ilium. The patient, a strong, healthy lad, whilst he was playing football some five months previously was thrown as he was running; after this he was unable to walk and was therefore carried home. He was then put to bed, where he remained for about a fortnight. The hip was thought to be sprained and it was rubbed with liniment. When he was taken out of bed it was found that he could not stand, but nothing further seems to have been done until he was taken to the hospital nearly five months after the occurrence of the accident. As the leg was of no use to him, being much shortened and absolutely incapable of bearing any weight, the consent of the parents was obtained to the performance of an operation with the view of being able to return the head of the femur to the acetabulum. Accordingly, with strict antiseptic precautions, a free incision was made over the front of the great trochanter and all the muscles attached to this and to the shaft of the femur were separated subperiosteally as far as the lesser trochanter, and the head was lifted out of its new bed. The articular cartilage appeared to be quite good. The acetabulum was filled with new tissue and the remains of the capsular ligament. These having been removed with scissors and a scoop the cartilage appeared to be quite healthy. By steady traction and manipulation the head of the femur was replaced in the acetabulum, but it gave the idea of being somewhat too large for the cavity. All hæmorrhage having ceased the wound was washed out and closed with the exception of the opening for a drainage tube, which was put into the deepest part of the wound. A long splint was applied and the patient was put back to bed and a weight attached to the limb. The after-history was uneventful; there was practically no shock; some drainage of sero-sanguineous fluid occurred for a few days, but that was all. The temperature never rose and the boy slept and fed well. The splint was kept on for two months and then removed, the patient being allowed up on crutches. Since leaving the hospital he has been seen three or four times by Mr. Bell, the last occasion being on Aug. 8th, 1898. The boy had then perfect movement of the limb and could stand and walk well.

[1] Yearbook of Treatment, 1898.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Hypertrophy of the Lung.—Fatal Summer Diarrhœa with Acute Enteritis.—Acromegaly.—Accessory Parathyroid Body.—Squamous-celled Carcinoma from the Trachea.—"Butter Cyst" of the Mamma.—Bony Nodules in the Tonsil.—Primary Sarcoma of the Scalp.

A MEETING of this society was held on Oct. 18th, the President, Dr. PAYNE, being in the chair.

Dr. NORMAN DALTON showed a specimen of Hypertrophy of the Lung removed from the body of a man, forty-five years of age, who was admitted to King's College Hospital dying from pneumonia of the right lower lobe. Externally the chest appeared to be normal, but on raising the sternum the right lung was found to pass across the mediastinum and to reach up under the left clavicle and into the left mammary region concealing the pericardium. The left lung was found behind, small, shrivelled, and airless. The hypertrophy was found to affect the middle and upper lobes, the right being bound down by adhesions. There was not much emphysema. The trachea bifurcated at the usual position. The left bronchus almost immediately narrowed. The lower branch could not be followed far beyond the constriction, but the upper could be followed as a mucous track for some distance. The space between the aorta and the bronchus was occupied by glands. Dr. Dalton held that this was not an undeveloped fœtal condition but was due to obstruction slowly produced. Most likely the obstruction had been due to enlargement of the glands already noticed.—Dr. CURNOW, under whose care the patient had been, said there had been nothing in the signs during life to suggest the abnormality.

Dr. F. W. ANDREWES showed specimens from a case of Fatal Summer Diarrhœa with Acute Enteritis. The case was of interest because the unusually severe enteritis found received a probable explanation in secondary streptococcus infection of the bowel. A girl, aged nineteen years, in previous good health, was attacked in August last by ordinary diarrhœa, mild at first but becoming more severe, till on the evening of the second day she was admitted to St. Bartholomew's Hospital in a state of profound collapse from which she never rallied. The stools were small, colourless, and like rice-water. She died about 56 hours from the onset. At the necropsy the only lesion found was an intense enteritis; the mucous membrane of the whole jejunum and ileum was of a vivid crimson colour and the solitary follicles stood out very conspicuously. There was no ulceration. The specimen shown had been prepared with formalin. Dr. Andrewes said that so intense an enteritis was not often seen in fatal "cholera nostras." Commonly there was little evidence of inflammatory change in the bowel to be seen after death. The causation of summer diarrhœa was still

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unsettled, though it was almost certainly of microbic origin. The researches of Dr. Klein had given considerable grounds for associating his "bacillus enteritidis sporogenes" with the disease. Whether this be so or not there was in this case evidence of a streptococcic infection of the bowel which was probably superimposed upon the primary cause of the diarrhœa. Bacteriological investigation of the intestine and its contents gave the following results. The spirillum of Asiatic cholera was absent. Bacillus enteritidis sporogenes was present in a very virulent form, a culture being fatal in thirty-two hours to a guinea-pig which was injected. The chief organism present in the stools was a streptococcus. Sections of the intestinal wall stained by Gram's method showed in the necrotic mucosa small numbers of bacillus enteritidis sporogenes and streptococci. The streptococcus was obtained in pure culture and was not certainly identical with streptococcus pyogenes. Microscopic specimens of the intestinal wall and of the fæces were shown.

Mr. S. G. SHATTOCK exhibited an Acromegalic Skull from the collection of modern Italian crania purchased by the Royal College of Surgeons of England in 1870 from Dr. Liccolucci. Though placed by Sir William Flower amongst the normal crania it was noted at the time as massive and rugged. There was no difficulty in recognising it now as one of the acromegalic type. The changes in the bones were associated with very considerable enlargement of the pituitary fossa, proving the existence of a pituitary goitre. The parietal bones, where thickest, measured $\frac{1}{5}$ in. (2 cm.). In some examples of acromegaly the thickening had been classed as hypertrophic, but in the present case all distinction between tables and diploe was lost and the change could not be classed as one of hypertrophy in the strict or academic sense; its texture was indistinguishable from that of a calvarium thickened and sclerosed in the later stages of osteitis deformans. One of the most characteristic features was the lengthening of the face due especially to the enlargement of the lower jaw and notable prominence of the chin (cranium progeseum of anthropologists). About 40 per cent. of giants were stated (Maximilian Sternberg) to be acromegalic. Certain writers had alleged that gigantic stature was in all cases associated with, or due to, pituitary disease arising during growth—i.e., that all giants were acromegalic. This was untrue. There were normal and pathological giants as there were normal and pathological dwarfs. Besides the dwarfing of cretinism due to disease of the thyroid there were short-limbed dwarfs who were not cretinous, and dwarfs, thirdly, who were proportionally small throughout. In the College Museum there were the skeletons of two giants. One, 6 ft. 9 in., that of "Freeman the American Giant," presented obvious prognathism, but the bases of the skull were in no degree thickened and the pituitary fossa was not in the least enlarged, its antero-posterior diameter being only 1·4 cm. ($\frac{5}{8}$ in.). But the Irish giant (Charles Byrne or "O'Brian," 7 ft. 7 in.) the speaker viewed, with Dr. D. J. Cunningham, as an acromegalic. The lower jaw was massive and the chin was particularly prominent, the glabella was very projecting, and the cranial bones were dense and thickened. The pituitary fossa measured over 2 cm. antero-posteriorly. The capacity of the skull was 1520 cm.; that of the acromegalic Roman skull was 1500 cm., whilst that of the normal giant was by contrast 1630 cm. This Irish giant was not to be confused with that in the Museum of Trinity College, Dublin (Cornelius Magrath), which Cunningham in 1891 showed to be acromegalic. The Irish giant referred to in Sternberg's monograph was that in Dublin, not that in London.—Dr. CURNOW mentioned that there was a skull in King's College Museum supposed to be that of an Australian native. He himself, however, had always been doubtful as to its real nature and believed from its prognathism, thickening of the frontal bones, and the condition of the sutures that it was an acromegalic skull.

Mr. S. G. SHATTOCK also exhibited a specimen of Accessory Parathyroid in the Human Subject, with complete microscopic sections. The body was of about the size of a small pea, which was found loosely hanging from the lower region of the thyroid isthmus in a man, twenty-two years of age, who died from intussusception. Histologically this was a most perfect example of parathyroid tissue and consisted of columns of cells ramifying in a close capillary mesh and showing nowhere any trace of lumen or of colloid. Such accessory bodies were to be distinguished from accessory thyroids; they were accessory parathyroids. He was induced to show it in consequence of the importance the subject of parathyroid tissue had attained. In the thyroid of the adult he had seen small flattened islands lying at the surface and far removed from the situation of the parathyroids described in them by Sandström, and especially more recently by Welsh, the latter glands being two on either side at the lower part of the lateral lobes about the site of the inferior thyroid artery. The subject was complicated by the fact that at times in the lower animals, but not rarely in man, it had been found that the parathyroids contained also thyroid tissue. So unlike were the islands he had seen—e.g., on the anterior surface of the lateral lobe—that he could not help suspecting parathyroid tissue in man was more extensive than that comprised in the parathyroids alone.

Dr. LAZARUS-BARLOW showed the Trachea of a man, aged fifty-six years, into which a Squamous-cell Carcinoma had perforated. The point of difficulty had reference to the seat of origin of the growth. The growth was of about the size of a small Tangerine orange and lay obliquely in front of the trachea between the lower margin of the thyroid gland and the upper margin of the remains of the thymus gland. During life it was almost entirely covered by the manubrium sterni. The seat of perforation was in the middle line of the trachea about 1¼ in. above the bifurcation. There was strong probability that the growth was primary in this situation, firstly, because nodules found in the cervical glands—especially on the right side—were much smaller; and, secondly, because there was no new growth visible in the tongue, mouth, or œsophagus. Neither was the skin anywhere implicated. The possible explanations were that the growth had arisen either in connexion with an accessory thyroid body, or with a remnant of the thymus gland, or with the trachea, or with a fœtal remnant of squamous epithelium included in the deeper tissues during closure of a branchial cleft. Against the view that it was of thymic origin was the fact that no Hassall's corpuscles could be found in the peripheral part of the growth. Against the views that it arose in the trachea was the fact that its structure was undoubtedly that of a squamous-cell epithelioma. Against the view that it arose from a fœtal inclusion of squamous epithelium during closure of a branchial cleft was the impossibility of proving the point. On the whole, however, Dr. Lazarus-Barlow thought that the latter view was most probable.—Mr. SHATTOCK said that if the tumour were really primary it probably grew as suggested from a branchial cleft, although it was rather low down for such an origin. The lower branchial cleft was developed from the pharynx at one end and the skin at the other. Had the squamous epithelium any stratum granulosum, as would be the case if it arose from the epidermic end?—Dr. ROLLESTON thought that it was possible the tumour might have arisen from the track of the depression in the visceral arch, which led to the development of the thymus in which the squamous epithelial structures were normally found. He had shown some years ago a specimen of spheroidal-celled carcinoma removed from the neck in relation to which no primary tumour could be discovered, and a similar case had been mentioned by Mr. Bowlby.—Dr. LAZARUS-BARLOW, in reply, said that the trachea was deviated and so the tumour was not really as mesially situated as at first sight appeared.

Mr. BETHAM ROBINSON showed a specimen of "Butter Cyst" of the Mamma which was removed in October, 1897, from the breast of a married women, aged twenty-five years, who gave the following history. Fifteen months before, three weeks after her first confinement, she suffered from an "abscess" of the right breast in almost the same situation as the present swelling. The breast became large, painful, and tender, especially at the upper and outer part. The inflammatory mass was punctured twice, not incised, and a considerable quantity of pus (?) was drawn off. Soon after the abscess had apparently healed she began to notice a small lump about the centre of her right breast. This quickly reached to the size of a Tangerine orange and had remained so. There was rarely any pain in connexion with it and no discharge from the nipple. On admission the lump, which was circular in outline, elastic, and about 2 in. in diameter, was situated above the nipple and showed at its inner part the scars of the two punctures. It was not tender. The gland on the inner wall of the axilla was distinctly enlarged. The lump with a margin of healthy gland structure round was removed as well as the enlarged gland.

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The swelling proved to be a cyst with smooth walls filled with a yellowish-brown semi-solid substance of the consistence of butter. On histological examination of the cyst-wall there were gland lobules to be seen embedded in some excess of fibrous tissue; the lining membrane was epithelial, flattened, chiefly in a single layer, and not granulation tissue. The cyst contents hardened on exposure to the air; with ether the main part (the fatty portion) was soluble; the undissolved part microscopically consisted of protoplasmic masses, apparently fatty epthelial cells without leucocytes, and with this could be seen sheaves of circular crystals, probably stearin. The condition, therefore, was a galactocele, but modified to this extent that the watery constituents had become absorbed, leaving only the more solid part behind. It was possible to get such retained products quite hard, dry, and friable, resembling very much old cheese. Such a case was shown by Mr. Wickins-Pitchford and recorded in vol. xlvii. of the Transactions, p. 250. Here the milk had been retained in dilatations associated with fibroid change in the breast and gradually lost all its watery elements; the "cheesy" material was proved to be chiefly fatty.

Dr. HUGH WALSHAM exhibited: 1. Bony Trabeculæ and Nodules in the Tonsil of a man, sixty years of age, who died from phthisis. There was nothing to indicate the condition during life. 2. Cartilaginous Nodules from the Tonsil of a young man also found after death. It seemed most likely that they were derived from some branchial cleft, but Dr. Kanthack, who had seen the specimens, regarded them merely as instances of metaplasia of fibrous tissue.—Mr. J. H. TARGETT mentioned that he had found bony nodules in the corium of the scalp.—Dr. ST. CLAIR THOMSON asked if the bone and cartilage might not come from the tip of the styloid process, which in some people reached right down to the tonsil.—Mr. SHATTOCK agreed that the nodules were derived from a branchial cleft and reminded Dr. St. Clair Thomson that the styloid process and its ligament represented one of the branchial clefts.—The PRESIDENT thought the cartilage and bone were most likely derived from some part of the skeleton, as suggested by Dr. St. Clair Thomson. Osteoma of the skin was very rare.—Dr. WALSHAM, in reply, said the nodules were multiple and so could not represent the tip of the styloid process.

Mr. P. DE SANTI exhibited specimens of Primary Sarcoma of the Scalp. The patient was a young woman. A lump was noticed in the right side of her scalp when she was a year old. They became more numerous, but varied in size for some years. They were removed in 1891, again in 1897, and in 1898, the growths having recurred, they were removed with the exception of two or three near the sterno-mastoid. The patient died a few months later from extensive secondary deposit in the lungs.

Dr. R. G. HEBB showed sections of Actinomycosis of the Tongue removed from a sailor sixty years of age. The lump was of the size of an almond, an inch behind the tip. It was excised and the centre was yellow and cheesy. Sections of the wall showed chiefly small-celled infiltration, but here and there were typical groups of the ray fungus.—The PRESIDENT remarked on the rarity of actinomycosis of the tongue in man, although it was so common in cattle.

CLINICAL SOCIETY OF LONDON.

President's Address. — Myositis Ossificans. — Congenital Cardiac Lesions in Mongolian Idiots.—Erythema Enematogenes.—Pin in the Vermiform Appendix.

THE first meeting of the present session was held on Oct. 14th, the President, Mr. LANGTON, being in the chair.

The PRESIDENT thanked the society for electing him to the chair a second time. He referred to the prosperous state of the society, which now had a membership roll of 588, and the financial position was fully secured. Of the 129 original members only 40 now remained. During the past year two original members had died, Sir Richard Quain and Dr. Ramskill. An index volume referring to the first 30 volumes of the society had been edited by Dr. Archibald Garrod and was a model of accuracy and completeness. The President presented the new volume of the Transactions of the Society and remarked on the value of the report on the antitoxin treatment drawn up by a committee under the presidency of Dr. Church. The society had always encouraged the observation and recording of facts. But the President wished to point out that observation required to be supplemented by skill in marshalling facts. In his later days Hunter insisted that theory should guide the record of observations. In their records observers should exercise a little scepticism both as to the accuracy of their own observations and as to the correctness of statements made by patients. Referring to the association between medicine and surgery the President said that there had been occasional efforts to separate them. At St. Bartholomew's Hospital in 1662, for instance, the governors decreed that "the apothecary do not prepare or dispense any medicines except such as be ordered by the physicians." Later a relaxation was made, the surgeons being allowed to prescribe mercurials and purges only. The papers read during the last session, especially those on abdominal diseases, showed how often the fields of the physician and surgeon overlapped. Referring to the question of the treatment of perforated gastric ulcer the President said that he thought all would agree that early operation gave the only chance. He preferred to sponge out solid matter as far as possible and then flush the abdominal cavity with sterilised water. He was inclined to think favourably of the proposal by Billroth and others to excise the ulcer before perforation if its presence could be diagnosed with any degree of certainty. This would especially refer to ulcers on the anterior wall. Deaths took place in considerable numbers in the London hospitals from this condition; the patients were usually young women or males of middle age. The operation itself would not now involve very great danger.

Dr. W. P. HERRINGHAM narrated a case of so-called Progressive Myositis Ossificans. The patient, a girl, now aged eight years, was shown as a living specimen to the society three years before by Mr. Owen Paget.[1] Rigidity was first noticed about the shoulders at two years of age. At five years of age swellings appeared in the back for which she saw Mr. Paget. The swellings were large at first, but disappeared under treatment. They were attached to the ribs and were probably fibrous in character. The shoulders were then rigid owing to ossification of the pectorals and latissimus dorsi and the head was fixed from rigidity of the sterno-mastoids, which were swollen. Microdactylia of the big toes was also noticed. At the present time the back had become more rigid so that the whole spinal column moved like a rod; a considerable bony prominence was found behind the left mastoid process; there were bony nodules springing from the ulna on both sides, which on the right arm limited supination; the thumb was small and imperfectly abducted; there was an exostosis on the first phalanx of the right middle finger. A pencil of bone was found in the right abdominal muscles running from the anterior superior spine of the ilium to the ninth costal cartilage and another was in the sheath of the right rectus abdominis. There had been pain lately about the right hip and its movements were not quite so free as those on the left side. The right biceps femoris tended to contract, but could be extended by force. Skiagrams showed the right shoulder-joint to be natural, the bony deposit being in the muscles alone. The deformity of the great toe was complex. The epiphysis of the first phalanx was thicker on the inner side; the first phalanx, somewhat tilted by this to the outer side, was itself thickened; the unequal phalanx was apparently joined to its head by synostosis, and was set on obliquely, pointing again outwards. The nail was perfect. The lesions of the disease were confined to the somato-pleural layer of the mesoblast, and in this to the bones, periosteum, and connective tissue only. The muscle was affected by secondary atrophy. Its pathology was uncertain. It was congenital and not hereditary. Of exciting causes injury alone had been sufficiently proved, and this in rare cases only. Males suffered more than females. There was no adequate evidence of any connexion with rheumatism or rheumatoid arthritis. The view of Pincus that it was a form of new growth appeared the most reasonable, and parallels might be drawn between this disease and multiple fibroma. It was not impossible that this anomalous disease might throw light on the pathology of tumour formation. The name was unfortunate, but must be retained until the pathology was more certain.—Mr. CAMPBELL WILLIAMS asked Dr. Herringham if he considered that the "chill" mentioned in the history was an attack of rheumatism. He had seen a case of an adult some time ago in Australia in which an attack of rheumatism preceded the appearance of the disease.—The PRESIDENT

[1] Transactions of the Clinical Society of London, vol. xxix., p. 221.

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asked if the condition improved when the child was kept resting in bed.—Mr. W. G. SPENCER observed that ossification after rheumatism or injury was not so very rare. In Dr. Herringham's case, however, the disease appeared to be congenital, and this was confirmed by the deformity of the toes. He regarded the disease as a congenital irregularity of ossification. In certain birds this condition occurred normally, ossification extending into the tendons from the periosteum.—Dr. HERRINGHAM, in reply, agreed with Mr. Spencer as to the pathology. He thought the congenital irregularity in development which most regarded as the origin of tumour formation was perhaps a parallel condition. The ossification might occur, not only in muscles and tendons, but independently in the inter-muscular septa. He did not see why a chill should not start the disease in a person congenitally predisposed in the same way as an injury might, but he did not think there was any special relation to rheumatism. The patient's condition did improve when she was kept at rest.

Dr. ARCHIBALD GARROD briefly described 5 cases which had come under his notice in which Congenital Cardiac Lesions were met with in Association with the Mongolian Type of Idiocy. He expressed the belief that there was a specially close association between these two varieties of congenital defect although structural malformations of other kinds were not unfrequent in children with malformed hearts. Dr. John Thomson in a recent paper on the Types of Idiocy had mentioned the occurrence of congenital heart disease in three children of the Mongolian type, but inquiry of physicians with large experience of idiot children showed that the association was not a familiar one in asylums. This was very probably due to the failure of these children to survive to the age for admission to such institutions. Dr. Garrod's patients and those of Dr. Thomson were all below the age of five years. In several instances death occurred at an early age. With one exception the patients were girls. Congenital cardiac lesions were occasionally met with in idiots of other kinds, but in Dr. Garrod's experience much less frequently than in "Mongols."—Dr. A. M. GOSSAGE mentioned a case in which there were signs of congenital heart disease at the age of eight months and later the child showed the typical Mongolian type of idiocy.—Dr. GUTHRIE had examined the heart in two cases of the kind described by Dr. Garrod. One was that of an infant, eight months old, who had a loud systolic murmur but was not cyanosed. She became dropsical before death and it was found that there was an imperfect septum ventriculorum and a patent foramen ovale. In the second case the right side of the heart was hypertrophied and there was a cribriform opening at the upper part of the ventricular septum. He agreed with Dr. Garrod that the children usually died before being old enough to enter the idiot asylums.

Dr. G. F. STILL read a paper on Erythema Enematogenes (Enema Rash) in Children. Very few cases of enema rash in childhood had been recorded, and although this variety of erythema was of little significance *per se* it became of considerable importance in children, inasmuch as it was very easily mistaken for some of the specific fevers to which childhood is particularly exposed. The rash had a characteristic appearance and course, as was apparent from a study of 26 cases which had occurred at the Hospital for Sick Children, Great Ormond-street. There seemed to be no reason to doubt the causal relation of the enema to the rash. In some children repetition of the enema had been followed repeatedly by the rash. Usually a bright red patchy erythema appeared, especially on the front of the knees, the backs of the elbows, the buttocks, and the face; in some cases, however, the rash was scarlatiniform, or the two forms might be combined. It appeared most often from 12 to 24 hours after the enema, and lasted usually from 24 to 48 hours; there was very rarely, if ever, any constitutional disturbance; the amount and time of retention of the enema and the duration of the preceding constipation did not seem to affect its occurrence. The rash occurred most often after a first enema. Children over six years of age seemed more liable to it than younger children, but it occurred in one case at two years and three months. Scarlet fever, rötheln, and measles were the exanthems for which an enema rash was most likely to be mistaken. The absence of constitutional symptoms, of sore throat, coryza, and pyrexia, and often slight differences in the character and distribution of the rash, together with the occurrence just after an enema, might serve to differentiate the enema rash. There was some evidence that desquamation might occasionally follow an enema rash, making the diagnosis from scarlet-fever still more difficult. It seemed highly probable that a certain number of the cases of so-called "surgical scarlet fever" were the result of enema given before operation. The erythema must be regarded as the result of a vaso-motor dilatation, but how this was produced was uncertain. Three possible explanations suggested themselves: (1) absorption of some toxic substance from the soap of the enema, possibly from the fats or the resins used; (2) absorption of some fæcal toxin, thrown into solution by the enema; and (3) a reflex effect on the vaso-motor centres. Arguments might be advanced in favour of each theory, but on the whole it was perhaps most reasonable to regard the rash as due to a vaso-moter change produced by absorption from the intestine of some constituent of the enema or of the fæces. Further observations were necessary before it could be decided from which of these sources the toxin was absorbed.

Mr. CHARTERS SYMONDS briefly described a case of a Foreign Body in the Vermiform Appendix. The patient, a young woman, was admitted for a tender swelling in the right inguinal region. This was diagnosed as a strangulated hernia containing omentum, although the medical man who had first seen the case had looked on it as an inflamed inguinal gland. On opening the sac of the hernia, which was an inguinal one, an inflamed appendix was found therein. This was found to contain a pin with a glass head. This and the appendix were removed and the patient subsequently did well. Mr. Symonds brought the case forward since true foreign bodies in the appendix were rarely met with, most of the classical instances of cherry stones and date stones being merely instances of calcareous concretions.—The PRESIDENT said that the presence of the vermiform appendix in a hernial sac was not very uncommon and was more often met with in inguinal than in femoral hernia. The condition as described suggested a cystic collection in the canal of Nuck, but such cysts were not attended by the severe symptoms met with here. He had seen two genuine cases of foreign body in the appendix. In the first a pin was found and removed and the patient did well; in the second a needle caused the formation of an abscess in connexion with the appendix.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Some Points in the After-treatment of Cases of Abdominal Section.

A MEETING of this society was held on Oct. 13th, Mr. F. BOWREMAN JESSETT, Vice-President, being in the chair.

The following specimens were exhibited:—

Mr. CHRISTOPHER MARTIN (Birmingham): (1) Bifid Uterus with Retention of the Menses; and (2) Myoma of the Round Ligament.

Mr. R. H. HODGSON: Fibro-cystic Disease of the Uterus.

Dr. ARTHUR GILES: Large Cervical Myoma, weighing 7 lb., in the broad ligament.

Dr. J. MACPHERSON LAWRIE (Weymouth): (1) Uterine Fibroid complicated by Ovarian Cystoma; and (2) Fibroids removed by Myomectomy.

Dr. FREDERICK EDGE (Wolverhampton): Carcinoma Uteri removed by Vaginal Hysterectomy.

Mr. JESSETT: (1) Two specimens of Carcinoma Uteri, one complicated by fibroids, removed by vaginal hysterectomy; and (2) Cyst removed from the Transverse Meso-colon.

In the discussion on these specimens Dr. C. H. F. ROUTH, Dr. HEYWOOD SMITH, Dr. R. T. SMITH, Dr. GEORGE KEITH, and Mr. CHARLES RYALL took part.

Mr. CHRISTOPHER MARTIN read a paper on Some Moot Points in the After-treatment of Cases of Abdominal Section. He laid stress on the importance of preventing complications by care in the preparation of the patient, in the performance of the operation, and in the attainment of perfect asepsis. He said it was unnecessary to keep the patient rigidly on her back for 48 hours. The dressings should be simple, dry and absorbent, and aseptic. Wet dressings favoured suppuration and powders formed unpleasant crusts. For closing the abdominal wall he used interrupted sutures of silkworm gut passed through the whole abdominal wall. He disliked buried sutures. The sutures should not be removed till the tenth or twelfth day. He only drained in septic cases or

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where there was much oozing. A little clean blood did no harm. He advocated iodoform gauze as a drain in preference to glass or rubber tubes. It was better to drain through the posterior fornix than through the abdominal wall. A hypodermic injection of morphia was advisable immediately after the operation as also in cases of great prostration and restlessness. He strongly recommended the purgative treatment of peritonitis, preferably calomel and salines, and discussed the mechanism of their beneficial action. He advised the early administration of bland fluids after the operation; it was cruel and harmful to withhold fluids for 48 hours. In vaginal sections he said the vagina should be packed with iodoform gauze and this should be left in till the seventh day. It was unwise to douche for at least a week after the gauze had been removed for fear of forcing the vaginal discharges into the peritoneum. Lastly, an abdominal belt should be worn for at least two years after every abdominal section. The discussion on this paper was adjourned to the next meeting.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Presidential Address.

A MEETING of this society was held on Oct. 14th, the President, Dr. E. GWYNN, being in the chair.

The PRESIDENT delivered an address on the Medical Officer of Health as a Public Teacher. Lord Beaconsfield, then Mr. Disraeli, in the electoral campaign of 1874, declared the public health to be the question of the day, and in the motto, *Sanitas sanitatum, omnia sanitas*, gave a watchword to his party which produced a succession of statutes beginning with his Public Health Act of 1875 and ending with that for London under Lord Salisbury's administration in 1891, each being a consolidation of, and improvement on, previous legislation. These acts, though fragmentary and imperfect, had been productive of much good. The two great religious legislators, Moses and Mahomed, inculcated personal cleanliness on their followers, but in the dark ages its neglect was regarded as a virtue and a distinctive mark of Christians. In our days, again, the sanitary reformer was the man of science as represented by the medical officer of health—a creation of the Act of 1855. An address by Sir B. W. Richardson in 1876 on "The City of Hygieiopolis" had aroused the public interest in sanitary problems, but the greatest impulse to practical results was given by Lord Salisbury's own article in the *National Review* in 1883 on the "Housing of the Working-classes." But the education of public opinion devolved on the medical officers of health, created by the Act of 1855, and whose appointment was made compulsory everywhere by that of 1875. Able, however, as a large proportion of these officers were, the multifarious nature of the routine duties imposed on them tended to give them the character of permanent officials and left them little leisure for other work. The necessity for the education of the public was evident from the fact that England, which had been the pioneer in practical sanitation, had not retained the lead but was being left behind in many respects by some other countries. He need but allude to the promotion of bacteriological and other scientific research, which, in the absence of the State aid so liberally granted on the continent, was here left to private generosity and effort; the "tremendous experiment," as Lord Lister had called it, of the abandonment of compulsory vaccination at a time when other nations were one by one following the example of Germany in requiring universal vaccination and revaccination; the ignorance of the principles of ventilation shown by the foul air of the law courts, theatres, schools, and churches; the general apathy as to the dangers of tuberculous milk and flesh,—in all of which we were behind other peoples. Other subjects on which the medical officer of health had great opportunities for teaching and leading public opinion were the housing of the working classes, not only in the slums and tenement dwellings of the older quarters of London, but in the thousands of jerry-built houses, springing up on all sides in the outskirts of the metropolis, destined to fall into dilapidation and become suburban slums in the course of a few years, these being the direct result of the vicious system of short ground leases and inefficient official control; while the consequences of these insanitary conditions were a high infant mortality, the miserable physique and demoralisation of the survivors, immorality, and crime. Then there was the pollution of the air by smoke tending to a high mortality from respiratory diseases. By how many sanitary authorities were the Smoke Acts strictly enforced? On all these questions and many others the medical officer's duty was to inform the community, but that he should be capable of fulfilling his true mission of their teacher, adviser, and leader it was necessary that he should enjoy more leisure and authority and that his salary and position should be such as to attract the best and ablest men in the profession. Meanwhile he urged his fellow officers to take a wide and lofty view of their vocation as embracing the welfare, physical and moral, of the entire community and to adopt as their motto, *Homo sum, humani nihil a me alienum puto.*

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

Presidential Address.—Annual Report.

THE annual meeting of this society was held on Oct. 12th in the Medical Library of University College, Bristol, Dr. Shaw, and afterwards Dr. Roxburgh, being in the chair.

Dr. R. ROXBURGH, in giving his Presidential Address, referred to a number of fascinating topics which at the present moment faced the pathologist, and some of which seemed on the verge of complete elucidation. The President then proceeded to deal with the Disillusions and Disabilities of Private Practice. He compared the ideals of the young and enthusiastic medical graduate with the difficulties which met him in maintaining these and in preserving a high scientific and ethical standard where his object was primarily to earn a livelihood. He pointed out that it was from the "commercial" side of practice that temptations arose to unprofessional acts and he appealed to the teachers of the Bristol Medical School to set a high ethical ideal before their students.

Mr. PAUL BUSH (honorary secretary) read his annual report, which showed a balance in hand of £47 on the ordinary account and of £103 on the Journal account. He referred to the loss the society had sustained by the death of Dr. H. Marshall and Mr. Augustin Prichard.

Dr. B. ROGERS (editorial secretary) read his report, which showed a deficit of £5 on the Journal for the year.

The honorary librarian (Mr. L. M. GRIFFITHS) read his report, which showed a balance in hand of £50; he mentioned that there were now 7180 books belonging to the society and that the Bristol Medical Library now contained nearly 19,000 volumes and was in receipt of 204 current periodicals. He made a long and clear statement as to the present condition of the library and intimated that after this year he would be unable to continue to be honorary librarian.

Dr. J. G. SWAYNE proposed and Mr. HANDCOCKE WATHEN seconded, and it was carried, "That Mr. L. M. Griffiths be thanked for his long services and that the report be adopted."

Dr. J. E. SHAW the retiring President, in supporting this motion, said it was the wish of all the members of the society that Mr. Griffiths should continue in office, a post he had so long held with such great benefit to the society and to the users of the medical library. He further mentioned that the excellent condition of the medical library was largely due to the energy and knowledge of Mr. Griffiths.

Mr. W. H. Harsant was elected President-elect; Mr. Paul Bush was re-elected honorary secretary; and Mr. L. M. Griffiths was re-elected honorary librarian. The following were elected to serve on the committee: Dr. Michell Clarke, Mr. J. Dacre, Dr. D. S. Davies, Dr. B. Rogers, Mr. Munro Smith, and Dr. H. Waldo. Mr. L. M. Griffiths, Dr. G. Parker, and Mr. J. Taylor were elected to serve on the Library Committee. Mr. W. Roger Williams was elected a member of the society.

PATHOLOGICAL SOCIETY OF MANCHESTER.

Election of Officers.—Exhibition of Specimens.

A MEETING of this society was held on Oct. 12th, Mr. C. E. RICHMOND, President, being in the chair.

The annual reports of the treasurer and committee were received and the following office-bearers elected for the

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session 1898-99:—President: Dr. R. B. Wild. Vice-Presidents: Mr. J. Collier and Dr. E. S. Reynolds. Treasurer: Dr. T. A. Helme. Secretary: Dr. T. N. Kelynack. Committee: Dr. A. Brown, Dr. W. E. Fothergill, Mr. J. E. Platt, Dr. W. Milligan, Dr. F. C. Moore, Mr. W. A. Renshaw, Mr. J. W. Smith, and Mr. W. P. Stocks. Auditors: Mr. W. A. Hooton and Dr. E. J. Sidebotham.

The following card specimens were exhibited:—

Mr. STANMORE BISHOP: (1) Tuberculous Kidney; (2) Pyosalpinx, with Ovary converted into Thick-walled Abscess; (3) Pyosalpinx; (4) Chronic Metritis with Mucoid Polypus; (5) Ectopic Gestation removed before Rupture; (6) Encysted Hæmatocele of the Cord; (7) Tubo-ovarian Abscess; and (8) Fibro-cystic Uterus.

Dr. BLACKWELL: Cured Aneurysm of the Abdominal Aorta.

Dr. VIPOND BROWN: Calculus formed around a Hairpin.

Professor DELÉPINE: Apparatus for taking Photographs of Morbid Specimens under Water, with demonstration on the screen of results obtained.

Dr. DRESCHFELD: Syphilitic Liver.

Dr. KELYNACK: Medico-legal specimens—(1) Pharynx and Larynx blocked by Partially Masticated Meat; (2) Stomach from a case of acute Arsenical Poisoning; (3) Stomach from a case of acute Carbolic Acid Poisoning; and (4) Stomach from a case of Nitric Acid and Mercury Poisoning.

Dr MILLIGAN: Microscopic sections of—(1) Tuberculous Growth of the Septum Nasi; (2) Maxillary Antral Polypus; (3) Sarcoma of the Septum Nasi; (4) Sarcoma of the Soft Palate; and (5) Papilloma of the Uvula.

Dr. MOORE: Some Mammary Tumours.

Dr. STODDART: (1) Cast of a Stomach formed during life by ingestion of string, hair, &c.; (2) Chronic Ulcer of the Stomach simulating cancer during life; (3) Lymphadenomatous Spleen; and (4) Microscopical Sections of the Spinal Cord from a case of acute Suppurative Peritonitis.

Dr. WILD: Photographs and Microscopic Preparations from a case of Lichen Planus Verrucosus.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Exhibition of Cases and Specimens.

THE first meeting of the session was held in the Royal Infirmary, Newcastle-upon-Tyne, on Oct. 13th, Mr. H. HIND, President, being in the chair.

The following office-bearers were elected for the ensuing session:—President: Dr. Limont. Vice-Presidents: Mr. Hind, Mr. Rutherford Morison, Dr. G. R. Murray, and Dr. R. S. Peart. Honorary Secretaries: Dr. T. Beattie and Dr. A. M. Martin.

Mr. WILLIAMSON introduced a patient recovering from Orbital Thrombosis. Proptosis had remained limited to the right eye which was "spoilt." No septic focus had been discovered. He also recited a series of five cases of orbital thrombosis arising from trivial face injuries.

Dr. BEATTIE recounted a case of Cavernous Sinus Thrombosis proved by exclusion, post mortem, to have been due to facial erysipelas, and two others proved on necropsy to have resulted from middle-ear disease, the most frequent cause.—The PRESIDENT commented upon the rarity of this condition as a sequela to the very frequent septic affections of the nose.

Mr. MORISON brought forward a case of Orbital Sarcoma for comparison with Mr. Williamson's case.

Dr. G. R. MURRAY introduced: 1. A case of Thoracic Aneurysm showing Dilatation of the Superficial Arteries in the Chest-wall. A deep impulse was felt posteriorly to the left of the spine and a loud systolic bruit was heard over a wide area, being especially intense over the upper part of the spine. A marked peculiarity of the case was the almost complete absence of pulsation in the abdominal aorta and in the femoral arteries. 2. A case of Thoracic Aneurysm pointing in the Third and Fourth Intercostal Spaces immediately to the left of the Sternum. 3. A patient with Aneurysms of the Innominate Artery and of the Abdominal Aorta.—Dr. DRUMMOND referred to the difficulties of the first case and expressed his opinion that it was one of fusiform dilatation of the thoracic aorta with the formation of laminated clot which had been displaced and partially occluded the descending aorta. The second case, he thought, did not spring from the ascending arch but from the anterior surface of the descending aorta.

Dr. MURPHY showed: 1. A child, aged ten months, from whom he had successfully removed a large Cranial Meningocele. The child was now developing hydrocephalus. 2. A boy, aged six years, very anæmic, with a very large spleen and a liver slightly enlarged. He asked for a diagnosis and suggestions for treatment.—Dr. BEATTIE, after examining the blood, reported that there was no leucocytosis. The case was therefore not one of leukæmia; he would rather consider the splenic enlargement secondary to the anæmia.—Dr. DRUMMOND said the case answered the description of so-called "splenic anæmia." He thought it essentially one for medical treatment.—Dr. PLUMMER and Dr. OLIVER also took part in the discussion.

Professor OLIVER showed a patient recovering from Caisson Disease. The man had worked as a sinker at the construction of the piers of a bridge which was being built over the Tyne at a depth of 75 ft. below high-water level and at an atmospheric pressure of 35 lb. to the square inch. He had severe cramping muscular pains, with rigidity and paresis of the arms and legs, and a tendency to syncopal attacks. At the onset he had suffered from epistaxis and deafness.—The PRESIDENT asked whether hæmaturia or emphysema of the lungs had occurred in this case, and was answered in the negative.

The following specimens were exhibited:—

Dr. MURPHY: Appendix removed seven hours after the onset of the symptoms. The patient had made an uninterrupted recovery.

Mr. WILLIAMSON: Liver and Duodenum, showing a large communication between the fundus of the gall-bladder and the duodenum with a large facetted gall-stone *in situ*. Another large facetted stone had been removed from the small intestine by operation, where as an enterolith it had caused acute intestinal obstruction.

Dr. DRUMMOND: Congenital Cystic Kidneys removed from a woman, aged forty-five years, being the third member of the same family who had died in adult life from this disease, diagnosis confirmed by necropsy. He stated that he had at present under observation two members of another family suffering from the same disease.—Mr. ANGUS, Dr. BEATTIE, Mr. MORISON, and Dr. DRUMMOND discussed the developmental origin and subsequent pathology of the condition.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held in the University College, Dundee, on Oct. 7th, Dr. J. Mackie Whyte, Vice-President, being in the chair.—Dr. McGillivray showed a case of Paralysis of the Right Cervical Sympathetic with well-marked symptoms of Unilateral Anhidrosis, Myosis, Ptosis, Enophthalmos, and Heterochromia. No direct cause could be ascertained except the vague history of an injury to the cervical vertebræ, which probably also accounted for the pain on deep pressure over the spinous processes of the third and fourth cervical vertebræ. Dr. McGillivray also discussed certain points in connexion with the treatment of corneal ulceration, such as the relief of photophobia and blepharospasm for the purpose of restoring the normal processes of nictitation and lacrymation and also the normal corneal temperature, &c.—Dr. Stalker read notes of three cases of Needle Swallowing and discussed the treatment.—Mr. Greig read a paper on the Infectivity of Venereal Warts in which he set forth that a fourth venereal disease should be recognised. Out of 330 venereal cases of his own taken at random 14 had venereal papillomata, 9 of which had absolutely no evidence or history of any other venereal trouble or any signs of balanitis, &c. Mr. Greig gave an example of a husband having infected the wife with venereal warts and also an example where the husband infected the wife and the wife infected her child. He did not think that it would be put down to the discharge when both are present, as one often finds the discharge present without any warts. The incubation period he thought was about four weeks.—Dr. Mackie Whyte spoke of cases he had seen in the parochial hospital and treated successfully with salicylic acid and collodion.—Dr. Mackie Whyte read notes of a case of Tricuspid Stenosis in a woman, aged thirty-seven years, whose trouble had commenced with an attack of endocarditis at the age of ten years. Mitral and aortic stenosis developed and this was evidently followed by tricuspid, as was shown by the condition of the valves at the post-mortem examination. The right auricle

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of the heart (which was shown at the meeting) was greatly enlarged and hypertrophied, the right ventricle had thinner walls than normal, the left auricle was somewhat hypertrophied, and the left ventricle showed thickening of the wall (⅛ in.), but no dilatation. Dr. Whyte also spoke of a case he had attended several years ago of pure tricuspid stenosis.

BIRKENHEAD MEDICAL SOCIETY.—The inaugural meeting of this society for the session 1898–99 was held on Oct. 14th and was well attended. Dr. Francis Johnston having resigned the office of President Dr. H. Nazeby Harrington was unanimously elected to the position and Dr. Joseph Blood to that of Vice-President. The President (Dr. Harrington) gave an inaugural address on the Association of Medicine with Literature in England, pointing out some of the facts connected with the lives of members of the medical profession who had become prominent in the world of letters from the time of Thomas Linacre down to that of Conan Doyle, special attention being drawn to the medical part of their lives and the influence that their medical training had upon their literary work. Whilst most of the medical *littérateurs* were touched upon the following were spoken of at greater length: Linacre, Sir Thomas Browne, Sir Samuel Garth, Sir Richard Blackmore, Smollett, Akenside, Goldsmith, Crabbe, and Keats.—A hearty vote of thanks, proposed by Dr. Sydney Marsden, seconded by Dr. Harris, and supported by Mr. Vacher, Mr. Shears, Dr. Temple, and Mr. Laird Pearson, was given to the President for his able address.—The President replied.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The first meeting of the forty-third session was held on Oct. 14th at the Royal Kent Dispensary, Greenwich-road, S.E. Dr. E. H. Ezard, Vice-President, occupied the chair.—The treasurer's balance-sheet and the annual report were adopted and several new members were elected.—Mr. Ernest Clarke read notes of cases of Foreign Bodies in the Orbit in which no external wound was visible.—Dr. Toogood, Mr. Hartt, and Mr. Joscelyne discussed the paper.—Dr. George Herschell then gave a demonstration on Intra-gastric Instruments, including Turck's Gyromele and the Intra-gastric Needle Douche.—Dr. Morgan Dockrell showed cases of Urticaria Pigmentosa and Syphilis.—Dr. Toogood showed a case of Tuberculous Arthritis in a child which was gradually improving.—The following officers were elected:—President: Dr. Morgan Dockrell. Vice-Presidents: Dr. Edward H. Ezard and Mr. Charles J. Parke. Council: Dr. George Herschell, Mr. Arthur E. Joscelyne, Dr. John Mackern, B.A., Dr. Thomas C. Meggison, Dr. Robert E. Scholefield, Dr. Patrick C. Scott, and Dr. Septimus Sunderland. Treasurer: Mr. John P. Purvis. Secretary: Dr. John P. Henry. Librarian: Dr. H. Bowen Williams.

NEWPORT MEDICAL SOCIETY.—The annual meeting of this society was held on Oct. 5th, the retiring President, Mr. O. E. B. Marsh, occupying the chair. The honorary secretary read his report on the work of the society during the past year and this was discussed and approved. The election of officers for the ensuing session was then proceeded with. Mr. H. E. Williams was elected President, Mr. C. Brooke Gratte was elected Vice-President, and Mr. W. Basset was re-elected honorary secretary. Mr. H. B. Seddon and Mr. B. W. Gowring were elected to the two vacancies on the committee. The retiring President then vacated the chair in favour of the President, who returned thanks to the members for his election, and in the course of a few remarks commented upon the satisfactory position of the society and of the usefulness of the same.—A case of Molluscum Contagiosum was shown by Dr. T. Morrell Thomas and Mr. Marsh showed a specimen of small Ovarian Cyst removed by him, with notes of operation, &c.

WEST PENRITH MEDICAL SOCIETY.—A medical society has been formed comprising those medical men practising in the Land's End district under the title of the West Penrith Medical Society. The first meeting was held at the West Cornwall Infirmary on Oct. 12th, when Dr. J. B. Montgomery was elected President and Mr. W. S. Bennett Vice-President. Mr. J. Symons and Mr. H. M. Montgomerie were elected on the committee and Mr. A. R. F. Evershed was elected Secretary. After the election Dr. Hugh M. Montgomerie read a short paper on Infective Endocarditis, illustrating his remarks with the heart from a case which had recently been in the infirmary.

Reviews and Notices of Books.

Manual of Ophthalmic Surgery and Medicine. By WALTER H. H. JESSOP, M.A., M.B. Cantab., F.R.C.S. Eng., Ophthalmic Surgeon to, and Lecturer on Ophthalmic Medicine and Surgery at, St. Bartholomew's Hospital, &c. London: J. and A. Churchill. Crown 8vo. Pp. 469. Price 9*s.* 6*d.*

MR. JESSOP has in the work before us written a manual which will prove very serviceable to the student. He has taken for granted that those who will use it are fairly familiar with the anatomy and physiology of the eye and that it is unnecessary to do more than recall to their memory those facts which have a direct bearing on the pathology of the several tunics and humours. Thus under the head of Diseases of the Choroid there is a short introductory paragraph, not exceeding half a page, which describes its position, the layers of which it is composed, with the nervous and vascular supply, but, of course, with no details of the several constituents. So with the Diseases of the Retina, the structure of the retina is relegated to a short note; but the points which it is useful for a student to know, as the yellow spot and the disposition of the vessels, together with the origin, course, and arrangement of the fibres in the optic nerve, are given more fully. The style is throughout plain and intelligible and where a description of an operation is given, such as that of extraction of the lens in cataract or that of ectropion or tenotomy, Mr. Jessop expresses himself both with brevity and clearness. In the treatment of cataract he states that when the patient is not suffering from cough or any disease which necessitates straining he operates without an iridectomy, but in cases of incomplete or over-mature cataract he prefers an iridectomy owing to the difficulty of removing the soft lens substance without bruising the iris. He appears to prefer the 3-millimetre corneal flap operation. In speaking of herpes ophthalmicus Mr. Jessop states that he has found the best means to relieve the neuralgia and formication which persist after the vesicles have disappeared to be a mixture of chloroform and eau-de-Cologne. He, however, does not mention a method of treatment which has been found to be very effective—the passage of a constant current of electricity.

In the treatment of sarcoma and malignant growths their removal with, if necessary, that of the eye and the contents of the orbit is recommended, and after the hæmorrhage has been stopped by pressure it is suggested that chloride of zinc on strips of lint may be plastered round the sides of the orbit and the rest of the cavity filled up with cotton-wool. It is indeed added that "the effect of this treatment is that the periosteum and frequently a layer of bone exfoliate," and that "this operation is always followed by severe reaction." But the proceeding is a dangerous one and we have known a fatal result to follow from the chloride of zinc penetrating the cranial cavity and eating away the walls of the cavernous sinus.

Mr. Jessop is of opinion that sympathetic ophthalmitis is probably of microbic origin, though he admits that the exact method of transmission from the exciting to the sympathising eye is still uncertain. When sympathetic ophthalmitis has definitely commenced, although its course can be but little altered by excision of the exciting eye, yet if this eye be blind or only have perception of light it should, he thinks, be straightway removed, and in such cases he would never do a partial operation as abscission or evisceration, and we consider this to be sound practice.

Although we agree generally with the opinions held by Mr. Jessop, we think that he does not counsel wisely when in speaking of tenotomy he observes that the operator may increase the effect of the operation by dividing freely the

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capsule of Tenon near the tendon or by rotating the eyeball forcibly by the forceps in the opposite direction to allow the tendon to slip backwards. The last proceeding is very uncertain in its effects and the free division of the capsule of Tenon we take to be the cause of many bad results. If division of the tendon at its insertion be insufficient to rectify the defect, it is better to proceed at once, as indeed he himself recommends on another page, to advance the opposite tendon. Extensive opening of the capsule of Tenon should never be practised.

The subjects of Refraction and Accommodation are briefly dealt with, but the practitioner will find in the chapter devoted to them all that is necessary to enable him to select the requisite glasses either by direct examination by means of the ophthalmoscope or by retinoscopy.

The chromo-lithographs are eight in number arranged on four plates, and give representations of the normal disc and of the following diseased conditions: albuminuric retinitis, disseminated choroiditis, retinitis pigmentosa, and papillitis; post papillitic atrophy; glaucoma and myopic crescent. Though not equal to the best foreign lithographs in colour they show very well the conditions which they are intended to represent. There is also a reproduction of Professor Holmgren's colour-vision plate giving the confusion tints. The woodcuts, which number 104, are well executed. There are remarkably few typographical errors. Altogether the work will hold its own against the several treatises of about the same size which have appeared in English and foreign tongues and we have great pleasure in recommending it to all who are about to spend three or six months in the ophthalmic wards of a hospital. With this book in their hands and daily observation of ophthalmic cases they will learn much that they will find useful in practice.

Elements of Histology. By E. KLEIN, M.D., F.R.S., and J. S. EDKINS, M.A., M.D. Revised and enlarged edition. London, Paris, New York, and Melbourne: Cassell and Co. 1898. Pp. 488. 296 Illustrations. Price 7*s.* 6*d.*

THIS valuable work is so well known to students that a new edition embodying recent discoveries is sure of a welcome. The book shows signs of careful revision throughout and many of the chapters have been completely rewritten. There is a practically new introductory chapter on the Structure and Life of the Individual Cell, and a full account is given of the minute structure of the nervous system as revealed by the staining processes elaborated by Weigert, Golgi, and Ramon y Cajal. The structure of the nerve cell revealed by Nissl's staining method is, however, not referred to. This section is admirably illustrated. Many other parts have been expanded to introduce the latest teaching. Dr. Klein and Dr. Edkins have wisely introduced photography largely for purposes of illustration, and the results, if less distinct than the older semi-diagrammatic drawings, are much truer to nature and correspond more closely with the preparations which the student will have to examine for himself. The section on the Blood hardly takes full account of the recent work of Ehrlich and others, but what is given is clearly written and well illustrated. Students could not have a better guide in their histological work and we have no hesitation in strongly recommending this edition.

Clinical Observations on 2000 Obstetric Cases. By G. PORTER MATHEW, M.D. Cantab. London: Simpkin, Marshall, and Co. 1898. Pp. 71. Price 2*s.*

CAREFULLY recorded clinical observations upon cases of labour are of the greatest possible value in enabling us to come to a conclusion as to the merits of the various methods of treatment advocated in abnormal cases of delivery. Dr. Mathew has analysed the cases under his care at Queen Charlotte's Hospital, at St. Mary's Hospital, and in private practice with great industry and care, and the results are of much interest. He has been perhaps a little too ready to lay down rules of treatment from what is after all a relatively small experience, although a very valuable one owing to the careful manner in which the results have been recorded.

In cases of unreduced occipito-posterior presentations he advocates early rotation of the occiput forwards per vaginam. We are inclined to think that many of these cases can be equally well treated by rotation of the child's body through the abdomen without the introduction of the hand into the vagina, and this is certainly, when possible, the safest and best method of treatment.

Dr. Mathew's remarks upon the varieties of a prolonged first stage are of value, and we can fully confirm from our own experience his recommendation of chloroform in those cases where the action of the uterus is almost continuous without any appreciable dilatation of the cervix and where the subjective distress is very great. The method of saving the perineum by the use of axis traction forceps, of which Dr. Milne Murray is so warm an advocate, is an exceedingly good one, although there are undoubtedly cases in which it is quite impossible by any means whatever to prevent a rupture. No doubt Dr. Mathew will sooner or later meet with such a case, although his results of 21 consecutive primiparæ delivered by axis traction forceps under chloroform without a single laceration of the perineum are exceptionally good. The author is in error in thinking that as regards sapræmia and the evolution of septicæmia the theory of symbiosis has not been put forward. It is, and has been for some time, a matter of current teaching, at any rate at one of the metropolitan medical schools, and we have no doubt that it is taught at others. Obstetricians owe Dr. Mathew a debt of gratitude for the amount of work which he has done in analysing his cases, and he is to be congratulated upon the good results of his practice.

LIBRARY TABLE.

The Illustrated Annual of Microscopy. London: Percy Lund, Humphries, and Co. 1898. Pp. 164. Price 2*s.* 6*d.* net.—The once familiar "Text-book" or "Complete Treatise on the Microscope," which included, beside an account of the instrument in its various forms, its history, accessories and method of use, a more or less complete description of, at least, samples taken from each of the three natural kingdoms, appears to be a thing of the past. This is, perhaps, hardly a matter for surprise, considering, first, the complete revolution which has taken place in the theory of microscopic vision during the past twenty years or so and, secondly, the intimate relation which the microscope now holds with nearly every department of physical science. These two factors have rendered it almost an impossibility to combine such an account of modern physical optics, including a discussion of the Abbe theory, as would suffice for more than an elementary student of physics, with anything but a most perfunctory description of the later methods of research and their application to biological science, as now understood, within the limits of a handbook. This may be seen from the last attempt of the kind—i.e., Dr. Dallinger's edition of "Carpenter on the Microscope," a work extending to close on 1100 octavo pages published in 1891. Here the first or optical portion has been entirely rewritten by the learned editor and associates and, as might have been expected, is thoroughly sound in theory and practice. The second or biological part, however, except such portions as bear on the editor's own researches and some few others where he called in the aid of specialists, remains very much as in the later editions issued in Dr. Carpenter's lifetime, when he had ceased to keep abreast with, or was too old to assimilate, more modern views. Hence this

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latter is, for the most part, practically useless at the present time. Even if it be granted that such a work *might* be compiled by fortunate collaboration it would necessarily be cumbrous and, from the rapid advance of science, soon obsolete. Progress, then, can hardly be followed by the mere study of a text-book issued at rare intervals, and it is to the periodical that recourse must be had for the latest information. The "Illustrated Annual of Microscopy" is the newest attempt to supply the class it appeals to with up-to-date notions on the subjects it treats of. On the whole, and so far as it goes, we think it has succeeded; but the question may well arise whether such a limited survey of things microscopic as is presented in this first issue and its publication at yearly intervals will satisfy its readers. This, however, is a matter for its editor and publishers to settle and we are chiefly concerned with the contents of the Annual and the way in which they have been treated by the respective authors. The opening paper is on the Diphtheria Group of Bacilli, by Dr. J. Eyre, and the methods of demonstrating, cultivation, staining, &c., including the morphology of the various varieties, are well and clearly given. The process-block illustrations, however, leave something to be desired, as is usually the case, and they would, in our opinion, have shown to greater advantage on a black ground. Two articles on Photo-micrography are contributed, one by Mr. J. W. Gifford, who has rendered great services in this branch by his improvements in screens and light-filters, and another by a pseudonymous author who strongly advocates the use of magnesium ribbon as an illuminant. Mr. Gifford's paper, although short, is well worth the study of the beginner in this art. Dr. Henri Van Heurck, Director of the Antwerp Botanical Gardens, one of the best-known Continental microscopists, gives a review of the microscope in 1897 and such new apparatus as has been recently devised. Unfortunately, or the reverse, he finds "there is not one important invention to chronicle during this period, beyond the introduction of a few new models and the improvement of details in apparatus already existing." We have been for some time of the opinion that the present microscope with its objectives is already far beyond the capacity of the majority of its users. It is somewhat amusing to read Dr. Van Heurck's commendation of the objectives of a certain firm as excellent and sold at a reasonable price, one of which, a 1·5 mm. of 1·4 N.A., he says, *only* costs about £20. Mr. Rheinberg's article on Multiple Colour Illumination is probably one which will excite great interest in those who may not have seen his original papers in the Journal of the Royal Microscopical Society for 1896 or the Journal of the Quekett Microscopical Club for 1897. The method itself is not new, but Mr. Rheinberg was the first to reduce it to scientific exactitude, and its possible applications to certain problems of movement in living, transparent organisms make it of value beyond the merely charming manner in which it displays many familiar microscopic objects. The longest contribution to the Annual and one of paramount importance to the "brass and glass" microscopist is Mr. Conrad Beck's exposition of the theory of Gauss as applied to microscopic problems, entitled "The Elementary Theory of the Microscope." Gauss's formula has been explained and a worked example given in the Dallinger-Carpenter, but we do not think this system has ever been put forward with so great detail and with so much explanatory reasoning in any previous English work, and although we are far from saying that the path of the rays through the central portion of a system of lenses is, on this formula, made plain to the "meanest intelligence," it will undoubtedly be of great service to the amateur student of microscopic optics. Some knowledge of mathematics is, of course, necessary to the understanding of papers of this kind; neither does the Gaussian theory explain the whole of the problems involved in the optics of wide-angled objectives, but nevertheless it is a work to be welcomed and Mr. Beck deserves great credit for presenting it in the lucid manner in which he has done. Mr. M. I. Cross descants on "uniformity and accuracy," and deals, *inter alia*, with the urgent desirability of fixing upon some universal size or sizes for eye-pieces. We have some approximation to a universal gauge for objective threads, recently improved by the Royal Microscopical Society, but wide differences exist in the diameters of eye-pieces as supplied by the various opticians, English and Continental. He also treats of the dishonesty of some makers who, in many instances, wrongly state the focal length and aperture of their objectives. There are several other papers of interest to the amateur microscopist, but we are struck with astonishment at the admission of one query in the body of the book—viz., "Living acari artificially produced. Is it a fact?" This rubbish, of course, refers to the *experiments* of the at one time notorious "philosopher" Crosse which are mentioned in "Vestiges of Creation." Such exploded nonsense is only fit for papers of the "Bits" order and we are left wondering how it obtained admission into a modern scientific work. Finally, and with this exception, we think the "Annual" a useful addition to the periodical literature of its class. It will no doubt be extended and made to embrace a somewhat wider range of subjects in future issues, but in its paper, typography, illustrations, and general freedom from error it is a distinct credit to its enterprising publishers.

Antiseptic Principles for Nurses. By C. E. RICHMOND, F.R.C.S. Eng., honorary surgeon, Ancoats Hospital, Manchester, &c. London: J. & A. Churchill. 1897. Pp. 47. Price 1*s.*—In this little book we find a short account of the reasons for precautions against sepsis expressed in language simple enough to engage the attention of the average nurse. Anything which will impress upon nurses the immense importance of every step taken in insuring asepsis is to be warmly welcomed, for a nurse is very apt to regard many of the procedures as unnecessary and, when opportunity offers, to relax her vigilance. In the last chapter the author has laid down the general rules which govern the surgeon in the dressing of wounds, but he has not gone further into the subject, considering that the nurse has every opportunity of acquiring a full knowledge of the practical application of these principles in the course of her duties in the wards.

Diseases of the Upper Respiratory Tract, the Nose, Pharynx, and Larynx. By P. WATSON WILLIAMS, M.D. Lond., physician to out-patients and in charge of the Throat Department at the Bristol Royal Infirmary, &c. Third edition. 1898. Bristol: John Wright and Co. 8vo. Pp. 282. Price 8*s.* 6*d.*—When noticing in 1894 the first edition of this work we were able to praise the clearness of the account which it gives of the diseases of a very important part of the body. We do not know of any volume of its size which we would rather recommend to those students and practitioners who wish to have a fuller account of the medicine and surgery of the nose and throat than is to be found in the ordinary text-books. The illustrations are numerous and good; there are five coloured plates showing the normal and abnormal appearances of the larynx, pharynx, and nose. A useful table is given on page 70; it summarises the main points of distinction between some of the most common diseases of the tonsil. Though the differences between the present edition and the first are not very great, yet the whole book has been revised and brought up to date.

BRISTOL CHILDREN'S HOSPITAL.—A well-equipped laundry has been recently added to the Bristol Children's Hospital. The cost, for which the ordinary income of the institution will not be used, is about £1200.

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New Inventions.

CUTTING FORCEPS FOR USE IN THE TREATMENT OF LARYNGEAL PHTHISIS.

THE forceps depicted in Fig. 1 were shown at the Laryngological Society of London during 1898. Fig. 3 is a sketch of the cutting end, the circle being the exact size of a piece of paper cut out by the instrument. Figs. 2 and 4 represent an

FIG. 1

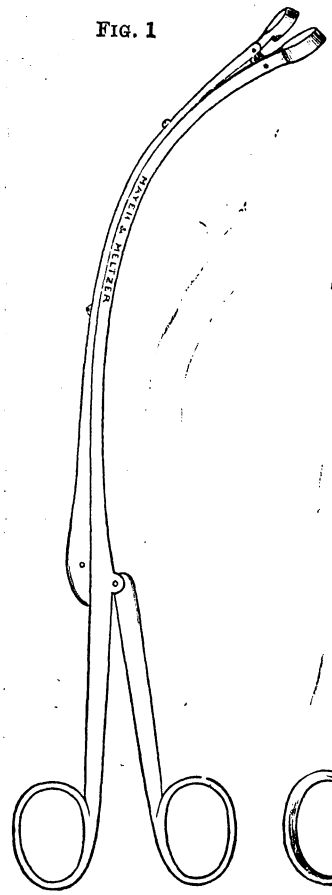
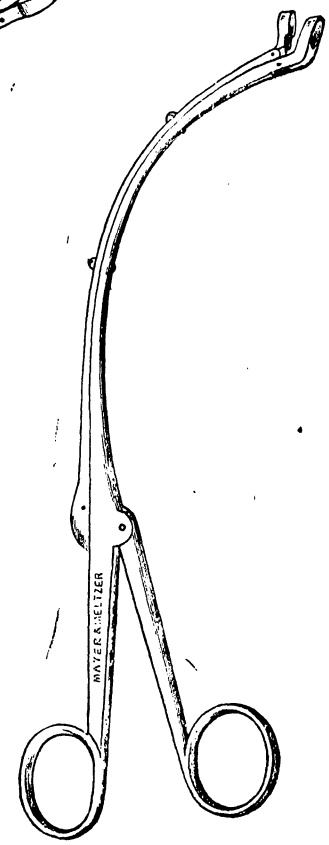


FIG. 2.



instrument which is made for removing superabundant tissue from the inter-arytenoid region, with a drawing of the and and of the sized piece capable of removal; both the letter full size. These forceps are of strong build and will cut through dense tissue or cartilage with the greatest ease.

FIG. 3.

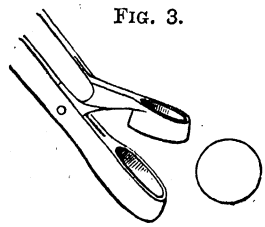
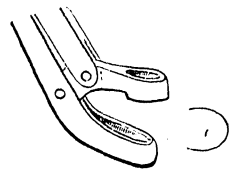


FIG. 4.



This is a point of considerable practical importance in laryngeal surgery and one often has to regret the weakness of tube forceps in punching out pieces of the glottic rima. The anterior-posterior cutting forceps will be found useful in removing tissue from practically every part of the rima, including the epiglottis, and no tissue will be found too dense. The downward cutting ones are for removal of those warty intra-arytenoid masses so hard to remove with any other instrument. They cut a little obliquely to suit the normal slope of the inter-arytenoid fold. These instruments are made by Messrs. Mayer and Meltzer, of 71, Great Portland-street.

Harley-street, W. RICHARD LAKE, F.R.C.S. Eng.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on Oct. 13th, the President, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., being in the chair.

It was decided to place the bust of Sir Richard Owen, by Mr. Alfred Gilbert, R.A., in the entrance hall of the Museum.

The Council adopted the following recommendations of the Committee of Management:—

1. That Hymers College, Hull, be added to the list of institutions recognised for instruction in chemistry, physics, practical chemistry, and biology; and that Reading School be added to the list for instruction in chemistry, physics, and practical chemistry.
2. That the University of Yale and the University of Malta be added to the list of institutions recognised by the Board at which the whole curriculum of professional study may be completed and whose graduates in medicine are admissible to the Final Examination.

The Committee of Management further reported that they had granted permission for the meeting of the International Otological Congress to be held at the Examination Hall in August, 1899.

Sir William Mac Cormac, who had retired by rotation from the Committee of Management, was re-elected.

The Laboratories Committee presented the following report, which was adopted:—

1. *The work on diphtheria for the Metropolitan Asylums Board. Preparation of antitoxin.*—Since June 3rd 7050 doses of antitoxin, each containing 2000 units, and 2325 doses each containing 4000 units, for the treatment of diphtheria in the hospitals of the Metropolitan Asylums Board, have been supplied and all the demands fully met. During this period 23,400,000 units have been supplied. Taking the quarter from June 3rd to Sept. 1st the figures are: 6300 doses of 2000 units and 600 of 4000 units, or 15,000,000 units in all, against 12,000,000 for the previous quarter. During this period the average strength of the antitoxin has been still further raised, so that it has been possible to send out 2000 units in quantities of from 4·25 to 5 c.c.
2. *Researches in connexion with the grant from the Goldsmiths' Company.* — Dr. T. G. Brodie and Dr. Cartwright Wood have continued their investigations and have planned out further series of experiments for the coming winter. The committee have unanimously awarded to each of them a further sum of £50 from the Research Grant as a recognition of their valuable work. The demand for antitoxin supplies to general and children's hospitals in London, in accordance with the conditions of the grant from the Goldsmiths' Company, for use among the poorer classes of the community is steadily increasing; 730 doses, containing in all 1,500,000 units, have been applied for and sent out during the past four months.
3. The Committee also report to the two Colleges that the director has forwarded to the Royal College of Physicians an account of an investigation carried on on the arrow poison received by the College from the Foreign Office.

Mr. H. G. Howse was re-elected a member of the Laboratories' Committee.

The Council appointed Mr. William Hardy Fleetwood, late of Epsom College, and now a student of the London Hospital, as the sixth Jenks scholar.

Mr. MORRIS, as chairman of the Annual Report Committee, submitted for the consideration of the Council a draft copy of the report to be presented to the Fellows and Members at the annual meeting to be held on Nov. 17th, 1898. It was approved.

The attention of the Council having been called by a local branch of the Incorporated Medical Practitioners' Association to the connexion of a Member of the College with a friendly society, it was determined that the branch of the association should be informed that the Council expressed their disapproval of canvassing for patients and of the employment of professional advertisements addressed directly to the lay public, and that this opinion would be communicated to the Member in question. It was also determined that the branch of the association should be informed that, as it did not appear to the Council that the society in question differed in any essential particulars from other registered friendly societies, the Council could not take any action in the case.

The SECRETARY reported that he had received the copy by Mr. John L. Reilly of the portrait by Mr. Stephen Pearce of Sir Erasmus Wilson, which was offered to the Council at the beginning of this year, and that the donor was Mr. Arthur H. Heywood, of Elleray, Windermere.

The Council voted their best thanks to Mr. Heywood for his present.

The PRESIDENT stated that the Bradshaw Lecture would be delivered by Mr. T. Pickering Pick on Wednesday, Dec. 7th, at 5 o'clock P.M., and that the subject of the lecture would be "The Union of Wounds."

A letter was read from Mr. T. M. Hocken, M.R.C.S. Eng., of Dunedin, New Zealand, asking the Council to consider the advisability of instituting a gown for the Members of the College. The subject was referred to a committee.

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THE LANCET.

LONDON: SATURDAY, OCTOBER 22, 1898.

IT is simply a platitude to say that the continuance of plague in India is a most serious matter and one which places the Government of that country in an extremely difficult position between the opposing forces of sanitation and political expediency. While attempts are being made to limit its spread by restrictive measures disaffection has been growing apace among the natives owing to their strong opposition to the measures which have been hitherto taken to suppress the disease. It is, of course, impossible to stamp out a disease like plague without much irritating interference with the liberty of the subject, by entering their houses and by obtruding into their domestic life in many ways very objectionable to Easterns. And so it has come about that, whether Hindu or Mahomedan, the natives are far less terrified at the risk of contracting plague than at the measures taken to suppress it. Moreover, if the attempt at stamping out an infectious disease is to be efficacious as a precautionary proceeding, its limits of application in point of numbers, time, and space must be regarded. Preventive measures must be rigidly enforced from the very beginning of an outbreak and whilst it is still circumscribed within narrow bounds and while the numbers attacked are still relatively small. Failure within a given time to suppress what threatens to become an invading epidemic by any stamping-out process may be taken as indicating that further efforts in this direction will prove futile. We must in that case fall back for hope of success on the general sanitary conditions being such that the disease cannot obtain any secure foothold for its continued existence.

To quote the words of the Indian Government, "To attempt by force to eradicate a disease when the entire population exerts itself to oppose the methods adopted is an effort foredoomed to failure." It must be borne in mind, too, that, as far as Western nations are concerned, the knowledge of plague until quite recently was extremely small and of a literary and academic, rather than of any practical or scientific, kind. The measures which have been taken in India have, we regret to say, been only partially successful, with the exception perhaps of M. HAFFKINE'S system of inoculation, about which, however, we do not yet know enough to decide positively whether it is efficacious and, if so, how long the immunity conferred by it lasts, or whether it is a practicable scheme to apply in India with its teeming population. The present epidemic of plague made its first appearance at Bombay in the autumn of 1896 and it is still there. It has shown itself in greatest intensity and persistency in Western India, but it has nevertheless become widely spread over India generally. It is difficult to say which is the worst feature connected with it—whether the sickness and grave mortality it has caused, or the financial loss, commercial distress, and popular opposition and disaffection that it has entailed. The deaths from plague have not, after all, been so numerous as in a severe and widespread epidemic of cholera or as in the chronic drain on life attributable to the malarial fevers of India and their consequences. The Government of India, to do it justice, usually has the courage of its opinions in such matters, but it cannot go on indefinitely spending money and incurring the almost certain risk of a widely spreading disaffection among its subject races without having strong grounds for its action. We think, therefore, now that bubonic plague may be almost regarded as endemic in Bombay and Western India, that the Government is right to amend and relax the stringency of the measures it has adopted hitherto. During the three years in which plague has existed in India we have had time to discount the danger of its importation into Europe, and, as Major J. CRIMMIN, V.C., of the Indian Medical Service, has very pertinently pointed out, there are places in the Persian Gulf and Red Sea nearer Europe where plague has been endemic for some years past.

Recent bacteriological researches have revealed to us the intimate relations of plague to a bacillus, which, whilst vegetating and proliferating in the lymphatic glands, probably elaborates the virulent poison or toxin which acts so fatally on the tissues of the circulatory and nervous systems. Sometimes the plague bacillus or its virus passes into the general system without the intervention of such glandular manifestations, but the striking and common feature of plague is that it is bubonic. Now, accepting the pathological correctness of this view, there still remains a great deal to be cleared up about the history of this micro-organism and its vehicles, how it gains an entrance into the human body, the way to prevent its doing so, how it manifests its presence, and how to render the system immune to its morbid action. The relations of this bacillus to the lower forms of animal life, too, have to be more exactly determined, as well as its relation to insanitary conditions generally and to those of defective domestic hygiene. We are very glad, therefore, to see that the Government is appointing a Special Commission for the purpose of making scientific inquiry into plague and of investigating the origin of the various outbreaks, the manner in which the disease is spread, and the effects of curative serum and preventive inoculation.

IT will be universally admitted that in free countries legislation should be as much as possible in accordance with the general sense and intelligence of the people. Many a great law-giver from the time of MOSES has had to wait before he promulgated what he knew to be the right law because the people for whom he was legislating were not ready to receive it. The same difficulty occurs to all legislators, especially in free and democratic countries. The working of this principle affects for the worse every question which has to be dealt with by statesmen, but the results are most serious or even pernicious when they arise with regard to questions more or less technical and special. Faddism is well recognised by men of all parties and by universal consent certain questions

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are to be raised above all petty and party considerations. There are many men in every party who feel that to deal with these questions from a party point of view is to degrade and dishonour Parliament itself. Among such subjects the health of the people is pre-eminently the first. There are wire-pullers and opportunists in all parties who would be prepared to make party capital even out of such a subject. But we are loth to believe that there is not a sufficient number of sensible and humane men in every party who would if rightly guided secure the settlement of such questions on non-party lines and in a way consistent with the judgment of those who, after all, are responsible for the health of the people, whether in the way of safeguarding it or of restoring it when it has been lost. It is obvious that a system of State Medicine can only be formulated by those who are familiar with disease, and that only those who have studied the causes of disease can be competent to advise as to the means by which such causes can be counteracted. There are diseases which prevail on so large a scale and so grievously affect the happiness of the people as to be suitable subjects for State action. Such are the great groups of infectious disease, including tuberculosis.

Two recent events show how erroneously some sections of society conceive of the duties of the State in respect of public health. When diphtheria-antitoxin was first introduced in the Metropolitan Asylums Board hospitals a group of gentlemen waited, if we remember rightly, on the President of the Local Government Board to protest against such a therapeutic measure being used in rate-supported establishments. They did not propose themselves to treat the children dying from diphtheria in these institutions, but they deliberately desired to tie the hands of the medical officers who had studied the subject and were responsible for the life of these children by withholding the one remedy which has been found more efficacious than all others. The very audacity of the proposal defeated itself. Diphtheria is now to some extent a controllable disease so long as it is treated according to the teachings of medical science, and many of the sanitary authorities are displaying a commendable readiness to adopt the latest suggestions of science for the detection and treatment of it. Is it not remarkable that a body of totally uninformed persons should take upon themselves to interrupt such work? The second event to which we have referred is the alteration of the Vaccination Acts in the direction of weakening the compulsory principle. This magnifies the liberty of the individual to incur the risk of contracting a disease which he may convey to twenty other persons before he is aware of having it—a precious result of liberty—but does not necessarily lead to an increase in the number of persons refusing to be vaccinated. All medical opinion is solid in regarding vaccination and revaccination properly performed as a preventive of small-pox, but the position of the recalcitrants was such that strict compulsion was outside the realms of practical politics. This fact does not lessen the grave responsibility which ignorant persons have taken upon themselves in discrediting vaccination. Their action has led to the loss of many infant lives, a fact which cannot be gainsaid after a cursory examination of the incontrovertible figures.

Such instances of a want of harmony between scientific knowledge and popular judgment make it necessary to revert to the first principles of State Medicine and to ask what are the circumstances which justify the disregard of individual liberty or rather its subordination to the welfare of the public. The very conception of State Medicine implies that the State is to use all scientific hygienic safeguards and, if necessary, enforce them by compulsion. It is also implied that in so acting the State shall be guided by medical science, and by the best medical opinion it can command. "No one," says Mr. FROUDE, "talks of a right of private judgment in anything but religion; no one but a fool insists on his 'right to his own opinion' with his lawyer or his doctor. Able men who have given their time to special subjects are authorities upon these subjects to be listened to with deference, and the ultimate authority at any given time is the collective sense of the wisest men living in the department to which they belong." These sentences contain the fundamental principle of State Medicine. The State must take its medicine from the best medical opinion. If it act otherwise it will suffer, and in the long run will suffer on a huge scale. It follows that in matters concerning the health of the community the State should have no political divisions. It should act as a whole on the scientific opinion given to it.

IN London we are face to face with a very serious question—i.e., whether the present sources of the water-supply can be correctly considered as adequate for future needs. It is time that the question was cleared from political considerations and regarded by all as THE LANCET has been most resolute to regard it—in the calmer light of a problem which must soon be grappled with on grounds of absolute necessity. The question is beset with difficulties while it is one upon which "slashing" articles can easily be written, but readers of THE LANCET will be able to preserve an equal mind in considering it, as they, like us, are fortified by the exact knowledge concerning the various companies contained in our Special Commissioner's report. It must not be forgotten that considerable confidence in the present sources of supply was inspired by the deliberations of sundry Royal Commissions on the subject and notably the last Commission presided over by Lord BALFOUR of BURLEIGH. We now know that some conclusions contained in the report of this Commission do not coincide with the evidence of experience and were founded on errors of reckoning and judgment. The occurrence of drought has swept away very many of the most important points which the Commissioners thought proper to emphasise. More especially is this so in regard to the sufficiency of water for future requirements from the present sources of supply. Assurance was conveyed by many experts, including the water companies' engineers, that the Thames, the Lee, and the companies' wells could be relied upon for an abundant supply of pure water for forty years to come, a supply equal, under strained circumstances, to the needs of an increasing population even when calculated at a probably

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over-estimated rate. Within five years of this pronouncement being made public the Lee has failed, the East London Water Company's reservoirs are empty, the flow of the Thames is seriously diminished, wells are dry and the New River Company is drawing upon every possible source, the whole of the circumstances carrying the conviction that the supply is approaching a dangerous limit. We have to think now not so much of the efficiency of the particular undertakings as of the adequacy and fitness of the present sources of supply.

It would seem on the face of it that the present sources must be supplemented and several schemes which have been urged in the past have now been revived by the scarcity of water which has prevailed in the East-end of London on three recent occasions. The construction of large reservoirs in the Thames and Lee valleys capable of holding the enormous excess of water coming down during times of flood is one proposal. The chief and most powerful objection to this is that such water is almost certain to be polluted, either because the efficient treatment of sewage discharged into the streams is seriously interfered with during flood times or because the storm water itself contains the washings of highly manured land or the overflow of cesspools. Again, it is said that the Cotswold Hills could be made to furnish a pure and abundant supply of water. This statement is at variance, however, with the findings of a committee of engineering experts who have thoroughly surveyed the suggested new water area. More recently it has been proposed to intercept the enormous volume of water running to waste from the London basin southwards into the sea beneath our south and south-east coasts. Finally, there is the scheme which has perhaps been more seriously taken into consideration than the rest, as presenting a more satisfactory solution of the problem—the bringing of water from Wales. It may be instructive in this last connexion to review the facts connected with the steps which have been taken and are being taken in some of the greatest and most populous towns in this country. We refer to Liverpool, Manchester, and Birmingham. Liverpool led the way in 1880 by commencing the construction of an enormou reservoir in the valley of the Vyrnwy in Wales and of a conduit which measured 77 miles in length from the Town Hall to the reservoir outlet. Lake Vyrnwy, as the reservoir is now called, is said to be the largest artificial sheet of water in the world and its capacity is 13,125,000,000 gallons. The water flows to Liverpool by gravitation and the total quantity available is 40,000,000 gallons per day after allowing an abundant overflow for compensation purposes to the river. The scheme has proved satisfactory, and Liverpool now we believe possesses a pure and adequate water service. The total cost of the scheme will be close upon £4,000,000. In 1885 operations were commenced by the Manchester Corporation with the view of making the water of Lake Thirlmere, in Cumberland, available for the city of Manchester. The distance in this case is 96 miles. At present 10,000,000 gallons are delivered in Manchester per day, but this will shortly be increased, by adding more pipes, to 50,000,000 gallons per day. The total cost is thus estimated at between £4,000,000 and £5,000,000. Finally, the scheme of water-supply to Birmingham is proceeding at the present time and it is hoped that it will be completed in ten years.[1] In this case the watershed of the rivers Elan and Claerwen in mid-Wales was decided upon. The works were commenced by the construction of a railway in 1894 and the ceremony of the laying of the commemoration stone of the reservoir took place in May, 1897. Since that date the task of collecting the supply and bringing it 80 miles across country, through mountains and over valleys, has proceeded apace, with what final success remains to be seen. The estimated cost of the scheme, including the purchase of the watershed, was £6,500,000, but we believe that this will be exceeded, if it has not been so already. The supply will provide, it is said, for a period of fifty years in advance, and for this it is calculated that 60,000,000 gallons a day will be the maximum supply which Birmingham will then require in dry weather. With these schemes, accomplished and proceeding, it is of interest to turn to the plans placed by Sir A. BINNIE before the London County Council, by which it is proposed to acquire a watershed in Wales for the London supply, not in substitution of but rather to supplement the existing sources. Sir A. BINNIE looks to the valley of the Irvon, a tributary of the Wye, as the best available for the purpose. The shortest aqueduct to London would be 150 miles long. The cost of bringing the water from Wales to supplement the Thames supply would, it is stated, be £14,000,000, and to provide for a future period of fifty years the extra cost would be £12,000,000, making £26,000,000 in all.

It would be obviously premature to express adhesion to any new proposal without obtaining a full and comprehensive knowledge of all the factors concerned. That the question is, as we have said, beset with difficulties is evident from the fact that it is once more being approached by a Royal Commission, an account of whose sittings up to the present date we have published at some length. The President of the Local Government Board has promised to draw the attention of the chairman of this Commission, Lord LLANDAFF, to the recent failure of the supply in the East-end of London, when we shall be curious to see how the events of this summer are treated by the Commissioners. That the extent and mischief of the water famine have been exaggerated by some does not alter the fact that a serious breakdown occurred and it is quite possible that the Commission will attach much importance to it, even if it does not shape the ultimate report.

UNDER the heading of "The Ethics of Club Practice" we published last week a letter setting forth some of the difficulties of this kind of medical work and showing how easily the most careful practitioner may find himself blamed for that which he cannot help. The facts were as follows: The writer of the letter, a surgeon who had served his society without complaint for thirty years, was called on a Monday morning to attend one of the members who was

[1] An excellent and entertaining account of the progress of the works in connexion with the Birmingham scheme will be found in a book recently published under the title of "The Future Water-supply of Birmingham," by Thomas Barclay. London: Simpkin, Marshall, and Co. 1898.

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suffering from quinsy. He saw him on that morning and promised to see him again on the following morning. When the Tuesday came there was an unforeseen pressure of duties and he could not see his patient at the time appointed. But he sent his qualified assistant, and the interval between the visits was, according to the patient himself, only twenty-six hours. When the assistant called he learned that the patient had called in another medical man living nearer. The quinsy soon disappeared, but obscure brain symptoms, apparently connected with a previous blow on the head came on. The patient was removed to a hospital to be watched with a view to operation. But the symptoms happily passed off. A few weeks later he wrote to the secretary of the society complaining in very strong language of having been neglected by the medical officer of the society and demanding from the latter payment of the bill of the second practitioner called in. Our correspondent refused to pay the bill on the ground that he was under no contract to see the patient at any given hour and that on any given day a medical man must himself be the judge of the urgency of cases and the order in which they should be seen. The second practitioner called in telephoned to the first as to the case and the latter assented to his taking charge of it. The facts seem very simple. Of course, we are writing on a statement of the case by the person inculpated. But the essential points seem to be admitted by the patient and we have no hesitation in expressing our opinion on them. Our correspondent seems chiefly anxious to know whether he can be compelled to pay the account incurred by the patient in calling a private practitioner to attend him. That is a legal question on which we pretend to speak with no special authority. We have no doubt that the surgeon of a society, under contract to attend its members and grossly failing to do so, would be liable in any reasonable amount for expenses incurred by his neglect. But whether in this individual case any such liability would be recognised we should think a matter of great doubt. An interval of twenty-six hours between visits in a case of quinsy is not an unreasonable one, and to say that a medical man fails in his duty because under stress of work he sends a fully qualified assistant in his stead is to advance a very questionable proposition and one which, we think, a county-court judge would be slow to endorse. No medical man can forecast one day what will be the nature of his duties the next, what will be the number of his cases, and what the respective urgency of each. No doubt an excitable man with quinsy would think his case bad enough, but the medical man might have a midwifery case or an accident, or a case of pneumonia, or a combination of such cases claiming his prior attention. Of this he must be the judge. Our correspondent's argument on the matter seems to us unanswerable, and it is strengthened by the letter which he publishes from the medical man who succeeded him in the charge of the case. This gentleman says that when he was called in the quinsy was actually on the decline and the secondary disease which supervened, and which was really the graver of the two, had not yet declared itself. The patient, who considered himself so badly used, "treated in a way not fit for any human being," may be comforted by knowing that what happened to him happens every day to the patients of private practitioners; for medical men have to take their rounds in a certain order, the order being determined chiefly by the comparative urgency of cases. We cannot think that on further reflection the patient in this case will think that he has treated the surgeon of his society with due consideration. Every practitioner requires, and is entitled to, some allowance at the hands of his patients, so impossible is it for him to prearrange his day exactly. Not only is he entitled to it, but in nine hundred and ninety-nine cases out of a thousand he receives it. Still more is the surgeon of a society entitled to it, because he is presumably attending a larger number of persons than a private practitioner and that for less remuneration, and especially when, as in this instance, his term of office has extended over thirty years and his work has secured for him the friendship and confidence of the members. Such a record is creditable to any medical man and to the society which he serves. It should almost suffice of itself to refute any charge of culpable neglect and certainly would appeal powerfully to any judge to whom the facts of the case might be referred.

Annotations.

"Ne quid nimis."

THE WORK OF THE GOVERNMENT LABORATORY.

WE believe that hitherto it was not the practice to issue a blue-book on the annual work of the Government Laboratory, the new departure apparently being commenced soon after Dr. Thorpe was appointed as principal two years ago. This would explain why two blue-books have been issued at the same time, one dealing with the work of the year ending March, 1897, and the other with the year ending March, 1898. The fact of the report of the work done being published in this official manner for the first time is alluded to incidentally in the 1897 report, where an explanation is offered of certain returns, "as this is the first report made direct to your lordships." We are surprised that this course has not been adopted before, since the important relation of this department to trade and commerce besides public administration is obvious. And, as we expected, the first blue-book contains some very interesting particulars. The work of the Inland Revenue branch of the Government Laboratory had its origin in controlling the strength of alcoholic liquors and other dutiable commodities. In short, its main object was to afford assistance to the Excise department and thus to secure the proper amount of Inland Revenue due on certain taxed goods. The work has now developed enormously, so that the chemical authorities are now consulted by the Government Offices in regard to the analysis of many trade products. At the present time samples are sent to the Government Laboratory by almost all the official departments of the Government Offices. During the official year 1897 the number of samples so referred amounted to a total of 2990. Amongst these were articles of food, drugs, disinfectants, oils, paints, fertilisers, &c. Under the Sale of Food and Drugs Act 65 samples were referred to the Government analysts as being cases under dispute. Of these 42 consisted of milk. On the whole, considering the number of samples examined annually by the public analysts in the United Kingdom, the result of reference is a tribute to the excellence and exactness of their work.

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The 1897 report draws attention to a point which we have frequently raised in our columns. The Government Laboratory authorities had a number of proprietary disinfectants submitted to them, chiefly by the Board of Trade and the India Office, for the determination of their antiseptic and disinfectant properties. It is remarked that there is a growing tendency to offer as disinfectants various indefinite mixtures of tar products, containing small proportions of carbolic and cresylic acids, but chiefly consisting of neutral bodies of little or no antiseptic value. We thoroughly agree with the observation that the varying composition and antiseptic power of these preparations, which, as a rule, are waste products, offered at a low price, render their use as a class inadvisable and compel a resort to the much longer method of biological examination as a test of antiseptic efficiency instead of the briefer chemical analysis. In view of the importance of this subject we might have anticipated that the Government Laboratory authorities would have made some provision for examining the so-called disinfectant preparations on the lines indicated, but we find no further reference to the subject in the succeeding report of 1898. There is little doubt that the Government enter into large contracts for a supply of disinfectants at home and abroad, and the Government department should be able to declare the real efficiency or worthlessness of these preparations. The new Government Laboratories were completed in October, 1897, the premises being situated in Carey-street, near the Law Courts, so that there are now no chemists at Somerset House and the familiar term "Somerset House referees" must in future be omitted. Considerable work has been done during the past official year with beer in order to effect a more satisfactory control over the dilution of beer with water. 14 per cent. of the samples examined were found to have been diluted and in one case the dilution was equivalent to 10·9 gallons of water in the barrel of 36 gallons. The practice by retailers of diluting beer appears to have been confined to London. Tobacco does not appear to be free from unscrupulous tricks, for of 60 samples taken 35 were found to be genuine and 25 adulterated. This probably refers to excessive moisture and mineral matter. The department, we venture to suggest, might turn its attention to the question of foreign flavouring substances in tobacco. As in previous years, the samples referred to the Government Laboratory as cases in dispute consisted largely of milk. Of 39 samples of this class 29 cases were upheld. The only serious differences occurring at all under this section were connected with samples of lard and spirits. On the whole, however, the 1898 report affords once more a testimonial to the skill and efficiency of the work done by public analysts. According to the recommendations of a Select Committee which will be embodied in a Bill to be introduced to the House of Commons next Session the relations existing between the Government analysts as referees and the public analysts at large should be still more satisfactory, so that probably a greater proportion of the cases under dispute will be officially confirmed by the chemists of the new Government Laboratory.

THE MEDICAL PROFESSION AND MASSAGE ESTABLISHMENTS.

AT length the proprietor of a massage house has been laid by the heels and sentenced to six months' imprisonment with hard labour for assault and, under the new Vagrancy Act, to three months' imprisonment with hard labour for "knowingly living wholly or in part on the earnings of prostitution." The name of this blackguard is James Davis and he lived at 120, Marylebone-road. We are not so much concerned with the immorality of his proceedings, but we might mention that we fail to see why hardworking taxpayers should support a person of this description for nine months, feed him and keep a roof over his head. A sound flogging every other day for a week would be much cheaper and would hurt a good deal more. However, that is not the point with which we wish to deal. The house in question nominally existed as an establishment where definite medical treatment — i.e., massage—was given. It was called the "Balneopathic Institute for the Treatment of Rheumatism, Gout, Sciatica, and Neuralgia by Dry Hot-air Baths, Massage, &c." As a matter of fact, it was nothing more or less than a brothel. Now, brothels have existed in large towns from the time of ancient Babylon downwards and we suppose they always will exist. With that we have nothing to do. But, as we said on a former occasion[1] when commenting upon massage establishments, such houses should not be allowed to masquerade under the name of places for legitimate medical treatment. A woman who gave evidence as one who attended when the house was short of "nurses" said that she knew nothing about massage but that she gave treatment with the birch. Gentlemen who underwent this treatment used to be known to our ancestors by the name of "flogging cullies," and further details need not be gone into. We can only hope that the remaining houses of this description—and there are plenty of them in other parishes than St. Marylebone—will be suppressed in as vigorous a manner.

THE ROYAL MEDICAL BENEVOLENT COLLEGE

THAT there is a turning point in the fortunes of most men is a recognised truism and that this also applies to many institutions has been proved over and over again. In another column we publish an appeal on behalf of the Royal Medical Benevolent College at Epsom, from which it would appear that after doing a steadily increasing amount of good work for more than forty years the institution has at last arrived at the road leading to well-deserved prosperity; but whether this desired goal is to be eventually reached depends, we feel quite sure, upon the extent of the support given now and in the future by the rank and file of the profession. The appeal puts the matter in a nutshell when it states: "If each member of the profession would give 10*s*. or even 5*s*. a year for a very few years the position of the pensioners and foundation scholars would be placed on a secure financial basis and the Council would be able to improve the school and extend its usefulness still more." Though substantial help from comparatively a few leading practitioners must be very welcome it may be safely asserted that the permanent success of the College can best be secured by the small contributions of many thousands of supporters. We would observe for the information of those not well acquainted with the work carried on by this important institution that there are two distinct branches—namely, charitable and educational. On the benevolent side 50 pensioners receive annuities and 50 foundation scholars are boarded, clothed, educated, and maintained, the total liabilities of this branch exceeding £6000 per annum. On the scholastic side a thoroughly sound public school training is given to the sons of medical men and others, the fees charged to members of the profession being considerably reduced, and in addition valuable exhibitions and scholarships are offered. It should be noted that these observations refer only to the work actually done by the College out of its general funds and not to the special annuities, scholarships, and exhibitions provided by generous benefactors. An important period in the history of the College was the year 1895, when the maximum amount of good that could possibly be accomplished was being carried out on both sides of the institution. The school was in a

[1] THE LANCET, Feb. 20th, 1897, p. 538.

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flourishing condition and for some time had been quite full, so that the Council decided after mature consideration to extend the accommodation by building a lower or junior school and at the same time to enlarge the chapel and build a laundry, works which have all been completed. As to the charity, that had for several years been maintaining the full number of pensioners and foundation scholars, and, owing to a munificent legacy from a Melbourne practitioner, the annuities of all non-resident pensioners had been raised from £21 to £30 per annum. As some of our readers will recall to mind, the increase in the amount of the non-resident pensions was a matter in which for years we took a deep interest; in fact, in 1892 we had the pleasure of handing the sum of £1000 to the treasurer, Dr. Holman, who was the originator of the movement, to be the nucleus of a fund to provide increased annuities for those who preferred to live away from the asylum. We were unable to shut our eyes to the fact that it was not a kindness to take aged ladies and gentlemen away from old beloved associations to end their days amongst strangers; and, moreover, it hardly seemed to be a judicious course to train boys for a medical life with the few sad failures of the profession constantly before their eyes. It may be asked, How can medical men help on the good work of the College? There are several ways. First, by contributing an annual subscription of any amount from 5*s*. upwards; secondly, by procuring contributions from the public, who are under a debt of obligation to the profession; thirdly, by sending their own sons to the College, where they will receive a first-class education at a moderate charge; and, lastly, by drawing the attention of those outside the profession to the many educational advantages offered at Epsom. That the school has for one of its size a thorough good record to show in successes gained at the universities and at the medical schools in London we can assure our readers, and the authorities at the College will no doubt willingly give to applicants detailed information as to honours gained in past years. In thus supplementing the appeal of the Council for increased support, which we have much pleasure in doing, it will be interesting to recall to mind an observation made by us long before the College was actually incorporated. In THE LANCET of May 3rd, 1851, we wrote—and it is hardly necessary to state that the observation still accurately expresses our views: "For the objects of the institution whether for eleemosynary or educational purposes we have but one word and one thought—that of hearty coöperation and support."

MIDWIVES AND THE DEATHS OF CHILDREN.

THE death of Joseph Sartori, three days old, at Windsor, has been the subject of a coroner's inquest. The mother was attended by a certified midwife, Mrs. Taylor. Mrs. Taylor had attended her in two previous confinements. On this occasion she was with the patient for seven hours, and an hour before the birth she administered a dose of ergot which, she said, had been her custom in the circumstances for twenty-six years without bad effects. On the day of the birth, a Tuesday, the infant passed blood with the urine. The next day the midwife did not call but sent her daughter. The daughter was asked to tell her mother of the blood in the urine. On Thursday Mrs. Taylor called. There was no mistake about hæmaturia and she advised that if the child was not better the next day a medical man should be sent for. Next day she came and finding the child very ill she took it well wrapped up to Mr. W. L. Goodridge, who found it moribund. In spite of the measures prescribed the child died on the way home. The coroner did not order a post-mortem examination, which we regret, but Mr. Goodridge saw the body after death. There was great abdominal distension, and a catheter passed into the bladder showed it to be empty. He attributed death to inflammation of the kidney. At the inquest he expressed his own opinion and that of the profession on the objections to giving ergot during labour, and especially to midwives being allowed to do so. He said that a Bill to be introduced into Parliament next year would make this a matter of criminal procedure. He thought that there was no evidence to show neglect at birth and that there was no mark of violence. The jury returned a verdict of "Death from natural causes." We approve the verdict but the case shows the importance of midwives' work being supervised by a medical man. For three days hæmaturia and probably nephritis were going on. If Mr. Goodridge had been called in on the first day when it was seen it is very probable the result might have been different. The coroner very properly objected to such young children being taken out, especially in such circumstances. The cause of the hæmaturia is uncertain and its relation to an alleged fall of the mother during her pregnancy is equally so. We do not associate it with the drug administered to the mother by the midwife, though we agree entirely with Mr. Goodridge in his objection to this practice. The inquest is valuable as showing the ignorance of midwives in this custom and the general disadvantage of mother and child in the absence of intelligent medical advice.

RESTORATION OF SEVERED PARTS.

THE possibility of restoring severed parts, even under unfavourable circumstances, is not so generally appreciated as it should be, and attempts which might be successful are not made. Lately we published three cases in which the severed external ear was successfully replaced.[1] In one (Dr. Brown's) the circumstances were anything but encouraging. The ear had been bitten off by a horse and was found lying in a stable yard. Neither surgical instruments nor antiseptics were available: a common needle and thread had to be used. In the other two cases (Dr. Purcell's) the surgeon adopted the ingenious plan of keeping the ear warm and endeavouring to restore the circulation by hot salt bags. We do not know of any other instances in the attempt to restore severed parts in which this had been done. To what extent it is useful is difficult to say; at any rate, it is rational. Several cases of union of severed finger tips are recorded. In the *Johns Hopkins' Bulletin*, Oct.–Nov., 1892, Dr. Finney has published a case of successful suture of severed finger-tips after seven hours. The middle finger was cut off just below the last joint through the phalanx, the ring finger at the root of the nail. The raw surfaces were freshened and the tips were attached each by four sutures. Dr. Finney used antiseptic dressings but not solutions, because bichloride of mercury and carbolic acid produce a thin layer of coagulation necrosis. The wounds united by first intention. In a recent number of the *New York Medical Journal* appears an account of the following case, published in the *Louisville Medical Monthly* by Dr. John Cooke Laurens. A coloured man in using a heavy axe cut through his shoe and severed the metatarsal bone of the first toe through the head, completely disarticulating the toe, and also cut off the second toe in front of the metatarsal joint. He was seen four hours afterwards. The shoe and sock were cut away and the second toe was found separated, whilst the first was hanging by a mere string of skin, every muscle and vessel being cut. They were united by interrupted sutures which included the tendons. A dressing of iodoform and boric acid, equal parts, was used and a splint was applied. The iodoform had to be discontinued because it proved

[1] THE LANCET, June 4th and 11th, 1898.

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irritating. Union by first intention occurred over more than half the wound and there was but little pus where granulation took place. On the third day sensibility was present in both toes and in a week the patient could move them a little. Finally they were strong, moveable, and sensible, and except for a little tenderness the foot was as good as ever.

THE DINNER TO PROFESSOR VIRCHOW.

DR. ROSE BRADFORD, Mr. Andrew Clark, and Mr. D'Arcy Power inform us that after paying the expenses of the recent successful dinner given to Professor Virchow by the English medical profession there remained a balance of between £7 and £8. This sum they propose to hand over to the British Medical Benevolent Fund.

PERSECUTION FOR RETICENCE.

A LIBEL case has recently been decided by the Budapest courts which is of interest to medical men as showing the dangers to which the profession is exposed. A member of the Hungarian Parliament, who is both a barrister and the editor of a monthly journal, had a son who recently died from phthisis at the age of nineteen years, having been under the care of the family doctor for some time, several consultants having also seen him. After the lad's death the father published in his own magazine a series of articles charging the practitioner with ignorance and negligence, because he had for some time avoided declaring the "dangerous and infectious nature of the disease," and so contributed to its fatal issue and endangered the lives of other members of the family. These articles so affected the medical man that he committed suicide. His son, however, who is also a medical man, brought an action against the member of Parliament, who has had to pay £25 and costs.

THE POLLUTION OF THE RIVER RODING.

AT a time when the suggestion to utilise the upper reaches of the Roding for supplementing the supply of the East London Water Company to certain urban districts in the County of Essex is receiving serious attention, it is of interest to note that the County Council has decided to take prompt action in order to restrain a number of sanitary authorities from continuing to pollute it with partially purified sewage effluents. The river rises in a thinly populated portion of the county called the Roothings, but the whole watershed is under cultivation and the various tributaries are all believed to be more or less polluted with the sewage from farms and groups of houses. Lower down it receives all the sewage of Ongar, Abridge, and other villages, and still nearer its junction with the Thames it receives all the effluents from seven different sewage works. Below Abridge Dr. Thresh reported that the river was simply an open sewer. A committee appointed by the County Council has inspected the stream and endorses the medical officer's report, the chairman of the Sanitary Committee remarking at the recent meeting of the Council that the condition of the river was a "disgrace to civilisation." The Council delegated to the Sanitary Committee all its powers under the Rivers Pollution Act in order that proceedings may be taken, if necessary, "against each of the local authorities or persons who are fouling the stream with a view to the immediate abatement of the nuisance." Dr. Thresh in his report strongly recommends the construction of a main sewer to drain the whole of the Roding Valley, from Loughton downwards, as being at once the most economical and the only permanent method of freeing the river from pollution. The population in the lower portion of the valley is increasing enormously and all the present sewage-disposal works are admitted to be more or less inadequate. The scheme is meeting with very favourable consideration and if carried out will in the future be a great boon to the district. It is also gratifying to find that the County Council at the same meeting showed its appreciation of the services of its medical officer of health by increasing his salary from £800 to £1000 per annum.

HOSPITAL SATURDAY.

SATURDAY, Oct. 15th, was observed throughout the metropolis as Hospital Saturday and we are glad to be able to note that in deference to a very widely expressed desire the street collections were abandoned. Street collecting is a method to which we have always taken exception, and latterly it became impossible to walk along the streets at any season of the year or any hour of the day without being pestered for money ostensibly on behalf of some charity, which in many cases no doubt never existed except in the minds of some speculator who sent out collectors. The change now made by the committee of the Hospital Saturday Fund has been for some time in the air, since for many years past the street collections had been falling off while the workshop collections had been increasing. This year collecting cards and sheets have been issued to the ladies who formerly took part in the street collections and it is to be hoped that the ultimate results will not show a deficit at any rate, if, indeed, they do not show an increase upon the sum total of former years.

PNEUMONIA AND THE NAPLES INSTITUTE OF SEROTHERAPY.

OUR Rome Correspondent writes:—"Of the medical congresses now drawing to a close none have equalled in importance and interest that recently hel at Turin, if only for the discussion it evoked on the 'Siero Antipneumonico' devised by Professor De Renzi and Professor Pane of the Naples school and prepared by them for distribution at the 'Istituto Sieroterapico' of that city. Professor Pane, who holds the chair of Medical Pathology, was able to announce at the Congress that in a series of experiments on animals and by means of special cultures they had obtained a pneumococcus more virulent than any other hitherto found by workers in the same field. This given in doses of the culture so minute as to be barely appreciable (*un miliardesimo di c.c. della coltura*) kills a full-sized rabbit in a few hours. Inoculating the ass, the horse, and the cow with the culture in progressively increased quantities they yet succeeded in immunising the said quadrupeds from doses of the pneumococcus which would 'many times over' have proved fatal to any non-vaccinated animal. The serum of these animals they found to possess therapeutic virtues of special power in antagonising pneumonia. Before, however, experimenting on the human subject Professor Pane and his colleague and coadjutor, Professor De Renzi, tested their serum on the lower animals. Inoculating a rabbit with a culture of pneumococcus ten and even twenty times fatal they were able to 'antagonise the tendency to death' by following up the inoculation in question with a minute proportion of the serum. Repeated experiments, checked and counterchecked to obviate every vitiating fallacy, satisfied them that their serum had power to neutralise and subdue all infections, however acute and however fatal, communicable by the pneumococcus. In the hands of their colleagues, Dr. Vincenzo de Giaxa, professor of hygiene; Dr. Luciano Armanni, who holds the chair of pathological histology; and Dr. Giuseppe Boccardi, demonstrator in microscopic anatomy, identical results were obtained. Thereafter they proceeded to inject their serum in a patient suffering from typical pneumonia and at once witnessed a perceptible abatement of the temperature,

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an easier and fuller respiration, a marked extension of the sound lung, the pulse and the arterial pressure being more accentuated, the heart gaining strength and the right ventricle completely emptying. The physiognomic signs told a similar tale and the patient felt such general relief as to crave for 'another injection.' In the discussion which followed Professor Pane's paper Professor Maragliano (Genoa), Professor Murri (Bologna), Professor Bozzolo (Turin), Professor Cantieri and Professor Bordoni (Siena), Professor Queirolo and Prosessor Silvestrini (Pisa), and many others hardly less distinguished took part, when the Neapolitan physicians, in answer to objections and interrogations, were able to adduce confirmatory cures by their serum of aggravated senile pneumonia, of pregnant women suffering from the same disease, and of patients with pneumonia complicated with various forms of cachexia. Among the most gratifying testimonies to its virtues was that of Dr. Belfanti, director of the Istituto Sieroterapico of Milan, who confessed that he had not been able to isolate a pneumococcus so virulent as that of Professor Pane and Professor De Renzi. He had just succeeded in preparing a bactericidal and preventive serum, but not a curative one or such as would prove effective in cases of pneumonia. Professor Bozzolo added his own experience to that of the able Milanese bacteriologist, and contributed to justify the expectation of the Congress that pneumonia will ere long cease to hold a formidable place in the roll of diseases."

YORK MEDICAL SOCIETY.

THE first meeting of the present session of the York Medical Society was held on Oct. 12th, the President, Mr. F. Shann, being in the chair. Dr. Lauder Brunton delivered an inaugural address on the subject of "Exercise and Over-exercise" which contained much excellent advice on the value of judiciously regulated exercise. Certain points in this interesting address are more particularly noteworthy. The sanitary value of physical exertion, the speaker observed, consists largely in the fact that it calls into play successively different muscles, affording to each alternate rest and action. This was what constituted the advantage possessed by an athletic game over a mere "constitutional." Some games, again, were preferable for the same reason. Lawn tennis and polo were pre-eminent as promoting more general movement than most others, cricket not excepted. On the other hand, no caution was more necessary than that which avoids excess in exercise, for this, far from promoting physical development, was an actual cause of exhaustion and consequent enfeeblement. Moderation in exertion, as in other things, was a relative term dependent on personal conditions. Among such two were of primary importance: (1) the strength of the heart, which ought always to be taken as the gauge of what was advisable in amount of exercise; and (2) the mental state in relation either to fatigue or anxiety. Both of these considerations were apt to be overlooked in the training of boys (and doubtless of girls also). Every thinking person must feel the force of these observations. The subject they deal with can at no age become antiquated, and of this we are daily reminded by the evident extension of the athletic habit in varying, not always judiciously varying, degrees among persons of all ages. The custom of bodily exercise is in our time not merely a part of education or even a recreation. It owes its present practically universal prevalence to being what it truly is, an important stage in sanitary evolution. In order that it should maintain itself and develop in this character it will be needful to bear in mind such counsels as those which we have just quoted. If not thus regulated it must prove, as it already has proved to many even in youth, a burden and a weakness. We are glad to see that Dr. Brunton condemned that dreary form of exercise known as "taking a walk." Not that we or he either mean by this a good country walk, but the dignified constitutional known at small schools. If we may judge by such works as "Henry Milner" and the "Fairchild Family" this was about the only form of exercise known to our grandfathers when children, and a very dull and sedate occupation it must have been, though, if we remember rightly, the rigours of the Fairchild children's day were once lightened by being taken to see a murderer hanging in chains. Dr. Brunton omitted two forms of exercise which, to our mind, are excellent—namely, rowing and fives. The latter game should, of course, be played in an open court. The exigencies of our modern civilisation, however, make it increasingly difficult for workers, in London at any rate, to take exercise, for by the time their day's work is done they are generally too tired to go six or seven miles to a river, a lawn tennis court, or a golf links. But even so we as a nation probably take more healthful exercise than any other, and long may we continue to do so.

THE ADULTERATION OF FOOD ON SUNDAYS.

THERE is an old adage which has it that "the better the day the better the deed," but we hardly expect that those who practise the adulteration of food on Sunday and supply nothing but the genuine article on week-days will urge this as an excuse for their moral obliquity. Be this as it may, satisfaction is to be found in the fact that the public analyst of Islington has succeeded in catching some of these adulterators of our Sunday milk-supply unawares, and we read in the last quarterly report of Mr. Harris, the medical officer of health of Islington, that of 30 samples collected on week-days all were genuine, whereas out of 48 collected on Sunday 6·2 per cent. were adulterated. This is by no means the first record which suggests that the milk vendor believes that the sanitary inspector, like most of his fellow citizens, takes a well-earned rest on Sunday; but it is to be hoped that the experiences of Islington will show both to sanitary authorities and to the vendors of food stuffs the need for vigilance on that day. Perhaps if adulterators were in all cases fined double for adulterations actually performed on Sundays the public might feel in a more secure position than is at present the case.

MILITARY SANATORIA.

ACCORDING to a contemporary (the *Evening Standard* of Oct. 7th) the King of the Belgians, who is a remarkably astute and business-like monarch, has suggested a commendable idea for military sanatoria. The Congo State has occupied a good deal of his attention. One of the greatest drawbacks to the expansion of European rule in West Africa is the deadly climate and the difficulty of dealing satisfactorily with fever-stricken troops. If they remain at their posts they run every risk of succumbing; if they are brought back to northern Europe the sudden transition from a tropical temperature to the chills and damps of their own temperate countries may also prove disastrous. King Leopold, therefore, has in view the establishment of a sanatorium within reasonable touch of the Congo territories which shall be at once genial and free from malaria. North-Western Morocco was at first suggested, but a second and decidedly better scheme has presented itself and is in fair way of being carried through. The Canary Islands are considerably nearer the west coast than Morocco is and lie in the direct route of the Congo steamers. Their climatic conditions are too well known to medical men to need any remarks. A medical commission has left Antwerp for Las Palmas to choose the site for the sanatorium and the King has placed 25,000 francs at the head of the subscription list by which the necessary funds

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are to be raised. It has always been the custom of our military medical service to provide hospital steamers for the reception of fever cases amongst our troops whenever large numbers have been on active service in malarial districts, but the establishment of a permanent sanatorium in a climate such as that of the Canaries, within easy reach of our West African dependencies, is certainly a plan well worthy of the consideration of the authorities of the Royal Army Medical Corps. English troops are constantly quartered in those districts and many valuable lives might be saved to our army by such an institution.

THE NEW ENTRIES AT THE MEDICAL SCHOOLS.

ALTHOUGH the London Medical Schools have now commenced the work of the winter session the number of new entries is not yet complete, but it would seem from the figures we have received from some of the schools that there has been a falling off in the number of new entries. At the present time it would be invidious to publish and compare the figures which have been kindly supplied to us by some of the deans and, moreover, from some of the schools we have not received exactly the information which we asked for. When the list is more complete we hope to publish a full analysis of the figures.

LIGATURE OF A RUPTURED MESENTERIC ARTERY.

ONE of the rarest lesions in a "buffer accident" is a rupture of a branch of one of the mesenteric arteries. Such an accident occurred recently to a railway porter and he was admitted in a state of collapse into the Royal Free Hospital. As the collapse seemed to diminish, operation was temporarily postponed, but later, as it was again increasing, it was decided to operate. Mr. E. W. Roughton opened the abdomen and found that one of the vasa intestini tenuis had been torn through about 1 in. from its origin. The distal end was bleeding freely and both ends were tied. The peritoneal cavity contained much blood and the collapse was so extreme that saline transfusion was resorted to during the operation. The man has so far gone on well, and as ten days have now elapsed since the operation he will in all probability recover. We hope shortly to give a more detailed account of this case.

HEALTH AT THE POST OFFICE.

THE criticism which pursues all public utterances has overtaken that part of the Postmaster-General's annual report which relates to the health of the staff. An article recently published in the *Telegraph Chronicle* takes exception to the report chiefly on account of its want of detail and precision in dealing with this subject. The writer objects, for example, that while apoplexy and pneumonia are represented by a considerable mortality there is no indication of the class of employés affected by them. The same statement is made with regard to phthisis, while it is further evident from the published returns that cases of this disease resulting either in death or superannuation are about one-fourth more frequent than in ordinary life, notwithstanding that Post Office employés are primarily selected persons. The ratio given is 2·2 per 1000, as compared with 1·6 per 1000. It is contended, in the absence of evidence to the contrary, that phthisis is most rife among telegraphists and is attributable to overwork within doors, that it is a preventable disease, and that no steps have been taken for its prevention. Want of precision in treating of sanitary matters is doubtless common to many official reports besides that issued by the Post Office. Nor is the prevalence of phthisis among in-door workers by any means limited to this or other public offices. A greater degree of exactness in the statement of such details is nevertheless attainable without much difficulty and it is certainly desirable as bearing upon the causes and prevention of communicable diseases. Phthisis is an example of particular interest. With regard to it there is certainly no method so effectual as the exclusion of all employés affected by it—necessarily, of course, by a process analogous to superannuation. The physical examination prior to entrance should also, in our opinion, be made to exclude applicants with a markedly phthisical family history.

UNIVERSITY COLLEGE, LIVERPOOL.

LIVERPOOL is certainly much better off than London as regards the ability to get money for scientific researches and other work. The other day at the opening of the Thompson-Yates Laboratories Mr. Glazebrook, the Principal, mentioned that the University College was still in need of a properly equipped anatomy school. His words have borne immediate fruit. At the meeting of the governors of the College held on Oct. 15th the Earl of Derby, President of the College, who was in the chair, mentioned that Professor Lodge was in need of a physical laboratory and that he himself would be happy to give £5000 towards its erection—that is to say, one quarter of the sum necessary. He also said that he had received a cheque for £2000 from Mr. Ralph Brocklebank towards new buildings for the medical school. We learn that the next block of the College to be built includes laboratories, theatre and museum for the study of anatomy, and will cost about £15,000. The citizens of Liverpool are to be warmly congratulated upon their princely generosity. Some day, perhaps, we may arrive at this sort of thing in London, but we fear it will be a long time. London is so vast, so decentralised, that though enormous sums are given every year yet there never seems to be any tangible result, while the average citizen's money is so taken up with compulsory taxes that by the time he has paid his School Board rate, County Council rate, free library rate, baths and washhouses rate, and other things he begins to think that he has done enough.

ANOTHER STREET DANGER.

THE dangers of the London streets are necessarily so many and varied that anything which adds to them unnecessarily should be at once put down with a firm hand. On Oct. 13th Dr. Danford Thomas held an inquest at the Paddington Coroners' Court upon the body of a woman who was knocked down and run over by a coal wagon. Evidence showed that she was crossing Malvern-road, Kilburn, on the night of the 8th inst. when she met with the accident which proved fatal. The driver of the coal wagon said that when he reached the junction of Malvern-road and Cambridge-road a flash-light suddenly came on his horse and made it bolt. The son of the deceased said that the flash-light came from the first-floor front window of a shop. The driver of the wagon did all he could to hold in his horse. A reporter in court informed the coroner that the London County Council are making inquiries as to the use of such lights and a solicitor representing the owners of the coal wagon said that if such lights were to be proved a nuisance and danger an injunction could be obtained to stop their use. A constable said that the shopkeeper had been invited to attend the inquest, but that he had refused to come. A verdict of "Accidental Death" was returned, the jury adding a rider to the effect that they condemned the practice of using lights in this manner. The custom of course is one which should be made absolutely illegal and so also should the use of those illuminated advertisements, of which there are several examples round Trafalgar-square and in Knightsbridge—those, we mean, which light up the street vividly at one moment and leave it in comparative darkness the next.

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Such alternations are enough to confuse any horse, to say nothing of any unfortunate foot passenger who may chance to be crossing the road at the moment when the light goes out. The roundabout process of getting an injunction is very lengthy and expensive. We are still waiting patiently for the Streets' Bill which we hope the London County Council will one day succeed in getting passed.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

AT the meeting of the Council of the Irish Medical Schools' and Graduates' Association held on Oct. 12th Dr. T. Gilbart Smith was elected Chairman of Council, vice Dr. P. S. Abraham, whose three years' tenure of office will expire at the end of the present month. At the same meeting it was determined to entertain Sir William Mac Cormac as the guest of the association at the autumn banquet, to take place on Nov. 23rd at the Café Monico, with the President, Dr. E. D. Mapother, in the chair.

AN EXTRAORDINARY EXPLOSION AT SEA.

A HOMEWARD-BOUND vessel carrying a cargo of petroleum and naphtha suddenly blew up on Monday last without any apparent warning close to the Tongue bank of the North Foreland. Several lives were lost and the ship speedily became a total wreck. The force of the explosion was enormous, particles of wreckage being hurled 300 ft. into the air. It was stated that the smell of naphtha was so strong during the voyage from New York as to be almost overpowering. Notwithstanding all warning and precautions it is practically certain that in some way or other the vapour became ignited, and this implies that it got access to a naked light. Two points are worthy of notice: first, that the barrels could not have been tight, and, secondly, that the hold in which they were stored freely admitted the escape of vapour to other parts of the ship. Are these conditions in accordance with Board of Trade requirements? Such an inflammable cargo should surely be battened down as tightly as possible in the hold and a proper vent provided. Further, the hold could be filled with carbonic acid gas which now, in the form of liquid in steel tubes, is as common an article of commerce as many other things. These tubes would be useful, too, in a case of fire in the hold. It would probably be more difficult to ensure tight barrels, because however sound they may be at the start the constant rolling of the ship during the voyage introduces the risk of leakage by reason of hoops, staves, and heads getting loose.

POISONING BY ATRIPLEX.

IN a recently issued collection of the reports of the medical officers of the Chinese Imperial Maritime Customs,[1] Dr. J. J. Matignon, of the French Legation in Pekin, gives a lengthy account, in French, of singular toxic effects produced by eating the shoots of the *arroche* (atriplex serrata), a plant belonging to the natural order Chenopodiaceæ and growing abundantly in the gardens and along the walls of the Chinese houses. The sufferers were almost invariably of the lowest social class—mendicants, in fact—and almost invariably females. The principal symptoms were localised œdema of the face, hands, and forearms, impairment of muscular power, of sensation, and of circulation, and dermatitis, often leading to the formation of scars in the œdematous regions. The tops of the young plant are eaten by the Chinese lower class almost raw, embedded in dough, which is made into rolls and gently steamed, or else in the form of salad. All Dr. Matignon's patients said that they had partaken of the plant on an average from ten to twenty hours before the first appearance of the toxic symptoms. These peculiar effects are well known to the Chinese, but they never occur to those who are careful to wash the plant thoroughly and to cook it before eating, which makes it probable that the poison is not inherent in the plant but is perhaps due to an aphis (*pucceron*) found in the shoots. The first cases generally occur in the month of May. The destitute persons who are most liable to be affected do not take the trouble to wash the plant before eating it and the preponderance of attacks among women is probably due to their lower state of health in comparison with that of men. In 1895, when food was very dear on account of the war with Japan, more than 20 cases of atriplex poisoning were treated in the Nan T'ang Hospital; in 1896 food was more plentiful and only 2 cases were admitted; whilst in 1897 there was only 1 case. The attack is sudden and almost always begins with painful swelling of the hands. Œdema of the hands commences half an hour or three-quarters of an hour after the first onset of the painful symptoms; it is, in fact, very probably the initial symptom, resulting from toxic vaso-motor paralysis. Œdema of the face begins a few hours after that of the hands; it usually affects the eyelids, lips, and cheeks, rendering the patient quite unrecognisable in a few hours and totally unable to see for two or three days. Itching of the backs of the hands is almost constant and is felt also in the face; the rubbing and scratching of the patient produce extensive ecchymoses in which there form vesicles filled with yellow serum, and these may coalesce into bullæ as large as a five-franc piece. In mild cases the œdema of the face disappears in two or three days, but when it is well marked it may continue for a week; the œdema of the back of the hands always lasts longer than that of the face and requires at least ten days in severe cases for resolution. The affection of the skin ends either in resolution of the infiltration, accompanied by desquamation of the epidermis, or else in ulceration, which cicatrises slowly. Dr. Matignon points out that there is some analogy between these symptoms and those of both Raynaud's disease and erythromelalgia (Weir Mitchell's disease). A number of experiments showed that rubbing the fresh plant on the hands and face had no ill effect.

[1] P. S. King and Son, King-street, Westminster.

THE DIRECT CONVERSION OF COAL INTO ELECTRICITY.

SINCE the transformation of the heat of combustion of coal into mechanical work by the aid of furnaces, boilers, and engines gives a loss of 85 per cent. of the total energy it follows that the production of the electric light by present means is, to say the least, wasteful. In short, it is a roundabout way of utilising the energy of coal by first burning it, then utilising the heat so evolved to convert water into steam, and finally to use the pent-up steam as a propulsive power for the dynamo. The energy thus absorbed and rendered inactive for the final purpose is enormous. If only a short cut could be taken or, in other words, the energy latent in the coal could be employed direct, then electricity would afford a solace to modern existence. The ideal would be a scuttle not to store a convenient supply of coals in, but into which a load or shovelful could be placed as the current required to be kept up. In other words, if the scuttle could be made the generating centre which would work faithfully so long as coal were supplied and containing a fluid which would quietly oxidise the element (for coal is mainly carbon), yielding the chemical energy and hence electric energy of the fuel which could be made available along wires for heating and lighting purposes, the problem of utilising electricity in the house would be solved and gas, wood, and coal and their attendant nuisances for ever banished. It must be admitted that such an attainment would be an ideal and a

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comfort far beyond all other devices directed towards obtaining a healthy equilibrium in household affairs. Yet such is not beyond the bounds of possibility, for the energies of investigators are being concentrated upon the prospects of being able to turn coal to account for the direct production of an electric current. If coal can be made the positive element in a battery the problem is solved, and this is exactly the direction in which recent investigation has turned, and not without hope. This accomplished, however, everything would depend upon our coal-supply and the time during which it would hold out. Coal is a source of force with which fortunately nature has abundantly supplied us, and by the time this has failed we shall probably have arrived at new methods of utilising natural force, as in the rise and fall of tides and the flow of water, on a scale which will provide the whole community with power and to spare.

PHOTOGRAPHIC EFFECTS PRODUCED BY BACTERIA.

THE "rapid" dry photographic plate with its extremely sensitive film has become a most remarkable aid to knowledge. It has brought countless stars to view which otherwise had escaped observation even with powerful instruments and it has more recently demonstrated the existence of dark light, so to speak—i.e., of radiations which are not realised by the eye, having no apparent effect upon the optic nerve. Recent experiments have shown that almost all substances give off a dark radiation or, at any rate, something which affects the sensitive silver film. This has been attributed to the throwing off of vapour in minute quantity, but sufficiently to act upon the photographic plate in the same way as actinic rays. Dr. Percy Frankland has now shown that certain bacteria have the property of producing images. With some organisms the effect is obtained when the sensitised plate is placed at a distance of half an inch over the culture, whilst when in contact with the film definite pictures of the bacterial growths result. Since the interposition of a piece of glass prevents the action it is probable that the action is due to the evolution of volatile chemical substances. But with phosphorescent bacteria the phenomenon is evidently a different one, since the interposition of glass makes no difference, the organisms emitting a radiation which traverses the glass easily. It is suggested that it is quite possible that considerable differences as regards activity towards a photographic plate may be found to exist with different bacteria, in which case this property may become of importance in their diagnosis. If the method could be applied to the identification of typhoid fever and cholera bacilli in water its value in the service of public health would indeed be great.

THE SMOKE NUISANCE.

IN Dr. Gwynn's presidential address to the Incorporated Society of Medical Officers of Health, an abstract of which we give in another column, it will be seen that he is dissatisfied with the way in which sanitary authorities neglect the Smoke Acts. As long, however, as magistrates deal with offences under these Acts in the lenient way in which some magistrates do or did deal with them, so long will there be small inducement to sanitary authorities to prosecute. The Public Control Committee of the London County Council has just issued a report in which the various steps taken to deal with the smoke nuisance in London are set forth. We are glad to see that the committee mentions that the view taken by certain metropolitan magistrates that difficulty in obtaining smokeless coal was a reason which justified persons in causing a serious nuisance was to be regretted. In our issue of June 25th we said the same thing when commenting upon a decision of Sir James Vaughan. To say that it is allowable to make black smoke because smokeless coal is unobtainable is absurd. To slightly modify the remarks of Mr. Gilbert's "Mikado," "That's the slovenly way in which these Acts are drawn. There is nothing about not being able to get smokeless coal, or not knowing," but the Act says that "Any chimney not being the chimney of a private dwelling-house sending forth black smoke in such quantity as to be a nuisance shall be deemed to be a nuisance liable to be dealt with summarily." The electric lighting companies were the chief offenders, but the great hotels and restaurants, and at one time the National Liberal Club, were also conspicuous examples of how to foul an atmosphere which is at no time too clear. We hope the London County Council will continue its crusade, for its public health work is beyond reproach.

BRUTALITY AND ALCOHOL.

THE brutality of many of the acts which occupy the time of our coroners and our law courts is becoming serious. It is quite a special feature of the time. We are spending ten or eleven millions a year over popular education, yet every day's newspaper reports some deed which is simply brutal in its coarseness and its causelessness. It does not represent anything deeply malicious in the criminal, but in its vulgarity and brutality it is exceptional and discreditable. Opinion is divided as to the exact explanation of such a state of things at the end of a century unprecedented for its strides in knowledge, in science, and in civilisation. It defies law and the ordinary penalties of law. Politicians, moralists, and sociologists are apparently helpless to control it. Perhaps the two most revolting instances of late have been firstly that of William Carey, aged thirty-two years, who was taken to Guy's Hospital, where he died on Sept. 24th from a fractured skull. The deceased was knocked down during a fight outside the Swan public-house, Old Kent-road, on the morning of Sept. 23rd, and when he fell his head struck the tram lines. According to the *Times* report of the inquest Walter Wood, a labourer, said that he had been drinking with deceased, and they had about twenty half-pints of ale each. After leaving the Swan Carey and some men began quarrelling, with the result of Carey's death. The other instance is in the murder of the young policeman, James Baldwin, by stabs with a knife. John Ryan has been committed for trial for the murder. We offer no opinion as to his guilt; but according to the evidence of Constable Henry Bendall he was the worse for drink and "the crowd were mostly drunken." They gathered round and the police were pelted with pots and cans. The invariable element in all such brutal acts is alcohol. It is sincerely to be hoped that the Royal Commission on Licensing Laws now in existence will take some evidence on the association of such offences with drinking and with the public-house system as at present conducted. The common British working man may be ignorant and at his wit's end when the day's work is done, but he is not the cruel monster which he appears to be in these midnight scenes as he leaves the public-house, and something must be done to prevent such wholesale demoralisation.

THE ROENTGEN RAYS IN ITALY.[1]

ACCORDING to a review by Dr. Emile Boix in the current number of Duplay's *Archives*, one of the latest additions to the series of manuals which, to the number of over 600, have been issued by the well-known Milanese publisher Ulrico Hoepli with a view to the popularising of science, art, and literature, consists of a volume by Italo Tonta on the nature, history, and practical application of the Roentgen rays. The

[1] Italo Tonta: Raggi di Röntgen e loro pratiche applicazioni. 160 pp., 65 figs., and 14 plates. Milan: Hoepli, 1898.

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author, who has studied his subject in several German schools, adds the experience of others to his own observations and advances certain hypotheses which he has formed regarding the nature of the rays and the effects which they produce. He also discusses their mode of action, chemical and luminous, and is able to find a great many points of analogy between them and lightning. Adopting Crookes's theory that all transmissible physical forces are due to vibrations through ether and matter differing from each other solely by reason of the relative rapidity of the vibrations, he likewise agrees with Roentgen that, whereas electricity corresponds to 33,359,730,750 oscillations per second, the x rays should be included in the category which corresponds to about 300,000,000,000 oscillations per second. But Signor Italo Tonta does not adhere exclusively to the dry bones of science, being evidently of opinion with Horace that *omne tulit punctum qui miscuit utile dulci*, for he quotes the following definition of electricity which was written by Galileo Ferrari in an album at the request of a young lady with scientific aspirations: "Ever since Maxwell showed that luminous vibrations may consist in periodic variations of the electro-magnetic forces and his theory was given an experimental basis by Hertz, who adduced facts to prove that electro-magnetic oscillations propagate themselves as light does, the idea has gone on growing ever firmer and firmer that the luminous ether and the medium where electro-magnetic forces have their seat are one and the same thing. Wherefore, O! maiden, so intelligent and so amiable, who dost ask What is electricity? am I able to reply to thine inquiry. Electricity is not only the titanic agent which tearing athwart the atmosphere terrifies by the crash of its thunderbolt, but also the vivifying agent which transmits from the sun to the earth by means of light and heat the magic of colour and the breath of life, which communicates to thy heart the pulsing of the external world and conveys to thy soul the enchantment of a look and of a smile."

AMONG the victims of the recent lamentable disaster to the Atlantic liner *Mohegan* off the Manacles was, we regret to say, Mr. John Fallows, L.S.A., L.R.C.S. Edin., of Princess-mansions, S.W. The deceased gentleman was acting as medical attendant to a patient who was taking a voyage to America. He was specially interested in laryngology and reported that section of the late meeting of the British Medical Association for THE LANCET.

MR. RIDER HAGGARD'S new story, which Messrs. Longmans will publish in November, is entitled "Doctor Therne." The story, which is told by the principal actor, Dr. Therne, after the final catastrophe, deals with the results of the conscientious objector clause in the Vaccination Act, under which the safety of many thousand children and, through them, of the community, is practically left in the hands of the anti-vaccinationists.

AT the County of London Sessions a man, name unknown, was sentenced to six months' hard labour for obtaining money by false pretences. The prisoner defrauded several medical men by representing himself in letters to be Dr. Alfred Vigne, who is now practising in Buluwayo.

A FATAL case of bubonic plague is reported from Vienna. The patient was an employé at the general hospital and, it is presumed, infected himself from a plague cultivation in the laboratory.

THE next meeting of the Odontological Society of Great Britain will take place on Nov. 7th, at 8 P.M., when the President, Mr. John Fairbank, will deliver his introductory address, and a paper will be read by Mr. Storer Bennett on Ankylosis of Human Teeth to the Jaws.

WE are informed that the council's nomination for the office of President of the Roentgen Society for the year 1898–99 is Mr. C. W. Mansell Moullin, F.R.C.S. Eng.

PRACTICAL HINTS ON CYCLING FOR COUNTRY PRACTITIONERS.

BY J. B. EMMERSON, M.D. DURH.

AS a cyclist of 30 years' standing, having begun upon a heavy "velocipede," before the advent of the "bone-shaker, I may be allowed a few words on this subject.

To a man nearing fifty years of age who for a quarter of a century has ridden constantly on horseback without becoming "hard" it is a matter of surprise that two years' serious cycling should have produced such a state of health as he never enjoyed before and that he is more active than he was at twenty-five; but so it is. The country practitioner used to have few opportunities for holiday-making, but now he can get right away from his work on a Sunday quite independently of trains and without being missed from his practice. If the inevitable patient appears just as he is starting it only means ten or twenty minutes' delay and not the loss of a train and consequently of the whole day's outing. One may drive for years and never see, for instance, a brace of magpies or any but the most distant glimpse of other interesting birds, but it is a curious fact that these evince little fear of a cyclist, as though they are well aware that he cannot carry a gun. At night-time, too, it is most remarkable to watch the behaviour of hares. They will rush out of the hedge and career madly backwards and forwards in the light of the lamp for about a furlong, and then end their gambol by another rush back into the hedge. Partridges and pheasants in the daytime scarcely pay one the compliment of rising. Another delightful result of this development is the repopulation of the roads. Formerly one might drive for several miles without meeting as many people. Now the roads in fine weather wear quite a holiday aspect from the number of travellers of all sorts, who produce quite a cheerful effect, and the roadway itself is scored by the marks of rubber tyres instead of by those of iron carriage wheels. All this has taken place in a very few years. No one who has not been compelled to drive incessantly for many years can conceive the pleasure and comfort of travelling on a ring of air instead of having to endure the constant grind of the iron tyre.

So much for the pleasures of the pursuit, now for the practical and economical side. Formerly the writer kept three horses and needed a groom all the year round. He now employs two horses but these are out at grass for a large portion of the year and during this time only an errand-boy is necessitated at a few shillings per week. The summer day's work varies from 15 to 25 miles, but this distance is generally extended for the sake of getting a little variety. There is never a feeling of fatigue at night as there generally is after sitting all day in a gig, and on the rare occasions when it is too wet to cycle it is a simple matter to hire a trap at an infinitesimal cost compared with that of retaining a horse and man all the time.

When a message arrives in the evening, instead of the annoyance at having to turn out with a horse and man it only suggests a pleasant spin after dinner before sitting down to a smoke. Of course, one does not forget the pleasures of the saddle, but those are emphatically only for the winter months when the ground is soft and the capricious movements of the horse will not throw one into an uncomfortable perspiration. No reasonable amount of work hurts a well-fed horse when the roads are soft, but it is pounding along on the hard roads in the summer that knocks him to pieces, so that under this system he ought to last at least three times as long as he would under the old treatment.

There are many things in cycling which are only learnt after a long experience, unless attention is specially called to them. For instance, it is the best plan to keep two bicycles, the old one for use when there is a chance of wet or when something has happened to the better one. What

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can be worse than to come down in the night in answer to an urgent message and to find the tyre deflated? The happy possessor of two machines simply rides off on the other and repairs next day at his convenience.

To the cyclist the dissipated or negligent groom offers no terrors. He can go two miles and back in less time than the most active and willing of grooms could be fetched and a horse put in the trap, and there is no such thing as a forgotten whip or a rein not passed through the terets.

It is a good plan to have a nice roomy cycle-room instead of pushing the machines away into the coachhouse or the coalhouse, and many an agreeable half-hour can then be spent in touching-up and altering the position of the saddle or varying the arrangements generally. It is better always to stand the machine on the floor leaning against a wall, for if there is a tiny puncture the weight causes the air to ooze out and the condition of the tube declares itself in the morning. Otherwise if the cycle has been on a stand all night one may ride away for a mile or two without detecting the mischief. The first time that the tyre is removed it is well to write the owner's name and address upon the inside of it. This offers an unsuspected means of identification when it is stolen and the thief, after altering its external appearance, vows that he has been riding it for the last six months.

After enduring the discomfort of the perineal pressure produced by the ordinary type of saddle for some time the rider probably changes to another saddle—say, a Christy—and he is delighted with the firm seat and the absence of obtrusiveness in the peak, together with the cooling effect of the air-channel up the centre. After a time, however, he realises that the spring is too tough and that the stuffing has settled hard. The bolt and nut fixing the spring underneath the peak should be removed and replaced by a lashing of whipcord. This allows a much greater amount of play in the spring. A tuft of horsehair should be tied upon the saddle and a Jaeger pad, costing 2*s*., should be placed over this. The result is an ideal saddle. It is well to bind the pad with some broad elastic, so as to grip the saddle firmly.

All tiny tool-bags on the handle-bars and rattling pumps on the diagonal should be banished. There should be only one receptacle for all appurtenances which you need to carry and the best form is in the shape of a schoolboy's satchel strapped behind the saddle. It should contain a repairing outfit and a short pump for emergencies, with a wrench, a box of matches, and a light alpaca overcoat which will roll up into a small ball and is excellent for turning a cold wind or a shower, and, finally, a small "rubber" or openwork towel with a spare handkerchief. The alpaca coat is much preferable to an indiarubber mackintosh, which produces untold misery from retained perspiration and is a fruitful cause of chills, and a regular wetting while moving is safer than this form of vapour-bath.

All the pumping should be done in the cycle-room with a long pump before starting, and then the short-pump mentioned above is all one needs for a sudden requirement. A toy looking-glass of a couple of inches diameter in the pocket is very useful. Holding this up in front the rider can easily survey the whole road behind him, and when followed by his wife or other tutelary deity he can see that all is well with her.

It is a mistake which every rider may have to regret to coast down very steep hills. It is much better to keep the feet on the pedals and to apply the brake lightly. With a well-made brake it is surprising how little harm is done to a good tyre, which ought to stand this treatment for a couple of years, and after all it costs only 30*s*. to replace it when worn out. Besides it is the back tyre which really endures all the hard work. On the other hand, one should take advantage of every slight declivity to put the feet on the rest. It is wonderful how slight a fall in the road will take the machine along at a fair pace, almost as fast as though the legs were trundling round, and the more backward position along with the short resting time is quite a pleasant change.

Flies and dust are often a cause of great annoyance. If a cheap pince-nez be procured and the glasses broken out the openings can then be covered with black crape. This makes the best screen from the glare of the sun and is most cool and comfortable to wear, as the air rushes through and a gale will not blow it off.

The best shirt to wear is one of white flannel, along with linen collar and cuffs and a bright tie. With the bright tie a little of the flannel which peeps out above a high waistcoat or a Norfolk jacket is not to be detected as not being linen. A full cravat generates too much warmth and suggests the absence of the linen shirt. Of all clothing there is none so comfortable as the "natural wool," which is porous and of a neat, pleasant colour. It should be lined with cashmere and not with cotton or linen. Two suits should be in daily wear so as to change during the day. It is a great luxury and entails very little trouble.

No one now objects to seeing a business man wearing knickers and stockings in the country, but if trousers are preferred they should be turned up neatly twice at the bottom. Clips look bad and they prevent the circulation of the air just where it is most desirable. The piece of box-cloth with the stockings folded thickly over it may be very well for shooting or other walking pursuits, but it forms a most unpleasant hot compress for cycling. It is better to have the stockings drawn up inside the knickers in the plainer and quieter fashion.

For the machine very little oil should be used at once, but it should be frequently applied except to the axles of the wheels which need it very seldom. The chief trouble with any form of lamp is caused not by the quality of the oil but by neglecting frequently to remove the blackened and hardened portion of the wick. In a gale a handkerchief tied bodily over the lamp will still permit a fair amount of light to penetrate it and will prevent the flame from blowing out.

Anywhere where a cup of boiling water can be obtained a good cup of tea can be secured by carrying compressed tea tabloids. When stirred up in the water the infusion is quickly made and all the dust settles promptly to the bottom. Compressed cocoa may be obtained without sugar in sticks like ordinary chocolate. It can be nibbled on the road and is very sustaining. Those who cannot digest milk on ordinary occasions can often do so on a journey. After a good breakfast a rider may go all day by simply stopping here and there at likely farmhouses or elsewhere for a glass of milk. With such a diet there is a constant impression of its being forenoon all through the day, than which nothing produces a greater holiday feeling. There is little desire for smoking after the milk such as there would be after a solid meal, and smoking is injudicious as it relaxes the muscular fibre. Alcohol should be left till the day's work is done and taken only with dinner at night. The "prairie oyster" is easily carried and may be made in something like the following proportions—six eggs, three tablespoonfuls of vinegar, a teaspoonful of salt, and a sprinkling of pepper. This should be whipped up and will go into a half-pint bottle.

The craze for high gears seems to be a great mistake. In this windy climate there are few days on which the cyclist will not have to encounter a head-wind somewhere, and with a gear of 63, he can easily ovecome this and mount any ordinary hill without difficulty. On a long hill it is an absurd waste of power and a trial to the machine to ride up. It is better to dismount and to enjoy the change of exercise in walking up.

In hot weather it is a good plan to take every opportunity of wetting the hair. This has a marked effect in keeping the whole system cool and is a great protection from the sun. Comfortable tweed caps are obtainable for 2*s*. with a cork lining between the peak and the brow where perspiration is apt to be free and disagreeable. For the handles a pair of mittens should be knitted and passed on to the handle-bars. A piece of tape can then be tied round them and the mittens reversed on themselves so as to give a double covering on the handles. This not only moderates vibration but is warm in cold weather and does not become clammy or sticky in warm weather.

The backward position of the saddle seems to be overdone. It is better to have it on the front of the T-piece so as to distribute the weight more fairly between the two wheels. In this way the work is easier and puncture of the hind tube less frequent. In conclusion, originality is not claimed for the majority of these suggestions, but they have all been put to the test of practical experience.

BRISTOL ROYAL INFIRMARY.—The half-yearly meeting of the Bristol Royal Infirmary was held on Sept. 27th. The chairman (Mr. Pellew) stated that the expenditure exceeded the income every year by £3000 and there was at present an adverse balance of £13,000 against the institution. The committee had decided to enlarge the Nurses' Home in Terrell-street. The cost would be about £5000.

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THE GUILD OF ST. LUKE.

ON Wednesday, Oct. 19th, the Guild which takes its name from Saint "Luke the beloved physician" and has for its objects "the mutual encouragement and support of its members in leading the purer and higher Christian life and the formation of a bond of union to help them in maintaining a true faith, hope, and love amongst themselves and the members of the medical profession" attended a Festal Evensong at St. Paul's Cathedral. The service was announced for 7.30 P.M., but long before that hour all the available chairs in the sacred edifice were occupied by members of the medical profession, and their friends, except those reserved for the 500 medical men in their gowns and robes and a contingent, numbering 150, of the London companies of the Volunteer Medical Staff Corps. Two silver cornets announced the arrival of this latter part of the congregation, who slowly filed up the aisle preceded by the banner of the Guild and that of St. Mathias. The service commenced with the processional hymn "Christ is made the sure foundation" and the ordinary evensong followed. The sermon was preached by the Bishop of London and the service was conducted by the Rev. C. Kelly. Dr. T. W. Belcher, M.D. Dub., and Canon Newbolt read the lessons, which were taken from Ecclus. xxxviii. and St. Luke xiii.

The Bishop, who took for his text the words from St. Paul's Epistle to the Philippians, ch. iii., v. 21, "Who shall change our vile body that it may be fashioned like unto His glorious body," said that in the Apostle's day as now there were two classes of persons—first, those who though they called themselves Christians minded earthly things, and, secondly, those who accepted a higher order of things than that which was seen. In the Revised Version of the New Testament the text read: "Who shall fashion anew the body of our humiliation that it may be conformed to the body of His glory." The difference between the two versions could be accounted for by the fact that at the time the first translation was made men's moral aspirations did not harmonise with their knowledge. Just in proportion as medical science, anatomy, and biology had revealed the true functions of the body we had got back to that noble view of the body and its place as expressed in St. Paul's words. The Apostle's spiritual insight enabled him to see that the body of our low estate was but a temporary form which was capable of receiving a permanent form. We wanted an ideal. Medical men strove for a perfectly healthy mind in a perfectly healthy body. But unless a man did his own part in the work there could be no real progress in his powers and no real elevation of himself into a higher and better being. In Christ they had the ideal they sought for. Speaking of the resurrection the preacher said he had heard that an eminent biologist had said that if there was a resurrection it must be a resurrection of the body. Body and spirit were so intimately connected that one could not be conceived of as existing in a perfect state without the other. If we thought about the matter we should see that the body would be stamped with the impress of all our thoughts and actions. Man was surrounded by laws which he was continually forgetting and breaking. It was the physician's duty to teach him the law. The Bishop concluded his sermon by pleading for support of the scheme which the Guild was trying to put on foot that the benevolent influences of the medical profession might be carried elsewhere by training up men who would spread the message that our body of humiliation was capable of receiving the marks and conformation of "His glorious body."

HEALTH OF BELFAST.

THE report of the Medical Officer of Health of Belfast, presented to a meeting of the Public Health Committee on Oct. 13th, shows that the death-rate for the week ended Oct. 8th had been from all causes 30·1 and from the principal zymotic diseases 7·9. The total number of deaths registered had been 176, of which 38 were attributed to phthisis and diseases of the respiratory system, 25 to enteric fever, 14 to diarrhœa and dysentery, 4 to diphtheria, 2 to whooping-cough, 1 to scarlet fever. 56 of the deaths registered were those of children under one year of age, and 34 were those of persons over 60 years of age. There were 151 cases of typhoid fever notified during the week, the previous five weeks' notifications having been 114, 247, 276, 271, and 333 respectively, the last and highest figure being that for the week ended August 27th. These statistics show, we are very glad to say, a distinct improvement in the decline of the typhoid fever outbreak, but we hope that the public will not be lulled by them into the belief that the so-called epidemic is a thing of the past. What the Public Health Committee must clearly understand is that until the disease ceases to be endemic in Belfast they will be held accountable, and that to get rid of typhoid fever as a disease which "has come to stay" in that city the Public Health Committee must overhaul the whole sanitary arrangements of the city, including the main drainage system, build a new infectious diseases hospital, and adopt all those sanitary and public health measures which every city of half the size of Belfast in England has done years ago. At a previous meeting a numerous deputation, representing the Association of House and Land Agents, Belfast, waited on the Public Health Committee and proceeded to point out that overcrowding and dirt were in their opinion pronounced enough among the tenants of small house property to cause sickness, and complaining that when drains became stopped or houses insanitary through the carelessness or gratuitous dirtiness of the inmates the owners of the houses were made liable. Frequently drains were blocked up maliciously by the tenants, and the deputation urged that it was most unfair that the owners should be held responsible for insanitary conditions following such acts. What the deputation asked was that the Public Health Committee should coöperate with the agents to induce greater cleanliness and care on the part of the occupants of the houses. They asked that when the sanitary inspectors found that a person kept a dirty house to the public danger they should proceed against him. The chairman pointed out that the agents in such cases had the remedy in their own hands and should apply it by giving the parties notice to leave. The power of the Public Health Committee in regard to occupiers is very limited and in the case of weekly tenants it is simply *nil*. The committee also discussed the question of the horrible houses without back passages, through which filth has to be carried from the midden to the front entrance, and they ultimately decided to take proceedings against the owners of such houses in order to compel them to put in water-closets instead of the existing ashpits. It was suggested that the deputation of the house and land agents previously heard was a counterblast directed against action of this kind on the part of the committee which they have reason to apprehend. We are pleased to be able to report that the Belfast Water Commissioners have, in order to remove any suspicion, decided to promote a Bill for the purpose of obtaining powers to acquire compulsorily so much of the catchment areas of their works as may be requisite to guard more effectually the water-supplies of the city against the possibility of pollution. This proposal applies only to the Woodburn and Stonyford supplies, as provision has already been made for the purchase of all the lands included on the gathering grounds of the gigantic Mourne scheme, from which in two or three years there will be a very abundant supply of capital water for Belfast. This action of the Water Commissioners is all the more praiseworthy and far-seeing, since the present typhoid fever outbreak has never been shown to be due in any way to contaminated water and the report of Professor Frankland as to the water during the past three months is very satisfactory. We are also glad to note that the Public Health Committee were firm with a deputation of women who appeared before them and urged that as they had no other means of livelihood than pig-keeping (though there is not back passage accommodation to their houses) they should continue the practice by which they live. The committee informed them that the pigs must go but that they would be allowed a short time so as to dispose of these precious animals to the best advantage.

A NEW WORKHOUSE INFIRMARY.—At the meeting of the Thornbury (Gloucestershire) Board of Guardians held on Oct. 14th it was decided to erect a new workhouse infirmary. The building is estimated to cost £3675 and will accommodate 28 patients.

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Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Plumstead Sanitary District.—Some friction arose in the district during 1897 with the London School Board in consequence of an effort being made by the medical officer of health to examine the children in one of the board schools, an examination which was confined to an inspection of the face, ears, throat, and hands of each child. The teacher, after allowing the inspection for some time, requested the medical officer of health to desist until she could report the matter to the London School Board. This she did in due course, and as a consequence a letter was sent to the Plumstead Vestry "severely censuring" the medical officer of health for inspecting the children. Unfortunately a medical officer of health possesses no legal power to thus examine the school children at school, and hence it would appear to be the safest course to intimate to the school authorities his desire to conduct such an inspection in the interest of the public health. As Dr. Sidney Davies observes, it is clearly in the interest both of education and of health that such inspections should be made, and a medical officer of health after having thus inspected the children must have a much clearer idea as to the desirability or the reverse of advising his sanitary authority to order the closure of a school.

Bedfordshire County District.—The estimated population of this administrative county at the middle of 1897 was but 169,469; its birth-rate was 25·3, and its death-rate 15·2 per 1000, the infantile mortality being 130 per 1000 births. As regards the control of infectious diseases this county is, as a whole, very much behindhand, in spite of the fact that compulsory notification has been adopted by all the sanitary authorities save that of Leighton Buzzard. There are many districts without any proper isolation accommodation, and only two urban districts have ambulance provision. So, too, with regard to disinfection the arrangements are not such as to inspire confidence. The county council have taken some action as regards sanitary improvement during the year, b it their efforts do not appear to have borne much fruit. The county of Bedfordshire is not, in fact, making such advance in sanitary matters as the appointment of a consulting county medical officer of health might have led us to anticipate. Dr. Leonard Wilde gives in his report a summary of the sanitary requirements of each district within the county, and we trust that by next year he will be able to chronicle more progress. The sanitary authorities cannot plead ignorance as to the necessities of their district.

Wandsworth District.—The several medical officers of health congratulate the Board of Works upon the sanitary condition of this district. In spite of the area becoming more thickly populated they are unable to discover in the mortality returns any evidences of the bad effects of the increased density of the people. In referring to the water-supply the medical officers of health report that in November of last year specimens of young horseleeches were found in the tap water drawn from two houses in the district. Investigation of the circumstances was made both by the medical officers of health and by the officials of the Lambeth Water Company but no light could be thrown on the occurrence. It is added that the domestic cisterns from which the water was drawn were quite clean. It is certainly disappointing that the officials of the water company were unable to offer any suggestion as to the means by which the leeches obtained access to the water.

Warwickshire County District.—Dr. Bostock Hill, who, as usual, summarises the annual report of this county (population 336,219), is gratified to notice that there was during 1897 a much larger estimated increase in the population of the rural districts than has been the case for many years previously, the increase being almost as marked in the rural districts as in the urban. As he observes, however, the figures are only estimates and we must wait till the next census to ascertain the real facts. The birth-rate of the administrative county for 1897 was 28·7 per 1000, the rates for urban and rural districts being almost identical. The general death-rate was 15·2 and the zymotic death-rate 2·0 per 1000. Measles caused 109 deaths, as against 41 from scarlet fever and 54 from diphtheria; but in spite of this fact measles is not now notifiable in any district in the county, the borough of Sutton Coldfield having recently abandoned notification of this disease. The Rugby Urban District Council is still recalcitrant in the matter of notification and hence the county figures of notifications are incomplete. No progress seems to have been made during 1897 in the direction of isolation accommodation, but there has been a diminution in the matter of river pollution and improvements have been made here and there in water-supply. Dr. Hill strongly urges the sanitary authorities themselves to undertake public scavenging, and he insists upon the importance of maintaining the soil as free from pollution as possible.

Oldham Urban District.—Mr. Tattersall, in presenting his last and parting report on this district, expresses his regret that the ratepayers threw out the proposed Bill which was to convert the existing excrement disposal system into one for water carriage, and we can well understand how disappointing it must be in these days to find the public still wedded to conservancy methods, more especially having regard to the recent investigations on the growth of enteric fever bacilli in polluted soil. Mr. Tattersall has left to the people of Oldham a memorial of his energy in the shape of a very carefully prepared life-table which will form a valuable standard of reference for future workers in the district. The expectation of life in Oldham is well shown in the form of coloured charts, where it is compared with the figures for Manchester, Brighton, and England and Wales as a whole. Briefly summarised the tables and charts for males show that at birth the expectation of life in Oldham is two years greater than that in Manchester or in Glasgow and seven years less than that in Brighton or in England and Wales. At ten years of age expectation in Oldham is a year more than in Manchester, almost identical with that in Glasgow, and five years less than that in Brighton or in England and Wales. At the age of fifty-five years expectation in Oldham is some six months more than in Manchester, a year less than in Glasgow, and three years less than in Brighton or in England and Wales. As regards females, the relationship of Oldham with the several towns just mentioned is almost identical with that obtaining in the male sex. Considering that the population of Oldham is well paid, well fed, and well housed Mr. Tattersall is surprised that Glasgow compares so favourably with Oldham and that Oldham does not compare more favourably with Manchester. He thinks that the exposed position of the town and the fact that it is built upon clay may account for the excessive mortality amongst the old people. As a standard up to which Oldham is enjoined to work Mr. Tattersall furnishes a column in his tables of the figures for the healthy districts of England and Wales.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6442 births and 4091 deaths were registered during the week ending Oct. 15th. The annual rate of mortality in these towns, which had declined in the five preceding weeks from 24·6 to 20·5 per 1000, further fell last week to 19·0. In London the rate was 18·5 per 1000, while it averaged 19·4 in the thirty-two provincial towns. The lowest rates in these towns were 10·2 in Brighton, 11·7 in Croydon, 13·1 in Portsmouth, and 13·2 in Cardiff; the highest rates were 25·1 in Manchester, 25·6 in Salford, 25·7 in Sunderland, and 28·5 in Norwich. The 4091 deaths included 618 which were referred to the principal zymotic diseases, against 1119 and 774 in the two preceding weeks; of these, 377 resulted from diarrhœa, 74 from diphtheria, 63 from "fever" (principally enteric), 43 from measles, 38 from whooping-cough, 22 from scarlet fever, and 1 from small-pox. No death from any of these diseases occurred last week in Croydon; in the other towns they caused the lowest death-rates in Oldham, Birkenhead, Brighton, and Huddersfield, and the highest rates in Hull, Salford, Sunderland, and Norwich. The greatest mortality from measles occurred in Sunderland and Norwich; from scarlet fever in Derby; from whooping-cough in Halifax; from "fever" in Salford and Sunderland; and from diarrhœa in Manchester, Norwich, Hull, and Sunderland. The 74 deaths from diphtheria included 41 in London, 8 in

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Leeds, 3 in West Ham, 3 in Cardiff, 3 in Swansea, 3 in Birmingham, and 3 in Sheffield. One fatal case of small-pox was registered in London, but not one in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals on Saturday last, Oct. 15th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2728, against 2353, 2459, and 2606 on the three preceding Saturdays; 357 new cases were admitted during the week, against 288, 300, and 358 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 200 and 226 in the two preceding weeks, further rose last week to 263, and were 12 above the corrected average. The causes of 39, or 1·0 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Bradford, Leeds, Hull, Newcastle-upon-Tyne, and in sixteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Nottingham, Liverpool, and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·1 and 20·6 per 1000 in the two preceding weeks, further rose to 20·7 during the week ending Oct. 15th, and exceeded by 1·7 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 12·6 in Aberdeen and 18·6 in Dundee, to 22·6 in Glasgow and 28·1 in Greenock. The 625 deaths in these towns included 54 which were referred to diarrhœa, 19 to whooping-cough, 12 to "fever" (principally enteric), 8 to diphtheria, 7 to scarlet fever, and 5 to measles. In all, 105 deaths resulted from these principal zymotic diseases, against 127 and 123 in the two preceding weeks. These 105 deaths were equal to an annual rate of 3·5 per 1000, which was 0·6 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had declined from 110 to 62 in the four preceding weeks, further fell to 54 last week, of which 27 occurred in Glasgow and 14 in Edinburgh. The 19 deaths from whooping-cough corresponded with the number in the preceding week, and included 12 in Glasgow and 4 in Aberdeen. The deaths referred to different forms of "fever," which had been 14 in each of the two preceding weeks, were 12 last week, of which 9 occurred in Glasgow and 2 in Greenock. The 8 fatal cases of diphtheria showed a slight further increase upon recent weekly numbers, and included 3 in Glasgow and 3 in Dundee Of the 7 deaths from scarlet fever 4 were recorded in Glasgow; and 3 of the 5 fatal cases of measles occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 87 and 105 in the two preceding weeks, further rose to 141 last week, and exceeded by 19 the number in the corresponding period of last year. The causes of 40, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the five preceding weeks from 30·7 to 22·1 per 1000, rose again to 24·9 during the week ending Oct. 15th. During the past four weeks the rate of mortality in the city has averaged 24·9 per 1000, the rate during the same period being 19·7 in both London and Edinburgh. The 167 deaths registered in Dublin during the week under notice showed a increase of 12 upon the number in the preceding week, and included 18 which were referred to the principal zymotic diseases, against 38 and 19 in the two preceding weeks; of these, 11 resulted from diarrhœa, 3 from "fever," 2 from scarlet fever, 1 from measles, 1 from whooping-cough, but not one either from diphtheria or small-pox. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 2·2 in London and 3·9 in Edinburgh. The fatal cases of diarrhœa, which had been 27 and 14 in the two preceding weeks, further declined to 11 last week. The deaths referred to different forms of "fever," which had declined from 6 to 2 in the three preceding weeks, rose again to 3 last week. The mortality from whooping-cough showed a further decline from that recorded in recent weeks, while that from scarlet fever showed an increase. The 167 deaths in Dublin last week included 50 of infants under one year of age, and 38 of persons aged upwards of sixty years; the deaths both of infants and elderly persons slightly exceeded those recorded in the preceding week. Four inquest cases and 2 deaths from violence were registered; and 59, or more than a third, of the deaths occurred in public institutions. The causes of 14, or more than 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is announced:—Staff Surgeon George H. Foott to the *Howe*, temporary.

ROYAL ARMY MEDICAL CORPS.

Major Wilkinson is directed to proceed to Woolwich for duty, and Captain Heaton proceeds to Gravesend for duty. Lieutenant-Colonel Magill, Coldstream Guards, is granted leave, with permission to go to Turkey and Greece. Captain Wade proceeds from Shorncliffe to Lydd and takes over charge of the Station Hospital and troops. Major Jones proceeds to Deolali to take over medical charge of the Station Hospital.

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel Smyth (retired), who has been temporarily re-employed as a Civil Surgeon in Bengal, to act as Civil Surgeon of Darbhanga during the absence, on deputation, of Captain Green, or until further orders. Captain Deare, on return from temporary military duty, to be Deputy Sanitary Commissioner, Northern Bengal Circle, but will continue to act as Civil Surgeon of Midnapore until further orders. Lieutenant-Colonel Young has been appointed Principal Medical Officer, Malakand Field Force.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant W. Fletcher is seconded for service on the West Coast of Africa.

VOLUNTEER CORPS.

Artillery: 2nd Durham (Seaham) (Western Division, Royal Artillery): John Charles French to be Surgeon-Lieutenant. 3rd Middlesex: Percival Wood to be Surgeon-Lieutenant. *Royal Engineers* (Volunteers): Submarine Miners: The Fourth Division: James Wilson, to be Surgeon-Lieutenant. *Rifle:* 2nd Volunteer Battalion the Suffolk Regiment: Surgeon-Lieutenant S. J. J. Kirby to be Surgeon-Captain. 2nd Volunteer Battalion the Essex Regiment; Honorary Assistant Surgeon E. P. Gutteridge resigns his commission. 4th (Donside Highland) Volunteer Battalion the Gordon Highlanders: Surgeon-Captain G. B. Currie resigns his commission. 1st Gloucestershire Royal Engineers (Volunteers): Surgeon-Lieutenant-Colonel D. J. Dutton retires under the provisions of Paragraph 111 of the Volunteer Regulations, 1897, with permission to retain his rank and to continue to wear the uniform of his corps on retirement.

VOLUNTEER INFANTRY BRIGADE.

Western Counties: Surgeon-Captain J. M. Harper, 1st Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry), to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade.

NATIONAL SOCIETY FOR AID TO THE SICK AND WOUNDED IN WAR.

Lord Wantage, the chairman of the Council of the National Society for Aid to the Sick and Wounded in War (British Red Cross Society), has received from Colonel Young, the society's Commissioner, a telegraphic communication from Cairo in which he states that after conferring with Lord Cromer and the Sirdar as to the best means of showing in a practical form the society's sympathy with all sufferers from wounds or sickness in the recent operations in the Soudan irrespectively of nationality he has placed in the Sirdar's hands the sum of £300 to be applied directly for the benefit of the Egyptian soldiers who have suffered in the campaign and the sum of £200 for the purchase and immediate dispatch to Omdurman, of articles urgently needed for the Dervish wounded, who are being treated by the Egyptian medical staff. Lord

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Wantage and the council of the Red Cross Society have given their sanction to this application of the funds. The society's steamer *Mayflower* returned to Assouan on Oct. 3rd to bring down the last of the sick from the front. This voyage terminates the society's work of evacuating the sick and wounded and the society's general operations will probably be wound up by the end of this month. It is very gratifying to the council—and will no doubt be to the public also—to learn that the supplemental aid rendered in the Soudan campaign by the British Red Cross Society has met with a very favourable impression in Egypt and the Soudan and has been most highly appreciated alike by the sick and wounded and the officers of the Royal Army Medical Corps.

THE MEDITERRANEAN SQUADRON.

With reference to a paragraph under the above heading in our issue of Oct. 8th stating that some dissatisfaction had been caused among naval medical officers serving with the Mediterranean fleet at the promulgation of an order that every ship is to have a surgeon on board at all hours of the day, we find that the words "a rigid enforcement of the order that every ship is to have a medical officer always on board would practically make a prisoner of the medical officer where there happened to be only one on board a small ship" are liable to misinterpretation, as under the regulations in force every ship bearing two or more medical officers has always to retain one on board, who ministers to the medical requirements of the smaller ships which bear only one or no medical officer; in the former case (that is, when there is only one medical officer) he can take his leave daily except on the occasions when he assumes the medical guard equally with the officers of other ships.

THE BLANE GOLD MEDAL.

The adjudication of the Blane Gold Medal founded for Medical Officers of the Royal Navy has recently been made by the Presidents of the Royal Colleges of Physicians of London and Surgeons of England and the Director-General of the Medical Department of the Navy, and medals have been awarded to Surgeon Francis H. A. Clayton, R.N., H.M.S. *Thrush*, and Staff-Surgeon Percy W. Bassett-Smith, R.N., H.M.S. *Magdala*.

Correspondence.

"Audi alteram partem."

THE ROYAL MEDICAL BENEVOLENT COLLEGE: AN APPEAL FROM THE CHAIRMAN AND TREASURER.

To the Editors of THE LANCET.

SIRS,—The growth of Epsom College within the last decade has surpassed the most sanguine hopes of those interested in its prosperity, and it has now taken its place among the most successful public schools of the country. The distinctions won by pupils of the College at the Universities and medical schools and the success achieved by them in various walks of life, afford convincing evidence of the excellence of the education given within its walls. The large share of academic honours which has fallen to the foundation scholars is a gratifying proof of the efficiency with which the College fulfils one of the chief purposes of its founder. The steadily increasing progress of the College is, however, in danger of receiving a check from insufficiency of funds. Besides providing a first-class education practically free of cost for fifty sons of medical men and exhibitions for several others the institution gives pensions to fifty aged medical men or the widows of medical men. Moreover, in connexion with the College there are other annuities, some of which are for the aged daughters of medical men, and there are also nine presentations to St. Anne's Schools for their orphan daughters. We who, with our colleagues of the governing body, take a deep interest in the welfare of this most necessary and useful institution, therefore earnestly appeal to every member of the medical profession to contribute to its support. When we state that a sum of more than £6000 is expended each year, barely one half of which is at present contributed by the medical profession, it will be granted that the profession does not do all that might reasonably be expected of it for the maintenence of what may justly be called its most important charity. We are confident that these facts only need to be mentioned to ensure a satisfactory response to our appeal. Proverbially charitable to all mankind, members of the profession are not likely to be indifferent to the necessities of their own brethren.

It may be well here to correct an impression which appears to exist in many quarters that the College is solely a charitable establishment intended for the sons of medical men and giving only a narrow scientific training. The school consists for the most part of paying pupils, and these and the foundationers are on a footing of absolute equality both in the class-rooms and in the playing fields. The education is of the most liberal character and is directed not so much to the preparation of the boys for any particular profession as to the development of their intellectual powers in a way which will enable them when the time comes to apply them readily and successfully to the acquisition of special knowledge of any kind. The soundness of the literary training is shown by the fact that in recent years several classical scholarships have been won at the Universities by Epsom boys.

We wish it, however, to be clearly understood that the funds for which we are appealing will not be applied in aid of those of the scholars who are paying pupils. That large section of the school is self-supporting, and here we would only point out to the profession that the numbers of our scholars have been steadily increasing, that more accommodation has been recently provided, and that by sending their sons to the College they will not only secure them a sound first-class education at a moderate cost, but will indirectly assist in the education and maintenance of those who are less fortunate—namely, the foundation scholars and the pensioners.

Like other great schools of England Epsom has its "foundation," but, unfortunately, instead of being like these older schools secure in the possession of a sufficient endowment Epsom has mainly to depend for the purposes of its foundation on a precarious annual income.

It is for the charitable side of the institution (the foundation scholars and the pensioners) that we appeal to the *esprit de corps* of the medical profession and to the generosity of the public which is under a debt of obligation to that profession. Unless a larger measure of public support can be secured than can be counted upon at present the Council will be compelled to make a considerable reduction in their expenditure for charitable purposes. This course, entailing as it necessarily would much privation on many deserving persons, they are most anxious to avoid. It is not much they ask for. An annual subscription of 1 guinea entitles to the privileges of a governor, but smaller subscriptions or donations will be gratefully received. If each member of the profession would give 10*s*., or even 5*s*., a year for a very few years the position of the pensioners and foundation scholars would be placed on a secure financial basis and the Council would be able to improve the school and extend its usefulness still more. We are fully aware that during the last year or two the calls upon every class of the community for contributions to charitable objects of all kinds have been unusually numerous, but we venture to think that it would be difficult to find an institution which, having regard either to the value of the work which it is doing or to the merits of the persons for whom it is done, has stronger claims on the profession and on the public than the Royal Medical Benevolent College, Epsom.

Subscriptions may be sent to our honorary local secretaries; to the bankers, Messrs. Barclay and Co., 19, Fleet-street, E.C.; to Dr. Holman, the treasurer, 26, Gloucester-place, Portman-square, W.; or to the secretary, at the office, 37, Soho-square, W.

We are, Sirs, your faithful servants,
J. FAYRER, Chairman of the Council;
C. HOLMAN, Treasurer;
Oct. 18th, 1898. J. BERNARD LAMB, Secretary.

"THE PRACTICAL APPLICATION OF BACTERIOLOGY TO COMMERCE."

To the Editors of THE LANCET.

SIRS,—My attention has just been called to an important leading article on this subject in THE LANCET of Oct. 1st. In it appreciation is only rightly expressed for the pioneer and admirably organised work carried out by Professor Delépine

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for the Manchester sanitary authorities and also for similar work undertaken by Professor Boyce in Liverpool. I might perhaps point out that some other municipal authorities have also entered into similar arrangements, though on a smaller scale, with pathological laboratories in their cities. Thus more than three years ago Dr. Spottiswoode Cameron, of Leeds, induced his Sanitary Committee to arrange with the pathological department in the Yorkshire College for the examination of diphtheria and other material and recently we have added to our staff in the hope of extending this very important branch of work.

So greatly has the need been felt by sanitary authorities for this bacteriological assistance that some other cities and towns have endeavoured to get the work done by some of their staff. I have even heard of analytical chemists taking this subject up and professing to be ready to make bacteriological examinations of water, &c.; but surely the requisite knowledge and skill can only be possessed by those thoroughly conversant with, and, what is more important still, constantly engaged in, such investigations. This is a point which is clearly emphasised in your leading article. The minimum requirements on the part of those who would undertake such work are that they should be engaged in teaching these subjects and should also have time and opportunity for research work. I take it that your observations upon routine and diagnostic laboratory work on the one hand and the opportunities for research work on the other must commend themselves to anyone with the least experience of pathological investigations. The importance of sanitary authorities being in close touch with those engaged in pathological and bacteriological work cannot be exaggerated. As far as the provinces are concerned our medical schools are scattered up and down the country and should form admirable centres for public laboratories. The communication between these centres and surrounding towns is of the easiest so that results obtained can be at once communicated by telephone as it is our custom to do in Leeds itself. I think it would be for many reasons a great misfortune if these centres should lose the bacteriological work which sanitary authorities find to become more and more necessary as time advances. The duties of medical officers of health are so multifarious that they can hardly wish to add to them the superintendence of bacteriological laboratories and therefore they would presumably be glad to depute this work to such central laboratories. Another point which is touched upon in your leading article is that of funds, the bugbear of many scientific institutions in this country. By bringing this bacteriological work into such centres as those referred to above the funds are increased, more assistance can be secured, and greater efficiency attained. In addition to this opportunities are thus afforded for the training of pathologists and bacteriologists of whom this country has none too many.

The munificent generosity displayed by inhabitants of our great provincial cities, such as Liverpool, Manchester, Leeds, in giving large sums of money shows that not only the profession but also the enlightened outside public are beginning fully to appreciate the scientific work done in these laboratories. This subject has been engaging my attention for some little time past and I trust that this may be the excuse for the length of my letter.

I am, Sirs, yours faithfully,

The Medical School, Leeds, Oct. 18th, 1898. E. F. TREVELYAN.

"WHAT IS 'FIRST AID'?"

To the Editors of THE LANCET.

SIRS,—Mr. Samuel Osborn's letter defining "first aid" in THE LANCET of Oct. 15th is, I hope, likely to be of good service. There has been a tendency for many years past for classes to wander beyond the limits of the subject in the attempt to master to some extent at least the subjects of anatomy, physiology, medicine, and surgery, in the five or six lessons usually given in each course—an attempt encouraged, I regret to say, by the questions of some examiners, such as: "What is the function of the spleen? or cerebellum? or which is the femoral artery?" First aid is really a subject in itself and the instruction should be kept absolutely within the limits of the subject, the whole range of which is covered by the knowledge of a few simple principles and the practical application of that knowledge. While the scope of the examination should therefore be very limited the standard required for a certificate should be high. The teaching should be in the simplest language and all technical terms should be avoided. It is not necessary that classes should be instructed in the mechanism of the heart or the physiology of respiration, and surely the artery of the thigh is more expressive to a person without technical knowledge than the "femoral artery," and is much easier to remember.

First aid should be considered as quite separate and distinct from anatomy, physiology, &c., and any attempt to include them even in a rudimentary way in first aid instruction is only likely to cause confusion and inefficiency. Every qualified medical man is considered competent to give instruction in first aid, but as it is not altogether easy to compress the essentials in a few lectures and avoid the introduction of matter which, however interesting and instructive, is not strictly relevant, it would be a good thing if the various bodies chiefly concerned in the subject were to nominate representatives to meet and agree upon a scheme of instruction which would ensure uniformity and secure a standard of practical knowledge which though limited would be thorough.

I am, Sirs, your obedient servant,

VALENTINE MATTHEWS.

Suffolk-street, S.W., Oct. 15th, 1898.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—Allow me to remark that for the present I shall be sufficiently occupied in defending my own views concerning *vital phenomena* and therefore do not propose to criticise the admirable work of Professor Virchow, who—with Kölliker and several other observers, including myself—has been constantly during the last fifty years very actively engaged in microscopical investigation in health and disease.

If Dr. J. H. Rowe looks over "Protoplasm," 1870–92, he will find many critical remarks which may interest him and he may perhaps assist progress by commenting upon objections to many doctrines generally entertained which I have been led to offer. I send him a reprint of my views in recent papers in THE LANCET which, like other work of mine, are based upon repeated microscopical *observations* and actual facts which have nothing whatever to do with *Spiritus* and cannot possibly have any "supernatural tinge of the Paracelsian world."

Let us concentrate our attention upon the questions of the origin, structure, formation, mode of growth, and action of organs and tissues which have to do with man's health and disease and death, and man's place in nature, which can be determined by microscopical investigation only.

I am, Sirs, yours faithfully,

Oct. 17th, 1898. LIONEL S. BEALE.

To the Editors of THE LANCET.

SIRS,—In relation to the controversy now running in your columns concerning "Vitality" I should like to call attention to one property of living matter which has hitherto received little attention and has not as far as I know received a name. I refer to what might be called "molecular inertia" or "molecular self-conservation." This property is indicated by the fact that as long as any tissue is alive it remains unchanged but immediately after death under the same conditions begins to disintegrate. Furthermore, I wish to offer reasons (*pace* Professor Virchow) for believing that this property of living matter may not depend entirely upon the intrinsic constitution of the cell, but in part upon the power of calling into action a force or forces not included in the ordinary physical gamut. We know that matter varies much in the power of calling into play the known physical forces. The magnetic ray passes indifferently through a thick stone wall, but is arrested by, and acts upon, a needle on the other side. In the same way it is easily conceivable that living matter has such a molecular arrangement that it is able to arrest ethereal forces of which we have no sensuous cognisance. The familiar phenomenon of a vibrating plate throwing sand into patterns according to its nodal lines is suggestive. Suppose the plate were made to vibrate by means of a resonating gong; at every beat the sand would be approximated to these lines, but if the plate and gong did not resonate this would not take place. In the same way it is not at all

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improbable that the molecules of living matter are so arranged that their vibrations resonate with some ethereal waves not classed amongst known physical forces. If after the sand has been forced into the nodal lines some of it is disturbed it will as the plate vibrates be thrown back into its former place; the stability of the sandy pattern is dependent on the resonance of the plate with the gong; an external force is arrested and used to produce the result. In the same way it is conceivable that if the molecules of living matter are disturbed the force to which their vibrations resonate may throw back the displaced parts and maintain by external means the stability of the living molecule. Again, if new sand be thrown on the plate this will gradually be forced on to the nodal lines and, as it were, be assimilated with what was formerly there. It is instructive to note that an observer situated on the plate whose vision did not reach the gong and who was deaf would be likely to come to the conclusion that the phenomena he observed were quite explainable by the actions of the forces he saw about him and might not guess at the existence of the gong or the striker. It is possible that this principle plays a great part in development; as the ovum throws off new cells, only those able to keep their stability by resonance of their molecular vibrations with the forces playing upon them would survive and so definite types of cells would be produced bearing the impress of external forces. If we push analogy a step further it is only on the lines laid down by the President of the British Association in his reference to transmission of thought. It is conceivable that some part of the brain should form as it were fluorescent points capable of arresting a subtle force disturbance of which results in our conscious ideation and will power.

I am, Sirs, yours faithfully,

London, Oct. 15th, 1898. T. GLOVER LYON.

To the Editors of THE LANCET.

SIRS,—My remarks referring to the augmentation in the sum of vitality and the transmutation of vitality into known forms of physical force were made on the assumption that Dr. Lionel Beale regarded his "vitality" as a species of force. Dr. Beale, however, tells us in his last letter that vitality is not force, and on this assumption those remarks of mine are of course pointless. He says vitality is "without weight and immeasurable" and "cannot be derived from non-living matter or from force." How are we to reconcile this statement with the facts of evolution? Though we may not yet have completely explained the mode of organic evolution no one can doubt that selection plays a part in the process. Now, it is clear that in Dr. Lionel Beale's view organic evolution must essentially be an evolution of vitality—of that spectral something which is supposed to work through structureless bioplasm and to determine structure and development. One must, therefore, suppose that selection operates upon this mysterious agency and not upon material organisms with their multitudinous physical potentialities. Let us see how difficult it is to realise such a conception.

Inasmuch as every living thing has its own peculiar biological tendencies, each must possess its own special vitality. We cannot, therefore, regard vitality as a single entity. We must assume many vitality-entities—one for every living thing. Such an assumption lands us into difficulties. (*a*) Inasmuch as vitality is immaterial—imponderable, unmeasurable, having neither length nor breadth, not derivable from, nor convertible into, physical force—how can we bring it into relation with space—how locate it? (*b*) What sort of changes do these immaterial entities undergo during evolution? Take any individual *homo*, and trace in imagination his evolution from, let us say, his piscian ancestry. His descent must pass through myriads of vitality, entities, each such entity as we travel down the long ancestral line becoming more and more involved, acquiring greater and greater powers in determining structure and function. Can we, I would ask, form any mental picture of such an evolution—any conception whatsoever of the changes undergone by the immaterial agency in its process of evolution? (*c*) How are we to explain the blending of paternal and maternal tendencies? Are we to suppose that the vitality associated with the nucleus of the germ blends with the vitality associated with the nucleus of the sperm, so as to form a new vitality-entity, or that each vitality, the germinal and sperminal, remains separate and distinct throughout development? Either view appears inconceivable. How, on the one hand, can two immaterial agencies blend into one? And, on the other hand, would it be possible to get proper coöperation between two separate and distinct directing powers unless, indeed, we suppose them to have frequent conferences together?

Like Dr. J. H. Rowe I was interested to find Professor Virchow, in his Huxley Lecture, adopting the materialistic theory of vital phenomena. Dr. Rowe asks who is right, the German or the Englishman? I confess that when the question is thus pointedly put my barbaric sense of patriotism makes me almost hope the Englishman is. We owe much to Dr. Lionel Beale, and it may well be that there is more in his theory of vitality than my narrow vision allows me to see. When brought face to face with the mystery of things one does well to recall those fine words of Hamlet—"There are more things in heaven and earth, Horatio, Than are dreamt of in our philosophy."

I am, Sirs, yours faithfully,

Wimpole-street, Oct. 17th, 1898. HARRY CAMPBELL.

To the Editors of THE LANCET.

SIRS,—Dr. Beale appears to define vitality as "a power working in every part of the living world." But a definition of life might be expressed in the same words. Vitality, then, is life. But life is force. What is force? It is a property of matter. What is matter? Matter, having property, is a relative, unreal, dependent existence. But let us assume matter to be a real existence. The existence of matter has been eternal and it could not have existed without its property. As long as matter has existed that property of it which we call vitality, life, or force must have existed or been inherent in it, a suitable environment causing life as we know it to become cognisable by us through certain sensations felt at our nerve-centres as organs of cognition. As matter never had a beginning life as a property of matter never had a beginning. It would be as vain to hope to understand how this property—life—inheres in matter as to expect to understand how gravitation, light, or heat inheres in matter. Any examination of life, as a property of matter, involves an examination of matter. Can man through the medium of his nerve centres conduct an examination of matter? If we say Yes, then an extreme case would be that in which the man with his own nerve centres has to examine his own nerve centres, his nerve-centres being both subject and object at the same time, which is absurd. The absurdity results from assuming matter to have real existence. An examination of life as a real existence will result similarly in absurdity. A search for the first cause or origin of life, whilst it may help to widen the domain of relative knowledge, must fail, as it has up to now failed, in its object. An inquiry on these lines, if it be for first cause or origin we are looking, will take us round and round a circle for ever but without finding origin. If vitality be the cause of life, what is the cause of vitality? To tell us that vitality "is a power, &c.," does not add to our knowledge.

I am, Sirs, yours faithfully,

B. O'REGAN, L.R.C.P. & S. Edin.

Hackney-road, Oct. 17th, 1898.

"SPHINCTER STRETCHING IN CONSTIPATION."

To the Editors of THE LANCET.

SIRS,—It is indeed interesting to find that sphincter stretching is a well-known method of treatment as the *rationale* of the procedure is by no means apparent. That a superadded constipation due to anal fissure should be cured in this way is to be expected. Mr. Allingham's explanation of the fact in THE LANCET of Oct. 15th (unfortunately I have not his book on Diseases of the Rectum by me) is obvious but beside the mark. To say that fissure starts constipation is an inversion of the true sequence of events. Unquestionably constipation is the commonest predisposing, and the delivery of a hard mass of fæces the commonest exciting, cause of fissure. The difficulty lies in understanding how the original constipation is overcome.

Regarding children I have rarely been able to satisfy myself absolutely that any anus the sphincter of which I have stretched has been abnormally small. It remains that in many cases one must fall back upon the theory of an

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additional benefit brought about through reflex nervous action.

I am, Sirs, yours faithfully,

Oct. 16th, 1898. SIDNEY VINES.

"ULCERATING GRANULOMA OF THE PUDENDA."

To the Editors of THE LANCET.

SIRS,—I am glad that Lieutenant-Colonel J. Maitland has drawn attention in THE LANCET of Oct. 15th to the close resemblance existing between the disease described by him as "chronic venereal sores" (*Indian Medical Gazette*, May, 1898) and the condition reported on by me as "ulcerating granuloma of the pudenda" (*British Journal of Dermatology*, April, 1887) and described by Messrs. Conyers and Daniels in the *British Guiana Medical Annual* (1896) as "the lupoid form of the so-called 'groin ulceration' of this colony." This disease seems to have similar features both in the East and West Indies. It is noteworthy, however, that Lieutenant-Colonel Maitland insists on the existence of a primary sore in his cases. With Lieutenant-Colonel Maitland's material histological and bacteriological examinations could be readily conducted (if necessary in this country) and might do much to elucidate the etiology of this curious malady.

I am, Sirs, yours faithfully,

Harley-street, W., Oct. 18th, 1898. JAMES GALLOWAY.

"THE 'SATURDAY REVIEW' AND MEDICAL STUDENTS."

To the Editors of THE LANCET.

SIRS,—*Apropos* of the reference in THE LANCET of Oct. 15th to the *Saturday Review* article regarding medical students as a class I can only say that the writer thereof must be as much lacking in knowledge of his "subjects" as in courtesy to a class of young men who, I venture to assert, are "second to none" in both behaviour and the ease with which they are managed if treated properly. I have had ten years' experience and can safely say that I have never met with aught but courtesy and consideration, though the students here are numbered in hundreds. Animal spirits will always be in existence where youth and health are, and who would stifle them when no harm results? The whole secret of the bad name attached to the medical student is to be found in the fact that every young man who finds himself at Marlborough-street after a riotous night, when asked what he is, says "a medical student," though he may never have seen the inside of a hospital.

I am, Sirs, yours faithfully,

FREDERIC H. MADDEN,
Secretary, St. Mary's Hospital Medical School,
Oct. 17th, 1898. Paddington, W.

DR. SAUNDBY'S ADDRESS.

To the Editors of THE LANCET.

SIRS,—In a very interesting and instructive address delivered to the students of the University College, Cardiff, Dr. Robert Saundby, in speaking of the prospects of the medical profession, made use of the following language: "Time will bring the roses to all of you but not to all fame or wealth. But if I cannot promise that you will all become medical baronets or even medical knights I can assure you that there is no profession in which success more certainly attends attention to business or which so good an income can be so readily secured. ..... The clamour for better pay and greater privileges depends in part upon inability to recognise the true position which we hold in society. That position depends mainly upon the public belief that we are a disinterested profession and that belief rests upon the vast amount of public work we do for nothing. But if we follow the advice of some of our friends and seek to put the marked price upon all our services must we not reckon upon a change on the part of the public which may not be to our advantage?" From the point of view of a gentleman who holds such lofty positions as Dr. Saundby does the opinions expressed in the foregoing sentences are no doubt right and proper. But from the point of view of an ordinary general practitioner the sentiments expressed sound simply ridiculous. It is not to be denied that with the competition of specialists, hospitals, quacks, nurses, and midwives an ordinary medical man (even with a strict attention to business) has the greatest possible difficulty in obtaining a bare livelihood. The profession has been exploited far too long by the public and naturally enough the public has taken advantage of the circumstance. It is very grand no doubt for a professor of medicine to talk in this way, but really, Sirs, the time has gone by for the promulgation of such views. Men enter the medical profession to make a decent living in an honourable way, and if after many years of hard toil they do not succeed in making a competency it will be small comfort to be told by learned professors that the failure has been due to the fact that they are bound to consider themselves a disinterested profession, and that it was their duty to do a vast amount of work for the public free, gratis, and for nothing!

I am, Sirs, yours faithfully,

Oct. 13th, 1898. A GENERAL PRACTITIONER.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Water-Supply.

SOME anxiety is felt by the authorities about the water-supply of the town, and warning has been issued with regard to the prevention of waste. The increase in the population of the water district during the last four years has amounted to 15,000 a year, an aggregate of 60,000. The long-continued drought has considerably affected the storage supply and has led to careful calculations as to the result, which is considered as serious. The population receiving the supply is estimated at 715,000 and the average consumption during the last year was 23·17 gallons per head per day. The actual amount distributed is about 19½ million gallons per day, or 27 gallons per head. The great storage reservoir at Shustoke has a capacity of 400,000,000 gallons derived from the river Bourne, which is appreciably affected by the prolonged dry weather of the past few months. About 6½ million gallons are daily taken from deep wells which so far have responded admirably to the demand made on them. Still, the level of the great reservoir has been lowering to the extent of 2 in. a day, a fact which is significant of precaution. Some four years have yet to elapse before the Welsh water-supply becomes an accomplished reality, and until then unless strict economy is practised and the natural rainfall is increased the prospect is by no means devoid of anxiety.

Hospital Sunday.

The collection on Oct. 30th for the present year is to go to the General Hospital. A strong appeal has been issued by the committee of the periodical collections and attention is invited earnestly to the following facts. 1. The General Hospital was opened as far back as the year 1779, and is therefore the oldest charity in the city. During this period it has treated 2,000,000 cases. 2. In the last three years 172,148 patients have been relieved, and of these 13,120 were in-patients. 3. During the same period upwards of 122,000 patients were treated as accidents or urgencies without ticket or payment of any kind, and therefore the hospital may to a very great extent be regarded as a free hospital. 4. These figures show a very large increase on all previous years and in themselves present a cogent argument in favour of a much larger measure of support. 5. The annual income from subscriptions, investments, &c., is about £10,000, while the annual expenditure is £22,000 leaving £12,000 a year to be raised by donations, grants, congregational collections, &c. 6. Since the last appeal for the General Hospital was made the old building has been superseded by a new one at a cost of over £210,000, equipped and furnished with every modern improvement and convenience. The additional number of beds in the new building will, if fully occupied, entail an increased annual cost of over £5000.

The Dental Hospital.

In an address given to the dental students on Sept. 24th Mr. Neale pointed out the remarkable growth of the hospital. In 1880 they extracted at the hospital without anæsthetics 3142 teeth; there was no record of the number extracted with anæsthetics, but there were 493 fillings. There were in all 4170 operations. In 1887 the number of extractions had grown to 10,275. Coming to 1895 they extracted 4450 teeth without anæsthetics and 7133 with anæsthetics; they had,

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too, 6218 fillings. Last year the number had still further increased. No wonder that the hospital is looked upon as a huge tooth-extracting establishment. Since 1880 the number of students had increased from one or two to 22.

Birmingham Medical School.

The outlook for the present session promises to be more favourable than the previous year, the number of entries having increased. The five-year regulations materially affect the supply, the scant numbers being insufficient to meet the abundant amount of work to be found in the various hospitals.

Oct. 18th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Pure" Air in Ancoats.

THERE was a crowded audience at the meeting of the Ancoats Healthy Homes Society on Oct. 13th to hear an address on "Pure Air" from Dr. Worswick. He told his audience that it was quite possible for the people in poor and densely populated districts like Ancoats to be quite healthy if they were not troubled with the dense and poisonous fumes of chemical works. It may be possible, but it requires more intelligent efforts than the dwellers in such districts usually put forth. The districts of Ancoats, Miles Platting, and New Cross are favoured seats of chemical manufacturers, whose presence gives a special character to the climate. The chairman spoke in condemnation of the action of the nine members of the City Council returned for these localities, and said he had been assured that if they took up the matter in earnest something would be done to lessen the evils from which they suffered. A comprehensive resolution was carried which affirmed that the disgraceful condition of the atmosphere in Miles Platting caused by the noxious chemical vapours emanating from the various chemical works in the district demanded the immediate attention of the corporation, and it called upon the representatives of the wards concerned to give more attention to the matter than they had done in the past, and, as the works which manufactured the corporation gas bye-products were (it was said) the biggest offenders by allowing large quantities of sulphuretted hydrogen and other offensive gases to escape and render the district almost unbearable, it called upon the corporation to commence at once to manufacture its own bye-products, believing that such action would not only benefit the ratepayers from a health point of view, but that it would be more economical and better for the working classes. The resolution went on to say that the inclusion of two manufacturers on the Sanitary Committee was viewed with alarm as it was feared that the work of the committee in the matter of offensive trades was in danger of being imitated. The alarm expressed at the presence of chemical manufacturers on the Sanitary Committee is not unnatural because they are chiefly and not very favourably known to these poor people as the producers and disseminators of sickening vapours and vile smells. Perhaps, however, it may not be too much to hope that when the widespread discomfort and injury caused by the diffusion of these products of their scientific ingenuity are brought more definitely and convincingly before them they will turn their undoubted abilities into an entirely new channel and seek to devise means by which their products may be made without at the same time flooding the surrounding districts with evil-smelling and depressing fumes. It undoubtedly behoves the corporation to see to it that while the building by-laws insist on a certain area for back yards and all the other points conducing to wholesome dwellings the air of these yards and dwellings should be fit for respiration.

Moss Side Sewage Farm.

The Moss Side Sewage Farm furnishes an illustration of some of the difficulties met with in the land treatment of sewage. At the meeting of the Urmston District Council on Oct. 11th Mr. G. E. Fryer, the medical officer of health, made a report as to the condition of the Stretford and the Moss Side sewage farms. The former was found "in a highly efficient condition," but the lagoons of the Moss Side farm were offensive and filled with decomposed sewage, and the whole of the tank effluent was being passed on to a small sodden portion of land quite insufficient and incapable of dealing with the sewage. The larger portion of the farm was cultivated for farming purposes. A sample of the final effluent of the farm as turned into the long-suffering Mersey was found to be far worse than the tank effluent. The smell arising from the entire farm was very offensive. The representatives of the Moss Side authorities who were present at the inspection acknowledged but tried to excuse the unsatisfactory state of things and promised an improvement "when their pumps came into operation." At what epoch this may occur is not stated. Moss Side is continuous with Manchester, is mainly residential, and would seem well adapted for the bacterial treatment of its sewage, which is at present a great nuisance to Urmston. No improvement can be expected under the present system "until fresh land is used for filtration and the lagoons cleansed." It is evident that there is still plenty of work close at home before the Mersey and Irwell Joint Committee can restore the former river—to say nothing of the latter—to even a reasonable degree of purity, though it is not much more than a generation ago since salmon and sea-trout were caught in the Mersey about Stretford.

Ancoats Hospital.

At the recent annual meeting of this hospital it was announced that the sons and daughter of the late Mr. James Oliver had undertaken the erection of a new out-patients' department at a cost of nearly £7000 as a memorial of their father and of his work and generosity on behalf of the hospital. It was further stated that a legacy had been received under the will of the late Mr. Thomas Whittaker, chemist, of Ardwick, which would amount to over £3000. Mr. Whittaker was formerly dispenser at Ancoats Hospital and he has left money for the Manchester Royal Infirmary as well as to the hospital with which he was once connected.

Manchester and Liverpool Sewage.

There is the prospect of a very pretty quarrel between the pot and the kettle. At a recent meeting of the Rivers Committee of the Manchester Corporation the question was raised of the proposed attempt on the part of Liverpool to prevent the Manchester Corporation from discharging sludge at the entrance to the Mersey at a point near the north-west lightship, where its discharge was authorised by Admiral Sir George Nares, the conservator of the Mersey. It is really far out at sea, beyond a point where it could affect the City of Liverpool. It is curious that exception should be taken to this when it is stated that "the Liverpool Corporation not only pour their crude sewage into the Mersey close to the landing-stage but also discharge all the solid refuse of the city at the same point at which the sludge is discharged from the Manchester steamer."

Feeble-minded Children.

An address was given by Sir Douglas Galton at Owens College on Oct. 11th, at the opening meeting of the session of the Manchester branch of the British Child Study Association, on "The Educational Management of Feeble-minded Children." He thought it might be assumed that for the future the classification or grading of children according to their intellectual development for purposes of education would be carried on on sounder lines than had been the case hitherto. Excluding the blind and the deaf-and-dumb we had first, he said, the normal bright child, then the dull and backward, the child termed "mentally feeble," and the lower grade of these latter who passed into imbeciles and idiots. He held that individualising the care of the mentally feeble child gave the best hopes of attaining success in its improvement.

Oct. 19th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

New Buildings for the Departments of Anatomy, Medicine, and Surgery, in University College, Liverpool.

ON the occasion of the opening of the Thompson-Yates laboratories in University College on Oct. 8th, Principal Glazebrook made a strong appeal for funds to enable the governors to rebuild the old medical school which has become quite unsuited to the growing needs of the anatomical, medical, and surgical departments. A new dissecting-room is urgently required, as the existing room is fast

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becoming obsolete and is altogether inadequate for its purposes. The appeal has already been responded to by Lord Derby, the President of University College, who has promised £5000, and by Mr. Ralph Brocklebank, the chairman of the Royal Infirmary, who has sent a donation of £2000. It is computed that a sum of £20,000 will be required for the new building, and with such a favourable start there ought to be no difficulty in obtaining the requisite amount.

Bequest to a Liverpool Charity.

The late Miss Barbara Morison, formerly of Liverpool and late of Penmaenmawr, has bequeathed £500 to the Liverpool Consumption Hospital.

Stanley Hospital.

The Lord Mayor of Liverpool on Oct. 13th laid the foundation-stone of the new out-patient department of the Stanley Hospital, which is being erected out of the funds of the Roger Lyon-Jones Trust. The new building is to be placed on a site adjoining the hospital and will cost £2500. It will consist of consulting-rooms, dispensary, and other requirements and it will be entirely detached from the hospital pile of buildings. The amount obtained from the Roger Lyon-Jones Trust by the Stanley Hospital within the last few years has reached the substantial sum of £6500, the benefit of which cannot be over-estimated.

Professor Virchow's Visit to the Royal Infirmary.

Professor Virchow paid a visit to the Royal Infirmary on the morning of Oct. 8th. He was received by the medical staff and a number of the officials of the infirmary. Professor Virchow appeared much pleased with his visit and frequently expressed his admiration of the general arrangements of the hospital. He was particularly interested in the post-mortem room, and remarked on the purity of the atmosphere. He was also favourably impressed with the circular wards, which are an interesting feature of the building. The Royal Infirmary, which is quite a recent erection, is one of the finest hospitals in the kingdom, and it contains all the most modern improvements. Professor Virchow was accompanied by Sir Samuel Wilks and Dr. Lauder Brunton. On the following day (Sunday) Lord Lister attended Divine service at the infirmary chapel, and afterwards visited the wards accompanied by his host, Mr. E. R. Bickersteth, who is one of the consulting surgeons to the infirmary.

Oct. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Winter Session in Edinburgh.

EDINBURGH at the beginning of another winter session begins to show that she is recovering from the exhaustion following upon her efforts for the British Medical Association meeting. Many of the men have had a long holiday, but now that classes have reopened they are all at their posts. The session opened on Tuesday, the Oct. 18th. It has been characterised by no special incident beyond the delivery of some class introductory lectures. Some changes have, however, occurred. Dr. James Carmichael's term of office as a physician to the Royal Hospital for Sick Children has terminated and it is expected that one of the extra physicians will be promoted to the vacancy resulting therefrom. This will make a vacancy amongst the extra physicians and for this post Dr. Crawfurd Dunlop, Dr. G. Elder, and Dr. Fowler are candidates. Dr. Muir's appointment to the Professorship of Pathology at Dundee has made a vacancy in the pathological department of the Royal Infirmary, for which there are three candidates—Dr. F. D. Boyd, Dr. Shennan, and Dr. Welsh. The infirmary has lost a valuable official in Dr. Muir, and it is much to be regretted that the authorities interested have not yet seen their way so to remunerate the office of senior pathologist to the infirmary as to enable an expert to make it his main if not his sole work.

Aberdeen Royal Infirmary.

At the next meeting of the board of directors Professor Ogston, who has resigned the office of senior surgeon at the hospital, will be appointed as one of the consulting surgeons and the question of the staff appointments caused by Professor Ogston's resignation will be considered.

Aberdeen and District Branch, British Medical Association.

At the annual general meeting of the Aberdeen, Banff, and Kincardine branch of the British Medical Association held in Marischal College, Aberdeen, on Oct. 15th, Professor Ogston gave a demonstration on the Effects of Modern Bullets on the Human Body. Professor Ogston afterwards presided at the business meeting, at which office-bearers were elected for the ensuing year. Dr. J. O. Wilson (Huntly) was elected President and Dr. Farquharson, M.P., as President-elect. The Vice-Presidents are Professor Finlay (University of Aberdeen) and Dr. G. Trail (Strichen). The annual dinner was subsequently held in the Palace Hotel, Aberdeen.

Proposed Public Slaughter-house, Aberdeen.

The members of the flesher trade in Aberdeen have resolved to adopt a hostile attitude as to this scheme.

St. Andrews University as a Medical School.—The Union with Dundee.

St. Andrews University was opened for the session by an address from Principal Donaldson. In the course of his remarks he observed that better days had begun to dawn upon the University. The numbers of students were steadily increasing and the financial resources of the university were augmented. A clear and satisfactory union with Dundee had been come to and now for the first time they had a complete medical school and a complete medical faculty. This was an immense stride in the effort to gain a high place among the universities of Scotland. The movement for union, which had this year reached its final stage, was justified first of all in the benefit which it conferred on the community. No St. Andrews student need now leave his University to finish his studies elsewhere. If he was attached to the place he could continue in it until he entered upon the duties of his professional life. This meant a great reduction in the expenditure required for education and it meant also that in the more retired locality and in the less numerously attended classes of the University he would get greater attention and have greater opportunities of experiment and research.

The late Dr. Francis I. White.

The news of the death of Dr. Francis I. White, which occurred at his residence in Atholl-place on Saturday, was received with general regret by the community of Perth. The deceased, who was born in 1815, had resided in Perth since 1840. He held several public appointments and his invariable kindness of disposition gained for him friends as well as patients. In ecclesiastical matters he was a prominent member of St. Ninian's Cathedral body. In his house and under his auspices the first meeting for promoting the building of the Cathedral was held so far back as 1846.

Oct. 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mercer's Hospital, Dublin.

A LETTER referring to the subject of the corporation grant withheld, so far, from Mercer's Hospital, has appeared in all the morning papers. It emanated from one of the governors—Mr. Theodore Ryland—and contained what he describes as a practical suggestion :—

> Let the Council, in conference or communication with the governing bodies of all the hospitals usually receiving corporation grants, consider some general scheme for promoting the efficiency of these hospitals, and if application to Parliament be necessary insert a short clause in the next Bill introduced into Parliament authorising the hospitals to comply with the terms agreed upon by all parties. Hitherto the supervision of the corporation has been efficiently exercised by their hospitals committee and it may be worth while to consider whether the committee would freely criticise the management of any hospital on the board of which their fellow-councillors represented the Council.

When it is remembered that the corporation of Dublin have through their hospital committee found fault with the management of Mercer's Hospital and, as a remedy for the quarrels and litigation in connexion with it and the medical staff which have been matter of public comment for years, have resolved upon the strong course of refusing their grant except under specified conditions, it seems to all outsiders improbable that they will consent now to reconsider and revive the scheme under which all their grants have hitherto been made to the hospitals of Dublin at the instance of one of

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the governors of the institution which has been censured and dealt with in an exceptionally severe way. The *impasse* is therefore likely to continue.

The Housing of the Poor of Dublin.

A public meeting was held on Oct. 17th in the Mansion House in support of the movement for providing houses for the very poor of Dublin. The Right Honourable the Lord Mayor presided and in his opening address alluded to the refusal of the neighbouring townships to join with Dublin in the expense of maintaining the poor of the city. Professor Antony Roche moved:

That in the opinion of this meeting the time has now arrived when it is absolutely imperative that provision shall be made for the housing of the very poor at rents not exceeding 2s. a week.

The Royal Academy of Medicine in Ireland.

The annual general meeting of the Royal Academy of Medicine will be held at the Royal College of Surgeons on Friday, Oct. 28th, at 4.30 P.M., when the report will be submitted and the election of officers will take place.

The Londonderry Asylum.

At a meeting of the governors of this asylum held on Oct. 13th a report was read from a sub-committee of the board as to what would be required for the new asylum buildings at Gransha to relieve the congestion in the asylum by taking over 60 patients. These buildings are situated four miles from the present asylum, on the site of the new asylum to be built for the county at a cost of £110,000. The medical superintendent advised, for economic reasons, that the auxiliary be worked as a branch, stores being daily sent out from the present asylum. They would require one head attendant, seven second class attendants, one cook, and an assistant nurse. The matter was deferred until next monthly meeting, as it was thought wiser to have a full attendance before deciding on a course which would entail such an amount of additional expense.

Infantile Mortality in Belfast.

At an inquest held on Oct. 10th in reference to the death of a child, six weeks old, whose mother had to work in a mill, the jury returned a verdict of "Death from blood-poisoning resulting from improper feeding." The coroner said that in Belfast out of every 100 deaths 25 were those of infants under one year old, and that improper feeding was the cause of one-fourth of those deaths. It is pleasant to say that through the exertions of the Lady Mayoress and Mr. A. W. Vance two crèches have been established and, it is said, the authorities of one of the large spinning mills are shortly to open another.

Opening of the Winter Session, Belfast.

The medical session (1898–99) was opened on Oct. 18th, when Dr. Calwell delivered in the theatre of the Belfast Royal Hospital before a large audience of students and colleagues an extremely interesting and suggestive introductory address on "The Study of Ourselves and our Neighbours," full of original thought and humour and with much practical advice for the guidance of students.

Cork Medical and Surgical Society.

The first meeting for the session of the Cork Medical and Surgical Society was held on Wednesday last and the President, Dr. Edward Magner, delivered the inaugural address. He selected as the subject "University Education in Ireland" and dealt with it mainly as it affects medical interests. He urged the desirability of radical changes which would foster the extension of university teaching. He emphasised the fact that the Royal University is a mere examining board. He protested against centralisation in Dublin as calculated to dwarf national intellectual progress and was strongly in favour of the establishment of universities for the provinces. In favour of the latter project he pointed out that in the German empire there are several universities, many of them located in comparatively small towns, and he also mentioned that in proportion to its population Scotland has a large number of universities. He had no doubt that the great commercial progress of Germany and of Scotland was mainly due to the facilities for university training in those countries. Why should not Ireland have similar opportunities for attaining a high place amongst the commercial nations of the world? In nearly all universities the great majority of the graduates belong to the medical faculty. Hence medical men always did and always will take a deep interest in university extension and development. The political aspect of the Irish university question could not be discussed at a meeting of the Cork Medical and Surgical Society, but as many of the members, either as professors of the Queen's College or as clinical teachers at the hospitals, were intimately associated with medical education they could not fail to be deeply interested in any project calculated to extend the sphere of university training. If the education question were settled once and for all Cork should become a large university centre and the intellectual and material prosperity of the citizens would be assured. Dr. Magner entirely endorsed the opinion of Sir Walter Foster that it would be to the advantage of the profession if its individual members would take a more prominent interest in politics. Medical men might differ amicably in politics and yet work shoulder to shoulder for anything calculated to promote the welfare of the profession at large. Dr. Magner's address is regarded as a valuable contribution to the discussion of the Irish University question and has been fully reported and favourably commented upon by some of the local newspapers.

Oct. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The French Surgical Congress.

THE Twelfth Congress of the French Surgical Association opened on Oct. 17th in the large theatre of the Faculty of Medicine, Professor Le Dentu being in the chair. On the platform were the Dean of the Faculty (Professor Brouardel), Professor Guyon, Professor Bouchard, Professor Poncet of Lyons, the Inspector-General of the Army Medical Staff (M. Dujardin Beaunetz), Professor Jonnesco of Bucharest, Professor Offa of Würzburg, and a large number of surgeons from Paris, the provinces, and foreign countries. Among the audience were MM. J. and A. Reverdin of Geneva, M. Dellettez-Gallet of Brussels, M. Deguins of Antwerp, MM. Doyen, Albarran, Picque, Galeszowski, Boiully, Teuffier, Berger, Legueu, Forgue of Montpellier, Montprofit of Angers, Calot of Berck, Roux of Lausanne, Suarez de Mendoza of Madrid, Ceci of Pisa, and others. Professor Le Dentu opened the session with an address in which he related the advances made in surgery of late years especially with regard to the treatment of tetanus by intra-cerebral injection of antitetanus serum. M. Albarran followed and read in his own name and in that of Professor Guyon an important paper upon Nephrostomy. MM. Teuffier and Bazy opened a discussion upon the matter. After the meeting the members of the Congress adjourned to the Hôtel des Sociétés Savantes, where they witnessed the progress of sundry surgical operations reproduced by means of the cinematograph. The exhibition will be repeated on Oct. 21st when a representation of an abdominal section performed by M. Doyen will be given. On the evening of Oct. 17th a *soirée* was given by M. Le Dentu in the galleries of the Champs Elysées which was a great success. On Tuesday, Oct. 18th, the members spent the morning in visiting the various surgical clinics in Paris. M. Doyen performed sundry operations in his private hospital in the Avenue de Jena, among which were an operation for the relief of an intestinal fistula and removal of the uterine adnexa for double suppurative salpingitis. In the afternoon M. Faure read a paper upon the Surgical Treatment of Facial Paralysis by means of Joining the Facial Nerve to the Spinal Accessory. MM. Abadie, Jonnesco, and Temoin, of Bourges, read papers upon Resection of the Cervical Sympathetic. Wednesday morning will be allotted to the Surgery of the Neck and Chest and the Vertebral Column, the speakers being MM. Calot, Forgue, Legueu, and Redard, and also to questions concerning Anæsthesia and Dressings, in which discussions the following will take part: MM. Berges, A. Reverdin, Teuffier, and Ceci. On Wednesday evening the subjects for discussion will be the Stomach, the Intestines, the Liver and the Spleen; speakers, MM. Doyan, Roux of Lausanne, Dellettez-Gallet of Brussels, Le Dentu, Quenu, Bouilly, Duset of Lille, Delageniere of Mans, and others. Thursday morning will be devoted to Gynæcology and on Friday there will be a discussion upon the Surgical Treatment of Goitre.

Attempted Suicide of Dr. Boisleux.

Dr. Boisleux, who some eighteen months ago was condemned to six years' imprisonment in company with Dr. Jarrige on account of a pregnant patient whom he had curetted having died, is serving his time in the prison

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at Étampes. He chose confinement in a cell which gives him a remission of half his sentence. This method of punishment, which the average criminal considers far more severe, was really lighter for the prisoner in this case, for by undergoing it he avoided contact with the other prisoners. On the other hand, the French prison regulations allow prisoners who have chosen this form of punishment provisional liberation at the end of half their reduced period of imprisonment if they conduct themselves well. Boisleux accordingly expected to be released at the end of eighteen months, and, when he discovered that he would not be, he became very depressed and tried to commit suicide by opening the veins of his feet and arms by means of a sharp spike of metal broken off his mess tin. A warder, however, arrived in time and Boisleux was removed to the infirmary where he was treated. Eight days afterwards he made a second attempt and he is in a very serious condition.

Treatment of Aortic Aneurysm by Injections of Gelatin.

M. Lancereaux made an important communication to the Academy of Medicine on this method of treatment, which has yielded remarkable results in his hands. The first patient mentioned had an aortic aneurysm which projected anteriorly. Subcutaneous injection of a solution of gelatin in artificial serum was made and the patient got well. Some time previously the blood had escaped from the aneurysm and coagulated just under the skin; the patient's state was very critical, but injections of gelatin promptly brought about coagulation of the extravasated blood. In the second case the patient suffered from aneurysm of the aorta which had not come to the surface. By means of the gelatin injection treatment all the pain disappeared and the dilated superficial veins diminished in volume. M. Lancereaux has treated by this method many aneurysms of the aorta and one subclavian aneurysm with similar success. Two other patients who suffered from aortitis and dilatation presented, however, no amelioration. They died and the post-mortem examination showed that no coagulation had taken place in the dilated portion of the artery. The operative proceeding was as follows. A solution of 2 grammes of gelatin in 100 grammes of saline solution is made and this is injected under the skin of the thigh into the subcutaneous cellular tissues in a dose of 250 c.c. The injection is renewed at varying intervals of time—every two days to fifteen days. As a rule, 10, 15, or 20 injections are quite enough to obtain a complete cure. The communication of these researches gave rise to a long discussion at the Academy, in which M. Huchard, Professor Hayem, and Professor Fournier took part. M. Huchard had employed the method of M. Lancereaux in many cases, one of which was very serious, the pulsation of the aneurysm being very strong. A complete cure was obtained by means of 20 injections and the sole inconvenience attaching to this treatment was that it was very painful. In a patient suffering from phthisis with constant hæmoptysis due to little aneurysms of the kind described by Rosmussen M. Huchard employed the same treatment and succeeded in stopping the hæmoptysis. This, however, did not prevent the patient from dying later from pulmonary tuberculosis. Certain precautions have to be observed in this method of treatment, for a patient, under the care of Boisset, in whom injections had been made on a very small scale lest the blood should coagulate all at once died very suddenly from embolism. The injections must never be made in the neighbourhood of the aneurysmal sac and still less into the aneurysmal sac itself.

Obituary.

Professor Haydenreich, Dean of the Faculty of Medicine at Nancy and Professor of Clinical Surgery, has just died after having pricked his finger at an operation.—Professor Bouchacourt, Professor of Obstetrics of the Faculty at Lyons, has recently died at an advanced age. He was the author of many important works dealing with his particular department of practice.

Oct. 19th.

SWINDON WORKHOUSE HOSPITAL.—At the meeting of the Highworth and Swindon Board of Guardians held on Oct. 12th it was decided that the men's hospital be enlarged so as to accommodate 50 additional beds, to include 2 wards, 1 for special cases and the other for boys, and also that the women's hospital should be enlarged by 2 wards to contain 80 additional beds. The estimated cost of the work is £3000.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Gall-stones.

PROFESSOR KEHR of Halberstadt is well known in connexion with operations on the gall-bladder and has probably performed more operations on this viscus than any other German surgeon. Lately while on a visit to Carlsbad he had an opportunity of discussing the indications for either operative or balneological treatment with the resident medical men of the famous Bohemian watering place, and he has published his conclusions in the *Münchener Medicinische Wochenschrift*. He recommends that every patient without distinction should be sent to Carlsbad first and that operation should only be resorted to when the Carlsbad water has proved useless. According to him no medical man of Carlsbad now believes that the Sprudel water is able to dissolve gall-stones or to bring about their expulsion from the gall-bladder. The undoubted success sometimes obtained by a stay in Carlsbad is due most of all to a judicious diet and to the regulation of the hepatic and portal circulations by the water, whereby the complication of cholecystitis is relieved. The gall-stones themselves remain in the gall-bladder, unless they are of very small size, in which latter case they may be spontaneously evacuated. The complaint thus passes into a latent stage. When this condition is established the patient may feel very well, but fresh attacks often occur and then the calculi may become impacted in the bile-duct, and suppuration, peritonitis, or even carcinoma, may be the sequel. These undesirable effects may, however, be avoided by early operations, which are free from danger if performed before there is impaction of gall-stones or adhesion of the gall-bladder to surrounding structures. With these precautions 160 operations have been performed without a death due to the operation. From a theoretical point of view early operation is indicated in every instance provided the surgeon's object is really to cure the complaint and not merely to be content with relieving the pain. Routine methods must be avoided and the age, the constitution, and the social position of the patient must be considered. For instance, patients over sixty years of age ought not to be operated on unless their lives are in danger; well-to-do persons with slight biliary colic, who are able to obtain proper food, may wait some time. Professor Kehr considers that internal treatment is indicated (1) in cases of acute occlusion of the ductus choledochus without fever; (2) in cholecystitis with or without icterus; (3) when calculi are discharged spontaneously during the attacks of colic, but when no calculi are discharged operation is indicated; and (4) in cases combined with diabetes or gout or when other affections make the administration of an anæsthetic undesirable. A course of Carlsbad treatment is of great benefit after an operation has been performed. When the calculi are in the ductus choledochus, cholagogues, such as olive-oil, glycerine, and salicylate of soda, may be used; when the calculi are still in the gall-bladder and an operation cannot be performed attempts must be made to relieve the inflammation. The endeavours of the physician to make the calculi pass through the narrow duct into the duodenum are much more dangerous than the removal of the calculi by laparotomy. An operation is indicated in every instance (1) of acute sero-purulent cholecystitis; (2) in adhesion of the gall-bladder to the intestines, the stomach, &c., provided that pain has been felt; (3) in chronic occlusion of the ductus choledochus or cysticus; (4) in originally slight cholelithiasis, where the pains have continued notwithstanding internal treatment; (5) in purulent cholangitis; (6) in perforation of the biliary passages and peritonitis; and (7) in morphinism caused by cholelithiasis, where an operation must be performed previously to the treatment of the morphia habit. It is thus not easy to settle the indications for balneological or surgical treatment and a very exact diagnosis, including a reference to the patient's age, constitution, &c., is necessary before deciding whether the Carlsbad treatment or an operation will best suit the individual case.

A Large Nose made Smaller.

In the *Berliner Klinische Wochenschrift* Dr. Joseph describes a rhinoplastic operation performed by him, not, as is usually the case, for the purpose of restoring a missing or mutilated nose, but in order to reduce the proportions of a preternaturally developed nose. A country gentleman possessed an olfactory organ of such unusual dimensions as

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to excite the hilarity of his neighbours, and he was thereby so mortified that he well-nigh became melancholy, and appealed to Dr. Joseph to deliver him from this affliction. The superfluous skin and cartilages were accordingly removed by four incisions, which formed two angles with the vertex in the median line of the nose; then the unduly prominent nasal bones were reduced with the chisel, and finally the bridge of the nose was shortened by excising a wedge-shaped portion of bone. Sutures were then applied, the wound healed by first intention, and the patient is now in high spirits, a comparison of photographs affording ample evidence of the improvement which has been brought about in his appearance. A similar case has been under the care of Professor Robert Weir of New York and is described in the *New York Medical Journal*, 1892, page 452.

The Battle of the Clubs in Rhenish Prussia.

By the trades laws in Germany membership of a sick club is compulsory on every working man earning less than 2000 marks (£100) a year. The sick clubs are under the control of the Government, but are, of course, entitled to manage their affairs themselves provided they do nothing contrary to the laws or regulations. In places with a large working-class population the influence of the clubs and of their committees is very great, as there are clubs consisting of from 40,000 to 50,000 paying members, not including their families. The presidents, secretaries, treasurers, &c., nearly always either actually are, or have been, working men, and they often exercise an authority over the medical men which is far from being satisfactory; often also the appointment of a medical man is decided not by the ability but by the political views of the candidate. Controversies between the club medical officers and the committees are therefore not unfrequent and a variety of proposals have been made with a view to guaranteeing the independence of the medical officers. The so-called "free choice" system, which has been described by me in THE LANCET, has given the best results for the profession, but the great majority of clubs have hitherto declined to adopt it. A serious disagreement broke out lately at Remscheid, in Rhenish Prussia, in connexion with a workmen's sick club, which includes nearly all the working men of the town, the committee having, without any sufficient reason, discharged some of the medical men who had hitherto attended the members. The local practitioners also discovered that the committee intended in course of time to dismiss them all and to bring into the town medical officers of their own, who would not engage in private practice, but would receive good salaries for devoting themselves exclusively to the club members and their families. In this way the old-established medical men would lose the not inconsiderable part of their income which had been derived from the club practice, whilst their successors not having the support of private practice would be entirely dependent on the club. Negotiations having failed the local practitioners, in order to put pressure on the committee and to draw public attention to these facts, took a very decided step. Without previous notice they declined to attend club members, club patients who came for advice were sent away, and requests for visits at the houses of patients were ignored. This action, however, unfortunately proved unsuccessful. The club committee stationed club members in front of the medical men's houses to warn off patients, and in urgent cases these sentries or pickets provided patients with money to consult other practitioners of the neighbourhood not concerned in the dispute. Telegrams were also sent to individuals who had previously sought to be appointed and in twenty-four hours sufficient medical aid was at the disposal of the members. The proceedings in Remscheid caused a sensation in Germany and a Government Commissioner was sent there with instructions to mediate between the parties, but as further negotiations were declined by the club and as the committee had not acted contrary to its by-laws he had to retire without having accomplished his purpose. The medical men who had bravely struggled to uphold the honour of the profession have therefore had the worst of the contest through not markedly considering the overcrowding and the disunion in the profession which enabled their opponents to fill their places. They, however, succeeded in drawing attention to the difficulties of their position, one result being that the press, in discussing the question, is mostly of opinion that the trade laws have made German medical men too dependent on the clubs and that the appointment of club medical officers ought to be under official control and not left to private agreement.

Oct. 18th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Recrudescence of Typhoid Fever.

IN Italy the poor are always with us and, in proportionate degree, infectious maladies. Indeed, the two facts originate in the same cause. The poverty that withholds work and wages from the humble breadwinner prevents communes and municipalities from carrying out the sanitary regulations imposed by Government and so beggary and disease can claim a common parentage. In not a few parts of the kingdom typhoid fever has reappeared in epidemic form so pronounced that the Pelloux administration can no longer shut its eyes to the danger. "Many communes," so runs the authoritative announcement, "are so badly furnished with *acqua potabile* that explosions of typhoid fever are inevitable. The drainage system in these localities is so bad as practically to be non-existent. The drinking water is contaminated accordingly, but besides the 'infiltrazioni micidiali' (deadly infiltrations) thus induced there are other factors that make for typhoid fever with hardly less power. Means of house disinfection are absolutely wanting. Isolation of the fever-stricken is neglected for lack of accommodation. The 'locali di ricovero' (places in which the homeless are sheltered) are themselves insanitary in the last degree. The greater number of the communes" (I am still quoting from official sources) "expected to carry out the provisions of the 'legge sanitaria' declare their inability to act from want of money, and in the same breath appeal for Government aid. The Government on its side pleads 'non possumus' and asserts that it does not dispose of funds to meet the prophylactic wants 'di tutto il regno' (of the whole kingdom)." It points to the melancholy and surely discreditable fact that for prophylactic purposes only 8000 lire italiane (£320) are set apart in the Ministry of the Interior—8000 lire, when the communes are 8263 in number! In these circumstances General Pelloux, as head of the Government and minister of the interior, is devising a "modo meno irrisorio" (a means less ridiculous) of fulfilling its duty to the public in the conservation of health, and to this end receives the energetic support of Dr. Baccelli, who besides being a cabinet minister is also president of the Consiglio di Sanità. *Quod felix faustumque sit!*

The Influence of Flowers on the Human Organism.

The "Bullettino della Reale Società Toscana di Orticultura," a monthly organ of fruit and flower culture published in Florence, has just brought to a close a series of interesting and instructive papers on "L'Influenza dei Fiori sull' Organismo Umano." They are from the highly competent pen of Dr. Ruggero Montelucci and will shortly see the light in an independent publication. The author's conclusions may thus be summarised: 1. That flowers not only constitute one of the best and most delicate medicaments of the excitant order (*medicamenti eccitanti*) which modern therapeutics can boast, but that, for many individuals at least, they have established a claim to be classed with those of restorative or reinvigorating media (*ricostituenti o corroboranti*), which contribute to the opportune, if temporary, rehabilitation of the organism. 2. That flowers have a distinct and potent function as purifiers of the air; that they are true and inexhaustible sources of disinfection, probably more active than the ordinary antiseptic substances; and that they operate with greater effect than may be supposed in counterbalancing the miasmata and the evil exhalations in general which are the inevitable concomitants of nature's evolution. Of special interest are Dr. Montelucci's illustrations, from experiments with flowers, of the law as stated by Dr. Mantovani of the University of Pisa in his recently published "Psicologia Fisiologica"—the law that "every pleasurable impression produces an augmentation in volume of the arm to which Mosso's 'pletismograph' is applied, together with a greater fulness in the arterial pulsations and a greater depth in the inspirations, that is to say, in the thoracic movements by which the air is admitted to the lungs."

Oct. 14th.

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Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having previously passed the necessary examinations and having now attained the age of twenty-five years, have been admitted Fellows of the College:—

Alex. Wathen Nuthall, L.R.C.P. Lond., Mason University College, Queen's and General Hospital, Birmingham, and St. Bartholomew's Hospital; diploma of Membership dated Nov. 14th, 1895.
John Dill Russell, L.R.C.P. Lond., M.D. Lond., University College Hospital; August 4th, 1896.

The following gentlemen, having passed the necessary examinations and having conformed to the by-laws and regulations, have been admitted Members of the College:—

Rustom Pestonjee, L.M. & S. Ceylon, Exams. for L.R.C.P. Lond., of Ceylon Medical College and University College Hospital.
John Burn Wood, M.B., C.M. Edin., Exams. for L.R.C.P. Lond., of Edinburgh University.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated at a meeting of the Examiners on Monday, Oct. 10th:—

Anatomy and Physiology.—Thomas Hutchinson, Mason University College, Birmingham; John Knowles Lund, Mason University College, Birmingham and Owens College, Manchester; William Stonier Gibson, Owens College, Manchester; Charles Monks, L.R.C.S. Irel. (Surgeon-Lieutenant-Colonel, I.M.S.), Ledwich School of Medicine, Dublin; Arthur Llewellyn Baldwin Green, St. Bartholomew's Hospital and Aberdeen University; Benjamin Capon, University College, Liverpool; Joseph Ward, Firth College, Sheffield; Percy Southwell Stokes, Firth College, Sheffield, and Mr. Cooke's School of Anatomy and Physiology; Edward Postle Gwyn Causton, Cambridge University; Eugène Dunbar Townroe, St. George's Hospital; Henry Albert Ehrlich and Charles Burnage Penny, Guy's Hospital; Douglas Wilberforce Smith, Edinburgh University and Guy's Hospital; George Maw, University College, London; Bakhshi Isaac Rahim, King's College, London; Ricardo Cope, St. Bartholomew's Hospital; and Harold Edward Flint, St. Bartholomew's Hospital and Mr. Cooke's School of Anatomy and Physiology.
Anatomy only.—Roderick McKenzie Skinner, Edinburgh University; George Henry Lionel Wright, University College, Bristol; and James Wodderspoon Bennett, Owens College, Manchester, and Mr. Cooke's School of Anatomy and Physiology.
Physiology only.—John Ellington Jones, University College, Bristol.
16 gentlemen were referred in both subjects and 2 in Physiology only.

Tuesday, Oct. 11th:—

Anatomy and Physiology.—Sylvester de Carteret, Charles Louis Claude Owen, John Arthur West, Ernest Eric Young, Napoleon Leonard, and Harry Hendy Butcher, St. Bartholomew's Hospital; Hugh Frank Bodvel-Roberts, Cambridge University and St. Bartholomew's Hospital; Charles Darby Allen Dowman, St. Bartholomew's Hospital and Mr. Cooke's School of Anatomy and Physiology; Jasper Lakeman, London Hospital; Charles Henry Allen, London Hospital and Mr. Cooke's School of Anatomy and Physiology; Christopher Tredwell Holford, St. Thomas's Hospital; Lawson Jervis Hughes and William Henry Bowen, Guy's Hospital; William Wellesley Campbell, King's College, London; Henry Francis Bellamy, Charing-cross Hospital; John Evan Skey and Frank Derécourt Martyn, Westminster Hospital; William Walker Browne, Richard Ernest Lloyd, and Andrew Norris Stevens, University College, London.
16 gentlemen were referred in both subjects.

Wednesday, Oct. 12th:—

Anatomy and Physiology.—Charles Dix, Thomas Munn Body, Herbert Harland Raw, Hugh Whitwell, Ernest Walters Price, William Percival Miles, Leslie Miles Morris, and William Gerald Greaves Johnson, St. Bartholomew's Hospital; Frank Morgan, Westminster Hospital; Arthur Reginald Schofield, Robert Cecil Pitt, William MacDowall-MacDowall, and Angelo Nelson Symons, London Hospital; David Morgan Jones, St. Mungo's and Anderson's College, Glasgow, and London Hospital; Thomas Howard Frederick Roberts and William Owen Roberts, Guy's Hospital; Basil Hood, Charing-cross Hospital; Antonio Blanc, King's College, London; Bernard Moore Sampson and William Trengweath Harris, St. Thomas's Hospital; William James Deacon Inness, St. Mary's Hospital; and Arthur Watson Levy, Cambridge University and St. Mary's Hospital.
Anatomy only.—David Thomas Jones, Middlesex Hospital and Mr. Cooke's School of Anatomy and Physiology; Walter George Douglas Miller, Cambridge University and University College, London; and Campbell Tilbury Fox, University College, London.
15 gentlemen were referred in both subjects.

UNIVERSITY OF GLASGOW.—The following have passed the First Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., botany; Z., zoology; P., physics; C., chemistry):—

James Richard Sunner Anderson (P.), William Kirkpatrick Anderson (B., P.), Thomas Ballantyne (B., Z., P.), Alexander Grey Banks (B., P.), Andrew Farm Bell (B., P.), Thomas Fraser Bowie (P.), James Campbell Bringan (B., Z., C.), Robert Bruce (B.), Robert Harold Campbell (B., P.), Daniel Lyall Carmichael (C.), Alexander Adam Carruthers (P., C.), Hugh William Crawford (B., Z., P., C.), John Cross (P.), Alexander Dick (B., P.), Hugh M'Millan Donaldson (C.), Andrew Robertson Dow (P., C.), William Dow (B., C.), William Elder (C.), John Ferguson, M.A. (P., C.), Thomas Forsyth (Z., C.), John Ritchie Gilmour (P., C.), William Macmillan Gilmour (B., P.), John Miller Gordon (C.), William Harvey (B., P.), Ronald Dingwall Hodge (B. P.), John Gordon Hume (P.), John Brown Dalzell Hunter (B., P.), Neil M'Coll Hutchison (B., P., C.), Ernest David Jackson (B., Z., P., C.), William Fletcher Kay (B., P., C.), James Thompson Kelly (Z.), Alexander Dingwall Kennedy (B., P., C.), Andrew Miller Kerr (B., P.), Douglas Roberson Kerr (P.), Robert Lauder (B., C.), Robert Laurie (Z., P.), Robert Wright Leckie (B., P.), Archibald Leitch (B., P.), Stanley Everard Lewis (C.), Thomas Walker Love (B., Z., P.), Thomas Lovett (B., Z.), Joseph Paterson Lusk (B., C.), Richard Makins (Z., C.), Robert Harry Manson (P., C.), Harry Sommerville Martyn, M.A. (B., Z., P., C.), William Alexander Milne (B., C.), Alexander John Mitchell (B.), Spencer Mort (B., P.), John Bertram M'Cabe (B., Z.), James Duff M'Culloch (B., P.), Coll Macdonald (C.), Daniel Dougall M'Dougall, M.A. (Z., P., C.), Alexander Armstrong Macfarlane (B., P.), Gregor MacGregor (B., Z.), Alexander Macintyre (B., P.), John Matheson M'Kellar (B., Z.), Ivy M'Kenzie, M.A. (B., Z.), John Chancellor M'Kenzie (B., Z., P.), Thomas M'Laren (P., C.), John M'Lean (C.), Dugald Henry Macphail (B.), James Roy M'Vail (Z.), Andrew Alexander M'Whan (P., C.), James Stuart Nicolson (B., P.), David Penman (Z., C.), Thomas Rankine (B., P., C.), Andrew Reid (B., P.), John Mark Reid (B., P.), Thomas Richmond (B.), David Riddell (B., Z., P., C.), Peter Hamilton Robertson (B., P.), Robert Thin Craig Robertson (B., P.), Charles James Ross (B.), James Russell (B., C.), Lawrence Drew Shaw (B., Z., P., C.), James John Sinclair (P., C.), John Williamson Smith (B., Z., P., C.), Robert Cassels Smith (Z., P.), John Stevenson (P., C.), William David Henderson Stevenson (B.), Arthur William Sutherland (B., C.), Peter Lindsay Sutherland (B., P.), John Allan Thom (P.), John Restell Thomas (B., Z., P., C.), William Wagner Turner (B., P.), John Unsworth (B.), James Walker (B., C.), George Wallace (B., Z.), Hugh Fleming Warwick (B., C.), William Norman West Watson (B., P.), Alexander Brown Watt (Z.), and James Wilson (B., P.). *Women*—Jeanie Auld (B., Z.), Agnes Wallace Cameron (Z.), Jane Campbell (Z.), Ethel Lily Chapman (B., Z.), Ethel Macleod Lochhead (B., Z.), Jane Stark M'Lauchlan (B., Z., P., C.), Ethel Jane Mildred Pryce (B., Z.), Margaret Hossack Smart (Z., C.), Elisabeth Taylor Talbert (Z.), and Janet Gardner Waddell (Z., P.).

The following have passed the second professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):—

Matthew Aikman, M.A. (A., P., M.); John Anderson (P.), George Arthur (M.), Gavin Barbour (P., M.), James Oastler Barclay (M.), Thomas Thomson Bathgate (M.), Alexander Binning (M.), Alexander Birch (P., M.), Harry Egerton Brown (M.), William Herbert Brown (M.), John Douglas Brownlie (M.), George Frederick Buchan (P., M.), Patrick Thomas Cairns (M.), Edward Provan Cathcart (M.), John Thomson Clark (P.M.), Robert Clark (M.), James Craig (P.), Charles Peter Garvie Crichton (P.), Charles Campbell Cuthbert, M.A. (M.), Gregor Hugh Grant Davis (P.), James Dick, M.A. (P., M.), Alexander Doig (A., P.), John Downie (A., P., M.), John Pinkerton Duncan, B.Sc. (M.), George Balfour Eadie (A., P., M.), Leonard Findlay (M.), John Forrest (M.), Alexander Fraser, M.A. (M.), Matthew William Fraser (P., M.), Gilbert Garrey (P., M.), David George Somerville Gartshore (P., M.), James Gemmel (A.), Edward Gillespie (M.), William Girvan (M.), Hyam Goodman, M.A. (A.), Charles Aikman Gourlay, M.A. (A., P., M.), James Dickson Gourlay (A., P.), John Gracie (P.), Charles Herbert Gunson (A., P., M.), George Pillans Harlan (M.), James Macpherson Henry (M.), Charles Milburn Hope (A., P.), Thomas Hamilton Jack (M.), John Kennedy (M.), William Bryce Kerr (M.), Alexander King (A.), James Dickson Laidlaw (A., P.), John Francis Lambie (M.), Alexander Leitch (A., P.), Norman Maclean Leys (P., M.), James Dunlop Lickley (M.), Donald M'Farlane Livingston (M.), John Lockhart (A., P., M.), Alexander Logan (M.), David Dale Logan (A., P.), David Longwill (A., P.), Jacob Mains (M.), Andrew Mair (M.), Robert MacNab Marshall (M.), Allan Martin, M.A. (M.), James Millar, M.A. (A., P., M.), Peter Moir (M.), Alexander Munro (A., P., M.), James William M'Dougall (A., P.), Walter James M'Feat (A., P.), George Steventon M'Kinnon (A., M.), James Mackinnon (M.), Burgess M'Phee (A., P.), James M'Pherson, M.A. (A., P), Duncan Mackenzie MacRae, M.A. (A., P., M.), James Patrick (A., P., M.), Peter Mackenzie Reid (P., M.), John Duncan Richmond (M.), David Russell (M.), David Shannon (P., M.), Andrew Stewart (M.), John Strathearn (A., P., M.), Robert Bryers Thom (P.), James Cameron Turnbull (M.), Albert Ernest Wainwright (M.), William Dinning Walker (A., P.), George White (A., P., M.), George Henry Wildish (P.), Thomas Watson Wilson (M.), William Webster Watt Wilson (A.), Hugh Patrick Wright (P., M.), and John Young (M.). *Women*—Auguste Boyes (A.), Gertrude Jane Campbell (M.), Helen Mary Gordon (P.), Lila Stephenson Greig (M.), Catherine Spence Howden (A., P.), Mary Emma Potter (A., P.), Mary Ann Thompson Ritchings (P.), Agnes Brymner Sinclair (P., M.), Elizabeth Helen Smith (A., P.), and Mabel Talbot (M.).

The following have passed the Third Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subject or subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):—

James Freeborn Bennett (M.), Andrew Brownlie (P., M.), Thomas Bullough Calland (P.), James Robert Chalmers (M.), David Maclure Cowan (P., M.), John Craig (P., M.), George Morris Crawford (P., M.), William Crerar (M.), James Austin Dickie (P., M.), James

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Drummond (M.), Hugh Campbell Ferguson (M.), George Gardner (P., M.), John Gardner (P., M.), William Gibson (M.), Nicol Jamieson (P., M.), Andrew Kerr (M.), Andrew Love (P., M.), Ramsay Millar (M.), Hugh Miller (M.), Ernest Wardlaw Milne (M.), Ebenezer Mitchell, M.A. (P., M.), James Hogg MacDonald (M.), Peter M'Fadyen (M.), John McGilchrist (M.), Anderson Gray M'Kendrick (P.), Charles Forbes Maclean (M.), George Todd Maclean, M.A. (P., M.), Norman Forbes MacLeod (M.), William Johnson Maclure (P., M.), Thomas Stephens Picken (P., M.), Robert Rennie (P., M.), William Alexander Riddell (M.), Arthur Robin (M.), David Ap Simon (M.), David James Smith (M.), John Steele Smith (P., M.), William Stewart Stalker (P., M.), Peter Alexander Steven (M.), Alfred George Stewart (M.), Frederic Richardson Stewart, M.A. (P., M.), Charles Pinkerton Thomson (M.), William Brown Thomson (M.), Thomas Bird Tierney (P. M.), Alexander Laurie Watson, M.A. (M.), Alexander Simpson Welle, M.A. (M.), Robert Orr Whyte, M.A. (M.), Alexander Wilson (P.), and William Wright (M.) *Women*—Sarah Davidson (P. M.), Maud Spencer (P., M.), and Edythe Marjorie Stewart Walker (P., M.).

Mr. Stewart Dunbar has passed the Third Professional Examination (regional anatomy and materia medica and pharmacy) for the degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.).

ROYAL UNIVERSITY OF IRELAND.—The following candidates have passed the examinations for the undermentioned degrees:—

M.B., B.Ch., B.A.O.—Upper Pass: *Edwin J. Butler, Queen's College, Cork; *Patrick Canning (M.A.), Catholic University School of Medicine; Theodore F. Dillon, Queen's College, Cork; George C. R. Harbinson and *David M'Cay, Queen's College, Belfast; Edward P. M'Loughlin (B.A.), St. Thomas's Hospital, London, and Catholic University School of Medicine; Arthur B. M'Master and Joseph Martin, Queen's College, Belfast; John Murray, Catholic University School of Medicine; Frederick S. Scott, Queen's College, Galway, and University of Edinburgh; James B. Slattery, Queen's College, Cork, and Catholic University School of Medicine. Pass: Robert A. L. Graham, B.A., and Alexander Grahame, Queen's College, Belfast; Joseph J. Hill, Queen's College, Cork; Alexander E. Knight, Queen's College, Belfast; Daniel Mahony, Catholic University School of Medicine; Robert A. Neilson, Queen's College, Galway and Belfast, and School of Medicine, Edinburgh; Henry S. Orr, Daniel S. Robinson, and Robert A. Shaw, Queen's College, Belfast; Lucy E. Smith, Queen's College, Cork; Richard B. Threlfall, Queen's College, Galway, and School of Medicine, Edinburgh; William White, Queen's College, Cork; and James E. Whyte, Queen's College, Belfast.

M.D.—Charles L. Birmingham, M.B., B.Ch., B.A.O., private study; Anna L. Church, M.B., B.Ch., B.A.O., Johns Hopkins Hospital, Baltimore, U.S.A.; and Isaac A. Davidson, B.A., M.B., B.Ch., B.A.O., Queen's College, Belfast.

* Those marked with an asterisk may present themselves for the further examination for honours.

FOREIGN UNIVERSITY INTELLIGENCE.—*Cracow:* Dr. Ludwig Switalski has qualified as *privat-docent* of Midwifery and Gynæcology.—*Gratz:* Dr. Ludwig Mark has qualified as *privat-docent* of Dermatology and Syphiligraphy.—*Lausanne:* Dr. A. Combe, *privat-docent*, has been appointed Extraordinary Professor, and Professor de Cerenville has resigned the charge of the Medical Clinic.—*Madrid:* Dr. Amalio Jimeno, of Cabañas, has been appointed Professor of General Pathology in succession to Dr. Antonio Alonso Cortés, who has resigned the chair.—*Rostock:* A special clinic is being built for ear and throat diseases near the eye clinic. It will contain 11 rooms, including wards and out-patient department, besides an operation-room and a laboratory.—*Vienna:* Dr. A. Ritter von Weismayr has been recognised as *privat-docent* of Internal Medicine; Dr. Heinrich Ludwig as *privat-docent* of Midwifery and Gynæcology; and Dr. Hans Koschier as *privat-docent* of Rhino-Laryngology. The names proposed for the chair of Experimental Pathology, vacated by the death of Dr. Stricker, are (1) Professor von Mering of Halle, (2) Professor Knoll of Prague, (3) Professor Klemensiewicz of Gratz and Professor Löwit of Innsbruck, who obtained an equal number of votes.

THE TECHNICAL EDUCATION OF PLUMBERS.—The winter session of the plumbing classes conducted by the National Registration of Plumbers in conjunction with the Perth School Board was opened on Oct. 8th in the Science Room of the Perth Academy by a lecture by Dr. John S. Lumsden. Mr. James Ramsay, chairman of the Evening Continuation Classes Committee, presided and among those present were ex-Baillie M'Neil, Mr. R. H. Miller (solicitor), Mr. Ellison (technical instructor), and Mr. William Watson. The chairman in his opening remarks said that he saw in this new departure an indication of the progress they were making in their appreciation of the value of science teaching and especially of technical instruction. After Dr. Lumsden had delivered his lecture Mr. William Watson, in the course of a few observations, said that the practical classes had for four or five years been conducted with splendid results and they now had the advantage of a teacher in the science subjects in the person of Dr. Lumsden. The chairman then presented the certificates gained last session by John Morton and David Welsh in the examination held under the graded syllabus of the Plumbers' Company.

VACCINATION GRANT.—Mr. Horace Lowther of Ventnor has been awarded the grant (sixth time) for efficient vaccination in his district.

DEATH OF MR T. H. MOXON OF YARMOUTH.—Mr. Thomas Henry Moxon, one of the oldest medical practitioners in Great Yarmouth, died at his residence, King-street, on Oct. 8th, after a short illness.

THE WINTER SESSION AT THE SANITARY INSTITUTE.—Sir Douglas Galton delivered the introductory lecture to the twenty-sixth course of lectures and practical demonstrations in sanitary science for sanitary officers and students on Oct. 17th. In the course of his address he said he would like to see sanitation made a branch of elementary education.

LITERARY INTELLIGENCE.—Messrs. Smith, Elder, and Co. will publish immediately a work upon "Albuminuria and Bright's Disease," by Dr. Tirard. The author, who assisted the late Sir George Johnson in his more recent publications on kidney disease, has treated the subject from the clinical rather than from the pathological standpoint. The book will be illustrated with 15 original plates, 4 of which, representing retinal changes in kidney disease, will be in colours.

CARDIFF INFIRMARY.—At the meeting of the Cardiff Infirmary Committee held on Oct. 12th a letter was read from Mr. Thomas Webb offering to give about £1000 for the purposes of a new and improved operation theatre in memory of his late wife. The gift was gratefully accepted and it was decided that the chairman should see Mr. Webb upon the matter. It was decided to appoint a gynæcologist. In reference to the financial position of the institution it was mentioned that the overdraft at the bank at present was £2500, and it was agreed that an effort should be made to get increased subscriptions.

UNIVERSITY OF CAMBRIDGE.—The returns from the several colleges show that 127 medical students have entered the University this term.—Dr. D. MacAlister has been appointed to act for the Regius Professor of Physic during his absence in reference to the exercises for the M.B. and M.D. degrees.—Professor Bradbury has been reappointed Assessor to the Regius Professor.—The University of Sydney is to be adopted as an affiliated university for students in arts or in science.—Professor Flinders Petrie has presented to Professor Macalister's museum 19 cases of Egyptian skulls and bones from the excavations at Hierakonopolis. They illustrate the physical anthropology of the earliest races of Egypt.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the annual meeting of the Royal College of Physicians of Ireland held on St. Luke's Day the following officers were elected for the ensuing year. President: Dr. John William Moore. Vice-President: Dr. W. J. Smyly. Censors: Dr. W. J. Smyly, Dr. H. C. Drury, Mr. J. Murphy, and Dr. A. K. F. McCutcheon. Additional examiners to take the place of an absent Censor:—Medicine: Mr. W. L. Symes. Medical Jurisprudence and Hygiene: Mr. A. N. Montgomery. Midwifery: Mr. T. H. Wilson. Examiners for the Licence in Midwifery: Mr. Andrew J. Horne and Mr. E. Hastings Tweedy. Additional examiners under the Conjoint Examination Scheme:—Biology: Dr. E. MacDowel Cosgrave. Chemistry and Physics: Dr. H. T. Bewley and Mr. Edwin Lapper. Materia Medica and Pharmacy: Dr. F. J. B. Quinlan and Dr. Ninian Falkiner. Physiology: Dr. J. Mallet Purser. Pathology: Dr. Wallace Beatty. Medicine: Dr. H. C. Tweedy and Mr. E. E. Lennon. Hygiene and Forensic Medicine: Mr. S. T. Gordon. College Examiners for the Conjoint Diploma in Public Health:—Meteorology: Dr. Ninian Falkiner. Hygiene: Dr. F. J. B. Quinlan. Chemistry: Mr. Edwin Lapper. Examiners in Preliminary Education: Mr. William Kennedy, B.A., Sch. T.C.D. Science: Mr. C. Joly, F.T.C.D. Representative on the General Medical Council: Dr. Lombe Atthill. Representatives on the Committee of Management under the Conjoint Examination Scheme: Dr. John Magee Finny, Sir Christopher J. Nixon, and Dr. James Craig.

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Treasurer: Dr. Lombe Atthill. Registrar: Dr. James Craig. In the evening the annual banquet of the President and Fellows was held in the College Hall.

KING'S COLLEGE, LONDON.—The following scholarships in the medical school have been awarded. Medical Entrance (Universities) Exhibition: 70 guineas Charles Harrison Barber; and 60 guineas, Herbert S. Flook. Warneford Entrance Scholarships (Arts): £25 a year for two years, Thomas Henry Jones; and £25 a year for two years, John James and Eardly Lancelot Holland (equal). Sambrooke Medical Exhibition (Science): £60, Albert Angelo Myers; and £40, Harold Benjamin Day. Rabbeth Medical Scholarship (Science): £20, Harold Benjamin Day and Albert Angelo Myers (equal). The Clothworkers Science Exhibitions (open to all Faculties of the College); £30 a year for two years, Arthur Wright; and £20 a year for two years, William Marden.

VACCINATION EXEMPTION CERTIFICATES.—At the Llandaff, Glamorganshire, police court on Oct. 10th a man applied for a certificate of exemption under the Vaccination Act. He was about to be sworn when the presiding magistrate (Mr. E. W. David) interposed and said that he refused to adjudicate in future on vaccination cases, for he would not be responsible for the scourge which will inevitably overtake this country if this Act remains in force. Colonel Fisher said he endorsed in the main the remarks of his colleague and the application was not granted.—At the meeting of the Monmouthshire Joint Committee at Newport on Oct. 12th during a discussion upon vaccination exemption certificates Colonel Lyne remarked that the new Vaccination Act was a difficult and even obnoxious Act, but there ought to be uniformity in its administration.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—The usual quarterly court of the directors of this society was held on Oct. 12th, Dr. Pollock, Vice-President, being in the chair. Two new members were elected. No deaths of members were reported. Applications for relief were read from 49 widows, 11 orphans, and 6 recipients from the Copeland Fund, and it was resolved that £1197 11*s.* be distributed amongst them at the next court. There were no fresh applications for grants and one orphan had become through age ineligible for further assistance. The audited accounts of the last half-year were read and it was resolved to apply the surplus to giving a Christmas present to the 49 widows, 12 orphans, and 5 recipients from the Copeland Fund—viz., £10 to each widow, £3 to each orphan, and £5 to each of those receiving assistance from the Copeland Fund; in all £551. The expenses of the quarter were £64 1*s.* 6*d.*

FREEMASONRY.—*The Æsculapius Lodge, No. 2410:* The seventh installation meeting of this Lodge was held at the Café Royal, Regent-street, on Oct. 12th. Bro. H. W. Kiallmark, M.R.C.S. Eng., was installed master for the ensuing year by Bro. E. H. Ezard, M.D. Edin. The occasion was an eventful one, as Bro. Kiallmark is also a Grand Officer for the year, having had the collar of G.J.D. conferred upon him by the Grand Master H.R.H. the Prince of Wales. Bro. G. Danford Thomas, M.D. Brux., coroner for Central London, was re-elected treasurer, and Bro. Thomas Dutton, M.D. Durh., secretary. Bro. Eyre, M.D. Durh., was admitted to the third degree, and Bros. Pakes and Eaton to the second degree. There was a large number of visitors present, including Bros. Ralph Gooding, M.D., P.G.D., Clement Godson, M.D. Aberd., P.G.D., Inspector-General Belgrave Ninnis, M.D. St. And., R.N., P.G., Std. Br. The members and visitors afterwards dined together and spent a very enjoyable social evening.

THE LATE MR. COTTLE OF CHELTENHAM.—The death has been announced of Mr. J. T. Cottle, which took place on Oct. 12th at Pulteney-villa, Winchcomb-street, in his eighty-eighth year. The deceased gentleman was one of the oldest—if not the oldest—medical practitioners in Cheltenham, and his long connexion with the town won him universal respect. For some time past he had been in failing health, though he carried his years well. He was one of the oldest Poor-law officers in the country, and in 1848 was appointed a permanent medical officer of the union. In 1867 he was given the office of honorary surgeon to the 10th Rifle Volunteers and retained a similar position in the 2nd Volunteer Battalion Gloucester Regiment to his death. He was one of the promoters of Cheltenham College. He was an ardent sportsman and he kept greyhounds for about thirty years and took a keen interest in the Waterloo Cup competitions, dividing the Champion Stakes at Altcar in 1889. He was twice married; his second wife died a few years since while on the way to the West Indies on the honeymoon. The shock to Mr. Cottle was necessarily severe and it told somewhat on his health.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALEXANDER, G. P., F.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed a Medical Officer for the Forfar Infirmary.

ALLFREY, FRED. H., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Royal Free Hospital, Gray's-inn-road.

CABLE, J., L.R.C.P. Edin., L.F.P.S. Glasg., has been re-appointed a Medical Officer for the Forfar Infirmary.

CHINERY, E. F., L.R.C.P., F.R.C.S. Edin., M.R.C.S., has been re-appointed a Medical Officer for the New Forest Union.

COLLIER, R. S., L.R.C.P. Lond., M.R.C.S., has been appointed a House Surgeon for the North Riding Infirmary, Middlesbrough.

ESKRIGGE, R. B., L.R.C.P. Edin., M.R.C.S., has been appointed a Medical Officer of Health by the Royston Urban District Council.

EYRE, JOHN, M.S., M.D. Durh., has been appointed Honorary Ophthalmic Surgeon to St. Mary's Children's Hospital, Plaistow.

FORSYTH, CHARLES, M.B., Ch.B. Edin., has been appointed Assistant Medical Officer for Wye House Asylum, Buxton.

GEPP, MAURICE, L.R.C.P., L.R.C.S., Edin., L.F.P.S. Glasg., D.P.H., has been re-appointed Medical Officer of Health for the Borough of Shrewsbury.

GOODRICH, EDITH E., M.B., C.M. Glasg., has been appointed Fourth Assistant Medical Officer for the Menston Lunatic Asylum by the West Riding County Council.

JONES, J. E., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Amlwch Sanitary District of the Anglesey Union.

LEGG, T. PERCY, M.B. Lond., F.R.C.S. Eng., has been appointed Senior Resident Medical Officer to the Royal Free Hospital, Gray's-inn-road.

MACALISTER, J. D. L., M.B., M.S. Edin., has been re-appointed a Medical Officer for the Forfar Infirmary.

MASON, J. J., L.R.C.P., L.R.C.S. Edin., has been appointed a District Medical Officer by the Bollington Urban District Council.

MILNE, J. A., M.B., C.M. Aberd., has been appointed Assistant Medical Officer for the Workhouse by the Leeds Board of Guardians.

MORGAN, WILLIAM, M.R.C.S., L.S.A., has been appointed a Medical Officer for the Swansea Tramway Company.

MULLICK, SARAT K., M.B., C.M. Edin., has been appointed Assistant Physician and Registrar to the National Hospital for Diseases of the Heart and Paralysis, Soho-square, London.

PEGG, JOHN H., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Casualty House Surgeon to the Royal Free Hospital, Gray's-inn-road.

PETERKIN, GEO., M.B., C.M. Edin., D.P.H., has been re-appointed a Medical Officer for the Forfar Infirmary.

PIERSON, A. C. B., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Resident Officer for the new Corporation Hospitals at Menston, Leeds.

WINDLE, J. DAVENPORT, M.B., Ch.B. Vict., M.R.C.S. Eng., has been re-appointed Medical Officer of Health for the Southall Norwood Urban Sanitary District.

WEDDERBURN, A. McL., M.D. Aberd., has been re-appointed a Consulting Physician for the Forfar Infirmary.

WYLDE, J. H., L.R.C.P. Irel., has been appointed a Medical Officer and Public Vaccinator for the Mottram Sanitary District, vice W. E. S. Burnett, resigned.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum with board and apartments in the Hospital.

BIRMINGHAM CITY ASYLUM.—Resident Clinical Assistant. Board and residence provided.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary £150 per annum, with an allowance of £30 per annum for cab hire, and furnished rooms, fire, lights, and attendance.

BOROUGH OF RICHMOND (Surrey) and HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the new Isolation Hospital at Mogden, near Kneller Hall, Twickenham, unmarried. Salary £100 per annum, with furnished apartments in the Hospital, rations, and washing. Applications to the Clerk to the Joint Committee, 172, High-street, Hounslow, Middlesex.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

CARDIFF INFIRMARY.—Honorary Gynæcologist.

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CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer for twelve months, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, gas, and washing.

CONSEIL SANITAIRE, MARITIME ET QUARANTENAIRE D'EGYPTE.—Medical Post for the Superintendence and Disinfecting Service at Suez and Moses' Wells (Sources de Moises). Salary commencing at £316 10s. per annum, and a house, will rise progressively to £474 15s. Applications to Dr. M. Armand Ruffer, Alexandria, Egypt.

ECCLES AND PATRICROFT HOSPITAL, Eccles.—Resident House Surgeon for six months. Salary £60 per annum.

GRIMSBY AND DISTRICT HOSPITAL, Great Grimsby.—Resident House Surgeon. Salary £80 per annum, board, lodging, and washing.

HERTFORDSHIRE COUNTY ASYLUM at Hill-end, near St. Albans.—Medical Superintendent. Salary to commence at £500 a year. Certain arrangements as to accommodation until the asylum is completed will be made, and also as to furnished residence, &c., in addition to the salary. Applications to the Clerk to the Hertfordshire County Council, Hertford.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Resident Medical Officer for six months. Salary at the rate of £50 per annum with board, residence, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months. Unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months. Salary £20, with board and residence in the hospital.

HOSPITAL OF ST. FRANCIS, New Kent-road, London, S.E.—An Assistant Surgeon and an Assistant Physician.

LONDON LOCK HOSPITAL, 91, Dean-street, W.—Surgeon to Out-patients. Applications to the Secretary at Harrow-road, W.

LONDON THROAT HOSPITAL, 204, Great Portland-street.—House Surgeon (non-resident) for six months. Salary at the rate of £25 per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant for one year at least. Salary £120 for first year and £150 afterwards.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum attaches to the senior post.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

ROTHERHAM HOSPITAL AND DISPENSARY.—Resident House Surgeon for three years. Salary £105 per annum, board and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL, Portsmouth.—Assistant House Surgeon for six months. Board and residence and an honorarium of £15 15s.

ST. PANCRAS AND NORTHERN DISPENSARY, Euston-road, London.—Honorary Physician. Applications to the Hon. Sec., 23, Gordon-street, Gordon-square, W.C.

ST. THOMAS'S HOSPITAL, London.—Assistant Physician.

TORBAY HOSPITAL PROVIDENT DISPENSARY AND EYE INFIRMARY, Torquay.—House Surgeon. Salary £80 and board, lodging, washing, and attendance (wines, spirits, and beer excepted).

UNIVERSITY OF CAMBRIDGE.—The John Lucas Walker Studentship. The studentship, which is of the annual value of at least £200, may be held by a person of either sex and is tenable under certain conditions for three years. Applications to Professor A. A. Kanthack, Pathological Laboratory, Cambridge.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

BAKER.—On Oct. 14th, at Westbourne-grove, W., the wife of William Henry Baker, M.R.C.S., L.R.C.P., of a daughter.

COWPER.—On Oct. 12th, at Havelock, Shanklin, I.W., the wife of John Cowper, M.B., of a son.

FARR.—On Oct. 10th, at St. Helier's, Ealing, W., the wife of Ernest Farr, M.R.C.S., L.S.A., of a daughter.

KIDD.—On Oct. 13th, at Rosslyn-gardens, Hampstead, the wife of Leonard Kidd, M.D., of a daughter.

KOETTLITZ.—On Oct. 16th, at Pencester-road, Dover, the wife of Maurice Koettlitz, L.R.C.P. Lond., of a daughter.

LIPSCOMB.—On Oct. 15th, at Starcross, Devon, the wife of Edgar R. S. Lipscomb, L.R.C.P. Lond., M.R.C.S., L.S.A., of a son.

MARRIAGES.

CATO—SHORT.—On Oct. 18th, at St. John the Evangelist's, Ponge, Alexander McLean, M.R.C.S., L.R.C.P., eldest son of William Robert Cato, of Anerley, to Katharine, third daughter of the late Thomas Short, of Carlisle.

CORNER—DRAKE.—On Oct. 18th, at Trinity Church, Walthamstow, Albert Corner, of Forest-gate, M.R.C.S. and L.R.C.P., to Nellie, second daughter of W. J. S. Drake, Forest-gate.

CREAK—CROCKETT.—On Oct. 12th, at St. James's, Kidbrooke, Alexander Brodie Creak, M.R.C.S., L.R.C.P., second son of Captain Creak, R.N., of Blackheath, to Mary Frances, elder daughter of Edwin A. B. Crockett, of Ashley-gardens, S.W.

DEATH.

COTTLE.—On Oct. 12th, at Pulteney Villa, Cheltenham, Thomas James Cottle, M.R.C.S., in his 88th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (29th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (24th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Sheild: Four Cases of Abdominal Section for Severe Injuries without External Wound.—Dr. F. L. Benham: On the Advantage of Venesection in Acute Pneumonia, with cases in illustration.

TUESDAY (25th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. H. L. Lack (communicated by Dr. A. Macfadyen): Fibrinous or Membranous Rhinitis and its Relation to Diphtheria.—Dr. E. Cautley: Congenital Hypertrophic Stenosis of the Pylorus.

WEDNESDAY (26th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Clinical Evening. Cases will be shown by Dr. F. J. Smith, Dr. Chaplin, Dr. J. H. Sequeira, Mr. Tubby, and other Fellows of the Society.

THURSDAY (27th).—NEUROLOGICAL SOCIETY OF LONDON (Medical Society's Rooms, 11, Chandos-street, W.).—8.30 P.M. Dr. Ormerod and Dr. Batten: Idiopathic Muscular Atrophy (Landouzy-Déjerine type) in Mother and Son.—Dr. Beevor: Unilateral Wasting and Paralysis of Lower Half of Trapezius.—Dr. Mott: Arsenical Neuritis from Local Action of the Poison, followed by General Degeneration Effects upon the Nervous System.—Dr. Ormerod: Case of Hereditary Chorea.—Mr. Lake and Mr. Ballance: Case of Recovery from Temporo-sphenoidal Abscess.—Dr. Beevor and Mr. Ballance: Case of Removal of Subcortical Cerebral Tumour.—Dr. J. Taylor and Mr. Ballance: Case of Trigeminal Neuralgia successfully treated by Krause's Operation.—Dr. Lunn and Mr. Ballance: Case of Removal of Cerebellar Tumour three years and eleven months after the operation.

FRIDAY (28th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Dr. L. A. Hawkes: The Dispensary. (Course of Lectures on Medical Relief.)

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—3 P.M. Dr. M. Hunt (President): Inaugural Address. Cases will be shown by Dr. D. Grant, Dr. Milligan, Dr. Lamb, Mr. Lennox Browne, Mr. W. Wingrave, Dr. F. Potter and others.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Clinical Evening. The following cases will be shown:—Dr. W. S. Colman: Syringo-myelia.—Mr. J. Clarke: Rachitis Adolescentium.—Dr. N. Dalton: Double Athetosis in a Boy.—Mr. Watson Cheyne: Repair of the Bridge of the Nose by Rabbit Bone.—Dr. S. Phillips: A Case of Chyluria.—Mr. Page: Ankylosis of Lower Jaw treated by Removal of a Wedge from the Neck. And other cases. Patients will be in attendance at 8 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (24th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. G. Stoker: Chronic Glandular Disease of the Nose and Naso-Pharynx.

TUESDAY (25th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Ferrier: Hemiplegia.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Psoriasis.—Bethlem Hospital, 2 P.M., Dr. Craig: Stupor; Katatonia; Dementia and Senile Insanity.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. T. D. Savill: Cases illustrating the Different Forms of Hysterical Attack, their Pathology and Treatment.

WEDNESDAY (26th).—LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: House Drainage.

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HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: Bronchiectasis.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Bidwell: The Application of Plaster-of-Paris and other Splints.

THURSDAY (27th). — LONDON POST-GRADUATE COURSE. — Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Dr. Mitchell Bruce: Clinical Lecture.
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow.
CHARING-CROSS HOSPITAL.—4 P.M. Dr. Galloway: Dermatological Demonstration. (Post-Graduate Class.)
THE LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—4 P.M. Mr. J. Startin: On Gouty Eczema.

FRIDAY (28th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Anthrax and Malignant Œdema.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Cheatle: The Application of Splints to the Lower Extremity.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

A QUESTION OF ETHICS.

To the Editors of THE LANCET.

SIRS,—The following question has been asked me; perhaps some of your readers will kindly give an answer. X is a growing spa. In it are already settled four medical practitioners. Would it be ethically wrong for another medical man to settle in the place or to go thither three or four days in the week for consultant practice?

I am, Sirs, yours faithfully,
Oct. 18th, 1898. M.D.

WHAT CONSTITUTES A PARTNERSHIP?

To the Editors of THE LANCET.

SIRS,—A and B are in partnership, having equal shares in a practice. Twelve months ago C goes to them as an out-door assistant at a fixed salary. At the expiration of six months A and B offer C a partnership in lieu of the assistantship, C to receive a fifth share of the nett profits in lieu of salary and A and B two-fifths each. C accepts the offer and his name thereupon appears on the surgery door and on the billheads as a member of the firm, besides which A and B repeatedly inform the patients that C is their partner and *not* the assistant. A deed is drawn up by one of the partners, but C and the other partner objecting to the wording of one of the clauses the deed is not signed but remains in the possession of C awaiting rectification. In the meantime, however, C receives his fifth share of the nett receipts which are divided up weekly, A and B receiving their two-fifths each. This goes on for six months when A and B inform C that the practice is too small for three partners and as no deed had been signed C must regard himself as only occupying the position of assistant and as subject to a month's notice. C declines to accept the notice on the ground that his name having appeared on the business premises and on the stationery and having been the recipient for six months of a weekly share of the profits he is a *bonâ fide* partner, notwithstanding the fact of there being no deed of partnership. Is C right in his contention that the facts as herein stated constitute a partnership? and is he justified in refusing to go out of the firm? The usual assistant's bond which C signed on first going to A and B is still in their possession. Is it still binding on C or should it have been destroyed when C became a partner? If taken into court neither A nor B could state on oath that they had not regarded C as their partner.

I am, Sirs, yours faithfully,
Oct. 19th, 1898. A READER.

*** It seems clear from the above *ex-parte* statement that A and B have made C a partner and have treated him as such. They cannot therefore relegate him to the position of an assistant without his sanction. The bond should have been formally cancelled when C ceased to be an assistant. Only a solicitor with the draft agreement and the bond before him could decide accurately what is C's best legal course. The matter is exactly one for friendly arbitration.—ED. L.

"VULGAR METHODS": AN EXPLANATION.

To the Editors of THE LANCET.

SIRS,—My attention has been directed to THE LANCET of Sept. 24th, in which you print a series of labels. The red labels which you so forcibly impress were evidently disseminated by my locum tenents during my absence from home.

I am, Sirs, yours faithfully,
Plashet-grove, East Ham, Oct. 18th, 1898. HY. HUTCHINSON.

"ADVERTISING."

To the Editors of THE LANCET.

SIRS,—I have received a copy of your journal, dated 15th inst., containing an announcement headed "Advertising" in connexion with my name. That announcement exposes me to an odium that, as I think, I do not in any degree deserve. I was obliged to change my address under very exceptionable and pressing circumstances through no fault of my own, and I did not intentionally send the card in question to anybody to whom I did not believe myself entitled conformably with professional usage to give notice of my removal. In fact, I scrupulously followed the course recommended to me by one who informed me that he had himself followed that course in all its details under similar circumstances on behalf and under the direction of a leading consultant now deceased. Moreover the card sent out for me was copied from the card sent out for that consultant and engraved at the same engraver's. I do not consider that anything I have knowingly done rightly exposes me to any censure that would not be quite as applicable to the eminent consultant above referred to, and he certainly was one whose judgment on a point of professional etiquette could not have been lightly challenged, nor was he by any means singular in his views and conduct in such matters.

I regret, as regards the addressing, &c., of the envelope, that through an oversight any annoyance should have been given to your correspondent.

I am, Sirs, yours faithfully,
Gloucester-place, Portman-square, W. W. BURSLEM ROTHEROE.

INNSBRUCK AS A WINTER RESORT.

MR. W. BUCHANAN, M.R.C.S. Eng., of Chatham, writes to us drawing attention to the claims of Innsbruck as a winter resort. Innsbruck lies at an altitude of 1912 ft. above the sea in a sheltered valley. It is blessed with an abundant supply of pure water brought down from the mountains, a most important item, and owing to the nature of the soil the ground dries very quickly after rain. The weather during November, December, January, and February is dry, still, and cold, with a bright sun, blue sky, and hard dry snow on the ground.

THE PROHIBITION OF CORSETS IN RUSSIAN SCHOOLS.

To the Editors of THE LANCET.

SIRS,—The Russian Minister of Education has forbidden the wearing of stays by the female students under his jurisdiction. Presumably, the reason for this edict is a laudable desire that the Russian educated woman shall rejoice in a natural waist. Regulations dealing with dress, especially with such garments as do not meet the eye, are difficult to enforce and easy to evade; but apart from the difficulty of making such rules effectual it is questionable whether the absolute banishment of every kind of corset would be advantageous. The wasp-waist which has for centuries deformed our female ancestors, though it dies hard, is undoubtedly on its death-bed. Perhaps the case is different in Russia, but among English-speaking women active exercise and games out of doors have become almost universal during the last few years and have necessitated a mode of dress which, while leaving something still to be desired, is on the whole sensible and rational. The corset has shared in the improvements and modifications which are found in every article of attire; there need now be no difficulty in procuring a garment which, without producing any compression or deformity, will nevertheless give to the wearer just the amount of support required by modern dress. The flowing robes of the Greeks needed no such support. But in these days the flowing style would be an inconvenient one to adopt; most women wearing modern dress, excepting the very thin and slight, feel more comfortable in stays of some sort. Many stays are made with shoulder straps and arrangements for attaching the underskirt and stocking suspenders, thus doing away with garters, bands, and strings, and allowing the clothing to be suspended from the shoulders instead of dragging on the hips; such stays have soft

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flexible "bones," yielding to every movement of the body and easily withdrawn for laundry purposes. They serve two purposes, supporting the figure and affording a comfortable means of attachment for the other underclothes. Such garments need not be tight; they answer best and are most comfortable when fitting properly and allowing due expansion of the chest and abdomen during breathing. To prohibit their use would be to deprive their wearer of a comfortable and rational garment. The Russian Minister of Education would be only logical were he to forbid men and women alike to wear boots and shoes because certain people have in times past constricted and deformed their feet.

I am, Sirs, yours faithfully,

Clapham-common, S.W., Oct. 17th, 1898. D. CAINE, M.D.

THE POSITION OF THE ASSISTANT WITH REGARD TO FEES EARNED AT CORONERS' INQUESTS.

"A is assistant to B on a salary with a commission on midwifery receipts. He is called in to see a patient and finds him dead on his arrival. Subsequently he makes a post-mortem examination, giving evidence before the coroner. Is he entitled to any part of the fee thus earned in the absence of any agreement to the contrary?"—The gentleman who sends this question to us informs us that A and B feel quite amicably towards each other and does not inform us if he is A or B. The fees belong legally to A, but it is the habit of many principals—and we think a graceful and right habit—to divide such fees with the assistant when all the labour and responsibility has fallen upon the assistant.

"POWDER PUFFING": AN EXPLANATION.

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to an observation in THE LANCET of Oct. 15th in which it is stated that the wrapper of a certain baking powder has upon it a testimonial signed by me. In reply I wish to remark that in the course of seventeen years' service as medical officer of health I have had to do some analytical work and that occasionally during the same period articles of a dietetic or other nature have been submitted to me by various people for qualitative analysis, several baking powders being amongst the number. As I have usually given a certificate as to purity, &c., I take it that the wrapper in question bore a copy of such a certificate. This does not appear to me to be "powder puffing"; neither have I lent my name for use in connexion with this or any other article. I am not aware therefore that I have infringed any Act of Parliament or by-law of the General Medical Council by giving such a certificate to any person who has considered my analytical report worth seeking. Numbers of medical men give such; hundreds are given every year. Trusting that you will give this explanation the same prominence in your valuable paper that you did the observation referred to.

I remain, Sirs, yours faithfully,

Nottingham, Oct. 15th, 1898. WILLIAM TIBBLES.

*** We publish the explanation with pleasure.—ED. L.

THE COUNTERFEITING OF ANCIENT COINS.

A WRITER in the *Revue Scientifique* of Oct. 15th states that the Italian manufacturers of coins and medals intended to be sold as ancient have a strange method of giving them the "patina" or superficial oxidation which is supposed to be characteristic of genuine antiques. Large birds, such as turkeys, are made to swallow imitation coins of the Roman emperors, and if the coins when voided do not present the desired appearance they are repeatedly subjected to the same process. The inference is that the effect is due to the action of the intestinal juices and gases.

MEDICAL OFFICERSHIPS IN THE HIGHLANDS AND ISLANDS.

To the Editors of THE LANCET.

SIRS,—Owing to the number of these vacant posts appearing in the "dailies" at present and the harsh treatment often meted out to the unfortunate young gentlemen who accept them you could not do better than direct your readers before accepting such places, particularly Skye and Orkney, to address the last medical officer for an honest opinion of their value and treatment to be expected.

I am, Sirs, yours faithfully,

Oct. 17th, 1898. JOHN TAYLOR, M.D.

THE POPULATION QUESTION IN FRANCE.

ACCORDING to *La Science Française*, there are 8,713,266 families in France with one or more living children, the number in each family being as follows. In 2,640,894 families, or 30·3 per cent. of the whole, there is only 1 child; in 2,364,202, or 27·1 per cent., there are 2 children; in 1,585,960, or 18·2 per cent., 3 children; in 975,616, or 11·2 per cent., 4 children; in 572,285, or 6·5 per cent., 5 children; in 322,651, or 3·7 per cent., 6 children; and, finally, in 251,658, or 2·9 per cent., there are 7 or more children. It is evident, says the writer, that in the matter of posterity the French nation cannot hope to establish a record. In a scientific journal one naturally looks for accuracy, but if the above figures are to be accepted, the population of France, exclusive of barren families and also apparently of single men and women, exceeds 40,000,000. Writing in *La Médecine Moderne* on what he calls "la Veulerie contemporaine," Dr. Fiessinger describes a "moral malady," which may or may not be accountable for the paucity of children in French households. "A social epidemic," he says, "has cast its net over the different classes; sparing none, collecting them all into one great flock, where they remain dumb and bereft of ambition. It is the leading vital question of the day this utter absence in modern society of energy, this lack of all initiative. The foundations of the State must be assured, the public equilibrium must be maintained at any cost. Hence the suppression of individuality, the levelling down of temperament, the crushing of aspiring spirits beneath the roller of uniformity additionally weighted by suspicion and jealousy. Such is the ideal to be attained to, the sublime crown which has to be wrought. Collectivism cannot endure that aught should emerge above the dead level of equality. Its favours are reserved for those who can stoop down to the official standard. Universal mediocrity; such is the dream of the collectivist." Frenchmen would seem to be afraid of large families because in their opinion all the children have to be provided for alike. They have no approval of the law of primogeniture.

THE CLIMATE OF THE DISTRICT AROUND JOHANNESBURG.

A CORRESPONDENT would be very grateful if anyone could tell him from personal knowledge some facts about the climate of the districts lying round Johannesburg. He is desirous of avoiding dust-storms.

M.R.C.S.—Seven teeth defective or deficient in persons under seventeen years of age on the day of entry or ten defective or deficient teeth in persons above the age of seventeen years disqualify. No departure from this rule is permitted without special authority from the Admiralty. Both classes of persons must, however, possess at least four perfectly sound opposing molars—viz., two in each jaw, and the same number of incisors similarly placed. A tooth is to be considered as defective when it cannot be made permanently serviceable by dental repair. In all cases due regard is to be paid to the condition of the remaining teeth and the probability of their lasting for at least twelve years. Credit is to be given for teeth which have not erupted, unerupted wisdom teeth excepted.

Registered Medical Student cannot take fees for attendance upon midwifery cases, and there is no "institution" which can give him the legal right to do so except such bodies as can transform him—after examination—into a qualified and registered medical man. Any medical man employing a student to attend midwifery cases for him would be liable to censure or worse from the General Medical Council, whose recent pronouncement about unqualified assistants seems to have escaped our correspondent's notice.

A Father of Nine.—We cannot publish a letter inviting suggestions for medical treatment and we do not give medical advice ourselves. Recourse must be had to the family medical man.

Enquirer.—We see no reason for believing that the medical men were privy to the insertion of the paragraph.

Mr. J. Williams.—We do not know of any work treating the subject named.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 20th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Oct. 14	29·69	S.E.	0·09	84	59	47	50	51	Overcast
,, 15	29·21	S.E.	0·11	59	59	51	50	52	Overcast
,, 16	29·11	N.E.	0·42	79	56	50	50	51	Hazy
,, 17	28·89	S.	0·25	105	65	51	55	56	Fine
,, 18	28·79	S.W.	0·54	93	60	55	55	55	Raining
,, 19	29·35	S.W.	0·05	77	58	51	52	53	Cloudy
,, 20	29·72	S.W.	...	79	59	50	50	51	Cloudy

During the week marked copies of the following newspapers have been received: *Scotsman, Birmingham Post, Eastbourne Chronicle, Western Gazette, Manchester Courier, East Essex Times, Hampshire Telegraph, South Wales Chronicle, Warwick Advertiser, Times of India, Pioneer Mail, Kent Messenger, Chatham News, Lancaster Guardian, Bedford Times, Citizen, Rochester Journal, Sussex Daily News, Brighton Gazette, Cambridge Express, Cheshire Observer, Yorkshire Post, Sheffield Telegraph, Architect, Derbyshire Courier, Eastern Morning News, Glasgow Herald, Builder, Blackpool Gazette, Liverpool Daily Post, Dundee Advertiser, Oban Times, Worcester Herald, Buxton Advertiser, Ilfracombe Gazette, Leeds Mercury, East Riding Telegraph, Somerset County Herald, Bristol Mercury, Sanitary Record, Radnorshire Standard, Tit-Bits, Optician, Rangoon Times, Farm and Home, Madras Times, Indian Daily News, Calcutta Local Government Chronicle, Hertfordshire Mercury, Liverpool Courier, City Press, Public Health Engineer, Reading Mercury, Bristol Times and Mirror, Local Government Journal, Surrey Advertiser, Freeman's Journal, Poole Herald, Shrewsbury Advertiser, Weekly Free Press and Aberdeen Herald, Macclesfield Courier and Herald, Cheltenham Examiner, New York Herald, Craven Herald, Keighley Herald, Louth Times, &c., &c.*

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An Address

ON

THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

Delivered at the Technical College, Huddersfield, on Oct. 22nd, 1898,

BY SIR WILLIAM BROADBENT, BART., M.D., F.R.C.P. LOND., F.R.S.,

CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL.

GENTLEMEN,—Having been called to Huddersfield on one matter concerning the public health it occurred to me that I might perhaps render a service to my native town and neighbourhood by bringing before you another question of great importance—namely, the prevention of consumption. I claim no special knowledge of the subject and shall have nothing to say which will be new to my medical friends in Huddersfield, so many of whom I see around me to my great satisfaction, and I should like to begin my lecture here by thanking heartily the members of the profession, and particularly Mr. Knaggs, for the cordial support and encouragement they have given me in this matter. You would have learnt from them in course of time how the ravages of tubercle may be stayed, but knowledge percolates slowly, and while it was being brought home to the general public many hundreds of valuable lives might be sacrificed. It is the realisation of this fact which has led to the formation of the National Society for the Prevention of Consumption and Other Forms of Tuberculosis.

You are all familiar with the prevalence of consumption. There can scarcely be a person here who has not lost some relative or friend from this disease. Statistics, therefore, are scarcely necessary, but it will perhaps bring more definitely before your minds the serious loss of life to which tuberculous disease gives rise in this neighbourhood if I quote the figures relating to it which are found in the able report of Mr. Annis, your medical officer of health, for the year 1897, and show you on an enlarged scale a diagram which he has made illustrating the proportion of deaths from all causes. You will see what an enormous preponderance consumption claims. The total number of deaths in the borough in 1897 was 1666, and of these 222, 1 in 7·5, were due to the various forms of tuberculous disease. We are, say, 800 people in this room; 80 or 100 of us will die from consumption or other effect of tuberculosis. You will all agree that if this terrible sacrifice of life is preventable it ought to be prevented. I can imagine some of you who are cynically minded, and especially such as consider themselves safe from diseases of this kind, saying, "Well, we must die from something; why not from phthisis?" If consumption only weeded out the weaklings there might be something in this view of the matter. But it is often the most gifted, the most useful, the most diligent, the most intelligent, the most amiable who are carried off in this way. Is this not so? And then it is so tedious and trying and often so painful and distressing a way of leaving the world; and so expensive too, frequently exhausting the entire resources of a family.

Until the last few years the idea was that consumption was a disease which was in the family, a constitutional tendency which could only be accounted for by heredity and against which it was in vain to strive, an inevitable evil to be submitted to as a decree of inscrutable providence. Added to this was the impression that it was incurable, and thus efforts to relieve and cure it were paralysed. But these ideas, I am thankful to say, are wrong. Tubercle is not inherent in the constitution. Consumption is not an inevitable disaster, inflicted by a mysterious fate; it is, on the contrary, one of the products of men's ignorance and carelessness. We now know how it is brought about and it is within the power of man to prevent it. Consumption is "caught," to use a familiar expression, from a pre-existing case; not, let me add at once, communicated directly from person to person by breathing the same air or even sleeping in the same room. There is no need to aggravate the sufferings of the phthisical patient by treating him as a public danger; no need to drive wife or child out of the house to save the rest of the family. The agent in the causation and transmission of the disease is the tubercle bacillus, a minute rod-like organism, which multiplies at an amazing rate. It is visible only under very high powers of the microscope and then only after careful straining. A favourite subject of discussion at one time was how many angels could stand on the point of a needle. Well, hundreds of these little demons could be carried on the point of a needle The bacilli then obtain access to the lungs or to other organs and if they find the soil suitable, and if they are not destroyed by the defensive agencies which are happily present in the system, they proceed to increase and multiply, compressing and blocking the minute blood-vessels and lymphatics, choking the air passages and air vesicles of the lungs, and forming the little pin-head solid bodies which gave rise to the name tubercle. Eventually the nutrition of the structures is so interfered with that they lose their vitality; inflammation is set up and the result is that the tubercles and the portion of tissue invaded by them soften and break down, forming small cavities which extend and coalesce till cavities of considerable size result. This is not the only harm they do, for besides damaging and destroying the tissues they form a poison or toxin which is absorbed into the blood, and by its presence in the circulation gives rise to the fever, sweating, and wasting which attend consumption.

We should naturally suppose that these tubercle bacilli being present in diseased lungs by millions would be carried out by the breath, but this is not so. They are not found in the moisture condensed from the breath, or on a piece of cold glass or metal, or in fluids through which expired air is made to pass. But they are contained in countless numbers in the expectoration and become the means by which the disease is disseminated. These bacilli are possessed of extraordinary vitality, even outside the body, but there are certain agencies which they cannot resist—heat, sunlight, and fresh air. Fresh air and sunlight are, in fact, the great enemies of all pathogenic organisms. The drying of the expectoration, however, does not kill the tubercle bacillus. Apparently, on the contrary, the desiccated organic matter serves as a protection to the bacilli, so that in the form of dust they survive indefinitely. The expectoration, then, of a consumptive person upon a pocket-handkerchief, or accidentally contaminating articles of dress or the carpets of a room, may sooner or later take the form of dust and so be carried about in the atmosphere. But careless people will spit about in the streets and roads and when not under observation in railway carriages and other public conveyances, in public buildings, especially in the corridors and passages, perhaps even in churches or chapels. This is not only nasty but dangerous. There is always the possibility that it may get dried, perhaps on ladies' dresses, which it contaminates, and be dispersed as dust, and it is by the inhalation of germ-laden dust that the seeds of phthisis are planted in the lungs.

We do not realise how ubiquitous dust is. We scarcely know where it can come from when we see it lying on papers, furniture, picture frames, windows, and in the holes and corners into which the diligent housemaid pursues it. You have all seen the motes dancing in the sunbeams crossing the room; you may have seen them in the rays of the lamp this evening. Every mote is a dust particle which may carry on its person numbers of tubercle bacilli. This is how consumption is usually contracted. In every breath we take we inhale an incalculable number of motes or dust of a more palpable form. Some of these may elude the defences which nature has planted in the respiratory passages, the filtering arrangement in the nose for entangling and arresting microbes, and the cilia of the windpipe and bronchial tubes, and reach the air cells. Then, if the local and constitutional conditions favour the development of the bacilli, the mischief is done. Let one bacillus out of a million find its way to predisposed lungs and consumption will be rife.

But there is another way in which tuberculosis is disseminated and that is by means of milk. Cows are very subject to tuberculosis, and at a certain stage of the disease tubercle bacilli are present in the milk. It is through milk so contaminated that children come to have tuberculous disease, tabes mesenterica, tuberculous disease of the bowels and mesenteric glands (better known, perhaps, as consumption of the bowels), and, directly or indirectly, tuberculous meningitis, or inflammation of the brain, or acute hydrocephalus. The disease of bones and joints to which children are

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subject are probably also traceable to milk; humpback, hip-joint disease, and the diseases of knees, elbows, &c., which cripple so many children; perhaps so is lupus; and no doubt tubercle is often implanted by milk in early life which develops later into consumption. While blaming the cows we must not forget that a consumptive mother may not only be wasting her own strength by suckling her child, but may be sowing in it the seeds of some of these diseases.

It is interesting to note that asses and goats do not suffer from tuberculosis and to bear in mind that the shrewd physicians of past days used to order asses and goats' milk for persons threatened with consumption. You will see how necessary it is that the milk-supply of large towns should be guarded from tuberculous contamination, and I am glad to find that the health authorities of Huddersfield are fully alive to this. The regulations with regard to cowsheds, dairies, and milk-shops on pages 39 to 44 of the medical officer's report for 1897 are admirable. They may be read with advantage by all consumers of milk and by those who keep cows for the supply of milk to their own households. I should like to see the medical officer of health empowered to make an addition, viz., that no person suffering from phthisis should be employed about cows. Consumptive persons should especially be forbidden to engage in milking or in the handling or distributing of milk. I do not like to contemplate the disgusting possibility of contamination of milk by sputa, but we cannot but admit that it might occur. There is no need to consider at any lengh the contingency of the communication of tuberculous disease by means of meat. This is adequately provided against by the public slaughter-house and by the careful inspection of meat. You are all the more secure in Huddersfield in consequence of the excellent relations which exist between your medical officer of health and the butchers of the town. Besides we do not eat our meat raw, and cooking is fatal to bacilli. The measures which are required for the prevention of consumption are at once suggested by what I have said as to the methods by which it is disseminated, but before entering upon these I must say a few words with regard to the old idea as to family proclivity and hereditary tendency to consumption. This was not a mere theoretical assumption; it was based on observed facts, and nothing could be more foolish than to reject a conclusion founded on experience simply because the explanation was erroneous.

Although the immediate cause of consumption is the implantation of the tubercle bacillus, it is still perfectly true that consumption runs in certain families and that constitutional predisposition is an important factor in the production of the disease. But it is not actual disease which is transmitted from parent to child, nor will any degree of tendency in the constitution induce it. The hereditary constitutional predisposition is simply a liability to tuberculous disease on exposure to the germs, a vulnerability of the tissues producing a suitability of soil. Two people may be equally exposed to invasion by the bacilli and one will develop phthisis while the other will not, and we can usually tell beforehand which of the two will succumb and which resist. It may be mentioned that gout seems to reinforce the resistance to infection by tubercle, and, curiously enough, so does the anæmia to which young girls are subject. Besides, however, a constitutional susceptibility, another reason why consumption prevails in certain families is that generation after generation live under the same unfavourable conditions in dark, damp, ill-ventilated houses—in houses very often which actually harbour the bacilli left by previous cases.

As regards the preventive measures which must be adopted I will first complete what I have already said on this point as to milk. To begin with, an absolute defence against the communication of tubercle bacilli by means of milk is to boil it. But some people, children especially, do not like boiled milk or think it does not agree with them. But the desired end, the destruction of the bacilli, can be attained by exposure for a certain time to heat short of the boiling point—by sterilisation as it is called. This, however, demands a little time and trouble, and in how many households is the simple boiling of the milk too great a trouble? Fortunately, milk is now sterilised on a large scale at many of the more important dairies and can be supplied in any quantity. As it keeps indefinitely while the bottles are sealed it can also be sent to any distance. I tasted some at the Sudbury Dairy on Lord Vernon's estate a few weeks ago which was a month old and as fresh and sweet as on the day it was milked. The railway companies ought to insist on this sterilised milk being kept at refreshment rooms instead of the tumblers of milk which we see exposed on the counter—which may have been standing there for half a day, absorbing bacteria and filthy emanations of every sort. If the railway company do not insist on it in defence of their passengers I hope the public will do it in self-defence. It is to the defensive instincts of the public that we appeal. But while we can kill the bacilli in milk we have a right to demand that milk shall be supplied to us which does not contain them. This opens up a large subject. An enormous proportion of the milch cows in this country and over most of the continent is affected with tuberculosis and they are potential sources of disease. Contrary to one's expectations, tuberculosis is much less prevalent among cows kept for dairy purposes in large towns than in the herds of dairy farms. This is due to the fact that cows which come under the purview of the medical officer of health are inspected and perhaps tested and such as are diseased are killed off or quickly got rid of in some way. It is a melancholy thing that the greatest danger comes from fresh country milk. It is with great reluctance that I contemplate the imposition of a new burden on the distressed agriculturist, but pure milk we must have. Fortunately, an easy and certain test for the presence of tuberculous disease in the cow exists in the subcutaneous injection of tuberculin, and already in many herds animals found to be affected are separated from the rest and gradually got rid of. In a few years with precautions against the introduction of new animals affected with tuberculosis the disease can be eradicated. This is a matter for rural and district councils and for land-owners. It has, in fact, been taken up by far-sighted and public-spirited landlords, and the Minister of Agriculture, the Right Hon. Walter Long, has given a conditional promise that tuberculin shall be supplied and the veterinary surgeon paid by Government. To insist on the universal testing of herds and the immediate slaughter of all affected animals would be ruinous to farmers unless there were compensation, and compensation would involve a demand for money which no Chancellor of the Exchequer could face. It would, besides, be a premium on carelessness and neglect of hygiene. Bad farmers would get rid of sickly beasts of their own making at the public expense. The extinction of tuberculosis in cattle must, I am afraid, be a gradual process, but in proportion as it is accomplished the farmer will be a gainer because his tuberculous cows die. I have had placed in my hands an appalling list of losses of cows year after year from this disease by an intelligent and industrious farmer. In the meantime we must boil or sterilise our milk.

Prevention of the spread of consumption from persons suffering from the disease practically resolves itself into the destruction of the sputa. The sufferers themselves must be brought to understand this and to realise that unless they adopt and faithfully carry out the necessary precautions they are a standing danger to their family and friends and to the public generally. The families of consumptive individuals must be impressed with the same idea, and the general public must defend itself by insisting on what is necessary for their safety. Convenient receptacles for expectoration have been devised, and one of these patients must carry about with them and conscientiously make use of. Every night and morning, or more frequently, the contents must be destroyed, if possible by burning, and the vessel must be well washed in boiling water and cleansed by some disinfectant, a little of the disinfectant fluid being left in it to receive the expectoration. If no fire is available it is, perhaps, permissible to throw the contents of the spittoon down the water-closet or privy well mixed with a powerful disinfectant, never should they be thrown on an ash heap or out into the street or road or garden or field. Pocket-handkerchiefs should not be employed unless in the form of a square of soft paper, such as is used by the Japanese, which can be at once burnt. Some of my zealous friends advocate notification of consumption, as is done in cases of fever, but, I ask, what are you going to do with the patients when you have notified them? All the hospitals in the kingdom would not hold them, and I doubt whether any effectual inspection and enforcement of precautions would be practicable. The worry would be intolerable. And if we wait till the Legislature enforces compulsory notification years will be lost.

One form of notification, however, is already in force—the death certificate—and action ought to be taken upon this. The room or rooms in which a consumptive patient has lived and died ought immediately to be thoroughly disinfected under the supervision of the medical officer of

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health. In the case of those who have received public help during life this should be imperative, and others will, I am sure, see the necessity of it in the interest of other members of the family. But there are preventive measures to be taken on the part of those as yet in health, and these are of especial importance in the case of those who belong to families in which there is an inherited susceptibility. The most effectual of these is to live, as far as possible, in fresh air day and night, summer and winter. The closely-fitting windows to which we attach such importance are a snare and a delusion. When we are sitting in a room with a fire if air cannot make its way in by the widow from the open air outside it will come in under the door from the passage and basement. Fear of a draught from a window open at the top leads to that most pernicious of draughts along the floor and about the ankles. Ventilation is of vital importance. But it is necessary by night as well as day. Everybody ought to sleep with the window open and the bedroom ought to be as fresh in the morning as when it is entered at night. I believe—it is a mere conjecture, of course—that if we all slept with open windows the mortality from consumption would be reduced by one-half from this alone. There would be fewer colds and coughs, too. The construction of houses, again, is a matter of great importance. There ought not to be a dark corner in a house, still less a dark passage. Sooner or later a dark passage or staircase will harbour germs, and, as everybody knows, they are the homes of dust. From this point of view some of the extensive flats and gigantic hotels which are now so numerous are a source of danger. In many of them the passages are tortuous and dependent on gas or electricity for light. Efficient ventilation is impossible, and as an enemy of germs even the electric light is a poor substitute for the sun. I used to be greatly astonished to meet with tuberculous disease in families living in splendid country houses, with every advantage of climate, soil, and surroundings, and all the aids to health which wealth and education can command. At last I found that the secret was dark corridors and, in one remarkable case, a dim central hall. I was chatting with an eminent man of science this summer and happened to allude to this conclusion of mine, upon which he told me that he was the sole survivor, I think, of eight brothers and sisters, and that he had lost almost as many uncles and aunts, all from phthisis, and that the family home was just such a large and imposing but dark and gloomy house as I had described. I need scarcely mention the necessity of attention to the personal health. Excesses of all kinds diminish the constitutional resistance to tuberculous invasion. Alcohol in excess not only stupefies our brains but our phagocytes, as the cells are called, which attack and destroy microbes.

So far I have said nothing of the treatment of those suffering from consumption, and you might be disposed to think that this formed no part of my subject. But it does. Nothing can be more efficacious in preventing the spread of consumption than to cure those already affected by it, unless, indeed, you kill them off out of the way. Now a great deal more can be done to arrest and cure phthisis than was formerly supposed possible by means of what is called, and what is in truth, the open-air treatment. We have been in the habit of sending phthisical patients to the shores of the Mediterranean in search of sun, to the mountain snows of Switzerland for a germ-free atmosphere, or voyages to every part of the world for the healing virtues of sea air, perhaps to special institutions in Germany or the Black Forest. Many returned better, some well, others perished miserably far from home and friends. At length we have become alive to the fact that the curative agent is not any particular air, but simply air. Thus the remedy for consumption lies ready to our hands, and instead of being attainable only by the favoured few is available for all. I hold in my hand a pamphlet by Dr. Philip, of Edinburgh, of which the title is, "On the Universal Applicability of the Open-air Treatment of Pulmonary Tuberculosis," and this is not a mere pious aspiration, but a verified experience. Dr. Philip at Edinburgh, Dr. Burton-Fanning on the Norfolk coast, Dr. Gibson in Ireland, and others elsewhere have shown that consumption can be treated successfully in practically all parts of our islands. This has revolutionised our ideas and it has created new duties. If consumption is preventable it ought to be prevented—if it is curable it ought to be cured. What is needed for this end is the erection of suitable sanatoria and these ought to be provided within easy reach of every large town. Certain requirements must be fulfilled: there must be a dry soil, a southern exposure, protection from the east and north, absolute freedom from dust, and, if possible, from fog. The special desiderata are a maximum of sunshine and a minimum of wind and wet. The construction of these sanatoria and their internal arrangements will be simple. The one thing about them will be that it shall be impossible to close the windows of any room in them day or night. They need, indeed, be little more than sleeping-sheds; but of course they would be made as cheerful and bright as possible, though pictures are almost inadmissible, as the frames harbour dust. The patient will spend the entire day in the open air, wet or fine, warm or cold. Moveable shelters will be provided to shield him from cold winds and to protect him from rain. On no pretext will he sit indoors. The amount and kind of exercise he may take will be determined by his temperature and strength, and his life will be regulated in every respect. No great barrack-like building will be required. A sanatorium will usually consist of a number of small separate pavilions, which may be erected one after the other, and I may venture to point out the opportunity to anyone who desires to be a benefactor to Huddersfield of building one of these pavilions by way of a beginning.

An idea which finds favour is that at first these sanatoria should be self-supporting—should, in fact, be for paying patients. Some part of the disease could thus be dealt with before funds could be raised to provide for consumption among the poor. The association which I have the honour to represent as chairman of the organising committee has for one of its objects the promotion of the erection of sanatoria in all parts of the country. It is to be hoped, and indeed confidently expected, that local branches will be formed for the purpose of ministering to local needs. Such branches will collect and expend their own funds and will erect sanatoria at any suitable spot in the neighbourhood so that patients will not have to go far from home. The special function of the national association will be to coördinate the work of different branches, to stimulate public interest in the prevention of consumption, and to coöperate with all the agencies which have for their object the promotion of public health.

We shall bring before county and district councils the question of milk, and aid health authorities to secure the construction of houses which shall not be standing invitations to disease, and the destruction and reconstruction of such as are, and to promote ventilation and cleanliness. Clergymen and ministers of religion, who see in the way of duty so much of the suffering and distress occasioned by consumption, will, we think, eagerly grasp the opportunity of informing themselves how the disease may be combated and prevented and of disseminating the information among families, thus reinforcing the efforts of the medical man. School-masters and mistresses, again, can do much to teach children the lessons of health and self-preservation. I have only time to hint at a very few of the ways in which a great national association may bring about the prevention of a terrible national loss and the removal of a dark blot on the national good name; and it is because more can be done by a general, simultaneous, and united effort than by any number of isolated local efforts that I give this lecture here to-day. The health authorities of the town have done me the great honour to invite me here to open formally a splendid fever sanatorium. I hope in a year or two to come down again to take part in the opening of a sanatorium for the open-air treatment of consumption, and I hope that in the not remote future, when physicians are lecturing upon tuberculous affections, it will be on examples looked upon as rare and extraordinary cases and not, as at present, furnishing a very large part of their work.

SOMERSET COUNTY ASYLUM.—The Somerset County Council has granted an additional sum of £5500 for the Cotford Asylum; the original cost was estimated at £60,000, but £154,000 have already been spent.

DIPHTHERIA IN THE RHONDDA DISTRICT.—At the recent monthly meeting of the Health Committee of the Rhondda District Council held at Pentre, South Wales, the medical officer of health (Mr. Herbert Jones) stated that a serious outbreak of diphtheria had occurred during the past month. 149 cases were reported and 31 proved fatal, the districts more particularly affected being Trealaw, Porth, and Ynishir.

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An Address
ON
SOME CONSIDERATIONS OF THE LIFE AND WORK OF THE GENERAL PRACTITIONER.

Delivered on Oct. 7th at the Inaugural Meeting of the West London Medico-Chirurgical Society, Session 1898-99,

BY S. D. CLIPPINGDALE, M.D. ABERD., F.R.C.S. ENG.,
SURGEON TO THE KENSINGTON DISPENSARY.

GENTLEMEN,—It is the custom for the President of our society to select as the subject of his inaugural address the matter with which he is most conversant—in other words, his *specialty*. The specialty of a general practitioner is, or should be, general practice and it is upon this subject that I, a general practitioner, wish to offer you a few remarks this evening. I am aware that I am addressing many who from seniority and experience know more of this matter than I do myself. From them I ask forbearance if I show ignorance, while from every member I beg indulgence if my remarks lack interest.

The life and work of a general practitioner can, I think, best be studied under three heads: (1) the medical practitioner's duty to his patients and to the public; (2) his duty to other medical practitioners; and (3) his duty to himself.

THE MEDICAL PRACTITIONER'S DUTY TO HIS PATIENTS AND TO THE PUBLIC.

The duty which a medical man owes to the community generally cannot, I think, be overrated. The late Mr. Gladstone expressed his belief that medical men would eventually become the leaders of the people. Whether or not this will be so I think there can be no doubt that the influence of the medical man is increasing. The reason of this trust is, I think, due to three causes. He is known to found his opinions upon scientific facts—that is, he is a disciple of truth; he is known to possess a keen insight into human nature; and he is, I hope, always regarded as a man of honour. The evolution of the medical man, the process by which he has reached his present stage of development, is itself an interesting study.

As you are aware, the earliest practisers of the art were alchemists and astrologers. Then came the Church and to its guardianship there is no doubt that medicine owes much, for the clergy brought natural science and logic to bear upon the cure of disease. The priests were the only educated men at the time and medicine was elevated by their dealing with it. Many of the clergy made a special study of disease, and one of the Popes, I think John IV., was what would be called to-day a qualified practitioner. After a time, as medical science widened and deepened, it became necessary that a separate body of men should be trained to deal with it. Theology and medicine were divorced. Not, however, without a struggle. The new order of practitioners, like all innovators, were looked upon with suspicion. The Pope and his cardinals discussed the question whether, in the interests of the human race, the new order should be encouraged or suppressed. The cardinals, with a natural anxiety for the welfare of their people, were unanimously in favour of suppression. The Pope, so it is said, was of the opposite opinion on the ground that the new doctors, if allowed a free hand, would be sure to kill some of their patients and so prevent over-population of the world. As a strange contrast to this the Bishop of Augsburg a few weeks ago (as related in the *British Medical Journal* of Sept. 24th) found it necessary to issue an edict against what he terms "the illegal practice of medicine by clergymen" and exhorts the priests to keep faith with regular practitioners. For centuries after its emancipation from the Church medicine was little better than quackery. In fact, it is doubtful whether the term "science" can be applied to anything which existed, certainly in this country, before the time of Harvey. The estimate formed of the medical practitioner at various times may be ascertained by consulting the contemporary literature. Thus Chaucer in his "Canterbury Tales" describes a medical man and seems to think him above the average, and attributes the superiority to trusting not so much to theology as to what he calls "natural magic." The practitioners of Shakespeare's time must have had an evil reputation if we are to judge of them by the poet's writings, for in these they are generally the agents by which death is produced. In the "Anatomy of Melancholy" Burton, writing in 1621, speaks thus of the profession: "I would require Honesty in every Physician that he be not over careless or covetous, Harpy-like to make a prey of his patient, or as an hungry Chirurgeon, often produce and wire-draw his cure, so long as there is any hope of pay. Many of them to get a fee will give physic to everyone that comes when there is no cause, thus, as it often falleth out, stirring up a silent disease and making a strong body weak." A century later we find Molière writing in a venomous way about medical men—in such a way, in fact, as to lead one to suppose that he had some personal reason for the attack. Le Sage in "Gil Blas" writes in a similar strain.

The contemptuous attitude shown to the profession was perhaps more or less deserved and was probably due to the following causes. In the first place, the "doctor" was little better than a charlatan, using all sorts of filthy compounds with which to treat his patient. To him the saying may be aptly applied that he "put drugs of which he knew little into a body of which he knew less." If his remedies failed a further piece of chicanery awaited the unfortunate patient, for the "doctor" sought a consultation with a physician, not at the patient's bedside, but in a tavern or at a street corner, and the physician would there, for a fee, prescribe for a patient he had never seen. A second cause of want of esteem was possibly the fact that the surgeon often played the *rôle* of personal servant. Henry VIII., for instance, was washed by his medical adviser and the latter has left an amusing account telling us that his Royal master would only take a bath once a fortnight and then if he were in a temper would only have his feet washed. A third probable cause for the disrespect was the mercenary disposition which unfortunately but undoubtedly characterised many of the profession. This I have mentioned above and it is referred to in many books. On this matter the late Dr. James Andrew informed me that the medical men of London 300 years ago had been credited with bribing the Lord Mayor to give parties in March!

It is not until the beginning of the last century that we find the medical profession referred to with anything like respect, and then the allusions become sympathetic. The poet Pope, for instance, says of his physicians: "There is no end of my kind treatment from the Faculty; they are in general the most amiable companions and the best friends as well as the most learned men I know." Of Dr. Lettsom, the celebrated physician of the reign of George III., it is recorded that "generosity was the ruling feature of his life," and Dryden writes: "That I have recovered is owing, next to God's mercy, to the skill and care of Dr. Guibbons and Dr. Hobbs, two ornaments of the profession whom I can only pay by this acknowledgment." A study of latter-day literature will show that the medical man is growing in public estimation. Dickens and Thackeray, it is true, write in satire of the profession; but satire is characteristic of these distinguished novelists. In the modern novel the medical practitioner often receives an amount of adulation which is fulsome, but honest tribute is to be found in the writings of the American poet Whittier, the late Mr. John Timbs, Mr. Cordy Jeafferson, Mr. Symington, Mr. William Andrews, and many others, while sympathetic articles are constantly appearing in the journals, notably the kindly and graceful writings in the *Spectator* last year. With his position in public favour firmly established and with the look for guidance from his fellow-men, how is the practitioner to discharge his trust? and firstly:

What part should a medical man take in municipal or imperial government? I have never felt free to respond to invitations to go upon a local board. It has always seemed to me that the contentions which often characterise the proceedings of these boards are incompatible with the calm required for medical practice and I am of opinion that the work of these boards is best left to the excellent business men who generally compose them and to their responsible medical advisers. With regard to the House of Commons it should always be remembered that a medical man who becomes a Member of Parliament does so as the representative of one or other of the political bodies. When he speaks he is listened to, not as a medical man, but as the agent of the party he represents. The political doctor is in my mind as unsatisfactory as the political parson, and for a

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medical man to achieve success as a politician appears to me to amount to a confession that he blundered in choosing his career. Government wants guidance in matters of health, but should not they get this as they get guidance in matters of law? Corresponding to the law officers of the Crown should there not be a Minister of Health—a medical man of great repute. The Minister of Health would of necessity be changed with the change of Government, but this would ensure that the post would always be filled by an up-to-date man. With a medical man as Minister of Health we should cease to witness the curious phenomenon of medical questions being answered by a gentleman who may perhaps be a successful brewer. As to the representation of the profession itself in Parliament I fail to see why it should not be represented where the other two professions are represented. I cannot believe that the House of Lords would suffer in dignity or in utility by the creation of a certain number of life peers on the nomination of bodies like the Royal Colleges of Physicians and Surgeons. With regard to the public services, it is a satisfaction to note that the office of coroner is now frequently given to a medical man who has taken the trouble to graduate in law also, the first appointment of this sort in London being that of Dr. Luxmoore Drew, the admirable coroner of this district. As to the military services, voluntary or regular, we must rejoice that our comrades in arms have at last received the positions and titles which they justly deserve; but I think we should deprecate a disposition on the part of our military brothers to forget that they enter the army as medical officers or a desire to exchange the medical for the military spirit. Doing this has been compared by Brigade-Surgeon Climo, and I think rightly compared, to the child who, possessed of a priceless jewel, prefers the setting.

What duty does a medical practitioner, as a teacher of hygiene, owe to those with whom he may come in contact? This duty is one of increased importance now that the Legislature has declared that a man may place his "conscience" above the law, especially as this so-called "conscience" seems to be the peculiar possession of ignorant people. It is also the duty, I conceive, of every medical man to point out that the object of medicine is its own obliteration, that death should follow senile decay alone, and that the stamping out of disease is a possibility, though its realisation will be delayed by the misguided action of faddists and "antis."

In what way can the medical practitioner best discharge his duty to his patients? It has been said that a good practitioner will aim at becoming as efficient as possible and then see that his patients get the benefit of his knowledge. I think it would be well if we asked ourselves occasionally such questions as these: How often do I attend the meetings of the Medical Society? what part of my annual expenditure in books goes in the purchase of medical literature? do I utilise my holidays in any way for the benefit of those who enable me to enjoy them? With regard to the last of these questions I may say that it has been my custom for some years to spend my holidays in health resorts. In this way I have had many pleasant trips, not only to the most picturesque parts of these islands, but also to such places as Arcachon and Biarritz, the health resorts of the Pyrenees, the Riviera, in Switzerland and in Germany, and I have seldom failed to find the knowledge thus acquired of benefit to my patients. The late Dr. Wilson Fox addressing his students said, "When taking your holiday, if you are anywhere near a health resort, by all means go and see it." I would venture to say, "Go to the health resort while engaged in active practice for your holiday and if you are anywhere near a golf course, &c., go to it." The late Archbishop Trench on this subject wrote:—

> "They who bid stern duty lead,
> Content to follow, they,
> Of duty only taking heed,
> Find pleasure by the way."

The practitioner who, having seen a patient at a distance, with the knowledge that he has done good and been well paid, with half an hour before his return train starts, and being of an antiquarian disposition turns into the aisles of an ancient cathedral, derives infinitely more gratification than if he had made the journey in pursuit of pleasure. The late Sir Andrew Clark, at a dinner of this society, made, as many of us will remember, some trenchant remarks about the man who prefers the theatre to the medical society, the novel to the medical journal, and, having stated that he came as a matter of duty but with a splitting headache, said that a man succeeded just as he was able to put his sensations under his foot and crush them! Gentlemen, if I speak something like a pedagogue I pray you forgive me. I am sensitive on this matter, for I feel no one needs greater stimulation to work than myself.

How can a medical man, having taken pains to make himself as proficient as possible, benefit his patients by the knowledge thus acquired? Turning to this question, I would suggest that a man often fails through want of confidence in himself. The late Prince Bismarck, when asked why he selected as his medical adviser the youthful Dr. Schweninger when there were so many older and better-known men in Berlin, replied: "The difference between Schweninger and my former doctors lies in this—I treated them, Schweninger treats me." Sir Morell Mackenzie and Dr. Burney Yeo have both pointed out that the medical practitioner should always be *superior* to his patient. The patient, in fact, feels *weak* and seeks *support*. He is the *adjective* and needs the medical man as a *noun* to lean upon.

THE DUTY OF THE MEDICAL PRACTITIONER TO HIS BROTHER PRACTITIONERS.

I wish to point out that the public have a curious notion as to what is called "professional etiquette." "You doctors are so funny," a patient will say, and he insinuates that "professional etiquette" is a variety of trades-unionism existing for the benefit of the medical profession and to the detriment of patients. It is not easy to make him believe that "professional etiquette" is simply the practice of the Christian rule of doing to others as you would have others do to you. The peculiarity of the medical practitioner, however, is that he carries this rule out more faithfully than others. The clergyman, for instance, does not expel from his congregation the person who lives in another parish, the lawyer does not refuse advice to a client who has consulted another lawyer, and the tradesman assuredly takes delight in getting his neighbour's customers. To a young practitioner, however, who wants to pull well with his colleagues I would strongly advise a perusal of Mr. de Styrap's excellent work on "Medical Ethics," and the report upon the same subject by the Shropshire branch of the British Medical Association. A study of these works and a careful consideration for the feelings of others would, I think, lessen the number of painful revelations which we are accustomed to see in the correspondence columns of the medical journals.

What duty do we owe to our brother practitioners in the poorer parts of London? We who live among cultured people, near parks and museums, who receive remunerative fees, and are shown hospitality by our patients, are, I fear, but ill-acquainted with the struggles of our equally deserving brethren who practise exclusively among the poor. I am not certain whether we do not look upon them with something like contempt and complain of the small fees which they unfortunately are obliged to accept. Yet surely the poor man's shilling is as respectable as the rich man's guinea and the poor man's medical attendant is generally one of vast experience and often a man of culture. I am acquainted with the case of an old Eton boy who has to receive a smaller fee than a shilling. To help these, our less fortunate brethren, is indeed a difficult problem, but I think a hint may be taken by what is known as the "affiliation among the Churches"—that is, a scheme by which a rich parish helps a poor one. The idea as regards medical work is certainly at present impracticable and may be altogether impossible, yet I can conceive that upon recognised and equitable principles an interchange of practices would be possible and beneficial. The West-end practitioner would be glad to realise the hardships of his less fortunate brother in the East. The East-end man would find relief by a stay in the West. An outcry would be raised by our wealthy patients, but they would have to follow us into the East and bring their wealth with them.

What is our duty in the matter of consultation? I think it should be clearly laid down that one general practitioner should never meet another general practitioner in consultation. Not for fear of arousing jealousy but simply in the patient's interests. If two men practising on the same lines and receiving the same fees meet in consultation they must either agree or disagree. If they disagree the patient is placed in the awkward or impossible position of deciding between them. If they agree the patient gains nothing. The entire body of consultants is within easy reach of us and if the patient cannot afford the fee for the consultant's advice he should seek that advice gratuitously at the hospital. As to the consultants we call in I fear there is a tendency to select our old teachers or our personal friends, and our old teachers and personal friends are rather apt to recommend us as private practitioners to the exclusion of perhaps better

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men. I think the interest of the patient alone should guide in such matters. The consultant whom we summon to our patient may not be the consultant whom we should select for ourselves or families, but there may be many reasons in the interests of our patients to influence us, and the interests of our patients should, I think, be our sole guide. A class of practitioners which I cannot understand includes the men who while engaged in general practice pose as specialists and the consultants who engage in general practice. In this neighbourhood I fear it is not uncommon for a consultant to visit a patient alone. He does so in the first instance for a smaller fee than he would receive in consultation and sometimes pays a second visit without fee—a "friendly" visit he calls it. In this way he enters very closely into competition with the general practitioner. Would it not be better for the practitioner of either kind to restrict himself solely to his proper work? The medical sphere is such a large one that it requires a man's entire energy to discharge properly his duty in the branch which he has selected for his own work.

> "One science only can one genius fit—
> So deep is human knowledge, so shallow human wit."

THE GENERAL PRACTITIONER'S DUTY TO HIMSELF.

If a general practitioner takes pains to make himself efficient, and if he lets the patient benefit by his efficiency, he is certainly entitled to look to the patient for adequate remuneration, and yet how often is he doomed to disappointment? The lines quoted in his presidential address by Dr. Alderson are too often true:—

> "God and the doctor we alike adore
> When sickness comes, but not before;
> The danger over, both are alike requited,
> God is forgotten and the doctor slighted."

To secure prompt remuneration I think it would be better if we could follow the example of barristers, of consultants, and of medical men in Ireland and in some places abroad—that is, to secure our fee at the time of our attendance. "The sick man," someone has said, "pays willingly while his tears are wet." Our custom of keeping books and rendering accounts, while it savours of the custom of tradesmen, is often, I think, the cause of serious loss to our pockets.

In the care of his health I fear the general practitioner is too heavily handicapped by the nature of his work to take much heed. For instance, no conscientious practitioner can take an hour for a meal and rest in the middle of the day if the patient who sent early in the morning has not yet been seen. The lunch is postponed. The digestive organs, ready with their juices to receive and digest the expected meal, think their agency is not required and resume a state of inactivity from which they are rudely awakened one, two, or three hours afterwards. They are then called upon for extra work, get worn out early, and dyspepsia results. I think it better to take at the usual meal hour a mere *soupçon* of food, if there is not time for a proper meal, and then wait for the next regular meal hour for a fuller supply. The disturbed sleep, the exposure to weather, the anxiety caused by difficult cases are all matters over which I fear a medical man has little control. No wonder the average years of his life are as low as fifty-seven. He must accept the pains as well as the pleasures of his profession and can only look forward to retirement to be freed from the former and to dwell with gratification upon the latter.

In the matter of recreation I think that no medical man should be without his hobby. It has been said that a man who sticks sufficiently closely to his work finds in it his recreation as well as his means of living. The nature of the practitioner's work, however, demands that his mind shall be abstracted at times from things morbid. The neglect of this demand is liable to be productive of misery when the time comes for cessation of active work. A celebrated physician complained to his friend in these terms: "I am told I must retire and make way for younger men. I have done nothing all my life but physic people and now I am told to go into the country and grow cabbages." I grieve to know that this distinguished man's period of retirement is not as happy as it should be. Lord Bolingbroke, the celebrated statesman of Queen Anne's reign, said, "Blessed is the man who has a hobby"; and a well-known medical man has said, "If you cannot find pleasure in the study of geology, of natural history, or of astronomy, then by all means make a collection of old walking-sticks, postage stamps, or pieces of cracked china."

Finally, I would advise a *spirit of contentment* as conducive to happiness in a general practitioner's lot. His work is surely a creditable one. The necessity of being able to deal efficiently with disease in all its forms at all times, the ability to treat successfully persons of all ranks and of all tempers, surely compel the possession and the exercise of knowledge and tact which are not surpassed in energy and self-denial by the requirements of any other branch of practice. It is a pity for the medical practitioner having put his hand to the plough to look back or to look above. I am sure many of our consulting brethren could tell us bitter tales of the struggle of their earlier years. In general practice there is much, if we only look for it, to interest and instruct us; much to keep our sympathies green and our spirits contented. Mr. Fildes's picture, the picture which attracted so much attention a year or two ago, did not pourtray the court physician, whose name is in the paper every day, nor the popular specialist who is the idol of society. The picture represented the general practitioner in the humble cottage, watching the sleeping child and thinking what he will have to tell the parent, and watched himself by the anxious parent trying to forecast what he will have to hear from the doctor. The picture recalls the lines written upon a portrait of the late Mr. Merriman of Kensington:—

> "What does it tell us? That to thee
> The noblest task on earth was given,
> The brightest service that we see
> Conferred on mortal under Heaven.
> To heal the sick, to lighten pain,
> To gently cool the heated brow,
> And, like an angel, bring again
> Hope to the hopeless, such wert thou."

I have referred to the ingratitude of patients, but how often do we receive from them touching evidence of their esteem and affection? How many of us can display valued, if not always valuable, gifts? It is said that a medical man should have his coat made with two pockets—one for his fees, the other for his insults. But is not a third pocket sometimes necessary—one to receive these welcome gifts?

There must surely be something in medical practice to awaken the emotions and stimulate the intellect, for we find the highest forms of literature enriched by the contributions of members of the medical profession—witness the works of Goethe, Sir Thomas Browne, Goldsmith, Smollett, Sir Samuel Garth, Sir Richard Blackmore, Akenside in the past, and besides others Oliver Wendell Holmes, Conan Doyle, and John Watson in the present day. How many of us could write, founded upon our cases, histories like the "Diary of a late Physician" by Samuel Warren, who was a medical man as well as a lawyer? At Monte Carlo one of the English surgeons there informed me that his patients suffered not so much from physical ailments as from nervous tension and exhaustion the result of gambling, and that they went home not with health improved by the climate of the Mediterranean, but with constitutions shattered by excitement.

The family doctor is, perhaps, more than either the clergyman or the lawyer the family friend. He is seen more frequently than either of the others and is consulted about many matters which are not medical. He is looked up to with childlike faith for advice which it is known will be given with neither satire nor contempt. It is his duty to minister to the wounded spirit as well as to the weakened body. In my own case I have been encouraged to do this by the motto of my alma mater, the London Hospital—*Nihil humani alienum puto.*

A CASE OF CHRONIC INFANTILE MENINGITIS WITH BASAL DRAINAGE.

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THE following case is of interest because of the extreme degree of rigidity which gradually became established and also because of an attempt which was made to drain the lateral ventricles through the subcerebellar space. Parkin[1] was the first to perform this operation and gave it the name of "basal" drainage to distinguish it from "cortical" (that is, drainage through the fontanelles and direct puncture

[1] THE LANCET, July 1st and Nov. 18th, 1893.

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FIG. 1.



Reproduced from a photograph of the child taken from the back on April 22nd, 1898. The retraction of the head is well marked, but the opisthotonos and rigidity of the legs were more excessive than are apparent from the illustration.

FIG. 2.



Reproduced from a photograph of the child from the ventral aspect taken on the same date, showing pronation of the forearm, extension of the legs, and drawing inwards of the great toes

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of the lateral ventricles) and "vertebral" drainage. Subsequently Waterhouse[2] drained the same space in a case of tuberculous meningitis. Glynn and Thomas[3] in 1895 described a case of chronic hydrocephalus in a young man subject to severe headaches, insomnia, and sickness in which the skull was trephined in the occipital area and drainage established, the result being perfectly satisfactory.

The patient, a female child aged ten months, was admitted into Tottenham Hospital on Feb. 16th, 1898. About three weeks previously she fell on her head out of a chair and was sick on the next day with convulsions. She afterwards gradually fell into a drowsy insensible state. Two days before admission she had several screaming attacks and at the same time retraction of the head was noted, but no strabismus. On admission she appeared to be semi-comatose and took no notice. The head was not retracted. The pupils were equal and reacted well to light. There was neither strabismus nor nystagmus. The heart and lungs were normal. There was no tenderness or retraction of the abdomen. The temperature was 97°F. The fontanelles were widely open. During the day the child vomited once. On the 17th the temperature rose to 101°. On the 23rd a vesicular eruption appeared on the face, trunk, and limbs, varicelloid in character. This afterwards became purulent and left scars. On March 5th the vomiting had continued and had gradually become worse. Nasal feeding was now commenced and continued throughout the illness. On the 8th a mixture of peptonised milk and chicken broth was given as food and 1 gr. of hydrargyrum cum cretâ every night. As a result the vomiting ceased. On the 11th a purulent discharge commenced from both ears and the temperature again rose to 101°. On the 14th a convulsive attack occurred lasting thirty minutes and the temperature rose to 102°. As the convulsion was not relieved by a hot bath a few whiffs of chloroform were inhaled. The convulsion was general, with arching of the back and retraction of the head. An enema of bromide of potassium (5 grains) and chloral hydrate (1½ grains) was ordered. A lotion of perchloride of mercury (1 in 3000) had been used for syringing the ears. Sherry whey was added to the chicken broth on the 11th and mercurial ointment had been daily rubbed into the abdomen and spine. On the 14th the vomiting also returned and the food was altered to peptonised milk and chicken broth. On the 19th the temperature reached 104° and the breathing was of the Cheyne-Stokes type. The optic discs were somewhat blurred, the veins were full and tortuous, but there was no marked retinitis. On the 26th there had been no more convulsions. The temperature chart was irregular and oscillating. There were now well-marked opisthotonos, retraction of the head, and carpo-pedal contraction. On April 27th the condition was unaltered as regards the rigidity, but the head now began to increase in size. Its circumference measured 19 in., the forehead was prominent, and the sutures were widely separated. Rigidity was extreme. The fingers were clenched, with the thumbs turned inwards, the forearms were prone, and the arms were extended. The legs were extended to such a degree that the feet touched the pillow and were on the same level as the retracted head. The tibiæ were rotated outwards and the knee-joints were rigid. The feet were extended and rotated inwards. The great toes were drawn inwards towards the sole. Nystagmus was present to a slight degree and strabismus occurred at times. On May 1st, the head having been prepared for operation in the usual way, Mr. Carson made an incision under chloroform from the external occipital protuberance towards the right mastoid process and turned down a flap of skin. The periosteum was stripped off and a portion of bone between the curved lines about half an inch in diameter was removed. The dura mater was exposed and opened. A bent probe was introduced as far as the tentorium and turned into the fourth ventricle, when about 2½ oz. of clear fluid escaped. A drain made of silk strands was introduced and left inside; the wound in the dura mater was stitched up, skin sutures were inserted, and the wound was dusted and dressed antiseptically. Very little hæmorrhage occurred and the operation proved easy of execution. The child bore the operation well. On the 5th the temperature had now been normal for two days. The child appeared to be somewhat better; there were less retraction of the head and rigidity of the limbs. The arms and legs were massaged daily and the child retained food well. On the 12th the child steadily became weaker. The stitches were removed on the 7th. The wound had healed and there was still a slight discharge of cerebro-spinal fluid. Death occurred on the 23rd. The illustrations show the posture assumed by the child on the day before death.

At the post-mortem examination great thinning and flattening of the cortex were noticed, with hyperæmia of the pia mater. Over the fourth ventricle and sella turcica the membranes were opaque and thickened. The ventricles were enormously distended with clear fluid and on removing the brain a large quantity of clear fluid escaped from the sides at the base, evidently from the posterior subarachnoid space. The iter and third ventricle were enormously enlarged. The lateral ventricles were so greatly distended that the brain appeared as a mere shell enclosing a reservoir of fluid. The ependyma and septum lucidum were much thickened. The choroid plexuses were relatively insignificant in size. There was no fracture of the bone, no laceration of the brain, and no suppuration within the temporal bones. The purulent discharge from the ears lasted only a few days and was obviously due to dental irritation and not to middle-ear trouble. The spinal cord was healthy and the central canal was of normal dimensions. There was no evidence of syphilis and there were no tubercles.

The causal relation of traumatism to the symptoms appears definite and direct, although the fact that the fontanelles were widely open on admission might lead one to suppose that a chronic hydrocephalus independent of the accident had already commenced. On the other hand, the coma and sickness began immediately after the fall and gradually became more severe during the four months the child survived. It is true that neither fracture nor laceration was discovered at the necropsy, but a laceration might have had time to heal and become obscure. There was certainly much thickening over the sella turcica and in the subcerebellar region. Obviously the result of the injury was to irritate the secreting cells of the ependyma, block efferent lymph channels, increase the circumference of the head and particularly the vertical measurements from ear to ear across the anterior fontanelle.

The operation in itself is not difficult nor is it attended by any special risk. Although the child was in a wretched and impoverished condition she bore the operation well and even improved somewhat afterwards. To be of any use, however, it should be performed as soon as the measurements of the head begin to increase, otherwise the lateral ventricles become dilated beyond any hope of amelioration. Drainage by means of silk strands we found to be unsatisfactory and in future we should be disposed to use capillary rubber tubes provided with an arrangement for preventing the too rapid escape of fluid.

[2] THE LANCET, March 10th, 1894.
[3] THE LANCET, Nov. 2nd, 1895.

ON COMBINED PLEURAL AND PERICARDIAL ADHESION.[1]

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MANY years ago I remember to have seen a case which appeared to give much difficulty to my seniors who were in charge of it. I was then scarcely in a position to form an opinion for myself, but I remember that a diagnosis of double pleuritic effusion was made. In the absence in those days of exploring needles this diagnosis was during life neither proved nor disapproved, but after death it was found that both pleuræ were universally adherent, very much thickened even to the thickness of ½ in., and that the pericardium presented a precisely similar condition except that the actual thickness of the fibrous layer was less in the case of the pericardium than the pleura. The case made a great impression upon me, but I have never been led to make much of the bearings of it until one somewhat similar presented itself in the latter half of last year under my own care in Guy's Hospital.

A woman, aged forty-two years, was admitted on May 20th, 1897, for dyspnœa, cough, and pain in the chest. The patient's father and an uncle had died from phthisis; her

[1] A paper read before the Nottingham Medico-Chirurgical Society on April 27th, 1898.

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mother died from bronchitis at the age of seventy-five years. Four years previously the patient had had scarlet fever. In February of this year an adeno-myxoma was removed from the left breast by Mr. Arbuthnot Lane. About Christmas she had noticed that her abdomen was growing larger, but without pain. Towards the end of April she had a slight cold and she said that on the 27th she had slept in a damp bed. The next day she had chill and shivering, dyspnœa, pain between the shoulders, and cough. On the 29th she was rather better, but worse on the 30th, and so she continued until May 2nd, when she laid up and was attended by Dr. James Wills. The feet and legs were then observed to be swollen. After that her condition varied, the dyspnœa being sometimes so great that she could not walk about; the pain also varied as to position. On May 15th Dr. Newton Pitt saw her in consultation and the chest was explored with a needle at the right base, but no fluid was found. On admission she was seen to be a middle-aged woman, with dark hair turning grey, dark eyes, and sharp features. The face was flushed and slightly swollen; the legs and feet were slightly swollen and there was œdema over the sacrum. Otherwise she was thin. The breathing was quiet and shallow and she had a hard dry cough. The chest was flat and the epigastric angle was less than 90°; there was no sucking in of intercostal spaces. The two sides moved equally. Tactile vocal fremitus was normal in front but deficient at the right base behind. Both bases were dull behind, the right up to one inch below the angle of the scapula, the left up to one and a half inches from the angle; there was resonance elsewhere. The vesicular murmur was absent from both bases over the dull areas; elsewhere it was normal. Fine inspiratory râles were heard at the left base behind and at both bases in front. The pulse was 96, regular, feeble, soft, and compressible. The impulse of the heart could not be seen, it was just felt in the fifth space, an inch below the nipple and half an inch internal to it. Præcordial dulness was limited above by the lower border of the fourth rib, and internally by the left border of the sternum. There was no murmur. The abdomen was tense and slightly swollen and there was some œdema of the skin on the left side. There was some dulness at the sides, but it did not move with change of position. The temperature was 99·4° F., the pulse was 96 and the respirations were 38. A week later the condition was much the same. There were dry cough, dyspnœa amounting to orthopnœa, and pain in the left side of the chest. At the right base there was still absence of breath-sounds and tactile vibration and at the left base the breath-sounds and tactile vibration were very deficient. A few days later there was some increase of râles in front on the right side, but the bases were thought to be less dull. The urine on May 31st was free from albumin, but it contained a slight amount on June 3rd, which amounted to 0·5 per 1000 (Esbach). At this time also the urea was found to be on two separate occasions 10 grs. and 12 grs. per ounce. During the month of June she became more œdematous, the abdomen increased so as to measure 31½ in. in circumference, there was much œdema over the sacrum, and the feet and legs and face swelled more. During July and August also there was no material difference, only an increase of the dropsy in every way and a persistence of the physical signs of the lungs. The abdomen increased to 39½ in. in circumference, due partly to ascites and partly to cutaneous œdema, which extended round the loins to the back and reached up to the angles of the scapulæ. At both bases the chest was dull, the entry of air was deficient, and râles were audible. The right side was slightly worse than the left. In front some râles were audible below the third rib. By the beginning of September the œdema extended to the upper extremities and the face, but was very variable in these parts; on the 21st the pulse was 104, the respirations were 50, and the temperature was 97°. The condition of the chest was as before. There were no cardiac bruits. The lips were full-coloured and congested. Examination of the fundus of the eyes gave negative results, there being no neuritis, retinitis, or hæmorrhages. During October some relief was obtained by puncture of the swollen legs. On Oct. 14th the patient had a rigor lasting ten minutes, on the 15th one lasting twenty minutes, and on the 24th a third, more severe, lasting nearly an hour. On Oct. 26th dulness was noted on the left side of the chest in front and some râles under the left clavicle; the posterior dulness extended quite up to the scapular angles. From this time she became more drowsy and collapsed, and she died on Nov. 7th. The temperature had been nearly always normal or subnormal. Only on two or three occasions for a few days at a time during the last three weeks of her life did it rise to 101° or 102°.

At the post-mortem examination the face and arms were found to be very thin and the abdomen and legs were œdematous. Both pleuræ were thickened all over and both surfaces were tightly adherent. The pericardium also was firmly adherent all over, so that it could be peeled off the heart, and it also was much thickened. Further, there were dense pleuro-pericardial adhesions and much fibrous tissue matting together the vessels and other structures in the mediastinum, the results, therefore, of a mediastinitis. The lungs were small and compressed, and quite airless except at the apices. The bronchial tubes were very much dilated at the left base, but less so in other parts. The bronchial glands were normal. The right auricle was dilated and the right ventricle was dilated and much hypertrophied. The left ventricle was very small and its walls were not thickened. There was no endocarditis; the valves were healthy, and the orifices measured as follows: the tricuspid, 4¾ in.; the pulmonary, 3½ in.; the mitral, 3½ in.; and the aortic, 3¼ in. The peritoneum was universally thick and opaque, especially on the pelvis and on the under surface of the liver. Over all this, especially in the pelvis, was much recent lymph. The liver was compressed from before backwards, and the capsule was thickened, involving the gall-bladder, which contained a gall-stone of the size of a filbert. The gastro-hepatic omentum was contracted. The spleen was hard and small, with a thick capsule, and it was adherent to the left lobe of the liver. The kidneys were small and healthy.

As will be seen the features of this case are, *clinically*, abolition of the action of the bases of both lungs without certain evidence of liquid in the pleura, cardiac weakness without marked local evidence of the heart's failure, with early and somewhat pronounced ascites. *Pathologically* they were adherent pleura with extensive collapse of the bases of the lungs and some dilatation of the bronchial tubes adherent pericardium with dilatation of the right auricle and ventricle, chronic mediastinitis (non-suppurative), and ascites with evidences of chronic peritonitis.

The mere coexistence of fibrous adhesions of the pleura and pericardium is sufficiently common. I find that in Guy's Hospital the post-mortem records of nine nearly consecutive years show that there were 192 cases of adherent pericardium, and of these 58, or nearly one-third, were accompanied by thickened or adherent pleura. On the other hand, the analyses of the clinical reports of cases in the medical wards show that only once in three or four years was thickened pleura recognised or diagnosed in association with adherent pericardium. This is, of course, only an illustration of the well-known fact that each of these lesions may present considerable difficulties in diagnosis. I have, however, examined more closely the post-mortem records for one year (1892), in which adherent pericardium was noted 25 times, and in 10 of these cases the pleuræ were also thickened or adherent. Of these 10 cases 3 presented valvular lesions which became the chief feature during life, in 3 the adhesions of the pericardium concerned only very small portions of the heart's surface, in 1 there was a hypertrophied heart with granular kidneys and the pericardial adhesions were limited, and in 2 the patients had undergone operations in surgical wards and died from syncope (fatty heart) and broncho-pneumonia respectively. The last 3 cases showed evidence of former phthisis. One only of the 10 cases presented some resemblance clinically as well as pathologically to the case I have just recorded. The right pleura was universally adherent and the left chest contained 22 oz. of serum and showed recent lymph over the lower lobe. The pericardium was universally adherent with calcareous plates in it. The heart weighed 14 oz., and was hypertrophied, and all the cavities were dilated. The muscular tissue was fatty. The patient had had during life dyspnœa, palpitation, and attacks of faintness; there were œdema of the feet, albuminuria, rapid pulse (140), and albumin in the urine; there was no cardiac murmur.

It is with this last class of case that I propose to deal for the present, especially from the point of view, at least in my own cases, that the pleural lesions were very extensive and of great prominence clinically, and that conversely the adhesion of the pericardium was suggested only by the failure of the circulation, not at all by any local manifestations and very little by any changes in the pulse. I have no doubt there are other cases like it and perhaps they are

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more frequent than I have been led to believe, and possibly the problems may seem to others easier of solution than they do to me; but I believe that in any case, whether rare or frequent, they form a group somewhat apart from other cases and are worthy of consideration.

One of the first questions is as to their origin. There are, no doubt, many circumstances under which pericarditis and pleurisy may be co-existent or consequent one upon the other; the most familiar is the case of double pleurisy in rheumatic fever accompanying pericarditis. The effusion in the pleura is often extensive, at least on one side, but it is not common to see at one and the same time a complete double pleurisy and pericarditis in rheumatism, and any approach to such a severe extension of the lesion would very probably be fatal. We are familiar also with the complication of pericarditis in acute pleuro-pneumonia, with double pleurisy and pericarditis in pyæmia, and with tuberculous pleurisy and pericarditis simultaneously. But all such explanations of this case present difficulties, seeing that on the one hand we cannot suppose these conditions are the sequelæ of tubercle or pyæmia, and on the other the patient gives no history either of rheumatic pleurisy or of so-called catarrhal pleurisy at such a date preceding her final illness as would explain the lesions found. It may be suggested that in her twelve months' illness the early catarrhal or acute or subacute inflammatory stage occupied the first months and the fatal mechanical results occupied the later periods; but it will have been noticed that the first symptom twelve months before her death was a swelling of the abdomen, which, as I shall show, is consistent with the probability that adherent pericardium with accompanying cardiac failure was already in evidence. It is, of course, allowable to speculate on the scarlet fever of four years previously to her admission to hospital as having been followed by rheumatism or as in some other way having been the antecedent of the implication of the serous membranes. But in that case it is remarkable that she should have at some former period of her life undergone such extensive lesions without having any recollection of the illness and discomfort to which, one would think, they must have given rise. Still, so far as mere antecedent is required, it will be only consonant with modern pathology to regard the scarlet fever and other infectious diseases—e.g., influenza—as sufficient.

Now, turning to the relation between the post-mortem lesions and the clinical symptoms the question presents itself: Are the latter determined by the conditions of the lung—adherent pleura and dilated bronchial tube; or by the conditions of the heart—adherent pericardium and dilated right side; or by the condition of the mediastinum, so-called "mediastinitis"? or what share has each in this production? In the answers to this question we should find, if we can at all, some help towards diagnosing this combination in the future. Beginning with the lung and pleura we find that the physical signs were dulness at both bases, especially the right, and deficient entry of air with some fine râles. The symptoms related to the lung were directly orthopnœa and cough, and indirectly dropsy of the legs and the lower part of the body. It is an old story that thickened pleura will account for dulness at the base of the lung, and when the thick adherent pleura is accompanied by collapse of the underlying lung the occurrence of the physical signs is easily explained. The latter was present here and to it, indeed, the dulness and deficient entry of air must be ascribed. Indeed, I should like to take the opportunity of expressing the view which I have long taught, that the dulness which so commonly persists for a long time after a pleuritic effusion is not due, or due in but small part, to the thickening of the pleura, but rather to the still unexpanded lung, which has been compressed by the fluid previously there. Neither could the thickening of the pleura have much share in the production of the œdema; but the sum total of the pulmonary lesions, especially the collapse of the substance and the dilatation of the tubes, no doubt contributed to that dilatation and hypertrophy of the right heart which was the chief cause of the œdema. In so far as the duration of the adherent pleura is concerned I need say little about that. We know from abundant experience that the pleura is constantly found adherent on one side in cases where, no such condition has been for a moment suspected and where, indeed, so far as the chest is concerned, the patient may have been thought to be perfectly sound and normal. It is possible that the adherent pleura had a share in the production of the dilated tubes, but as there were no signs during life by which they could with certainty be recognised but little help is derived from that view.

It must of course be seen that the chief explanation of the dropsical symptoms lies in the two conditions which the heart presented—namely, adhesion of the pericardium and dilatation of the right heart. Here, again, we are in some difficulty as to the importance of mere obliteration of a serous cavity, and it is clear that the adhesion can only act prejudicially if it causes the occurrence of hypertrophy or dilatation of the cavities of the heart. Even whether it can do that is somewhat doubtful, and the explanations of the coexistence of adherent pericardium and dilated heart are more than one. A simple explanation is that accompanying the pericarditis there is some inflammation of the myocardium—myocarditis—which results in the altered physical conditions. Dr. John Broadbent, in his work on Adherent Pericardium, has provided us with the suggestion—viz., that when the heart dilates as a result of the yielding of the inflamed muscle it is subsequently maintained in this dilated condition by the fibrous changes which take place in the simultaneously inflamed pericardium; and he points out that the right ventricle is more likely to suffer than the left. This was, indeed, the case here; but it would be rash to deny the influence of the pulmonary conditions on the production of this right-sided failure. It may be remembered, so far as diagnosis is concerned, that the impulse of the heart was in the fifth space internal to the nipple, and the percussion dulness did not pass beyond the left border of the sternum. So far, then, it seems probable (or certain) that the dropsical symptoms must be referred to cardiac failure and that a failure on the right side rather than on the left.

When looking for references to literature bearing on the present case I met with some articles by Dr. Heidemann which have a very important bearing upon it and which possibly provide a solution of the difficulties which it presents. His paper is entitled "On the Results of Obliteration of the Pericardium."[2] After reminding his readers that adherent pericardium eventually leads to all the effects of cardiac failure, however arising, such as dyspnœa, œdema, and dropsical effusions, with small, rapid, and often irregular pulse, and that these conditions are now allowed to be the results of a myocarditis coincident with the pericarditis which caused the adhesions, he states that not all cases run the same course and draws especial attention to cases in which ascites was the first prominent symptom and that often long before any anasarca or œdema of the feet was observed. He refers to isolated observations of a similar kind by Hirschler, Riegel, and Pick, and to statements by Rosenbach, Strümpell, Leube, and Schrötter, bearing in the same direction. He then records his own case and follows with 6 other cases already published by Van Deen, Frerichs, Vierordt (2 cases), Riedel, and Henoch. In all of these 7 cases the peritoneum, besides containing fluid, was thickened, or it showed evidences of chronic inflammation. In all of them, with the exception of one in which the thoracic conditions are not given, there was pleurisy either in the form of fluid, or of a thickened pleura, or of extensive and complete adhesions; this was present in two cases. Three of these cases were published as cases of chronic exudative peritonitis, and probably the pericardial obliteration was not a prominent feature clinically or was perhaps overlooked; another is in Frerichs's work on Diseases of the Liver under the heading of Simple Induration of the Liver, which Frerichs attributes to the operation of peritonitis in this case.[3] A fifth is published as chronic pericarditis in combination with chronic pleurisy and peritonitis, and the sixth is from the "Diseases of Children" of Henoch, who regarded it as a case of syphilitic pericarditis and myocarditis. After reviewing and discrediting the opinions of some authors who attribute the early appearance of the ascites to cirrhotic conditions of the liver, or to peculiarities in the circulation of the liver, or to kinking of the vena cava by fluid in the right pleura Dr. Heidemann adopts the suggestion of Weiss that antecedent to the cardiac failure there is, or has been, an inflammatory condition of the peritoneum which favours the occurrence of dropsy in this part of the body rather than in the so far uninjured connective tissues of the lower extremities. Similarly, where the pleural surfaces are not adherent hydrothorax

[2] Ueber Folgezustände von Pericardialen Obliteration, Dr. M. Heidemann, Berliner Klinische Wochenschrift, 1897, Nos. 5 and 6.

[3] Frerichs: Diseases of the Liver, Sydenham Society's Translations, vol. ii., p. 98.

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will readily result from cardiac failure as it comes into operation. Thus, what is suggested as the course of events in these cases is the more or less simultaneous occurrence of peritonitis, pleurisy, pericarditis, and myocarditis; cardiac incompetence as a result of the last; and serous effusions antecedent to anasarca of the limbs in consequence of the tissue-weakening of the serous membranes.

If we ask the cause, the primary cause, of all this the answer is by no means satisfactory. The micro-organism is always, of course, at hand. Dr. Heidemann says: "It is astonishing that the disease so often attacks the upper part of the abdomen and especially in this part leads to cicatricial processes and extensive matting together. One may well believe that micro-organisms are the excitants of the disease and that after their entry into the abdomen they are carried about by the peristaltic movements of the intestines, "remain fixed in the closed spaces between the diaphragm and the spleen and the liver, and here exercise their poisonous influence." Thus he is prepared to explain the occurrence of fibrosis of the liver, into which the irritating microbes may easily creep, and he appears almost to suggest that the pericarditis and pleurisy might be secondary to the peritonitis with its thoracic localisation. However, let us take his conclusions; they are to this effect. 1. In these cases there is a chronic inflammation of all the serous membranes. 2. The stagnation occasioned by degeneration of the cardiac muscle leads to ascites because on account of the chronic peritonitis the peritoneal vessels offer a *locus minoris resistentiæ*. 3. The cirrhotic process in the liver so often observed under these circumstances is occasioned by the extension of inflammatory irritation from the capsule of the liver as well as by the chronic hyperæmia of the organ. 4. By the growth and contraction of this connective tissue in and about the liver the stagnation and exudation in the abdominal cavity are increased.

If now we compare the case I have here given with this case under Heidemann's care and with the others which he has collected we shall see a very close correspondence. In the former we have the co-existent evidences of inflammation in the pleura, pericardium, and peritoneum, in her also death occurs from the increasing results of cardiac failure as shown in anasarca and general dropsy, and enlargement of the abdomen was an early sign, though there is no positive information as to the exact nature of that enlargement. But it is interesting to note here that one of my colleagues who saw the case for a period of two or three weeks was inclined to believe that cirrhosis of the liver was an important feature in the case. If, however, we interpret the sequence of events in the light of Heidemann's reasoning we must suppose that twelve months before her death, when she began to be ill with swelling of the abdomen, the patient had already gone through a chronic pleurisy, pericarditis, and peritonitis of which at the age of forty-one or forty-two years she had practically no knowledge. Six months later she had apparently an acute illness, during which she was found to have physical signs suggesting effusion of fluid at the right base, and the feet were swollen. On the eighteenth day of this illness the right base was explored and no fluid was found, and the physical signs continued with but little variation, while dropsy became increasingly pronounced until her death nearly six months later. No solution of this difficulty—that is the time relations of the various lesions—is entirely satisfactory.

I propose now to deal with yet another phase of this case, and that is the occurrence of mediastinitis or matting together of the connective tissues about the large vessels of the heart. This subject of mediastinitis is one which has, perhaps, not been separately considered in much detail of late. We shall not find it indexed in many of our modern text-books on medicine, and it will be of interest to examine into its bearings on this case. "Mediastinitis" is a term which runs a danger of being used rather loosely, because what is intended to be predicated of the mediastinum may be predicated as much of the organs in the mediastinum as of the space itself. Dr. Hare's Fothergillian essay on the "Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta," gives a valuable table of published cases of mediastinitis. These are divided into suppurative and non-suppurative cases, the former being in vastly greater proportion—namely, as 115 to only 16. Of these mediastinal abscesses it is sufficient to say here that tuberculous lesions of the glands and injuries by bullet and cold steel were the most common causes. Turning now to the smaller list of non-suppurative cases, to which my own case has the closer resemblance, we find the information as to causation is meagre. In 5 only out of the 16 is a cause (as such) mentioned: three times it was pressure on the chest, once erysipelas, and once pleurisy. But 5 are described as mediastino-pericarditis, in 3 others the pericardium was involved, and in 4 the pleuræ were either thickened, adherent, or contained liquid. Hare in his summary says that the exciting causes of this trouble are very much the same as those of the suppurative form, such as traumatism in all its varieties, sudden suppression of discharges of long continuance, or in some instances suppression of the menstrual flow. The two last causes I should accept with a good deal of reserve. It is also not clear how he comes to the conclusion that of the two possible terminations of this disorder—viz., resolution and fibrous thickening of the connective tissue of the space—the former is the more common, seeing that 15 out of the 16 cases which he records were fatal. The diseases of the mediastinum occupy one of the divisions of Nothnagel's "Special Pathology and Therapeutics" now in course of issue, and that portion of the work was published in 1896. It is by Professor Dr. F. A. Hoffmann. He divides the cases into three chief groups—those arising in extension from neighbouring organs, those due to metastasis in infectious diseases, and those due to injury. He does not admit cold and suppression of menses as causes. The comparatively small section of the work devoted to mediastinitis is largely or almost entirely concerned with the suppurative forms, which it would be obviously beside the mark to consider in detail here, and practically no advance is made by him beyond what can be got from Hare, from whom, indeed, he draws largely in the matter of abscess. Osler briefly alludes to it in his "Principles and Practice of Medicine" as a part of mediastino-pericarditis, on which subject he gives the results published by Harris, who appears to find that the amounts of pericardial adhesion and of mediastinitis are apt to vary in regard to one another, and that sometimes mediastinitis may exist without the pericardium being involved at all. In this case the term "mediastino-pericarditis" hardly seems justified. The symptoms, as mentioned by Osler, are referable to adherent pericardium and changes in the shape of the heart, but none are given which can be considered as due to the mediastinitis alone. I must allow that I have not seen the original paper.

Dr. G. A. Sutherland has published an interesting case[4] in which he diagnosed chronic mediastinitis. The patient, a child aged eight years, had dulness over the sternum, prominence of the veins of the arms and neck, puffiness of the face, and duskiness in the lips, cheek, and tongue, which were no doubt rightly ascribed to enlargement of the bronchial glands; and a pleuritic rub first heard over the sternum and then more to the side showed the extension of inflammation to the pleura, and hence presumably the intermediate implication of the mediastinal connective tissue. Here, of course, it may be an open question what is the importance of the mediastinitis apart from the tuberculous lymphadenitis. In relation to the work of Heidemann already mentioned it is extremely interesting to note that in Sutherland's case ascites was an early, if not the first, sign, and throughout a prominent feature of the case, and that the possibility of cirrhosis as a cause was under discussion but was rejected in favour of compression of the inferior vena cava in consequence of the mediastinal changes. This explanation, as I have shown, would not satisfy Heidemann, who looks to chronic peritonitis as the cause of the effusion. Sutherland admits in his case the existence of chronic peritonitis; but he thinks that it is the effect, and not the cause, of the ascites, and that it is not considerable because of the abundance of the fluid and the completeness with which the fluid has been evacuated at each tapping. However, if all the lesions in this case were secondary to the tuberculisation of the bronchial glands, the case differed in its essentials considerably from my own, and the others to which I have tried to liken it.

I will now turn to the question of the diagnosis or recognition of these cases—that is, the recognition of cases of combined adhesion of the pericardium and pleura with or without peritonitis. It seems a simple thing to say that if you can recognise adherent pericardium and adherent pleura you

[4] Clinical Lecture on a Case of Chronic Mediastinitis, delivered at Paddington-green Children's Hospital on Dec. 13th, 1897, by G. A. Sutherland, M.D. Edin., M.R.C.S.Lond., THE LANCET, Jan. 8th, 1898, p. 87

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can recognise the two together, but it is a matter of experience that you often cannot recognise either the one or the other. And so far as this group of cases is concerned it will be seen that in Heidemann's collected cases the thoracic conditions were partly masked by the condition of the abdomen; and in my own case one of my colleagues expressed the opinion that cirrhosis of the liver was an important factor; and, further, the right chest had been unsuccessfully explored to find fluid which was not there. After this the possibility of mediastinal changes chiefly at the lower part was made a question, to which I do not regard the mediastinitis, which was found, as being the response desired. Of course, it is well known that thickened pleura with the collapse of the lung which necessarily accompanies it will give the physical signs at the base of the chest which are too often regarded as the peculiar indications of liquid effusion. If there has been a history of pleurisy the diagnosis may be easy; if there is no such history, as in this case, and if, in addition, there are indications of disease in the heart or in the abdomen there are many other possibilities besides pleuritic adhesion and thickening which should give the physician pause.

As to adherent pericardium, in spite of the good work which has been done upon the subject it is obvious that it is often overlooked, and also that it is sometimes successfully diagnosed upon very inadequate grounds. I may especially remark here that the heart's impulse was in the normal position, that the impulse was not unduly forcible, and that the præcordial dulness did not extend beyond the left border of the sternum, so that no enlargement of the heart could be recognised, such as is present so commonly in association with adherent pericardium. Nor was there any retraction of spaces, to which, however, I attach very little importance, nor were there cardiac murmurs; nor was there, as I have already stated, any history of pericarditis or of diseases antecedent to it. The case, in respect of the pericardium no doubt falls within the group specified by Dr. John Broadbent,[5] in which the pericardial adhesion has a predominant effect upon the right heart and thus leads to its dilatation with all the other effects of stagnating circulation from this point backwards. In the absence of any lesion on the left side of the heart or of any pulmonary lesion competent to produce failure of the right ventricle the proofs of such failure would be suggestive of adherent pericardium; but obviously the difficulties of the diagnosis are very much increased if there is no history of previous acute pericarditis, and if there are pulmonary conditions, such as might result from disease of the left side and might even cause the dilatation of the right side. Here one might almost say the condition of diagnosing adherent pericardium on these lines was that adherent pleura should be diagnosed at the same time, or at any rate that the pulmonary lesion should be recognised as being neither the cause of the cardiac failure, as emphysema is of dilated right ventricle, nor the result of it, as red induration is of mitral disease. Indeed, a large part of the difficulty in recognising such cases may be said to consist in this—that the disease of one part cannot be considered on its own merits, because it is always open to the suspicion of being influenced by the disease in the others.

Then, lastly, can one take any account of the mediastinitis in the diagnosis? Can it be recognised? Can any particular symptom or group of symptoms be attributed to it? It occurs to me in this way—that from reasons of gravitation or otherwise the dropsy resulting from cardiac lesions is so constantly determined to the lower half of the body that a mediastinitis with adhesions or matting could only be suspected if the upper limbs or face or neck were quite exceptionally, or perhaps quite early, involved. This was not the case here. And yet there was one feature of the case which did turn our thoughts towards mediastinal mischief, when it was found that at the left base we had to do with solid and not liquid. And that circumstance was that three months before the patient's admission to hospital an adeno-myxoma had been removed by Mr. Lane from the left breast. However, this variety of tumour is not highly malignant, and, as a fact, it did not produce any secondary deposit in the chest as a cause of the symptoms found.

I think it will bring the subject to a fitting termination if I record another case in which a similar diagnosis may be made—that is, where pleuritic lesions are certainly present, where signs of cardiac failure are not explained by recognisable local evidence of cardiac disease, where nevertheless the pleuritic or pulmonary lesions are not such as to cause in themselves dilatation of the right ventricle, and where, finally, the implication of the pleura suggests a simultaneous and associated implication of the pericardium as the cause of the heart's incapacity.

A man, aged thirty-nine years, was admitted in February, 1898, suffering from cough, dyspnœa, and œdema of the legs. He had been in the army; he admitted having had gonorrhœa but denied that he had suffered from syphilis. His present series of illnesses began two and a half years ago. He suffered from cough, dyspnœa, and pleurisy in 1896 and was in the hospital; 24 oz. of fluid were drawn off; the liquid reaccumulated and 25 oz. were drawn off. His liver at that time reached to the umbilicus. He was again in hospital at the end of 1897 suffering from cough and dyspnœa. The breath-sounds and the voice-sounds were deficient at the left base and râles and rhonchi were present in both chests; the liver appeared to be enlarged, firm, and a little tender, but there was no ascites. The legs were very œdematous. The heart and the urine appeared to be normal. There was some rusty sputum but there were no tubercle bacilli. He got gradually better. Soon after Christmas, he again got dyspnœa and the legs began to swell and soon the abdomen, the scrotum, and even the hands slightly, followed suit. The edge of the liver was found in February, 1898, to be at the level of the umbilicus; the surface was uniform and smooth; the spleen came below the costal margin but there was no ascites. At the left base behind and in the left axilla there were dulness and diminution of breath-sounds and voice-sounds. The heart's movements could not be seen or felt; there was no retraction of spaces but there was slight epigastric pulsation; its dulness was normal and there was no murmur. Albumin was once discovered in the urine but it soon disappeared. Subsequently rubs were heard on the left side and some râles and rhonchi were always present. Three months after admission the patient was very much better; he walked about almost with comfort, but still presented inadequacy of his pulmonary bases, especially the left, bad expansion of the left chest, generally rather a quick pulse, absolutely negative character of the cardiac physical signs, the sounds being well heard, rather sharp, and approximated in quality and loudness. The liver and spleen were still large. He had not in the slightest degree the appearance of a man who had been addicted to hard drinking.

Of treatment little requires to be said; it is obvious that the most variable function is the capacity of the cardiac muscle, and practically the treatment resolves itself into that of a cardiac case by rest, diuretics, laxatives, and cardiac tonics. In the first case here recorded the treatment was absolutely of no avail. From the first and with scarce a temporary check the illness ran a downward course.

I will conclude with the following propositions:—(1) that while the combination of pleural and pericardial adhesions is by no means uncommon, a few cases are distinguished by features which render diagnosis somewhat difficult; (2) that some such cases form part of a larger group in which the peritoneum and mediastinal connective tissue are also involved in the inflammatory process; (3) that these features referred to are especially the prominence of the signs of past or present pleuritic changes and the insignificance of the local evidences of cardiac disease; (4) that such patients nevertheless do die chiefly from the incapacity of the heart, with increasing œdema and ascites, and this incapacity chiefly arises on the right side; (5) that in some cases peritonitis may have an important share in the fatal result; and (6) that in some cases ascites occurs as an early symptom and gives rise, with the passive enlargement of the liver, to suspicions of cirrhosis.

Wimpole-street, W.

[5] Adherent Pericardium, 1895, p. 43

A NEW infectious diseases hospital has just been opened at Huntingdon. Everything seems to have been done to make the building, which is the gift of Mr. J. A. Fielden, thoroughly efficient, but there is some dissatisfaction on the part of some of the ratepayers with regard to the site chosen.

PUBLIC HEALTH SERVICE IN SOMERSETSHIRE.—The recommendation of the special committee of the Somersetshire County Council advising the appointment of a county medical officer of health at a salary of £500 per annum has been deferred for further consideration.

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UNCOMMON CASES OF OPERATION ON THE BRAIN.

BY JAMES H. NICOLL, M.B. GLASG.,

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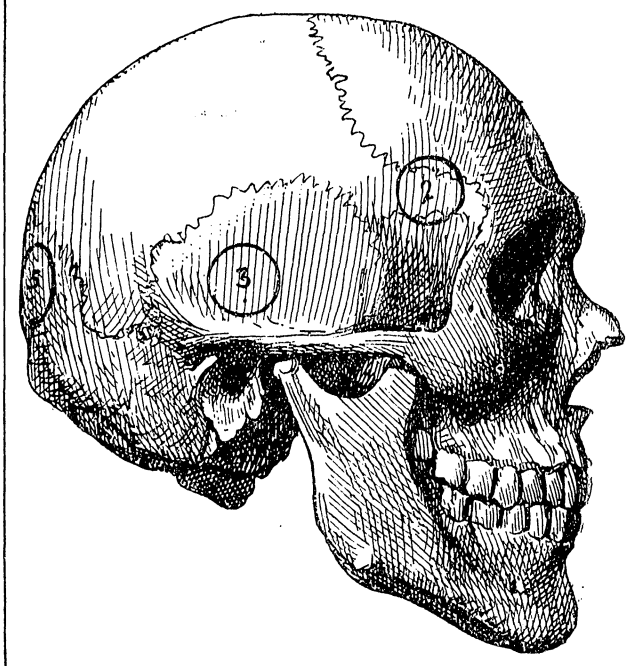
THE following three cases of operations on the brain present features somewhat out of the usual run of the ordinary intracranial operations, viz., those undertaken for abscess, sinus thrombosis, hæmatoma, and depressed fracture.

CASE 1. *Ligature of a cerebral artery for spontaneous hæmorrhage; patient nearly two years after operation in good health.*—A woman, aged sixty-two years, was sent into the Glasgow Western Infirmary by Dr. Bell Todd on Oct. 9th, 1896. Her history (as obtained from her two sons, her daughter, and a neighbour) was that she was always excitable and latterly had been much addicted to drink. One month previously she had suddenly in her house turned giddy and after staggering for a few minutes fallen unconscious. She was thought to be drunk and was placed in bed. For several days, however, she remained more or less unconscious. Then she gradually recovered, but for three weeks was in a dazed and stupid condition and "could not talk properly" (aphasia?). After that she appeared to be quite well for a week. Four days before admission, while going out, she again suddenly turned giddy and was found by a neighbour leaning against the wall of the entry. She was with difficulty got into her house and put to bed; by that time she was nearly unconscious. For three days she remained more or less unconscious and on the fourth day an acute epileptiform seizure occurred very suddenly. Dr. Bell Todd, who was hastily summoned, recognised the condition as one requiring operation and sent her at once into the infirmary. Being on duty at the time in Professor Macewen's wards I happened to see her on admission. Her condition was as follows. She was unconscious, but could be partially roused. Her pupils were equal, moderately dilated, and sluggish in reaction. There was no optic neuritis. At intervals of a few minutes there occurred violent epileptiform seizures. Each seizure began with a turning of the eyes and head to the right, followed by twitching of the right side of the head and neck. This was almost at once followed by violent twitching of the right arm and of the right lower limb. During the most severe seizures the left side of the body also became involved. The head was shaved and the patient was prepared for operation, which took place about an hour after admission. Over the motor area I removed successive portions of the skull to the extent of about 5 square inches in all. A large clot lay on the surface of the brain and there was also smart fresh hæmorrhage from the lower and anterior part of the exposed area. After removing the clot I tied the middle meningeal in the dura mater. The hæmorrhage still continuing I removed a further portion of bone in the direction from which it proceeded and exposed a cavity in the cerebral cortex of about the size of a pigeon's egg. This was lined by greyish shreddy material resembling partially bleached old blood-clot. From the lower side of this cavity an artery was spouting across the cavity. This I tied with a fine ligature. All the bone removed was replaced with the exception of one part. The wound healed rapidly, the bone uniting firmly. For several weeks she remained stupid and irritable and markedly aphasic. She ultimately was dismissed well. At present she is well in every way except in so far as that there is a gap in the skull about 1 in. square, and near it an area of skull, corresponding with that removed and replaced during the operation, which is irregular and flattened. The patient was brought before the Glasgow Medico-Chirurgical Society in November, 1897.

The artery tied appeared to be the ascending frontal branch of the middle cerebral. As to the nature of the cavity into which it was bleeding it seems an open question whether (*a*) it may have been an aneurysm which partially ruptured on the occasion of her first attack of giddiness and finally ruptured a month later, or (*b*) was produced by tearing of the brain by hæmorrhage from the ruptured artery. In either case the shreddy material on its walls appeared of much earlier date than the large clot on the brain surface, suggesting a date of origin probably contemporaneous with the date of the attack of giddiness one month before admission. The large black clot on the brain surface, on the other hand, seemed of recent origin, and in all likelihood originated at the time of the second attack of giddiness four days before admission. Whatever the exact explanation the rupture would seem to have been spontaneous. No evidence of fracture could be found nor did the shaven scalp reveal any bruising. The history also bears out this opinion.

CASE 2. *Acute symptoms of intracranial pressure due to distension of the lateral ventricle and relieved by draining; the patient at the present time well.*—A man, aged twenty-one years, on June 29th, 1897, while carrying a heavy iron casting on his shoulder tripped and fell. His forehead struck the ground, while his skull at the same time received a blow behind near the occipital protuberance from the piece of metal on his shoulder. This was followed by smart epistaxis and a condition of concussion which lasted for some hours. For a fortnight he was confined to bed suffering from headache, recurrent epistaxis, and giddiness. Over the junction of the nasal and frontal bones anteriorly, and over the occipital bone posteriorly, there was tenderness and in the latter situation there was some swelling for a time. At the end of the fortnight he gradually

FIG. 1.



within a few days regained his normal condition, and for about two months was fairly well except that he occasionally felt giddy when stooping and had occasional epistaxis. On Oct. 15th, three and a half months after the accident, his condition changed. He suffered from severe pain in the right frontal region, marked giddiness, and a tendency to frequent vomiting. These symptoms increased in severity till Oct. 25th when I saw him in consultation with Dr. John Barr Stevens. At that time his condition was, briefly, as follows. His temperature was practically normal and his pulse was 62; there was severe and constant pain in the right frontal region. The slightest movement, even turning the head on the pillow, produced instant giddiness and frequently resulted in vomiting. The patient appeared to be dull and lay very still, possibly more from the desire to avoid the giddiness and vomiting consequent on any exertion than from commencing coma, though Dr. Stevens, who had full opportunity of observing his condition, is of opinion that at this time there was a tendency to stupor and commencing coma. His speech was slow and hesitating. There was no paresis or spasm of the face, arms, or legs. There was no optic neuritis. His nasal bones were loose and "rocking" on the frontal bone. On Oct. 28th, his condition being

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unchanged except that there was distinctly more stupor, I decided to explore the interior of the skull for the source of pressure. There being present only *general* symptoms of intracranial pressure, without any definite *localising* evidence, I was guided in my decision to explore the frontal region by the presence of pain there and by the loose condition of the nasal bones. Discs of bone 1 in. in diameter were removed from the sites marked (1) and (2) in Fig. 1. The dura mater in both places presented no bulging and pulsated normally. In both sites the dura mater was incised and the brain explored to the depth of 1½ in. by means of Macewen's cannula with negative result. The effect of the operation was a slight diminution of pain and giddiness for a few days, after which the patient relapsed into his former condition with deepening stupor. On Nov. 9th I again saw him with Mr. W. G. Stevens and Dr. J. B. Stevens and decided to explore further. I removed a 1 in. disc of bone in site 3 in Fig. 1 and found the dura mater over the temporo-sphenoidal lobe bulging and pulseless. On incising it the subjacent cortex appeared to be pale, pulseless, and bulging. Exploration with the cannula in three different directions to the extent of 1 in. and 1½ in. gave no result, but on pushing the cannula in the direction of the ventricle it entered that cavity and evacuated a considerable quantity of fluid, the amount of which, however, could not be ascertained. With the object of discovering the possible source of this distension of the ventricle, in the shape of abscess, hæmatoma, or tumour pressing on the veins of Galen, I removed 1 in. discs of bone in site 4 over the cerebellum and site 5 over the occipital lobe and explored both cerebellum and occipital lobe with the cannula. The result was negative. From that date the patient made an uninterrupted recovery and is now well. He was shown to the Glasgow Medico-Chirurgical Society in March, 1898.

Three things have induced me to think the case of sufficient interest for publication. 1. The diagnosis. It is not uncommon for acute distension of one or both lateral ventricles to follow from blocking of the veins of Galen, the result of the presence in the cerebellum or occipital lobe of abscess, hæmatoma, or tumour. In this case, however, both the subsequent negative exploration of the cerebellum and occipital lobe and the patient's perfect recovery go to exclude that possibility. Amongst the various possible explanations of the distension of the ventricle perhaps the most probable in this case is that the vein of Galen draining the right ventricle was obstructed by thrombosis originating in some way from the injury received at the time of the fall. 2. The extent of the cerebral exploration carried out. Though not the most extensive exploration of the encephalon I have carried out it is the most extensive exploration of one hemisphere I have yet had to undertake, and when it is recollected that from each of the five trephine apertures the cannula was passed in 2 or 3 directions into the brain for distances varying from 1 in. to 2 in. it will be seen that the interference with the brain was considerable. As consulting surgeon to the Glasgow Ear Hospital, when on duty in Professor Macewen's wards in the Western Infirmary, and in private practice I have frequently had occasion to explore the temporo-sphenoidal lobe and cerebellum on one side and in some cases, in addition, the occipital lobe. In several cases which have been under my care I have explored one or other, or several, of these sites on both sides. In this case, however, there has been added the not very common exploration of the frontal lobe. Practice has advanced with great rapidity of late years in cerebral cases. There must be a limit to interference with the brain. With a knowledge of the anatomy of the brain and strict asepsis, however, it is not yet clear where the limit of successful interference with the brain is to be placed. 3. The method of dealing with the discs of bone removed. Much has been written, and opinions widely differ, as to the best method of dealing with bone removed from the skull in the matter of providing the most efficient protecting covering for the brain. The principal methods advocated are: (*a*) leaving the bone removed unreplaced on the ground that if replaced it either necroses or undergoes absorption. In this method the brain is protected by the dura mater, pericranium, and scalp fused together. (*b*) Breaking up the discs removed into small portions and implanting these on the sutured dura mater in the gap. In this method these portions of bone are said to grow and firmly fill the gap. (*c*) Splitting the disc into two lamellæ and replacing one only. The supporters of this method assert that the thin lamella of half the thickness of the disc is more easily vascularised and therefore less likely to necrose than the thicker plate formed of the entire disc. (*d*) Replacing the entire disc. In this case I followed the method I have always practised—viz., replacing the entire disc. In this case the discs were not even kept in warm solution. They were laid between folds of dry sterilised gauze till the operation was over, then replaced, and the scalp was sutured over them. The wounds healed by first intention under the original dressing. At the present time all five discs are, four months after operation, firmly united *in situ*.

With the two objections urged against replacing the entire discs—viz., the risks of necrosis during healing and of remote absorption—it is not easy to deal without some knowledge of the circumstances in which these untoward results have occurred. I have not seen absorption occur, and I have lately inspected three cases where the entire disc had been replaced ten, seven, and six years ago respectively. In none of these can I detect any evidence of absorption. It is not easy to follow up one's cases, however, more especially hospital cases, and in the meantime, until I have been able to extend my observations, I should wish to reserve final judgment. Whether subsequent absorption of the disc, granting it to be at all common, constitutes any argument against replacing it is another matter. It would appear that what remains of the absorbed disc uniting with the fused dura mater and pericranium should tend to increase the protecting covering of the brain. Necrosis of the replaced disc is also an occurrence of which I have had no personal experience. In a now very considerable number of cases I have not, if I may trust my notes and memory, seen it once. In the records of cases in which it has occurred and in the observations of certain writers there is evidence that the main, if not the only, cause of necrosis of the disc is sepsis. Should anything be permitted to interfere with the strictly aseptic condition of such a wound it could hardly be matter for surprise should necrosis of the disc result.

CASE 3. *Malignant tumour of the brain originating in the middle ear; symptoms simulating temporo-sphenoidal abscess; removal of intracranial portion of the tumour, with relief of pressure symptoms; death two and a half months after operation.*—On May 18th, 1897, I saw the patient, a boy, aged twelve and a half years, with, and at the request of, Dr. Barr, senior aural surgeon of the Glasgow Ear Hospital. The symptoms were persistent vomiting, pain on the right side of the head, subnormal temperature, slow pulse, drowsiness, stupor, and steadily developing coma, right optic neuritis, dilatation of the right pupil, paralysis of the right third and fourth nerves, and paresis of the left sixth nerve. Some time previously the patient had been brought to Dr. Barr suffering from paroxysmal pain, deafness, and purulent discharge in connexion with the right ear. Dr. Barr had found the middle ear occupied by tough granulation-like tissue, and had opened the mastoid cavities and thoroughly cleared both these and the tympanum of this tissue. Portions of this tissue were under examination when the serious intracranial symptoms above detailed developed and Dr. Barr requested my coöperation. We agreed that the symptoms indicated a lesion in the temporo-sphenoidal lobe. As to the nature of that lesion we were also at one in thinking it probably an abscess and not a tumour and this for the following reasons: (*a*) the boy had, and had had for three months, the most common exciting cause of intracranial abscess in the form of a purulent otitis; (*b*) the rapidity and progressiveness of the development of the symptoms of intracranial lesion, a matter of five or six days in all; and (*c*) apart from these considerations the symptoms themselves afforded no sufficient evidence on which to decide between the two probabilities—abscess and tumour. That being so it was natural to think it more probable that the lesion was the common one, abscess, and not a rarity in the shape of a malignant tumour causing both aural and intracranial symptoms. Later in the day I operated along with Dr. Barr and assisted by Mr. F. Adams and Dr. J. G. Connal, assistant surgeons to the Ear Hospital. In the first place I still further enlarged the very free mastoid opening previously made by Dr. Barr so as to freely open the bony channel of the sigmoid sinus. This was largely occupied by a firm greyish granulation-like tissue. The operation had then lasted about ten minutes. At this point the patient's respiration gradually became shallow and finally ceased. The pulse remained perfectly good. The patient was evidently in a condition of apnœa from cerebral pressure. Artificial respiration was begun. No stimulant

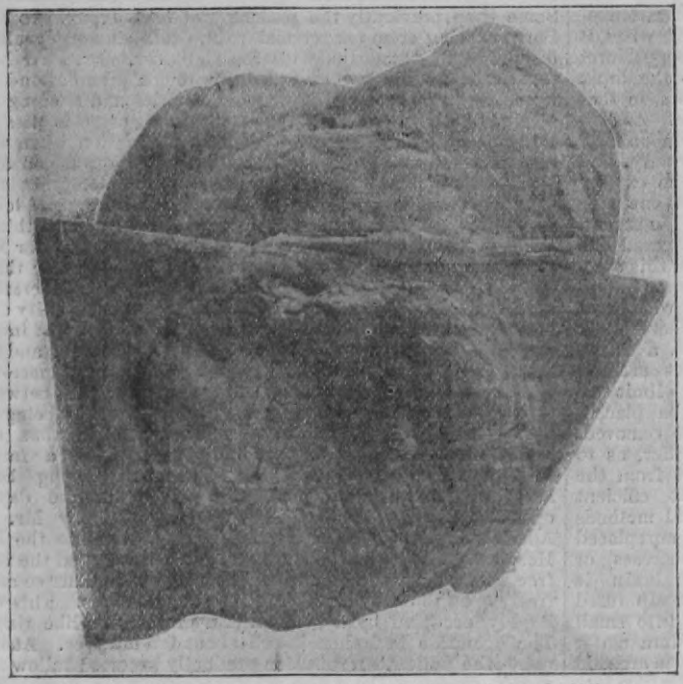
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FIG. 2.



External view, showing fungating extensions of the recurrent growth through the operation opening in the skull.

FIG. 3.



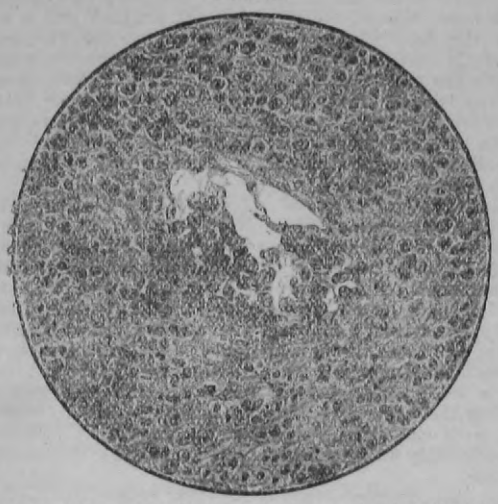
Internal view, showing extension of neck of growth from middle ear through petrous bone.

was given nor was the foot of the table raised. After some minutes I performed tracheotomy on the suggestion of the chloroformist, Dr. Connal, who found this an aid to artificial respiration. For over one hour the patient's condition remained unchanged. So long as artificial respiration was kept up the pulse and colour remained good, but on stopping the artificial respiration from time to time there was not the faintest attempt at spontaneous breathing. It was then decided to open the skull at all hazards and explore the temporo-sphenoidal lobe. This I did while artificial respiration was still being carried on. On removing a large trephine crown of bone, about 1½ in., directly over the external auditory meatus the dura mater bulged markedly. In the dura mater I made a crucial incision. The cerebral cortex bulged at once in the opening, evidently under great pressure. At this point, one hour and ten minutes after the breathing had failed, the first faint effort at spontaneous respiration occurred. I explored the temporo-sphenoidal lobe with the trocar. No pus was got, but at a short distance under the cortex a hardish mass was detected. I divided the cortex and displaced it to either side and exposed a firm greyish mass of tissue similar in appearance to that which had been exposed in the groove of the sigmoid sinus. With a small elevator a portion of this was removed. The patient was now breathing regularly and there had occurred a marked contraction of the previously dilated right pupil. I enlarged the aperture in the skull by means of gouge forceps and removed a considerable portion of the intracranial tumour. This was readily distinguished by the sense of touch from the soft brain around. After evacuating the larger part of the then intracranial portion of the growth it became clear that the tumour sprang from and widely permeated the petrous bone. I therefore gave up the attempt to remove more and applied an aseptic packing and dressing. By this time the patient, to whom no chloroform had been administered from the time apnœa set in, was moaning and struggling to get at our hands working at his head. For some days the symptoms were relieved, the headache, drowsiness, and vomiting having ceased. After that time, however, the headache returned—as formerly, more marked in the right side—and the right pupil was again dilated. At the end of a fortnight optic neuritis occurred in the left eye, rapidly followed by atrophy and blindness. Soon after this the left side of the face became paralysed and this was followed by paresis of the left arm. During the two and a half months he survived the operation there was no return of the semi-comatose condition developing before the operation and on only one occasion was there any return of the vomiting. On two occasions towards the end of the first month I shaved off portions of the growth which had fungated through the large cranial opening and were giving rise to hæmorrhage. On June 18th, a month after the operation, he was removed home to Saltcoats and the further report is by Dr. Campbell, whose patient he was. Dr. Campbell notes on June 19th: "Hearing, taste, and smell perfect. Intellect clear. No pain. Temperature normal. Complete blindness. Paralysis of left side of face and of left arm." For the following six weeks his condition varied little, except that the old pain in the head occasionally returned, and on one occasion he had a recurrence of the vomiting. About a week before death he became gradually completely deaf. Four days before death drowsiness returned and gradually merged into coma with a steadily rising temperature, which just before death, on August 2nd, reached 107°. The specimen (of which photographs are reproduced) was exhibited in the Museum of the British Medical Association meeting in Edinburgh, July, 1898.

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The two points of interest in the case are—(1) the apnœa (probably produced by the action of the chloroform on a brain the site of steadily developing pressure coma) and the almost dramatic immediate relief of both apnœa and coma

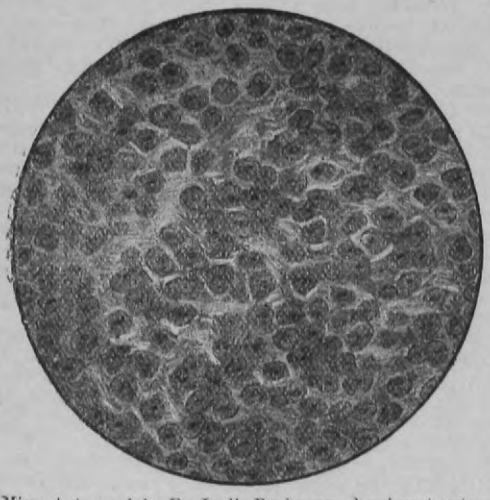
FIG. 4.



Microphotograph by Dr. Leslie Buchanan, showing structure of growth under low (× 150) power.

following the shelling-out of the then intracranial portion of the growth; and (2) the nature of the growth, on which it appears a little difficult to obtain any unanimity

FIG. 5.



Microphotograph by Dr. Leslie Buchanan, showing structure of growth under high (× 300) power.

of opinion amongst the pathologists consulted, several favouring soft carcinoma and several alveolar sarcoma. The accompanying illustrations (Figs. 2, 3, 4, and 5) give a fair idea of the size and structure of the tumour.

Glasgow.

NORTH-EASTERN HOSPITAL FOR CHILDREN, SHOREDITCH.—A complete Roentgen rays apparatus has been presented to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, by the Duke of Newcastle, who is a member of the committee. The apparatus, which was made by Mr. J. Le Couteur, throws an 18-in. spark, and is in every way an efficient adjunct to the clinical work of the hospital.

FREEMASONRY.—At the regular monthly meeting of the Chaucer Lodge, No. 1540, held at the Bridge House Hotel, London Bridge, on Monday, Oct. 24th, Bro. Heinrich Oppenheimer, M.D. Heidelberg, M.R.C.P. Lond., was duly installed W.M. The banquet which followed the ceremony was largely attended and an enjoyable evening was spent.

SUMMARY OF GUNSHOT WOUND CASES TREATED IN NO. 2 NATIVE GENERAL HOSPITAL AT RAWAL PINDI.

BY CAPTAIN D. M. MOIR, I.M.S., M.B., C.M. EDIN.,
REGISTRAR NO. 2 NATIVE GENERAL HOSPITAL.

THIS hospital of 500 beds was mobilised for about a period of six and a half months, from the middle of October, 1897, to the end of April, 1898. It received sick and wounded from the field hospitals in the Tirah expedition, who were transferred through the native general hospitals at Kohat or Naoshera. Altogether 2946 patients were treated, of whom 1453 were fighting men and 1493 followers. Of this number only 309 were surgical cases, 233 being fighting men and 76 followers. There were no deaths among the surgical cases, whereas the mortality from disease amongst the remaining 2637 patients was 89, 11 fighting men and 78 followers died. The nature of the surgical cases was as follows:—

Injuries.*	Fighting men.	Followers.	Total.
(*g*) Burns and scalds	1	5	6
(*a*) Contusions	10	12	22
(*e*) Wounds	5	19	24
(*d*) Gunshot wounds	193	28	221
(*b*) Sprains	11	2	13
(*p*) Dislocations	1	—	1
(*k*) Fracture of skull	1	—	1
(*j*) Abrasions	6	1	7
(*n*) Fracture of other bones ...	5	9	14
Total	233	76	309

* The classification used in Army Hospital Forms 80 and 81 is here adopted.

This paper deals with the 193 cases of gunshot wounds amongst native officers, non-commissioned officers, and men. It was not an easy matter to ascertain accurately the locality or engagement at which the men were wounded, partly owing to their vague replies, but chiefly on account of this information not being supplied in the papers accompanying them. However, as far as could be gathered the following are the places at which the wounds were inflicted:—Dargai 50, Tirah (vague) 55, Maidan in Tirah 20, Kuki Khel in Tirah 2, Tabai in Tirah 2, Bagh 12, Charbagh 1, Kharappa 8, Bara Valley 7, Saransar 6, Waran 5, Dwatoi 5, Mastura 3, Shinawari 2; Asmar, Shabkadr, Gulistan, Samana, Sampagha, Kai, Karmana Dara, Sadda, each 1. Also 1 man was wounded near Kohat and another near Khusalgarh, and 5 were "unknown." Particulars as to the nature of the projectile or of the weapon used could be obtained in only a small number of the cases. All that inquiry and examination could elicit was that 16 of the wounds were caused by the old-fashioned round or spherical bullet, 12 by the Martini-Henry, 11 by the Lee-Metford, 11 by the Snider, 1 by a cavalry carbine, and in the remaining 142 cases no reliable data could be got.

Medical officers at the front and on the lines of communication have their hands full; but still it would not increase their work much, and it would add very much to the interest of the cases, if printed forms were supplied in which they might jot down the following data while events were fresh in their minds. The forms might contain such headings as: (1) place or action at which wound was received; (2) nature of weapon or projectile; (3) nature of injury; (4) approximate distance at which the shot was fired, also the direction from in front, behind, above, &c.; (5) attitude of patient at the time he was struck, whether he was running, standing, lying down, &c.; and (6) any other facts of interest. Of course, such information could not be obtained in all instances, but it would be forthcoming in many cases, and thus valuable knowledge as to the effects of different projectiles at varying ranges in actual warfare could be collected.

The Gurkha and Sikh regiments supplied the greatest number of wounded; no less than 157 out of 193 belonged

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to these corps. There were 101 wounded Gurkhas from the 2nd Battalion 1st Regiment, 1st Battalion 2nd Regiment, 2nd Battalion 2nd Regiment, 1st Battalion 3rd Regiment, 2nd Battalion 4th Regiment, 1st Battalion 5th Regiment, and 2nd Battalion 5th Regiment. The 1st Battalion 2nd Gurkhas and the 1st Battalion 3rd Gurkhas suffered most severely, there being 49 from the former and 35 from the latter. The 3rd, 15th, and 36th Sikhs furnished 56 wounded, the last two corps in nearly equal numbers—24 and 29. Native cavalry regiments and mountain batteries each added 5 to the total of wounded and the remaining 26 came from the Bombay Sappers and Miners, 28th Bombay Pioneers, 21st Madras Pioneers, Jhind Infantry, 2nd Punjaub Infantry, 12th B. I., and 22nd Punjaub Infantry.

LEE-METFORD BULLET WOUNDS.

The cases of wounds from the Lee-Metford bullet[1] make rather an interesting series and they tend to confirm previous experience regarding its relative harmlessness (so long as a bone is not struck) as compared with the damage done by most other projectiles used in modern warfare.

CASE 71. *Gunshot wound of the chest, IV., 5.*—The patient (15th Sikhs) was wounded in Tirah on Nov. 9th, 1897, by a Lee-Metford bullet fired from behind him. The bullet entered on the left side of the back of the chest just below the lower angle of the scapula and internal to it through the seventh costal space. It traversed the lung and emerged in front through the second left costal space 3 in. above the nipple and 1 in. internal to the left mammary line. He fell down immediately on being hit and there was considerable hæmorrhage from the wounds and from the mouth. Air also escaped from the wounds and there was emphysema of the tissues surrounding them. The treatment consisted in antiseptic dressing and strapping of the chest, with the free administration of opium. The wounds, which were both very small, round, and of equal size, healed up in a fortnight. He was received at Rawal Pindi on Dec. 1st with the wounds soundly healed, but he complained of occasional pain in the chest on the side affected and also of a slight cough. No marked dulness could be elicited on percussion and the breath sounds were normal on auscultation. On Dec. 24th he was given three and a half months' sick leave. This man had a marvellous escape because, though the bullet entered below the level of the root of the lung and its main vessels, yet it traversed the whole thickness of the lung and emerged in close proximity to the great vessels at the base of the heart.

CASE 48. *Gunshot wound, XV., miscellaneous (pelvis).*—The patient (1st Battalion 3rd Gurkhas) was wounded at Dargai on Oct. 18th, 1897, by a Lee-Metford bullet, which struck him in the cleft between the nates over the lower end of the sacrum and passed forwards and outwards to emerge a little above and in front of the great trochanter of the right femur, its track being quite 10 in. long. The impact of the bullet knocked him down and he was carried to camp in a dhoolie. In his medical certificate it was stated that the right os innominatum was fractured, but all evidence of this was gone when he arrived here on Nov. 14th. The scars of the apertures of entrance and exit were very small and both were about the same in size and shape. In spite of the long 10 in. track the wound was healed in a fortnight. He was discharged to duty at his regimental depôt on Nov. 29th.

CASE 28. *Gunshot wound of the neck, III., 2, with injury to the cervico-brachial plexus.*—The patient (15th Sikhs) was wounded on Oct. 18th, 1897, at Dargai, by a Lee-Metford bullet which hit him on the back of the neck 1 in. to the left of the middle line on a level with the upper and inner angle of the scapula. It passed forwards and outwards, emerging about 2 in. above the middle of the left clavicle. When admitted here on Nov. 9th both wounds were healed and the resulting scars were very small; that of the exit wound was the smaller of the two. In this case also the wound was healed in a couple of weeks. He complained, however, of pains shooting down his left arm and up the side of his neck and head, the pain being worst at night. It is probable that the bullet in its passage through the neck injured some of the nerves. He was discharged to his depôt on Nov. 29th, but still complained of pain in his neck and arm.

CASE 133. *Gunshot wound, VII., perineum, &c.*—The patient (28th Bombay Pioneers) was wounded at Dwatoi on Dec. 9th, 1897, by a Lee-Metford bullet, which entered immediately to the left of the root of the penis and emerged at the outer side of the right buttock an inch and a half above the fold of the nates, traversing the perineum. Apparently neither the urethra nor the bladder were injured, nor was the pelvis fractured. On Dec. 21st, when he was admitted here on transfer, the wound was completely healed and he was discharged to duty at his depôt three days later. In this case an extensive wound, very liable to septic contamination from its situation, was healed in less than two weeks.

CASE 182. *Gunshot wound in the back, VI., 1.*—The patient (15th Sikhs) was wounded on Nov. 9th, 1897, at Maidan by a Lee-Metford bullet while he was lying down. It entered the right side of the back a little below the level of the iliac crest and came out about the corresponding place on the left side, having a long course through the left tissues without any apparent injury to bone. An abscess formed later and pus was evacuated through an incision midway between the two wounds. On admission here (Jan. 22nd, 1898) all three wounds were nearly healed. Early in the first week of February the wounds were healed, but he had been suffering much from malarial fever and debility. On Feb. 15th he was sufficiently well to be sent on six months' sick leave to his home.

CASE 134. *Gunshot wound in the lower extremity, IX., 1.*—The patient (28th Bombay Pioneers) was wounded in Tirah on Dec. 10th, 1897, by a Lee-Metford bullet which entered the inner aspect of his right thigh at the junction of its middle and lower thirds. It passed upwards and backwards through the whole thickness of the thigh and escaped 2 in. below the fold of the nates. When transferred here on Dec. 21st both wounds were almost healed and were very small and round. There had been no suppuration nor had there been any injury to bone or important structures. The wound was quite healed within a fortnight of its infliction and the patient was discharged to duty at his depôt three days after admission.

CASE 142. *Gunshot wound in the lower extremity, IX., 1.*—The patient (36th Sikhs) was wounded in the retirement from Bagh on Dec. 12th, 1897. A Lee-Metford bullet struck the front of his left thigh 8 in. below the anterior superior iliac spine, passed to the inner side of the femur, and came out at the same level on the back of the limb without injuring any important structure. On admission here (Dec. 21st) both wounds were very small, round, punched out and were healing well. By Jan. 17th, 1898, they were firmly healed.

CASE 155. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in the left leg on Dec. 13th, 1897, in Tirah. A Lee-Metford bullet entered a little above the middle of the leg, 1 in. external to the edge of the tibia, and passing backwards and downwards it emerged in the middle of the calf. On admission here (Dec. 21st) the wounds were very small and were healing satisfactorily. By Jan. 11th, 1898, the wound was soundly healed and the man was discharged to duty at his depôt next day.

CASE 145. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (36th Sikhs) was wounded in Tirah on Dec. 11th, 1897, by a Lee-Metford bullet, which struck the right arm just in front of the deltoid insertion, passed to the outer side of the humerus and came out behind at the same level. On admission here (Dec. 21st) both wounds were small, round, clean, punched out and healing well. By Jan. 4th, 1898, they were healed thoroughly.

CASE 146. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (Jhind Infantry) was wounded at Dwatoi on Dec. 10th, 1897, by a Lee-Metford bullet fired from behind him. It entered at the back of the right arm about 1 in. below the deltoid insertion, passed upwards, and came out just below the acromion process without injuring bone or joint. On admission here (Dec. 21st) both wounds were quite healed—i.e., within twelve days of the injury. His head must have been turned to one side when he was hit, otherwise it could scarcely have escaped being struck.

CASE 166. *Gunshot wound in the upper extremity, VI.I., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in Tirah on Dec. 18th, 1897, by a Lee-Metford

[1] I have condensed the following abstracts of cases from the case-books of medical officers in charge of the sections of the hospital. Accordingly, I am indebted to Captain W. H. Gray, Captain H. B. Melville, Captain S. H. Burnett, Captain B. G. Seton, Captain T. W. A. Fullerton, Captain J. S. S. Lumsden, and Captain H. Burden, also to Lieutenant C. B. Harrison and Lieutenant J. M. Woolley, for their notes. The classification adopted is that of Army Form A 7, which needs revision, as I pointed out in an article which appeared in the Indian Medical Gazette for June, 1898.

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bullet, which struck the right forearm 3 in. above the wrist. It entered over the inner edge of the ulna, passed in front of both bones, and emerged on the outer side of the radius 2 in. above the wrist, thus crossing the point of the forearm obliquely without injuring the bones. On admission here (Dec. 21st) both wounds were merely small round ulcers. On Jan. 1st, 1898, there was loss of power in the hand and the movements of the fingers were defective both as regards flexion and extension. Although the power of opposition of the thumb was unimpaired, yet he could not hold or lift anything firmly in his hand. On March 12th there was some improvement, but the hand was still weak and movements were impaired. On the 31st prognosis was unfavourable, so he was sent to his depôt to appear before an invaliding board.

While describing these 11 cases of Lee-Metford bullet wounds I may as well complete the dozen by mentioning one which came under my treatment from the beginning at the Followers' Cantonment Hospital, Rawal Pindi. It is interesting in that it tends to show that a Lee-Metford bullet had not apparently sufficient force to perforate completely both the forearm and leg of a thin and feeble native at some distance less than 2000 yards. It is also an example of wounds healing in a couple of weeks or less.

A man, aged thirty years (a grass-cutter), was shot by a Lee-Metford bullet while squatting and cutting grass behind one of the rifle ranges when firing was going on. The bullet struck his naked arm and leg, which were thin and poorly nourished. It passed through the fleshy part of the back of his right forearm and then entered the outer side of his right calf and lodged just under the skin on the inner side. This happened on March 29th, 1898. He was brought to hospital the same day and the bullet was at once extracted through a skin incision over it. On admission the man was not suffering from shock and he was able to stand, though he did not attempt to walk then. However, he was caught walking about within a week of the accident. The wounds in the forearm were healed on the ninth (exit) and tenth (entrance) days. The incision in the leg was healed on the eleventh day and the wound of entrance healed on the sixteenth day, this last having been retarded by slight suppuration. In the opinion of the officer commanding the regiment and from the evidence at a court of inquiry it would appear that the grass-cutter was hit about half a mile behind the butts and that the company at practice began firing at 1100 yards and advanced up the range towards the butt. Therefore the shot may have been fired at a distance much less than 1100 yards but allowing the maximum distance of 1100 yards from the firing point to the butt and of 880 yards behind the target, yet the total comes to less than 2000 yards and the bullet had not had sufficient force to perforate completely the arm and leg of a poorly-developed native. It may be objected, however, that the shot was a ricochet and that part of the force and velocity were expended on some other object before the man was struck. Against this is the fact that the bullet was absolutely unaltered in shape—it had not the least scratch, flattening, or indentation on its surface.

WOUNDS FROM SPHERICAL BULLETS.

Passing next to consider the effects of the old-fashioned round ball we find they make a sharp contrast with those of the Lee-Metford as detailed above.

Effects of spherical bullets.—(1) Mostly lodged, requiring an operation for extraction; (2) suppuration usual from the bruising of the tissues and the introduction of septic foreign bodies, hence sinuses and slow healing; (3) fractures and injuries of important structures common; and (4) course of bullet tract often tortuous.

Effects of Lee-Metford bullets.—(1) Did not lodge (except in the last case), hence much less subsequent manipulation of the wounds; (2) much less tissue injured, cloth, &c., not carried into the wound, hence rapid healing often without suppuration; (3) bones and important structures escaped injury in a wonderful way; and (4) course of bullet track usually straight.

CASE 49. *Gunshot wound in the upper extremity, VIII., 2.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a spherical bullet which struck him on the deltoid muscle just above the right shoulder joint, and passed inwards and forwards under the clavicle, lodging about 4 in. or 5 in. from the wound of entrance. It fractured a portion of the outer end of the clavicle and also the acromion at the acromio-clavicular joint. Some pieces of bone were extracted shortly after he was injured. When he was admitted here on transfer (Nov. 14th) he was suffering great pain in the shoulder and neck; there was a copious discharge of thick pus from the wound and the temperature ranged between 100°F. in the morning and 102° in the evening. On Nov. 18th under chloroform the wound was enlarged and explored and a spherical bullet was felt lying in the neck 4½ in. from the entrance, but it could not be extracted until a counter-opening was made just above the supra-spinous fossa. This incision served the double purpose of allowing of the removal of the projectile and also of providing free drainage. The capsule of the shoulder-joint was not injured. The bullet was a round one, about five-eighths of an inch in diameter, weighing half an ounce On Dec. 12th the counter opening had healed. On Jan. 20th, 1898, the primary wound was closed. On the 27th the patient was sent home on three and a half months' sick leave.

CASE 83. *Gunshot wound in the upper extremity, VIII., 2.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a spherical bullet fired from above him. The wound of entrance was immediately over the tip of the right acromion process. On admission here (Nov. 9th) there was considerable antero-posterior thickening over the head of the humerus, with fulness in the axilla and induration of the soft parts of the upper half of the arm. This led to a suspicion that the bullet had entered the shoulder joint; but when the patient was put under chloroform on the 22nd it was found that the bullet had fractured the spine of the scapula and was lodged in the infra-spinous fossa. The aperture in the spine of the scapula had to be enlarged in order to admit of the removal of the bullet as well as of a piece of khaki cloth (from his coat) which was one inch long, half an inch broad, and in two layers. In spite of antiseptic precautions and good drainage profuse and prolonged suppuration supervened. It was not till April 9th, 1898, that he was made over to his regiment, at which time there was a small sinus less than an inch long and also a good deal of stiffness of the joint from extra-capsular adhesions.

CASE 39. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai by a spherical bullet. On admission here on Nov. 12th, 1897, there was a small wound at the posterior and lower margin of the right deltoid only half an inch deep. There was no wound of exit and there were no signs of the bullet. By the 22nd the wound was healed, but a day or two later he complained of pain on raising the arm. On the 26th a hard lump could be felt at the edge of the latissimus dorsi. Cocaine solution was injected, the lump was cut down on, and a round bullet was readily shelled out. Evidently this bullet had altered its position and come nearer the surface while he was under treatment, because no sign of it was perceptible on manipulation when he was admitted or during most of the time he was in hospital.

CASE 8. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai by a spherical bullet which grazed his left upper arm, entering over the inner side of the biceps. It passed under the skin and emerged 2 in. lower down. The wound was healing well on his admission here (Nov. 3rd, 1897) and he was fit to be discharged to duty at his depôt ten days later.

CASE 82. *Gunshot wound in the upper extremity, VIII., 4, ulna.*—The patient (1st Battalion 3rd Gurkhas) was wounded at Shinawari on Nov. 18th, 1897, by a spherical bullet, which struck the back of his right forearm midway between the elbow and the wrist, fracturing the ulna, and then lodged. The ball was extracted the same day through an incision on the front of the forearm 1 in. below the bend of the elbow. No bone was then removed and no fragments have since come away. The elbow joint was not injured, but the movements of pronation and supination were somewhat impaired. On admission here (Dec. 3rd) the wounds were merely small ulcers, but a sinus persisted, discharging a thin watery fluid, and a fragment of dead bone was suspected. On Jan. 18th, 1898, under chloroform the sinus was slit up and a small sequestrum was removed as well as half-a-dozen strands of wool from a cardigan jacket. On March 2nd prehensile power and movement had greatly improved. The wound healed some time ago. The patient was sent on six months' sick leave.

CASE 83. *Gunshot wound in the neck, III., 1; upper extremity, VIII, 6.*—The patient (36th Sikhs) was wounded in Tirah on Nov. 16th, 1897, by two spherical bullets. One entered the right side of the root of his neck and lodged

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It was removed the next day by an incision 4 in. behind the point of entrance. The other bullet struck the palmar aspect of the terminal phalanx of the right thumb, passed upwards and emerged beyond the joint between the first and second phalanges, fracturing the bone and injuring the joint. Some fragments of the terminal phalanx were removed soon after the injury. On arrival here (Dec. 3rd) both wounds were nearly healed, but the thumb was rather stiff. On Dec. 27th he was sent on three months' sick leave.

CASE 51. *Gunshot wound in the face, II., 2.*—The patient (Rocket Section, 5th Mountain Battery) was wounded at the Sampagha Pass on Oct. 29th, 1897, by a spherical bullet, which struck him in the hollow between the chin and the lower lip and lodged in the body of the lower jaw. One tooth in the upper jaw was broken across and three teeth in the lower jaw were loosened. The bullet was removed the same day. On transfer here (Nov. 14th) the wound was nearly healed and he was discharged to duty at his depôt on Dec. 1st.

CASE 117. *Gunshot wound in the face, II., 3; right eyeball; neck, III., 1.; upper extremity, VIII., 1.*—The patient (1st Battalion 5th Gurkhas) was wounded near Sadda on Nov. 7th, 1897, by a spherical bullet while he was in a kneeling attitude. The bullet was fired from above and first hit his right eye, completely disorganising it. Next the ball struck his right shoulder over the acromion process and was diverted at an acute angle, passing under the muscles to emerge over the spinous process of the last cervical vertebra. The bullet was found in his clothes. An operation was performed to remove the remains of the injured eye. On admission here (Dec. 7th) all his wounds were healed and he was discharged to his depôt four days later.

CASE 110. *Gunshot wound in the abdomen, V., 2; fracture of pelvis.*—The patient (15th Sikhs) was wounded at Maidan on Nov. 16th, 1897. The wound of entrance was in the right hip 3 in. below the crest of the ilium and the bullet lodged in the abdominal parietes. It was removed through an incision 2 in. above the middle of Poupart's ligament and proved to be of the ordinary spherical type. The abdominal cavity was not penetrated. On admission here (Dec. 2nd) the extraction wound was healed and the wound of entrance appeared to be closing. On the 26th there was a purulent discharge from the sinus of the entrance wound, which was 2 in. long. On the 30th bare bone was felt with the probe at a depth of 3 in. and the probe passed completely through the ilium. Apparently the bullet must have pierced the right iliac bone and then must have passed under or through the iliacus muscle without penetrating the peritoneal cavity. On Feb. 1st, 1898, the wound had quite healed and three days later he was sent on four months' sick leave.

CASE 5. *Gunshot wound in the back, VI., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded by a spherical bullet at Dargai on Oct. 20th, 1897. It lodged in his back and was extracted shortly afterwards. He was struck on the right side of the back a little above the waist and the bullet track passed obliquely downwards to the left for 3 in. deeply amongst the muscles of his back. On arrival here (Nov. 3rd) the wound was healed.

CASE 151. *Gunshot wound in the back VI., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in the Bara Valley on Dec. 13th, 1897, by a spherical bullet which entered behind the left shoulder near the posterior superior angle of the scapula and passed out 1 in. above the junction of the upper and middle thirds of the axillary border of that bone, which was not injured. On arrival here (Dec. 21st) the wounds were almost healed, so he was discharged to duty at his depôt three days later.

CASE 112. *Gunshot wound in the lower extremity, IX., 1.*—The patient (2nd Battalion 4th Gurkhas) was wounded at Kharappa on Oct. 28th, 1897, by a spherical bullet, which lodged in the left buttock and was extracted through the original wound. On admission here (Dec. 7th) there was merely an ulcer 2 in. long, by half an inch broad, which soon healed.

CASE 98. *Gunshot wound in the lower extremities, IX., 1.*—The patient (36th Sikhs) was wounded in Tirah on Nov. 16th, 1897. One bullet struck him on the front of the right leg about 5 in. above the ankle joint. It lodged between the bones and was extracted the same evening. Another bullet struck him on the back of the left thigh just below the fold of the buttock and lodged. It was also extracted the same evening. Both bullets were of the ordinary spherical pattern. On Dec. 4th he was received on transfer. On the 11th the wound in the thigh healed. On the 20th the wound in the leg healed. On the 29th he was sent on three months' sick leave.

CASE 169. *Gunshot wound, XI., penetration of the knee-joint with fracture of the patella.*—The patient (1st Battalion 2nd Gurkhas) was wounded on the Samana on Sept. 11th, 1897, by a spherical bullet, which entered on the outer border of the left patella a little below the centre of the bone, fractured it, and lodged in the knee-joint. On admission here (Jan. 21st, 1898) he had a linear scar on either side of the patella. These were the scars of incisions made at Kohat in September, 1897, for the extraction of the bullet and drainage of the joint. His leg was on a posterior splint and there was marked stiffness of the joint. Fibrous union of the patella had taken place. On Feb. 2nd there was a transverse sulcus over the patella corresponding to the depression in the line of fracture. The fragments of the patella were separated by three-quarters of an inch of fibrous tissue allowing of considerable lateral movement of the fragments. There was partial ankylosis of the knee-joint owing to fibrous adhesions. The muscles of the limb were much wasted. On the 15th the condition was the same, but as the patient refused any operative interference he was sent to his regimental depôt next day.

CASE 159. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in Tirah by a spherical bullet on Dec. 8th, 1897. It entered the outer side of his left leg 3 in. below the knee-joint and emerged 2 in. behind this point. On his transfer here (Dec. 21st) the wound of exit was closed and that of entrance was nearly healed. Three days later he was sent to his depôt.

CASE 185. *Gunshot wound, XI., penetrating ankle-joint, with fracture of the fibula, astragalus, and os calcis.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a spherical bullet which struck him over the external malleolus, smashing it and opening the ankle-joint. It passed downwards and outwards, splitting the astragalus and os calcis, and lodged about the insertion of the tendo Achillis, whence it was extracted soon afterwards. At the same operation pieces of bone were removed through the wound of entrance. Later other pieces came away through both wounds. At Kohat an abscess formed over a sequestrum close to the incision wound which was made for the extraction of the bullet. This was opened and the dead bone was removed. On admission here (Jan. 27th, 1898) he had a depressed scar adherent to the outer malleolus and the latter was much thickened. There was another depressed and adherent scar over the os calcis and a linear incision where the abscess had been opened. There was a good deal of callus over the os calcis and the ankle-joint was enlarged and stiff. Flexion and extension were reduced to about half the normal and the patient was unable to walk. Massage and gentle passive movements were commenced. On Feb. 1st there was no pain and only a slight defect in his gait, but the patient will probably be disabled permanently as a soldier. On the 22nd he was sent on six months' sick leave.

(To be continued.)

THE INFLUENCE FOR EVIL OF THE MIDDEN-PRIVY IN THE DISSEMINATION OF TYPHOID FEVER.

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THE influence for evil of the midden-privy in the dissemination of typhoid fever may be exerted in several ways—e.g., by soil-pollution, air-pollution, and contamination of milk, &c., by infected particles therefrom. Dr. S. Martin and Dr. J. Robertson have recently shown that in soil fouled by leakage from these receptacles Eberth's bacillus will survive and multiply for very long periods, whereas in virgin soils it loses all signs of vitality in a comparatively short time. Again, the late Sir George Buchanan truly said in 1888 in an official Local Government Board Memorandum: "In enteric fever the evacuations should be regarded as capable of communicating an infectious quality to any night-soil with which

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they are mingled in privies," and Sir Richard Thorne, his successor, has recently remarked that the midden-privy provides almost every factor "favourable to the setting up and maintenance of those very conditions which seem to be essential to the vitality and multiplication of the typhoid bacilus." The value of these warnings has, moreover been established beyond all question by Professor Delépine, who in a characteristically ingenious manner demonstrated the presence of swarms of Eberth's bacillus in the detritus from between the floor bricks of a privy-pit into which typhoid dejecta had thirteen months before been thrown, the receptacle having been repeatedly subjected to careful disinfecting processes in the interval. To this striking bacteriological proof may be added an abundance of the "evidence of experience" of midden-privy towns in regard to typhoid fever.

In the appended table are set forth the statistics for Stockport during the five years 1893–97. In order to make the inquiry as equitable as possible the privy-pit houses and water-closet houses have, with much labour, been enumerated and classified from the rate-books, and the incidence of typhoid fever on each class compared *according to rateable value*, which has been taken, partly at the suggestion of Professor Delépine, as a fair indication of the sanitary condition in other respects of the two classes of dwellings.

Table showing for the Five Years 1893–97 the Incidence of Typhoid Fever in Stockport on Privy-pit Houses and Water-closet Houses respectively.

Rateable value.	Privy-pit houses.		Water-closet houses.		Typhoid fever incidence per centum of	
	Average number.	Cases of typhoid fever notified.	Average number.	Cases of typhoid fever notified.	Privy-pit houses.	Water-closet houses.
Under £5	2,811	54	176	1	1·92	0·56
£5 and under £8...	7,771	275	703	3	3·53	0·42
£8 and under £10	1,415	57	746	9	4·02	1·20
£10 and under £12	1,077	42	425	8	3·89	1·88
£12 and under £14	449	16	225	4	3·56	1·77
£14 and under £20	656	30	613	8	4·57	1·30
£20 and under £30	249	13	374	2	5·22	0·53
£30 and upwards...	147	8	369	9*	5·44	2·43*
—	14,575	495	3631	44*	3·39	1·21*

This figure does not include 2 cases reported from the infirmary and 4 from the workhouse hospital.

In 72 instances during the five years infection of a privy-pit with typhoid discharges was followed by one or more cases amongst those who subsequently used the privies. The entire number of such subsequent cases was 116 out of a total of 545 notified, or 21·3 per cent., and as many as 4, 5, 7, and 8 cases were upon occasion traced to the same privy-pit. The details are as follows. In 53 instances 1 subsequent case occurred—viz., in 37 cases within a few weeks, in 10 cases about one year later, in 3 cases about two years later, in 1 case about three years later, and in 2 cases about four years later. In 10 instances 2 subsequent cases occurred—viz., in 7 cases within a few weeks, in 1 case about one year later, and in 2 cases about two years later. In 2 instances 3 subsequent cases occurred—viz., in 1 case within a few weeks and in 1 case about a year later. In 2 instances 4 subsequent cases occurred—viz., 1 within a few weeks and 1 about three years later. In 3 instances 5 subsequent cases occurred—viz., 2 were within a few weeks and the other four years later. In 1 instance 7, and in another 8, subsequent cases occurred within a few weeks. During the same period only 1 subsequent case (and that was three years later) occurred where a water-closet was used. This was in a very large public institution, and it is doubtful whether the water-closet infected by the first sufferer was used by the second.

It is noteworthy that the figures for Stockport show that the incidence of typhoid fever increases with rateable value both in privy-pit and water-closet houses.

Stockport.

A CASE OF

CHRONIC CONSTIPATION ENDING FATALLY AND ASSOCIATED WITH ENORMOUS DILATATION OF THE SIGMOID FLEXURE.

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THE patient was a young man, aged twenty years. The account of the case is necessarily rather imperfect, as he was not a patient of any of the physicians at the hospital, but was treated by his own medical man outside. The history of the case showed that from the day of his birth to the day of his death the patient suffered from constipation and his bowels were apparently never opened without recourse to artificial means. For the first week of his life he was exceedingly ill, passed nothing but blood and water by the rectum, and was not expected to live. After the first week he began passing fæcal matter, but the motions were never those proper to an infant, consisting almost entirely of scybala, and they were passed with much pain and screaming. The motions, such as they were, were not obtained without previous ½ oz. doses of castor oil, which often had to be repeated two or three times in the course of twelve hours before the bowels acted. As the child grew the bowels were only opened by drugs, and with increased difficulty, and at the age of twelve months the mother began to have recourse to ½ pint enemas of soap and water. Later enemas of a whole pint had to be given and very often had to be repeated two or three times before the bowels were opened. The after-history of the case is merely a repetition. The bowels used only to be opened at intervals of ten days or a fortnight and only after repeated enemas. A very large scybalous motion was then passed, generally succeeded by several loose motions, spread over the next two or three days. The motions could only be passed by the help of gravity—i.e., squatting down over a chamber in the position which, as Dr. Lauder Brunton has pointed out, is the natural and proper one for defecation. The patient very often felt slightly sick before the bowels were opened and was very much collapsed afterwards, so much so that he often had to go to bed for the rest of the day. His abdomen was always greatly distended, so that he could never button the bottom button of his waistcoat or the top button of his trousers. About a month before he died he was taken ill with influenza and on getting better he went away into the country for a holiday. Five days before death he was seized with pains all over his body and slight swelling of the legs, and in consequence he hurried home. He was treated by a medical man who thought that he had a slight touch of rheumatic fever. The night before he died he passed a fairly large motion. On the morning of the next day he was seized with a severe pain over the heart for which the præcordial area was rubbed with liniment, which gave him considerable relief, and shortly afterwards he went to bed feeling fairly comfortable. During the following night he suddenly got out of bed for some unknown reason and fell down dead.

The body was brought to the hospital, and at the necropsy it was found that it was well developed and that rigor mortis was not present. There was very slight œdema over the feet and shins, but enormous general distension of the abdomen. On reflecting the parietes the abdominal cavity was found to be occupied by a tense shining viscus, presenting the appearance of a sac rising out of the pelvis and passing under the ribs, where it doubled on itself and returned to the pelvis again. On closer inspection this proved to be an enormously distended sigmoid flexure. At the point where the sigmoid flexure left the descending colon it turned on itself and passed directly up the left side of the abdomen. The summit of the viscus then passed behind the ribs and xiphisternum with a gentle curvature and descended along the right side of the abdomen to the pelvis to join the rectum. Some little distance above the junction with the rectum the viscus showed a distinct constriction. The remaining abdominal viscera were entirely concealed by the sigmoid flexure, which pushed the liver upwards and backwards, compressed the lungs, and rotated

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the heart upwards and outwards. On removing the sigmoid flexure and laying it open it was found to contain an enormous amount of gas and also a large quantity of semi-liquid fæces of the consistence of pea-soup. The total length of the sigmoid flexure when it was opened and laid flat was 22½ inches. Fourteen inches from its upper end was a large cicatrix formed by an almost healed ulcer, probably stercoral in origin, which had caused the constriction above mentioned. The circumference of the flexure above the ulcer was 14 inches, at the ulcer it was 7¾ inches, and below the ulcer it was 10 inches. These measurements, of course, represent the circumference of the flexure at its period of least distension, and they also show that the constriction at the site of the ulcer was merely a relative one and could have made no difference, or very little, to the onward passage of the fæces. The walls of the sigmoid flexure were uniformly greatly thickened. This thickening was shown on microscopical examination to be almost entirely due to great hypertrophy of the circular and longitudinal muscular fibres. There was also slight thickening of the submucosa. As regards the rest of the organs, the pharynx, œsophagus, and stomach were quite healthy. The small intestine also showed no lesion and was not at all distended. There was slight general distension of the cæcum and of the ascending, the transverse, and the descending colon. This distension was not at all marked and the large intestine appeared otherwise healthy, as did also the rectum, and there was no sign of a fibrous band, kink, or constriction anywhere except at the ulcer above mentioned. The lungs were small and compressed by the abdominal distension and were slightly œdematous and engorged. The heart was somewhat displaced but was otherwise perfectly sound, as also were the liver and spleen. The cortices of the kidneys were slightly swollen and streaky and on microscopical examination the renal epithelium appeared to be in a state of cloudy swelling.

The disease in this case would appear to come under the heading of so-called "idiopathic dilatation of the colon." Dr. Hale White, in his excellent article on the subject in Allbutt's System of Medicine,[1] mentions that only 12 cases have been recorded in the last forty years, and he provisionally groups them under two heads—those occurring in elderly patients and those occurring in young children due to some congenital inertness of the bowels. Whatever may be the initial cause—whether it was due to a temporary kink, as Rolleston and Haward[2] suggest, or to the length of the sigmoid in children readily allowing kinking, as Jacobi[3] suggests, or to mere constipation and distension with wind or local spasm of the rectum, as Gee[4] suggests, the attempted remedies in this case must probably have increased the disease. The patient moved in a vicious circle and the sigmoid, already distended, was ever being more distended by the successive enemas administered. So far as could be judged from the post-mortem appearances the only possible treatment which could have had any permanent success would have been a lumbar colotomy.

Brompton.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON PTOMAINE POISONING.

BY JOHN CAHILL, M.D. DURH., F.R.C.S. ENG.

THE subjoined instance of multiple poisoning by apparently wholesome food has occurred under my direct observation and may be considered worthy of record.

On Oct. 13th a brace of wild ducks, which appeared to be in very good condition both before and after cooking, formed part of the dinner of a party of five. All five persons partook of the ducks without any ill effect. On the 14th a portion of wild duck, cooked the day before, was eaten at dinner by two persons, appeared very palatable, and produced no ill effect. On the 15th the bones of the same ducks were placed by the cook in her stock-pot together with the meat for soup. At dinner on that evening there were three persons, of whom one took no soup, one took soup only, and the third took the soup and other courses of the dinner which followed it. Within less than half an hour the two persons who had taken soup at table were seized with sickness and continued to vomit violently for about twenty minutes. The person who had partaken of the rest of the dinner, but not of the soup, was not in any way affected. The cook had tasted the soup by drinking about half a teacupful before it went up to table, and she was seized with sickness and vomiting after about the same interval and in the same manner as the two persons upstairs. The soup was obviously the cause of the sickness in these three cases, and there was the following evidence to show that the poisonous element in the soup proceeded from the wild duck, although these had been eaten without harmful result on the two preceding days and had appeared to be perfectly sweet when used as an addition to the soup. When the cook had sent the soup up to table it happened that she gave a bone of duck out of the pot to the cat. A little later, when the three cases of sudden sickness had occurred, inquiry was made as to the effect of this food upon the cat. That animal was found at the back of the house vomiting and evidently in great distress. None of the sufferers appeared the next morning to be any the worse for their experience.

Seville-street, S.W.

[1] Allbutt's System of Medicine, vol. iii., pp. 967-972.
[2] Transactions of the Clinical Society of London, vol. xxix., 1895.
[3] Archives of Pediatrics, vol. x.
[4] St. Bartholomew's Hospital Reports, vol. xx.

SUPPURATION IN AN OLD HERNIAL SAC.

BY A. S. NAKASHIAN, M.D.

ON August 27th I was called to see a Turk, twenty-two years of age, who had had right inguinal hernia for ten years. The scrotum was now swollen, tense, and very tender, and the contents were irreducible. Ten days previously he had taken to his bed with chills, fever, and pain in the abdomen. Five days after the beginning of this illness (to use his own language) his "intestines came down and did not go back as usual." It seemed to me like strangulated hernia, but there was no vomiting and the bowels were acting quite regularly. On the second day I operated and evacuated about a pint of fœtid pus from the hernial sac which did not contain any intestine. The inguinal canal was firmly closed and there was no communication with the abdominal cavity. I washed out the sac and established free drainage, after which he improved very much for a week. Then he began to get worse, having fever and complaining of abdominal pain. In a few days I detected very marked swelling and dulness in the lower third of the abdomen, which was tender and gave all the signs of containing pus, while the upper two thirds were flat, natural, and not tender. I did not open the abdomen but continued fomentations and tonics with occasional doses of opium to relieve him. By this treatment the swelling and fluid disappeared in eleven days. The man is now going about and transacting his business as formerly.

I think this was a case of tuberculous peritonitis accompanied with tuberculosis of the sac. The interesting features to me were the rapid closure of the sac, the partial peritonitis, and the rapid disappearance of the fluid and inflammation from the abdominal cavity.

Konia, Turkey.

MEMBRANOUS LARYNGITIS, WITH HYPERPYREXIA FROM MALARIAL POISON.

BY CHARLES LLOYD WORRALL, L.R.C.P. LOND.

AT the cost of being considered long behind the times I am driven to designate the following as a case of "simple membranous" laryngitis in contra-distinction to diphtheritic laryngitis. This one is compelled to believe owing to the total absence of the usual symptoms of diphtheria. On Sept. 20th I was asked to see a child, two and a half years of age, who had been ailing for about five days, the symptoms notably being a very frequent cough of the characteristic "croupy" type with almost entire loss of voice. On examining the throat a very marked whitish membrane—not of the "wash-leather" type—was seen at the back of the throat implicating the larynx, the tonsils

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and palate being quite free, and these parts remained quite free to the last. Until Sept. 23rd the child was treated in the usual way, when the dyspnœa at times became so very pronounced and inspiratory recession of the intercostal spaces so marked that on the evening of the same day, with the kind help of a colleague (Mr. P. C. Powrie), I performed tracheotomy. Vitality was so good that it was deemed advisable to give a few whiffs of chloroform. In a few minutes after the trachea was opened and a few free inspirations were taken all the urgent symptoms passed. On the following morning the child continued to do well, but about midday, without any warning, he was seized with a convulsion which lasted for a considerable time, notwithstanding a tepid bath, &c. Later in the afternoon the temperature was found to have run up to 108·9° F. A tepid bath reduced it a couple of degrees, but notwithstanding this the child soon got into quite a collapsed condition and died about 6 P.M. I should mention that the child never regained consciousness after the convulsion. Further, it should be stated that until the day after the operation there had never been anything like a high temperature and I would point out that but for the hyperpyrexia the case might perhaps have had a more happy termination. To explain more fully, the child came from a malarial district and I had attended him more than once for malarial fever, but the last time when I attended him for this complaint was many months ago. But notwithstanding this I do not exonerate myself for withholding quinine in the case and should I ever have to treat a case of this kind again in a malarial district I shall place quinine as the first drug on my list.

Barberton, South African Republic.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

A CASE OF EXTRA-UTERINE FŒTATION; REMOVAL OF A FULLY-DEVELOPED DEAD CHILD, THE PLACENTA BEING LEFT; RECOVERY.

(Under the care of Mr. FREDERICK PAGE.)

THE danger of severe hæmorrhage after removal of the placenta in cases of extra-uterine fœtation results from the fact that the tissues of the placental site have no power of contraction, so that the vessels continue to bleed freely. When the fœtus dies the circulation in the placenta ceases, first in the fœtal vessels and later in the maternal vessels, so that after a certain time the placenta may be removed without risk of severe loss of blood. In the interesting case reported below this thrombosis of the placental vessels had not occurred, although a fortnight had elapsed from the death of the fœtus, for severe hæmorrhage threatened when the removal of the placenta was attempted. A further point of interest in the case is the absence of any lochia or decidual cast. For the notes of the case we are indebted to Dr. J. D. Wardale, surgical registrar.

A woman, aged thirty-nine years, was on July 7th, 1898, admitted into the Royal Infirmary, Newcastle-upon-Tyne, under the care of Mr. Frederick Page. She stated that she had considered herself pregnant, but had gone ten months and parturition had not taken place. Eighteen years ago she had her only child, the labour being normal. There was no history of floodings or miscarriages. Menstruation had been quite regular until ten months previously, when it suddenly ceased; morning sickness and enlargement of the breasts followed, causing her to consider herself pregnant. Two and a half months later she was suddenly seized with severe cramping pains in the abdomen and felt cold and shivered, but she did not vomit, nor was there any loss of blood from the vagina. This attack lasted twelve hours. A week later she had a similar but more severe attack, on account of which she was confined to bed for three months. Five months after the cessation of the menses she felt "quickening"; meanwhile, the abdomen was steadily increasing in size and the breasts contained milk. Six weeks before admission, being, according to her calculations, eight and a half months pregnant, she experienced severe intermittent pains in the front of the abdomen. A month later she again felt similar pains with greater severity, and at this time there was also a slight blood-stained vaginal discharge. Since then these pains had recurred about every ten minutes and in consequence she had had very little sleep during the fortnight before admission. During the past six weeks the breasts had gradually diminished in size.

The patient looked thin, sallow, and exhausted, the pulse was 120, feeble and of low tension, and the temperature was 100° F. The abdomen was hugely and uniformly distended. A tense cystic mass, in which fluctuation could be readily elicited in all directions, extended from the pubes to within about 1 in. of the ensiform. The whole mass became tense at times of pains; at such times also a hard, ball-like mass of the size of a closed fist could be seen to contract to the right of the middle line, about 5 in. above the pubes. Nothing representing the fœtal limbs could be felt. On repeated auscultation no fœtal heart-sounds were heard but a loud and distinct placental souffle was made out on the left side below the level of the umbilicus. The breasts were soft and flaccid; a very little milk could be expressed with difficulty. The vagina was soft and œdematous, extending in a forward direction behind the pubes, but the os could not be reached. The posterior vaginal wall bulged as if with fluid, through which a hard mass, like the fœtal head, was readily felt and could be pushed up through the fluid, giving distinct *ballottement*. A catheter on being passed into the urethra went in a backward direction; the bladder contained very little urine; the urine was alkaline, very foul, and contained mucus, pus, and phosphates. Cystitis was present.

On account of the patient's bad condition, owing to sleeplessness, frequent repetition of pains, and cystitis, she was kept at rest, sleep was induced by the administration of opium, and the bladder was frequently washed out. The temperature meanwhile fluctuated between 97·6° and 100°. On July 19th, twelve days after admission, the patient was anæsthetised, chloroform being used, and on introducing the hand into the vagina the cervix was felt high up, 1½ in. above the pubes, the os being soft and patulous, readily admitting the forefinger. An incision was made in the middle line extending from 4 in. above the umbilicus to 2 in. above the pubes. The enlarged uterus, of about the size of a cocoanut, presented immediately below the umbilicus and to the right of the middle line. Behind, above, and around this was a tense cyst of a bluish colour, covered by the thinned omentum, which was adherent and very vascular. The omentum was partially detached, a trocar was inserted into the cyst, and a large quantity of grumous blood-stained fluid was removed which had no smell of putrefaction. The opening in the cyst wall was now enlarged, a leg was seized, and a dead full-term fœtus was removed. The cord was torn through close to the umbilicus. The placenta was found firmly adherent to the left side of the sac wall; it was not disturbed. The intestines, small and collapsed, were found above and to the right of the sac. The edges of the opening into the cyst were closely sutured to the lower part of the abdominal incision and the cavity was packed with gauze. The upper portion of the incision, that communicating with the general peritoneal cavity, was packed off with gauze and was carefully closed with sutures. As far as could be made out this large sac was entirely retro-peritoneal. The fœtus weighed 6½ lb.

After the operation the patient was greatly troubled by "after pains," which were controlled by opium. On July 20th, the day following the operation, the evening temperature reached 102·2°. On the 21st the gauze packing was removed, no hæmorrhage occurring, and the cavity was repacked. On the 22nd the wound was dressed daily and the cavity was douched with corrosive sublimate (1 in 10,000) and subsequently with a lotion of permanganate of potassium. On the 24th the finger was gently inserted under the edge of the placenta and the cavity at once filled with dark venous blood. The packing was again firmly introduced. On the 31st a further attempt was made to separate the margin of the placenta and the cavity again promptly filled with blood. The hæmorrhage was readily stopped by packing. The

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placenta gradually came away piecemeal, the last remnants separating on August 11th. Since the operation there had been no lochial discharge and no decidual cast of the uterus had been thrown off. The temperature meanwhile had been fluctuating between 98·6° and 100°, on one occasion (August 2nd) reaching 102·2°. On and after August 16th the temperature remained normal. On August 26th the patient was discharged in good condition with a minute sinus at the lower extremity of the wound. She has been seen at a more recent date healed and in good health.

Remarks by Mr. PAGE.—The point to which I wish particularly to direct attention is the treatment of the placenta. The child had certainly been dead for twelve days before the operation, but the placenta remained "quick." Some twenty years ago a case very similar to the one reported occurred in the Royal Infirmary, Newcastle-upon-Tyne. The child was beyond term and dead at the time of the operation. The placenta was left *in situ*. A few days after the surgeon removed the placenta and the woman died at once from uncontrollable bleeding. I am satisfied had I removed the placenta either at the time of the operation or some days later that my patient too would have bled to death. It is stated in Bland Sutton and Giles's work on "Diseases of Women," 1897 edition, p. 248: "If the fœtus dies before the operation is attempted the placenta can be removed without risk of hæmorrhage." I think this dictum requires qualification.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Fibrinous or Membranous Rhinitis and its Relation to Diphtheria.

A MEETING of this society was held on Oct. 25th, the President, Mr. BRYANT, being in the chair.

Dr. H. LAMBERT LACK read a paper on Fibrinous or Membranous Rhinitis and its Relation to Diphtheria. Fibrinous rhinitis, first described by Schuller in 1871, was defined as a subacute or chronic affection of the nose, characterised by a fibrinous or membranous exudation on the nasal mucous membrane. The great interest of the affection lay in its connexion with diphtheria, the older observers considering the diseases quite distinct, while more recent observers, relying on the results of bacteriological examination, claimed that fibrinous rhinitis was merely a mild manifestation of diphtheria. Cases of the disease were shown to be very common, forming no less than 2½ per cent. of all the children attending Dr. Lack's hospital practice. A brief analysis was then given of the symptoms presented by 36 cases of the affection. The disease was shown to be essentially one of children and to occur most frequently in the autumn months. The chief symptoms were purely local, such as nasal obstruction and discharge, excoriation of the nostrils and upper lip, occasional epistaxis, &c.; sometimes sore-throat was seen, presenting peculiar characteristics, which were described. The affection was very chronic, lasting on an average from six to eight weeks or more. General symptoms were seen to be very mild and sometimes were altogether absent. Many cases were not seen until very late in the disease; others probably were often overlooked even by competent observers; and some probably were never seen at all, the children, not being in any way ill, continued to attend school, &c., as usual. There was complete absence of all paralytic sequelæ. A brief sketch was then given of nasal diphtheria and special attention was drawn to cases in which a purulent nasal discharge persisted often for many weeks after an attack of true faucial diphtheria. The symptoms of the two diseases, fibrinous rhinitis and true nasal diphtheria, were then briefly contrasted. The results of bacteriological examination carried out in 33 cases were then reported. The true Klebs-Löffler bacillus was constantly present, generally in pure culture, sometimes mixed with pyogenic cocci, sarcinæ, &c. It was usually of the large variety, and its identity was proved by its morphology, by its growth on various culture media, &c. It was further shown to be of full virulence on animals, to produce virulent toxins, and to be neutralised by antitoxins. Further, it was shown to be capable of living for several months on culture media and by its vigorous growth to crowd out other organisms if present. Finally, the surroundings of the patients were examined, all sources of diphtheria sought for, and, as far as possible, all persons with whom the patients came into contact seen and examined both clinically and bacteriologically. A previous history of diphtheria was found in connexion with one case only. The disease was found to be very infectious, however; often it gave rise to itself (9 cases occurred in four families), and often to mild sore throat, 25 instances of which occurred in 11 families. The Klebs-Löffler bacillus was also found in the throats of healthy people who had been in association with these cases. A comparative investigation showing the frequency with which the bacilli were found in healthy noses was then described, and statistics of similar investigations on both healthy noses and throats and on cases of non-diphtheritic sore throat were quoted. The conclusion was arrived at that fibrinous rhinitis was a mild variety of diphtheria, the difference in the clinical manifestations apparently depending on some differences in the organisms associated with the Klebs-Löffler bacillus. The diagnostic value of the presence of the bacillus in sore throats which did not clinically appear to be diphtheria was also discussed and was considered to be very slight.

Dr. ALLAN MACFADYEN said that the association of the Klebs-Löffler bacillus with membranous rhinitis was now established, but it certainly was at first sight puzzling to find this bacillus present in this chronic rhinitis, in true diphtheria, and even in normal throats. There were probably several factors in infection. 1. The properties of the bacillus. It had been shown that the bacilli obtained by culture from true diphtheritic throats varied greatly in virulence. During convalescence, too, it had been shown that the bacillus altered in form and became shorter and stouter—the so-called "pseudo-diphtheria bacillus." By artificial means also the virulence of a culture could be degraded or intensified. 2. The condition of the tissues. 3. The presence and virulence of associated pyogenic organisms might lower the vitality of the tissues and facilitate the entrance of the diphtheria bacilli.

Mr. T. D. LISTER said that he had examined the nasal mucus of 125 children at the East London Hospital for Children. Of these 69 had some nasal discharge, watery, muco-purulent, or hæmorrhagic. These hæmorrhagic cases all gave pure cultures of the Klebs-Löffler bacillus. There were 39 children in whom the bacillus was found, and of these 10 were free from any nasal discharge whatever. Some were sent home and some were isolated in the hospital, but in no case did ordinary cases of diphtheria arise from these children coming in contact with others. He had examined 2 cases post mortem. In 1 there was a creamy exudation on the nasal mucosa as described by Dr. Lack, in the other there was nothing.

Dr. E. W. GOODALL said that it was well known that the Klebs-Löffler bacillus was present in very different conditions as, e.g., in the sore throat of scarlet fever and in healthy people. But the evidence of a causal connexion between this bacillus and diphtheria was too strong for it to be given up. He did not understand whether there had been definite membrane in Dr. Lack's cases. There was a form of nasal discharge occurring after scarlet fever which was very obstinate. Dr. Todd had found the Klebs-Löffler bacillus present in all of 51 cases he examined, corresponding to 700 or 800 cases of scarlet fever admitted. None of these gave rise to any case of diphtheria among other patients. But even when a case of true diphtheria (as shown by subsequent paralysis) got into a scarlet fever ward and was unrecognised for some time, it often did not infect scarlet fever cases. He asked if any of the cases had been treated with antitoxin, as in the cases of nasal discharge after scarlet fever the trouble stopped in a day or two if antitoxin was administered. Dr. Lack's description of true nasal diphtheria rather described forms in which it extended from the pharynx. He thought that when membrane was confined to the larynx or the nose constitutional symptoms were less severe, possibly because absorption of the toxins was less easy from those surfaces. He still thought that a case of sore throat in which Klebs-Löffler bacilli were present should be isolated and treated as diphtheria.

Mr. C. R. LYSTER mentioned a case in which a boy who was regarded as having only a slight cold in the head and without being himself ill brought the disease from a school

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and communicated it in a virulent form to his mother and sisters, who died from it.

Dr. LACK, in reply, said that the throat was affected as well as the nose in his cases. In describing true nasal diphtheria he had drawn his picture from cases associated with faucial diphtheria. There was membrane on the nasal mucous membrane in his cases. This could only be seen on careful examination with a mirror as it did not affect the vestibule.

MEDICAL SOCIETY OF LONDON.

Abdominal Section for External Injury.—Venesection in Acute Pneumonia.

A MEETING of this society was held on Oct. 24th, Dr. KINGSTON FOWLER, Vice-President, being in the chair.

Mr. MARMADUKE SHEILD read a paper on four cases of Abdominal Section for External Injury not accompanied by Wound. After referring to the extreme difficulty of deciding how to act in this class of cases he related firstly the case of a boy, eleven years of age, who was run over by a cab and showed all the signs of grave abdominal injury, with serious collapse, which did not pass off. The abdomen was opened and found to be distended with blood, like a ruptured extra-uterine gestation. The source of hæmorrhage was found in a tear of the mesentery, which was repaired. The patient made a rapid and complete recovery. The next case was similar—a boy was run over by a heavy vehicle. The abdomen was found full of blood and the jejunum was torn quite across. A resection of intestine was rapidly done, end-to-end anastomosis being employed, and the mesentery was repaired. The case proved fatal and after death a second rupture which had escaped observation at the operation was found in the transverse duodenum, which was the source of the fatal peritonitis. The resected intestine had joined and held water under considerable pressure. The third case was a desperate one of ruptured liver in a boy, sixteen years of age, and was related to show the success of the treatment of the hæmorrhage in these injuries by plugging with iodoform gauze. The last case was very interesting. A woman, sixty-one years of age, was run over across the lower abdomen and showed grave signs of injury, together with hæmaturia. The bladder, however, held injected boric fluid and the diagnosis was made that it was intact. Blood, however, returned with the injection. The collapse and serious symptoms rather got worse than better and the abdomen was opened. There was some blood-stained fluid in the pelvis. The source of bladder trouble was apparent in a large ecchymosis of the size of a halfpenny on the posterior aspect of the fundus, just where rupture so commonly occurs. Careful examination showed that no actual perforation existed. The liver, spleen, and renal regions were palpated, but nothing more was found. After the operation the patient became feverish and maniacal. The symptoms were of the most puzzling nature and pointed to some pyæmic process, though its cause was not even guessed at. After death a fæcal abscess was found tracking up in the retro-peritoneal tissue towards the right kidney. This originated in a small rent on the posterior surface of the cæcum. It was peculiarly unfortunate that this had not been detected during life as it admitted of such easy repair. In conclusion Mr. Sheild discussed the indications for these operations. The symptoms of ruptured kidneys and bladder were generally to be demonstrated and the rules of treatment were tolerably clear. It was in ruptured intestine and mesentery, injuries of the liver and spleen and of the sympathetic nerves, that the greatest difficulties arose. As a general rule, when, after a severe abdominal injury, the symptoms were progressively grave, and especially if vomiting and abdominal distension began to come on, exploration was indicated. The mortality would be in direct proportion to the gravity of the injuries; the fatal operations are merely failures to save a life otherwise certainly doomed. It was of the utmost importance that these cases should be related. Only by accumulated experience could rules of practice be formulated.—Dr. KINGSTON FOWLER said it was interesting to notice that in several of Mr. Sheild's cases there was more than one lesion, a circumstance which made a full diagnosis extremely difficult. In cases of chronic obstruction it was also often found that there was more than one growth or other cause of obstruction. He asked whether in the cases of rupture of the intestine there was obliteration of the liver dulness. He had formerly thought that after perforation of a chronic ulcer the disappearance of hepatic dulness was always followed by a fatal issue, but he mentioned a case in which apparently perforation of a chronic ulcer occurred. After some hours the liver dulness became obliterated, and both he and a surgical colleague were quite convinced that perforation had occurred. The patient refused operation and the normal dulness gradually reappeared, recovery taking place.—Mr. G. R. TURNER mentioned a case of traumatic volvulus occurring in a boy who fell 12 ft., striking his abdomen against the pole of a boat. There was no wound, but the abdomen was explored twenty-four hours later. The volvulus was found and released and the boy made a good recovery. Since then he had seen several cases of injury of the viscera without external wound. In the first there was abundant hæmorrhage from a small rent in the under surface of the right lobe, which was plugged, but the condition of the patient was already very grave and he did not survive. In the second case a man who was carrying a heavy weight received a blow on the abdomen rupturing the small intestine. This was found and repaired, and a hernia from which he suffered was operated on at the same time and he did well. Another patient was admitted suffering from severe collapse and vomiting. He improved for a time but the vomiting returned and the abdomen was explored. A small tear was found in the under surface of the liver, and in addition there was enormous extravasation of blood in the retro-peritoneal tissue. Vomiting persisted and he died from exhaustion caused by vomiting ten days later. The kidney was found at the necropsy to have been crushed to a pulp. A week later another man was admitted with symptoms of rupture of the kidney. The abdomen was opened in the linea semilunaris. There was no blood in the peritoneal cavity, but there was again extensive retro-peritoneal hæmorrhage. The kidney was found to be extensively torn and was enucleated, the patient making a good recovery. Although he held strongly the view that in cases of grave injury surgical exploration should be resorted to the surgeon should exercise some caution in coming to a decision, remembering that in the old days some patients did recover under expectant treatment, as was shown by specimens exemplifying repair after injury of various organs to be seen in all museums.—Dr. F. LUCAS BENHAM mentioned the case of a boy who fell striking his abdomen against the kerb. There was pain about the cæcum and severe peritonitis, with symptoms of obstruction and stercoraceous vomiting. He was treated by leeching, the free administration of mercury internally and externally, and afterwards with small doses of turpentine. He recovered without surgical assistance.—Mr. F. C. WALLIS said it was interesting that no gangrene of the intestine had resulted in the case of rupture of a mesenteric artery. The influence of injury of the solar plexus in causing part of the condition of shock must not be overlooked. He mentioned a case which occurred in Germany where hæmorrhage from the liver from a stab was successfully treated by suturing. In cases of rupture, however, he was afraid the walls would not hold.—Mr. W. H. BATTLE insisted on the importance of watching cases of abdominal injury from hour to hour, as grave symptoms were often delayed and came on suddenly. No group of symptoms could be relied on to indicate particular lesions. In cases of rupture of the intestine sometimes the symptoms were clear and unequivocal, but often they were masked. He mentioned such a case in which a man was admitted after being run over. He was free from pain, anxiety, and fever for four days, and then the temperature suddenly ran up and he died in a few hours. At the necropsy a rupture of the small intestine was discovered. The amount of shock afforded little guide as to the severity of the visceral injury. He asked Mr. Turner how long had elapsed after the injury before he operated on the case of ruptured intestine.—Mr. TURNER stated that he operated about eight hours after the accident.—Mr. SHEILD, in reply, agreed as to the necessity for caution in deciding to explore. But if the collapse did not pass off, vomiting continued, and the abdomen became distended, delay was dangerous. He thought that Dr. Benham's case might very well be one of appendicitis lit up by the injury. In contrast to that case he mentioned one in the practice of another surgeon where a woman fell and bruised the right side of the abdomen. There were symptoms pointing to injury of the cæcum, but no operation was performed. She improved for a time but

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a fæcal abscess formed, no doubt the result of a small rupture, and she died from pyæmia. He did not place very much reliance on examining for dulness. The abdominal tenderness usually precluded careful percussion, and even when fluid was present, unless it were encysted or in great quantity, its presence was often masked by the distension of the intestines. The disappearance of the hepatic dulness might, he thought, be brought about by intestinal distension as well as by free gas in the peritoneal cavity.

Dr. F. LUCAS BENHAM read a paper on the Advantages of Venesection in Acute Pneumonia, with Cases in Illustration. It was based on the report of 19 cases in which venesection had been successfully performed. All these cases were severe ones and in several life was undoubtedly saved by this means. The series included some cases of pneumonia complicating influenza and phthisis. Reference was also made to the beneficial employment of leeches in some forms of pneumonia in children, particularly that which complicates whooping-cough, and is very apt to be fatal. Additional cases were mentioned where death occurred notwithstanding bleeding or where death might have been averted if recourse had been had to blood-letting. The guiding principles laid down were that though venesection affords great relief in most cases of acute pneumonia from the earliest stages, and if performed in moderation never does the slightest harm, yet that, as cases of moderate severity recover by simple means only, venesection is indispensable only in severe and dangerous cases, the object aimed at being to convert a severe form of the disease into a mild one—i.e., to subdue the over-intensity of the morbid processes, the chief indications to follow after noting the severity of the initial rigor being a rapidly-increasing frequency of the pulse and nervous disturbance marked by sleeplessness and wandering. As pneumonia is a disease the symptoms of which increase in intensity from day to day until the crisis, the progress of this intensity may be checked or stayed by blood-letting if it is advancing too fast and thus betokens danger. It was possible that greater good might be done by bleeding at the very beginning of the disease, which might be cut short thereby; but it was generally useless to delay it till the last moment, when the patient was dying from the formation of clots in the heart.—Dr. KINGSTON FOWLER said that it was now half a century since the antiphlogistic pathological theories had been laid aside. It was possible that the pendulum had swung too far in the other direction. But personally, while he quite recognised that venesection had a definite value as a therapeutical weapon, he did not go as far as Dr. Benham in his recommendation of its use in pneumonia, although he admitted that his experience of its employment in that condition was limited. The condition which called for it was distension of the right side of the heart, especially in cases of chronic bronchitis with emphysema. He mentioned such a case in which a patient was greatly relieved by free hæmorrhage from the dorsalis pedis artery which was unintentionally included in an incision intended to relieve the patient's anasarca. It was also of undoubted value in relieving for a time the pain of aneurysm.—Dr. B. B. JOLL said that he had practised formerly in a district where periodical bleeding during health was the custom and where venesection was the routine practice in pneumonia and other fevers. The results were almost uniformly good.—Dr. LUCAS BENHAM agreed as to the value of venesection in cases of bronchitis, but he had intentionally confined himself to the treatment of pneumonia in his paper. He thought that venesection would be valuable in several grave diseases such as plague, hydrophobia, and the severer forms of malaria.

OPHTHALMOLOGICAL SOCIETY.

Glioma of the Optic Nerve.—Tension of the Eye in Irido-cyclitis.—Exhibition of Specimens.

THE first ordinary meeting of the session was held on Oct. 20th, Mr. H. R. SWANZY, President, being in the chair.

Mr. J. F. BULLAR and Mr. C. DEVEREUX MARSHALL communicated a paper on Glioma of the Optic Nerve. The case upon which it was based was that of a woman, aged thirty-seven years, who noticed nothing the matter until 1889, when the left eye became more prominent than natural. It continued to become more and more pushed forward until 1895, when Mr. Bullar operated and removed the tumour with the eyeball attached. Immediately behind the globe the optic nerve was of normal size for a distance of 15 mm. It thus formed a pear-shaped swelling 50 mm. long and 20 mm. wide. A cyst-like cavity was found inside this which contained straw-coloured fluid. On opening it the interior was found to be rough and vascular and had a fatty appearance. The tumour was encapsuled. The optic nerve was completely lost as soon as it entered the tumour, and it was not again seen at the posterior part, as the growth extended at least as far as the optic foramen and was cut across behind. The patient did quite well and had since married and was in good health. The tumour was proved by microscopic examination to have originated in the neuroglia; Mr. Bullar and Mr. Marshall have therefore termed it a glioma of the nerve. The eye was normal. In the literature on the subject 130 cases of growths of the optic nerve were recorded, and the results of these showed that these tumours were of slow growth, but should be classed as malignant, as they were liable to extend into the brain, although metastases had not been found in any case. The question of growths of all sorts found in the optic nerve was discussed, and although the different terms applied to them were legion, yet Mr. Bullar and Mr. Marshall were strongly of opinion that the majority of them would fall into three groups: (1) those originating in the neuroglia, which should be termed "gliomata"; (2) those originating in the dural sheath, "sarcomata"; and (3) those originating in the pial sheath, "endotheliomata." Mr. Bullar added that there had been no difficulty in removing the tumour. As soon as the conjunctival sac was opened the finger passed readily into the orbit and the tumour was easily defined; it was not necessary to clear out the orbit. The posterior section of the growth was made as close to the apex of the orbit as possible, but the tumour was cut through so that some portion of it must have been left behind. It would have been quite easy to remove the whole of it, leaving the eye behind, but in the stretched condition of all the parts he had not thought this advisable.—The PRESIDENT remarked upon the rarity of tumours of the optic nerve. He only remembered seeing one case.—Mr. J. B. LAWFORD referred to a case published by Mr. Rockliffe in which part of the tumour had been left in the orbit without ill consequences.—Mr. TREACHER COLLINS commented on the great variety of names which had been given to this form of tumour. He thought the best classification was the anatomical one—those originating in the sheaths of the nerves and those starting in the nerve itself. The optic nerve was a prolongation of the brain substance and gliomata of the optic nerve resembled those of the brain in structure rather than those of the retina, which approached the embryonic type in their round-celled formation.

Captain H. HERBERT, I.M.S., made a communication on the Tension of the Eye in Irido-cyclitis based on observation of 144 eyes affected with the disease. In the majority of attacks, more especially in the milder attacks, the tension was, as in simple hyperæmia of the iris and ciliary body, reduced, the reduction lasting, as far as the evidence went, at least as long as any ciliary injection remained. In other cases a period of high tension of very variable duration came on. The high tension appeared to be due to blockage of the normal outlets from the anterior chamber, and the eyes chiefly affected were (1) those very severely attacked with copious exudation; and (2) eyes perhaps lightly attacked but predisposed to glaucoma, as shown by shallow anterior chamber in the sound fellow eye and by more or less advanced age of the patient. In these high tension cases the anterior chamber was deepened and the pupil slightly dilated. In the most intense inflammations the plus tension rapidly gave way to a softening, which might be permanent and which indicated atrophy of the ciliary body. The mild attacks, which were little removed from primary subacute glaucoma, were of interest because of difficulties in diagnosis and in treatment. There were no grounds for attributing high tension to cyclitis as distinguished from iritis.—Mr. PRIESTLEY SMITH said that the principles enunciated by Captain Herbert were now generally accepted. There were two processes, mutually antagonistic, concerned in the regulation of tension in irido-cyclitis: one was the suppression of secretion reducing the tension, the other was the formation of an albuminous exudation hindering filtration and raising the tension. He had been glad to hear in this paper of the value of the tonometer he had introduced; after longer experience he thought it very valuable if its limitations were recognised. He had made some experiments on tension some years ago in which a perfectly limpid

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albuminous fluid obtained from a serous cavity had been injected into an eye of a cadaver and normal saline solution into the other. In the former the tension was raised, in the latter it was not raised, showing that albuminous fluids will not filter through animal membranes.

The following living and card specimens were shown:—

Mr. R. M. GUNN: A case of Retinal Disease.

Dr. R. D. BATTEN: Superficial Central Choroiditis.

HARVEIAN SOCIETY OF LONDON.

Congenital Affection of the Heart. — Enlargement of the Spleen. — Pulmonary Osteo-Arthropathy. — Exhibition of Cases.

A MEETING of this society was held on Oct. 21st, the President, Dr. JAMES F. GOODHART, being in the chair.

Dr. ROBERT MAGUIRE showed a case of Congenital Affection of the Heart in which he thought the lesion was imperfection of the septum ventriculorum. This was so far the most common of the congenital defects of the heart causing symptoms, that all others might for clinical purposes be ignored. Even in the absence of cyanosis the condition of the heart could be diagnosed by the physical signs and especially by the character of the systolic murmur which was always present and which, Dr. Maguire asserted, was always heard best along the line of the interventricular septum, diminishing rapidly in intensity when this line was left, even though the murmur could still be heard in every part of the chest. Dr. Maguire stated that imperfection of the septum might be due to two causes: (1) intra-uterine endocarditis affecting the pulmonary orifice and so preventing, by increased tension in the right ventricle, the due formation of the septum; or (2) deficient developmental energy during the formation of the septum, without any cardiac disease. These two conditions, he asserted, could be diagnosed clinically, for while in the second condition there was present merely the murmur he had described, in the first there was also observed a continuation of the murmur to the left along the line of the pulmonary artery. The occasional absence of cyanosis in such cases was due to the fact that the tension in the left ventricle might be sufficient to prevent access of venous blood to its own cavity, admixture taking place only in the right ventricle, where it was of no consequence. When, however, by reason of bronchitis or some similar respiratory trouble, the tension in the right ventricle was increased, venous blood passed through the septal opening on to the left ventricle and caused cyanosis. It was wonderful how great a deficiency of the septum was compatible with life. In one case which he had observed for some eight years, and in which cyanosis often disappeared for considerable periods, he had found at the necropsy practically only one ventricle, the septum being represented by a small semilunar ridge near the apex of the heart.

Dr. MAGUIRE also showed a case of Congenital Heart Disease and made remarks on the varieties of such malformations.

Dr. GOW expressed surprise at the statement that the disease was so rare. He inquired whether the unilateral clubbing observed in cases of one-sided chest lesions, such as collapse of the lung from old empyema, was of the same nature as the cases exhibited.

Dr. LESLIE THORNE, referring to Dr. Maguire's remarks on congenital heart disease, asked him if he would kindly explain his reason for diagnosing previous intra-uterine inflammation in cases where the systolic murmur was conducted along the line extending from the second left costal cartilage upwards and outwards towards the left clavicular region, and congenital malformation where the murmur was not so conducted.

Dr. A. P. LUFF showed a case of Great Enlargement of the Spleen due to Hyperplasia and Fibrosis. The patient, a woman, aged fifty-three years, was first admitted into St. Mary's Hospital in June, 1896, when the spleen reached on the left side to the left anterior superior spine of the ilium and on the right side 1 in. to the right of the umbilicus. Since then it had gradually enlarged until at the present time it reached from 2 to 3 in. to the right of the umbilicus and downwards to the brim of the pelvis. For the past two and a half years the red blood corpuscles had averaged from 2,700,000 to 3,540,000 per hæmic unit while the proportion of white corpuscles to red had throughout been normal. There was no history of ague, malaria, of syphilis. The liver and lymphatic glands generally were normal.

The PRESIDENT alluded to the acute arthritis which sometimes complicates phthisis and is usually regarded as rheumatic. He asked whether the first conditions in Pulmonary Osteo-arthropathy might not be due to similar but chronic forms of arthritis. He drew attention to the analogy between acromegaly and pulmonary osteo-arthropathy and asked whether changes in the pituitary body had been found in the latter affection.

Dr. LEONARD GUTHRIE showed, for Dr. JAMES TAYLOR, a boy, aged seven and a half years, suffering from the congenital form of Myopathy. His parents were then healthy. The patient was the youngest of four, of whom the eldest was alive, aged twelve and a half years. The others died shortly after birth. The patient was a full-term child. He could not walk until he was five years of age and could never walk more than a few steps. His legs had not become thinner lately but his arms had wasted. He could never use a knife and fork. He was mentally bright. There was no facial affection. The special senses and sensation, the heart, the lungs, and the sphincters were normal. Movements of the head and neck were normal. There was no local enlargement of the muscles of the arm, but all were small. The middle and lower parts of the trapezii were wasted. The upper parts were normal. The supra- and infra-spinous fossæ were flattened on both sides. There was complete atrophy of both pectorales majores except a few of the lowest fibres on the left side. The serrati magni were small on both sides. The latissimi seemed absent on both sides. The diaphragm and intercostals seemed normal, the abdominal muscles were fair, and the spinal muscles were weak. The legs were very weak. He could carry out all movements as he lay in bed, but very feebly. He could only walk a few steps. The muscles of the leg were all very small and the knee-jerks were absent.

Mr. STANSFIELD COLLIER showed a man, aged seventy-three years, who after recovering from prostatectomy was suddenly seized with Pain in the Left Eye accompanied by proptosis. The symptoms subsided but again returned, and at the present time there was considerable protrusion of the left eyeball, together with the presence of a firm, tender swelling in the left temporal region. The fundus oculi was normal. His mental condition had recently deteriorated, but otherwise there were no definite cerebral symptoms. Mr. Collier believed that the swelling in the temporal region was malignant and that the sudden onset of symptoms was occasioned by hæmorrhage into a new growth.—The PRESIDENT agreed that a new growth probably existed in Mr. Collier's patient. He alluded to the case of a public speaker who was suddenly attacked by pain in the head with marked proptosis whilst in the act of addressing a meeting. A loud bruit was audible all over the skull and he (the President) believed that an arterio-venous aneurysm had formed in the neighbourhood of the cavernous sinus.

Mr. COLLIER also showed a young girl suffering from Congenital Dislocation of the Patella.—Mr. JACKSON CLARKE discussed the case and Mr. COLLIER replied.

ÆSCULAPIAN SOCIETY.

Presidential Address.

A MEETING of this society was held on Oct. 7th, when the Presidential Address was delivered by Mr. D. H. GOODSALL, who took "Provincial Provident Dispensaries" as his subject. He said that at the present time the medical charities, certainly the medical charities of London, are grossly imposed upon. A large number of people receive gratuitous medical and surgical treatment which ought to be paid for. Where letters of recommendation are useful—and they do assist the patient at most medical charities—a common plan adopted by those who ought not to receive free medical aid is to get a letter from a subscriber through either a friend or a servant of the subscriber to the charity for which a letter of recommendation is required. The difficulty in preventing this form of fraud is well known and so far no reliable means for preventing it has been adopted, for many of these patients when questioned about their means conceal their true position. That provident dispensaries when well managed can do a

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great deal towards removing the abuse of our medical charities and can also give the necessitous poor a much more thorough help in sickness than they are now receiving is shown by the results attained in seven provincial dispensaries which have been in operation for many years. The dispensaries are in the following towns—viz., Derby, Leamington, Leicester, Northampton, Reading, Tunbridge Wells, and Worcester. A provident dispensary has existed at Reading since 1802. The seven dispensaries show an average existence of upwards of 50 years and their total membership in 1897 was 101,455. As the total population of these towns amounts to 465,000, 21·7 per cent. of the population were members of provident dispensaries. The average payment per member per annum was 3*s.* 7½*d.* The highest payment (at Tunbridge Wells) was 4*s.* 11½*d.* and the lowest (at Reading) was 3*s.* A strict wage limit is in force in all these towns and rules exist by which a member whose position shall have become improved during his membership shall have his name removed from the books of the dispensary. The wage limit varies from £1 per week at Derby to 35*s.* at Tunbridge Wells. Without these dispensaries every one of the members would be eligible for treatment at the hospitals of the seven towns, and most certainly at any hospital in London—i.e., if the members wished to go to them. There is undoubtedly a strong feeling with some of the very poor that they would rather pay their medical man for his attendance than receive free medical relief, but with the majority of the working classes it is not so. Under the present arrangements in London a few of the poor pay a very little and the majority of the poor escape payment altogether. The hospital patients in the seven towns referred to numbered 56,346 out-patients and 10,602 in-patients during 1897, showing a percentage of 12·1 of out-patients and of 2·2 of in-patients. In comparison with those seven towns the following five towns may be taken where provident dispensaries are not stated to exist.

Town.	Population.	Hospital beds.	In-patients.	Proportion per cent. of in-patients to population.	Out-patients.	Proportion per cent. of out-patients to population.	Number of medical men.
Chatham	31,657	101	916	2·9	16,505	52·1	12
Hastings	52,223	78	604	1·15	2,665	5·1	?
Bath	51,844	327	3111	6	18,625	36	86
Bradford	216,361	531	3135	1·45	20,726	9·4	126
Birkenhead ...	99,857	170	1345	1·35	16,287	16·3	97

At Bradford the hospital staff paid 3052 home visits; this may mean that many patients having met with accidents were sent home and seen there instead of being admitted.

The above five towns give a total population of 441,942. The out-patients numbered 74,808, or 17 per cent. of the population. The in-patients numbered 9111, or 2 per cent. of the population. This comparison of towns with provident dispensaries as against towns without provident dispensaries shows that the out-patients are over 40 per cent. greater in the non-provident than they are in the provident towns. In the non-provident towns this increased percentage of out-patients did not contribute anything towards the cost of their treatment—i.e., the cost of drugs, &c., must have been paid by the charitable public. When compared with the seven provident towns they should clearly have contributed something towards this expense, and should have also paid the medical men who attended them. With reference to the benefit of the provident dispensaries to the poor the following advantages are given to them in the seven towns: (1) The right to apply at once for immediate medical attendance; (2) the right (in many of the towns) to consult the nearest medical officer in case of accident or sudden illness; (3) the right to choose their own medical officer when joining the dispensary; (4) the right to change the medical officer at stated times, and during an illness if the committee consent; (5) the feeling of security that in case of prolonged illness they will not incur a debt which they might find great difficulty in subsequently discharging; and (6) the encouragement of thrift and self-reliance. In reference to medical men the advantages of provident dispensaries are that (1) in accordance with the work they do for the working poor they are certain to receive some remuneration, the amount depending upon the time they devote to the work; (2) they are relieved from all trouble of supplying medicines to the poor patients; (3) they have no records to keep of the indebtedness of these patients; and (4) they have no trouble in collecting the amounts due from the patients. In the seven towns with provident dispensaries the total payments by members during 1897 amounted to £17,699 1*s.* 10*d.* The balance left after defraying expenses was £12,033 6*s.* 4*d.*, which was divided among the 76 medical officers of the provident dispensaries in those towns, giving an average of £158 6*s.* 8*d.* It may be fairly assumed that all the patients who belong to the provident dispensaries of those towns, representing 21·7 per cent. of their population, were really members of the working-classes.

CLINICAL SOCIETY OF MANCHESTER.

The Treatment of Summer Diarrhœa in Children.

A MEETING of this society was held on Oct. 18th, Dr. A. HILL GRIFFITH, President, being in the chair.

Dr. ASHBY opened a debate upon the Treatment of Summer Diarrhœa in Children. He said that the annual epidemic of summer diarrhœa with its death-roll of infant life—which has been exceptionally heavy this year—reminds us how ineffectual are our means for preventing as well as of treating this disease. Year after year with the advent of hot weather comes a visitation of acute gastro-intestinal disease which gives rise to a high mortality among infants during the acute stage and leaves many others in a permanently damaged condition. It is the universal experience that a close, hot atmosphere maintained during the whole twenty-four hours for days together is the indirect cause of the epidemic. It is well known that the heat wave supplies favourable conditions for the increased growth and virulence of various organisms, especially those which are liable to find their way into commercial cows' milk. It is tolerably certain that not one special bacillus but many are capable by their growth of forming toxins which are of a highly deleterious character. Having found entrance into the alimentary canal by means of milk or other food, the formation of toxins or toxalbumins quickly follows, which, being absorbed into the blood, give rise to fever, depression of the heart, suppression of urine, and drowsiness, and affect all the tissues of the body. Moreover, the bacteria in the alimentary canal may penetrate into the blood-vessels and give rise to inflammations in other organs, such as the lungs and meninges of the brain. Locally the toxalbumins are apt to give rise to an enteritis which chiefly affects the large bowel and lower end of the ileum, the reason doubtless being that in these parts the toxalbumins are longer in contact with the lining membrane of the bowel than they are in the upper part of the alimentary tract. Among the most important means for preventing these epidemics must be mentioned an improved condition of things as regards our milk-supply. A greater care of the health and cleanliness of the cows and byres, a rapid cooling of the milk to a temperature of 40° F., and maintenance of this temperature during the conveyance of the milk from the cow to the consumer must be reckoned amongst the most important measures of prophylaxis. The first indication for treatment is the evacuation of the contents of the stomach and alimentary canal. The vomiting which usually occurs is doubtless salutary and may be assisted by means of warm water if the infant or child will take it, or, still better, the stomach may be washed out. Stomach washing is urgently called for in cases with no vomiting and much collapse. Calomel is the best evacuant drug; if there is no vomiting it should be given in ½ gr. or 1 gr. doses and repeated once. If the vomiting is troublesome doses of from ⅛ gr. to ⅒ gr. should be given half-hourly. All milk must be stopped, and barley water, white of egg in sugar water, and chicken tea or whey given in small quantities at a time. Diluted brandy if there is any appearance of heart failure should be given. Very many drugs have been used, and recently drugs which are supposed to disinfect the alimentary canal have been much in vogue; that they are disappointing most will admit. Bismuth nitrate in large doses, from 5 to 15 gr. every two or three hours, is as useful as any. Opium

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has fallen to some extent into disrepute in the treatment of infantile diarrhœa, and Dr. Ashby believes undeservedly so. The griping and colic caused by the enteritis can certainly be soothed by small doses of opiates and the excessive drain on the system checked. Enemas of starch and opium or ½ gr. of Dover's powder repeated every hour or two may be safely given within forty-eight hours of the onset of the attack to infants six months or a year old provided there is no marked drowsiness or contraction of the pupils. Washing out the large bowel by enemas of starch and boric acid by means of a soft indiarubber catheter attached to a ball syringe or funnel is certainly useful; from 20 to 30 oz. may be injected and allowed to escape by the side of the catheter. In this way the fæcal matter and toxins may be removed and the irritable bowel soothed.

Dr. W. E. FOTHERGILL stated that in hospital practice he had found all varieties of feeding-bottles unsatisfactory and had therefore discarded them entirely in favour of spoon-feeding.

Dr. J. WESTMORLAND, who had resided for two years in Southern California, referred to the fact that diarrhœa was not so rife in that country as it was here, although the temperature was much higher. He attributed this to the milk and fresh meat being cooled at once on ice and afterwards being constantly kept at a low temperature until required for use.

Dr. P. R. COOPER alluded to some bacteriological observations he had made on summer diarrhœa in rabbits, which disease he had noticed was coincident with an enormous increase in the number of "resident" bacteria in the intestine. He suggested that the summer diarrhœa of children was accompanied by an increased proliferation of the normally resident microbes, which at the same time became pathologically virulent. This would explain the occasional occurrence of this disease in breast-fed children, although admittedly the majority of cases were caused by fresh invasions of organisms introduced with fermenting and unsuitable food. He was opposed to the use of feeding-bottles. He had tried most of the so-called intestinal antiseptics with disappointing results, but had had better success with the use of turpentine enemas in certain cases.

Dr. J. PRICE WILLIAMS thought that little could be done to reduce the mortality from infantile diarrhœa unless the health authorities would issue early in the summer instructions to the public as to the precautions they should take against the disease and the importance of obtaining medical advice at the very outset of the attack.

Dr. WILKINSON (Oldham) considered that the temperature of the soil had much more to do with this disease than the temperature of the air. He preferred the boat-shaped bottle to spoon-feeding and thought that sterilisation of the milk was the best preventive. He recommended that in the very early stage of the disease nothing should be given for a few hours except sips of tepid water and that milk should be altogether avoided.

Dr. ARNOLD LEA had adopted in some cases of collapse subcutaneous injection of saline fluid under the skin of the abdomen or back. This had always caused marked improvement and had been the means of saving some cases which would otherwise have proved fatal, but unfortunately the good effects were in many cases only temporary.

Dr. DULBERG in certain advanced cases had had very good results from the use of small doses of opium in a little Parrish's food and from feeding with Mellin's food in very small quantities at a time.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases.—Immunity after Excision of Malignant Disease. — Pneumonia. — Intussusception in Young Children.

A MEETING of this society was held on Oct. 20th, the President, Dr. MACFIE CAMPBELL, being in the chair.

Dr. CATON showed a man suffering from Elephantiasis of both legs and feet; the patient had never been abroad.

Dr. BARENDT read notes and showed a child, aged two and a half years, suffering from Xerodermia Pigmentosa. The disease affected the face, neck, and forearms. The skin elsewhere was healthy. Treatment by burnt amber ointment (2 dr. to 1 oz. of lard) had no effect. He proposed to apply the x rays.—Dr. LESLIE ROBERTS and Dr. G. STOPFORD TAYLOR spoke.

Mr. C. THURSTAN HOLLAND read notes and exhibited a patient, a boy ten years of age, who had suffered from Lupus which affected a large area of the left cheek. He had treated it by the x rays—eighteen exposures, each of 15 minutes' duration, extending over a period of two months. The ulcerated patch had quite healed. For five years previously the boy had been scarified and cauterised and treated in many other ways without any good result. The scar was supple and there was now no sign of breaking down three months after cessation of the treatment.—Dr. LESLIE ROBERTS alluded to risks of dermatitis from the use of x rays.—Dr. STOPFORD TAYLOR had treated two cases of deeply infiltrated lupus of the face without benefit by the x rays. In another case of lupus of the face with corneal ulcer an acute inflammation of the eye was set up. He congratulated Mr. Holland on the case shown.—Dr. CARTER, Dr. BARENDT, Dr. GIVEN, and the PRESIDENT having spoken, Mr. HOLLAND, in reply, thought the fear of dermatitis being caused by x rays much exaggerated. He had used the x rays in over 700 exposures and had never seen it.

Dr. NATHAN RAW showed a patient, a man, aged thirty-two years, whom he had trephined for Traumatic Epilepsy. The man fell, ten months ago, on his head, and after a long illness recovered and went to work. Seven weeks ago he commenced to have epileptic fits and was admitted to hospital unconscious. He had twenty-one fits in one day and became comatose. Trephining and removal of nearly the whole of the right frontal bone, which was irregularly depressed from fracture, was followed by cessation of the fits and in six weeks he was discharged.

Mr. F. T. PAUL read notes of Two Cases of Immunity after Excision of Malignant Disease. The first case was one of extensive epithelioma of the tongue, floor of the mouth, right tonsil and glands of the neck in a man, fifty-one years of age. An operation was performed in 1893 for its removal. Six weeks later the glands were removed. He made a rapid recovery and worked hard and lived sparingly until recently when an extension of the disease was found in the new floor of the mouth with glandular infection. This was removed. The second case was one of removal of a carcinomatous breast and axillary glands twelve years ago. There had been no recurrence.—Mr. MITCHELL BANKS observed that since no successful treatment had yet been found they were bound to go on improving the operative procedure. Early removal with a fair margin of apparently healthy tissue gave good results. He deprecated such proceedings as removal of the upper extremity in cancer of the breast and axilla and considered it discreditable to surgery when severe and incomplete operations were performed.—Dr. IMLACH said it had taken three years to answer a paper written by Dr. E. T. Davies against cancer surgery. These two patients, only one of whom was free from disease, were still living, and this was encouraging. But great surgeons, as Sir Benjamin Brodie and Sir James Paget, after a lifelong experience of cancer surgery always recanted from their early belief in it at the end of their career. — Dr. ALEXANDER and Mr. RUSHTON PARKER also spoke.

Dr. ABRAM read notes of three cases of Pneumonia. In the first case, that of a young athletic man, aged twenty-six years, gangrene of the lung supervened, followed by recovery. The second case occurred in a man, aged fifty-one years. Maniacal delirium was present. The administration of a drachm dose of tincture of digitalis, followed six hours later by a dose of two drachms, quietened him and he recovered. The third case ran a long course due to extension of the mischief to the upper lobe of the lung and the development of a pure pneumococcal empyema, which was opened. Dr. Abram held that opening such an empyema was sure to get rid of the fibrinous masses met with in these cases and favoured quick resolution.

Mr. R. W. MURRAY read a note on the Treatment of Intussusception in Young Children. He mentioned the high mortality in this affection, and after drawing attention to the uncertainty and dangers of rectal injections strongly advocated primary laparotomy.—Mr. HAWKINS-AMBLER had no idea that the results of laparotomy in this condition were so good as described. The chief dangers arose from delay in recommending operation and in advanced cases of attempting to do too much. He gave a case where enterotomy was performed on the ensheathing intestine and the gangrenous bowel removed through this opening.—Mr. PUZEY observed that there were cases where hydraulic pressure was obviously called for. He instanced a case in a child, aged five years, with an intussusception protruding from the anus, in which

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hydraulic pressure was successful.—Dr. A. C. E. HARRIS strongly advocated operation and thought rapidity of performance of such operation of extreme importance.—The PRESIDENT, Dr. IMLACH, Dr. BARR, Mr. RUSHTON PARKER, and Dr. ARMSTRONG also spoke.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At the opening meeting, held on Oct. 13th, the President, Dr. Alfred Robinson (Rotherham), introduced the subject of Vaccination by glancing at the figures presented to Parliament by the Royal Commission on Vaccination and which compelled the Government to take action. He pointed out the relation of infant vaccination and its neglect to the age incidence of small-pox. During the seven years 1848–54 of 1000 deaths from small-pox 677 occurred among children under five years of age, whilst in the subsequent groups of five years the proportional number steadily declined to 193 in the years 1885–89 and afterwards rose again to 283 per 1000 in the years 1890–94, concurrently with the decline in infant vaccination. So that it seemed impossible to avoid the connexion between the rapid increase of small-pox and vaccination default. Europe 100 years ago was decimated by the ravages of small-pox, the loss of life being estimated at 400,000 yearly. On the introduction of vaccination and revaccination the immunity was so astonishing that it seemed as if the disease had vanished from Europe. Indeed, in Germany, where vaccination and revaccination were insisted upon, it was almost unknown as an epidemic and was seldom found in any but frontier towns. It was from facts and figures such as these on which the Royal Commission made its recommendations, three out of four being embodied in the Bill, the only one omitted being the State payment of private practitioners for successful vaccination. The gains of the Bill were stated to be—(1) age limit extended from three to six months; (2) operation to be performed by the public vaccinator at the child's home if required; (3) the use of glycerinated calf-lymph; (4) the conscientious objector allowed his liberty; (5) an objector cannot be convicted more than twice; and (6) recalcitrants to be treated as first-class misdemeanants. Going on to the omissions of the Bill the President pointed out that no lists were prepared for public vaccinators after the age of four years; it laid no duty on school boards in connexion with children on entering school life; finally, when children reached the age of twelve years, at which time revaccination ought to be performed, when their parents were still less likely to object, the Bill made no provision for any action being taken as regards either vaccination or penalty or declaration of conscientious objection. The President regretted the indefiniteness of the term "conscientious objection" and expressed the hope that in any future Bill sanitary authorities would have charge of vaccinal administration and also that prosecutions should be conducted by public prosecutors. In conclusion, he pointed out that the Bill was an admitted compromise, though on the right lines. It had done something, on the one hand, to remove legitimate grievances and plausible objections raised to the practice of vaccination; whilst, on the other hand, it sought to provide facilities for vaccination which had never been enjoyed before. The line taken with regard to compulsion was again that of least resistance. At present about one-third of the children in England and Wales escaped vaccination, but with an amended Act in which the gravest objections were removed much of the opposition might die out. The Act was of a temporary character, it being understood that in its present form it was to remain law for five years only. The President's opinion was that the medical profession would not rest satisfied with the law as it stood; its ethical traditions had always been to protect every life against even that life's own ignorance and self-will. It disowned the selfish maxim, "Am I my brother's keeper?"

OXFORD MEDICAL SOCIETY.—The first meeting of the session was held on Oct. 21st in the Radcliffe Infirmary, Mr. H. P. Symonds (President) being in the chair. The minutes of the last meeting and the financial report were read by the secretary, Dr. Duigan, and were approved. The following is a list of the officers who were elected at the annual meeting in June:—President: Mr. H. P. Symonds. Vice-Presidents: Professor Gotch and Dr. Brooks. Secretary and Treasurer: Dr. Duigan. Council: Dr. Collier, Dr. Ritchie, Dr. Farmer, Dr. Ramsden, Dr. Elsmore and Surgeon-General Bradshaw, C.B.—Mr. Sankey read notes of a case of Apparent Rupture of an Ovarian Cyst and exhibited the patient. A single woman, aged sixty-five years, first noticed a swelling of the abdomen in June, 1897. In September, 1898, she had a fall and had severe pain in the abdomen after, and coming now under observation she was found to have an enormous distension of the abdomen (measuring about 50 in.); there was dulness in front, with fluctuation; the flanks were resonant. An ovarian cyst was diagnosed, but there was evidence rather of bruising than of rupture of the cyst. Four days after the accident the patient passed an unusual quantity of urine and the abdomen began to get smaller until it only measured, as at present, 36 in. in circumference.—A discussion followed, in which other cases of rupture of thin-walled parovarian cysts were mentioned, where absorption of the fluid by the peritoneum had occurred, and in one case this was associated with the passage of a large quantity of urine.—Dr. Collier showed a case of Sarcoma of the Sternum involving the ribs. The heart and lungs appeared to be healthy. The treatment by injection was discussed.—Dr. Roe exhibited a case presenting some features of Insular Sclerosis. A man, aged thirty-three years, noticed weakness and difficulty in walking eight years ago. His eyesight became affected five years ago, there being loss of vision in the centre of both visual fields. At this time he was a fairly heavy smoker. There was no history of syphilis or alcohol. The knee-jerks were exaggerated and there was ankle-clonus. There was no loss of sensation. His gait was at times ataxic. He was very loquacious, but speech was normal and there were no delusions.—Mr. Doyne, who had investigated his ocular symptoms, said there was central scotoma of both eyes but there were no peripheral scotomata. It differed from tobacco amblyopia. He regarded it as a case of insular sclerosis, such cases being sometimes indistinguishable from commencing general paralysis.—Mr. Symonds showed a case of Bronchocele where tracheotomy had to be performed during the removal of the gland. He also showed a case of Congenital Dislocation of both Hip-joints, comparing it with a case of extreme rachitic deformity of the femora.

SOCIETY OF ANÆSTHETISTS.—The sixth annual meeting of this society was held at 20, Hanover-square, W., on Oct. 20th, the President, Dr. Dudley Buxton, being in the chair. The reports of the council and treasurer described the condition of the society as flourishing. The following officers for the coming session were elected:—President: Dr. Dudley W. Buxton. Treasurer: Mr. G. Eastes. Members of Council: Mr. Edgar Willett, Mr. E. F. White, and Mr. Sydney Rumboll (Leeds). Secretaries: Dr. R. Turle Bakewell and Dr. E. H. Grant Morris. Auditors: Dr. R. Probyn-Williams and Dr. McCardie (Birmingham).—The President proposed votes of thanks to Mr. Joseph White, who retired from the post of treasurer on account of illness, and also to the ex-secretary, Mr. E. A. Starling, which were carried unanimously. At the conclusion of the formal business a dinner attended by the members and their guests afterwards took place at Limmer's Hotel, Conduit-street, under the chairmanship of the President, Dr. Dudley Buxton. After the usual loyal toasts Mr. Howard Marsh proposing the toast of the evening, "The Society of Anæsthetists." He said that the great improvements in modern surgery had been produced by the introduction of anæsthetics and by the labours of Lord Lister. Anæsthetists were perhaps specialists, but they must also be good physiologists and pathologists, and must have a good knowledge of clinical medicine, whilst many were admirable surgeons and often able to give valuable hints to the operator. Moreover, they seemed always amiable, always ready to help to their utmost and in a way which made surgeons very thankful. He was pleased to see several lady anæsthetists also present that evening.—The President, in replying for the society, said that anæsthetists were peculiar in that they had few if any opportunities of seeing each other at work. It was therefore of peculiar advantage to them to have a society such as the Society of Anæsthetists, which enabled them to tell one another their special methods, their difficulties, and their failures. These last were perhaps the most instructive. The society was extremely flourishing and had taken a step which he thought would greatly extend its benefits. He referred to the first publication of the Transactions of the society. In this way they had been able to focus their work and supply a ready means for referring to the valuable papers, discussions, &c., which had been given during the year. He referred to the accord between surgeon and anæsthetist which robbed the duties

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of the anæsthetist of their grimmer side and aided him on the many occasions when he had, as it were, to dispute step by step with possible catastrophe.—Mr. George Eastes proposed the toast of "The Visitors," which was replied to by Professor Schäfer.—The health of the President was proposed by Dr. Silk and drunk with musical honours.—During the course of the evening Miss Cherry sang with much feeling, Mr. Schartau rendered some humorous songs, and Mr. Churcher recited and gave some amusing sketches.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Oct. 18th, Mr. J. Foster Palmer, President, being in the chair.—The Chairman having thanked the members of the society for electing him their first President, and having referred to the remarkable advances in modern surgery and the continued invasion by the surgeon and the specialist of the functions of the physician, which threatened to bring about the gradual extinction of the latter, proceeded to the subject of his inaugural address on "Certain Undefined Factors in the Spread of Disease." The factors referred to were (1) pathogenetic evolution; (2) abnormal objective receptivity; and (3) retrograde metamorphosis. Each of these factors was dealt with separately in its relation (1) to the history of former epidemics; (2) to clinical experience; and (3) to bacteriological research. The conclusions arrived at were: 1. That however tempting evolution may be as a pathological theory there is not in the present state of our knowledge any trustworthy evidence to show that it is in any sense a general law of nature among the pathogenic micro-organisms. 2. That receptivity is essentially an abnormal condition brought about either by some external insanitary influence or by some personal defect, either hereditary or acquired, and that an ideally healthy person is proof against the toxic effects of pathogenic microbes. 3. That decomposing animal and vegetable matter forms the best possible nidus for the growth and cultivation of the pathogenic bacteria, and that it is only the presence in the air of the products of retrograde metamorphosis which makes infection possible.—Dr. Morris, Dr. Ball, Dr. Gibbes, Mr. Nitch-Smith, Dr. Penny, and Dr. Vinrace also spoke, and a vote of thanks was given to the President for his address.—On behalf of Dr. Marsh, who was absent, the President, seconded by Dr. Penny, moved that a letter of condolence be sent to the family of the late Mr. Fallows, a member of the society who was lost on the Atlantic liner *Mohegan*. The motion was carried.—A resolution was also passed in reference to Dr. Cooper, the secretary, to whom the society owed so much, and who was then absent on his wedding tour. Seven new candidates were proposed for election as members.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—The second meeting of this society was held on Oct. 21st. Dr. W. K. Hunter showed: (1) A child with Hemiplegia associated with Diphtheritic Paralysis, the hemiplegia being apparently due to hæmorrhage; and (2) a well-marked case of *Maladie des Tics*.—Dr. James Carslaw showed a young woman with painful Swelling of the Limbs, presenting resemblances to erythromelalgia.—Dr. R. S. Thomson read a paper on an Infectious Disease occurring in Lascars, having relations to variola and varicella, but differing from both in certain points. This paper was published in THE LANCET of Oct. 22nd.

Reviews and Notices of Books.

Twentieth Century Practice: an International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In 20 vols. Vol. XIV.: Infectious Diseases. London: Sampson Low, Marston, and Co. 1898. Pp. 602. Price 21*s.* cloth; 30*s.* leather.

THE issue of the volumes of this literary undertaking, which stands comparison with the famous Cyclopædia edited by von Ziemssen, proceeds with praiseworthy regularity. Its international character, too, is well sustained, for the present volume contains contributions from England, France, Germany, and Brazil, as well as from the United States. The first article is on Scarlet Fever and is by Dr. F. Forcheimer of Cincinnati. He reviews the different lines of research adopted to discover the contagium vivum of the disease, inclusive of the classical contribution made by Dr. Klein twelve years ago in the Hendon cow disease and the subsequent announcement by Dr. Edington of his discovery of a specific bacillus. Whilst compelled to admit that the evidence is inconclusive as to the specific identity of any microbe yet discovered, Dr. Forcheimer thinks that scarlet fever has an intimate connexion with streptococcic infection. The septic character of its more severe types may perhaps be explained on this ground. In regard to scarlatinal nephritis he makes it clear that it is directly related to the virus of the disease and that it is mainly a glomerulo-nephritis, as Klebs first pointed out. He considers, too, that clinically—especially the degree and frequency of dropsy—it has distinctive characteristics. The supervention of cardiac dilatation upon this form of nephritis is also emphasised, whilst mention is made of the occasional occurrence of peri- and endo-carditis in scarlet fever apart from the "rheumatism" to which the fever may lead. Puerperal and surgical scarlet fever are regarded as being sometimes due to infection by ordinary channels, at other times by inoculation, which may account for the different characters they may exhibit. The symptoms are discussed under the heads of, first, the Normal Form, and, second, Aberrant Forms, which comprise (*a*) rudimentary forms; (*b*) grave, excessively developed forms; and (*c*) complicated forms. Such a division seems cumbrous beside the more scientific classification adopted by Dr. Caiger in his article in Allbutt's System of Medicine of (1) simple, (2) septic, and (3) toxic. In the section on Treatment attention is drawn to the variable results obtained from the use of Marmorek's serum in the various septic complications, and in speaking of antipyretic measures the author says he has long abandoned the use of drugs, whilst the claims of hydro-therapeutics are fully recognised. Dr. Dawson Williams (London) contributes a very complete study of Measles. Commencing with statistics upon seasonal prevalence and age incidence, the subject of etiology is discussed in an impartial manner, the uncertain results of bacteriological research being noticed. The symptoms are detailed in turn, the characteristics of the rash, the type of fever, its duration, and the concomitant phenomena as ordinarily met with being first described. Dr. Williams then notes the several "departures from the usual course" which may take place, and there follows an excellent study of the complications of measles. The frequency of otitis as a complication is insisted upon and the share taken by measles in the production of deaf-mutism is specially noted. Nor must we omit to mention the account given of the nervous complications and in particular of the forms of disseminated myelitis and sclerosis which have indubitably been traced to the action of the virus of measles. The remarkable association of measles with tuberculosis is noted, whilst attention is called to the paroxysmal cough simulating pertussis which may arise from pressure on the trachea by enlarged bronchial glands. The subject of prophylaxis is dealt with at considerable length and the treatment of the disease and its complications is well described. Dr. Forcheimer writes the article on German Measles, in which he adduces convincing arguments as to its independent existence; Dr. Dillon Brown (New York) writes on Chicken-pox, one notable feature of his article being the description of the "gangrenous" forms, which he attributes to secondary septic infection. Dr. Dawson Williams gives a short account of Glandular Fever, the recognition of which is of comparatively modern date. The article upon Whooping-cough is the conjoint work of Dr. Joseph O'Dwyer (New York) and Dr. Nathaniel R. Martin (New York), and is perhaps most remarkable for the suggestion that the use of intubation may be of service to obviate the spasm of the glottis which is the characteristic

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and most alarming feature of the affection. Dr. O'Dwyer speaks with authority on intubation, but we cannot find that he has carried out the practice in pertussis to any extent. He does, however, refer to the temporary use of intubation in three cases of whooping-cough complicated by diphtheria. He recommends employing rubber rather than metal tubes. Of course, any rational treatment of an affection which seems to be little influenced by drugs is to be welcomed; but unless it be admitted that the glottic spasm is the main feature of pertussis and that the cough will not continue should such spasm be mechanically prevented it does seem as if the laryngeal tube would with difficulty be retained in place. Dr. Jacobi (New York) writes in his usual clear and convincing style upon Cholera Infantum. The article is of especial value for its demonstration of the great share taken in this affection by improper feeding, and the author's remarks upon infantile diet, the sterilisation of milk, &c., will be welcome to all practitioners. The influence of hot weather is a factor in the disease which may in part be ascribed to its effect in lowering the resistance of the organism, in part to the readiness with which foods undergo change under such atmospheric conditions. Dr. Rumpf (Hamburg) contributes the articles upon Cholera Nostras and Asiatic Cholera. They are exhaustive and thoroughly scientific, and it is interesting to find their author concluding, at the close of a detailed discussion of its etiology, that the essential cause of Asiatic cholera is the comma bacillus discovered by Professor Koch. To the experienced hands of Sir Joseph Fayrer (London) has been assigned the subject of Dengue, whilst that of Beri-beri is contributed by Dr. de Arvedo Sodré (Rio de Janeiro), who has no doubts as to the infectious nature of this remarkable affection. Dr. Netter (Paris) writes upon Miliary Fever, which is still prevalent in some parts of France, and which he identifies with the English sweating sickness of mediæval times. Lastly, Major David Bruce of the Royal Army Medical Corps writes upon Malta Fever, a disease with which his name is so well associated.

The Living Organism: an Introduction to the Problems of Biology. By ALFRED EARL, M.A., late Scholar of Christ College, Cambridge; of the Inner Temple, Barrister-at-Law. London: Macmillan. 1898. Pp. 271. Price 6*s.*

IT is difficult to say whether this book is best adapted for a beginner or for the advanced student. It is intended for the former but the latter will read it with most profit. The beginner has too few facts in his possession to enable him to appreciate such general statements drawn from the consideration of numerous observations as are here frequently introduced and many paragraphs might be cited which require and imply wide and accurate knowledge on the part of the reader. On the other hand, the advanced student is generally disposed to continue to accumulate his facts rather than to spend his time in the consideration of abstract statements which afford him but little information.

The author commences by pointing out that the acquisition of knowledge is a gradual process beginning with simple perceptions and progressing within certain limits for each individual to the more complex, and requiring, in order that advances may be made in any subject, exact observation and the exercise of the intelligence. Biology, which not only, like chemistry, deals with the substance, but in addition with the form and identity, of certain objects, may be defined as a certain body of connected knowledge which is derived from the observation of living objects and from reflections based on that observation. The nature of life is considered and the difficulty of framing any definition which embraces all its manifestations is dwelt upon. As a general statement it may be said that any conception of physical life deals with ideas of form and change associated with differences of structure and function, and it is to facilitate the study of these that generalisations and divisions of our knowledge are made. The several systems of organs and their functions in man are then briefly described, as those of digestion, circulation, respiration, absorption, assimilation, and excretion, and these processes are compared with the corresponding ones in other animals and contrasted with those changes which are taking place in plants, and the conclusion is arrived at that both locomotion and feeding are acts which appear to have as one of their constituent parts *an element of choice, and it is this element of choice which is the most distinctive feature of vital change.* The author then proceeds to discuss the object and method of classifying objects and he indicates the importance of development in this respect. He shows that authority—or the formulated opinions founded on observations of careful and experienced observers—is of great assistance to investigators as representing the highest point of positive comprehension that has been attained, though it may still happen that many exact opinions are erroneous, their quality of exactness bringing them within the scope of inquiry and discussion—a statement which is more curtly expressed by Bacon when he observes that "truth is more easily educed from error than from confusion." Succeeding chapters deal with the material basis of life, the organism as a chemical aggregate and as a centre for the transformation of energy, and the meaning of sensation. Little, of course, can be given on these subjects that is certainly known, but the author's end will certainly have been attained if these difficulties have been clearly indicated and in some cases surmounted.

Idiopathic Ulcerative Colitis (Dysentery). By JAMES F. GEMMEL, M.B. Glasg. London: Baillière, Tindall, and Cox. 1898. 4to, pp. viii.–140. Price 12*s.* 6*d.*

THIS monograph is mainly the outcome of the author's experiences at the County Asylum, Lancaster. It goes to show that "dysentery," which at one time figured largely in the records of prisons, barracks, and asylums, still tends to appear and at times to prevail epidemically, and this notwithstanding the improvements which modern science has introduced into the construction and hygiene of such institutions. Although employing the term "idiopathic" Dr. Gemmel gives us good ground to believe that the disease is of microbic origin. With his colleague, Dr. Goodliffe, he has succeeded in isolating and cultivating a bacillus which has certain characters in common with the bacillus coli communis and the bacillus typhosus but which in other features can be distinguished from these forms. The gross anatomical lesions are hardly to be distinguished from those of tropical dysentery and the treatment of the affection follows on much the same lines. It is interesting, however, to find that quinine in large doses has been more efficacious in treatment than ipecacuanha, whilst the value of irrigation by large enemata is admitted. The perusal of this work confirms our opinion that much has yet to be learnt concerning the pathology of these forms of ulceration of the colon, and we are grateful to Dr. Gemmel for his valuable contribution to the subject. The book is admirably printed and well illustrated.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. By CHARLES E. SIMON, M.D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore. Second edition. With 133 Illustrations in Wood and 14 Coloured Plates. London: Henry Kimpton. 1898. Pp. 563.

THE fact that a second edition of this work was called for in two years is sufficient evidence that the first met with the success which it deserved. Within the past

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ten years a large number of books have appeared dealing with the value of the microscope and chemical analysis as aids to diagnosis and much advance has been made in this direction. Dr. Simon's volume has been brought well up to date. The parasitology and bacteriology of the blood, saliva, fæces, urine, and vaginal discharge have been almost entirely rewritten. New methods of chemical examination which have appeared since the publication of the first edition have been embodied in the work and some of the older and complicated ones have been omitted. We have found the different matters dealt with most completely described, the various chemical processes are clearly explained, and the microscopical technique will be clearly understood.

The chapter on Transudates and Exudates is an interesting one and contains information not usually found in text-books. Other chapters are also given on the Examination of Fluids which are usually neglected, although much useful knowledge might be obtained if they were more frequently submitted to chemical analysis and microscopic observation, such as the cerebro-spinal fluid, vaginal discharges, and the secretion of the mammary gland. The illustrations in a work of this kind are a very important feature, and in this matter Dr. Simon is certainly to be congratulated. A large number of them are borrowed and are of none the less value on that account, but many are original. Especially good are those depicting the parasites found in connexion with malarial fever; the methods of observing these organisms and the many varieties which are met with are very well given. The author has given this study a great deal of attention, for he thinks it "must be regarded as one of the most important in clinical medicine." Those who wish for detailed information on these parasites cannot do better than consult this work. The sections on the chemistry of the urine, too, contain a large number of useful hints, especially in the varieties of albuminous bodies which may be found. We can cordially recommend the book to our readers, both as a handbook to the clinical laboratory and also as a work of reference.

Les Cancers Epithéliaux: Histologie, Histogénèse, Etiologie, Applications Thérapeutiques. Par FABRE-DOMERGUE, Docteur ès Sciences, Chef de Laboratoire à la Faculté de Médecine de Paris. (*Epithelial Cancers: Histology, Histogenesis, Etiology, Treatment.* By FABRE-DOMERGUE, D.Sc.) Paris: Georges Carré et C. Naud. 1898. Pp. 462. Prix 30 fr.

THIS handsome volume, which, in point of paper, printing, and illustrations, leaves nothing to be desired, is devoted to the study of the cancers properly so-called, mainly from the structural and developmental standpoint. The author shows a profound familiarity with his subject and places his facts before the reader in a manner calculated to inspire confidence. Any contribution to more intimate knowledge of malignant disease is welcome, and if, as in this instance, the result is to show how much yet remains to be known such work cannot be without its value. Dr. Fabre-Domergue shows that he is entitled to speak with authority in microscopical anatomy and therefore the conclusion at which he arrives—after very full discussion—that the so-called coccidial parasites are only changes in the cell protoplasm must be held in respect. To those interested in this subject we recommend a careful study of the chapters which are devoted to this exposition. They abound in details and arguments which can be best appreciated by pathological histologists. The author does not deny the possibility of parasitism as a cause of cancer, but he endeavours to show that the case is not proven. It must not be supposed that the discussion of this question occupies the main part of the work. On the contrary, the development, relationships, and intimate structure of carcinoma—epithelial and glandular—may be said to form the basis of what constitutes a most interesting and valuable contribution to pathology.

LIBRARY TABLE.

Physiology, Experimental and Descriptive. By BUEL P. COLTON, Professor of Natural Science in the Illinois State Normal University. London: The Scientific Press. 1889. Pp. 423. Price 6*s.* — This, on the whole, well-written little book is suited for the upper classes in ordinary schools and contains the information in respect to the structure and functions of our bodies which should be possessed by every young man or woman entering life. The method adopted is to describe shortly but intelligibly the several organs, as the heart, lungs, kidneys, &c., but without going into very minute histological details. The function of each of these is described and in many instances illustrated by original and instructive diagrams. Directions are given that are appropriate for a teacher with a class before him and, finally, some simple experiments are appended which can be easily carried out either by the master himself or by the members of the class. The author has submitted his book to a considerable number of experts whose criticisms and suggestions he acknowledges in the preface to have been of much assistance to him, and as several of these gentlemen are inspectors of high schools, professors, and teachers, in the different States, the book may be considered as being issued with their approval and to represent the high-water mark of school education in America.

Phonographic Outlines of Medical Terms. Issued by the Society of Medical Phonographers. Second edition. 1898. London: Sir I. Pitman and Sons, Limited. Manchester: G. Pulman and Sons. Price 2*s.*—Although this is called a second edition it is practically a new book, for not only has the list of outlines and contractions been extended from some 2500 to about 3000, but a most useful list of similar words—i.e., words having the same phonographic outline and distinguishable only by vocalisation or position—has been added. To get the greatest amount of help from phonography it is necessary to habitually use the outlines which practice and experience have marked with approval and, for the most part, the outlines recommended in this list can be approved, but, as remarked in our notice of the first edition,[1] it is doubtful whether all experienced phonographers will endorse with approval all the forms shown. Upward and onward should generally be the guiding maxim in the choice of outlines, all other things being equal, and such niggling abominations as half-sized downward *h* and half-sized *t* for hydatid should be avoided. No student of phonography should neglect to study the list of similar outlines or to carefully peruse the deviations from the orthodox system which go so far to make phonography as here presented almost perfect for medical reporting.

Methods of Staining the Central Nervous System. By Dr. BERNHARD POLLACK. Translated from the second German edition by WILLIAM R. JACK, M.D., B.Sc. Glasg. Glasgow: F. Bauermeister. 1899 (*sic*). Pp. 132. Price 4*s.*—This is an exceedingly convenient reference book for those who are engaged in histological research, but it will be found too advanced for the beginner. The more widely-used methods, such as Nissl's, Marchi's, and Golgi's, are described in very full detail and there is an excellent account of Weigert's complicated stain for the neuroglia. An adequate account is also given of almost all the staining methods at present employed in neurological research. There are a good bibliography and a full index which will add to the value of the book.

JOURNALS AND REVIEWS.

The Journal of State Medicine. Vol. VI., No. 10. October, 1898. Baillière, Tindall, and Cox. Price 2*s.* — Much of this volume is taken up with the matters relative to Ireland

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[1] THE LANCET, Feb. 1st, 1896, p. 299.

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which were apparently brought before the members at the last meeting of the Institute of Public Health at Dublin. Mr. Cotton, M.I.C.E., furnishes an account of recent sanitary legislation in Ireland, and Dr. J. W. Moore a very readable paper on Ireland: its Capital and Scenery. Mr. Richard Kelly discusses the existing sanitary law and its possibilities, and the leading articles have reference amongst other subjects to typhoid fever in Belfast and to the East London water famine. We note that the forthcoming Harben lectures are to be delivered by Sir Richard Thorne.

The Journal of Anatomy and Physiology. Conducted by Professor Sir WILLIAM TURNER, Professor D. J. CUNNINGHAM, Professor A. MACALISTER, and Professor J. G. M'KENDRICK. Vol. XXXIII., Part. 1. October, 1898.—The contents of this part are: 1. The Significance of Anatomical Variations, by D. J. Cunningham, F.R.S. 2. A Study of the Arrangement of the Muscular Fibres at the Upper End of the Œsophagus, by A. Birmingham M.D.R.U.I., of Dublin. 3. The Arrangement of the Muscular Fibres of the Stomach, by A. Birmingham, M.D.R.U.I., of Dublin. 4. The Marsupial Larynx, by Johnson Symington, M.D. Edin., of Belfast. 5. An Interesting Case of Connexion between the Lungs and Systemic Circulatory System and of an Abnormal Hepatic Blood-supply in a Frog, by George P. Mudge, A.R.C.S. Lond. 6. A Case of Uterus Masculinus—Tubular Hermaphroditismus—in a Male, with Sarcomatous Enlargement of an Undescended Testicle, by A. Primrose, M.B. Edin., of Toronto, with a Plate. 7. A New Dissection, showing the Internal Gross Anatomy of the Hippocampus Major, by J. G. M'Carthy, M.D., of Montreal. 8. Note on a Fœtus of Gorilla Savagei, by W. L. H. Duckworth, M.A., with illustrations. 9. The Action of Certain Drugs and Mineral Waters on the Secretion and Composition of Human Bile, by William Bain, M.D. Durh. 10. The Peripheral Distribution of the Cranial Nerves of Ammocœtes, by R. Alcock, student of Newnham College, Cambridge, with a plate. 11. On the Origin of Vertebrates Deduced from the Study of Ammocœtes, by Walter H. Gaskell, M.D. Cantab., F.R.S., with two plates. The last article is the eighth report of the Committee of Collective Investigation of the Anatomical Society of Great Britain and Ireland for the year 1897-98.

Archives de Physiologie. Cinqième série. Tome x., No. 4. Paris: Masson et Cie. Octobre, 1898.—The articles contained in this part are the following:—1. Development of the Guinea-pig, by Charles Livon and H. Alezais. 2. Resistance of the Human Body in the Period of the Variable State of the Galvanic Current, by Dr. Dubois of Berne. 3. On the Existence in Mammals of an Oxydase-Globulin with an account of its Characters and Properties, by MM. J. E. Abelous and G. Biarnès of Toulouse. 4. On the Action of some Antiseptics on Soluble Ferments, by M. A. Treyer of Fribourg, Switzerland. 5. Analysis of the Thermic Phenomena which prepare, accompany, and follow Death by Refrigeration, by M. J. Lefèvre. 6. The Denitrifying Power of the Bacillus of Eberth, by MM. Hugouneng and M. Doyon. 7. Transmission of Toxins from the Fœtus to the Mother, by M. A. Charrin. 8. Researches on the Physiology of the Optic Thalamus, by MM. J. Sellier and H. Verger of Bordeaux. 9. Changes in the Nervous System Consequent on Burns, by Dr. Carlo Parascandolo of Naples, with a plate. 10. A Case of Tumour of the Pons with Degeneration of the Band of Reil, by M. E. Long. 11. Thermogenesis in Tetanus, by MM. D'Arsonval and Charrin. 12. Influence of the Thyroid Juice on Muscular Energy and Resistance to Fatigue, by M. A. Mossé of Toulouse. 13. Sources of Animal Heat, by M. F. Laulanié. 14. The Relation between the Size of the Body and the Development of the Encephalon, by MM. Dhéré and Louis Lapicque, with a plate. 15. Contribution to the Physiology and Pathology of the Labyrinth in Man, by Dr. Max. Egger. 16. The Application of the Radiograph to the Determination of Distances by Means of the Superposition of Two Stereoscopic Couples, by MM. T. Marie and H. Ribaut. 17. On Lipase, by M. M. Hanriot.

Dublin Journal of Medical Science.—The original communications are on the Duties of the Community with regard to Tuberculosis, by Dr. Joseph O'Carroll, and on Ireland, its Capital and Scenery, by Dr. J. W. Moore. There is a long article on Medical Education and Examinations in Ireland.

Scottish Medical and Surgical Journal.—The principal paper is one by Dr. William Russell, the editor, on the differentiation of cardiac murmurs. An entertaining article headed "As Others See Us" consists of a translation of the description of the recent meeting of the British Medical Association published in the *Deutsche Medicinische Woohenschrift.* A section on Medical Education in Scotland will be found useful by students.

Caledonian Medical Journal.—The principal feature is an address on Some Highland Doctors of the Past, delivered by Dr. Alexander Macdonald, President of the Caledonian Medical Society, at the eighteenth annual meeting of the society in Edinburgh last July. At the annual dinner held the same evening the menu and toast list, both of which were of some length and have been reproduced in the *Journal,* were entirely in Gaelic; "cofi," which comes last of all in the menu, is the only word intelligible to the ordinary reader.

Edinburgh Medical Journal.—Dr. Andrew Davidson discusses the Malaria Problem in the Light of Epidemiology, pointing out that epidemics of malaria connected with soil disturbance, the prevalence of the disease in extremely cold regions of Russia, and some other malarial conditions, have not hitherto found an explanation in accordance with the mosquito theory of transmission. Mr. Adams Frost describes the Operative Treatment of High Myopia, a method resuscitated by Fukula in 1889. Mr. Frost considers that the operation is of great benefit to myopes of not less than 15 D., enabling them to go about without glasses and, as a rule, giving them better vision than they formerly had with glasses. The treatment usually extends over a period of three months. Mr. Frost needles the lens freely at the first sitting. Dr. James Mackenzie (Burnley) has a very interesting paper, illustrated with sphygmograms, on the Alleged Retardation of the Pulse in Aortic Regurgitation. In place of the apparatus with a large revolving cylinder he used a much more convenient arrangement in which a tambour is combined with a Dudgeon's or von Jacquet's sphygmograph. His observations showed that there is no more retardation of the pulse in aortic regurgitation than there is in health. There is an Appendix of 36 pages on Medical Education in the United Kingdom and the Principal Public Medical Services.

The *Phonographic Record* for October contains a short but useful contribution by Sir William Gowers, suggested by a case of wrist-drop in which no blue line on the gums could be seen by the naked eye. With a 3-in. lens, however, a complete but narrow line was seen on the lower gum, whilst the points of gum between the teeth presented in many instances a decided black mark. A paper by Dr. Benson Cooke on the Palliative Treatment of Chronic Disease of the Uterine Appendages, Notes on a Case of Anomalous Convulsions and Pyrexia following Influenza by Dr. F. H. Spooner, an Account of the Post-mortem Examination of King George the Second, which was noticed in THE LANCET of Oct. 15th, and Notes of the Post-mortem Appearances in a case of Gunshot Wound of the Head complete the number.

The Student.—This magazine, published by the Students' Representative Council, Edinburgh University, contains a portrait of Dr. Robert Muir, recently appointed Professor of Pathology at St. Andrews University. A short account of his past appointments and his scientific work is also given.

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THE LANCET
Analytical Commission
ON
SHERRY:
ITS PRODUCTION, COMPOSITION, AND CHARACTER.

Introduction.

BY an obviously easy transition the "vino de Jerez"[1] became in the English language shortly *sherry*. Some hold that the derivation of Xeres, or, as it is now more commonly spelt Jerez, is from the Greek word Ξηρος, dry, and we have the words "seck," "sac," and in French "sec" applied to a dry wine, or a wine free from sweetness. Strictly speaking, therefore, sherry should mean Jerez wine and undoubtedly Jerez is the home of sherry. But "Manzanilla," a wine which is produced close by at San Lucar, to the west of Jerez, and "Montilla," a wine produced at Montilla, a town south of Cordova, are famous wines which come under the same category. Sherry, again, in the British Pharmacopœia is known as "vinum Xericum," and it is the only wine enjoined in the preparation of the wines of the Pharmacopœia except two—viz., vinum ferri citratis and vinum quininæ, which were made with orange wine. Thus sherry is directed to be used in the preparation of vinum aloes, vinum antimoniale, vinum colchici, vinum ferri (iron wire dissolved in sherry), vinum ipecacuanhæ, vinum opii, and vinum rhei. Sherry was originally employed for this purpose, doubtless to render the drugs indicated less objectionable to the taste and partly because it proved to be a good solvent of active principles and is in itself distinctly tonic in character. In the British Pharmacopœia of 1824 it is interesting to note that diluted spirit was substituted for wine without altering the name of the preparation, but the use of sherry was restored in 1836. We shall point out later why probably it was found that diluted spirit could not be substituted for sherry in the way which had been proposed. This is an interesting point in connexion with the chemical composition of sherry which, as we shall see, distinguishes it from most other wines, and in which some explanation may be found of the advantage experienced in practice of employing sherry as a menstruum. In the Pharmacopœia the only test described is that for salicylic acid, the recourse to which is exceedingly improbable, since, as is well known, sherry possesses remarkable keeping powers, due in part to its alcoholic strength and in part to its richness in antiseptic aromatics.

In defining sherry we may very properly call it a wine which is peculiar to Spain and essentially Spanish. There is no genuine wine like it produced in other countries. Of course, as with all good and genuine things, there is the counterpart in fictitious substances and there is undoubtedly much stuff sold in England as sherry which was more likely produced in Hamburg or in any other place than Spain but of which not a single drop ever found sustenance on the soil of Spain or flourished under the remarkable influences of the Andalusian sun. With these imitations we do not propose to deal, but having the real significance and meaning of the word "sherry" in mind it is clearly a fraud to pass off such decoctions as Jerez wine. It is akin to calling a spirit Cognac which is produced in the colonies or elsewhere. In referring to sherry, therefore, we must be taken to mean "vino de Jerez" or the well-known white wine produced in the province of Andalusia in Spain. There is no soil or similarly favoured environment other than that of the province mentioned which can produce wine of the peculiar character of sherry. The vines of Jerez, were they transplanted further afield or to other countries, would produce grapes which would fail to yield the same character of wine; they would miss the peculiar climatic conditions which give rise to a peculiar wine. Moreover, the great life process of fermentation is profoundly modified by external conditions; and the external conditions—soil, sun, and air, &c.—in the vineyards at Jerez and the adjacent districts produce sherry and sherry alone.

[1] Pronounced "herreth," the "her" as in herring.

The Production of Sherry.

By far the greatest quantity of sherry is produced at the sherry centre of the world, Jerez de la Frontèra. Chemistry and biology have not been brought to bear upon the production of sherry to any extent, and when the application of scientific principles has been tried the result has invariably spelt failure; but, doubtless, as the biology of the organisms concerned in the fructification of wine is better understood there will be greater certainty of the success of a vintage. Indeed, the conversion of the juice of the Jerez grape into sherry is the simplest possible process; it is essentially and purely a natural operation, and the grower is content to be an onlooker of this natural process with little power to influence its progress either for bad or good. Specific characters are, however, gradually developed by different butts of wine, or a wine may lack certain characters, and then the skill of the sherry grower comes into evidence. He cultivates the character he requires by inoculating a wine, as it were, with the properties of one of established excellence. Without going into minutiæ this is the so-called "solera" system. The solera wine, so to speak, is the breeding ground or mother liquor, on which young immature wines are placed to develop delicacy, refined taste, and good character. The "solera" is drawn upon again and again for blending and the quantity so abstracted is made up by the addition of a wine which in its turn requires this wholesome infection. Thus by a very interesting and beautiful method of culture depending upon the inherent properties of the fermented juice itself are the aroma, bouquet, and fragrance which are so marked a characteristic of sherry handed down from generation to generation of vintages, and the palatable and peculiar flavours of a sherry may happen to have descended from a wine perhaps three centuries or even a greater number of years old.

There are several types of sherries according to the different characters developed. These are known by several distinguishing terms comprehending the characters and specific qualities of the wine from one end to the other of a scale ranging from delicate and light wines to rich, generous, and dark-coloured wines. Broadly, however, sherry may be divided into two classes—the so-called "fino," a light-coloured, pale, delicate, light wine of the Amontillado or Manzanilla type, and the so-called "oloroso," a full-bodied, highly-developed brown wine. Intermediate in character—that is, between the "fino" and "oloroso" type—may be mentioned the wine classed as "palo cortado." All classes are produced in the several districts, but the wine of each district has its own peculiar characters. San Lucar, close by Cadiz, is famous for its delicate light wine (of the "fino" type), "Manzanilla," which is said to possess a faint flavour of camomile flowers, and in Montilla a particularly fine wine is produced presenting a most delicate bouquet and taste, sherries resembling Montilla wine but produced in Jerez being known as "amontillado"—that is, *à la Montilla*.

The Sherry Bodega.

The bodega is the sherry nursery. In reality it is an overground cellar and usually consists of a very large, lofty, and capacious building containing hundreds, and often thousands, of butts of wine in different stages of development. The interior of the building is kept as cool as possible and away from the influences of the sun, while the arrangements are such that a current of cool air is constantly passing through and ventilation is thus efficiently secured. It is here the tasting of wines goes on from day to day and changes are made according to the resulting observations. It is here the skill of the grower is chiefly centred and his delicate sense of smell and taste

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is constantly employed in order to note what qualities his wines may be developing. Sherry, unlike most other wines, may be stored in butts freely open to the air; the wine improves rather than deteriorates under these conditions and becomes more "made," as it is said—that is, advanced in the direction of developing bouquet and delicate flavour. With the light delicate wine known as "fino" a "flor" or microscopic plant (mycoderma vini) develops on the surface which is highly regarded as the agent concerned in contributing excellent characters to this class of wine. Obviously such a wine cannot be bottled till the "flor" has ceased to grow, as otherwise an unfinished wine with murky appearance would be the result. The bodegas contain wines of every description and type and almost of every age, varying from a hundred years' to the last year's vintage. Sherry is pre-eminently a wine which improves with age and to this age there is no limit, the changes going on being chiefly in the direction of etherification and concentration of "vinosity." The bodegas and all premises connected with the production of sherry are quite open to the inspection of the interested visitor, and it may be added that practically three-fourths of the industry are carried on by English people.

The Nature of the Soil upon which the Sherry Grape Grows.

The Jerez vineyards are situated within a few miles to the north-west of the town itself on a series of undulations stretching right away towards San Lucar, which is on the coast just a little to the north of Cadiz, whence all the sherry produced is shipped to England and elsewhere. The soil is of a porous character, light, and of a greyish colour. Its approximate composition, according to an analysis made in THE LANCET Laboratory, is as follows:—

Analysis of Soil.

	Per cent.
Calcium carbonate	29·12
Oxide of iron, &c.	4·08
Sand, &c....	45·80
Soluble salts	0·50
Moisture	16·70
Loss on ignition	3·80
	100·00

Practically, therefore, a third part of the soil consists of carbonate of lime, an observation of some importance to which we shall have occasion to refer. The vines present the appearance after vintage of a group of gnarled stumps of an average of two feet in height. The grape is small and white. Vintage time is a harvest scene which is one of the most impressive spectacles in Spain.

The Sherry Wine-press.

The grapes are collected and placed in large panniers on the backs of mules and conveyed to the press-house. There are in some instances press-houses situated on the vineyards, but more often the grapes are pressed on premises connected with the bodegas in the town, and the string of mules so laden at harvest time on their way to the bodegas is a very picturesque sight. The "lagar," or press, is of primitive construction and identical still with the presses described in ancient history. It consists simply of a wooden trough about ten feet square provided in the centre with a screw press, which is used after the treading by foot power is done to express the final juice from the crushed mass. Rather less than a ton of grapes—or to be more accurate 1800 lb. (812 kilogrammes)—serves for one pressing. Men clad in light clothing and provided with a kind of wooden clog with nails on the soles and heels, pointing in a slanting direction, then proceed to tread the grapes in a perfectly methodical manner, proceeding row by row, each row being of the width of the pressing clog or boot. It is said that the average weight of a man is just sufficient to press out the juice without injuring the skins or branches, the bitter substances in which, if expressed, would give an objectionable character to the wine. It cannot be supposed, however, that modern ingenuity could not contrive a mechanical means of pressing the grapes to comply with these requirements and thus meet an objection which might be raised to a method and custom of which we read in the most ancient of ancient history. After the grapes have been trodden over for the first time, that is to say, partly crushed and bruised, a measured quantity of sulphate of lime ("yeso") is sprinkled over the sticky mass. The sulphate of lime employed is a pure native earth occurring in large quantities in the neighbourhood of Jerez. It is first burnt. Its analysis made in THE LANCET Laboratory is as follows:—

Analysis of Sulphate of Lime ("Yeso").

	Per cent.
Insoluble matters	2·30
Calcium sulphate	83·57
Calcium carbonate	4·57
Potassium sulphate	1·48
Moisture, &c.	8·08
Total	100·00

"Yeso" consists practically therefore of sulphate of lime with a small proportion of carbonate of lime; it is commonly added in the proportion of a little over a kilogramme (1140 grammes, or 2½ lb.) to a load of grapes weighing nearly a ton (1800 lb., or 812 kilogrammes). The grapes having been thus trodden several times the residue is swept up around the screw (branches first being picked out and thrown away) and bound up in a heap with strips of woven esparto grass and the press screwed down. This proceeding expresses more juice, which trickles away and joins the bulk previously expressed in a butt placed to receive it. The average yield of liquor or juice is 110 gallons, or 500 litres (i.e., about the capacity of a butt) per 1800 lb., or 812 kilogrammes, of grapes crushed. The butt is then placed in a convenient place and the juice is soon in an active state of fermentation, the temperature rising considerably. The fermentation subsides in about three weeks, when the wine immediately begins to clear. After a time the wine is "racked" or drawn off the lees or slimes and placed in other butts. In this condition it is known as "mosto." This is in reality young wine, and from this stage its progress is watched with the greatest care. How it will turn out nobody can tell. Time alone decides. It may develop into a "fino," a delicate light wine, breeding a "flor" and flowery bouquet and taste, or it may go into a highly vinous liquid developing the vigorous "oloroso" character, or it may become diseased, developing objectionable fungus, and go into vinegar or remain a vinous liquid of indifferent character. The sherry-grower would like to be able to control it at this point so as to get a result he would desire, but he is entirely in the hands of nature's caprices, preferring to wait and abide the result rather than resort to artificial correctives.

The Part Played by Sulphate of Lime.

The addition to the crushed grapes of a definite quantity of sulphate of lime has given rise in recent years to considerable discussion as to the advisability or even legitimacy of the proceeding. This recourse at any rate has existed as long as sherry has been known and this must have been from time immemorial, since Pliny, for example, says that it is an ancient African system.[2] Again, Shakespeare puts into the mouth of Falstaff the words, "There's lime in this sack." In modern days the process has become known as "plastering" from the fact that plaster-of-Paris consists principally of sulphate of lime or burnt gypsum. "Yeso" the Spaniards call it. It is interesting to surmise the origin of this very ancient custom. That it had some intelligent basis admits of no doubt. Some think that it had its origin in the fact being noticed that when the grape juice was fermented in alabaster vessels or in marble tanks the wine was better, it clarified quicker, and developed character more satisfactorily. Others regard the addition of sulphate of lime as convenient from a mechanical point of view during the pressing; it was necessary when the grapes were wetter than usual in order to bind the residuary mass together. We do not incline to this view.

According to many experiments which we have made we are disposed to think that the following is the correct explanation. It has at all events a very reasonable basis. The soil upon which the sherry grapes are grown consists, as a reference to the above analysis will show, of nearly one-third part of calcium carbonate or chalk, so that if the soil upon which the grapes actually grow were substituted for the sulphate of lime a similar, though it must be admitted not precisely similar, result would be effected. The result at any rate would be the same in regard to clarification and probably also in regard to development of character in the wine, provided the carbonate of lime in the soil or the soil itself were not in large excess. It is conceivable, therefore,

[2] Pliny: Natural History, Book xiv., p. 19.

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that centuries and centuries ago it was observed that when a greater quantity than usual of soil was adhering to the grapes a better and more satisfactory "mosto" and wine were produced owing to the lime salts. It is not difficult to imagine that in some seasons the quantity of soil blown upon the grapes by the wind and fixed there by the stickiness of the fruit would be increased. This observation being remarked it was but an easy step to resort to what appeared to be a better, as it was a purer and whiter, soil for the purpose. And close by the vineyards occurs "yeso," a white earth containing for its principal ingredients sulphate and carbonate of lime, and this it seems probable was dusted over the grapes to imitate an action which frequently took place naturally. Whatever may be the explanation of the custom of dusting the grapes with sulphate of lime one thing seems clear, and that is that without exception every experienced sherry-grower is positive in stating that if this custom be omitted the result is a wine devoid of those special characteristics which distinguish sherry from other wines. We shall see presently how this experience of the sherry-grower is supported by the evidence gained on a careful analytical examination of wines produced both with and without the previous addition of sulphate of lime.

The addition of sulphate of lime effects one important change. It reacts with the tartrates or malates of potassium in the grape and yields in the resulting wine sulphate of potassium largely, but not entirely, in the place of these salts. Our own experiments show conclusively, we think, that the result may be represented in the following equation:—

$$2KHC_4H_4O_6 + CaSO_4 = K_2SO_4 + CaC_4H_4O_6 + H_2C_4H_4O_6.$$

The result of adding sulphate of lime, therefore, is to convert part of the potassium acid tartrate ($KHC_4H_4O_6$) into potassium sulphate (K_2SO_4), insoluble tartrate of lime ($CaC_4H_4O_6$) separating and going down with the lees, effecting rapid clarification (and as we shall presently show an important degree of fining), and leaving a large proportion of the original tartrate in the clear wine as free tartaric acid. The change will be understood more clearly if we consider first the composition of the lees or slime obtained in fermented grape juice ("mosto") previously treated with sulphate of lime and compare this with the composition of the slimes or lees deposited in "mosto" untreated with sulphate of lime. The analyses of the two deposits are as follows and the results are placed side by side for the purpose of admitting of ready comparison.

Analysis of Lees from (1) "Mosto" with Sulphate of Lime, and (2) "Mosto" without Sulphate of Lime.

	(1) Per cent.	(2) Per cent.
Alcohol and water	73·86	77·76
Albuminoids...	4·93	3·96
Potassium bitartrate ...	3·02	6·30
Calcium tartrate	7·38	2·82
Tartaric acid	1·50	0·71
Potassium sulphate... ...	0·62	0·30
Potassium phosphate ...	—	0·03
Calcium sulphate	0·61	0·34
Gummy matters	8·08	7·78
Total	100·00	100·00

There are some interesting and important differences here which after all are just what might have been anticipated, but so far as we are aware the comparative analyses of lees from treated and untreated wines have not hitherto been put on record. The differences in composition of the two lees bring out at once the advantage of the treatment, at any rate from the sherry-growers' point of view. We will consider the results from other points of view presently. The lees of wine which have been treated previously with sulphate of lime contain a greater proportion of organic matters than the lees of a wine not so treated, consisting of just those matters, such as albuminous bodies, which are likely if retained in the wine to make it susceptible to objectionable changes and deterioration. Again, tartrate of lime in lees of previously treated wine occurs largely, but not entirely, in the place of acid tartrate of potassium in the lees of untreated wine, but it will be observed that in the latter tartrate of lime is also an important constituent. The lees of treated wine further contain an increased proportion of free acid.

With these important differences fresh in the memory in regard to the composition of the lees of wine previously treated and untreated with sulphate of lime we may next in order show the differences in composition between the same wines racked off the lees—i.e., the clear young wines decanted from the deposits, the interesting difference in the composition of which we have just considered.

The Analysis of (1) "Mosto" previously treated with Sulphate of Lime and (2) of "Mosto" not so treated.

	(1) Per cent.	(2) Per cent.
Solid matters	2·16	1·88
Sugar	0·37	0·23
Potassium bitartrate ...	0·093	0·28
Tartaric acid	0·338	0·21
Acetic acid	0·09	0·05
Mineral matter	0·37	0·23
Potassium sulphate ...	0·34	0·085
Potassium phosphate ...	—	0·041
Alcohol by weight ...	11·62	10·85
Alcohol by volume ...	14·37	13·43
Proof spirit...	25·18	23·54
Alcohol in volatile ethers..	0·0214	0·0071
Alcohol in fixed ethers ...	0·0382	0·0172
Total alcohol in ethers ...	0·0596	0·0243

It will be seen that in these important results we have complete confirmation of the view expressed in the equation above; that the changes induced by the addition of sulphate of lime are the formation of sulphate of potassium in the wine, the separation in the lees of tartrate of lime, and the production of free tartaric acid. Thus the potassium acid tartrate in the untreated wine amounts to 0·28 per cent., whereas in the treated wine it is only 0·093 per cent., just one-third the quantity. It is important to note, however, that not all the acid tartrate of potassium has been removed. The quantity of potassium acid tartrate reduced is in proportion to the increase of free tartaric acid. Further, while the untreated wine contains 0·085 per cent. of potassium sulphate the treated wine contains 0·34 per cent., or just four times as much.

The two young wines (or "mosto") were produced side by side at the same time, they were racked at the same time, and the deposits or lees were collected at the same time. The deposit in the butt of the treated wine was considerably bulkier than that from the untreated wine.

The Effect of Sulphate of Lime on the Development of Ethers.

There is another point of considerable interest brought out in this analytical contrast and that is in regard to the ethers. The fixed ethers may be looked upon as contributing the peculiar flavour of wine and the volatile ethers the aroma. The type of the former is ethyl tartrate and of the latter ethyl acetate. Now although these wines were produced from grapes of the same vintage, were crushed, fermented, and racked at the same time and were of precisely the same age—though that was only a few months—yet there is a great and important difference in the amount of ethers. In the wine treated with sulphate of lime they are more than double in amount that of the wine not so treated. The explanation, we think, is not far to seek.

As already pointed out one effect of treating grape juice with sulphate of lime is to liberate free tartaric acid in the wine. In other words, the fixed acids of treated sherry are largely in a free state while in untreated sherry they occur in the form of the acid salt of potassium. In the former case alcohol being in the presence of free organic acid would, it may fairly be assumed, readily combine with the acid to form ethyl tartrate or other ethers of wine. In a word, the treatment with sulphate of lime stimulates etherification.

Two very simple experiments confirm this view. Five grammes of acid tartrate of potassium were repeatedly shaken up with 100 cubic centimetres of distilled water and the acidity of the clear solution was measured. Next, a precisely similar liquid was prepared, but this time a little sulphate of lime was added. The acidity was found to have increased by over 50 per cent. Part of the insoluble acid tartrate of potassium had been converted into tartrate of lime and free tartaric acid, and the latter being more soluble went into solution and increased the acidity accordingly. Further, when an excess of acid tartrate of potassium was shaken up with alcohol of the same strength as sherry and allowed to remain for some time, and the same process repeated, but with free tartaric acid instead of acid tartrate

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of potassium, the amount of ethers when estimated in the latter at the end of the experiment was found to be nearly three times as much as in the former. The fact, again, of sherry containing free tartaric acid in place of the acid potassium salt explains the adoption of sherry in the Pharmacopœia and the probable reason why diluted alcohol was not found an efficient substitute for sherry for this purpose. As is well known tartaric acid is an excellent solvent of the active principles of drugs and as we have already pointed out sherry is used in conjunction with several drugs of the Pharmacopœia. Sherry, again, is for the same reason a solvent of iron, an organic salt of iron being formed.

Further, the fact that tartaric acid occurs in sherry largely in the place of the acid potassium salt by reason of the sulphate of lime treatment affords a very probable explanation of the fact that sherry excels all other wines in regard to etherial contents and possibly also the beneficial influences gained by storing whisky in sherry casks may have some connexion with the same fact. It explains also the stimulating and well-known tonic power of sherry compared with other wines, for as we shall see presently the ethers in old sherry amount to a very high proportion never attained by other wine, and this suggests an explanation of the extraordinary stimulating powers of old sherry which it is said is not possessed to the same extent even by real old Cognac. This stimulus which the changes effected by treatment with sulphate of lime give to the formation of ethers is of great interest in regard to what every sherry-grower maintains—namely, that without such treatment a wine of good, delicate, and generous character cannot be produced. The sherry-grower judges and values his wines by smell and taste and these senses are cultivated to a remarkable degree of refinement which enable him to anticipate the fate of a wine for good or for worse. In putting wine through these simple tests is he not making in reality an estimate of the volatile and fixed ethers, the former by smell and the latter by taste? In that case his judgment is completely and conspicuously confirmed by minute analyses which show that sherry previously treated with a small quantity of sulphate of lime contains and develops a more marked etherial character than sherry not so treated. By experience he has learned this difference and analysis shows his experience to be correct. Analytical and experimental chemistry would appear here to offer some explanation for the time-honoured adoption and the continuation of a process which has been in practice for probably more than a thousand years.

Sulphate of Potassium in Sherry.

We have next to consider the question and significance of the occurrence of potassium sulphate in the wine in the amount which our analyses of several types of sherries show. At the outset it should be pointed out that sulphate of potassium is not a foreign constituent of the grape or of the wine produced without any intermediate treatment with sulphate of lime at all. Further, grapes contain a definite quantity of calcium salts. These constituents are of course extracted from the soil and it follows that the soil must contain them. The particular soil which we examined did not appear to contain any important quantity of sulphates, but as a rule these salts are common constituents. In all the published analyses of grapes we find sulphate of potassium recorded as a constituent of the mineral matter; hence the soil must have contained this salt or its elements. These points are further developed in an analysis made in THE LANCET Laboratory of the Palomino grapes taken from the Jerez vineyards.

Analysis of Grapes.

	Per cent.
Water	74·05
Organic matter	24·94
Mineral salts	1·01
Total	100·00

Percentage Composition of Mineral Salts of Grapes.

	Per cent.
Calcium and magnesium salts (carb. sulph. phosph.)	46·30
Potassium sulphate	10·70
,, carbonate	31·78
,, phosphate	11·22
Total	100·00

Thus a tenth part of the mineral matter of the grape is potassium sulphate, and lime salts including the sulphate occur in large proportion. Accordingly, we found in the lees of untreated wines, as also in the lees of treated wines, tartrate of lime in addition to the normal potassium salts (tartrates), but obviously in smaller amount. We have examined several untreated wines and what may be called as the normal amount of potassium sulphate was found to range from 0·056 per cent. to as much as 0·15 per cent. It is clear, therefore, that potassium sulphate is a normal constituent of wine, amounting at times to nearly half the quantity contained in the so-called "plastered" wine.

The French Government have a prohibition order forbidding the importation of wine into France containing more than 2 grammes per litre (0·2 per cent.) of potassium sulphate, but the wine thus imported is chiefly used for blending, and for this purpose a specific and delicate character is not indispensable. The restriction appears to have been the outcome of economic rather than of hygienic considerations. In bad years in the vintages of France the regulations in regard to the character of imported wines are less rigidly imposed than in prosperous seasons. The question as to whether sulphate of potassium, in the quantity in which it occurs in wine, is responsible for injury to health has been the subject of considerable discussion for some time, and recently it has been revived in France, notably by M. Lancereaux in a paper read before the Academy of Medicine. It may be pointed out that treatment with sulphate of lime is not peculiar to sherry but, as we have found by experiment, it is applied also to certain clarets and to Marsala. M. Lancereaux's views and the discussion arising upon the public expression thereof will be found conveniently summarised in the following numbers of THE LANCET: Sept. 18th, 1897, p. 748; Oct. 23rd, 1897, p. 1083; Nov. 13th, 1897, p. 1289; Dec. 4th, 1897, p. 1486; and still more recently in THE LANCET, April 2nd, 1898, p. 966. M. Lancereaux concludes that in Paris the principal cause of cirrhosis of the liver is wine, and that in general use is red wine. Since, as he affirms, those addicted to the use of spirits are rarely affected with cirrhosis, alcohol, he holds, cannot be assigned as the cause of this disease in wine-drinkers. He considers that the potassium salts are in fault, and apparently in experiments in which potassium salts (it is not stated which) were administered to animals they died and showed on examination a cirrhosis "*bi-veineuse*." M. Lancereaux maintains in conclusion that wine—and especially plastered wine—is the cause of atrophic cirrhosis, and that it would therefore be well to prohibit the plastering and sulphating of wine. M. Vallin adversely criticised these views before the Academy and he thought it was necessary to have confirmation of the views held by M. Lancereaux. He pointed out that beer and gin, although they cause cirrhosis, only contain a small amount of potash salt. He held that cirrhosis was due to excessive alcoholic drinking altogether without reference to the salts of potash.

M. Laborde at a subsequent meeting of the Academy maintained, in opposition to M. Lancereaux, that the cirrhosis of the intemperate is caused by alcohol and not by potassium sulphate in wines. He further made the very important observation that, as is well known, the potassium salts are rapidly eliminated, and he added that they are not injurious except in very large doses. By administering as much as three ounces of potassium sulphate in fifteen days to dogs M. Laborde found that the dogs' health continued perfectly good. Lastly, he added, it must be borne in mind that everybody takes in his daily food from 75 to 105 grains of potassium salts and at this rate cirrhosis ought to be universal. M. Richet, at a still more recent meeting of the Academy of Medicine, expressed the view that there is no reason to think that the toxic qualities of wine are due to the potassium sulphate and referred the occurrence of cirrhosis to the effect of alcohol on the liver and gastric centres. He concludes, however, that M. Lancereaux is probably correct in considering that potassium sulphate is to blame in the production of the cirrhosis of drunkards.

In commenting upon M. Lancereaux's views the *British Medical Journal*, in a leading article in its issue of Oct. 30th, 1897, p. 1284, says: "The distinguished French pathologist (M. Lancereaux) is doubtless more or less correct in his conclusions about wine and hepatic diseases in Paris and it would appear that 'some' kinds of beer contain the noxious

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salt."[3] "Unfortunately," our contemporary continues, "we once more face negative evidence." "He implies that spirits, especially absinthe, do not contain the salts. Absinthe-drinkers do not get cirrhosis. What, however, causes the disease in the British drunken operatives? Do some spirits, like 'some beers,' contain potassium sulphate? The matter is worth investigation. Till it is made clear we doubt if British physicians will abandon the theory that spirits—at least, British spirits—cause cirrhosis through the direct injurious action of alcohol on the liver." Referring to this article Dr. Thorowgood[4] expresses the belief that lime salts "are the constituents of wine that do more than the potassium sulphate to induce fibroid and cirrhotic change in organs." On the other hand, Dr. Luff[5] writes: "Although I am open to conviction as to the possibility of potassium sulphate contained in wines being a factor in the production of cirrhosis in excessive wine-drinkers—a point which, in my opinion, is not by any means established by the investigations of Lancereaux—yet I feel fairly confident that the lime salts contained in wine cannot be held responsible for the production of cirrhosis as is suggested."

In considering these expressions of opinion it is interesting to record that the men engaged in the bodegas in Jerez drink sometimes as much as six litres of light sherry per diem (10½ pints) and yet cirrhosis is unknown among them. This quantity amounts to a maximum daily consumption of 20 grammes or 308 grains of potassium sulphate. There is also to be considered the interesting and important fact that potassium sulphate occurs universally in almost all articles of diet and, as is pertinently pointed out by M. Laborde, cirrhosis, if it be due to potassium salts, should be universal. In the British Pharmacopœia potassium sulphate is contained in pulvis ipecac., pil. colocynth. et hyoscyami, pil. colocynth. co., and pil. ipecac. cum scilla. It is distinctly diuretic and "a valuable saline purgative" administered in doses varying from 10 to 60 grains. The average quantity in a bottle of sherry of one-sixth of a gallon is 40 grains. After all, the potassium sulphate in sherry is an equivalent of the potassium tartrate originally present in the wine, which latter salt presents similar therapeutic properties to the sulphate. Potassium sulphate is further described as mildly cathartic, usually operating without irritation, and as a useful purgative in jaundice and dyspeptic affections. Lastly, potassium sulphate "is a hepatic and intestinal stimulant of considerable power, but its action on the liver is uncertain."

Various Types of Sherry.

As has already been indicated there are a great many varieties of sherry and in what particulars each and all differ will be seen from the following analyses of a few selected types. It should be added that the samples to which reference is here made and all other samples the analyses of which are given in this inquiry were obtained personally on the spot by our Special Commissioner. The analyses were made in THE LANCET Laboratory and are perfectly independent of those published elsewhere or at any previous time.

Sherry No. 1.

	Per cent.
Solid matters	1·44
Sugar	0·18
Potassium bitartrate	0·08
Tartaric acid	0·36
Acetic acid	0·10
Mineral matter	0·46
Potassium sulphate	0·39
Alcohol by weight	13·15
,, ,, volume	16·24
Proof spirit	28·46
Alcohol in volatile ethers	0·0228
,, ,, fixed ethers	0·0320
Total alcohol in ethers	0·0548

This wine was a pale delicate dry wine of the "fino" type and of light alcoholic character and suitable for drinking with meals. It is almost as light to drink as claret. The sugary contents are practically *nil*, the wine being correctly described, therefore, as "brut." It is an "amontillado" and possesses the fragrant and delicate character of the celebrated Montilla wine.

Sherry No. 2.

	Per cent.
Solid matters	2·20
Sugar	0·215
Potassium bitartrate	0·08
Tartaric acid	0·343
Acetic acid	0 126
Mineral matter	0·55
Potassium sulphate	0·52
Alcohol by weight	14·82
,, ,, volume	18·25
Proof spirit	31·99
Alcohol in volatile ethers	0·026
,, ,, fixed ethers	0·038
Total alcohol in ethers	0·064

Like the last this is an "amontillado" with a slightly-increased proportion of solid matters and sugar. It is a light, delicately-flavoured wine suitable for drinking with meals much in the same way as claret.

Sherry No. 3.

	Per cent.
Solid matters	2·66
Sugar	0·60
Potassium bitartrate	0·17
Tartaric acid	0·382
Acetic acid	0·12
Mineral matter	0·57
Potassium sulphate	0·47
Alcohol by weight	13·92
,, ,, volume	17·17
Alcohol in volatile ethers	0·0333
,, ,, fixed ethers	0·0423
Total alcohol in ethers	0·0756

This wine comes midway in character between a "fino" and an "oloroso," though perhaps inclining to the side of the latter. It is an excellent after-dinner wine with greater "vinosity" than the previous specimen, and accordingly the ethers occur in higher proportion.

Sherry No. 4.

	Per cent.
Solid matters	2·87
Sugar	0·65
Potassium bitartrate	0·13
Tartaric acid	0·41
Acetic acid	0·10
Mineral matter	0·70
Potassium sulphate	0·65
Alcohol by weight	15·67
,, ,, volume	19·28
Proof spirit	33·79
Alcohol in volatile ethers	0·0341
,, ,, fixed ethers	0·0418
Total alcohol in ethers	0·0759

A similar wine to the last, with slightly increased body and alcoholic strength. An after-dinner wine.

Sherry No. 5.

	Per cent.
Solid matters	6·75
Sugar	3·85
Potassium bitartrate	0·16
Tartaric acid	0·336
Acetic acid	0·087
Mineral matter	0·595
Potassium sulphate	0·47
Alcohol by weight	16·46
,, ,, volume	20·24
Proof spirit	35·47
Alcohol in volatile ethers	undetermined
,, ,, fixed ethers	,,
Total alcohol in ethers	,,

This is an excellent type of a medium "oloroso" wine, full-bodied, sweet and darker coloured than the previous specimens. It is known as "palo cortado." The ethers

[3] All kinds, we believe, since water containing the highest possible proportion of sulphate of lime used in the treatment of wines is particularly selected for the production of beer, and the interaction of sulphate of lime with the potassium salts of malt would result in the formation of potassium sulphate in the beer and the sedimentation of insoluble lime salts which, as in the case of sherry, serve in falling to clarify and to refine.

[4] Brit. Med. Jour., vol. ii., 1897, p. 1375.

[5] Ibid., p. 1680.

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unfortunately were not determined as the experiment failed on account of the apparatus breaking.

Sherry No. 6.

	Per cent.
Solid matters	5·45
Sugar	1·03
Potassium bitartrate	0·26
Tartaric acid	0·52
Acetic acid	0·20
Mineral matter	0·86
Potassium sulphate	0·76
Alcohol by weight	18·85
,, ,, volume	23·10
Proof spirit	40·48
Alcohol in volatile ethers	0·0745
,, ,, fixed ethers	0·1410
Total alcohol in ethers	0·2155

An old nut-brown sherry and an "oloroso." Dry to the taste but full of pleasant character (the so-called "vinosity") and accordingly containing a remarkably high proportion of wine ethers. It possesses the peculiar inimitable flavour and bouquet of fine old matured sherry. Vintage 1865.

Is Sherry a Pure Wine?

There is no point in any single particular in the foregoing analyses which may fairly be regarded as evidence of adulteration. Nor does an inspection of the entire methods concerned in the production of sherry from the vineyards to the bodega give any suspicion of anything being carried on that is not honest and publicly open to view. As will have been gathered from the present article, there is no mystery about the production of sherry and the interested visitor may easily obtain an entry into any of the great producing bodegas, and at vintage time Jerez is one of the most interesting sights in the south of Spain. Our Commissioner visited most of the large bodegas in Jerez, San Lucar, and Montilla, where sherry-growing is carried out on a gigantic scale. He was met with the greatest courtesy by the sherry-growers—and three-fourths of the industry is carried on by English people—and every step in the interesting processes was shown to him, as were all other operations incidental to the production of sherry. Perhaps the most satisfactory and reassuring feature in this connexion is that nothing is concealed, the processes throughout from beginning to end are readily explained and where possible practically demonstrated. This, of course, cannot be said in regard to the production of many wines, nor is it fair to expect altogether that such should be the case. Still, where there are no secrets concerned in the course of production it is clear that the grower is convinced and confident of the honesty of his product. There are two facts in connexion with the production of sherry which are open to be construed as adulteration. The first is the addition of sulphate of lime to the crushed grapes before fermentation and the second the addition of a small proportion of spirit to wine intended for export. Against the former we do not think that a rational objection can be raised so long as the treatment is kept within limits, and this is invariably so. It may be called an artificial recourse, but so also is the adding of sugar-candy to champagne to make it sparkling or of gelatine, clay, and so on for the purpose of refining wines, beers, &c. We have described how the same thing may be to some extent naturally effected by the simple occurrence of an unusual proportion of vineyard dust adhering to the grapes prior to pressing. We venture to suggest that this has been the origin of the so-called "plastering process." The sulphate of lime employed is a natural constituent of the soil contiguous to the vineyards. The question is, Can this be regarded in the light of adulteration or fraud, since it does not add in any way to the bulk of the wine nor does it make it poisonous? On the contrary, it refines the wine and increases its power to develop those fragrant ethers which give to the wine its peculiarly pleasant characters in regard to bouquet, flavour, and agreeable stimulating qualities. Whatever character a sherry may possess this is due entirely to the produce of the grape and to no foreign addition. When, for example, a sweet wine is demanded by the public taste a certain proportion of "dulce" is added; dulce itself being a concentrated grape liquor, while a similar liquor imparts colouring consequent upon the caramelisation produced during the concentration by boiling of the grape sugar. It has been said that wine treated with sulphate of lime contains free sulphuric acid. This, in our experience, is not true, since in the whole of the wines examined the potassium acid tartrate was not entirely removed and the ash obtained on evaporation and incineration of the solid matter was invariably alkaline. This could not be in the presence of free sulphuric acid or acid sulphates. Further, we found that tartaric acid is without action on sulphate of lime. As we have said, the potassium acid tartrate produced in wine by this treatment is largely removed in favour of potassium sulphate. There is very little therapeutic difference between the two salts, both are diuretic and purgative and are rapidly eliminated from the system. The former, however, is more likely to produce increased alkalinity of the blood than the latter. As is well known, in very old wines the acid tartrate of potassium is nearly absent, being thrown out in the form of crust.

Then, with regard to the addition of spirit. This in the majority of cases is small, and in some cases, as in Sample No. 1 in the Report, is omitted altogether, this being a "brut" natural wine, as otherwise much of the sherry could not be imported into this country at the cheap rate of duty (1*s.* per gallon of a maximum alcoholic strength of 30° proof spirit; when much under this strength sherry will not travel satisfactorily). Some estimate of the spirit so added will be found by comparing the quantity of alcohol in "mosto" and in a light imported wine as recorded in the analyses in a previous part of the present article. It will be seen that this addition amounts to about 2 per cent. by weight, although some account must be taken of the normal increase which takes place in alcoholic strength by keeping. It is a curious fact that sherry in keeping develops a slight increase of alcohol as the time advances. All spirit added to sherry, however, is obtained from wine itself, corn spirit in Spain being quite a superfluity, since wine spirit can be produced so cheaply and in unlimited quantity. Moreover, the importation of German spirit into Spain is made practically impossible by a prohibitive duty. Good brandy — that is, a genuine wine-distilled spirit — is being produced in Spain in commercial quantities which it is to be hoped will successfully compete with the stuff erroneously called brandy, not to say Cognac, but of which not a drop has been derived from the grape.

It follows as the outcome of our inquiry that it cannot be correctly said that sherry in any particular contains a single ingredient foreign to its composition. We again lay stress on the fact that in coming to these conclusions we are speaking of vinum Xericum, the vino de Jerez, or the wine produced in Spain generally known as sherry, and not of those fictitious wines which are produced, or rather concocted, only too freely elsewhere. Indeed, it is true to assert that Spain could not profitably produce fictitious wines, so essentially and peculiarly is it a country where the grape grows luxuriantly and abundantly.

PLYMOUTH PUBLIC DISPENSARY.—The 100th annual meeting of the Plymouth Public Dispensary was held on Oct. 19th. The report stated that 3345 patients had been treated during the past year and that 579 patients had been visited at their homes. The financial statement showed that in the charitable department the receipts were £903 and the expenditure £987. In the provident department the income and disbursements both amounted to £129. It was decided that the centenary of the institution should be celebrated next month.

LITERARY INTELLIGENCE.—Mrs. Alec. Tweedie has in the press a Life of her father, the late Dr. George Harley. The book is to be published by the Scientific Press, Limited.—Messrs. Williams and Norgate's circular announcing new books includes the following: "Der Luftdruck in den pneumatischen Kammern und auf Höhen: Vom ärztlichen Standpunkt" (G. v. Liebig). "Kritik der Echtheit der Paracelsischen Schriften" (K. Sudhoff). "Vergleichende Anatomie der Wirbelthiere mit Berücksichtigung der Wirbellosen" (C. Gegenbauer). "Handbuch der Cystoskopie" (L. Casper). "Anleitung zur qualitativen und quantitativen Analyse des Harns," tenth edition (Neubauer and Vogel). "Bacterium septatum und dessen Beziehungen zur Gruppe der Diphtheriebacterien" (T. Gelpke). "Handbuch der Unfallerkrankungen" (C. Thiem).

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THE LANCET.

LONDON: SATURDAY, OCTOBER 29, 1898.

WE are all hoping that a better state of things is coming between friendly societies and their medical officers. The right of combination on the part of the working classes and the claim for any advantages which the principle affords in the way of organised schemes for procuring medical attendance have never been disputed by the medical profession. On the contrary, they have been recognised as they have scarcely been recognised by any other profession. This of itself constitutes a claim on the part of medical men for consideration and justice, not to say generosity, on the part of the friendly societies. Great objection has been taken to those huge combinations which are apt to become tyrannical in their dictation of terms and which, in fact, have come in many cases to be machines for sweating individual medical men and dealing a serious blow at the independence and dignity of the profession. Still the profession has preserved moderation of temper and of argument, and in regard to its supreme duty it has appealed for guidance to the General Medical Council, which is the last court of appeal in questions deeply affecting the methods or the ethics of medical practice. The Council has not yet responded to the last appeal of those who have felt the injustice of some of these huge combinations. But it is to be gathered from its last *interim* report that the Council is not without hope of being able to do something in the way of restoring that harmony which used to exist between ordinary and reasonable combinations for medical attendance and the medical profession. It is understood, too, that on the side of the friendly societies there is a genuine disposition to do justice to their medical officers and to remove all reasonable causes of complaint and friction. It is obvious that in dealing with large societies having a membership to be counted almost by millions there must be patience on both sides. Time is necessary to form and to ascertain opinion. We are quite ready to make all such admissions. Meantime it is well to take notice of individual cases which illustrate the evils of which medical men complain. A fair study of them will enable both the General Medical Council and the friendly societies to understand the strength of the complaint that in the development of friendly societies the profession has not been treated generously, whether judged with reference to the increased cost and completeness of medical education or the increased demands of friendly societies for efficient attendance and the increased means of their members to pay more adequately for it.

A case in point is reported from Evesham, in which Mr. ANTHONY HERBERT MARTIN and Mr. JOHN SAMUEL SLATER, Surgeons to the Court Vale of Evesham (No. 4648) of the Ancient Order of Foresters, were the plaintiffs in a county court action and the trustees of the Court Vale were the defendants. The action was to recover a certain sum due to the plaintiffs. The defendants admitted the sum but claimed to set off against it a sum of £4 11*s.* 6*d.*, an amount which they had had to pay on behalf of members for medical attendance in consequence of the surgeons' neglecting to attend them. The neglect, on the theory of the defendants, was in this wise. The plaintiffs had acted as medical officers of the court for twenty-five years for the sum of 5*s.* per annum for each member. On May 24th Mr. MARTIN received notice of a meeting of the society—the usual quarterly meeting—at which the reduction of his fees per member from 5*s.* to 4*s.* would be proposed. He attended the meeting and stated that if such a resolution were passed he would then and there resign. The resolution was passed and he resigned for himself and his partner, declining to see the members except as private patients. The defendants considered themselves entitled to a month's notice. As this had not been given they construed non-attendance into neglect and acting on a rule of the society against neglect (Rule 16), they deducted from the amount due to the plaintiffs the sum of £4 11*s.* 6*d.* which had been paid to other surgeons for attendance on cases between June 8th and July 8th. This was the only amount in dispute between the plaintiffs and the defendants and gave rise to the action and the counter-action. The whole question turned on the right of the medical officers to resign without notice. The terms of the contract expressly enabled the society to dismiss its medical officers without any notice whatever. Nothing was said about the notice of resignation to be given by the medical officers. The judge took the very natural view that what was fair for the society was fair for the medical officers. "In the absence of any custom in the case ..... I come to the conclusion," he said, "that the contract is a contract terminable at pleasure by either side. ..... It provides for no notice being given to the doctor ..... and he may be summarily dismissed. I conclude that the doctor has a similar right of determining his office. I therefore give judgment for the plaintiff." He further allowed counsel's consultation fee. Mr. Smith, on behalf of the defendants, reserved the right to appeal.

The *Evesham Journal* of Oct. 22nd, to which we are indebted for a good report of this interesting action, gives also an equally interesting report of the Foresters' annual dinner. The incidents of this action and the moral of it were referred to by various speakers, mostly, we think, in sympathy with the medical officers. We regret to learn that the society is not too rich. The members have to economise or to increase their subscriptions. It is of course much more easy for them to reduce their medical officers' fees than to increase their own subscriptions. But the members were ill advised in regarding the reduction of the fees of the surgeons who had served them for a quarter of a century as economy. This miserable attempt to reduce medical fees already too small is a fruitful source of the discord which obtains so largely between medical men and these societies. One speaker, Mr. GEOFFREY, said, "If they get a good day's work from a man let them give him a good day's pay. Let them treat a man as they would be treated themselves." We commend this admirable advice to this society and to all the friendly societies. Of all economies that is the worst which would starve and

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sweat medical men. In this particular instance the result is melancholy. They have dismissed gentlemen of long service and of high standing in the community. It is true they have got another medical officer — a stranger, we gather — to take the reduced fee. We pass no judgment on him. No doubt he has a "conscientious belief" that he is doing what is right. But we have a deep conviction that neither he nor they are "helping along the interests of Forestry."

AN anonymous correspondent, "M.D.," in a letter to the *Times* of Oct. 24th, gives some interesting particulars respecting the results of his examination of 100 boys who were just entering a public school. They were, with scarcely an exception, supposed to be healthy boys and were between thirteen and fifteen years of age. It is certainly very startling to find that over 60 per cent. of these boys were suffering from deformities ranging from lateral curvature of the spine and pigeon-breast to flat-foot, even though we recognise that they were at the age when infantile maladies and unnatural school postures begin to tell their story. No stronger plea for proper physical exercise from the time of leaving the nursery has ever been quoted, even if we allow that the examiner was a little over-severe in his examination. Cases of serious disease were only 2, but both of these were affections of the heart. Two boys were ruptured, but it is not stated in the columns of our non-medical contemporary whether these were congenital cases. We assume them to have been and to have gone unnoticed before the medical examination. Slight varicocele was found in 14 cases. Defective vision was detected in the large proportion of one-fifth of the 100, and one boy was colour-blind. Defective hearing was found in 9. The most unexpected item in the list, however, is the number of cases—22—in which albumin was present in the urine. The subsequent history of these 22 boys, as well as a medical account of their antecedents in regard to the infectious diseases, would be most interesting and would throw a flood of light on the pathology of the so-called "functional" albuminuria of which we know so little. We hope the writer will use the unique opportunity which presented itself to him to fill up this hiatus in medical literature.

Apparently the "average" boy in height, weight, and chest girth is a very rare specimen, and this we should expect, although it sounds paradoxical to say that the average boy is the rare boy. But between thirteen and fifteen years of age a boy is on the eve of accession to puberty, at which age the rate of development is very variable and averages are rather of statistical than personal value. There is a marked difference even in standard tables of averages at these ages, and as the writer states that he has included every variation in the height and weight it would be necessary in estimating the value of his table that we should be informed which standard he has taken as his basis. Under the heading of "height" 52 boys are stated by "M.D." to be above the average height and 39 to be below it in his 100 cases. At fourteen years of age QUETELET gives 57·3 in. as the average, the Anthropometric Committee 59·3 in., and MACLAREN 60·7 in. There is obviously so wide a discrepancy between these calculations that "M.D.'s" statistics must be read with a critical judgment. QUETELET'S cases were Belgians; the Anthropometric Committee took their average from the general population of Great Britain; whilst MACLAREN, like "M.D.," drew his average from 100 boys. We should like to know the limits employed by "M.D." in deciding on the maximum and minimum measurements of the long, lanky, and narrow-chested boy and the stumpy, heavy-looking, and broad one. The variation in weight in British boys is much less than in height, as at fourteen years of age there is only a difference on the average of 1 lb. between the estimates of the Anthropometric Committee (92 lb.) and MACLAREN (93 lb.); and the same tables show but little difference in chest girth, being respectively 28½ in. and 29½ in. In "M.D.'s" cases 40 per cent. were above the average in weight and 53 below it, whilst the chest measurement showed 24 above and 68 below. These figures are more suggestive than the mere question of height. The tables of the Anthropometric Committee are by far the most comprehensive and should be adopted as the standard in any further investigations on the condition and development of any members of the community. Researches on these lines are of the greatest utility, not only to the boy and his teachers, but also to his parents and the medical officer of the school, and might with advantage be extended to all classes of people who work practically under similar conditions.

AS announced in our issue of Oct. 15th the Charity Organisation Society are giving a series of lectures upon the question of medical relief, and we congratulate them upon their efforts to promote a more healthy public opinion in regard to gratuitous medical work of all kinds. The first lecture, by Mr. LOCH on the growth of medical charities, was introduced by a speech from Sir WILLIAM BROADBENT which enhances the obligation of the public and the profession to him for the long and painstaking interest which he has displayed in this subject. He might well plead both want of leisure and of inclination to criticise and improve a system under which he has attained to high success. There is a strong, and in some degree a natural, feeling of this kind among hospital physicians and surgeons which greatly hinders the reforms which are needed. They do not seem to see that a better administration of hospital relief would do the hospitals good, and would save them from that suspicion which attaches to all undiscriminating forms of relief—all relief, that is, which is superfluous, which is not needed, and which does for people what they can easily do for themselves. We commend Sir WILLIAM BROADBENT'S views to his colleagues on the staffs of the metropolitan hospitals. He seeks to raise the reputation of hospitals by bringing them into coördination with all other forms of medical service, and especially with all provident forms of such service, so that every self-respecting working man and his family should have ready use of them when occasion requires. But he would not allow them to be used indiscriminately as at present. Like many other friends of the hospital system

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he sees that its weak spot is the out-patient department, where abuses undoubtedly exist. And like many other sound observers of these abuses he is doubtful of the efficacy of the ordinary remedies for them which are in vogue at present. He is of opinion that the precautions against abuse are inadequate. A superficial inquiry into the means and circumstances of patients at the hospital is not enough. Any efficient investigation must be made at the homes of the patients. This is, of course, obvious. It is the opinion even of those who benevolently supply tea and coffee to out-patients that abuses exist, but detection of such abuses in the crowd of an out-patient room is practically impossible. The difficulty is that any efficient home investigation of the case of the thousands who attend the out-patient department would be very costly. Might not an object lesson in this work be given by some volunteers undertaking an inquiry into a limited number of out-patient cases in each hospital?

This is Sir WILLIAM BROADBENT'S suggestion and it is a valuable one. He is favourable also to the creation of a Central Hospital Board for the better discussion of questions which affect the support and efficiency of hospitals. But the board which he advocates is one not of outsiders but of representatives of hospitals of every kind and creed. His arguments formed a good preface to the address of Mr. LOCH, who estimated that after making all due allowances the number of persons relieved by London hospitals was not less than 2,000,000 a year. The fact is an appalling one and should make the most conservative supporter cry for a halt. Mr. LOCH made a powerful point in his argument against such wholesale and reckless help of the growth of other forces in the community which make it incongruous and indefensible. Chief among these was the development of the friendly societies. He reckoned that one in every three working men above the age of sixteen in London was a member of some such society. This is very creditable to the working classes and makes it only the more regrettable that the hospital system should lend itself to "loose and lumbering methods" of giving medical help. Mr. LOCH said, and with some truth, that the popular view of the hospital system at present was that it should be placed within the reach of all the poorer classes on demand and that practically any member of the artisan or labouring class or his family should receive free medical aid. Such a view is founded on a misconception of the very object of hospitals and is unworthy of the men who have built up the friendly societies of England. We agree with Sir WILLIAM BROADBENT that in urgent circumstances such men should have free admission to our hospitals, but we are equally clear that for all ordinary medical attendance they are capable of making their own private arrangements.

We have noticed Mr. LOCH'S address rather from the public than the professional point of view. The evils he describes so ably should be rectified on public grounds. It is in the public interest that all degrading and pauperising elements should be eliminated from medical charity. But we do not forget that the medical profession has the greatest right to demand the remedy of such evils. It works the medical charities, it does an amount of charitable medical work which no other profession does, and its "ready help is always nigh" for the necessitous and impecunious sick. But for this very reason it should be guarded from imposition and the great institutions which use its gratuitous services should see that they lend themselves to no abuse.

THOSE of our readers who have followed the accounts given in the daily press of the cases of plague having their origin at the Pathological Laboratory in the Allgemeines Krankenhaus of Vienna cannot but fe nat the event is one of those accidents from which great good or great evil may arise according as the lessons are taken to heart. The facts are as follows. For eighteen months past the members of the Austrian Commission who went out to India for the purpose of studying plague in its clinical and bacteriological aspects have been continuing their investigations and have performed numerous experiments with the object of deriving further light as to the exact relationship between the disease and the bacillus pestis, also having in view the possibility of devising some prophylactic or antitoxic method of treatment which might be available for the prevention and treatment of this excessively fatal disease. It appears that up to the last week or two some fairly successful results have been obtained as regards the second part of the investigation, and this had even gone so far that it had been suggested that the laboratory attendant who was engaged in looking after the inoculated animals should submit himself to preventive inoculation. To this, however, he demurred and the step was not taken. The question involved in the first part of the investigation has now unfortunately been answered only too precisely in the affirmative, and we are compelled to accept as the result of a most unfortunate accident the proof that the bacillus of plague, and this bacillus alone, is capable of initiating an outbreak of bubonic plague of the most virulent type.

In this instance we have the plague bacillus taken from plague patients, transported from India, and grown generation after generation in a laboratory where the utmost care must necessarily have been exercised to keep this micro-organism uncontaminated or unmixed with others grown in the same laboratory. These organisms, a number of cultures of which, we are told, showed various grades of virulence, were used to inoculate animals. Under ordinary circumstances and with reasonable precautions (such precautions as have been taken in the same laboratories for years) there was not the slightest danger of the spread of the infection through the animals; for it having been recognised that rats are often the vehicle by which the bacillus is carried, any animal-house or laboratory to which rats from the outside had access would naturally be condemned at once, and there is every reason to believe that Dr. MÜLLER and those associated with him were fully cognisant of this danger. It was a risk scarcely to be apprehended that an attendant thoroughly impressed with the necessity for taking certain simple and elementary precautions and fully understanding the danger attending such neglect should, while on duty, have brought himself into such condition that he was no longer able to estimate his danger. This, however, is what happened. An attendant who, perhaps unknown to those in authority, had gradually been deadening his sense of responsibility went to his work

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in a condition in which he did not realise the danger to which he exposed himself through not carrying out simple precautions, though in his normal condition he would never have thought of neglecting them: and we have as a result the first case of plague infection occurring directly through the mouth. As Professor PALTAUF points out, the infection might have been absorbed from the hands or from the pipe the man was smoking being laid down on a surface to which plague germs had access.

The second act in the tragedy appears to have been due to hypersensibility rather than to any blunting of a feeling of responsibility, and we have in the case of Dr. MÜLLER and of the two nurses who attended on BARISCH an instance of devotion to duty overcoming all sense of danger and of the necessity for taking personal precautions. The extreme anxiety on the part of the actors in this terrible drama to carry out all the necessary precautions to prevent the further spread of the disease amongst those outside led to their own undoing, and there can be little doubt that had Dr. MÜLLER and the nurses taken more food, more rest, and more sleep they might all have been alive to-day, as even the pneumonic form of plague does not, as a rule, infect people in a good state of health, especially when they are placed under proper hygienic conditions and not actually engaged in plague work. So far this outbreak has claimed two victims and another may succumb, but it appears probable that with this exception there will be no further cases of death from plague in Vienna. It is perhaps too early to speak with any degree of assurance on this point, but from the statements of those who are best acquainted with the circumstances of the case we are led to hope that no further ill results will directly attend this tragic mishap.

The great lesson to be gathered is that where the organisms which cause this deadly disease are being experimented with, and, in fact, wherever they are present, whether accidentally or not, the use of no precaution, either great or trifling, is to be neglected for the purpose of confining the organisms to the sphere allotted to them. That this can be done when very elementary precautions are taken we have ample evidence, especially where experimental work only is concerned, but it must be pointed out that the principles which ought to govern the work of every laboratory must be applied with equal strictness in everyday life on the outbreak of a specific infective disease. Who but a fool would think of "handling" a cultivation of anthrax bacillus or of inhaling the diphtheria bacillus or the bacillus of tuberculosis as found in a laboratory? Nevertheless, under ordinary conditions of life there are men who are frequently handling carcasses in which anthrax bacilli are present in enormous numbers and who after a time become so careless that they continue to do their work with cut hands or scratched arms, with, of course, but one inevitable result. There are people who, owing to carelessness on their own part or on that of others are exposed to infection through the throat and lungs by the organisms which give rise to tuberculosis or diphtheria. Such stories as the tragic one from Vienna should make such people think. As most of the papers point out, and as our own information goes to show, Dr. MÜLLER behaved throughout with a heroism which fortunately is not rare in the medical profession, and it cannot but be felt, after reading the full accounts of what he did and what he suffered, mentally and physically, that his conduct gives a very direct lie to an insinuation which we have often been ashamed to read. He at any rate cannot be put down as amongst those who are brutalised by the carrying on of experimental work. A last word. Some will say that the responsibility of introducing into Western Europe a disease which has not for some time invaded it in any other way is greater than that involved in watching the ravages committed by epidemic disease amongst us without making special efforts to cut short such diseases. This is a point, as Sir ROGER DE COVERLEY says, on which much might be said on both sides, but we have no doubt ourselves on which side right lies. We hope that whilst the teaching of this serious accident is taken thoroughly to heart by those engaged in carrying on experimental investigations attention will be drawn to the still wider question of the prevention of disease due to well-recognised micro-organisms, and that the interest which attaches to the deaths in Vienna may not distract attention from the need which there is for remembering that micro-organismal diseases which are at all times with us and in our very midst may for the most part be prevented by the adoption of fairly well-known and reasonable precautions.

Annotations.

"Ne quid nimis."

THE SICKNESS AMONG THE TROOPS FROM THE SOUDAN.

As we have repeatedly said, it was to be confidently expected, in accordance with our previous experience in connexion with campaigns in tropical and sub-tropical climates and with that of similar expeditions conducted by every other nation, that a considerable amount of sickness, and notably of enteric fever, would appear among the troops returning from the Soudan. Compared with similar expeditions undertaken by other Powers, or even with those previously undertaken by this country in Egypt, the total amount of sickness and the number of cases of enteric fever on the present occasion have so far been less than might have been anticipated. It will be remembered that there was a large amount of enteric fever among the British troops after the Egyptian campaign of 1882 and also after the second expedition to Suakin. It is, unfortunately, always the case that an army in the field suffers far more from sickness than from the assaults of the enemy to which it is opposed. The late expedition to the Soudan was a long and very arduous one, added to which there was other continued exposure of the troops to climatic heat and the unhealthy conditions to which they were unavoidably subjected. Although losses from sickness are practically unavoidable under such circumstances, still it must not be forgotten that their amount is very sensibly lessened in proportion to the forethought and care bestowed on perfecting the hygienic and medical arrangements in the field. The French campaigns in Tonquin, Madagascar, and elsewhere, and still more recently the very lamentable experience of the Americans in Cuba, contrast very unfavourably with those of this country in Ashanti, Egypt, and the

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Soudan. We have gone on improving of late years in respect of the sanitary and medical preparation, organisation, and management of our military expeditions. We have, at any rate, reached a standard that enabled the Sirdar in his Omdurman despatches to declare his belief that "the minimum of pain and maximum of comfort procurable on active service in that country had been attained. Still, do what we may, the use of unwholesome and contaminated water on the part of the troops cannot be altogether prevented, the effect of climatic heat upon men unaccustomed to it has to be encountered, and the soldiers have for some time to subsist on tinned and preserved foods and to face the hardships and fatigue incidental to campaigning. The time for the disease-toll to be exacted comes when the physical wear and tear and the excitement and strain of the nervous system have abated or passed away, and the Grenadier Guards as well as various other corps returned from the Soudan are now paying it as a result of their gallant service there. There are, we believe, about 100 men of the 1st Battalion of the Grenadier Guards in hospital at Rochester-row, of whom between 30 and 40 are suffering from enteric fever, in addition to about 40 cases of sickness of different kinds distributed between Cairo, Gibraltar, and Netley. At Cairo there is a large number of sick in hospital belonging to the recently returned force from Omdurman and the Soudan, and at Alexandria there are also several cases in hospital. We much regret to notice that two young officers, both of whom were present with their regiments at the battle of Omdurman, have since died from enteric fever at the Ras-el-tin Hospital, Alexandria. Second Lieutenant I. V. L. Maunsell, of the Lancashire Fusiliers, who was a very fine promising young officer, is a son of Surgeon-General T. Maunsell, C.B., the Principal Medical Officer at Malta, to whom we venture to express our sympathetic condolence.

CONSCIENTIOUS OBJECTION BY WHOLESALE.

No better illustration of the difficulty often experienced in drafting a clause of a Bill in Parliament so that it shall not hopelessly fail in carrying out the objects of its promoters can be found than is offered by the so-called "conscience clause" of the Vaccination Act. The avowed object—both of Sir Walter Foster, who originally proposed the clause, and of Mr. Balfour, who adopted it—was to prevent a mere mechanical presentation of objections in a multiplied and stereotyped form, such as an organisation like that of the Anti-Vaccination League could easily promote if the opportunity were given to it for doing so. To this end it was agreed that the person having the custody of the child—that is, the father, where there is one—should be required to personally present the objection before two magistrates in petty sessions, whom he was to satisfy (in what way the Act does not provide) that his objection was conscientious. The Keighley magistrates have lately shown how it is possible to comply with the letter of the Act and to evade its spirit. Keighley, as, no doubt, most of our readers are aware, is the town which first established a record in obtaining the recognition of local option in the matter of the non-enforcement of vaccination. It is now more than twenty years since the Keighley Board of Guardians of that day refused to carry out the Vaccination Acts and were committed to prison for their contumacy by the Court of Queen's Bench for one month. That episode was the first and last effort the Local Government Board made to enforce the coercive powers which the Board possesses in this matter and since that time vaccination has been a dead letter in Keighley. It became, therefore, interesting to see how Keighley would deal with the conscience clause. Would the numerous objectors in it refuse to avail themselves of it, as some of the stalwarts of the League have been recommending them to do, or would they present themselves before the magistrates and afford them the satisfaction as to their objection which the law requires? Then, again, the further question suggested itself as to what explanations would be necessary to satisfy the Keighley magistrates. These problems have been recently solved by the holding of what may be called a great field day for reviewing the Keighley army of objectors. On Oct. 4th no less than 693 recalcitrants, mostly women, we are told, presented themselves at the Keighley Court-house to four of the magistrates, who resolved themselves into two courts for the purpose of facilitating the business. In order to further meet the exigencies of the situation the magistrates, who appear to have been of an exceptionally accommodating disposition, decided that it was not necessary that the father should appear. As a matter of form each mother was asked whether her husband was a consenting party, and in many cases this system of abbreviated procedure was carried to its ultimate extent by his acquiescence being signified by a nod on the mother's part. The magistrates also decided that no oath should be required, thereby saving the payment of a shilling, and that it would satisfy them if the applicants when asked as to their conscientious objection merely replied in the affirmative, which, we presume, they were again allowed to do by a nod. We are not surprised, therefore, to learn from a local newspaper that the whole 693 applicants, by being taken in batches and by being expeditiously marshalled before the court by the superintendent of police, were polished off in a few hours. Thus, to make use of the phrase of the local reporter, the Keighley magistrates have certainly succeeded in reducing this formality "to its lowest and simplest terms." Indeed, the reduction is so complete that the formality may be said to have almost entirely disappeared in the process. The mothers, most of whom, we are told, carried babies, appear to have availed themselves of the period of waiting to have a congenial gossip, probably thinking that the children have escaped the risks of a bad arm at a not very burdensome cost, and the whole *mise en scène* was so successful that the drama is to be repeated in a fortnight's time. It will be interesting to see whether Leicester and other places where infant vaccination has been as much of a dead letter as it has been at Keighley will follow suit on the same lines, and whether the magistrates in these localities will be equally accommodating in facilitating the evasion of the intentions of the legislature. There appears to be as much difference of opinion in the anti-vaccinationist camp as there is amongst the magistrates as to how they should treat the Act. Probably the *genius loci* in each case will work out its own form of procedure on both sides and we shall thus have abundant opportunity of observing the operation of the first stage in the "tremendous experiment" upon which, in the words of Lord Lister, we have now embarked.

THE VENTILATION OF UNDERGROUND ELECTRIC RAILWAYS.

OUR remarks upon this subject in our issue of Oct. 15th have attracted considerable attention, and several lay papers have been prompted to apply for information to just those officials who should be able to give an assurance that a system of ventilation on the underground electric railways, over and above that established when the trains are in working order, had been provided. In the particular instance to which we referred—namely, that of the City and Waterloo line—we cannot allow that such an assurance has been forthcoming. It will be remembered that the point which we raised was based on a recent occurrence on this line which seemed to show that no extra precautions had been taken.

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for securing the adequate ventilation of the tunnels in the event of emergency. "The best answer I can give to THE LANCET is to ask them"—so the general manager of this line is reported to have said in an interview with a representative of *London*—"how they think our workmen manage to live when repairing the line. ..... In the ordinary business of good and careful management our men make a minute inspection of the line at regular intervals and remain in the tunnel until the necessary repairs are completed. If there was any truth in this scare our men would have been as dead as door-nails long enough ago. Of course the story is altogether absurd." Clearly this is quite beside the question at issue. We never doubted that so long as the trains were running the condition of the air in the tunnels would be satisfactory. But in the event of the stoppage of the train in the tunnel this automatic system of ventilation would cease also and 200 or 300 passengers might soon exhaust the vital air. We held, therefore, and still hold, that a system of ventilation should be established providing against such a possibility. We do not gather that this is so from the information given by this responsible official. Neither is there comfort to be derived from the remarks offered by Sir Benjamin Baker to a representative of the *Standard*, for these remarks applied only to the Central London Railway, which differs in very important details from the City and Waterloo line. Sir Benjamin Baker is reported to have said that in the case of the Central London Railway there are at each station vertical shafts of from 20 to 30 ft. in diameter with electrical lifts moving up and down every two minutes. These act, and are designed so to act, like enormous pumps sucking up and restoring the air in the tunnels. This is very assuring in regard to the Central London Railway, but there are no intermediate stations on the City and Waterloo line, nor are there any electrical lifts "moving up and down every two minutes acting like enormous pumps sucking up and restoring the air in the tunnels." We have no wish to create any scare in this matter, but these statements do not in our opinion weaken in the slightest degree the force of our remarks. It would be much more satisfactory if the City and Waterloo Railway authorities could inform the public whether in the plans of their line duly approved by the Board of Trade there were adequate means provided for the ventilation of the tunnels in the event of the delay of a train by a breakdown. If there were not, and it be shown that there are at present no means of supplying air in the tunnels in such a case, then it is a regrettable and serious omission which demands prompt consideration and instant repair.

"THE FLOGGING MOVEMENT."

WE gladly call attention to a communication which appeared in the *Saturday Review* of Oct. 15th under the above heading. Amid the silly sentimentality and nauseous sympathy occasionally expressed in regard to cowardly ruffians who kick and beat their wives and children, commit deeds of violence, or cruelly maltreat policemen in their resistance against arrest, it is refreshing to light upon a bit of manly common-sense. Hardly a day escapes in which we do not come upon some description of such brutalities in the morning papers, and the experience of the out-patient departments of our hospitals could furnish numerous instances of a similar kind which never get into the papers. Everybody with any real knowledge of this class of criminals knows that there is nothing these bullies fear so much as the physical suffering which they do not hesitate to inflict on others. Despite of all that may be said to the contrary, flogging has a deterrent effect on ruffians of this class. They care nothing for imprisonment, which often has the result, moreover, of only adding further injury to that which their unhappy victims have already suffered at their hands. Besides, why should already over-taxed people have to bear the cost of "the keep" of these criminals while in jail? The poor but law-abiding citizen has no sympathy whatever with the unwholesome sentimentality of those faddists of the present day who gush over criminals of this sort but seem to ignore altogether the suffering which such criminals inflict on others weaker than themselves. Those who write and speak against flogging in cases of this kind have no practical knowledge of this class of criminals to lend any pertinence or weight to their opinion. We should like to see a year's trial made of a new and different method of dealing with them, and it would surprise us very much if a physical impression on the skins of such culprits did not result in making them and the class to which they belong think twice before committing crimes of this sort.

THE NEW POTTERY RULES.

IT is pleasing to record that the revised special rules recently issued by the Home Office in regard to certain dangerous trades have been met in a thoroughly conciliatory spirit by those most directly concerned. The new proposals have been fully discussed at a meeting at Stoke-on-Trent, where the Home Secretary, the manufacturer, and the industry were adequately represented. The proceedings, in fact, amounted to an arbitration where the *pros* and *cons* were discussed and where the experience of the practical man was consulted as to how far the suggested rules could be applied without interfering with the ordinary working requirements of the industry. The proceedings were presided over by an umpire, and there were several well-known authorities on the subject present. These included the inspectors of factories and certifying surgeons and, in fact, all who could realise the difficulties which the application of special rules might present. It is impossible to go into the revisions which were suggested and which in some cases were adopted in order to make new rules workable, but the following points are worthy of record. It appears that the total number of notices sent out by the Secretary of State as to the making of these special rules was 691, of which 416 related to the districts known as the potteries district, some ten miles long by three or four miles broad. There were 529 immediate acceptances of the special rules *in toto*, which in these cases were now enforced and being acted upon. Of the 162 original objections 78 had been withdrawn, leaving 84 to be dealt with by the arbitrators. The objections were in all cases reasonable and referred chiefly to what was considered an unfair distribution of imposition—to those cases, in short, in which much onus was thrown entirely on the manufacturer which ought to be shared by the operative. Thus there was no doubt that whatever a manufacturer did he was not helped by the personal cleanliness or care of the workers. In regard to the rule providing for the monthly examination of all women and young children by the certifying surgeon it was submitted that the rule should be modified by adding that the cost of such examination should not fall on the employer. This suggestion must remain in abeyance since there was no power to insert such a clause without further legislation. In regard to the rule providing that certain processes should not be carried on without the use of exhaust fans for the effectual removal of dust the manufacturers propose the insertion of the words "or other efficient means" after the word "fan," which should apply to all processes, the means to be approved in each particular case by the Secretary of State and under such conditions as he may from time to time prescribe for the effectual removal of dust. This after much discussion was agreed to. A modification providing for washing conveniences was also agreed to. Mr. Dugdale, Q.C., the Recorder of Birmingham, in his concluding

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remarks as umpire tendered his best thanks for the way in which every suggestion made had been met by the gentlemen on both sides. On this account there had been the saving of a great deal of expense and friction, which were very undesirable elements in matters of that kind, and he certainly thought that the costs of the arbitration and the award should be borne under these circumstances by the Treasury. To this we will add that it is indeed most gratifying that a conference of this kind, beset with so many interests and points at stake, should have been brought to such a satisfactory issue and that the various important matters were discussed in a spirit thoroughly in accordance with the weal of both employer and employed.

"TYPHOID SPINE."

DR. W. S. NEWCOME has published an interesting case of "typhoid spine"—an affection the nature of which is disputed—in the *International Medical Magazine of Philadelphia*, September, 1898. Some have doubted the existence of such a condition, claiming that some complication, such as lumbago, is present in the convalescent stage of typhoid fever; others believe that it is due to some inflammation around the spinal column—"perispondylitis"; others that it is due to neuritis; others that it is hysterical. Dr. Osler states that "even if the great majority of these cases are hysterical some may be due to alterative changes of the disease." Inflammations of bone occur much more frequently after typhoid than any other fever. This lends some support to the second theory; but neuritis might also be produced by this spinal inflammation, and many cases of distinct neuritis have been reported. There have been no necropsies to throw light on the subject. Dr. Newcome's patient was a girl, aged seventeen years, who had an ordinary attack of typhoid fever. Towards the end of the fever she complained of pain in the back and thought it was due to cold which had been applied to reduce the temperature. It entirely disappeared and she was able to walk about. About two weeks afterwards she was seized with a severe pain in the lower part of the back radiating towards the hips. She could not lie down, and when standing was bent forward and drawn to the right side. The least motion was painful. She improved slowly and in a month was able to move about with little pain. Bicycle riding was ordered to "straighten her spine." Relapses occurred. Salicylates, acetanilid, salol, belladonna, bromide, and trianol were tried without success; finally morphia had to be given to relieve the pain. There was great tenderness over the second and third lumbar vertebræ and she was still bent forward and to the right. Extension weights of about 8 lb. were attached to each foot with a view to decrease the strain on the spine. In about four weeks all tenderness had disappeared. She made a complete recovery.

THE LONDON WATER-SUPPLY.

AT the meeting of the London County Council on Tuesday last a report was presented by the Water Committee. It was decided, however, to defer the discussion and consideration of the important proposals contained therein until Tuesday next, Nov. 1st. The preliminary question to be decided turns on a matter of procedure—namely, as to whether the Council will continue to wait for the report of the Royal Commission before taking any action in the direction of legislation or whether it will at once formulate its proposals and lay them before Parliament in the coming session. We believe that the report urges the necessity of pressing forward the old policy of the Council to acquire the eight metropolitan water companies, and in this connexion stress is laid upon the fact of the breakdown of the East London supply this summer. The report contains proposals as to immediate remedies and as to future supply. In regard to the former provisions are laid down authorising the Council to proceed forthwith with the connecting and laying of mains and other works necessary in order to enable it to protect any part of the metropolis from want of water. In regard to the latter it is recommended that "a Bill be promoted in the coming session of Parliament for the purpose of empowering the Council to bring an additional supply of water to London from the watersheds of the Wye and Towy on the general lines of the water committee approved by the Council April 21st, 1896, in so far as it applies to the Wye section of the engineer's scheme."

THE HYGIENE OF THE THEATRE.

WE learn that the authorities at Drury Lane Theatre, acting on the advice of Mr. Edwin O. Sachs, are setting the example of improving the hygiene of the mysterious regions of the theatre behind the curtain by introducing constructional ironwork to replace woodwork as much as possible and wire cables to replace the ropes. This should materially affect the accumulation of dust on the stage. The propelling power which Mr. Sachs has introduced is to be electricity and a great deal of manual labour will henceforward be avoided and thus the overcrowding of the stage should be less. To-day a pantomime requires some 100 to 150 stage hands alone, quite irrespectively of property men, and improved forms of stage construction are already being employed on the Continent, hydraulic power being in general use. The dampness occasioned by the constant leakage of water has, however, in Mr. Sachs's opinion, counterbalanced some of the benefits of improved construction, but he hopes that the substitution of electricity will obviate this defect. The hygiene of the stage is somewhat neglected, and the amount of illness among the employés, especially in the provinces, is particularly heavy. We are all concerned in improvements which make the theatre warm and wholesome and airy for the audience, but we are apt to forget that the producers of our entertainment have arduous work to do, often in a very unsatisfactory environment. We are glad to congratulate the management of Drury Lane Theatre on taking steps to render life behind the curtain a little less arduous and dangerous.

SIR WILLIAM BROADBENT ON THE PREVENTION OF TUBERCULOSIS.

THE admirable address of Sir William Broadbent on the Prevention of Tuberculosis delivered at Huddersfield upon the occasion of the opening of the magnificent new hospital for infectious diseases in that town will very possibly appear—as he himself allowed—to medical men to tell them nothing new. Although addressed to a lay audience in the main it is printed in our columns in full by our own special request, for it contains so much sound sense and so many points which although perfectly well known to every medical man are not sufficiently insisted on, that we consider that it will be of value to those members of the profession who did not hear it delivered to have a chance of reading it. For who are or ought to be the advisers and teachers of the public on this important question? Surely the family practitioners. It is their duty to point out the ways in which the scourge of "consumption" can be abated and as an additional incentive to do good they can refer their patients to Sir William Broadbent's weighty and yet perfectly simple words. In insisting upon the value of air Sir William Broadbent emphasised the necessity of open windows. Now, this may be possible in Huddersfield, but it is impossible to sleep and quite impossible to do any work in many parts of London with an open window, on account of the abominable and perfectly unnecessary noises.

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The prevention of these is a work which the National Society for the Prevention of Tuberculosis might well take up. Apart from this, though, a good deal is being done. Enthusiastic landowners like Lord Vernon are alive to the necessity of reforming milk-supplies, and municipal bodies like those of Liverpool, Manchester, and London, are doing their best to overcome ignorance and prejudice in the matter of meat- and milk-supply. Huddersfield, we think, may be congratulated both upon its new hospital and upon the various gatherings connected with the opening thereof.

WOKING COTTAGE HOSPITAL.

THE local papers contain an account of a lengthy inquiry before Mr. G. F. Roumieu, coroner for West Surrey, as to the circumstances under which a man, who was removed to the Woking Cottage Hospital, came by his death on the railway after some dispute in the bar of the refreshment-room at the station. This account contains a statement which, so far as we remember, stands unique in the history of our cottage hospitals. It is stated that the coroner, having called before him the nurses from that institution, declined to allow them their expenses, expressed to them the very unsatisfactory nature of their evidence, and had to warn them, not only against similar behaviour in the future, but also against obstructing his officer when he went to them for the purpose of gathering evidence. We sincerely trust that the committee managing this cottage hospital will make a full inquiry into the matter and that both the inquiry and any decision which may be arrived at as the result of it will be as public as the condemnation of the coroner has been. It would be a serious thing if the public were led to believe that a staff maintained by their charitable gifts for the benefit of their fellow creatures could, under any circumstances, lend themselves, as is here implied, to defeat the administration of justice. The matter may admit of a complete explanation; if so, such explanation will doubtless be forthcoming.

THE ORDER OF ST. JOHN OF JERUSALEM.

AT the Camera Club, Charing-cross-road, on Oct. 20th, the Rev. W. K. R. Bedford, M.A., delivered a most entertaining address entitled, "The Knights Hospitallers: What They Did and What They are now Doing." Mr. Bedford, who is one of the chaplains to the Order of St. John of Jerusalem in England, has made a special study of the deeds of that religious and military Order in Malta and elsewhere, and on the present occasion occupied himself mainly with its history and development from its origin in Jerusalem as a charitable association between the years 1014 and 1023, through its subsequent successive settlements in Acre, Rhodes, and Malta, to its gradual decay and extinction in the beginning of the present century. These Knights Hospitallers or Knights of St. John succeeded to a considerable part of the possessions of the Knights Templars on the dissolution of the latter Order in 1312. After the plundering of the church of St. John in Malta by Napoleon in 1798, the Grand Master, Hompisch, took the precious relic, the hand of St. John, to St. Petersburg and created the Emperor Paul of Russia grand master of the Order. In the middle ages the Order was represented in England by the Priory of Clerkenwell, which existed almost contemporaneously with the First Crusade. During Wat Tyler's insurrection in 1376 much damage was done to the Priory as well as to the estates of the prior, who had a residence near Hampstead and a deer-park in the locality now known as St. John's Wood. The Priory was suppressed by Henry VIII. and entirely destroyed by the Protector Somerset in the reign of Edward VI. In 1834 steps were taken to establish an English branch of the Order, and in 1878 its great ambulance system was founded by two of the members—John Furley and Colonel Francis Duncan, R.E., St. John's Gate, Clerkenwell, being purchased for the Order about the same time by Sir Edmund Lechmere. The Queen granted a charter in 1888 and the insignia of the Order are worn at Court. Its operations include the ambulance work, the granting of medals to persons who save life at the risk of their own, and the maintenance of the Ophthalmic Hospital at Jerusalem, which has treated something like 50,000 patients. Mr. Bedford's remarks were illustrated by fifty photographic views and reproductions of old prints, shown with the fine electric-light lantern belonging to the club. It was announced that on Thursday, Nov. 3rd, at 8.15 P.M., Major Beevor, Royal Army Medical Corps, would deliver an address on the Afridi Campaign, illustrated with lantern slides.

TYPHOID ORCHITIS.

IN the *Journal des Praticiens* of Sept. 3rd Dr. Breton has related a case in which this rare complication occurred. Whilst convalescing from typhoid fever a youth, aged seventeen years, was attacked by pain in the right testicle which was soon followed by suppuration. When seen two months later there was ulceration of the skin of the scrotum to the extent of a franc piece and a small fistulous opening surrounded by a violaceous zone, the whole having the appearance of a tuberculous lesion. The testicle was invaded, but the epididymis was sound; there was swelling of the lymphatic glands in the corresponding groin. An injection of tuberculin gave no reaction. The whole of the suppurating area was removed; a bacteriological examination showed the presence of a bacillus with the characters of the typhoid bacillus, but the writer was not able to distinguish it absolutely from the colon bacillus. In eight days the wound was healed.

THE GARBAGE-MONGERS.

IT will be remembered that on Oct. 6th a man named Geary, trading as Ruffin and Co., was fined £100 including costs for being in possession of 44 barrels of stinking livers intended to be used in the form of meat extract as human food. Evidence was given that Geary was only performing experiments so as to make a meat extract which should command the market. On Oct. 20th Alfred Ashley was summoned as the vendor of the said livers. Ashley gave evidence and said that he did not know much about the livers. He got them through a shipping firm, Stahlschmidt and Co., who he believed got them from Munne and Schultze, of Hamburg, who got them from Buttle Bros., of Enniscorthy, Ireland. This modern commercial version of the House that Jack Built did not, however, satisfy the magistrate, who fined Ashley £25 and 5 guineas costs or three months' hard labour. Another man named Charles Sureties, who went by the name of Dr. Sureties and had formerly been manager to Geary, but carried on the trade of an extract blender in Bermondsey, was summoned on a similar charge. He did not attend the court and was fined £40 and 5 guineas costs, or three months' hard labour. No time would be allowed for grace. We consider that the law with regard to these sort of cases is in a most unsatisfactory condition. If Geary and Co. had put 2 grains of arsenic into their neighbours' beer they could every one have been sentenced to penal servitude. But because they prepare poison under the name of "table delicacies" or "meat extract" they get off with comparatively small fines. Actions such as this should be treated as attempted murder and in a case involving the possession, with intent to use or supply as food, of putrid aliments the offending party should be fed upon his own goods till they were finished, if

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he lasted as long. He should be made to post at his own expense a notice of his conviction in every prominent newspaper in the kingdom and also in a prominent position in his shop and place of business. A second conviction should mean imprisonment for life. Except blackmailing there is no crime so mean and blackguardly as adulteration of food or selling putrid food. It should be put down with the heaviest possible hand.

PESTIS BUBONICA: PRECAUTIONS OF THE ITALIAN GOVERNMENT.

OUR Rome correspondent writes under date Oct. 25th: "The deaths, actual and threatened, from 'pestis bubonica' in the Viennese bacteriological laboratories, have caused the Italian Government to take all needful precautions against the introduction of the malady into the kingdom. The strictest hygienic surveillance is already established along the frontiers which divide the two countries; and this, working in harmony with the energetic measures enforced by the Austrian Government to isolate the 'pestis,' can hardly fail to confine the outbreak to its 'point of origin.' The 'Direzione della Sanità,' chiefly through the consular agencies of Italy, is in daily touch with the Viennese authorities; not only so, but within the Italian kingdom itself precautions of a like tenour with those at Vienna are being vigorously carried out. At Florence (as readers of THE LANCET are aware) Professor Lustig, who with three coadjutors of that school coöperated with Dr. Müller at Bombay in a series of studies on the 'pestis,' had established in the Tuscan capital a 'gabinetto batteriologico' for the further prosecution of these researches, and till the other day was engaged in experimenting on animals with his antitoxin. On the 23rd inst. the 'Consiglio Sanitario' of Tuscany, at an urgency meeting convened *ad hoc*, adopted measures identical with those devised by the central office in Rome and received from Professor Lustig, who was present and who requested to be heard, a spontaneous assurance that in presence of the danger he had, for the time at least, suspended all laboratory work in connexion with the 'pestis.'"

MASSAGE AND MOVEMENT IN INJURIES OF JOINTS.

IN many text-books of surgery the treatment which is still advocated for a sprain or dislocation is the fixation of the injured joint, and this treatment is usually based on the propositions, firstly, that fixation relieves the pain; secondly, that the rest prevents inflammation of the joint; and, thirdly, that it favours the repair of the ligaments. The stiffness which is so prone to follow any of these joint injuries is often very long-lasting and difficult to cure. Of late years there has arisen a tendency to treat sprains and luxations by more energetic methods, and a paper which sums up well the arguments in favour of the active treatment has recently appeared in *La Clinique*. It is by Dr. Lucien Tiberghien, of Brussels, and he points out that although rest relieves the pain the total amount of the suffering which has to be endured is by no means lessened, for the stiffness which succeeds is very painful to treat, while early and gentle massage, far from being painful, is very soothing. The stiffness resulting from injury to a joint is chiefly due to the organisation of the exudations which take place; these bind together the tendons and their sheaths, cause contraction of ligaments, and may even form adhesions between the articular surfaces; but if massage has been employed and early passive movement of the joint has been allowed the exuded materials, both leucocytes and serum, are carried off by the lymphatics and only sufficient is left to repair the damage which has been done. The degree and extent of the movement to be permitted vary somewhat with the joint affected and the extent of the lesion, but in all cases the ultimate result is that the articulation is freely and painlessly moveable in a much shorter time than if it has been kept carefully at rest.

THE WEST LONDON HOSPITAL.

H.R.H. PRINCESS LOUISE, MARCHIONESS OF LORNE, has intimated that she will attend at the West London Hospital on Wednesday, Dec. 7th, at 3 P.M., for the purpose of opening two of the three wards built in 1896. These two wards will be furnished with 52 beds, all of which have been generously presented, completely equipped, by friends of the institution, the Earl of Ilchester having given ten.

SCHOOL BOARDS AND THEIR MEDICAL OFFICERS.

A MEETING of the medical men of Halifax was held at the Halifax Club on Oct. 15th to consider the duties of the proposed school board medical officer for the borough. There was a large attendance, viz., Dr. Dolan, J.P., Dr. West Symes, Dr. Priestley Leech, Dr. Lockwood, Mr. Ellis, Mr. Kennedy, Dr. Finlayson, Dr. Marshall, Dr. Drury, Dr. Mantle, Mr. Macaulay, Mr. Woodyatt, Mr. Crowther, Mr. Shaw, Dr. Robertson, Dr. Knowles, Dr. Hunt, Mr. Morton, Mr. Branson, Dr. Bromley, Mr. Cookson, Mr. Whitcombe, Mr. Topham, Dr. Hue, and Dr. Dickson. Letters of apology were read from medical men who were unable to attend. The chair was taken by Dr. Dolan, and it was unanimously resolved that a deputation, consisting of Dr. Dolan, Dr. Mantle, and Mr. Ellis, should wait upon the School Board and represent that the profession did not approve of some of the proposed duties and should insist on the recognition by the board of all certificates of exemption and certificates for pupil teachers, whilst at the same time it should be made clear that the profession did not approve of the medical officers visiting school-children or teachers under the care of private practitioners. There was a strong expression of opinion as to the inadequacy of the salary, as pointed out by THE LANCET.[1] The deputation waited on the board on Oct. 17th with satisfactory results, and assurance was given that all certificates from private practitioners would be received as before.

THE OPEN-AIR TREATMENT OF TUBERCULOSIS FOR INFIRMARY PATIENTS.

DR. NATHAN RAW, the medical superintendent of the Mill-road Infirmary, Liverpool, has made a report to the committee of that institution in which briefly but clearly he states the case for the establishment of sanatoria for the treatment of cases of tuberculosis. After pointing out the extent to which tuberculosis prevails in closely peopled and ill-ventilated districts of large towns, and the diminution in the mortality from the disease *pari passu* with improvement in dwellings and other sanitary measures, inclusive of food-supply inspection, he gives a few figures from the records of the infirmary with which he is connected which show a gratifying diminution within the past few years; for whereas in 1893 the total number of patients suffering from tuberculosis admitted to the infirmary was 349, of whom 121 died, in 1897-98 there were but 195 admissions and 88 deaths. Dr. Raw explains the principle of the open-air treatment, which can, he says, be carried out in this country, thus obviating the necessity of sending tuberculous patients to seek sunshine and air in foreign lands. He thus enumerates the requisites of a sanatorium for the purpose of carrying out this treatment: "1. The building should be well arranged with a south aspect. 2. A dry, pure, well-

[1] THE LANCET, Oct. 1st, 1898, p. 886.

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drained subsoil. 3. Pure atmosphere and abundance of sunlight. 4. A large garden or grounds well protected from wind. 5. Sheltered verandahs facing the sun. 6. Proper supervision." All these conditions are, he avers, to be found in the neighbourhood of Liverpool, and he confidently recommends the West Derby Board of Guardians to consider his suggestion to establish such an institution. Since only those in the early stages of the disease would be admissible for the treatment a building large enough to contain 30 or 40 patients, with a staff of 4 nurses and supervised by a visiting physician, would, he thinks, suffice to begin with. We trust that Dr. Raw's scheme will take practical shape and that we may have the pleasure of congratulating the West Derby Board of Guardians on being the first public body to take so wise a step towards the amelioration of the lot of a class of patients who form no small proportion of every Poor-law infirmary.

THE SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

MOST of our readers are acquainted with the duties discharged by the Society for the Prevention of Cruelty to Children. It is probable, however, that they realise only imperfectly the extension of the area over which those duties are exercised and the consequent effort and expense implied in that extension. Not even yet have all districts in this country been brought under the society's supervision, while the needs of our colonies, where nature is not all humane, are only now being discovered. The field already covered by the society is a wide one, but there is a wider one beyond it, and there is therefore a constant necessity for exertion. If we take the record for last August alone we find that it includes 2141 cases of proved cruelty. The great majority of these appear under the heading of "Neglect and starvation," though nearly 400 are instances of direct ill-treatment and assault. In other words, vice and poverty are the most fruitful sources of domestic tyranny. The method of treatment adopted by the society is commendably judicious. Though armed with the power of a punitive law a preference is given wherever possible to less heroic measures. Of the 2141 cases referred to 1675 were dismissed with a warning, but it is noteworthy that out of 258 prosecutions there were 248 convictions. These facts will suffice to prove to any who may still be doubtful as to the quality of the society's work that the judgment and activity which it exhibits are worthy of encouragement. Subscriptions to the funds of the society cannot all be large, but they can at least be regular, as is most important for the maintenance of this deserving work, and they are certain to be well applied.

THE FATE OF SUGARS SUBCUTANEOUSLY INJECTED.

AN article has been recently published in the *Archiv für Klinische Medicin* (Band 58, p. 523) by F. Voit on the Behaviour of Different Kinds of Sugar in Man after Subcutaneous Injection. By introducing them in this way into the economy the disturbing influence of digestion is abolished. Antiseptic precautions were of course taken and solutions of mono-, di-, and poly-saccharides were used and the urine was then examined both qualitatively and quantitatively for the sugar injected or for the presence of any other sugar. In the first instance 11·24, in the next 60, and in the third 100 grammes of grape sugar were injected in solutions containing 10 per cent. of the sugar. It was only in the third experiment that 2·64 grammes of the sugar were excreted by the urine, in the second experiment only traces of it, and in the first none at all. Similar large quantities of fruit sugar and of galactose were disposed of in the body, since after the injection of from 10·13 to 31·25 grammes of the former sugar only traces reappeared in the urine. Lastly, amongst the mono-saccharides the non-fermentable sugar sorbinose was tried with the result that after the subcutaneous injection of 10·15 grammes 3·7 grammes, or 36 per cent., reappeared in the urine. Of the pentoses there were examined arabinose, xylose, and rhamnose. Of the first two of these about one-half was disposed of in the body and of the rhamnose only about 14 per cent.; the remainder was eliminated unchanged. It was found that if these pentoses were ingested by the mouth a larger portion was disposed of and it is possible, Voit thinks, that it may be to some extent destroyed or altered in the stomach. Of the disaccharoses cane-sugar and milk-sugar were wholly and completely excreted as such by the kidneys; and since, when taken into the stomach, they are both used up to a greater or less extent, the conclusion is obvious that only the intestine is competent to effect their decomposition and render them serviceable. On the other hand, the third disaccharid, maltose, was completely disposed of when injected subcutaneously. Trehalose, which is isomeric with maltose, was only retained in the body to the extent of 85 per cent. These results agree well with those of E. Fischer on the action of blood-serum on the different kinds of sugars outside the body. They also show that the aldehyde nature of the different sugars does not form a measure of their destructibility, since milk sugar, in spite of its aldehyde nature, is not destroyed, whilst trehalose, which is not an aldehyde, is, and, further, that the greater or less facility of the breaking-up of a disaccharide does not coincide with corresponding behaviour in the body. Thus, cane sugar, which inverts easily, passes unchanged through the body, whilst the contrary holds for trehalose. Raffinose, which is a trisaccharide, was found in two experiments to be destroyed to about 35 per cent., whilst it is unaffected by blood-serum outside the body. The portion not destroyed reappeared in the urine as raffinose. Of the so-called polysaccharides glycogen was completely destroyed so that it did not reappear in the urine either as glycogen or as sugar. Achroödextrin, erythrodextrin, and amylodextrin (soluble starch) were used up in the body to the extent of about 75 per cent. of the quantity subcutaneously injected. Voit is of opinion that just as in Fischer's experiments outside the body in order to effect thorough fermentation of sugar, its antecedent splitting up into mono-saccharides is necessary, so the animal economy is not able to burn off the higher sugars until they have been broken up into their components.

MUNIFICENT GIFT TO WINSFORD.

CHESHIRE is to be congratulated on possessing a family with the benevolent traits of the Verdins, for it owes to the munificent spirit of this house many of its public buildings. Among the many gifts with which the name of Verdin is associated not one will be more useful or more appreciated than the new infirmary at Winsford, which was opened on Oct. 20th by the Duchess of Westminster. By the permission of the Queen the new infirmary, which was formerly the mansion of the Verdin family, is named after Prince Albert. It is a stone-fronted building standing on a site close to the station of the London and North-Western Railway Company. On the ground floor are reception, nurses', and convalescent rooms, and two men's wards with eight beds, whilst on the first floor are women's and children's wards which contain four beds. The building has been handsomely furnished by the donor, Mr. W. H. Verdin, D.L., J.P. Before presenting to Mr. Verdin the silver shield, which was meant as a recognition by the town of Middlewich of the gift of the infirmary, the Duke of Westminster said that "it would probably be within the recollection of many present

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that he had already had the privilege of assisting in no less than three ceremonials, and his wife had taken part in another, which made four, in not much more than three years, to commemorate very noble work done in a very noble way by one or other of the Verdin family, who had done so much for that district and the adjoining district of Northwich. All their generous works would be a lasting benefit to their neighbours. Not only had they provided for the treatment of the mind of the inhabitants, but also for the cure and relief of suffering, whether from accident or disease." Mr. Verdin having replied, the Duchess of Westminster presented a portrait in oils of Mr. W. H. Verdin to his son, Lieutenant R. N. H. Verdin, Cheshire Yeomanry Cavalry, a gift from the inhabitants of Winsford to commemorate the attainment of Lieutenant Verdin's majority.

ABDOMINAL ADHESIONS AS A CAUSE OF PAIN.

IT was Mr. Mayo Robson, we believe, who first pointed out that many instances of severe abdominal pain spoken of as neuroses were due to adhesions and capable of cure by operation. These adhesions may affect the stomach, vermiform appendix, ovaries, Fallopian tubes, and omentum. One of the sequels of gastric ulcer is perigastritis, which may result in adhesions to the abdominal wall or other organs, forming sometimes a tumour which can be felt externally. In the *Boston Medical and Surgical Journal* of Sept. 29th Dr. J. C. Warren has published a case in which such adhesions were the cause of much suffering which was removed by operation. A man, aged forty-one years, who had suffered for years from dyspepsia and severe paroxysmal attacks of pain in the epigastrium, was admitted to hospital. He was sallow and emaciated. There was a tumour in the right hypochondrium, hard and ill-defined, and seemingly attached to the abdominal walls. An incision 5 in. long was made parallel to the right costal cartilages at a distance of about an inch. On dividing the abdominal parietes the liver was found attached to them by a thick exudation of lymph. The gall-bladder and the pylorus were buried in adhesions. After these had been broken down palpation failed to detect anything abnormal in the stomach or duodenum. The stomach was incised near the pylorus and explored. No ulcer or induration was felt in the stomach, but a cicatricial band narrowed the pylorus, so that only the forefinger could be pushed through; the opening was gradually stretched so as to admit the ring finger also. Complete recovery followed.

HYGIENE AND HEALTH IN HOT COUNTRIES.

DR. FEDERIES MONTALDO, who holds a commission in the medical department of the Spanish navy, has brought out a practical medical and hygienic guide for Europeans in hot climates, and according to a reviewer in the *Archives de Médecine Navale* for September it is a work which is entitled to very high commendation. In the first part the writer gives the intending traveller suitable advice as to his preparations prior to embarkation, entering into details regarding the composition of his baggage. Next, assuming that his European has made good his landing in some country within the tropics, he sketches out an ideal twenty-four hours as a model for his information and guidance, incidentally drawing his attention to his constant foes—to wit, heat, the sun, variations of temperature, moisture of the atmosphere, and what are somewhat vaguely called telluric miasmata. The important subject of diet is then dealt with, what to eat, drink, and avoid, the best time for meals, how to purify drinking water, the judicious use of alcoholic liquors, &c., the section ending with a chapter on the hygiene of clothing, inclusive of headgear, footgear, outside garments, underlinen, and bedding. The personal portion of his theme exhausted, Dr. Montaldo proceeds with a brief disquisition on organic diseases and their treatment, confining himself, it is said, to plainly worded description and practical advice. He approves of quinine for combating malaria and lays down rules for its employment, but he also vaunts the good qualities of calaya in similar cases, his experience on the west coast of Africa enabling him to recommend that drug with confidence. A summary of the symptoms and treatment of bites and stings follows, together with instructions for dealing with the common surgical affections, such as contusions, wounds, burns, fractures, and dislocations, the section concluding with hints as to the management of yellow fever, cholera, beri-beri, and other diseases usually met with inside tropical zones. Finally, the writer advises the European to seek his native clime without delay when he finds himself seriously weakened by anæmia or climatic cachexia, but at the same time he strongly recommends the establishment of sanatoria locally on the model of the institutions of this description which are to be found in English and French colonies. Dr. Montaldo, in the opinion of his friendly reviewer, writes with a facile pen and withal lucidly, avoiding technical terms so far as possible in order to make himself intelligible to non-professional readers. The Madrid Academy of Medicine has warmly commended his book, but it seems a pity it was not published a few years ago before the Cuban troubles began, for during that lamentable contest innumerable lives must have been lost for lack of sanitary knowledge.

SURGERY THEN AND NOW.

THE opening address at the Meath Hospital, Dublin, inaugurating the session of 1898-99, was delivered by Mr. Hepenstal Ormsby, surgeon to the hospital. After premising that it was almost impossible to get anything new about which to talk he said that he had made up his mind to take for his subject "A Century's Progress in Surgery." He reminded his hearers how in everything force had given place to gentleness. Especially was this marked in the treatment of dislocations. Patients were no longer bled wholesale, neither were they poisoned with mercury. But, great as these advances were, the two which shone out above all others were the introduction of anæsthetics and of antiseptics. Orthopædic surgery had made wonderful strides and so had the surgery of the brain. Mr. Ormsby referred to the multiplication of special hospitals and said that there was a danger lest practitioners should rather be led to make a diagnosis by the aid of various special methods of investigation without taking into consideration all the circumstances of the cases, as was the way, the necessary way, with the surgeons of a past generation who had to rely mainly on their unaided senses. He also alluded to the Vaccination Act and the improved status of the medical practitioner in the army. Perhaps in some of the advances to which he referred the pendulum has swung too much the other way, notably, as Mr. Ormsby remarked, in the practically total abolition of bleeding. This is a therapeutic measure which, wisely employed, is of incalculable service, though possibly more in medical cases—e.g., dilated right heart, pneumonia, and pleurisy—than in surgical cases, though in these latter the use of leeches to an acutely inflamed joint gives the greatest relief. But the horrors of hospitals of fifty years ago can be but faintly imagined by the practitioner of to-day, and, on the other hand, if Liston or Cooper could arise to-day and see a modern operation involving the abdominal or thoracic cavity or the removal of a cerebral tumour, what a perfect revelation it would be to them. And the beauty of all these advances is that they are the outcome, not of one or two men's brains, but of the laborious, patient work of hundreds of toilers; in the dissecting room, in the post-mortem room, in the laboratory, the anatomist,

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the pathologist, and the physiologist wrest the secrets from nature. Slowly has the great house of knowledge been built up, rotten stones have been taken out and replaced by fresh and sound ones, portions pulled down and rebuilt, till at length what we do know stands upon enduring ground. At least, so it seems for the present, but there is still plenty for the science builders of to-day and the future to make plainer and to investigate.

THE SHEFFIELD SCHOOL OF MEDICINE.

THE opening of the seventy-first session of the Sheffield School of Medicine, which is a department of the University College, was marked by an address delivered by Dr. Dyson, the Vice-President of the College. Dr. Dyson really combined with his address a report upon the progress of the school. He pointed out that the school had certain most salutary regulations, one of which was that a student was bound to present himself for an examination within six months after that examination became due. This did away with "chronics." A very fair percentage—namely, 12—of their students went for a university degree, a percentage which compared favourably with the larger and richer schools. He might mention that smaller schools had advantages over large in that their students got more individual attention. The equipment of the school had recently been greatly improved owing to the generosity of Sheffield citizens. The chair of physiology was still in need of an endowment. Passing to more purely professional matters Dr. Dyson referred to the new Vaccination Act, saying that although the Royal Colleges of Physicians and Surgeons had unanimously sent in their opinion as to the value of vaccination, yet the new Bill had been passed. As regarded the providing of a standardised lymph and increased facilities for supply it was a good Bill. He had seen two epidemics of small-pox and did not want to see another, but if one did come and the fatuous conscience clause was taken advantage of by many, after that—the deluge. After mentioning the action of the General Medical Council as to unqualified assistants and congratulating the profession upon the establishment of the Royal Army Medical Corps Dr. Dyson passed on to consider the movement in connexion with the prevention of tuberculosis. They might, he thought, try the open-air treatment, not, indeed, in Sheffield itself, but on the moors, which were quite close to the city. After the conclusion of the address the various prizes and certificates were presented. Dr. Dyson's address is particularly interesting as showing how much better off in one way the provincial medical schools are than those in London—namely, in the benefactions which they receive from citizens.

THE PATHOLOGY OF DENTAL CYSTS.

SOME valuable light is thrown on the pathology of dental cysts in an interesting communication to the October issue of the *Journal of the British Dental Association*. The author, Mr. J. G. Turner, draws his conclusions from an exhaustive microscopical examination of 17 cases which have been under his care. In all with the exception of one he was able to discover a distinct epithelial lining, and from the specimens obtained he was able to demonstrate the succession of changes which occur in the development of these cysts. The nucleus of origin for these cysts is to be found in the epithelial remnants so frequently met with in the alveolar dental ligament. These masses were first demonstrated by Malassiez under the name of para-dental epithelial remnants, and have their origin, according to that observer, in a prolongation of the enamel-forming organ of the tooth which precedes and determines the formation and shape of the dentine of the root and is known as the epithelial sheath of Hertwig. On the formation of the dentine the surrounding mesoblastic cells invade and partly destroy this sheath, applying themselves to the surface of the dentine and forming the cementum and alveolar dental ligament, the undestroyed portions of the sheath remaining as the para-dental epithelial remnants. Through the continuous absorption of small quantities of septic matter an active growth is induced in these remnants, so that either a solid epithelial mass or an epithelial reticulum enclosing islands containing cells of mesoblastic origin is formed. That the septic matter is the product of putrefactive changes in the pulp of a tooth or teeth is pretty clearly demonstrated by the fact that in 27 cysts all were connected with teeth containing septic pulps. These reticula or masses, although present in chronically thickened alveolar ligament, are more constant in the small growths attached to septic roots known as root tumours and frequently form the chief element. These epithelial root tumours are of common occurrence and when of any size determine for themselves a connective tissue capsule. By a continued growth at the periphery of these epithelial masses or reticula and a degeneration in the centre a small cyst is in time formed containing a pultaceous mass like inspissated pus. At some period the contents liquefy, and with the continued growth of the epithelium a clinically recognisable cyst is formed. These stages are all very clearly shown in the paper by means of admirable photo-micrographs. The paper also contains details of three cases of gingival cysts. Such growths possibly have their origin in those clusters of epithelium constantly met with in the muco-periosteum of the gums under the term "glands of Serres," and judging from the cases recorded the irritant which lights up activity in these masses is to be found in the septic matter absorbed from a sinus in connexion with a pulpless tooth. These cysts—namely, dental and gingival—are interesting, too, as examples of tumour production, the cause and effect being so clearly demonstrable. In the para-dental epithelial remnants and the glands of Serres we have the "rests," in the absorbed septic matter the probable chronic irritant, and in the epithelial cyst, dental or gingival, the result.

THE WATER-SUPPLY OF LEICESTER.

IT has been suggested in regard to the proposal to derive a new source of water-supply for Leicester from the upper reaches of the Derwent in Derbyshire that there would be a possibility of introducing water which would induce the disease known as goitre. As is well known, "Derbyshire neck" is constantly prevalent in certain parts of Derbyshire, and appears to be traceable to the drinking of water which is rich in salts of lime and magnesia. The actual predisposing cause of this disease is surrounded with considerable obscurity. Instances have been placed on record in which, on the contrary, soft water would appear to have produced the disease. In the Himalayas in India, for example, goitre occurs where snow water is drunk. On the other hand, the balance of evidence certainly favours the view that goitre prevails most where the water-supply is derived from limestone rocks. This is, at any rate, the character of the water supplied in many parts of Derbyshire, where the disease has been so pronounced as to have given it the name of "Derbyshire neck." The municipal authorities have therefore very properly caused an inquiry to be made on this point into the character and quality of the water which it is proposed to draw from the upper waters of the Derwent. It is important that such an inquiry should be very carefully conducted before the new supply becomes available. Dr. J. H. Davies has been instrumental in drawing attention to the subject and last week the views of Sir Edward Frankland were placed before the water committee. In his report Sir Edward Frankland points out that the districts in Derbyshire which suffer from this

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disease are situated upon the coal measures, which impart to the water flowing over them or percolating through them an extreme degree of hardness caused by the solution of salts of lime and magnesia. On the other hand, the contemplated supply from the upper reaches of the Derwent, besides possessing an extremely high degree of organic purity, is remarkably soft, being almost absolutely free from salts of lime and magnesia. This water is supplied to Manchester, Macclesfield, and Buxton, and is free from reproach. It is said that goitre is at present not unknown in Leicester and Sir Edward Frankland concludes that so far from the disease being increased by the introduction of the pure and soft water of the Derwent the hope may be entertained that by the use of a water having only one-seventh of the hardness of the present supply the disease in the town may be entirely extinguished.

ISOLATION HOSPITALS.

AN important and animated discussion recently occurred at a meeting of the Lincoln Board of Guardians. Lincoln seems to be very much behind the times, inasmuch as there is no isolation hospital there for infectious cases. But cases have recently appeared in the town which demonstrate the need for such an institution. A man employed at a brick-yard at 21*s.* a week had six children, five of whom had been attacked about a week before the discussion took place with scarlet fever. They were attended by a private medical man at their home, but subsequently the relieving officer gave an order for them to be treated by the same medical man, he to act as if he was the district medical officer. The mother of the children was about to be confined, and it was represented to the clerk to the board of guardians that it would be exceedingly dangerous for her to be confined in a house where children were suffering from scarlet fever, and after a consultation between the clerk and the urban sanitary authorities the mother was removed to the fever ward of the workhouse to be confined. A long discussion then took place on the question—Whose duty was it to provide isolation for the children? The board of guardians rightly repudiated any legal responsibility, but a few of the members thought it would be an act of charity to remove the children to the workhouse; a proposal, however, to this effect was lost by a large majority. The urban sanitary authorities alleged that though they had the power to build an isolation hospital it was not their duty. We agree with the remarks of the clerk to the guardians that the onus of dealing with it does rest upon the sanitary authority of the district. The importance of an isolation hospital cannot be exaggerated. In many houses, such as the one in this case, proper isolation cannot be carried out; the inhabitants are not paupers and yet have not sufficient means to adopt the necessary precautions against the disease spreading to other houses. In the case just related it had already attacked patients in the adjoining house. If an extensive epidemic occurs in that district the urban sanitary authority will be distinctly to blame, and immediate steps should be taken to establish an isolation hospital to which similar cases might be removed.

DEATH UNDER CHLOROFORM.

WE have received, through the courtesy of Mr. Lewis Buck, resident medical officer to the Bolton Union Workhouse, very careful notes of a fatality under chloroform which occurred recently at that institution. The patient, a weaver, aged sixty-six years, suffered from epithelioma affecting the larynx. He showed some signs of senile change and had pulmonary emphysema, dilated hypertrophied heart, and diseased arteries. There was no physical evidence of fatty heart, but there was a marked history of excessive indulgence in alcohol. There was considerable narrowing of the larynx leading to dyspnœa, for which the operation was imperative. The patient was given the A.C.E. mixture, but as the ether which it contained appeared to irritate the air-passages chloroform was substituted, being given by dropping it upon a single layer of a towel placed over the patient's mouth and nose. He took the anæsthetic badly and a quarter of an hour after the commencement of the administration of the anæsthetic he died. There was apparently no failure of the heart, as evidence of circulation existed after respiration had quite ceased. Air could by artificial respiration be made to enter the lungs freely. There was no shock, as no operation was commenced. The reflexes were not abolished when dangerous symptoms appeared. The administrator was a careful and experienced man, who believed that no "overdose" in the usual acceptation of the phrase occurred. The death was sudden and very little chloroform had been given. The death appears to have been due to respiratory failure brought about by what, under ordinary circumstances, would have proved a non-poisonous dose. In cases of chronic dyspnœa, especially in alcoholic subjects, there is usually a gradual carbonisation of the blood which renders such patients peculiarly bad subjects for anæsthetics. We are not told whether cyanosis was a prominent symptom in the present case; as a rule it exists and renders the task of the anæsthetist a doubly difficult one, as he has to steer safely between the Scylla of overdosage—a very variable and often a very narrow margin existing between safety and danger—and the Charybdis of insufficient narcosis marked by obstreperous and perilous excitement. In suitable cases there is no doubt that Schleich's infiltration method offers a satisfactory alternative to general anæsthesia. In connexion with the statement that circulation appeared to persist after respiratory failure it is important to note that McKendrick and other physiologists have maintained that although the heart may appear to be beating it is in these cases not beating effectively, and circulation is not, in fact, taking place, although cardiac movements may be easily felt and seen.

THE Council of the Childhood Society, which was established for the scientific study of the mental and physical conditions of children, announces a course of lectures to be given in the library of the Sanitary Institute, 72, Margaret-street, W., on Oct. 27th and following Thursdays up to Dec. 8th inclusive, at 8 P.M. Dr. Symes Thompson will lecture on Nov. 24th, his subject being Mute Children, their Education and Health Care, and on Dec. 8th Dr. Henry Rayner will lecture upon the Early Recognition and Treatment of Mental Condition. Children, perhaps, are too often misunderstood, so that this society does a good work in trying to obviate the tendencies to such misunderstandings.

THE second trial of John Lloyd Whitmarsh upon the charge of the wilful murder of Alice Bayly, who died, according to the prosecution, as a result of an attempt to produce criminal abortion, was concluded on Wednesday night when the jury returned a verdict of guilty, qualified with "the strongest possible" recommendation to mercy. Mr. Justice Bigham pronounced sentence of death, informing the prisoner at the same time that the recommendation of the jury would be forwarded to the proper quarter and that he would support it with everything that he could say properly.

DR. SIDNEY COUPLAND has been appointed a Commissioner of Lunacy in the room of Dr. Reginald Southey, resigned. We congratulate Dr. Coupland on his appointment very heartily. He has been our colleague in the editorial duties

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of THE LANCET for many years, and we are aware that the confidence thus shown in his judgment and capacity for work is thoroughly justified, while his all-round attainments as a practical and scientific physician, no less than his labours in behalf of the recent Royal Commission on Vaccination, selected him clearly for official recognition.

A MONUMENT in honour of Dr. Hans Wilhelm Meyer, whose name is known so well in connexion with adenoid growths of the pharynx, was unveiled on Wednesday last at Copenhagen. We hope to give next week an account of the proceedings. Sir Felix Semon made over the memorial to the municipality of Copenhagen on behalf of the international committee which organised the movement.

THE annual distribution of prizes at the St. George's Hospital Medical School will take place in the board room of the hospital to-day (Saturday) at 2.30 P.M. The distribution will be made by His Grace the Duke of Westminster, K.G., joint treasurer with Mr. Holmes.

MR. R. H. P. CRAWFURD, M.D. Oxon., M.R.C.P. Lond., has been appointed assistant physician to King's College Hospital.

REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR THE YEAR 1896.[1]

CONCLUDING NOTICE.[2]

IN continuation of our remarks regarding hepatic abscess we may add that, according to a table in the report under review, the mortality from abscess of the liver in 1896 was 17 times greater among European than among native soldiers, and it is stated to have been 70 times greater in the previous year. The admission ratio from dysentery, on the other hand, among European soldiers was rather less than that of native soldiers, 1 : 1·5.

So much attention has of late been given to the subject of venereal diseases among British troops serving in India that this matter need not now detain us. It may suffice to say that the secondary syphilis ratio of 1896 is about the highest on record.

Turning to the vital statistics of officers serving in India we find that the death-rate in 1896 for those of the British army was 14·18 and for the Indian army 10·76 per 1000 respectively. The number of deaths from enteric fever among both British and Indian officers was the same as in 1895. The number of fatal cases from this disease is usually greater among the British than among the Indian officers, apparently because the latter have to serve first with British regiments, and it is known that youthful and recently arrived men are more liable to be attacked than others.

Turning now to the next section of the report—that on the native army of India—we find, as might be expected, that ague was the chief cause of admission—36 per cent. of the total admissions. The chief causes of death among soldiers of the native army were pneumonia and remittent fever, the former causing 31 per cent. and the latter 10 per cent. of the total deaths. The mortality-rate in the native army in 1896, including absent deaths, was altogether 12·57 per 1000, as against 15·71 in the preceding year. The smaller sickness and mortality in 1896 is attributed by the Sanitary Commissioner to the dry and non-malarious character of the year; there were, however, more influenza and cholera in 1896. It may be briefly said that while the young soldiers of the British army die from enteric fever the chief causes of death in the native army are respiratory diseases. In 1896 over 36 per cent. of all the deaths were due to these diseases.

Scurvy seems to be unduly prevalent among the native troops, and the existing amount of that disease is alleged to be greater than that actually returned and it is believed to underlie a vast amount of sickness which does not directly bear its name. Hepatic abscess, as has been already said, is not a frequent disease of the native soldier, and this probably points to the injurious influence of a too liberal use of alcohol and animal food on the part of the European in a hot climate like that of India. Touching venereal disease it may be mentioned that there were only 37 admissions for every 1000 men among native troops, as against 512 for every 1000 men among European troops. Several reasons have been urged in explamation of this striking difference, into which it is needless, however, to enter on the present occasion.

Section IV. of the Sanitary Commissioner's report deals with the Jails of India. The year 1896 having been comparatively settled, rainless, and bright, sickness—especially sickness attributable to malaria—was, we are told, less than usual, but there was more or less food scarcity and influenza and cholera were somewhat more prevalent. The ratios of admissions into hospital and of constantly sick indicate that the year was a comparatively healthy one. The presence of famine in India (as in the Central Provinces especially) sends numbers of unfortunate natives into jails. The enfeebled state of their health makes them, of course, less resistant to disease. Overcrowding, too, existed in some of the jails. The chief causes of death were dysentery, pneumonia, tubercle of the lungs, and diarrhœa. Dysentery gave rise to 21 per cent. of the total deaths, pneumonia to 16 per cent., and pulmonary tubercle, to 11 per cent.

In respect of cholera in the jail population 1896 compares on the whole favourably with preceding years. July and August were the worst months for cholera. The high rate of mortality from bowel complaints in the native jail population as compared with that in the European and native armies is a notable feature. As regards respiratory diseases, again, taking the mortality of European troops as 1, that of the native troops is 4·8 and that of the prisoners is 6·9. This seems to indicate that while a previous medical history of malaria renders the individual very vulnerable to causes of acute pulmonary disease, and insufficient clothing is also a factor, the overcrowding and defective ventilation of buildings occupied by persons living in community have likewise a very important bearing in the production of pneumonia and affections of the respiratory organs.

Section V. deals with the Vital Statistics of the General Population and Section VI. with the History of the Chief Diseases. The subject of cholera and the modern bacteriological researches in relation to it, together with the late experiments in cholera prophylaxis and the distribution of the disease in India, are pretty freely discussed, and this portion of the report, we may add, will well repay perusal and consideration. The appearance of bubonic plague in Bombay in the latter part of 1896, the fevers of India and Assam, *Kala azar*, and other matters of medical and epidemiological interest are also dealt with. In conclusion, we may say that we consider the Report for 1896 of the Sanitary Commissioner with the Government of India an admirably compiled as well as an interesting official production.

[1] Annual Report of the Sanitary Commissioner with the Government of India, 1896, with Appendices and Returns of Sickness and Mortality among European Troops and Prisoners in India for the Year. Calcutta: Office of the Superintendent of Government Printing, India. 1898. Price, 5 rupees.

[2] The First and Second Notices appeared in THE LANCET of Sept. 24th and Oct. 8th, 1898, respectively.

HOSPITAL ABUSE AT COVENTRY.

THE question of hospital abuse at Coventry has now reached a new stage. The article by our Special Commissioner published in THE LANCET of April 17th, 1897, set out very clearly the condition of things and showed that the essential point in the whole matter was the influence and control of the working men upon the funds and management of the hospital. The workmen subscribe 1*d.* per week and the sums raised in this manner have increased from £132 in 1874 to £1300 in 1896, while voluntary subscriptions and donations are declining. This 1*d.* per week subscription though nominally voluntary is practically a compulsory tax. The result, to put it shortly, is that every workman expects that he has a right to treatment at the hospital for as long as he likes in return for his 1*d.* per week. Early in this year a sub-committee was appointed by the general committee to

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inquire into the matter. This sub-committee brought up a report in May which was referred back, and finally the amended report came up on Oct. 12th. The report as printed in the *Coventry Herald* was as follows:—

The sub-committee ascertained from the representatives of the working men's committee that the answers to the questions which were previously submitted to them were given somewhat under a misapprehension and amended answers to Questions 1 and 3 have now been given. The questions with the original and amended answers are as follows:—

Question.—1. If a man who subscribes to the Hospital Saturday Fund and earning, say, £3 or £4 per week, applied for a ticket from his works, would he be granted one?

Answer.—No answer could be given.

Amended answer.—No.

Question.—3. The sub-committee suggest making inquiries as to the position of candidates (say for one month) who it is considered can well afford to pay a medical man, and ask if the members of the Hospital Saturday Committee are willing to assist them in obtaining the necessary information.

Answer.—They could not entertain the suggestion.

Amended Answer.—The matter will now be taken in hand and inquiries made as suggested in the question.

Following up the undertaking given by them, the working men's committee have held an inquiry and investigated all the out-patient cases treated at the hospital between May 21st and June 30th, and have submitted a report thereon to your sub-committee.

During the period investigated by the working man's committee the number of out-patients treated was as follows:—By ticket, 70; without ticket, 126. Special departments: by ticket, 37; without ticket, 27. From the report it would appear that 30 cases were kept back for strict inquiry which upon investigation it was thought would probably be found to be instances of hospital abuse. The cases were reported upon by various members of the committee, and only 2 cases were discovered which, in the opinion of the working men's committee, were such as should not have been treated at the hospital. The sub-committee do not consider the report of the working men's committee as regards the abuse to be conclusive, as it must be admitted that in many cases the patients were in receipt of wages sufficient to enable them to pay to a dispensary, a medical service, or a club. This view has been expressed and upheld by the honorary medical staff, who from their position are well able to judge as to the suitability of the cases which come before them for hospital treatment.

With reference to the cases treated without a ticket, the sub-committee believe that a very large proportion of those patients could have obtained a ticket if they had thought proper to have taken the trouble to do so, and having regard to this fact the sub-committee recommend: "That on and after 1st November next every patient be required to present a ticket before receiving treatment, excepting in the case of simple teeth extractions for children under twelve, accidents, and such acute medical cases as require immediate help, and as to the latter cases after first aid they should be required to obtain the necessary tickets for subsequent treatment."

The sub-committee have revised the existing ticket and recommend that the ticket as revised should be brought into use concurrently with the previous recommendation. The sub-committee believe that the strict enforcement of the ticket system will be productive of great good to the hospital by causing its benefits to be more strictly confined to deserving cases. It is hoped that the subscribers, the managers of workshops and of the philanthropic institutions, and all who have tickets at their disposal will do all in their power to carry out the instructions and regulations on the tickets.

The chairman moved the adoption of the report, which motion was eventually carried. It will be seen from the report that a revised ticket is to be issued, and those who give away the tickets are to be requested to see that they only select fit objects for charitable relief. The medical staff as a whole appear to incline to the belief that the ticket system is a wrong one. This is certainly our own opinion, for in general for one subscriber who looks after the proper distribution of his or her tickets there are fifty who do not. Even if this system were to be altogether done away with there remains the question of the right of workmen to hospital relief, however high their wages, on account of the 1*d.* per week subscription. So there appears to exist this dilemma. If the 1*d.* per week is to be, as it should be, looked upon as a mere subscription and not as entitling the giver of necessity to relief, the Saturday collections will diminish very greatly. If it is to be looked upon as entitling the givers to treatment as in a provident dispensary, then the medical staff of the hospital will have to be paid and in that case the appointment of hospital surgeon or physician should be open to every medical man in the town simply on account of his being a practising medical man in Coventry.

THE ENTRIES AT THE MEDICAL SCHOOLS.

THE following table, the figures of which have been supplied to us by the courtesy of the deans of the various schools and medical faculties, will give some idea of the number of students who have decided to enter the medical profession this year. The first column of the table is that to which particular attention should be directed as it shows the number of students who have entered for the full course of medical study. The other columns are of interest, and especially that relating to dental students, but the gross totals both for the present and past medical sessions only tend to show the relative popularity of the various schools. It should be pointed out that last year's totals at King's College and the London School of Medicine for Women show the total number of full students only. With regard to St. George's Medical School the figures do not include students who have entered for a course of tropical medicine. Under the agreement whereby joint cards of admission are issued to the clinical instruction of the following hospitals and schools of medicine—viz., Charing-cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College, and Westminster—42 qualified men have entered since the 1st of May of this year—that is to say, 15 from the United Kingdom, 12 from the colonies, and 15 from foreign countries. These figures, which belong to the "special courses" column of the table, cannot, of course, be placed against the name of any one school. They should, however, be taken note of in making comparisons.

ENTRIES FOR THE YEAR 1898-99.

Name of Medical School.	Full students.	Special courses.	Prel. sci.	Dental.	Total.	Total 1897-98.
London.						
St. Bartholomew's	100	75	13	1	189	188
Charing-cross	24	30	6	24	84	41
St. George's	50	4	0	0	54	53
Guy's	81	21	19	53	174	180
King's	28	218	12	0	258	15
London	60	47	11	0	118	115
St. Mary's	65	47	5	0	117	130
Middlesex	20	29	0	14	63	46
St. Thomas's	62	7	8	0	77	82
University	34	45	51	0	130	107
Westminster	12	31	3	1	47	19
Royal Free (School for Women)	45	2	0	0	47	37
Provincial.						
Birmingham (Mason College)	23	12	11	15	61	—
Bristol (University College)	13	0	5	1	19	—
Cambridge University	127	0	0	0	127	—
Durham University	30	31	0	6	67	—
Leeds (Yorkshire College)	24	9	19	0	52	—
Liverpool (University College)	52	13	26	18	109	—
Manchester (Owens College)	66	62	71	18	217	211
Sheffield (University College)	9	0	4	0	13	—

University College of South Wales and Monmouthshire, Cardiff, sent in their figures too late to be included in the above table. Those figures are as follows: Full students, 15; special course students, 4; prelim. sci. students, 13—total 32.

NEW INFECTIOUS DISEASES SANATORIUM AT HUDDERSFIELD.

TWENTY years ago the Huddersfield Corporation began to exercise the powers they had obtained for the establishment of an infectious diseases hospital. On Jan. 1st, 1878, 15 cases were under treatment and 163 patients passed through the hospital during that year. During 1897 the number of patients under treatment reached 700. The progressive demands upon the resources of an inadequate and out-of-date building have led to the erection of a "sanatorium," which was formally opened by Sir William Broadbent, himself a native of Huddersfield, on Oct. 22nd.

The sanatorium has been built from the plans of Messrs. Edward Thomas and Sons, Queen Anne's-gate, S.W., in competition with 144 other architects. An examination of the hospital is alone necessary to confirm the encomiums of Sir William Broadbent when he said at the opening ceremony that everything connected with it met with his entire approval. The plan may be concisely described as a long

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open corridor, at one end of which is the handsome administrative block of three storeys, in the Renaissance style, at the other the buildings for the laundry, the disinfecting apparatus, and mortuary. In the intervening space, on each side of the central corridor, stand the ward pavilions. The pavilions stand on pillars, are one storey high, and a branch from the main corridor enters the middle of each transversely. The ward kitchen immediately confronts the visitor with a ward of fourteen beds on each side. The pavilions run N.N.E. by S.S.W. A small rectangular block stands out from the western aspect of the end of each and contains the bathrooms and lavatories, whilst from the centre of the eastern side a ward of two beds communicating with the large ward has been projected. The cubic space to each bed in these small wards is 2155 cubic feet; in the large wards 2095 cubic feet. The pavilions are bright and cheerful, there is a window between each bed, whilst the direction of the pavilions ensures a maximum of sunshine. The floors are fireproof covered with polished teak laid diagonally; all corners and angles have been rounded; the walls are in Keene's cement painted and varnished; the windows are on the N.A.P. principle and can be cleaned from the outside; and all the pipes, electric wires, and flushing cisterns are in the false roof where they are accessible from the outside. The heating is partly by radiators and hot-water pipes and partly by open fireplaces. A ventilating stove with an ugly black flue in the centre of the ward would spoil the appearance of the ward less if its funereal colour were changed to a bright, cheerful tint. With the exception of a small fan in one of the walls of each large ward there is no attempt to change the air of the ward by mechanical means. Under each bed is an inlet for fresh air, and in the wall above the beds are the apertures leading to circular outlet shafts discharging on the eaves, whilst Boyle's ventilators are placed on the ridge and communicate with the highest point of the ceilings. The beds are Gale's iron bedsteads, fitted with Lawson Tait mattresses, upon which a mattress of white horsehair is placed. The kitchens and lavatories are fitted with every modern requisite, and an ingenious shelved cupboard, closed with an air-tight sheet-iron door but projecting into the open-air, to which its sides are open by lowered ventilators, deserves mention. It is intended for the storage of chamber utensils the contents of which it is desirable to keep for subsequent examination. The floors of the kitchen and lavatories are in Terrazo pavement, the walls in glazed bricks, so that all may be washed down with the hose-pipe. The complete scheme comprises five pavilions. Three only have been erected. These, with the isolation block of ten beds, in course of erection, provide 100 beds.

The quarters for the medical officer, matron, nurses, and servants are excellent. Bright pictures and excellent furnishings adorn the sitting-rooms and the bedroom appointments are marked by taste and comfort. The kitchens and stores are in a separate block immediately behind the administrative block, whilst between the kitchen and ward pavilions intervenes the receiving block, consisting of a verandah-protected room, opening at once into a bathroom and thence into the central corridor. On the other side of the corridor is the discharge block, similar in its arrangements to the receiving block. The site is about 12 acres in extent, and together with the 71 ft. between each pavilion is being laid out as a recreation ground for convalescent patients. Exclusive of the land the sanatorium has cost £24,667, and the total of the contracts is about £30,000. It is a modern hospital of the best type and will prove a valuable help to the corporation in checking epidemics and safeguarding the health of the town. By adding a laboratory for serum diagnosis and the bacteriological examination of diphtheritic or suspected diphtheritic membrane and the appointment of a resident medical officer capable of making use of such a laboratory the corporation would give completeness to a scheme in which nothing that could add to the welfare of the sick seems to have been overlooked.

Sir WILLIAM BROADBENT, in reply to a graceful little speech by the Mayor on presenting a gold key of the building, after tending his thanks for the honour done to him that day, referred to the fact that Huddersfield was the very first town to adopt the compulsory Notification Act. He mentioned that because notification was a subject which he had deeply at heart and for advocating which he had at one time incurred great unpopularity. He then declared the building open. In the afternoon Sir William Broadbent delivered his address in the lecture hall at the Technical College upon "The Prevention of Consumption and other Forms of Tuberculosis." This address will be found in full in another column. The audience comprised both medical men and laymen and the address was listened to with marked attention. In the evening there was a banquet at which Sir William Broadbent, in returning thanks for the toast of "The Medical Profession," remarked upon the enormous progress made in medical matters from comparative darkness into light.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6217 births and 4043 deaths were registered during the week ending Oct. 22nd. The annual rate of mortality in these towns, which had declined in the six preceding weeks from 24·6 to 19·0 per 1000, further fell last week to 18·8. In London the rate was 17·3 per 1000, while it averaged 19·8 in the thirty-two provincial towns. The lowest death-rates in these towns were 11·4 in Cardiff, 11·7 in Huddersfield, 12·5 in Blackburn, and 12·8 in Bristol; the highest rates were 24·4 in Liverpool, 25·7 in Sunderland, 26·4 in Newcastle-upon-Tyne, and 30·2 in Salford. The 4043 deaths in these towns included 538 which were referred to the principal zymotic diseases, against 774 and 618 in the two preceding weeks; of these, 250 resulted from diarrhœa, 100 from "fever" (principally enteric), 72 from diphtheria, 48 from measles, 36 from whooping-cough, and 32 from scarlet fever. The lowest death-rates from these diseases were recorded in Croydon, Cardiff, Wolverhampton, and Bradford; and the highest rates in Norwich, Salford, Hull, and Sunderland. The greatest mortality from measles occurred in Plymouth, Norwich, and Gateshead; from "fever" in Nottingham, Salford, Halifax, Leeds, Hull, and Sunderland; and from diarrhœa in West Ham, Burnley, Salford, Hull, and Sunderland. The mortality from scarlet fever and from whooping-cough showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 30 in London, 6 in Swansea, 6 in Sheffield, 5 in Portsmouth, 5 in Liverpool, 4 in Leicester, and 3 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Oct. 22nd, was 2915, against 2459, 2606, and 2728 at the end of the three preceding weeks; 381 new cases were admitted during the week, against 300, 358, and 357 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 226 and 263 in the two preceding weeks, were again 263 last week, and were 35 below the corrected average. The causes of 43, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Leeds, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Leicester, Liverpool, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the three preceding weeks from 19·1 to 20·7 per 1000, declined again to 19·0 during the week ending Oct. 22nd, but slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·0 in Leith and 13·7 in Aberdeen to 22·1 in Perth and 23·8 in Greenock. The 572 deaths in these towns included 38 which were referred to diarrhœa, 19 to whooping-cough, 9 to "fever," 8 to measles, 6 to scarlet fever, and 6 to diphtheria. In all, 86 deaths resulted from these principal zymotic diseases, against 123 and 105 in the two preceding weeks. These 86 deaths were equal to an annual rate of 2·9 per 1000, which was 0·4 above the mean rate last week from the same diseases in the thirty-three large English towns. The 38 fatal cases of diarrhœa showed a further decline from those recorded in recent weeks, and included 18 in Glasgow and 9 in Dundee. The 19 deaths from whooping-cough corresponded with the number in each of the two

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preceding weeks, and included 11 in Glasgow and 3 in Edinburgh. The deaths referred to different forms of "fever," which had been 14 and 12 in the two preceding weeks, further declined to 9 last week, of which 5 occurred in Glasgow and 4 in Greenock. Of the 8 fatal cases of measles 5 were recorded in Edinburgh and 3 in Glasgow. The deaths from diphtheria, which had been 7 and 8 in the two preceding weeks, declined again to 6 last week, and included 2 in Glasgow, 2 in Edinburgh, and 2 in Dundee. Of the 6 fatal cases of scarlet-fever, 3 occurred in Glasgow and 3 in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 105 and 141 in the two preceding weeks, declined to 120 last week, and were 24 below the number in the corresponding period of last year. The causes of 32, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·1 and 24·9 per 1000 in the two preceding weeks, further rose to 26·0 during the week ending Oct. 22nd. During the past four weeks the rate of mortality in the city has averaged 24·7 per 1000, the rate during the same period being 18·6 in London and 19·1 in Edinburgh. The 174 deaths registered in Dublin during the week under notice showed an increase of 7 upon the number in the preceding week, and included 20 which were referred to the principal zymotic diseases, against 19 and 18 in the two preceding weeks; of these, 8 resulted from diarrhœa, 7 from whooping-cough, 4 from "fever," 1 from scarlet fever, and not one either from small-pox, measles, or diphtheria. These 20 deaths were equal to an annual rate of 3·0 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·0 in Edinburgh. The deaths from diarrhœa, which had declined from 27 to 11 in the three preceding weeks, further fell to 8 last week. The 7 fatal cases of whooping-cough exceeded the number recorded in any week since May, 1897. The deaths referred to "fever," which had been 2 and 3 in the two preceding weeks, further rose to 4 last week. The 174 deaths in Dublin last week included 42 of infants under one year of age, and 34 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from those recorded in the preceding week. Four inquest cases and 5 deaths from violence were registered; and 54, or nearly a third, of the deaths occurred in public institutions. The causes of 12, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: R. H. J. Browne to the *Edgar* and afterwards to the *Alacrity*; C. R. Sheward to the *Edgar* and afterwards to the *Redpole*; F. Nimmo to the *Edgar* and afterwards to the *Pigmy*; W. Jackson to the *Plover*; and M. L. B Rodd, F. J. A. Dalton, and F. D. Lumley to the *Edgar*.

ROYAL ARMY MEDICAL CORPS.

Major Thompson proceeds to Woolwich for duty. Lieutenant-Colonel Kirkpatrick and Captain Jones are transferred to the Aden District, and Captain Sladdon from Bombay to the Nagpore District. Major Lane is posted to the Bombay District.

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel McConaghey, Civil Surgeon, Lucknow, is appointed to the Visiting Medical Charge of Rae Bareli, in addition to his other duties, during the absence on deputation to the Jail Department of Dr. Simpson.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Augustus Kinsey-Morgan, 1st Dorsetshire Volunteer Artillery, to be Surgeon-Major.

The following notification is substituted for that which appeared in the *London Gazette* of Oct. 11th, 1898:—Surgeon-Lieutenant E. W. St. V. Ryan to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Surgeon-Captain C. T. D. Urquhart, from the Aberdeen Company, to be Surgeon-Captain.

MEDICAL ARRANGEMENTS AT ARMY MANŒUVRES.

In *Truth* of Oct. 20th it is stated that the medical and hospital arrangements during the recent army manœuvres were inadequate. According to the regulations for mobilisation there should have been present 71 officers and 816 non-commissioned officers and men of the Royal Army Medical Corps, whereas the actual numbers available were 30 and 282 respectively, while apparently the horses required for the ambulances belonged to the Army Service Corps and had to do double duty. Mr. Labouchere is of opinion that it is not necessary to make the same preparations for dealing with the sick and wounded at manœuvres as it would be in a campaign, and yet he immediately afterwards enunciates the thoroughly sound dictum that "if these manœuvres are to serve the purpose for which they are intended it is as necessary that the conditions of actual warfare should be applied to the medical and ambulance arrangements as to any other department." In a succeeding paragraph the subject of "typhoid fever, euphemistically described as enteric," is dealt with, some rather curious statements being advanced. With the advice regarding the after-treatment of convalescent typhoid fever patients, however, it is impossible to disagree. Beyond question "extreme care" is needed "for a long time after the [apparent] disappearance of the disease, both in regard to the diet of the patient and keeping him from violent exertion," and doubtless the note of warning sounded by *Truth* will reach the ears of many a convalescent soldier whose friends are not "likely to possess any medical knowledge."

THE LATE SIR W. A. MACKINNON, K.C.B.

A handsome tablet has been erected to the memory of the late Director-General of the Army Medical Department, Sir W. A Mackinnon, in the chapel of the Royal Victoria Hospital, Netley, with which place he was for some time connected as Assistant Professor of Military Surgery. The tablet, which was erected by numerous friends of the late Director-General, bears the following inscription: "Sacred to the Memory of Surgeon-Major-General Sir William Alexander Mackinnon, K.C.B., Q.H.S., A.M.S., born at Strath, Isle of Skye, June 27, 1830, died in London October 28, 1897. He served in the Crimea with the 42nd Royal Highlanders, and through the Indian Mutiny on the personal staff of Lord Clyde; he also took part in the New Zealand and Ashanti (1873–74) campaigns, and closed as Director-General of the Army Medical Staff an honourable and active career, which extended over forty-three years. This tablet is erected by his brother officers and several old comrades and friends."

THE WAR OFFICE.

While Mr. Brodrick is to be congratulated on his promotion to the Foreign Office as Under-Secretary of State for Foreign Affairs we may add that the War Office will regret the loss of his services, for he has proved an able, energetic, and business-like official, and has not spared himself in mastering the details of army administration. In conjunction with Lord Lansdowne he has helped to carry out some important changes in the organisation of the army and, among other things, in the reorganisation of its medical service as well as in matters affecting army sanitation generally. Sir George Whyte, V.C., has taken up the post of Quartermaster-General, having, we are glad to say, quite recovered from the effects of the injury he sustained whilst serving as Commander-in-Chief of Her Majesty's Forces in India.

THE HEALTH STATISTICS OF THE ITALIAN ARMY.

The *Army and Navy Gazette* of Oct. 22nd, deriving its information from published official returns, states that the health statistics of the Italian Army for 1896 show that 151,438 were treated in hospitals and infirmaries out of a total strength of 204,382 men. There were 1184 deaths in all, of which infective diseases caused 536 (225 typhoid fever). The mortality was greatest in the first year of service and between the ages of twenty-one and twenty-three years.

THE SICK AND WOUNDED FROM THE SOUDAN AT NETLEY.

Her Majesty the Queen will, we understand, visit Netley Hospital on her return from Scotland to see the sick and wounded from the Khartoum expedition.

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Correspondence.

"Audi alteram partem."

DIFFICULTIES UNDER THE INFECTIOUS DISEASES (NOTIFICATION) ACT.

To the Editors of THE LANCET.

SIRS,—A week or so after my first attendance on a case of scarlet fever the mother told me that she had noticed a rash on a child who had been sleeping with my patient and that the rash had been followed by peeling, which was now nearly at an end. I examined the cuticle carefully and had no doubt that this had been a mild case of scarlet fever now at the end of the desquamative stage. I thought it my duty to notify it, but struck out the word "urgent" which is printed on the envelopes addressed to the medical officer of health and inserted the words "desquamative stage," thinking that this would indicate—as there was already a case under treatment—that there would be no need for fresh sanitary measures. To my surprise I received a note from the medical officer of health next day in which the following passages occur: "The inspector visited the house at once to make usual inquiries." "The father was astounded to hear that the child had scarlet fever." "The inspector thereupon examined the hands and feet without finding any trace of peeling." "In the circumstances I have thought it desirable to mention the above facts and to ask you whether there may not perchance be an error of diagnosis." In a subsequent letter he says: "I think you should withdraw the notification. I do not see how I could possibly advise the committee to pass the certificate for the payment of the fee." I have since had a letter from the vestry referring to my "neglect to notify the case forthwith" (I may have allowed twenty-four hours to elapse between seeing the case and forwarding the notification), further stating that they "will decline in the present instance to pay the usual fee for your certificate." I should like to know if it is usual for sanitary inspectors to examine cases and correct the diagnosis of medical men. Also, if the vestry are within their rights in refusing to pay for a notification.

I am, Sirs, yours faithfully,

Kensington, Oct. 26th, 1898. ALFRED E. BARRETT.

*** We recommend our correspondent to read our pamphlet entitled "Difficulties under the Infectious Diseases (Notification) Act."—ED. L.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—From Dr. Beale's letters it would seem he does not believe in the correlation, equivalence and transmutation of forces, and that one force may be a mode of another, as heat (and perhaps life) is a mode of motion. He seems to exclude the vital from all other forces and to regard it as *sui generis*, neither transmuted nor transmutable. Vitality, he says, "cannot be derived from non-living matter *or* from force," but may it not be derived from such matter *plus* force, as locomotive power is from coals and water *plus* heat? Professor Lindley, in his "Introduction to Botany," Ed. 1839, p. 358, says he had some raspberry plants before him as he wrote which had been raised from seeds taken from the skeleton of a man 30 ft. below the surface of the earth, who had been buried with some coins of the Emperor Hadrian. The seeds therefore were 1600 or 1700 years old. All this time they had lain without motion or change of any kind and so might have remained for ever if they had not been exposed to heat, light, air, and water. Before such exposure they might be regarded as so much *quasi* dead matter, waiting for forces to produce in it chemical activity, change, movement, germination—in a word *life*, which the matter *per se* and the forces *per se* could never have generated. As Dr. Beale denies that life can be derived from non-living matter and forces and as there was a time when our earth consisted of these only, how does he explain the first appearance of life upon it? A and B being the only things in existence, if C appears surely it must be derived from A or B or A + B?

I am, Sirs, yours faithfully,

D. HOOPER, B.A. Cantab., M.B. Lond.

Trinity-square, S.E., Oct. 24th, 1898.

To the Editors of THE LANCET.

SIRS,—My thanks are due to those members of the profession who have taken part in the consideration of that which I have long regarded not only as the most important of all the questions connected with every department of medicine and surgery but a question which has to do with the first principles of natural science and philosophy.

Seeing that the bioplasts, the several particles of living matter upon which the formation, action, and preservation of all the active tissues and organs of a living being depend, are less than the one-thousandth of an inch in length and diameter, and in many cases considerably less than this, the question of the nature of vital change—of vitality—must be considered from the microscopical point of view. I doubt whether anyone who studies the facts and observations to which I have referred will very widely differ from me as regards the conclusions he arrives it.

It is to be regretted that so far no one has criticised the views I have advanced from the microscopical side, which are based upon observations possible only during the last thirty or forty years. Even recently some naturalists, physiologists, psychologists, and pathologists, as well as chemists and physicists, have not only under-estimated the constantly increasing value of microscopical investigation in our endeavour to determine the nature of vital phenomena, but have calmly ignored the important bearing of facts ascertained by microscopical inquiry upon the problem of life. Consequently free discussion, in the absence of which the advancement of every department of natural knowledge must be retarded, has scarcely been commenced.

During the last few months, however, some encouragement has been afforded to students in microscopic investigation in England by the honours conferred upon Kölliker and Virchow, whose lives have been devoted to microscopical anatomy and pathology, while Lister stands pre-eminent in the recognition by the State of his labours in an all-important department of minute investigation.

Dr. T. Glover Lyon's suggestions take us far beyond the visible minute bioplasts consisting of living matter to be found in all those parts of a living organism where vital action proceeds. Is not the state of the "tissue" of a living animal as contrasted with the "tissue" of a dead one dependent upon the never-ceasing interstitial currents of fluid through every part of it—a circulation which is set up and maintained as long as the bioplasm lives, but ceases the instant it dies? "Ethereal forces" and "ethereal waves" also go far beyond anything I can hope to study. Tissue and bioplasm I have seen and have demonstrated to others.

Dr. Harry Campbell will force upon me notions with which I am not concerned. When he has defined what he means by "evolution" it will be soon enough to discuss with him the question of the "evolution of vitality." Surely he may "take his individual *homo* and trace in imagination his evolution from, let us say, his piscian ancestry" to his heart's content, and "travel down his long ancestral lines," and even become "more and more involved," without trying to involve me and my efforts to learn a little more about living matter and the formation and action of tissue in interminable, impossible travel. From the thoughtful interest he has shown, however, I do not despair of his becoming a convert to vitality, and I feel sure if he will only consider the changes which take place, say, in the limbs of a child, as by the process of growth the distance between the peripheral extremities and the brain gradually increases, he will no longer regard growth as it occurs in all things living as a change in any way akin to a physical process such as aggregation—man as a machine constructed or built by the Sun, or man's life to be physical and chemical, and I hope he will regard all vital evolution as absolutely different from all physical evolution, as is life of every kind and of every period from any physical change at present known. But whatever may be our differences all workers and thinkers will acknowledge with Dr. Harry Campbell the absolute truth and eternal application to all our achievements of

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Hamlet's profound philosophy with which his letter concludes.

Mr. O'Regan seems to think, with some other authorities, that life is a property of matter and argues that "as matter never had a beginning life as a property of matter never had a beginning"; but does not very much matter exist without the property in question? Still though I may not add anything "to our knowledge," I trust I may escape the terrible fate of being taken "round and round the circle for ever," and I hope Mr. O'Regan will treat my vitality with a little more kindness and consideration than he extends to the assumption that matter has "a real existence."

I am, Sirs, yours faithfully,

Oct. 25th, 1898. LIONEL S. BEALE.

"WHAT IS 'FIRST AID'?"

To the Editors of THE LANCET.

SIRS,—I quite agree with Mr. Valentine Matthews that it is time that a more definite course was laid down for lecturers and examiners in "first aid." The late Surgeon-Major Shepherd's Handbook has been improved of late, but it is still very unsuitable for a text-book. What good purpose can possibly be served by teaching a class the number of bones in the spine, chest, wrist, and hand, or the total number in the body? The description of the cavities of the heart and its valves is another among the many unnecessary complications. Yet the lecturer dare not omit these details lest a short-sighted examiner fail to pass his class. I once had two large classes of working men "ploughed" almost to a man on the subject of poisons. I confess my teaching had gone little beyond the proper use of an emetic, but for the type of student I am certain it was quite enough.

What is wanted is a book prepared with the greatest care, not one put together in a hurry, as was, confessedly, the present one. In it all that is essential should be printed in large type, with perhaps a few further facts for more ambitious students in a smaller type. The matter should be arranged in logical order. A more complete book could be easily arranged in less than half the space. Examiners should be instructed to examine only on the text-book, or at all events to ground their report on a knowledge of it. A page might be devoted to a list of facts which *must* be learnt and then both lecturer and examiner would be on firm ground.

There are many other details which might be improved in the present course. Thirty is far too many for one man to instruct practically. Paper work should be abolished for all. Such knowledge is often practically useless, and the present distinction between literates and illiterates is illogical. The practical part of a lecture should be the longer. The present direction that half an hour of each lecture should be devoted to practical work is absurd, for with a class of thirty it would mean five minutes' practical work to each student during the course. I try to arrange that each pupil does all the operations at least twice, but of course that means cutting down the "unpractical" part of each lecture to little over half an hour.

I have not much faith in representative committees, and question whether Mr. Matthews's scheme for such would produce a more satisfactory course. I would rather see one able man appointed who should write a new text-book and submit it to all the lecturers and examiners. Those who felt themselves qualified to criticise might apply for, and pay for, a copy, and thus expense to that excellent association the ambulance department of the Order of St. John of Jerusalem might be avoided.

I am, Sirs, yours faithfully,

Ottery St. Mary, Oct. 24th, 1898. CLAYTON JONES.

"THE WATER TEST AS APPLIED TO SEWER CONNEXIONS."

To the Editors of THE LANCET.

SIRS,—I think this is a matter which should be publicly noticed as in the course of my experience I have found that the so-called water test as applied by some local authorities to sewer connexions is a farce and I have no doubt many engineers, architects, and builders have had the same experience. As an instance a few weeks ago a client of mine bought a house in one of the suburbs which he decided to have redrained. A deposit of £5 was paid to the local authorities for putting in a new 4-in. connexion from the sewer to the fence. The house-drains were put in under my supervision, laid on concrete beds, and the joints were properly made with cement and allowed to set for four days before the first water test was applied. The joints successfully resisted a pressure of 5 lb. to the square inch. The pipes were then surrounded with concrete and when it had properly set the trenches were filled and watered in and no ramming was allowed until 2½ ft. of soil covered the pipes. The whole of this work was examined by the local sanitary inspector, who was as particular as I was myself about the soundness of joints, &c. The connexion from the sewer to the fence was put in in a very different manner. The joints were made with cement and tested by the local authorities as soon as they were made, before even the cement was dry, and I noticed a workman ramming the clay into the trench a few inches only above the pipes which had no concrete either below or around them. The drain was filled with water which was run off immediately and this was the water test. Further comment is needless. This is a fair sample of what is constantly going on.

Without going into the legal question as to whether local authorities have any right to make a charge for sewer connexions at all, which I very much doubt, I contend that as my client paid £5 for this connexion he should be allowed the privilege of having it examined by his representative, to see that he got value for his money, which in my opinion he certainly did not. If the house-drains had been laid and tested (?) in this way, they would have been promptly condemned by the local authorities. Why, then, should not the local authorities be compelled to do their portion of the work as thoroughly as they make the house-owner do his? for at present they carry out this work in a most unsatisfactory way. If the water test is to be applied to those connexions at all, why should it not be applied properly, as in the case of the house drains? There is no doubt that the ramming process has shaken off the wet cement from the joints of the pipes. To fill a drain with water when the joints have just been made and to let the water run off immediately is *not* applying the water test. A paper bag will hold water until the paper becomes saturated, and so will a drain until the joints become saturated; but then, if the water is allowed to remain in and the cement joints are not set the pressure of water in the drain will force the cement out of the joints. It should be remembered that a great many sewer connexions are a very few feet below the road surface, and if a stoppage occurs the sewage escapes through the leaking joints and saturates the surrounding ground with results known to every sanitarian.

I think this is a subject that should prove interesting to medical officers of health as there must be many miles of this defective drainage both in London and the suburbs. If it is argued that the trenches in the public roadway cannot remain open long enough to give the pipe-joints sufficient time to set, then why should not heavy iron pipes with caulked lead joints be used for those connexions?

I am, Sirs, yours faithfully,

Wimbledon, Oct. 21st, 1898. JOHN W. MAYNE.

"PRACTICAL HINTS ON CYCLING FOR COUNTRY PRACTITIONERS."

To the Editors of THE LANCET.

SIRS,—Your cycling readers will thank Dr. Emmerson for his paper on "Practical Hints on Cycling for Country Practitioners," in THE LANCET of Oct. 22nd. The hints are valuable, not only for medical practitioners, but for all cyclists, whether ladies or gentlemen. The bicycle has made a revolution in travel and is giving health and strength to those who use it in moderation. I see that the machine is much in requisition among the young people of the theatrical profession, who wisely take advantage of it to get as much country air as possible during their provincial tours. It is wonderful the long distances ordinary riders can cover without much fatigue. A young girl of my acquaintance, ten years of age, rode to a watering-place upwards of forty miles from her home and afterwards spent the greater part of the day on the sands playing with her little friends.

But a greater feat than this was performed recently by the Rev. Henry Watney, rector of Canwick, Lincoln, who rode from Lincoln to a place six miles beyond Newbury in Hants, a distance of 165 miles, in one day, and on the following day he did not feel the least fatigued. Mr. Watney strongly

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advises that food should be taken every 50 miles, if it were only milk or bread-and-milk. Many people would feel rather tired at the end of a railway journey of 165 miles. I am afraid bicycling is putting constitutional walking out of fashion—in fact, numbers of good bicyclists are bad walkers and tire very quickly.

I am, Sirs, yours faithfully,
WILLIAM O'NEILL, M.D. Aberd., M.R.C.P. Lond.
Lincoln, Oct. 24th, 1898.

MEDICAL FEES FOR LIFE INSURANCE EXAMINATIONS.

To the Editors of THE LANCET.

SIRS,—You are no doubt aware that it is the general practice of life insurance offices to pay a fee of one guinea for the medical examination of proposers for insurance, but that when the sum assured is small only half that fee is allowed, the reason being that the smallness of the premium will not admit of the payment of the full fee. It may interest you to learn that, as the result of the discussions in the section for life insurance at the recent meeting here of the British Medical Association, the directors of this office have decided to double the fee when the sum assured is £2000 and upwards, thus allowing two guineas for the medical examination in these cases.

I am, Sirs, your faithfully,
DAVID PAULIN,
Manager, the Scottish Life Assurance Company,
Edinburgh, Oct. 26th, 1898. Limited.

A CORRECTION.

To the Editors of THE LANCET.

SIRS,—The statement on page 1090 of the issue of THE LANCET for Oct. 22nd that I am a candidate for the appointment of extra-physician to the Sick Children's Hospital is incorrect.—I am, Sirs, yours faithfully,
Edinburgh, Oct. 26th, 1898. J. S. FOWLER.

POOR-LAW MEDICAL APPOINTMENTS.

To the Editors of THE LANCET.

SIRS,—I shall feel very much obliged if through the medium of THE LANCET you would answer the following questions: 1. Is it compulsory that all Poor-law medical appointments should be advertised by a board of guardians? 2. Is it legal to appoint a medical officer to a Poor-law district who resides out of the district when other eligible men reside in the district and are applicants for the same?

I am, Sirs, yours faithfully,
Oct. 19th, 1898. MEDICUS.

*** The guardians are not bound to advertise their vacancies in point of law, but when they proceed to appoint without having previously advertised the vacancy they render themselves very liable to public criticism, and if the question was raised by the Local Government Board they would have to justify their action and show that the person whom they appointed was very highly qualified for the post in every respect. As regards the second question, a district medical officer is not necessarily obliged to reside within his district though it is very desirable he should do so. In point of law the guardians are not obliged to appoint a gentleman residing within his district to the medical officership of that district, but, other things being equal, it is eminently desirable that he should do so; and if candidates residing within the district and otherwise qualified came forward the guardians would again have to satisfy the Local Government Board as to the grounds for their action to the contrary. If our correspondent thinks it worth while he might very well submit these points to the Local Government Board, with whom the confirming of such appointments rests absolutely. As a rule, however, these appointments are so poorly paid and service under the guardians is so irksome that medical men rarely find it worth while to go out of their way to secure such appointments.—ED. L.

SANITATION AND DIPHTHERIA AT TUNBRIDGE WELLS.

(FROM OUR SPECIAL COMMISSIONER.)

FOR some time there has been an exceptional prevalence of diphtheria at Tunbridge Wells. The Local Government Board complained that this matter had not received sufficient attention and finally held a local inquiry on the subject. The report giving the results of this inquiry has not yet been published. The deaths from diphtheria during the last ten years, from 1888 to 1897, were for each successive year as follows: 9, 3, 5, 4, 5, 9, 5, 9, 14, 10. In 1896 there were 67 cases of diphtheria notified, resulting in the 14 deaths mentioned above, and in 1897 no less than 117 cases of diphtheria were notified, though there were only 10 fatal cases. The fact that so many cases produced so few deaths may be in part due to the extensive use of antitoxin. The medical officer of health is always ready to supply antitoxin gratuitously for use among the poor. Considering that the population of Tunbridge Wells barely exceeds 30,000 the above figures show, not merely a high proportion, but a steady increase in the number of cases of diphtheria, which has continued during the present year, and these were the facts which led the Local Government Board to institute a special inquiry. In other respects, however, the death-rate of Tunbridge Wells is not high. The zymotic death-rate only amounted to 0·97 per 1000 in 1896, while that of the country generally was equal to 2·18 per 1000, and in 1897 it was equal to 0·95 per 1000, as opposed to 2·55 per 1000 for London and 2·15 per 1000 for England and Wales during the same period. The mean general death-rate for the ten years from 1888 to 1897 amounts to 13·7 per 1000, and amounted to 12·22 per 1000 in 1897. But if from this we deduct the deaths occurring among visitors who had resided in the borough for a period of less than three months the death-rate for last year is reduced to 11·1 per 1000. At the same time it must be borne in mind that the birth-rate is exceptionally low—namely, 20·32 per 1000 in 1897, as against 29·7 per 1000 for England and Wales. Not only are there few births, but the infant mortality is low. In 1896 the deaths of infants under one year of age was equal to 117·6 per 1000 born, while for England and Wales the proportion was 148 per 1000 born. In 1897 the figures for Tunbridge Wells amounted to only 87·8 per 1000 born, as against 156 per 1000 born in England and Wales. If judged only by these statistics it would seem that Tunbridge Wells is an exceptionally healthy place. The question, however, arises whether this low death-rate is the result of good sanitation and administration of the town or the consequence of the special character and circumstances of the inhabitants.

The medical officer of health in his annual reports has several times pointed out that at Tunbridge Wells there is an exceptionally low birth-rate, an extra complement of aged lives, an excess of invalid visitors, a very small proportion of operative workers, and a great excess of opulent people. As a matter of fact, Tunbridge Wells can hardly be considered as a town in the usual acceptation of the word. There are very few streets where the houses touch each other. It is rather a vast accumulation of villas and mansions standing in their own grounds and separated from each other by trees, gardens, and flowers. A great number of the inhabitants are thus leading country rather than town lives and they are able to supplement the abundant supply of pure air with all the ease and comforts which the possession of ample means enables them to secure. Under these circumstances the death-rate ought to be exceptionally low, and the question arises whether with a more efficient sanitary administration the death-rate might not be lower than that on record. In any case, many of the inhabitants who ought to know are far from satisfied with the present state of affairs. Nor is this dissatisfaction a mere platonic expression of opinion. It has given rise, on the contrary, to an active agitation and has brought forward fresh candidates for municipal honours, who base their principal claim for support on their determination to press forward energetic measures of sanitary reform. Strange as it may seem, considering the luxurious appearance of most of the dwellings and the large gardens with which they are surrounded, the chief complaint is that of overcrowding. The

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grievance arises partly from the fact that there is no competition in the sale or leasing of land for building purposes. It nearly all belongs to three or four large land-owners who do not want to be bothered with poor tenants. They are willing enough to see villas and mansions arise on their land, but they have a strong objection to workmen's cottages. Such dwellings, they think, would depreciate the value of the surroundings, and therefore they refuse to let their land on building leases unless high-class houses are to be erected. Thus, though the working-class population is not numerous, there is a much keener demand for workmen's cottages than for middle-class villas. But anyone seeking to supply this demand would find it almost impossible to obtain the necessary land. Yet, on the other hand, if a big villa or residence is erected the tenants bring with them a coachman and they require the services of gardeners and others who do not live in the villa. Where, however, are these attendants to live? They must rent one of the few workmen's cottages that do exist, and as this necessity is most imperative they are compelled to bid against each other. Thus the rents for workmen's cottages have risen in a fabulous manner; and now it often happens that a third of a workman's earnings is absorbed merely in the payment of rent. Under these circumstances the tenants of workmen's cottages are obliged to take in lodgers so as to help them to pay the rent, and this occasions the overcrowding.

That this grievance is serious is proved by the petition which was drawn up on the subject some time ago. It was entitled "An Urgent Necessity" and was worded as follows:—

> We, the undersigned, consider that for some years the number of houses for the working classes resident in Tunbridge Wells has been and still is grievously deficient. We know from our own experience that much overcrowding has resulted, and are convinced that evils, both physical and moral, have been prevalent in consequence. We urge that efforts should at once be made to discover the best means of removing this serious danger to the physical welfare of our town and its general reputation as a health resort.

This petition was signed by thirty out of the thirty-two local medical practitioners. The two medical men who did not sign were in no way opposed to the petition, but could not testify that they had personal knowledge of the overcrowding. On the other hand, all the Poor-law guardians, all the clergy, all the ministers of Dissenting chapels, all the trade union officials and the chief house-agents without exception signed the petition. Finally, the petition was confirmed and adopted at a public meeting convoked by the mayor of the borough and held on Feb. 25th, 1897. A somewhat elaborate house-to-house inquiry was instituted in the poorer quarters. It was then shown that cottages containing only four rooms and a small lumber room were rented at 7*s.* and sometimes even 8*s.* per week. There certainly is one little lane where some weather-board cottages are rented at 4*s.* a week, but these were such wretched structures that they had to be rebuilt. To avoid, however, the submitting of plans to the town council each wall was pulled down separately and the work done was described as repairs and not as rebuilding. Where for 7*s.* 6*d.* or more a cottage with six rooms can be obtained, it will be found that, though built for one single family, it is inhabited by two or three families. Of course, there is not the necessary accommodation. The family that occupies the kitchen may be able to cook a decent meal, the other families cannot do so.

As the demand for these cottages is so keen the landlords can afford to neglect necessary repairs. If the tenants are not satisfied they can easily be replaced by others who will not be so difficult to please; therefore it is not surprising to hear that many of the cottages are in a very insanitary condition. Thus in some cases it has been found that the house drain, instead of communicating direct with the sewer, first passed under a whole row of cottages. Then these drains were so badly built that they burst and saturated the subsoil. On pressing on the thin boarding of the cottage floor the gurgling of the sewage underneath could be heard. When a case of diphtheria occurred in such a cottage the flooring was taken up and the drain was relaid. But sometimes there were other cases of diphtheria after these repairs had been effected and some people concluded from this that sanitation was of no use as a preventative for this form of disease. They forgot, however, that though the drain had been repaired the subsoil remained in a polluted condition.

It seems quite evident that sanitary matters have, at least in the past, been much neglected. The building of houses over old brick drains has been allowed and it would still be difficult to say how some parts of the town are drained. The medical officer of health, Mr. William Stamford, and the sanitary inspector, Mr. James Cave, have not failed to point out some of these defects in their official annual reports. Thus, dealing with the 14 deaths from diphtheria which occurred in 1896, Mr. Stamford says that this disease "was prevalent in the boundaries of the borough, at Rusthall and Newton, and children attending an infant school which was in a bad state of sanitation became infected. The school was at once closed, as soon as it was found to have been a source of infection." Concerning house sanitation the medical officer of health advises the town council to avail themselves of the Act of Parliament bearing upon this matter and to erect about 200 cottages for "the exclusive occupation of the respectable and provident poor." This recommendation is all well and good in its way, but there are two objections—first, that the town council did not seem at all inclined to thus run in competition against private interests; and secondly, that from the sanitary point of view it is precisely those poor who are neither provident nor respectable that require the most attention and legislative interference. Both the sanitary inspector and the medical officer of health protest against the keeping of poultry, rabbits, and sometimes even pigs, in small back yards; but it is because the people are poor that they seek to eke out their slender earnings by rearing such animals. Now one of the most evident causes of this poverty is the exorbitant rents charged. If the municipality would provide cottages at a low rent then they would have the right to stipulate that poultry, &c., should not be kept on the premises.

Concerning the 117 notified cases of diphtheria which took place in 1897 the medical officer of health states that an outbreak occurred at Rusthall and Lower Green on the boundary "which was traceable to the water-supply, derived from a spring at Lower Green, not forming part of the town supply. This spring was found to be contaminated, the dip-hole receiving a back flow from a contaminated pond. The water was examined by Dr. Stevenson and on receipt of his report water was supplied gratuitously from a standpipe and steps were taken to enforce a supply to each house from the borough mains. Notice was also posted that the water from the spring was unfit for domestic use." On the other hand, this town supply does not seem to be all that can be desired. Land has recently been purchased to establish filter-beds, and it is to be hoped that these will be placed in working order at the earliest possible date. So also has Part III. of the Housing of the Working Classes Act (1890) been recently adopted by the town council and some steps have been taken for the acquisition of land. The question is, however, whether the new town council, to be elected at the commencement of November this year, will show more energy and a genuine desire to carry out an effective scheme for the housing of the working classes. It will likewise be necessary to act with much more rigour against the owners of bad property. In his report for the year 1897 the sanitary inspector says: "Many drains which have been found defective have been repaired and reconstructed and many hundreds of defects in sanitary fittings have been attended to. Many houses, however, still remain in a condition which renders improvement necessary." Evidently what is wanted is a house-to-house inspection and the careful testing of every drain. But even when this is done it is very possible that a new drainage scheme will have to be devised, at least for some portions of the town. In his report for the year 1896 the medical officer of health says that "during the year a large number of surface sewer ventilators have been removed or closed and nearly all the open gullies have been trapped, ventilation for the sewers being provided by a ventilation shaft whenever required." But in the following year we find that still more complaints were made as to the effluvia coming from street sewer ventilators and gullies. Evidently the ventilation shafts were not placed wherever required or were not effective, for now the medical officer of health recommends that the whole subject of sewer ventilation should be submitted to, and studied by, sanitary engineers. The real fact is that in all probability the sewers in many instances are not properly laid and are not self-cleansing, and hence the constant complaints as to the escape of unpleasant effluvia. Till these defects are remedied the bad odours had better escape on a level with the streets than inside the houses or be conveyed by shafts to the neighbourhood of the bedroom

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windows. A bad smell has often been described as a sanitary sentinel, and if the sewers are not properly built the inhabitants of Tunbridge Wells had better be made aware of the fact by the constant escape of bad odours in the streets.

Whether all these sanitary defects are the only cause of the increase of diphtheria it is difficult to say. Doubtless they have aggravated the evil. But there can be no denying that school attendance, though not the original cause of diphtheria, contributes largely towards its spread. Children lick their slates, put their pencils in their mouths, bite from the same apple, and instead of taking a glass put the water-tap in their mouths. Thus by means of their saliva and directly from mouth to mouth the disease can be communicated from one child to the other. It is difficult to see how this can be altogether prevented. Even adults, when duly warned, are often most careless and we cannot expect greater forethought from little children. Nevertheless, more severe regulations could be established than are at present enforced and the school teachers should watch, and reprove, or advise, the children more frequently in regard to such matters. Again, it must be confessed that the climate of Tunbridge Wells is perhaps not so favourable as is generally supposed. It has been urged that diphtheria is more prevalent in the presence of damp and there is a considerable amount of clay soil. The rocks which stand out on the common seem to indicate that the town is built on sandstone. But this is not the case. In some places there is clay to a depth of 14 ft. From the Pantiles down to the new athletic grounds the soil is practically all clay, and where there is sandstone there are indentations which retain water and this in evaporating occasions fog and dampness. As a proof of this it may be noticed that the trees outside the town are covered with lichen. The soil, in fact, alternates between sand and clay. The water does not escape easily in the subsoil; therefore it ultimately evaporates and hence there is probably more damp than is generally supposed. In the absence of careful hygrometric observation it would, of course, not be safe to dogmatise on this point, but it seems likely that there is more damp than is desirable.

On the other hand, visitors to Tunbridge Wells will be glad to hear that a system for the giving of sanitary certificates to lodging- and boarding-house keepers has now been instituted. Some time ago Mr. George Abbott, a retired medical practitioner residing in Tunbridge Wells, started an agitation in favour of such certificates. At first the town council were not inclined to take the matter in hand, and then Mr. Abbott said he would endeavour to form a private association to inspect houses and certify to the condition of their drains, &c. Finally, however, the town council yielded and themselves organised a service of this description. The sanitary certificates issued during the first year have brought in to the borough an income of £30 paid as fees for inspection and certificates. This measure will add greatly to the attractions of the town and will help to dispel whatever alarm may be caused by the cases of diphtheria which have been recorded and by the insanitary condition of certain quarters and houses.

WE have received the following communication from a resident, which is in many ways so confirmatory of our Special Commissioner's report that we think it interesting to print them next each other.

To the Editors of THE LANCET.

SIRS,—Tunbridge Wells has been visited within the past eighteen months with some pronounced outbreaks of diphtheria, confined mainly to the eastern and northern divisions of the borough, though several cases have occurred from time to time in the south and south-west, as well as at Rusthall, a neighbouring village about 1½ mile distant in a westerly direction. As is well known, the town is famed for its excellent and somewhat chalybeate water, its bracing air, and its beauty of inland scenery, while the district abounds in beds of secondary iron ore. The main water-supply of the town is derived from reservoirs, 7¾ acres in extent, situated at the village of Pembury, about 3½ miles distant, supplemented by water from bore-holes. There is a constant supply; it is, however, generally admitted that it is desirable that filtration should be carried out owing to the presence of a variable amount of harmless vegetable débris. The soil of Tunbridge Wells may, speaking broadly, be divided into two main divisions—that in which the sandstone rock predominates and that in which there is an admixture of sandstone and clay, by far the most interesting geological feature being the peculiar character of the rocks which underlie the district. The population is about 30,000, the birth-rate is 20·32 per 1000, while the corrected death-rate is 11·1 per 1000—a rate which will compare very favourably with other health resorts. The corporation have adopted several of the most salutary Acts of Parliament relating to public health questions—in particular the notification of infectious diseases; the general sanitary regulations relating to dairies, cowsheds, and trades; the housing of the working classes and public baths; and they have secured a generally efficient system of street main drainage, street lighting, watering, and sweeping. During 1897 three infectious diseases were particularly prevalent within the limits of the borough—namely, scarlet fever, 129 notified cases; diphtheria, 117 notified cases; and whooping-cough, which caused 12 deaths. The cases of scarlet fever were, on the whole, of a mild type. The cases of diphtheria centred in the main among the poorer labouring classes living overcrowded in more or less insanitary houses, affecting mostly the children attending three of the Church schools. A localised outbreak also occurred at Rusthall and Lower Green, within two miles of the borough but in part outside its boundary. This outbreak was clearly traced to the water-supply, which was derived from a spring at Lower Green and did not form a part of the borough general main supply. There was undoubted evidence of contamination of this spring, the dip-hole receiving a back flow from a contaminated pond. The prevalence of diphtheria in the borough is, by a general consensus of expert opinion, due to the day schools and, moreover, it is noteworthy that the first cases during the earlier half of this year occurred almost entirely among those children attending one or other of two parish schools in particular. The local urban sanitary authority was not at the time able to stamp out the disease completely; consequently a series of cases has been kept going by means of personal infection among the children, among the most frequent and effectual means being the cup at the street drinking-fountains, the proved fact that children suffering from the disease in question or those convalescent, though possibly still infectious, had given sweetmeats which they themselves had partially dissolved in their own mouths to other children, the constant carelessness of their parents as to the common use of feeding utensils, cups, spoons, and of all articles used to wipe discharges from the mouth and nostrils, including vessels used to receive sputa, &c. The mortality among the 117 notified cases in 1897 was 10. It is comparatively a difficult and intricate matter to prosecute a very searching inquiry into the absolute *fons et origo* of these outbreaks in the town. The water- and milk-supply generally being to all appearances above suspicion, we are naturally led to an examination of the system (or its absence) of the house-drainage among the dwellings of the poorer classes, the disease never having gained much ground among the well-to-do and usually better-housed residents. One general conclusion which may reasonably be drawn is that the drainage in many of the houses of the poor is undoubtedly defective and that in some instances there is also overcrowding, coupled with the keeping of fowls and other domestic animals in confined spaces such as unclean backyards and outhouses. The chief points to which sanitary efforts should be directed appear to be the reconstruction of a large number of house-drains, the proper fitting of both inside and outside water-closets with flushing tanks, the erection of ventilation shafts, the total abolition of all cesspools, the fitting of satisfactory manholes, soil-pipes, and approved traps, and the supply of water from the town mains to every house. As there have been frequent indications of mild cases of tonsillitis, pharyngeal catarrh, and "sore-throat" occurring in the neighbourhood of infected houses it would appear essentially important for local practitioners to "look out" for any such "doubtful cases," treating them upon prophylactic lines as if they were actual cases of diphtheria, as well as to aim at prompt and complete isolation of all first cases, the corporation having provided an isolation hospital. It would also be advisable if all cases of illness in which children have been sent home from school were visited at once, the teachers endeavouring to render every assistance to the medical officer of health of the borough as well as to the other local members of the profession.

I am, Sirs, yours faithfully,

RESIDENT.

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THE BATTLE OF THE CLUBS.[1]

(FROM OUR SPECIAL COMMISSIONER.)

TUNBRIDGE WELLS.

Position of the Profession at Tunbridge Wells.—A Good Opportunity for constituting a Model Public Medical Service.—Abuse of the Friendly Societies.—Resignation of Consultants and Club Medical Officers.

MEDICAL MEN engaged in practice at Tunbridge Wells should enjoy an exceptionally fortunate position. There are comparatively few poor people in the town, but there are many invalids, and these nearly all belong to the wealthier classes. There are no large manufactories at Tunbridge Wells. The working classes of the town are for the most part connected with the building trades or work for retail shops, for some timber sawing-mills, or as gardeners, coachmen, stablemen, &c. Among the poorer sections of the community lodging-house-keepers probably form one of the most numerous classes. There is some poverty undoubtedly, but this cannot in any way be compared with the intense and widespread misery which prevails in the large manufacturing and commercial centres. Tunbridge Wells consists in the main of handsome villas and mansions and of the larger-sized type of house in which private furnished apartments are let to the numerous visitors who annually spend some weeks in this favoured locality. Under these circumstances it might have been thought that the medical practitioners of this town would not have suffered much from those economic conditions which compel medical men in other neighbourhoods to form unions for the sake of defending their material interests. As a matter of fact, however, this is not the case. The battle of the clubs has been fought at Tunbridge Wells as elsewhere, and there are also complaints of hospital abuse in that town. Certainly on investigating closely these grievances it became evident that they were not so acute or so widespread as in other and larger towns which I have visited; still, they do exist, and are sufficiently serious to justify complaints and to point to the need of organised action.

The two most important medical institutions in the town are the Provident Dispensary and the Friendly Societies' Medical Association. The former was started to relieve the pressure upon the hospital. Patients provided with a subscriber's letter of recommendation were able, according to the old rules, not only to go to the hospital, but they could request the house surgeon to visit them in their own homes. This outdoor work became too frequent and too irksome; also it was thought that the facility with which medical aid was obtained from the hospital would tend to pauperise a number of people. It was therefore decided to start a provident dispensary, to be supported by the subscriptions of the members and by voluntary donations. Thus it assumed at once the aspect of a charity and of a provident club. During the first year of its existence—namely, in 1877-78—the income consisted of donations £40, annual charitable subscriptions £83, and subscriptions to life governors' fund £137. Altogether £260 were charitably contributed. The payments made by members amounted to £410 and there were remaining on the books at the end of the year 1260 members. The contributions made by the members have greatly increased while the charitable donations and subscriptions have decreased. Thus in 1897 there were 2496 members who paid £619, while the charitable donations and subscriptions only amounted to a total of £118. The terms of payment for adults above the age of fourteen years is fixed at 1½*d.* per week and for children under fourteen years of age 1*d.* per week, but no more than three children in any one family need be paid for. Thus the maximum payment for one family is 6*d.* per week. Taking last year's figures, it would appear, however, that families with more than 3 children are the exception, for only 96 children are entered as entitled to gratuitous treatment, though the total number of members under fourteen years of age amounts to 822. The rule is that all the family must join unless any member already belongs to some other club which provides medical aid.

[1] A reprint of the previous articles on the above subject has been published in book form entitled, "The Battle of the Clubs," and can be obtained from THE LANCET Office, price 1*s.*

The question is whether the Provident Dispensary, being organised on this basis, has given rise to abuse. According to Rule 11, "any person whose average gains or wages do not exceed 35*s.* weekly may (subject to approval) be members on paying regularly and in advance their subscriptions." The wording of the rule, it will be seen, is extremely vague, for it does not state whether the wage limit applies to the joint earnings of the whole family or only to the individual member. In the latter case the limit would be far too high. Nor is there any systematic method of seeing that this rule, whatever way be its meaning, is strictly enforced. At the same time it is on record that several members have been expelled because they were too well off to belong to such a society. One of the medical officers of the dispensary assured me that he had during the course of the last year compelled several members to leave the dispensary and to call in private practitioners and pay the ordinary fee. On the other hand, when called upon to attend persons who are really poor, my informant explained that he refused to run up bills which he knew could never be paid and therefore would not attend poor patients unless they joined the dispensary. From other sources I learnt that a labouring man who had so far prospered that he was able to take a shop was urged to leave the dispensary and did so. There was another case of an assistant who, having taken a shop of his own, also left. It is true that in six months he was unsuccessful and is now working for wages once more, so perhaps he would be readmitted. In spite of these few incidents it seems that in actual practice the less said about the rules the smoother matters work and, on the other hand, the medical men of the town have no great complaint to make. It is generally recognised that there is some abuse, but it does not amount to much, and though no trouble is taken to find out such cases there is every disposition to put an end to any abuse which may be accidentally discovered. Nor can it be said that medical men attached to the dispensary are sweated or in any way exploited. On the contrary, after the payment of working expenses all the money received is divided between the six medical officers attached to the dispensary in proportion to the number of members they have on their books. Thus, last year, out of receipts amounting in all to £786 the medical officers received £447. With the balance the dispenser's salary of £91 10*s.*, the rent and taxes (£51) the drug bill (£73) and other smaller items were paid. Confinements are not included in the medical aid given by the dispensary, but it undertakes to collect weekly subscriptions of 1*s.* so as to pay the medical man attending a fee of one guinea.

The real grievance against the dispensary rests in the fact that the number of its medical officers is limited to six. This has helped to create a privileged class of practitioners and has driven others who could not join the dispensary to accept positions of a somewhat degrading description in the service of speculating insurance companies. In defence of the dispensary it may be said that it does not knowingly tolerate any abuse, that it seeks to check any touting proclivities on the part of its canvassers, and that it cannot employ more than six medical officers because there are only six working days in the week. The latter excuse is very weak. There might be more than one consulting-room, more than one medical men present at the same hour, or different medical men might attend at different hours. That some such arrangement would be practicable is proved by the fact that some time ago an effort was actually made to increase the staff. Two general practitioners having succeeded in establishing well-attended private clubs were sounded as to whether they would not join the Provident Dispensary and bring their members over with them. There is yet another grievance against the dispensary—namely, that the rule by which it is necessary to be a member for two months before receiving medical aid is not always observed. Some persons, it is said, only join when they are actually ill and pay two months' subscriptions on joining. Altogether, and to sum up, the dispensary is the least abused of the charitable institutions of the town. The reforms needed are a clearer definition and more strict application of the wage limit and the admission of all resident fully-qualified practitioners as medical officers of the dispensary if they desire to undertake that style of work. Such, in any case, were the only suggestions made to me during the course of my inquiries. For my part, however, I do not see why the medical practitioners of Tunbridge Wells should not aspire to place themselves on a level with the more progressive towns of the kingdom. The Provident Dispensary is managed by a committee of twenty

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laymen and clergy. The only excuse, as far as I can see, for the existence of this committee of totally unqualified persons is that they represent the charitable donations made to the institution. These, however, amounted last year to only £118, and it seems to me it would be well worth while sacrificing this sum if by so doing the institution could be placed entirely in the hands of the profession. It would form a splendid basis for the establishment of a public medical service. After all, the best method for abolishing medical aid associations, clubs, &c., is for the profession to establish a model institution of its own open to all local practitioners and managed exclusively by the medical men themselves. Then no practitioner would have any excuse for selling his services to a speculating commercial concern; if he wanted club patients he could join the public medical service. All patients who could not pay the usual fees would have the option either of joining this institution as subscribers or of claiming relief under the Poor-law. The battle of the clubs would be terminated, for the medical clubs would cease to exist.

The next most important institution is the Tunbridge Wells Friendly Societies' Medical Association. This amalgamation of friendly societies was established in 1882. According to the published accounts this society has about 4000 members, a figure which includes 1000 juveniles. The income from subscriptions paid by these members last year amounted to £653, and the total income to £774. Out of this large sum the medical officer who is employed by this institution and is debarred from private practice received as his salary and for extras, which presumably include midwifery fees, the sum of £308 11*s.* 9*d.* A locum tenent was paid £3 3*s.* Evidently the medical officer did not enjoy a long holiday if his absence could be covered by a fee of only three guineas. Yet he must have been sadly in need of repose, for we find it on record that the number of visits paid to patients in their own houses during the course of the year amounted to 5687 and that 23,168 consultations were given at the surgery. With the exception of the little help which was obtained for the three-guinea fee all this work was done, or ought to have been done, by one single person. If all the patients were not seen by the solitary medical officer employed by this institution, then they must have been treated by an unqualified assistant, probably the dispenser of drugs. If we divide the £311 14*s.* 9*d.* paid for medical advice by the 28,855 visits and consultations given it will be seen that the medical officer received for each consultation or visit a munificent sum amounting to a fraction above 2½*d.* We have heard of shilling and even of sixpenny doctors, but here we have a 2½*d.* doctor.

Of course, if this was a work of charity there would be no reason to complain. Medical men are constantly attending the poor for nominal fees or gratuitously; but the members of this society would indignantly repudiate the idea that they were recipients of charity. Nor is there any reason for them to claim charitable help. No wage limit is imposed and many members are very well off, yet they do not scruple to pay only 4*s.* a year so as to secure the services of a fully-qualified practitioner when they are ill. Thus there is a tradesman, who sometimes employs as many as 100 men, who lives in a house for which he must pay some £60 a year, and yet he belongs to this society and is content to receive medical service at an average rate of about 2½*d.* per consultation. Another member keeps an establishment on such a large scale that the rent and taxes are estimated at £300 a year. Yet he only pays 4*s.* a year for medical attendance. That he could pay more is proved by the fact that his family do not care for the club medical man and when ill call in a private practitioner to whom they pay 5*s.* a visit. If some blunder in diagnosis or treatment should result these comparatively wealthy men will certainly only have themselves to blame. Even a fully-qualified practitioner cannot perform an impossible task and it is altogether beyond human capacity to give 28,855 careful consultations in the course of a single year. The society consists, or is supposed to consist, mainly of workmen and the workmen's ideal is an eight hours' day. But the medical officer's position, it will be seen, by the rate of pay he gets, is very inferior to that of his employers, the workmen. We will say, therefore, that he has to work ten hours a day for every day in the year, Sundays included. This makes 3650 hours in the twelve months. During that time he has to give 28,855 consultations. This means seven minutes for each consultation. But we must take into account that these consultations comprise 5687 visits paid to the patients in their own homes. If therefore from the seven minutes we deduct the time taken going from house to house—some of the houses are situated at a distance of three miles and no carriage is allowed—and if, further, we make some allowance for a partial rest on Sundays, it will be seen that barely more than a minute or two remains for ordinary consultations. As a matter of fact, the general opinion is that the medical officer did not see all these patients and did not give all these consultations, but many of them were seen by an unqualified assistant. One case was related to me concerning a member who was drawing sick pay and yet had never seen the medical officer, but only his unqualified assistant. As he did not get any better the member called in a private practitioner. The board of management took up this matter and finally paid the private practitioner's bill. Now, however, that unqualified assistants are no longer allowed it is proposed to increase the subscriptions and to employ a second medical officer to act as a qualified assistant. This is all the more necessary as the work is not limited to the care of patients. There are also medical examinations of persons who desire to join one of the amalgamated friendly societies. The medical examination is not instituted with the view of protecting the medical officer against the admission of unhealthy members. The relations of members are admitted to the medical department of the friendly societies' organisation without any medical examination, however delicate or ill they may be. It does not matter to the lay administrators of this society how much work the medical man has to do. But with regard to full members the matter is very different, because if they are ill they are entitled to draw a sick allowance, and that is why they must be medically examined and the medical man must certify that they have sound constitutions before they are admitted as full members. Thus the medical officer must do all he can to protect the society, while he is not allowed to do anything to protect himself.

Referring again to the published accounts, it will be seen that the dispenser's salary and that of his locum tenent amounted in all to £132 15*s.* 6*d.* The purchase of drugs and bottles cost £86 2*s.* 4*d.* Rent of the surgery, insurance, and taxes came to a total of £63 17*s.* 8*d.* Then there is a secretary, who draws a salary of £35, and there are fees to auditors, treasurer, &c.; total, £43 6*s.* Altogether the working expenses are put down at £675 18*s.* 11*d.*, of which the medical officer does not receive half. But the receipts are £100 in excess of this expenditure. This net profit is, of course, in the main due to the medical officer's work, yet he is allowed to have no share in the capital which he thus builds up.

Much as the commercial insurance companies may be decried the share they allow to their medical officers if honestly paid is much larger than that given by the friendly societies. The most important at Tunbridge Wells is the Liverpool Victoria Legal Company, and here it charges children as well as adults 1*d.* per week. Of this sum the insurance company only deducts 20 per cent. for its working expenses and for the collecting agents' commission. Unfortunately, the medical officer has no means of checking the list of members given him. The only way is to compare the card of the patient with the list, but then if there is an error it can only be found out when the patient is ill. This was done by one of the medical officers at Tunbridge Wells, and the errors were so obvious that in several cases they were acknowledged and the balance was paid. Whether such errors are due to the company or the company's canvasser it is difficult to say. The canvassers are constantly changed and mistakes might accidentally occur, but it would be very advantageous to put a smaller number of names on the list given to the medical man than are inscribed on the list kept by the canvasser. The chances of detection are small. If the persons whose names are omitted from the list given to the medical man do not fall ill the omission will pass unperceived. Nor is it likely that the medical officer, unless his suspicions have been aroused, will take the trouble to verify whether every patient who presents himself is on his list. But with regard to the list, such as it is, the medical officer is paid punctually and receives the full 80 per cent. of the subscriptions paid by the members inscribed on the list. It is true that he has to provide the drugs, but the working expenses are not increased by a charge for a dispenser's salary, for the rent and taxes of the dispensary and surgery, as is the case both with regard to the Provident Dispensary

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and the Friendly Societies' Medical Association. On the other hand, these commercial insurance companies entirely ignore medical ethics. They canvass in all directions, pointing out the advantages of life insurance combined with medical insurance, praise their own medical men and abuse the other members of the profession. Of course, they have no notion of establishing a wage limit; and, on the contrary, prefer that their members should be well off as they are more secure in the receipt of the subscriptions. If one of their medical officers, being dissatisfied with this state of things, proposes to resign, the company will threaten to bring down a new practitioner to compete against him in his own district. There is also the Croydon and Surrey Insurance Company at Tunbridge Wells. This is very similar to the Liverpool Victoria Legal Company, but has not so many members.

Fortunately the members of the profession are commencing to make a stand against these abuses. The two consultants who were formerly attached to the Friendly Societies' Medical Association have resigned; and the question arises whether all the profession should not boycott this association and refuse to consult with its medical officer. Then, again, one of the local practitioners who had a very large number of members of the Liverpool Victoria Legal Company on his list has given them all up. This is the more remarkable as he had absolutely no complaint to make. He was paid punctually and he thought the terms of payment were on the whole fair. The greater part of his patients were exceedingly poor and it was a charity to help them. When, however, he discovered that any of his patients could afford to pay he struck them off his list and the Liverpool Victoria Legal Company did not object to this. But though he was thus able on various occasions to prevent abuse he could not prevent the canvassing. Several medical men in the town wrote to him saying that their patients had been canvassed by the agents of the company which employed him as their medical officer. He found also that his own private patients had likewise been canvassed and that patients who used to pay him the usual fees now proposed to give him only 1*d.* a week through the intermediary of the Liverpool Victoria Legal Company. At the same time he had read several articles on the "Battle of the Clubs" in THE LANCET and these helped to convince him that though personally he had no complaint to make, still the system was bad. He therefore resigned because he was anxious that there should be no stigma attached to his name. This certainly is a moral triumph. The idea that there is a stigma attached to those who sell their professional services to a speculating commercial company should be spread broadcast. This is a weapon held in the hands of the profession. Good use should be made of it.

THE PLAGUE IN VIENNA.

(BY TELEGRAPH FROM OUR OWN CORRESPONDENT.)

IN January, 1897, the Imperial Academy of Sciences of Vienna sent out a Commission to investigate the epidemic of plague in Bombay. The members of the Commission were Dr. Müller, a physician; Dr. Albrecht, an anatomist; Dr. Ghon, a bacteriologist; and Dr. Poech, physician's assistant who also has charge of the photographic department of the hospital. After a stay of three months they returned to Vienna and established a plague laboratory of their own in Professor Weichselbaum's pathological and anatomical institute in the General Hospital. Here they made pathological investigations of specimens which they had brought with them, obtained from fifty-two post-mortem examinations, observing the morphology and biology of the plague bacillus and making experiments on animals with a view to ascertaining the nature of its pathogenic action and the possibility of immunisation. On Oct. 15th a man named Barisch, who looked after the animals, suddenly fell ill with high fever and cough without expectoration. Dr. Stejskal, the assistant physician, diagnosed pneumonia, Dr. Ghon expressed his suspicion of plague, and the case was isolated in Dr. Nothnagel's clinic, where Dr. Müller and Dr. Nothnagel discountenanced the diagnosis of plague as there was no enlargement of the spleen. On Oct. 17th the patient's sputum contained blood, the microscope showed polymorphous bacilli, and a guinea-pig was inoculated with the sputum. On Oct. 18th the guinea-pig was killed, its glands were found to be enlarged, and the microscope showed plague bacilli. In the afternoon Barisch, whose symptoms included high fever and copious expectoration containing blood, became collapsed and died. A guinea-pig inoculated with blood from his heart died in two hours. Sputum collected on Oct. 17th gave plague bacilli on cultivation, as also did the glands of the guinea-pig. No post-mortem examination of Barisch was made on account of the risk of an extension of the disease, but the body was buried after Dr. Müller and two nurses had wrapped it in sheets impregnated with corrosive sublimate; they also cleansed the ward. On Oct. 20th Nurse Pecha, having fallen ill with fever, cough, and expectoration containing blood, was transferred to the Infectious Hospital under the care of Dr. Müller and the second nurse named Hochegger. Nurse Pecha's sputum contained bacilli. Dr. Müller began to feel ill. On Oct. 21st he suffered from fever accompanied by expectoration, and he found plague bacilli in his own sputum and also in Nurse Pecha's, whose temperature rose to 41° C. (105·8° F.). Dr. Poech undertook the treatment of the patients, and was treated prophylactically with Paltauf's serum, but Dr. Müller refused the serum treatment. On Oct. 22nd Dr. Müller showed typical pneumonia and he died on Oct. 23rd. As in Barisch's case no post-mortem examination was made. Nurse Pecha was suffering from continuous high fever. On Oct. 24th Dr. Marmorek arrived from Paris with a supply of Dr. Roux's serum, injections of which were given to Nurse Pecha and prophylactically to Dr. Poech and two nurses. On Oct. 25th Nurse Pecha's condition showed little change, if any, but on Oct. 26th she was described as moribund. As soon as the first case of plague was clearly recognised the Plague Commission permanently closed Professor Weichselbaum's Institute. All the animals used for experiments were killed, and the drains of the Institute were disinfected; Dr. Nothnagel's clinic was cleared and disinfected and the medical men and nurses belonging to it were isolated; the public were refused access to the General Hospital, all the medical men and the nursing staff were kept indoors, and some supposed febrile cases were transferred from the Institute and Professor Nothnagel's clinic to the Infectious Hospital. Barisch's wife and brother were also admitted to the Infectious Hospital and received prophylactic treatment. No one has been attacked with plague since Dr. Müller fell ill, and all the persons in isolation have remained free from it up to Oct. 26th, the symptoms which were regarded as doubtful being only those of sore-throat. On Oct. 26th Nurse Pecha's was the only case officially notified as plague in Vienna, though the symptoms of a companion nurse are gravely suspicious. She and those who had been in communication with her and all the suspected cases are completely isolated in the Infectious Hospital. Barisch probably received the infection by way of his respiratory organs while feeding the inoculated guinea-pigs; Dr. Müller and Nurse Pecha were obviously infected by inhaling the germs coughed up by Barisch. In all three cases the symptoms were exclusively pulmonary; glandular enlargements, which point to infection conveyed through the skin, did not occur. Infection never takes place by way of the alimentary canal. The nursing staff in the Infectious Hospital are provided with "bacteria filters" to protect them from inhaling bacteria.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague and Small-pox.—The Destruction of Rats.—Deaths of Medical Officers.—The Progress of the Plague.—A Plague Commission from England.

IT was recently asserted that animals which are susceptible to plague become immune if they be vaccinated with ordinary cow-pox in four different parts of the body. Whether this statement be founded on any experiments is not stated. One thing, however, is certain, that those persons who have been vaccinated have no protection from plague. There does not seem to be any antagonism between the toxins of these two diseases. There is no evidence either that those who have had small-pox are any safer against contracting plague. The idea was said to have been current in Constantinople when plague visited that city, but investigations made in the Byculla Jail at Bombay do not give it any support. There was found to be a marked similarity in the proportion of

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attacks among the primarily vaccinated, amongst the re-vaccinated, and amongst those who had had small-pox.

There is reason to believe that the extermination of the rat population in a district bordering on a plague-infected area would have a preventive effect on the extension of this disease. So far the only attempt which has been made in this direction has been in the destruction of rats by the ordinary methods. It is now suggested that they should be infected with some disease. The problem, however, has been to find a specific infective disease which is pathogenic to rats but not to man. It is stated that some progress has recently been made in this direction. There is little doubt that plague primarily affects the rat and that it is through the rat that the disease spreads amongst men. Wherever an outbreak of plague has occurred amongst human beings it has almost invariably been preceded by plague among the rats. Although plague is not very infectious from one human being to another, except, perhaps, the pneumonic form, there is reason to believe that it is highly infectious among the rats. If, then, the rats could be exterminated in advance of the plague there would be great prospects of preventing the spread of the epidemic. The interval between two epidemics of plague seems to be about the time required to renew the rat population, and although the plague is very fatal and appears to kill off every rat, yet a few either survive the disease or fail to contract it, and these few soon regenerate the rat population. The conditions then become again favourable for a fresh outbreak and the cycle of disease incidence is again repeated. Some of the above facts, although repeatedly observed and recorded, have not been taken to heart by the plague authorities and regulations still continue to be issued as if an ordinary infectious disease, such as scarlet fever or measles, had to be dealt with. It is upon the basis of house contamination that the emptying or burning down of houses with the encampment of the inhabitants in the open country around has alone proved of real value.

I regret to hear that within a fortnight two of the medical officers of the Maratha Hospital in Bombay have been attacked with plague and that one has died. Neither of the officers lived in plague-infected localities, and the presumption is that they both contracted it at the hospital. The medical officers of this hospital are native practitioners. As well-ventilated, well-arranged, and well-conducted hospitals have hitherto been shown to be extraordinarily safe as regards contagion and infection of plague some inquiry should be instituted into this and some of the other native hospitals. Many of these hospitals are only converted houses and are ill adapted for the purposes in view. They are, moreover, situated in closed-in and very crowded localities.

The summary of the progress of plague during the week is not satisfactory. In the districts and states of the Bombay Presidency the reported number of plague cases rose from about 4100 to over 5000. It is said that in Dharwar the disease has become too prevalent for the staff to cope with, that corpses are being found in the outskirts of the town and fields with no one to bury them, and that they are obliged to be left as they are to decompose or to serve as food for the jackals and the vultures. The southern part of the Presidency is badly infected, the chief increase occurring in Dharwar, Belgaum, and the Satara district, and the Kolhapore State. Calcutta is apparently free and Karachi had only one death. The death-roll for Bombay city shows a terrible rise, the figures being 1002 or over 400 above the average. Probably the whole of this excess is due to plague, although the official returns give only 243 deaths from this disease.

It is understood that a Plague Commission will shortly be formed consisting of five members with a secretary. Three eminent medical men will be sent out from England.

Oct. 7th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Need of a Physical Laboratory in University College, Liverpool.

THE need of a physical laboratory in University College has been felt for a considerable time, as the accommodation provided for the department of physics has become altogether too limited owing to its rapid development. To make use of Professor Lodge's own words, "it is becoming increasingly difficult to accommodate the ordinary student and will soon be impossible." In THE LANCET of Oct. 22nd reference was made to the munificent donations of Lord Derby and Mr. Ralph Brocklebank towards the erection of new buildings to comprise the departments of anatomy, medicine, and surgery, which are so urgently required. It is much to the credit of Professor Lodge that he willingly and approvingly waived his immediate claim to a new physical laboratory, believing that the wants of the above-mentioned departments were more pressing. In a letter to the local press on the need for a local physical laboratory Professor Lodge reviews the history of his department since his appointment as the first professor of physics eighteen years ago. The terms of the letter are temperate in the extreme, although showing a condition of things which cannot be allowed to continue much longer. He says that on his appointment he was introduced to the temporary accommodation which was to serve him as a laboratory both for teaching and research and which, he was told, was to satisfy him for twenty years. Professor Lodge truly points out that physical laboratories in this country and even on the continent and in America were not then what they are now. Twenty years makes a wonderful difference in a progressive subject in the Victorian era, and the whole idea of a working student's physical laboratory is quite recent, originating in a large measure with Lord Kelvin at Glasgow, who began in a dark hole where now is the old College-street railway station. The first practical class (one of 5 students only) which Professor Lodge had was conducted in an upper room of a building formerly used as a lunatic asylum, with the apparatus mostly on the floor. Gradually, as the other professors expanded into new buildings for their respective departments, the professor says, he also expanded by occupying their discarded rooms. He would be loth to leave them now, having in a manner grown into the place, but for two serious drawbacks—viz., want of cleanliness and unhealthiness. He cannot recommend advanced students or graduates of other universities to come and do research work at University College—there is literally no room. He dilates on the material scientific advantages to be met with at Berlin, Strasburg, Zurich, Harvard, and Baltimore and at other places far poorer and smaller than Liverpool. He goes so far as to say that really advanced students, even his own, must migrate elsewhere. The pinch is felt most by the more advanced students. With an average attendance of 26 or 27 students at the present time and these likely to increase as the session goes on, and in addition a few teachers only able to come on a Saturday and a large number of evening students on Thursdays, he wonders how they all get fitted in. And then over and above this number there are 77 first-year students to be put through a beginner's course of laboratory instruction. These have to be taken in batches; they cannot be taught nor can they be examined all at once or in two sets as in Manchester. At the electro-technical department the pressure is not so severe, but it, too, has to be carefully organised. Altogether Professor Lodge makes out a good case for new laboratories, and when that desired object has been attained there will be none more worthy and more pleased to perform the opening ceremony than that distinguished man of science, Lord Kelvin, who, on parting at the railway station with his host, Professor Lodge, on the occasion of his recent visit to Liverpool, made use of words to this effect: "When they give you a new laboratory I will come and open it. Not laying foundations, that's a dreary ceremony, but the real opening." All wish Lord Kelvin health and strength to enable him to fulfil his promise to Professor Lodge.

Opening of the Albert Infirmary, Winsford: The Duke of Westminster on Vaccination.

The Duke of Westminster performed the opening ceremony of the Albert Infirmary in Winsford on October 20th. The new infirmary is the gift of Mr. W. H. Verdin, D.L., for the benefit of the inhabitants of Winsford and Middlewich, and the surrounding districts. It was formerly the mansion of the Verdin family; and is a square stone-fronted building. On the ground floor are reception rooms, nurses' rooms, and convalescent rooms, and 2 men's wards with 8 beds. On the first floor are women's and children's wards which contain 4 beds. The new infirmary will be governed in conjunction with the Victoria Infirmary at Northwich under a board of management of which Sir Joseph Verdin, Bart., is

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president. The Duke of Westminster, in the course of his opening speech, said that medical and surgical science had made very considerable strides in the direction of curing and preventing disease. He hoped that public opinion would be still more educated and directed to the advantage of preventing disease, of which they had heard a great deal lately in connexion with vaccination. He would that public opinion might arrive at the conclusion that vaccination was after all a specific for one of the most loathsome diseases to which the human race was subject. The Duke also alluded to the advance which had been made in nursing during the latter part of the present reign.

Oct. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University: Sir Thomas Grainger Stewart's Inaugural Address to the Faculty of Medicine.

THE classes in the Faculties of Arts, Medicine, and Law in the University of Edinburgh opened on Oct. 18th, for the winter session. In some instances introductory lectures were delivered by the Professors; in others the work of the class was at once taken up. In opening the class of Medicine, Sir Thomas Grainger Stewart spoke of the reciprocal duties of the profession and of the community in reference to the arrest of such diseases as small-pox and phthisis. With reference to the New Vaccination Act, Sir Thomas Grainger Stewart congratulated his hearers that in Scotland the attitude of the people towards vaccination was the sensible and scientific one, while he stigmatised the action of the Government in introducing a conscience clause as "from a medical point of view absolutely disastrous folly." With regard to phthisis he asked his hearers to grasp the conception of the very dreadful fatality which tuberculous disease was causing in these days in that the mortality from tuberculous disease in our own and most countries was such that it accounted for one in every six of the deaths which occurred. Referring to preventive measures now being gradually taken against phthisis he wished his hearers to note the suggestions, which, in his opinion, were very important. They should attend to the education of the public, and especially of infected individuals and families, in regard to the laws of the spread of tubercle. They should make everybody know that a phthisical patient was a source of danger to those round about him unless proper precautions were taken. Precautions should be taken with regard to the quality of food and especially with regard to the quality of milk. Sir Thomas Grainger Stewart also thought that there should be compulsory notification of phthisis.

Glasgow University: an Emeute.

The session has opened in a very stormy and unfortunate manner. The new principal, according to the official intimation, was to signalise his accession to office by the delivery of an address to the students in the Bute Hall, and the eventful day found gathered together not only the academic dons but also the heads of the municipality and various representatives of learned bodies to do honour to the occasion. In the usual stately fashion the Senators entered in procession the Bute Hall and the new principal ascended the rostrum. But from the commencement it was evident that a very unruly spirit for some reason or other existed in the undergraduate breast. Noises and disturbances of all kinds greeted Dr. Story's appearance, and remonstrance was vain. In the end the Principal folded up his manuscript and followed by his colleagues left the hall. It is difficult to explain, and of course impossible to justify, the behaviour of the students. During his term of office as professor Dr. Story has on more than one occasion come into acute conflict with the student world; but these are for the most part old tales and scarcely have more than the interest of tradition for the students of to-day. Such traditions, however, are not unwelcome to those who believe it is their inalienable right to "kick up a row" whenever an occasion presents itself. It is not to be accepted that the uproar was part of a preconcerted scheme, and by this time the great majority of the undergraduates regret at least the extremity to which the demonstration was pushed. It was a silly exhibition of animal spirits and bad taste, and it is to be hoped that no more serious interpretation will be attached to it. The management of a large body of young men is not an art to be mastered in a day and possibly Dr. Story may be able to add to his undoubted capacity and courage that nameless quality which wins the good temper and sympathy of sound-hearted and demonstrative youth. Some wise words have been spoken by Professor Coats, to which the Senate no less than the students may well pay heed.

Glasgow Veterinary College.

The new session was opened on Oct. 21st by Dr. Lindsay Steven, who delivered an address on the Prevention of Tuberculosis, in which he advocated combined action on the part of the medical and veterinary professions. He believed compulsory notification of tubercle in man to be at present impossible; hospital treatment of pulmonary tuberculosis was, he contended, not curative, but by the provision of sanatoria in the country for early cases and by the distribution of handbills from house to house so as to secure popular instruction much could be done to prevent the spread of the disease. The veterinary practitioners, Dr. Steven pointed out, were in a fortunate position to check the very springs of the disease, as they were able by suitable measures to prevent the distribution to human beings of contaminated food supplies.

St. Mungo's College, Glasgow.

The medical session was opened on Oct. 20th by an address delivered by Professor Maitland Ramsay, M.D. Glasg.

University of Aberdeen.

The medical classes for the present winter session opened at Marischal College on Oct. 19th, the work being commenced by nearly all the professors without introductory remarks. In opening the class of materia medica Professor Cash, however, drew attention to the British Pharmacopœia of 1898, recently issued by the General Medical Council, as a somewhat conservative volume, neither omissions nor additions being of a prominent character. The metrical system, he observed, was introduced as an alternative to the old system for compounding, but an equivalent was not given, and unfortunately the decimal method was not recommended to the prescriber even as an alternative. This serious blemish, he added, it was to be hoped, would be rectified by the compilers of the next volume. In his introductory lecture on Oct. 20th to the pathology class Professor Hamilton referred to the transformations in Marischal College, the chief new feature this year being the completion of the south wing for the accommodation of the department of physics. Having remarked that Aberdeen was now one of the best equipped medical schools Professor Hamilton addressed himself to a comprehensive survey of new medical schools in England which threatened to prove dangerous rivals to those of Scotland. The new National Philosophy buildings at Marischal College were opened by Professor Niven, who gave an interesting address on the history of the teaching of the subject in the University. The new lecturers in history, education, and German language and literature were introduced to their respective classes by Principal Sir W. D. Geddes. There were 25 passes in the medical "preliminary" on this occasion; 8 candidates took part in the medical bursary competition.

Aberdeen Hospital for Sick Children.

The extension of this building—being a home for 30 nurses—has now been completed from designs by Mr. A. Marshall Mackenzie, A.R.S.A., architect, Aberdeen. It is a granite building consisting of ground floor and three floors above and includes dining-room, sitting-room, bedrooms, and sick-room. The extension has been plainly furnished and the total cost amounts to the wonderfully small sum of about £2000. A bazaar in aid of the hospital is to be opened in the Music Hall Buildings, Aberdeen, on Friday, Oct. 28th, by Princess Henry of Battenberg (Princess Beatrice), and on Saturday, Oct. 29th, by Lord Provost Mearns, Aberdeen.

Typhoid Fever in Aberdeen.

Dr. Matthew Hay, medical officer of health of Aberdeen, reports regarding the outbreak of typhoid fever in Aberdeen in the month of September that "typhoid fever shows a very large increase, 30 cases with 3 deaths having been reported, as against 6 cases with 1 death in the preceding month. This is by far the largest number reported in a single month for several years. The excess of cases was traced, as indicated in last month's report, to an infected milk-supply."

Oct. 25th.

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IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Regius Professor of Medicine in Dublin University.

SIR JOHN BANKS, K.C.B., has resigned the position of Regius Professor of Medicine in the University of Dublin. Sir Francis Cruise, consulting physician to the Mater Misericordiæ Hospital, and Dr. J. M. Finny, King's Professor of Medicine in the Medical School of Trinity College, are mentioned as candidates for the office.

Sir Patrick Dun's Hospital.

The opening meeting of the session was held at Sir Patrick Dun's Hospital on Oct. 19th, when Dr. C. B. Ball, Regius Professor of Surgery in the University of Dublin, delivered an inaugural address, dealing with the advances in surgery which had taken place during the last quarter of a century.

The Royal College of Surgeons in Ireland.

The President, Vice-President, and Council of the Royal College of Surgeons in Ireland have issued invitations in connexion with the formal presentations of medals and prizes which will take place on Nov. 1st. On that occasion the students of the medical school of the college to whom such honours were awarded at the termination of last session will receive them from the President.

Irish University Education.

The Lord Lieutenant of Ireland (Earl Cadogan) paid a State visit to Belfast on Oct. 18th and laid the foundation-stone of the new city hall and opened the newly-erected electric lighting station. He was subsequently entertained at a sumptuous luncheon by the Lord Mayor (Alderman Henderson, M.A.), when, in the presence of 400 of the most influential citizens of Belfast and Ulster, he delivered an address, in response to the toast of his health, dealing among other matters with university education. His Excellency stated that for some years past he had sympathised entirely with the views of Mr. Arthur Balfour on this question. He said he could not hope to receive any enthusiastic support for that view. Mr. Balfour had stated that nothing but the education of his party could possibly bring his ideas to realisation. He (the Lord Lieutenant) said if the party could be so educated then a way might be found out of the difficulty. This remarkable and pointed reference by Lord Cadogan to the subject of a Roman Catholic university has, as might be expected, aroused a great deal of discussion and the general feeling is that the question of Irish university education is again thrown into the melting-pot. THE LANCET is not the place in which to discuss political or religious questions, but one thing is clear: if the Government decide to found a Roman Catholic university there is no longer any reason for the existence of the present Royal University, and where are the northern students, who constitute over 50 per cent. of those who go to the Royal University, to obtain degrees? The Lord Lieutenant did not allude to this point and it is one which the Government must fully consider in any new settlement of Irish university education. There can be no question that the present condition of Irish university education is most unsatisfactory. No one is content with it. But when it is remembered that in dealing with such a subject Mr. Gladstone shipwrecked his Government, many fear that it may form the grave of the present political party in office, unless, as some suggest, the whole question is to be taken up and an attempt made to settle it on non-party lines by representatives of both sides who do not sit on either of the front benches in the House of Commons.

Belfast Corporation.

On Oct. 19th a special meeting of the corporation in committee was engaged for a lengthened period in considering the character and contents of a new Bill which it is proposed to promote in the next session of Parliament. A great many matters considered by committees and by private members to be of sufficient importance to apply to Parliament for power to deal with were discussed, and amongst others that of the compulsory provision of water-closets in all houses at present furnished only with privies and to lend money to owners of property to assist them to carry out this object. A very influential deputation, of which Dr. W. A. McKeown was the spokesman, appeared before the council on the same date, arguing the chief objections to the continuance of the traffic through the city of traction engines and their accompanying waggons. Dr. McKeown pointed out that these objections were: excessive noise; vibration; damage to sewer- and water-pipes by the passing of the heavily-laden waggons, breaches in sewers being caused in this way and the ground being impregnated by means of the leakage with objectionable material frequently charged with germs of typhoid; the damage to property, house-walls being cracked and great difficulty being experienced in tracing the damage to the traction engines owing to the non-appearance of external signs till perhaps days after the harm had been done; and the inability to obtain satisfaction from the owners of these engines when they are known. The Lord Mayor stated that in the preliminary report submitted to the corporation concerning the new measure there were these words, "To abolish goods traction-engines travelling in the city." With this statement the deputation were quite content.

The Health of Belfast.

The death-rate of Belfast for the week ended Oct. 15th from all causes was 27·9 and from the principal zymotic diseases 7·0. The number of cases of typhoid fever notified was 149 during the same period, in the previous six weeks the numbers having beeen 157, 172, 164, 247, 170, and 271 respectively. These figures show that there is little change during the past two weeks in the number of cases of typhoid fever notified and would seem to indicate that the recent outbreak or recrudescence of the disease is passing over and that we are reaching the normal endemic condition of typhoid fever in Belfast. Dr. Lorrain Smith, who has been investigating the problem of the causation of the typhoid fever in Belfast, has reported to the Public Health Committee that since the beginning of September he had given his whole attention to the investigation of the cause of the epidemic; that in the course of the work many side questions had arisen which required solution; and that the whole problem had assumed a form which in the first instance he did not anticipate, and on this account he was not yet in a position to come to a definite conclusion, but he had confidence that the methods on which he was working would yield decisive results. A curious point, which may lead to further complications, arose at the last meeting of the Public Health Committee in reference to a letter received from the board of guardians. In this communication it is suggested that the Belfast Corporation should contribute a moiety of the cost of the cleansing of the Holywood foreshore of the decomposed seaweed impregnated with sewage matter which has accumulated there and which the guardians are having removed at a cost of about £100. Holywood is a small town situated on the right hand side of Belfast Lough, about five miles from the city, and the interesting point is that the guardians evidently believe that the pollution of the shore there is due to the fact that owing to the plan of the main drainage scheme of Belfast the sewage of that city is spread out on each side of the Lough, and so Holywood is injured. The Public Health Committee decline to fall in with the suggestion of the guardians on the ground that the sewage of Holywood itself, as well as that of the new adjacent military barracks, is, with the cognisance of the board of guardians, discharged on to the Holywood foreshore. There is no doubt that some contamination may arise in this way, but there can be no question that Belfast is the main cause of the horrible stenches which exist at times on both sides of the Lough, and which it is feared will lead to further depreciation of property unless the main drainage scheme of that city is completely reorganised, a work which will be as formidable as it will be expensive. The truth is, that the city of Belfast has completely outgrown the schome which is at present in service for carrying away its sewage.

The Belfast Hospital for Sick Children.

At a special meeting of the governors of this hospital, held on Oct. 24th, Dr. Robert Campbell was promoted to the post of surgeon, in place of Dr. J. S. Morrow, retired, and to the office of assistant surgeon thus created Dr. Andrew Fullerton was elected by a very large majority.

The Ambulance Branch of the Belfast Fire Brigade.

During the year ended June, 1898, the most efficient ambulance service of the Belfast Fire Brigade received 1643 calls (an increase of 368 on the previous twelve months), and the department, which is worked entirely by the fire brigade

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staff, responded to 1630 calls (being unable on 13 occasions to do so owing to the staff being engaged at fires), occupying 741 hours 51 minutes (being an increase of 112 hours 21 minutes from last year), showing an average of 27 minutes per journey from the receipt of the call until the carriage returned to its station. The distance travelled was 4226½ miles, or an average of 2½ miles per single journey. It is probable that when a divisional station is erected at Ardoyne a second ambulance will be placed there. This ambulance service, which is of the utmost value in a great commercial city like Belfast, is most admirably worked under the superintendence of Mr. Parker, chief of the Fire Brigade; and Deputy Commissioner Major Charles J. Trimble, L.R.C.S. Irel., who recently inspected the service on behalf of the St. John Ambulance Association, in his report stated that "so far as the general efficiency and usefulness were concerned the Belfast division is far ahead of anything I have yet seen. The members are firemen and certainly a more thoroughly efficient ambulance organisation no town or city could possess, the staff being always ready by night and by day to start at a second's notice on ambulance or transport duty." The city corporation deserves the utmost credit in having selected in Mr. Parker a chief who has completely reorganised their fire brigade and who has established an ambulance service which is now admitted to be one of the finest in the world.

Oct. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Surgical Congress.

THIS Congress came to an end on Oct. 22nd, the last meeting being devoted to the subject of Gynæcology and an exhibition of Instruments and Apparatus. A long discussion arose upon the technique of, and indications for, the operation of total abdominal hysterectomy. Before separating the Congress arranged its organisation for next year. M. Lucas Championnière was unanimously elected Vice-President for 1899 and therefore will be President in 1900, in which year the foreign sovereigns will be received. The evening of the last day was devoted to a *soirée* at the Hôtel des Sociétés Savantes, where a demonstration was given, arranged by Dr. Doyen, of cinematograph views of various operations performed by himself, such as craniectomy, resection of the knee-joint, hysterectomy, and others. The audience was very large and the apparatus worked most successfully, as there was much more electricity available than on Oct. 17th. It was derived from 40 large accumulators supplied by Dr. Doyen on finding that the ordinary street mains did not supply sufficient energy. *A propos* of Dr. Doyen he has just published in the *Revue de Gynécologie* for Oct. 19th a very strong letter addressed to every medical man in France as an answer to one published by M. Tuffier, in which the latter described as his own personal invention the method of arresting hæmorrhage by crushing the vessels with a strong pair of forceps. Dr. Doyen maintains that this instrument is but a modification of his vasiotribe and energetically maintains his right of priority to both method and instrument, for he had made M. Tuffier acquainted with both in the course of conversation. M. Tuffier, he says, has only made one alteration in his (Dr. Doyen's) method and that for the worse—namely, that he has given up the ligature after the crushing. M. Tuffier has announced a reply to be published in the next issue of the *Revue*, which will appear in two months' time.

The Congress of Urology.

The third Congress of Urology held in France met this year from Oct. 20th to Oct. 22nd under Professor Guyon as President, who was attended by many of his pupils, and a large number of provincial specialists and surgeons who came to Paris to take part in the meetings of the Surgical Congress also attended the Congress of Urology. The chief matter for debate was the subject of vesical infection. It was opened by a report of researches by MM. Albarran, Halle, and Legrain. In reply MM. Bazy, Jules Janet, Dessus, and others spoke. M. Jules Janet proved that certain vesical infections were due to venereal disease. On the morning of Oct. 22nd the members of the Congress visited the wards set apart for genito-urinary complaints a the Necker Hospital.

The Library of the Faculty of Medicine.

The Faculty of Medicine has just taken a step which has called forth the most lively protestations from the medical men of Paris. The universities have recently acquired the right of receiving donations and legacies and of applying these to their own liking without any outside control and naturally they have taken advantage of this new privilege. The Government has, of course, reduced these new rights to as small a compass as possible and has laid down that any moneys received in future shall be devoted to the fitting up or improvement of laboratories, libraries, or buildings. The various faculties, however, can only raise money in new ways by taxing the students, a class who already pay sufficiently heavily, and the Faculty of Medicine has therefore decided that from Nov. 16th admission to the library will be no longer free, but that every reader will have to buy an annual card of admission which will cost 30 francs. This rule has met with universal disapproval. The new tax will bring in very little, for all *bonâ-fide* students whose names are entered at the Faculty will be exempt by reason of the fees they already pay to the University. The rule will, however, fall hardly upon men already in practice who frequently wish to consult the library for reference. On the other hand, as the rules state that anyone working in a university laboratory can consult the library on the recommendation of a professor it is evident that the monetary gains of the faculty will be very small in proportion to the annoyance inflicted upon the class affected. All the medical press joins in protesting against the new arrangement, and the very students, unaffected as they are by the new regulation, are organising demonstrations against it.

The Orthopædic Institute of Lille.

A scandal has just come to light in connexion with the Catholic Faculty of Lille. One of the professors, a distinguished surgeon named Guermonprez, accepted the post of director of an institution called the Orthopædic Institute, in which a priest, the Abbé Crud, treats patients without having a medical qualification. This priest, who was formerly the Curé of Sens, has carried on for a long time the trade of a bone-setter; he has been many times convicted for illegally practising medicine, and finally he fell under the condemnation of his religious superiors. He then left Sens and came to Lille, where some charitable and wealthy persons, believing that they were doing good, built a large hospital for him at Cantelen, whereby he was enabled openly to carry on his illegal medical practice. In order to protect himself from renewed convictions the Abbé managed to get a medical man to cover him, and this medical man was Professor Guermonprez. When the committee of the new hospital made use of Professor Guermonprez's name as a "draw" the Catholic Faculty of Lille publicly repudiated having anything to do with the Orthopædic Institute in a letter signed by the Dean (Dr. Desplats) and inserted in all the Lille papers. M. Guermonprez has sent in his resignation as Professor at the Faculty.

The Accounts of the Assistance Publique.

M. Napias, the director of the Assistance Publique, has just issued a balance-sheet together with a budget for 1899. The situation is far from satisfactory. The total sum at the service of the Assistance Publique, excepting a sum reserved for certain charitable institutions, is 14,588,932 francs, and this sum is entirely used up in the annual expenses of the *service*. Besides this sum the administration possesses certain *capitaux disponibles* and a reserve fund. The former sum amounted last year to 708,359 francs arising from sums paid by patients for their keep in asylums, from the sale of timber belonging to the Assistance, and from the sale of certain other articles. This sum, however, is entirely given up to the liquidation of certain expenses incurred previously. The reserve fund, which was constituted by the regulations of 1858, is provided for by taxing all the landed property of the Assistance in the sum of 10 per cent. and is intended to meet any unforeseen catastrophe, such as fire or a fall in the value of money. This sum, however, has been gradually diminished, not by fires, but by being applied to the purposes of other departments, and now only amounts to 12,527,718 francs. The new organisation for dealing with tuberculosis has absorbed 6,000,000 francs; the construction of children's hospitals, 833,400 francs; precautions against fire, 250,000 francs; surrender of certain sources of income, 900,577 francs. Moreover, the payment of the deficit standing over from 1897 will absorb 812,547 francs,

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and the liquidation of a special debt owing to the Hôtel Dieu 779,341 francs. Bad debts are estimated at 231,661 francs, and finally the accounts for 1898 will probably show a deficit of 1,000,000 francs, so that the reserve fund will be still further reduced to 1,720,065 francs. This lamentable state of affairs is not improved by the fact that in the budget for 1899 the proposed payments to the medical staff are 1,213,028 francs instead of 1,151,488 francs in 1898.

Oct. 25th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Death of a Great Surgeon.

ITALIAN surgery has of late years progressed conspicuously, mainly from its adoption of the antiseptic therapeutics and the tidiness, not to say cleanliness, they imply. Formerly the mortality consequent on its intervention was out of all proportion to the skill in diagnosis and the manual dexterity it evinced. Excellent anatomists and "artists with the knife," the surgeons of Italy had too often the chagrin of seeing all their professional insight and "assured boldness" frustrated by sequelæ due to slovenliness in treatment. Thanks to "Listerism," however, all this is changed, at least in the great centres of the healing art—nowhere, indeed, more strikingly than in the clinique of Dr. Azzio Caselli, professor of operative surgery in the University of Genoa. He was a man, whether as a teacher, an operator, a consultant, or a citizen, whom Italy could ill spare; but now—such has of late been her evil fortune—he has gone to swell the list of her prematurely "lost leaders," having succumbed to a lingering and intractable disease at the early age of fifty-one years. Azzio Caselli inherited an honoured name in surgery, his great-grandfather, his grandfather, and his father having each been distinguished in the art as well as known to fame far beyond their native Reggio Emilia. There he himself was born in 1847, and thence with a view to the medical career he proceeded as a student to the University of Bologna. From that seat of learning he passed to Naples, where he became a pupil of the eminent surgeon Rizzoli, who quickly discerned in him the makings of a sound and self-reliant operator. Graduating at the age of twenty-two years he was first called to fill the post of *chirurgo primario* in the hospital at Reggio, and in that capacity laid the foundation of the esteem in which he was held in France, Germany, Austria, Hungary, and the British Isles. He created at Reggio the "Museo di Anatomia Patalogica," which even yet rewards a visit by reason of not a few of its remarkable preparations and which forms a kind of running commentary on the many brilliant operations he performed between his twenty-fifth and thirtieth year. As a teacher, moreover, he was careful to insist on "guiding principles" amid the details which, in their sheer multitude, are so apt to bewilder; and many were the ingenious and memorable generalisations of his which helped the student to a mastery of his subject in theory and in practice. In 1882 his reputation, by this time securely established, led to his appointment to the Professorship of Clinical Surgery in the University of Genoa, a post he held with increasing popularity till his death on Oct. 19th. Keeping pace with all the resources of the modern school, when, indeed, he did not contribute others of his own, he made his clinique the resort of ardent young aspirants to the surgical career from the remotest corners of the kingdom. Operations apparently hopeless seemed to turn out well in his hands, imparting the lesson so useful in these days, especially to Italians, "never to despair of the healing art." In laparotomy, in thoracic and in cerebral surgery, his results were generally as gratifying as they were encouraging and stimulating—indeed, those of Billroth, his lifelong friend, had scarcely a more inspiring effect on pupil and colleague alike. Add to this a nature finely "touched to the issues" of art and literature, a sense of citizenship which fructified in many an act of public philanthropy, a power to make and to keep friends in all ranks of life and under every variat on of circumstance, and the outside world will have some appreciation of the feeling of loss which in the week now closing accompanied Azzio Caselli to the grave.

Oct 21st.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In October the following candidates passed in the undermentioned subjects:—

Surgery.—F. Ede, Royal Free Hospital; L. Liebster, Vienna; W. M McLoughlin, University College Hospital; A. H. Priestley, Manchester; and W. R. Wilson, Dublin and Belfast.

Medicine.—C. G. Catterall (Section II.), Leeds and Westminster Hospital; H. Clough, Leeds; H. H. Cotman (Section II.), Aberdeen and London Hospital; H. L. Hands, Madras and Charing-cross Hospital; A. H. Priestley and S. Sugden, Manchester; and A. F. Weston (Section I.) and R. Le G. Worsley (Section II.), St. George's Hospital.

Forensic Medicine.—G. F. M. Clarke, Charing Cross Hospital; H. Clough, Leeds; P. T. Goodman, St. Thomas's Hospital; H. L. Hands, Madras and Charing Cross Hospital; P. A. Pierre, Westminster Hospital; A. H. Priestley, Manchester; and A. F. Weston, St. George's Hospital.

Midwifery.—A. G. C. Davies, Guy's Hospital; G. W. H. Edgelow, London Hospital; F. Golding-Bird, Guy's Hospital; F. S. Leech, University College Hospital; D. V. Lowndes, Westminster Hospital; R. R. Mowll, King's College Hospital; H. J. Pickering, St. Bartholomew's Hospital; P. A. Pierre, Westminster Hospital; and A. H. Priestley, Manchester.

The diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—G. F. M. Clarke, F. Ede, A. H. Priestley, and W. R. Wilson.

CAMBRIDGE UNIVERSITY.—At the examination in Sanitary Science held in October, 1898, the following candidates satisfied the examiners in both parts of the examination:—

Lewis Potter Black, Thomas Carr, John Inglis Cook, Mohan Lal Dhingra, Alexander Duncan, Herbert Edward Goulden, John Knight, Campbell Samson Marshall, John E. O'Connor, Patrick Wilkins O'Gorman, Alfred Gervase Penny, John Alfred Knowles Renshaw, Joshua James Taylor, and Joseph Henry Whitaker.

Matriculation took place on Oct. 21st, when 897 freshmen inscribed their names on the University books. Of these 19 were post-graduate students from other universities. Dr. Langley, Lecturer in Physiology, has been elected a member of the Council of the Senate in place of Principal Glazebrook, now of Liverpool. Dr. Barclay-Smith and Professor D. J. Cunningham of Dublin have been appointed Examiners in Anatomy; Dr. H. K. Anderson and Dr. Starling of Guy's Hospital, Examiners in Physiology; and Mr. Ivatt and Mr. Easterfield, Examiners in Pharmaceutical Chemistry, for the second M.B. examination.

FOREIGN UNIVERSITY INTELLIGENCE.—*Munich:* A new Dental Institute has been established, to the charge of which Dr. P. J. Berten of Würzburg has been appointed with the rank of Extraordinary Professor.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Heinrich Spöndli, formerly Professor of Midwifery in the University of Zürich, at the age of seventy-four years. He had been for many years in retirement.—Dr. A. Morrison, formerly Professor of Physiology in the University of Nashville.—Dr. K. F. Slaviansky, Professor of Clinical Gynæcology in the Military Medical School of St. Petersburg.—Dr. D. Kochs, *privat-docent* of Physiology in the University of Bonn.—Dr. Subbotin, Professor of Hygiene in the University of Kieff.

PRESENTATIONS TO MEDICAL MEN.—On Oct. 11th at the wardroom mess of H.M.S. *Cambridge*, the President presented Surgeon Leo Edward James, L.R.C.P. Lond., M.R.C.S. Eng., R.N., with a pipe and tobacco-pouch, together with a purse of money subscribed for by a large number of friends, on the occasion of his departure from the vessel.—Mr. W. G. Grace, L.R.C.P. Edin., M.R.C.S. Eng., celebrated the twenty-fifth anniversary of his wedding on Oct. 9th and received numerous presents, amongst them being a silver tea service and silver salver suitably inscribed from the professional cricketers of the Gloucestershire Cricket Club. — On Oct. 14th, in the board-room of the Great North of Scotland Railway Company's offices, on the presentation of the prizes won last session by those who attended the various ambulance classes in connexion with the railway—viz., Great North of Scotland, North British, and Caledonian and Joint Station classes—Mr. T. W. Ogilvie, M.B. Aberd., of Aberdeen, was the recipient of a set of medical volumes as a mark of appreciation of his services. The first volume bore the following inscription:—"Presented to Dr. Ogilvie, along with other 28 volumes, from the members of the

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railway ambulance class, 1898, as a mark of their appreciation."—The mayor, corporation, and officials of Kingston-upon-Thames presented Dr. W. E. St. L. Finny with an electric pedestal lamp and shade on St. Luke's Day, which was also the eve of his wedding. At the same time they selected Dr. Finny as the mayor-elect for Kingston for the coming year.

THE LATE MR. LLEWELLYN COUCH.—Much sympathy is felt in Swansea for Mr. James Couch, M.R.C.S., whose son, Mr. Llewellyn Couch, was lost in the wreck of the Atlantic liner *Mohegan* on Oct. 14th. Mr. L. Couch was chief mate of the unfortunate vessel and was described by one of the survivors as undoubtedly the pluckiest man on board; it was certainly through him that so many lives were saved.

CHIPPENHAM COTTAGE HOSPITAL.—This hospital, the foundation-stone of which was laid on Nov. 8th, 1897, is now completed, and a meeting was held last week to appoint a committee of management, &c. Sir J. Dickson Poynder was chosen President, and amongst the managing committee Dr. W. T. Briscoe, Mr. M. S. Wilson, M.R.C.S. and Dr. Carter were elected as honorary members. Mr. F. K. Green, F.R.C.S. Eng., of Bath, was appointed honorary consulting surgeon.

THE LATE MR. EDWARD BARBER.—Mr. Barber of Glossop-road, Sheffield, who has just died in his sixtieth year, was a well-known practitioner in that city, and enjoyed much popularity among an extensive circle of friends. His professional education was received at the Sheffield Medical School and in London at St. Mary's Hospital. In 1874 he took the diploma of L.S.A., followed in 1877 by that of L.R.C.P. Edin. He settled in practice about twenty-five years ago in Division-street, and had been in Glossop-road since 1878. Mr. Barber was a Churchman and a prominent supporter of parochial organisations, but notwithstanding his large practice he was not connected with any medical institution beyond his membership of the Sheffield Medico-Chirurgical Society.

THE PLAGUE IN INDIA.—The plague returns for the week ending Oct. 22nd show a marked decline as regards Bombay city, the deaths reported being considerably less than in the preceding week. In the other districts of the Bombay Presidency, however, the deaths reported numbered 4700, being somewhat greater than in the preceding week, the greatest mortality being at Dharwar, Belgaum, and Satara. The disease continues to increase steadily in Bangalore city and at the military station. There is a slight increase, also, in the Madras Province, while numerous cases have been reported in Hyderabad State. One death has occurred at Karachi. Northern India is free from plague. The services of Lieutenant Chitale, I.M.S., have been lent for temporary plague duty at Belgaum.

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BARKER BROTHERS, Calcutta, and A. REDDICK AND CO., Furnival-street, Holborn, London.
The Medical Register and Directory of the Indian Empire. By Jas. R. Wallace, M.D., F.R.C.S. Irel. Second Edition. 1898.

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Die Störungen des Verdauungsapparates als Ursache und Folge anderer Erkrankungen. Von Dr. Hans Herz. 1898.
Fürsorge für Gemüthskranke. Von Dr. C. Furstner. 1898.

BELL, GEO., AND SONS, York-street, Covent-garden, London.
Domestic Hygiene, including some General Problems affecting the Public Health. By Arnold W. Williams, M.B. Edin., D.P.H. Lond. 1898. Price 1s. 6d.

CASSELL AND COMPANY, London.
On the Origin and Progress of Renal Surgery. Being the Huntorian Lectures for 1898. By Henry Morris, M.A., M.B. Lond., F.R.C.S. 1898. Price 6s.

CONSTABLE, A., AND CO., Whitehall-gardens, London.
The Surgical Anatomy of the Lymphatic Glands. By C. H. Leaf, M.B. Cantab., F.R.C.S. 1898. Price 10s. 6d. net.

COIN, OCTAVE, Paris.
Affections Chirurgicales du Tronc. Par Dr. Polaillon. 1898.
Affections Chirurgicales du Tronc. Statistique et Observations de Chirurgie Hospitalière. IV.—Tronc. 1898.

HARRISON AND SONS, St. Martin's-lane, London.
The Lettsomian Lectures on the Affections of the Urinary Apparatus in Children. Delivered before the Medical Society of London. By J. H. Morgan, M.A. Oxon., F.R.C.S. Eng. Reprint. 1898.

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Health in the Nursery. By H. Ashby, M.D., F.R.C.P. 1898. Price 3s. 6d.

MACLEHOSE, JAS., AND SONS, Glasgow.
A Directory for the Dissection of the Human Body. By J. Cleland, M.D., LL.D., F.R.S., and J. Y. Mackay, M.D. Fourth Edition. 1898.
Atlas of External Diseases of the Eye. By A. M. Ramsay, M.D. Illustrated. 1898. Price 63s. net.

MACMILLAN AND CO., London.
Edward Thring, Headmaster of Uppingham School: Life, Diary, and Letters. By George R. Parkin, C.M.G. Vols. I. and II. 1898. Price 17s. net.

MURRAY, JOHN, Albemarle-street, Piccadilly, London.
The Groundwork of Science: A Study of Epistemology. By St. George Mivart, M.D., Ph.D., F.R.S. 1898. Price 6s.

OLIVER AND BOYD, Edinburgh.
Manual of Bacteriological Technique and Special Bacteriology. By Thos. Bowhill, F.R.C.V.S., F.R.P.S. Illustrated. 1899. Price 21s.

PENTLAND, YOUNG J., Edinburgh.
The Principles and Practice of Medicine. By Wm. Osler, M.D., LL.D. Edin., F.R.S., F.R.C.P. Third Edition. 1898.
Diseases of the Heart and Aorta. By Geo. A. Gibson, M.D., D.Sc., F.R.C.P. Edin. Illustrated. 1898.

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The Sanitation of Domestic Buildings. By F. Latham, C.E., and B. Latham, C.E. 1898. Price 2s. 6d. net.
Disinfection and Disinfectants. By Samuel Rideal, D.Sc. Lond. Second Edition. 1898. Price 12s. 6d.

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An Atlas of Bacteriology. By C. Slater, M.A., M.B., M.R.C.S., F.C.S., and E. J. Spitta, L.R.C.P. Lond., M.R.C.S., F.R.A.S. 1898. Price 7s. 6d. net.

SCOTT, WALTER, Paternoster-square, London.
The Natural History of Digestion. By A. L. Gillespie, M.D., F.R.C.P. Ed. Illustrated. 1898. Price 6s.

SWAN SONNENSCHEIN AND CO., London.
An Elementary Text-book of Botany. By Sydney H. Vines, M.A., D.Sc., F.R.S. Illustrated. 1898. Price 9s.

THIN, JAMES, Edinburgh.
Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By C. W. Cathcart. 1898. Price 7s. 6d.

Transverse Fracture of the Patella: by F. H. Alderson, M.D., M.R.C.S. reprint (G. T. Whitehead, Trinity-street, Halifax).—Cyclic Law: Its Influence over Man in both Health and Disease; Determining the Sex, Its Influence upon Births, Deaths, &c.: by Thos. B. Reed, M.D., Middletown, Ohio.—A Helping Hand to Mothers: by Minnie Elligott (Jas. Clarke and Co., Fleet-street, London); price 6d.—Magazines, &c., for November: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge Humanitarian, St. Peter's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BRATTIE, J. M., M.B., C.M. Edin., has been appointed an Assistant Professor of Pathology for the University of Edinburgh.

BENNETTS, A. J., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary, Parish of St. Mary, Lambeth.

BRETTINGHAM, C. E. S., L.F.P.S. Glasg., D.P.H. Irel., has been appointed a Medical Officer for the 3rd Sanitary District of the Yeovil Union.

BRIDGES, ERNEST CHITTENDEN, M.B., B.S. Durh., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Physician-in-Ordinary for the Infirmary for Consumption, Margaret-street, Cavendish-square, W.

BURGESS, A. H., M.B., Ch. Vict., M.Sc., B.Sc., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Second Assistant Medical Officer for the Crumpsall Workhouse of the Township of Manchester.

DE WYTT, WM. H., M.B., C.M. Glasg., has been elected to the Chair of Materia Medica, St. Andrews University.

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FENWICK, S. C. C., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Medical Officer for the No. 10 Sanitary District of the Lambeth Union.

FULLERTON, ANDREW, M.D., B.Ch., has been appointed Honorary Assistant Surgeon to the Belfast Hospital for Sick Children, Queen-street.

GOODBODY, E. E., M.B., B.S. Dubl., has been appointed a Medical Officer for the Great Bradfield Sanitary District of the Dunmow Union.

GRAHAM, F. M., L.R.C.P., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Fifth Sanitary District of the Drayton Union.

HARRIES-JONES, E., M.B., C.M. Edin., has been appointed Junior House Surgeon for the Birmingham and Midland Eye Hospital, Birmingham.

HEMMING, J. J., M.R.C.S. Eng., L.S.A. Lond., has been appointed a Medical Officer for the Margate District of the Isle of Thanet Union.

LEE, W. H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a House Surgeon for the General Infirmary, Hereford.

LORD, C. C., L.R.C.P. Lond., M.R.C.S., has been appointed an Obstetric and Ophthalmic House Surgeon, Queen's Hospital, Birmingham.

MACKIE, F. PERCIVAL, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Junior Assistant Medical Officer for the Salop and Montgomery Asylum, near Shrewsbury.

MACLAREN, J. A., M.B., Ch.B. Vict., has been appointed Senior Assistant Medical Officer for the Crumpsall Workhouse of the Township of Manchester.

MOORE, E. COTTEW, M.B., C.M., F.R.C.S. Edin., has been appointed Resident Surgical Officer for the Birmingham and Midland Eye Hospital, Birmingham.

MORGAN, ALBERT THOMAS, M.D. Brux., L.S.A. Lond., has been appointed Medical Officer for the No. 4 Sanitary Districts by the Bristol Board of Guardians, vice W. G. Grace, retired.

MULLIGAN, J. W., M.D. Irel., has been appointed a Medical Officer for the Abersychan Central Sanitary District of the Pontypool Union.

ORR, W. J., M.B., C.M. Glasg., has been appointed a Medical Officer by the Govan Combination Hospital Board.

PARSONS, ALLAN C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the Victoria Hospital for Children, Chelsea.

PETHYBRIDGE, W. L., M.D., B.Sc. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Physicians' Assistant for the Plymouth Public Dispensary.

RUST, MONTAGUE, L.R.C.P., L.R.C.S. Edin., has been appointed a Junior Assistant House Surgeon for the Stockport Infirmary.

RYLE, R. J., M.D. Oxon., M.R.C.S. Eng., has been appointed an Honorary Assistant Surgeon for the Sussex Eye Hospital, Brighton.

SHARMAN, MARK, M.B., M.S. Glasg., M.R.C.S. Eng., D.P.H. Scotl., has been appointed Medical Officer of Health by the Rickmansworth Urban District Council.

STAPLE, JAMES DIBBLE, M.R.C.S. Eng., L.S.A. Lond., has been appointed Medical Officer for the No. 3 Sanitary District by the Bristol Board of Guardians, vice J. B. Stephenson, retired.

STUART, C., M.B., C.M. Edin., has been appointed a Medical Officer for the No. 11 Sanitary District, Allerton.

TAYLOR, F. A., M.R.C.S. Eng., has been appointed a Medical Officer for the Third Sanitary District of the Romsey Union.

THOMAS, J. LYNN, F.R.C.S. Eng., has been appointed Honorary Surgeon for the Hamadryad Hospital, Cardiff, vice Alderman Edgar Jones.

THOMPSON, HENRY E., M.B. Lond., M.R.C.S., has been appointed Senior House Surgeon for the Birmingham and Midland Eye Hospital, Birmingham.

TURNER, J. A., M.B., C.M. Edin., D.P.H. Camb., has been re-appointed a Medical Officer by the Hertford Town Council.

WEBBER, H. W., M.D., M.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer for the Provident Department of the Plymouth Public Dispensary.

WHITEFORD, C. HAMILTON, L.R.C.P. Lond., M.R.C.S. Eng., has been re-appointed Medical Officer for the Plymouth Public Dispensary.

WILSON, A. T., M.B., B.S. Dubl., has been appointed a Medical Officer for the Inkberrow Sanitary District of the Alcester Union.

WILSON, W., M.D. Edin., has been appointed a Medical Officer for the Abersychan Northern Sanitary District of the Pontypool Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ALEXANDRA ORPHANAGE, Hornsey-rise, N.—Medical Officer, non-resident. Applications to Mr. A. C. P. Coote, Secretary, 73, Cheapside, E.C.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

CHARING-CROSS HOSPITAL, Strand, London. — Assistant Obstetric Physician.

COUNTY ASYLUM, Prestwich, Manchester.—Pathologist. Salary £200 per annum, with furnished apartments, board, attendance, and washing.

DURSLEY UNION.—Medical Officer and Public Vaccinator for District No. 1. Salary £115 per annum, with usual extra medical and vaccination fees. Applications to the Clerk of the Guardians, Dursley.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Unqualified Clinical Clerkships for three months.

GENERAL INFIRMARY AT LEEDS.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Resident Medical Officer for six months. Salary at the rate of £50 per annum with board, residence, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months. Unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months. Salary £20, with board and residence in the hospital.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Assistant Surgeon, unmarried. Salary £80 the first year and £90 per annum afterwards, with apartments, board, and attendance.

LONDON HOSPITAL, Whitechapel, E.—Surgeon.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising £10 yearly to £155, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, each for six months. Salary at the rate of £50 per annum for the senior post.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

PARISH OF BIRMINGHAM.—Resident Assistant Medical Officer for the Workhouse Infirmary for twelve months. Salary £100 per annum, with furnished apartments, rations (which do not include alcoholic liquors), coals, gas, washing, and attendance. Applications to the Clerk to the Guardians, Parish Offices, Edmund-street.

ROYAL EAR HOSPITAL, Frith-street, Soho, London.—House Surgeon, non-resident, for six months. Honorarium 12 guineas.

SAINT MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—Honorary Surgeon. Also Honorary Assistant Surgeon.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser for two years, unmarried. Salary £105 per annum, with lodgings, attendance, fire, and lights.

VICTORIA CHILDREN'S HOSPITAL, Hull.—Assistant House Surgeon (Lady). Salary £40 a year, with board, lodging, and laundry.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

BEDDOW.—On Oct. 19th, at Rectory-road, Stoke Newington, the wife of J. Beddow, M.R.C.S., of a daughter.

BREESE.—On Oct. 22nd, at Kennington-park-road, the wife of Fredk. Breese, L.D.S., of a daughter.

EVANS.—On Oct. 24th, the wife of H. Muir Evans, M.D., Kirkley, Lowestoft, of a son.

HENCHLEY.—On Oct. 21st, at the Laurels, Blagdon, R.S.O. Somerset, the wife of Albert Richard Henchley, L.R.C.S., L.R.C.P., of a daughter.

HOWITT.—On Oct. 21st, at Ebor House, Grove-park, Chiswick, the wife of George Grahamsley Howitt, M.D., of a daughter.

MCDONNELL.—At Southsea, the wife of Staff-Surgeon J. R. McDonnell, R.N., of a daughter.

PARSONS.—On Oct. 12th, at Kaiapoi, Christchurch, N.Z., the wife of H. Compton Parsons, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter. (By cable.)

ROBERTSON.—On Oct. 18th, at Hill House, Adderbury, Oxon, the wife of James S. Robertson, M.R.C.S., of a daughter, stillborn.

SHELMERDINE.—On Oct. 23rd, at Upton Lodge, Bexley-heath, the wife of Herbert Shelmerdine, M.B., C.M., M.R.C.S., of a daughter.

SLAUGHTER.—On Oct. 19th, at Brondesbury-road, Kilburn, N.W., the wife of Ernest A. Slaughter, B.A., M.D., of a son.

WIGHTWICK.—On Oct. 23rd, at Upper Brook-street, W., the wife of Fallon Percy Wightwick, M.D., of a son.

MARRIAGES.

GARFIT—LINNELL.—On Oct. 22nd, at St. Helen's Church, Tarporley, Cheshire, Chas. Corringham Garfit, M.B., Ch.B. Vict., of Kirby Muxlee, near Leicester, to Ruth Kate, third daughter of Thomas Forester Linnell, of Shaw House, Tarporley.

HUDSON—HOLMES.—On Oct. 22nd, at Whaplode, Lincolnshire, John S. Hudson, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., of Chiswick, to Ada, second daughter of Daniel Holme, Esq., of Madeley, Staffordshire.

MOULLIN—WHITINGTON.—On Oct. 20th, at Tuxford, J. A. Mansell Moullin, M.A., M.B. Oxon, to Bertha Mary, youngest daughter of the late P. Whitington, Esq., of Tuxford.

O'CONNOR—VACOSER.—On Oct. 20th, at St. George's Church, Bloomsbury, Charles Patrick O'Connor, M.D., of The Limes, March, to Emmie Mary, only daughter of the late Edward Robert Vacoser.

PAGE—MENZIES.—On Oct. 3rd, at Holy Trinity Church, Karachi, Sind, Alfred M. Page, Staff Surgeon, Royal Navy, to Susan (Lily), youngest daughter of J. T. Menzies.

SHEPPARD—HEALEY.—On Oct. 19th, at St. Stephen's Church, Dublin, James F. Sheppard, L.R.C.S.I. and L.R.C.P.I., second son of the late Capt. Sheppard, Clifton, Shinrone, to Emmie H. Healey, elder daughter of the late John Healey, Esq., Eye, Northampton.

DEATHS.

BARBER.—On Oct. 16th, at 259, Glossop-road, Sheffield, Edward Barber, surgeon, aged 60 years.

BLAGDEN.—On Oct. 22nd, Robert Blagden, L.R.C.P. Lond., M.R.C.S. Eng., of Cambridge-road, Teddington, Middlesex, in his 74th year.

WICKSTEED.—On Oct. 19th, Mary Beatrice Wicksteed, the beloved wife of Francis W. S. Wicksteed, surgeon, of The Grove, Dulwich, and late of Weston-super-Mare, Somerset.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (5th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (1st). — PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. T. Churton: Thrombosis of the Hepatic Veins.—Dr. W. S. Lazarus-Barlow: Thrombosis of Hepatic Vein in Cirrhosis (? Syphilitic) in a Boy aged thirteen years.—Dr. H. M. Fletcher: Viscera from a Case of Congenital Syphilis.—Prof. Curnow: Acromegalic (?) Skull.—Dr. H. Walsham: Epithelial Pearls in the Tonsil.—Dr. A. C. Latham: Multiple Dermoids in the Abdomen.—Dr. Rolleston: Idiopathic Hypertrophy of the Œsophagus. Card Specimens by Dr. N. Dalton (Dextrocardia with Left Superior Vena Cava), Dr. H. M. Fletcher (Excessive Dilatation of the Left Auricle), and Dr. T. Churton.

WEDNESDAY (2nd). — OBSTETRICAL SOCIETY OF LONDON. — 8 P.M. Specimens will be shown by Mr. Doran, Mr. Butler-Smythe, and others. Papers:—Mr. B. Sutton: (1) On a Case of Tubo-abdominal Pregnancy in which a Living Fœtus was extracted by Cœliotomy after Term and the Mother's Life Preserved; (2) On some Cases of Tubal Pregnancy.

THURSDAY (3rd).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchbourne-street, Edgware-road).—8.30 P.M. Dr. S. Phillips: The Treatment of Typhoid Fever.—Mr. W. H. Battle: Cases of Intestinal Obstruction.

FRIDAY (4th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Dr. C. Dent: The Hospital. (Course of Lectures on Medical Relief.)

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—7.30 P.M. Council Meeting. 8 P.M. Special General Meeting. 8.15 P.M. Dr. G. Herschell: Constipation and its Modern Treatment.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—8.30 P.M. Dr. F. J. McCann: Cases Illustrating the Difficulties in the Diagnosis of Early Tubal Pregnancy.—Dr. A. W. Addinsell: Parotitis following Ovariotomy.—Mr. R. Lake: The Treatment of Laryngeal Phthisis.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Prof. Massei, Dr. D. Grant, Dr. St. C. Thomson, Dr. B. Baron, Dr. Pegler, Dr. W. Williams, Dr. Bond, Dr. Waggett, Mr. Lake, Mr. C. Symonds, Mr. De Santi, and Mr. Agar.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (31st).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. C. Wilkin: Anatomy of Ear, Illustrated with lantern.

TUESDAY (1st).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Tooth: Spinal Cord Localisation (lantern demonstration).

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Ringworm and Favus.—Bethlem Hospital, 2 P.M., Dr. Craig: Delusional Insanity; Paranoia.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. H. Campbell: Cases of Hypochondriasis and Allied Affections.

WEDNESDAY (2nd). — LONDON POST-GRADUATE COURSE. — Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Sources of Water.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton),—4 P.M. Dr. Maguire: Anæmic Murmurs.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. L. A. Bidwell: The Application of Splints to the Upper Extremity.

THURSDAY (3rd). — LONDON POST-GRADUATE COURSE. — Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Dr. P. Manson: Clinical Lecture.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Gunn: Demonstration of Ophthalmic Cases.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post-Graduate Class.)

FRIDAY (4th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Tuberculosis and Leprosy.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. G. L. Cheatle: The Application of Splints to the Lower Extremity.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

TYPEWRITING *v.* PENMANSHIP.

WRITING in the *Journal d'Hygiène* (No. 1138, July 14th, 1898, p. 331) Dr. Moreau, of Tours, draws attention to what he qualifies as a remarkable work by Dr. Bizzorero on the advantages which typewriting possesses over the old-fashioned method of communicating ideas to paper. In the opinion of the author penmanship is fraught with danger to the writer's health in a variety of ways. To begin with, the constrained attitude he is compelled to assume favours a distorted spine, and especially scoliosis, together with venous congestion, headache, epistaxis, dyspnœa, and compression of the abdominal organs leading to constipation and dyspepsia, the latter disability being well-nigh inevitable should he sit down to write immediately after meals. The hands having to execute dissimilar work the penman cannot guide his pen without keeping his eyes glued to its point, and so his vision is bound to suffer, asthenopia being a frequent sequela owing to the straining of the accommodatory apparatus. In adults vertigo and vomiting frequently complicate the case, but in children, whose power of accommodation is greater, the complication to be feared is myopia. The use of a typewriter according to Dr. Bizzorero, is a perfect remedy for all these evils, and for the following reason. The operator sits straight, with head erect and arms at liberty. His lungs have free play, and his abdominal viscera remain uncompressed. His eyes undergo no strain, for he is not obliged to keep them fixed on a moving pen—in fact, after a little practice he can turn them away from the keys whenever he likes without interrupting his work. That distressing complaint, writers' cramp, so common among people who have to live by their pens, has no terrors for the typewriter. His occupation is an amusement to him, and without the least discomfort he can return to it immediately after eating. But it is not to the healthy alone that typewriting presents so many advantages. Numbers of people who have the misfortune to be palsied cannot use a pen, whereas they can express themselves freely, thanks to the machine; and many sufferers from conjunctivitis, iritis, or choroiditis who have been forbidden to

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write after the old-fashioned style can in the same way carry on correspondence with their friends at a distance. If proof were wanting that typewriting has no injurious effect on the eyes it would be forthcoming in the fact that the blind readily become expert manipulators. Dr. Bizzorero advances rapidity in writing as a hygienic advantage, but the legitimacy of the claim is not very apparent. His contention in favour of legibility is, however, more likely to find acceptance, for in truth there are many handwritings of which the attempted deciphering cannot but be highly injurious to the health of the unfortunate persons whose sad fate it is to endeavour to interpret the hieroglyphics. Dr. Moreau observes, in conclusion, that the knell of dactylography is not likely to be heard for some time to come. Bookkeeping will no doubt long serve the cause of penmanship and what writer of *billets doux* would entrust his lucubrations to a mechanical typewriter!

DAVOS-PLATZ.

To the Editors of THE LANCET.

SIRS,—I am shortly proceeding to Davos-Platz in charge of two or three youths whose health is in some need of restoration and medical guidance. I think that perhaps the knowledge of this may prove useful to some of my brother practitioners, many of whom doubtless have cases which under medical supervision might likewise benefit from the salubrious conditions generally under which life in that more or less aseptic region is conducted. I may add that my young companions are in no sense invalids, but it has been deemed prudent as an extreme measure of safety to expose them through the coming winter months to the pure dry air and brilliant sunshine so constantly associated with this health-giving valley of the Alps.

I am, Sirs, yours faithfully,

JAS. T. JONES.

17, Mornington-crescent, Regent's-park, N.W., Oct. 12th, 1898.

MUNICIPALITIES AND THE HOUSING OF THE PEOPLE.

AT the opening of the commissions for the county and city of Dublin on Oct. 18th Mr. Justice O'Brien in addressing the city grand jury made some weighty remarks which deserve to be studied by the so-called "advanced" school of reformers. Much had been heard lately, he said, about the high mortality prevalent in Dublin and about the domestic circumstances of the humbler classes of the community who in too many instances lived under conditions incompatible with health and decency. The cause of the evil was alleged to be the character of the dwellings of the poor in the city, and the corporation had been severely blamed for permitting such a state of things to exist. He had to inform them, however, that many of those evils in their new structures were such as, with the limited powers of the corporation, they had no means of removing. The corporation were bound to exercise the functions assigned to them by law as far as possible to conduce to the sanitary state of the capital over which they presided, but their powers were limited to that function. The poverty which was prevalent in Dublin was the real and true cause of the state of things which led up to the insanitary dwellings and the high death-rate. With respect to the accommodation of the poor the corporation possessed certain powers of interference under the Sanitary Acts, but these powers must be exercised with discretion because no new houses adapted to the requirements of the humbler classes were being built, and of course poor people must live somewhere. In some towns the duty of providing the poor with suitable dwellings had been assumed by the municipal body, but with such a degree of discouragement as not to lead to the example being followed. Private enterprise would probably find that the erection of buildings suitable for the poor would be a profitable investment of money, and a great advantage would result to the city from the giving of employment to the trades connected with building. The poverty of the city was to a great extent owing to want of employment, and it was impossible not to feel that the restrictions imposed by trades' regulations contributed not a little to the difficulty of obtaining employment.

DISLOCATION OF PHALANGES BY A BLOW FROM A CRICKET-BALL.

To the Editors of THE LANCET.

SIRS,—This accident, which came under my observation lately in the cricket field, presents an interesting feature in its mode of causation. It occurred to the wicket-keeper, who wore the usual gloves, and was caused by a blow on the tip of the middle finger of the right hand. As a result there followed a complete dislocation of the second phalanx forwards on the first. It was easily reduced by forcible extension.

I am, Sirs, yours faithfully,

Coventry, Oct. 15th, 1898. RICHARDSON RICE, M.D. Dub.

*** It is not rare for a finger to be dislocated by a cricket-ball, though it is commonly displaced *backwards*. It is rare for the phalanx to be dislocated forwards.—ED. L.

DELIVERY OF THE AFTER-COMING HEAD IN CONTRACTION OF THE PELVIS.

IN the *Deutsche Medicinische Wochenschrift* of Oct. 20th Dr. Radojewski of Janowitz records 3 cases in which he extracted the after-coming head by breaking up the brain through the vertebral canal and washing away the brain substance with a current of water. In his first case, which occurred about twenty years ago, the midwife told him on his arrival that it had been a foot presentation and that she had pulled away the body from the head. He had not brought a cranioclast with him and after vainly endeavouring to extract the head with a hook he passed a uterine sound into the skull through the spinal foramen, broke up the brain, passed an elastic catheter into the skull, attached it to an enema syringe, and injected water till the brain was washed away, after which the head was easily removed with the hook. His next case was in October, 1897, when he was called to a primipara whose conjugata vera scarcely exceeded five centimetres (two inches). The presentation being transverse he turned, but the head could not be extracted by moderate traction and external pressure, and as the child was dead he divided the spinal column between the second and third dorsal vertebræ, broke up the brain partly with a catheter and partly with a wire introduced through the spinal foramen, and washed away the brain with water, after which the head was easily withdrawn. In the third case the operative part was quite similar to that in the second, except that it was impeded by the midwife having previously fractured the cervical vertebræ. As a result of this experience Dr. Radojewski has devised an instrument which is made by Messrs. Evens and Pistor of Cassel. It is called the "cerebrotome aspirator," and consists of a tube a foot long containing a spring 3½ in. long which projects more or less beyond the tube as may be required. The spring is used to break up the brain and is then withdrawn from the tube to which a syringe half full of water is attached and the brain substance is removed by alternate injection and aspiration of the water.

"AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE JAMES McGREGOR LAING."

To the Editors of THE LANCET.

SIRS,—The following subscriptions have been received in addition to those already acknowledged in THE LANCET of July 9th:—

	£	s.	d.		£	s.	d.
Dr. Herbert L. Spencer ...	2	2	0	Mr. J. P. Gannon, Board of Trade	2	2	0
A Poor Medico, Edinburgh	0	5	0	Dr. J. Power, Nailsworth	1	1	0
Professor Findlay, Aberdeen	1	1	0	Dr. George Hunter, Edinburgh	1	1	0
A Mite	0	5	0	Dr. Duka	1	1	0
Mr. Edward Bartlett ...	1	1	0	Mr. T. Corbett, Droitwich	1	0	0
Dr. E. P. Scott, Brussels...	1	0	0	Dr. G. F. Grant, Motihari, India...	1	0	0
Postal Order, Maxwell ...	0	2	6				
Mr. Edmund Owen ...	2	2	0				

We wish to say that, in spite of many attempts to find an established business or a suitable place to begin a shop, we have hitherto not been successful and we have, in consequence, been obliged to give Mrs. Laing, to enable her to live, some £15 out of the money so kindly subscribed. Any further sums will be gratefully acknowledged. Mrs. Laing's youngest boy, John Bertram Laing, now ten years old, will make his third application in May next to be put upon the foundation of Epsom College. Help in this direction will be greatly esteemed.

We are, Sirs, yours faithfully,

J. PICKETT, M.D. St. And. (26, Colville-square, W.),
REGINALD HARTLEY, M.D. Durh. (68, Porchester-terrace, W.)

Oct. 24th, 1898.

DANGERS IN MILK IN MANCHESTER.

APROPOS of the recent investigations by Professor Delépine and Dr. Niven as to the dangers from the milk brought into Manchester the Corporation are seeking powers similar to those contained in the Glasgow Police Amendment Act in connexion with the sale of milk from diseased cows, &c. The City Council decided also to give their support to the Camberwell Vestry in getting a Bill introduced into Parliament for dealing with the mischief arising from condensed milk.

"THE POSITION OF THE ASSISTANT WITH REGARD TO FEES EARNED AT CORONERS' INQUESTS."

WE regret to find that by a slip we have said the exact contrary of our meaning in a note last week in answer to a question from a correspondent on this subject. By the context it is clear that we designed to say that these fees belong legally to the principal—as, of course, they do—but we have written that they "belong to A," and "A" was the letter used by our correspondent to designate the assistant.

"THE CLIMATE OF THE DISTRICT AROUND JOHANNESBURG."

To the Editors of THE LANCET.

SIRS,—Dr. E. Symes Thompson has been kind enough to draw my attention to an inquiry inserted in THE LANCET of Oct. 22nd by a correspondent who desired information about the suitability of the neighbourhood of Johannesburg for phthisical patients and who is anxious to avoid dust-storms. It must be understood that almost all colonial towns are extremely dusty at certain seasons, as the corporations cannot afford the expense of preventing this in dry climates. In the vicinity of Johannesburg the immense traffic and the mining operations create much dust, which is driven about by the high winds. Moreover, the grass there is not so thick as it is, for instance, along the Drakensberg in the Orange Free State. If it is merely a question of ascertaining which part of the elevate region of South Africa is best suited for phthisical patients I

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should recommend the locality of Harrismith on the Natal border, in the Orange Free State. The altitudes of Johannesburg and Harrismith do not differ very much, but the latter place has a decidedly purer and more bracing atmosphere. Speaking generally, the districts along the Drakensberg range on the western side are not so dry as the country west of them, but this fact is of little consequence. My personal observations have persuaded me that very frequently too much stress is laid on the extreme dryness of a climate in combination with high temperature. The exceptional power displayed by the atmospheric conditions of the elevated region of South Africa in restoring phthisical patients to health is principally due to two factors: (1) height above the sea level, which improves the quality of the blood and gives increased vital energy; and (2) the warm, dry atmosphere, which permits the air indoors to be continually renewed. It is scarcely necessary to close bedroom windows either by day or by night, the good result being, of course, due to the continual fresh air and not to its mere warmth and dryness. A further requisite is that the atmosphere must be bracing, for if the locality is very hot in summer the vital energy is reduced; many patients lose flesh and do not easily make it up in winter. Phthisical patients in England will be glad to hear that a movement is now on foot to establish a large and well-appointed sanatorium in the Harrismith district. In my opinion, knowing the greater part of South Africa as I do, that place is the most suitable and has the most effective climate for the purpose in question.

I am, Sirs, yours faithfully,

London, Oct. 24th, 1898. HENRI, COMTE DE MARILLAC.

*** We publish the Comte de Marillac's letter, though it s from a lay pen, as it records personal experience.—ED. L.

QUACKERY AT THE CAPE AND ITS PUNISHMENT.

FREEDOM as understood over here and at the Cape differs widely. Here any ignoramus can treat patients and receive money for so doing without let or hindrance. The treatment may be something tangible, as in the case of massage houses, or it may mean nothing at all, as in the case of the "Christian Scientists." Now in democratic South Africa they will not stand this sort of thing. Only recently a labourer was charged with practising as a medical practitioner without having a licence as required by law. A gentleman who suffered from internal pains was treated by the defendant, who gave him a medicine composed of herbs and he soon got better. Witness's father gave defendant a heifer as a fee. Another patient said that defendant had treated him but he got no better. He had promised to give a heifer but as he got no better he did not pay. Eventually defendant was fined £5.

THE FOUR SQUARE HUMOURS.

To the Editors of THE LANCET.

SIRS,—For some weeks I have been endeavouring to find the meaning of a certain phrase. Your valuable little contemporary *Notes and Queries* has hitherto been unable to suggest a solution, and I venture therefore, the rather as the phrase in question has a more or less medical air, to appeal to the readers of THE LANCET. It occurs in a legend scratched, with a diamond apparently, on a small window-pane once in use in a very old Shropshire house, and still carefully preserved. I need not trouble you with the whole of it, but I may say that it concludes with the words: "Whom God long preserved in the promisses and from the four square humors." It is as to the significance of the last three words that I seek information. The "four humours" of the classical physicians one is, of course, familiar with, but how could a man speak of being "preserved" from all four? He must, one would think, have had at any rate one. And why square? The date, 1690, is likewise inscribed on the pane. Can the "four square humors" by any chance have been a medical colloquialism or provincialism two centuries ago? I can find no trace in any dictionary. It has struck me that some medical man living in the Midlands may possibly have heard of the phrase as once current, and if he has I shall be grateful if he will say so, and at the same time hazard a solution.

I am, Sirs, yours faithfully,

United University Club, Oct. 26th, 1898. ARTHUR GAYE.

THE USE OF THE CRUET IN FIRST AID.

A CORRERPONDENT asks us for the title of a book by one of the staff of St. Mary's Hospital containing directions for the use of the cruet in first aid. Can any of our readers supply the information?

"BARKOO ROT."

To the Editors of THE LANCET.

SIRS,—I have just noticed in THE LANCET of Oct. 8th an inquiry as to the nature of Barkoo rot it should be Barcoo rot, named from the Barcoo district in Queensland, where it is very prevalent), and as I spent three years in that district and saw a great deal of it I beg to submit the following information. I saw it among all classes of men who do rough work in the bush. It is chiefly seen on the hands, as these are especially exposed to injury. The slightest abrasion of the skin may start it. The essential feature is that these abrasions show no disposition to heal for some reason. They suppurate, involving areas much larger than the original focus, and this condition may last for weeks and months. Out there it is looked upon as having a constitutional origin and the antidote which I have seen adopted and do good is tinctura ferri perchloridi taken internally—an empirical remedy; but its effects justify its use. It does not seem to be especially prevalent among men following any special occupation or using special implements, and I can offer no theory as to its pathology. It reminds one of an obstinate coccl infection, but local applications seem to have no effect on it. To put it popularly, the hands seem to get sodden with the constant sweating and the skin becomes so devitalised that the slightest injury causes an abrasion and starts the unhealthy process of ulceration and suppuration.

I am, Sirs, yours faithfully,

EUSTACE BARTON, M.R.C.S. Eng.

Cromwell-road, S.W., Oct. 22nd, 1898.

CURRY FROM A FRENCH POINT OF VIEW.

WE learn from a French journal devoted to hygiene that *le karik* is a very popular condiment in Hindustan and that it has made its way throughout the entire Orient. The natives of these regions value it highly as a powerful aperitive, and also employ it freely in the treatment of a multitude of maladies inclusive of anorexia, atony of the digestive tract, gastric and intestinal dyspepsia, muscular weakness, organic wasting, and climatic debility. When well prepared *karik* stimulates the appetite to a wonderful extent. It consists of morsels of chicken ("the muscular parts" be it noted, not the bones or feathers), together with a *sauce piquante* composed of pepper, ginger, canella, cachumba, and sundry other plants having aromatic qualities, the whole being spread abundantly over very white rice and served up piping hot.

Enquirer.—The condition is an exceedingly common one and its symptoms are always attributed by the victims to impossible telepathic influences. It is not "a clear case of insanity," but the sufferer has lost his mental balance, as his medical man has indicated to him, and we advise him to place himself under proper directions.

A Constant Reader is recommended to apply to Mr. Walter Reeve, 38, Manchester-street, W., who will be able to give him the information he requires. We have not attempted to give a list of the books particularly required for any examination.

Manor Park.—The address of the Irish Medical Schools' and Graduates Association is 11, Chandos-street, W., and that of the honorary secretary, whose name is Mr. James Stewart, F.R.C.P. Edin., is Dunmurry, Sneyd-park, Clifton, Gloucestershire.

Plague.—We are not aware that the Government require further assistance, but application should be made to the India Office and the Colonial Office.

Books.—The best pamphlet on the subject is the well-known one by Dr. J. C. McVail entitled "Vaccination Vindicated."

Mr. E. H. Snell.—We have made the correction. The fees, of course, belong legally to the principal.

M.B., R.N. has omitted to give his name and address.

Disgusted.— he matter will r iv our attention.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 27th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Oct. 21	29·59	S.W.	0·31	74	66	50	58	58	Raining
,, 22	29·90	S.W.	0·03	74	65	57	60	63	Cloudy
,, 23	30·11	S.W.	0·04	88	65	54	55	57	Fine
,, 24	30·09	W.	0·02	97	64	53	53	55	Cloudy
,, 25	30·02	S.W.	...	78	60	48	50	52	Cloudy
,, 26	30·03	S.W.	...	70	63	52	55	57	Cloudy
,, 27	30·02	W.	...	72	61	55	55	56	Cloudy

During the week marked copies of the following newspapers have been received: *Warwick Advertiser, Glasgow Herald, Manchester Guardian, Dundee Advertiser, Scotsman, Doncaster Chronicle, Wigan Examiner, Sheffield Telegraph, Leicester Post, Architect, Times of India, Pioneer Mail, Leamington News, East Riding Telegraph, Hereford Times, Sussex Daily News, Birmingham Gazette, Ilfracombe Gazette, Southern Times, Garston Reporter, Walsall Free Press, Derby Times, Builder, Liverpool Daily Post, Leeds Mercury, Essex County Standard, Western Press, Citizen, Evesham Journal, Yorkshire Post, Brighton Gazette, Bristol Mercury, Western Mail, The Joint Stock Companies' Journal, Sanitary Record, Mining Journal, Local Government Chronicle, City Press, Reading Mercury, Local Government Journal, Lincolnshire Chronicle, Hertfordshire Mercury, Surrey Advertiser, Launceston Examiner, Weekly Free Press and Aberdeen Herald, St. Mary's Hospital Gazette, Woolwich Gazette, Tenby and County News, St. Helens Examiner, Lisburn Standard, Clacton Gazette, Eastern Morning News, Guernsey Star, Leominster Chronicle, Catholic Times, Llanelly and County Guardian, Chichester Observer, Burton Guardian, &c., &c.*

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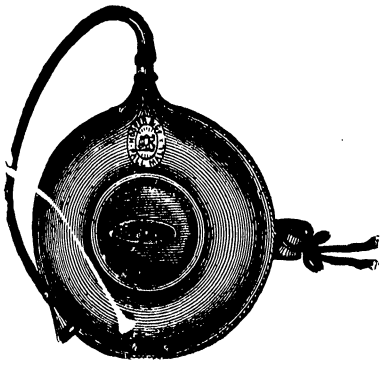
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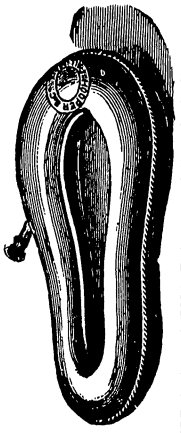
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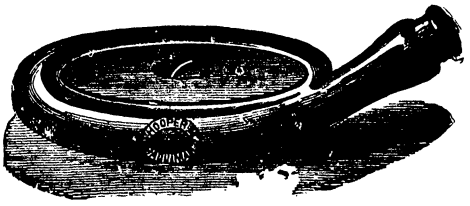
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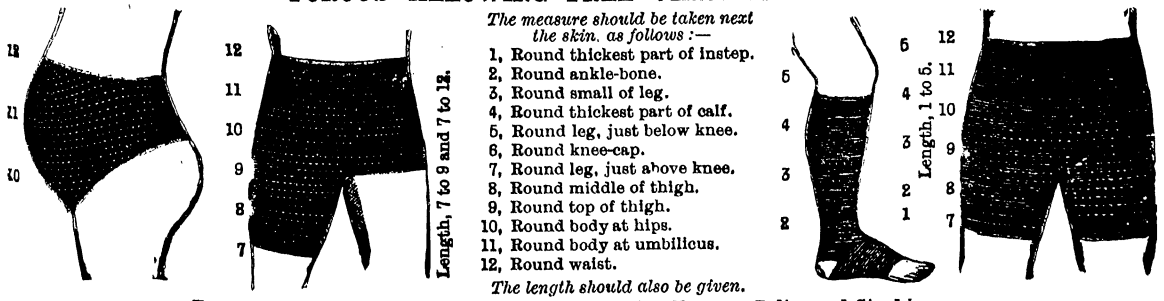
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(See THE LANCET, July 23th, 1898; BRITISH MEDICAL JOURNAL, Feb. 27th, 1897; CENTRALBLATT DER PHYSIOLOGIE, Bd. iii., p. 434.)

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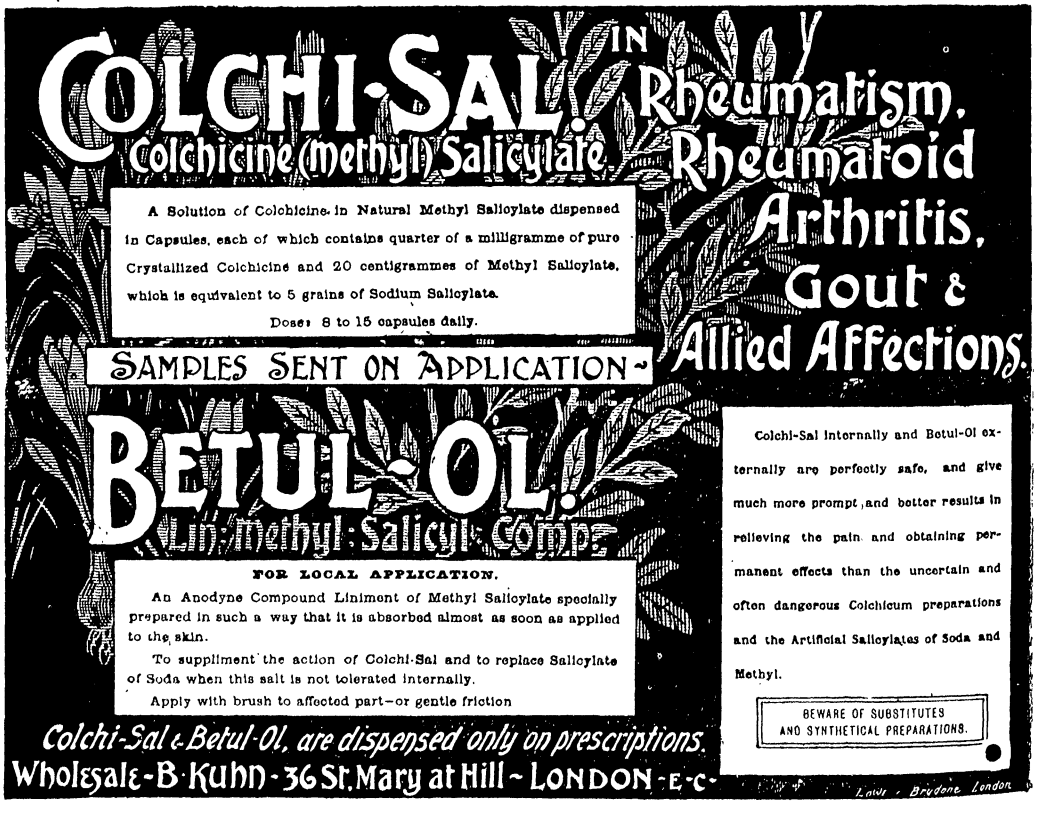
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An Address
ON
ELEMENTS OF PROGNOSIS AND PRINCIPLES OF TREATMENT IN CARDIAC DISEASE.

Being the Introduction to a Discussion at the Medico-Chirurgical Society of Norwich, delivered on Nov. 1st 1898,

BY G. A. GIBSON, M.D., D.SC. EDIN.,

SENIOR ASSISTANT PHYSICIAN TO THE ROYAL INFIRMARY, EDINBURGH; LECTURER ON MEDICINE AND CLINICAL MEDICINE IN THE MEDICAL SCHOOL, EDINBURGH.

MR. PRESIDENT AND GENTLEMEN,—My first duty is to attempt in some measure to express my sense of the honour you have conferred upon me by requesting me to open this discussion. When your honorary secretary communicated your flattering invitation my first feeling was that of weighty responsibility, such as might assuredly arise in the mind of anyone under the circumstances. The corner of England in which we are met is hallowed by the presence of ancient and honourable memories. When the dawn of history first pierced the gloom in which our land was shrouded and threw its light upon this portion of the island it was the scene of tragic events attendant upon the glorious struggle for freedom made by a brave race under the leadership of an heroic queen. Since then this classic region has been the stage upon which has been played many an act in our country's stirring drama; it has been the arena of numberless victories in peace no less than war. The art of healing has, amongst pacific successes, achieved here numerous triumphs. It owes much in almost every one of its branches to those who have lived and laboured, nay, who live and labour, within sight of these walls. For obvious reasons a certain amount of reticence must be observed, but you will perhaps allow me to refer to the deep debt of gratitude to those distinguished men under which medicine, as well as surgery, labours, and to give utterance to the feeling of thankfulness that they are still amongst us to aid us by their counsels and shed lustre upon our vocation. Another reason for the sense of diffidence which threatened to overcome me lies in the fact that your society has from time to time been graced by the presence of men bearing names of world-wide renown, who have at your request brought before you the results of fruitful years devoted to the pursuit of knowledge. Acquaintance with this circumstance only served to deepen my apprehension lest any oblation it might be in my power to offer should be all unworthy of the occasion. Yet in spite of these weighty considerations the invitation vouchsafed by your secretary was so cordial in its tone, so instinct with that spirit of comradeship which has contributed so much to the solidarity of our profession, that it seemed my bounden duty to cast aside my scruples and respond to your summons as the most suitable manner of acknowledging your kindness.

The subject which you have requested me to bring before you to-night is one of such wide import, and at the same time so full of vexed questions, as to be of more than ordinary difficulty. It is, moreover, possible that it may be regarded as almost, if not quite, worn threadbare; it is, in truth, a theme often discoursed upon, yet with the onward progress of knowledge it is one that allows reconsideration from time to time. The views we hold must of necessity alter with the advent of new facts from nature. As Goethe says:[1]

> "Grau, theurer Freund, ist alle Theorie,
> Und grün des Lebens goldner Baum."

The title which has been adopted involves the consideration of what is really but one subject regarded from two different points of view. It is, in truth, absolutely impossible to sever prognosis from treatment. The close association between the gift of foreseeing events and the ability to modify their course is well recognised even amongst those who have but little direct connexion with the art of healing. Many of you will, no doubt, remember the pathetic lament put in the mouth of the good Dr. Chassaigne by one of the greatest writers of the age[2]: "Moi qu'on imagine si savant, si armé contre la mort, je n'y ai rien compris, je n'ai rien pu, pas même prolonger d'une heure la vie de ma fille. Et ma femme, que j'ai trouvée froide dans son lit, lorsqu'elle s'était couchée la veille mieux portante et si gaie, est-ce que j'ai été capable seulement de prévoir ce qu'il aurait fallu faire? ..... Non, non!" Here we have from the pen of one of the closest observers of men and things the clearest recognition of the interdependence of foresight and action. It is perfectly true that a contrary opinion has at times been urged. One of the greatest teachers of modern times has, for instance, stated[3] that "the *prognosis* (or foreknowledge) of the course and event of disease has but little connexion with the promotion of the art of healing." This is assuredly a hard saying to have fallen from the lips of the eloquent Watson in those lectures which are still the object of our admiration. In early ages, and amongst robust peoples, the mind of man has ever sought with hungry longing to peer into the gloom enshrouding the future. It has been somewhat otherwise when a later phase of progress has been reached; at such a stage there has often been no yearning to raise the veil hiding coming events. The Augustan poet deftly handles this shrinking in many a lyric gem, but nowhere perhaps does he more gracefully touch the subject than when he sings:—[4]

> "Prudens futuri temporis exitum
> Caliginosa nocte premit Deus,
> Ridetque, si mortalis ultra
> Fas trepidat."

It is assuredly somewhat less than scientific to recoil before the problems which are connected with the future or to belittle the influence upon action which foreknowledge must exert. If it be true of any branch of knowledge, it is most certainly true of medicine, as Carlyle says,[5] that "the Present holds in it both the whole Past and the whole Future"; "the Future," also, as the same great writer remarks in another place,[6] "is not dissevered from the Past, but based continually on it." It is scarcely possible to imagine anyone who does not attempt to solve at once problems connected with the origin and the result of disease, for, as Hume puts it,[7] "determined by custom to transfer the past to the future in all our inferences," we cannot avoid projecting the results of previous experience into the consideration of coming possibilities. To one who has been trained, as all of us have been, to observe the sequence and event of disease, its probable terminations may, in most instances, be with considerable certainty predicted. "To foreshow these," as your great fellow-townsman, Sir Thomas Browne, remarks in regard to another subject,[8] "is not prophecy but prognostication." It is therefore incumbent upon the physician to remember the adage of the old playwright:[9]

> "Istuc est sapere, non quod ante pedes modo'st
> Videre: sed etiam illa, quæ futura sunt,
> Prospicere."

An engrossing attention to the conditions and circumstances of the moment is not enough. The "mens provida rerum futurarum" of the Roman orator [10] is of a value in medicine, as in other walks of life, that cannot be over-estimated. No doubt the "aliquid in animis præsagiens atque divinum,"[11] of the same author is an inherent faculty, yet it is one that can be successfully cultivated. It is the duty of everyone who professes the art of healing to extend it, for "he will manage the case best," as the Father of Medicine puts it,[12] "who has foreseen what is to happen from the present state of matters." While it is necessary for the purpose of systematic discussion to consider prognosis and treatment separately, it must ever be borne in mind that the two go hand in hand—that, in truth, to be forewarned is to be forearmed.

The elements of prognosis as regards heart disease have in recent times received much attention. The observations of Clark,[13] Pye-Smith,[14] and Broadbent[15] have brought, as it

[1] Goethe, Faust, I. Theil.

[2] Zola: Lourdes, Journée ii., Chapter iii.

[3] Watson: Lectures on the Principles and Practice of Physic, Lecture viii.

[4] Horace: Carmina, Lib. III., Carm. xxix.

[5] Carlyle: Past and Present, Book I., Chap. vi.

[6] Ibid., Op. cit., Book IV., Chapter iii.

[7] Hume's Essays, xxxix., Sect. vi. 7a.

[8] Browne: Religio Medici, Sect. xvii.

[9] Terence: Adelphi, Act iii., Sc. iii.

[10] Cicero: De Divinatione, Lib. ii., Sect. lvii.

[11] Ibid., Op. cit., Lib. i., Sect. xxxviii.

[12] Hippocrates: Adams's translation, Prognostics, i.

[13] Clark: Brit. Med. Jour., vol. i., 1887.

[14] Pye-Smith: Transactions of the Hunterian Society, 1891.

[15] Broadbent: Heart Disease, Chapters vi. and vii.

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were, to a focus many of the views of modern time, while Duckworth in his interesting lectures has also dealt with the subject. The last-mentioned author writes as follows:[16] "The principles on which a prognosis is framed in respect of valvular disease are now well understood. All depends on the constitutional powers, habits, and environment as regards the integrity and nutrition of the cardiac muscular fibres." There is no doubt a large element of truth in these remarks, but it is by no means easy, as will be shown shortly, to arrive at the precise conception which he speaks of with reference to the muscular wall of the heart. If we proceed analytically to consider the various factors upon which a forecast of the future must rest we shall find that there are certain agencies which may all be classed as *general* and other influences to be termed *special*. Let us, in the first place, consider the former.

Firmly believing, as most of us do, in the great doctrine of inheritance we shall find in the past history of the family determining influences which, acting upon the germ plasm, provide for greater or less resistance to the forces of dissolution. That cardiac lesions are hereditary has long been known and our conceptions have been rendered clearer by the work of Leube[17] and Pierson.[18] A glance, therefore, at the family history will in every instance be of great value in framing the prognosis. The past events of individual life without doubt exercise vast influence over the course and event of disease. Previous illness, over-exertion, excess,—all these factors are potent for evil. The great oriental doctrine of Karma, is singularly applicable to the effects of former actions upon the individual. The age and sex of the patient must be taken into account. Affections which begin in tender years are much more serious in their results than those which occur after the organism has attained a riper growth. The influence of sex, moreover, is of far-reaching importance in heart affections. It is universally known, for example, that aortic affections are more particularly found in men, while mitral lesions obtain principally among women. It is quite as generally recognised that the mode of life and the events incidental to either sex are influential as regards the course of a cardiac lesion. The occupation and surroundings need not detain us; their influence for good or ill is so far-reaching as to require but little comment. These general considerations may be summed up by stating that when, from the facts of family tendency or personal history, individual conditions or special environment, the organism is so conditioned as to be in the possession of healthy structures and the performance of healthy functions the prognosis will be by so much the better than if structure and function tend to be rendered faulty by any departure from favourable conditions.

The special factors in reaching a definite prognosis are manifold, but confining ourselves to cardiac lesions and excluding affections of the peripheral circulation we shall be able to arrange them into groups. In lesions of the pericardium interference with the circulation ensues from one or more of three agencies. The presence of an acute process may, by extension to the myocardium, produce a paralytic myocarditis and in this way diminish the cardiac energy. It is fortunately averted by the presence of the fibrinous deposit which, as was pointed out by the eloquent Hilton[19] in his classical lectures on "Rest and Pain," acts as a protection. There may also be the presence of adhesions, as shown by Morgagni,[20] Kennedy,[21] and Wilks,[22] which interfere with the free movement of the cardiac muscle. There is, further, the presence of an excessive amount of serous secretion which, as clearly grasped more than two centuries ago by the great Lower[23] and physiologically explained by Cohnheim[24] and Starling,[25] interferes with diastolic aspiration. Physical examination will in almost every instance reveal with tolerable certainty the cause of the interference. The feebleness of the sounds and the waning yet frequent pulse suffice to diagnose myocarditis arising by extension. The indrawing of the interspaces around the apex beat and the diastolic rebound will give a diagnosis of adhesions, while the distant character of the cardiac sounds and the characteristic enlargement of the dulness on percussion ought to prove that an excessive accumulation of serum is present in the sac.

Endocardial lesions may be, as in the case of most other diseases, acute or chronic. Modern pathological research has shown us that all forms of acute endocardial lesions are due to, or associated with, the presence of micro-organisms, but, whether from differences in the virulence of these infective agents or from the varying powers of resistance possessed by the tissues, the effects of these lesions are very diverse, and it at present seems extremely difficult to foresee the probable termination in any acute endocarditis. Many a case which in an early phase appeared full of hope suddenly and unexpectedly undergoes an unfavourable change and proceeds to a fatal termination, while the converse, although not so frequently encountered, also occurs.

When we turn to the chronic affections of the orifices and their cusps we find, on the whole, a general consensus of opinion as regards the relative dangers attendant upon lesions of the different valves. This agreement, however, is subject to a few individual variations. Speaking generally, it may safely be assumed that aortic incompetence is the most dangerous, and aortic obstruction the least serious, of valvular affections, while mitral lesions occupy an intermediate position, mitral obstruction being rather more formidable than mitral incompetence. The reason for the different degrees of danger presented by these lesions may be summed up by stating that whereas aortic incompetence gives rise to considerable oscillations of pressure, and is at the same time apt to be attended by coronary lesions, mitral affections lead to symptoms of backward pressure upon the lungs, and secondly upon the right side of the heart and the systemic veins. We know from the work of Cohnheim[26] and Rosenbach[27] that artificial valvular lesions do not in themselves cause any loss of mean blood-pressure or disturbance of the equilibrium of the circulation, and it can only, therefore, be as the result of continued interference with the mechanism of the heart and prolonged call upon its reserve of energy that valvular lesions produce their evil effects. The results produced by those lesions are almost entirely dependent upon the state of the cardiac muscle and they must be considered in dealing with the next factor.

The condition of the muscular wall of the heart is the predominant factor in prognosis. Whether arising primarily in itself or secondarily as the result of pericardial or endocardial lesions, any disturbance of normal conditions in the myocardium brings about an alteration of the relative blood-pressure in different parts of the circulation. The nutrition of the heart muscle depends in the first place upon an adequate supply of healthy blood. The maintenance of normal structure in the heart involves the integrity of every bodily function, but, above all, the performance of digestive and metabolic processes in such a satisfactory manner as to produce blood of adequate quality. This must, in the next place, be supplied to the heart in sufficient quantity. Two great points are to be considered here. The coronary arteries, whose relation to the heart was first shown by Morgagni in his earliest work,[28] may be of a calibre too small for the supply of sufficient blood to the heart muscle. This undeniably takes place in sclerotic and atheromatous changes. It is scarcely necessary to refer to the frequent association of coronarteritis and interstitial myocarditis, or so-called fibroid degeneration. On the other hand, when the general blood pressure in the arterial system is too low, and when there is a tendency to venous remora, the heart is apt to participate in the general stagnation, and it undergoes the chronic fibroid degeneration first described in this connexion by Jenner.[29] The cardiac muscle may therefore suffer primarily or secondarily.

The practical question now arises, if the whole prognosis and treatment of cardiac affections depend upon the condition of the cardiac muscle, how is this to be gauged? Do our methods of physical examination furnish us with results of sufficient accuracy to give the means of reliable forecast and adequate management? The investigation of the pulse

[16] The Sequels of Disease, p. 166.
[17] Leube: Deutsches Archiv für Klinische Medicin, 1880.
[18] Pierson: Jahresbericht der Gesellschaft für Natur- und Heilkunde in Dresden, 1880.
[19] Hilton: Rest and Pain, Lecture XI.
[20] Morgagni: De Sedibus et Causis Morborum, tom. i.
[21] Kennedy: Edinburgh Medical Journal, 1858.
[22] Wilks: Guy's Hospital Reports, 1871.
[23] Lower: Tractatus de Corde, cap. ii.
[24] Cohnheim: Lectures on General Pathology, sect. 1.
[25] Starling: THE LANCET, 1897, vol. i., p. 569, et seq.
[26] Cohnheim: Op. cit., Sec. I.
[27] Rosenbach: Archiv für experimentelle Pathologie und Pharmakologie, 1878.
[28] Adversaria Anatomica Omnia, Advers. v., Animad. xxv.
[29] Jenner: Transactions of the Royal Medical and Chirurgical Society, 1860.

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reveals, without doubt, most important facts as regards arterial pressure, yet it is by no means easy to determine the extent to which the different factors involved in the maintenance of the pressure are respectively engaged. It is unnecessary to mention that no instrument yet devised for recording the movements of the pulse is of the least importance from the point of view of prognosis. No form of sphygmograph is of the slightest assistance, and the educated finger can alone be depended upon in attempting to foretell the probable course of events. It is otherwise with regard to certain of the modern instruments intended to measure the arterial pressure. The sphygmomanometer of von Basch[30] and the sphygmodynamometer of Oliver[31] are both of importance in this respect. My own observations with these instruments have been scanty, but for some time the sphygmometer of Hill and Barnard[32] has been in constant use in my wards. The general results obtained by means of it show that in healthy young men the pressure has usually been equal to from 105 to 135 mm. Hg., while in failing compensation it may be as low as 50 or 60 mm. Hg. It is by no means certain that these figures give any real information as regards the energy of the cardiac muscle. There may, for example, be a high arterial pressure, notwithstanding a feeble heart, simply because the peripheral resistance is excessive.

The energy of the systole and the intensity of the cardiac sounds or murmurs must of necessity be taken into account. These are subject to fluctuations according to the condition of the parietes, and this consideration will necessarily lead to the employment of great care in attempting an estimation of them. The cardiograph is for the purpose now under discussion of even less utility than the sphygmograph. Many attempts have been made to estimate the cardiac energy by the investigation of the heart sounds by means of the microphone. This is a subject which for some time engaged my earnest attention, but thus far no results of the slightest value have been attained. Recently it occurred to me to inquire whether the electro-motive force generated by the heart might furnish any prognostic indications. We know from the investigations of Engelmann,[33] Marchand,[34] Burdon Sanderson and Page,[35] and more recently of Waller,[36] that the movements of the heart are accompanied by electric variations which are easy to demonstrate. An electrode made of zinc, covered by chamois leather and moistened with brine, is applied to the front of the chest near the apex of the heart; one or two fingers of the right hand are placed in a vessel containing salt solution and the electrode and brine are connected with a capillary electrometer. The mercury in the electrometer is seen to move with a sudden throb immediately before each beat of the heart, the time interval usually being about 0·015″. When observed with a high power of the microscope in order to ascertain the extent of this electric variation it occurred to me that a micrometer might be employed, and by its means it has been possible to determine that there are considerable variations in the amount of electro-motive changes. The extent of the movements in the electrometer may be recorded by photography, as has been so beautifully done in Waller's experiments, or the movements may be shown graphically by the use of the projection microscope. There are certain difficulties in regard to this subject. In the first place, it cannot be assumed as absolutely certain that the electro-motive changes bear any constant relation to the amount of muscular force; and, in the next place, it will be readily granted that there are without doubt large possibilities of error in consequence of differences in conduction. My investigations upon this subject are as yet only in their infancy, but it seems to me that it is of sufficient interest to bring before you to-night. Although there are but few definite facts to submit for your consideration it may be stated that while in certain individuals with a feeble circulation the variation observed by the micrometer does not exceed one micro-millimetre, in others the extent of movement rises to as much as three.

The size of the heart is a factor of some importance. If it be found by palpation and percussion to be considerably enlarged, although feeble, thereby showing a condition in which dilatation is the principal state, it necessarily leads to apprehensive conclusions. If, on the other hand, it is enlarged but acting powerfully, pointing to the presence of hypertrophy, it again aids the observer by warranting a more hopeful forecast of the future. In this place it may be well to venture upon a note of warning. During the last few years great stress has been placed upon the results of percussion, and enormous changes in the size of the organ have been demonstrated both by percussion and by the employment of radiography. Such statements have been shown by Poore[37] on mathematical grounds to rest on conceptions which can scarcely satisfy the reason of anyone trained in the methods of philosophic doubt. These changes appear, as is urged by A. Morison,[38] to be more the result of apparent diminution in consequence of altered position and of modified form than of real alteration in size.

The condition of the heart muscle can, according to our present lights and our present methods, only be estimated with any approach to exactness by comparing the results of the investigation of the pulse and the examination of the heart. In addition to the results obtained by physical examination of the chest we find in many other symptoms evidence of considerable value. The entire range of effects produced by backward pressure—the enlargement of internal organs, the catarrh of mucous membranes, the dropsy of serous membranes, and the anasarca of subcutaneous tissues—throw, as is so well known, a lurid light upon the condition of the patient. It is far from my present purpose to inflict upon you any analysis of the symptoms produced by such pathological processes; suffice it to say that the modified functions of the structures so affected, familiar as they are to everyone, are of at least as much value as the facts obtained by a rigid investigation of the chest.

To sum the entire subject of prognosis up it may be said that when the arterial pressure is good, the heart not unduly hypertrophied, and the system at large free from any appearance of disturbed equilibrium, the prognosis may be regarded as satisfactory; when the converse conditions are present it must be framed with greater reserve.

It is time to turn now to the second part of our subject—the principles of treatment. It may be premised that they are few in number. The most important object which must be kept in view is the maintenance of the blood-pressure at an adequate height; this aim involves the elevation of arterial, the diminution of venous, pressure. These effects must be produced by acting upon the heart on the one hand and upon the arterioles on the other. The condition of the blood as regards its nutrition will require attention, but in cardiac failure it is a matter of obvious difficulty to arrive at correct conclusions on this subject. As is now well known, in the most profound cyanosis the number of red blood corpuscles is enormously increased; the white blood corpuscles are also somewhat more numerous and the hæmoglobin is large in amount. Speaking generally, it may be said that 8,000,000 red blood corpuscles, 15,000 white blood corpuscles, and 120 per cent. of hæmoglobin come not infrequently under observation. That these changes are compensatory and are produced by the long life of the individual corpuscles through diminished wear and tear has been urged by myself.[39] It is, however, quite possible that they are simply caused by backward pressure as the result of stagnation. This nevertheless does not commend itself to my judgment. An easy way of solving the question would be by the comparison of arterial and venous blood if it were in any cyanotic case justifiable to perform arteriotomy. These facts are submitted to you with the view of showing how difficult it is to come to any direct conclusion with regard to the condition of the blood in respect of nutrition. By acting upon the secretory and excretory mechanism the blood may be rendered more pure, while the relative arterial and venous pressures may also tend to be approximated to the normal. It need scarcely be added that by stimulating the nervous mechanism, and in this way liberating nerve energy, very considerable benefit will accrue to the patient, through the influence which is indirectly exerted on the entire system.

In the practical application of therapeutic principles to the treatment of cardiac disease it is necessary, in the first place, to consider some general methods. Nowhere is the wholesome influence exerted by air and light better seen

[30] Von Basch: Zeitschrift für Klinische Medicin, 1880.
[31] Oliver: Edinburgh Medical Journal, 1898, vol. iv., New Series.
[32] Hill and Barnard: Brit. Med. Jour., vol. ii., 1897.
[33] Engelmann: Pflüger's Archiv, 1875, 1877, and 1878.
[34] Marchand: Ibid., 1877 and 1878.
[35] Burdon Sanderson and Page: Journal of Physiology, 1880 and 1884.
[36] Waller: Philosophical Transactions, 1889.
[37] Poore: Brit. Med. Jour., 1895, vol. ii.
[38] A. Morison: On Cardiac Failure and its Treatment, Part IV. Section vi.
[39] THE LANCET, Jan. 5th, 1895.

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than in the management of circulatory disturbances. Good ventilation and such an exposure as will secure as much sunlight as may be obtained in our country must therefore be provided. In many cases it will be necessary to seek a more genial climate for the winter and spring months than our own country affords. In serious conditions the inhalation of oxygen may be of vital importance. Sufficient sleep, alternating with some gentle intellectual exercise, must in every case be ensured. The former is frequently aided, even in the gravest cases, by the use of two beds for the patient, one to be employed during the night, the other during the day. As regards mental operations, it need hardly be remarked that any brain work must be of the easiest description. The questions relating to food and drink are manifold. In a large number of cardiac conditions, characterised by the presence of dropsy, a dry diet is of the greatest value, and the use of the smallest quantity of fluid possible is helpful. There are, however, many conditions, more especially of renal inadequacy, which forbid such drastic measures and render it necessary to put the patient on fluid food. Abundant rest, accompanied by some exercise, will be of utility. In the worst cases absolute confinement to bed is necessarily imperative, but even under such circumstances exercise may be obtained. It naturally falls into three categories. There is, in the first place, purely passive exercise, which may be given by means of massage. The utility of this method cannot be overestimated. Not merely does it empty the lymphatic spaces and accelerate the return of the contents of the lymphatic and venous vessels towards the heart, but it assists the metabolic processes in those parts of the system to which it is applied. Exercise, partly passive and partly active, may be obtained by means of the resistance exercises introduced by the Schotts,[40] and described in most of the recent works on diseases of the heart. Such resistance exercises are of very considerable benefit in the treatment of cases of heart disease presenting less alarming features than those just referred to. Active exercise may be employed in a variety of ways. In serious cases the exercise must be gentle and had best be confined to walking on level ground; in those which are of less severity gentle hill-climbing will be found useful, while the use of the cycle may be safely recommended. Closely associated with this subject is the stimulation of the system through the skin by means of baths.

The treatment of heart disease by means of baths is by no means of recent introduction, inasmuch as it was advocated by Hope.[41] It is only within the last few years, however, that this method of treatment has come into popular favour, and this is due chiefly to the work of Beneke,[42] Groedel,[43] and the brothers Schott.[44] The method is carried out very thoroughly at Nauheim, on the north-east slopes of the Taunus Mountains, in the Grand Duchy of Hesse. At this charming little place a number of springs arise from a depth of nearly 600 ft. below the surface; these fall into two groups, one of which is used for internal administration and the other solely employed for baths. The springs employed for the baths have a temperature varying from 82° to 95° F. and contain from 20 to 30 parts of sodium chloride and from 2 to 3 parts of calcium chloride in 1000, along with smaller proportions of potassium, lithium, magnesium, strontium, barium, iron, manganese, zinc, bromine, and arsenic, but they also contain a very large amount of carbonic acid, amounting in weight to almost 4 parts in 1000, and by volume 1340 in 1000. As baths these springs are employed in three ways—simple brine baths, effervescing baths, and effervescing current baths. Of these the first are employed at a strength of 15 per 1000 of sodium chloride and 1 per cent. of calcium chloride at a temperature of 94° or 95°, the carbonic acid being previously allowed to escape. The strength is gradually increased day by day and the temperature modified according to circumstances. The effervescing baths contain the full amount of salts and gas, the temperature being varied to suit individual requirements. The effervescing current baths are similar to the last mentioned in all respects save one, the water being allowed to stream into and out of the baths while it is being used. The Nauheim baths may be closely imitated without difficulty by means of Sandow's tablets. There cannot be the least doubt as to the powerful action of these baths under physiological conditions or as to their beneficial effects in some morbid states. The simple saline baths seem to have no influence beyond that of ordinary water at the temperature which is employed; that is to say, when the temperature is high the pulse becomes somewhat more frequent and more bounding, without any perceptible change in the condition of the heart. The effervescing baths in health cause a fall of the pulse-rate, an increase in its volume and an elevation of its pressure. Similar effects are produced in many conditions of disease. The effervescing current baths give rise to analogous effects, which, however, are somewhat more marked. So far all are agreed, but a considerable amount of controversy has raged round the size of the heart on percussion. My own observations, both at Nauheim and by means of imitations of the baths in this country, have convinced me that the apparent size of the heart is reduced by means of these baths, but that this apparent reduction of the cardiac dulness is produced by any actual diminution in the size of the organ has yet to be proved. It therefore seems to me that the suggestion of A. Morison,[45] previously referred to, is correct.

While there are differences of opinion as regard the results of these baths upon the apparent size of the heart, there can be none in respect of the beneficial results which accrue from the Nauheim treatment in suitable cases. Instances of cardiac weakness and dilatation, whether from depression, general disease, or over-strain, are certainly those which gain most. Many other conditions, however, such as cases of approaching breakdown in middle life and early disturbances of compensation in valvular disease, are also much improved by a course of baths. The greatest care must be employed in the selection of suitable cases. There can be no doubt that in many serious disturbances they will do more harm than good. The mode of action of these baths has been variously explained. By Schott,[46] for example, it has been asserted that increased tissue change is caused by a greater power of absorbing oxygen by the cells, possibly from the passage of gas through the skin, so as to come in contact with the tissues and stimulate the arterioles and capillaries. He also allows that there is probably a reflex stimulation of the heart producing more complete and thorough contraction. Broadbent[47] is of opinion that there is more probably a physiological dilatation of the capillaries in the skin so that the resistance to the blood is lessened and the left ventricle is unable to complete its systole. A. Morison[48] regards the action as being mostly reflex, but he is of opinion that the mere act of bathing is to be regarded as a form of gymnastics with a certain amount of influence over the circulation. With these views I practically agree.

Besides these various measures there are to be considered the special medicinal remedies which act directly upon the circulation. Almost all drugs which directly affect the heart and blood-vessels are to be found in Schmiedeberg's great group of nerve and muscle poisons. These various substances produce effects which vary very greatly, both in regard to the doses which are given and the time which elapses after administration. Many of them act as stimulants or tonics in small doses, while others act as sedatives or depressants in larger amounts. Another important consideration is that cardiac stimulants must be distinguished from circulatory stimulants. Many drugs excite the activity of the heart while producing no influence on the rapidity of the circulation; others can bring about acceleration of the blood-flow while producing no effects of an exciting kind upon the heart. As it is, therefore, difficult to classify these poisons from a purely physiological standpoint it is more convenient to arrange them in pharmacological groups. The alcohol group is of the greatest importance in the treatment of circulatory affections. Most of the drugs belonging to it produce in moderate doses dilatation of the arterioles and acceleration of the heart, while in larger quantities they bring about depression of all the great vital centres, including those controlling the circulation. Whether acting directly upon the heart muscle or indirectly through the nervous mechanism ethyl alcohol in almost any of its numberless forms acts both as a stimulant and as a food.

[40] A. and T. Schott: Berliner Klinische Wochenschrift, 1884.
[41] Hope: Diseases of the Heart and Great Vessels, p. 282.
[42] Beneke: Deutsche Klinik, 1863.
[43] Groedel: Berliner Klinische Wochenschrift, 1878.
[44] A. and T. Schott, loc. cit.
[45] A. Morison: Loc. cit.
[46] Schott: The Mineral Waters of Nauheim, 1894.
[47] Broadbent: Heart Disease, Chapter viii.
[48] A. Morison: Op. cit., Part IV., Section iii.

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Ether is a powerful stimulant while chloroform is a most useful sedative, and chloral, although powerfully depressant on account of the large amount of chlorine in the molecule, is of importance as a hypnotic. Paraldehyde, sulphonal, and trional are the hypnotics belonging to this group which are most worthy of confidence. Closely associated with the alcohol group is that of the nitrites. These drugs, which owe their introduction to Lauder Brunton, are of world-wide renown for the purpose of reducing blood-pressure by dilatation of the arterioles. The ammonia group contains several drugs which have long been employed as stimulants, but modern research has not adequately explained this empirical conception. Carbonate of ammonium and its preparations certainly raise the blood-pressure. Such drugs are therefore of frequent employment, especially in combination with cardiac tonics. The camphor group contains several remedies which have a powerful effect in stimulating the cardiac muscle, and remedies belonging to this class are accordingly useful aids in the management of many circulatory conditions. Substances belonging to the caffeine group cause some vascular stimulation and inasmuch as they produce a change in the muscle curve they may influence the heart. This, however, has not been proved. Being direct renal stimulants they are of much importance when dropsy is present. Lastly, that most valuable class of drugs containing digitalis and strophanthus, besides many which from their inferior value require no mention, must be considered. What has to be said of this group really belongs to the two drugs named, seeing that they form the type of the class. The singular "type" is used, not "types"; the reason of this is that the drugs are practically identical in their effects. Diminution of pulse-rate, increase of cardiac energy, contraction of arterial walls, and consequent elevation of pressure result from both. There may be somewhat less arterial contraction in the case of strophanthus; it is, however, doubtful, and anyhow it is but a question of degree. In their results upon cases of disease it seems to me that strophanthus is to be preferred when there is necessity for rapid action and where the digestive system is irritable. On the other hand, digitalis is more valuable when the kidneys are not acting adequately and where œdema is present. In the latter condition the infusion acts most usefully, probably from containing a relatively large amount of digitonin. Into the mode of action of these drugs, whether they exert their influence by means of the nervous system or directly by stimulating the cardiac and arterial muscular structures, it is not expedient to enter. Suffice it to say that this point has not yet been cleared up.

In addition to all these means there are such important measures as evacuation, in which the employment of mercury is of prime importance, blood-letting, local and general—a method too much neglected—removal of fluid, whether by aspiration or by Southey's tubes, and counter-irritation by various agents. Each and all of these methods may be of the highest value. In recent years the treatment of cardiac affections has owed some brilliant results to serum-therapy. As has already been mentioned, micro-organisms are present in all cases of acute endocarditis, and it follows that the hard-and-fast line which used to be drawn between ulcerative or malignant and simple or verrucose endocarditis is no longer valid in its former meaning — in other words, the distinction is now clinical, not pathological. In certain infective cases cultures of the blood have revealed the presence of organisms, but, on the other hand, instances equally grave have given negative bacteriological results. The interesting point is this, that whether there has been a positive or a negative result on cultivation the employment of anti-streptococcic serum has in cases which would hitherto have been hopeless produced a fortunate result. An example of this condition was recently brought under my notice by one of my friends, who kindly asked me to see the patient with him. Although presenting clinical features strongly suggestive of infective endocarditis the blood was sterile, yet the use of Behring's serum was followed by rapid improvement leading to recovery.

Passing the various acute diseases by without further reference let me bring these somewhat rambling remarks to a termination by grouping the different varieties of chronic heart-disease into two classes according as the lesion has been adequately compensated or the circulation manifests disturbance of its equilibrium. In the former group, comprising the less serious cases of heart disease, *nimia diligentia* must be our motto; the "masterly inactivity" of a great statesman finds here a suitable field. Watchful care must no doubt be exercised in respect of all the general surroundings of the patient, that have already been examined, but the time of action has not arrived. While employing every means to ensure environment and occupation suitable for the conditions it will probably seem advisable to prevent the patient becoming a valetudinarian. It is far otherwise when there is inadequate compensation and the distressing features of failing circulation develop. Under such circumstances every measure calculated to strengthen the heart, to elevate arterial pressure, to aërate the blood, to remove excessive fluid, to improve the nutrition, and to stimulate the nervous system must be invoked. To do this is a task that will often tax all the energies of the physician and call forth all his ingenuity. He will, however, frequently find his reward in the recovery of some one,

> "Who scarce had pluck'd his flickering life again
> From halfway down the shadow of the grave," [49]

and he will find it, in the storm and stress of circumstances, to be a solace to follow the poet's advice:—

> "Æquam memento rebus in arduis
> Servare mentem." [50]

Inaugural Address
ON
SOME RUDIMENTS OF INTESTINAL SURGERY.

Delivered before the Midland Medical Society at Birmingham on Oct. 20th, 1898,

BY FREDERICK TREVES, F.R.C.S. ENG.,
SURGEON-IN-ORDINARY TO H.R.H. THE DUKE OF YORK; SURGEON TO THE LONDON HOSPITAL.

GENTLEMEN,—Anyone who still persists—on such an occasion as the present—in giving exclusive prominence to abdominal surgery cannot but be reminded of the fable of Æsop which relates to the "Belly and the Members." It will be recollected that in that parable the members complained that their interests were not duly recognised, and that the pompous and overbearing attitude assumed by the belly was inconsistent with its intrinsic importance and with the rights and privileges which the members claimed as portions of their body politic. So far as the corporation of medicine is concerned it may be argued that enough for the present has been said about the abdomen and its concerns, and that it is time we returned to the needs of the extremities. In begging, however, that you will allow me to limit my remarks this evening to that perhaps over-exalted subject, abdominal surgery, I may urge that the extra-visceral parts of the body have had an almost exclusive monopoly of surgical attention for many centuries and that Æsop—who was ignorant of even the fashionable exploratory incision—decided his fictitious quarrel in favour of the belly. I would wish to deal solely with so much of this great subject as concerns the intestines and with such details in that department as may be of some present interest.

As a preliminary and introductory matter I may assume that all surgeons who have concerned themselves with intestinal surgery must be growing sceptical in regard to the alimentary canal of man and its fitness for its reputed functions, and must be in doubt whether it deserves the encomiums which have been lavished upon it as an efficient work of nature. The actual body of man seems to have changed but little since his first appearance on the earth, but the environment of the man has changed in the meantime to an extent beyond all reasonable conception. Now it is a question if the alimentary canal has adapted itself to this latter change. It is a question if the human digestive organs have progressed with the times and have advanced with that progress of events which has raised man from a clever brute to a cultured epicurean. It is a question, indeed, if our stomach and intestines are, to use a common expression, quite up to date or are quite adapted to the

[49] Tennyson: Idylls o the King.
[50] Horace: Carmina, Lib 'II., Carm. iii.

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enlightened individual they serve. The naked cave man scrambled out his life some thousands of years ago and was contemporary with the long extinct cave bear and cave hyæna, yet his skeleton differs in no essential from the skeleton of the modern dandy who, arrayed as Solomon in all his glory, suns himself to-day in Rotten-row. A nineteenth-century public dinner would probably have confined the cave man to his cave for many sorrowful and painful days and if the modern alderman had to dine on badly cooked hyæna meat torn from the bone by his own incisor teeth, he would possibly find himself in a few days upon the operating table. Yet the same alimentary canal has had to do duty for the two specimens of humanity and for the two types of feast. It is no matter of wonder that it has failed somewhat in the herculean effort of adaptation. That it has not wholly succeeded is evident by many signs. If the cave man could return to earth and could travel by rail from London to Birmingham he would notice that almost every field by the way had erected in it an isolated wooden hoarding on which was painted a conspicuous inscription. From a certain repetition of these inscriptions he might gather that the painted words were incentives to religious fervour or that they were patriotic expressions calling the traveller to deeds of heroism and virtue. He would be pained to learn that they were merely advertisements of aperient pills.

It would appear, indeed, that these common objects by the traveller's way show that the cry of the people is not so much for light and leading as for laxatives. It is a curious comment upon the unfitness of the alimentary canal for its simplest duties that the animal, the vegetable, and the mineral kingdoms have been ransacked to provide incentives to peristaltic movement. The discovery of a new laxative would excite more public interest than the discovery of a new planet, and the habit of aperient drinking must rank in the annals of intemperance as but little less enthralling than the vice of the tippler. A further suggestion that the present type of alimentary canal is becoming obsolete is provided by the fact that in the literature of medicine a singularly prominent place is given to diseases of the stomach and intestines. The name of these maladies is Legion and in certain sections of the community dyspepsia can hardly be regarded as an abnormal condition. It is safe to say that among the so-called cultured classes one man in ten is "on a diet," and one woman in ten is "living on aperients." As for the liver it retains a place in our economy as a thing compounded of mystery, meddlesomeness and inefficiency. While some patients speak of their livers with a certain amount of awe, others refer to that organ with a degree of familiarity which is almost irreverent. With many the liver is a kind of fetish which has to be humoured and appeased, and no appeal to a medical man is more earnest than the prayer for "something to touch the liver." By others the liver is spoken of as if it were a piece of defective machinery and is alluded to in terms which would be suitably applied to a motor car or a cheap watch. It is complained that the organ is always "out of order," that it "will not act," that it is perpetually in need of something to make it act, that it is "sluggish," that it is easily "upset."

While the laity talk of their livers with an exactness which is based apparently upon most familiar acquaintance, the physician has not yet acquired a sufficient knowledge of that organ to enable him to even define precisely what is meant by "biliousness" or to give any reasonable scientific account of a "bilious attack." Time will probably show that the liver has played the part of a pampered charlatan and that its reputed powers are to no little extent based upon a great physiological fraud. Wherever the truth might lie, it would appear evident that this much-physicked organ is not competent to deal with the requirements of the alimentary canal of modern man, or at least that it performs its duties in the halting manner of a worn-out machine.

How things will fare with us in the future it is hard to say, but some hope of amendment is held out by the knowledge that nature appears to be both ready and ingenious in modifying structure to meet individual requirements. One notices, for example, amongst mammals what extraordinary and probably satisfactory experiments have been tried with the cæcum. The ornithorhynchus has a mere apology for a cæcum; the ursidæ have no cæcum at all, while many of the herbivora have cæca of immense proportions which apparently play an essential part in digestion. The two-toed ant-eater seems to have been in doubt as to whether it should accept the mammalian cæcum or content itself with the double cæcal appendages of certain birds, and to prevent any inconvenience from its indecision it has provided itself with three cæca—one of the mammalian form and two of the type met with in certain birds. The vulpine phalanger has been very decided in its appreciation of the cæcum and has possessed itself of an appendage which is twice the length of its own body.

In the matter of the stomach nature has proved to be most accommodating. The blood-sucking bat, or desmodus, living as it does on a highly digestible food which requires little more than storage, has almost solved the problem of how to live without either stomach or intestine. The fruit-eating bat—the pteropus—has turned its stomach upside-down so that it might digest its food in comfort while hanging head downwards. The kangaroo has a stomach precisely like our large intestine—i.e., arranged in sacculi so that its food may be packed away in small parcels and thus not incommode the animal when taking its prodigious leaps. The ruminant stomach appears to have been the outcome of an unattractive and bulky diet on the one hand and on the other hand of that passion for leisure and for reflection after meals which is so well marked in the common cow.

Without multiplying examples of apparent experiment and adaptation, one might be permitted to speculate as to the future form of the digestive canal of man. The human being is becoming toothless, and when it is recognised that a conspicuous function of the teeth is merely to provide material for the undoubted ingenuity of the dentist they will probably be allowed to go. Recent operations in which the entire stomach has been excised without any very gross inconvenience to the patient would seem to suggest that one might possibly dispense with our present type of stomach. Our intestine is probably unnecessarily long and the removal of considerable portions of it has done no more than add to the comfort of those individuals who have recovered from the operation. One patient of mine, who was the subject of congenital stenosis of the lower bowel, has been entirely relieved by the removal of the anus, rectum, sigmoid flexure, and descending colon. The child's large intestine is in this case represented by the ascending and transverse colon only, very much to the convenience of the patient. The frequency with which the sigmoid flexure is involved in mechanical difficulties and the common occurrence of cancer in the rectum would suggest that the terminal part of the bowel is becoming effete and may be regarded as degenerate by any pathological Max Nordau. As a matter of simple speculation it may be surmised that the coming man will be quite edentulous, that he will have a less enigmatical liver and no gall-bladder, and that his intestine will be considerably shortened and—it is to be hoped—considerably simplified. Extreme refinement in the selection of food materials and an exquisite cultivation of what is termed a "palate" may lead to an elongation of the œsophagus and to the development of taste organs along its entire length. In the place of the present stomach it is probable that the edentulous man will develop a gizzard. A gizzard would appear to be a labour-saving organ which is to be depended upon, and which is little liable to get out of order. A gizzard would probably be a great comfort to the over-worked man of business and to the seeker after pleasure who spends much of his life in continental hotels. The ruminant stomach has many attractions. Its size would make it popular with the operating surgeon, and its leisurely method of disposing of its contents suggests intervals of calm in the rush of modern existence. A ruminant stomach in a human being would, however, be inconsistent with the exclusively human habit of after-dinner speaking, and the actual act of rumination would no doubt be inconsistent with the amenities of the modern drawing-room.

To leave these matters of speculation and to enter upon subjects of present interest I would venture in the first place to allude to certain features connected with intestinal obstruction. The morbid anatomy of this affection has been very elaborately treated by many writers, and it is probably safe to assume that our knowledge of the mechanism of obstruction of the bowel is, in its main particulars, practically complete. From a clinical point of view, a proper appreciation of this common trouble is a little obscured by the prominence given to the actual item of the obstruction. In a fatal case of acute intestinal obstruction the undoubted occlusion of the bowel is by no means either the most serious or the most essential element in the progress of events. In a really acute case death will

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take place within seven days, and it may almost be said that the fatal issue is in small part due to the fact that the lumen of the bowel is occluded. Obstruction of the bowel *per se* is not an acutely serious thing. The intestine may be blocked for a week, or for two weeks, or even for three weeks, and yet no very distressing or very alarming symptoms may attend this circumstance. In a fatal case of acute intestinal obstruction it can hardly be said that death is due directly to the obstruction. The complete closure of the bowels for a period of, say seven days, is not in itself an accident to cause death. Moreover, the clinical manifestations in a case of acute intestinal occlusion are in large part due to conditions other than those directly arising from the obstruction in the lumen of the gut. Finally, there is a period in the progress of such a case as we are considering in which the relief of the obstruction will not save the patient's life. Those who like to speak in paradox are almost justified in saying that in fatal cases of intestinal obstruction the patients do not die from intestinal obstruction. The interest of this matter extends, however, beyond a mere play upon words, and it can be shown that an undue prominence given to the mere fact of the obstruction is apt to distort both the clinical conception of the disease and the proper view of its treatment.

In the course of a case of acute intestinal obstruction it is possible to recognise three stages. In the first stage—or that of the onset of the trouble—the symptoms are those of intense abdominal pain, collapse, and vomiting. We will assume that the lesion is represented by the snaring of a loop of ileum by a peritoneal band. The symptoms in question, however, are in no way due to the fact that the bowel has become abruptly blocked. They depend upon the circumstance that a sudden and intense impression has been made upon exquisitely sensitive abdominal nerves. The symptoms must be classed as purely nervous. The vomiting, for example, is reflex and has no connexion whatever with the accidental fact that the bowel has become occluded. The symptoms which mark the onset of a case of acute intestinal obstruction have little or no diagnostic character. They are symptoms which attend all sudden and intense painful impressions upon important visceral nerves, and have been collectively described under the title of "peritonism." They are symptoms common to a series of intra-abdominal accidents. In the absence of any determining feature in the patient's history these clinical phenomena may equally well mark the passage of a gall-stone, the torsion of an ovarian tumour, the perforation of an ulcer of the stomach, or the rupture of a pericæcal abscess. They are nervous symptoms produced by a common nerve lesion and their interpretation can proceed no further than this—there has been an abrupt and intense impression made upon some part of the abdominal nerve plexuses. We have all seen cases in which perforation of the stomach or the appendix has been mistaken for intestinal obstruction and *vice versâ* and cases in which the lesion found in an early operation has had no kind of relation to the trouble suspected or assumed.

In what may be termed the second stage in a case of acute obstruction the symptoms attain more individuality and depend without doubt mainly upon the mechanical obstacle in the bowel. The pain is to a large extent due to disordered and futile peristaltic movements, the absolute constipation depends upon the blocking of the intestine, and the persistent vomiting is in the main due to the same cause. The character of the vomit, however, shows that another factor is being introduced into the circumstances of the case in the form of rapid decomposition of the intestinal contents. This depends, of course, upon the unnatural retention of those contents in the bowel and probably in a still larger degree upon vascular and other changes in the intestinal wall. The vomited matter becomes offensive and acquires an odour which for want of a standard of offensiveness may be called stercoraceous. Fæculent or fæcal vomiting—by which I assume is meant the ejection of fæces—I have not met with in acute obstruction. Finally, there is an increasing distension of the abdomen. This is largely due to mere accumulation, to mere inability of the contents to escape. The meteorism in intestinal obstruction is, however, in great part due to vascular changes in the bowel wall. This fact has been fully demonstrated by experiments upon animals and by pathological observations in man. It is well illustrated by the distension of the twisted loop in volvulus of the sigmoid flexure. The most severe case, indeed, of meteorism of the small intestine which has come under my notice was associated with no mechanical obstruction in the gut but with thrombosis of the superior mesenteric vein.

Last of all, in the third or final stage of acute obstruction the symptoms have little to do with the actual obstruction as such. They are the symptoms of poisoning and the patient who dies unrelieved dies poisoned. The septic matter which leads to his death is derived from his own intestine. It is the rapid onset of septicæmia which makes the operative treatment of acute intestinal obstruction so futile in the majority of cases. In many and many an instance an accurate diagnosis has been made, an early incision has been carried out, and the cause of the obstruction has been readily discovered and removed. The abdomen is closed and the patient dies. I remember one very painful example of this sequence of events. The patient was a man of middle age; the operation was performed forty-eight hours after the onset of the attack. A strangulating band presented itself the moment the abdomen was opened. It was divided without difficulty and the parietal wound was closed. A more favourable case could hardly have been conceived, yet the patient died with septic manifestations and the necropsy revealed no breach in the bowel and no gross peritonitis.

Those who wish to advance the therapeutics of intestinal obstruction must first of all grapple with this terrible element of intestinal septicæmia. Surgery wants a Lister who will teach us how to overcome the process of decomposition in the bowel. The lesion of the bowel need be by no means grave, the operation of dividing an easily discovered band cannot be considered to be severe, and yet the patient dies. I am quite aware that in a large proportion of these cases there is infection of the peritoneum to a degree which may lead to death and yet produce few of the naked eye manifestations of peritonitis, but the infection starts from the bowel and in the bowel the process of antisepsis must start. The intestine has some power of acquiring immunity against this septicæmia, as is made evident in cases of chronic obstruction of the bowel, and one meets with slighter grades of this self-poisoning from which the patient makes an easy recovery. Such milder forms are often seen in instances of fæcal accumulation. As soon as the fæcal mass has been removed there is often some fever with a mild degree of collapse and possibly nausea or even vomiting. As a rule such manifestations vanish in a day or so. The stomach seems not to lend itself to this form of blood-poisoning and extensive accumulations may take place in that organ and lead to no septic effects. The colon, too, would appear to possess a natural immunity up to a certain point, but in the lesser bowel the process is uncontrolled, desperate, rapid, and almost hopeless.

From a practical point of view, the treatment of acute intestinal obstruction appears to me to demand two things of the surgeon—(1) an early operation and (2) the evacuation of the bowel after the strangulation has been relieved. The first of these two measures will, I imagine, be allowed by all to be commendable. I do not urge that the opening of the abdomen in these particular cases is a trifling measure, but it is infinitely trifling when compared to the mere standing by with folded hands to await the remote possibility of spontaneous cure. The so-called medical treatment of these cases is a relic of the dark ages and must rank with the "faith cure" and the medical treatment of a dislocated hip.

With regard to the second proposition it appears to me that in a certain sense the real danger to life lies rather with the poisonous material in the intestine than with the actual obstructing cause beyond its walls. As I have already said, the patient is dying not because his bowel is occluded, but because the distended gut above the obstruction is producing a poison which is sapping his strength. It has unfortunately been too many times demonstrated that the successful relief of the obstruction will often fail to save life, and, indeed, it is of more moment to relieve the patient of the trouble within his bowel than of that which is without it. I have in all cases of acute intestinal obstruction with which I have had to deal in recent years not considered the operation complete until I had, as a matter of routine, emptied the bowel. This is conveniently done by bringing the most distended coil to the parietal incision and evacuating it by means of a small glass tube which is inserted into the gut and secured to the bowel wall by a single encircling thread. I have had no difficulty in closing the small artificial anus by a subsequent operation carried out some weeks after the original proceeding. I can certainly

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state that this measure has had the effect—in my own practice at least—in reducing the mortality of this formidable measure to one-half of its original rate.

Some time ago, when collecting records of cases of acute intestinal obstruction treated by operation, I was struck by the fact that by far the best results attended the instances in which the surgeon had simply performed enterostomy—that is to say, in which he had made a small abdominal incision, had drawn out the first distended coil which presented itself, and had opened it and fixed it in position. In this remarkable series of cases the obstruction had been ignored and had not even been sought after and evidence was lacking to show what had happened to the snared bowel after the operation. I am quite aware that among these cases there are probably some in which there had been an error in diagnosis, but the number of examples in the series is too extensive to allow this possibility to disturb the conclusion which is forced upon those who will critically examine the evidence. In my opinion, the operation for really acute intestinal obstruction is not completed until the bowel has been evacuated of its contents. This measure of treatment is by no means new; it was most vigorously advanced by Travers in his remarkable work on the intestine which was published over eighty years ago. Travers supported his views by experiments upon animals and by the observation of many cases in the human subject and he elaborated his proposition by arguments which have not been affected by the scientific advances of a century.

To appreciate and deal with septic processes within the bowel must be one of the very first rudiments of intestinal surgery. The teachings of Lister have led to a revolution in the surgeon's art which is still a matter of amazement. Antiseptic surgery, however, as we employ the term, concerns itself mainly with the prevention of forms of infection in which the septic germ is introduced into the body from without. Antiseptic surgery has practically left untouched those forms of infection in which the septic element is in a certain sense introduced into the system from within. I allude specifically to those grave and often fatal conditions of septicæmia in which the patient is poisoned by the products of decomposition in his own intestine. I have just alluded to such infection in connexion with acute intestinal obstruction and without going fully into the matter I might add that in the majority of the examples of non-traumatic peritonitis, excluding the puerperal and tuberculous forms, the infection comes from the patient's own bowel. And with regard to that infection the remarkable fact is this, that the bacillus which appears to be most concerned in the production of this septicæmia is not a bacillus introduced accidentally into the bowel from without, but a bacillus which exists normally in the bowel in a condition of health. I allude, of course, to the bacterium coli commune. It is probable that the micro-organisms described under this name do not belong to one particular, definite species and that the term bacterium coli commune may be taken as a collective name for a group of bacteria which will probably be in time resolved into several different species. Anyhow this widely diffused bacillus exists normally in the intestine of healthy man and appears in the bowel a few hours after birth. It is found in all parts of the intestinal canal and at all periods of life. It is scarcely reasonable to assume that this invariable occupant of the healthy intestine is a mere noxious or useless parasite. It is more than probable that it is concerned in some direct or indirect way with the process of digestion. It would be indeed interesting to know how the phenomena of digestion would proceed in a sterile bowel. The bacterium coli may remain a perfectly harmless saprophyte; on the other hand it may rapidly alter its character and become possessed of intense pathogenic activity. It has been shown that in the majority of cases of perityphlitis the local inflammation is due to the bacterium coli commune which has escaped from the lumen of a diseased vermiform appendix. That extensive variety of peritonitis which takes its origin from the intestine — as illustrated by the peritoneal infection attending strangulation of the bowel — would appear to be in nearly every instance due to the micro-organism now under discussion. The virulence of the bacillus coli is subject to a quite extraordinary variability. An exaltation of its virulence may be due to an association with other organisms, pathogenic or non-pathogenic, but in most instances its morbid activity is excited by some change in the condition of the bowel itself. Diarrhœa, enteritis, cholera, typhoid fever are all capable of rendering this organism virulent, and the same may be said of the conditions attending fæcal accumulation.

Experiments upon animals make it probable that in man a moderate infection of the peritoneum with the colon bacillus from a healthy bowel would be harmless, while an infection by equal dose from a bowel rendered in any way unhealthy would induce peritonitis. Surgical experience would certainly support the suggestion. Klecki[1] has shown that the bacterium coli from the ileum is the most virulent, that from the jejunum ranks next, while that from the colon is the least potent for harm. There is no doubt that so long as the bowel wall remains intact, especially as regards the epithelium, little or no opportunity is afforded to the bacterium to escape from the gut. Artificial compression of a loop of bowel by an indiarubber ring (with or without ligature of the mesenteric vessels) will cause acute general peritonitis in dogs, as Klecki has demonstrated. The animals die in from twenty-four to forty-eight hours. The epithelium rapidly desquamates, the vessels dilate, and there is an abundant infiltration of the whole wall of the ligatured knuckle. The virulence of the colon bacillus within the loop is infinitely greater than that of the same micro-organism from an undisturbed part of the same intestine.

These facts suggest, by the way, that the handling of the bowel during an operation should be of the gentlest and that the evacuation of an obstructed loop is very desirable. On the other hand there is no doubt that the normal peritoneum has considerable powers of resisting an invasion of this particular bacterium. This protective power, however, would appear to be very soon lost if the delicate surface of the serous membrane be damaged. There is no doubt that the washing and scrubbing and rubbing to which the peritoneum was exposed while surgeons were under the influence of that fatal expression "the toilet of the peritoneum" led to many deaths. The peritoneum has remarkable powers of protecting itself if only the surgeon will permit it to exercise them. Save in a few exceptional instances the serous membrane is better able to deal with a moderate effusion than are the over-ready sponge and the futile and often fatal drainage-tube. I have noticed, moreover, that the peritoneum which has been subjected to repeated infections becomes in time almost immune. The operations which can be carried out with success in patients who have had repeated attacks of peritoneal inflammation are often almost beyond credence.

It will be evident from these few observations that the foundation of a rational intestinal surgery must be based upon a fuller knowledge of bacterial processes within the bowel. We need to know the function and purpose of the great bacterial horde which normally occupies the intestine, the circumstances which modify the virulence of those bacilli, and the conditions needed to apply the principles of antisepsis to the lumen of the bowel. One can, for example, imagine it possible that the introduction of some non-pathogenic bacterium into the intestine may beneficially influence by its growth the powers of micro-organisms which are already rampant in the bowel and uncontrolled. The impossibility of employing potent drugs, or what may be termed the usual antiseptics, to arrest certain decompositions within the bowel suggests the searching for such a measure as has just been mentioned. We want further information as to the conditions which increase and which diminish the power of the peritoneum to protect itself from invasion. I can imagine that in the future we may be able by artificial means to secure an immune peritoneum, and that this desirable condition may possibly be brought about by certain preliminary injections into the serous cavity itself. Among the minor advantages which would arise from a fuller knowledge of the common changes within the bowel I can imagine the discovery of an aperient which might be administered hypodermically. The need of a hypodermic aperient must have been apparent to all of us. It will probably not take the form of a drug, but rather of some product of bacterial change. Numerous experiments have been made upon animals with the colon bacillus and with its products, and especial interest attaches to those experiments in which the inoculations have been made hypodermically. It is evident that at present our knowledge of the subject is very crude and that our control of the bacillus coli is singularly imperfect. These injections in animals

[1] Annales de l'Institut Pasteur, 1895, tome ix., p. 710.

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have led to very widespread and disastrous symptoms, but among them I notice the frequent mention of diarrhœa and it seems quite possible that further investigations may enable the bacteriologist to evolve a substance which will produce a diarrhœa which seems to be a feature in these hypodermic administrations.

We might now pass on to the consideration of certain points in connexion with the surgical handling of the intestine. In the first place it may be said that the common and useful operation of colotomy has been greatly improved within the last few years and has been rid of most of the after discomforts which made it at one time a measure to be greatly dreaded. The operation in the iliac region has entirely supplanted the colotomy in the loin, and the latter procedure has, indeed, become one of the rarest of abdominal operations. In inguinal colotomy pains have to be taken to select a proper spot for the opening in the sigmoid flexure, the bowel must be carfully fixed and, in my experience, the best results have attended the immediate opening of the gut, the contents being evacuated through a glass tube. Little or nothing is now seen in practice of two after-troubles which were at one time the bugbears of colotomy—viz., the contraction of the orifice, on the one hand, and the prolapse of the exposed bowel on the other. The average colotomy gives the patient but a minimum amount of trouble. In a large proportion of cases it is possible to secure a good action of the bowels every forty-eight hours, the artificial opening causing the patient but little or no inconvenience in the interval. If there be a degree of colitis present at the time of the operation it is true that the new opening may be the seat of a not inconsiderable distress. But in the average case the administration of a dose of mistura alba very early in the morning on alternate days will secure an ample evacuation of the bowel, followed by a period of immunity from disturbance. This much-to-be-desired result is rendered possible by very careful feeding and, above all, by the utmost attention to the wound. There is no doubt that the troubles attending colotomy, as performed some years ago, were in large measure due to neglect of the wound. A pad of septic tow and a dab of vaseline were placed over the bowel and the requirements of surgery were considered to have been thereby fully met. The gross neglect of the part was excused on the ground that the operation area was already septic. As a matter of fact, few complicated wounds respond more readily to careful treatment and assiduous attention than does the colotomy incision and the benefit to the patient from such care can hardly be over-estimated. I am convinced that the troublesome catarrh of the colon which was not uncommon after colotomy was very often due to the filthy condition into which the wound was allowed to pass, and that difficulty with the bowel in the form of prolapse was often dependent upon the same cause.

It is satisfactory, however, to note that the necessity for colotomy is rendered less frequent by the numerous opportunities for performing resection of the bowel—especially for cancer—and by the excellent results which have followed upon the operation of lateral anastomosis or short circuiting. The excision of a portion of the colon for malignant disease must rank as a most satisfactory procedure. The best results are obtained when the growth is situated in the sigmoid flexure or in such other part of the large intestine as may be provided with a free meso-colon. The least satisfactory cases are those in which the growth has involved a part of the bowel which is unassociated with a meso-colon and has a portion of its surface denuded of peritoneum. It is essential for success that the growth should be dealt with early and that the excision of the gut and of the associated meso-colon should be as liberal as possible. Indeed, it appears to me that among all the operations for the treatment of cancer by excision the removal of a portion of the sigmoid flexure for early epithelioma must rank as one of the most successful. In those instances in which the malignant growth—by reason of its position or extent—cannot be excised there are, happily, a fair proportion of cases in which a lateral anastomosis can be carried out and the patient be thus spared the inconvenience of a colotomy. Experience has shown that a considerable portion of the intestine can be thrown out of the circuit without apparent inconvenience to the patient.

Time will not permit of a discussion of the various methods whereby the bowel may be sutured, excised, or short-circuited. The name of intestinal sutures is legion. Indeed, the passion to invent a suture for the bowel seems to be almost as uncontrolled as the frenzy to invent midwifery forceps, pessaries, and needle-holders which has so long afflicted the medical profession. Many of the intestinal sutures are hopelessly bad because the thread passes through all the coats of the bowel and acts as a vehicle for conveying septic germs from the lumen of the gut to the peritoneum. Others are hopelessly complex and of interest only to those who find delight in ingenious puzzles. Not a few are the subject of periodical invention whereby the forgotten Jones-Robinson suture of 1800 becomes the quite original Smith-Johnson suture of 1898. To my thinking the best stitch is still the ancient one which includes a fine continuous suture of the mucous membrane and points of Lembert's suture which involve the other coats of the viscus. Certainly in the stomach no form of stitching is more convenient than this. Moreover, among the horde of intestinal needles the best is the milliner's needle which comes from the draper's shop.

Of the methods of uniting divided bowel, either after excision or in the performance of a lateral anastomosis, the best theoretically is without doubt the method of simple suturing. In practice, however, this can seldom be advantageously employed. The simple suture involves a great expenditure of time; the differences in the segment of gut above the stricture and that below it render straightforward suturing almost impracticable; the bowel at the suture line is very apt to kink. To cope with these difficulties there has arisen the remarkable host of plates, discs, tubes, cylinders, buttons, and bobbins which has so disturbed the peace of the surgeon who hungers after the "last new thing." Not a few of these appliances alternate between oblivion and rediscovery to the great hindrance of progress. For example, in 1882[2] I described a method of suturing bowel over a collapsible indiarubber bag which was sausage-shaped and was introduced into the ends of the gut to be united. It could be blown out into the form of a firm cushion and before the last stitches were introduced could be emptied and withdrawn. A little experience showed me that my bag was useless and I promptly discarded it. Now after a period of sixteen years an American surgeon, Dr. W. S. Halsted[3] rediscovers my useless bag and reproduces it with singular exactness. He believes this old-new procedure to be "better than any method hitherto devised," and so we step back sixteen years. Dr. Halsted also, by the way, expresses his conviction "that there should be a law compelling all surgeons to practise on animals the operations for circular suture of the intestine and for intestinal anastomosis." I hope this view will not commend itself to the legislators of this country. Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that when I came to operate upon man I found that I was much hampered by my new experience, that I had everything to unlearn, and that my experiments had done little but unfit me to deal with the human intestine.

Of the various appliances in vogue for the uniting of divided bowel I think the best is Murphy's button. It is very far from being a perfect instrument, but it compares at least very favourably with the other forms of apparatus which compete with it. The idea underlying the button appears to have originated sixty-two years ago in the brain of one Denans.[4] "He introduced into the upper and lower end of the (divided) gut a silver or zinc ring, thrusting it inwards about two lines from each end; he then brought the two ends together over a third ring, of which the two springs retain the external rings. The included ends of the intestine mortify and the rings thereby becoming unfastened are discharged by stool after they have united the serous surfaces in contact" (Chelius). I have employed Murphy's button in considerably over 50 cases with results which are certainly satisfactory. The button requires no elaborate preparation; it is always ready; its introduction is exceedingly simple and is effected in a few minutes. The two parts of the instrument may certainly jam, but I think that that accident is the result of careless handling. I have never known it to induce a gangrene which has extended beyond the limit of the button. The two definite and undoubted objections to the button are these—it may be indefinitely retained

[2] Transactions of the Royal Medical and Chirurgical Society, vol. xlviii., p. 55.

[3] Philadelphia Medical Journal, Jan. 8th, 1898.

[4] Recueil de la Société Royale de Médecine de Marseille, No. 1, 1826.

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and its separation may be followed by contraction of the artificial opening. These two undesirable results are often in close relation to one another as cause and effect. In the cases of cholecystenterostomy in which I have used the button I have never known it to be retained and, so far as I am aware, the opening made has not undergone inconvenient contraction. In cases in which the button has been employed in the colon only I have never had it retained, but in some instances—a very small minority—there has been contraction of the new passage. In examples of gastro-enterostomy performed by means of this apparatus retention of the button for considerable periods or its absolute failure to appear at all seems to me to be the rule rather than the exception. In not a few instances there has been undoubted contraction of the artificial opening. In only 2 examples of gastro-enterostomy in which the button was retained has that instrument caused any trouble. In the first of the 2 cases I performed gastro-enterostomy upon a man, aged thirty-nine years, for pyloric obstruction due apparently to non-malignant disease. He had been ill a year at the time of the operation, which was performed on March 24th, 1897. He was at that time greatly emaciated and the stomach was very much dilated. He made a perfect recovery and subsequently gained 3 st. in weight. He had no further gastric symptoms of any kind. The button was never known to have passed. On March 14th, 1898, he was seized with severe epigastric pain after bicycling. In due course a fœtid abscess formed under the old scar. This was opened on March 28th and it rapidly healed. A skiagraph showed very distinctly that the button was still in the stomach. On April 16th I opened the stomach and removed the button, which was quite loose. It was black and rough, but still in working order. The patient's recovery was complete and he left the surgical home in three weeks in excellent condition and free from all gastric symptoms. In the second case the patient was a man, aged thirty-six years, with non-malignant obstruction of the pylorus and great dilatation of the stomach. Gastro-enterostomy was performed in June, 1897, followed by a speedy recovery. He kept in excellent health until March, 1898, when after a few days of abdominal pain an abscess containing fæces burst through the parietal wound. A fæcal fistula has since remained. In this case the button lodged in the lower ileum and owing to peculiar complications which I need not deal with it has only just been removed.

As an example of contraction of the colon after the use of the button I may mention the following case. A man, aged sixty-one years, who had had symptoms of chronic intestinal obstruction for some months, was seized with symptoms of acute occlusion of the bowel, attended by immense distension of the abdomen and stercoraceous vomiting. Laparotomy, performed in January, 1897, revealed an epithelioma in the centre of the sigmoid flexure. The urgency of the case and the great distension forbade any attempt at excision. I therefore effected an anastomosis, by means of a Murphy's button of the largest size, between the two extreme ends of the sigmoid flexure. The diameter of the button was 1½ in. Fluid fæces were passed before the patient left the table and he was at once relieved. The button, which had already been used in two previous cases, was passed on the twenty-second day. The patient was walking out of doors at the end of the fourth week. In March, 1897, he had regained his original weight and his bowels were acting well with aperients. I then performed a second laparotomy to remove the sigmoid flexure. Although only thirty-eight days had elapsed since the passing of the button I found the artificial opening I had made so contracted that it would do no more than admit my little finger. I removed the whole sigmoid flexure and united the descending colon to the rectum by means of the same button. This button was passed on the sixteenth day. The patient recovered rapidly and remains in sound and vigorous health.

The explanation of these cases of contraction, whether in the stomach or in the colon, is not far to seek. The button effects an opening between the two viscera by means of pressure gangrene. I have noticed that after-contraction has only occurred in cases in which the upper viscus was much dilated at the time of the operation. It is needless to say that in gastro-enterostomy in pyloric obstruction a dilated stomach is met with and in intestinal anastomosis for stricture the upper segment of the gut is apt to be enormously distended. After the operation the dilated organ contracts and consequently the newly made hole contracts. I can easily imagine that a hole in a dilated stomach made by pressure gangrene and of the size of half a crown may readily become an aperture of the size of a fourpenny-piece when the distended viscus has gradually contracted. It is therefore very desirable to have the viscera to be dealt with as empty as possible before the button is introduced. This end is very difficult to secure even to a partial degree. The stomach, for example, in old pyloric obstruction, even when kept washed out for many days, is slow to contract, and if at the time of the operation the viscus be still much dilated retention of the button and some inconvenient contraction of the new opening may be regarded as possible. This association between previous distension of a viscus and the subsequent contraction of the aperture made in it is of course by no means limited to Murphy's button. It applies to nearly every method in vogue for carrying out the operations now under discussion. Still, in spite of many drawbacks and many failures intestinal surgery has made within the last few years decided and substantial advances; but it will fall short of perfection until antiseptic surgery, which has so far penetrated only to the serous covering of the gut, has reached the mysterious and septic lumen which lies within the bowel wall.

SUMMARY OF GUNSHOT WOUND CASES TREATED IN NO. 2 NATIVE GENERAL HOSPITAL AT RAWAL PINDI.

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(Continued from page 1130.)

MARTINI-HENRY BULLET-WOUNDS.

1. MARTINI-HENRY bullets lodged in the tissues much more frequently than the Lee-Metford and much more deeply than the round balls. Consequently they were more difficult to find and also more difficult to extract, partly owing to their greater depth and partly owing to their being more deformed, more jagged and flattened.

2. Owing to the Martini-Henry bullets being more deeply lodged there was a greater tendency for them to shift their position, to wander in the planes of the deep muscles or inter-muscular septa.

3. Major Beevor's Roentgen rays apparatus proved of the greatest use in localising the site of and in confirming the presence or absence of bullets in the tissues. In a couple of instances men were received with only a single scar, that of the wound of entrance; but there was no reliable information available as to whether the bullet had been subsequently extracted. With the x rays it was a simple matter to demonstrate that no foreign body remained lodged in the limb or part affected.

4. Owing to the introduction of foreign bodies or septic material, owing to the greater trauma to the tissues, or in consequence of increased manipulative interference in extracting deeply-seated and encapsuled projectiles the wounds suppurated, sinuses were common, and the patients were longer in hospital. There was more damage done to important structures, so the wounded were disabled for a longer average period.

5. Wounds of the lower extremity in this series number double those of the upper. Case 70, in which a bullet travelled half way round the pelvis without injury to the viscera, is one of considerable interest, as is also Case 193, in which a bullet perforated the chest, lung, and shoulder-joint and fractured the head of the humerus.

CASE 70. *Gunshot wound in the abdomen, V., 3.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Maidan by a Martini-Henry bullet fired at a range of about 600 yards. It struck him on the right buttock, traversed the pelvis, and emerged in the right groin close to the os pubis. After piercing the skin the bullet dropped down inside his trousers, not having sufficient force to find its way through his clothes. The wound healed readily, so that he was able to walk a little eight days after the injury. On admission here (Dec. 1st, 1897) both wounds were quite healed, the scar of entrance being round, that of exit being linear and 1 in. in length. It would seem that the bullet entered the sacro-sciatic foramen or perforated the ligaments and then passed round

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the brim of the true pelvis and was directed along Poupart's ligament until it came out just above the spine of the pubes. In this way neither the bones of the pelvis nor the pelvic viscera were injured and the man had a most wonderful escape and a rapid recovery. On Dec. 13th he was discharged to duty at his depôt.

CASE 23. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a Martini-Henry bullet fired from above while he was running at "the double." He was admitted here on Nov. 9th, at which time the entrance of the wound was healed. It was on the outer and front aspect of the left thigh close to the knee-joint. There seems to have been a suspicion that the bullet had lodged in the lower articular end of the femur owing to the joint being hot, inflamed, tender, and enlarged, with great limitation of movement. As the position of the bullet could not be accurately located, on Jan. 12th, 1898, a skiagraph of the limb was taken by Major Bamber and Major Beevor. This showed the bullet to be lying behind the tibia just below the insertion of the semi-membranosus muscle. It turned out that Major Beevor had taken a skiagraph of this case at Shinawari soon after the Dargai action. At that time the bullet was lying an inch below the head of the fibula and to its outer side. Consequently the bullet had travelled upwards and inwards across the back of the leg in the interval of about two and a half months. On the 15th the bullet was extracted from the muscles of the calf. Considerable difficulty was experienced owing to the peculiar jagged shape of the bullet, which had become encapsuled. A good deal of suppuration followed extraction of the bullet, involving a fresh incision and drainage; healing was therefore greatly retarded.

CASE 158. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 3rd Gurkhas) was wounded in Tirah on Dec. 12th, 1897, by a Martini-Henry bullet which was fired at a range of about 600 yards. It struck him about the middle of the inner side of the left thigh and lodged. On admission here (Dec. 21st) the bullet seemed to be lying above the front of the shaft of the femur and under the quadriceps extensor. It could not be felt by introducing a probe into the wound, but there was a hard and tender spot about 3 in. from the wound of entrance in the situation indicated in the preceding sentence. On Jan. 12th, 1898, the limb was examined with the Roentgen rays and the bullet was stated to be lying close to the inner side of the femur and behind it at the same level as the wound of entrance. On the 14th under chloroform the original wound was enlarged and explored both in front of and behind the femur, but no bullet could be found, though a small piece of khaki cloth, half an inch square, was removed from the track of the wound. Another incision was then made further back, parallel to the femur and behind the adductor magnus, but no trace of the bullet could be discovered, although the back of the shaft was exposed and the surrounding tissues were thoroughly explored. The x rays were applied twice after this. On one occasion the bullet was said to be large and square, lying with its axis transversely across that of the femur on its inner side. On the other occasion it was alleged that three fragments of lead were scattered about at different levels on the inner side of and slightly behind the femur in the position described on the first application of the rays. On Feb. 15th the bullet could be distinctly felt lying in the position first suspected on admission and before the x rays were applied. An incision 2 in. long was made on the front of the thigh about the level of the entrance wound and to the outer side of the sartorius. The bullet was found encapsuled in the quadriceps extensor and it was difficult to dislodge owing to irregularities in its outline. It was flattened and spread out like a fan from base to tip. On one side it was smooth, but on the reverse it was very rough with irregular turned-up edges. In front it was quite sharp-edged. Its length was 1⅜ in. and ⅞ in. was its greatest breadth. After this the patient did very well and the wound healed readily. On April 4th he could walk without a limp and without any support, so he rejoined his regiment next day.

CASE 178. *Gunshot wound in the lower extremity, IX., 1.*—The patient (36th Sikhs) was wounded at Bagh by a Martini-Henry bullet on March 24th, 1897, which entered the front of the middle of the right thigh and lodged. He was examined with the Roentgen rays at Bagh and the position of the bullet was determined. It was extracted through an incision at the back of the thigh on the third attempt, the first two occasions having proved unsuccessful. On arrival here (Jan. 22nd, 1898) the wounds were granulating well, but the knee was rather stiff. On Feb. 28th two bits of coarse blue cloth, ½ in. by ⅜ in. and ⅜ in. by ¼ in., were removed through the posterior wound. On March 24th both wounds were soundly healed. The knee was rather stiff and the patient limped a little. On the 26th he was sent on four and a half months' sick leave.

CASE 129. *Gunshot wound, XII., with injury of the external popliteal nerve.*—The patient (8th Mountain Battery) was wounded in Tirah on Nov. 16th, 1897. A Martini-Henry bullet hit him on the outer side of the left thigh a little above its middle and passed inwards and backwards to emerge in the centre of the popliteal space. On admission here (Dec. 19th) the entrance wound was 1¼ in. long and ¼ in. broad. The exit wound was much larger, 3 in. long and 1 in. broad. He complained of much pain in the leg and foot owing to the external popliteal nerve having been injured and involved in the cicatrix. On Jan. 20th, 1898, he was sent on three and a half months' sick leave.

CASE 183. *Gunshot wound in the lower extremity, IX., 1.*—The patient (13th Bengal Lancers) was wounded at Shabkadr on August 8th, 1897, by a Martini-Henry bullet, which entered the right buttock on a level with the great trochanter and lodged. On Sept. 1st an unsuccessful attempt was made at Peshawar to extract the bullet from the front of the thigh under chloroform. He was transferred here on Jan. 26th, 1898, for examination by the Roentgen rays apparatus. The bullet must have shifted its position on the journey to Rawal Pindi, because on admission here it could be so plainly felt on the inner side of the front of the thigh just internal to the scar of the former operation that the use of the x rays was unnecessary. On Feb. 3rd the bullet was extracted without much trouble. It was encapsuled under the sartorius and close to the femoral vessels and it had an irregular surface and flattened shape. On the 28th the wound had quite healed.

CASE 177. *Gunshot wound in the lower extremity, IX., 4, tibia and fibula.*—The patient (36th Sikhs) was wounded at Maidan on Nov. 9th, 1897, by a Martini-Henry bullet which passed through the right leg. It entered about an inch above the internal malleolus and passed out about an inch and a half above the external malleolus. At Kohat the exit wound was enlarged to allow of some fragments of dead bone being removed. On admission here (June 22nd, 1898) both wounds were open and discharging pus. On passing a probe a couple of inches up the track of the exit wound bare bone could be felt. Both tibia and fibula seemed to have united at the seat of the fracture and the ankle-joint had escaped injury. On Feb. 21st both wounds had healed. On March 14th he walked with the help of crutches. On the 26th much callus was thrown out at the site of fracture. The foot was in a good position and movements of the ankle were free. He could walk with the aid of a stick. He was sent on six months' sick leave.

CASE 4. *Gunshot wound in the lower extremity, IX., 1.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a Martini-Henry bullet, which passed through the middle of the leg between the tibia and fibula without touching either bone. On admission here (Nov. 3rd) the wound was granulating satisfactorily. On the 29th he was discharged to duty at his depôt.

CASE 193. *Gunshot wound in the chest, V., perforating contents deeply; upper extremity, VIII., 4, humerus.*—The patient (12th Bengal Infantry) was wounded at Maidan on Dec. 1st, 1897, by a Martini-Henry bullet while retiring on rearguard duty. The shot was fired from a hill about 300 yards distant. The bullet entered his back on a level with the lower angle of the right scapula and about an inch to the right of the dorsal spine; it passed through the chest cavity upwards and outwards, then through the axilla, and emerged on the outer side of the right arm near the insertion of the deltoid. Air and blood came out of the chest wounds. The exit wound was large and irregular owing to the bullet having carried away a portion of the head of the humerus. Fragments of bone were removed from the exit wound while he was in hospital at Kohat. On admission here (Jan. 21st, 1898) the wound of entrance was healed, its scar being ½ in. long, and the wound of exit had completely healed. There was much thickening about the head of the humerus and the shoulder-joint was stiff. On March 9th all the movements of the shoulder-joint were limited, especially abduction, in spite of regular massage and passive movement. There was loss of sensation over the

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cutaneous area supplied by the median and musculo-spiral nerves. The prehensile power of the right hand was very feeble. On the 31st prognosis was bad as regards service. He was discharged to his depôt at Bareilly to appear before an invaliding board.

CASE 14. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (15th Sikhs) was wounded at Dargai on Oct. 18th, 1897, by a Martini-Henry bullet, which entered on the outer side of the right arm about an inch above the insertion of the deltoid. It passed inwards towards the median line and slightly upwards, and came out over the spine at the root of the neck behind. He was admitted here on Nov. 5th with a granulating wound and he was discharged to his depôt at the end of that month.

CASE 26. *Gunshot wound in the upper extremity, VIII., 1.*—The patient (2nd Battalion 4th Gurkhas) was wounded in Tirah on Oct. 28th, 1897, by a Martini-Henry bullet which entered the back of his left arm about the level of the deltoid insertion while his arm was raised. It traversed the back of the arm without injuring the humerus and emerged on the outer side at the junction of the lower and middle thirds. He was transferred here on Nov. 9th with a suppurating wound. On Dec. 17th he was discharged to duty at his depôt.

CASE 111. *Gunshot wound in the upper extremity, VIII., 5.*—The patient (No. 2 Derajat Mountain Battery) was wounded at Kharappa by a Martini-Henry bullet while he was holding up his hand as a signal. The bullet was fired at a distance of 700 or 800 yards, and struck the back of his left hand and lodged in the angle formed by the metacarpals of the thumb and index finger. It was extracted soon afterwards, but the wound did not heal readily and severe eczema supervened. On admission here (Dec. 6th) the discharge from the wound was lessening and the eczema on the back of the hand was gone. On Dec. 27th he was sent on two months' sick leave.

SNIDER BULLET WOUNDS.

1. From a review of these 11 cases of Snider bullet wounds the most noticeable thing is the severity of the effects produced, which greatly surpassed the results above described under the headings of wounds from Lee-Metford, Martini-Henry, and round bullets. In all of the Snider wounds recovery was slow or imperfect owing to suppuration and to severe traumatism.

2. In 9 out of the total bones were fractured. The Snider wounds gave the greatest proportion of fractures and also the most severe ones. The spherical bullet wounds had the next greatest number of fractures and the Lee-Metford wounds the fewest.

3. As regards the lodgment of projectiles this occurred in 4 out of the 11 Snider cases, as compared with 5 out of the 12 Martini-Henry wounds, and 13 bullets lodged in 12 of the 16 spherical bullet-wound cases.

4. As in the Martini-Henry series, the wounds of the lower extremities greatly outnumbered those of the upper limbs.

5. It is interesting to note that all 3 cases of bullet-wound of the lung survived. In the Lee-Metford case there was rapid and complete recovery in a fortnight, no bone having been injured; but the results were very different in the two other cases. In one (Martini-Henry) the shoulder-joint was opened and the head of the humerus was fractured, in the other (Snider) the glenoid angle of the scapula was fractured. The subsequent progress of these two cases was very similar. They were both received at Rawal Pindi on the same day, having been 52 and 55 days on the lines of communication after they were wounded; and they remained at No. 2 Native General Hospital for 68 and 69 days. The prognosis in both cases was much the same; one was sent before an invaliding board as permanently unfit and the other was given a chance of six months' sick leave in case he might recover sufficiently to be fit for further service.

CASE 174. *Gunshot wound in the chest, IV., 4.*—The patient (1st Battalion 2nd Gurkhas) was wounded in Tirah by a Snider bullet on Nov. 28th, 1897. The bullet struck the back of the left shoulder, smashed through the outer part of the scapula near its glenoid angle, passed through the lung and chest obliquely, and lodged under the skin in front of the head of the humerus, from which place it was extracted through a vertical incision which healed quickly. Emphysema occurred after the injury and the entrance wound proved troublesome. On his arrival here (Jan. 21st, 1898) the anterior wound was healed and only a small sinus remained in the line of the posterior wound. The movements of the shoulder were limited owing to pain and stiffness. On Feb. 19th the sinus was 1¼ in. long and showed no tendency to close. On March 9th a piece of cloth was found and removed while the wound was being explored. On the 28th the sinus had healed. Movements of the arm were slightly impaired, but this stiffness will wear off in time. Two days later he was sent on six months' sick leave.

CASE 100. *Gunshot wound of the upper extremity, VIII., 2.*—The patient (Jhind Infantry) was wounded in Waran on Nov. 16th, 1897, by a Snider bullet. The wound of entrance was just below the right acromio-clavicular joint. The bullet passed directly backwards just above the shoulder-joint, fractured the scapula, and emerged below the spine of the latter. On admission here (Dec. 4th) the wound of entrance was closed and that of exit was merely a small ulcer. The movements of the shoulder-joint were unimpaired. On Dec. 20th the wound of entrance, which was apparently soundly healed, broke down and the wooden plug of a Snider bullet was discharged in the dressings. On Jan. 4th, 1898, he was sent on two months' sick leave, the wound being quite healed.

CASE 179. *Gunshot wound in the upper extremity, VIII., 4, humerus.*—The patient (36th Sikhs) was wounded at Maidan on Nov. 24th, 1897, by a Snider bullet, which struck the outer side of his right arm about the middle, passed through the humerus, shattering it, and escaped just above the inner condyle. On admission here (Jan. 22nd, 1898) the exit wound was healed, but there was a drainage-tube passing from the entrance wound obliquely downwards across the arm to an incision on the inner side of the forearm, which had been made for drainage purposes. On the 31st the wound of exit had reopened and was discharging pus copiously on Feb. 8th. Under chloroform all the wounds were enlarged and the unhealthy granulations lining them were scraped off. A piece of lead ½ in. long and ¼ in. broad was found in the soft tissues and two sequestra of a larger size were removed through the entrance wound. The soft tissues were œdematous and infiltrated for 6 in. above and below the elbow, but the joint was not affected beyond its being rigidly flexed owing to the contraction of the biceps and brachialis anticus. There was no real union of the fracture in the shaft of the humerus, although a good deal of callus existed; accordingly the ends of the bone were rubbed together to stimulate union. Large drainage-tubes were inserted, the arm was put up in small straight encircling splints covered by two ordinary rectangular ones, and a tonic containing strychnine and iron was ordered. By the middle of March the humerus seemed to be uniting fairly well and at the end of the third week all drainage-tubes were removed. On April 5th union was firm in the humerus and the transverse line of fracture could be easily palpated owing to the thickening at that site. Most of the sinuses healed. On the 21st he was transferred to the depôt hospital of his regiment.

CASE 176. *Gunshot wounds, VII., perineum, genital, and urinary organs.*—The patient (36th Sikhs) was wounded at Gulistan on Sept. 13th, 1897, by a Snider bullet which entered the left side of the scrotum, splintered the pubic arch, and passed along the perineum, lacerating the corpus spongiosum and bulb and escaped near the anus. Pieces of the os pubis were removed by operation, urinary fistulæ formed in the perineum, and a counter opening was made in the right buttock. On admission here (Jan. 22nd, 1898) he had a bad traumatic stricture, but only one fistula *in perinæo*, and that was closed before the end of the first week in February. On April 3rd the stricture proved very obstinate, as might have been expected in so severe an organic stricture. Otherwise he was in excellent health, so he was sent on six months' sick leave.

CASE 58. *Gunshot wound in the lower extremity, IX., 1.*—The patient (2nd Battalion 1st Gurkhas) was wounded at Maidan on Nov. 3rd, 1897, by a Snider bullet which ricocheted off the ground before it struck him on the right buttock just above and behind the trochanter major. It lodged about 3 in. from the surface and was extracted a fortnight later. On Jan. 8th, 1898, the wound had completely healed and he would have been discharged to duty had he not been detained to act as a sick attendant on a comrade.

CASE 127. *Gunshot wound in the lower extremity, IX., 4, femur.*—The patient (1st Battalion 2nd Gurkhas) was wounded at Dargai on Oct. 20th, 1897, by a Snider bullet, which struck him on the outer and front part of the right thigh a little above the middle and passed backwards and inwards, fracturing the femur and emerging at the back of the thigh. The bullet then struck his kukri and fell to the ground. His thigh was put up in a long splint and he was

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sent to Shinawari, where he remained for 8 weeks. On admission here (Dec. 19th) the exit wound was healed and that of entrance was closing, and the bone had united. On Jan. 8th, 1898, all wounds had healed and union was firm.

CASE 180. *Gunshot wound in the lower extremity, IX., 1.*—The patient (36th Sikhs) was wounded at Maidan on Nov. 23rd, 1897, by a Snider bullet, which entered the inner and upper third of the right thigh and lodged in the limb. An unsuccessful attempt was made at Maidan to remove the bullet, but it was extracted at Kohat on Dec. 9th after its position had been localised with the aid of the x rays. On admission here (Jan. 22nd, 1898) both wounds were soundly healed and there was only a slight limp in the man's gait. On Feb. 9th he walked well and on the 15th he was sent on six months' sick leave.

CASE 172. *Gunshot wound in the lower extremity, IX., 4, tibia and fibula.*—The patient (15th Sikhs) was wounded at Maidan on Nov. 6th, 1897, by a Snider bullet which struck his left leg about 2 in. above the inner malleolus from behind. It smashed the tibia badly and came out in front after breaking the fibula also. After a time he was sent to Kohat in splints, where the wound of entrance was opened up under chloroform on Jan. 8th, 1898. The exit wound appeared to have healed readily. On arrival here (Jan. 21st) there was a large healthy granulating surface about 3 in. long by 1 in. wide on the inner side of the leg above the ankle. There was a great deal of irregular thickening and callus about the lower ends of both bones and the ankle was stiff and tender. Sequestra were removed on the 26th and on March 10th, but the man remained very lame owing to "toe drop" of the great toe. On the 23rd there was a sinus 1 in. long and still bare bone could be felt. On April 17th he was transferred to his regimental hospital at Ferozepur.

CASE 175. *Gunshot wound in the lower extremity, IX., 2.*—The patient (15th Sikhs) was wounded in Tirah by a Snider bullet on Nov. 6th, 1897, at a range of about 150 yards. The bullet entered the lower third of the leg internal to the tibia and passed out directly backwards in a straight line. A bit of the shaft of the tibia was chipped off or injured, because some pieces of bone came away afterwards, but the shaft was not completely fractured. On transfer here (Jan. 21st, 1898) there was a comparatively small wound of entrance, in diameter that of a shilling, with a depressed cicatrix and a small sinus. The exit wound was healing well and was about 4 in. long and 2 in. broad. There was considerable thickening of the limb all round on a level with the injury. On March 1st the wound had been quite healed for the past fortnight, but there were now lameness and defective flexion of the toes; extension was not affected. On April 13th the sinus had almost healed and the patient was doing well. He was transferred to his regimental hospital at Ferozepur.

CASE 187. *Gunshot wound in the lower extremity, IX., 4, fibula.*—The patient (2nd Battalion 5th Gurkhas) was wounded at Bagh on Nov. 26th, 1897, by a Snider bullet, which entered the outer side of the right leg 3 in. above the ankle-joint and came out on the back of the limb about the same level, lodging in his puttee. It broke the fibula and some pieces of bone were removed later. On admission here (Jan. 27th, 1898) the wound of entrance was healed; a drainage-tube 1 in. long was in the exit wound and there was thickening over the lower third of the fibula, in which there seemed to be a small gap. On March 18th suppuration continued, healing was delayed, and non-union of bone continued. He was allowed to go about on crutches. On April 13th over an inch of the fibula was wanting. The probe entered the sinus of exit for an inch and a half and impinged on the free end of the lower fragment, which seemed necrosed. Next day he was transferred to his regimental hospital in the hills.

CASE 148. *Gunshot wound of the lower extremity, IX., 5.*—The patient (Jhind Infantry) was wounded in Tirah on Dec. 13th, 1897, by a Snider bullet which struck him on the dorsum of the left foot about 1 in. from the base of the little toe. It passed through the foot between the fourth and fifth metatarsals and emerged in the sole almost directly below the wound of entrance, lodging in the boot. The exit wound was considerably the larger, probably owing to the bullet forcing fragments of bone before it. He was admitted on the 21st with a freely suppurating wound. On Feb. 18th, 1898, a small sequestrum was removed. A week later he had a severe attack of eczema madidans on the wounded foot. On March 14th both wounds had healed and the eczema was cured. He was discharged to duty at his depôt next day.

CAVALRY CARBINE WOUND.

CASE 191. *Gunshot wound of the upper extremity, VIII., 5.*—This case differs from all the preceding in that it was an accidental self-inflicted wound. The patient (3rd Bengal Cavalry) was wounded on Jan. 27th, 1898, near Khusalgarh, while travelling on escort duty with a sick convoy. He put his left hand over the muzzle of his carbine, not knowing, or forgetting, that it was loaded. The carbine went off accidentally and the bullet passed through his left hand about the middle of the fourth metacarpal, having entered on the palmar surface. Profuse hæmorrhage followed, necessitating the ligature of an artery on his arrival at Khusalgarh. He was transferred by rail to Rawal Pindi next day. The hand was much swollen and inflamed; the wound of entrance was small; the exit wound on the dorsum was ragged and irregular, 1½ in. by 1 in., and involving the fourth metacarpal bone, a portion of which was projecting. The inter-metacarpal space was blackened and sloughy. On Feb. 9th a small piece of the fourth metacarpal bone was discharged in the dressings. On March 10th the exit wound was healed; the scar was depressed. Suppuration continued from the palmar wound and there was more dead bone to be got rid of, though it was not loose yet. On April 10th he was sent on three months' sick leave.

The conclusions drawn from these 52 cases are applicable to the clinical results of these cases only and they must not be considered in the light of generalisations as to the potential destructiveness of this or that projectile. The numbers given are too few for the basis of broad general comparisons, there being only about a dozen cases illustrating the effects of each of these four varieties of bullets, but perhaps these remarks may elicit confirmatory results from those who have had a wider experience.

THE RINDERPEST IN SOUTH AFRICA.

BY JOHN MABERLY, L.R.C.P. LOND., M.R.C.S. ENG.

IN two former communications[1] I endeavoured to place before the readers of THE LANCET as clear an account as possible in a short sketch of the origin and progress of rinderpest in South Africa as well as of the efforts which were being made to overcome its terrible effects, and I shall now try to place on record the work since done and the brilliant victory which has at last been won by scientific research over this the most fatal plague known among those valuable allies of the human race—the horned cattle. In those communications the brilliant discovery of Professor Koch of the antitoxic power of the bile taken from oxen suffering from the disease was recorded, and also his initial work with regard to the use of antitoxic serum procured from animals who had recovered from the disease, which work has since been brought to such a happy and successful conclusion by the labours of Dr. Kolle, who came out to carry on Professor Koch's work, and of Dr. George Turner, the Government Health Officer of Cape Colony. It is very satisfactory to be able to place on record the fact that the name of an English medical man is associated with this, perhaps one of the most important achievements in the antitoxic method of treating disease, since it shows that we are coming into line with the great continental discoveries of this century in the methods of bacteriological research. Professor Koch proved that the serum of cattle which had recovered from an attack of rinderpest, when injected under the skin of healthy cattle, protected them from the poison of rinderpest for a short time. He also proved that a mixture of 99 parts of this serum with one part of rinderpest blood, when injected in a series of doses of 20 c.c. into healthy cattle, gradually increased this immunity to a very great extent; but on discovering the immunising power of bile he abandoned further work on the serum treatment as it appeared too troublesome when it came to be applied to large numbers of cattle and also at that time to be inferior to

[1] THE LANCET, Nov. 13th and 20th, 1897.

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the bile treatment on account of the impossibility of obtaining sufficient "salted" cattle from which to obtain a supply of serum equal to the demand. The disease was spreading at such an alarming rate that it was imperative that some form of treatment should be applied capable of keeping pace with the spread of the infection. Consequently, although the bile treatment was expensive from the number of cattle required to be sacrificed for its material, it was necessary to continue it for the time being and there is now no doubt that it was instrumental in saving many thousands of head of cattle and at the same time in checking the progress of the disease into uninfected areas to a very considerable extent. As time wore on it was found that cattle which had been rendered immune with bile after periods varying from three to six months lost their resisting power and in many instances succumbed to fresh attacks of the disease.

Whilst this race between the spread of the infection and the attempts, more or less successful, to get ahead of it with bile inoculation was going on, Dr. Kolle and Dr. Turner were persevering in their scientific experiments to bring the serum treatment to perfection. Cattle which had recovered from the disease were gradually collected and a stock of antitoxic serum was in this way secured. From July to the end of October, 1897, antitoxic serum in doses varying from 20 c.c. to 100 c.c. was used for treating herds which had already become infected with rinderpest, it being found that bile (as had been pointed out by Koch at the offstart) was quite useless if the animals treated had already been infected with disease, although they showed no apparent symptoms except a slight rise of temperature, and even animals which became infected any time before six days after the injection of bile were not safe. The serum, if given in sufficient quantity, however, proved capable of overcoming the virulence of the disease provided it was applied within three days after the initial rise of temperature. After that stage it appeared useless even in very large doses. It now slowly became certain that the only permanent immunity was to be found among those cattle which had either recovered from the disease naturally or with the assistance of antitoxic serum and the attention of those engaged in scientific research was turned towards endeavouring to discover some method by which a modified form of the disease could be communicated to healthy cattle, since in this way only did it appear possible that the disease would be finally stamped out. The French *savants* in the Transvaal, Dr. Danysz and Dr. Bordet, first proposed a method of first injecting healthy animals with immunising serum and then keeping them continually exposed to the infection of rinderpest by either occasionally smearing their nostrils with rinderpest blood or keeping them among infected herds. In this way they hoped that the animals would take the diseases as soon as the temporary immunity produced commenced to pass off, but whilst some of the resisting power of the antitoxin was still active enough to modify the disease sufficiently to prevent a fatal result. The results, however, were uncertain and the method was abandoned as too cumbersome for actual application. Dr. Kolle and Dr. Turner tried the experiment of first injecting serum and then rinderpest blood a few days after. This was followed by experiments in which rinderpest blood was first injected followed by antitoxic serum in the course of one or two days, but the results of both these methods were uncertain and they were also open to the objection of requiring heavy doses of serum, and the necessity of catching and casting or otherwise handling the cattle treated at least twice was another drawback in actual practice. They then struck upon the happy idea of simultaneously injecting rinderpest blood and antitoxic serum into the same animal at spots in the body sufficiently apart to prevent the two fluids from mixing together at once. The experiments carried on at the Kimberley station in this method proved eminently satisfactory and it was decided to give the method a thorough trial by placing at Dr. Turner's disposal the cattle living on Robben Island, the Government leper station, situated in Table Bay, which up to this time were entirely free from the disease. The experiments carried on there are so important in their bearing on the future treatment of the disease that it will be well, perhaps, to give them in some detail.

Dr. Turner arrived at Robben Island on Dec. 1st, 1897. The first thing done was to collect all the cattle, and as several of the cows, 29 in all, were heavy with calf Dr. Turner deemed it inadvisable to subject these animals to rinderpest even in a modified form because the fever is liable to cause the cows to miscarry and such miscarriages are frequently fatal. As it would have been manifestly imprudent to introduce rinderpest into the island while some of the cattle were unprotected it was decided to protect these cows in calf by the injection of 150 c.c. of protective serum; this quantity had been found sufficient to immunise for six weeks or more. In this way they would incur no danger of infection when the other animals were infected. This treatment had the further advantage of demonstrating the possibility of producing a temporary immunity amongst dairy cattle without stopping the secretion of milk, a matter of very considerable importance. About five days after the injection of protective serum one of the cows so treated calved in the ordinary course and the calf was born alive and healthy, thus showing that even so large a dose as 150 c.c. of antitoxic serum was not detrimental to life in utero. On Dec. 8th, blood which had been taken from an animal suffering from rinderpest at Kimberley on Dec. 6th was brought to Robben Island and Dr. Turner immediately commenced his work of simultaneous inoculation on the rest of the cattle on the island—in all 52 in number. Each head was injected behind one shoulder with 0·5 c.c. of rinderpest blood and with an average of 25 c.c. of antitoxic serum behind the other shoulder. The dose of antitoxic serum was varied according to the size of the animal, 25 c.c. being considered the proper dose for animals weighing about 600lb. About two days after the inoculation had been performed Dr. Turner received a letter from Dr. Kolle stating that the dose of this sample of serum should have been taken at an average of 30 c.c. instead of 25 c.c. as at first stated; consequently it was decided to give 25 of the animals a second larger dose of serum in order to prevent the possibility of too great a fatality. The rest were allowed to take their chance. Of these 25 cattle 8 showed no signs of fever chiefly owing to the second dose of serum having been too large. Of the remaining 27 which had not received a second dose of serum 4 showed no signs of fever. Out of the whole number treated only 1 died—an old cow in very low condition; 14 of the animals operated on were cows giving milk at the time. The secretion during the height of the fever was diminished but not otherwise altered; in one it was entirely arrested for twenty-four hours but again reappeared. Dr. Turner, in order to test the quality of the fluid, drank a pint of raw milk —taken from a cow suffering from the modified disease— every morning fasting. This did not produce the slightest ill effect upon him and the milk was used in the public institutions just as usual. As a rule, beyond fever nothing indicative of rinderpest could be noticed in the animals. The exceptions were: 4 purged and had discharge from the eyes and nose (one of these passed blood in the fæces); 2 had runnings from the eyes and nose, and 4 did not eat well for a day or two. The fever commenced about the sixth day after the inoculation and lasted on an average four and a half days; the highest temperature reached was 107° F.

A second series of inoculations carried on under similar conditions at the Government farm, Tokai, near Capetown, gave similar results. 39 animals were "simultaneously inoculated"; no deaths occurred, but 29 showed symptoms of the disease. One cow gave birth at full time to a dead calf and another aborted. The 10 which showed no signs of fever were tested ten days after the first inoculation by injections of 10 c.c. of virulent blood, enough to kill 10,000 full grown oxen. The result was that they reacted in just the same way as other salted cattle and in no case were any symptoms visible. This question of the duration of immunity after an apparently unsuccessful simultaneous inoculation was further tested at Kimberley and it was found that the immunity conferred was active for some months and up to the present sufficient time has not elapsed to decide how long this immunity lasts, whether, in fact it is not a permanent one. The success of this method of inoculation having been thus definitely proved it has since superseded the other methods in the treatment of uninfected herds and has been carried out in some instances on a very large scale. In Matabeleland, for instance, 3141 cattle were inoculated in this manner, with the splendid result that only 25 died, something less than 1 per cent.

In order to fully appreciate the importance of this discovery it will be well to take a short review of the history of the disease in other countries previously to this outbreak in Africa. It was estimated towards the end of the last century that rinderpest caused the death of thirty millions of cattle in Germany alone, and in the whole of

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Europe of two hundred millions of cattle. The most recent extensive outbreak of the disease in England occurred in 1865. According to Mr. John Gamgee, in his "History of the Cattle Plague," it was introduced through a shipload of cattle from Revel on the Gulf of Finland, part of which were landed at Hull on May 29th, 1865, and the rest at London the following week. In a leading article in the *Times* of August 15th, 1865, it was stated that as far back as June 12th animals affected with the Steppes murrain were seen in the metropolitan market. By the beginning of November the plague had been conveyed over the length and breadth of the land. By the end of the year 48,964 cattle were reported as having been attacked; 10,645 only remained alive of this number; the rest had been either killed or had died. This gives an average of recoveries of a little more than 21 per cent. and a fatality of about 79 per cent. The disease continued to spread and to commit great havoc until an Order in Council was issued making it compulsory to slaughter and bury all animals affected with the plague as well as those which had been in contact with them. The beneficial effects of this Order were soon apparent and the disease was finally stamped out. In November, 1866, there were only 8 fresh outbreaks, attacking 16 animals. This outbreak cost the country considerably over £3,000,000 sterling. Another outbreak occurred in July and August of 1872, but it was through the prompt action of the authorities quickly stamped out at a cost of only a few hundred pounds sterling.

These facts help us to realise the enormous value of the work which has now been done in South Africa during the late ravages of the disease. Owing to the vast extent of the country, the comparatively sparse population, and the fact that the buffaloes and several of the many species of antelopes which are found in various districts contracted the disease it was found absolutely impossible to check its progress by the most thorough system of stamping out which could be devised, and in spite of all efforts it gradually spread through the whole country. It is not difficult to imagine what would have been the result if no more effectual means had been devised and, I think, it may fairly be considered that we are well within the mark in stating that under these circumstances we should not to-day have 20 per cent. of the whole cattle of the country alive.

According to the Cape Government statistics published in May, 1898, the total number of cattle in the colony, excluding the Transkei, before the outbreak of rinderpest was 1,639,435. Of these, 575,864 were lost through rinderpest, giving a percentage of a little over 35. The number remaining is 1,063,571 or rather over 64½ per cent. If we now apply the figures worked out in the English outbreak and allow a percentage of recoveries of 20, which is far in excess of what actually occurred in the district of Mafeking before Koch's discovery of the bile treatment—where we find that out of an approximate total of 90,400 cattle 80,000 died, 7800 were shot, and only 2600 remained alive, equivalent to something less than 3 per cent.—we arrive at some idea of the difference in results under the older method and that brought about by the discoveries of Koch, Kolle, and Turner. Instead of 1,063,571 head of cattle remaining we should only have 327,887 head of cattle in the country; which means that a loss of 735,684 head of cattle has been prevented in spite of the disadvantages at which we have been working in having to carry out the scientific researches which led up to this result during the time that the epidemic was raging. If now we estimate the cattle thus saved at the rate of £4 per head we arrive at the conclusion that the steps taken to discover a remedy for the disease have resulted in a saving of £2,942,736, or close on £3,000,000 sterling, so that even if the rinderpest bill comes to something like two millions of money we are still one million to the good. Besides the fact that we now have in our possession a remedy which has brought about the astounding result that the death-rate of the disease has been reduced from one of between 80 and 90 per cent. to the trifling one of something like 2 per cent., it must be borne in mind that the figures given as representing the probable saving brought about by the scientific work done for the disease in South Africa is reckoned at the lowest possible figure, both as regards the probable percentage of cattle which would have been lost and also the value per head. The amount really saved would probably be quite fairly represented at an average of from £5 to £6 per head, and in this case would be nearer five than three millions of money.

The facts brought to light by the scientific research carried on during the outbreak of rinderpest in South Africa of the last two years are of so valuable a nature that this paper would not be complete without giving a summary of the more important of them.

A.—As regards the etiology of the disease neither Koch, Kolle, nor Turner have so far succeeded in satisfying themselves that they have discovered and isolated the specific microbe of rinderpest, and their experience leads them to believe that up to the present it has never been isolated, although various observers claim to have done so, but on very insufficient grounds. They believe, however, that a specific micro-organism does exist and that it is of sufficient size to be visible through the medium of modern lenses for the following reason—viz., that if defibrinated rinderpest blood be filtered through a Pasteur bougie the clear filtered serum may be injected into clean animals without any ill effect, while the corpuscles and fluid which remain in the filter cause the disease. The same thing happens with the still more porous Berkefeldt filter. Evidently the organism is either too large to pass through the pores of the filter, or it is contained in the blood corpuscles which are themselves too large to pass. To test this Kolle and Turner mixed defibrinated rinderpest blood with five times its volume of 0·2 per cent. salt solution; this destroyed the red corpuscles. The mixture was filtered through a Pasteur filter and though the original fluid was virulent the filtered solution failed in all cases to infect animals when inoculated.

B.—An interesting question has been raised as to how gall taken from rinderpest animals acts as a temporary immunising agent; this question also at present has not been satisfactorily answered. The filtered gall was proved not to be capable of giving the disease and also does not protect from the disease, but the matter which remains on the filter, even after being twice washed with normal salt solution, while it does not communicate rinderpest yet protects the animal from the disease.

C.—A series of experiments was instituted by Kolle and Turner to ascertain the amount and kind of action that immunising serum exercised over the rinderpest virus outside the body, in order to gain some idea of how it produced its action when injected as a therapeutic agent into animals suffering from the early manifestations of the disease or as a protective agent against attacks of the disease—in other words, to compare the action of the serum *in vitro* with its action *in corpore*, in the hope of ascertaining by this comparison some idea of its mode of action in the latter case. Mixtures of rinderpest blood and immunising serum were made of the following strengths:—(1) 0·5 per cent. of blood to serum, (2) 1·0 per cent. of blood to serum, (3) 2·0 per cent. of blood to serum, and (4) 10·0 per cent. of blood to serum. These mixtures were kept in each case twenty-four hours in a cool place before being used. In Experiment 1 10 c.c. of the 0·5 mixture were injected into two animals. The result was negative; neither did the animals take rinderpest nor were they rendered immune, both succumbing eventually to an inoculation with rinderpest blood on the eighth day after the first experiment. In Experiment 2 20 c.c. of the 1 per cent. mixture were injected into 18 animals. The result was that 7 had rinderpest and 4 died; 11 of the animals showed no reaction and were subjected to a second inoculation of rinderpest blood only. All of them had rinderpest and 7 died. A considerable difference in the ultimate result, apparently dependent on the time allowed to elapse between the first and second injections, is noticeable in this experiment. Seven of the animals which had showed no reaction were injected for the second time seven days after the operation; only 3 of these died, 4 recovering from the disease. Of the remaining 4 cattle which had been unaffected by the first inoculation, 2 were injected with virulent blood on the eighth day and 2 on the tenth day after the first operation; all 4 died, thus apparently showing that the first injection had some power in fortifying the animals against the injection of rinderpest blood if this was performed within seven days. In Experiment 3 20 c.c. of the 2 per cent. solution were injected into 3 oxen; in Experiment 4 10 c.c. of the 10 per cent. solution were injected into 3 oxen. In both cases all the oxen died from the disease.

These experiments showed that working with ordinary unfortified serum and virulent blood *in vitro* the virus was destroyed when present in small proportion—0·5 per cent. When the proportion was increased to 1 per cent. the virus appeared to be destroyed in about 60 per cent. of the cases, to be impaired in 20 per cent. of the cases, and to be

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undiminished in 20 per cent. of the cases treated. In higher proportions the virus was undiminished. Working with fortified serum similar results were obtained.

We may conclude, then, that *in vitro* the bactericidal action of the serum obtained from salted animals is small and that the outside limit of its power does not exceed 1 per cent. of its volume of rinderpest blood even after standing twenty-four hours, but that it does exert a modifying influence on the poison is evidenced by the results of the experiments with 0·5 per cent. and 1 per cent. solutions. If now we take results on the other hand of experiments in which immunising serum was injected into animals already infected with the disease, we find that a dose of from 50 to 100 c.c. of immunising serum is sufficient to overcome and counteract the effect of an injection of even from 100 to 200 c.c. of rinderpest blood, provided the former were injected any time within twenty-four hours after the blood inoculation. A comparison of these results shows conclusively that the action of immunising serum on the virus of rinderpest *in vitro* is infinitely less powerful than when applied *in corpore*. In other words, its action on the poison outside the body is very different from its therapeutic power in the living organism; evidently this difference in its action is brought about chiefly through the intervention of the living cells of the animal experimented on. Dr. Kolle and Dr. Turner suggest that the immunising material present in the serum injected is in an inactive modification, that it acts as a stimulus to the cells, probably nervous, and that these cells, again acting upon the injected material, convert it from an inactive into an active modification.

D.—With regard to the preparation of the serum the first serum used was obtained from an animal which had recovered from rinderpest without any treatment, but the serum proved so weak that it was practically useless. The next step was to attempt to increase the power of the serum by injecting into the animal doses not exceeding 100 c.c. of rinderpest blood. This improved the quality of the serum, as proved by the experiments of Dr. Koch. Dr. Kolle and Dr. Turner were led by degrees to increase the doses of virulent blood up to 4000 c.c., and they found that the power of the serum was thereby most decidedly increased. Experience convinced them, however, that animals which had survived a severe attack of the disease are by no means the best suited for purposes of serum preparation, and they now prepare it from healthy animals which have been immunised by the simultaneous method of inoculation and afterwards fortified by successive inoculations of rinderpest blood. The greatest care is requisite in the examination of the blood used for fortifying animals so as to ensure it being free from septic and other organisms and in order to exclude as far as possible the possibility of it containing the germs of other diseases. The animals having been fortified in the way stated they are bled in the usual way and the serum is collected after the clot has formed or by means of a centrifugal machine. The serum has now to be tested so as to gain an approximate knowledge of its strength. This is done by a series of simultaneous inoculations. 10 or 12 healthy animals are taken, their weights ascertained approximately by measurement to be about 600 lb.. Each is then injected with the same quantity of virulent blood and then, say, 3 of these are injected simultaneously with a dose of 15 c.c. of fortified serum, 3 again with 20 c.c., 3 others with 30 c.c., and perhaps 3 others with 40 c.c. The animals are then allowed to stand; food, water, and shelter only are provided; no treatment of any kind is attempted. From the results obtained the strength of the serum is judged. Suppose that some of the animals injected with 15 c.c. die and that the others are severely ill, that those injected with 20 c.c. have a mild attack, that those injected with 30 c.c. do not all suffer, and that none of those injected with 40 c.c. suffer, it would be considered that the dose of that particular batch of serum should be placed at 20 c.c. for animals weighing 600 lb. The serum is then mixed with carbolic acid in the proportion of 0·5 per cent. of the latter and bottled with proper precautions. It has been proved that it retains its strength for at any rate seven months, but for how much longer is uncertain as sufficient time has not elapsed to show.

E.—As regards obtaining rinderpest blood for the simultaneous inoculation process a difficulty arises in transporting it any distance from the fact that it rapidly loses its virulent properties and any preservative added has a similar action. This difficulty is, however, to a great extent overcome by using the blood of living sheep as a means of conveying the poison to a distance. Although the latter animals themselves do not take the disease, still blood drawn from them from three to eight days after an injection of 100 or 200 c.c. of virulent blood fatally infects oxen injected with it, and it has been proved that the strength of the virulent blood can be virtually disregarded in simultaneous inoculations. The hopes entertained at one time of the method of glycerinising bile as advocated by Dr. Edington have proved fallacious.

Cape Town.

ACUTE NECROTIC CELLULITIS OF BOTH ORBITS.

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THE interest of the following case lies in the extreme severity of the local inflammatory process and in the absence of any discoverable cause.

The patient, aged sixteen years, was employed as a bookkeeper in a poultry shop. On Feb. 5th and 6th, 1898, he first had headache of the left side and blocking of the left nostril. Towards the end of the day on the 6th, he had a rigor. There had been toothache on the same side for some days. There had been no injury. Personally he was a healthy youth and had always been so. One of his sisters, however, about a year before had had acute necrosis of the vermiform appendage within two days of the onset of the first abdominal symptoms. There was nothing else to note in the personal or family conditions. On Feb. 8th the swelling of the left eye began, it increased rapidly on the 9th. The patient's temperature was 102° F., and he became delirious. At 10.30 P.M. on the 9th, the following condition was present. On the left side there was intense dusky congestion of the eyelids and the surrounding skin. The orbital contents were much thrust forward; the eyeball itself was fixed and so much proptosed that the stretched lids scarcely covered it; there was perception of light only. There was some offensive discharge from the left nostril. As a fairly definite sense of fluctuation could be obtained above the eyeball an anæsthetic was given and the orbit was opened at its upper and inner part by an incision about 2 in. long. Deep in the orbit behind the globe was a collection of fetid pus containing fragments of necrotic tissue. The incision was enlarged so as to admit the finger and a careful exploration of the orbit was made. The abscess cavity was in contact with the optic nerve as far back as the apex of the orbit; its walls were perfectly smooth and no swelling or displacement of parts could be felt anywhere; a most careful examination with the finger and probe failed to detect any bare bone. About an ounce of pus was evacuated. The cellular tissue of the orbit was quite grey and dead and there was no bleeding from it. The patient had a restless night afterwards; the temperature was maintained and he continued in a condition of muttering delirium, although quite sensible when roused. On the evening of the 10th anti-streptococcic serum was injected, but it had no effect. On the 11th the swelling of the orbit had increased; the edges of the wound were gangrenous, but the upper lid was less tense. The cornea was quite opaque and compressed into a furrow by the dense edge of the lower lid. As there was a decayed painful tooth in the upper jaw of the same side it was thought advisable to thoroughly explore the antrum and nasal cavities. This was done by Mr. Walsham. The carious tooth was removed and the antrum of Highmore was washed out and found to be perfectly normal; the nose was explored and no bare bone could be found except a doubtful point at the root of the middle turbinated bone; the passage to the frontal sinus was normal and the sphenoidal sinus as far as could be ascertained by probing was normal. At the same time the useless eyeball was excised and the orbit was again thoroughly explored. The only thing found was a small surface of bare bone at the upper margin of the orbit. On the 15th there was no improvement to note. Early in the morning his temperature went up to 107° and he had an access of maniacal delirium. Most of the skin of the upper lid was quite dead and much bare bone could be felt in the roof of the orbit. On the 16th the temperature reached 107°

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three times and he had a slight convulsion of the right side of the face. On the 17th the orbital plate of the frontal bone was bare over its whole extent and some œdema of the right eyelids was first noticed. The question was discussed as to whether anything further could be done in the way of exploring for an abscess above the frontal bone; but as the œdema of the right eyelid and conjunctiva indicated a probable involvement of the other eye by way of the cavernous sinus it was decided to do no more. The patient was seen by Dr. Ferrier on the 22nd but no further action was suggested. On the 24th there was great swelling of the right lids with proptosis, gangrene of the lids, and deep fluctuation in the orbit, and there was panophthalmitis indicated by hypopyon and suppuration in the vitreous. The whole of the lymphatic glands of the right side of the face and neck were swollen and fluctuating. The tissues of the left orbit were shrunken and had sunk down, leaving the bare bone of the roof entirely exposed. On the 26th the patient died. Permission for an examination of the body could not be obtained.

The question of interest in the case is, What was the point and manner of infection? At the first view of the conditions in the orbit it seemed impossible to avoid the conclusion that there had been a wound of the skin or conjunctiva, and the patient's employment in a game shop gave a reasonable support to the view that he had been infected by some dead animal matter. Careful examination failed to reveal any wound and no history of injury could be obtained, but inasmuch as no thorough examination of the conjunctival folds was possible, owing to the tense conditions of the parts, this view of the case could not be entirely set aside. The possibility of the orbital inflammation being of a pyæmic nature secondary to some focus elsewhere in the body was negatived by careful examination. The next possible source of infection was a suppuration in the antrum started by a carious tooth and communicating itself to the orbit. There was no swelling or tenderness of the antrum, but to set the matter at rest the tooth was removed and the antrum was explored.

Taking the other nasal cavities in order the size and position of the sphenoidal sinus made it clearly possible that an empyema in it might find its way into the orbit; if any foul retention had been found it would not have been difficult to break through the thin partition of bone after enucleation of the eye, but a probe introduced into the cavity from the front did not reveal any abnormality. Similarly the naso-frontal passage did not reveal any abnormal condition of the frontal sinus. With regard to all the sinuses it is improbable that a retention of discharge giving rise to an inflammatory process of such intensity in the orbit could exist without revealing itself by external marks in the neighbourhood of the sinus itself.

It is unfortunate that the case could not be cleared up in the only way which was possible, by a post-mortem examination, but there had been such widespread involvement of all the parts in the neighbourhood before the end that it is more than likely that nothing would have been discovered which would have definitely settled the question of cause.

Orbital cellulitis of this degree of severity resulting in acute necrosis of all the contents of both orbits is fortunately not a common occurrence; among the easily accessible records there does not appear to be a similar case. True orbital cellulitis is always a serious disease and always calls for a guarded prognosis; the thinness of the bony partition separating the orbit from the cranial cavity allows a possible extension of the inflammatory process to the meninges in one direction, while in another the blood-flow from the veins of the orbit to the cavernous sinus provides for a possible thrombosis of the sinus and general pyæmic infection of the body. In the Transactions of the Ophthalmological Society of the United Kingdom, vol. vi., one case of orbital cellulitis with recovery was reported by Mr. Critchett; in vol. x. another case with death was reported by Mr. Snell; in vol. xv. five cases of plastic cellulitis of the orbit were brought forward by Mr. Lawson. Of Mr. Lawson's patients three died, one had the eye removed, and one recovered with imperfect sight. In one case only the cellulitis extended to both orbits. In four of the cases Mr. Lawson said his impression was that the cause was septicæmia, but in only one case could the original focus be traced—a previous acute tonsillitis. In the last case, in which both orbits were affected, the patient was suffering from pyæmia before the cellulitis began, the cause of the pyæmia being undetermined. It is unfortunate that in none of Mr. Lawson's cases, so much resembling the present one in many of their characters, was a post-mortem examination made. In the discussion which followed the reading of Mr. Lawson's paper Mr. Hulke and Mr. Tweedy narrated their experiences of orbital cellulitis. The chief point of interest to be drawn from the discussion was the advisability of making very free incisions into the parts involved, a proceeding which was thoroughly carried out in the present case.

CANTWELL'S OPERATION FOR EPISPADIAS.

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THE operation of Dr. F. V. Cantwell, of Trenton, U.S.A., by "transplantation of the urethra" for the relief of complete epispadias with infundibuliform opening into the bladder but without extroversion, deserves to be more widely known, and the short record of a case which I have recently cured by it may serve to bring it to the notice of many who had not the opportunity of seeing his original paper in the *Annals of Surgery* of December, 1895. That the operation is either not known or not appreciated as I think it should be is clear from the fact that the most recent book on operative surgery published in this country this year makes no reference to it, and yet the operation is an admirable one alike in its conception and in its practical value for the cure of a most distressing congenital deformity. I have had one case only, but I believe that my friend Mr. Clutton has treated two or three by it with complete success. Dr. Cantwell's paper was illustrated by drawings which cannot be reproduced here, but without entering into moot questions as to the precise cause of epispadias it may be said shortly that the principle of the operation is to dissect up a mucous and submucous flap, composed of the open urethra, from the extremity of the glans backwards as far as possible into the infundibulum, to separate thereupon the corpora cavernosa from each other by blunt dissection, to form a urethral tube out of the aforenamed flap and to secure it in its rightful place beneath the corpora, which are then united together. The infundibuliform opening is closed by prolonging the incisions for the urethral flap so as to surround it, and by suture of the wounded surfaces thus made to bridge over the funnel which leads into the bladder. The result is the creation of a penis modelled on natural lines, with a well-formed urethra on the under side, occupying, that is, its normal relationship to the corpora cavernosa. Furthermore, the effect of the operation is to produce a penis with a natural curve, hanging properly downwards instead of being turned up on the abdominal wall—a penis, in fact, which in the process of growth is calculated to be available for all the possible uses which may be required of it, and which immediately admits of natural micturition. I am indebted to my dresser, Mr. Hughes, for the notes of the case, and both to him and to my house surgeon, Mr. Power, for their intelligent care of the child after operation.

A boy, aged ten years, was first sent to me two years ago by Mr. Havell of Felixstowe, but it was then decided to postpone operation until the parts were somewhat larger, and accordingly he was admitted again on Feb. 22nd, 1898. There was complete epispadias with an infundibuliform opening above the pubes from which urine was continually dribbling. Nevertheless, there was a slight amount of control and the passage of a catheter showed that there was a well-formed bladder. It hurt him too much to attempt to pass the finger. The penis was small and ill developed and was turned upwards so that the glans lay over the mouth of the funnel. When pulled downwards it was seen that the penile portion of the urethra existed as a flat band of bare mucous membrane reaching from the dorsum of the rudimentary glans back to the bladder opening, where it was lost from view. The corpora cavernosa clearly were there, but they occupied the under side of the organ. There was a good scrotum and both testes were to be found in it. An attack of measles delayed operation until May 18th, when as a preliminary step an opening was made in the perineum and a Watson's silver

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tube inserted in order that after the plastic operation the parts might be kept entirely free from the contact of urine. From this time forth the boy lived night and day in a warm boric bath, a procedure which I do not doubt contributed largely to the success of the operation as well as to his own comfort. The perineal tube answered admirably and he never complained of it. The plastic operation was undertaken on May 20th and presented no difficulties save such as were entailed by formation of the urethra and accurate suturing. The urethral flap having been freed from the corpora cavernosa on which it lay was moulded into a tube upon a catheter, fine catgut being used for the sutures. The corpora cavernosa were separated from each other with singular ease, and their subsequent union, together with the fixation of the new urethra in its rightful place beneath them, was made with finest silk. Finally, the skin along the whole length of the penis and over the infundibuliform opening was sutured with silkworm gut. A soft catheter was then passed by the natural route into the bladder, secured, and left there. Everything went well after the operation, but on May 24th there was so much œdema of the scrotum that I made several punctures in it, the perineal tube was removed, and one or two of the dorsal silkworm stitches were taken out because of obvious tension. The soft catheter was also taken out, cleaned, and re-inserted. More sutures were removed on May 26th and by June 1st the perineal wound was healed. Already the child had gained considerable control over the passage of the urine and emptied his bladder at will through the retained catheter. He was still kept in the bath. By June 8th the retained catheter was discarded and the urine was drawn off twice a day, not with the object of emptying the bladder, but of obviating a tendency to contraction at the meatus. Removal of the boy from the bath for a few hours revealed slight leakage at the infundibulum, and accordingly on June 18th a small plastic operation, which need not be specially described, was undertaken for the closure of the tiny orifice which was alone the cause of it. This was successful, and after a few days longer in the bath the child was recorded on July 1st as being able to retain his urine for seven hours, as passing it naturally, and as being perfectly dry throughout the day. When discharged on July 7th it was noted that he was able to retain his urine all night and the only defect, if so it may be called, in the result of the operation was a slight tendency to contraction of the meatus, for which the daily passage of a catheter was recommended. The latest reports of his condition are in every way favourable and he is now regularly at school.

It may be said that the result of the operation far exceeded our expectations, and while but small experience can be gained from one case only I feel nevertheless that the record of it may be of use in calling the attention of surgeons to an operation of unquestionable value for the treatment and cure of a malformation so grievous and distressing as that of complete epispadias.

SOME MALFORMATIONS MET WITH IN THE POST-MORTEM ROOM.

BY CHARLES POWELL WHITE, M.B. CANTAB., F.R.C.S. ENG.,

DEMONSTRATOR OF PATHOLOGY AT THE YORKSHIRE COLLEGE, LEEDS; FORMERLY PATHOLOGIST TO THE GENERAL HOSPITAL, BIRMINGHAM.

DURING the eighteen months from March, 1897, to September, 1898, when I was pathologist to the General Hospital, Birmingham, I noticed several malformations which are worthy of being placed on record. The number of post-mortem examinations during that period was 394.

MONSTERS.

Anencephalus.—There was one anencephalic monster which presented the usual features.

Sympus.—There was one "siren monster" of the variety sympus dipus. It was a full-term fœtus and the upper part of the body was perfectly well formed. The lower limbs were united as far as the bases of the little toes, the union consisting of skin and subcutaneous tissue. There was no anus and the external genitals were represented by a semicircular tag of skin ⅛ in. in diameter. There were many malformations of the viscera, which will be noticed under their respective headings.

HEART AND BLOOD-VESSELS.

Absence of pericardium.—There was one instance of this very rare anomaly. It was in an adult woman who died from septic peritonitis following on suppurating ovaries. The heart lay in contact with the base of the left lung, the serous membrane passing directly from the base of the heart on to the root of the lung. On lifting up the heart a trace of the division of the pleuro-pericardial cavity into two could be seen in the form of a fold extending from the lower left pulmonary vein to the diaphragm just to the left of the inferior vena cava. This fold projected ⅜ in. into the cavity. The left phrenic nerve passed along the front wall of the cavity behind the sternum in front of the aorta and right auricle, and reached the diaphragm at the same point as the fold above mentioned; it then passed along the upper surface of the diaphragm and entered its substance at the usual place. The heart itself was normal.

Deficiency of inter-ventricular septum.—This was in a male, aged twenty-three years, who died from acute phthisis. The right ventricle was enormously hypertrophied, the left being much smaller than usual. The deficiency was at the upper part of the septum, the aorta appearing to arise equally from both ventricles. The foramen ovale was closed and the aortic and pulmonary valves were normal. There was no stenosis of the pulmonary artery. The ductus arteriosus was patent.

Deficiency of the aortic valve.—In one case the aortic valve consisted of two curtains only, both coronary arteries arising from behind one curtain. Both curtains were the seat of recent infective endocarditis.

Excess in number of curtains of the pulmonary valve.—In one case there were four curtains in the pulmonary valve. The extra curtain was situated anteriorly and to the right and was smaller than the other three, which were equal in size. All the curtains were healthy and well formed.

Malformation of the tricuspid valve.—In one heart the tricuspid valve presented an unusual malformation. In the middle of the posterior curtain there was an aperture ¼ in. in diameter. This aperture was provided with two small curtains to which were attached chordæ tendineæ, which arose from the inter-ventricular septum. The valve was apparently quite competent.

Left superior vena cava.—In the "siren monster" the left innominate vein ended in the coronary sinus of the heart.

Persistence of the left posterior cardinal vein.—In this case, which was associated with malformation and malposition of the left kidney, the left common iliac vein immediately after the junction of the internal and external veins divided into two. The smaller branch pursued the ordinary course and the larger passed under the left common iliac artery and passed upwards on the left side of the spine. At the level of the third lumbar vertebra this latter vein gave off a communicating branch to the inferior vena cava which passed behind the aorta. It then passed into the thorax and continued as the hemiazygos vein, which was very large. At the level of the disc between the third and fourth lumbar vertebræ this vein received a large tributary which, originating in the left phrenic vein, received in its course the left suprarenal, ovarian, and renal veins. There was another renal vein which passed over the left common iliac artery to enter the inferior vena cava at its commencement.

ALIMENTARY SYSTEM.

Duodenal pouches.—In one case (an adult female) the duodenum presented two distinct pouches. One of these was situated at the site of the papilla, the pancreatic and common bile-ducts opening into it; it was ¼ in. deep. The other was just above this on the posterior wall of the duodenum and just below the opening of the accessory duct of the pancreas; it was ⅛ in. deep and would admit the index finger.

Meckel's diverticulum.—This anomaly occurred four times. In each case it was situated between 2 ft. and 3 ft. above the ileo-cæcal valve. The diameter was about 1 in. and the length varied from 1 in. to 2½ in.

Absence of rectum.—Absence of the rectum and anus occurred in the "siren monster," the sigmoid flexure ending at the brim of the pelvis in a blind extremity.

Imperforate anus.—This occurred twice. In one there was no anal invagination and the rectum terminated close to the

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skin. In the other the rectum terminated at the tip of the coccyx and was separated from the anal invagination by a thin membranous septum.

GENITO-URINARY SYSTEM.

Absence of genito-urinary apparatus. — In the "siren monster" there was no trace of kidneys, ureters, bladder, urethra, or genital glands.

Defective development of one kidney.—In one case the left kidney was represented by a little mass of connective tissue in which the microscope failed to reveal any renal tissue. The renal vessels were represented by a minute artery and vein passing into this tissue. The ureter, which was only pervious for 1 in. at its lower extremity, could be traced upwards as a fibrous cord which was lost in the mass of tissue.

Horseshoe kidney. — Three cases of horseshoe kidney occurred, the union in all consisting of true renal tissue; each had two ureters. The vessels were normal in two of them and abnormal in the third.

Malformation and malposition of kidney.—In a boy, aged seventeen years, who died from phthisis, the left kidney was large, weighing 5 oz.; the hilum was placed anteriorly. It was in the normal position. The right kidney was in the right iliac fossa and was circular in shape. Viewed from the front it had the appearance of two kidneys, one above the other, with their hila adjacent. The pelves of the two halves were distinct and were united by a canal of the size of a ureter which was ½ in. long; the ureter arose from the lower pelvis and passed in front of the lower half. Posteriorly the kidney presented a uniform surface except for a transverse sulcus, in which ran an artery. Each half of the kidney had its own vein, which entered the inferior vena cava. There were two renal arteries arising from the aorta just above the bifurcation; one passed to the front and divided into two, one branch going to each half. The other passed along the sulcus at the back of the kidney and after giving off branches into its substance passed round the outer edge to end in the outer side of the hilum. This kidney weighed 5 oz. The suprarenal body was in the normal situation.

Another case similar to this occurred in a woman, aged forty-four years. It was associated with the persistent cardinal vein above mentioned. The right kidney was normally placed and was normal in size and structure. The left kidney was in the left iliac fossa and resembled the last one almost exactly except that there was one pelvis common to the two halves. One artery arose from the aorta just above the bifurcation and passing to the back of the kidney entered a transverse sulcus in which it passed to the outer edge, round which it turned to end in the outer side of the hilum. Another artery arose from the sacral aorta and passing in front of the left common iliac artery entered the hilum from the front.

Uterus bicornis.—One case of uterus bicornis was recorded. The two horns were ½ in. long. The cervix and the main part of the body of the uterus externally appeared single. There was a septum in the body of the uterus dividing it into two halves. The cervix and the vagina were single.

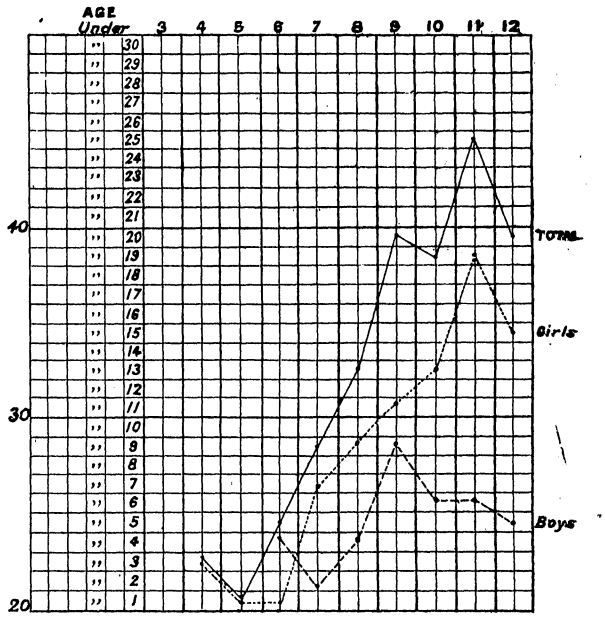
I am indebted to the honorary staff of the hospital and to Mr. W. E. Bennett for permission to publish these notes.

THE OCCURRENCE OF RHEUMATISM IN CHILDREN SUBSEQUENT TO AN ATTACK OF CHOREA.

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ON the occurrence of rheumatism previously to the onset of chorea numerous tables have been compiled and among the more recent an analysis of 327 cases by Fletcher[1] showing that 26 per cent. of cases suffer from rheumatism previously to the onset of chorea. His figures agree closely with those of S. Mackenzie, who gives 29 per cent., and the majority of observers place the percentage between 25 per cent. and 30 per cent., only Sturges places it as low as 20 per cent., and Sée and Hughes at 48 per cent. and 65 per cent. respectively.

Some time ago, at the suggestion of Dr. Lees that it would be of interest to find out what percentage of choreic children subsequently develop rheumatism, the following analysis was made of cases of chorea discharged from two wards of the Hospital for Sick Children, Great Ormond-street, under the care of the late Dr. Sturges and Dr. Lees during a period of two and a half years—viz., from January, 1892, to June, 1894. During this period 115 cases were discharged from the hospital. Of these 115 cases, in 78 (67·8 per cent.) there was no history of previous rheumatism, while in the remaining 37 (32·2 per cent.) there was some evidence of the patient having previously suffered from rheumatism. The chart shows the age and sex of the children affected.



The abscissæ show the number of children and the ordinates the ages of the same. The dotted line shows cases in girls and the broken line cases in boys.

In July, 1895—i.e., a year after the last patient and more than three years after the first patient had left the hospital—postcards were sent to these 78 cases requesting that they would attend the hospital, or, in some cases where the distance was great, that they would reply to certain questions by postcard. Of these 78 cases, 34 were examined and 23 replied by letter, a total of 57 cases; 19 gave no reply; 2 had died, 1 from scarlet fever and 1 from meningitis. Of these 57 cases there was evidence of rheumatism in 11; in 2 others, although there was no history of rheumatism, nodules were present and well-marked cardiac lesions, and this I consider a definite rheumatic manifestation, although at variance with a statement of Osler in his book on Chorea, p. 16—i.e., 13 cases in all. Of the above 13 cases 2 had attacks of pericarditis with rheumatism and were treated in the hospital, the first after the third attack of chorea and the second six months after the first attack of chorea. Thus 11·3 per cent. of cases without previous rheumatism developed rheumatism within three years.

In July, 1898 (three years later), cards were sent to 44 out of the 57 cases—i.e., to all those who had not had rheumatism up to July, 1895—and from whom a reply had been previously obtained. Of these 44 cases 29 were either seen or heard from. Of these 29 cases 18 had had no rheumatism; 10 had had rheumatism (4 cases were designated as rheumatic fever and 6 cases as rheumatism); and 1 had died from heart disease in the London Hospital. That is to say, there was evidence of rheumatism in 11 of the 29 cases, a further increase of 9·7 per cent., making a total of 20 per cent. within six years. Whipham[2] found that chorea preceded rheumatism in less than 2 per cent. of all cases, while in the present series the percentage amounted within three

[1] St. Bartholomew's Hospital Reports, vol. xxxii., p. 383.

[2] Quoted from Osler: Chorea, p. 15.

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years of the chorea to 11·3 per cent. and in six years to 20 per cent. In the Report of the Collective Investigation Committee of the British Medical Association on Chorea, 1887, under heading 16, "The Occurrence of Rheumatism during or immediately subsequently to the Attack of Chorea," it is found that 56 out of 439 cases, or 12·7 per cent., suffered from rheumatism during or immediately subsequently to the attack of chorea, but in only 26 of these cases was the attack of rheumatism the first attack—i.e., in a little under 6 per cent. The following table is a summary of the above 115 cases:—

Date.	No rheumatism.		Rheumatism.	
	Number.	Per cent.	Number.	Per cent.
On admission (from January, 1892, to June, 1894) ...	78	67·8	37	32·2
Three years later (July, 1895)	65	56·5	50	43·5
Three years later (July, 1898)	54	47	61	53

Some objections may be lodged against the above figures since in a considerable number of the cases no evidence could be obtained; these cases have been counted with the non-rheumatic and can only tend to lower the percentage of cases in which rheumatism subsequently occurred.

Harley-street, W.

A NEW METHOD OF RESTORING THE ABSENT FUNCTION OF MUSCLES IN INFANTILE PARALYSIS.

BY NOBLE SMITH, F.R.C.S. EDIN.,
SURGEON TO THE CITY ORTHOPÆDIC HOSPITAL AND SURGEON TO ALL SAINTS' CHILDREN'S HOSPITAL, LONDON.

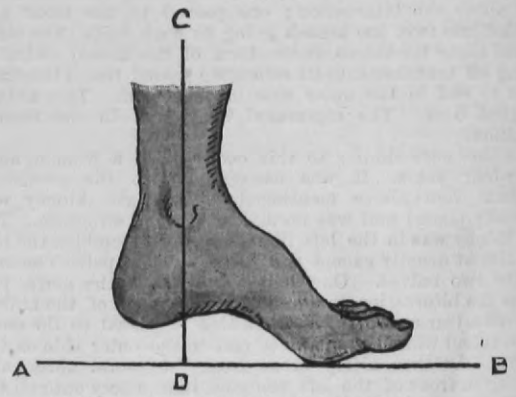
ALL orthopædic surgeons know that in cases of muscular contraction associated with infantile paralysis—as, for instance, when the calf muscles are contracted and their antagonists, the flexors of the foot, are paralysed—division of the tendons of the contracted muscles is generally followed by improvement in the nutrition of the whole foot. In such a case as I have suggested division of the tendo Achillis not only permits restoration of the foot to a natural position, but it also frequently brings about an increased warmth of the skin and subcutaneous tissue and presumably of the paralysed muscles also. Very little notice has been taken of this improvement in nutrition and when noticed at all the result has generally been attributed to the increased movements of the parts which the release of the contraction has permitted. This explanation does not seem satisfactory for the following reasons. I have found that the almost immediate effect of tenotomy of the tendo Achillis, with as much reduction of the deformity as possible at the time of operation, has set up a distinct increase in warmth of the part the day after operation. This increase in warmth has continued permanently, or at least if it has subsided slightly after a few days yet it has remained distinctly apparent during the period of from two to three weeks or more whilst the foot has been kept absolutely quiescent, and the warmth has continued afterwards as a permanent benefit. Mr. William Adams referred to this subject in his post-graduate lectures published in 1893. He stated that the result "might be due to a certain amount of muscular action taking place in the muscles not contracted, after the tendons of the contracted muscles had been divided." But he remarked that Dr. Brown-Séquard, to whom he mentioned the occurrence, had said that he "believed it to be due to a direct reflex action of the spinal cord, and that a local increase of temperature probably followed all surgical operations, but it would be most observable in cases of paralysis."

We know well that additional warmth, whether produced by external heat or by friction, massage, stimulating liniments, or by any other means, has a beneficial effect upon a paralysed limb, and will help materially in restoring the functions of the paralysed muscles. That is to say, if a muscle is not completely and absolutely paralysed, or perhaps it would be more correct to say that if the nerve-supply of a paralysed muscle or muscles as well as the muscles themselves is capable of improvement, additional warmth of the part will greatly assist in such restoration of power. This being so, it is not surprising that, whatever may be the explanation of the increased warmth following the tenotomy, the result of such increased temperature must act beneficially upon the paralysed parts. Further, it seems probable from the rapid improvement in function of the neighbouring muscles which sometimes occurs that some more direct influence upon the nerves or muscles must take place. After tenotomy of a contracted muscle, in cases in which other muscles have been so far paralysed that they have been beyond the possibility of amelioration, there has yet been a permanent improvement as regards warmth and nutrition. In many instances where the limbs have been cold, blue, and with a tendency to ulceration these symptoms have to a great extent disappeared and almost invariably the skin has lost its blueness.

Operation on the paralysed muscles.—The idea occurred to me that if tenotomy of a sound muscle was capable of producing so much improvement in nutrition in a neighbouring muscle weakened by paralysis, how much more direct an influence would tenotomy of the affected muscle itself have. Acting upon this idea I have operated in this way on two patients whose histories I will now record.

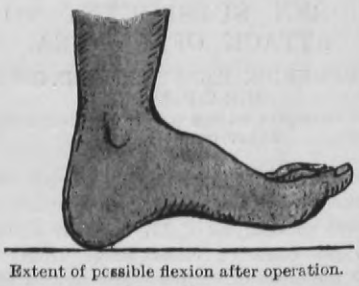
CASE 1.—A girl, aged seven years, was brought to me on Nov. 10th, 1897. Two years and three months previously she had been suddenly attacked by infantile paralysis. There was said to have been complete motor paralysis from the waist downwards, but this began to pass away rapidly, so that in less than a week the patient was able to sit up. The functions of the bowels and bladder were very feeble at first but became normal at the end of five days; sensation was perfect from the first. She had been under the care of Dr. Suckling of Birmingham and had been treated by massage and electricity. At the time of my examination I found the left leg feeble in all its movements, the extensors of the toes (flexors of the ankle) were apparently entirely paralysed, and there was contraction of the calf muscles, so that in walking the heel did not touch the ground. The left leg (measured at the internal malleolus) was ½ in. shorter than the right, and when the foot was flexed as much as the contraction

FIG. 1.



Extent of possible flexion before operation.

FIG. 2.



Extent of possible flexion after operation.

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would permit there were 1¼ in. between the heel and the ground, as indicated by the line A B at right angles with the vertical axis C D of the leg and on a level with the ball of the great toe, as shown in Fig. 1. The right leg was quite strong, all the muscles acting well. Before operating I requested Dr. Risien Russell to see the patient and he reported as follows: "All the muscles of the left leg respond to Faradaism with the exception of the tibialis anticus and extensor longus digitorum, neither of which muscles respond even to a painful current, and one which when applied to the motor points of these anterior muscles results in marked contraction of the soleus and gastrocnemius on the posterior aspect of the limb. All the muscles which respond to Faradaism also react to galvanism, K.C.C. being greater than A.C.C.; but in the anterior tibial group only an exceedingly feeble response is obtained (A.C.C. greater than K.C.C.) with a very strong current, and one which, applied to the anterior aspect of the limb, evokes marked contraction of the soleus and gastrocnemius. The examination thus shows that there is most pronounced reaction of degeneration in the tibialis anticus and extensor longus digitorum, while the quality of the response from the other muscles of the leg is normal." On Nov. 12th I divided the tendo Achillis of the affected leg; I also divided the tendons of the tibialis anticus, extensor proprius pollicis, and extensor longus digitorum. In the case of the latter muscles, which were considered to be paralysed, there was some difficulty in isolating their tendons. On the 20th I removed the bandage and tried the action of the foot. Upon directing the patient to try to move her foot there was distinct movement of the tendons of the muscles which had previously seemed paralysed. Being so soon after the operation I did not allow more than the slightest effort to be made by the patient. On the 24th Dr. Risien Russell again examined this patient and verified the fact of this restoration of muscular power. The patient made an excellent recovery and has since been walking about with a light temporary support.

One cannot imagine that after two years and three months from the time of the attack of infantile paralysis, seeing that the reaction of degeneration was present, it would

FIG. 3.



Showing the size of the paralysed leg in comparison with that of the sound one.

have been possible, under any ordinary treatment, to obtain restoration of function. Therefore I think we may assume that the operation upon the tendons of the paralysed muscles was the direct means of restoring that power.

CASE 2.—On Nov. 21st, 1895, a girl aged eleven years, was first brought to me. She had suffered from an attack of infantile paralysis at the age of three months and had been subsequently operated upon for contraction of the calf muscles. I was told that during recent years she had got very much worse as regards ability to get about, the left leg being almost useless to her. The left leg was much smaller than the right and deformed, as shown in Fig. 3, and the patient was unable to extend the foot beyond the position there shown. Two years previously to her visit to me she had given up wearing iron supports and the foot had been getting much more deformed. I found there was 2¼ in. shortening of the limb, measuring from the heel to the ground, and the leg below the knee was very cold and blue. The extent of the paralysis was as described below. By means of apparatus she was enabled to walk about with comparative comfort and I only saw her at long intervals. On Oct. 22nd, 1896, I divided a band of the internal lateral ligament which held the foot in the varus position and I was then able to lessen the amount of deformity considerably. On Nov. 3rd, 1897, the patient was walking better, but I found the foot and the lower half of the leg very cold and the circulation very feeble. Ulcers were almost constantly forming and healing up again. As so much benefit in position had been obtained by the cutting of the lateral ligament I thought it worth while to operate

FIG. 4.



Present condition, both feet resting flat on the ground.

on the tendo Achillis and at the same time to divide the tendons of the paralysed muscles. I asked Dr. Althaus to examine the patient first and he reported as follows: "Nov. 3rd, 1897.—1. *N. tibialis.* (*a*) *Faradaism.*—No response on application to the nerve at the back of the knee-joint or to the motor points of the gastrocnemius, soleus, plantaris, flexor digitorum communis, and flexor hallucis longus. (*b*) *Constant current.*—Anodic opening contraction (A.O.C.) absent up to 15 milliampères in the nerve and muscles above mentioned. Kathodic closing contraction (K.C.C.) slightly present between 10 and 15 milliampères. A few voltaic alternatives cause this response to be diminished. 2. *N. peroneus.* (*a*) *Faradaism.*—Fair response with 8 R. A. Stower's induction coil on the nerve, and on the motor points of the peroneus longus and brevis, the extensor digitorum communis, the tibialis anticus, extensor hallucis longus, and the interossei dorsales. (*b*) *Constant current.*—Slight A.O.C. on application to the nerve and the motor points of the muscles, and stronger K.C.C. in the same, with 10 milliampères." In operating I divided the tendo Achillis (muscle acting soundly) and the tendons of the tibialis anticus, extensor proprius pollicis and the extensor longus digitorum (apparently paralysed), and I also broke down some very firm adhesions which prevented the free movement of the tendo Achillis. On Nov. 24th, three weeks after the operation, I found the leg and foot quite warm, the foot

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in excellent position, and a great improvement in the action of the muscles." Dr. Althaus reported again as follows: "Nov. 24th, 1897.—Farado-muscular response increased in the sphere of the peroneal nerve, especially tibialis anticus, extensor digitorum, and extensor hallucis longus. No other marked change." Her present condition, Oct. 5th, 1898, is as follows (Fig. 4). The patient is now able to walk about with only a very slight limp and suffers no inconvenience. She wears a light apparatus to take the place of the weak anterior muscles and only requires ¼ in. extra thickness on the heel and sole of the left boot. The foot and leg are well nourished and she has never suffered from chilblains or ulcers since the last operation. Dr. Althaus saw her this day and reported that "the leg seems altogether better. Electrically less current strength is required to cause muscular action."

It will, of course, require far more experience than that derived from the above cases to enable us to form a fair estimate of what may be expected from division of the tendons of paralysed muscles. It is obvious that such a procedure cannot be expected to restore action in muscles which have become absolutely degenerated, nor can we expect paralysed nerves to be capable of regaining their function. It seems certain, however, that the significance of what is called the "reaction of degeneration" must be modified, for it would appear that this symptom does not prove that no power of recovery exists. The results in the two cases recorded above are so definite that I cannot see any other explanation of the benefits derived than that suggested. The advantages are obvious and great. In the first case it means the difference between the child being absolutely cured in a few months and having to wear some mechanical support for the rest of her life. In the second case, although some weakness remains, yet the improvement is very considerable, and I would further point out that this improvement is distinctly more than could be expected as the result only of making the joint more free. I could record other cases in which apparently similar results have been obtained, but as no electrical examination was made before operation I prefer to limit my report to the above two instances.

Queen Anne-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A RARE, IF NOT UNIQUE, FRACTURE OF THE TIBIA.

BY LEONARD MOLLOY, M.A., M.D. DUB.,
HONORARY SURGEON TO THE VICTORIA HOSPITAL, BLACKPOOL.

THE patient was a man, aged sixty-five years. On May 19th, 1897, while getting into his cart with his right foot on the step his pony started. He endeavoured by hopping along on his left foot to keep pace with the pony and so clamber into the vehicle, but while so doing he fell away from the trap on to his left side. He felt that he had sustained an injury to his left knee and found that he could not stand. He was removed to hospital where he came under my care. The knee-joint was enormously swollen and it was exceedingly difficult to localise the injury, but I came to the conclusion that there was an almost vertical fracture through the head of the tibia, opening, of course, into the joint, and that the greater part of the external tuberosity, with the fibula attached to it, was separated from the head of the bone. There was no fracture of the fibula. The difficulty of diagnosis was increased by the fact that there was shortening of the affected limb to the extent of 1½ in., but this I was enabled to satisfy myself was due to a fracture of the left femur which the patient had sustained in childhood and for which he had been treated in Genoa. The limb was put up on a Lawrence's back splint and so treated throughout. An attempt was made to take a radiogram of the injury before the effusion into the joint had subsided, but it was unsuccessful. Later, however, a radiogram was taken by Mr. T. D. Whittington of this town, of which a reduced reproduction of the photographic print is annexed. The photographic plate was placed behind the knee. From measurements made on the original radiogram it appears that the fracture ran from a point on the articular surface of the head of the bone, 2½ in. from the internal border of the internal tuberosity, almost directly downwards for 2 in., when it came flush with the shaft of the bone and so separated the major portion of the external tuberosity. This fragment could be moved antero-posteriorly, when the resulting crepitus gave one the idea of two broad surfaces rubbing one upon the other. I am quite sure that there was



Radiogram showing deformity of head of tibia resulting from fracture.

no other line of fracture in the head of the bone. Heydenreich's plate of an injury to the "head of the tibia with division of the superior extremity into *many* pieces" shows a **W**-shaped line of fracture, one of the limbs of which takes exactly the line which, I believe, was present in the above case, the cause being, as in this, concussion of the tibial head by the femoral condyles. I am unable to find a record of a similar case to the above. The patient is now able to walk as well as he did before the accident. On measurement with callipers I found that there was broadening of the head of the tibia from side to side to the extent of ¾ in.

Blackpool, Lancs.

SUCKLING A CAUSE OF ABORTION.

BY T. M. CALLENDER, M.B., C.M. EDIN.,
LATE RESIDENT SURGEON ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL, EDINBURGH.

I THINK the following case of abortion of interest on account of the cause which I attributed it to—viz., suckling.

The patient, a woman, aged about thirty years, who had had five children, was well-developed, strong, and healthy, with nothing abnormal in her previous menstrual history. There was no history of endometritis or of specific illness. Her first child was born seven years ago and her last twelve months ago. All her labours were normal except the last but one, when the child was stillborn. It was a breech presentation and there had been some ante-partum hæmorrhage two months before birth. There were no previous miscarriages. Since the last child was born she had one menstrual period, three months ago; she missed the next period and at the date when she should have had her third period she began to suffer from uterine pains and hæmorrhage. She had suffered from morning sickness during the last month. Her breasts were large and full of milk, which was watery in

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consistence. I was sent for on the third day of the hæmorrhage and found abortion to be inevitable. I packed the vagina with iodoform gauze and gave ergot. A two months' abortion came away entire. In trying to discover the probable cause of the abortion I could find none save the fact that the patient was in the habit of putting her baby to the breasts three or four times daily. On making careful inquiry I found that the pains began while the child was at the breast, and that the next time she put the child to the breast the pains increased in severity and were followed by hæmorrhage. I have no doubt but that in her case the uterine contractions had been set up reflexly through putting the child to the breasts and that the contractions had been sufficiently powerful to bring about the miscarriage. Playfair in his "Midwifery," quoting Tyler Smith, states that suckling as a cause of abortion is not infrequently met with.

Sidcup, Kent.

CONCURRENT ERUPTION OF MEASLES AND CHICKEN-POX.

By H. W. WEBBER, M.D. LOND.

A BOY, aged four and a half years, was seen first on July 12th, 1898; he then presented the appearance typical of commencing measles, rash in moderate amount on the face and behind the ears, with a few scattered spots on the trunk and limbs, coryza, sore-throat, and bronchial catarrh. On July 13th the rash had come out plentifully and cough was troublesome. On July 15th an eruption of papules made its appearance and by the next day these developed into the vesicles characteristic of chicken-pox. Both eruptions ran their normal course, the measles rash fading gradually and ending in a fine desquamation, that of chicken-pox terminating in the usual scabs.

Plymouth.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

ROYAL FREE HOSPITAL.

A CASE OF EXTREME DEFORMITY OF THE LOWER EXTREMITIES; OPERATION.

(Under the care of Mr. W. H. BATTLE.)

THE following case well illustrates two points of importance. The first is the very great amount of atrophy and deformity which may occur as the result of general malnutrition in an adolescent; and the second is the marked improvement which in such cases follows multiple osteotomy and attention to the general health. It is difficult to say what, if any, special dyscrasia led to the replacement of so much of the bone by fatty tissues.

A woman, aged twenty-one years, was admitted into the Royal Free Hospital on Nov. 26th, 1895, under the care of Mr. Battle. Until she was sixteen years of age there was nothing wrong with her legs. At that time she was working in a warehouse, where she had to stand about eight hours a day, and her right leg began to be painful and to swell. About a year later she noticed that it was getting out of shape and she left the warehouse and took a place as housemaid, but here also she was much on her feet and her right leg grew worse. She was admitted into the Westminster Hospital and Mr. Davy "took a piece of bone out of the right leg," which had become bowed inwards, and it was put up in plaster. At that time the patient thought the left leg might have been very slightly bowed outwards, but it gave her no trouble. She remained in the Westminster Hospital for three months and when she came out her condition was at first much improved, but about two months after leaving off the plaster the leg began to get painful again. The pain in the right leg compelled her to lean more on the left leg and that soon began to give way. In December, 1894, she had to take to a crutch and gave up work as a housemaid, though she continued to do other work which did not require kneeling. In March, 1895, the pain had become so much worse that she gave up work entirely and since then had done none. The family history was indefinite and unimportant. The patient on admission was fairly healthy in appearance and presented no abnormality beyond the deformity of her legs. Both legs were greatly altered, the right knee was strongly bent inwards towards the left (genu valgum), and the left knee was equally strongly inclined outwards (genu varum). In the right knee the inner condyle of the femur reached a distinctly lower level than the outer condyle and the ligaments were much loosened. The right femur had a marked curve with its convexity forwards. The head and upper 4 in. of the tibia were bent backwards and formed a curve with its concavity forwards with the rest of the bone, which was fairly straight. Just below the concavity were two scars, each about half an inch in length. This was the place from which, according to the patient, a piece of bone was removed at the Westminster Hospital. When lying with the thigh in the natural position and the knee extended the internal malleolus was 9 in. to the right of the middle line. The knee was greatly deformed, its antero-posterior diameter being much greater, and its transverse diameter less, than the corresponding diameters of the opposite side. The left femur was bowed outwards and the left leg was much rotated inwards; the ligaments of the left knee-joint were loosened to some extent, but less than the right. When the patient lay with the knee extended the left external malleolus was 3 in. to the right of the middle line. The patient could stand alone when placed on her feet, though not firmly, but she was unable to walk without a crutch or some other support. On further examination it was evident that some slight amount of movement could be obtained in the upper end of the shaft of the right tibia and Mr. Battle thought that the union after the last operation was probably fibrous. He therefore ordered long outside and back splints in the hope that some of the deformity might thereby be removed; an iron tonic was also given. She had a slight feverish attack on Dec. 24th but soon recovered from it. No obvious improvement having occurred, on Jan. 10th, 1896, Mr. Battle operated on the left leg. An incision about half an inch long was made on the inner side of the left thigh about a finger's breadth above the internal condyle and carried down to the bone and with a chisel the bone was divided; very little force was required for this as the bone was soft and very vascular. The wound being closed with a pad the leg was wrenched into a very good position, the femur being practically straight. A second incision was made about two inches below the tubercle of the tibia over the internal surface of the bone and this bone was divided in a similar manner; it was even softer than the femur and as the chisel was being driven in the medullary fat oozed out of the wound. The tibia was put straight and all deformity removed except a slight inward rotation of the foot. The limb was put up in a plaster-of-Paris splint which extended from the hip to the toes. Very little pain followed the operation. On Jan. 28th Mr. Battle operated on the right leg. An incision 1 in. long was made on the inner side of the right thigh, commencing about 3 in. above the level of the upper border of the patella; it was carried down to the bone and a Macewen's osteotome having been introduced the bone was partly chiselled through and then broken. As the bone was being cut into some oily fluid exuded from the wound. The tibia was then treated similarly through an incision about 2 in. below the lower margin of the patella and a little internal to the middle line at the same place at which the previous osteotomy had been done. The position of the leg still not being satisfactory Mr. Battle decided to divide the fibula and this was done through an incision on the outer surface of the leg about 4 in. below the head of the bone. It was noticed when the bones were being divided that the tibia and fibula were much harder than the femur. The wounds were sutured and dressed and an anterior plaster splint was applied with a long Liston splint on the outer side. The left leg was then examined and considerable external rotation of the foot being found an osteotomy was performed on the tibia in its lower fourth. The left leg was put up in splints in the same way as the right leg. The patient bore the operation well and on Feb. 6th the splints were reapplied. Her

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general condition steadily improved and early in March the legs were massaged daily; this seemed to improve their nutrition and movement at the knee became free. On April 22nd an apparatus was applied by which some of the weight of the body was conducted by means of iron rods to the legs and feet, thus saving the knees. The right boot had a thick sole in order to equalise the length of the legs. She was soon able to walk, though at first she was easily tired. The patient was seen from time to time and six months after leaving was shown at a clinical meeting of the Medical Society of London, when her legs were seen to be almost straight and she could walk with ease. She had given up the use of the apparatus, as some of the straps were worn and she found it rather cumbersome. Her general health was greatly improved and she looked much stronger.

Remarks by Mr. BATTLE.—The deformity, as shown in the illustration, was very great and disabling, so much so that



Shows a view from the front of the extreme deformity of the lower extremities, the patient standing, as usual, with the aid of her crutch.

the girl could neither stand (except for a short time) nor move without support. It is a little difficult to say how far her pain in standing was due to the strain on the ligaments of the knees and how far it depended on weakness of the limbs. The unusual amount of degeneration of the bones must have been accompanied by corresponding weakness of muscles, whilst her general want of vitality was emphasised by the delayed union in the right tibia. Operation was postponed until the general health had been improved by tonics and good feeding, and when bony union of the tibia had taken place this was regarded as an indication that satisfactory results might be expected after aseptic osteotomy. It is possible that her home surroundings had not been of the best, for at the time of admission there were several superficial sores on the body which soon healed under treatment. She was also at that time somewhat pale-faced and had an anxious expression.

ST. GEORGE'S HOSPITAL.

A CASE OF FRACTURE OF THE TRACHEA AND STERNUM; NECROPSY.

(Under the care of Mr. G. R. TURNER.)

WE have already referred in an annotation[1] to the case reported below, and the fuller details which we publish now confirm the opinion expressed there that as no dyspnœa was present and as the patient survived the injury fourteen days death was probably due to some other condition and not to the rupture of the trachea. Undoubtedly the calcification of the trachea was a great predisposing cause of the lesion, but that the force causing the accident was very great is shown by the extensive injury to the sternum and ribs. It is a point of interest that the backward displacement of the manubrium slowly rectified itself. At least three cases have been recorded of complete rupture of the trachea in which recovery occurred.

An old man, aged seventy-three years, was on Sept. 15th, 1898, admitted into St. George's Hospital. The patient, a night watchman, was resting his chest upon a cross-rail and looking down the shaft of an uncompleted lift, being unaware that the lift had commenced its descent from above. The descending mass came in contact with the back of his head and forcibly flexed his head upon his chest. He was able to walk, but with groans complained of pain in his neck, whereupon an examination was made and the following conditions were found. There was a large hæmatoma over the occipital region without any marked injury to the superficial structures of the scalp, epistaxis was rather free (and subsided early), and there were some bruises over the nose and malar regions. No external marks could be detected on the neck. The sternum was evidently fractured, the manubrium being displaced backwards, and this was associated with fracture of the second and third ribs or their costal cartilages on both sides. There was considerable pain over the præcordia and particularly behind the suprasternal notch; the pain was found to be much aggravated by a full respiratory movement, by slight pressure, or by coughing, the expectoration being accompanied by traces of blood which was at first considered to be of nasal origin, but on examination of the buccal cavity the soft palate to the left of the middle line extending outwards and forwards was found to be lacerated. The pain was unaccompanied by any marked swelling or deformity of the neck; upon palpation of the neck no crepitus was elicited and no emphysema was present. The displacement of the manubrium seemed too slight and the pain caused by the least degree of extension too great to justify forcible extension of the head upon the trunk in order to rectify the displacement; moreover, the likelihood of some deep-seated mischief at the root of the neck militated against such a procedure; no necessity arose for immobilising the head and neck. Very little inconvenience appeared to be caused by this displacement and the condition rectified itself in about nine days. Though the patient had a slight cough and bronchitis and later developed signs of hypostatic congestion of the lungs, gradually sinking to die on the fourteenth day, yet at no time was the respiration much embarrassed and at no time was there any dyspnœa, dysphonia, or dysphagia. The temperature was about 100°F. throughout.

Necropsy.—The post-mortem examination, in addition to corroborating the lesions diagnosed during life, revealed the following conditions: (1) upon removal of the sternum hæmorrhage into the superior mediastinum; (2) transverse fracture of the cartilaginous portion of the trachea through its whole extent about 2¼ in. below the rima glottidis, whereas the membranous portion was not involved and the œsophagus was in no way injured; and (3) fracture of the horizontal plate of the left palate bone. The cartilages of the larynx and trachea were considerably calcified; the fracture of the trachea could be accounted for by forcible compression between the upper border of the sternum and the vertebral column and the fracture of the hard palate by the presence of some such object as a pipe in the patient's mouth at the time of the accident. The surface of the mucous membrane of the trachea over the seat of fracture was continuous but showed evidence of having been slightly injured.

[1] THE LANCET, Oct. 8th, 1898, p. 945.

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Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Exhibition of Specimens.

A MEETING of this society was held on Nov. 1st, the President, Dr. J. F. PAYNE, being in the chair.

Dr. T. CHURTON (Leeds) exhibited a specimen of Thrombosis of the Hepatic Vein. The patient was a man, twenty-six years of age. He had never been strong, but although enlargement in the epigastric region had been noticed for two years he was able to work till a month before death. He then (July 12th, 1898) received a blow on the right side, after which he gave up work but did not seem ill. On August 4th he was seized with diarrhœa and two days later the abdomen began to swell and the superficial veins became distended. On the 10th several pints of blood-stained ascitic fluid were drawn off, and on the 13th an exploratory incision revealed the nature of the case. At the necropsy, some days later, a cirrhotic liver was found and one of the hepatic veins contained dark-red and recent clot. The portal veins were free from thrombosis. The cirrhosis was chiefly monolobular. There was a good deal of formation of new bile-ducts. Dr. Churton did not think the evidence clear enough to prove that the cirrhosis was due to congenital syphilis. No other cause, however, such as lead, malaria, alcohol, dyspepsia, and auto-intoxication, or acquired syphilis, could be traced.—Dr. LAZARUS-BARLOW also showed a specimen of Thrombosis of the Hepatic Vein associated with Cirrhosis of the Liver, probably syphilitic. The specimen was taken from the body of a boy, aged thirteen years, who during life presented the ordinary signs and symptoms of hepatic cirrhosis—viz., hæmatemesis, ascites, and slight jaundice. The veins over the front of the abdomen were much distended. There was no direct evidence of congenital syphilis; the teeth were normal and there was no interstitial keratitis. His mother had had no miscarriages before his birth (her third pregnancy), but subsequently had four miscarriages. At the necropsy there was found a localised suppurative peritonitis. The liver weighed 2 lb. 10 oz. and its surface was granulated and mottled. On the upper surface posteriorly was a large mass of cicatricial tissue which extended 1½ in. into the depth of the organ and involved the hepatic veins about their termination in the inferior vena cava. Numerous branches of the hepatic vein, both large and small, were blocked by partially adherent and in many places decolourised clot. The cicatricial mass suggested a former gummatous condition and its edges ultimately became lost in the form of trabeculæ of fibrous tissue which entered the main substance of the liver. At the same time the branches of the portal vein served as centres for a fibrous tissue overgrowth throughout the organ. Microscopically the liver, even in its apparently most normal regions, showed the existence of a mixed fibrosis in an extreme degree. The greater part of the fibrosis was of the multilobular variety, but much of the intercellular variety was also present. No gummata were found at all. The spleen, which weighed 16 oz., showed a large radiating and central mass of fibrous tissue.—Dr. MORLEY FLETCHER showed the Viscera from a case of Congenital Syphilis presenting certain unusual features. An infant, aged three weeks, was admitted to the Children's Hospital, Shadwell, on account of the large size of the abdomen. The child died when seven weeks old. There was neither jaundice nor œdema during the course of the illness. The liver was found greatly enlarged, hard, and with a mottled surface on section. The right suprarenal body was adherent to its under surface. Both suprarenals were much enlarged and were hæmorrhagic. The changes in the liver were unusual. There was almost complete absence of liver cells and a great amount of dense fibrosis. The most important feature was a very extensive and diffuse infiltration of the organs by round cells with an obvious reticulum of young connective tissue fibres, closely resembling the condition described by Hutinel and Hudelo as "a diffuse embryonal infiltration." This resembled in some respects the appearance of a small round-celled sarcoma and it was suggested that some of the so-called diffuse primary sarcomata of infants which had been described might possibly be of a similar nature.—The PRESIDENT observed that the histology of congenital syphilitic cirrhosis of the liver was not yet quite fixed and that of Dr. Fletcher's specimen did not follow the usual description. He had described a peculiar liver in an earlier volume of the society's Transactions in which there was an interstitial cellular infiltration with formation of fibrous tissue quite unlike that met with in typical congenital syphilitic cirrhosis.—Dr. MORLEY FLETCHER referred to a case reported by Dr. Gee and Dr. West, in the St. Bartholomew's Hospital Reports, in which there was thrombosis of the hepatic veins in a child seventeen weeks old. In that case the hepatic veins could not be traced into the inferior vena cava, the orifice being closed by a thin membrane.—Dr. H. D. ROLLESTON agreed that thrombosis of the hepatic veins was very rare and was due to very varied causes. In the cases described by Dr. Churton and Dr. Lazarus-Barlow the congenital syphilitic changes appeared to be more marked at the orifices of the hepatic veins causing stenosis first and then thrombosis. In one case he had seen the thrombosis extend in from the inferior vena cava. Osler had described a case of thrombosis from stenosis of the orifice of the hepatic veins. Delépine had described a case in which thrombosis occurred from rupture of a softened cirrhotic nodule into a hepatic vein. Cirrhosis from congenital syphilis was not always intercellular, but might be multilobular. Probably some cases described as diffuse sarcoma of the liver in children were syphilitic cirrhosis. Although congenital syphilitic cirrhosis passed off under treatment it left the liver more likely to develop ordinary cirrhosis later.—Dr. CHURTON, in reply, said that the opening of the hepatic veins into the vena cava in his case could not be found.—Dr. LAZARUS-BARLOW said that in his case there was no modification of the entry of the hepatic veins into the vena cava.

Dr. CURNOW exhibited a Skull which was referred to at the previous meeting in a discussion on a specimen of acromegaly shown by Mr. Shattock. The skull was unusually dense, weighing 2 lb. 10 oz. The sutures were very prominent and the skull was markedly dolichocephalic and prognathous. The ridge of origin of the temporal muscles and the insertion of the masseters were very strongly marked and unlike those of any European skull. The frontal sinuses were very large. There was no enlargement of the pituitary fossa and the skull was not acromegalic. There was a tradition that this was an Australian skull, but this was certainly not the case. He regarded it as a normal skull with strong racial peculiarity and thought it was African, but would not like to be more precise.

Dr. HUGH WALSHAM exhibited microscopic sections of Epithelial Pearls in the Tonsils. He thought that some forms of tonsil calculi might be due to the calcification of these "pearls." Others were due to calcification of tubercle and others were probably the bony masses described by him at a previous meeting.

Dr. ROLLESTON showed a specimen of Idiopathic Hypertrophy of the Œsophagus from a man, aged fifty-nine years, who had not had any dysphagia or other symptoms referable to the digestive tract. This was vouched for by the patient's daughter, who had always shared his meals. Three inches below the cricoid cartilage the circular muscular coat began to hypertrophy and increased in thickness towards the cardiac orifice. The longitudinal muscular coat was practically normal. Around the outside of the œsophagus there were numerous adhesions but not of any density or sufficiently firm to account for the hypertrophy. Microscopically there was no evidence of fibrosis on the hypertrophied circular muscular coat. The lumen of the œsophagus was not dilated or narrowed. The stomach was larger than natural and the pylorus was small. The kidneys were granular, the left ventricle was hypertrophied, and the prostate was hypertrophied. No obstructive cause for the hypertrophy being discovered it was called idiopathic. Spasm of the cardiac orifice naturally suggested itself as a cause, but there was no evidence either of cardio-spasm during life in this patient or that hypertrophy of the œsophagus occurred in cases of cardio-spasm. The hypertrophy of the circular muscular coat of a part of the digestive tract immediately proximal to a gastric orifice closely resembled and suggested analogies with congenital hypertrophy of the pylorus in infants.—Dr. NORMAN DALTON asked if there might not have been a narrowing of the œsophagus at the point where it passed through the diaphragm.—The PRESIDENT pointed out that the patient's age excluded congenital malformation. The

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limitation to the muscular coat suggested excessive functional activity from some cause. A similar muscular hypertrophy of the stomach for which no cause could be assigned was sometimes met with.

The following card specimens were exhibited:—

Dr. NORMAN DALTON: Dextro-cardia from a boy, aged fifteen years.

Dr. MORLEY FLETCHER: Dilatation of the Left Auricle.

Mr. SHATTOCK: Molluscum Contagiosum in Birds.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Oct. 28th, Mr. LANGTON, President, being in the chair.

Dr. W. S. COLMAN showed a case of Syringomyelia. The patient was a woman, twenty-eight years of age. She had, when a child, never been able to get about like other children, being apt to fall. When seven years old she had painless whitlows and when ten years old her back was noticed to be twisted. She used frequently to burn herself without experiencing any pain. At the present time she was rather stunted and presented the following symptoms: spastic paraplegia with increased reflexes; wasting of the muscles round the shoulder with diminished electric excitability; and wasting of the intrinsic muscles of the right hand with claw-like contraction of the fingers. Sensation to touch was preserved everywhere, but there was loss of sensation to painful sensations over the head, arms, and trunk as low as the umbilicus with the exception of the face, and complete loss of sense of heat and cold as low as the knees. There were also marked lateral curvature of the spine and vertical nystagmus on lateral deviation. Her general health was good.

Mr. JACKSON CLARKE showed a girl, aged three years, suffering from Congenital Subacromial Dislocation of the Shoulder. The humerus was dislocated backwards on to the acromion. The right arm was pronated and movement was limited. There was a history of some difficulty during the labour, but Mr. Clarke thought that the case was one of congenital dislocation and not of traumatic dislocation during birth.

Dr. SIDNEY PHILLIPS showed a boy, aged sixteen years, suffering from Chyluria which had existed for three years. The urine passed after sleep was milky, whether he slept by day or by night. The ordinary urine was clear. The milky urine contained a large quantity of albumin, fat, and granules, which had been described as the "molecular basis of chyle." It was acid and its specific gravity was 1030. The clear urine sometimes contained albumin but at others was perfectly normal. Dr. Phillips was unable to assign a cause. The blood had been examined repeatedly at night but no filariæ had been discovered.

Mr. WATSON CHEYNE showed an example of Repair of the Bridge of the Nose by Rabbit Bone. The patient was a youth who, eight years ago, met with an accident through which he lost large portions of his nasal bones. In January, 1898, Mr. Cheyne raised a flap of skin from the right side of the nose, exposing the periosteum. He then removed the femur from a rabbit, split it into pieces, and simply laid these on the periosteum and replaced the flap. The wound healed without suppuration, and the result as shown to the society was excellent.

Dr. NORMAN DALTON showed a boy, aged fifteen years, suffering from Double Athetosis. There was a history that labour was difficult but not instrumental. The patient walked well until he was three years old. He now presented restless movements of the face, shoulders, and back muscles and there were the typical athetoid movements of the hands when held out. There was rigidity of the lower limbs, particularly marked in the adductors and in the calf muscles, giving rise to some talipes equino-varus. The symptoms were most marked on the right side. There was also some hypertrophy of the muscles of the hand and shoulder.—Dr. J. A. ORMEROD said that he had shown a similar case to the Neurological Society last year. The symptoms in that case were said not to have come on until the boy left school. Both the movements and the spastic condition of the legs were much more marked than in Dr. Dalton's case. The boy had since died, but no post-mortem examination was permitted.

Mr. HERBERT PAGE showed a case of Ankylosis of the Lower Jaw treated by Removal of a Wedge from the Lower Condyle. The patient was a boy, aged nine years, whose jaw was noticed in 1894 to be nearly ankylosed and in 1897 the ankylosis had become complete. Mr. Page had therefore operated with the view of resecting the joint, but finding that the ankylosis was dense and bony he resected instead a wedge-shaped piece of bone from the neck. The boy could now open his mouth widely.

Dr. BERTRAM ABRAHAMS showed a case of Myxœdema in a child, aged seven years. She was unable to walk until five years of age. When six and a half years old she rapidly became fat, her tongue got large, and in twelve weeks she became helpless and unable to feed herself. She was treated with thyroid extract and within 30 days her weight fell from 44 lb. to 33 lb. and she became more active and was able to go to school. The treatment was left off by her parents and the symptoms returned. There was a curious induration of the muscles of the calf probably due to the deposition of mucin.

Mr. A. PEARCE GOULD showed a case of Lupus treated by Thyroid Colloid. The patient was a woman, forty-seven years of age. She had suffered since childhood from tuberculous glands in the neck and in 1879 the glands broke down and lupoid ulceration gradually extended over the face. Afterwards tuberculous disease occurred in the foot, which was amputated, and she had abscesses in various parts. These had all healed before she came under treatment. She then had an ulcer extending right across the face, reaching from the eyelids to the mouth. Mr. Gould's house surgeon, Mr. Mannington, ordered tabloids of thyroid colloid, which were begun in September, 1898, and in three weeks the face had entirely healed over. A single tabloid of the colloid was being still given daily and the scar tissue had become more supple and the ectropion much less marked, and the pain, which was very considerable, had disappeared. Mr. Gould had seen similar but less marked improvement in other cases.—Dr. J. J. PRINGLE confirmed the value of thyroid treatment and considered that the thyroid colloid was better borne than any other preparation. Unfortunately the cases tended to relapse unless the thyroid medication was pursued continuously.—Dr. A. WHITFIELD said he should be inclined to describe the case as one of scrofuloderma rather than as one of lupus vulgaris and he observed that the ulcerative forms of tuberculous skin lesions were more amenable to treatment both by the serum method and by thyroid medication than the pure neoplasm form of lupus vulgaris.

Mr. CHARTERS SYMONDS showed a girl, aged seventeen years, the subject of congenital syphilis, suffering from Gumma of the Tongue. She had previously had gummata in connexion with the ulna and fibula. She had also had syphilitic eye manifestations. It was noteworthy that these gummata developed while the patient was having vigorous mercurial treatment.

Dr. LEONARD GUTHRIE showed a case of Left Hemiplegia associated with Atrophy of the Right Optic Nerve occurring in a woman, twenty-two years of age, who nine days after the birth of a child was seized with convulsions of an ordinary type which were followed by left hemiplegia. She had subsequently had several fits but the paralysis had gradually improved. Three months after the hemiplegia she suddenly found herself unable to see with her left eye and the disc was now in a condition of atrophy. There was mobile spasm of the left arm and leg. The great toe was hyper-extended but the other toe was flexed so that she walked on the knuckles. He thought that the hemiplegia was due to thrombosis of a branch of the Sylvian artery and that the optic atrophy might be the result of retro-ocular neuritis, both probably the result of syphilis.—Dr. R. D. BATTEN said that he had examined the case and thought the cause of the atrophy was uncertain. He thought that embolism and thrombosis of the central artery could be excluded and from the condition of the fields he did not think that retro-ocular neuritis could account for the atrophy.

Mr. CUTHBERT WALLACE showed a case of Bending of the Neck of the Femur in a child, aged three years. The foot was markedly everted. Movements of flexion were free if the foot was everted, but very restricted if the foot was inverted.

Mr. F. C. ABBOTT showed a child, aged five years, suffering from an exactly similar condition. The child had been

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unable to walk until the year before and had crawled about on the buttocks. This he suggested had caused the bending, which was in the antero-posterior direction and was not merely a diminution in the obliquity of the neck.—Mr. JACKSON CLARKE pointed out that it was easy to flex the leg up against the body with the feet together and this was the natural position of repose. That, moreover, was the position in which children with congenital dislocation of the hip were often born. He observed that owing to the frequent confusion of coxa vara and congenital dislocation of the hip the statistics previously to the introduction of skiagraphy were absolutely unreliable.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Cæsarean Section.—Sarcoma Uteri.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Oct. 21st, the Vice-President, Mr. C. J. WRIGHT, being in the chair.

Dr. BRAITHWAITE read a paper on Two Cases of Cæsarean Section. In both cases Cæsarean section was performed at or about full term of pregnancy in consequence of the pelvis being blocked by ovarian tumours. In neither case could the tumour be got at for removal when the abdomen was opened. Case 1.—The uterus, on exposure, was seen to be of an unusual dark blue colour in consequence of the placenta being attached to its anterior wall. The placenta was divided at the same time as the incision was made through the anterior wall of the uterus. The child was rapidly removed and the uterus was wrapped up in a large hot sponge, which was pressed firmly upon it and at the same time it was lifted out through the abdominal wound. The placenta and membranes were removed immediately after the child. The mother did well and the child is still living and is now over a year old. Case 2.—This was almost precisely similar to Case 1. The mother did well but the child unfortunately died within 24 hours. The following amongst other points were noteworthy in these cases. First, in opening the uterus, especially if the placenta was attached anteriorly, rapidity was of vital importance. The incision should be begun by a scalpel but was better finished by very strong sharp scissors. Secondly, the edges of the incision must be seized and everted and compressed where necessary by a second assistant, not by the one standing opposite to the operator. The hæmorrhage from the divided uterine wall was very easily arrested in this way, as it was entirely venous and at very low pressure. It, moreover, did not come from the whole surface of the wound, but only from two or three points. Thirdly, after the uterus had been emptied of the child, placenta, and membrane, and brought out of the abdominal wound and wrapped in and pressed by a large, flat, hot sponge, the first stitch should, as recommended by Dr. Murdoch Cameron, be put in the middle so as to produce accurate adaptation. Before the wound was finally closed by the last two stitches, which should be at the upper end of the wound, the nozzle of a syringe should be inserted into the uterus and its cavity washed out by hot boric lotion in order to ensure the absence of clot. Fourthly, as it was ultimately absorbed, the best material for the sutures in the uterine wall was green chromic catgut soaked for half an hour in perchloride solution, 1 in 1000. In making the first half of each knot the end should be put through the loop twice instead of once. A knot so made in catgut would hold, otherwise it was not safe if any strain was put upon it, as by vomiting. The sutures should be put in two to the inch, and so deep as just to miss the inner surface of the uterus. If placed at longer intervals, as recommended by Saenger, the wound was not quite safely closed.—Dr. BELL, in an experience of 8000 midwifery cases, had only met with one case requiring Cæsarean section and this occurred lately in a dwarf 3ft. 5in. high whose pelvic antero-posterior diameter was only 1½ in. The case occurred in a poor house and a hurried operation was necessary without recourse to any thorough aseptic arrangements; nevertheless, complete recovery took place both of the mother and child.—Dr. HELLIER deplored the frequency with which children were born with spastic paraplegia occurring immediately afterwards and attributed this to the children being dragged through the contracted pelvis by means of forceps. He advocated in these cases a more frequent adoption of symphysiotomy, which experience had shown was a very safe operation.—Mr. C. J. WRIGHT referred to three cases of Cæsarean section at which he had assisted for deformed pelvis some years ago and contrasted the past with the present successful mode of operating. The respective merits of Porro's operation and Cæsarean section were also mentioned. The existence of ovarian growths in both of Dr. Braithwaite's cases emphasised the necessity for early removal when these were detected in all cases of pregnancy.

Mr. CROFT related a case of Hysterectomy for Sarcoma Uteri following Hydatidiform Mole and showed the uterus removed and microscopic sections of the growth. The patient, aged thirty-two years, had had three children and had been ailing since the birth of the last child, two years previously. After suckling the child for eighteen months the menses returned once or twice and there was then severe flooding. A large hydatidiform mole was removed. About six weeks afterwards intermittent bleedings and offensive discharge with septicæmia having occurred the uterus was explored and the presence of malignant growth was discovered. The septicæmia and general symptoms having been relieved, vaginal hysterectomy was performed. Meanwhile the growth had been examined and reported upon by Mr. Targett of the Clinical Research Association. The tissue consisted of uterine muscle substance infiltrated with sarcoma. The cells were spindle-shaped, and many of them were very large, like giant cells, but the characters did not resemble those of deciduoma malignum. The interest of the case turned on the clinical resemblance to this latter disease and the fact of the malignant growth following a few weeks after the hydatidiform mole. The patient recovered and is so far well, the operation having been performed three months ago.

Dr. CHURTON showed a Large Cirrhotic Liver with Thrombosis of the Hepatic Veins from a man aged twenty-six years. He had been perfectly temperate and no ordinary cause for the disease could be discovered. There was, however, much reason to regard it as a case of congenital syphilis with manifestations long deferred. Keratitis due to this taint is said to appear occasionally as late as the thirtieth or fortieth year (J. Hutchinson).

Mr. LITTLEWOOD showed the following: 1. Bullet-wound of the Knee-joint. The patient was a boy, aged thirteen years, from whose right knee a bullet had been removed on Sept. 28th, 1898. The bullet had lodged just beneath the articular cartilage of the inner condyle. The bullet and skiagram were shown. 2. Sarcoma of the lower end of the Femur. The patient was a male, aged twenty-three years, who had had an amputation through the left thigh just below the lesser trochanter for a huge breaking-down sarcoma of the lower end of the femur. Operation was performed twelve days previously under nitrous oxide and oxygen. The patient was very ill at the time of the operation, having a temperature of 103° F. He suffered remarkably little from shock and has made a very rapid recovery. The specimen was shown. 3. Solid Ovarian Tumour, weighing 17 lb., having many adhesions, removed from a girl, aged fifteen years, on August 8th, 1898. The patient made a good recovery. 4. Double Pyosalpinx and Suppurating Ovarian Cyst (left) removed from an unmarried woman, aged twenty-five years, on Oct. 10th, 1898. Each tube contained 6 oz. of pus and the cyst 12 oz. The patient is making a good recovery. 5. Hat-pin, measuring 4 in., removed from the urethra of a man, aged fifty-four years. 6. Hydatids involving a Portion of Rib removed from a woman suffering from hydatid disease of the chest.

Dr. WARDROP GRIFFITH showed: 1. A case of Post-Diphtheritic Paralysis in a lad, aged nine years. The symptoms came on about a week after a severe sore-throat, the nature of which was not diagnosed. The patient was rapidly recovering, and at one stage his gait had strongly resembled that of pseudo-hypertrophic paralysis. 2. The blood from 2 cases of Leucocythæmia of the Spleno-medullary type. In one case the number of white cells was about equal to that of red, and the number of large eosinophile cells was very great.

Dr. ALLAN: (1) Elephantiasis of the Leg; and (2) Syphilitic Liver.

Dr. TREVELYAN: Miliary Tuberculosis of the Spinal Meninges.

Mr. W. H. BROWN: (1) Hand with Seven Fingers; (2) Sarcoma of the Neck after Injection with Coley's Fluid; (3)

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Skin Grafting after Severe Burns; and (4) Malignant Disease of the Prostate.

Dr. CHURTON: Cancer of the Liver, with Microscopic Specimens.

Mr. LAWFORD KNAGGS: The Parts removed in a Porro's Operation. (The patient was shown).

Mr. E. SOLLY: Specimen of Complete Inversion of the Uterus.

Dr. HELLIER: Carcinoma Corporis Uteri removed by Vaginal Hysterectomy.

Mr. SECKER WALKER: Case of almost Complete Anterior Staphyloma of both Eyes. Iridectomy was performed in one eye with useful result.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH (Metropolitan Branch).—A meeting of this society was held at 197, High Holborn on Oct. 28th, when Dr. J. F. J. Sykes delivered his presidential address on Some Points in Public Health Administration. Referring to the power of entry possessed by sanitary authorities under the Public Health (London) Act he regretted that no power was given to enter unless a nuisance was believed to exist; this was particularly to be regretted in the case of schools. With regard to drainage regulations he asked for pressure to be brought on the London County Council to issue their long-promised by-laws, and also for an interpretation of the words "making of a drain" and "new drain," as used in the Metropolitan Local Management and other Acts. He also advocated power being given to local authorities to make by-laws for the proper drainage and paving of stables. Speaking on the storage and removal of manure he suggested that as the nuisance from peat and some other kinds of litter arose from its disturbance and transference from one receptacle to another rather than by the transit of the removing receptacle the County Council should provide for the removal to be made in the same receptacle as the storage, by which means disturbance would be obviated and nuisances avoided. Continuing Dr. Sykes said that under the provisions of Section 41 (2) of the London Building Act, 1894, the open spaces to be provided to buildings might be entirely covered in so far as buildings existing in London streets prior to 1895 were concerned; in other words, no open space need be provided to the lowest floors—viz., the basement and the ground floors and possibly an entresol of a house. In consequence of this houses were being built so as not to have even a shaft for the purpose of allowing the drainage to discharge into the open, so that the by-laws of the sanitary authority and the county council, devised with a view to excluding drainage from buildings, especially domestic buildings, were rendered useless by the law of the Building Act, which permitted a building to embrace the whole of its drainage within its external walls. Some remedy was obviously necessary for this growing evil. He further urged that provision should be made for taking samples of polluted or infected foods and suggested the desirability of veterinarians being employed as food inspectors. Other points mentioned included overcrowding (for which Dr. Sykes said a definition was required), the notification by school teachers of absences caused by infectious diseases, and the desirability of making vermin of the clothing, person, or place a nuisance under the Public Health Act.

BECKENHAM AND PENGE MEDICAL SOCIETY.—Consequent on resolutions of two special general meetings this society formally entered on Oct. 28th into affiliation with the Corporate and Medical Reform Association, Limited, the object being to unite these otherwise distinct and independent associations the better to effect their common objects—corporate and medical reform. After a resolution moved from the chair, seconded by Mr. Barton, and carried *nem. con.*, to support the Corporate and Medical Reform Association and to coöperate in its policy and measures, the resolution to enter into affiliation was moved by Mr. Primrose Wells, seconded by Dr. Corbin, and adopted. At the meeting, held at the residence of Mr. Primrose Wells (honorary secretary), Mr. Sturges (President of the society) being in the chair, a deputation consisting of Dr. Lorimer Hart (Sydenham) and Mr. R. B. Anderson attended on behalf of the Corporate and Medical Reform Association and in summing up the question, before putting the motion to affiliate, Mr. Sturges said that he believed this method of affiliating distinct and otherwise entirely independent associations for the great purpose of corporate and medical reform was an entirely new departure in the profession and would obviate much of the inconvenience and dissatisfaction caused by the inertness of large and unwieldy bodies such as one they had in mind; that the policy placed before them by the deputation appeared reasonable and practicable and to be calculated to supply the want of some means of common action, and to supplement that local organisation which, though in that society absolutely unanimous, had failed to protect them and to establish their just claims in face of the inevitable outsider; and he predicted for this new policy and these new methods a great and remarkable success.—It was agreed that the resolution to affiliate should not take effect until and unless ratified by another meeting, which was held on Oct. 21st, and at which the resolution was again brought forward and formally passed unanimously.

THE DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held at 20, Hanover-square, W., on Oct. 26th, the President, Dr. Radcliffe Crocker, being in the chair. The following cases were shown:—The President: 1. A case of Tuberculated Leprosy in a middle-aged Hindoo. The skin affection had existed for ten years. He had been totally blind since Christmas. 2. A case of Urticaria Pigmentosa in a boy.—Dr. T. D. Savill showed two cases: (1) Scleroderma of the Extremities in a woman; and (2) a Case for Diagnosis.—Dr. Alfred Eddowes showed: 1. Alopecia Areata with Leucodermia symmetrically situated on the Inner Aspect of both Knees, the patient being a boy about fourteen years of age. 2. A man recovering from Hodgkin's Disease. There was extensive alopecia areata. Dr. Eddowes pointed out the marked anæmia of the affected areas in this case and in his previous case. Both patients wore wigs. 3. A man with (?) Iodide Rash. 4. A woman with Chronic Symmetrical Œdematous Erythema of the Face, with a Lichenous Eruption affecting both Arms and the Neck.—The cases were discussed by the President, Mr. Buxton Shillitoe, Dr. Phillips-Conn, Dr. Hall, and Dr. Eddowes.

BOURNEMOUTH MEDICAL SOCIETY.—The annual meeting of this society was held on Oct. 26th at the Royal Exeter Hotel, Mr. T. Frederick Gardner, the retiring Vice-President and President-elect, being in the chair.—The honorary secretary read the minutes of the last annual meeting.—The reports of the committee and honorary librarian and the treasurer's audited accounts having been previously circulated among the members of the society were taken as read.—A ballot took place for the committee.—The following are the officers for the year 1898-99:—President: Mr. T. Frederick Gardner. Vice-President: Mr. Bernard Scott. Honorary Treasurer: Mr. A. Heygate Vernon. Honorary Librarian: Dr. W. H. L. Marriner. Honorary Secretary: Mr. D. M. Ross. Committee: Mr. S. L. Clift, Mr. A. C. Coles, Dr. W. H. L. Marriner, Dr. W. Hooper Masters, and Mr. F. Winson Ramsay.—The members and some friends afterwards dined together in the hotel.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—At a meeting of this society held on Oct. 26th the following office-bearers were appointed for the session 1898-99:—Honorary President: Dr. James Stirton. President: Mr. Alex. Miller. Senior Vice-President: Dr. Lawrence Oliphant. Junior Vice-President: Dr. J. K. Kelly. Treasurer: Dr. J. Lindsay. Secretary: Dr. R. Jardine. Reporting Secretary: Dr. Munro Kerr. Pathologist: Dr. Balfour Marshall. Councillors: Dr. A. Richmond, Dr. Edgar, Dr. G. W. Thomson, Dr. Elizabeth Pace, Dr. Marion Gilchrist, and Dr. E. A. Gibson.

THE PLAGUE IN INDIA.—The *Times of India* of Oct. 15th says that Lord Sandhurst was very busy during his late visit to Simla. More than one conference of high officials met regarding the plague question in Bombay and the subject of the provincial and financial status was carefully considered by his Excellency with Sir James Westland. As already announced, the Secretary of State for India has sanctioned the appointment of a special commission to make investigation of a scientific character in India in connexion with plague. The main questions with which the commission will deal are the origins of the different outbreaks of plague, the manner in which the disease is communicated, and the effects of curative serum and preventive inoculation.

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Reviews and Notices of Books.

The Nervous System and its Diseases. By CHARLES K. MILLS, M.D. Philadelphia. Edinburgh and London: Young J. Pentland. 1898. Pp. 1056.

ANYONE who has read the contributions to neurological literature which have from time to time come from the pen of Dr. C. K. Mills must take up the present volume with considerable expectations. It may be said at once that these expectations are not likely to be disappointed and that the book, so far as it goes, is worthy of the high reputation of its author. We have said "so far as it goes," and it is well to state at the outset that this volume, after a general anatomical, physiological, and symptomatological introduction, deals only with diseases of the brain, cerebellum, medulla, and cranial nerves. Yet the book is complete in itself and is furnished with an excellent index and a most complete bibliography.

The first chapter is one of 124 pages, comprising a general sketch of the nervous system, a description of nervous tissues, an account of the development of the nervous system, and a section on nomenclature and terminology, advocating a somewhat radical and, in many cases, we believe, unnecessary change in the current terminology. We venture to think that the substitution, e.g., of "callosum" for "corpus callosum," of "dura" for "dura mater," of "thalamus" for "optic thalamus," of "medifrontal" for "middle frontal," and such like, are scarcely changes which will to most recommend themselves as improvements. Yet the attempt to attain to uniformity in nomenclature is one with which most students of neurology will probably sympathise. The general anatomy of the nervous system is dealt with in the next section and all the latest views are incorporated in this description. In the part dealing with the anatomy of the spinal cord no serious attempt is made to describe the destiny of the various tracts. The membranes, blood-vessels, and lymphatics of the nervous system are next dealt with, and following this the architecture and general physiology and the chemistry of the nervous system. Such is the first chapter, and it will not be wondered at that it comprises 124 pages which are abundantly and, on the whole, excellently illustrated.

The second chapter deals with the general pathology and etiology of nervous disease: its symptomatology, the methods of investigation, electrical examination, and electrical treatment. The general therapeutics of nervous diseases are also considered, including diet, climate, baths, and the various forms of special treatment, such as the Weir-Mitchell treatment, hypnotism, and serum treatment.

In the third chapter consideration of the spinal diseases is first entered upon and diseases of the membranes, sinuses, and veins of the brain and also encephalic malformations are dealt with. The account of these is satisfactory, although little new light is thrown upon their origin or symptomatology.

The fourth chapter seems at first sight a digression, but it really is not so, consisting as it does of an account of the histology and physiology of the brain in relation to its focal diseases, so that it includes an account of its minute anatomy, of cortical localisation, of the functions and morbid conditions of the basal ganglia, and of the cerebellum. Cranio-cerebral topography is also dealt with and the modes of examining the brain post mortem, especially with reference to the localisation of lesions.

The fifth chapter is devoted to an account of the diseases of cerebral vessels and of the vascular disturbances of the brain, and is naturally prefaced by an account of the encephalic circulation. It comprises, of course, a clinical description of various conditions, such as cerebral hæmorrhage, vascular occlusion from embolism and thrombosis, intracranial aneurysm, brain tumours, and abscess.

In the next chapter an account is given of the remaining cerebral diseases, including degenerations, the cerebral palsies of children, aphasia, and other defects of speech. This is an extremely satisfactory chapter. The next one is devoted to diseased conditions of the special senses and their related cerebral representations and this is succeeded by a chapter dealing with disturbance of ocular movements resulting from lesions of nerves, nuclei, or cerebral structure. The remaining two chapters discuss morbid conditions of the other cranial nerves—i.e., trigeminal, facial, glosso-pharyngeal, pneumogastric, spinal accessory, and hypoglossal—and diseased conditions of the medulla oblongata.

From the foregoing account the scope and completeness of the book will be evident, and it need only be said that it is very copiously illustrated, that on every page of it the author's intimate acquaintance with the latest neurological literature is evident, and that everywhere it is illuminated by the clinical experience of a highly-trained and keenly observant physician. We congratulate Dr. Mills on the first instalment of his book and we trust that he will be encouraged to complete a work which will, we believe, take a place in the best medical literature of America. As regards printing and typography and character of the illustrations the book is admirable.

The Meteorology of Egypt and its Influence on Disease. By H. E. LEIGH CANNEY, M.D. Lond. London: Baillière, Tindall, and Cox. 1897.

THIS work contains the most complete account of the meteorology of Egypt which we have yet seen. It includes the results of a series of observations undertaken during the three years 1893–96 by Dr. Canney and others at the following stations: Cairo, Helouan, Mena House, Luxor, Assouan, Luxor Fields, and at several points in the Luxor desert. All the observations (except those of the subsidiary stations near Luxor) were taken on the flat brown cement roofs of hotels from 40 to 50 ft. high. The following gentlemen coöperated with Dr. Canney in this work: Mr. Longmore and Dr. Jalland at Assouan, Dr. Bentley and Mr. J. L. Hichens at Mena House, Dr. Kauffmann at Cairo, M. F. Douat at Helouan, and Dr. Page May. The general result of Dr. Canney's observations is to bring out the superior climatic advantages of Upper, as compared with Lower, Egypt. Thus for the four months December to March Luxor has a mean temperature 3·3° warmer than Helouan, and Assouan 7·8° warmer than Helouan. Again, the fall of mean temperature in January, which is 4·5° at Mena House and 3·5° at Helouan, is 2·7° at Luxor and only 1·8° at Assouan. The mean daily variation of temperature is naturally greater in Upper than in Lower Egypt. For the four months included in the observations it was found to be 21·7° at Mena House, 22 3° at Helouan, 28·4° at Luxor, and 27·6° at Assouan. "With regard to the fall of temperature at sunset," says Dr. Canney, "much has been said by nearly everyone who has ever travelled in Egypt, and it has often been described as very great. So far as these continuous observations show, the fall of temperature from 4 P.M. to 6 P.M. (including the hour of sunset) is only 1° more than that for the following two hours to 8 P.M. in Lower Egypt, whilst in Upper Egypt the fall from 4 P.M. to 6 P.M. is only 2° more than that for the following two hours. In the desert the reduction of temperature from the maximum to the minimum is gradual, though rather more rapid up to 6 P.M. than after that hour." The relative humidity is decidedly less in Upper than in Lower Egypt. Dr. Canney gives the mean for two years as 54·2° at Helouan and 40·5° at Assouan. The

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absolute humidity (grains in 10 cubic feet of air) is stated to be 35 at Mena House, 30 at Helouan, 31 at Luxor, and 28 at Assouan. It is characteristic of Egypt that in these observations "rain was not recorded." Rain falls at Cairo on an average about ten to fifteen days in the year, the total precipitation being less than half an inch; Upper Egypt is practically rainless. It need hardly be said that the climatic differences between Upper and Lower Egypt are modified to an important extent by the influence of the cultivated Delta upon the latter. This influence, so far as it goes, detracts from the pure "desert" quality of the air at Cairo, Mena House, and Helouan.

Dr. Canney strongly advocates Egypt (and especially Upper Egypt) as a resort in the following cases: phthisis (non-erethic cases, hæmorrhagic cases, chronic quiescent cases, and cases associated with bronchitis), asthma, chronic bronchitis and emphysema, impaired convalescence from pneumonia and pleurisy, chronic nasal and pharyngeal catarrh, mental overstrain, insomnia, Bright's disease, rheumatism and gout, dyspepsia, sciatica, &c. This is a long list which we have not space to discuss. The best air for phthisis (speaking generally) is mountain air. The next best is desert air. While Dr. Canney's book contains a great mass of really valuable information it is open to criticism in some particulars. It is badly arranged and the various tabular statements are not sufficiently self-explanatory. Some of the remarks regarding the influence of cultivated land upon climate seem to us erroneous. The mean daily variation of temperature is given as 25° at Cairo and 8° at Alexandria. This latter figure is certainly too low. The following sentence is hardly a model of philosophic impartiality and caution: "It will be observed that the cases deriving the greatest benefit from the climate of Egypt are mostly diseases unknown or rare in Egypt—phthisis, asthma, bronchitis, gout, Bright's disease, insomnia, rheumatoid arthritis, dyspepsia, and sciatica. In all these cases the relief to be obtained is very great in Egypt, and at the same time *they are cases for which little or nothing can be done in Europe*, with the exception of phthisis which has possible alternative resorts." The italics are ours.

Perityphlitis and its Varieties: their Pathology, Clinical Manifestations, and Treatment. By FREDERICK TREVES, F.R.C.S. Eng., Surgeon to the London Hospital, &c. (Reprinted from "A System of Medicine," edited by T. Clifford Allbutt, M.D. Cantab., F.R.S.) London: Macmillan and Co. 1897. Pp. 61. Price 2*s.* 6*d.*

THE high character of the individual contributions to Clifford Allbutt's "System of Medicine" fully justifies the reappearance separately of some of the more important papers. Mr. Treves's article on "Perityphlitis" is especially suitable for publication in this isolated form, for the subject is very well defined and the frequency of the occurrence of this disease makes it of especial interest.

The author prefers the name Perityphlitis to Appendicitis, and we heartily agree with him that the latter is uncouth, but there seems little doubt that it will ultimately prevail. After a short sketch of the history of the disease and the anatomy of the parts affected the pathology and morbid anatomy are considered. Einhorn is quoted as stating that 91 per cent. of all perityphlitic cases are appendicular in origin and that 9 per cent. are due to primary perforation of the cæcum; these statistics are based on post-mortem examinations; but, as Mr. Treves says, surgical experience would lead us to place the cases arising from the appendix at a higher percentage of frequency. With regard to the etiology the author considers that 3 per cent. would represent the proportion of his cases of perityphlitis in which a foreign body was found in the appendix; this is in accord with general opinion at the present time; concretions are found more commonly, perhaps in 30 per cent. of the cases.

The situation of the pain felt in an attack of inflammation of the appendix is of importance; in about 70 per cent. of cases it is felt at first just above the umbilicus, and only in the remaining 30 per cent. is it found in the right iliac fossa. Occasionally pain is also felt in the left iliac fossa, and sometimes this pain on the left side may be more marked than that on the right. Mr. Treves divides the cases for purposes of description into (1) those which end in resolution; (2) those ending in suppuration; (3) very mild cases; (4) intense and acute attacks; and (5) certain peculiar forms.

The section on Diagnosis is likely to prove useful. The conditions from which perityphlitis must be distinguished are renal colic, hepatic colic, twisting of the pedicle of an ovarian cyst, torsion of a moveable kidney, general peritonitis, intestinal obstruction, colitis, carcinoma of the cæcum, hip disease, and psoas abscess; but several other conditions may simulate disease of the appendix.

The pages devoted to Treatment will probably be considered as the most important. Mr. Treves deals with the treatment (*a*) during an attack, (*b*) between attacks, and (*c*) operative interference. In the early treatment of an attack a very difficult problem is whether to give aperients; the author advises that if the onset is mild a purgative should be given at once, for he has found many times that an attack has apparently been cut short by a promptly administered aperient. In attempting to promote an action of the bowels it is best to give an enema at once; should it cause a thorough evacuation no further measure is needed; should it fail a purgative should be given without delay. If the onset of the attack be very acute and severe the administration of an aperient at once cannot be entertained. In the treatment between the attacks the digestion must be attended to and deficiencies in the teeth should be made good, for Mr. Treves tells us that he has known in many instances a set of false teeth to bring a case of relapsing perityphlitis to a favourable ending. As to the diet it should be simple and digestible; there is no pathological evidence to support the advice that the patient should especially avoid substances such as strawberries, figs, or currants, which contain minute seeds. The bowels should be made to act daily. As to operative interference Mr. Treves lays it down as a rough rule that the use of the knife is very seldom called for before the fifth day. Routine early operation is especially deprecated, for the vast majority of cases undergo a spontaneous cure and even when pus forms, in no large proportion of cases does it burst into the peritoneal cavity—according to Dr. Bull's statistics only in 8 cases out of 67. The use of the exploring needle is strongly condemned, for it is full of risk and of little value. In relapsing perityphlitis Mr. Treves advises operation if the attacks have been very numerous, even if slight; if the attacks are increasing in frequency and severity; if the last attack has been so severe as to place the patient's life in considerable danger; if the relapses have made him a chronic invalid; or if the persistence of certain local symptoms during the quiescent period renders it probable that a collection of pus exists in or around the appendix. We commend this article to all who have not already seen it in Allbutt's "System of Medicine." An index would have rendered the contents more readily available and we consider its absence a serious defect.

A Manual of Obstetrics. By A. F. KING, M.D. Seventh Edition. 1898. With 223 Illustrations. London: Henry Kimpton. Demy 8vo, pp. 574. Price 10*s.* 6*d.* net.

As an interval of only two years has elapsed since the appearance of the last edition of this work very little alteration

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has been necessary in the preparation of the present, the seventh, edition, so that the book retains its former size and scope. A number of minor corrections and additions have been made and the chapter upon Puerperal Septicæmia has been rewritten. It now gives a clear review of this important subject and the most recently recommended methods of treatment, such as the administration of nuclein, the transfusion of normal saline solution, and the use of antistreptococcic serum, are adequately described and discussed. The book gives a concise and readable account of the most important facts of obstetric practice and is one of the best manuals of its size and kind. The present edition fully maintains the standard of the previous ones and the work is therefore one which we can cordially recommend to such students and practitioners as may require an outline of the principles and practice of midwifery in a compact form.

Chirurgie de la Face (The Surgery of the Face). Par FÉLIX FERRIER, Professeur à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Bichat, Membre de l'Académie de Médecine, et MM. les Docteurs GUILLEMAIN et A. MALHERBE, Anciens Internes des Hôpitaux de Paris. Avec 214 figures dans le texte. Paris: F. Alcan. 1897. Pp. 303. Prix 4 francs.

PROFESSOR F. FERRIER lectured during the session 1894–95 on the operative surgery of the face and his lectures have been arranged by two former pupils. The title hardly describes exactly the contents of the volume, for it includes, in addition to that of the face and the jaws, the surgery of the tongue, tonsils, palate, and pharynx and even of the sphenoidal sinuses. The surgery of the nerves of the face has, however, been omitted and will probably form the subject of a separate volume. A very good account is given of the various operations performed, and abundant illustrations, more than two hundred in all, assist the descriptions. The references to original papers are exceptionally numerous and British surgery appears to be given full credit for the work it has done in this department. We were interested to learn that the operation, which in this country is ascribed either to Furneaux Jordan or to Gant, for removal of the tongue by incising the cheek was described so long ago as 1832 by Jaeger. A good account is given of naso-pharyngeal adenoids and their treatment, and the description of the employment of metallic supports for rhinoplastic flaps is fully up to date. To those who can read French we recommend this little book as furnishing an interesting and useful account of the surgery of an important part of the body.

JOURNALS AND REVIEWS.

The Middlesex Hospital Journal.—The October number of this journal contains amongst other matters Dr. Voelcker's introductory address, an abstract of which has already appeared in our columns, and the continuation of Dr. Coupland's "Story of the Middlesex Hospital." Among the great names connected with the hospital mentioned in this section of Dr. Coupland's interesting papers are those of Latham, Charles Bell, and Watson.

Revue de Gynécologie et de Chirurgie Abdominale. No. 5. Septembre–Octobre, 1898. Paris: Masson et Cie.—This number contains the following articles. The Treatment of the Broad Ligaments in Hysterectomy by Angiotripsy, by M. Doyen; Esthiomène of the Anus and Vulva, by M. Verchère; Complete Prolapse of the Uterus and Vagina in a Young Virgin, by M. Fr. Stépkowski; the Treatment of Extra-uterine Gestation, by M. Paul Segond; a *résumé* of the report presented to the Congress of Gynæcology at Marseilles, October, 1898; and the Extirpation of the Cancerous Rectum through the Perineum, by MM. E. Quénu and R. Baudet. An analysis of current literature and a bibliographical index complete the number.

Analytical Records
FROM
THE LANCET LABORATORY.

HÆMATOGEN (HOMMEL'S).

(NICOLAY AND CO., 36, ST. ANDREW'S-HILL, DOCTORS'-COMMONS, E.C.)

THE interesting results following the administration of hæmoglobin in anæmia and other morbid conditions would seem to suggest this treatment as being properly classified under organo-therapeutics. The preparation here described has been spoken of favourably in this connexion. Hommel's hæmatogen is a somewhat syrupy, blood-coloured fluid, with a practically neutral taste except that due to glycerine. It coagulates on heating to a solid mass so that it is rich in albumin. On further examination we found that the preparation contained the normal salts of blood plasma. We could find no objectionable preservatives. A diluted solution exhibited the well-marked absorption spectra of hæmoglobin. The preparation is quite stable and is not repulsive on the score of taste, appearance, and smell. In some clinical trials made with this preparation the results were said to be very encouraging, indicating that it distinctly increases the amount of iron in the blood, while at the same time it acts as a nutrient by so influencing the metabolism of the body as to promote a healthy condition of the processes of nutrition. These results are in accordance with the composition and constitution of the preparation as shown in our analysis and examination.

OVO.

(THE MECREDY MANUFACTURING SYNDICATE, LTD., 248, GRESHAM HOUSE, OLD BROAD-STREET, E.C.)

This preparation needs little examination to show that it is, as described, desiccated egg. We found, however, that the desiccation had been so conducted as to preserve the properties of the nutritive substances of the fresh egg intact. Thus, on treating "ovo"—which presents the appearance of finely chopped, hard-boiled egg—with warm water for ten minutes a liquid is obtained having the appearance of a freshly whipped egg. Moreover, the albumin is in a soluble state and uncoagulated, for on filtering the liquid with the aid of pressure a fluid is obtained which on boiling turns semi-solid. When examined for objectionable preservatives the results were negative. The preparation is identical with egg, except that the moisture has been reduced carefully by a process which does not alter the constitution of the proteids. It is erroneous, therefore, to describe "ovo" as an egg substitute.

PROTENE PREPARATIONS.

(THE PROTENE CO., LTD., 36, WELBECK-STREET, CAVENDISH-SQUARE, W.)

The basis of these preparations is "protene," a powder occurring in small grains which is but little soluble in water. It is essentially a nitrogenous compound identical in composition with the casein of milk. Our analysis gave the following results: nitrogenous matters, 80·00 per cent.; non-nitrogenous matters, 11·93 per cent.; mineral matter, 4·37 per cent.; and moisture, 3·70 per cent. The mineral matter consisted almost exclusively of phosphates identical with those in milk. Protene, indeed, is described as a form of dried milk with the fat and sugar eliminated, the flesh-forming and bone-forming substances being alone retained. It is clearly a powerful food substance and admirably adapted for raising the nitrogenous value of farinaceous or other foods. Protene flour (No. 2) gave the following results on analysis: nitrogenous matters, 76·73 per cent.; non-nitrogenous matters, 13·59 per cent.; moisture, 3·27 per cent.; and mineral matter, 6·41 per cent.

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The increased amount of mineral matter here is due to a small quantity of added carbonate of soda which renders the protene to some extent soluble. Protene bread gave the following results on analysis: moisture, 42·43 per cent.; nitrogenous matters, 51·87 per cent.; carbohydrates, 2·40 per cent.; and mineral matter, 3·30 per cent. The bread contains a trifling quantity of starch. It presents a satisfactory spongy texture and should serve as a valuable and palatable food in those cases where sugar-producing substances are contra-indicated. Lastly, protene is the basis of some excellent biscuits which differ from the foregoing preparations in containing fat. They possess a very agreeable flavour and are desirably "short." We consider "protene" a valuable and important addition to dietetics in affording a means of adding considerably to the nutritive properties of special foods. The application of protene in accentuating the nutrient properties of various forms of food is well illustrated in the following preparations which are made: "protene household flour," "protene luncheon biscuits," "protene training biscuits," "protene medical biscuits," and "protene fancy biscuits." Painstaking research has established that the proteids of milk are amongst the most easily assimilated, and since these form the basis of "protene" preparations, many of which contain no less than 50 per cent. of proteid, it follows that they must possess a high degree of really nourishing property.

(1) PLASMA NASAL TABLETS; (2) MENTHOLATED THROAT TABLETS.

(PARKE, DAVIS AND CO., 21, NORTH AUDLEY-STREET, W.)

Both these formulæ are of well-known value and the convenience of the tablet form containing the ingredients in reliable ratio is obvious. The composition of the "plasma nasal tablets" is as follows: sodium chloride, 5½ gr.; sodium sulphate, 1½ gr.; sodium phosphate, ¼ gr.; potassium chloride, ⅔ gr.; potassium sulphate, ¼ gr.; and potassium phosphate, ⅓ gr. The tablet when added to 2 oz. of lukewarm water gives a solution of the same density as blood-serum. The addition of a trace of menthol is an important feature, which gives the solution sedative properties. It is therefore well adapted for application to the nasal cavities. The throat tablets are also mentholated and contain as well an approved quantity of cocaine hydrochlorate, aniseed oil, benzoic acid, and eucalyptol. They are very agreeable in inflamed conditions of the throat, mildly stimulating the secretion and relieving irritation.

ESSENCE OF COCOA.

(JOHN TORDOFF AND SON, BRADFORD AND 21, MINCING-LANE, E.C.)

This is a well-prepared cocoa satisfactorily miscible with hot water, the resulting infusion possessing a rich cocoa flavour. According to our analysis more than one-third of the indigestible fat in raw cocoa has been removed in this preparation. The amount of mineral matter was normal, though it showed an alkalinity suggesting a special method of manufacture, which tends to increase the digestibility of the cocoa.

PAPINE.

(ROBERTS AND CO., 76, NEW BOND-STREET, W.)

"Papine" is described as the anodyne or pain-relieving principle of opium the narcotic and convulsive elements being eliminated. The name suggests a corruption of "papaverine" which is anti-tetanic and hypnotic. The preparation proved to be an alcoholic solution coloured with cochineal and exhibiting a slightly acid reaction. On neutralising with ammonia and extracting with chloroform a residue was obtained which gave a blue reaction with Fröhde's reagent (ammonium molybdate dissolved in sulphuric acid), while an abundant mahogany-coloured precipitate was obtained with a solution of iodine in potassic iodide. One fluid drachm is said to be equal in anodyne power to ⅛ gr. of morphine. It would appear to be without the drawbacks of opium, since it is stated it has less tendency to cause nausea, vomiting, and constipation.

FORTUNA NATURAL MINERAL WATER.

(SANDERS, REHDERS AND CO., 108, FENCHURCH-STREET, E.C.)

The spring from which this water is drawn is situated in a valley between the Vogel and Taunus mountains in Germany, not far from Nauheim. It is only slightly mineralised and contains no added salts. The total mineral matter, in fact, amounts only to 1·54 grammes per litre, of which 0·8 gramme is common salt, the balance consisting of lime salts, the carbonate and sulphate. The water possesses in regard to taste the characteristics of a pure natural water. It is quite free from organic matter. On examination with the spectroscope some evidence was gained of the presence of lithium. The water is pleasantly sparkling and bright and well adapted for table purposes. Its composition lends support to the statement that it is an "absolutely natural" mineral water. It contains a very small proportion of mineral salts, an excess of which distinguishes many other "natural" effervescing waters of the same class.

DOUBLE CYANIDE GAUZE (LISTER).

(JOHN MILNE, LADYWELL, LONDON, S.E.)

We have carefully tested a specimen of gauze submitted to us, and the results were in accordance with the directions first indicated by Lord Lister for impregnating the material with the double cyanide (mercury and zinc). When prepared with due care the application of such a gauze is unattended with mercurialism. Such is claimed to be the case, at any rate, with the dressing made by this firm.

OLD BLENDED SCOTCH WHISKY.

(J. HEGINBOTHAM, 47, MARKET-STREET, STALEYBRIDGE.)

The analysis of this whisky was as follows: alcohol, by weight 41·05 per cent., by volume 48·48 per cent., equal to proof spirit 84·96 per cent.; extractives, 0·16 per cent.; volatile acidity, *nil;* reducing substances (reckoned as sugar), 0·15 per cent. The spirit was smooth to the taste which gave no suggestion of the presence of any crude product. It contains a minimum of extractive matters, while the acidity was hardly measurable. It is evidently a pure spirit and skilfully blended.

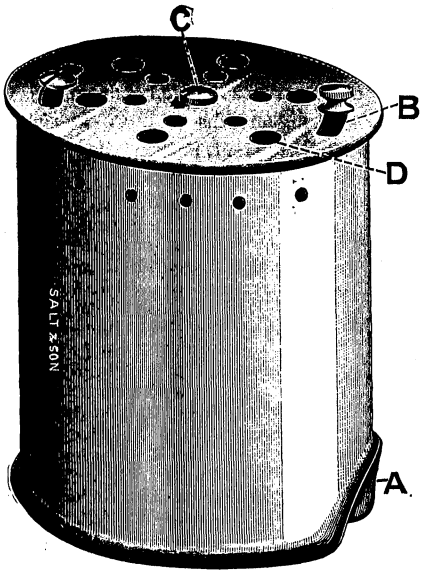
New Inventions.

METAL A.C.E. INHALER WITH A SIMPLE MEANS OF VARYING THE AIR-SUPPLY.

THE mask is lightly made of German silver nickel-plated and the general construction is fairly represented by the illustration. The rim is fairly accurately adapted to the contour of, and has a recess shown at A for, the nose. The plate closing the end of the mask is pierced by a number of holes (D) and the stud B is attached to an internal plate similarly pierced and rotating on the pivot C. Very free access of air is allowed when the holes in the internal and external plates coincide and the supply is regulated by moving the stud B whereby partial or complete closure of the holes can be effected at will. There are also apertures around the upper part of the mask, as shown in the illustration, to allow of a moderate continual air entry, independently of the regulated supply and of that admitted under the edge of the inhaler. Close under the perforated plates is placed a sponge of coarse texture. Besides the A.C.E. mixture this inhaler is well adapted for the administration of other mixtures containing a larger proportion of ether than does the A.C.E. One can very conveniently add ether to any mixture which is being administered, of course regulating the air-supply accordingly. Even ether alone may easily be inhaled from this mask. It is often of advantage to first give a little A.C.E. on a Skinner's mask

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and then in two or three minutes to change to this inhaler, having its air apertures patent at first and gradually restricting the air-supply as is found necessary according to the age and condition of the patient. The sponge should occasionally be removed and squeezed to get rid of superfluous alcohol and chloroform remaining over after the evaporation of the ether. If pure ether is being given it is advisable to prevent access of air under the free edge by means of a cloth.

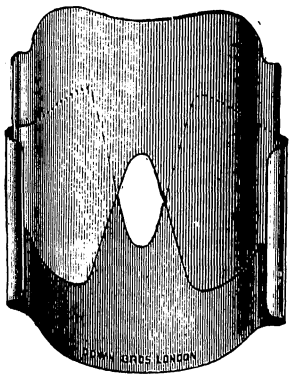


The chief advantages of the inhaler are—(1) its exceeding lightness and simplicity and the ease of sterilising it; (2) its suitability for administering besides the A.C.E. other mixtures stronger in ether or even ether alone; and (3) the ability to regulate to some extent the air-supply. I find it of great use and would not be without it, especially when anæsthetising old people. This inhaler has been made to my instructions by Messrs. Salt and Son of Birmingham.

W. J. McCARDIE, B.A., M.B., B.C. Cantab.,
Anæsthetist to the General Hospital and to the Dental Hospital, Birmingham.

AMPUTATION RETRACTOR.

ALL surgeons, in bone amputations, of muscular limbs especially, know the difficulty assistants have in keeping the flaps out of the way of the saw and their fingers out of danger; also the difficulty of holding firmly the proximal part of the bone, as in the thigh. When the operation has to be performed with only one assistant or with unskilled help these difficulties are accentuated. Some three years ago I had made by a local tinsmith an instrument which my colleagues and I have continued to use with advantage in hospital work. This instrument Messrs. Down Bros. have been good enough to make in a more finished style, as depicted in the illustration. The retractor consists of two blades, which are concavo-convex from side to side, and when fitted together, as in the illustration, practically form half of a cylinder with a hole in the centre; this hole is due to the wedge-shaped piece which is absent from each blade. When about to be applied the two blades are separated entirely and the female (lower) one is placed so that the bone lies in the apex of its notch; the male blade is passed to the other side of the limb and then pushed into the grooves of the female one and thus the bone is encircled by the retractor. The flaps are now covered by the metal and the instrument is held easily by the edges which form the grooves at the sides. In the case of two bones one bone fits into the apex of one notch and the other into that of the companion retractor. An ordinary surgical retractor may be placed between the bones on the proximal side to retract all the tissues between if necessary. By pressing the flat end of the female blade firmly on the operating table the bone can easily be held as if in a vice and by pulling towards the body the flaps can be retracted to any extent wished.



The advantages which this instrument presents are—(1) protection of the flaps from damage; (2) perfect exposure of the bone to be divided; (3) absolute and easy fixation of the bone; (4) reduction in the number of assistants required; (5) perfect protection of the assistants' fingers; and (6) simplicity of cleansing the instrument by boiling or scrubbing.

I feel indebted to Messrs. Down Bros. for their ready help and for their careful construction of the instrument.

F. W. COLLINSON, M.B., C.M. Edin., M.R.C.S. Eng.
Preston.

HEALTH OF BELFAST.

AT a meeting of the Public Health Committee, held on Oct. 27th, it was reported that 125 cases of typhoid fever were notified during the week, the numbers in the previous six weeks having been 149, 151, 172, 164, 247, and 270. Nine cases of diphtheria were also notified during the same week. The following paragraph, from an account of this meeting, appears in the public press and is not calculated to keep up pleasant relations between the Public Health Committee and the medical profession: "The Infectious Diseases Notification Act and its operation were again brought forcibly to the front by the case of a person who had been notified as suffering from typhoid fever and who having unfortunately succumbed to the illness was returned as having died of bronchitis." At the last meeting of the combined Public Health and Improvement Committee a report was presented by the borough surveyor and the executive sanitary officer in reference to the resolution passed on Sept. 20th to the effect "that a systematic test of all the drains in the city be made and that the head officers of the Public Health and Improvement Committees report what additional officers are necessary for this purpose, and that such officers be appointed and a weekly return of the drains so tested be made to the above committees." At the meeting on Oct. 27th the two officers mentioned reported that the enforcing of this resolution would effect one of the most sweeping changes ever proposed by any committee of the corporation and that in their opinion it practically amounted to the sanitary reconstruction of the drainage of the great majority of the houses within the city. They say, assuming that Belfast contains at present about 70,000 houses, and that one inspector and an assistant can thoroughly test and report on the drainage of six houses per day, so as to be available for legal evidence, thirty-nine inspectors with their assistants and workmen would be required (exclusive of expenses involved in conveying testing apparatus, &c.) to do the work in a year. It is well to be able to state that notwithstanding a determined effort to oppose those who are working so hard to get the sanitary condition of the city made right—a state of affairs due to the neglect of past years—the following resolution was carried: "That three additional plumbers be appointed in conjunction with the four already in the surveyor's department to examine and test all drains, each of the seven to have an assistant." No more serious indictment was ever brought against any city than that made by the city surveyor and the executive sanitary officer of Belfast when they report that to carry out a resolution of the city council to make a systematic test of all the drains in Belfast "practically amounts to the sanitary reconstruction of the drainage of the great majority of the houses within the city." If this is true is it any wonder that typhoid fever has been so prevalent in Belfast? but the only solution—and it will take time and money—is to begin at once to make matters right. Every credit is due to those members of the Public Health and Improvement Committees (lay and medical), who are determined that a thorough attempt shall be made to improve the present sanitary state of Belfast.

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THE LANCET.

LONDON: SATURDAY, NOVEMBER 5, 1898.

THE new and elaborate Vaccination Order issued by the Local Government Board bears many marks of careful consideration and of great administrative skill and experience on the part of its draughtsmen. Its provisions take cognisance both of difficulties which have been experienced in the past and of new difficulties which may be expected to arise in the immediate future in consequence of the coming into operation of the new Act and of the efforts which are already being put forth by those whose distorted mental vision has led them to make opposition to vaccination the main purpose of their lives.

A circular letter to boards of guardians accompanies the order and points out, *inter alia*, that with the exception of Section 2 (the Conscience Clause), which is already in force, the new Act will be in operation from Jan. 1st, 1899 to Jan. 1st, 1904; that the Board are now empowered to make rules with respect to the duties and remuneration of public vaccinators, even if already in office; that public vaccination stations will be abolished from the end of this year, unless under Section 7 of the new Act the Board deem it expedient to require guardians to provide such stations owing to serious risk of small-pox prevalence or to other exceptional circumstances, though the letter avoids, perhaps wisely, any attempt to indicate what might be considered such "other exceptional circumstances"; that domiiciliary vaccination will take the place of stational vaccination; that the duties and remuneration of public vaccinators and vaccination officers therefore require revisal; that without any Order issued by the Local Government Board and without any instructions by boards of guardians the power and duty of taking legal proceedings to enforce the Vaccination Acts are vested in the vaccination officer; that an order under Section 31 of the Act of 1867 directing the vaccination of a child shall not be made on any person who has previously been convicted of non-compliance with a similar order relating to the same child; and that no proceedings under Section 31 shall be taken against a person already convicted under Section 29 on account of the same child until he or she has reached the age of four years.

The Order itself consists of thirty-two articles and five schedules. Article I. provides that the validity of existing contracts with public vaccinators and the appointment and tenure of office of existing vaccination officers are not interfered with excepting that the duties and remuneration must be in accordance with the new Order.

Article 3 deals with the remuneration of public vaccinators and Article 20 with that of vaccination officers. The scheme in the two cases is similar in principle though not identical in operation. Each official is to receive, first, a small payment in respect of every child as to whom he has any kind of official duty under the Acts, whether such child ever be vaccinated or not, and, secondly, a larger and additional payment for each successful vaccination with which he has to do. With regard to the vaccination officer this first small payment means a minimum capitation grant of threepence for every child born within his district, he having certain duties with regard to all of them. For the public vaccinator the first and smaller payment is to be a shilling as a minimum, but the basis of payment is not nearly so wide. His duties will begin with children four months old unless where he is called in earlier by the parent, and so far as this capitation payment is concerned there will be several important deductions. He will receive nothing for children not included in the lists furnished to him by the vaccination officers, and such lists will exclude all children as to whom a certificate of conscientious objection has been duly lodged, or whose vaccination, or insusceptibility, or unfitness has already been certified.

The second or additional payment refers, in the case of both officials, to successful vaccinations, and, in the case of the public vaccinator, to successful revaccination of children over ten years old or of persons who have not been vaccinated within the previous ten years. The minimum fee to the vaccination officer will be 9*d*. (besides additional payments which the Board may direct for extraordinary services) and to the public vaccinator 5*s*. for domiciliary vaccinations or revaccinations and 2*s*. 6*d*. for vaccinations of persons other than children, or for revaccinations, done at his surgery or elsewhere. For workhouse vaccinations the fee is similarly to be 2*s*. 6*d*.

In considering the adequacy of these fees to the public vaccinator various facts have to be kept in mind. What we have for convenience called the capitation fee is obviously intended to remunerate the officials for work requiring to be done by them under the Statute and Order but which yet may not result in the performance of vaccination. In places where the new law is honestly carried out, where objectors go before the magistrates to get relief and then lodge their certificates of conscientious disbelief with the vaccination officer, almost every domiciliary visit should mean a domiciliary vaccination, and here the minimum payment of 6*s*. (1*s*. plus 5*s*.) would be for the operation and one subsequent visit, and also for any other visits which the public vaccinator might think necessary. But the readers of an anti-vaccinationist print are, we observe, advised not to apply for any certificate of relief and not to submit to vaccination when the public vaccinator calls. If this advice be followed in any district the effect will be, on the one hand, to reduce very greatly the average fee received by the public vaccinator for each domiciliary visit, but, on the other hand, to increase greatly the total amount received, as the number of names in the lists submitted to him by the vaccination officer will obviously be all the greater according as the certificates of conscientious objection are the fewer. This is a contingency which, we fancy, may cause the organ of the Anti-vaccination League to feel itself in a dilemma. Nothing could well be more abhorrent to it than an increase in the remuneration of public vaccinators, while at the same time it is evidently most anxious to make as much trouble as possible by inciting

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to the refusal not only of vaccination but also of the relief provided by the Conscience Clause.

It is to be noted that the payments above mentioned are minimum payments. In a thickly populated place, where the lists sent to the public vaccinator may contain many children whose homes are within a short distance of his own residence, obviously, other things being equal, the minimum fees will be much more likely to be adequate than in the country, where a single domiciliary visit, whether or not it results in a vaccination, may involve a drive costing several shillings and taking much time. In rural districts, therefore, the fees should rule higher than in towns, especially as everything must be covered by the fees, the Order making no provision for payment of hires or allowances for long journeys. As in the case of many medical appointments, the short and the long distances must be accepted alike by the holder of the office, and he should therefore see that the fees are so fixed as to cover reasonably all contingencies.

Here we regret to note that the public vaccinator will be at a great disadvantage as compared with the vaccination officer. The former is dismissable on twenty-eight days' notice, while every vaccination officer appointed under the new Order "shall continue to hold office until he shall die, or resign, or be removed by the guardians, with Our consent, or by Us, or shall be proved to be insane by evidence which We shall deem sufficient." The words of the Local Government Board, "with Our consent," will afford a great security to the holder of the office in making any request for increase of fees. The public vaccinator is to have no such protection, and we must assume that the central authority had no power to give it to him, otherwise it could hardly have made such an invidious distinction between the two servants. Let it be understood that we do not grudge the vaccination officer his security. On the contrary, it is entirely in the public interest as well as in his own interest, but it would also be in the public interest that the public vaccinator should be similarly dealt with. We sincerely trust that in every district, and especially in rural districts where the minimum fees must be least satisfactory, the standard of professional conduct will be such as to make the public vaccinator safe in insisting on a reasonable reward for his services. It is true that the payments "shall, subject to the above provisions as to the minimum, be of such amount ..... as may be fixed in the contracts approved by" the Local Government Board, but if a medical man were willing to accept office on the minimum scale where another scale ought to be in force it might be difficult for the central authority to interfere.

Articles 6 to 9, inclusive, deal with the duties of the public vaccinator, which are further specified in the third Schedule. His domiciliary visits must be made between 9 A.M. and 4 P.M., and he must give twenty-four hours' notice. His visit must be made within a fortnight after receiving the notice from the vaccination officer or a request from the parent. The Schedule of Instructions to Public Vaccinators contains some clauses which ought to apply to every vaccination done by every private medical man, and which are so important that we quote them here.

4 The public vaccinator must keep such record of the lymph he uses for vaccinating as will enable him always to identify the origin of the lymph used in each operation. He must not employ lymph supplied by any person who does not keep an exact record of its source.

5. The public vaccinator must keep in good condition the lancets or other instruments which he uses for vaccinating, and he must not use them for any other purpose whatever. When he vaccinates he must cleanse and sterilise his instruments after one operation before proceeding to another and must always, when vaccinating, have with him the means of doing this. When once he has unsealed a tube of lymph he must never attempt to keep any part of its contents for the purposes of vaccination on a future occasion. Under no circumstances should the mouth be applied directly to the tube in which the lymph is contained for the purpose of expelling the lymph. In the case of ordinary capillary tubes an artificial blower may properly be used for this purpose.

6. Vaccination should at every stage be carried out with aseptic precautions. These should include: 1st, the cleansing of the surface of the skin before vaccination; 2nd, the use of sterilised instruments; and 3rd, the protection of the vaccinated surface against extraneous infection both on the performance of the operation and on inspection of the results.

Advice as to the precautions to be taken in this respect until the scabs have fallen and the arm has healed should always be given to the person having the custody of the child.

7. In all ordinary cases of primary vaccination the public vaccinator must aim at producing four separate good-sized vesicles or groups of vesicles not less than half an inch from one another. The total area of vesiculation resulting from the vaccination should not be less than half a square inch."

Articles 10 to 15 inclusive deal with the appointment of vaccination officers. Wherever the guardians or the Local Government Board think the number of officers insufficient for the district additional officers shall be appointed, and temporary assistance shall be provided when necessary owing to an outbreak of small-pox or other cause. When a vacancy occurs the office shall be filled up without delay, and if this cannot be done forthwith a person must be appointed temporarily. Under the heading of "Duties of Vaccination Officers" (Articles 25–28) there is further indication of the Board's attitude as to legal proceedings by that officer.

"He shall, when required by the guardians, give them full information as to any legal proceedings taken by him as vaccination officer; and, subject to the provisions of the Vaccination Acts, 1867 to 1898, and of this Order, shall obey all lawful orders of the guardians which are applicable to his office."

The officer here is not to wait for instructions by the guardians to prosecute, or to ask for instructions, or even to report his proceedings as a matter of course. His sole duty to the guardians in this connexion is that "when required" he shall "give them full information" as to his doings. It will be interesting to note how those boards of guardians which in the past have systematically and ostentatiously neglected their duties under the Vaccination Acts will receive this very plain intimation that the vaccination law can be administered in spite of them. Not only can they not prevent the officer doing his work, but they are bound (Article 29) to pay the costs of his doing it and also (Article 28) to report to the Local Government Board if he is not doing it, and the Board (Article 16) has the power to remove any officer.

We have already seen that it is the duty of the

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guardians, with the approval of the Local Government Board, to fill up vacancies. No article in the Order deals with the case of guardians refusing to fill up a vacancy. In such an event perhaps the Board would itself make the appointment. That would certainly be better than sending the guardians to prison as was done long ago in the Keighley case, where the local authority refused to administer the law. But if the Board should have to take any proceedings it would certainly be greatly strengthened by the fact that the Conscience Clause removes the last shred of reasonable complaint from the path of the most obstinate anti-vaccinationist. A board of guardians which would endeavour to prevent a fair trial of the new law by such indirect means as are here indicated would be most unlikely to receive public sympathy, excepting in places which have come to regard law-breaking as a communal virtue, and notwithstanding the long crusade of the Anti-vaccination League such places are not yet numerous, if, indeed, they are to be found at all, in England.

WE published last week a table of the entries of students for the year 1898-99. An ordinary person would have to be endowed with very special intelligence to grasp the full significance of tables purporting to give the comparative facts in successive years as to the entries of medical students in the various medical schools of London and the provinces, for medical education is now made up of many different elements and includes a great variety of subjects. Besides, in London especially, certain of the schools make valuable provision for special courses which are as a matter of fact often taken by persons who receive their ordinary medical education elsewhere. Thus, King's College, with its classes for special courses, figures in the table as having a larger total than either St. Bartholomew's or Guy's or any other hospital and yet has a com aratively small entry for the full course. These special courses constitute an important feature in the efficiency of schools, especially schools for those who are contemplating the taking of degrees or any other departure from the ordinary curriculum of medical education. Time was when two or three lecture-rooms and a dissecting-room constituted the plant of a medical school. All this is changed. The development of histology, biology, and chemistry, with new and more practical methods of teaching them, have trebled the cost of such plant, and the completeness with which such special courses are provided for and the efficiency of the teacher who gives them count for much in the attraction of a school. Thus one laboratory or one or two good teachers in special subjects may give character to a school and draw a large number of students to it. In the table of entries for the current year, 1898-99, the whole number of entries for special courses in London is 556—almost as large a number as the entries for the full medical course. It is not unreasonable to suppose that in the new developments of medical education likely to arise out of the reconstruction of the University of London there may be some further specialisation of work in the various schools, with advantage alike to them and to the cause of medical education.

Perhaps the chief interest of the table is in its first column, which seems to show as regards London a considerable increase over the numbers entering in the two previous years. In 9 out of the 12 London schools there is an increase as compared with the previous year. But it is not very considerable and in some of the larger schools, the entries at which perhaps are the best guide to the rate of increase, there is a diminished number of entries. This is the case at Guy's, the London, and University College Hospitals. The last two columns of the table, it is true, show an increase of the total entries in 1898-99 as compared with 1897-98, of 345. This may seem rather serious to those who had been hoping that the undue influx into the profession which has been going on of late years was at least moderating. Such persons need not be over-anxious so far as this particular table is concerned, for a careful study of it will show that the increase of 345 is largely explained by the large number of entries for the special courses at King's College to which we have already alluded, no such return having been included in the table of last year's entries.

It is interesting to notice the activity of the provincial schools. The entries at the University of Cambridge for full students—127—exceed those of any other English school, metropolitan or provincial. Those at Owens College, Manchester, 66 in number, with an almost equal number of entries for special classes, make the total entries much larger than those of any other provincial school. Those of University College, Liverpool, come next. The whole entries for the provincial schools amount to nearly half of the whole of the entries for the metropolitan schools. As to dental students the majority of medical schools do not have any special courses for this department of practice. In London and in the provinces, respectively, only five schools provide dental courses. The entries for these in London were 93 and for the courses in provincial schools 58.

THE second trial of JOHN LLOYD WHITMARSH at the Old Bailey for the murder of ALICE BAYLY terminated on Oct. 26th. The jury, as we have already announced, found the prisoner guilty of wilful murder and the judge sentenced him to death. As, however, it was certain that the death sentence would not be carried out, if only because of the strong recommendation to mercy preferred by the jury, we decided to await the Home Secretary's decision before commenting at length upon the case. The death sentence has now been commuted. It will be remembered that at the previous sessions of the Central Criminal Court the jury were unable to agree.

The indictment charged that on June 18th the prisoner performed an illegal operation upon ALICE BAYLY for the purpose of procuring abortion. The history of the case is remarkable (1) in that the means adopted by WHITMARSH included, besides operative interference, the local application of a salt of mercury; (2) that it was the first case of murder in this country in which the accused was legally constituted a competent witness; and (3) that the prisoner was convicted of the capital offence of murder. The cause of death of the unfortunate woman who paid the penalty of sacrificing her life for her participation in the crime was not challenged by the counsel for the defence.

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The evidence of Dr. STEVENSON and Mr. BOND, the chief medical witnesses for the prosecution, placed the matter beyond all reasonable doubt. There was ample testimony that the deceased succumbed to the combined effects of septicæmia and mercurial poisoning, and it appears equally clear that the latter was introduced into the system by a topical application. Whether this was done with the intent to produce a local irritant effect and thus to ensure the intended consequences of instrumentation or with a view to prevent sepsis seems doubtful. We may remark parenthetically that some years ago a Belgian was convicted and sentenced to fifteen years' penal servitude at the Old Bailey for having procured abortion by applying acid nitrate of mercury to the cervix uteri. The victim in that case succumbed to acute mercurialisation and not to septicæmia.

WHITMARSH, on counsel's advice, did not give evidence before the coroner, nor did he attempt previously to the trial to exculpate himself save by a direct denial as expressed in the following terms: "It is an abominable lie." We do not question that counsel would in his discretion advise what he considered best to serve the interests of his client; at the same time it must be conceded that there was much force in Mr. GILL'S accentuation of the fact, in his conduct of the prosecution for the Crown, that "the prisoner had not given any explanation although he had had every opportunity of giving one." If the prisoner knew that he was guilty we can understand that he would feel that silence on his part would be the best safeguard against self-incrimination; for any statements made by him would clearly lead to further investigation for the purpose of proving the truth or falsity of the same. But at the trial he would be on safer ground, although submitting himself to the ordeal of a cross-examination, for whatever the forensic ability of counsel and however damaging the answers elicited might be the effect would necessarily not be commensurate with the direct testimony of disinterested witnesses. We subscribe to the proposition that the new Act of Parliament which permits prisoners to give evidence on oath will in the main be a help to the innocent and a pitfall to the guilty. At the same time it is not an unmixed good, for it is possible that juries may view with distrust the presentment of a prisoner's innocence by counsel, unless supported by the prisoner's appearance in the witness box. Nor on moral grounds can it be unconditionally approved, since obviously it will be a powerful incentive to perjury. The late sessions at the Old Bailey will be memorable in that two persons were convicted of murder after denying on oath their guilt, and yet in each case the circumstantial and direct evidence for the prosecution thoroughly warranted the verdicts. We are also of opinion that Mr. Justice BIGHAM justly admitted the dying declaration of the deceased woman BAYLY that attempts had been made upon her to procure criminal abortion; but we have serious misgivings as to the value of such statements, being far from satisfied that the belief of approaching death will always nullify the human tendency to minimise one's own offence and to shift the responsibility to others' shoulders. Besides, on medical and psychological grounds a person whose decease is judged to be imminent is not in a fitting state to carry on such intellectual processes as are worthy to form the basis of evidence whereby the life of an individual may be sacrificed or his liberty taken away.

Lord BRAMWELL'S judgment that a person who by illegally procuring abortion sacrifices the life of the woman is guilty of murder has not been reversed or, as far as we remember, been appealed against. Judges, however, have generally shown a tendency to a lenient interpretation of the law by directing juries that they might find circumstances which would warrant them in returning verdicts of the minor offence of manslaughter. We commend the singularly clear and logical charge delivered by Mr. Justice BIGHAM at the trial of WHITMARSH. The learned judge said: "If a person in committing a felonious act compasses the death of another he is guilty of murder unless he could not reasonably infer that death would result as a consequence of the act." Now, it must be admitted that every medical man knows that the procuring abortion is fraught with danger to the life of the patient even where precautions are taken to avoid the incidence of septic infection. How infinitely more dangerous, then, is the procedure where no such measures are adopted. The guilt of WHITMARSH having been proved we fail to see any extenuating circumstance, save that he had every reason to desire that the death of his poor accomplice should not ensue. There was, of course, in his crime an absence of malice prepense which is generally held to be the essence of homicidal intent; and for this reason we share in the relief which it is known is felt by the public at the reprieve which has been extended to the wretched man. But legally the death sentence was justified. If only to meet cases of criminal abortion it would be well if our penal code recognised "degrees of murder."

Annotations.

"Ne quid nimis."

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

THE following letter has been sent on behalf of the Association, signed by Sir Samuel Wilks, Sir William Mac Cormac, and Sir William Broadbent, to the Chairman of the London County Council:—

"The attention of the Organising Committee of the National Association for the Prevention of Tuberculosis has been directed to the recommendations of your Public Health Committee with regard to the institution in London of an administration for the prevention of disease conveyed by milk and meat. Our Association is more particularly interested in the question of the prevention of tuberculosis, and we understand that your Committee recommends that the Council should be empowered to take the necessary steps for preventing the sale of tuberculous milk and meat. On behalf of our Association we beg to state that we are strongly of opinion that there is urgent necessity for such measures, and that if the Council takes steps to prevent the sale of tubercle-infected milk in London and to ensure the proper examination of meat by the substitution of public for private slaughter-houses there is every prospect of reducing the present mortality from tuberculosis, especially among the poor, who more particularly suffer from the effects of milk and meat of dangerous quality. We regard it as fortunate that the recommendations of the Royal Commission on Tuberculosis are being so promptly considered by a body which has always manifested the greatest interest in the

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public health. We are much impressed by the conviction that the action of the London County Council in this matter will set an example which is likely to be followed throughout the kingdom. We therefore respectfully urge upon your Council the eminent necessity of adopting the recommendations of your Public Health Committee."

A recent leading article in our columns advocated strongly that the recommendations of the Public Health Committee of the London County Council with regard to securing a pure meat- and milk-supply for the city should be immediately adopted, and so universal is this opinion among all who, like the signatories of the above letter, understand what are the real factors in the spread of disease, that we can hardly suppose that the County Council will do otherwise.

THE MILK-TRADE AND DIPHTHERIA.

ON Oct. 28th Evan Morris, a milk-seller of New North-street, Holborn, was summoned at Clerkenwell Police-court on three counts for not immediately upon an outbreak of diphtheria within the building in which he kept milk giving notice of the same to the London County Council, for not removing the milk immediately on the outbreak of the disease, and for keeping milk in the building before it had been disinfected. On the first summons defendant was found only technically guilty, as he had given notice to the Holborn Board of Works. On the second summons it was proved that defendant's wife had served milk in the shop after removal of the same and the utensils had been ordered by the London County Council's inspector. Costs only were ordered on the third summons, but on the first there was a penalty of 5*s*. and 2*s*. costs and on the second 5 guineas penalty and 2 guineas costs. We do not think this penalty severe. Milk is such a typical breeding ground for the diphtheria bacillus and such a universal vehicle for the conveyance of infection to young children, who are the class of the community more fatally affected by the disease than any other, that too much care cannot be exercised in the prevention by every possible means of the contamination of this essential article of diet. We make every allowance for the difficulty which the lay mind has in realising the importance of the hygienic measures which have been laid down by scientific men for the preservation of the health of the community, but it must be shown that non-compliance with such regulations will result in punishment whether the offenders understand the reasons for them or not.

OPTICAL DIPLOMAS.

A NOTICE appeared in the *Times* of Oct. 31st to the effect that the Spectacle Makers' Company has been engaged for some months past in perfecting a scheme for the granting of optical diplomas to those who pass an examination. The committee has appointed as examiners Professor Silvanus Thompson, Dr. G. Lindsay Johnson, and Mr. G. Paxton. The examinations are being held this week and it is stated that as many as 150 candidates will attend. The presence of Dr. Lindsay Johnson on the Board of Examiners confers an interest upon the examination which it would not otherwise possess and leads us to make a few comments upon it. There can be no doubt that Dr. Lindsay Johnson is in every way well qualified for the duties of an examiner, a post which we have not the slightest doubt was entirely unsolicited on his part. He is a distinguished graduate of the University of Cambridge, has seen much eye practice, and has written various papers of interest and value. His coadjutors are Professor Silvanus Thompson, a gentleman of high scientific status, and Mr. G. Paxton, who is a cultivated and intelligent optician. That an examination should be established to test the knowledge of those to whom the manufacture of instruments of precision, such as are daily ordered by the ophthalmic surgeon, is entrusted is reasonable enough. It is right that they should show that they understand the object for which such instruments are prescribed, but it will require, we think, much care on Dr. Lindsay Johnson's part to ensure that the examination for which he will be held responsible is confined to the strictly physical aspect of the subject and that it does not infer a kind of irregular professional status and lead those who have passed it successfully to conclude that they are by their capability of recognising the nature and extent of the physical defects of their customers' eyes thereby qualified to give an authoritative opinion in regard to the treatment to be adopted. We note in the *Optician* of Oct. 27th, 1898, that at a special meeting of the Spectacle Makers' Company Mr. Maw called attention to a custom which was gaining ground—that of opticians selling drugs. It seems to us not a very long step to the employment of certain drugs for what might probably be regarded by a zealous optician as purely optical purposes but which would really be a serious infringement of the law and might lead to very unpleasant results. In some respects, therefore, it is perhaps as well that the guidance of the examination should be partly in the hands of a medical man of good standing who will be able to point out to the Company, his co-examiners, and the candidates what is or is not in the province of the optician. Still the ground is a somewhat dangerous one, and we shall look with interest at the style of examination inaugurated by Dr. Lindsay Johnson and the kind of question to which he expects an answer to be given by those who present themselves for the purpose of obtaining the diploma.

"VICARIOUS URINATION (P)."

UNDER this heading a most extraordinary case is reported in the *Canada Lancet* (October) by Dr. Q. T. Rice, of Woodstock, Ontario. The patient, aged thirty years, a daughter of a farmer, of a somewhat nervous temperament and rather weak intellect, had been attacked three years before with a cystitis of two or three weeks' duration, the attack being somewhat severe, there being complete atony of the bladder, necessitating the use of the catheter during that period. This attack gradually subsided, though considerable tenderness remained. One year after this attack she was again laid up with involuntary twitchings or spasms of the whole body; accompanying this attack there were a number of discolourations of the right leg and thigh, extending almost entirely over the limb but without tenderness. This after a few weeks gradually disappeared and the patient regained her ordinary health. In the following year the atony of the bladder returned. The patient was again obliged to resort to the use of the catheter three times a day, about ½ oz. of urine being withdrawn upon each occasion. During this time her general health suffered severely. The feet then began to swell slightly and a peculiar complication set in. The secretion in the bladder gradually diminished but was compensated for by an exudation of fluid from the anterior portions of the lower limbs between the knee and ankle. This fluid was voided regularly three times a day, the amount gradually increasing, the average being about from 30 oz. to 40 oz. per day. The fluid simply oozed from the skin without any abrasion of the skin or discolouration or even the slightest œdema being present; the patient would realise that the fluid was about to issue and would place her feet upon a stool and a dish beneath the heels. Dr. Rice was present at one time when it began and can therefore vouch for the correctness of the statement. The fluid was of an amber colour, similar to healthy urine; its specific gravity was 1010; there was an absence of albumin or sugar; it had a strong smell of urine upon boiling, with a distinct ammoniacal smell after

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standing; examination also showed the presence of uric acid. After this symptom showed itself the patient's health rapidly improved and became fairly well established, so that she had little to complain of except the inconvenience caused by this peculiar phenomenon. This condition lasted about two months, when, after an unusually large quantity of fluid had been passed, it ceased altogether and urine began to pass through the urethra. The natural state of affairs gradually became established, but the patient became again very ill. The spasms reappeared, accompanied by headache, swelling of the feet, and great swelling of the face. These symptoms lasted about a week and then gradually disappeared, and the patient regained her usual health, which has continued until the present time. Dr. Rice naturally asks: "Was this vicarious urination? If so, how is it to be explained? Through what channel did it travel? The fluid certainly stood the tests for urine, and its elimination enabled the patient to live."

THE LIVERPOOL HEALTH COMMITTEE.

ALDERMAN E. H. COOKSON, the chairman of the Liverpool Health Committee, referred to the work of the department during the past year at the final meeting of the committee for the municipal year held on Oct. 20th. The sewers constructed during the year extended to 4⅜ miles; sewers reconstructed, 3⅜ miles; sewers constructed by builders and supervised by the sewerage department, 4½ miles; sewers, brooks, and culverts repaired, 1⅞ miles; sewers, brooks, and culverts cleansed, 13⅜ miles; sewers ventilated as constructed, 8⅞ miles; main sewers flushed, 289¼ miles; private house drains flushed (twice in the year), 3000 miles; deposits removed from sewers, 1038¾ loads, &c. Much benefit had already resulted from improved scavenging and the more liberal use of water for sanitary purposes. The remarkable connexion between filthy streets or a stinted water-supply and choleraic disease had been so frequently brought to the notice of the committee that there was no need to emphasise it further. By means of Parliamentary powers recently obtained they could deal more stringently with certain articles of food exposed for sale, and already the committee had put into practical operation the recommendation to test by examination the suitability of all candidates for the post of inspector of meat. They had also been granted power to close some of the city burial grounds which were found to be unwholesome. The recent Vaccination Act was referred to by the chairman in terms of strong condemnation. It could not be regarded without dismay by every sanitary authority in the country. Liverpool is, or was, one of the best vaccinated communities in the country—a result attained only after infinite care and pains by vaccination officers, guardians, and others. The consequence of this has been that Liverpool has been for many years practically free from those serious outbreaks of small-pox which attacked it periodically before vaccination was so thoroughly carried out. Exposed as Liverpool is to the importation of small-pox from almost every corner of the globe in which it may be prevalent, those responsible for the health of the city cannot but view with the greatest concern the Act which already in its brief existence has had the pernicious effect of raising the proportion of children who remain unvaccinated something like 50 per cent., and has added materially to the difficulty of those responsible for vaccination. The chairman went on to say that the permanent appointment of a bacteriologist was found to be a much more satisfactory arrangement than that which had hitherto prevailed of obtaining tests from time to time. Besides numerous researches into the conditions of food some careful investigations were set on foot into the sanitary aspect of the gas supplied to the city and to the consequences of the use of carburetted water-gas. With a view to ensure greater promptitude in dealing with infectious disease the committee have engaged a staff for the purpose of stripping the walls of apartments in which infection has occurred with very satisfactory results. It cannot be doubted that the sanitary work undertaken by the City Council during the ten years ending 1891 was less extensive than it would have been had not the Registrar-General's remarkable over-estimate of the population during that time misled the council. It is, however, fair to say that the Registrar-General applied to the municipal authorities for assistance in the revision of his estimate, but they did not respond to his suggestions. Returns involving an error of more than 20 per cent. were officially published by the Registrar-General during a great part of those ten years, and this had the effect of obscuring the necessity for sanitary work; and it was only at the census of this decade that the fallacy was exposed and the real need for more adequate sanitary measures became manifest. The excessive mortality of infants in some districts of the city is still a matter for much concern, being largely the result of unwholesome feeding. The general health of the city for the first six months of the year has been exceedingly satisfactory, the rate of mortality being 21·7, as against 22·0 per 1000 during the first six months of last year. During the three quarters zymotic disease has been kept well under control and shows a remarkable improvement on the preceding year, the numbers reported of the various forms of zymotic disease being upwards of 2000 less than last year, when the total number of cases was upwards of 6600. The diminution in the total number of cases of typhus fever, typhoid fever, and scarlet fever is no less than 53, 47, and 533 respectively.

THE LIBRARY OF THE BRISTOL MEDICO-CHIRURGICAL SOCIETY.

AT the annual meeting of this society, which was held on Oct. 12th, the honorary librarian, Mr. L. M. Griffiths, presented his report upon the condition of the library. It now consists of 7180 volumes, including 671 duplicates, and receives 170 periodicals. It also possesses busts of William Budd and James Syme. But this library is not the only medical library to which the medical men of Bristol have access. The Bristol Medical Library is made up of the libraries of the following bodies, which possess respectively books in the under-mentioned numbers: the Medico-Chirurgical Society, 7180 volumes; the Faculty of Medicine, 6539 volumes; the Royal Infirmary, 3650 volumes; and the General Hospital, 1381 volumes—a total for the conjoint libraries of 18,750 volumes and 204 current periodicals. The catalogue is now nearly complete—if, indeed, a library catalogue can ever be complete—and has been made easier for reference by the addition of a card catalogue. As the library of the Bristol Medico-Chirurgical Society only dates from 1891 it will be seen that the labours of the members and the librarian have been by no means in vain. Mr. Griffiths, in resigning his post, which he has held uninterruptedly since his election in 1891, referred to the fact that the conjoint library scheme demanded that the new librarian should be a man of many parts.

"No longer must he be one who has little more than a capacity for remembering the titles of the works under his care and an interest in the quantitative development of the library. Now he must be a scholar, acquainted with languages; a man of wide literary outlook, of comprehensive professional knowledge, of large bibliographical acquirements, gifted with the power of lucid exposition in order to make others realise the resources of their library and able to give demonstrations of the practical and historical nature of its grouped contents. In addition to all this, he must be prepared to give a large amount of time to the superintendence of the library and its correspondence, and able from his position to get in touch with librarians in all parts of the world and from his knowledge to judge with accuracy in what particular respect advantage to his library might be

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best secured. Also, to know how to render help to readers who turn to him for assistance must not be lost sight of among other qualifications of the librarian, and even this must be exceeded if the library is to give its best to the profession, for he must be ready, even before he is asked, to point students to the avenues by which they can reach the goal they are seeking."

These are wise and weighty words. A good librarian is possibly like a poet—born and not made. Much can be done by training, but if the capacity is not there it cannot be inculcated. Mr. Griffiths has done such admirable work that we can only say we are sincerely sorry that he feels himself unable to continue in the position in which he has laboured so worthily.

ANOTHER ROMAN OCULISTS' SEAL.

AFTER a somewhat longer interval than usual intelligence comes of the discovery of another Roman oculists' seal. This time the relic has been disinterred in Germany, at Frankenthal, in the Rhine Valley. The seal has been described and edited by Dr. F. J. Hildenbrand and is of interest because the letters engraved upon it are in Greek as well as Roman characters and also because their interpretation presents many difficulties. The inscription which is upon the four edges of the seal is as follows: Λ.Α.Γ.Κ.Ο : Ο.Δ.Α.Κ : Λ.Τ.Μ.Ρ : Κ.Κ.Ο. The first three letters are probably initials concealing the name of the proprietor of the stamp. The final K.O. on the face of the seal denote either Kollyrium (or Krocodes) Opobalsamatum. If the K. is for Kollyrium then this is the second indication upon these documents of opobalsamatum as a remedy by itself. Upon one of these occasions the disease ad caliginem is given as the disease for which it was a remedy; that is to say, for defective vision. If the K. stands as initial for Krocodes, and we should therefore read Krocodes Opobalsamatum, then the text is unique, though we have a seal found in Bavaria which reads "Crocodes Diaopobalsamutum." The C.Δ. may stand for Crocodes Dialepedos (or Diamisus) and the A.K. for Ad Caliginem; but Dr. Hildenbrand thinks all the final letters of the four texts are initials of collyria and thinks the K. is for Krocodes. The P terminating line 3 is most likely a Collyrium, probably standing for Paccianum, Palladium, Penicillum, Pelagium, or Pyxinum. The final K.K.O. are almost certainly an abbreviated Kontra Kaliginem Oculorum. This leaves the Λ.Τ.Μ. unaccounted for. They may be short for Lippitudinem, for which Penicillum is often indicated as a remedy; or the M. may simply stand for Mixture, leaving the Λ.Τ. still a matter for conjecture. It is to be hoped that Capitaine Esperandieu will express his views soon upon the subject, as he is the greatest authority in this branch of research.

NERVE LESIONS IN BURNS.

AN article on this interesting subject appears in the *Archives de Physiologie* by Dr. Carlo Parascandolo. The causes of death after burns have been studied by many pathologists. It is well known that when death occurs in the course of an hour or two numerous visceral congestions are to be discovered. Curling and Erichsen noticed that the duodenum is the special seat of lesion, and that it becomes quickly inflamed and at a late period ulcerated, and Dupuytren, in summing up the conditions found after death from burns, attributed the greater part of the symptoms observed during life—as fever, vomiting, constipation, convulsions, hectic fever, and at a subsequent date diarrhœa—to gastro-intestinal irritation, the conditions varying with the date after the injury. When death was immediate after exposure to the flames there was considerable congestion of the intestinal mucous membrane with occasional hæmorrhages, and the same appearances were presented by the bronchial mucous membrane; sanguinolent fluid was also to be found in the arachnoid, pleura, pericardium, and peritoneum. After survival of some days the appearances of acute gastro-enteritis were visible, and at a still later period the intestinal tube was generally discoloured; there were red spots with or without ulceration and engorgement of the mesenteric ganglia. Dupuytren attributed these changes to sympathetic irritation. Later observers have found congestion of the brain and of the pons. Sir Samuel Wilks called attention to the frequency of purpuric spots on the pleuræ and in the cortical substance of the kidneys, and to fibrinous deposits in the veins, which he regarded as an indication of changes in the blood. Pneumonia is of common occurrence. Dr. Parascandolo experimented on dogs and rabbits and paid particular attention to the lesions of the nervous system occurring after burns of various degrees of severity. He found retraction of the grey matter of the cord with deformed posterior cornua and chromatolysis, both perinuclear and peripheric, in the cells; sometimes what he terms "homogeneisation of the protoplasm"; sometimes granular degeneration of chromatin with presence of chromatin rods in the nucleus; and sometimes total achromatolysis with destruction of the linin network. The protoplasmic processes presented varicose atrophy or lost their connexion with the cell body and were segmented—in fact, degeneration of the cord was the rule and this always affected the posterior cornua. The conclusions which he considers himself entitled to draw are that as the result of burns ptomaines make their appearance in the blood and in the muscles and other organs of animals suffering from them—a view which has been advanced by Dr. Parascandolo in a previous publication and which has been substantiated by researches which he made in conjunction with M. Ajello—and that the ptomaine thus produced is the cause of death after burns, as it brings about in the nervous centres anatomical changes which, however, are not *per se* capable of causing death. The alterations observable are similar to those met with in different types of infection. It is particularly worthy of notice that these ptomaines are capable when inoculated of producing in the nerve centres the same lesions as are observed in cases of burn.

"RETURN" CASES OF SCARLET FEVER.

CASES of this kind have been but little in evidence of late—a fact which may be due to two causes: greater care exercised in the discharge of patients from isolation hospitals and an appreciation on the part of the public that it is extremely difficult to prevent the occasional occurrence of such cases. We have discussed this question many times before and we have given due weight to that view of it which regards residual infection in the air and other passages of the body as one of the chief causes of these annoying manifestations. Dr. Niven of Manchester has, amongst others, devoted much attention to this subject and he has so modified the procedure at the Monsall Fever Hospital as to afford practical illustration of the importance of this aspect of the question. The method of dealing with the cases before discharge has been as follows: certain wooden pavilions were set apart as convalescent wards for scarlet fever cases, it being understood that no case was to be sent into these wards until six weeks had elapsed from the onset of the illness or until all signs of desquamation had disappeared. In the first instance only such cases as were free from discharges from any of the orifices, such as the nose or ears, were admitted, but it was found difficult to carry out this last particular. The convalescent children were encouraged freely to take exercise in the open air with a view to the oxidation of infective material and the dislodgement of infective particles. During the continuance of

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this practice not one return case occurred in connexion with Manchester patients discharged from the convalescent wards. Such cases as did occur during 1897 occurred apparently when the necessary conditions as regards the convalescent wards were not being rigidly adhered to; and when there was much pressure on the accommodation the rigidity of the practice had of necessity to be relaxed. To carry out this form of additional isolation under stress is obviously impossible at the present time in most of our fever hospitals, and "return" cases must, we fear, be looked for from time to time. Still, efforts may be made in many places to carry out this plan, even although the circumstances will only admit of its partial application. It will be for the medical officers of fever hospitals to obtain, as far as is possible, sufficient convalescent hospital accommodation to enable complete isolation to be carried out. Doubtless, however, there are other sources of the so-called "return cases," and in spite of every precaution we must not be altogether surprised at the occurrence now and then of such cases.

THE ABUSE OF MEDICAL CHARITIES.

MEDICAL Missions, if properly conducted, serve a very useful purpose, but, like every other good thing, they are liable to abuse. An inquest was recently held by Mr. E. N. Wood, the deputy coroner for Bermondsey, upon the body of a child, aged two years, the daughter of a tinplate worker. The deceased child had attended at the Oxford Medical Mission in Abbey-street, but becoming worse Mr. J. H. Collymore was called in. The child, however, died from peritonitis. Mr. Collymore, in the course of the inquest, complained of the indiscriminate way in which cards of admission to the Mission were given out, without any regard to the circumstances of the recipients. The coroner coincided and remarked that it was quite time that hospital authorities took steps to prevent such abuse. In his opinion two-thirds of the patients who were treated at hospitals ought not to be treated there, for they were well able to pay. The jury also expressed the same opinions in delivering their verdict. Of course, we have said these things over and over again, but it is consoling to find a coroner's jury taking the same line as ourselves. We do not know what the status of the Oxford Medical Mission may be, for it does not appear in the Post Office Directory; but if it should be a reputable institution—and by its name it should be—we would counsel the authorities thereof to take more care in the distribution of their relief orders.

ANKYLOSIS OF THE SPINE, HIPS, AND SHOULDERS—"SPONDYLOSE RHIZOMÉLIQUE."

DR. PIERRE MARIE, who has earned so much distinction in describing new diseases of the skeleton, thus denominates a rare condition characterised by extreme rigidity of the spine and stiffness more or less complete of the hip- and shoulder-joints. A summary of his paper published in the *Revue de Médecine*, April, 1898, appears in a recent number of the *Revue des Sciences Médicales*. He has observed three cases and collected four. The stiffness of the spine is complete in the lower half; higher, especially in the cervical region, the column may preserve for some time a certain mobility. There is kyphosis due to a considerable and abrupt curvature of the cervical spine and a little to curvature of the superior dorsal spine. Hyperostoses are not limited to the inferior part of the spine, for osseous projections can be felt on the posterior wall of the pharynx. The hips are fixed in a position of flexion and adduction; the shoulders are much less affected. The movements of the knees are more or less limited, without true ankylosis. In two cases there were nodosities on the hands. The respiration is entirely diaphragmatic. All the cases occurred in adult males. They are too few for a general statement of the etiology and course of the disease, which, according to Dr. Marie, should be distinguished from chronic deforming rheumatism, from hereditary traumatic kyphosis, and from acromegalic deforming polyarthritis.

THE BRITISH RED CROSS SOCIETY.

THE secretary of the British Red Cross Society encloses to us for publication the following letter received from Surgeon-General W. Taylor, the principal medical officer with the forces in Egypt, to Lord Wantage, the chairman of the Council of the Society, which seems to us to be of sufficient interest for publication.

Cairo, Oct. 16th, 1898.

DEAR LORD WANTAGE,—Having come down in the *Mayflower* on her last trip from Assouan, I feel I cannot let a mail go out without writing to thank you, and through you the National Aid Society, for the great assistance given to the Army Medical Service, in bringing back the sick and wounded from the Soudan. I have written an official expression of my opinion of the great benefit and comfort the poor fellows, officers and soldiers, obtained by being saved from the trying railway journey from Assouan to Cairo. I have not a doubt that several lives were saved by that, and I am quite sure the convalescence of many was hastened and made safe by the comfortable, pleasant river trip. Colonel Young deserves all praise for the courteous and kind way in which he worked in harmony with the officers and men of the Royal Army Medical Corps. Personally, I feel very deeply indebted to you for the invaluable help given to the Medical Service in the way I have mentioned, and I beg you to accept my sincere thanks for having enabled me to transport such a number of the sick and all the wounded in such comfort.

I am, yours very truly,

W. TAYLOR.

FUNCTIONS OF THE OPTIC THALAMI.

THE October number of the *Archives de Physiologie* contains an article giving an account of some recent researches made by M. J. Sellier and M. H. Verger on the functions of the optic thalami. The deep position of the thalami renders them difficult of access and it is not surprising that differences of opinion in regard to their function should exist, and that whilst Fournié, Ferrier, and Lemoine came to the conclusion that there were sensory troubles after destruction of the optic thalami, Nothnagel failed to find any defect in the general sensibility of the body, but noticed that animals in which the thalami were destroyed on both sides seemed to have lost the sense of the position of their limbs, since without being paralysed they allowed them to remain in any position in which they were placed. M. Sellier and M. Verger determined to make some further researches with improved methods of investigation, with the object of ascertaining with greater exactness the effects of injury to this region of the brain. They selected the dog and adopted the plan of bipolar electrolysis, in which fine needles were made to penetrate the substance of the thalami and a current of a mean strength of 10 milliampères was passed. In none of these animals were any symptoms of meningitis observed, and the necropsy in each case showed that the destruction of tissue was small (of about the size of a grain of maize) and sharply defined. The animals were allowed to recover from the operation and tested systematically for some weeks. It was found when examined from eight to ten days after the operation that motility and sensitiveness to heat were always intact. The sense of the position of the limbs and the tactile sensibility were always manifestly affected. At the conclusion of a fortnight the disturbances of sensibility had entirely disappeared, which M. Sellier and M. Verger regard as the most important outcome of their observations. In two cases there were marked and permanent visual troubles, but they were unable to determine whether there was complete unilateral

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blindness or a crossed hemianopsia. They satisfied themselves that the optic thalami have no influence on the voluntary movements of the animal operated on and that there were no compulsory or forced movements. Their sensory *rôle* is undeniable, but the thalamic anæsthesiæ, like cortical anæsthesiæ, do not include sensibility to pain and are transitory in duration—circumstances which support the view that the functions of the cerebral ganglia have similar if not identical functions to those of the convolutions of the brain.

THE POSITION OF COUNTY MEDICAL OFFICERS.

THE President of the Local Government Board gave notice in the last session of certain clauses which were to be inserted in a group of Water Bills before the House of Commons. The Executive Council of the County Councils' Association wish to have county councils and their medical officers placed in the same position in these clauses as that contemplated to be given to local sanitary authorities and medical officers of health with regard to water-supply. The fact that the medical officers to county councils were not to enjoy the same powers in regard to making analyses of water-supplies as the medical officers of health to sanitary authorities was probably an oversight which will be remedied when the clauses are introduced into the House.

REPORT OF THE CAPE OF GOOD HOPE VETERINARY DEPARTMENT FOR 1897.

THE Blue Book issued by the Department of Agriculture for the Cape of Good Hope is especially interesting this year on account of the recent trouble which there has been with rinderpest amongst the cattle. The report contains a full account of the work which has been done by the chief colonial veterinary surgeon, Mr. D. Hutcheon, and his assistants. At the beginning of 1897 the veterinary staff was increased to 28 men, but even with this number some districts had to be neglected or supplied with unqualified men specially instructed in the work of inoculation. It is interesting to note, at a time when the relations between the English and Dutch residents are often somewhat strained, that "the most urgent demands for veterinary surgeons came from the districts in which the farmers are principally Dutch, who as a rule do not professedly estimate the services of these officers very highly"; and again, "when inoculation had practically ceased in many districts the local committees and farmers strongly protested against the veterinary surgeons being removed, as cases of rinderpest continued to reappear." The report gives a complete history of the course of the disease from its commencement to the present time, particular stress being laid upon the various methods carried out for preventive and curative treatment and the results attained. Dr. Koch's suggestion of injection with the bile of diseased animals and Dr. Edington's modification of glycerinated bile were each tried extensively, as was also the inoculation with serum obtained from animals which had recovered from a severe attack of rinderpest spontaneously contracted. The results of each are given, those of the serum treatment appearing to come out the best, particularly with regard to the length of time during which immunity could be obtained. One point especially noticed was that, "although all the cattle are given the disease in a more or less modified form by the application of the serum treatment, it is a curious fact that infection is rarely carried from such a herd if ordinary quarantine precautions are taken," whereas in several of the reports reference is made to the fact that the disease was introduced into districts which had up to then been free by the use of the bile inoculation intended to confer immunity. Mr. Hutcheon speaks very highly of the serum treatment and says, in concluding his report upon it: "It is too early to generalise on the subject, but I entertain hopes that by means of serum inoculation systematically applied the disease may be eradicated from the country." The second part of the report is devoted to the accounts sent in by each of the assistant veterinary surgeons, almost all of whom speak much more favourably of the serum treatment than of any other used. Considering the enormous amount of work which had to be done and the almost insuperable obstacles and difficulties which had to be overcome it must be admitted that the work performed by the Veterinary Department of the Cape Board of Agriculture has been very satisfactory, and that a great deal has been added to our knowledge of the treatment of rinderpest and diseases of a similar nature. In fact, it is quite apparent that more has been discovered with regard to this disease during the past twelve months than during the many hundreds of years in which we know it has existed. An interesting paper by Mr. Maberly dealing with the subject will be found at p. 1189 of our present issue.

PHYSICAL EDUCATION IN ITALY.

UNDER the auspices of the Minister of Public Instruction the following programme of athletic sports was recently carried out at Turin, the competitors being pupils of the various educational institutions throughout the country. 1. Speed: 165 yards in a straight line over the flat and without obstacles. 2. Endurance and speed: about 6 miles on the flat. 3. Swimming: 110 yards with the current. 4. Rolling or throwing the discus. This contest consisted of two parts. In the first the discus was rolled as far as possible on the flat; in the second it was thrown through the air, the distance being measured to the spot where it first alighted. 5. Pitching an iron quoit weighing 22 lb. 6. Casting a javelin weighing about 3 lb. at a rectangular target 5 ft. high and 3 ft. broad. The distance of the target from the casting-point is not stated. 7. Pole-leaping with the help of a spring-board, the leapers to begin at 7 ft. 8. Competitive gymnastic exercises of various kinds, including horizontal bar, parallel bar, vaulting horse, and trapeze rings. In addition to the foregoing teams of students numbering at least eight besides their captains took part in sundry games, among them being Association football, hockey, lacrosse, battledore, and lawn-tennis. In conclusion, prizes consisting of medals and diplomas were freely distributed amongst the victors.

THE LONDON WATER-SUPPLY.

LAST week we announced that the London County Council would at its meeting on Nov. 1st consider a report recently presented by the Water Committee. There was a question at the outset as to whether the Council would at once formulate its proposals and lay them before Parliament in the coming session or whether it would wait for the report of the Royal Commission. The former course was very definitely decided upon at the last meeting and the County Council's attitude on the whole question has now been unmistakeably defined. All the recommendations of the Water Committee were adopted. Upon two recommendations only, indeed, out of eight in all, did the Council go to a division. The first was that in which Mr. Dickinson moved that a Bill be promoted in the coming session of Parliament for the purchase by the Council of the undertakings of the eight metropolitan water companies by agreement or failing agreement by compulsion. To this Lord Onslow moved an amendment to the effect that it would be futile for the Council to lay down any policy until the views of the Royal Commission were known. The amendment was rejected by 101 to 15, a result which must not be regarded as a big Progressive

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victory. so much as a sequel to the breakdown of the supply in the East-end of London. Our opinion expressed some months ago that the continued existence of a limited supply of water to the East-end of London would direct public opinion more forcibly than ever to the entire question of future administration and requirements with a view to speedy and satisfactory settlement is thus confirmed. The recommendation of the Water Committee that a Bill should be promoted in the coming session of Parliament for the purpose of empowering the Council to bring an additional supply of water to London from Wales was approved unanimously, as were the various recommendations dealing with the administrative area and the questions of arbitration and acquirement. Lastly, the recommendation that the Bill should contain provisions authorising the Council to proceed forthwith with the connecting and laying of mains and other works necessary in order to enable it to protect any part of the metropolis from want of water was adopted, a contrary amendment moved by Mr. Beachcroft being rejected by 70 to 28.

DEATH UNDER CHLOROFORM.

A DEATH under chloroform took place at the Victoria Hospital, Lewes, on Oct. 1st. We are indebted to Mr. Wilson, the house surgeon, for careful notes of the occurrence. The patient, a child, aged four years, was suffering from lumbar abscess connected with disease of the spine. Chloroform was administered from a modification of Skinner's mask (Schimmelbusch). The child breathed deeply at first, but the respiration then became gasping and finally ceased, and although the usual methods for resuscitation were applied the little patient did not recover. Heart movements were observed after respiration had completely ceased. The death was no doubt due, as Mr. Wilson points out, to paralysis of the respiratory centre through an excessive intake of chloroform at the commencement of the administration—a fact which is commonly overlooked by those who advise the use of Skinner's mask and like apparatus. By their use it is very difficult to counteract the irregularity of the patient's breathing and to lessen the dose during deep respiration. In theory it may be said that a careful anæsthetist will remove the mask when any alteration in respiration takes place, but in practice this can seldom be done, especially in the case of young children, who until they are fully anæsthetised rarely present the same rhythm of respiration for many seconds together. Of course, with a drop bottle more can be done to regulate the dose.

THE ROYAL COMMISSION ON SEWAGE DISPOSAL.

THE length of time which the recently-appointed Royal Commission on Sewage Disposal must inevitably occupy if the inquiry is to be at all comprehensive threatens to prove a serious obstacle in the way of progressive sanitation. The appointment of the Commission, in fact, has placed the whole question *sub judice*, and many local authorities whose duty it is to carry out in the meantime a system of sewage and refuse disposal in our towns and villages are inclined to wait until the Commission pronounce judgment upon the merits or demerits of the processes in vogue. Lord Iddesleigh recently addressed a letter to the papers in which he stated that the Commission would view with the gravest concern any postponement on the part of the local authorities of the carrying out of works for the purification of trade refuse and sewage until the Commission have issued their report. But what, we ask, are the local authorities in the meantime to do? They may well hesitate to construct work and spend money on a method with the risk that in two years' time, when the report is issued, the whole scheme may be condemned and a perfectly new departure insisted upon. Further, it appears that the Local Government Board now refuse to sanction a loan for the purpose of carrying on disposal works unless the process is recommended in the report of the Royal Commission now sitting, and how can this possibly be known? This refusal is obviously inconsistent with the expression of grave concern contained in Lord Iddesleigh's letter as to the postponement of the carrying out of refuse and sewage disposal works until the views of the Commission are known. The Local Government Board must, it seems to us, meet these cases in some way or other or a standstill in the sanitary affairs of the country may happen which might have very serious consequences.

THE USE OF MORPHIA IN BRIGHT'S DISEASE.

IN 1873 in the *New York Medical Record* Dr. Loomis stated that he had treated uræmic convulsions by the hypodermic administration of morphia with marked success; in THE LANCET of August 3rd and 10th, 1889, Dr. Stephen Mackenzie confirmed his conclusions. At the recent annual meeting of the American Medical Association Dr. Sydney Ringer of London read a paper on this subject, "The Use of Morphia in Bright's Disease," which was published in the Journal of the Association on Oct. 8th. Dr. Osler writes concerning uræmia: "For the restlessness and delirium morphia is indispensable. Since its recommendation by Stephen Mackenzie I have used this remedy extensively and can speak of its great value in these cases. I have never seen ill effects or tendency to coma follow." Dr. Ringer entirely confirms these statements. He finds that morphia hypodermically employed is of conspicuous benefit in uræmic dyspnœa and in uræmic asthma. But of course dyspnœa due to dropsy of the lung or fluid in the chest is not benefited. Also, the headache and sleeplessness of uræmic patients can generally be removed. Dr. Ringer has not employed this treatment in uræmic convulsions or coma, but has largely used it for other uræmic troubles, and is certain that it may be employed in these cases without risk and with every prospect of benefit.

THE INCREASE IN WEIGHT WHICH SOMETIMES PRECEDES DEATH IN VERY YOUNG INFANTS.

AT the present time, when the systematic weighing of new-born infants is regarded as an important feature in their management and when we are accustomed to look upon a steady increase in weight as an indication of their general well-being, it is a little startling to find that such an increase without any corresponding improvement in their general condition occurring in cases where the weight has previously been diminishing or stationary may be the first indication of impending, often rapid, and even in some cases of sudden death. Such is the conclusion that Dr. G. Durante draws in a paper upon the subject in the September number of the *Annals of Gynæcology*. As he points out, the oscillations in the weight of a new-born infant correspond fairly accurately to its general condition. Any loss of weight is as a rule proportional to the gravity of the condition causing it and usually persists until the time of death, while approaching convalescence is in most cases indicated by an increase in the weight of the child. But there are exceptions to this general rule, and Dr. Durante finds that an increase in weight sometimes occurs in the two or three days preceding death. Such an increase was observed by him in 11 out of 130 fatal cases. In some of these cases death followed a steady rise in the weight without any preceding fall or stationary period. Such cases are, however, rare. More commonly after a long stationary period a sudden increase occurred without any improvement in the general

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condition, and the child died just at the time when he or she appeared from the weight to be gaining ground a little. In other cases after a more or less pronounced loss the weight rose suddenly and death ensued. The gain in weight varies from 50 to 75 grammes in from two to four days, but it may reach as much as 200 or 350 grammes in from five to six days, the increase, unaccompanied as it is by any appreciable improvement in the general health, contrasting strangely with the preceding loss or stationary period. Of the 11 cases observed 1 died with a suppurating sore on the leg, 1 from general tuberculosis, 2 were syphilitic, in 5 the only lesion present was marked fatty degeneration of the liver, while in 1 the thymus was hypertrophied and in another no cause for the fatal result could be found at the necropsy. Dr. Durante appears to have taken adequate means to exclude any possible sources of error. The children had been some time under observation and the increase was not due to constipation or to any increase in the amount of food administered. It is impossible to draw any definite conclusion as to the cause of this increase of weight from such a small number of cases. The observations are, however, of practical interest. The weight of new-born infants often fluctuates from day to day in a most surprising manner, yet the fact that an increase in weight unaccompanied by any definite improvement in the child's general condition is followed at times by a rapidly fatal result may be of value in certain cases in enabling a more accurate prognosis to be made. Further observations upon this subject are, however, required before its constancy or exact clinical value can be determined.

THE Harben Lectures of the Royal Institute of Public Health for 1898 by Sir Richard Thorne Thorne, K.C.B., M.B. Lond., F.R.S., commenced on Wednesday, Nov. 2nd, and will be continued on Nov. 9th, and 16th, at 5 P.M., in the Examination Hall of the Royal Colleges of Physicians and Surgeons, Victoria-embankment. The subject chosen is "The Administrative Control of Tuberculosis."

THE following figures reached us too late for insertion in the table giving the entries at the medical schools which we published last week. At Cambridge University 40 students have joined preliminary scientific classes with a view to graduating in medicine. At the London School of Dental Surgery, Leicester-square, 39 students have entered.

THE annual dinner of the Irish Medical Schools' and Graduates' Association will be held on Nov. 23rd at 7.15 at the Café Monico, as we have already announced. Members desirous of being present are requested to communicate with Mr. P. J. Freyer, 46, Harley-street, W.

THE Morison Lectures of the Royal College of Physicians of Edinburgh will be delivered in the College Hall, 9, Queen-street, by Dr. Alexander Morison, at 5 P.M., on Monday, Nov. 7th, Wednesday, Nov. 9th, and Friday, Nov. 11th.

THE annual dinner of the Aberdeen University Club will be held in the Venetian Saloon of the Holborn Restaurant on Wednesday, Nov. 16th, at 7 P.M., under the presidency of Lord Strathcona and Mount Royal.

IN the district of Iskander, in the Samarcand territory of Russia, there have been some cases of plague. The Russian Government are taking precautions against the spread of the disease.

THE Queen Regent of Spain has created Mr. Charles Lane Sansom, F.R.C.S. Edin., a Knight of the Order of Isabella.

A native officer, Tasildar Sundarasa Iyer, while on plague duty, has been stoned to death at Hindupur.

AN INTERNATIONAL MONUMENT TO HANS WILHELM MEYER.

THE inauguration of the monument to Wilhelm Meyer took place at Copenhagen on Oct. 25th, the birthday of the deceased, at 2 P.M. Among those present at the inauguration were the widow and other relatives of the late Dr. Meyer, the Mayor of Copenhagen, representatives of the Municipality and University of Copenhagen, the members of the Danish Committee, Sir Felix Semon from England, Dr. Edmund Meyer, the treasurer of the German Committee, from Berlin, the sculptor, Professor Bissen, and a large assembly, consisting chiefly of medical men and patients of the deceased. The ceremony commenced with the singing of a cantata by the Danish poet, Ernst von der Reck, which was sung by medical students. Sir Felix Semon, who had been requested by the Executive Committee of the Wilhelm Meyer Memorial to make the inaugural speech and to hand over the monument, erected by international subscriptions, to the care of the Municipality of Copenhagen, thereupon made the following speech:—

MR. MAYOR, LADIES, AND GENTLEMEN,—The Executive Committee of the Wilhelm Meyer Memorial have delegated to me the signal honour to hand over the monument, erected by international subscriptions to his honour, to the care of the Copenhagen municipality. In fulfilling this pleasing task I much regret my inability to address you in the Danish tongue, and for this reason alone I must not trespass long upon your patience. At the same time this occasion is such a very unusual one that I may be permitted to say a few words pointing out its meaning and importance. We are assembled here to-day to unveil a monument erected in honour of the late Dr. Hans Wilhelm Meyer. A monument in honour of a physician—that in itself is a very uncommon thing. To be immortalised by the sculptor's art in bronze or marble in a public place has usually been reserved from times of old to some few classes of the community only. Great rulers, benevolent or warrior princes, distinguished statesmen, victorious generals and admirals—these are the privileged mortals in honour of whom most frequently monuments have been erected; more rarely has such a reward fallen to the lot of great artists, poets, painters, musicians, and sculptors; still less frequently have men of science, philosophers, law-givers, inventors, and other leaders of intellect thus been distinguished; few and far between are monuments erected in honour of members of the medical profession. Nor is the reason of this far to seek. Slowly and by the labour of many is the edifice of scientific medicine being erected. The brain work of a lifetime of a physician usually means hardly a single brick in this ever-growing structure. Even if of uncommon importance his achievements rarely pass outside a comparatively narrow circle within his own profession; not often is his fame of a really universal character amongst his own compeers; still less frequently does it appeal to the imagination, to the gratitude of the community at large. Thus the ordinary fate of the scientific physician, even if in his day he has been successful in promoting by teaching and writing the welfare of mankind, as a rule is not of a largely resplendent character. A few complimentary obituary notices, the grateful recollection of some friends and pupils, not as a rule lasting longer than into the immediately following generation, finally a resting place for his name in those corners of medical literature in the development of which he has been most active,—this is the summary of the life-work of most leaders of the medical profession. What, then, has been the conspicuous merit of Hans Wilhelm Meyer that he should have been singled out for so unusual an honour as the one which is going to be paid to his memory to-day? The answer is easily given. It is now just thirty-one years since he was one day consulted by a girl, aged twenty years, who suffered from deafness, whose voice was most peculiar, and the expression of whose face was almost idiotic. Treatment directed to the ears and to the throat failed, and it was not until the puzzled observer one day introduced his finger into the space between the nose and throat that an unexpected solution was met with. Instead of penetrating into an open cavity the finger was arrested by a large, soft, easily bleeding mass, a condition the existence and nature of which in those days formed a *terra incognita*.

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AN INTERNATIONAL MONUMENT TO HANS WILHELM MEYER.



The Monument to Hans Wilhelm Meyer, executed by Runeberg and Bissen, erected in Copenhagen by international subscription, and unveiled on Oct. 25th, 1898.

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Meyer succeeded in removing this mass by operation, with the result that the deafness was materially improved, the voice became natural, and the idiotic expression of the face disappeared. Gratifying as this result was in itself it was, however, only then that Meyer's real merit commenced. Schopenhauer has truly said that not he is finder of a thing who lifts it from the ground and drops it again, but he who takes it up and recognising its value keeps it. If Meyer had regarded his experience in the light of a mere pathological curiosity, again years and years might have passed before the importance of the subject was realised. But with the true instinct of the scientific observer who develops what is ultimately to become an important truth from small beginnings Meyer did not drop the clue which a casual observation had placed in his hands. He began studying the subject in all its bearings; he examined the masses he had removed with regard to their structure, and finding them to be glandular in character gave them the name of "adenoid vegetations"; he investigated the results which obstruction of the space between the nose and throat exercises upon respiration hearing, articulation, facial expression, and general mental and bodily development; he examined 2000 Copenhagen schoolchildren with regard to the frequency of this affection; he made himself the apostle of his own teaching by proclaiming it, not only in his own country, but also in scientific publications abroad. In one word, to such an extent did he realise the true significance of his discovery that he left to his successors merely the addition of more or less important details, whilst the foundation of the edifice erected by him has remained unchanged from the time of his own first publication on the subject. Nevertheless it cannot be said that this teaching at first made very rapid headway. When in 1881 he introduced a discussion on the subject at the International Medical Congress of London it came almost—I well remember—as a novelty to many of his audience, although that was mainly composed of specialists, and it was only in the next decade that the true importance of the subject was realised throughout the world. It was at first not easy to convince the bulk of the medical profession, the parents of the mostly juvenile patients, and the schoolmasters that a discovery had been made which, like few others in medicine, was of the utmost practical importance concerning the development of a healthy mind in a healthy body of the rising generation, and it needed the irrefutable proof of the surprising improvement seen in the subjects of successful operations to make this conviction a universal one. But truth, though slowly, ever forces its onward way, and when Meyer three years ago closed his eyes he had the satisfaction of knowing that the value of his discovery had at last been universally recognised. Already then the number of those who through the timely removal of the obstructing glands had been saved from lifelong deafness or from the lasting results of obstructed nasal respiration amounted to many thousands, and the benefits achieved through Meyer's merits will continue to accrue in future times to hundreds of thousands and to millions. The proposition made immediately after his death to erect a statue to him at Copenhagen under these circumstances met with the most sympathetic reception; committees were formed in almost every country in which scientific medicine is established; in Great Britain the movement was particularly favoured by the patronage which Her Royal Highness the Princess of Wales, herself a daughter of the Royal Danish House, most graciously extended to it; physicians, surgeons, specialists, general practitioners, grateful patients, and former patients showed themselves anxious to contribute their mite towards a truly international monument of gratitude of his contemporaries towards the deceased great benefactor of the human race, and the result we see to-day before us in the shape of this beautiful and touching monument, which will carry the names of the artists, Messrs. Bissen and Runeberg, to every quarter of the globe. It is true that in the general chorus of approbation a few dissentient voices have been heard. "What, after all," it has been said, "has been Meyer's extraordinary merit? He put his finger up behind a patient's palate and found an obstruction, which he removed, and which turned out to occur more frequently than could at first have been supposed." Very true; but need I remind my audience that the same specious argument has been used against the claims of Christopher Columbus? America had been there all the time, only waiting, as it were, for the bold sailor who dared to go westwards until he struck a new continent. But Columbus did it. The naso-pharyngeal cavity had been there waiting for its explorer ever since man in his present shape has been in existence; pathological obstruction of this cavity has been as old as the records of the sculptor's art allow us to go back. In the last paper on the subject, which Meyer wrote a few months before his death, he showed that the facial expression of some Greek statues and busts which have come down to our times left no doubt that the originals had been suffering from "adenoid vegetations"; mediæval portraits of historical personages prove the same fact. Any physician might have conceived the idea of investigating the subject as Meyer did in 1868, but it was left to Meyer to do it, and having done so to realise the importance of his discovery whereby he became without exaggeration a true benefactor of the human race. That is why we are assembled here to-day; that is why we do honour to his memory. Gentlemen, the country of Denmark has been rich in producing men of eminence in almost all branches of human activity. If in many instances the nature of their distinction is better known to their own compatriots than to the world at large this is but natural and is an experience which is repeated in every country under the sun. There are some Danes, however, whose names are household words throughout the civilised world, whose reputation is not a local but a universal one, and who, whilst their countrymen may be justly proud of them, belong, as it were, to mankind at large. Need I mention the names of Tycho Brahe, of Bertel Thorwaldsen, of Hans Christian Oersted, of Hans Christian Andersen, and of Niels Gade? To those great names I think may be reverently added the name of Hans Wilhelm Meyer, one of the greatest benefactors to mankind medicine has known. Mr. Mayor, in the name of the subscribers to this monument, who have gladly contributed towards this external sign of gratitude erected in memory of your great compatriot, I have the honour to deliver the monument of Hans Wilhelm Meyer to the safe keeping of the municipality of Copenhagen.

Towards the end of Sir Felix Semon's speech the veil was withdrawn and the monument exposed to public view. It is considered one of the finest monuments in Copenhagen and loses nothing by its site, one of the new boulevards close to the Deaf and Dumb Asylum. The monument itself consists of a bronze bust of Hans Wilhelm Meyer on an oblong pedestal of polished brown granite with the following inscription:—

In front.	*On back.*
Laegen HANS WILHELM MEYER. * Fredericia, 25 Oktob., 1824. * Venetzia, 3 Juni, 1895.	Dette Mindesmaerke reistes i Aaret 1898 ved Bidrag fra Danmark og Udlandet. (This monument has been erected by contributions from Denmark and foreign countries.)

On the pedestal are written the names of those countries which have subscribed to the monument: "Australia, Austria, Batavia, Belgica, Britannia, Civitates fœderatæ Americanæ septentrionales, Dania, Gallia, Germania, Helvetia, Hispania, Hungaria, Italia, Norvegia, Polonia, Russia." The pedestal rests on several steps of roughly-hewn granite, mounting which is seen a most beautiful female figure (bronze), more than life-size, representing the Goddess of Medicine, who whilst she rests her left hand upon the staff of Æsculapius with her right offers the palm of glory to Dr. Meyer. The beautiful monument does full justice to the genius of the Finnish sculptor Runeberg, who made the bust of Meyer, and of the Danish sculptor Professor Bissen, who designed the female figure.

The MAYOR of COPENHAGEN thanked Sir Felix Semon in the following speech: Sir Felix Semon has just inaugurated and unveiled this monument and presented it to the municipality of Copenhagen. As a member of the municipality I have been commissioned to accept this beautiful monument, due to the united energies of the sculptors Runeberg and Bissen, which has been erected in honour of the renowned Danish physician, Dr. Hans Wilhelm Meyer. His great discovery on the subject of ear and throat disease has been generally acknowledged amongst his colleagues, not only in his own country, but, as we have just heard from Sir Felix Semon, perhaps even more so far beyond its boundaries, and the monument is a proof in itself. It may well be said that the proof of the value of a medical discovery lies in its practical use in curing disease, and in this respect Dr. Meyer's discovery has stood its ground, for the method he discovered and indicated has cured many people, or at any rate relieved their sufferings. Dr. Meyer's method has been followed and

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perhaps improved upon by many medical men at home and abroad—several of the most prominent of these we have the honour to see here amongst us—and we hope that their energetic work may succeed in still further perfecting what Dr. Meyer had begun; but one thing I think is certain, that not only now but also in the far future laryngologists and otologists will look up to Dr. Meyer as the pioneer and their master in this question, the man with the clear brain who saw and explained the connexion of causalities. This place which the Danish Committee and the municipality have chosen is, we may also say, in a state of development, but in a short time it will be one of the finest parts of our city, so that the beautiful monument will be even better placed than at present. With these few words, in the name of the municipality of Copenhagen I accept this monument in memorial of Dr. Hans Wilhelm Meyer and promise to keep it and guard it.

Dr. E. SCHMIEGELOW, the President of the International Executive Committee, added his thanks to those of the Mayor and more especially expressed the gratitude felt by the committee towards the Danish and foreign subscribers. As chairman of the original Danish committee he assured Sir Felix Semon that his countrymen were fully alive to the great and unusual compliment paid by the entire world to Danish medical science, and, indeed, to the whole Danish people, in the person of so worthy a representative as Hans Wilhelm Meyer had been.

In the afternoon Dr. E. Schmiegelow gave a dinner to the foreign representatives, the members of the committee, and many of the leading men in Danish medical science; and amongst those present were the Mayor of Copenhagen and the sculptor, Professor Bissen. Letters and telegrams were received from the Dutch Oto-laryngological Society and the Medical Society of Amsterdam (Professor Guye, Dr. Voute, and Dr. Burger); Norway (Professor Uchermann); Belgium (Dr. Delie); England (Dr. Cresswell Baber); America (Dr. Bryson Delavan); and others.

THE NEW OPERATING THEATRE AT SWANSEA HOSPITAL.

SIR WILLIAM MAC CORMAC, President of the Royal College of Surgeons of England, visited Swansea on Oct. 28th for the double purpose of opening the new operating theatre at the hospital and delivering an address at the annual meeting of the Swansea Medical Society. A large company assembled at the hospital about 3 P.M. and were received by the Mayor, Mr. Aeron Thomas, who in a short speech welcomed Sir William Mac Cormac to the town. Mr. Howel Watkins, speaking on behalf of the board of management of the hospital, said that for the new theatre the town was indebted to the public spirit and generosity of Mr. Benjamin Evans, J.P., who had defrayed the expense of putting up an entirely new building for the purpose. Sir William Mac Cormac, having opened the theatre with a gold key presented to him by Mrs. Benjamin Evans, expressed his admiration of what Mr. Evans had done for the institution and made an allusion to the assistance which had been rendered by the energy and knowledge of his old friend and pupil, Mr. W. F. Brook, senior surgeon to the hospital. A vote of thanks to Mr. and Mrs. Evans for their munificence having been proposed by Sir John Llewelyn, M.P., and seconded by Mr. Ebenezer Davies, Mr. Evans replied in a genial speech, thanking Sir William Mac Cormac for being present, eulogising the hospital staff, and describing various recent improvements as an evidence of the progressive spirit of the town. Sir William Mac Cormac also read a paper on the Past and Future of Surgery before the Swansea Medical Society, and the same evening he was present at the society's annual banquet, on which occasion Dr. T. D. Griffiths presided, the other speakers including Chancellor Smith, General Sir James Hills-Johns, the Mayor, and Sir John Llewelyn, M.P.

The operating theatre is an annexe approached from the lower corridor of the hospital and is built of polled stone with dressings of Bath stone. The plan consists of two half-circles with a radius of 11 ft., separated by an interval of 4 ft., thus measuring 26 ft. by 22 ft. It is lighted from a dome-shaped roof 20 ft. high in the centre by two top-lights, one of which is continuous with the main side-light, a slab of plate glass 8 ft. wide extending to a level of 3 ft. from the floor. The walls are lined throughout with Parian cement, glazed with "Blundell's petrifying fluid." The floor is terrazzo and on either side of the north side-light is raised into two tiers of high steps, each step carrying an iron rail. Thus solid masonry takes the place of the wooden and iron stands usually provided for spectators. The theatre is heated by two sets of low-pressure steam radiators standing in recesses swinging on hinges and situated in front of four air inlets. The latter are provided with closely fitting metal boxes, with fronts and backs of wire gauze enclosing cotton wool, by filtering through which all air entering the theatre is cleared of dust. In the wall at a height of 14 ft. is an extracting fan driven by a jet of water $\frac{1}{16}$ in. in diameter capable of displacing 1000 cubic feet of air per minute and set in motion by turning a tap. A shallow recess in the wall with embedded glass shelves closed in by glass and enamelled iron doors forms the instrument cupboard. Immediately behind it is the flue of one of the anæsthetising rooms, the heat from which prevents condensation of moisture within the cupboard. The theatre is entered through either of two anæsthetising rooms, each 12 ft. by 10 ft., which are floored and lined in a similar way. The work was carried out by Messrs. Wilson and Moxham, architects, from designs prepared by the surgeons of the hospital.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A MEETING of the Comitia was held on Thursday, Oct. 27th, Sir SAMUEL WILKS, Bart., President, being in the chair.

The following gentlemen were admitted as Members: R. H. Crowley, M.D.Lond.; W. J. Fenton, M.B.Cantab.; and C. H. J. Lockyer, M.B. Lond. Licences were granted to 120 gentlemen who had passed the required examinations.

The PRESIDENT made some remarks in regard to his duties outside the College, drawing especial attention to the award of the Gilbert-Blane Prize for naval surgeons, the candidates for which had done much useful work; and to the position of the President as one of the trustees for the British Museum and the Tancred Scholarship. Sir Samuel Wilks also referred in glowing terms to the opening of the new medical laboratories at Liverpool. He considered that day to form the inauguration of a new system in medical teaching, the practical taking the place of the theoretical. He also announced that the Gilbert-Blane Prize had been awarded to Francis Clay, M.B., C.M. Edin., surgeon to H.M.S. *Thrush*, and to Percy Bassett Smith, M.B., C.M., staff-surgeon to H.M.S. *Magdala*. The Jenks Scholarship had been gained by Mr. William Hardy Fleetwood.

Communications were received, amongst others, from: 1. The Right Hon. A. J. Balfour and others, acknowledging the receipt of the declaration of the College respecting vaccination. 2. The Charity Commissioners, in reply to the College respecting a scheme for the maintenance of the Chelsea Physic Garden. A committee was appointed to consider the scheme, consisting of Dr. Hensley, Dr. Lauder Brunton, and Dr. Allchin. 3. The London County Council, asking the guidance of the college in the matter of the Notification of Infectious Puerperal Diseases. The following were nominated as a committee to consider the matter of nomenclature, with power to answer the letter:—Sir J. Williams, Dr. Payne, Dr. Champneys, Dr. Cullingworth, and Mr. Clayton. 4. The Society of Arts, respecting the award of the Swiney Prize to be made in January next. The President, Treasurer, Registrar, and Senior Censor, and Dr. Pavy were nominated as representatives of the College. 5. Mr. Trimmer, secretary of the Royal College of Surgeons of England, reporting certain proceedings of the Council of that body on August 2nd. 6. The Secretary of State for the Colonies, asking the present opinion of the College on the communicability of leprosy, in view of the report of the Berlin Conference (1897). The following were requested to act as a Committee to answer the communication: Sir Dyce Duckworth, Dr. R. Liveing, Dr. Heron, Dr. Payne, Dr. Head, and Dr. John Anderson. 7. The Seamen's Hospital Society, asking the College to nominate a representative on a committee appointed to organise a School of Tropical

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Medicine in connexion with their branch hospital. Dr. Curnow explained that although Dr. Anderson and himself were physicians to the Seamen's Hospital at Greenwich they had not been consulted in the matter and, having detailed some of the correspondence which had taken place between himself and the secretary of the hospital, he moved "the previous question." Dr. Anderson having made a few remarks this was carried.

The audited accounts for the year ending Sept. 29th last were laid before the College. The quarterly report of the finance committee was received.

It was announced that the first award of the Bisset Hawkins Memorial would be made in July next and the medal would be presented on the St. Luke's Day following. A cast of the medal was handed round for the inspection of the Fellows.

Dr. Frederick Taylor was elected a member of the committee of management in place of Dr. Ord.

Reports were received from the committee of management and the laboratory committee, and Dr. Pye-Smith was re-elected a member of the latter.

After some further routine business the President dissolved the Comitia.

THE OUTBREAK OF PLAGUE IN VIENNA.

THE unfortunate Nurse Pecha died early on Sunday morning last from plague. She was a young, strong, healthy girl, and fought hard for her life, but eventually succumbed in spite of frequent injections of serum.

The disease has not spread at all thanks to the drastic precautionary measures which have been taken, and the city of Vienna, which last week was ripe for a panic, has now resumed its tranquillity. Nurse Hochegger, the other nurse who was ill, is pronounced out of danger.

The American Consul at Hamburg has received instructions that in consequence of the cases of plague in Vienna the American Government require 15 days' quarantine of all steerage passengers coming from that city, and already a large number of Austrian passengers have been prevented from joining one of the mail steamships.

Our Rome correspondent writes under date Nov. 1st: "Dr. Alessandro Lustig, who holds the chair of general pathology in the Florentine Istituto di Studi Superiori and directs the pathological laboratory in the same school, has just received from the Permanent Sanitary Commission of Vienna the cordial thanks of that body for his spontaneous offer of a supply of his *siero antipestifero*. The Commission adds that it will at once avail itself of the offer should the serum already furnished it from other quarters prove insufficient. At present it has on hand a supply from the Pasteur Institute of Paris."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6752 births and 3844 deaths were registered during the week ending Oct. 29th. The annual rate of mortality in these towns, which had declined in the seven preceding weeks from 24·6 to 18·8 per 1000, further fell last week to 17·9. In London the rate was 16·3 per 1000, while it averaged 18·9 in the thirty-two provincial towns. The lowest death-rates in these towns were 9·6 in Croydon, 12·7 in Huddersfield, 12·9 in West Ham, and 13·5 in Halifax; the highest rates were 23·5 in Manchester, 24·3 in Blackburn, 24·9 in Wolverhampton, and 26·6 in Liverpool. The 3844 deaths in these towns included 455 which were referred to the principal zymotic diseases, against 618 and 538 in the two preceding weeks; of these, 152 resulted from diarrhœa, 84 from "fever" (principally enteric), 82 from diphtheria, 65 from measles, 38 from scarlet fever, and 34 from whooping-cough. The lowest death-rates from these diseases were recorded in Huddersfield, Derby, Halifax, Bradford, and Oldham; and the highest rates in West Ham, Bolton, Salford, and Sunderland. The greatest mortality from measles occurred in Portsmouth, Liverpool, and Sunderland; from scarlet fever in Sunderland; from whooping-cough in Plymouth; from "fever" in Wolverhampton, Bolton, and Sunderland; and from diarrhœa in Blackburn, Bolton and Gateshead. The 82 deaths from diphtheria included 46 in London, 9 in Leeds, 7 in West Ham, and 5 in Swansea. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Oct. 29th, was 3024, against numbers increasing from 2178 to 2915 at the end of the nine preceding weeks; 335 new cases were admitted during the week, against 358, 357 and 381 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 263 in each of the two preceding weeks, were again 263 last week, and were 52 below the corrected average. The causes of 45, or 1·2 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Leeds, Newcastle-upon-Tyne, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in Blackburn, Preston, Halifax, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·7 and 19·0 per 1000 in the two preceding weeks, rose again to 20·0 during the week ending Oct. 29th, and exceeded by 2·1 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·7 in Leith and 18·5 in Edinburgh to 25·3 in Dundee, and 27·2 in Perth. The 603 deaths in these towns included 36 which were referred to diarrhœa, 15 to "fever" (principally enteric), 8 to diphtheria, 6 to whooping-cough, 4 to scarlet fever, and 4 to measles. In all, 73 deaths resulted from these principal zymotic diseases, against 105 and 86 in the two preceding weeks. These 73 deaths were equal to an annual rate of 2·4 per 1000, which was slightly above the mean rate last week from the same diseases in the thirty-three large English towns. The 36 fatal cases of diarrhœa showed a further decline from the numbers recorded in recent weeks, and included 9 in Glasgow and 8 in Dundee. The deaths referred to different forms of "fever," which had declined from 14 to 9 in the three preceding weeks, rose again to 15 last week, of which 10 occurred in Glasgow and 2 in Aberdeen. The fatal cases of diphtheria, which had been 8 and 6 in the two preceding weeks, rose again to 8 last week, of which 2 were registered in Glasgow, 2 in Dundee, and 2 in Aberdeen. The 6 deaths from whooping-cough showed a marked decline from recent weekly numbers, and included 2 in Glasgow and 2 in Aberdeen. The 4 fatal cases of scarlet fever were recorded in Glasgow, where 3 of the 4 deaths from measles were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 141 and 120 in the two preceding weeks, were 119 last week, and were 18 below the number in the corresponding week of last year. The causes of 38, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the three preceding weeks from 22·1 to 26·0 per 1000, further rose to 26·4 during the week ending Oct. 29th. During the past four weeks the rate of mortality in the city has averaged 25·1 per 1000, the rate during the same period being 17·7 in London and 19·1 in Edinburgh. The 177 deaths registered in Dublin during the week under notice showed a slight increase upon the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against 18 and 20 in the two preceding weeks; of these, 4 resulted from diarrhœa, 4 from "fever," 3 from diphtheria, 1 from scarlet fever, 1 from whooping-cough, and not one either from small-pox or measles. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 1·7 in London and 1·1 in Edinburgh. The 4 fatal cases of diarrhœa showed a further decline from those recorded in recent weeks. The deaths referred to different forms of "fever," which had increased from 2 to 4 in the three preceding weeks, were again 4 last week. The 3 fatal

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cases of diphtheria exceeded the number recorded in any week since May last, while the mortality from whooping-cough showed a marked decline. The 177 deaths in Dublin last week included 38 of infants under one year of age, and 49 of persons aged upwards of sixty years; the deaths of infants showed a further decline, while those of elderly persons exceeded the number recorded in any recent week. Ten inquest cases and 5 deaths from violence were registered; and 62, or more than a third, of the deaths occurred in public institutions. The causes of 13, or more than 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON JOHN LEONARD AHERNE, has been allowed to withdraw from Her Majesty's Naval Service with a gratuity.

The following appointments are notified:—Staff Surgeons: J. Sugrue to the *Devastation*, and H. W. G. Doyne to the *Collingwood*. Surgeons: E. Cooper to the *Buzzard*; E. D. J. O'Malley to the *Jaseur*; J. Shand to the *Brisk*; D'Arcy Harvey to the *Excellent*; W. R. Trythall to the *Daphne*, undated; E. B. Pickthorn to the *Centurion*; and L. E. Dartnell to the *Tamar*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert H. Robinson is placed on retired pay. Lieutenant-Colonels John Stevenson and Alexander S. W. Young retire on retired pay. Lieutenant O'Gorman is posted to the Dublin District for duty. Captain Way will be held in readiness for service in South Africa. Lieutenant-Colonel Hughes has arrived at Canterbury for duty. Major H. N. Thompson has arrived at the Station Hospital, Hounslow, for temporary duty.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotions among the officers of the Indian Medical Service made by the Government of India:—To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel David Sinclair, Madras Establishment. Surgeon-Lieutenant-Colonels to be Brigade-Surgeon-Lieutenant-Colonels: *Madras Establishment:* Henry FitzLawrence Plunkett French Esmonde-White, William Richard Browne, Arthur Henry Leapingwell, Hazlett Allison, and Thomas James Hackett Wilkins. *Bombay Establishment:* John Philip Greany. Surgeon-Lieutenants to be Surgeon-Captains: *Bengal Establishment:* John Stephenson, Frank Needham Windsor, Walter Barrie Turnbull, Ernest Edwin Waters, Asher Leventon, and Philip Francis Chapman. *Madras Establishment:* Frederick Linton Blenkinsop, Edmund Moritz Illington, Thomas Edgar Watson, and Charles George Webster. *Bombay Establishment:* Alfred Hooton, Arthur Frederick William King, Robert Frazer Standage, Andrew Armstrong Gibbs, and Henry Alfred Forbes Knapton. The Queen has also approved of the retirement from the Service of the under-mentioned officers: Surgeon-General James Cleghorn, Bengal Establishment, and Lieutenant-Colonel James Joseph Moran, Madras Establishment. The Queen has also approved of the resignation of the Service by the under-mentioned officer: Captain William Carr Sprague, Bombay Establishment.—*London Gazette.*

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain H. G. Thompson, to be Surgeon-Major. Surgeon-Lieutenant Edmond U. F. MacW. Bourke, 18th Middlesex Volunteer Rifle Corps, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Rifle: 18th Middlesex: Surgeon-Lieutenant C. Godson to be Surgeon-Captain.

THE TITLES OF RETIRED ARMY MEDICAL OFFICERS.

The Royal Warrant recently issued with reference to the Royal Army Medical Corps, while giving satisfaction to officers on the active list does not relieve retired but employed members of the Army Medical Service from designation by cumbrous and inconvenient titles such as Brigade-Surgeon-Lieutenant-Colonel. It should not be a difficult matter for the authorities to confer upon these officers the same titles as those now granted to the R.A.M.C., and Lord Lansdowne would earn the gratitude of the retired as he has done of the active medical members of the Army by such a concession.

ARMY MEDICAL SCHOOL, NETLEY.

The following is an additional list of surgeons on probation nominated for the R.A.M.C.: J. M. Sloan, Glasgow University; W. W. Scarlett, School of Surgery, Royal College of Surgeons, Ireland; D. S. Harvey, Glasgow University; G. C. Phipps, Owens College, Manchester; and F. J. Brankenridge, St. Thomas's Hospital.

OOTACAMUND.

This well-known hill station of Madras has of late had the reputation of being exceptionally unhealthy and the Madras Government directed their Sanitary Commissioner, Colonel Thomson, I.M.S., to proceed to Ootacamund to investigate and report thereon. This has accordingly been done.

Professor A. E. Wright, M.D. Dub., Professor of Pathology in the Army Medical School, Netley, has been selected to proceed to India at once as a member of the new Commission appointed to study the spread of the plague. During his absence Major D. Semple will act as Professor of Pathology in the Army Medical School. Major C. Birt, R.A.M.C., is to succeed Major Semple as Assistant Professor of Pathology, while Captain G. Lamb, of the Indian Medical Service, has been appointed for one year as an Extra Assistant in the Pathological Laboratory of the Army Medical School.

Correspondence.

"Audi alteram partem."

"THE LANCET ANALYTICAL COMMISSION ON SHERRY: ITS PRODUCTION, COMPOSITION, AND CHARACTER."

To the Editors of THE LANCET.

SIRS,—I have read your most interesting article on Sherry. A similar description and analysis of Australian brandy which you issued some years ago has been the means of furnishing the profession with a genuine and good article. The need of pure, unadulterated wines and spirits is greatly felt by all who have to prescribe for gouty, dyspeptic, and "livery" subjects. You would add very much to the value of your work on sherry if you would trace the wine from its importation at our docks to its arrival on our tables. Is it adulterated by the British wine-merchant? I have at times questioned several friends "in the trade" on this point. They all assured me that the "blending" of sherry is essential and universal. The blending consists of adding water, spirits, curaçoa, burnt sugar, &c., and variously mixing different casks of sherry, so they told me. The British public will not drink it in its pure state, but demand this adulteration and alteration. I have some natural sherry that I get at the stores, discovered after hunting for it for some time. Being a dyspeptic I can drink very little wine, but this agrees with me and I like it. It is a light wine, dry, free from burning taste, and fruity in flavour. But I find that the ordinary guest at my table does not like it—the man, that is, who rather fancies himself as a connoisseur in wines; so that my friends the wine-merchants, who told me the British public will not drink "natural sherry," I now find are about right. How many people one meets say they cannot drink sherry. It would be a great advantage if some sherry importers would guarantee to sell nothing but the pure wine as imported; we could then recommend it with confidence to those who are poisoned by the usual stuff.

I am, Sirs, yours faithfully,

H. HOWARD MURPHY, M.D. Cantab.

East Twickenham, Oct. 29th, 1898.

"MEMBRANOUS RHINITIS AND ITS RELATION TO DIPHTHERIA."

To the Editors of THE LANCET.

SIRS,—May I be allowed to correct the figures given in your report in THE LANCET of Oct. 29th of my remarks in the discussion following Dr. Lack's very interesting

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paper on Membranous Rhinitis and its relation to Diphtheria, read at the Royal Medical and Chirurgical Society on Oct. 25th? Doubtless I failed to make them sufficiently clear, but as they may be published in another place, I would like to have an opportunity of preventing any apparent discrepancy between their final appearance and that which they present in your report. I examined 125 children. Of these 69 had nasal discharges of varying quality and 56 were free from discharge. Of the former 37, and of the latter 24, presented the Klebs-Löffler bacillus; 5 cases where the discharge was more or less blood-streaked gave the bacillus in every case. None of the discharges were associated with constitutional symptoms not otherwise to be accounted for; all were of a markedly chronic character, and several of the children on the surgical side were apparently in good health, being admitted for accident or deformities. Trusting you will find space for this statement, I am, Sirs, yours faithfully,

THOS. D. LISTER,
Pathologist, East London Hospital for Children.

Wimpole-street, W., Oct. 28th, 1898.

THE WATER-SUPPLY OF LEICESTER.

To the Editors of THE LANCET.

SIRS,—As one who is interested in water-supplies in general and the question of the causation of endemic goitre in particular allow me to say a few words on this matter. The question of the Leicester water-supply seems to me one for very serious consideration. The upper reaches of the Derwent derive their water, at any rate in part, from well-known goitre-stricken geological horizons, the lower carboniferous limestone and Yoredale series of the carboniferous formation. The most goitrigenous water in my experience is that which remains quietly in contact with the soil (in affected localities), such as is the case with well water. It is found that when water originally goitrigenous flows away from its source, especially if exposed to the oxidising agencies of oxygen or light, it quickly loses its poisonous properties. Now will this be the case with the water of the Upper Derwent Valley and will the conveyance by pipes render the water innocuous on its arrival at Leicester? Personally I think that even in this latter case the water will lose the greater part of its poisonous properties, though I doubt if all will be eradicated. Most certainly also should the water be subjected to thorough filtration, another agency found to be efficacious in diminishing the amount of the goitrous poison. Another element of danger, it seems to me, in this Leicester case is that natural reservoirs are to be formed, so far as I can ascertain, and these in a goitrous locality. As to the question of the causation of the malady I think it quite time that the ancient theories of lime and magnesia were relegated to some museum of antiquities. On two formations in this country, largely goitre-stricken, hardly any lime or magnesian salts exist—viz., the Ordovician shales and the Volcanic Series of Borrowdale. The cause of the malady is rather to be sought in the agency either of soil-bacteria (or possibly hæmatozoa having a soil origin), or, secondly, of metallic salts, especially the sulphides of iron or copper (or rather the results of their decomposition). With regard to soil-bacteria certain chemical factors in the soil favour their growth no doubt, and this may account for the presence of goitre in particular localities. With regard to the goitre-producing faculties of decomposing iron and copper pyrites the evidence in their favour is very convincing. For example, in the lower carboniferous limestone, and Yoredale series I have found abundance of iron pyrites occurring as marcasite. Ordovician shales contain a large amount of cubical iron pyrites and marcasite. The English chalk formation, according to Berry, has goitre fairly evenly distributed though not to any extent (if lime salts caused goitre we should expect a large amount of goitre on this formation). Now with the exception of disseminated lime phosphate and glauconite I am unaware of any mineral in this formation except marcasite, which I may mention is a very readily decomposed form of iron sulphide. The gault clays of England are goitrigenous and their blue colour is due to disseminated iron pyrites. On the corresponding formation in France (*marnes aptiennes*) Saint Lager found an abundance of goitre with a corresponding abundance of the mineral in question. Many other instances could be adduced in favour of this theory and adverse to the lime and magnesian salts theory, but I think I have said enough to draw attention to this fascinating subject, as I consider too little attention has been directed in this country to a disease which has such a baneful influence on the health and intelligence of the affected localities.

I am, Sirs, yours faithfully,

LOUIS E. STEVENSON.

Temple Sowerby, Penrith, Oct. 28th, 1898.

"WHAT IS 'FIRST AID'?"

To the Editors of THE LANCET.

SIRS,—Dr. Clayton Jones brings out in his letter some other points in the teaching of "first aid" which also require considerable reform and I am glad to find that he agrees with me in desiring a more definite course and a more practical scheme of instruction. He has "not much faith in representative committees and ..... would rather see an able man appointed who should write a new text-book." I am not fond of such committees either, but it is not of much use that "an able man" should write a new text-book without some previous assurance that it would be accepted as the recognised manual and that the present state of things would not continue. Again, who is to appoint him? Instruction in "first aid," although largely in the hands of the ambulance department of the Order of St. John of Jerusalem, is not entirely so, and what is wanted is complete and definite agreement among the various authorities as to the scope of the subject and the method of teaching. Provided, however, the end is attained I do not much care whether it is by committees or otherwise, but I feel sure that reform of the kind indicated by the correspondence in your columns would be welcomed by all really interested in the proper teaching of "first aid."

I am, Sirs, yours faithfully,

Suffolk-street, S.W., Oct. 29th, 1898. VALENTINE MATTHEWS.

THE PLAGUE IN INDIA.

To the Editors of THE LANCET.

SIRS,—Your otherwise fair leading article in THE LANCET of Oct. 22nd on "The Indian Government and the Plague" contains some sentences from which it would appear that the natives of India are hostile to the *legitimate* steps which have been taken to stamp out the plague. That is a chimera which is affectionately hugged by a large majority of the British public. You quote the words of the Indian Government, "To attempt by force to eradicate a disease when the entire population exerts itself to oppose the methods adopted is an effort doomed to failure." In what way does the "entire population exert itself to oppose the methods adopted"? It is not the necessary steps to which they object, for disinfection, though not always with the modern therapeutic agent, is practised night and morning in every Indian household. Isolation is an ancient custom among the small-pox ridden people of India and inoculation as a science was practised in the East from time immemorial and, indeed, spread from the East to the West. So that in principle there is nothing which is being done which can be called an innovation. What they really object to (and what self-respecting nation would not?) is the arbitrary and high-handed manner in which the orders of the Government are executed. I do not say that it was the intention of the Government that its officers should ride roughshod over the people, far from it. But it is a notorious fact that the feelings of the people were grievously trampled upon; it may be from ignorance of Indian customs and manners. The Government cannot be altogether guiltless when it rejected the counsels and coöperation of the natives of the country and imprisoned without trial (a privilege given the meanest of Her Majesty's subjects in England) two highly born leaders of the people for sounding the warning note against some of the unpopular plague measures which had to be cancelled afterwards, but not till a serious riot had opened the eyes of the Government. By appointing a committee of investigation at the tail end of the outbreak the Government earns for itself the compliment of "being better late than never." As regards M. Haffkine's system of inoculation it seem to me that there is much ado about next to nothing. Whatever may be

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proved in the future as regards the value or efficacy of his system, certainly the medical profession "do not yet know enough," as you rightly say, "to decide positively whether it is efficacious and if so how long the immunity conferred by it lasts, or whether it is a practicable scheme to apply in India with its teeming millions."

The English people have misunderstood the attitude of the Indians towards measures which, after all, have not yet passed the experimental stage. Even in England, where popular education is supposed to have done wonders, we see the ridiculous sight of the repeal of the vaccination laws, which have been acknowledged by all, except a handful of fanatics, to have stemmed the tide of small-pox. If such a thing can happen here much that has actually, and said to have, occurred in India can be easily explained and pardoned.—I am, Sirs, yours faithfully,

SARAT K. MULLICK,

National Hospital for Heart and Paralysis, Soho-square, W. Oct. 29th, 1898.

"MEDICAL FEES FOR LIFE INSURANCE EXAMINATIONS."

To the Editors of THE LANCET.

SIRS,—With reference to the letter from Mr. Paulin in THE LANCET of Oct. 29th I am glad to note that the invaluable services rendered by medical men in life insurance cases are becoming well recognised. These services are indispensable. On the honour and skill of the medical examiner depend the benefits the public derive from life assurance. This office has for some considerable time paid two guineas for £2000 cases, but my appreciation of the assistance rendered by medical men is such that I am about to propose to my directors that in future we pay an extra guinea for each £1000 above that amount. Though in all cases the examination should be equally thorough, still the responsibility which doubtless the physician feels in examining for large amounts should, in my opinion, be recognised.—I am, Sirs, yours faithfully,

HENRY R. POPE, Secretary.

The Absolute Life Assurance Company, Limited, 87, St. James'-street, Pall Mall, S.W., Oct. 29th, 1898.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—Dr. Beale seems in his last letter to be just a little impatient because your correspondents have in their discussions confined themselves chiefly to the philosophical aspect of the question of vitality. The importance of this phase of the subject to the general practitioner will be more easily realised by Dr. Beale when he considers how little time the busy practitioner can afford for the prosecution of microscopical research involving laborious minuteness and lengthy sittings and that he, not having the opportunity of attacking such problems experimentally with the resources of a laboratory, does what is next best—reflects and philosophises. The statement that the philosophical side of the subject has to be studied and discussed in order to provide a harmonious whole of that which in honour of its chief exponent one may term *Bealeology*, needs no elaboration of reasons; the city doctor and the country practitioner will the more readily accept Dr. Beale's conclusion—drawn from an immense amount of microscopical study—if reasonable theories can be formulated as to the origin, the means of existence, and the "death" of vitality.

The question of the origin of vitality interests me as it does Dr. Hooper; if vitality be not a form of matter or motion where did it spring from? How did it reach the earth? It is generally admitted that the earth, a combination of matter and motion, is derived from the sun. It must at first, then, have gone through a long period of cooling and life could only have begun to exist in the fashion we now see it when the earth reached a certain degree of temperature and presented other favourable manifestations of motion, such as a non-injurious state of electrical environment, suitable atmospheric conditions, and proper juxtaposition of the constituents of primeval bioplasm. Given the presence, then, of these conditions, from what sources did vitality arise and by what way did it arrive? The question of its source and means of reaching the constituents of bioplasm is intimately bound up with our conception of its mode of action on antebiotic material and its manner of becoming latent and conserved when bioplasm dies. (Whether one takes Dr. Beale's view of life or the mechanico-chemical theory one feels bound to accept indestructibility as an attribute of it.)

Is vital power derived from the sun just as motion is, and was it latent until conditions arose when it could blossom forth? Or is this subtle influence transmitted (possibly by vibrationary means) through the intra-astral medium from some extra-solar quickening centre? (How near does this bring us to the conception of a life-giving Almighty.) Vitality must have originated in either of these ways or else must be considered a manifestation of motion—having distinct and peculiar properties it is true—and classified amongst the forces of the natural sciences that are so interdependent on each other and without the aid of which vitality can show no results.

I am, Sirs, yours faithfully,

Cowling, Yorkshire, Nov. 1st, 1898. JOSEPH H. ROWE.

A RARE DISLOCATION.

To the Editors of THE LANCET.

SIRS,—On Oct. 28th I was called to see a woman who had been attended by a midwife in her confinement fourteen days previously, but a lump being observed in the infant's neck she had been advised to have a medical man to see it. I found the child small in size but in fair condition. It naturally turned on its left side, twisting its face downwards towards the left shoulder. Examination showed dislocation of the sternal end of the right clavicle, the bone being drawn upwards and slightly outwards by the sterno-mastoid as far as the subclavian, which retained the outer half in its place. This was a breech presentation, and the mother stated that the midwife had had great trouble with the after-coming head. I cannot find this cause mentioned in the text-books and thought it might interest some of your readers.

I remain, Sirs, yours faithfully,

Bournemouth, Oct. 31st, 1898. A. J. TURNER, M.D.

"DR SAUNDBY'S ADDRESS."

To the Editors of THE LANCET.

SIRS,—Dr. Saundby, in his address to the students at Cardiff, admits that our country is saturated with the commercial spirit and that students, professors, and governing bodies are all alike too apt to consider what will pay them best. Some time since your Commissioner had occasion in the interests of the profession to visit Birmingham, and in the first instalment of an excellent report published in THE LANCET he brought a charge of commercialism against the whole community. This did not please the President of the Council of the British Medical Association, and when your Commissioner afterwards called upon Dr. Saundby he was told curtly to mind his own business. What is the difference, we may ask, between the term "commercialism" as used by your Commissioner and the phrase "saturated with the commercial spirit" as employed by Dr. Saundby?

Dr. Saundby pleads for the establishment of eight additional universities in England alone. Those, we gather, would cost £16,000,000 and would require for their maintenance the sum of £400,000 per annum. Dr. Saundby speaks of millions sterling as glibly as any company promoter, but when the decaying medical school of Birmingham has been replaced by an up-to-date and model university is it probable that Dr. Saundby will trouble himself further with the £14,000,000 which would still be required to found similar and consequently rival universities in Manchester, Liverpool, Leeds, Newcastle, Bristol, Nottingham, Norwich, or that other city not specified? I hardly think so. Dr. Saundby at first allows that "there may be professions in which the work is better paid and less exacting," but later he expresses the somewhat contradictory opinion that "there is no profession in which success more certainly attends attention to business or in which so good an income can be as readily secured." If the latter statement be true I can only say that the condition of the other professions must be deplorable indeed. Mr. Lawson Tait has spoken regretfully of the mean dwellings now occupied by so many medical men of good character and recognised ability in the city of Birmingham, and judging from the rents paid, as indicated by Mr. Tait, such dwellings certainly could be fittingly

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occupied only by humble individuals of the working class. From a leading article on the "Sixpenny Doctor" in the most widely read of Birmingham newspapers I cull the following: "The simple fact is, and there is no good purpose to be served by disguising it, that the medical profession in common with others is overcrowded. Of late years there has been an increase in the number of medical colleges and the cost of an ordinary medical education has been decreased. ..... How the medical bodies are to prevent the excessive rush into the profession we do not quite see unless they can persuade the universities and medical colleges to raise their standards and their fees and so diminish the number of entrants. When a man has once qualified he naturally and properly expects to live by his profession. He takes guineas if he can get them, if not he accepts half-crowns, and if even these become too scarce he swells the ranks of the sixpenny doctor." The following extract from a professional journal has been widely circulated in the public press: "Now we speak but plain and sober truth when we say that competition in medical practice at the present time is excessive and ruinous; and this is true of all ranks in the profession. ..... We feel and know that the vast majority of doctors in full practice have to reckon with a diminishing instead of an increasing income year by year; that old men are steadily elbowed out, and not having been able to save any money at all in early life they are often driven to starvation, whilst young men coming in and endeavouring to establish themselves quite justifiably in practice against their older rivals are often compelled to resort to methods which are nothing less than degrading. The following is a generalisation from twenty years' practice in London. Of every six men who take a house and put up a door-plate without buying a practice, five are compelled to leave the house within two years. They leave with their little capital expended and with despairing hearts to renew the struggle elsewhere."

Dr. Saundby says further: "Our position depends mainly on the public belief that we are a disinterested profession, and that belief rests upon the vast amount of public work we do for nothing." What is the nature of the work to which Dr. Saundby refers? We do work for nothing when, from disinterested motives, we give our services freely without thought of fee or reward, and we also do work for nothing when in the ordinary course we give our services in anticipation of payment which in the end is not forthcoming. Our good deeds and our bad debts represent a vast amount of work no doubt, but such work is not paraded in full view of an admiring public. It is true that the hospital physicians and surgeons of Birmingham alone do a vast amount of work without remuneration, but surely they have their reward. Is not the gratuitous advertisement inseparable from such appointments worth infinitely more to the man who knows how to make the most of his opportunities than the full value of the work which he does for nothing? If Dr. Saundby had said: "In Birmingham there is no profession in which success more certainly attends attention to business, or in which so good an income can be as readily secured provided you have a hospital appointment," one statement at least in the elaborate address would have been undeniably true.

I am, Sirs, yours faithfully,

J. RITCHIE DALRYMPLE.

Yetholm, N.B. Oct. 15th, 1898.

"THE PHYSIQUE OF BOYS ENTERING PUBLIC SCHOOLS."

To the Editors of THE LANCET.

SIRS,—It is incumbent on me, in consideration of your kindly and courteous notice of my letter to the *Times*, giving the result of the physical examination of 100 boys as they entered a public school, taken consecutively and unselected, to amplify my letter by furnishing you with the further particulars you indicate as of value. With reference to the deformities, it seems to me to be possible that the examiner might have been a little over severe had he been preparing the results of his examination for publication, but when this was a mere after thought and the examination was solely for the purpose of regulating the physical exercises and games of each boy it seems scarcely possible. I had known for many years that these deformities were considerable and that they were mainly the result of negligence in the process of education, but I was myself astounded at the facts revealed by the examination when I came to total them. The cardiac cases were mitral disease and the hernias were congenital.

You suggest that a medical account of the antecedents of the cases of albuminuria would throw a flood of light on the pathology of the so-called functional albuminuria. I am fortunately able to accede to your appeal, having by my side a complete previous medical history of every boy. I fear, however, it will not prove of value in its elucidation. I have little doubt in my own mind that this form of albuminuria in boys, like chilblains, is dependent upon the condition or action of the vaso-motor nervous system. Else how is it that in the worst cases where the urine boils as white as milk the albuminuria disappears as soon as the boy is placed in the horizontal position, in which position he can be fed as heartily as is pleased, and it never appears unless he is very constipated? While in the vertical position, if it is to be kept away he can partake of nothing but milk, which even "crammers" know who send candidates up for the medical examinations of the public services. How is it, further, that these albuminurics can join in all vigorous school games, apparently without harm, and yet faint soon after rising in the morning, especially if they are compelled to stand? When these boys thus faint, or even feel faint, the first thing I do is to examine the urine. I can now diagnose these cases of albuminuria from their appearance, from a finger on the pulse, or my hand on the heart.

The Previous Medical History of 22 Boys suffering from Albuminuria between the Ages of Thirteen and Fifteen Years.

Name of disease.	Number of cases.	Name of disease.	Number of cases.
Chicken-pox	19	Acute nephritis	1
Whooping-cough	19	Pleurisy	1
English measles	17	Pleuro-pneumonia	1
German measles	7	Bronchitis	1
Mumps	7	Rheumatism	1
Scarlet fever	4	Laryngitis	1
Influenza (?)	2	Burmah malaria	1
Diphtheria	2	Hay fever	1
Headaches	2	Catarrhal jaundice	1

I admit that the record of the height, weight, and chest-girth are only of personal value to the master, to whom they are handed for his guidance in the management of the boy and to whom they are of untold value, for, taken periodically, they indicate as nothing else can when wrong is being done to the child in the process of education.

As these public school boys are a "special class," well-bred, well-fed, and reared for the most part in the country, I thought it only fair to employ the averages of the special class tables of Dr. Charles Roberts, as if such a very specialised class is compared with the artisan class reared in towns there is a very marked difference. For instance, the following shows the average height and weight of the artisan class—town population:—Age, 14 years; average height without shoes, 57·76 in.; average weight, including 9 lb. of clothes, 84·61 lb. The following also shows the average height and weight of the most favoured classes of the English population—public school boys, naval and military cadets, &c.:—Age, 14 years; average height without shoes, 61·11 in.; average weight, including clothes of 9 lb., 99·2 lb.

It seems to me, therefore, that it would be very misleading to take an average of all classes in estimating the average height and weight of such a very favoured class as public school boys. I am aware that the record of the physical examination of only 100 boys is scientifically of not much value, though I thought they were of untold value to the public as eye-openers for the coming generation. I am now preparing tables for a much more minute record, and when I have the physical examination of 1000 scheduled I will publish it. If I do not live to tell the tale my successor will find it in such order that he will have no difficulty in doing it for me. For obvious reasons I still withhold my name and sign myself,

Your obedient servant,

Oct. 31st, 1898. M.D.

A NURSES' HOME is to be erected in connexion with the Brompton Hospital for Consumption and Diseases of the Chest, the estimated cost of which is over £30,000.

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MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manufacturers and River Pollution.

THE decision given in the Queen's Bench Divisional Court on the 27th ult. by the Lord Chief Justice and Mr. Justice Wills, however correct in law, is of evil omen as regards the purification of rivers. Two cases had been decided by the county-court judge against the River Ribble Committee, which had prosecuted two defendants for alleged pollution of the River Darwen by running solid putrid matter into the stream. The defendants were millowners on the river and had impounded the water in reservoirs, allowing it after a time to flow out again into the river through sluices, one of them merely opening the sluices and allowing the water and deposited matter to flow out as it would, while the other employed men to rake up the bottom of his reservoirs so that mud and all should run into the river. This was not held to make any material difference in the cases. No solid matter was put in by the defendants, but higher up the stream are paper-makers, who use esparto grass largely and are really responsible for the solid matter flowing from the river into the defendants' reservoirs. After being impounded for a time the matter in the water becomes putrid and is then turned into the river, causing a great public nuisance. Lord Russell said one question was, Did the defendants put into, or allow to be put into, the River Darwen putrid solid matter? As the analysis showed that the effluent where it entered the river from the reservoir gave only 2·4 parts of solid matter the judges held that it could not be said that the water in the river was polluted by putrid solid matter. What there was was put in by the paper-makers higher up and it would be hard for the defendants to be punished for the acts of others. The judges decided that no offence had been committed by the defendants under Section 2 of the Rivers Pollution Act of 1876 and that the summons should be dismissed under Section 17, which allows of impounding of water. It is allowable, therefore, to impound water, knowing it to contain putrescible matter, to keep it till a fine putrescent odour is obtained, and then to turn it into a river where it is abominably offensive for the delectation of the unfortunates lower down. The mud at the bottom of the reservoirs, if shovelled by spadefuls into the river, would no doubt be considered a solid, but according to this decision it seems that all one has to do is to stir up the filth and diffuse it through the body of the water in the reservoirs and then run it off. Is there no way of dealing with the paper-makers? The waste matter of the esparto grass would be a useful manure and it ought not to be very difficult to recover it.

The Training of the Feeble-minded.

A meeting was held in Manchester on the 26th ult. to form a society for promoting the welfare of the feeble-minded. The Dean of Manchester presided and said he should have hesitated before taking part in any new movement in Manchester amongst so many philanthropic enterprises which were carried on in the city had it not been for the necessity of the case. From an inquiry made under the auspices of the school board—of which the Dean is chairman—it appears that of 39,600 board school children 525 seemed more or less incapable of holding their own in the ordinary classes. Dr. Ashby was requested to see these children and he found that there were 214 "dull and backward," 276 "mentally feeble," 4 "deaf-mutes," and 6 not sufficiently behindhand to need special attention. The school board are about to erect buildings both in the north and south of Manchester as special schools for these children, but, as the Dean said, "the children who might leave the schools of the board needed further guidance." He moved a resolution—"That it is desirable to form a North of England society for the promotion of the welfare of the feeble-minded." This was seconded by Miss Dendy, a former member of the school board, who may be said to have been the active spirit in this movement. She said they wanted £20,000, which Manchester could easily provide. "The price of a dinner party, of a ball dress, of a Saturday's football match, and the thing was done." By what process of mental arithmetic this estimate was arrived at is not known, but a very small amount of self-denial widely distributed would soon suffice. Dr. Ashby, in supporting the resolution, emphasised the fact that other means than those provided by the school boards and the guardians of the poor were needed for dealing with feeble-minded children. The Duchess of Sutherland, as President of the National Society for Promoting the Welfare of the Feeble-minded, spoke strongly in favour of the object of the meeting. Sir Wm. Houldsworth moved the appointment of a committee with the Dean of Manchester as president of the society. He said that apart from Christian duty an important argument in favour of the work it was proposed to do "was the national argument of preventing the propagation of the present state of things to future generations."

Typhoid Fever at Stockport.

Dr. Porter, medical officer of health for Stockport, reports the prevalence of typhoid fever. He states that of 20 cases under notice 15 are, in his opinion, the result of soil and air pollution and, as he has repeatedly pointed out, "so long as such conditions continue just so long will very hot summers be, with almost absolute certainty, followed by a corresponding severe incidence of typhoid fever."

Cotton Districts Convalescent Fund.

The meetings of the governors of the above fund always bring back the remembrance of the hard days of the cotton famine, and the residue of the fund subscribed for the relief of the operatives is still the means of giving invaluable help to many poor convalescents. At the meeting on Oct. 24th the report stated that during the nine months ending Sept. 30th, 1898, 2295 patients had been sent to the convalescent hospitals at Southport, Buxton, and Cheadle, at a cost of £3592.

Infectious Diseases Hospital for Oldham.

The new infectious diseases hospital for Oldham was opened on the 26th ult. by the Mayor of the borough, Alderman Waddington. The old temporary structures have been swept away and replaced by a permanent building, the whole establishment being surrounded by a wall about half a mile in length. The wards will accommodate nearly 100 patients and in times of epidemic the accommodation can easily be increased.

Nov. 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Aberdeen Hospital for Sick Children.

ON Oct. 28th, Princess Henry of Battenberg came from Balmoral to Aberdeen to open a two days' bazaar in the Music Hall Buildings in aid of the Royal Hospital for Sick Children. The route from the Joint Passenger Station to the hall was gaily decorated and the weather was fine. Previously to the opening ceremony several presentations, including the members of the hospital medical and surgical staff, were made to Her Royal Highness, who subsequently made a number of purchases, and before leaving the city was entertained to lunch in the Palace Hotel by the directors of the hospital. On Saturday the bazaar was reopened by Lord Provost Mearns. The proceeds of the two days' sale amounted to £1440.

University of St. Andrews.

On Oct. 29th the recently appointed medical professors were installed:—Professor Stalker to the chair of Medicine, Dundee College; Professor Macewen to the chair of Surgery, Professor Muir to that of Pathology, and Professor Kynoch to that of Midwifery. Principal Donaldson administered the oath. There was a large attendance of students and others in the Library Hall, St. Andrews University, where the ceremony took place. Professor Lawson (English Literature) was installed at the same time.

Nov. 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal University of Ireland.

THE ceremony of conferring degrees took place at the Royal University of Ireland on Oct. 28th in the presence of a very large and distinguished audience. The

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Marquis of Dufferin and Ava, Chancellor of the University, delivered an address, in which he alluded to the recent institution of diplomas in agriculture by the Senate and to the work which the University had done in certain spheres of physical research. The degree of D.Sc. (*honoris causâ*) was conferred on Sir Richard Thorne Thorne, K.C.B., M.B. Lond., F.R.S., and Professor Thomas Preston.

Treatment of Epileptics in Irish Workhouses.

The Countess of Meath has recently addressed a letter to the Dublin morning papers calling attention to the fact, elicited by her from the medical officers of several unions, that pauper epileptic patients are placed in the same wards as lunatics.

Mercer's Hospital, Dublin.

At a meeting of the Commissioners of the Pembroke township, held on Oct. 30th, a letter was read from the governors of Mercer's Hospital asking for a contribution in aid of the funds of that institution and stating that the Corporation of Dublin had withdrawn a grant of £300 which they had annually made. The secretary was directed to reply that the request could not be complied with.

Royal College of Surgeons in Ireland.

The ceremony of opening the School of Surgery took place on the afternoon of Nov. 1st, when the medals and prizes awarded during last session were distributed by Mr. Robert L. Swan, the President of the College.

North of Ireland Branch of the British Medical Association: President's Address.

On Oct. 27th, in the presence of a large audience of medical men, the incoming President, Dr. Henry O'Neill, inaugurated the present session by giving an opening address on Recent Advances in Brain Surgery. After thanking the members for the honour conferred on him Dr. O'Neill began by pointing out the special importance of head injuries and discussed the question of localisation of functional and motor areas in the brain. He thought that Professor Chiene's method for ascertaining the relations of the cerebral convolutions to the scalp the best and he hoped the members would soon have an opportunity of judging the undoubted value in surgical practice of a simple plan described by Professor Symington of Belfast at the late Edinburgh meeting for localising the motor areas of the brain. Dr. O'Neill dwelt very fully on the aseptic management and the technique of the surgical treatment of cerebral wounds in the operation of trephining and he gave an account of a series of cases to show the great success of cerebral surgery, the patients themselves being exhibited. Finally, he discussed the indications for operation in surgical injuries of the head. The address was illustrated by limelight views, which made it much more clear and striking, and Messrs. Down Brothers lent a series of recent types of instruments used in Brain Surgery. On the conclusion of the address a very hearty vote of thanks to Dr. O'Neill, moved by Professor Byers and seconded by Lieutenant-Colonel Moorhead, I.M.S., was passed. Communications on medical subjects were then brought forward by Mr. M'Harry, Dr. Dempsey, and Mr. Robert Campbell.

The Condition of Workers in Flax-scutching Mills.

A case of great importance to flax-scutching mill-owners was heard at Garvagh Petty Sessions (county Derry) on Oct. 27th, when the proprietor of a flax-scutching mill was summoned by the Commissioners, under the Factories and Workshops Act, to show cause why the order for the erection of a ventilating fan was not complied with. Her Majesty's Inspector under the Factories and Workshops Act brought the action in order to ameliorate the conditions of work in flax-scutching mills, the idea being that dust and other impurities were generated in, and inhaled by workmen in, this mill and that this could be prevented by the use of a fan or other mechanical means, which had not been provided although notice had been given, and that consequently the factory was not kept within the meaning of the Act. Evidence was given by the inspector, flax scutchers, Dr. Morrison (medical officer of the district), Dr. Steel (medical officer of health), and Dr. T. M. Legge (medical inspector of factories) to show that there was dust in the mill which was so fine that it would float in the air and would, after being inhaled, cause injury to the lungs. For the defence evidence was called to show that those examined had all had experience of working in scutch mills and that they had not suffered in health thereby. Mr. Cochrane testified that scutching would not affect a healthy person but would a person already diseased. The bench were about to impose a nominal penalty, but at the request of the solicitor of the mill-owner it was decided to impose sufficient penalty to allow the defendant to appeal, and this was accordingly done.

Nov. 1st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Peritoneal Immunity to Certain Operative Infections.

MM. AUCHÉ and CHEVANNAY of Bordeaux were able to communicate to the Society of Biology at its meeting on Oct. 25th some interesting results obtained by experiments in peritoneal infection. It is well known that in certain animals the peritoneum is able to resist the introduction of virulent cultures and MM. Auché and Chevannay have now been able to prove that the human peritoneum possesses the same power. They brought forward 5 cases in support of their argument: 2 were cases of total abdominal hysterectomy for fibroma; 1 an ovariotomy for cystic epithelioma of the ovary; 1 a laparotomy for tuberculous peritonitis, and 1 for contusion of the abdomen. All were operated on under the strictest antiseptic precautions and all made a good recovery. In 3 of the cases there was no peritoneal effusion; in the other 2—i.e., the contusion and the tuberculous peritonitis—there was effusion. From the first 3 towards the end of the operation a few drops of blood which had escaped into the peritoneal cavity were collected in Pasteur pipettes, while from the other 2 a little of the effusion was taken in the same way at the beginning of the operation. Lastly, as drainage tubes were employed in some of the cases fluid from these drains was collected at different periods. Cultivations were made upon bouillon and various solid media, with the result of convincing the experimenters that the peritoneum is always infected by an operation, as a rule by the staphylococcus albus, even if previous to the operation the peritoneal contents have been shown to be sterile. Fluid from the drainage-tubes taken three and five days after the operation showed both staphylococcus albus and aureus. MM. Auché and Chevannay conclude from these results that despite all the precautions taken by surgeons the peritoneum is more often infected during an operation than is commonly supposed, but that, as a rule, such infection does no harm. The influence of the personal resistance of the patient thus appears to be very considerable as was indeed always affirmed before the advent of micro-biology.

Splenectomy for Malarial Infection.

A paper on 22 cases of splenectomy for malarial infection was communicated to the Academy of Medicine on Oct. 25th by M. Jonnesco of Bucharest. The spleens removed weighed from 850 to 5750 grammes and in every case but one were firmly fixed by adhesions, while most of the patients were profoundly anæmic and cachectic. One patient only died from the operation and that death was from secondary hæmorrhage, while seven others finally succumbed owing to their generally unhealthy condition or to some complication independent of their malaria. In all there was rapid improvement in the proportion of red corpuscles and a diminution in the toxicity of the urine. These results M. Jonnesco considers enable him to confirm, as he had always been inclined to do, the theory of Laveran that so far from the spleen being a protective organ against malaria it is really a sort of reservoir for the hæmatozoa where they accumulate in the intervals of the paroxysms. To do away with the spleen is, therefore, to do away with the storehouse of infection.

Meeting of the French Medical Associations.

The annual meeting of the French medical associations (*syndicats*) was held on Oct. 25th at the Hôtel des Sociétés Savantes. Delegates attended from sixty associations. A number of subjects came up for discussion, of which the following were the most important. Protests were made against the new legal regulation concerning accidents to workmen whereby a wounded workman is considered as a pauper and the medical man is obliged to attend him at the tariff laid down by the Assistance Public for those patients who are charged nothing. Objections were put forward to the system of gratuitous medical assistance, and it was considered that distant visits in the country should be paid

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for by mileage and that the choice of the medical man should be left entirely to the patient. A resolution was passed that promotion of medical men in the reserve and the militia and their right to reach the highest position should not be limited as at present to those on the staff of a hospital or the professors in a Faculty. A dinner was held in the evening with Professor Brouardel in the chair. In the course of his speech he remarked that he would do everything in his power to get the new regulation as to the 30-franc tax imposed by the Library of the Paris Faculty of Medicine rescinded.

A Patriotic Fête at the Charité Hospital.

The students working under Dr. Gouraud, who is physician at the Charité Hospital, and whose son Captain Henri Gouraud has just covered himself with glory in the Soudan by the capture of the well-known chief Samory, got up a *fête* in honour of the event. Dr. Gouraud's wards were ornamented with flags and flowers and many stirring speeches were made.

The Disinterestedness of Dr. Calmette.

Dr. Calmette, Pasteur's well-known pupil, who was recently appointed as chief organiser of the Pasteur Institute at Lille and who has won much fame by his researches into the question of immunity for serpent venom, has made another discovery of a more purely commercial nature. By this discovery he was enabled to manufacture alcohol very much purer and stronger than is usual at a distillery and at the same time much more cheaply. He sold his secret to a large factory near Lille and very soon realised the handsome sum of 250,000 francs. This sum he has handed over absolutely to the Pasteur Institute, over which he presides, although he is not personally a wealthy man. This act of munificence, which has been noticed solely by the medical press and ignored by the political journals, is considered as a protest against the recent action of Dr. Behring.

Obituary.

Dr. Pilliet, one of the best known histologists of the day, has just died after a long illness. He was curator of the Pathological Museum at the Faculty of Medicine (the Musée Dupuytren) and head of the laboratory of clinical surgery at the Charité Hospital.—Dr. Chipault, whose son is so well known for his researches on the nervous system and its bony coverings, died suddenly at Orleans while he was performing an operation.—M. Tocepart, a young house physician at the Tenon Hospital, died recently from typhoid fever contracted in the discharge of his duties. His death is all the more sad as his mother only the other day lost both her husband and her other son.

Nov. 1st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Professor Virchow.

THE winter session of the Berlin Medical Society began on Wednesday, Oct. 19th. The principal event of the first meeting was the enthusiastic reception given to the chairman, Professor Virchow, who had just arrived from England. The presidential chair was decorated with flowers, and when Professor Virchow entered the members rose to listen to an address of welcome read by the vice-president, Professor von Bergmann, who said that Professor Virchow had gone to England as a peaceful conqueror, that he had there worthily upheld the renown of German science, and that the society felt very proud of the high esteem in which their president was held by the most distinguished English *savants*. In his reply Professor Virchow said that he had been very much impressed by the cordial manner in which he was received by the members of the English medical profession. He had been anxious to satisfy such a critical audience as that connected with Charing Cross Hospital Medical School, from which men like Huxley and Livingstone had come. Referring to the present condition of medical science in Great Britain he said he was astonished at the development of experimental methods. When he was at the International Medical Congress held in London in 1880 medical science was severely threatened by the anti-vivisectionists, whom he, in company with his old friend, Sir James Paget, had to oppose. Now the anti-vivisectionists are obviously defeated and the victory of experimental medicine assured. Professor Virchow next touched on the recent opening of the new laboratories at Liverpool at which he was present, and pointing to the portraits of Lord Lister and Sir James Paget, which among other portraits of leading medical men adorn the assembly hall of Langenbeck House, he said that the services rendered to medical science by these two men were thoroughly well known to the meeting. On the conclusion of his speech, which was received with great applause, Professor Virchow took the chair, which had been occupied during the earlier part of the proceedings by Professor von Bergmann, and then the business of the society began. The meeting again stood up in token of respect to the memory of the members deceased during the recess—one of them being Professor Nasse, who had los his life by an accident on the Alps. The first paper, on the Etiology of Syphilis, was then read by a visitor, Dr. Nissen of Wiesbaden. The bacillus alleged by him to be the cause of the disease was not acknowledged either by pathologists such as Professor Wolff or by dermatologists such as Professor Lassar.

The Red Cross Exhibition.

An interesting exhibition lately took place in Berlin under the auspices of the German Red Cross Society. The principal aim of this society, as is generally known, is to support the official authorities in the care of sick and wounded soldiers in war-time, and in time of peace to provide aid for injured persons, the victims of epidemics, &c. The exhibition was divided, into eight sections: (1) first aid; (2) ambulances; (3) housing of sick and wounded soldiers; (4) domestic appliances for hospitals; (5) surgical appliances for hospitals; (6) nursing appliances; (7) clothing of ambulance men; and (8) literature. The Army Medical Department was very well represented in the exhibition. Arrangements had been made by this department to show in a very practical way to the public what is done with the soldier from the moment of his being wounded till his return home. This special exhibition took place on an extensive open space in connexion with the exhibition palace. The grounds were divided into different sections, each to represent a different phase in the treatment of the wounded soldier. The first section, marked "Truppen-Verbandplatz" (station for surgical dressings), showed the place where first aid is given by the surgeons accompanying the troops under fire; its equipment is, of course, very simple, consisting only of some litters, dressing boxes, &c. The second stage was represented by the "Haupt-Verbandplatz" (operation station), situated beyond the reach of the enemy's bullets. There the most urgent operations are to be performed and a much greater equipment is thus required. Ambulance waggons, vehicles with dressing material, surgical instruments, a pharmacy waggon, &c., were exhibited there. The third section showed the "Feldlazareth" (field hospital), of which every army corps has 12 of 200 beds each. A long column of carriages of every description exhibited the difficulty of carrying the equipment of such a hospital to the battlefield; there were carriages with tents, clothes for the wounded, bed-linen, surgical applicances, preserved provisions, &c.; a number of tents were also exhibited ready for use. From the field hospital the patients return home by the hospital train, expressly fitted for the transport of sick and wounded. A train consisting of hospital cars with beds, cooking cars, officers' car, pharmacy car, &c., was also on the grounds. During the journey the men get refreshments at the "Erfrischungs-Stationen" (refreshment places) provided and equipped by the Red Cross societies and at home they are at last received into the society's "Reserve-Lazarethe" (reserve hospitals), where they may stay till the cases terminate in recovery or death. The Army Medical Department's exhibition was made especially interesting by the fact that all the ambulance cars, hospital tents, and railway carriages were shown ready for use and fully equipped from the most complicated surgical instruments to the torches and electric apparatus which the ambulance men use in searching for the wounded after battle. The War Office has done well in proving to the public that nothing will be omitted to relieve the unfortunate victims of a possible war. The other sections of the Red Cross Exhibition showed hospital ambulances as used in the larger towns of Germany, and arrangements for first-aid in factories, in street accidents, &c. In connexion with the exhibition a congress of the Volunteer Ambulance Columns of Germany took place. The Berlin and Munich columns held a "manœuvre," its idea being that after a

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battle near Berlin a great number of wounded still lie on the field and are to have their wounds dressed and to be removed by ambulances, trains, &c., to the hospitals. The surgeon-general, head of the Army Medical Department, Dr. von Coler, and many army and civilian surgeons were present at the "manœuvre," which proved a great success.

The Plague in Vienna.

The news of the outbreak of plague in Vienna has caused a great sensation here and there was some uneasiness felt lest the epidemic might spread to Germany by the manifold relations and the great traffic between the two countries. Now that the epidemic seems to be localised public opinion has become reassured; some journalists, however, seem to be afraid that a similar incident may occur also in this city. An interviewer calling at the Institution for Infectious Diseases was informed that cultures of plague bacilli in a virulent state were not kept there and that Professor Koch had strictly forbidden experiments with these dangerous bacilli. The *Official Gazette* also states that there are no virulent cultures of plague bacilli either in the above institution or in any other of the State laboratories.

Infra-clavicular Luxation of the Humerus.

In the *Berliner Klinische Wochenschrift* the late Professor Nasse described an interesting case of infra-clavicular luxation of the humerus observed by him in the Royal Surgical Clinic of Berlin. The patient was a man, fifty-six years of age, who had fallen from a horse and was admitted to the clinic ten days afterwards. There was great ecchymosis of the right shoulder and its surroundings, extending as far as the lower ribs and the elbow. Beyond the clavicle, notwithstanding the great swelling, a protuberance could be felt which proved to be the head of the humerus. The mobility of the joint was, of course, almost lost. The arm could not be brought to the side, elevation was impossible, and rotation and abduction could only be accomplished in a small degree. As attempts to perform reduction were unsuccessful owing to the humerus always gliding off the glenoid cavity, Professor Nasse decided on operative replacement of the humerus. Owing to the severe laceration of the muscles, which made efficacious aseptic treatment rather difficult, he resolved to wait for some days, but unfortunately the patient was attacked with delirium tremens and so the operation could not be performed before the lapse of three weeks. He made an incision beginning in the axilla and continued parallel to the inferior edge of the pectoral muscle, but when he attempted reposition in that way he met with an unexpected difficulty, for the hæmorrhagic infiltration of the muscles had in the course of time become transformed into hard, fibrous matter in which the head of the humerus was, as it were, immured, and it was impossible to draw it from the clavicle. The muscles were all torn off from their attachments and the glenoid cavity was covered with fibrous tissue. As there was therefore no prospect of a useful joint resection of the humerus was performed, with the result that the patient is now able to abduct the arm for about 45° and to raise it above the horizontal position. This case proves that operation should not be postponed but should be performed at once when reduction has proved unsuccessful. Infra-clavicular luxations are rather rare and only four cases have been examined anatomically. Reduction is always difficult and was especially so in the above case, where the capsule and the muscles had been completely pulled off. The difficulty of reduction was due to the circumstance that the capsule was either situated loose in the glenoid cavity or was kept strained by the muscles of rotation, the consequence being that the head of the humerus always slipped off the glenoid cavity.

Oct. 30th.

ERRATUM.—In the letter of our Berlin correspondent published on page 1092 of our issue of Oct. 22nd, the word "not" was accidentally omitted in line 10 of the first paragraph. The passage ought to read "should *not* be sent to Carlsbad first." The context shows with sufficient clearness that Professor Kehr disapproves of a routine system of sending every patient to Carlsbad and deferring operation till a case is desperate.

NEW SANATORIUM AT BRIGHTON.—The Mayor of Brighton, Sir John Blaker, opened the first portion of a new borough sanatorium on Thursday, Oct. 27th. The new buildings will cost about £19,775.

ROME.

(FROM OUR OWN CORRESPONDENT.)

"Down with Duelling."

"*Abbasso il duello*" rang from one end of Italy to the other when it became known that one of the most gifted and patriotic, if not the most wise, of Italians lost his life in a duel on March 6th last in the Roman Campagna. Felice Cavallotti, the "combatant Shelley" of his country's politics, had survived over thirty such encounters; Signor Macola, the antagonist who killed him, was a novice, not to say bungler, with the sword; and the unexpectedness of the result had, I suspect, not a little to do with the indignant outcry which followed it. Be that as it may, the trial of Signor Macola, which has just ended in his condemnation to thirteen months' imprisonment, seems to give general satisfaction, and will, it is hoped, be the prelude to a like intervention of the law on every repetition of the same offence. For duelling is by the criminal code of Italy a *delitto*, or crime, and its continuance is not only an outrage in itself but a direct encouragement to defy the law in every relation of life. With what consistency can the tribunals enforce their decrees when *avvocati* and members of Parliament, the makers and the upholders of law, are themselves the first to infringe it as often as a so-called "affair of honour" crops up? Poor Cavallotti will have done Italy a higher service than any he wrought her in his generously inspired but ecstatic and wayward career if by his tragic death he puts an end to duelling and makes the mediæval tradition which has disgraced the nineteenth century impossible in the twentieth.

Two Brigades of Artillery Poisoned.

At Brescia some thirty soldiers of the 16th Artillery having had their usual supper were immediately thereafter seized with violent abdominal pains accompanied by vomiting. Verdigris in the cooking utensils was at once suspected, but no trace of it was to be found and the food prepared and served in the same apparatus was next evening followed by the same symptoms. The food itself was next analysed, but no deleterious matter was detected in it. Poisoning, however, of a serious kind there has undoubtedly been, and, pending still more searching inquiry, the medical officers of the regiment suggest that the "pasta" or farinaceous element in the rations has been partially acidified, probably by the urine of rats in the store-rooms—a cause not unknown to barrack experience. Such "accidents" as the above are all too frequent in Italy. Mushroom poisoning is of more than weekly occurrence from the consumption of doubtful or deleterious fungi among the lowest classes, too poor to be fastidious or even careful. Ptomaine poisoning due to the ingestion of unsound fish destroyed nearly a whole family in Florence not so long ago, and infective pneumonia communicated from parrots became well-nigh epidemic in Genoa till the Uffizio di Sanità stamped it out by a veto on the harbouring of such household pets. Not till men and women in Italy are taught to be "the intelligent custodians of their own health" will such "accidents" become as rare as in the British Isles.

The English-speaking Practitioner in Italy.

The Congresso degli Ordini dei Medici, convened annually for the consideration and discussion of professional interests, deserves nothing but praise from the impartial outsider until it meddles with the practitioners of non-Italian nationality, whose *clientèle* is restricted to their compatriots resident in the kingdom. On Monday, Oct. 24th, the congress (the second of the series) met in the Aula Magna of the University and after preliminary business, including a report on the proceedings of its predecessor, it was addressed by Dr. Santini (a member of Parliament) on the subject he has made peculiarly his own—to wit, the right of medical men not furnished with an Italian diploma to practise in Italy. It had been thought that this *vexata quæstio* had been fairly and finally laid to rest last spring, when, intervening on behalf of Great Britain, Lord Salisbury induced the Di Rudinì Administration to let the duly qualified English-speaking practitioner pursue his calling as heretofore among his compatriots, that privilege being withheld from those only whose want of a diploma would have excluded them from the profession in their own country. This quite equitable arrangement, however, is far from satisfying Dr. Santini and the party—narrow, I believe, in numbers as in mind—for whom he speaks. At the

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meeting above referred to he reopened the whole question, censured the Di Rudinì Government for having failed to give due consideration to a subject so important, and proposed the nomination of a commission empowered to wait upon the Ministers of the Interior, of Foreign Affairs, and of Public Instruction in the Pelloux Administration and to lay before their Excellencies the propriety of taking steps "affinchè ai medici Italiani sia concesso il trattamento che l'Italia faccia agli stranieri, e che sia radicalmente mutato o soppresso l'articolo 23 della legge sanitaria" (that Italian medical men be vouchsafed the treatment Italy metes out to foreigners and that Article 23 of the public health law be radically changed or suppressed). This proposal was carried in a "congress" of fewer than sixty members and a commission *ad hoc* was forthwith nominated, consisting of the Senators Durante (absent from "sciagura domestica" or family affliction) and Morisandi and the members of Parliament Dr. Santini and Dr. Angiolini (the latter representing the medical "ordine" in Florence). We are face to face, then, with a renewal of an agitation which was supposed to have happily died down, and we may expect to find the Pelloux Administration importuned with the pertinacity and energy brought to bear on its predecessor for the purpose of committing it to a policy which must end in excluding the English-speaking physician or surgeon unprovided with an Italian qualification from practising among his compatriots in the kingdom. This, and nothing less than this, is the end and aim of Dr. Santini's adroitly-drawn proposal, for ignoring the fact that Italians in the British Isles are numbered by units and the English-speaking world, migratory or resident, in Italy by tens of thousands, he requires a law to be exacted from the General Medical Council of Great Britain which would treat the Italian practitioner in England and the English practitioner in Italy as proportionally on the same footing, this preposterous demand being merely a cover for the real object of his agitation—to abrogate, that is to say, Article 23 of the Italian "legge sanitaria" which allows English-speaking medical men to cultivate a *clientèle* among their compatriots residing in Italy, while refraining from practice among the Italian population. It would be idle to reiterate the arguments already familiar to readers of THE LANCET by which the Di Rudinì Administration felt constrained to accede to the equitable requirements of Lord Salisbury and recognise the legal status of the English-speaking practitioner in Italy. I venture to predict that the renewed agitation will fare as badly as its defunct predecessor; and this for many reasons—one of which I may adduce. The sole supreme interest in the kingdom of Italy—an interest likely to be perennial—is the financial one. Year by year her ablest and astutest financiers are finding it more and more difficult to make ends meet. One-third of her revenue is derived from the annual sojourn within her borders of the English-speaking world alone, and that sojourn and the money it pours into her shrivelled circulation would be reduced by at least one-half if the medical attendance to which the said world is accustomed, in which alone it has confidence, and on which it counts, were denied it. She must, in other words, do everything to attract—nothing to repel—the wave of English-speaking travel which is annually to her what the yearly rise of the Nile is to Egypt; and if Dr. Santini and his following ever get so far as to "take the sense" of the Italian people and the Italian Parliament on their proposal they may expect to encounter as severe a rebuff as ever came from an indignant householder fighting *pro domo suâ*.

Oct. 31st.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Citadel Hospital.

MANY medical visitors to Cairo have seen and admired the English military hospital inside the lofty Citadel, with its walls and ceilings decorated in the Turkish palatial style, and the unique view of the neighbouring country obtained from its windows and balconies. Tradition says that the great Saladin chose this rock as the place to build his citadel, because he found that meat remained fresh there for a longer time than in other precincts of Cairo. But fresh air alone is, unfortunately, not enough to cure disease, and a week ago, when I was kindly allowed to visit the wards, I found them fuller than I had ever seen them before. In spite of the spaciousness of the building many convalescents had to find accommodation in tents in the garden. Altogether there were 458 sick and wounded British officers and men. This number included very little venereal disease—for that at least cannot be caught in the desert, but there were 120 cases of enteric fever and a large number of sufferers from dysentery. There were 50 wounded men all neatly bandaged with cyanide gauze and sal-alembroth wool. Since then 280 sick and wounded have been sent home to Netley in the transport *Jallunga*, and to-day the total number in hospital is 320. The temporary overcrowding has resulted from the rapid evacuation after the fight of all sick from the Nile stations to Cairo. This was considered advisable in order to secure for the sufferers a cooler climate and various luxuries as soon as possible. It was always foreseen that there would be a considerable number of sick after the campaign, and all difficulty would have been prevented if the home authorities had consented to supply a hospital ship. This ship, properly fitted up for the reception of sick and wounded, would have waited patiently in Alexandria harbour at the beginning of September. The sick, instead of being landed in Cairo, jolted 3 miles up the hill, and then allowed to suffer the damp heat of the worst month in the year in Cairo, would have continued their journey peacefully to the sea, where they would have been refreshed by cool breezes and the thought that they were really homeward bound. The ship when it had received its complement of sick would have proceeded immediately to England and would have saved much discomfort and perhaps some lives. But the penurious authorities in London decreed otherwise and poor Tommy Atkins has been going every day lately to the English cemetery in fours, fives, and sixes. There are now 80 cases of enteric fever in hospital and about the same number of dysentery patients. Until lately the percentage of deaths among the enteric fever cases was 11, but now it is a little higher. The dysentery cases have not been very severe and have yielded usually to the routine ipecacuanha treatment. The wounded have almost all done well, especially some sabre cuts. One man who was shot through the lung developed empyema. Perhaps the bullet took in with it some septic germs from the man's clothing. The hospital operating theatre has been greatly improved this summer and is now well furnished with modern aseptic instruments and materials. Adjoining it is a Roentgen ray department worked by the Royal Army Medical Corps, who tell me that it has been of great use to them. The hospital still suffers from the plague of bugs, which probably live in the wooden ceiling and lath-and-plaster walls. Colonel Barrow, the present senior medical officer of the hospital, has been waging war against them during the whole summer.

Enteric Fever and Dysentery.

All the cases both of enteric fever and dysentery are the direct result of the campaign. Some men sickened at the front, many on their way down the Nile, and dozens of others after their arrival in Cairo. The same course of events succeeded the Dongola and other sections of the Nile campaign. This time the Atbara station seems to have been specially productive of both diseases. Among other officers now in hospital there are two surgeons, one with dysentery and the other with enteric fever. How do the men get these diseases? Surely the troops infect themselves. One man develops enteric fever, pollutes the water long before his disease is recognised, and other cases follow. The camping ground left by one regiment is occupied by another which inherits germs and their vested interests. It is difficult to see how this will ever be prevented in time of war unless general officers will consent to a large supply of proper filters accompanying the army. This time the Berkefeld filters in the gun case invented by the Royal Engineers did very well, but there were not nearly enough of them. Men dying from thirst cannot afford to wait while water is boiled and cooled or even filtered for them. Another weak point of the filters is that means have not yet been provided for sterilising the candles of the filters. Instructions were issued to scrub the candles once a fortnight and then pass through them a solution of caustic potash. But if a filter is working for several hours in muddy Nile water it will require cleansing every day, and it cannot be trusted unless it has recently been sterilised as well.

Movements of the Royal Army Medical Corps.

Surgeon-General Taylor is proceeding to India, after a banquet which is to be given to him by the medical officers

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to-morrow. Colonel Macnamara on promotion has left to take up the post of Principal Medical Officer at Gibraltar. Crete has absorbed 10 medical officers and a stationary hospital for 100 beds, besides large consignments of supernumerary stores. Twelve officers have been sent home to England and so there is a general dispersal of the large medical force, which all ranks praise in the highest terms for the excellence of the work done during great difficulties in the campaign. 21 officers were ordered to India, but no less than 11 of them were prevented by illness and had to be "invalided" instead. This week 8 officers are proceeding to India, and as some of them were warned that after the campaign they would have to continue their foreign service in India they made arrangements for doing so. But there are a few others now under orders for India who received no such intimation and on them the order falls particularly hard. A man is suddenly ordered on foreign service and at the end of hard work in an unhealthy climate he is told that instead of returning to his home and family he is to proceed to India for several years. This is quite unfair and has given rise to some not unnatural discontent here. The order has been made unnecessarily irksome by refusing leave to some officers who have been kept hanging about here with health impaired by their hard work and with nothing to do from the end of September to Nov. 2nd when they sail for India. These six weeks might have been more agreeably and profitably spent if leave to visit England had not been refused.

Cairo, Oct. 24th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Common House-fly the Carrier of Typhoid Germs in Camp.

THERE has been much speculation as to the great prevalence of typhoid fever in camps during the late war. Blame has been cast upon the water-supply of the camps, on the food, and on the surgeons. But it has been discovered at last that the common, busy house-fly has caused the typhoid fever in camps and is responsible for the deaths of hundreds of brave soldiers. This is the scientific conclusion of a commission of scientific men, appointed to investigate the condition of the camps, the cause of typhoid fever in them, and authorised to recommend measures to stop its spread and for its prevention in the future. The commission is a unit in declaring that the house-fly is responsible for the prevalence of typhoid fever in camps and brings forth apparently indisputable facts to support its conclusions. The report is of the greatest importance, not only to the War Department and the army, but to science itself, and will undoubtedly be the subject of much discussion. It will have great influence in determining the course of the War Department in the future in dealing with typhoid fever in camps and the members of the commission are willing to base their reputations as physicians and scientists on the accuracy of their conclusions. The commission visited the camps at Jacksonville, Huntsville, Fernandina, and Chickamauga. Everywhere it found typhoid fever and found it spreading. It found that in the majority of cases the typhoid fever was brought originally to the camp by regiments coming from the State camps. At Chickamauga the commission found the situation almost ideal; the ground was firm, the drainage was good, and the weather, though warm, was superb. Yet typhoid fever was prevalent there. The first question was, how did the fever get there? After investigation the commission concluded that it had undoubtedly been brought there from the State camps. The commission then sought to learn why the disease had spread and how it had spread. The water-supply of the camp was obtained from Chickamauga Creek and the water was said to be responsible for the spread of the disease. But one company did not get its water-supply from Chickamauga Creek, never did get its supply from that source, and yet many of its members were ill with the fever. The commission found that flies, as was naturally the case, were present in the camp by millions. It was the same way in every camp, their numbers being equalled only by those of the flies which infested Egypt during Pharaoh's plagues. The surgeons looked into the matter further and found that the flies fed from the fæcal matter from the hospitals and then at meal time shared the hard tack and bacon of the soldiers. In the first place the fly picked up on his six hairy little feet infinitesmal particles containing the germs of typhoid fever and in passing over the hard tack and bacon he deposited them there. One fly could do little harm, but millions of them conveyed a sufficient quantity of germs to inoculate large numbers of soldiers, which inoculation was slow but sure. The accuracy of this conclusion is, to the minds of the commission, amply demonstrated in the case of the company above mentioned, which drank no water from Chickamauga Creek. This company escaped the attack of typhoid fever until after a heavy and prolonged rainfall. Then a number of the members of this company were taken ill with typhoid fever, and the conclusion was immediately reached that its water-supply had become contaminated and that it was due to this fact that the fever made its appearance. But the medical commission holds that this was not the case, but that during rains and threatening weather flies seek for cover and become more persistent in their attentions to human beings than when they are able to skirmish for food in the open air. As soon as the rains began at Chickamauga the flies took refuge in the tents of this company and before they had been there long a number of the men were down with typhoid fever. It was found that in all the camps typhoid fever did not appear in isolated cases but that whole messes and in some cases whole tents of soldiers fell ill with the disease at the same time, showing conclusively that the fault lay with the food. At Jacksonville it was determined that fever was due to the fact that the sinks were connected with the sewers and frequently flushed. At Fernandina, where the system of tub-sinks was employed, it was found that this method worked very badly instead of very well, as was generally supposed. These tubs were collected every morning and hauled to a sewer and dumped; it was not possible to fill these tubs with dirt because they were dumped in the sewer, nor was any disinfectant used. These tubs were hauled through one street of a Wisconsin regiment and the fly was here busily at work. From the street he flew to the mess tables of the men in the tents, and as a result 50 per cent. of the men on the north side of the street were taken ill with typhoid fever, while the percentage of men ill from the same disease on the other side of the street was little lower. According to the commission the activity of the fly was not confined to the mess tent but he invaded the sleeping quarters of the men and exuded tiny bits of fæcal matter on their clothes and bedding, on their tent-flaps, and, in fact, everywhere, so that the very air itself was filled with fever germs. To prevent the ravages of the disease in the future the commission recommends that a new sink be used in the camps. It is now possible to have water connexions in every camp even where connexions cannot be made with sewers. It urged that metallic-lined sinks be constructed, 16 ft. in length, 2 ft. in width, and 18 in. deep, which troughs are to be slightly inclined and a connexion made with a water-pipe at one end. The other end is to project from the house and is to have a waste-pipe 3 in. in diameter and an upright pipe of the same diameter about 16 in. high. Every day this trough is to be filled with water in which a sufficient quantity of lime is to be placed. The waste matter will be thus disinfected as soon as it is deposited and all danger avoided. Every morning the sink will be cleansed by flushing it through the waste-pipe into a covered sink or into barrels properly covered and carried to some distant place for dumping. The commission also recommends that sinks shall be constructed in the future after the above pattern and placed on waggons, the whole apparatus being moved each day and the contents of the trough deposited in a safe place; such waggons could accompany the army on its march. It strongly urges that in every case great care shall be taken that such matter be disinfected as soon as possible by the use of lime or other disinfectants. The hope is that by this means the fly will be prevented from reaching the fæcal matter, or if he does it will have been disinfected and rendered harmless.

Yellow Fever in the United States.

Yellow fever which began to prevail in one of the ports on the Gulf of Mexico early in July, has continued to spread in spite of the most strenuous efforts on the part of the health authorities to control it. It is now prevalent in no less than twenty-six different towns in the States of Louisiana and Mississippi. Upwards of 800 cases have been reported with 50 deaths. The sanitary regulations to prevent its spread consist of an inspection of all railroad trains and disinfection of all cars, stations, and accessory buildings in the infected

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district; but it is now evident that only severe frost will control its further spread.

Mortality among the Spanish Soldiers returning to Spain.

The reports from the transports which returned the Spanish soldiers to their native country show that the sickness and death-rate among these men had been very great. On one transport which carried 1000 Spanish soldiers 123 died on the voyage. This high sickness and mortality rate seems to have been due to the feeble condition of the Spanish soldiers resulting from the effects of the climate and improper and inadequate food.

Oct. 18th.

Obituary.

THOMAS HENRY MOXON, M.R.C.S. ENG., L.S.A.

MR. THOMAS HENRY MOXON was at the time of his sudden death on Sunday, Oct. 9th, the senior practitioner in Great Yarmouth. He was born at Hull in 1831, and in that town he commenced his medical studies at the now extinct Hull and Yorkshire School of Medicine. He was apprenticed to his brother, Mr. James Burdett Moxon, who then practised as a surgeon at Brigg in Lincolnshire, and who survives him. In 1853 Mr. Moxon took the diplomas of M.R.C.S. Eng. and L.S.A. He first commenced practice at Kirton-in-Lindsey, Lincolnshire, but after a few years he disposed of his practice there and went to Great Yarmouth in 1865–66, where he entered into partnership with his brother-in-law, the late Mr. Charles Palmer, and on the death of that gentleman in 1884 he succeeded to the entire practice. Throughout the whole of his professional life in Great Yarmouth he was looked upon by his brother practitioners as the soul of honour. He devoted himself with an untiring zeal and energy to his profession and was the possessor of a genial, kindly, sympathetic manner which made all classes of his patients look upon him as a true friend as well as medical adviser. The honour and dignity of the profession were ever matters of the highest concern to him both in his relations to the public and to his medical brethren.

For several years he served as a member of the Great Yarmouth School Board, working in the interests of the Church, of which he was a staunch and true member. Belonging to the older school of High Churchmen, he was tolerant of the views of others in Church matters to an unusual extent in one whose own views were so decided. He always took an active part in Church affairs and for many years was churchwarden to St. Andrew's Church. He was connected with the Volunteers for a long period, being allowed to retire last year with the rank of Surgeon-Lieutenant-Colonel to the 1st Norfolk Artillery Volunteers, E.D.R.A.; he obtained in 1897 the long service medal for thirty years' service and only this summer was presented by his brother officers in the brigade with a handsome testimonial. He was a member of the British Medical Association. In 1896 the medical men of Great Yarmouth united to form a district branch of the Incorporated Medical Practitioners' Association and Mr. Moxon was unanimously elected president. He filled the office for two years, but voluntarily retired at the commencement of the third year, the members of the branch presenting him with a piece of plate at their annual dinner in May last to mark their appreciation of his services as chairman as well as their personal esteem. Mr. Moxon was also a member and regular attendant at the meetings of the Great Yarmouth Clinical Society.

He was buried in the Great Yarmouth Cemetery on Oct. 21st. The funeral was attended by nearly every medical man in the town and a detachment of officers and men of the 1st Norfolk Royal Artillery Volunteers marched behind the hearse. A large number of the shops in the town were shaded out of respect to his memory and the church and graveyard were thronged by his fellow townspeople of all classes. He leaves behind him two sons and six daughters who deeply mourn the loss of as good a man and as good a father as ever lived.

CHARLES VAUGHAN SYMMONDS BENNETT, M.R.C.S. ENG., L.S.A., J.P.

THE death took place on Oct. 22nd of Mr. Charles Vaughan Symmonds Bennett, at his residence, Kensington House, Haverfordwest. Mr. Bennett received his medical education at Guy's Hospital, London, and took the qualification of M.R.C.S. Eng. and L.S.A. Lond. in 1858. The deceased, who was sixty-two years of age at the time of his death, had been in practice for many years in Haverfordwest and was formerly in partnership with the late Dr. Brown of that town. He was also surgeon to the Haverfordwest Infirmary and was a Justice of the Peace for Pembrokeshire and Haverfordwest. Mr. Bennett was highly respected and much regret is felt at his death.

MABEL ELIZABETH WEBB, M.B. LOND.

THE following notice has been sent to us by a member of the medical staff of the Royal Free Hospital:—"A few days since we were all saddened by the news of the sudden death of Mabel Webb at her mother's house in Hampstead. On the day preceding her death she was, as usual, at her work in the hospital and in twenty-four hours she was at rest from her earthly labours. For as long as fourteen years she had suffered from gastric pain, for which she was treated by several of the leading London physicians. Last Christmas, after a long period of latency, symptoms of fresh activity appeared and her medical attendant insisted on her relinquishing her work for a period of several months, which were spent in holiday on the Nile. From Egypt she returned in the early summer, seemingly in the best of health and free from all symptoms of the local trouble, and in thoughtfulness for the work of the hospital resumed her duties. On the evening of Oct. 27th she was seized with abdominal pain, but having experienced similar attacks previously she felt no alarm and thought it unnecessary to send for her regular medical attendant, who knew intimately the whole course of her illness. Next day, when surgical assistance was hastily summoned, all hope of life was gone and death from perforation of a chronic ulcer of the stomach followed in the course of an hour. By her untimely death at the early age of thirty-one years the Royal Free Hospital has lost a most valued servant. Graduating at London University in 1896 Mabel Webb was appointed Curator of the Museum at the Royal Free Hospital in the spring of 1897. Those of us who worked beside her well knew how faithfully she fulfilled her trust, out of sight of professional advancement, without a thought of professional reward. To many of us her life was at once a pattern and a precept, and those of us who had the privilege of her closer friendship feel that we have lost a sister. Bringing into her everyday work all the refinement of her personality she could not fail to exalt her office therewith. Such of us as were dependent on her assistance will sadly miss her ever ready service and unfailing courtesy; nothing was too trivial for her earnest attention. On the students of the hospital her loss will fall with special heaviness; it will indeed be hard to find another hand so ready to serve, so eager to help. By her death we are all the poorer."

Medical News.

UNIVERSITY OF EDINBURGH.—At the special graduation ceremonial held on Oct. 29th the following degrees were conferred:—

Degrees of Bachelor of Medicine and Master in Surgery.—Frederick Thomas Hield Adamson, Scotland; Arthur Leonard Anderson, New Zealand; Edmund Balmer Anderton, England; Frank Beecroft, England; Arnold Louis Joseph Branday, Jamaica; Harry Marchant Bundey, Australia; Duncan Alexander Cameron, England; Richard Craven, England; John Glen Forsyth, Scotland; Joseph Vincent Fox, England; Arthur George Hayden, England; Edith Isabella Hudson, India; Frederick John Jude, Australia; David James Cooper Oliver, Scotland; Duncan James Peirson, England; Dorothy Ellen Pratt, India; Thomas Pretsell, Scotland; Frederick William Price, England; Frederick Stanley Rose, Scotland; Alexander Hamilton Rutherford, Australia; Charles Robert Scott, Scotland; George Harper Wilson, Scotland; and John Brunyee Wilson, England.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Daniel Vere Maxwell Adams, Scotland; Anthon Sutherland Allum, Trinidad; Ernest George Ffrench, Jamaica; Edgar Robert Grey, B.A., South Africa; Albert Alexander Gunn, Scotland; Alexander George Hamilton, England; James Haworth, England; Joseph Hunter, Scotland; Balfour Stuart Hyslop, Scotland; Gerrit Hendrik Willem de Labat, South Africa; William Lockerbie, Scotland; David Valentine M'Intyre, M.A., Scotland; Andrew M'Kaig, Ireland; William Walker Maxwell, England; Philip

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Ernest Millard, England; William John Nutter, England; Henry Kenneth Paxton, India; Ernest Cromwell Peake, England; Arthur de St. Leu Frederick Perigal, England; George Herbert Stewart, India; Arthur Henry Thompson, England; Peter George Leeb du Toit, South Africa; and Arthur George Worrall, Scotland.

Degree of Bachelor of Science.—Alan Wilfrid Cranbrook Menzies, M.A.

CARDIFF NATURALISTS' SOCIETY.—At the annual meeting of this society Dr. C. T. Vachell was elected President.

BATH RURAL DISTRICT COUNCIL.—At the meeting of the Bath Rural District Council held on Oct. 22nd it was decided to adopt the Infectious Diseases Notification Act.

MEDICAL MAGISTRATE.—Mr. E. Barnard Fuller, M.B., C.M., F.R.C.S. Edin., has been appointed a Justice of the Peace for the district of the Cape, Cape Colony, South Africa.

INCREASE OF A CORONER'S SALARY.—At a meeting of the Carmarthenshire County Council held on Oct. 26th the clerk read the warrant of the Home Secretary increasing the salary of the coroner for the Three Commotts and Kidwelly districts from £100 to £160 per annum. This was in direct opposition to the decision of the council.

ROYAL LONDON OPHTHALMIC HOSPITAL.—A ball will be held in aid of the funds of this charity at the Empress Rooms, Royal Palace Hotel, Kensington, on Friday, Dec. 9th. Vouchers for tickets will be obtainable only from the committee, medical staff, and ladies' committee, and all communications on the subject should be addressed to the secretary, Royal London Ophthalmic Hospital, Moorfields, E.C.

VACCINATION OFFICERS AND THE NEW ACT.—On Saturday a special meeting of the members of the Vaccination Officers' Association was held at the offices, 4, Bessborough-street, St. George's, Hanover-square, W., for the purpose of considering: 1. The report of the deputation recently appointed by the Association to wait upon the Local Government Board with respect to the new Vaccination Act, 1898, so far as it affects vaccination officers, and (2) to confer as to the new orders thereon which have been issued by the Board. Mr. E. A. Frith (Marylebone) presided in the unavoidable absence of the President, Mr. Shaddock, and there was a large attendance of members.—Mr. C. O. Elkerton, the hon. secretary, reported that the committee—Messrs. Shaddock, Walter, and himself—had made every effort to obtain an interview with the Local Government Board, but without success. This appeared to be inexplicable, as the Board had received a deputation from the public vaccinators, notwithstanding that the request of the Association to be heard had been sent in some considerable time before them. The committee, however, had drawn up a complete statement explaining the views of vaccination officers with regard to the Bill and that statement had been duly submitted to the Local Government Board. He was glad to say that whether consequential or not the age limit had been reduced from twelve to six months, and provisions inserted to pay vaccination officers per head on the birth-rate, in addition to payment on successful vaccinations. General discussion ensued and several speakers called attention to a letter by "Public Vaccinator" which had appeared in the *British Medical Journal* urging that public vaccinators, private practitioners, and vaccination officers should cordially coöperate to make the best of the "tremendous experiment" under the new Act in order that a fair trial could be given to it. Opinion was freely expressed that this suggestion should be adopted, as far as vaccination officers were concerned, in order that the period of five years during which the Act will remain in force should not be wasted from the point of view of experience. The following resolutions were unanimously adopted:—"That the best thanks of this association be tendered to the London and District Poor-law Officers Association for the valuable assistance they had rendered to the vaccination officers in the critical time through which that branch of the Poor-law service had been passing"; "That in view of the disparity between the salaries of public vaccinators and vaccination officers this association trusts that boards of guardians will adopt the scale of the former for the remuneration of the latter, as the responsibilities and duties of vaccination officers were greatly increased under the new regulation"; and "That this association be extended to form a National Vaccination Officers Association."—Mr. C. O. Elkerton intimated that he would resign the honorary secretaryship and it was arranged that a testimonial committee be formed to arrange for a suitable recognition of his twenty years' service as the honorary secretary of the association.

THE LEWIS CARROLL COT.—Mr. John Murray, vice-president of the Committee of Management of the Hospital for Sick Children, Great Ormond-street, Bloomsbury, presided at a meeting at the hospital on Friday, Oct. 28th, at which the subscribers to the Lewis Carroll Memorial Cot presented to the committee a cheque for £1000 "to endow the cot for ever."

THE FLANNEL-SHIRT CLUB.—The Flannel-shirt Club, of which the Countess of Strafford is president and Mrs. W. H. Courtney vice-president, has already distributed nearly 700 flannel-shirts to patients discharged from the medical wards of general hospitals in the metropolis. The shirts are bestowed exclusively upon necessitous working men who require warm clothing on returning to work after serious illness, exchanging the shelter and comfort of the hospital for exposure in inclement weather and other hardships. The club, which was only started last year, has 183 members, but many more are needed to enable it to adequately carry out its objects. Subscriptions and donations should be sent to the honorary treasurer, Mrs. Clutton, 2, Portland-place, W.

UNIVERSITY COLLEGE OF WALES.—On Oct. 26th Sir William Harcourt opened the new central block of the University College of Wales, Aberystwyth, which has been erected at a cost of about £20,000 and to which he, when Chancellor of the Exchequer, gave a grant of £10,000. In the course of an eloquent speech Sir William Harcourt dwelt upon the backward state of English education, especially the lack of a secondary system, and hoped that this Parliament would give England what Wales possessed—a sound system of intermediate education. He then attended the annual meeting of the Court of Governors of the College and there received a motion of welcome. Mr. A. C. Humphreys-Owen, M.P., and Sir John Williams, Bart., M.D. Lond., were elected joint treasurers of the College.

UNIVERSITY COLLEGE, LIVERPOOL.—At a meeting of the Council of the College on Nov. 1st, donations were announced amounting to £13,000 towards the erection of anatomical laboratories and the further extension of the medical school. Plans for the construction of the anatomical laboratories will be prepared forthwith.—Mr. Henry Briggs, M.B. Edin., F.R.C.S. Eng., has been appointed Professor of Midwifery and Gynæcology in place of the late Dr. John Wallace. Dr. Briggs has had a long experience as a teacher, having held the posts of demonstrator of anatomy, demonstrator of surgery, and surgical tutor in the medical school. He was for ten years honorary medical officer to the Liverpool Ladies' Charity and Lying-in Hospital, and for the past eleven years has held the post of gynæcological surgeon to the Hospital for Women, Shaw-street.

PRESENTATIONS TO MEDICAL MEN. — Mr. Alexander Lewers, L.R.C.P. Lond., M.R.C.S. Eng., of Creswick, Victoria, Australia, has been the recipient of an illuminated address from the local medical union prior to his leaving for England.—Mr. T. H. Champ, M.D. Lond., M.R.C.S. Eng., of Beaconsfield, Tasmania, was entertained on August 25th at a social meeting of the inhabitants of the district and presented with three addresses and a purse of sovereigns on the occasion of his leaving the district.—Mr. Geo. E. Rennie, M.D. Lond., M.R.C.S. Eng., of College-street, Sydney, New South Wales, was the recipient on Sept. 6th and 15th of a purse of sovereigns and an illuminated address from the members of the New South Wales Branch of the British Medical Association and the Sydney and Suburban Provident Medical Association, of which organisations he has been the highly esteemed honorary secretary for about three years. The occasion of the presentation was Dr. Rennie's leaving for England.—On the 27th ult. a large company of the inhabitants of Cruden assembled in the Drill Hall, Hatton, to present Mr. A. G. Duguid, M.B., C.M. Aberd., and Mrs. Duguid, with tokens of esteem previously to their leaving the district. For the last fourteen years Dr. Duguid has been the medical practitioner of the parish, an active member of the School Board, and an energetic member of the local volunteer corps. The presentations consisted of an illuminated address and a

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purse of sovereigns to Dr. Duguid, while Mrs. Duguid was the recipient of a tea and coffee service. On the silver service is the inscription—"Presented to Mrs. Duguid, along with an address and purse of sovereigns to Dr. Duguid, on the occasion of their leaving Cruden, 28th October, 1898."

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—The Duke of Westminster, accompanied by the Duchess, attended St. George's Hospital, Hyde-park-corner, on Saturday last, Oct. 29th, and distributed the prizes obtained by the students of the medical school during the past year. The following is the list of the Exhibitioners and Prizemen: Beaumont Percival, the Brackenbury Prize in Medicine; Harold Shuttleworth Barwell, the Brackenbury Prize in Surgery; Harold Robert Dacre Spitta, the Webb Prize in Bacteriology; Ralph Bignell Ainsworth, the Treasurer's Prize and Sir Benjamin Brodie's Prize. John Cosmo-Stuart Rashleigh, the Henry Charles Johnson Prize in Anatomy; Keppel H. Reed, Certificate of Honour in Anatomy, and General Proficiency Prize II. Sidney Herbert Nathan, Certificate of Honour in Anatomy. Adrian Caddy, Certificate of Honour in Anatomy; Charles Montague Neale May, Certificate of Honour in Anatomy; Henry George Drake-Brockman, Sir Charles Clarke's Prize; Lawrence Charles Hunt, General Proficiency Prize I.; Walter Fedde Fedden, General Proficiency Prize III.; Arthur Soloman Morley, General Proficiency Prize IV.; James Farquharson Powell, Certificate of Proficiency in Anatomy and Physiology; William Roberts Harris, Entrance Scholarship in Arts (£150); Hugh Basil Drake, Entrance Scholarship in Arts (£50); Sidney Horace Matson, Entrance Scholarship in Arts (£50); Reginald Winter Sprague, Entrance Scholarship in Arts (Pauline); Arthur John Jex-Blake, Entrance Scholarship in Science (£85); George Frederick Darwall Smith, Entrance Scholarship in Science (£85); and Samuel Herbert Lee-Abbott, Entrance Exhibition in Science (£40).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAM, B. J., M.B., Ch.M. Glasg., has been appointed Officer of Health for the Borough of Daylesford, Victoria, Australia, vice E. B. Allan, resigned.

ALFORD, HENRY JAMES, M.D. Lond., M.R.C.S., has been re-appointed a Medical Officer of Health for Taunton.

ATKINS, S. E., L.R.C.S. Irel., has been appointed a Medical Officer for the Hatherleigh Sanitary District of the Okehampton Union.

BAILY, EDWIN, M.D. Edin., has been appointed Admiralty Surgeon and Agent at Oban.

BILL, G., M.B., M.S. Edin., has been appointed a Public Vaccinator for Pyramid Hill, Victoria, Australia, and Officer of Health for East Loddonshire, East Riding, Victoria, vice H. G. Kelly.

BILL, J. F., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed a Second Assistant Medical Officer by Lewisham Union Guardians.

BOWES, W. H., M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Medical Superintendent for the Plymouth Borough Lunatic Asylum.

BRIGGS, H. E., M.B. Edin., F.R.C.S. Eng., has been appointed Professor of Midwifery and Gynæcology for the University College, Liverpool, vice J. Wallace.

BRINDLEY, A. E., M.D. Lond., Ch.B., has been appointed a Medical Officer of Health for the Borough of Bury.

BROMET, EDWARD, L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Reigate and Redhill Cottage Hospital.

COLES, ALBERT CHARLES, M.D., C.M. Edin., has been appointed a Medical Officer for the Winton Urban District Council.

CRAWFURD, RAYMOND H. P., M.A., M.D. Oxon., M.R.C.P. Lond., has been appointed Assistant Physician for King's College Hospital, London.

CROWE, G. E., M.D., B.Ch. Dubl., has been appointed a Medical Officer for the Cottage Homes of the Charlton Union.

DAUNT, WM., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the No. 4 Sanitary District of the Holborn Union.

EDWARDS, J. W., M.B., C.M. Edin., has been appointed a Medical Officer for the Third Sanitary District of the Middlesbrough Union.

FERGUSON, J., M.B., C.M. Glasg., has been appointed, *pro tem.*, a Medical Officer of Health for the Perth City and Police Surgeon, vice A. Simpson.

GREGG, JAMES, M.B., B.S. Dubl., has been appointed a Public Vaccinator for Wedderburn, Victoria, Australia, vice R. A. A. Manly, resigned.

HODGSON, JOHN, M.B. Lond., M.R.C.S., has been appointed Honorary Surgeon for the Oldham Infirmary, and also a Medical Officer for the Oldham School Board.

JOHNSON, J. B., M.D., C.M. Montreal, has been appointed a Medical Officer for the Lavenham Sanitary District of the Cosford Union.

KITCHIN, DR., has been appointed a Medical Officer for the Box District by the Chippenham Board of Guardians.

LETHBRIDGE, C. F., M.R.C.S., has been appointed a Public Vaccinator for Beaufort, Victoria, Australia.

MACBIRNIE, S., M.B., Ch.M. Glasg., has been appointed, *pro tem.*, Acting Medical Superintendent for the Beechworth Lunatic Asylum, Victoria, Australia.

MADDEVER, J. C., M.D., C.M. Glasg., has been re-appointed a Medical Officer by the Brownhills Urban District Council.

MARTIN, JAMES, L.R.C.P., L.R.C.S., L.F.P.S. Glasg., has been appointed Health Officer for Broad Arrow, Western Australia, vice Dr. Ewing, resigned.

MASON, J. J., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Officer for the Bollington Sanitary District of the Macclesfield Union.

MATTHEWS, J. M., M.B., B.S. New Zealand, has been appointed a Public Vaccinator for the District of Popotuna, New Zealand.

MOORE, H. O., M.B. Dubl., has been appointed Officer of Health for Karkarooeshire, southern portion, and Public Vaccinator for Beulah, Victoria, Australia, vice F. Cheetham.

MULLEN, W. L., M.D., Ch.B. Melb., has been appointed, *pro tem.*, Acting Medical Superintendent for the Sunbury Lunatic Asylum, Victoria, Australia.

MURRELL, WM., M.D. Brux., F.R.C.P. Lond., M.R.C.S., has been re-appointed a Physician for the Westminster Hospital.

NEILD, NEWMAN, M.B., Ch.B., has been appointed a Clinical Assistant to the Chelsea Hospital for Women.

NICHOLS, W. R., M.D. Toronto, has been appointed a Clinical Assistant to the Chelsea Hospital for Women.

NOBLE, H. P., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Honorary Anæsthetist to the National Dental Hospital, Great Portland-street, London.

POLLARD, FREDERICK, M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Divisional Surgeon, Metropolitan Police, vice George Woodward, deceased.

POWELL, J. H., L.R.C.P. Edin., M.R.C.S., has been appointed a Medical Officer for the Workhouse and the Children's Homes of the Middlesbrough Union.

REID, M. A., M.B., Ch.M. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for Kerang, Victoria, Australia, vice T. M. Austin, resigned.

ROBERTS, L. W., M.B., B.S. Melb., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for Walhalla, Victoria, Australia, vice J. Stewart, resigned.

SEED, W. P., L.R.C.P. Lond., M.R.C.S., has been appointed a Resident Medical Officer and Public Vaccinator for Coolgardie, Western Australia, vice A. McNeill.

SMITH, ALFRED CHARLES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed, *pro tem.*, a Medical Officer by the Devonport Board of Guardians.

SMITH, HORACE, A.M., M.B., B.C. Cantab., has been appointed House-Physician for the Boscombe Hospital, Bournemouth, vice W. Scott Tebb, resigned.

STILES, A. J., M.D. Edin., M.R.C.S., has been appointed a Public Vaccinator for the Spalding District, including Cowbit and the Parish of Deeping, St. Nicholas.

WALDEN, F. J., M.B., M.S. Edin., has been appointed a Medical Officer for the Sorell District, Tasmania.

WALKER, E. A., M.B., C.M. Glasg., has been appointed a Public Vaccinator for the New Plymouth District, New Zealand.

WALTERS, A. R., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Reigate and Redhill Cottage Hospital.

WARREN, E. D., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Superintendent for Garlands Asylum, Carlisle.

WATSON, H. J., M.D. Toronto, has been appointed a Clinical Assistant to the Chelsea Hospital for Women.

WEARNE, WALTER, M.R.C.S. Eng., L.S.A., has been re-appointed a Medical Officer of Health for Helston, Cornwall.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road, Brighton.—House Surgeon for six months. Honorarium £20 for that period and furnished apartments with attendance provided near the hospital.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE, Grosvenor-road, Chelsea, S.W.—Assistant Bacteriologist. Salary £100 per annum.

CHARING-CROSS HOSPITAL, Strand, London. — Assistant Obstetric Physician.

COUNTY ASYLUM, Prestwich, Manchester.—Pathologist. Salary £200 per annum, with furnished apartments, board, attendance, and washing.

DERBY COUNTY ASYLUM, Derby.—Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Physician.

ECCLES AND PATRICROFT HOSPITAL, Patricroft.—Resident House Surgeon for six months. Salary at the rate of £60 per annum.

GLAMORGAN COUNTY COUNCIL.—Bacteriologist for the Laboratory at Cardiff. Salary £250 a year. No pension attached. Applications to the Clerk to the County Council, Glamorgan.

GODSTONE UNION.—Medical Officer for the Southern District of the Union. Salary £62 per annum, with the usual extra fees for midwifery, &c. Also to act as Public Vaccinator for the District at such fees as may be arranged. Applications to the Clerk, East Grinstead.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Junior House Surgeon for six months. Board, washing, and lodging in the hospital provided.

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HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months. Unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months. Salary £20, with board and residence in the hospital. Also Assistant Surgeon.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrarship. Salary £100 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer for the Convalescent Hospital at Cheadle for twelve months, unmarried. Salary £150, with board and residence.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer for the Western Fever Hospital, Seagrave-road, Fulham, S.W., unmarried. Salary £160 the first year, £180 the second year, and £200 the third and subsequent years of service, with board, lodging, attendance, and washing, subject to statutory deduction. Applications to the Clerk to the Board, Norfolk-street, Strand, W.C.

METROPOLITAN HOSPITAL, Kingsland-road, N.E. — Anæsthetist. Honorarium 25 guineas per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Two Visiting Medical Assistants for one year at least. Salary £120 for first year and £150 afterwards.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—Assistant House Surgeon for six months. Board, apartments, and washing provided.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising £10 yearly to £155, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

SAINT MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—Honorary Surgeon. Also Honorary Assistant Surgeon.

ST. GEORGE'S HOSPITAL, London, S.W.—Physician and Assistant Physician.

ST. THOMAS'S HOSPITAL, London, S.E.—Assistant Physician.

SCHOOL BOARD FOR LONDON.—Lectures to Teachers on Voice Production, with particular reference to the use of the Speaking Voice and to the Cause of Laryngitis. Four lectures to constitute a series. Applications to the Clerk to the Board, Victoria-embankment, W.C.

SEAMEN'S HOSPITAL SOCIETY (*Dreadnought*), Greenwich.—House Surgeon for Branch Hospital, Royal Victoria and Albert Docks, E. Salary £50 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Resident Junior Assistant House Surgeon. Salary £50 per annum, with board and washing.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser for two years, unmarried. Salary £105 per annum, with lodgings, attendance, fire, and lights.

WEST BROMWICH DISTRICT HOSPITAL. — Resident Assistant House Surgeon for six months. Gratuity £20, and board, lodging, and washing in the hospital.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

FRANCIS.—On Oct. 29th, at Arnold, Notts, the wife of Harvey Francis, M.B., M.R.C.S., of a son.

HAYTHORNE.—On Oct. 29th, at Hazelmere, Aigburth-road, Liverpool, the wife of T. J. S. Haythorne, M.D., of a son.

MACGREGOR.—On Oct. 21st, at Camden-square, N.W., the wife of Duncan Otto Macgregor, M.B., of a daughter.

VACHER.—On Nov. 1st, at Glanmor, Shrewsbury-road, Birkenhead, the wife of F. Vacher, F.R.C.S. Edin., of a son.

VOELCKER.—On Oct. 26th, at Harley-street, the wife of Arthur Francis Voelcker, M.D., F.R.C.P., of a son.

WINTER.—On Oct. 25th, at Chartham, near Canterbury, the wife of Laurence A. Winter, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

HERBERT—SYKES.—On Oct. 26th, at St. Stephen's and All Martyrs, Darcy Lever, Bolton, by the Rev. H. J. Adams, M.A., Vicar, William Herbert, M.R.C.S., L.R.C.P., Richmond, Surrey, to Lucy Gertrude, daughter of Thomas Sykes, Esq., The Haulgh, Bolton, Lancs.

LAWSON—MORRIS.—On Oct. 13th, at the Church of the Ascension, Balham-hill, by the Rev. H. Curtis, M.A., Vicar, assisted by the Rev. J. B. Seaton, M.A., Vice-Principal of the Clergy School, Leeds, Richard Lawson, M.R.C.S., L.R.C.P. Lond., of 1, Marius-road, Balham, younger son of the late Thomas Lawson, of Leeds, to Cecile Violet, daughter of F. H. Morris, of 12, Abbeville-road, Clapham, S.W.

METCALFE—HOOD.—On Thursday, Oct. 27th, at the Church of St. Mary, Castlegate, York, by the Rev. H. Vyvyan, M.A., Rector, assisted by the Rev. W. K. Wyley, M.A., and Rev. A. J. Chambers, M.A., Alfred Waugh Metcalfe, M.A., M.D. Cantab., only son of R. Metcalfe, M.D., Leyburn, North Yorks, to Amy Louise Bower, only daughter of W. Hood, M.R.C.S., Castlegate House, York.

DEATH.

WHITBY.—On Oct. 23rd, at Harlesden, Robert Whitby, M.R.C.S., aged 80.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (12th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (7th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN. 8 P.M. Introductory Address by the President. Mr. Storer Bennett: Ankylosis of Human Teeth to the Jaws.

TUESDAY (8th).— ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Dr. St. Clair Thomson: Cerebro-spinal Fluid from the Nose Escaping Spontaneously. Full report of one case and a consideration of twenty others occurring in literature, most of them with cerebral symptoms and some with retinal changes. (A patient exhibiting this condition will be shown, and will be in the rooms of the Society from 8 P.M.)

WEDNESDAY (9th).— DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Ordinary meeting. 8.30 P.M. Special meeting. Dr. Walter G. Smith (Dublin): Pityriasis Rubra.

HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. A discussion on the Antitoxin Treatment of Diphtheria will be opened by Dr. Goodall and Dr. Washbourn.

THURSDAY (10th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Specimens will be shown by Dr. Macpherson, Laurie, Dr. Purcell, Mr. Tonison Collins, and Mr. C. Ryall. Adjourned discussion of Mr. Christopher Martin's paper: "On some Moot Points in the After-treatment of cases of Abdominal Section. Mr. Stanmore Bishop: Combined Abdominal and Vaginal Section in cases of Pelvic Surgery.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM. — 8 P.M. Card Specimens. 8.30 P.M. Papers: — Mr. Priestley Smith: Suggested Explanation of Tschering's Observations in Accordance with the Accommodation Theory of Helmholtz. — Mr. Arnold Lawson: Tumour of the Optic Nerve Sheath.

FRIDAY (11th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Dr. T. D. Savill: The Poor-Law Infirmary. (Course of Lectures on Medical Relief.)

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Mr. Howard Marsh: Sarcoma of the Synovial Membrane of the Knee-joint.—Dr. Newton Pitt: Hyperpyrexia in cases of Pulmonary Disease.—Mr. Clement Lucas: A Case in which Twenty-seven and a Half Inches of the Bowel were Removed by Murphy's Button.—Mr. Arbuthnot Lane: Two Cases of Deficiency of the Ulna Treated Successfully by the Insertion of a Rabbit's Femur.—Mr. Campbell Williams: Lingual Chancre from Indirect Contagion, which tends to show that Syphilitic Virus can remain active in the dried state for over two months.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (7th).—LONDON POST-GRADUATE COURSE. — London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. Whistler: Syphilis as it Affects the Larynx.

TUESDAY (8th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Ormerod: Muscular Atrophy.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. T. D. Savill: Cases of Muscular Tremor.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Seborrhœa. — Bethlem Hospital, 2 P.M., Dr. Craig: Alcoholic Insanity; Insanity with Syphilis; Insanity with Organic Brain Disease.

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WEDNESDAY (9th).—HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Acland: Cases illustrating Types of Tuberculosis, with special reference to Diagnosis and Prognosis.
LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Sanitary Appliances.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. A. Whitfield: Methods of Examining the Blood.
THURSDAY (10th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. W. M. Ord: Myxœdema and Allied Conditions. (Bradshaw Lecture.)
LONDON POST-GRADUATE COURSE.—Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Mr. Golding Bird: Clinical Lecture.
LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.
CHARING-CROSS HOSPITAL.—4 P.M. Dr. Green: Cases in the Wards. (Post-Graduate Class.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow: Clinical Lecture on Demonstration of Recent Specimens.
FRIDAY (11th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Actinomycosis and Glanders.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. A. Whitfield: Methods of Examining the Blood.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

THE IRELAND FUND: A LETTER OF THANKS.

WE publish the following letter with pleasure:—"Mrs. John Ireland and Mrs. Stanley Brown beg to acknowledge with many thanks the great kindness of the proprietors of THE LANCET and other donors to the fund for the Misses Ireland (daughters of a medical man). The fund was closed last September; it amounts to £215 4*s*. On Sept. 27th an annuity was purchased with £100 producing £8 per annum. The other £100 is deposited in the Queen Victoria-street Building Society at 4 per cent., where it will remain till Miss J. J. Ireland attains the age of sixty years, when it will be withdrawn to purchase a joint annuity of £6 per annum."

"WANTED DIAGNOSIS AND TREATMENT."

To the Editors of THE LANCET.

SIRS,—Your correspondent, "L. M.," who wrote in THE LANCET of Sept. 24th under the above heading, suffers from what I—also at his age—suffer, and fortunate he is that his forced abstention from work is of one day and not three. I believe that the stomach in my case is at such times flaccid and dilated, that I suffer from inertia and ectasia, and that this is passing, for in the interval appetite and digestion are good. A distinct splash can be elicited, especially on those occasions when fluid is in the stomach and, I regret to say, often at other times after a fluid meal, but rarely, I believe, unless I am headachy—i.e., threatened with an attack. The pathology of this thing has come to be, to my mind, "neurasthenia." The attacks are precipitated often by a railway journey, and I have found of late that a course of resisted exercises—self-resisted, such as have been described in your volumes so often as a part of the Nauheim treatment for certain diseases of the heart—has seemed to render me more resistant, to lengthen the interval and shorten the duration of the attacks. I would also mention that I have for years taken every morning on rising, and I believe with benefit, a very hot sponge or shower bath of, say, one minute, followed by a decidedly cold shower lasting as long as in my judgment it may, and I come out of it with good reaction and without chill. Drugs I have found useless. Such a bath taken when the attack is threatened in early morning and followed by abstinence for a few hours will often succeed in warding it off. Fluids should be taboo at meals unless mere sips. Let the fluid ingestion be done an hour or two before meals and be of good cool water. In my own case a scantiness of urine an an inactivity of the bowels are further indications of the gastrectasic tendency and the weak absorptive power of the stomach.

I am, Sirs, yours faithfully,
October, 1898. G. C. L

A MICROBE-PROOF HOUSE.

WE extract the following from the *Leeds Hospital Magazine*:—

"The oddest domicile on earth is that recently erected at Yokohama by an eminent German bacteriologist. It is a microbe-proof house, built of glass blocks. There are no window-sashes and the doors, when closed, are air-tight. The air-supply is forced into the room through a pipe and filtered through cotton-wool to cleanse it of bacteria. To ensure further sterilisation the air is driven against a glycerine-coated plate of glass, which captures all the microbes the wool spares. The few microbes brought into the house in the clothes of visitors soon die in the warm sunlight with which the house is flooded. The space between the glass blocks, of which the house is built, is filled with a solution of salts which absorbs the heat of the sun, so that the rooms are much cooler than those protected by the thickest shades. In the evening the interior is heated by the salts radiating the heat they have absorbed during the day."

DIFFICULTIES UNDER THE INFECTIOUS DISEASES NOTIFICATION ACT.

To the Editors of THE LANCET.

SIRS,—I was recently called to see a child suffering from diphtheria and notified the case forthwith. On my next seeing the child I found the patient much worse and I gave an unfavourable prognosis. At the same time I learnt that the medical officer of health had called and expressed doubts as to the correctness of my diagnosis and suggested that the child was suffering from bronchitis. The following day I received a letter from the father dispensing with my further services and informing me that the medical officer of health had undertaken the case himself. I learnt subsequently that the child soon died and that the cause of death was certified by the medical officer of health to be diphtheria. I should be glad if you would comment on the above case, and any suggestions by which I might obtain redress would be most thankfully received by,

Yours faithfully,
D.P.H. LOND.

To the Editors of THE LANCET.

SIRS,—The following are the facts of a case which occurred in my practice during the week and I shall be glad to have your opinion as to whether the medical officer of health was within his rights or not.

I have a case under observation, but not yet reported, of suspected typhoid fever. The medical officer of health, having heard of the case, called at the house and asked to be allowed to examine the patient. This the mother of the patient would not allow, as she told him she had a medical man of her own in attendance. I have had no communication from the medical officer of health of his having tried to visit the patient, but learned the above facts from the mother of the patient next day.

I am, Sirs, yours faithfully,
Oct. 29th, 1898. SCOTLAND.

*** We recommend our correspondents to read our pamphlet entitled, "Difficulties under the Infectious Diseases Notification Act." It is unfortunate, but inevitable, that the provisions of the Act occasionally place the official in a difficult position with regard to the private practitioner. We can only advocate mutual forbearance. "D.P.H. Lond." should send a full account of the case, properly substantiated, to the Local Government Board. "Scotland," we think, should write to the medical officer of health offering to give him assistance and to see the patient with him if he is in doubt as to the diagnosis.—ED. L.

"A PLAN AND PLEA FOR NATIONAL MEDICINE."

WE have received a pamphlet bearing the above title. The author is E. L. Garbett, of the Peculiar People. Mr. Garbett's works cover a wide range. For instance, he has written a paper, which costs 3*d*., entitled "Bishops in Victoria's Time Only Idolaters," and another rejoicing in the name, "3130 Grounds for Holding that Satan Inspires Our Clergy." This latter can be obtained for the sum of 1*d*. "A Plan and Plea for National Medicine" starts on the assumption that "we can see nothing but a work of the devil in the way they [i.e., surgeons] have been paid hitherto

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in Christendom." This is a statement with which many a hard worked medical man will cordially agree. Mr. Garbett's method for obviating these painful circumstances is not very clear, but as far as we can understand it is as follows: there is to be an ante-natal tax upon births, which will bring in £360,924 per annum. This sum divided among all the medical men in the British Isles would give every practitioner £463 per annum nearly. Mr. Garbett does not approve of Christian Science, for he says Mrs. Eddy exhibits a painful ignorance of the true meaning of 666, a fact which, "in my opinion, utterly demolishes their claims." Should any of our readers feel inclined to study this production further it can be obtained from William Reeves, 185, Fleet-street, for the small sum of 3*d*.

ENTERIC FEVER SPREAD BY A POTATO-SALAD.

FOR the following somewhat remarkable story a French newspaper named *l'Evénement* is responsible. A battalion of infantry quartered at Saarbruck having been decimated by enteric fever Dr. von Coler, the medical inspector-general of the division, was ordered to investigate the matter and if possible ascertain the cause of the epidemic. He accordingly made a close inquiry and at length came to the conclusion that the disease was due to a potato-salad. It seems that in honour of some festival or other the soldiers of the infected battalion were treated to this salad, which probably was more succulent than its name indicates, and that the preparation of the dish was entrusted to a man who had not taken the ordinary precaution of washing his hands beforehand, although (curiously enough) it had just been another part of his duty to empty a latrine bucket. The whole of the men who partook of the poisonous compound, to the number of 300, are said to have fallen ill soon afterwards, whereas their comrades on leave that day, and also the non-commissioned officers who messed apart, remained perfectly well.

LEPERS IN HAMBURG.

AT a meeting of the Hamburg Medical Society held on March 1st and reported in the *Deutsche Medicinische Wochenschrift* of Oct. 27th, Dr. Reincke said that 17 lepers (15 men and 2 women) have been discovered in the town since the first inquiry made in 1896. Of these 11 incurred the disease in Brazil, 2 in Honolulu, and 1 each in Surinam, Mexico, Penang, and the Philippine Islands. 8 were born in Germany, 4 in Portugal, 2 in Brazil, and 1 each in Mexico, Sumatra, and England. Since the inquiry 3 have died, 4 have left Hamburg, and no fresh case has arrived. An increase in the number is not probable at present, as patients are attracted by Dr. Carasquilla's serum treatment in Bogota. The regulations relative to lepers include compulsory notification and supervision by the medical officer of health, who has to visit them half-yearly in company with the medical man who attends them. Lepers may mingle with the public as long as the symptoms are mild and there are no discharges containing bacilli. In other cases they must either enter a leper hospital or submit to a number of restrictions in their own homes.

ROENTGEN RAY SCREENS.

MR. HENRY A. KENT, of 59, Myddelton-road, Bowes-park, N., writes: – "The use of a screen in some operations, such, for example, as bullet-extracting, has many advantages. It, however, occurred to me that a more simple and effective method might be the following. The mineral 'Willimite' crushed and passed through a 90 or 100 hole sieve gives a powder which is fairly good for screen work. This powder should be mixed with gum-water and glycerine (or any antiseptic medium) into a paint about the consistency of cream. By painting the parts under operation very good definition is thus obtained."

ANTI-VIVISECTIONISTS AT BRADFORD.

DURING the progress of the Church Congress at Bradford the Church Anti-vivisection League held a meeting upon which we commented in our issue of Oct. 15th. In our annotation, which was headed "Anti-vivisectionists at Bradford," we said that we had applied to Miss A. L. Woodward, whom we wrongly called the Secretary, she being as a fact the Honorary Assistant Secretary, for information as to the objects of the League; that we had received no reply, and that therefore we thought the Church Anti-vivisection League must be one of the secret societies in the Church recently mentioned in the *Times*. Since the publication of these remarks Miss A. L. Woodward has sent us the reports of the League from 1894 to 1898, some quotations from Cornelius a Lapide, a leaflet called "The Ethics of Vivisection" by the Rev. T. P. Ring, and a lecture called "Man's Relation to the Lower Animals Viewed from the Christian Standpoint." The author's name is not given, but the lecture is published by the League. Our view of the unsound attitude of the League has undergone no change, but we are quite ready to allow that it is not a secret society.

"THE EXCLUSION OF INFECTION FROM SCHOOLS."

A CORRESPONDENT signing himself "A True Briton," and referring to a letter under the above title which appeared in THE LANCET of Oct. 15th, informs us that he has known of cases where in consequence of proprietary schoolmasters letting their houses during the vacations the tenants introduced the infection of "mumps, scarlet fever, measles, whatnot," and the pupils returning at the beginning of the school term contracted these diseases through that unsuspected channel.

A STOUT NEGRESS.

THE *Philadelphia Polyclinic* of Sept. 17th states that Mrs. Mary Mazique, said to be the largest coloured woman in the world, died at Little Rock, Arkansas, on Sept. 7th, aged thirty years. She is said to have weighed at one time over 700 lb., or 50 st., and at the time of her death, 560 lb.

"BARKOO ROT."

To the Editors of THE LANCET.

SIRS,—Allow me to supplement Mr. Eustace Barton's letter in THE LANCET of Oct. 29th on Barcoo rot. During many years residence in Queensland I necessarily saw much of this complaint. Mr. Barton's description coincides with my own observations, but I am quite sure that it is not a constitutional affection, but a purely local one. Certainly local remedies applied in the usual way have no influence on the progress of the disease for the simple reason that on account of the thick scabbing they fail to reach its seat. If, however, Volkmann's spoon be freely used until healthy vascular tissue is reached any mild antiseptic will effect a cure in a few days. Of course, many of these patients are run down and suffering from want of proper diet, &c., and for such no doubt iron is an excellent remedy. The majority, however, are otherwise perfectly healthy.

I am, Sirs, yours faithfully,
F. E. HARE, M.D.,
Oct. 31st, 1898. Late Resident Medical Officer, Brisbane Hospital.

Izal (Banbury).—Each procedure is correct, but a combination of the two would not come well from one person. As L.S.A. he has qualified in medicine; possessing the M.R.C.S. he does not need to append any other diploma to his name when signing it officially; but if he desires to announce to the public that he has a medical qualification, why conceal the source of his qualification? An L.S.A. is not, in our opinion, entitled to call himself a physician.

A. G. S.—(1) As a rule, No. Attendance at particular classes might be allowed to count, but the matter would be one for the Dean of the British medical school and perhaps the General Medical Council to decide upon. (2) A list of the registrable degrees will be found in the Medical Register, as well as the conditions under which they are registrable. Only persons whose names are on the Register have a legal status as practitioners.

Dr. Alexander Wallace.—Some of the points alluded to by our correspondent were certainly before the jury. We do not think the justice of the verdict can be questioned, and the convict has now been reprieved.

Puzzled.—The lady should apply to the Royal Pharmaceutical Society.

Volunteer.—The method of style we have adopted is correct.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 3rd, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Oct. 28	29·94	S.W.	...	91	63	54	53	55	Cloudy
,, 29	29·70	S.W.	0·86	73	62	53	57	59	Overcast
,, 30	29·36	S.W.	0·30	90	58	48	49	52	Cloudy.
,, 31	29·59	W.	...	89	60	48	48	50	Cloudy
Nov. 1	29·94	N.W.	...	75	55	40	40	41	Hazy
,, 2	29·91	S.W.	0·26	61	61	41	52	54	Cloudy
,, 3	29·65	S.W.	...	67	62	54	58	59	Overcast

During the week marked copies of the following newspapers have been received: *Sussex Daily News, Boston Independent, Manchester Guardian, Leicester Post, Pioneer Mail, Times of India, Bedford Advertiser, Warwick Times, Sheffield Telegraph, Scotsman, Builder, Southern Times, Royal Cornwall Gazette, Yorkshire Post, Architect, Birmingham Mail, Western Gazette, Luton Reporter, Walsall Advertiser, Liverpool Daily Post, Worcester Echo, Eastern Morning News, Dundee Advertiser, North Wales Chronicle, Bristol Mercury, Midland Counties Express, Somerset County Herald, Bradford Observer, Leeds Mercury, Citizen, Morning Leader, Hampshire Telegraph, Portsmouth Times, Hastings Independent, Brighton Gazette, Daily News, Batley News, Sanitary Record, Hertfordshire Mercury, Mining Journal, Reading Mercury, City Press, Local Government Journal, Surrey Advertiser, Macclesfield Courier and Herald, Taunton Echo, Hull Daily Mail, Le Temps (Paris), Weekly Free Press and Aberdeen Herald, Local Government Chronicle, Australasian Medical Gazette, Fife Free Press, Oban Times, Isle of Ely Advertiser, Morecambe Times, Malton Gazette, Pontefract Express, Public Health, Hornsea Gazette, Gravesend and Dartford Reporter, Deal Chronicle, &c., &c.*

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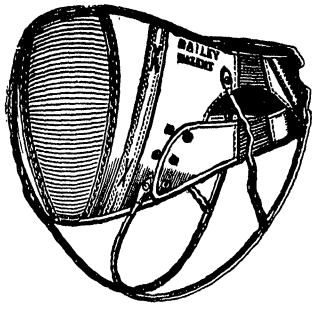
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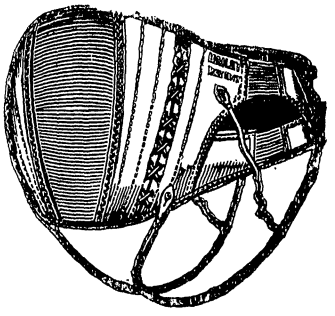
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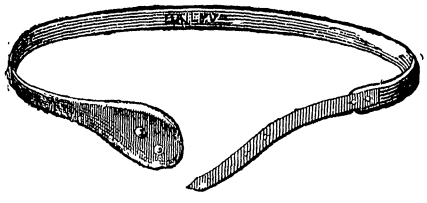
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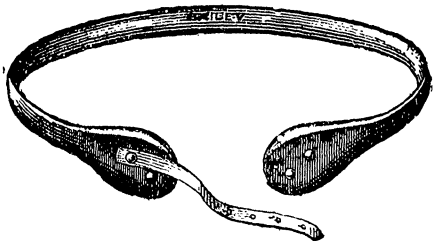
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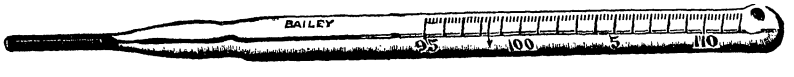
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The Bradshaw Lecture

ON

MYXŒDEMA AND ALLIED DISORDERS.

Delivered before the Royal College of Physicians of London on Nov. 10th, 1898,

By WILLIAM M. ORD, M.D., F.R.C.P. Lond.,
PHYSICIAN TO, AND LECTURER ON MEDICINE AT, ST. THOMAS'S HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—The pathology of myxœdema, so far as it is at present known, will doubtless form a part of the lectures which Dr. George R. Murray of Newcastle will deliver before this College next year. In the present lecture I propose to devote my attention mainly to the clinical aspect of myxœdema, its recognition, its differential diagnosis, and its treatment.

Diagnosis.—The primary diagnosis of the disease is not always so easy as might be expected from the observation of well-pronounced or typical cases. This is true, indeed, of all kinds and manner of disease. Whatever be the disease it is necessary, in the first place, whether we do it consciously or not, to construct a picture of such disease in its full development, including, first, the main and most important symptoms, then, next, the less frequent and less characteristic symptoms, and, thirdly, accessory symptoms of varying value in various cases. Such a picture cannot be constructed by making a mere list of symptoms. It is necessary, by careful comparison of a considerable number of cases, and also by bestowing careful regard on the relations of symptoms to etiology, to make the picture a carefully shaded one—to put into strong relief that which is most important, and that which is less and less important further and further in the background. The picture must, in a word, have its perspective and its colouring carefully drawn and filled in. Such a process, carried on in a more or less methodical manner, must be applied to the separation in our minds of diseases and of their subjects from one another before we are able to write down the primary naming of any disease of which there may often be many forms. As the knowledge of myxœdema grows by the addition of new cases to our original list it becomes evident that around our well-defined picture are to be found forms more or less obscure, in part because of incomplete development of the whole series of symptoms and in part also by reason of curious modifications of myxœdema constituting alliances with diseases to which the term "myxœdema" cannot with propriety be applied.

Classification of symptoms.—Let us now endeavour to make a classified list of the signs and symptoms of myxœdema. The first lines which we draw in firmly in limning the disease are those connected with the external appearance of patients, such as the increase in the size and bulk of the whole body, due, evidently, in part to changes in the skin, in part to changes in the subcutaneous tissue. Next, the changes in the skin affecting more or less the whole surface and determining changes in the appendages of the skin, in the hairs, in the glands, and in the organs of touch. In correlation with the changes in the skin we have to take note also of altered states of mucous membranes resembling those observed in the skin and leading again to destruction of appendages, such as the teeth and glandular structures. It is here a point of much importance to remember that the swelling of the skin and mucous membranes is not an ordinary dropsical swelling, does not in any way gravitate from the upper parts of the body to the lower, and does not in any part pit on digital pressure but is firm and resilient. Next comes a group of symptoms indicating in various ways impairment of the functions of the nervous system; such as slowness in muscular movement and tardiness in response to impressions made upon the surface of the body, slowness in thought and action, weakening of memory, disturbance of the balance of muscular actions in the limbs. With these we must associate the quality of the speech and the sound of the voice perfectly typical of the disease and dependent apparently on the combined effects of the swelling of the lips and fauces, of failure of the movements of the muscles within the swelling, and of default of nervous power in controlling the action of muscles. Further, beyond the above-mentioned signs of dilapidation we may find various degrees and kinds of mental aberration and certain mental phenomena which may be fairly called "peculiar" up to a certain point.

Symptoms of the second degree.—The next in the rank of important signs may, I think, fairly be taken to be the lowering of the temperature of the body—rarely, if ever, absent when the disease is fully pronounced. A less common symptom than those already enumerated is the tendency to hæmorrhage following comparatively slight injury, the hæmorrhage being most commonly in the skin or mucous membrane, but sometimes in internal organs. Partly with special regard to etiology we have to consider the question of sex, noting that the affection is very predominantly one of the adult female. In all diagnoses negatives have to be marshalled among sources of help. We shall find that there is no affection of the viscera which can be called characteristic of myxœdema, although in the course of the disease visceral affections may arise, chiefly from the operation of external and new causes, not wearing, so to speak, the uniform of the higher groups. After passing in review the components of the several groups of symptoms and conditions above classified, the relations of the thyroid body assume great importance, seeing that certain changes in that body and its functions are in effect causative of myxœdema. Another set of changes belong to other diseases which in this aspect have some sort of alliance with it and help us to its explanation. We may now amplify the elements of each group of symptoms in succession.

Details of symptoms.—The often vast and quivering bulk of the body is, I have already said, partly brought about by alteration in the skin and partly by developments of fat beneath the skin. It is doubtless often also due in part to alterations in the muscles and viscera, all partaking of the nature of the change most readily noticeable in the skin. The skin is found to be everywhere dry and often in many parts is clearly very much thickened in its epithelial layer as well as in the derm. It is exceedingly rough and harsh to the touch, so that, as a patient once remarked, you might almost strike a match upon it—an experiment which, I may say, I have never yet attempted. The varying connexions of the skin with the deeper tissues involve considerable variety in the appearance of the swollen parts. For instance, the loss of natural expression is at once forced upon one's notice. The skin on the checks and forehead is very obviously translucent, dry and firm to the touch, but not nearly so harsh to the rubbing touch as elsewhere. Both upper and lower eyelids are much swollen and the upper lids droop heavily over the eyeballs. They are almost transparent and look at first sight like the eyelids of persons suffering from acute renal disease, but they do not in the least present any pitting on pressure. As a result of the drooping of the upper eyelids the eyebrows are mostly raised in various degrees, sometimes to a very considerable extent, by the effort to elevate the upper lids above the level of the pupils. The alæ nasi are generally particularly thickened and translucent, giving rise to a broadening of the whole nose. The upper and lower lips alike are so swollen as to destroy the natural expression of the mouth and to reduce it to little more than a chasm between the inflexible margins. The ears are usually both very much enlarged and thickened. The total effect is that of a mask of sorrowful immobility. There is in this a remarkable resemblance of myxœdematous patients one to the other.

In examining the body one of course generally takes note at once of the condition of the thyroid body, although this has no direct relation to the state of the skin. On each side of the neck above the clavicles are usually found large soft projections. Sometimes they are called "dough-like," but they are not plastic like dough and convey to the touch the same kind of sensation which might be yielded by a large ripe tomato imbedded beneath the skin. These projections, as you know, are partly fat, partly changed connective tissue, and possibly in part veins. They are, as you know, also very characteristic of that modification of myxœdema which is observed in sporadic cretinism. The abdomen is usually particularly large and often pendulous. In the hands and feet, most noticeably in the former, the changes in the skin determine a great thickening and coarsening of these members. In the hand the digits while swollen are much flattened out and when the hand is

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extended no spaces separate one finger from another. The resulting conformation of the hands has been aptly called by the late Sir William Gull "spade-like." The altered hands lose, like the face, what we may call the natural expression, and lose also their delicacy of movement. Among the earliest manifestations of the disease is a change in the hair, which becomes rough, loses its natural lustre, and breaks very readily, becoming after a time very ragged and very intractable in the toilet. The hair thus altered speedily falls off both from the head and from the eyebrows—not before, however, the latter, if well developed, have passed through a stage of raggedness which is brought into prominence by their raised position. The eyelashes undergo similar disfiguration, are always much broken, and often are lost altogether. The hair over the body also dwindles and falls off, and the nails, although they rarely go so far as to complete atrophy, are wasted and brittle. It is, perhaps, mostly in the hands and feet that the extreme roughness of the skin is most developed; the highest degree of this change occurring on the sole and the heel.

Mucous membranes.—All visible mucous membranes exhibit alterations parallel with those of the skin. In the mouth it is evident that the swelling of the lips is very much compounded of mucous membrane. The cheeks project in between the teeth, are marked by them, and are very apt to be bitten. The tongue is very large and generally very anæmic. In the fauces we can see the changes of mucous membrane generally most pronounced. The uvula and soft palate press down upon the tongue as a somewhat firm, very translucent, and imperfectly moveable mass. Similar changes may be seen in the vulva and vagina. The teeth almost invariably undergo impairment of nutrition, sometimes becoming brittle and falling to pieces and sometimes coming out whole without much obvious alteration in structure. The gums are usually greatly swollen and yet recede from the teeth, tending to become ulcerated and to bleed on the very slightest provocation. The most obvious explanation of the decay of the hair and teeth and of the dryness of the skin is to be found in an extreme swelling of and change in the connective tissue in the skin and mucous membranes. The connective tissue becomes firm and resistant, ultimately encroaching on the pulp of the teeth, on the follicles of the hairs, and on the sebaceous and sudoriparous glands. Whether these changes in the connective tissue be in part of neurotrophic origin is a question to be considered, but at present not fully capable of answer. It is important, however, to know that under certain treatment, hereafter to be set forth, the skin, losing its swollen character, resumes its functional activity, and the hair frequently returns also in a healthy form over what have appeared to be bald surfaces. The swelling of the body is, however, not always uniform or constant. It may and usually does appear most strongly in the face and supra-clavicular regions. It may, however, be found in the limbs or in the abdomen before involving the face and neck. It may in early stages disappear altogether for a time, or it may be transferred from one region to another. The face is particularly subject to alterations in the amount of swelling, generally in association with changes in symptoms, more especially nervous symptoms—disappearance being followed by headache or neuralgia and recurrence by relief of these conditions.

Nervous and muscular changes.—Tactile sensation all over the body is in typical cases diminished. This can doubtless be explained in part by the alteration of the connective tissue in and around nerve-endings, but it is also in some cases clearly traceable to defect in the central receiving nervous system. The defect of sensation is, of course, particularly noticeable in parts which depend for much of their usefulness upon very delicate and sensitive nerves. The fingers notably lose not only mobility but also accurate sense of touch, which is very plainly demonstrated when a patient endeavours to fasten or unfasten a button or pick up a pin from the floor. There is also a tendency to drop things held in the hand. Not only, however, is the sense of touch blunted, but the recognition by the central perceptive organs of impressions made upon the periphery is distinctly retarded. In certain circumstances the skin entirely loses sensibility in parts. A lady whom I have seen recently and who presents fairly typical myxœdema has from time to time sudden increase in the swelling of the feet and hands, accompanied by a complete loss of sensation over restricted areas of no particular form. When, as happens from time to time, the swelling passes away sensation is restored to the same condition as in the rest of the body. We may find, therefore, both bradæsthesia and anæsthesia in myxœdema. The special senses are sometimes affected, particularly the sense of smell and the sense of taste, offensive odours being complained of where no signs of such odours appear to be present and tastes of excessive sweetness or acidity or bitterness—most commonly the sweetness—being present in the mouth.

As regards the muscular system, there is in all cases a marked debility and tendency to ready exhaustion by exertion, sustained action of muscles evidently using up their power very rapidly. The complaint of excessive muscular weariness is one of the next which we have to listen to, and sometimes the failure of muscles leads to very distressing results. Patients sometimes are unable to keep the head erect. For the most part, both in the erect and sitting posture, the head falls forward with the chin on the upper part of the chest and cannot be restored to its proper position without assistance from the hands either of the patient or of a nurse. Sometimes the head, when restored to its position or a little beyond the proper position falls backward with a rapid movement enough to cause anxiety as to the occurrence of injury consequent upon the jerk. Such loss of balance in the movements of the muscles supporting the head seems to exist throughout the whole system and is readily noticed in the gait of well-marked cases. I have seen this most often of course in women, who are the most frequent victims of the disease. If asked to walk they rise from the sitting to the erect posture with a somewhat tremulous effort; they sway somewhat in standing, and in walking present a quivering of all the muscles of the body, particularly of the legs, with each step. Their movement in walking is such as might be expected to attend great nervous excitement with difficulty to restrain it, and is not altogether without a suggestion of stateliness, such as might be represented upon the stage. Not infrequently the want of coördination in flexors and extensors which leads to this quivering movement goes so far as to determine sudden falls, not caused by the feet coming in contact with obstacles, but by giving way of the knees. The patient falls suddenly into a kneeling position and often experiences serious injury, sometimes even incurring fracture of the patella. This form of nerve weakness may persist even after the disappearance of the main symptoms already noted.

The speech of the myxœdematous patient is, so far as I know, unlike any other modification of speech in disease. There is an obvious difficulty, in the first place, in getting words out of the mouth. They seem to stick at the lips and their ultimate pronunciation is accompanied by either a writhing of the upper lip or by a puffing, explosive jerk of the word through the chasm between the comparatively immoveable lips of the patient with advanced disease. The quality of the voice is nasal and leathery, the tone is monotonous, and at the same time speech is frequently interrupted by little explosions through the nostrils. The words uttered, although somewhat blurred, are usually correctly framed and, for the most part, accurately represent what is in the mind. Sometimes, however, patients still state that they have words in their mind which they are unable to put into speech. In spite of the slowness and painfulness of utterance the patients are disposed to talk at great length. Once started in conversation they tend to go on indefinitely. I have known a patient talk continuously for an hour or even more without interruption save for drawing the breath at frequent intervals and without taking apparent notice of a remark or question intended to break the prolonged monologue. In connexion with speech it must be remarked that the patients in many cases write letters also at great length, and that as a rule the handwriting is good and monotonously regular, the difficulties already mentioned in respect of the movements of the fingers not appearing to interfere with the use of pen or pencil. The voice, which I have tried to describe, with its monotonous flow and leathery intonation, is, once heard, almost in itself a ground for diagnosis of the whole disease. It has occurred to me to hear a patient speak outside the door of my consulting-room and to recognise the disease before I had actually seen the subject. It has occurred also under my observation that patients in hospital under treatment for myxœdema would detect in the voice of a newcomer the existence of the

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malady and would say, "That's my disease." The imperfections in speech are not always so complete as in the typical cases which I have described. It sometimes happens that the elocution is only comparatively slow and the existence of a difficulty is fully understood only after treatment. Then it is frequently found that the patient naturally speaks very quickly and with excellent elocution, which has only been modified in a minor degree. It is, of course, obvious that not infrequently the loss of teeth complicates matters and increases the difficulty of articulation. If the treatment of myxœdema in any case be successful natural speech is gradually resumed, but while the mechanical obstacles appear to pass away completely the tendency to garrulity for the most part persists, so that the physician has still to listen to a long setting forth of comparatively small matter recited volubly and with interminable iteration. That the state of the nervous system is much concerned in this alteration of speech is, I think, abundantly clear. It is perhaps only the first to attract our notice of many nervous symptoms. In some cases to the difficulty of speaking a difficulty in swallowing is added. The swollen state of the fauces and of the mucous membrane beyond would make us ready to expect some difficulty, but at times dysphagia of considerable severity together with affection of inspiration will lead to a suspicion of affection of the medulla oblongata.

Changes in the mind.—It has been noted already that the aspect of the patients is lethargic. A considerable number are actually lethargic and unnaturally placid, but it is very common to find, even early in the disease, indication of the disturbance of mental equilibrium. The most common of all is the gradual development of a suspicious frame of mind. This is not, as a rule, a suspicion of conspiracy or of intent to do harm on the part of the people around the patient, but a constant idea that all such people regard the patient unfavourably and are finding fault. This may be developed so far as to make the patient actually violent and to cause him to protest against the injustice of the supposed attitude of the persons around; and I have seen patients so terrified by the sensation of dread of some ill-defined malignant influence that they have tried after getting out of bed to throw themselves from windows or down stairs. It is also interesting to observe that some people who are not suspicious of others are suspicious of themselves and spend their time in moaning over their sins and shortcomings, although these cannot be stated in any clear or definite form. Some years ago a patient under my care at St. Thomas's Hospital very well illustrated such conditions. She was a woman of more than middle height, was enormously swollen, and weighed over 20 st. She was afflicted particularly with *cacoëthes loquendi*, and was full of suspicions about everybody who had to deal with her as well as about the rest of the patients in the ward. They were all thinking evil of her and no one expressed any sympathy for her sufferings. When I paid my visits to the ward she often detained me for half an hour with the endless recapitulation of her sufferings, suspicions, and fears. One night, under the influence of great excitement, she actually fell out of bed, receiving, however, no obvious injury. One day, after I had been enduring her loquacity for some time, I was passing on to see another patient when she sat up and reviled me and all present on account of the want of interest shown in her. It occurred then to one of my clinical clerks to take an opportunity of letting her talk herself out. He sat by her bed and listened patiently to her as long as she was able to continue speaking. This lasted for more than an hour and a half. She immediately took a great fancy to him and said that for the first time she had been properly understood. This was before the days of the use of the thyroid treatment, but the patient certainly improved during a long stay in hospital and left weighing only 18 st. I attributed her improvement to prolonged rest in bed, the maintenance of warmth, and the use of jaborandi. A few months afterwards she appeared in the ward one afternoon during my visit. She was still further reduced in bulk, weighing then only about 15 st.; but, while she talked a great deal, her change of mental attitude was quite remarkable. She, indeed, came mainly to apologise to me and to the nursing staff for her rudeness during her stay in hospital. She had known all the time that she was rude and unreasonable, but she was quite unable to repress the feelings which prompted her to rudeness. The case was valuable as illustrating the licence in which persons of unsound mind will sometimes indulge, being fully aware at the time that their conduct is unjustifiable. She did not make her appearance again in the hospital—at least, in my ward. Mental improvement following a distinct abatement of the signs of disease has been observed in this case as well as in some others. On the other hand, the suspicions and the garrulity often remain the last symptoms to be overcome. In fact, in some cases they are actually exaggerated in persons who have lost all the other characteristic signs of the malady.

In more than one case the mental disturbance has become so great as to require restraint. Taken in conjunction with alterations in the thyroid gland all the materials for a direct diagnosis of myxœdema are to be found among the foregoing symptoms, but there certainly are cases of myxœdema in which for one reason or another certain of the symptoms may be absent or modified. Thus, for instance, as Dr. George R. Murray has recently shown, instead of the marked swelling of the whole body, a relative tumefaction, accompanied by a yellowish tinge of the skin varying under treatment, would render the first-sight diagnosis a little obscure. The speech is often not characteristic, even when the other parts of the picture stand out well, and the hair and teeth may escape the ordinary degeneration. I have seen recently a woman whose hair at the age of sixty years was almost, if not quite, natural, being abundant in quantity, not having fallen out, and not being broken or ragged. The teeth, however, in this case had gone early. There are, indeed, cases in which it must be admitted that diagnosis is very difficult; cases in which, while the bulk of the body is very considerable and the face much swollen, the yellowish, transparent look of the skin is not present, the speech is but little impaired, and the hair and teeth have suffered only in a minor degree. Some of these cases are not easy to separate from cases of simple over-fatness of the body, and it is only by dint of repeated verification that the existence of symptoms belonging to myxœdema and not to simple fatness may be determined. In the early identification of myxœdema its subjects have much the appearance of being really victims of a form of Bright's disease without albuminuria, and, indeed, after some of the early publications of observations on myxœdema, it was seriously contended by more than one accomplished physician that the disease really was Bright's disease associated with an unusual form of dropsy. The compass of this lecture will not allow of my entering into the details of the controversy, but I think that no one nowadays has any doubt of the absolute difference between Bright's disease and its dropsy and myxœdema and the swelling belonging to it.

Associated symptoms.—We can now proceed to consider some of the associated symptoms of myxœdema, not of such primary importance as the preceding.

Temperature of the body.—First among these is the lowering of the temperature of the body. In the well-established disease the temperature of the body is usually lowered by from 1° to 3° F. Such lowering of temperature, however, is not by any means always present in the early stages. The heat of the body may be maintained at something like the average temperature or a little above it by the influence of intercurrent disease, particularly that of phthisis. Indeed, an average temperature, say of 94° or 96° observed in a case of well-developed myxœdema may be taken to be an indication of a sort of pyrexia calling for the most careful search for any local or general causes, such as in ordinary people raise the temperature to 100°, 101°, or more. It will be seen afterwards that one of the first effects of the successful treatment of myxœdema is the raising of the temperature. Related no doubt to the lowering of the temperature, we find patients liable to great suffering and aggravation of their symptoms during the prevalence of cold weather. This is certainly the rule, and one may notice in hospital how our old patients come back to us with the frosts. They do not appear so much to feel the cold as to be conscious of the injurious effects of cold. One may see a patient sitting up in bed and complaining of feeling ill because of the cold weather. The hands and feet will often be found then to be extremely cold and blue and yet it is far from uncommon to find the complaining person allowing her nightdress to be open so that the air directly impinges upon the skin, and careful questioning will elicit the fact that the patient is not conscious of such impact of cold air, the general numbing of sensation masking the effects of a prejudicial influence. Independent of various modes of treatment, climate must be regarded as very strongly modifying the progress of the

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illness. The people who can have well-warmed houses and keep out the cold of our English climate pass through the winter with much less suffering and danger than poorer people unprovided with such protection. Still more, if people can exchange our English climate for a warmer one during the winter season the progress of the disease may be retarded and the sufferings greatly diminished. Observations of temperature must be made by insertion of a thermometer into the mouth or into the rectum. Axillary determinations may be regarded as practically valueless.

Hæmorrhages.—Hæmorrhages from various parts are, as we have noted, not uncommon in myxœdema, though far less general in their occurrence than the alteration in temperature. They occur mostly in the fully established disease. Epistaxis and bleeding from the gums will often be noted. The extraction of a tooth, often called for, is always to be dreaded on account of the hæmorrhage which is apt to follow, lasting in some cases for three or four days in spite of plugging and the use of styptics and involving a drain which the anæmic patient can with difficulty sustain. Hæmorrhages in the skin and from the bowels are less common, but uterine hæmorrhage is often a serious source of enfeeblement, becoming dangerous in association with parturition. Post-partum hæmorrhages are far from uncommon in even the early stages of the disease to an extent almost becoming a rule when the relatively small number of myxœdematous patients who become pregnant is considered. The most serious hæmorrhages are those into the brain. I have seen three cases of apoplexy in two of which post-mortem examination showed bleeding into the brain in the usual position of cerebral hæmorrhage, and in the third in a curiously distributed form in the cortex of the brain. In the last-mentioned case I had the opportunity of watching the progress of the patient for a considerable time. He was a man, aged thirty years, a waiter by occupation, and was admitted for the first time to St. Thomas's Hospital under my care on June 14th, 1892. It appeared that his illness commenced six years before his admission. He began at first to feel dull, heavy and depressed, and became clumsy, especially with his hands. His friends complained of his dull and muffled voice. All exertion became a trouble and he would occasionally fall. His abdomen and body generally began to swell and his face became round, puffy, and yellowish-brown with flushed cheeks, earning for him the nickname of "the fat boy in Pickwick," which replaced the nickname of "Skin and Buttons" which had before the illness been bestowed upon him on account of his pale and hollow-eyed countenance. His hair had begun to fall out some time before admission and his skin was always very dry. He stated that he was rather worse in the winter than in summer time and that he had lost interest in the outside world. He was conscious of being very irritable. At the time of admission his skin was exceedingly harsh and dry, also much pigmented; his hair was dry, scanty, and broken, particularly on the face and head. His features were heavy, his expression was somewhat fatuous, and there was a strong suggestion of his having undergone a sort of Mongolian change of physiognomy. He was very bulky; there was some fulness about the clavicles; the thyroid gland could be felt but was evidently smaller and firmer than natural. All his movements were sluggish, and his hands were spade-like, with impairment of the finer movements. There was no sign of visceral disease and the urine was normal. Glycerine extract of thyroid, prepared after the admirable method of Dr. George R. Murray of Newcastle, was injected hypodermically in doses of 15 minims on the following dates:—July 12th, 16th, 19th, 22nd, and 30th. He improved considerably under this treatment, which was, however, discontinued on account of great swelling and distress following the injections and was replaced by internal administration of the same preparation in the same doses daily. Under this treatment improvement continued to be rapid; his bulk diminished, his skin became moist, and at times he perspired very considerably. His hair grew again very quickly and in great thickness. A photograph presenting his condition after six weeks of treatment was taken for me by an exceedingly clever clinical clerk of mine, who wrote on the back of it the very appropriate quotation from the "Ingoldsby Legends":

> "He grew sleek and fat;
> In addition to that
> A new crop of feathers
> Came thick as a mat."

Only we must pass over the fact that the patient did not, like the jackdaw, get fatter. The patient left the hospital on August 28th, 1892, but continued to attend as an outpatient for some months afterwards, taking the glycerine extract regularly, but only now about twice a week. His attendance soon became irregular. He appeared to have taken up service as a waiter. I learned at the time that he was a very good waiter in a general way, but was somewhat expensive in consequence of a tendency to drop plates and dishes when he was handing them. It is certain, however, that at this time he began to indulge in alcoholic stimulants, and to have neglected his thyroid treatment. The signs of myxœdema gradually returned and at the beginning of July, 1895, he had a fit in which he lost consciousness for some hours and this was followed by a second and a third fit during that year. In the last of these the tongue was bitten. He was again admitted to St. Thomas's Hospital on Nov. 13th, 1895. Much of the appearance presented at the time of his first admission had now returned and his urine now was of a specific gravity of 1028, with a trace of albumin. Shortly after his admission he was seized with convulsions and was unconscious for one hour. On Nov. 14th he had two fits, after which he became very violent, struggling and talking incoherently. He sweated profusely all the next day and was still very violent, requiring restraint by a male attendant. He then became comatose for some hours and died on Nov. 16th. The temperature, which had been 98·2 at the time of his admission, rose on Nov. 13th to 100·6°. At the post-mortem examination the thyroid gland was found to be very small and flabby, the isthmus being little more than a strand of connective tissue. It is important to state that the adrenals were diseased, the left being increased in size by enlargement of the central cavity, which contained several calcareous and caseous nodules, some surrounded by miliary tubercles. The right adrenal showed a similar change, but with all this the mass of glandular tissue was unaffected; there was now no pigmentation of the skin. On examining the brain there could be seen through the arachnoid and pia mater innumerable minute hæmorrhages dusted, as it were, over both hemispheres, but more numerous on the left side. The cortical vessels were much distended and the brain throughout was hyperæmic, but there were no petechiæ below the surface. Otherwise the brain appeared to be healthy. As regards the hæmorrhages noted on the surface of the brain it must be remarked that in his convulsions and struggling he had evidently met with some injury of the scalp, but the distribution of the petechiæ and their superficial character were most probably either the result of his epileptic fits or the cause of them. It is well known that petechiæ occurring in the face of children are not unfrequently found to be the result of convulsions and that occasionally their existence may lead to the recognition of fits occurring during the night and not in the daytime.

Changes in the thyroid gland.—It is now generally admitted that myxœdema, in common with the sporadic cretinism of children and cachexia strumipriva, is dependent on a destruction or loss of the function of the thyroid gland and that in many ways myxœdema is allied to cretinism in which affections of the thyroid gland play an important part. It is commonly the case that in myxœdema diminution of the thyroid glands is recognised during life; not, however, always, by reason of the difficulty of feeling the thyroid through the massive and unyielding cutaneous tissue. For the most part the gland is found in a state of atrophy, having the secreting structure partially or completely destroyed by a fibrosis of connective tissue, there being also an associated loss of the colloid secretion. But it is not always a reduced thyroid that is found. In an enlarged gland the destruction of the tissue may be brought about by a new growth; and, furthermore, the history of a certain number of cases of myxœdema indicates that an enlargement of the gland has preceded its contraction and atrophy. To go further than this, it may be stated that in certain well-observed cases the symptoms presented before the establishment of myxœdema have been more or less the symptoms of exophthalmic goitre. It appears to me probable that we shall recognise in the future more and more the occurrence of a stage of hypertrophy of the thyroid gland, with or without the signs of Graves's disease, as an antecedent of myxœdema.

I will venture to give here an abstract in as short a form as possible of a case the notes of which have been kindly sent to me by Mr. Alex. Hope Walker of Cranleigh, whom I beg now to thank for his kindness. It is, of course, helpful to me to have the opportunity of quoting the cases

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of other observers as well as my own. The patient was a woman, aged twenty-three years, living at Alfold in Sussex, a place where, according to Mr. Walker, goitres are frequent. Being hitherto in the enjoyment of fairly good health she noticed in July, 1890, that her neck was larger than usual, though neither pain nor inconvenience was experienced from the enlargement. In March, 1891, she began to present signs of exophthalmic goitre, and was subsequently admitted in June of that year to Charing-cross Hospital under the care of Dr. John Abercrombie. The diagnosis of exophthalmic goitre appears to have been formed and adopted at the hospital, where she was treated with iron, quinine, and digitalis, together with daily galvanisation of the thyroid. Under this treatment the swelling became reduced in a somewhat marked degree, and she left the hospital on August 1st, 1891, to all appearance cured. She then went into service at Burgess Hill and continued well until November, 1893, when she noticed her legs, arms, and hands to be swelling. She finally gave up her service and returned to Alfold, where she was seen by Mr. Walker on Nov. 20th, 1894. At that time, to quote Mr. Walker's notes, "the face throughout was markedly swollen, the skin feeling thick, looking translucent and waxy, and the eyelids were particularly swollen. The nose was broad, the lips were thickened and diverted, the face was devoid of all expression; the pink flush, so constantly present in these patients, was absent; the hands were spade-like; the skin was harsh, dry, and pale; the hair was falling out, the speech was slow and monotonous, the temper was sulky and uncertain, the movements of the body were all very slow and deliberate, the urine and the viscera appeared to be normal, the thyroid gland could just be felt." I think you will agree with me in accepting the first stage of this patient as one of exophthalmic goitre and the second as one of myxœdema. I may add that the treatment was mainly by the administration of thyroid in the form of tabloids. By the end of January, 1895, she appeared to be quite well, but being at home she neglected to send for her tabloids and drifted back into her myxœdematous condition. She was recovered from this once or twice by renewed treatment, but finally she died rather suddenly from heart failure on June 6th, 1897—that is to say, seven years after the first appearance of symptoms connected with the thyroid. No post-mortem examination was made so far as I am aware. It appears probable that the enlargement of the thyroid in such a case, as, indeed, in exophthalmic goitre generally, is due partly to hyperæmia and partly to changes in the gland which are apt in certain cases to determine proliferation of the epithelium surrounding the cells, such proliferation ending in the replacement of the true glandular structure by fibrous materials and consequent destruction of the functions of the gland. The gland being thus destroyed after a time undergoes a sort of cicatricial contraction, leading to atrophy comparable to that occurring in cirrhosis of the liver.

I am inclined to think that the succession of enlargement of the thyroid, with or without the typical signs of Graves's disease, is much more commonly an antecedent of myxœdema with contracted thyroid than is generally supposed. In my own experience, and probably in that of many other physicians, young women brought for treatment on account of anæmia and various nerve disorders are found much more commonly now than formerly to present some enlargement of the thyroid. Doubtless with the phenomena of myxœdema and exophthalmic goitre brought more and more prominently before our notice we have come to take more careful note than formerly of the state of the thyroid gland. It is certainly common to find a definite increase in the size of the gland present where neither the parents of the patient nor the patient herself were conscious of anything of the kind. I do not mean to say that in all these cases the enlargement of the thyroid is followed by atrophic change, but the great frequency of the occurrence of enlargement in adult women justifies the hypothesis that in a much larger number of cases than we know of at present an enlargement of the thyroid has preceded the development of myxœdema. How this enlargement comes about is certainly not well understood as yet, but it must be remembered that in the first place myxœdema, like exophthalmic goitre, is a disease affecting women in an exceedingly larger proportion than men. In fact, the title to Sir William Gull's first paper brings this predominance into strong relief. The title of the paper was "On a Cretinoid State supervening in Adult Life in Women." Temporary increases and diminutions of the size of the thyroid body are certainly not easy to recognise and determine, but certainly where a thyroid is once enlarged it is often found that there is increase of enlargement at the time of the menstrual period. When, as in many women, conditions approaching the inflammatory occur in various parts of the body at the time of menstruation it is no hasty induction if we suppose that a local exaggeration of such conditions may lead to a permanent enlargement, to be followed by simple subsidence or possibly in some cases by contraction. I know of no changes in the sexual organs of men in any way related with myxœdema where it attacks them and *primâ facie* I should not expect to find such a relation, there being in men no periodical disturbance comparable to those of menstruation. In sporadic cretinism, which is really only myxœdema occurring in childhood, the affection of the two sexes appears to be about equal, boys and girls alike in those cases being affected by developmental error. It is only after the full development of the sexual organs that the disproportionate implication of women becomes evident. So far as I know the occurrence of sexual development in sporadic cretinism, for the most part very delayed, does not affect the further course of the disease in either sex. The boy and the girl suffering alike from their myxœdema carry it on with them equally when they respectively become man and woman.

In relation to the points which have just come under discussion I may draw attention to an exceedingly interesting paper read by Dr. George R. Murray at Edinburgh in July last on the Diagnosis of Early Thyroidal Fibrosis. The object of this paper is to draw more attention to a class of cases of early disease with partial disablement of the thyroid gland, which are more common than is generally supposed. Dr. Murray points out that the symptoms in these cases are not yet sufficiently well recognised and he regards the symptoms to be the result of a certain amount of atrophy of the glandular tissue of the thyroid with fibrosis, but he does not think it desirable to discuss the question as to the possibility of fibrosis being primary and leading to atrophy of the secreting epithelium as a secondary result or to fibrosis as a secondary condition following atrophy.

Treatment.—Under the head of treatment it must first be observed that until the introduction by Dr. Murray of the practice of making hypodermic injection of a glycerine extract of the thyroid gland no remedies could be spoken of as effective. Arsenic and iron were suggested by the very obvious presence of anæmia, and each in its way often produced some improvement in the general health of the patients. The hypophosphites were used where the nervous weakness was particularly evident and jaborandi or the salts of pilocarpin were used in order to favour the occurrence of perspiration. In addition to the use of drugs the introduction of portions of thyroid gland into the tissues of the body has been used by several observers. Some found a resting place for the gland in the peritoneal cavity, others in the tissues beneath the skin. I may say that I myself have made use of the latter method in several cases, choosing a spot over the upper part of the pectoralis major muscle where the portion of the thyroid gland could be deeply embedded in subcutaneous tissue. In all cases some improvement rapidly followed the operation; the skin began to be moist, the patient's face to fine down, and the hair recovered somewhat of its healthy character, but in no very long time it could be ascertained by the touch that the embedded gland was diminishing in size and at length it had disappeared. With its disappearance passed away also all the signs of improvement. I suppose that it is just possible that by regular repetition of the process some thing like cure might have been effected, but I do not know that anyone has performed the operation more than once or twice, the difficulties of such a proceeding being very obvious. It must be stated that the embedded glandular structure was taken from a goitre just removed by operation.

As I have already observed, after Dr. Murray had made his important discovery Dr. Hector Mackenzie found that the internal administration of the gland or its preparations brought about as marked an improvement and progress to cure as had been effected by the hypodermic injections, and I suppose that the internal administration of the thyroid gland in one way or another is the method of treatment now usually adopted. It appears to me that the administration of the thyroid gland itself when it can be carefully and

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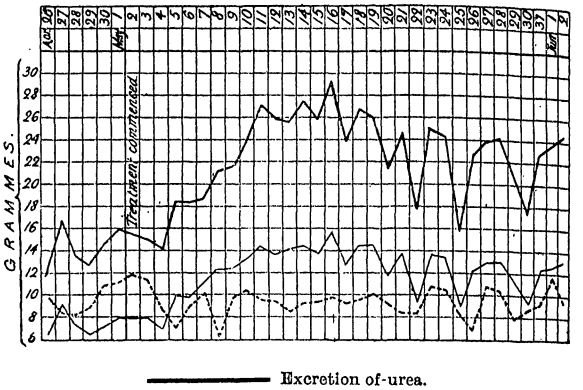
regularly maintained is the most appropriate form of treatment. The gland may be finely minced and administered raw with sugar or salt or may be lightly cooked. The size of the gland, mainly obtained from the sheep, varies a good deal and such variation is to some extent a justification of the administration of an extract obtained from a number of glands so as to get something like an average. In one case still under my occasional notice an affectionate husband has been at the trouble to procure regularly thyroid glands from sheep and to prepare them in a raw state for administration to his wife. The original quantity administered was one gland a week, but as the patient has improved the frequency of administration has been diminished, but it still goes on as it has gone on for some years and at the present moment the woman presents no signs whatever of the disease. It is possible to give the thyroid gland too frequently. When the knowledge of its efficacy as administered internally first became known I gave to a patient, who was so ill as hardly to present any chance of maintaining life, one gland a day for four days in succession. At the end of that time she suffered from violent headache, vomiting, and pains in the limbs with a rise of temperature amounting to 6° F. With such a lesson the gland was administered at longer intervals—namely, of from a week to ten days—with ultimately the greatest benefit. But to procure fresh and healthy glands and to prepare them in the proper way involves a great deal of trouble and their use may be replaced by the administration of Dr. Murray's glycerine extract in doses varying from ten to thirty drops a day, or every second or third day, according to the effects produced and to the patient's power of bearing the influence of what we may call now the drug. Still more convenient and not ineffective are the preparations in the form of tabloids now in common use. Some of these contain the dried and crushed gland, others extracts of it, such as the excellent powders devised by Mr. Edmund White, B.Sc., the pharmaceutist of St. Thomas's Hospital. On the whole I prefer the extracts of the whole gland to any kind of principle derived from it by chemical processes. Perhaps the next best form is the dried and powdered gland of the Pharmacopœia.

A good deal of extremely interesting work relating to preparation has been done by various observers, and I would draw your attention to "Observations on the Chemistry and Action of the Thyroid Gland," by Dr. Hutchison, Demonstrator in Physiology at the London Hospital Medical College. According to Dr. Hutchison and others colloid matter prepared in various ways from thyroid gland is found to contain a definite quantity of iodine, which appears to be present in the form of what has been called "iodothyrin" (Bergmann). We may note in passing that according to Dr. Hutchison parathyroids when administered in myxœdema have no effect upon the disease, although in operations on dogs no myxœdema occurs if the parathyroids are not removed as well as the thyroid.

The urine.—For the most part the urine in myxœdema contains no albumin, certainly not as a rule until the disease has lasted a very long time, often not at all from beginning to end. Where albumin, however, is present regularly in the urine, together with casts and degenerated epithelium, we may regard it as an indication that the kidney has undergone an internal change comparable to that observed in the eyelids, where the glandular tissue is injured by the encroachments of swollen connective tissue. In post-mortem examination the kidneys are found somewhat enlarged and exceedingly tough, reminding one in their consistence very much of the kidney of advanced heart disease. This change in consistence is associated with excessive thickenings of the connective tissue around Malpighian bodies and between the tubes—changes at first sight very like those of the contracting granular kidney. In the case of the young man who died with cerebral hæmorrhage some increase of interstitial tissue in the kidneys with great degeneration of epithelium, especially that of the convoluted tubes, was noted. Further, as regards the urine three things have long been observed as occurring in the treatment of myxœdema by the administration of thyroid. First, the urine below the average quantity before the administration was very largely increased in the first days of treatment. Secondly, the quantity of urea present in the urine before treatment, long known to be very deficient, amounting often to less than half of the proper excretion in that fluid, was found under the treatment to be very much increased in quantity, to a point even above the average. Thirdly, the temperature of the body was found to rise with more or less rapidity from the subnormal range present in the disease to either the normal height or beyond it. After selecting a well-marked case of myxœdema I obtained the valuable assistance of Mr. White. The constituents of the patient's daily diet and of the urine were regularly submitted to chemical examination a week before treatment. At the end of the week the administration of the thyroid in the form of the glycerine extract of the sheep's gland was begun. It was found then that while the weight of the body diminished rapidly during the first week of treatment the daily volume of urine passed rose from 928 cubic centimetres to 1127, being an increase of 190 grains; that the total solids increased from 26·16 grammes to 36·49; the organic matter from 18·79 grammes to 27·65 grammes; the urea from 14·21 to 22·36 and the total nitrogen from 7·39 to 12·08 grammes, there being also a distinct increase in the quantity of phosphoric acid and chlorine. It was clear, therefore, that the thyroid extract had: (1) a distinct diuretic action; (2) that the elimination of nitrogen was largely increased; and (3) that the increased elimination of nitrogen was almost entirely in the form of urea. These results appear to indicate that during the process of the melting of the myxœdematous deposit there occurs some important metabolism of a nitrogen-containing substance. These observations were brought before the Clinical Society of London some years ago.

In conclusion, I may be permitted to say that myxœdema presents for us great interest in the matter of its primary diagnosis; that it presents for our consideration many problems besides those connected with its own etiology and course and its relations with other diseases in which affection of the thyroid is present; and that in its pathology there are also many points to be investigated and explained. I have dealt only lightly with its pathology for the reason which I have already given—namely, that the setting forth of this before you will presently be found entrusted to more skilful hands.

Chart and Table illustrating Changes in Excretion of Urea and Nitrogen after Treatment.



Average daily excretion of urine and its constituents.	Before treatment.	After treatment.	Increase after treatment.
Volume ... ... c.c.	928	1127	199
Total solids ... ... grms.	26·16	36·49	10·33
Ash ... ... ,,	7·37	8·84	1·47
Organic matter ... ... ,,	18·79	27·65	8·86
Urea ... ... ,,	14·21	22·36	8·15
Nitrogen ... ... ,,	7·39	12·08	4·69
Phosphoric acid ... ... ,,	2·78	3·33	0·55
Chlorine ... ... ,,	1·71	2·01	0·30
Average daily ingestion of nitrogen in food ... grms.	9·46	9·30	—

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A Clinical Lecture,

BEING

SOME DETAILS IN POSTERIOR GASTRO-ENTEROSTOMY, WITH TWO SUCCESSFUL CASES.

By ARTHUR E. BARKER, F.R.C.S. ENG.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY AND PROFESSOR OF CLINICAL SURGERY AT UNIVERSITY COLLEGE AND SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—The operation of *posterior* gastro-enterostomy being yet on its trial it appears desirable that all details which may facilitate its rapid and accurate completion should be carefully studied. If the procedure is ever to be of real use it must be shown to involve but little risk to the patient. Only in this way will it come to be employed either for cancerous or cicatricial stenosis of the pylorus at a stage when it is most likely to be of real service. Hitherto it has been reserved almost exclusively for desperate cases and consequently the mortality has been high. This latter point, again, has deterred many from employing the measure even in those cases where it would have given great relief from suffering and if successful have prolonged life. This is, of course, equally true of the anterior method as well as of the posterior. But I venture to think that we have been inclined to assume too easily that because the mortality from the first-invented anterior method has been high that therefore the *posterior* method, which appears at first sight to be more difficult, would be higher. This does not necessarily follow. As a balance to the assumed difficulty of the posterior operation we have in it the absence of several of the well-known risks of the anterior method, and notably of the kinking of the bowel and the tendency if a button is used that the latter will fall into the stomach. Statistics do not help us much in estimating the relative risks of the two procedures, inasmuch as the figures available in regard to the older method include many cases done while the procedure of gastro-enterostomy was in its infancy and was consequently imperfect and more dangerous. The figures relating to the much newer *posterior* method, on the other hand, are taken from a period in which surgical technique has undergone immense improvement and the mortality of all operations has greatly fallen. But this much may be said, that some operators of large experience who in the past have done many anterior gastro-enterostomies are now giving it up in favour of the posterior method. And one, Professor Carle of Turin, writing at the beginning of this year, claims to have done his last 23 posterior gastro-enterostomies consecutively without a death, and puts his gross mortality at 3·8 per cent. for non-malignant cases. It may be objected to this series that it only contains non-malignant and consequently less severe cases. But, on the other hand, it probably gives a better idea of the intrinsic risks of gastro-enterostomy *per se* than one including malignant cases, many of them probably operated on in the last stages of an exhausting disease. But if anything like Professor Carle's success comes to be the rule, and a mortality of from 3 to 5 per cent. is all that has to be feared, one of the strongest reasons against timely operations for gastric disease will no longer exist.

But for such results great attention will be necessary to every detail, in addition to the careful selection of cases. Foremost among these will come the preparation of the patient by careful washing out of the stomach beforehand. This should never be omitted and should be carried out for some days anterior to the operation. Next to this comes the cleansing of the skin of the abdomen. For this purpose I am inclined to depend, in addition to plentiful soap and water, chiefly upon washings with methylated spirit and carbolic acid, 1 in 20, alternately if possible, for at least forty-eight hours before the operation. Then the retention of warmth in the patient comes next. My own method to this end, employed for years past, is to envelop the patient from head to foot in hot wool secured by bandages, both now always sterilised beforehand by steam. In cold weather hot bottles are placed round the patient on the operating table.

But it is to some of the details more immediately connected with the actual operation that I think attention deserves specially to be called. In the first place there appears to be a growing conviction among those who have the largest experience of plastic surgery in the abdomen that the less germicides are applied to the peritoneum the better for the result. Every irritant applied to the peritoneum is a most powerful depressant. Fully impressed with this view I have for a long time past carefully abstained from the use of any antiseptic within the abdomen in these cases and have been content to see that everything coming in any way in contact with the viscera is carefully sterilised by heat. Plain, sterile, warm dry gauze has taken the place of carbolised sponges and so on. If fluid for washing is required, which is rare, it is simply plain boiled water. Then special care is required by all and every means to save time and the manipulation of the abdominal contents. Much may be done in this direction by preparation of all detail before the abdomen is opened and much may subsequently be done as well. But in the first place it is very desirable to make the initial incision as small as possible until the exploration of the condition of the stomach has been completed. It is hardly ever necessary to make in the first instance an opening in the muscular wall of more than 2 in. The skin wound may be double that length. But with one or two fingers in the abdomen the stomach can in most cases be explored adequately, and during this exploration there is a minimum of exposure of the viscera and very little chance of prolapse of bowel. Of course, if this opening is not sufficiently large it can be increased with scissors. As a matter of fact, in the class of patients who require such operations emaciation is usually marked, and both exploration and the subsequent operation can be carried out through a relatively small abdominal incision.

And now I desire to call attention to two small modifications of the usual operation which I know will save much time and a good deal of unnecessary manipulation of the field of operation. And first let me say that, although by no means an enthusiastic believer in the wholesale use of Murphy's button, I think that in this particular case of *posterior* gastro-enterostomy it has great advantages. Its use certainly makes an operation which without it is very difficult and tedious comparatively easy and short. And, besides, some of the objections to its use in the anterior operation have less weight in the posterior. Two drawbacks to the use of the button in the *anterior* operation occur at once to any surgeon who has done many of these operations. One is the probability that the button will fall back into the stomach rather than pass into the bowel. This has been known to occur in several cases. It can be explained both by the weight of the metal body tending to drag it back from its position in the anterior wall of the stomach into the cavity of the viscus and from the narrowing of the jejunum due to the dragging of the colon preventing the button from passing into the gut. But when the button is placed in the posterior wall of the stomach behind the colon and in the jejunum behind the latter, where it does not kink, the contractions of the stomach and gravity both tend to carry it into the gut, which is at its greatest size and in no way displaced.

But again I have to note two small details in the method of applying the button in the posterior operation which I observed in my last two gastro-enterostomies, which I think materially shorten the procedure and further minimise the chance of the button falling into the stomach. The first is Professor Carle's method of closing each viscus round the central tube of the button, which differs materially from that recommended by Dr. Murphy. The incision in each viscus was made only just large enough to get the button into each. Then, instead of the usual purse-string suture round the edges of the opening to close it on the central tube Professor Carle simply puts a stitch at each end of the slit by Lembert's method and so reduces it. This saves much time, as he says, and as I know from my own cases, and is equally effectual. It also saves much handling and dragging of the parts.

The next point to which I wish to draw attention I have not seen noticed elsewhere. It is a departure from von Hacker's procedure in his operation. He recommends that when the stomach has been reached through a slit made in the transverse meso-colon it should be secured there by stitches before being made to anastomose with the jejunum.

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Now I believe that this stitching, although I have done it in my own operations, may be dispensed with altogether where the button is used. That this will save much time is obvious. In my last case the operation had lasted seventeen minutes before this stage had been completed, the whole procedure lasting thirty-six minutes. From what I have seen in the last two cases I have operated on I believe that all that is necessary is to make a small hole in the meso-colon and draw the posterior wall of the stomach through it to a sufficient extent to give room for the insertion of the metal button. When the latter has been placed in position it will prevent the stomach from slipping back through the slit in the meso-colon and there will therefore be no reason for stitching the latter to the stomach. There might be some fear perhaps that the funnel of the stomach-wall thus made might be strangled by the edges of the hole in the meso-colon did we not know that under similar conditions where the stomach is drawn out through small apertures in the most recent operations for gastrostomy no strangulation takes place. In my first posterior gastro-enterostomy, though the stomach-wall was tightly grasped by the hole behind the button, no evil result followed and the button was passed on the fourteenth day, the patient making a perfect recovery. In my last case of the posterior operation done with the same button I stitched the stomach to the meso-colon. But though the patient made an uneventful recovery and the button was passed on the twelfth day I could see that I had lost at least ten minutes in putting in stitches in a very inaccessible part which might have been avoided. Everything which gets rid of the necessity of stitching within the abdomen appears to me to deserve a very careful consideration as a means of saving time and the irritation of manipulation.

In conclusion, I may say that I was struck with the very small amount of general disturbance produced by the posterior operations as contrasted with a much larger number of anterior gastro-enterostomies which I have done. The operation in every way left a very favourable impression on my mind. And if further experience shows that it can be done in a still shorter time and with equally rapid and satisfactory recovery we may hope that many sufferers may be relieved at a much earlier stage of their ailments than has hitherto been the case. The cases are briefly as follows.

CASE 1.—A patient, aged fifty years, was sent to me by Mr. Smith of Tavistock with a history that he had just arrived from Italy. He had been a healthy man until some six or eight months before, when he began to suffer from dyspeptic symptoms accompanied by pain and great dilatation of the stomach. Some seven years before he had had somewhat similar symptoms but had recovered and become very stout, weighing usually about 15 st. The last attack was followed by rapid emaciation, so that when I saw him he only weighed 10 st. 8 lb. He had been treated by careful dieting and washing out of the stomach daily and under this treatment the dilatation of the organ disappeared but with increasing weakness. No tumour could be made out. In the uncertainty as to diagnosis an exploratory operation was done on Aug. 27th, 1898, in which I discovered a hard, thickened pylorus, possibly cicatricial, but presumably carcinomatous. I turned up the colon, made an opening in the transverse meso-colon, and united the stomach through this to the first part of the jejunum about 18 in. from its origin. Murphy's button was used, as above described. The patient bore the operation, which lasted fifty minutes, well. He was troubled for the first two or three days by regurgitation of bile from the mouth. After this he had no trouble and soon began to put on flesh at the rate of 3 lb. every two days. He left the nursing home looking well and very cheerful, having passed the button on the fourteenth day.

CASE 2.—A man, aged forty-eight years, was admitted into University College Hospital in the last week of September, 1898. He was much emaciated and suffered severely from pain and dilatation of the stomach and there was a tumour to be felt in the pyloric region. Here I did the operation of posterior gastro-enterostomy precisely as in the previous case but more rapidly, finishing it completely in thirty-six minutes. The stenosis was undoubtedly cancerous. The patient was none the worse for the operation, was fed from the first, and soon began to put on flesh rapidly. He had no bad symptom of any kind and returned home on Oct. 26th, 1898, without any of his old pain and eating ordinary food. The button was passed on the twelfth day.

A FURTHER CONTRIBUTION TO THE SURGERY OF STONE IN THE BLADDER,

BASED ON A RECENT SERIES OF CASES IN HOSPITAL AND PRIVATE PRACTICE.

BY REGINALD HARRISON, F.R.C.S. ENG.,
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FROM time to time I have passed under notice [1] and compared with my own experience various processes which have in recent years been employed in the treatment of stone in the bladder and have endeavoured to illustrate their applicability to individual cases in practice. The record of additional cases which forms part of this paper will enable me to offer some further remarks on various points still open to consideration. The cases here referred to have all been operated upon by me either in hospital or private practice during the interval of 1890–97 and include every instance thus dealt with during this period. It will be convenient to divide my subject-matter into three parts: (1) a tabulated record of all my operations during the period referred to, with special reference to litholapaxy as the procedure now generally adopted; (2) observations relative to the prevention and treatment of recurring stone; and (3) some remarks on certain operations for stone in the bladder which may be regarded as supplementary to litholapaxy.

I.—A TABULATED RECORD OF OPERATIONS DURING THE PERIOD 1890–97, WITH SPECIAL REFERENCE TO LITHOLAPAXY AS THE PROCEDURE NOW GENERALLY ADOPTED.

To proceed with my first division it will be seen on reference to the table of cases that it comprises 101 litholapaxies, 3 perineal lithotrities by my method, 2 suprapubic lithotomies, and 4 median lithotomies, making a total of 110 persons operated upon.

Litholapaxy.—Since 1878, when I was in Boston and spent some time with Bigelow watching his earlier operations by this process, which he was then developing, I have continued to practise it, using with but slight modifications the appliances which I showed for the first time in England at the annual meeting of the British Medical Association in 1878 [2] on my return from the United States. No more striking testimony to the completeness of Bigelow's work could be found than the fact that the instruments of his day, after a lapse of over twenty years, have undergone no important change. It is rare to find an invention so perfect in its initiation as this in all its details. On reference to the table of cases it will be seen that 6 of the 101 litholapaxies terminated fatally. 1. A man, aged sixty-five years (No. 6), who was operated upon successfully on the first occasion, died on the third day after the repeated operation which was performed thirteen months subsequently. The kidneys were extensively involved in suppurative nephritis. The stone was a phosphatic one weighing close upon 2 oz. The repetition of the operation had clearly been delayed too long. 2. A man, aged sixty years (No. 13), died on the twenty-eighth day after operation from chronic suppurative nephritis and syncope. 3. A man, aged seventy-two years (No. 32), died on the sixth day after operation from pelvic cellulitis probably due to suppuration within a vesical sac or pouch. 4. A man, aged fifty-four years (No. 70), who was operated upon successfully on the first occasion, died after a similar operation repeated fifteen months subsequently from suppurative nephritis caused by a chronic urethral stricture which had gradually contracted. Had on the second occasion a perineal lithotrity with division of the stricture and drainage of the bladder and ureters been practised he would have had a better chance of recovery. The patient derived so much relief from the first operation that he wished it repeated on precisely the same lines. 5. A man, aged sixty-two years (No. 88), died on

[1] Observations on Lithotomy, Lithotrity, and the Early Detection of Stone in the Bladder (Churchill, 1883). Surgical Disorders of the Urinary Organs (4th Edition, Churchill, 1893). Diseases of the Bladder in Twentieth Century Practice of Medicine (Wood and Co., New York, vol. i., 1895).

[2] Brit. Med. Jour., vol. ii., 1878

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the tenth day after operation from extensive suppurative nephritis consequent on a urethral stricture of some years' standing. He was much exhausted from many weeks' travelling under painful circumstances. 6. The remaining fatal case was that of a man, aged seventy-six years (No. 92). He died on the twenty-ninth day after what promised to be a very successful operation. A large urate stone was crushed and evacuated, the dried fragments of which weighed 975 gr. The prostate was much enlarged. The calculus had previously caused him great pain and the operation afforded complete relief from this. He died from senile decay. Of the 101 different persons included in the table and who were submitted to litholapaxy 23 were known to have one or more recurrences for which I treated them on subsequent occasions. One man (No. 17), I heard, had a second stone successfully removed by another surgeon by a suprapubic cystotomy about twelve months after my operation. In these 23 persons who had recurrence of stone after crushing I repeated litholapaxy once in 13 of them, twice in 2, thrice in 1, four times in 1, five times in 1, six times in 1, nine times in 2, and ten times in 2, making a total of 174 litholapaxies in 101 individuals with six deaths as previously detailed. In several of the repeated operations the proceeding resolved itself into occasionally removing from the bladder calculous concretions with the aid of the lithotrite and aspirator, much on the same principle as the dentist removes tartar which has collected about the irregularities of the teeth. These occurred for the most part in elderly men with atonic bladders who were more or less dependent on their catheters and possessed but little power of voluntary expulsion. To submit these cases to a cutting operation for the purpose of removing the concretions and draining the bladder could not be recommended, as during the intervals, sometimes extending over many months, they enjoyed fair, and even active, health. For instance, in case No. 1 the patient, whom I first operated upon early in 1890 and upon whom I have repeated the operation nine times, is alive and well, and though not in robust health leads as comfortable a life as most people do at seventy-one years of age who are dependent upon the catheter. No. 3, operated on in 1890, followed by two recurrences at about three months' interval each, has had no recurrence since 1891, and is now again leading an active professional life. No. 4 had the operation repeated six times, but has had no recurrence since 1893. He is now eighty-seven years of age and is in good health. No. 44 has had nine recurrences. He is in excellent health, though he has recently had another operation after a previous two years' interval. I have since divided both his vasa and I think it likely that he will be no further troubled either with stone or prostatic symptoms. These cases were all unfitted for any other procedure. In none of them have the patients hitherto shown any signs of kidney complication.

As in records by other surgeons which have been recently published, the mortality connected with all these proceedings has been reduced to so small a percentage as to assimilate them in this respect to those which we are accustomed to speak of as minor or non-fatal operations. The period of convalescence has also been considerably lessened. In both of these important respects there has been generally a remarkable diminution during the last twenty-five years of the present century.

The stones noted in the table both as to composition and weight include all the commoner varieties of calculi and one cystin (No. 96). The collected and dry fragments of the 101 primary litholapaxies were found to weigh 13,413 gr., or an average weight of over 2 dr. removed from each patient. The largest calculus in this litholapaxy series was a urate (No. 64) which weighed 1200 gr. In the 73 operations undertaken for recurring calculi the fragments removed varied from about 20 gr. in weight to over 2 oz. These calculi were for the most part phosphatic. The youngest patient operated upon (No. 73) was a boy four years of age. A urate calculus weighing about 15 gr. which had caused several acute attacks of retention of urine, was pushed back into the bladder and then crushed and evacuated. He was well and about on the following day. In the same way a cystin calculus was removed from a boy five years of age (No. 96).

A urethral stricture complicated several of the cases of litholapaxy (Nos. 12, 23, 26, 54, 55, 70, 84, and 88). Urethral stricture, as several of these cases show, offers no obstacle in the way of litholapaxy provided the kidneys are fairly sound and have not commenced to suppurate. When the latter has taken place litholapaxy can only be undertaken with a considerable degree of risk. This complication proved fatal in cases No. 70 and No. 88. Where stricture is of that degree of tightness or of previous duration as to render suppurative nephritis imminent or actual, perineal lithotrity, with division of the stricture and subsequent drainage, is far safer. Case No. 104 of the series is another illustration of this. This patient had been treated for stricture for over a year before I sounded him and found a large stone in addition. Litholapaxy would probably have been fatal in not providing drainage for the suppurating bladder, ureters, and kidneys. Perineal lithotrity was selected and since the operation, over four years ago, he has enjoyed excellent health, and has had no recurrence either of stone or of stricture. In 2 of the cases (No. 33 and No. 100) the stone was embedded within the area of the prostatic urethra. In one instance it was seen with the cystoscope. With a sound aided by my finger in the rectum in both cases the stone was freed, pushed back into the bladder, and crushed.

In looking over the table of cases which accompanies this paper it will not be difficult to recognise that prostatic hypertrophy and the conditions associated with it most frequently co-exist with stone recurrence. I shall therefore pass on to the second part of my paper and proceed to offer some observations relative to the prevention and treatment of vesical stone when met with under these circumstances.

II.—Observations Relative to the Prevention and Treatment of Stone Recurring after Operation.

It is only in connexion with the surgical treatment of stone in the bladder when complicated with prostatic enlargement and the vesical conditions associated with this that it becomes necessary to offer any special remarks in reference to stone recurrences after operation. Litholapaxy or crushing when practised on the child or the young adult under normal structural conditions is so rarely followed by the re-formation of stone as hardly to require notice. It happened only once in this series under the latter circumstances (No. 17) and this was probably due not directly to bladder causes, but to a fresh descent from the kidney, as also occurred in a second instance (No. 33). The remaining recurrences and a large proportion of the entire number of litholapaxies were associated with this particular form of urinary obstruction. There is nothing very remarkable in this when we remember that, excluding three or four young persons about or below puberty, the average age of the patients was over sixty-two years. Nor is it difficult to understand why this should be. The enlarged prostate not only often renders the act of complete micturition mechanically difficult and impossible, but it furnishes favourable local conditions for the growth of stones which, having descended from the kidney, are thus detained there. Under such circumstances the male bladder may not inaptly be regarded as a bedding-out ground for renal calculi. Many instances in this series served to illustrate this and to show how gravel and calculi which were formerly expelled naturally ceased to be so as soon as the prostatic age had been reached. And what applies to kidney calculi and concreted crystals is equally true of other foreign bodies which a chronically-inflamed bladder is apt to contain. That an incomplete removal of the débris after a crushing operation may be responsible for some recurrences there can be no doubt, but not, I believe, to the same extent as some are disposed to consider. A red urate or a black oxalate stone is sometimes supplanted by a pure white phosphate. More than one recurring calculus which I have removed had a fixed origin on the rough cicatrix of a previous suprapubic cystotomy; two were formed on centres furnished by the remains of silk sutures employed in the latter operations, and others undoubtedly have had their origin on nuclei provided by shreds and sloughs from an inflamed bladder. Further, the sacs and pouches of bladders distorted in this way by prostatic obstruction furnish hiding places for débris which are almost inaccessible. In view of such obstacles and to prevent recurrence taking place much importance must be attached to the thorough clearance of the bladder in the first instance, to the subsequent management of the case after it has left the hands of the operator, and to such measures as have for their object bringing about shrinking or atrophy of the enlarged gland.

The lithotrites employed should be capable of rapidly and completely breaking up the stone without pounding it too much into such masses as a pestle and mortar produces. The jaws of the lithotrite whilst protected should be able to

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TABULAR STATEMENT OF CASES OF PRIMARY STONE IN THE BLADDER TREATED BY LITHOLAPAXY (1890–97).

No.	Age.	Days under treatment.	Stone. Composition.	Stone. Weight.	Result.	Condition of Bladder.	Condition of Prostate.	Condition of Urine.	Recurrence or not.
				Gr.					
1	63	19	Uric, Phosphatic.	15	Good.	Pouched.	Large.	Alkaline.	Recurrence.
2	61	28	Phosphatic.	150	,,	,,	,,	Ammoniacal.	—
3	59	10	,,	120	,,	,,	,,	,,	Recurrence.
4	79	19	,,	53	,,	Cystitis.	,,	,,	,,
5	64	18	Uric.	80	,,	Normal.	Normal.	Normal.	—
6	65	20	Uric, Phosphatic.	86	,,	Cystitis.	Large.	Ammoniacal.	Recurrence.
7	74	10	Phosphatic.	130	,,	Pouched.	,,	Alkaline.	,,
8	68	7	Uric, phosphatic.	65	,,	,,	,,	,,	—
9	57	5	Uric.	16	,,	Normal.	,,	Normal.	—
10	64	8	Phosphatic.	64	,,	,,	,,	Ammoniacal.	—
11	55	6	Uric.	55	,,	,,	Normal.	Normal.	—
12	56	10	,,	12	,,	,,	,,	,,	—
13	60	28	Phosphatic.	30	Death.	Pouched.	Large.	Ammoniacal.	—
14	60	15	,,	600	Good.	,,	,,	,,	Recurrence.
15	71	18	Uric, phosphatic.	200	,,	,,	,,	,,	—
16	61	6	Phosphatic.	130	,,	,,	,,	Purulent.	Recurrence.
17	20	8	Uric.	60	,,	Normal.	Normal.	Sanguineous.	
18	66	7	,,	150	,,	Pouched.	Large.	Normal.	—
19	53	6	Uric, oxalate.	120	,,	Normal.	Normal.	,,	—
20	56	8	Uric.	86	,,	,,	,,	,,	—
21	75	12	,,	120	,,	,,	Large.	,,	—
22	68	18	Phosphatic.	84	,,	,,	,,	Purulent.	—
23	31	30	,,	74	,,	,,	Normal.	Alkaline.	—
24	64	11	Uric, phosphatic.	189	,,	,,	Large.	Purulent.	—
25	69	7	Phosphatic.	24	,,	Pouched.	,,	Ammoniacal.	—
26	43	7	,,	26	,,	,,	Normal.	,,	—
27	41	16	Uric, phosphatic.	34	,,	Normal.	,,	,,	—
28	45	9	Oxalate.	8	,,	,,	,,	,,	—
29	64	9	Uric.	65	,,	,,	Large.	Albuminous.	Recurrence.
30	67	5	Phosphatic.	25	,,	Pouched.	,,	Ammoniacal.	—
31	70	6	,,	30	,,	,,	,,	Sanguineous.	—
32	72	6	Uric, phosphatic.	100	Death.	,,	,,	Ammoniacal.	—
33	46	8	Oxalate.	30	Good.	,,	,,	Purulent.	Recurrence.
34	66	14	Phosphatic.	240	,,	,,	,,	Normal.	—
35	69	16	Uric.	228	,,	Normal.	,,	Purulent.	—
36	39	8	Oxalate, phosphatic.	31	,,	,,	Normal.	Normal.	—
37	76	14	Phosphatic.	65	,,	Pouched.	Large.	Ammoniacal.	Recurrence.
38	58	8	Uric, phosphatic.	120	,,	,,	Normal.	Normal.	—
39	54	9	Uric.	69	,,	Normal	,,	,,	—
40	61	7	,,	68	,,	Pouched.	Large.	,,	—
41	65	15	,,	180	,,	Normal.	,,	,,	Recurrence.
42	65	7	,,	190	,,	Pouched.	,,	,,	—
43	67	7	Phosphatic.	20	,,	Normal.	Normal.	Ammoniacal.	—
44	72	3	,,	39	,,	Pouched.	Large.	,,	Recurrence.
45	64	12	Uric.	182	,,	Normal.	Normal.	Albuminous.	—
46	69	9	,,	130	,,	,,	Large.	Normal.	—
47	74	15	Phosphatic.	20	,,	Cystitis.	,,	Ammoniacal.	Recurrence.
48	73	14	Uric.	80	,,	Pouched.	,,	Alkaline.	—
49	64	10	,,	40	,,	Normal.	,,	Normal.	—
50	68	18	,,	182	,,	,,	,,	,,	—
51	65	7	,,	80	,,	Pouched.	,,	Ammoniacal.	—
52	64	6	Oxalate.	13	,,	Normal.	,,	Normal.	—
53	62	10	Uric.	120	,,	,,	Normal.	,,	Recurrence.
54	62	13	Phosphatic.	95	,,	Cystitis.	Large.	Ammoniacal.	—
55	47	6	,,	80	,,	,,	Normal.	,,	—
56	73	4	Uric, phosphatic.	80	,,	Pouched.	Large.	,,	Recurrence.
57	69	7	Uric.	125	,,	,,	,,	Purulent.	—
58	62	22	,,	91	,,	Normal.	Normal.	Albuminous.	—
59	66	14	Uric, phosphatic.	143	,,	Pouched.	Large.	Purulent.	—
60	74	6	Phosphatic.	336	,,	,,	,,	,,	Recurrence.
61	60	13	Uric, phosphatic.	76	,,	Normal.	,,	Normal.	—
62	64	3	Uric.	12	,,	,,	,,	,,	—
63	65	10	Phosphatic.	240	,,	Cystitis.	,,	Ammoniacal.	—
64	75	12	Uric.	1200	,,	Normal.	,,	Purulent.	—
65	62	17	,,	91	,,	,,	,,	Albuminous.	Recurrence.

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TABULAR STATEMENT OF CASES OF PRIMARY STONE IN THE BLADDER TREATED BY LITHOLAPAXY (1890–97)—(*Continued*).

No.	Age.	Days under treatment.	Stone. Composition.	Stone. Weight.	Result.	Condition of Bladder.	Condition of Prostate.	Condition of Urine.	Recurrence or not.
				Gr.					
66	73	23	Uric.	100	Good.	Pouched.	Large.	Albuminous.	—
67	71	14	Uric, Phosphatic.	600	,,	Normal.	,,	Alkaline.	Recurrence.
68	25	10	,,	18	,,	,,	Normal.	Normal.	—
69	56	14	Oxalate.	240	,,	,,	,,	Purulent.	—
70	54	18	Phosphatic.	120	,,	Pouched.	,,	,,	Recurrence.
71	59	10	,,	336	,,	,,	Large.	,,	,,
72	74	2	Uric, oxalate.	120	,,	,,	,,	,,	—
73	4	1	,,	15	,,	Normal.	Normal.	Highly acid.	—
74	67	16	Uric.	240	,,	Contracted.	,,	Normal.	–
75	70	6	,,	90	,,	Pouched.	,,	Purulent.	—
76	61	8	Uric, phosphatic.	15	,,	Normal.	,,	Normal.	Recurrence.
77	35	9	Phosphatic.	33	,,	,,	,,	Purulent.	—
78	52	17	Oxalate.	416	,,	,,	,,	Oxaluria.	—
79	38	20	Phosphatic.	57	,,	Phosphatic.	*Ntl.*	Alkaline.	—
80	54	17	,,	65	,,	Cystitis.	Large.	Ammoniacal.	Recurrence.
81	45	10	Oxalate.	279	,,	Contracted.	Normal.	Normal.	—
82	64	10	Oxalate, phosphatic.	150	,,	Cystitis.	Large.	Alkaline.	—
83	30	7	Uric.	76	,,	Normal.	Normal.	Normal.	—
84	56	7	Phosphatic.	320	,,	Cystitis.	,,	Alkaline.	—
85	67	9	Uric, phosphatic.	120	,,	Pouched.	Large.	Purulent.	—
86	60	4	Phosphatic.	30	,,	,,	Normal.	,,	—
87	72	6	Uric.	120	,,	,,	Large.	Normal.	—
88	62	10	Uric, phosphatic.	244	Death.	,,	,,	Ammoniacal.	—
89	84	10	Phosphatic.	23	Good.	,,	,,	,,	—
90	56	5	Uric.	180	,,	Normal.	Normal.	Normal.	—
91	74	6	Uric, phosphatic.	11	,,	Pouched.	Large.	Ammoniacal.	—
92	76	29	,,	975	Death.	,,	,,	,,	—
93	69	13	Uric.	385	Good.	Normal.	,,	Albuminous.	—
94	65	11	Phosphatic.	20	,,	Pouched.	,,	Purulent.	—
95	69	15	,,	21	,,	Normal.	,,	Normal.	—
96	5	18	Cystin.	150	,,	,,	Normal.	Purulent.	—
97	60	8	Uric.	191	,,	Pouched.	Large.	,,	—
98	66	9	Phosphatic.	26	,,	,,	,,	Ammoniacal.	—
99	75	17	,,	34	,,	,,	,,	,,	—
100	34	9	Uric.	10	,,	Normal.	,,	Normal.	—
101	31	8	Oxalate.	15	,,	,,	,,	,,	—
			Cases treated by Perineal Lithotrity (1890–97).						
102	49	19	Uric, phosphatic.	430	Good.	Contracted.	Normal.	Ammoniacal.	
103	52	31	,,	1446	,,	Cystitis.	Spastic.	,,	
104	56	56	,,	480	,,	,,	Normal.	,,	—
			Cases treated by Suprapubic Lithotomy (1890–97).						
105	56	55	Uric.	308	Good.	Normal.	Normal.	Puro-sanguineous.	—
106	35	32	,,	900	,,	,,	,,	Sanguineous.	—
			Cases treated by Median Lithotomy and Drainage (1890–97).						
107	44	20	Phosphatic.	24	Good.	Cystitis.	Normal.	Ammoniacal.	—
108	41	61	,,	85	,,	Pouched.	,,	Purulent.	—
109	25	23	,,	23	,,	Normal.	,,	,,	—
110	55	30	,,	18	,,	Pouched.	,,	Ammoniacal.	—

REMARKS.

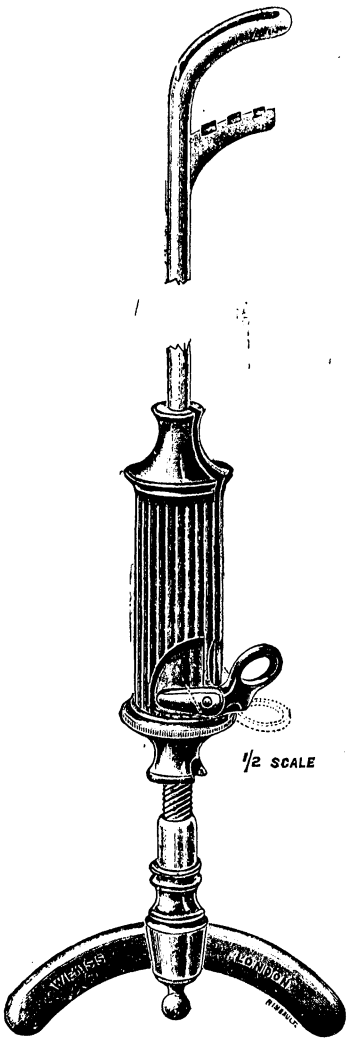
Case 6: Operation repeated 13 months afterwards; death. Case 9: Prostate subsided after removal of stone. Case 12: Urethral stricture dilated. Case 13: Advanced kidney disease. Case 14: Pouch seen with cystoscope. Case 16: Diabetic. Case 17: Suprapubic cystotomy a year subsequently; recovery. Case 18: Double vasectomy subsequently for enlarged prostate; good result. Case 23: Urethral stricture treated by dilatation. Case 26: Urethral stricture. Case 32: A suppurating saccule and pelvic cellulitis caused death. Case 33: Stone saculated in prostate pushed back and crushed; shrinkage of prostate; recurrence due to fresh descent from kidney. Case 48: Paralysed. Case 54: Tight stricture: (1) internal urethrotomy and (2) litholapaxy. Case 55: Internal urethrotomy for stricture 13 months previously; nucleus of stone a bougie of ol. theobrom. Case 56: Single vasectomy for enlarged prostate on recurrence. Case 60: Double vasectomy for enlarged prostate. Case 66: Very small and contracted bladder with a pouch; double vasectomy. Case 69: Pelvis much distorted by old spinal caries. Case 70: Chronic stricture of urethra; litholapaxy repeated 15 months after; death; suppurative nephritis. Case 71: Double vasectomy for large prostate. Case 73: Impacted stone causing retention; pushed back and crushed. Case 74: Suffered much from chronic bronchitic asthma. Case 78: Complicated with large hydrocele. Case 79: Mucous membrane encrusted with phosphates. Case 81: Incontinence of urine for 3 years previously and constantly wearing a urinal; power of bladder completely restored after operation. Case 84: Chronic urethral stricture. Case 88: Complicated with old stricture and suppurative nephritis. Case 92: Much relieved by operation; death from senile decay; urine specific gravity 1008. Case 94: Double vasectomy for enlarged prostate. Case 100: Prostatic stone pushed into bladder and crushed; shrinkage of prostate. Case 101: Stone seen with cystoscope in orifice of left ureter. Case 102: Lithotrity attempted, but perineal lithotrity substituted. Case 104: Chronic urethral stricture; pyelitis; division of stricture. Case 106: A villous growth was also suspected, but not discovered. Case 110: A stricture necessitated division and drainage.

Note.—All the cases were those of male patients except No. 79, which occurred in a female.

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out up stones such as the phosphates, which though soft and friable are apt when mixed with the mucus from the bladder to run into tough pultaceous pieces which may readily be left behind and form nuclei for further concretions. Hence the powerful fenestrated lithotrites are, as a rule, to be preferred. For use with large stones the lithotrite last made for me (Fig. 1) by Messrs. Weiss and Son has proved a most

FIG. 1.



The lithotrite.

FIG. 2.



The aspirating catheter and stylet.

admirable pattern. It will be seen that to save the hand a cross-bar has been fitted to it instead of a wheel and a short lever worked by the thumb, in place of the old button, by which the sliding movement is converted into the screw when the stone is seized. It must, however, not be forgotten that the former adaptation greatly increases the power which can be brought to bear upon the instrument. A cautious operator will consequently be chary how he utilises his maximum force. Nor must the aspirators and catheters used for withdrawing the broken fragments from the bladder be less efficient. In this series of cases I have continued to use Mr. Morgan's aspirator. My colleague Mr. Freyer has recently described one which is extremely simple and is readily charged with water. The opening or eye in the evacuating catheter should be large and bevelled (Fig. 2) and a probe stylet should be at hand in case of impaction.

In cases complicated with prostatic enlargement and where the patient is, as is often the case, more or less dependent upon the catheter, the bladder should be attended to for some time after the operation. Sufficient importance is not attached to this point. If these cases were carefully looked after for three or four months after the operation, recurrences would be far less frequent. At least once a week the bladder should be washed out with the metal catheter and aspirator, as used in connexion with the operation, in addition to such irrigation and catheterism as the patient can himself employ when necessary. I have also had some large-eyed flexible catheters made to fit these aspirators. The latter are sometimes useful where there are sacs or pouches. The aggregation and growth of calculous matter in the bladder may thus often be prevented. I recently saw a boy, aged four years, who had many of the symptoms of stone. I sounded him under ether but could not find one. I then washed out his bladder with an aspirator catheter as just described and removed quite a quantity of large urate crystals with complete relief to the patient. It was, as Mr. Braine remarked at the time, "a good stone spoilt." Free crystals remaining in the bladder are not an infrequent cause of various irritations and reflexes in young subjects.

The effect of silver nitrate as a local application in cases of chronic cystitis with prostatic enlargement where there is a tendency to produce phosphatic concretion is well known. I remember a case some years ago which bears importantly upon this practice. It was that of an elderly man who when suffering from residual urine broke a gum-elastic catheter whilst passing it and left several inches of it in his bladder. His general condition was such that no immediate steps could be taken to remove it and it was therefore advised that the bladder should be washed out twice a day with a weak solution of silver nitrate. This was done and ten days afterwards the patient allowed me to extract the broken portion entire with a smooth-bladed lithotrite. What struck me on doing so as remarkable was that neither on the piece of catheter nor within the bladder was there any sign of phosphatic concretion. I presume that the action of the nitrate, as with other salts which may be artificially introduced into the bladder, prevented molecular coalescence taking place, as the urine was alkaline and offensive during the ten days the catheter remained in the bladder.

In the third place, my series of cases furnishes examples (Nos. 18, 56, 60, 66, 71, and 94) where vasectomy was employed with the view of bringing about shrinkage of the prostate. It appeared to do good in all these instances, (1) in rendering access to and from the bladder easier both as to micturition and the use of catheters, and (2) in getting rid of that slimy mucus, not unlike birdlime, which clings so tenaciously to the bottom of vessels in which it is allowed to settle. Vasectomy was resorted to under these circumstances in instances where in addition to the recurrence of the stone serious symptoms of prostatic obstruction existed. The stone having been removed in the usual way by the lithotrite and aspirator, one vas was resected in the way described in my Bradshaw lecture[3] and seven days afterwards the remaining one was treated in the same manner, about an inch of each tube being taken away. The small wound usually heals under a collodion dressing in forty-eight hours.

I have never had occasion to resort to castration in connexion with my stone operations, as I think that a trial should first be made of vasectomy before so serious an operation is proceeded with. I have, however, recorded one instance in my Bradshaw lecture (where I have discussed this subject at some length), in which I know excellent results followed castration in a case of recurring stone with urgent and increasing symptoms of prostatic obstruction. In the instances of vasectomy just referred to no recurrence of stone has yet occurred to my knowledge and there has been a general improvement in the symptoms connected with the enlarged gland which co-existed. I think a further experience and a still more extended period of observation will warrant me in concluding that the diminishing number of recurrences in this series was due not entirely to any additional pains taken in the first instance in the removal of the stone, but partly also to the use for some time after of the evacuating catheter and wash-bottle and to the employment of vasectomy on recurrence, in suitable cases, where there was much prostatic enlargement, which practices I have more recently adopted. I will now proceed to the third and concluding portion of my subject.

III.—SOME OPERATIONS WHICH MAY BE REGARDED AS ALTERNATIVES OF LITHOLAPAXY.

In the last nine cases of stone in the bladder arranged in this series (No. 102 to No. 110) it was thought necessary to employ some form of incision to facilitate the removal of the

[3] THE LANCET, Dec. 12th, 1896.

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calculus, either entire or by first breaking it. The selection of one or other of these proceedings had reference mainly to conditions or complications outside the mere presence of a stone, as in no instance was the latter itself deemed to be beyond the reach of litholapaxy. In every instance recovery was complete and, so far as I know, permanent. The average age of these nine individuals was about forty-six years, whilst in the previous series of litholapaxies the average was about sixty-two years. In 3 of these cases perineal lithotrity on the lines I have elsewhere described was selected; in 2 suprapubic lithotomy or the high operation was practised; whilst in the remaining 4 the boutonnière or median operation was employed as providing for the extraction of the stone and the subsequent drainage of the bladder, the latter being the main consideration. A few words will be devoted to noting the special advantages connected with the several proceedings and their application to some of the cases selected.

Perineal lithotrity.—The chief reason for selecting this mode of dealing with the stone in the three patients (No. 102 to No. 104) may be very briefly stated. It was essentially a mechanical one, having reference in the first instance to an extremely contracted and thickened bladder, where after trial it was found impossible to use the lithotrite with safety in such a limited area; in the second instance to an unusually rigid or fibrous prostate which rendered the introduction of the short curved lithotrite exceptionally difficult; and in the third instance to a very strictured urethra. The patient in the third case had previously undergone an internal urethrotomy and two divulsions by Holt's method by other surgeons and the canal was structurally unfitted for the instruments used in crushing operations. Further, as will be readily understood, suppurative nephritis was impending if not already in existence. The patient made a good recovery. In these three cases, in addition to the special features I have mentioned the stones were large and hard, weighing respectively 430 gr., 1446 gr., and 480 gr. In one of the patients (No. 103) who was submitted to perineal lithotomy in 1893, nine months afterwards he had an attack of cystitis which threatened to become chronic. As this would probably have led to a recurrence I opened and drained the bladder from the perineum for ten days. This speedily cured the cystitis. I hear that the patient continues to have excellent health and has had no return of the stone. In a previous series of cases in two instances I drained the bladder by a median perineal puncture and drainage-tube where some weeks after lithotrity the urine remained purulent and chronic cystitis continued. In both of these the independent drainage, apart from and subsequently to the removal of the stone, acted beneficially and certainly appeared to complete the cure. In neither of these patients did recurrence take place, though before the drainage was employed it looked as if this was most likely to happen.

The chief points in favour of the selection of perineal lithotrity appear to be these: (1) it enables the operator to crush and evacuate large stones in a short space of time; (2) it is attended with a very small risk to life as compared with other operations, such as lateral or suprapubic lithotomy, and is well adapted to old and feeble subjects when for any reason crushing is inadmissible; (3) it permits the operator to wash out the bladder and any pouches connected with it more effectually than by the urethra, as the route is shorter and the evacuating catheters employed are of much larger calibre; (4) the surgeon can usually ascertain, either by exploration with the finger or by the introduction of forceps into the bladder, that the viscus is cleared of all débris; (5) it enables the surgeon to deal with certain forms of prostatic outgrowth and obstruction complicated with atony of the bladder in such a way as to secure not only the removal of stone, but the restoration of the function of micturition; and (6) by the subsequent introduction and temporary retention of a soft rubber drainage-tube states of cystitis due to the retention of urine in pouches and depressions in the bladder wall are either entirely cured or are permanently improved. To lock up unhealthy ammoniacal urine after a lithotrity in a bladder which cannot properly empty itself is to court the formation or recurrence of a phosphatic stone. Hence it is well suited to some cases of recurrent calculus. I have never known the wound to remain unhealed except in those instances where for some reason or other it has been desired to construct a low-level urethra.

Supra-pubic lithotomy.—This was successfully practised in two instances (No. 105 and No. 106). In both, from the pain and the frequency and duration of the hæmorrhage, growth was also suspected but not discovered. The bleeding was so free and was so readily excited that the cystoscope afforded no assistance, and I thought it better to remove the stones in such a way as to enable me to directly explore the interior of the bladder. No cause for the bleeding other than the calculus was discovered. It is seldom that the latter occasions so much hæmorrhage. The stones weighed respectively 308 gr. and 900 gr.

I am not much in favour of this method in removing large calculi from elderly males. In younger persons it is much safer and there is less objection to it. The mortality is considerable, as shown by Guyon, in males over fifty years of age. The cicatrix which is left in the bladder sometimes greatly interferes with complete micturition and in 2 instances a rough scar was shown on exploration as forming a holding-ground for phosphatic concretion. In one of these instances the scar has been excised with advantage.

Median perineal lithotomy with bladder drainage.—In 4 instances (No. 107 to No. 110) this simple operation was practised for the removal of small stones which were incidental to chronically inflamed and suppurating bladders. The bladder was subsequently drained for varying periods on the same principle as is sometimes utilised in the case of chronic abscesses, a satisfactory result being obtained in each instance.

Nitrous oxide gas and ether were the anæsthetics usually employed throughout the whole series of operations and nothing occurred to make me alter the favourable opinion I have expressed as to this method of producing insensibility. In elderly and debilitated persons with weak hearts the stimulating effect of the ether in improving the circulation was often most marked; nor were any casualties noted in connexion either with the instruments used or the parts operated upon. No serious hæmorrhage was encountered where incisions were necessary and after the litholapaxies it was rare to find the urine tinged with blood forty-eight hours after the operation. Any cystitis which was present at the time of operation usually rapidly subsided after the removal of the stone and no trouble with elevations in temperature, rigors, or fever complicated recovery.

As to sounding for stone I would repeat what I have often said. I much prefer that the stone should be removed where this is practicable on the occasion when it is first detected by the sound and the diagnosis is made. This practice predominated in this series, as the more I see of stone in the bladder the more I recognise the utility of this precaution, particularly in the case of elderly males. Where the prostate is large stones grow up like mushrooms in the pouch-like space between the large prostate and the back of the bladder and make, as it were, nests for themselves. Where there are two or three they often become fitted to each other like tessellated tiles, and if this arrangement is accidentally and suddenly disturbed most acute cystitis is apt to follow. Most of us know how much discomfort a displaced piece of tartar will cause in the mouth until it is completely removed. Even when they are delicately and lightly touched with the sound the stones may get out of gear with their bed, and if urine finds its way underneath them to some unaccustomed spot an acute cystitis may be aroused in the interval between the detection of the stone with the sound and its removal by the lithotrite. In one patient (No. 41) this actually happened and made a simple operation a serious one, as I had to crush and remove the stone seven days after sounding in the presence of a most acute inflammation which otherwise, I am sure, would have proved fatal. He had, as I anticipated, a recurrence and I removed a small phosphatic stone eight months afterwards (in March, 1894). He has since enjoyed excellent health and has had no recurrence. The process of sounding, however skilfully performed, is certainly not an agreeable one and is best accomplished under an anæsthetic. Fewer stones would escape detection and consequently be sooner removed if this was a more general practice. The cystoscope has in several instances been of much service in clearing up doubtful points—for example, in determining the presence and position of pouches or sacs and whether urine derived certain changes observable in it from either, and from which, kidney or from sources below these organs. In one case of encysted calculus (No. 100) not only was the stone seen but its removal was facilitated by exact knowledge as to its location. In another case (No. 101) the cystoscope clearly showed the impaction of a stone in the orifice of one of the ureters.

In conclusion, this series of cases may serve to illustrate—

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(1) conditions under which the surgical treatment of stone in the bladder, in the adult male particularly, have to be undertaken, at all events in this country; and (2) various operations which may be selected for its cure or relief. Of course, the relative proportions of the latter to each other will vary in some degree, and it is only reasonable that this should be expected. I well remember some years ago, when "lithotomy *versus* lithotrity" was a burning question, being present as a junior at a consultation where after the diagnosis of stone in the bladder had been made the operating surgeon in charge asked the opinion of his senior colleague, a man possessed of much common-sense and surgical experience, as to whether crushing the stone or cutting should be practised. "Whichever you can do best," was the prompt but somewhat curt reply. Lithotomy was selected and the patient made an excellent recovery. I doubt if at that time crushing had been resorted to whether the case would have terminated equally well. Where the pathological conditions were so equally balanced I do not think a better answer could have been given.

Lower Berkeley street, W.

GENERAL PARALYSIS OF THE INSANE: AN ATTEMPT TO ASCERTAIN ITS AVERAGE DURATION AT THE PRESENT DAY.

BY JAMES ADAM,

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PERHAPS there are no cases which come under treatment in the various institutions for the insane throughout the country which excite more interest or attract greater attention than those of the prevalent disease known as general paralysis. I use the word prevalent because it is found so in and near large centres of population, although in districts more sparsely populated it may be more rarely met with. Often obscure in its earlier manifestations, there usually no longer exists any doubt as to the actual character of the malady as it presents itself in these institutions, for by the time the case reaches them it has developed at least some of its typical and unmistakeable features. So much has been already written by competent writers on the subject of general paralysis that there is little or nothing left to add regarding its general characteristics and it would not accord with the object held in view by the writer of this article were he to attempt to do so. It may therefore suffice for the present purpose to allude to four stages through which the disease commonly passes and to remark in passing that the duration of those various stages differs much in different cases; that the disease occurs more frequently in males than in females; and that when it does occur in the female sex the symptoms, especially the mental symptoms, differ from those in the male sex.

The first stage which calls for notice is the period of onset during which the patient, with his malady more or less unrecognised, is usually resident in his own home, goes about, or attempts to go about, his daily avocations and still remains a free agent, brooking no control, squandering his money recklessly, and being immoral to his heart's content. The importance of a correct diagnosis being made at this stage is evident, so that proper steps may be taken for care and treatment with as little delay as possible. But these steps are too often, almost of necessity, delayed until much and irretrievable mischief is done.

Then follows the second stage, during which, the disease having fully developed itself, removal to an asylum becomes imperative, and it is usually in this stage that the patient is first seen in such an institution and for the first time becomes subject to carefully and accurately recorded statistics. There is, I think, little doubt that much may be done by treatment during this second stage to favour arrest or possible cure. The value of such arrest or cure if brought about goes without saying, for not a few of those affected by general paralysis are persons of property, and a successful and just disposition of property may be accomplished at such a period.

In favourable cases a third stage sooner or later sets in—a stage of arrest of the disease, during which the patient becomes quiescent and docile and gains flesh. He also regains much of his lost mental power and coherence and self-control return. In some cases he even wholly recovers, there being well-authenticated instances, as recorded below, not only of recovery from well-marked general paralysis but of successful resumption of business, and this even in the busy heart of the metropolis itself.

The fourth stage needs little comment. Utter helplessness is usually ushered in by epileptoid or apoplectiform seizures, and as a rule such seizures are continued or are frequently repeated until exhaustion or coma mercifully closes the scene.

Having thus described the stages through which this strange malady usually passes I will now endeavour to ascertain as nearly as possible the average length of time occupied in passing through them. It will, I think, be found practically that duration is governed by that stage which I have described as the third or arrest stage, for without this the average duration would be infinitely shorter than it even now is. General paralysis of the insane would, in fact, nearly always be a rapidly fatal disease if it ran its course without interruption. A question is not infrequently addressed to the medical practitioner by the guardians or relatives of general paralytics as to the probable duration of the disease after its existence has been ascertained. The question is usually answered by the aid of the general belief that on an average general paralysis of the insane runs its course and terminates in death within two years. My experience for several years has led me to doubt the accuracy of this assumed average, for I have seen so many cases of prolonged arrest, and more than one of recovery, as to suggest the possibility of a general modification of the disease having taken place, rendering it more amenable to treatment. On the other hand, this prolongation may be accounted for by the fact that the experience of later years has been among the more educated classes, and education generally exercises a modifying influence in all the varieties of mental disorder. Be that as it may, I resolved to make the attempt to verify or to rectify if necessary the old-standing estimate of duration and as a first step addressed questions on the subject to the superintendents of all institutions for the care of the insane in England. I was favoured by numerous replies, for which I beg here to express my thanks, and although they are not quite complete the figures so obtained are valuable and enable an approximate estimate at least to be given, which appears to be not far removed from what would prove to be the complete facts of the case. In framing these figures difficulties, of course, presented themselves, not the least of which were the vagueness attending the inception of the disease and the incorrectness or unreliability of the data received with the patients at the various institutions at the time of admission. Moreover, the early symptoms of general paralysis are not always easily recognisable. There are also the wandering cases, which may or may not be recognised or taken notice of at all until a late stage of the disease. The returns obtained were from 26 county asylums, 16 private asylums, 6 lunatic hospitals, 2 military and naval hospitals, and 4 borough asylums. The returns extended over the past ten years, which accounts for the smallness of the return from the borough asylums, some of which have only recently been called into existence. The following figures give the results arrived at:—

Table shoning approximately the Average Duration of General Paralysis (in Male Patients only) in Institutions for the Insane in England, with the Age at Death.

Institutions.	Average duration of disease.		Average age at death.	
	Years.	Months.	Years.	Months.
County asylums	1	10	42	6
Private asylums	2	6	46	0
Lunatic hospitals	1	7	44	0
Military and naval hospitals ...	1	11	37	5
City and borough asylums	1	8	46	6

Thus the correctness of the stated old-standing average is practically verified by the present figures, taken as a whole, although it would appear that the educated and well-to-do

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classes have a longer period of existence meted out to them after the onset of the disease than have the poorer classes. The explanation of this may be the earlier recognition of the disease in the wealthier classes and the earlier resort to care and treatment.

Annexed are notes illustrative of three typical cases, with recovery in two.

CASE 1. *Undoubted general paralysis with typical and marked mental as well as physical symptoms of the disease.*—The following characteristic letter was written two or three months after onset whilst under care: "I am going to astonish the whole world this week; the papers will be full of it. I am going to reform the world—England to be made a paradise. Work for all the unemployed; no more taxes, workhouses or prisons required. All diseases will be banished; there will be simply a few paying hospitals. No one to be married before they are twenty-four years of age, women twenty-one years. The first thing to do is to get together all the vagabonds, thieves, drunkards, and wife-beaters, and I shall have them punished with a cat-and-nine-tails. The sea to be brought all over England, also electric light, good roads to be made, plants, trees, and wild flowers on the banks. Electric tramcars. I shall have plenty of money to do what I like with. Your dad will 'be a bishop' and my private chaplain. I have learnt to sing and play anything on the piano; you will hardly know me, I am so improved. Nice church and cathedral will be built. I am going all over the world and you shall come to some of the best places with me. Address to me, Grand Hotel, Charing Cross." At the end of six months, arrest having been in progress for some time, a consultation among leading psychologists and neurologists was held in London, with the result that no trace of the mental disease was discovered. A three months' probation followed, at the end of which time the patient was discharged recovered.

CASE 2.—In this case equally typical symptoms presented themselves, but an enumeration of them would prove too lengthy. The patient believed he was making £190,000 per diem, &c.; six months later an inquisition in lunacy was held by a master in lunacy on the request of the family, but by the time it was held there was no evidence to produce of existing insanity. Three months later ordinary work was resumed in London and at the end of another three months the patient, remaining perfectly well mentally, was also discharged recovered.

CASE 3.—This case was of about six years' duration and during a considerable portion of the time the disease was in a state of arrest.

West Malling, Kent.

AXIS-TRACTION FORCEPS.

BY WALTER COLQUHOUN, M.A., M.B., C.M. GLASG.

THE matter of this paper, the subject of which has caused me considerable thought, may not appear inopportunely at the present moment, when so many busy practitioners are giving up their old forceps for forceps guaranteed to pull in the direction of the pelvic axis. If I may seem to some readers to deal with points which have been thrashed out elsewhere at greater length my answer is that they did not seem to be known to able practitioners, my friends, and, further, that they have evidently been missed more or less by inventors whose forceps are in good enough repute. Dr. Playfair pertinently remarks concerning forceps: "It would be a wearisome and unsatisfactory task to dwell on all the modifications of the instrument which have been made, which are so numerous as to make it almost appear as if no one could practise midwifery with the least pretension to eminence unless he has attached his name to a new variety of forceps." Nor can it be expected that those who dwell in the valleys will altogether escape the epidemic ranging among dwellers on obstetric heights. In many a humble medical home in Scotland some secluded cupboard contains weapons which may probably be hung on the walls by female posterity and be pointed to with pride as relics of the battle of Bannockburn. I also invented a beautiful pair of forceps, superior to anything in existence, but convalescence fortunately setting in while the matter was at the paper stage I began to consider the essentials demanded from axis-traction forceps, and also how those demands are met by the various forms in use. It is my purpose in this paper to deal with the general question from that point of view.

A pair of forceps is said to act in three ways: (1) as a tractor; (2) as a lever; and (3) as a compressor. An axis-traction forceps (since it is inconvenient to use two different pairs in the same case) should combine these three properties with that of confining traction at each point to the direction of the pelvic axis. To these properties attempts are now made to provide for free movement of the fœtal head in flexion, extension, and rotation, and in addition it is demanded that the forceps should act as a guide to the fœtus and as an indicator of the direction of traction. Let me consider the points in detail.

Direction of traction.—In many instruments the forceps are used, but used erroneously, as an indicator of the direction in which traction should be made; that is to say, the pelvic curve of the instrument is considered to coincide with the pelvic axis, and traction being made on the instrument after locking by means of a tractor which enables it to swing more or less freely it is supposed to slide out keeping to the pelvic curve. The instruction given with most instruments is that the bar of the tractor should be kept parallel to the handles of the forceps. Now, to pull in the direction of the axis the pull must be given at each instant in the direction of the tangent to the pelvic curve at the point where it passes the centres of the fenestræ. Accordingly, if it is intended to use the handles of the forceps as an indicator of the direction of traction they should be bent backwards. A glance at Tarnier's excellent instrument will show that the part of the forceps corresponding to the handles of our instruments is practically parallel to the curve at the centre of the fenestra. In Neville's forceps also, Rotunda pattern, an arrow indicates the direction of pull which is inclined backwards from the handles. In connexion with this point the following quotation from Barnes's "Obstetric Operations" is interesting: "Dr. Aveling curves the handles of a short double-curved forceps backwards, thus increasing, he affirms, the tractile power." Here the idea does not seem to have been to change the direction of the pull, but rather to approach the point to which traction was applied to the line representing the axis, just as is done in axis-traction instruments by curving the traction rods backwards. The direction of traction altogether depends on the direction in which the pull is made and not at all on the point at which it is made. Thus it is of little use to curve the traction rods backwards if the pull is in the wrong direction. They are curved backwards because the forceps and the child's head forming a rigid lever, the fulcrum of which is above the point of application of the forceps, if any force be applied in a given direction to the handle of the forceps the point of application of that force tends to lie on a line drawn through the fulcrum in the given direction. Hence the application of a force at the handles of the forceps, even when applied in the right direction, may wrongly cause or prevent flexion or extension, or, what is of more serious consequence, may press the forceps and head injuriously against the soft parts of the mother. The curving of the traction rods backwards tends to place the point of application of the pull on the line of direction of the force which passes through the fulcrum. If this condition be satisfied and the pull be at each instant in the right direction it is of little importance whether the traction rods be attached high up or not.

Rotation, flexion, and extension.—Why, then, is it asserted to be a distinct advantage in practice to have the traction rods attached high up? I have heard it asserted that such an arrangement allows of free flexion or extension, but I hope to show presently that there is little truth in the assertion. If there is any advantage in the high insertion of the traction rods it seems to me to lie in the fact that such an arrangement allows the forceps to act as guide to the fœtal head more easily and tends to minimise the disadvantage accruing from wrong application of force at the end of the long rigid lever formed by head and forceps. Flexion and extension occur at the proper stages during delivery by rigid forceps and as a matter of necessity. It is claimed that some of the recent axis-traction forceps by allowing the forceps to swing about the points of application of the traction rods allow free flexion and extension and yet the inventors of the instruments use them as indicators of the direction of traction. As a matter of fact, forceps which fit the pelvic curve and are rigidly connected with the fœtus can have no free swing, and flexion and extension, except within

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very small limits, occur at the same places during delivery and in the same manner as when rigid forceps are used, traction being applied by the handles. Thus extension, for example, could take place without advance of head and forceps only by the forceps leaving the pelvic curve.

A point which is not much dwelt on by inventors is that forceps which are best suited for axis traction, having a full pelvic curve, are unsuited for rotation and that if they rotate they are no longer axis-traction forceps. Indeed, the only way to restore true axis traction in such cases would be to take them off after rotation and obtain a new grip. Forceps with a pronounced pelvic curve are evidently intended to be put on in the transverse diameter, and if rotated to any extent the pelvic curve is no longer a guide or indicator but rather a hindrance. Hence the wisdom shown by Simpson in making his forceps with a modified pelvic curve to allow of some rotation and slight movement of flexion or extension. It seems to me a problem worthy of grave attention whether for general use the axis-traction forceps coming so much into vogue are not more dangerous than Simpson's long forceps used with some knowledge and caution. Rigby in his "System of Midwifery" says: "The forceps is the simplest imitation of nature, for, in fact, it is nothing more than a pair of artificial hands introduced one on each side of the head." Now when a man grasps the handles of the forceps the instrument may be regarded as a continuation of his own hands. There is direct connexion between his hands and the fœtus, he feels when it moves or yields, estimates more accurately the force he is using, and by his great leverage can, guided by his knowledge, help its progress at a difficult point. Using the axis-traction forceps is like putting another man's hands into the pelvis to grasp the head and then pulling on his coat-tails. I am so convinced o the advantage of a rigid connexion with the fœtus that, apart from other considerations, I consider that to be one of the advantages of Murdoch Cameron's antero-posterior forceps. It is quite common for medical men to complete delivery by pulling on the traction bar. Now I confess that if the head is high in the pelvis, and indeed until it has reached the floor, it is of advantage to have an indicator of the direction of the axis and also the power of pulling freely in the direction of the axis, but I am of opinion that in every case both hands should be used, one grasping the handles of the forceps and the other the traction handle. The hand which grasps the handles of the forceps can apply leverage where necessary, steady the progress of the fœtus, and obtain information of that progress which would not be obtained by merely pulling on the traction handle. When the head has reached the floor of the pelvis it is especially necessary, for the sake of the perineum, among other reasons, to complete delivery without having recourse to the traction handle. In his "System of Midwifery," 1844, Rigby writes: "In extracting the head we must bear in mind the part of the pelvis in which it is impacted and make our efforts in the direction of its axis; we must also recollect the curved form of the instrument, and that we must not pull in the direction in which the handles point, *but rather hold them firmly in one hand and by pressing against the middle of the forceps with the other guide the head downwards and backwards into the cavity of the pelvis.* We shall thus make our extractive effort in the direction of the upper portion of the blades, or that part which has the chief hold upon the head." (The italics are mine.) Here there is perfect axis traction arranged for without any great apparatus but simply by means of the ordinary forceps used with the good sense and ingenuity of a practical man, and his axis traction would be much more perfect than that of a practitioner who delivered by simply pulling on the traction handle of one of the latest instruments. Traction rods enable the operator to use the second hand to great advantage, but the more important hand is the one which grasps the handles of the forceps. The forceps in Rigby's hands had another important use, for he continues: "Whilst extracting we should, as with the straight forceps, slowly move the handles from side to side and even make them describe a circle. We thus not only use the forceps as a simple extracting instrument, but make it act as a lever in every direction and greatly facilitate the advance of the head, even under circumstances of considerable impaction."

It was the considerations I have set forth which caused my forceps to be stillborn. I was providing for free movements of rotation, flexion, or extension, by placing immediately below each fenestra a swivel and a hinge, which could both be unlocked from the handles. I am now convinced that while it is a benefit to be able to use the curved traction rods, the rigidity of the instrument and its simplicity should be interfered with as little as possible.

Glasgow.

PARALYSIS AGITANS;

WITH AN ACCOUNT OF A NEW SYMPTOM.

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EIGHTY years ago Parkinson wrote his classical description of paralysis agitans. So little has been added to its symptomatology since and the disease now appears at first sight to be, clinically at least, so thoroughly worked out that to many it may seem a superfluous task to traverse once more a subject so well worn. The following paper, therefore, must be regarded as merely supplementary to the descriptions in the text-books, not in any sense as a substitute for them.

Within the past two years I have had opportunities of studying a number of patients, 28 in all, suffering from paralysis agitans and it is upon personal observations on these cases that the following remarks are based. Although the number of cases is not large enough to permit of any statistical references being founded upon them alone, yet the fact that they have been examined and compared by one person renders the value of the observations fairly uniform, whilst the cases are sufficiently numerous to justify me in drawing certain clinical conclusions. Of these 28 cases, 17 occurred in men and 11 in women. This greater frequency among male patients is in entire agreement with the combined statistics of a large number of cases seen by other physicians, which show the disease to be much more frequent in the male sex than in the female, the proportion being about 2 men to 1 woman.

The age of onset of symptoms in my series of cases is instructive. It ranges from twenty-two years to seventy-three years, the distribution being as follows:—In 1 case the earliest symptom appeared at the age of twenty-two years; in 1 case at thirty years; in 1 case at thirty-three years; in 2 cases between the ages of thirty-five and forty years; in 3 cases between forty and forty-five years; in 6 cases between forty-five and fifty years; in 7 cases between fifty and fifty-five years; in 4 cases between fifty-five and sixty years; in 2 cases between sixty and sixty-five years; and in 1 case at the age of seventy-three years. Thus 23 cases out of 28—i.e., over 82 per cent.—commenced after the age of forty years.

A family history of nervous disease was obtained in only a few instances (in 6 cases out of 28). In 4 of these 6 cases there was epilepsy or insanity in the patient's brother or sister; in 3 of the 6 cases a relative had actually suffered from paralysis agitans—a maternal aunt in one case, a paternal grandfather in another, and a sister in a third. As to exciting cause, 6 patients gave a history of fright or emotional disturbance. Thus, for example, in one case the earliest symptom—shaking of the left thumb—showed itself after a shock occasioned by a sister becoming insane. Another patient was at a menagerie when a lion escaped from its cage and caused considerable alarm amongst the spectators. On the next day the patient's illness is said to have commenced, his first symptom being stiffness of the left leg. Another patient was threatened as a "blackleg" by his fellow-workmen on the railway who were on strike and ever afterwards he found his right hand stiff and his handwriting unusually slow. Another patient blamed the shock of having a tooth extracted as being the antecedent cause of her illness, the earliest symptom in her case being tremor of the left hand. Worry or overwork was assigned as the exciting cause in 3 cases; 3 were said to have followed an attack of influenza; and one patient had an attack of right hemiplegia a few weeks before the tremor of paralysis agitans appeared in his left hand. One man had his foot trodden on by a horse a year before the onset of tremor in that foot. One woman's symptoms came on after a confinement at the age

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of forty-six years and another patient sustained a fall which is said to have produced a prolapse of the uterus and this was succeeded by stiffness of the legs. In the remaining 12 cases no cause was assigned by the patient in the form of injury, emotion, or preceding disease. Moreover, the severity of the disease in those cases where some exciting cause was ascribed was not at all proportional to the intensity of the assigned cause. It therefore seems probable, on the whole, that such so-called exciting causes, if they really are causes at all, merely precipitate the disease in a decaying nervous system.

The earliest symptom in a large proportion of my cases was not tremor but stiffness—contrary to the orthodox statements of the text-books. In 14 cases out of 28 stiffness and weakness preceded the tremor for periods varying from several weeks to over two years, and in 3 of these cases tremors were entirely absent although the disease had been well established, with its characteristic attitude and facial expression and with a definite history of stiffness and weakness, for fifteen months, eighteen months, and four years respectively. In 3 other cases, again, tremors only occurred on excitement or on voluntary effort, the patients exhibiting no tremor whatever when at rest. The dictum that the tremors of paralysis agitans are diminished by voluntary movement can therefore no longer be accepted as an invariable rule, nor as a secure point of diagnosis between paralysis agitans and other diseases.

The symptoms of the disease in most cases are hemiplegic in distribution. In only 2 cases out of 28 were the limbs of both sides equally affected. The left side appears in the majority of cases to be affected before the right, in right-handed people. Thus 14 cases began on the left side and only 12 on the right, and one of these 12 was in a left-handed man, so that his case should be properly added to the 14 left-sided cases. That side which is first attacked remains, as a rule, more severely affected than the other side even when, later in the disease, the symptoms have become bilateral. The upper extremity was affected before the lower in 18 cases out of 28 and the hand usually suffered before the shoulder, though not invariably. Thus one patient, a woman, first felt her left hand weak and stiff when peeling potatoes, so that she had difficulty in turning the potato round. Another patient, a professional musician, first noticed weakness in her left hand when playing the organ. Several patients noticed, as their earliest symptom, an abnormal slowness in writing; another patient first experienced inconvenience from the tremor of his fingers owing to a difficulty in buttoning his clothes. In only one patient did the weakness begin in the shoulder—his attention being attracted by the unusual difficulty which he experienced in putting on his overcoat.

The orthodox clinical picture of a patient suffering from paralysis agitans is too well known to require much emphasising here. In a fully developed "classical" example of the disease the constant rhythmic tremors of fingers and wrists, the "interosseal" position of the fingers, the stooping attitude of the head and trunk, the "festinant" gait with its short, shuffling steps, the retropulsion on walking backwards, the difficulty in rising from the sitting to the standing posture, the tremors of the legs when sitting down, the slowness of voluntary movements in trunk and limbs, the fixed and sad facial expression,—all these, when present, form a striking clinical picture which it is easy to recognise. But such a condition of affairs is only reached when the malady is far advanced and we ought to be able to recognise its nature long before the disease has attained such severity as to be diagnosable telescopically.

Let us therefore consider some of the symptoms of the disease more in detail. The prevalent conception of paralysis agitans is that of a disease in which sensory symptoms are practically almost absent. Such, however, is not the case. Dull, aching pains in the affected limbs, along with a feeling of stiffness and weakness, often precede for a long time the actual rigidity or tremor. The patients also frequently complain of sudden flushes of heat or of cold spreading all over the body, especially at nights when in bed. As mentioned above, a case of paralysis agitans may run its course for years without any visible tremor whatsoever, this being the so-called "paralysis agitans sine agitatione." One reason why this variety or stage of the disease is not more generally known is because the real nature of the malady is usually not recognised until obvious tremors have appeared. As to motor symptoms, the presence of stiffness and rigidity should suggest paralysis agitans almost as readily as does the existence of visible rhythmic tremors. In paralysis agitans all voluntary movements may become slow and stiff, with a few notable exceptions, as in the ocular, palatal, and respiratory muscles. In a well-marked case, if the patient be requested to look suddenly at some object near the extreme lateral boundary of his field of vision, he turns his eyes smartly in the desired direction whilst his head and neck follow slowly and deliberately in the movement of rotation. Why the ocular muscles should usually escape it is difficult to explain, since almost all the other voluntary muscles of the face, trunk, and limbs may be affected, certainly by rigidity and often by tremor as well. Rhythmic tremor of the jaw occurred in 4 of my cases, the movement of the jaw being an up-and-down one and synchronous with the rhythmic movement of the limbs.

The face is characteristically affected, and in a well-marked case in which both sides of the face have become affected the result is the "Parkinsonian mask" in which the expression is fixed and woe-begone; it has been aptly termed the "starched" expression. In this condition the facial immobility is such that when the patient is talking his play of facial expression is almost *nil*, the deficiency being evident both in the upper and in the lower facial muscles. The condition can be most strikingly demonstrated by covering up the patient's chin and lower lip whilst he is talking. It is then often remarkable how motionless is the upper part of the face above and including the upper lip. And this "starched" expression of face may be unilateral, as will readily be understood when we remember the frequent hemiplegic distribution of the disease. Thus out of 11 cases which exhibited the phenomenon in no fewer than 9 the facial movements were distinctly asymmetrical, the weakness being most marked in the lower facial muscles and always on the same side as that on which the limbs were affected, the difference between the two sides of the face being best brought out when the patient was made to retract the upper lip, the naso-labial fold in such cases being distinctly shallower on the weaker side. In some cases (6 in my series) the face is not merely immobile but may actually develop rhythmic tremors, especially about the lips, and in 3 cases this was associated with a synchronous antero-posterior tremor of the tongue. The voice is often high-pitched and monotonous and its quality is frequently thin and quavering. The soft palate was not affected by tremors in any of my cases. Articulation is frequently disturbed, tending to assume a "festinant" character. The patient starts off deliberately enough at the beginning of a sentence, but after a few words the syllables become slurred and jumbled together, so that in some cases the concluding words of each sentence are almost unintelligible.

As regards the trunk and limbs the characteristic stooping attitude and the frequent rhythmic movements are so familiar that they need not be described here in detail. But one remark may be added—viz., that the attitude of the patient, the "interosseal" position of the hand, the semi-flexed, pronated forearm, the frequently unilateral facial weakness, most evident in the lower facial muscles, the stiff, shuffling gait, often more marked on one side than on the other,—all these, as has been pointed out by Dr. Hughlings Jackson, closely resemble the attitude seen in ordinary hemiplegia due to a cerebral lesion.

Another symptom, which is seen only in advanced cases accompanied by much rigidity, consists in a peculiar method of assuming the recumbent attitude. The patient, instead of lying down in bed in the usual way, climbs up on to the bed and stands on it. Then bending down very slowly he takes hold of the rail at the foot of the bed with both his hands and gradually sits down on the bed, holding on to the rail all the time. Having in this manner reached the sitting posture the patient then allows his trunk to fall backwards into the recumbent posture. This circuitous method of getting into bed is characteristic of the disease. A somewhat similar affection is described below (*vide* Case 3). Difficulty in changing the position when in bed is a common symptom and patients frequently complain, in addition, of a difficulty in finding a comfortable position when lying down. This feeling of restlessness is interesting when we remember the muscular rigidity which accompanies it.

In concluding this paper I should like to call attention to a new symptom which has not hitherto, I believe, been placed on record. As might be expected, it is a minor symptom, but in my series of cases it occurred no fewer than five times—i.e., with sufficient frequency to place it beyond

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the category of mere coincidence. It consists in a peculiar affection of the toes, which in the majority of the cases in which I have met with it was one of the earliest symptoms of the disease, and is therefore, I think, of considerable diagnostic value. It is as follows. The patient complains, when walking, that the toes of one foot occasionally become spontaneously strongly flexed and curled up under the sole in a cramp-like fashion, causing difficulty in walking. This "curling up" of the toes is often so uncomfortable that the patient has to stand still for a minute or two until he can get his toes to relax and spread out flat again. All the toes, with the exception of the great toe, participate in this flexor contracture; the hallux, on the other hand, usually becomes hyperextended at the same time; sometimes, however, it may become flexed like the other toes. In some cases the contraction may spread to the anterior tibial muscles, causing an inversion of the ankle as well. For permission to publish my notes I am indebted to the courtesy of Dr. Hughlings Jackson, Dr. Buzzard, Dr. Ferrier, and Dr. Ormerod.

CASE 1.—The patient, a man, fifty-four years of age, was admitted to the hospital on Dec. 13th, 1896. Six months before his admission, when walking, he began to feel the toes of both feet become occasionally hyperextended, this movement passing on at once to one of plantar flexion. His ankles also became dorsiflexed, so that he had to take a step or two backwards until the cramp passed off. Two months after the onset of this symptom his hands became stiff and weak and his handwriting became abnormally slow. On admission he had the typical facies of paralysis agitans—the starched expression, the stooping of the head, the elbows slightly flexed, the fingers in the "interosseal" position, no tremor either at rest or on movement, and all voluntary movements slow and stiff.

CASE 2.—A man, forty-two years of age, was admitted to the hospital on Feb. 9th, 1897. For four years before his admission he noticed that the toes of his right foot would occasionally become strongly flexed when he walked so that he had to stand still until his toes relaxed. Later his right leg became stiff and weak and his right hand became slow in its movements so that he could not cut his food readily nor could he write so easily or so rapidly as usual. Within the last three or four months he had developed slight tremor of the right foot when fatigued. On admission he had slight weakness and rigidity of the right face, arm, and leg, with marked "starched" expression. The right hand was held in the "interosseal" attitude and the right elbow was habitually semi-flexed. All movements of the right arm and leg were slower and stiffer than on the left side. He dragged his right foot a little in walking; there were no tremors on admission. He complained of difficulty in turning in bed and in finding a comfortable posture when in bed.

CASE 3.—A married woman, aged fifty years, was admitted to the hospital on June 14th, 1898. For three years she had had trembling of the left hand and arm followed, some six months later, by trembling of the right hand, which she first noticed when putting pegs on a clothes-line. For two years she had had difficulty in turning in bed and had been unable to get into or out of bed without assistance owing to stiffness of her legs. About a year before admission she began to feel her toes curling up under her soles inside her shoes when she was sitting down. This made her get up and walk about for a few minutes until the symptom passed off. She had been unable to sing for a year; within the last month or so her jaw began to tremble and her articulation became less distinct. On admission she was seen to have severe paralysis agitans with the typical "starched" face, the typical attitude of the limbs and trunk, and tremors of the face, jaw, tongue, and limbs, synchronous, the rate of tremor being 6 per second. The tremors affected the limbs equally on the two sides. Her articulation was markedly festinant and her voice was monotonous and plaintive. All voluntary movements of the trunk and limbs were slow and stiff and the tremor persisted in spite of voluntary movement. The gait was slow and shuffling and there was no festination; she could not turn round without holding on to the furniture. She could not feed herself owing to tremors. She was unable to lie down in bed herself. When trying to do so she put one knee on the edge of the bed and then fell heavily on to the bed in a semi-prone posture, from which she was unable to move without assistance. She perspired excessively and would not allow herself to be covered by more than a single sheet.

CASE 4.—A married woman, aged fifty years, was admitted to the hospital on March 1st, 1897. Her mother's sister had paralysis agitans. Four years previously, a fortnight after her last confinement, the patient noticed tremor of the fingers of the left hand on movement. Stiffness of the left arm and later of the left leg had since developed. Within the last two years the right side had become stiff, the arm being affected before the leg. For about two years she had noticed in walking that the toes of both feet occasionally curled under the soles, except the big toes, and she had to stand still for a few minutes until this passed off. She had had great difficulty in turning in bed for the past six months. On admission she had the typical face of paralysis agitans, "interosseal" attitude of the hands, stooping head, festinant shuffling gait, and marked retropulsion. The speech was monotonous and festinant. All the voluntary movements were slow and stiff, especially on the left side. She had difficulty in doing her hair herself; she could not use her left hand easily to "gather" the hair. There was very slight tremor in the left hand, this occurring only on holding it out, not when it was at rest.

CASE 5.—A man, fifty-three years of age, was admitted to the hospital on Dec. 4th, 1896. He was left-handed. For four years he had noticed that the toes of his right foot occasionally became stiffly flexed into the sole; the hallux, however, became hyperextended. About two years previous to his admission he began to have slowness and tremor in writing with the right hand, and about a year afterwards his right leg began to shake, especially in walking. On admission he had the typical symptoms of paralysis agitans in the right face, arm, and leg, there being both tremors and rigidity. The gait was shuffling but not festinant. He could voluntarily stop the tremors for a moment.

In 3 of the above 5 cases the "toe-curling" symptom was the earliest to appear, preceding the other symptoms by intervals of four months (Case 1), a year (Case 2), and two years (Case 5) respectively.

Since the above paper was written I have been kindly favoured by Dr. Ormerod (to whom I had mentioned this symptom) with the notes of another corroborative case in which the patient, after having had the "toe-curling" symptom for five years, developed symptoms of paralysis agitans.

CASE 6.—The patient, a man, aged forty-four years, consulted Dr. Ormerod in March, 1892, for a "drawing under of the toes of the left foot. This came on chiefly after walking, all the toes becoming flexed, beginning with the big toe and then the ankle becoming inverted. The symptom had been present since 1890. Dr. Ormerod writes: "At that time I do not think there was anything in his symptoms or general appearance to make me suspect that he had paralysis agitans. In May, 1895, he came again and there was no doubt that he now had paralysis agitans. There were characteristic tremors of both hands and the facies was that of paralysis agitans; the gait was not very characteristic. The affection of the left foot still continues; it looks shorter and more humpy than the right."

Queen-square, W.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF PUERPERIUM COMPLICATED WITH SCARLET FEVER; RECOVERY.

BY J. GAWLER MURRAY, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.

THE following cases may be of interest, showing that pregnant women seldom develop scarlet fever (Haultain).

CASE 1.—I attended the patient on May 24th. The child was born on my arrival and the placenta came away quite easily. I visited the patient on the 26th, 27th, and 28th, her temperature never being above 99·2° F. On the 29th I found her looking very ill and with a temperature of 105°. I immediately douched out the uterus with iodine and water and ordered the nurse to give a vaginal douche of weak Condy's fluid every two hours as the discharge was very foul-smelling. I called in the afternoon to repeat the intra-uterine douche and found the patient's temperature to be

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105·8°. On calling in the evening her temperature was found to have fallen to 103·4°, but I repeated the douche of iodine. The temperature on the next morning was 102·4° and the patient was found to be covered with a typical scarlatinal rash and she complained of sore-throat. My father (Dr. Ivor Murray), whom I called in, confirmed my diagnosis and notified scarlet fever. On making inquiries I learnt that two children of the previous tenant of the house had had scarlet fever there in the previous October; the patient and her husband came into the house in November. This was the only clue to contagion which I could get, as the patient had not been near any scarlet fever cases and I had not myself seen any for six months previously. This, I think, points to the indefinite incubation period of scarlet fever in pregnant women. The baby also took the infection, but both mother and child made uninterrupted recoveries, both desquamating freely.

CASE 2.—A sister-in-law of the above patient who was in daily expectation of being confined and who lived next door had, of course, seen her sister and the baby before I had any suspicion of anything being wrong, but when the temperature of the first patient rose I forbade her sister-in-law to enter the house, and at the confinement of the latter on June 5th I took every precaution and was careful to put on fresh clothes. On June 8th, however, the patient's temperature ran up to 104° F., and she had a strawberry tongue and sore-throat, but there was no definite rash. Knowing that she had been exposed to contagion I treated her as for scarlet fever. In spite of diaphoretics, quinine, Warburg's tincture, &c., her temperature oscillated between 101° and 104° for fourteen days, when it went down to 99°. Owing to sleepless nights I had given trional (20 gr.) with good result, but on the 23rd I found that she had taken a violent dislike to nursing her baby and to her husband and that she fancied herself to be a feather and that she would blow away. On the 25th she complained of her left arm being swollen and on examination I found a hard lump in the axilla. I wrapped the arm in wool and kept her quiet, but it swelled to twice its size till under massage it gradually decreased. Her urine contained a slight amount of albumin and her legs were slightly swollen, but as she recovered strength her urine became normal. She desquamated very slightly. The mania lasted about a fortnight and she is now as strong and well as ever she was. This case I think interesting because of the number of complications which had to be contended against.

Scarborough.

A NOTE ON AMPUTATION FOR CHARCOT'S JOINT DISEASE.

BY F. A. SOUTHAM, M.B. OXON., F.R.C.S. ENG.,
SURGEON TO THE MANCHESTER ROYAL INFIRMARY; LECTURER ON OPERATIVE SURGERY, OWENS COLLEGE.

ABOUT six years ago a case of Charcot's joint disease came under my care in which the ankle-joint had become so completely disorganised that the foot was displaced upwards and outwards, the internal malleolus projecting prominently through an opening in the skin; in fact, the appearance was not unlike that met with in an unreduced compound Pott's fracture. Removal of the foot was the obvious treatment, but in the absence of any definite information on the question of amputation in patients suffering from Charcot's joint disease, and, bearing in mind the unsatisfactory results which often follow amputation for perforating ulcer in tabetic subjects, I was hesitating somewhat as to the advisability of adopting this course, when a short article by Mr. Jonathan Hutchinson, published a few months previously in the Archives of Surgery,[1] attracted my notice. Mr. Hutchinson wrote as follows: "I have recently had an opportunity of observing the process of repair after amputation in a state of advanced locomotor ataxy. It may be of interest to record the result, since, owing to absence of any experience on the point, I felt some misgivings in recommending the measure." Details were then given of the performance of Teale's amputation in a middle-aged subject who for ten years had suffered from locomotor ataxy accompanied by perforating ulcer and disease of the bones of the foot and ankle-joint. The result of the operation was extremely satisfactory, the patient recovering with a sound stump, which was afterwards fitted with an artificial limb and bore pressure well.

Encouraged by Mr. Hutchinson's success I advised my patient, a male, aged forty-nine years, to submit to amputation of the leg below the knee-joint, and to this he readily consented, being anxious to be rid of the foot, which, though it caused him no pain, had become a great inconvenience to him. Since then I have performed the same operation in three other patients, all males between forty and fifty years of age, for a similar condition, the ankle-joint being affected in one case and the tarsal joints in the other two. In all four patients the result has been most satisfactory, the stumps healing quickly without suppuration and without any tendency to sloughing of the soft tissues or necrosis of the end of the bone, as might have been expected from the nervous origin of the disease.

It is somewhat strange that in most works on surgery little or no reference is made to the question of operation in cases of locomotor ataxy when a joint has become completely disorganised. In a recent text-book the following paragraph, however, appears: "In the later stages, where the joint is entirely disorganised, some form of fixed apparatus may be applied to render the limb more useful, since no operative treatment can be undertaken."[2] A similar opinion is expressed in one of the most recent German works on nervous diseases, for it is there stated that though the joint affections may require some mechanical support surgical treatment is seldom necessary, operative interference being avoided by most surgeons.[3]

Manchester.

[1] Archives of Surgery, Oct. 1891, p. 137.

[2] Rose and Carless: A Manual of Surgery, p. 585.

[3] Oppenheim: Lehrbuch der Nervenkrankheiten, vol. ii., p. 145.

NOTES ON A CASE OF PERSISTENCE OF HYMEN; NON-RUPTURE.

BY N. CULLINAN, M.D. BRUX.

THE following case having come under my notice may be of interest to the readers of THE LANCET from a medico-legal point of view as well as on account of the obstruction which may be caused during the second stage of labour.

On March 13th, 1898, I was called to attend a primipara, aged twenty-five years. On making my visit and questioning the midwife I found that the patient had been in labour for nine hours, the pains then recurring about every seven minutes. On attempting to make a vaginal examination I found that an obstruction existed and the parts were tender to the touch, which latter sensation lasted a considerable time. Having determined the position of the fœtus by an abdominal examination I resolved to await results. The labour progressed naturally until a fulness could be noticed in the perineum. A visual examination now confirmed the conclusion which I had previously arrived at; the membrane was intact except for a small opening which would allow the escape of the menstrual fluid, situated in the antero-posterior line about one-third from the anterior and two-thirds from the posterior edge of the vaginal opening, the aperture being of sufficient size to admit an ordinary slate-pencil. The clitoris was of abnormal length and sensitive. On attempting to enlarge the opening in the hymen with the tip of the little finger the patient complained of intense pain and I decided to desist. I then used a hernia knife, making a crucial incision, and the succeeding pain caused the protrusion of the membranes well into the opening made. After making a vaginal examination and allowing the liquor amnii to escape the labour terminated naturally, no laceration taking place. The patient made a good recovery.

The points of interest in this case are as follow: (1) the non-rupture of the membrane although the patient had been married for eleven months; (2) the membrane itself was of a fibro-elastic consistence and extremely dense; (3) the small opening allowing impregnation to take place; (4) the abnormal sensitiveness of the parts; (5) an unusually large clitoris; and (6) the obstruction caused during the second stage of labour with the amount of force necessary to cause rupture. From a medico-legal point of view cases of this sort are of much importance showing that impregnation can take place without rupture of the hymen, that the presence of the membrane is not a positive proof

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of virginity, and therefore it behoves a medical witness to be careful in giving an opinion, for if he swears that a woman is a virgin and later she turns out to be pregnant he may involve himself in legal proceedings as well as perhaps the loss of his reputation. On the other hand, the absence of the hymen does not prove that defloration has taken place. Such a condition may exist from ulceration, masturbation, &c.

Pontymister, Monmouthshire.

NOTE ON STAINING THE CAPSULES OF PNEUMOCOCCUS AND OF THE BACILLUS OF FRIEDLÄNDER.

BY ALFRED MACCONKEY.

(*From the Bacteriological Laboratory of Guy's Hospital.*)

RIBBERT'S observation that dahlia is useful for staining the capsules of pneumococcus has not met with the attention it deserves, as there are very few references to it in the text-books. Dahlia stains the cocci well and their capsules faintly. Bleu de Roux (dahlia with methyl green) gives a better result when slightly warmed; and the addition of fuchsin effects a still further improvement. The following combination gives a clear image which photographs well: dahlia, 0·5 gramme; methyl green (0 0 crystal), 1·5 gramme; saturated alcoholic solution of fuchsin, 10 c.c.; distilled water to 200 c.c. The dahlia and methyl green are rubbed up in a mortar with part of the water until dissolved, then the fuchsin is added, and finally the rest of the water.

Staining.—Prepare the film in the usual way. Flood the cover slip with the stain and hold over the flame until steam begins to rise. Then place aside for about five minutes, wash in water, dry, and mount in xylol balsam. N.B.—If the film is treated with acetic acid before staining the result is not so good.

This serves as a good general stain and gives good results with the bacillus typhi abdominalis, bacillus coli communis, and especially with the Klebs-Löffler bacillus.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

A CASE OF INTUSSUSCEPTION TREATED BY LAPAROTOMY; RAPID RECOVERY.

(Under the care of Mr. RICKMAN J. GODLEE.)

WE have recently[1] published cases demonstrating the value of early operation in intussusception, but the importance of adopting this method of treatment could not be more satisfactorily demonstrated than in the case reported below. The early age of the patient and the severity of the symptoms would soon have led to a fatal termination, and the difficulty with which the bowel was reduced by manipulation renders it impossible to believe that any form of injection or inflation could have effected the reduction. But inflation has dangers of its own: it has led to rupture, it may appear to succeed though the bowel is still tightly grasped, and by its use very valuable time is lost. For these reasons, and in view of the results obtained by laparotomy in many cases, it can now hardly be maintained that inflation is justifiable, except in cases where the parents refuse to allow a cutting operation. In Mr. Godlee's case the patient was only six months old, and though recovery has been recorded in several instances at an earlier age, yet it is noteworthy how rapidly the child recovered, for he was discharged perfectly well on the seventh day. For the notes of the case we are indebted to Mr. Montague Dixon, house surgeon.

A male infant, aged six months, was taken by his mother to the out-patient department of University College Hospital at midnight on Sept. 28th, 1898. The history given by the mother was that at six o'clock that evening the child vomited and that the vomiting was repeated at intervals until about 10.15 P.M., when he passed "some blood and slime from the back passage." He had been crying a good deal and had been restless, drawing the legs up and appearing to be in pain. The infant was doubly ruptured, was breast-fed, and had had no previous illness. On examination he was seen to be a fine fat child. He was pale and seemed to be in pain. The knees were drawn up and there was evidently abdominal pain. The pulse was small and rapid. On palpation of the abdomen some tenderness was evident and the child showed his resentment by crying. Passing from the right side just below the costal margin to the epigastrium a sausage-shaped, curved tumour was felt characteristic of an intussusception. It moved with respiration, and palpation of it caused more screaming than palpation of the rest of the abdomen. Rectal examination revealed nothing. The abdomen was cleansed and disinfected and the child's limbs and chest were bandaged in wool. Chloroform was administered and the abdomen was opened by a longitudinal incision about 2 in. in length just above the umbilicus and a little to one side of the linea alba. On drawing out the transverse colon a large intussusception was seen. The greater part of this was very easily and rapidly reduced by the ordinary manipulation, but the reduction of the last part was difficult. Of this last part the lower few inches of the ileum and the first portion of the ascending colon with the cæcum formed the intussusceptum, while the remainder of the ascending colon constituted the intussuscipiens. On firm pressure no effect was produced for a moment, when suddenly the reduction began to be effected and the portion of large intestine forming the intussusceptum shot out and became the intussuscipiens, leaving therefore only the lower few inches of the ileum as intussusceptum. On continued manipulation this also was reduced, completing the reduction. The portion of ileum which had been invaginated was remarkably stiff and inelastic owing to exudation into its substance, and remained out of shape while under observation, forming a sort of flat, oval tumour about 2 in. long by 1 in. wide. The whole bowel was, however, in good condition, the circulation throughout being maintained. The appendix was found to be quite normal and not even congested. The case was therefore of the ileo-colic variety. On the next day (Sept. 29th) the patient was doing splendidly. The mother continued to suckle him. He had vomited twice during the night. The temperature was 100·8° F. and the pulse was 168. No flatus had been noticed. At night the child vomited once and passed a stool containing a little blood and mucus. The stool was not green but was darker than normal and rather watery. The temperature never rose again as high as 100·8° during recovery. The patient was discharged on Oct. 4th, having been in hospital six days, and he had recovered completely from his trouble.

Remarks by Mr. GODLEE.—The case demonstrates the advantage of early operation. Had inflation been tried the modification in the shape of the tumour would have suggested that reduction had been accomplished; but the operation showed that this was absolutely impossible. It was difficult to effect even at this early period after the onset of symptoms, and a few hours' delay would have probably rendered excision of part of the gut necessary.

[1] THE LANCET, July 30th, 1898, and August 20th, 1898.

SALFORD ROYAL HOSPITAL.

A CASE OF ACUTE ILEO-CÆCAL INTUSSUSCEPTION; LAPAROTOMY AND REDUCTION; NECROPSY.

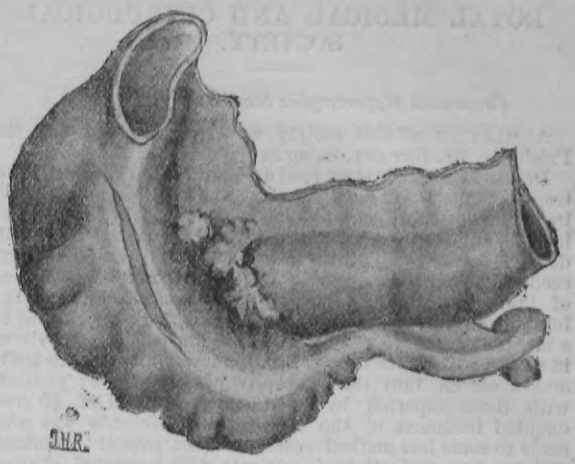
(Under the care of Mr. J. H. RAY.)

THE following case is chiefly remarkable for the great acuteness of the symptoms; the intussusception commenced apparently at three o'clock in the morning, and the child died about twenty-four hours later. The younger the patient as a rule the more severe are the symptoms and the greater the probability of a fatal issue. This is due to two causes: in the first place, young children stand very badly the shock

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due to the bruising of the bowel and of the intestinal nerves; and secondly, the younger the child the smaller the lumen of the gut. The fatal result in this case is no argument against operation; on the contrary, it enforces the lesson that in most cases of intussusception early operation offers the only chance of saving the patient's life. The condition found at the laparotomy demonstrated clearly that no procedure other than an operation could have reduced the intussusception; and it is highly probable that if reduction had been effected only a few hours earlier recovery would have ensued.

A child, aged nine months, was taken to the Salford Royal Hospital by his mother on April 16th, 1898, about 6.30 P.M., suffering from severe peritonism as the result of an acute intussusception. The mother gave the following history. The child had always appeared to be healthy and had required no medical treatment since birth. At about 3 o'clock in the morning on April 16th the child suddenly commenced to cry, seemed to be in great pain, and rolled about restlessly. Vomiting soon appeared as well as a kind of diarrhœa with much straining; many of the later attempts at evacuation of the bowel, however, only gave rise to a discharge of almost pure blood in varying quantity and mixed at first with mucus. As these symptoms did not abate a medical man was called in, later in the day, and he advised the removal of the child to the hospital. Mr. J. H. Ray saw the patient immediately on admission. The child, who was well nourished, looked extremely ill, with pale, slightly cyanosed face and with limbs hanging helplessly. He seemed, as was observed by a bystander, to be "too ill to cry." The abdomen was slightly tumid, and beneath the lower half of the left linea semilunaris an elastic, elongated, slightly tender swelling was to be felt, whilst another elastic mass could be made out with less distinctness about midway between the left costal margin and the umbilicus. Over the right iliac fossa there was some sinking-in and on palpation lessened resistance could be made out in this situation. A finger introduced per rectum could feel nothing abnormal, but came away streaked with blood, which was also noticed on the child's linen. A diagnosis of acute ileo-cæcal intussusception was made, and by rectal injections of olive-oil and of warm water it was attempted to reduce the swelling. This failing, and only leading to the discharge of more blood, Mr. Ray performed median laparotomy at 7 P.M., making an incision from a little above the umbilicus down to the pubic region. Through this incision it was an easy matter to confirm the diagnosis, but as it was found impossible to reduce the intussusception *in situ*, the entire tumour was brought through the laparotomy wound and surrounded by towels wrung out of hot normal saline solution. The intussusception was about 18 in. long, and owing to the attachment of the mesentery and mesocolon was coiled into nearly two turns of a spiral having a diameter of rather more than 3 in. The apex of the swelling was in the sigmoid colon but beyond reach of ordinary rectal examination. By uncoiling the swelling and so relaxing the mesentery during reduction it was found comparatively easy to express the intussusceptum from the intussuscipiens, always beginning about half an inch beyond the apex. The last few inches were somewhat more difficult to disengage owing to the presence of the twisted appendix, and when completely reduced a longitudinal rent was noticed in the serous and outer muscular coat of the cæcum and ascending colon, situated almost midway in the appendicular band, as shown in the illustration, and involving this for a distance of 1½ in. The tear did not involve the circular muscle fibres and was probably of some hours' standing, for its edges were infiltrated with blood, were swollen and slightly everted, whilst there was no bleeding from the edges at the time of reduction or later. The appendix was of medium length and provided with a well-marked meso-appendix. The cæcum was covered almost entirely by peritoneum and there was a fairly long ascending mesocolon. At the junction of the ileum and the cæcum there were some masses of subperitoneal fat, as shown in the illustration. The posterior surface of the cæcum and the colon was much congested and somewhat bruised, whilst the ileo-cæcal valves were of much increased thickness as felt through the ileo-cæcal junction. The abdomen having been sponged out in the operation area and a little iodoform and boric acid powder dusted on to the injured gut in the neighbourhood of the appendicular band the parietal wound was closed with silkworm-gut sutures and the child was sent back to bed about 7.30 P.M. There was very little sickness immediately after the operation and dilute brandy and milk were given by the mouth and retained, but the child never rallied fairly from his



The ileo-cæcal junction and appendix. Showing the rent in the cæcum and the masses of fat at the junction of the ileum and cæcum.

original condition of shock and died about nine hours after the operation. The only temperature taken, about two hours after the laparotomy, registered 97° F.

Necropsy.—An examination of the abdomen post mortem showed that there had been no return of the intussusception. The above illustration represents a drawing which was made of the ileo-cæcal segment of gut shortly after removal. It shows the longitudinal rent in the appendicular band, which was due, Mr. Ray believes, to the excessive tension on this region when inverted and lying near to the apex of the intussusception and in the immediate vicinity of the tucked-in appendix. This rent might have been caused in reduction when turning out the last portion of invaginated bowel and the appendix, but no excess of force was at any time used in reducing the swelling, and, as stated above, the character of the edges noticed at the time of the operation and the absence of any bleeding or oozing points would indicate that this lesion, as well as the bruising on the posterior aspect of the cæcum and ascending colon, were due to the force of the invagination; and they suggest how severe must be the impression on the nerves of the peritoneum by such acute cases of intussusception. An examination of the ileo-cæcal orifice showed this to be patent, though narrowed by congested mucous membrane, and there was no polypoid or other growth or foreign body within the gut to account for the immediate onset of intussusception. The appendix appeared to be quite normal in structure and its lumen was not obstructed in any way.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—A successful bazaar was held at St. Austell, Cornwall, on Nov. 3rd, in aid of the funds of this hospital, and as a result £180 will be handed over to the funds of that institution.

WEST OF ENGLAND EYE INFIRMARY.—The annual meeting of this institution was recently held at Exeter under the presidency of the Rev. W. H. McGrath. The medical report showed that during the year 2779 patients had been under treatment, of whom 2404 had been discharged benefited. A total of 95,202 patients has been treated since the opening of the infirmary in 1808. The financial statement showed that the receipts for the year amounted to £1280 and the ordinary expenditure to £1331. Since the last annual meeting £4000 had been received towards the building fund, and as the total amount was now £7000 it was decided to immediately commence the first part of the building, which the architect estimated would cost £8500. The committee hope to receive further subscriptions so as to enable them to carry out the remainder of the scheme, which would comprise nearly the whole of the administrative portions, including operation rooms and isolation wards, all of which are urgently needed.

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Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Congenital Hypertrophic Stenosis of the Pylorus.

A MEETING of this society was held on Nov. 8th, the President, Mr. BRYANT, being in the chair.

Dr. EDMUND CAUTLEY read a paper on Congenital Hypertrophic Stenosis of the Pylorus. The condition illustrated by the cases described was one in which the pylorus of the infant was found post mortem to be represented by a well-defined, cylindrical, thick-walled tube, with its lumen exceedingly small or completely occluded. The affection was of importance in its immediate effect on the life of the infant, and probably also in its relationship, when present in a modified form, to the hypertrophic stenosis of the pylorus in adults. The first case of the kind was recorded in 1841, and a search into the literature of the subject yielded, with those reported by Dr. Cautley, a total of 20 undoubted instances of the condition. Reference was also made to some less marked cases, some in patients examined post mortem and others in patients who presented characteristic symptoms and yet recovered. One of the cases under Dr. Cautley's observation was that of a male infant who died in the fifteenth week of life from vomiting and marasmus. There was apparently no inherited taint and nothing in the condition of the child at birth to indicate disease. Constipation was present from birth and vomiting began at the age of three weeks and persisted. Another abnormality was present—viz., a large cavity in the right hemisphere of the brain. The second case was that of a male infant who died in the eighth week of life "in a fit." Vomiting had commenced a few days after birth and the child rapidly wasted. The following were regarded as characteristic features of the disease: (1) vomiting, occurring without apparent cause and persisting in spite of treatment; (2) the absence of bile from the vomited matter; (3) obstinate constipation; (4) marasmus; (5) the presence of a tumour in the region of the pylorus; (6) the absence of abdominal distension except from dilatation of the stomach itself in some instances; and (7) the absence of signs or symptoms of gastritis and of the more common forms of intestinal obstruction. The influence of inherited disease, family predisposition, and sex were apparently unimportant. The child had usually been noted "a fine baby born." Symptoms might occur within a few days of birth or later in life, but almost invariably within the first month. The pathological changes were illustrated by specimens. In each case the pylorus was about an inch long, forming a firm, thick, elongated tumour, well defined at either end, and of about the size of the last joint of the little finger. The thickening was clearly seen to be due to a relatively immense hypertrophy of the unstriped circular muscle-fibres forming the middle coat of the pylorus. The other changes which might be present in the pylorus, stomach, and œsophagus were secondary to the stenosis produced by the contraction of this hypertrophied muscle. Thus the mucous membrane was thrown into longitudinal folds and appeared to be thickened, but microscopical examination showed that there was no actual thickening of this layer. It was due to the contraction and was an important factor in the production of the stenosis, blocking up the already narrowed lumen. The stomach and œsophagus might be dilated, and the former might present signs of secondary gastric catarrh. Diagnosis depended entirely on the characteristic symptoms arising during the first few weeks of life and the presence of a tumour. The tumour had been noted in two cases during life. Treatment must be merely palliative unless the presence of the tumour could be demonstrated. In such a case Dr. Cautley suggested surgical measures as offering the best prospect of cure. No explanation was given of the cause of the condition, but it was suggested that it might result from a redundancy of fœtal growth, due to the anxiety of nature to provide an efficient pyloric sphincter.

Dr. NORMAN MOORE referred to the point mentioned by Dr. Cautley, that the hypertrophy was sharply limited to the pylorus, and said that it was of interest in connexion with the similar limitation observed in specimens of epithelioma of the pylorus which rarely if ever extended down into the duodenum. He thought that this suggested that the pylorus was the point of junction of the two processes from which the alimentary canal was developed.

Dr. H. D. ROLLESTON said that since Dr. Cautley had written his paper he himself had recorded a similar case, in which, however, no tumour could be detected during life, and Dr. Metzler had also published several cases this year in America. The most interesting question was in connexion with the causation. It was difficult to put aside the theory of Dr. John Thomson of Edinburgh that the condition was due to spasm. Dr. Thomson suggested that it might be due to the fœtus absorbing amniotic fluid, which in these instances acted as an irritant and so set up the spasm. Dr. Metzler, however, in opposition to this view, maintained that there was no proof that spasm of the pylorus gave rise to hypertrophy. Dr. Rolleston thought that the change was confined to the muscular coat, and that any change in the submucous coat was due to compression, and that any thickening of the mucous membrane was of a catarrhal character, secondary to the spasm. He referred to a specimen of similar hypertrophy of the œsophagus occurring without known cause in a man, aged fifty-four years, which he showed at a recent meeting of the Pathological Society.[1]

OBSTETRICAL SOCIETY OF LONDON.

Tubo-Abdominal and Tubal Pregnancy.—Exhibition of Specimens.

A MEETING of the society was held at 20, Hanover-square, W., on Nov. 2nd, Dr. C. J. CULLINGWORTH, President, being in the chair.

Mr. BLAND SUTTON read two papers on Tubal Pregnancy. The first paper consisted of the record of a case of tubo-abdominal pregnancy in which a woman, twenty-four years of age, conceived in her left Fallopian tube, and the pregnancy went to term. The fœtus escaped from the amnion, and at the operation was alive and among the intestines, merely tethered by the umbilical cord. The placenta was removed without difficulty and with a very trifling loss of blood. The mother recovered but the child only survived extraction three hours. The second paper consisted of criticisms and deductions based on a report of a specimen presented to the society by Mr. Alban Doran in May, 1898, described as Hæmorrhage from the Fallopian Tube without Evidence of Tubal Pregnancy. Mr. Sutton's object was to prove that the specimen was an excellent example of "complete tubal abortion." This contention was supported by a re-examination of the specimen and illustrated by additional cases. Criticism was also extended to some other records recently published in the society's Transactions.

Mr. ALBAN DORAN wished it to be remembered that his communication was designedly entitled "Hæmorrhage from the Fallopian Tube *without Evidence* of Tubal Gestation," and not "*independent* of tubal gestation." In his paper he further declared: "I am very suspicious of alleged cases of hæmorrhage from the tube into the peritoneum not due to tubal gestation." He would have been much interested to see a demonstration of chorionic villi found in the clot in his specimen, but Mr. Sutton and Mr. Shattock had failed to find any. Walther had also uttered a warning against taking almost structureless fibrinous deposits for villi. There was no reason why clots from the tube not associated with tubal gestation and abortion should not be smooth and elliptical. As chorionic villi had not been found the case, in his opinion, remained not proven.

Dr. MCCANN said that the case which was the subject of discussion came under his care. The patient had suffered for some weeks from constant and copious discharge of bright red blood which in his experience was quite exceptional. In another case the dilated tube contained an ovoid blood-clot with a small central cavity. A careful examination of the clot and the tubal wall failed to detect chorionic villi. This case was probably one of hæmato-salpinx not caused by tubal pregnancy.

Dr. EDEN said that a good deal of care was necessary in

[1] THE LANCET, Nov. 5th, 1898.

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examining masses of blood-clot for chorionic villi. He had known fibrin rings and sections of the tubal plicæ exhibited as chorionic villi. If a careful search had been made, in Mr. Doran's opinion, and no villi were found he thought it pretty certain that it was not a mole.

Dr. AMAND ROUTH said that Mr. Bland Sutton's paper had brought out clearly the fact that after tubal rupture the Fallopian tube might recover itself and look normal in a few days, and after tubal abortion had been proved to have resumed its normal size and appearance even in a few hours.

The PRESIDENT was glad that Mr. Sutton had called attention to the question as to what happened in cases of pelvic hæmatocele from incomplete tubal abortion where the tubal mole remained in the tube after the hæmatocele had undergone absorption. It was a question on which more light was needed. He himself was disposed to agree with Mr. Sutton that an unremoved or unexpelled tubal mole was apt to cause trouble and he was not sure that it was not a source of serious danger to the patient. He had seen a case in which the mole-containing tube had become twisted on its axis, with results similar to those which occur when the pedicle of a small ovarian cyst becomes twisted. He had also seen a case where there was reason to believe that the mole had become septic and set up peritonitis.

Mr. BLAND SUTTON, in reply, contended that it was idle to deny that the clot in question was the product of tubal pregnancy. A tubal mole with such definite characters indicated that it was the result of tubal pregnancy as clearly as a potato was known to be the product of Solanum tuberosum. The difficulty of detecting the villi was probably due to the fact that the mole had been extruded from the tube many weeks. In reply to Mr. Targett he observed that in some cases of tubal abortion villi were demonstrable in the tube; in other cases the tubal mucous membrane was quite smooth.

The following specimens were exhibited:—

Mr. ALBAN DORAN: (1) Fibroma of the Broad Ligament, weighing 44 lb. 8 oz., successfully removed from a woman aged twenty-eight years; and (2) Sarcoma of both Ovaries.

Dr. TATE: Sloughing Fibro-myoma of the Uterus occurring twenty years after the Menopause.

Mr. BUTLER-SMYTHE: A Microscopic Section of Chorionic Villi from a Case of Tubal Gestation.

Dr. AMAND ROUTH: Uterine Appendages showing Hæmato-salpinx.

The PRESIDENT: Œdematous Subperitoneal Fibro-myoma removed by Hysterectomy.

HARVEIAN SOCIETY OF LONDON.

Malignant Disease of the Large Bowel.—Typhoid Fever.

A MEETING of this society was held on Nov. 3rd, the President, Dr. J. F. GOODHART, being in the chair.

Mr. W. H. BATTLE read notes of three cases of Malignant Disease of the Large Bowel, in each of which he had been called upon to operate for intestinal obstruction; in two cases the growth was removed at a subsequent operation, in one case it was excised at the time. They had been recently operated on at St. Thomas's Hospital, and one still remains under treatment. The result in each had been satisfactory. Case 1, a very rare one, was that of a man, aged forty-four years, who had a history of stoppage of the bowels three years previously, but he had apparently recovered from that attack and was well until three months before admission, when he suddenly became bad again, with increasing abdominal distension, pain, and the passage of a good deal of blood from the rectum, but no vomiting. Growth could be felt in the rectum. This proved to be an intussusception with the growth in the intussusceptum near the apex. Right iliac colotomy gave relief. Some weeks later the apex of the intussusceptum and the growth were excised through the rectum. Finally, the artificial anus was closed and although this was not completely successful the man was rendered so much more comfortable that he refused further relief. Case 2 was that of a woman, aged twenty-nine years, who had been seen by the President the day before Mr. Battle operated for the first time. She had all the signs of intestinal obstruction of chronic character and the diagnosis of malignant growth of the large intestine, either descending colon or sigmoid flexure, was made. Exploration was carried out and showed a hard growth of moderate size in the splenic region. An artificial anus was made in the left linea semilunaris below the ribs as it was hoped that at a subsequent operation, when the woman was in a better state, it might be possible to excise the growth and the artificial anus at the same time. The first operation was done on August 24th and after admission to St. Thomas's Hospital the second operation was performed on Sept. 23rd. The artificial anus and the growth were excised, the ends of the bowel were closed, and a lateral anastomosis by suturing was effected with the best results. The patient was able to leave for her home about three weeks afterwards in a very satisfactory condition. Case 3 was that of a woman, aged forty-five years, who was admitted to St. Thomas's Hospital on August 4th with intestinal obstruction of a fortnight's duration. She had had much vomiting, abdominal pain, and increasing distension of the abdomen. A median incision showed the cause of the obstruction to be a cancerous stricture of the sigmoid flexure. A second incision in the left iliac region was well over the seat of the disease, and as the patient's condition was fair and the growth could be brought up it was excised by the method recommended by Paul and a tube placed in each of the divided ends of the gut. The two ends and the mesentery were sutured together side by side and brought outside with the tubes. A few stitches secured them to the abdominal wall. The obstruction was completely relieved and the patient was now undergoing treatment for the re-establishment of the intestinal canal, the septum being divided gradually by the application of clamp forceps. Her general state of health has much improved. In none of these cases was there apparent glandular disease. Mr. Battle dealt upon the advisability of treating similar cases before obstruction had set in and the patient's state had become much more serious. He considered that the operation of colotomy should be rendered much less frequent by an early removal of the growth when diagnosis had been made. The advantages of "short-circuiting" and lateral anastomosis were pointed out and he expressed himself as against the use of mechanical contrivances.—The PRESIDENT alluded to a case of chronic intestinal obstruction caused by a mass of new growth in the neighbourhood of the splenic flexure. The bowel was "short-circuited" by means of Murphy's tube. The symptoms were completely relieved by the operation and the patient had remained well ever since.

Dr. SIDNEY PHILLIPS read a paper on the Treatment of Typhoid Fever. He referred to the changes which occurred in typhoid fever, amounting in time to a change of type. This was seen in the lessened severity of abdominal symptoms of late years. Thus, while Murchison estimated diarrhœa in 1862 as occurring in 96 of 100 cases it occurred now in not more than about half. The lessened severity of abdominal symptoms corresponded with probably less severe ulceration and of late a good number of necropsies of typhoid fever cases without ulceration had been recorded. It appeared that local lesions specific to typhoid fever and intercurrent affections such as pneumonia could not account together for more than 5 of each 100 deaths, and the remaining 50 per cent. or more were due to toxæmia, pyrexia, heart failure, or asthenia. It was necessary in treatment to keep up failing heart power by tonics and food, but heart muscle weakened by disease failed to respond well to cardiac tonics. Diffussible stimulants were useful. Diarrhœa should be checked by enemas rather than by drugs given by the mouth. Hæmorrhage was often controlled by hamamelis. The chances of recovery from perforation were so remote that operation offered the best chance, but the difficulty in many cases was the diagnosis of perforation.—Mr. HAZEL asked for further information as to the indications for the use of stimulants in typhoid fever.—Dr. WILSON inquired as to the exact time after cessation of the fever when it might be considered safe to give solid food.—Mr. EASTES fully agreed with Dr. Phillips as to the uselessness of phenacetin, antipyrin, and similar drugs; any lowering of temperature which they produced passed quickly away and was followed by increased general depression. He did not employ cold baths, but always ordered wet pack (with or without ice).—Dr. JOHN BROADBENT thought that the cold bath treatment ought to be more generally adopted in this country, as its routine employment in America and on the continent had indisputably diminished the percentage of fatal cases.—Dr. H. A.

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CALEY advocated increased attention to systematic hydrotherapeutic measures, adapted according to the nature and circumstances of individual cases, and confirmed what had been said as to the value of hamamelis in the treatment of intestinal hæmorrhage.—Dr. OWEN FOWLER gave his personal experience of the cold-bath treatment and pointed out the comfort experienced after the bath, the change from restlessness and fever to calm and rest.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

The Life and Times of John Milligan.—Strangulated Hernia.—Exhibition of Cases and Specimens.

A MEETING of this society was held at the Royal Infirmary, Bradford, on Oct. 25th, the President, Dr. BERRY, being in the chair.

The PRESIDENT gave his opening address on the Life and Times of John Milligan, surgeon, of Keighley, 1812–1876. He was born at Crosshills in 1812 and was apprenticed to a Keighley surgeon. He subsequently entered as a student at University College and Middlesex Hospitals and obtained the Licence of the Apothecaries' Society in 1834. He then returned to his native district and commenced practice. He was extremely industrious, beginning work at 5 o'clock in the morning and doing much of his work on foot—he often walked from 15 to 20 miles a day. In 1838 he was appointed first medical officer of the Keighley Union and public vaccinator. Mr. Milligan was an enthusiastic supporter of the Mechanics' Institute and frequently lectured there. He read widely in preparation for these lectures and paid much attention to works bearing on sociology and sanitation. Though he was much respected for his earnestness and enthusiasm for the public welfare in social and sanitary matters he was hindered in his work by popular ignorance and prejudice. His denunciations of the overwork and under-pay of the people and of the miserable hovels in which they lived doubtless often earned for him the dislike and opposition of employers and owners of property. In 1855 Mr. Milligan was appointed medical officer of health. By one who knew him intimately he was described as much in advance of his time in all sanitary matters and that he was much vexed by the popular indifference to such subjects. Among papers contributed by him to both the London and provincial press was one on the Prevention of Accidents in Mines, on Vagrancy and Crime, on Common Lodging-houses, and on Hospitals and Dispensaries. In 1849 he won the Fothergillian gold medal with an essay on the Influence of Civilisation on Health and Disease. In 1857 Mr. Milligan read a paper before the British Association at Dublin on a New Method of preserving Vaccine Lymph in Glycerine and on an Instrument for facilitating Vaccination. The method was to soak dried vaccine crusts in glycerine for six months and he apparently obtained results identical with those of arm-to-arm vaccination. Mr. Milligan was dexterous and successful as an operating surgeon under very unfavourable conditions, both as regards the patient's surroundings and also the lack of skilled assistance. He introduced the use of chloroform into Keighley, having first tried the effect upon himself. Apart from his professional work he interested himself deeply in local politics and tried to further the cause he thought worthy of support by both tongue and pen. He was much attached to the study of natural history in all its branches and was an authority on the local fauna and flora. He retired from active practice in 1866, retaining only his public health appointment until his death ten years later at the age of sixty-five years. A point of considerable interest was brought out by the lecturer in connexion with the attitude of the Keighley people to vaccination, Keighley now having one of the lowest vaccination rates in the country. In 1853 vaccination was made compulsory in England. Previously to this time Mr. Milligan was allowed to vaccinate at any time and on any day at his surgery or at the patient's houses, but most of the vaccinations were as a matter of fact performed during the warmer months of the year. The people were so alive to the value of the protection they gained from it that in outlying districts where medical men rarely went old women often performed the operation with a needle. The only anxiety felt was as to the source of the lymph, and so long as people were allowed to select this they raised no objection to the operation. When vaccination became compulsory and it was necessary to bring children at certain hours to a particular place then troubles commenced. Sometimes stations were a long way off and to reach them involved exposure in all kinds of weather, and this was felt to be intolerable for both mother and child. When the people found that by electing as guardians only such as would not enforce the compulsory clauses of the Act they could escape with impunity they were not slow to avail themselves of their privileges in this direction.—A vote of thanks to the President for his address was proposed by Dr. W. A. EVANS, seconded by Dr. RABAGLIATI, and carried unanimously.

Dr. ALTHORP related two cases of Strangulated Hernia exhibiting somewhat unusual features. The first case was that of a woman, sixty-six years of age, who for many years had had double femoral hernia, the left being irreducible for a considerable time. She was admitted to hospital with symptoms of obstruction and the vomiting was stercoraceous. The hernial sac of the left side was exposed and a pronounced gangrenous odour was at once perceived. On opening the sac it was found to contain a loop of large intestine about 8 in. long which was quite gangrenous. There did not seem to be any tight constriction at the femoral ring and the gangrenous bowel extended rather above this point. The wound was enlarged upwards through the femoral opening, the gangrenous bowel was cut away, and a large rubber tube was fixed into each cut end, the wound being left open. No fæcal discharge occurred through either tube and as the symptoms persisted the hernia on the right side was opened up after two days. A small piece of omentum, which was irreducible, was found in the sac and was removed. The symptoms persisted and the patient died two days after the second operation. A complete post-mortem examination was not allowed, but examination through the operation wound showed that there was a volvulus of the sigmoid flexure which had descended into the hernial sac and the descending colon was filled with hard fæces. The second case was that of a man, forty years of age, with a strangulated left inguinal hernia. Herniotomy was performed and there were found two sacs, one within the other, the inner containing omentum and bowel. Dr. Althorp described the condition as one of congenital inguinal hernia with a patent funicular process.

Dr. JAMES KERR showed two patients, mother and son, who each presented peculiar symptoms apparently as Sequelæ of Influenza. The mother, forty-seven years of age, together with the rest of the family, suffered from a febrile illness seven years ago, from which all the members except the mother and son recovered completely. In the case of the woman recovery from the influenza was much delayed, and at the end of two years she noticed failure of vision, the left eye being affected first and then the right. Three years ago the gait became weaker, unsteady, and reeling, and now the patient could not walk a few yards without great exhaustion. The affection of locomotion was ushered in by numbness of the feet and a sensation of walking on wool. There was no tremor of the hands and no wasting. Mentally she was quite clear, but rather emotional (inclined to tears). Sight was very bad—fingers were counted at a yard; faces were fairly well recognised, also colours. There was occasional (doubtful) nystagmus. The ocular movements were good; the pupils reacted sluggishly. Optic nerve atrophy was present on both sides. Taste and smell and sensibility were natural. Hearing was rather dull. The knee-jerks were exaggerated and ankle clonus was present. She could not stand without assistance. The gait was spastic and incoördinate. There was incontinence of urine and cystitis. The son, twenty-five years of age, had good health till he had influenza seven years ago. As in the case of the mother there was prolonged convalescence followed by failure of sight and power of walking. During the past year he had had difficulty in micturition. Mentally he was quite bright, but inclined to be emotional. Sight was bad; he counted fingers at a yard. He could not distinguish faces; colours were recognised. The pupils were dilated and reacted slightly to light. There was slight nystagmus on moving the eyes. The arms were muscular and slightly incoördinate. The legs were incoördinate; the knee-jerks were exaggerated; there was no ankle clonus. Sensibility was natural. Dr. Kerr remarked that there was a disseminated lesion affecting the central nervous system, probably toxic in origin. He stated that the commonest cause was syphilis but that similar cases had been described as following the specific fevers. The fact that both mother

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and son were attacked showed a family susceptibility to this particular poison.

Dr. KERR also showed a girl, aged ten years, who had suffered from the disease called by Charcot Astasia Abasia. The symptoms came on after influenza. There was at first some difficulty in walking which culminated in complete inability to either stand or walk. She was treated by suggestion and in three days could walk well. There had been slight return of the symptoms consequent on over-exertion.

Dr. EURICH gave a Microscopical Demonstration.

Dr. GLADSTONE showed a number of Pathological Specimens including the Œsophagus of a child in which a halfpenny had been impacted for ten months. There had been a lateral pouch formed at the seat of obstruction.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this society was held on Oct. 27th, the President, Dr. ALFRED ROBINSON (Rotherham), being in the chair.

Mr. SIMEON SNELL introduced: 1. Three instances of Entropion which had been treated by eschar by caustic potash (Theobald's method). The result in each case was excellent. 2. Three cases of Ectropion—(1) severe of the upper eyelid treated by division of subcutaneous bands and temporary union of the eyelids; (2) of the lower eyelid treated by raising a V-shaped flap and temporary union of the eyelids; and (3) from granular lids, treated by shortening the palpebral fissure and at the same time inverting the lower eyelid.

Mr. SNELL also related particulars of a case of Diphtheritic Conjunctivitis in a woman in which the bacillus of diphtheria had been discovered. Complete recovery resulted. He referred, also, to a case in an infant treated by antitoxin and to another in an elderly woman with well-marked membrane. In the latter the bacillus was not to be found; in the former the result of the bacteriological examination was not recorded.

Mr. PYE-SMITH showed a man on whom he had performed Colotomy by the method recently described by Mr. F. T. Paul as based on the principle introduced by Hahn in the performance of gastrostomy. It was easy and rapid in performance and had given a very good result. The patient was wearing a truss as recommended by Mr. Paul.

Mr. PYE-SMITH also showed a girl, aged eleven years, with Congenital Displacement of the Left Hip. There was 2in. of shortening which could be reduced by half by traction, but she could walk and run well with a raised boot. A skiagraph showed that the head and neck of the femur were not much abnormal as regards size and direction.

Mr. ARCHIBALD CUFF showed and described a case of Double Congenital Dislocation of the Hip.

Dr. PORTER showed: (1) A case of Insular Sclerosis; (2) a case of Locomotor Ataxia in a woman; and (3) a case of Incipient Progressive Muscular Atrophy (?).

Mr. PRIESTLEY showed a case of Leontiasis Ossea.

Dr. WILKINSON showed a specimen of Ruptured Tubal Mole obtained by operation from a woman, aged thirty years. The patient had had three children, the last nine years ago. She missed two periods and a week later began "flooding." She had sudden severe pain in the lower abdomen a week later. Since that time up to the day of admission (four weeks) she suffered from intermittent hæmorrhage from the uterus and abdominal pain. A tumour was detected by vaginal examination to the left of the uterus, feeling like a distended tube. The sound passed 3 in. The abdomen was opened and many clots and blood-stained serum were found in the peritoneal cavity. The left uterine appendages were removed. They were found to consist of a distended Fallopian tube which had ruptured. Through a rent a mole protruded which was still attached to the distended tube in the unruptured portion. The patient made a good recovery. Dr. Wilkinson drew attention to the method of incising the abdomen by "going round" the rectus, which he thought was applicable at the inner as well as at the outer border of the muscle.

Mr. SIMON RYAN showed a very large Gall-stone removed from a patient under his care, a man sixty-three years of age, by Dr. Sinclair White.

Dr. SINCLAIR WHITE exhibited and made remarks on Renal Calculi (three cases) and skiagraphs of Old Dislocation of the Shoulder and Renal Calculus.

The PRESIDENT, Mr. PYE-SMITH, Dr. SINCLAIR WHITE, Mr. ARCHIBALD CUFF, Dr. ARTHUR HALL, Dr. GODFREY CARTER, Dr. A. ANDERSON, Dr. ADDISON, and Mr. RICHARD FAVELL made remarks on the cases and specimens.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Nov. 3rd, the President, Dr. Macfie Campbell, being in the chair.—Mr. Rushton Parker read notes of a case of a Large Gumma of the Liver which formed a prominent tumour. Exploration was undertaken and the greater part was removed.—Mr. F. T. Paul spoke.—Mr. Richard Williams showed a patient from whom he had scraped a well-marked Lupus from the Palpebral Conjunctiva of the Upper Eyelid.—Dr. Grossmann alluded to the rarity of the affection. The diagnosis might be confounded with syphilis, trachoma, and, in some countries, with leprosy. Trachoma was, however, mostly bilateral and there were no characteristic organisms present. He had recently examined 100 cases of trachoma without finding any. He was in favour of treating lupus by scraping or galvano-puncture. Possibly the x rays might prove of service.—Mr. Thelwall Thomas mentioned a case of Lupus of the Conjunctiva of both upper eyelids in a young man whom he had seen. He had a small patch of lupus at the tip of the nose and he had probably inoculated himself on the eyelids. Scraping and the rubbing in of iodoform were successful.—Mr. Rushton Parker and Mr. Shears made remarks.—Mr. Robert Jones showed a case of Osteomalacia in an unmarried girl, aged twenty years, one of four cases which he had seen. All the bones were softened, spontaneous fracture having occurred in the tibia. The bones of the left limb could be moved in any direction. The fingers were clubbed, the thickening being confined to the terminal phalangeal joints. The radiographs demonstrated immense thickening of the long bones, striation suggestive of the partial disappearance of lime salts, and crenated borders. Mr. Jones suggested feeding with bone-marrow and, should this fail, he would remove the ovaries.—Dr. T. R. Bradshaw was surprised to hear that Mr. Jones had seen so many cases, the disease being so rare. Late rickets and cancerous infiltration of bones had sometimes been included in the records of cases of osteomalacia. Most important of all was the condition described as multiple myeloma, which was associated with great quantities of a kind of albumose in the urine. Dr. Bradshaw maintained that it was impossible to be sure of the true nature of the case exhibited without a careful investigation of the urine.—Mr. Clemmey spoke.—Mr. Hugh E. Jones read a paper on the Importance of the Early Detection and Treatment of Suppuration in the Tympanic Cavity and Mastoid resulting from Otitis Media. The mortality in complicated chronic suppurative otitis was still high in spite of the great progress made in operative treatment in recent years. The after history of successful cases was not always quite satisfactory. The radical tympano-mastoid operations, though of immense importance in the treatment of chronic cases, did not restore the ear to anything like its normal condition. With the exception of primary tubercle all the chronic cases began as acute ones; it was therefore highly necessary to thoroughly deal with acute cases. He described the course of acute otitis media and indicated the cases which required (1) paracentesis of the membrane, (2) exploration of the mastoid cells, and (3) opening of the mastoid antrum. The operations required at this stage were simple, easy of performance, and with ordinary skill perfectly safe.—Dr. Permewan agreed as to the advisability of early operation in acute cases. The real difficulty was in diagnosing mastoid complication; some cases of otitis externa and of tympanic inflammation alone closely simulated mastoid disease. Still, the only way to prevent acute cases becoming chronic was to operate early.—Mr. Robert Jones related four cases where he had opened up the lateral sinus and cleared the internal jugular vein. Two recovered.—Mr. W. M. Banks, Mr. Paul, Mr. Parker, Mr. Shears, Mr. Richard Williams, and Dr. Alexander spoke.

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WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—An ordinary meeting of this society was held in the society's rooms at the West London Hospital on Nov. 4th, Dr. S. D. Clippingdale, President, being in the chair.—Dr. F. J. McCann read a paper on Cases illustrating Difficulties in the Diagnosis of Early Tubal Pregnancy. Three cases were described in detail and remarks were made on the differential diagnosis of early tubal pregnancy. Case 1.—The patient was a woman, aged twenty-seven years; she had been married three years and was sterile. Three weeks before she was seen she had an attack of pain in the left iliac region, accompanied by sickness and faintness. At that time she had missed her monthly period for fourteen days. On bimanual examination an elongated fluctuating swelling was felt to the left of the uterus. As the contents of this swelling were evidently leaking into the abdominal cavity an abdominal section was performed. The abdominal mass proved to be a dilated tube containing an ovoid clot with a small central cavity. No evidence of chorionic villi could be found. The patient recovered. Case 2.—The patient was a married woman, aged thirty-seven years; she had had four children, the youngest being two years old. After a period of three months' amenorrhœa she was suddenly attacked with pain in the right groin and thigh. The temperature varied between 101° and 104° F. The patient was very blanched and collapsed. The abdomen was distended and very tender. An elongated swelling was felt in the right posterior quarter of the pelvis. Abdominal section was performed and about a pint of blood-clot was found in the abdominal cavity. The swelling was a well-marked example of a tubal mole. The patient recovered. Attention was directed to the difficulties in the diagnosis of early tubal pregnancy. Other cases were mentioned. The significance of elevated temperature, irregular uterine hæmorrhages, passage of decidual membranes, and amenorrhœa were discussed. The last case described in detail exhibited many of the signs and symptoms of tubal pregnancy. At the operation, however, a dermoid cyst with a twisted pedicle was removed.—The paper was discussed by Dr. Alderson, Dr. Addinsell, Dr. Campbell Pope, Dr. Drummond Robinson, Mr. Atkinson, and Mr. Twynam, and Dr. McCann replied.—Dr. Addinsell then read a paper on Ovariotomy followed by Parotitis. The patient was an unmarried woman, aged thirty-five years, from whom, in October, 1897, he removed a large multilocular ovarian cyst. There was a history of a severe sudden illness 5 months prior to the operation and lasting 6 weeks. There was found to be a twisted pedicle and the cyst was adherent to the bladder and uterus. The patient did well for 7 days. On the morning of the eighth day there was swelling of the left parotid gland. The temperature was 103° F., there was dryness of the mouth, and the submaxillary gland was involved. Suppuration did not occur and the patient left the nursing home at the end of three weeks. The origin of parotitis following abdominal operations was discussed, and it was pointed out that the cases collected by Mr. Stephen Paget in 1886 if carefully examined all pointed to a septic origin. Dr. Addinsell admitted the part played by the large network of sympathetic nerves in the abdominal and pelvic viscera, but he held that the lymphatic system must also take its share of responsibility. He thought that the cases relied on by Mr. Stephen Paget for establishing the theory of nervous origin were in reality cases of septic infection, and he considered that the whole weight of evidence was in favour of parotitis following operation being due to a mild form of sepsis.—The paper was discussed by Dr. McCann, Dr. Percival White, Dr. Gibbes, Mr. Stephen Paget, Mr. Bidwell and Mr. Keetley, and Dr. Addinsell replied.

BEDFORD MEDICAL SOCIETY.—A meeting of this society was held on Oct. 27th, the President, Mr. M. F. Cock, being in the chair.—Dr. G. P. Goldsmith opened a discussion on Diphtheria. He related his early experiences in 1859; next in 1863, when he had about 50 cases, and little children perished in large numbers at the end of a week or ten days from heart failure. He noted the great change for the better produced by the introduction of serum injections and pointed out the importance of early treatment. In about 20 cases recently under his care, all of which recovered, the serum was only used in the severe cases. In addition to the serum the throats were painted with a 1 in 1000 solution of perchloride of mercury and sprayed with sulphite of soda. He quoted statistics from 53 hospitals in which 7277 cases were treated with serum injections, with a mortality of 20 per cent., against a previous mortality of 44 per cent.—Mr. G. Robinson related a mild case in the swabbings from which no bacilli were found, but paralysis afterwards occurred.—Mr. Nash said that he and his partner had treated 50 cases since 1892 with 1 death. In 29 out of the last 32 cases bacilli had been found; in 25 cases serum injections were used, the number varying from 1 to 7 per head. Paralysis had occurred in 6 cases, 3 of which were treated with serum; one of these, which had 3 injections, died. Between June 29th and July 19th of this year he had seen 13 cases, all of which drank unboiled milk from the same dairy. Six other cases were heard of in the same period drinking the same milk and two or three cases which did not drink this milk. The latter were probably the ordinary sporadic cases.—Mr. A. Sharpin and Mr. T. J. Tonkin contested the milk origin of this epidemic.—Dr. F. B. W. Phillips related a puzzling case of Pustular Eruption on the hands of a child.—Dr. S. J. Ross, referring to Diabetic Urine, stated (1) that the appearance of albumin *per se* does not materially affect the prognosis; (2) the presence of diacetic acid and acetone does; and (3) he had noticed fatty casts in the urine appearing from 24 to 72 hours before the onset of coma.—Mr. Nash read notes of a case of Labour obstructed by an Ovarian Cyst in the Pelvis. The membranes had ruptured and the cord was prolapsed. The latter was replaced, the cyst was aspirated, and the child was delivered with forceps. The patient made an uneventful recovery.—Mr. Nash showed Congenital Cystic Kidneys from a child, aged six months. The colon was also malformed.—Mr. Nash also showed a Spindle-celled Cystic Sarcoma of the Gracilis and Adductor Longus removed from a man, aged sixty-eight years. The lump was first noticed by the patient eighteen months ago. In June of this year it was first seen by Mr. Kinsey and taken for a hæmatoma in the gracilis. It was incised by Mr. Kinsey and a large cyst was evacuated of its contained blood. It soon healed, but as it continued to enlarge was removed with much of the involved muscles. This patient's wife died in May, 1897, aged sixty years, from a malignant tumour of the sigmoid flexure.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 2nd, the President, Mr. T. Davies Pryce, being in the chair. The President delivered an address on Limitations in Medicine. He remarked that our limitations are many and meet us in every field of medicine, arising as the result of our restricted mental capacity, for the accepted doctrine of to-day is frequently the demonstrated error of to-morrow, from an overweening confidence in our knowledge causing us to accept a few facts as the whole truth and from a mental tendency to think in certain grooves. Often the brilliancy of some new discovery blinds us to the darkness of our knowledge, and thus we think the final goal has been reached while it merely marks a stage upon the road. What, he said, is known of the true nature of carcinoma, of hysteria, and melancholia? The frequent failure of past theories should ensure caution in accepting new views and practices. The "classification" of disease is necessary, but is often a hindrance, and none of the groups should be looked upon as final; phthisis and certain forms of pneumonia afford examples of recent emancipation from old forms of classification and are an instance of how a group of facts if taken alone may bear one interpretation, but which, if viewed by the light of further discovery, must necessarily be looked upon from a new standpoint and in consequence require a new interpretation. As an instance of how, by allowing our minds to think in a groove, we are apt to permit one important fact to obscure others of possibly equal value Mr. Pryce alluded to the acceptance of the water-borne infection of typhoid fever, and showed that many other possible sources of infection were thus disregarded. Another cause tending to confine and retard progress is a too ready assumption of knowledge which we do not possess, and the habit of taking refuge in expressions, the substitution of mere words for a definite explanation of observations, such as the terms "diathesis," "immunity," "predisposition," and the like.—A hearty vote of thanks was accorded to the President on the proposition of Dr. Cattle, seconded by Mr. Powell.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Nov. 4th, the President, Mr. D. H. Goodsall, being in the chair.—The President

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showed two boys, aged five years, treated by the American Stirrup Weight Extension and lateral sandbags with a sheet over the limb for Femoral Fracture in the Mid-third. One of these raised his injured limb from the bed on the seventeenth day.—Dr. R. Ostlere showed a man, aged forty years, the subject of Chronic Glossitis of three years' standing, whose tongue had three ulcers of from 1 cm. to 3 cm. in diameter, with thickened, irregular edges and in part a sloughy base. The right half of the tongue was very markedly swollen. The patient had had various treatment, but had benefited by none except silver nitrate locally. There was no history of syphilis.—Dr. Leslie Durno showed a man, aged thirty years, a coach painter, the subject of Extensor and Interossei Palsy coming on eighteen months after the first of a series of eight attacks of colic due to lead. The sulphide line on the margins of the gum was well marked. There was no sensory symptom. The left hand was attacked two months after the right.—Mr. W. Campbell M'Donnell showed a man, aged twenty-eight years, the subject of Recurrent Rectal Carcinoma, for whom excision of the rectum was done thirteen months before. Recurrence was in the deep parts as well as the skin.—Dr. B. G. Morison showed a woman, aged twenty years, whose right first, second, and third Nails becoming longitudinally ridged separated from the nail-bed and were shed close up to the lunula. She was also the subject of brachial neuralgia. He thought the condition a tropho-neurosis.—Dr. E. F. Willoughby showed a specimen of False Membranes from a case of Mucous Colitis in a man, aged seventy years, whose complaint commenced in April, 1898, and, with relapses, went on till the end of October. Under the microscope the membrane showed no structure but mucous cells.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Nov. 2nd, Mr. G. A. Wright, President, being in the chair. — Mr. Southam made some remarks, which will be found in another column, on Amputation for Charcot's Joint Disease and mentioned four cases where the leg had been removed below the knee for disease of the ankle or tarsal joints. In each instance the wound healed quickly without suppuration, a useful stump resulting. The patients, who were males between forty and fifty years of age, presented other well-marked symptoms of locomotor ataxy.—Dr. Leech gave an account of the investigations made by pharmacists subsequently to the publication of the 1885 Pharmacopœia, which had showed that accurate dosage with the official preparations of belladonna and nux vomica was impossible, since however carefully such preparations were made their strength might vary widely owing to the difference in the amount of alkaloid contained in the crude drugs themselves. Hence the necessity for the changes made in the Pharmacopœia of 1898. He pointed out that the alkaloid contained in the maximum doses of the preparations of belladonna in the 1885 British Pharmacopœia varied from $\frac{1}{300}$th to $\frac{1}{75}$th of a grain. In the standardised preparation of the 1898 British Pharmacopœia the width of limit had been greatly lessened. The largest dose of the new tincture (15 minims) corresponded to $\frac{1}{180}$th gr. of alkaloids, the largest dose of the alcoholic extract to $\frac{1}{270}$th gr., these amounts being equivalent to about two-thirds and 1 drop of liquor atropinæ sulphatis respectively. The tincture and extract of nux vomica have been likewise rendered much less variable in strength than formerly by standardising according to the amount of strychnine instead of according to the amount of total alkaloid contained.—Dr. Ernest S. Reynolds made some remarks on the Uncertainty of Diagnosis of Cerebral Tumour and gave illustrative cases.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A general meeting of this society was held at 20, Hanover-square, W., on Oct. 31st, the President, Dr. W. V. Snow (Bournemouth), being in the chair. Dr. Snow referred to the loss sustained by the society by the death of Dr. Henry Lewis (Folkestone), who was the first President of the society.—The treasurer's report and balance-sheet were adopted after discussion by Mr. Blaker (Brighton) and Dr. Hyde (Buxton).—Dr. Snow then introduced the new President, Dr. Fortescue Fox (Strathpeffer Spa).—A vote of thanks to the retiring President was proposed by Dr. Symes Thompson, seconded by Dr. Ivor Murray (Scarborough), and carried. Dr. Snow replied.—A vote of thanks to the editor of the Journal was proposed by Dr. St. Clair Thomson, seconded by Dr. Gilbert (Tunbridge Wells), and carried. Dr. Hyde replied.—A vote of thanks to the treasurer and auditors was proposed and carried. Mr. Keetley, Mr. Ward-Humphreys, and Dr. Leonard Williams replied.—A vote of thanks to the council and secretaries was proposed by Dr. Younger, seconded by Dr. Gage Brown, and carried. Mr. Ward-Humphreys and Dr. Sunderland replied.—An ordinary meeting was then held, the President, Dr. Fortescue Fox, being in the chair. The President delivered an impressive address on the Province of the Spa Physician, which evoked great interest and attention.—Dr. Ewart proposed, and Mr. Bowen Davies (Llandrindod Wells) seconded, a vote of thanks to the President for his address and Dr. Fortescue Fox replied.

HUNTERIAN SOCIETY.—A meeting of this society was held on Oct. 26th when the following cases were exhibited:—Dr. F. J. Smith: An elderly man with supposed Bulbar Paralysis. He was admitted with inability to swallow, paralysis of the tongue, aphonia, and loss of palate reflex. The small arteries were extremely hard.—Dr. R. Hutchison thought that in the absence of muscular atrophy of the tongue the lesion must be above the bulbar nuclei, possibly in the lenticular nucleus or the inferior frontal convolution.—Dr. F. J. Smith: A boy, aged sixteen years, with Gangrene of the Left Foot and Mitral Regurgitation. He had recently suffered from pneumonia.—Dr. Sequeira: A case of Raynaud's Disease. The nose, ears, and nails were affected, but there had been no hæmoglobinuria.—Dr. Chaplin: A man, aged forty-two years, with a Thoracic Aneurysm. There was marked laryngeal stridor and the right pulse was much weakened, though the signs of disease were chiefly on the left side.—Dr. F J. Smith thought it might be due to atheroma of the aorta with dilatation and regurgitation.—Dr. A. T. Davies suggested that the sac had originated from the concavity of the aortic arch.—Dr. Sequeira: A child with supposed Cerebellar Tumour. He had a marked ataxic gait, double optic neuritis, and enlargement of the head.—Mr. Targett had seen a case with similar symptoms and diagnosed as cerebellar tumour which proved to be due to chronic hydrocephalus.—Dr. Kelson: Two cases of Congenital Syphilis.—Sir Hugh Beevor: Arthritis Deformans in an Elderly Man.

ROENTGEN SOCIETY.—The first annual meeting of this society was held on Nov. 1st at 11, Chandos-street, Cavendish-square, W. In the unavoidable absence of the President, Professor Silvanus Thompson, Mr. Thomas Moore took the chair. The report of the council was read and adopted. It showed a financial balance upon the year's proceedings of £46. Mr. C. W. Mansell Moullin was elected President for the coming year, 1898-1899. On taking the chair he gave a short address, in the course of which he insisted upon the need of a normal atlas of osteography and of collections of photographs illustrating special conditions. There were great possibilities for the future development of the new art in various technical directions. The annual conversazione will be held on Nov. 21st at the invitation of the new President. During the evening it was announced that a 10 in. coil had been presented to the society by Mr. Wilson Noble. The following is the list of officers:—President: Mr. C. W. Mansell Moullin. Past-President: Professor Silvanus Thompson. Vice-Presidents: Lord Blythswood, Professor Ferrier, Professor Gladstone, Dr. Macintyre, Mr. A. A. Campbell Swinton, and Dr Dawson Turner. Council: Mr. J. Mackenzie Davidson, Dr. F. E. Fenton, Mr. Greenhill, Dr. Hedley, Mr. Isenthal, Dr. F. H. Low, Mr. Wilson Noble, Mr. Sydney Rowland, Mr. Vezey, Mr. Snowden Ward, Mr. Webster, and Dr. Wolfenden. Hon. Treasurer: Mr. Thomas Moore. Hon. Secretary: Dr. Walsh, 5, Pump-court, Temple, E.C.

ILFORD MEDICAL SOCIETY.—At a general meeting of this society held on Nov. 3rd, the President, Mr. Best, in the chair, the subject of Affiliation with the Corporate and Medical Reform Association, Limited, was brought forward for re-consideration by means of a motion formally proposed by Dr. Griffith and seconded by Dr. Hanks, but unsupported, to rescind a resolution adopted on Oct. 6th to enter into affiliation. Whereupon the resolution of Oct. 6th, moved by Dr. Fraser, seconded by Mr. Houghton, was again put to the meeting and unanimously re-affirmed. At the previous meeting (Oct. 6th) a deputation was received

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consisting of Mr. Murtaugh Houghton and Mr. R. B. Anderson submitting proposals of coöperation and affiliation in favour of corporate and medical reform, at which a resolution, moved from the chair and seconded by Dr. Duncan, approving of the policy and measures of the association, was carried *nem. con.*, and the resolution to enter into affiliation was, after a prolonged discussion, carried against three dissentients, who held that absent members should have a further opportunity of voting, for which purpose Dr. Griffith gave notice of his motion to rescind the resolution.—The Memorandum of Association was executed on Nov. 5th.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—This society held its third meeting on Nov. 4th, when Dr. Nicoll showed a case of Cerebellar Abscess successfully treated by operation.—Dr. Beatson then showed a Cystic Goitre removed by operation and also a large Fatty Tumour removed from the superior mediastinum. It lay beneath the deep cervical fascia and simulated a cyst protruding above the manubrium sterni.—Dr. James Adams and Dr. Nicoll each showed a specimen of large Meningo-encephalocele removed by operation, and Dr. Nicoll showed a Nævoid Tumour of the Intestine enclosed in a double intussusception involving over 5 ft. of bowel. It was successfully resected, having produced symptoms of acute intestinal obstruction.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The first meeting of the new session was held on Nov. 7th at 40, Leicester-square, W.—The President, Mr. John Fairbank, delivered his inaugural address. After thanking the members for the honour which they had conferred upon him he referred to the prominent part which the society had played in the foundation of the L.D.S. diploma, and at the same time incidentally referred to the opposition which had been offered to this step by the Society of Surgeons practising Dentistry. He dwelt at some length on the bearing which the various portions of the curriculum have upon the practice of dental surgery, pointing out that in his opinion the mechanical portion of the training outweighed in importance the medical and surgical. In reference to the actual education of students he thought that only too frequently the pupil while serving his apprenticeship was neglected by the practitioner and left to the tender mercies of the workroom assistant. He considered, too, that the utmost possible supervision should be given to the student whilst acquiring his operative knowledge and he suggested that every student before being examined should present satisfactory evidence that he had performed in detail all the various operations which he was likely to meet with in the practice of his profession. Referring to the treatment of patients he thought there was much to be learnt and he in the course of his practice had come to the conclusion that firmness of purpose combined with patience and gentleness were required for successful treatment. He touched, too, upon, in his opinion, the advantage of the subdivision of dental surgery into specialities, but he did not think there was any chance of his ideas in that respect being realised.—Mr. C. E. Smith presented a communication on the Value of Tube Teeth in the Manufacture of Bridge-work.—Mr. Storer Bennett read an interesting paper on Ankylosis of Human Teeth to the Jaw. He narrated the details of four separate cases of this character which had come under his notice and in all four there was unmistakeable microscopical evidence of the tooth substance having become firmly blended with the osseous tissue. The subject had, in his opinion, an important bearing on the operations of replantation and transplantation of teeth.—In a discussion which ensued several members of the society took part, and Mr. Bennett having briefly replied the meeting adjourned.

LIFEBOAT SATURDAY IN BRISTOL.—Oct. 29th was observed in Bristol as Lifeboat Saturday, and as a result nearly £300 was received for the funds of the society.

CAMBRIDGE UNIVERSITY.—At the election to the Council of the Senate held on Nov. 7th, the following were chosen to serve for four years: Heads of Colleges, Dr. Peile, Mr. Chawner; Professors, Dr. Forsyth, Mr. Ewing; Members of the Senate, Dr. Donald Macalister, Mr. R. T. Wright, Mr. F. Whitting, Mr. A. W. W. Dale. Dr. Macalister was at the head of the poll, and has already served for twelve years.

Reviews and Notices of Books.

A Treatise on Surgery by American Authors. Edited by ROSWELL PARK, A.M., M.D., Professor of the Principles and Practice of Surgery in the Medical Department of the University of Buffalo, &c. In Two Volumes. Vol. I.: General Surgery, with 356 Engravings and 21 full-page Plates, pp. 799. Vol. II.: Special or Regional Surgery, with 451 Engravings and 17 full-page Plates, pp. 804. 1897. Edinburgh and London: Young J. Pentland.

A TREATISE on surgery to which are attached such names as those of the well-known surgeons who have contributed to these volumes and which contains more than 1600 pages of text and more than 800 illustrations, is certainly deserving of the fullest and most careful consideration. This we have given to the work before us and we express the general impression which the perusal of the book has left on the mind when we say that it fully represents the high level of theory and practice which surgery has attained in the country from which it comes. The editor, Professor Park, has judiciously chosen for each section a surgeon well qualified to write on the subject, and though individual opinions occasionally show themselves, yet the general result is very homogeneous.

The whole of the section on General Surgical Pathology, which deals with inflammation and its results and the pathology of the blood, has been ably treated by the editor. He gives an interesting account of fat embolism, perhaps attributing to it more important results than are usually supposed to follow its occurrence. In describing the discharge from a "healthy granulating surface" Professor Park denies that it is pus, as its origin is essentially different, for he does not consider that it is due to the irritation of micro-organisms, but simply to excess of reparative material. This opinion, however, can hardly be maintained in view of the fact that an aseptic granulating surface under an aseptic non-irritating dressing has no discharge whatever.

A valuable chapter is that on Auto-infection, by the editor. It sums up our present knowledge of this recent but most important subject. In his account of Tetanus Professor Park mentions that the toy pistol with percussion-caps was in the United States a frequent cause of tetanus in children. For instance, in July, 1881, in Chicago, there were more than sixty deaths from tetanus among children who had been injured in this way. This led to the sale of these pistols being suppressed by law. Some excellent illustrations of actinomycosis are given in the section dealing with that disease, but in the treatment of actinomycosis no mention is made of the great value of potassium iodide.

Dr. John A. Fordyce of New York writes on Syphilis and Dr. W. T. Belfield of Chicago on Gonorrhœa; both of these chapters are decidedly good. The remaining surgical diseases are dealt with by the editor, who contributes a useful account of the surgical aspects and sequelæ of those diseases—such as the exanthemata—which usually come under the treatment of the physician. In speaking of the Etiology of Scurvy Professor Park mentions that he considers that beri-beri is largely due to absence of animal food. There is surely very little foundation for this opinion, and most of the evidence points strongly in favour of a bacterial origin of this disease. Minor Surgery and the Treatment of Hæmorrhage are well described by Dr. J. Parmenter of the University of Buffalo, and Dr. H. A. Hare of Philadelphia contributes the article on Anæsthesia. Dr. C. B. Nancrede of the University of Michigan is responsible for the chapters on Wounds and their Repair and their Treatment, and he gives a very good account of aseptic methods.

In the last section of the first volume dealing with Surgical

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Affections of the Tissues the longest articles are those on Cysts and Tumours by the editor, and on Fractures and Dislocations by Dr. H. H. Mudd of St. Louis. Professor Park gives a very clear description of new growths, always a difficult subject for students, and many excellent illustrations from photographs of cases are to be found in this chapter. In the account of Villous Papillomata we are told that "they are strictly identical with chorionic villi"; although it is easy to see the writer's meaning, yet there is little doubt that the sentence quoted might readily be utterly misunderstood. Dr. Mudd's account of Fractures and Dislocations is very good, and we would only point out that "Lister's" long splint should be "Liston's." All the chapters in this section are excellent, but we would specially mention Dr. J. Ransohoff's article on the Diseases of Joints and their Treatment.

The second volume is devoted to Regional Surgery and is as satisfactory as the first; to it the editor has contributed a valuable account of the Surgical Diseases and Injuries of the Head. He limits the application of the phrase "concussion of the brain" to those cases in which no gross mechanical lesion is present and naturally finds that there are very few cases to which it becomes applicable. It is better on the whole to employ the expression as a useful clinical term for the group of symptoms present in cases after an injury to the head in which no signs of "compression" are present and yet the brain has suffered. The symptoms referred to are probably due to bruising of the brain with minute ecchymoses; in fact, the condition which the writer of this chapter has described under the title of "contusion" of the brain. In the description of compression it is mentioned that there is increased cerebral tension, the first effect of which is to drive some of the cerebro-spinal fluid out of the skull into the spinal canal, and, further, that there is a "less rapid flow of blood" through the brain, but it is not explained that as the intracranial pressure rises the amount of blood entering the skull diminishes until the anæmia of the brain resulting from this causes the coma which ensues. When the general intracranial pressure is equal, or nearly equal, to the arterial pressure in the internal carotid and vertebral arteries death must occur. The coloured plate illustrating the topographical anatomy of the cerebral cortex is very clear.

Dr. E. H. Bradford of Boston writes on the Surgery of the Spinal Column and Cord, a very good chapter, especially the part dealing with Pott's disease. Dr. Duncan Eve of Nashville contributes the section on the Heart and Blood-vessels, and Dr. D. B. Delavan deals with the Surgery of the Respiratory Organs; these chapters are well written. The Surgery of the Face and Neck is described by Dr. E. Souchon of New Orleans and is very satisfactory.

The name of Professor F. S. Dennis of New York is sufficient guarantee that the article on the Surgery of the Chest is all that it should be. Dr. A. D. Bevan's contribution on the Surgical Diseases of the Mouth, Tongue, Teeth, and Jaws is good but rather short. It is followed by an account of a new method of closing a cleft of the palate invented by Dr. Truman W. Brophy: it consists in using a modification of the quill suture, flat lead plates taking the place of the tubes. The important subject of the Surgery of the Abdomen occupies 70 pages and is written by Dr. Maurice H. Richardson of Boston with the assistance of Dr. Farrer Cobb. It must have been difficult to compress so large a subject into so small a space, but the result is satisfactory and up-to-date. Dr. Richardson also is responsible for the chapter on Hernia; it contains a reproduction of a photograph of that rare condition, an ischiatic hernia. Dr. C. B. Kelsey of New York gives a good account of the Surgery of the Rectum and Sigmoid Flexure; for hæmorrhoids he prefers Smith's clamp and cautery to all other methods, and he thinks that "so elaborate an operation" as Whitehead's is never necessary to cure any case of hæmorrhoids. He considers that the ordinary "syphilitic stricture" of the rectum is not really syphilitic, but the result of simple proctitis. Dr. W. T. Belfield of Chicago has written the chapter on Genito-Urinary Surgery and has given a very good description of this important branch of surgery in comparatively few pages. In describing the treatment of Hypertrophy of the Prostate the writer speaks well of double castration, but insists that it should never be performed until the bladder has been opened and explored by the finger, so that the operator may be certain that the symptoms are not due to a vesical calculus or tumour.

The section on the Surgery of the Female Reproductive Organs has been undertaken by Dr. James H. Etheridge of Chicago; he gives a somewhat brief account of Gynæcological Surgery. It should have been pointed out in the description of ovarian cysts that most of the unilocular cysts are derived from the parovarium and not from the ovary itself. The account of the various procedures for treating ruptured perineum is very complete, and a diagram shows well the incisions in the different methods by means of superimposed outlines.

Dr. Charles B. Parker of Cleveland, Ohio, deals with the Surgical Diseases and Injuries of the Breast. This article is illustrated by some excellent photographs. Professor Rudolph Matas of New Orleans describes Amputations, and all recent methods are included. In the history of the methods of amputation it is hardly correct to speak of Celsus as the "prince of Greek physicians," as, though we know comparatively little about him, he certainly wrote in Latin and lived in Italy. For amputation at the hip-joint the writer prefers Wyeth's method, in which the hæmorrhage is controlled by a rubber tourniquet held in place by two long steel pins which transfix the thigh close to the hip. In the statistics of amputations which are given no distinction is made between amputations for injury or for disease, or between primary and secondary amputations. As on these points depends the whole value of statistics in this subject no conclusions can be drawn from those quoted.

Orthopædic Surgery has a section to itself, contributed by Dr. R. W. Lovett of Boston. The account is rather compressed, but may be taken as fairly representative of modern practice.

The most striking portion of Dr. Arpad G. Gerster's article on Plastic Surgery is the series of diagrams illustrative of the methods by which defects of the skin can be made good; the whole chapter is satisfactory.

Dr. C. S. Bull of New York contributes the section on the Surgery of the Eye, but he mentions in a preface that only the more common conditions and those which are likely to be met with in general practice are described, and comparatively little notice has been taken of operative technique except in regard to operations on the eyelids, as all operations on the eyeball are better left to the care of the ophthalmic surgeon. Even with these limitations the article occupies nearly 50 pages and is as complete as is needed in a work on general surgery.

In Dr. Clarence J. Blake's contribution on the Surgery of the Ear a useful summary is given of the chief operations on the middle ear. The volume concludes with a chapter by the editor on the Application of the Roentgen Rays to Surgery. Each volume has its own index and a general index is given in the second volume. The several articles vary greatly as to the number of references given, but many of them are abundantly supplied with these useful aids to study. As we have mentioned already nearly 800 illustrations adorn the pages. The printing and general get-up of the work are excellent.

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The Principles and Practice of Medicine. By WILLIAM OSLER, M.D., LL.D. Edin., F.R.S., F.R.C.P. Lond., Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore. Third Edition. Edinburgh and London: Young J. Pentland. 1898. Pp. 1181.

THIS work is already so well known that no recapitulation of its scope is necessary in a review. But the present rate of progress of medical science necessitates frequent revision of text-books, and for the purpose of coping with these advances the present edition has been wholly recast—notably is this the case in the classification of diseases. Many readers, no doubt, will be surprised to find pneumonia and rheumatic fever placed amongst the "specific infectious diseases." With this classification we agree so far as concerns the former. Pneumonia is defined as "an infectious disease characterised by inflammation of the lungs, toxæmia of varying intensity, and a fever that terminates abruptly by crisis. Secondary infective processes are common." Dr. Osler is known for the great originality of his writings and for having the courage of his convictions. He is by no means the first observer to suggest that pneumonia should be classed amongst the specific fevers; but, as far as we are aware, he is the first who has so classified the disease in a text-book of general medicine. The section on Etiology, which supports this contention, is couched in terse phraseology, but contains all that is necessary for the student and practitioner and is devoid of redundant arguments. Dr. Osler goes still further in writing on Broncho-pneumonia, a disease generally considered as a purely inflammatory one, for we find the following: "All forms of broncho-pneumonia depend upon invasion of the lung with microbes and it would have been more consistent to place them with lobar pneumonia among the infectious disorders, but it is well, perhaps, to defer this until the bacteriology of the different varieties has been more fully worked out."

"Rheumatic fever" is defined as "an acute, non-contagious fever dependent upon an unknown infective agent and characterised by multiple arthritis and a marked tendency to inflammation of the fibrous tissues." The arguments in favour of this definition are likewise very lucidly given, and are based (*a*) on general evidence, such as its epidemic and seasonal occurrence; (*b*) on its clinical features, such as their similarity to those of septic infection; and (*c*) on special evidence, especially the bacteriology of acute rheumatism; but on this point the evidence is conflicting, and no positive proof has yet been offered of the constant association of any special micro-organism with the disease, and we would prefer to wait for further testimony before countenancing so bold a departure in medical classification.

Much new matter has been incorporated in the section on typhoid fever, and we note particularly the grouping of the various types. "Typhoid fever," says Dr. Osler, "is no more primarily intestinal than is small-pox primarily a cutaneous disease. We may recognise the following groups: 1. Ordinary typhoid fever with morbid enteric lesions. An immense majority of all the cases are of this character. ..... 2. Typhoid septicæmia, a general infection with the bacilli without special local manifestations ..... the diagnosis may rest upon the existence of the Widal reaction and the demonstration of the bacilli ..... 3. Typhoid fever with localisations other than enteric ..... The organs attacked may be the lungs, the spleen, the kidneys, or the cerebro-spinal meninges ..... 4. Mixed infections." All observers who have had a large experience of typhoid cases will probably agree with the author in this classification.

We commend Dr. Osler's remarks on the Value of Vaccination to the careful consideration of those whose opinion on the subject may be undetermined. Equally interesting are his comments on the Communicability of Leprosy. This matter is receiving much attention at the present time, a committee having just been appointed by the Royal College of Physicians of London to inquire into the evidence which has been accumulated. Dr. Osler remarks that while it is highly probable that leprosy may be contracted by accidental inoculation the experimental evidence is as yet inconclusive.

Much new matter will be found in the sections on Diseases of the Blood and Heart, and in these and similar sections on the Lungs and Kidneys the student will find set forth in decisive terms everything that is necessary for examination purposes. The paragraphs devoted to Treatment are especially noteworthy. The student or practitioner is not confronted with a number of drugs which have been suggested in certain diseases, but only those are recomended which have stood the test of experience. The section on Diseases of the Nervous System has been rearranged and an attempt has been made to group the diseases in accordance with the modern conception of the anatomy and functions of the part. Thus, system diseases—sensory, motor, and the two combined—are first considered, then diffuse diseases of the nervous system, such as affections of the meninges. Next diffuse and focal diseases of the spinal cord, followed by similar affections of the brain. Then we find diseases of the peripheral nerves, general and functional diseases, and, finally, vaso-motor and trophic disorders. In conclusion, we can cordially recommend Dr. Osler's text-book as one of the best in the English language. It is a volume which is much required, containing all that is necessary with regard to theory, but at the same time being essentially practical.

The Mineral Waters and Health Resorts of Europe. By HERMANN WEBER, M.D. Bonn, F.R.C.P. Lond., and F. PARKES WEBER, M.D. Cantab., F.R.C.P. Lond. London: Smith, Elder, and Co. 1898.

THIS is a new and enlarged edition of "The Spas and Mineral Waters of Europe," which was published not long ago. The additions made in the present volume include two new chapters on "Inland Climatic Health Resorts" and "Grape Cures, Milk-and-Whey Cures, Sanatoria for Dietetic and Special Methods of Treatment, and Sanatoria for Phthisis" respectively. In the arrangement of the spas of any one group the plan followed is to select two or three typical examples of the group and then to consider the remaining members of the group more briefly in "political geographical" order. Thus Wildbad and Ragatz represent the simple thermal waters, Spa, Schwalbach, and St. Moritz the chalybeate waters, and Ems and Royat the muriated alkaline waters, and so on. The information given is fairly full, considering the limits of the work, and extremely accurate. We have not been able to detect any error of importance. The estimate given of the value of balneological and climatic treatment is eminently sober and judicious, all extremes being avoided and every variety of treatment receiving due consideration. In dealing with such controverted questions as the Nauheim treatment of heart disease, the Karlsbad treatment of diabetes, and the Aix-la-Chapelle methods in syphilis, the authors show admirable judgment and good sense. The long chapter upon "Different Diseases and Morbid Conditions with respect to the Selection of Mineral Waters, Climates, Exercises, &c.," is an excellent piece of writing and contains a vast amount of well-digested information and valuable advice. If we have any fault to find with the general scheme of the work it is that spas and mineral waters receive disproportionate attention, while only relatively meagre space is allotted to such resorts as Davos, Falkenstein, Nordrach, &c. No doubt considerations of space have had great weight with the authors, but in future editions we think the special sanatoria for pulmonary tuberculosis might fairly claim fuller consideration. In a work which is on the whole a model of

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accuracy even trifling errors naturally strike the eye. Thus, Roncegno and Levico are described in one part of the work as being "in the Austrian Tyrol" and in another part as being "in Italy." Contrexéville is described as distant "thirteen hours by train from Paris." These, however, are trifles. In the account of special marine sanatoria for "scrofulous" children no mention is made of Italy. We can warmly commend the book to the practitioner who desires a trustworthy and compendious guide to the large subject of mineral waters and climatic treatment but who does not want an exhaustive discussion of these questions. Within its limits this work has no rival that we know of. A therapeutic index would be of service and might be added in the next edition.

LIBRARY TABLE.

The Day's Work. By RUDYARD KIPLING. London: Macmillan and Co. 1898. Price 6*s*.—It is not usual with us to review a work of fiction other than one written by a medical man, but Mr. Kipling's latest collection of stories deserves more than a passing notice from us on account of two of them—namely, "The Bridge-builders" and "The Tomb of His Ancestors." The first details the building of a railway bridge over the Ganges and how when it was all but finished the great river arose in her might, coming down in flood to destroy the result of all the toil and labour. Then we hear, how the engineer and the foreman of the works, who was a native, sat and watched to see what would happen. Neither could eat and so the native gave his superior officer some opium. "Findlayson stood with his chin on his chest thinking. There was one point ..... that he had not fully settled in his mind. The figures would not shape themselves to the eye except one by one and at enormous intervals of time. There was a sound rich and mellow in his ears like the deepest sound of a double-bass—an entrancing sound upon which he pondered for several hours as it seemed." After this he found himself in a boat and considered how easy it would be to step out on the water and so be borne by the rushing stream to the shore. But "It needed only an exertion of will for the soul to hurl the body ashore as wind drives paper; to waft it kite fashion to the bank. Thereafter ..... suppose the high wind got under the freed body? Would it tower up like a kite and pitch headlong on the far-away sands or would it duck about beyond control to all eternity? Findlayson gripped the gunnel ..... for it seemed that he was on the edge of taking flight before he had settled all his plans..... In his mind he had already escaped from the boat and was circling high in air to find a rest for the sole of his foot. His body—he was really sorry for its gross helplessness—lay in the stern." He then argued with himself that he was on shore, but that Findlayson, "poor beast," would be drowned. "I'm on shore already, why doesn't it come along?" Now, anybody can realise the opium enthusiasm, but what strikes us in these passages is the wonderful way in which Mr. Kipling has put the sensations down on paper. This is the faculty in which he is so pre-eminent—the ability to realise for others circumstances and scenery. To take an instance of a slightly different character, anyone who has ever been in an Oriental mountain country has only to read the description of the hill village in the "Miracle of Purun Bhagat" to have it all brought back—the sights, the sounds, the very smells are present as we read. In "The Tomb of His Ancestors" we find an account of a mode of procedure which it would be eminently satisfactory to see applied to conscientious objectors. The fiat had gone forth that a certain tribe were to be vaccinated, and the members thereof, being simple and ignorant, tied up the official vaccinator in bonds and destroyed the official calf. John Chinn, the descendant of the "ancestors," is the *Deus ex machinâ*. He was trusted by the tribesmen and he addressed them as follows: "'Ye know the small-pox who pits and scars your children so that they look like wasp combs. It is an order of the Government that whoso is scratched on the arm with these little knives which I hold up is charmed against her. All sahibs are thus charmed and very many Hindoos. This is the mark of the charm. Look!' "He rolled back his sleeve ..... and showed the white scars of the vaccination mark. 'Now, all these things the man whom ye bound told you. But being pigs ye did not believe, and so came I here to save you first from small-pox, next from a great folly of fear, and lastly, it may be, from the rope and the jail!'" These sound arguments had their effect and the whole tribe submitted. The two stories from which we have quoted are by far the best of the collection, although "William the Conqueror" and "Maltese Cat" come very near them. The Indian or Afghan *milieu* is the one to show Mr. Kipling at his best.

The Transactions of the Society of Anæsthetists. Vol. I. London: Published for the Society by the Medical Publishing Company, Limited. 1898. Pp. 171. Price 5*s*.—Some five years ago the anæsthetists of London formed themselves into a society for the purpose of encouraging the study of the subjects connected with their professional labours. The volume before us is the first one which the society has issued. It contains the Transactions for the year 1897-98, with the exception of the opening address delivered by the President, which appeared in THE LANCET of Nov. 27th, 1897. No collected records of the society's transactions have appeared until the present. Of the five sections of the book some deal with practical matters and we find that most of the newer methods and apparatus are described, notably those recently introduced with the view of maintaining anæsthesia by giving nitrous oxide gas through the nose. It has been said that the skilled anæsthetist should be an educated physician, a ready surgeon, and a physiologist rolled into one. In this book we find evidence that the society attempts at least to give its members an opportunity of hearing the views of physiologists as well as physicians and surgeons upon the subject of chloroform and ether. Professor Waller's now well-known experiments on the effects produced on isolated nerve by the anæsthetic vapours are recorded, and Professor Schäfer's views upon the physiological antidotes to chloroform are given. In the course of a most interesting discussion upon the best methods of Resuscitation in Emergencies under Anæsthetics excellent speeches were made — Dr. Bowles dealing with the different modes of performing artificial respiration, Dr. Silk with the antidotal employment of strychnine, and Mr. Harold Barnard with that of hydrocyanic acid and the effects of posture whereby the loss of the check action of the splanchnic areas is compensated and bulbar anæmia avoided. Not the least useful parts of these Transactions are those which deal with cases of danger, death, or difficulty, which occurred in the practice of members of the society and which were brought forward for discussion and elucidation. The volume is clearly printed, has illustrations, and forms a compendium of modern work in anæsthetics which no one interested in the subject can well afford to be without. We congratulate the society upon its first literary venture and hope to see equally good material in succeeding volumes with the addition of an index to facilitate reference.

Aerztliche Versicherungs-Diagnostik der Vollwertigen und der Minderwertigen Leben (*Life Assurance: The Medical Diagnosis of Good and Doubtful Lives*). By Dr. EDWARD BUCHHEIM.—The publishing firm of Herr Alfred Hölder at

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Vienna has recently issued the above work by Dr. Edward Buchheim. The author, who is the Principal Physician of the Allgemeiner Beamten-Verein at Vienna, is well known in Austria and Germany as an authority on the subject of life insurance from a medical point of view, and his present book is a timely expansion of his publication some ten years ago on the same subject.

JOURNALS AND REVIEWS.

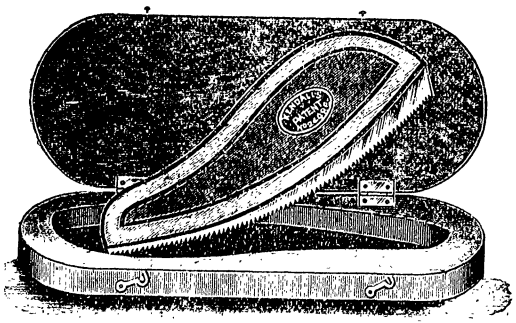
The Phonographic Record for November contains, in addition to notes of a fatal case of laparotomy for perforated gastric ulcer, an article by Dr. E. B. Gray upon the New Edition of Phonographic Outlines of Medical Terms, reviewed in THE LANCET of Oct. 15th, and a discussion upon Chronic Disease of the Uterine Appendages, taken from the pages of one of the circulating manuscript magazines of the Society of Medical Phonographers. Rest, hot vaginal douches, glycerine plugs and saline aperients, the treatment of uterine abnormality, and administration of hydrastis canadensis, salix nigra, hamamelis, ergot, and bromides sum up the measures adopted. Removal of the appendages is mentioned in deprecatory terms.

The Practitioner.—The November number of this journal is a very interesting one. Among the editorial paragraphs of the month is a sensible one on that ridiculously misnamed form of lunacy known as Christian Science. The editor rightly says that although the practitioners of this form of therapeusis are not amenable to the law for their "purely mental therapeusis" yet that if they prevent medical treatment they may then be fairly held responsible. Among the original papers are a clinical lecture by Dr. Patrick Manson on the Parasite of Malaria and a paper by Dr. Page May on Sulphur Treatment during the Winter in Egypt, dealing mainly with the springs at Helouan. The Medico-Literary Causerie deals with the late Wilhelm Meyer.

New Inventions.

SAW FOR REMOVING PLASTER-OF-PARIS AND OTHER CASINGS.

MR. E. G. KENDALL, of 53, High-street, Harborne, Birmingham, sends us a specimen of a saw which he has recently constructed for the removal of plaster-of-Paris and other casings. The saw has been made to obviate the use of



pliers, knives, acids, and other ill-adapted weapons, the shape of the blade being so designed that the toothed edge of the saw will enable the operator to cut through casings of any thickness without injuring the flesh of the patient.

A NEW MEDICINE BOTTLE.

MR. S. THISTLETHWAITE, of 35, Market-street, Manchester, sends to us for inspection an eight-ounce bottle and a one-drachm vial, the feature of which is that their necks are of the same size and therefore require the same sized cork. The invention has for its objects the saving of time, expense, and annoyance to medical men and druggists when dispensing and consequently merits respect from us, but we are not certain that the convenience of the innovation is quite as obvious to everyone as it may be to the dispenser. We have tried the effect of pouring water from the eight-ounce specimen and found the narrow neck a decided obstacle to an even flow. The fluid had a tendency to come in squirts which might make the measuring of an accurate dose a rather difficult task to the nurse, patient, or patient's friends. This being so with an eight-ounce bottle we wonder what sort of flow would issue from a forty-ounce bottle, up to which size the inventor is making bottles with a uniform neck. There is not much demand in medicine for bottles containing as much as two pints, but when they are wanted they are generally intended to hold lotions or antiseptic solutions to be used freely. We fear that a bottle whose speciality is to deliver *guttatim* a fluid that is wanted in large quantities will never achieve a vogue among medical men or nurses, however easy it may be for a dispenser to find a cork for it.

THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH AND THE ARMY MEDICAL SERVICE.

THE following memorial has been presented to Lord Lansdowne by the Royal College of Surgeons of Edinburgh:—

To the Right Honourable the Marquess of Lansdowne, K.G., Her Majesty's Secretary of State for War.

The Royal College of Surgeons of Edinburgh wishing to encourage its Licentiates to regard the Army Medical Service more favourably than they have done in recent years has had under consideration the regulations for admission to the service, and after discussion at a meeting of the Fellows of the College has committed to us, its President and Council, the duty of respectfully bringing under your lordship's notice its opinion in regard to certain changes which it deems necessary. The College gratefully appreciates the interest your lordship has shown in the well-being of the Army Medical Service, and, along with your lordship, recognises the importance to the efficiency of the army of having a medical department highly educated, fully manned and equipped by the best men sent out from our colleges and universities. With the view of obtaining such a class of candidates for the Army Medical Department we beg most respectively to submit:—

FIRST. *In regard to the conditions for admission to the service.* — The present regulations for the competitive entrance examination do not appear to us well adapted to secure the best men; too much importance seems to be given to elementary subjects and too little to the practical and clinical work which now occupy the latter years of professional study. Since Jan. 1st, 1892, by order of the General Medical Council, the course of professional education has been extended in all cases to five years, with the recommendation that the fifth year, thus added, should be devoted to clinical work. By the regulations of the various universities and other licensing bodies the examinations in elementary subjects, including chemistry, pharmacy, anatomy, and physiology, take place at the end of the first, second, or third year of study, thus allowing the fourth and fifth years to be devoted to the branches of surgery and medicine and midwifery, and to clinical work in hospitals and dispensaries.

Intending candidates for the army competitive examination who have qualified themselves for the active duties of their profession are thus deterred from entering the competition, which either necessitates a return to elementary studies or a recourse to a "crammer" in order to acquire such kind of knowledge as will gain marks at the competitive examination. By this system the best men will not be obtained for the service. While we hold that a thorough knowledge of the fundamental subjects of anatomy and physiology is essential, it must be remembered that all candidates have already been tested in these subjects in a more practical manner than that employed at the army

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competitive examination or than can be secured apart from dissecting rooms and college museums and laboratories. We would also observe that abundant opportunities occur in the course of any examination in surgery and medicine for testing the practical knowledge of anatomy and physiology. We would therefore venture to suggest that "chemistry and pharmacy and a practical knowledge of drugs" and "anatomy and physiology" be no longer retained as *separate* subjects in the army competitive examination.

The subject of pathology, including bacteriology, has of late years become of great importance in surgical and medical study, as well as in that of hygiene, and might be made useful as a critical test of the acquirements of candidates. The importance of such knowledge and of the accompanying familiarity with the use of the microscope to the army medical officer is manifest. Of this there have recently been presented notable examples in the recognition of the causes of typhoid fever, cholera, and bubonic plague, &c., and in their prevention and treatment. It is disappointing and deterring to our best qualified men, who have devoted the latter part of their course to such studies in their clinical work, to find them not recognised in the army competitive examination.

We do not forget that the army surgeon on probation has to undergo a course of further instruction in such subjects at the Army Medical School, which cannot but be useful to him in the special application of such knowledge to the circumstances of military duty, but we submit that the previous more general study of these subjects should be recognised in the army competitive examination. We are therefore of opinion that the compulsory part of the competitive examination should be limited to those subjects with which the student is mainly concerned in his last two years of study—viz., surgery and medicine—surgery to include operations on the dead body and the application of surgical apparatus; medicine and surgery to include pathology and hygiene and the examination at the bedside of patients, medical and surgical. We would further suggest that the number of marks obtainable in the practical subjects of surgery and medicine should be increased in proportion to those obtainable in the voluntary subjects of science and languages. We desire to mention our cordial approval of the intimation to candidates for admission into the Army Medical Service that they may be rejected for bad spelling or composition. Among the large number of preliminary examinations in general education recognised by the General Medical Council there is reason to believe that sufficient values are not always given to examination in English. It is not necessary to dwell on the injurious influence that such deficiencies in preliminary education must have on the social position of an army medical officer.

SECOND. *The non-existence of a system of "Study Leave."*—In the Army Medical Service this is a serious impediment to the efforts of the ordinary medical officer to keep abreast of the progress of medical science. Unless he happen to be stationed where there is a medical school it is not possible for him to become practically familiar with the improvements in the ever-advancing science and art of surgery and medicine. Such opportunities are ever present at all medical schools, but, in addition, there are now at all the important medical schools courses of instruction, termed "Post-graduate Courses," to which practitioners in civil practice have recourse in order to learn what is new in surgery and medicine. Still more are such opportunities required for most of the medical officers of the army, cut off as they necessarily are for long periods from being in relation with medical educational centres. Such opportunities can rarely be attainable during foreign service, but on returning from such service, as well as after some years of ordinary home service, we regard it as essential that the army medical officer should have a period of leave afforded him for practical study, and that some advantages be accorded him in recognition of such further study, which may act as a stimulus to him to avail himself of it. We would also venture to remind your lordship that the promise made by a previous Secretary of State for War that the Examining Board for the Army Medical Department should include representatives from the medical schools of Scotland and Ireland, as well as from those of London, has not been implemented to the extent we desire.

We beg most respectfully to submit to your lordship our opinion that if improvements on the lines indicated were introduced the army medical service would be better fitted to attract young medical men of talent and to attain to that state of high efficiency which it is alike the duty and interest of the country to secure.

On behalf of the President and Council of the College,
(Signed) JOHN CHIENE, President.

Royal College of Surgeons of Edinburgh, July 11th, 1898.

The following reply has been received from the War Office:—

To Professor John Chiene, President of the Royal College of Surgeons of Edinburgh.

SIR,—With reference to your letter of 13th July last, forwarding a memorial from the Royal College of Surgeons of Edinburgh in regard to the medical service of the army, I am directed by the Secretary of State for War to inform you that he has given his most careful attention to the representations therein set forth. In regard to the question dealt with in the first part of the memorial—viz., that of the subjects to be included in the competitive examination for entrance into the Royal Army Medical Corps—Lord Lansdowne admits that the arguments adduced are not without force, but he has come to the conclusion that it is not at the present moment advisable to make any change in the subjects prescribed for the examination. With the opinions expressed in the second part of the memorial, as to the desirability of a system of "study-leave," Lord Lansdowne fully sympathises, and he has already given his sanction to the grant of leave for this purpose; but owing to the unusually severe demands which have been made upon the *personnel* of the Royal Army Medical Corps at a time when it was considerably below its normal establishment it has not been found possible to give effect to this privilege to the extent to which he would desire to do so. It is hoped, however, that the grant of such leave on a more liberal scale may shortly become practicable. With reference to the last paragraph but one of the memorial, in which it is stated that the promise made by a previous Secretary of State for War, "that the Examining Board for the Army Medical Department should include representatives from the medical schools of Scotland and Ireland, as well as from those of London," has not been adequately fulfilled, I am to call the attention of your College to the composition of the present Board of Examiners, two of whom (out of a total of four)—Professor McCall Anderson, Scotland, and Professor Cunningham, Ireland—belong to the schools of those countries, and to state that such a composition, in the opinion of Lord Lansdowne, constitutes an adequate fulfilment of the promise referred to. I am to add that every attempt will be made to secure upon all occasions a fair representation of the different schools, but the eminence of the examiners and the public confidence which they inspire must be the first consideration.

I have the honour to be, Sir, your obedient servant,
(Signed) R. H. KNOX.

War Office, London, S.W., October 7th, 1898.

QUEEN'S COLLEGE, BELFAST.—The following is the scholarship list which was posted in the College Hall on Nov. 1st for session 1898–99 in the Faculty of Medicine: Fifth Year—Medicine and Pathology: William Matthew Hunter; Surgery and Midwifery: John Edmund Clements, Fourth Year: John Alexander Douglas Radcliffe; John Campbell Rankin; John Elder M'Ilwaine, a prize. Third Year—Albert Lytle Black; David M'Mordie. Second Year—Henry Mulrea Johnston; Thomas Carnwath; John M'Clatchey, a prize. First Year—Literary—John Stanley Pyper.

TAUNTON AND SOMERSET HOSPITAL.—On Nov. 2nd Lord Wolseley unveiled at Taunton a bronze bust of the late Lieutenant-Colonel Chard, V.C., erected with funds subscribed to perpetuate the memory of the hero of Rorke's Drift. Lord Wolseley afterwards presented a cheque for £600, being the balance of the fund, to General Emerson, who represented the Taunton and Somerset Hospital, and this sum is to be used for the purpose of endowing a bed in the hospital for a soldier or his wife or child. Colonel Heyar, the honorary secretary of the fund, mentioned that £300 was still required to complete the endowment of the bed, and added that he had reason to believe the people of Natal would shortly send a donation for that purpose.

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THE LANCET.

LONDON: SATURDAY, NOVEMBER 12, 1898.

ON Thursday, Nov. 17th, will be held the annual meeting of the Fellows and Members of the Royal College of Surgeons of England. The progress of reform in the College is, as it has ever been, extremely slow, and we can well understand that some of its supporters despair of it entirely. Fourteen years have now elapsed since the Council decided to call a yearly meeting of the Fellows and Members of the College and to submit to them the annual report. This was a very small concession for the Council to make, but it was obtained only after a long and severe struggle, and at first the meetings were of little value, for nothing more than limited discussion was allowed. In time, however, resolutions were permitted, but only under oppressive restrictions which deprived them of much of their value. To-day a little more freedom has been granted both as to the terms of the motions brought forward at the meetings and as to the limits of the subsequent discussions. Something more than five years ago the Council, after many misgivings and much consultation with its legal advisers, decided to call half-yearly meetings of the Fellows apart from the Members, and further to call separate meetings of the Members, whenever in the opinion of the Council it was advisable. The introduction of voting by post for the election of members of the Council is also to be accounted a measure of reform. But these changes, few and comparatively unimportant though they be, represent the total amount of reform which has been wrung from a reluctant Council in the fifty-six years which have passed since the establishment of the Fellowship. That act cannot be looked upon as in any way a true reform. Though the benefits resulting from the formation of a higher grade of surgeons have been great, and it has doubtlessly led to the improvement and advancement of the science and art of surgery, yet the political outcome of the creation of the Fellowship has been in effect the restriction of the franchise to a comparatively small body of men, and politically it was a retrograde step. Far be it from us to belittle the standing or intelligence of the Fellows — they have by their training and their experience a wide and accurate knowledge of many parts of professional education; but neither the training nor the experience of the greater number of the Fellows renders them capable of judging of the professional needs of the majority of the Members of the College. Even were it not so; if the Fellows and the Council elected by them were indeed fitted to appreciate the requirements of the Members, if every act and every resolution of the Council were all that could possibly be devised for the benefit of the Members, even then the anomaly and inadequacy of the present constitution of the College would remain conspicuous. By the express words of the Charter, by the very admission of the Council itself, the Members form part of the body corporate, and yet in vain do they appeal for a share in the government of the College. Those who are the true constituents have no voice, either direct or indirect, in the management of the institution to which they belong.

Early in last year the Council solemnly put forth their claim to represent the whole of the body corporate of the College, and therefore the Members as well as the Fellows, but it is difficult to believe that this pronouncement deceived even any member of the Council who voted for it at the meeting at which it was carried. There are fewer than 1200 Fellows; there are more than 17,000 Members of the College of Surgeons: can it be seriously said that those 1200 Fellows represent the Members, who are fourteen times as numerous? The Council has admitted that the Members are a part of the body corporate of the College, and no satisfactory reason has ever been advanced why they should not take part in the election of the Council. We disclaim entirely and emphatically any imputation of unfairness against the individual members of the Council—they are all, whatever opinions they may hold, desirous only of doing what they think best for the interests of the College—and, moreover, we are of opinion that no small proportion of the members of the Council really favour the extension of the franchise. We simply point out their unsatisfactory position. It is often urged that the Members have no *legal* right to the powers they claim, and this must be admitted, but they possess what is of more value than a legal right, they have a moral right, and when legal and moral rights come into conflict the final victory always remains with the moral right. Moreover, the Members of the College contribute the major part of its revenues, and but for their pecuniary contributions the College would soon have to curtail its huge annual expenditure on the museum and library. An argument which is also employed is that since every Fellow of the College is also a Member, therefore some Members at least are represented on the Council. We only mention this in order to show how logically weak the defenders of the present state must be to be willing to employ such a puerile argument. Again, it has been said that the privilege of voting at the election of members of Council has acted as a great inducement to many to pass the examinations for the Fellowship. We think we may safely challenge the upholders of the present system to produce any Fellow of the College who was influenced in even the slightest degree by the privilege of voting to aspire to the Fellowship.

For the present we may leave out of consideration the question as to how the Members should be represented on the Council, whether by Fellows or by Members, or by Fellows or Members indifferently. These are weighty matters and in due time they will come up for discussion and ultimately for solution, but at present they may stand aside and await their turn. The exact number, too, of representatives on the Council to be allotted to the Members and whether they should be in place of a corresponding number of the present members of Council or in addition to the twenty-four representatives elected by the Fellows, though questions of great importance, can well wait until the right of representation has been conceded. *The Members must have the power of voting at the*

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election of the Council. This desired consummation, however, cannot be obtained without persistence on the part of those who are interested in the matter. There is unfortunately a great deal of apathy amongst the Members; they do not seem to feel that the subject concerns them at all; many are too busy with their practices, many others live too far away for active coöperation, but even after allowing for all who are absent on account of these reasons there are very many who never put foot within the College buildings. Time after time at the annual meetings of Fellows and Members only a few are present, and of these some are Fellows. The Members must bestir themselves; they must attend in full numbers at the meetings which are at present vouchsafed to them; they must show by their votes that they are thoroughly in earnest and that they intend to demand the suffrage persistently until it is granted to them; but withal this must be done with courtesy. Vulgar declamation and the attribution of unworthy motives to the members of the Council can only tend to estrange the sympathy of many Fellows and members of the Council who now are fully on the side of the Members. In time the looked-for end will come. No one can prophesy when, but come it must if the Members, who so truly deserve the power of voting for the election of the Council, show by their actions and their words that they desire it also. The Royal College of Surgeons of England cannot suffer. Firmly supported by all its Members as well as all its Fellows, it will fulfil more thoroughly than at present the purpose of its existence.

IT is a curious fact, the truth of which is so generally recognised that it almost amounts to a platitude, that disastrous occurrences which take place in our midst at once rivet our attention, whereas if they take place at a distance they fail in a great measure to do so. The explanation of this is not far to seek, for if a disaster occurs at a distance more or less remote from ourselves it does not endanger our lives or jeopardise our interests. Moreover, any evil which is at all chronic or continuous soon loses the effect which its first incidence produced. Be all this as it may, however, the recent history of India has been singularly calamitous, for famine, plague, pestilence, and war have followed one another in quick succession. When the news of the outbreak of plague first reached this country some three years ago, and whilst the number of cases was still comparatively limited, we could not shut our eyes to the gravity of the intelligence, although we were naturally desirous of avoiding the creation of any feeling of panic in the initial stage of an evil, when the extent of it in the future could only be a matter of conjecture and hypothesis. The subsequent progress of events has shown how serious has been the continuance and spread of the epidemic of plague in the Bombay Presidency and elsewhere in India. The Government of that country finds itself in the extremely difficult position of being placed between the opposing forces of sanitation and political expediency. Attempts to suppress or limit the spread of the disease by restrictive measures—necessarily of a severe character if they were to be of any use—have not unnaturally awakened a spirit of antagonism on the part of the native population and given rise to a good deal of disaffection.

Moreover, our knowledge of plague at the beginning of the epidemic was small and empirical, mainly derived as it was from the historical records of it in the past rather than from any scientific, clinical, or practical observation. The subject has, however, now been studied with the keenest interest from all sides and has been investigated with all the aids which the more recent and precise methods of scientific research could bring to bear upon it. Nor has the investigation comprised only clinical, bacteriological, and experimental work in the laboratory. The most important step was the first one—that of the discovery of the bacillus pestis by Dr. KITASATO and Professor AOYAMA of Japan during the preceding epidemic of plague at Hong-Kong. The accuracy of their discovery has been completely verified by the late lamentable occurrences at Vienna. So far as that part of the investigation of plague is concerned we have complete proof, at any rate, that the bacillus of plague is veritably and indeed the cause of that disease and that it is capable of initiating an outbreak of plague of virulent type. While we can then take a firm stand upon this foothold of fact there still remains a great deal to be yet accomplished, some of which is of a very practical and important kind. We are still upon the threshold of the inquiry as to the natural history of the bacillus, the conditions favourable to its growth and development, and as to the best means of dealing with plague with a view to preventing or limiting its spread and of safeguarding a population or individuals against its attacks. We think, therefore, that the Government have very wisely decided to send a Commission to India, consisting mainly of scientific experts, to report upon the plague in that country, and that an excellent selection has been made for the purpose. Dr. THOMAS R. FRASER, F.R.S., Professor of Materia Medica and Clinical Medicine at Edinburgh University, has accepted the duty of President and with him will be associated two other scientific experts — Dr. WRIGHT, Professor of Pathology at the Army Medical School, Netley, and Dr. RUFFER, who has been for some time head of the Egyptian Sanitary Department at Cairo. Two officers of the Indian Civil Service, Mr. J. P. HEWETT, C.I.E., and Mr. A. CUMINE, both of whom have had much to do with recent plague affairs in India, have also been appointed to the Commission by the Government of India. The scope of the Commissioners' inquiries will include—(1) the origin of the different outbreaks of plague; (2) the manner in which the disease is communicated; and (3) the effects of certain prophylactic and curative serums that have been tried or recommended for the disease. The members of the Commission will reach Bombay towards the end of the present month.

It will be seen that the functions of the Commission are mainly of a scientific and technical character, and that matters of sanitary and medical organisation do not, therefore, fall within their province and purview. We may point out, however, that we have long thought and often said that the sanitary service in India might be remodelled with advantage. As far as our information extends

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there is too much reporting and too little action and directness of aim. A new, increased, and more efficient machinery of a special kind seems to be required, designed somewhat on the lines of the public health organisation of this country, for investigating and dealing with the causes of disease and for supervising and controlling the methods of procedure and expenditure for public health purposes. We fully recognise the difficulties arising from the extent of country and the variety of peoples, their poverty, traditional conservatism, and racial, religious, and social prejudices, as also the need which exists for reconciling them to the Imperial Government — which, it must be remembered, is an alien Government. But when we think of all that is done in England, with its Local Government Board, medical officers of health, and sanitary inspectors, and compare it with what exists and is done in India the contrast is striking. However, as RUDYARD KIPLING says, "that is another story," but one with which the Government of India will sooner or later be brought face to face, if the time has not already come for it to make a beginning.

THE sittings of the Royal Commissioners were resumed on Monday last, and we continue our report of them. In view of the long break in the sittings it will be well to quote the "terms of reference" for our readers and to give also a brief summary of the proceedings. The terms of reference are as follows:—

"To inquire: 1. Whether, having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either (*a*) by one authority, or (*b*) by several authorities, and if so, what should be such authority or authorities. To what extent physical severance of the works and other property and sources of supply of the several companies and the division thereof between different local authorities within the limits of supply are practicable and desirable, and what are the legal powers necessary to give effect to any such arrangements.

"2. If the undertakings are not so acquired, whether additional powers of control should be exercised by local or other authorities, and if so, what those powers should be.

"3. Whether it is practicable to connect any two or more of the different systems of supply now administered by the eight metropolitan companies; and if so, by whom, and in what proportion, should the cost of connecting them be borne, and what are the legal powers necessary to give effect to any such arrangement."

At the second meeting of the Commissioners Lord LLANDAFF, the Chairman, announced that the Commissioners accepted generally the findings of the former Royal Commission which was presided over by Lord BALFOUR of Burleigh. He said: "We have decided not to reopen the questions reported upon by the Royal Commission presided over by Lord BALFOUR of Burleigh, and, speaking generally, we accept the findings of that Commission." The BALFOUR Commission, it may be remembered, was appointed to report on the quantity and quality of the Metropolitan Water-Supply. It may be well to restate the terms of reference on which the BALFOUR Commissioners reported. They are as follows:—

"Whether, taking into consideration the growth of the population of the metropolis and the districts within the limits of the metropolitan water companies, and also the needs of the localities not supplied by any metropolitan company but within the watersheds of the Thames and the Lee, the present sources of supply of these companies are adequate in quantity and quality, and, if inadequate, whether such supply as may be required can be obtained within the watersheds referred to, having due regard to the claims of the districts outside the metropolis but within those watersheds, or will have to be obtained outside the watersheds of the Thames and the Lee."

The report issued by the BALFOUR Commission was a long and, in some parts, an argumentative document. The main decisions at which they arrived, however, are given in the following paragraphs of their report:—

"We are strongly of opinion that the water, as supplied to the consumer in London, is of a very high standard of excellence and of purity, and that it is suitable in quality for all household purposes."

"We are of opinion that an average daily supply of 40,000,000 gallons can be obtained from wells and springs in the chalk of the Lee Valley without affecting any material interests; but that if that quantity is exceeded it is probable that the springs and wells in the parts of the valley immediately adjacent to the wells and all the districts further down the valley may be injuriously affected."

"From wells in the chalk area on the south side of the Thames, in the district of the Kent Company, we are of opinion that a daily average supply of 27,500,000 gallons may be obtained."

"From the River Lee we are of opinion that with adequate additions to the present system of storage 52,500,000 gallons may be taken daily."

"We are of opinion that by the construction of storage reservoirs in the Thames valley, at no great distance above the intakes of the companies, it will be possible to obtain an average daily supply of 300,000,000 gallons without taking in any objectionable part of the flood-water."

The Royal Commission which is now sitting met first on Nov. 22nd, 1897, and at the time of its rising for the autumn vacation had sat thirty-one times. At these sittings the London County Council has occupied more than two-thirds of the time of the Commissioners. At the first three sittings evidence was given by Mr. H. L. CRIPPS, Parliamentary Agent to the London County Council. The fourth, fifth, sixth, and part of the seventh sittings were taken up by hearing the evidence of Sir ALEXANDER BINNIE, chief engineer to the London County Council. Sir ALEXANDER BINNIE gave evidence again at later sittings and his evidence occupied part of the twenty-second and the whole of the twenty-third and twenty-fourth sittings of the Royal Commissioners. Part of the seventh and the whole of the eighth and ninth sittings were occupied by evidence given by Mr. H. E. HAWARD, the Comptroller to the London County Council. Mr. G. L. GOMME, Statistical Officer to the London County Council, gave evidence at the tenth, eleventh, and twelfth sittings. The thirteenth, fourteenth, and part of the fifteenth sittings were occupied by taking the evidence of Mr. W. H. DICKENSON, Chairman of the Water Committee of the London County Council. Sir JOHN LUBBOCK, M.P.,

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gave evidence at the conclusion of the fifteenth sitting and at the beginning of the sixteenth, and the remainder of the latter sitting was occupied by receiving evidence from Mr. C. A. WHITMORE, M.P., another County Councillor, whose evidence was completed at the seventeenth sitting. The latter part of the seventeenth, the whole of the eighteenth, and part of the nineteenth sittings were occupied by the evidence of Mr. GABRIEL PRIOR GOLDNEY, the Remembrancer to the City of London. The remainder of the nineteenth sitting was occupied by taking the evidence of Sir ARTHUR ARNOLD, another member of the London County Council and a late chairman. His evidence was concluded at the twentieth sitting, at which Mr. SHIRLEY F. MURPHY, Medical Officer of Health of the Administrative County of London, gave brief evidence. The remainder of the sitting was occupied by the evidence of Mr. G. F. DEACON, another witness employed by the London County Council. At the twenty-first sitting evidence was tendered on behalf of the vestries of Islington, Shoreditch, and Wandsworth. At the twenty-second sitting M. GASTON CADOUX, chef de bureau to the Prefecture of the Seine, gave evidence in support of the London County Council. The whole of the twenty-fifth and part of the twenty-sixth sittings were occupied by the evidence of Mr. R. M. LITTLER, Q.C., at that time chairman to the county council of Middlesex. At the twenty-sixth sitting evidence was given on behalf of the parish of St. Mary Abbott, Kensington; and Mr. COLLINS, a resident of Whitechapel, complained of the water-supply given by the East London Company during the years 1895 and 1896. The twenty-seventh sitting of the commissioners was occupied in hearing the evidence of Mr. JAMES BIGWOOD, M.P. for the Brentford division of Middlesex, and of Mr. E. J. HALSEY, chairman to the Surrey County Council. Mr. HALSEY, on behalf of Surrey, said that purchase by the London County Council was in the opinion of his council the very worst settlement which could be arrived at. At the twenty-eighth sitting no less than nine witnesses gave evidence. Mr. HOWARD MARTIN appeared for the Croydon Borough and Mr. SALTER WHITER for the Croydon Rural District Council; Mr. T. H. WATNEY gave evidence on behalf of the Borough of Richmond; Mr. G. J. COURTHOPE appeared for the Kent County Council; Dr. R. M. H. RANDELL for Beckenham in Kent, Lieutenant-Colonel CHARLES KIDD for the Dartford Urban District Council, Mr. A. T. WARING for the Dartford Rural District Council, Mr. F. H. NORMAN for the Bromley Urban District Council, and Mr. R. G. MULLEN for the Bromley Rural District Council. At the twenty-ninth sitting witnesses gave evidence on behalf of the Essex County Council, and of East and West Ham, Barking, and Leyton; and Sir JOHN EVANS, Vice-chairman of the Hertfordshire County Council, was briefly examined on a very important statement which he put in with regard to the water-supply of Hertfordshire. At the thirtieth sitting Mr. HENRY WEEDEN gave evidence on behalf of the Ilford Urban District Council, and Mr. F. G. BANBURY, M.P., a trustee and manager of the Stock Exchange, explained a scheme which had occurred to him as being the best method of purchasing the businesses of the London water companies. At the same sitting Mr. ALLEN STONEHAM, auditor of the accounts of the metropolitan water companies, explained his duties and how he carried them out. The latter part of the sitting and the whole of the thirty-first sitting was occupied by the evidence of Mr. R. E. MIDDLETON, who had acted as Assistant Commissioner to Lord Balfour's Commission, and who now gave evidence as a scientific expert on behalf of the London water companies.

From this point we shall continue the reports of the sittings from week to week.

LAST week we considered the case of JOHN LLOYD WHITMARSH as standing by itself; there is, however, an aspect of it which is attracting even more attention than the individual facts relating to the death of the unhappy girl ALICE BAYLY. Within the space of a few months two men, COLLINS and WHITMARSH, have been tried for murder at the Old Bailey, each having caused the death of a woman in the endeavour to unlawfully procure miscarriage. The one has been convicted of manslaughter and sentenced by the judge who presided at his trial to a term of penal servitude; while the other has been convicted of murder, sentenced to death, and subsequently reprieved by the Home Secretary, his ultimate fate being thus left in the hands of that official; and the question has naturally been asked by many whether in the two cases there existed any material facts to differentiate them in the eye of the law, or whether some defect in the law of England had resulted in an inequality in the administration of justice.

The law of murder is mainly common law undefined by statute, though interpreted and regulated by the decisions of generations of judges, and in the minds of the writers of the older law books there seems to have existed no doubt but that anyone who by an act done with intent to commit a felony, or by conduct which in his knowledge was likely to cause death and was therefore eminently dangerous in itself, killed another, was in either case guilty of wilful murder. This was carried so far that it could be said that if a man shooting at a fowl with intent to steal it killed someone inadvertently he would be guilty of murder, while it would be only a case of death by misadventure if the man had a right to shoot the fowl through being its owner or only did so out of mischief. It must be borne in mind, however, that this was in a Draconian age, when the fate of criminals, whatever their punishment, was regarded more callously in every way than now, and that, as capital punishment would be inflicted in many instances for the felony itself, the question whether owing to a death occurring incidentally the offence became that of murder was not of the same importance to anyone that it is now. In two conspicuous trials during the past thirty years—in that of BARRETT and others in 1868 for causing the numerous deaths resulting from the Clerkenwell explosion, and that of SERNÉ, who in 1887 set fire to his house for the sake of the insurance, causing the deaths of two of his children who were in it, the law of murder committed without direct intent to kill has been laid down by very eminent judges. We have taken from the summing-up of Sir FITZ-JAMES STEPHEN in SERNÉ'S case our definition of the usually accepted law, but both he and Lord Chief Justice COCKBURN in the Clerkenwell case followed up their general definition.

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with one apparently modified to suit the requirements of a gentler age. Mr. Justice STEPHEN accordingly said: "I think that instead of saying that any act done with intent to commit a felony and which causes death amounts to murder, it would be reasonable to say that any act known to be dangerous to life and likely in itself to cause death done for the purpose of committing a felony, which caused death, should be murder." In result, the two cases now referred to differed much as those of COLLINS and WHITMARSH have done—BARRETT was convicted of murder and hanged, being the last person publicly executed in this country; SERNÉ, no question of manslaughter being apparently suggested to the jury, was acquitted, but afterwards tried for the arson, which he had clearly committed, and convicted of that less heinous offence. The fact that the crime of BARRETT had resulted in many deaths and caused the greatest excitement and horror in London, while that of SERNÉ was comparatively obscure and unimportant, suggests at once an element of human weakness in the verdict of one of the two, or rather three, juries concerned with these two trials, and before passing on to consider the law applying to COLLINS and WHITMARSH it is not out of place to point out that the same element may have had something to do with the different verdicts in their cases also. It will be remembered that in the case of WHITMARSH there was the dying declaration on which we commented last week, and the evidence and cross-examination of the prisoner. A feeling of greater certainty in his case may therefore have tended to give the jury confidence to return a verdict of murder, though all juries are in theory equally certain and confident. Apparently also, from letters that have been published, individual jurors did not realise that a death sentence would follow their decision, and these letters further accentuate what we have said as to the human element as distinct from the legal in verdicts.

Let us, however, now consider the principles of law laid down above with reference, in practice, to cases of criminal abortion. Of the application of the law in olden days there can be little question. Sir MATTHEW HALE[1] writes: "If a woman be with child and any gives her a potion to destroy the child within her and she take it and it works so strongly that it kills her, this is murder, for it was not given to cure her of a disease, but unlawfully to destroy her child within her, and therefore he, that gives a potion to this end, must take the hazard, and if it kill the mother it is murder and so ruled before me at Bury in the year 1670." And there is more recent authority to the same effect. When, however, we come to the present year we find that the Attorney-General gave the law to the jury in the trial of COLLINS much in accordance with the definition of Lord Chief Justice COCKBURN and Mr. Justice STEPHEN but, in the words of Mr. PICKERSGILL, M.P., who contributed an interesting letter on the subject to the *Times* last week, he "rode from start to finish for a verdict of manslaughter as against a verdict of murder," whereas Mr. Justice BIGHAM, an extremely clear-headed and able judge, presiding at the second and final trial of WHITMARSH, at which Sir RICHARD WEBSTER did not appear—after giving a similar definition of the law, clearly instructed the jury that in his view the application of the law to the facts before them must logically result in a conviction for murder. Now it is so difficult—taking into consideration the facts of each of the two cases and the necessary knowledge of each man as to the danger attending on his acts, performed in the circumstances in which they were performed—to discover differences between them that would warrant a different application of the principles laid down, that we are almost driven to this conclusion:—that by the common law the taking of life in the course of the unlawful procurement of abortion is murder; that the rule of law by which this comes to be so has had its application narrowed and its limits defined to suit the clemency of modern times; and that the question whether a case of death falls within the narrower limits or not depends in a measure on the view taken by the judge or the counsel for the prosecution; while as these guide but do not control the verdict the personal opinions of the individuals who compose the jury form another element of uncertainty. As a result two different verdicts have been returned in two practically indistinguishable cases, the carrying out of the sentence necessarily passed in the second being rendered impossible by the finding of the jury in the first. Similar cases may recur at any time with similarly conflicting results, and this element of uncertainty in the matter of a serious crime demands the attention of lawyers and legislators. Mr. PICKERSGILL, in the letter already referred to, urges the separating of cases of death through the procurement of abortion from other cases now governed by the same rule and recommends a short Act of Parliament for the purpose, giving examples from the codes of India, Italy, and Massachusetts, U.S.A., of the manner in which the crime in question is punished in those countries. It may, however, be found difficult to logically justify the differentiating deaths caused in the commission of one felony from those resulting from another; the legislative machine is not always easy to move and English law has always been inclined to resist codification. It would be easier—and such a course has, we believe, been suggested—to establish a consistent practice for the cases in question. We are inclined to think that the Treasury, which almost invariably prosecutes for such offences, should make it its established practice to indict for manslaughter only, the present Attorney-General being clearly of opinion that manslaughter is a possible alternative. This would produce uniformity and would eliminate the necessity for a jury (with the possible capital penalty before it) having to determine whether the attempt to procure abortion in a particular way is of itself dangerous or whether the prisoner acted with the knowledge or belief that life was likely to be sacrificed by it—questions which result in a jury having to decide on issues hard for jurors to grasp and difficult for evidence to elucidate. It would leave the ultimate punishment where it is now, for the death sentence is never enforced, but would make it in all cases the sentence of the judge trying the case; it would be in accordance with the trend of public opinion; and it would get rid of the feeling, abhorrent to Englishmen, that there is in some cases, even outwardly, an inequality or uncertainty in the incidence of our laws.

[1] Pleas of the Crown, p. 429.

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Annotations.

"Ne quid nimis."

LORD MAYOR'S DAY.

As we have already pointed out the retiring Lord Mayor is entitled to the thanks of our profession and will always be remembered as the first Chief Magistrate of the City of London to whom occurred the happy and graceful idea of honouring "Medicine" by entertaining at a banquet at the Mansion House many of its representative members. We may now in "speeding the parting" Lord Mayor offer our congratulations to Sir Horatio Davies on the well-deserved honour which has been conferred upon him by Her Majesty and also upon his very successful year of office, in carrying out the duties of which he appears to have given every satisfaction to his fellow citizens. We have now to "welcome the coming" Lord Mayor, and in so doing are glad to claim him as a comrade in a crusade which was initiated by the Founder of THE LANCET many years ago—a crusade in which, alas, we are not able yet to lay aside our armour, for the battle of the purity of the food of the people is not completely won. Both the Recorder and the Lord Chief Justice at the reception at the Law Courts alluded to Sir John Voce Moore's services in connexion with the prevention of adulteration of food. We, too, thank him for those services and respectfully offer him our good wishes, feeling assured that his tenure of the distinguished office to which he has been elected will be a useful, as we trust it will be a pleasant, one. Another word of congratulation on the occasion of the commencement of a new civic year we may perhaps add, and that we proffer to Lieutenant-Colonel Probyn, one of the present sheriffs, who represents on the London County Council that busy division, the Strand, in which our own labours are carried on. Moreover, the firm of which he is, we believe, the head is one which has dealings with the medical profession, and we feel confident that in his future career, actively associated as he is with the two great municipal bodies of the metropolis, we may count upon his assistance and coöperation in all useful measures of sanitary reform.

IS ETHERION A NEWLY-DISCOVERED ELEMENT?

IN our issue of August 27th we alluded to the alleged discovery announced at a meeting of the American Association of Science of an exceedingly attenuated gas to which had been given the name of "etherion." The gas was said to invade all interstellar space and it was even hoped that it would prove to be the "ether" to the undulations of which alone can many physical phenomena be ascribed. "Etherion" was found in the atmosphere and its density was said to be one-thousandth of that of hydrogen. This and other data afforded chemists a shadow of a hope that they were nearing the discovery or possibly even the isolation of Crookes's "protyle," the primordial element. No one could have been more keenly interested in the announcement than Sir William Crookes himself, who is the author of the word "protyle," which he first employed, we believed, in his masterly essay on the Genesis of the Elements. Sir William Crookes speaks with peculiar authority on alleged new elements and his opinion on the subject therefore must always gain a respectful hearing. His latest reflections based upon his fascinating investigations on "Repulsion resulting from Radiation" in 1873, 1876, 1878, and 1880 tend to lead him to the opinion that the supposed new gas may be nothing more than aqueous vapour, highly attenuated water, so to speak! On the evidence at present available—and the complete evidence, we may remark, is not yet to hand—Sir William Crookes considers it more probable that etherion is water vapour than that it is a new elementary gas, and this is corroborated by the observations made by Mr. Brush, the discoverer, that etherion is absorbed by phosphoric acid and soda-lime, as well as by the powdered glass from which it has previously been driven off by heat. Some have been led to hope that the alleged new element might turn out to be the *materia prima*, but, after all, it appears to be merely water. It is curious that water has once more appeared as an element even when critically examined by the most searching methods which the enormous progress of scientific work during recent years has provided. Aristotle at any rate had no such means at his disposal when he regarded the universe as composed of four elements, earth, air, fire, and water. The last in the scale, nevertheless, has apparently evinced such subtle phenomena as to have led an investigator in this year of grace 1898 to conclude that it was a new element—indeed, the *materia prima*—the protyle out of which all the rest in process of time were elaborated, thus bringing forcibly to the front again Prout's classical hypothesis that the elements were formed from one primary matter by various condensations.

THE PAY OF COLLIERY SURGEONS.

A MOVEMENT has been started among colliery surgeons and other practitioners who undertake duties by contract among the working classes of the county of Durham to obtain a higher scale of remuneration, and no one who looks at the matter with an unprejudiced eye and from all points of view can doubt that these members of our profession have right on their side. At present the colliery surgeon receives a fortnightly subscription of 6*d*. from each collier, which sum entitles the subscriber, his wife, and his family (however numerous) to attendance and medicine. This is the rate of pay that has been in vogue for many years, and no doubt when it was agreed upon between the men and their medical advisers it was felt to be a just arrangement. But different conditions now prevail. The wages of the colliers have gone up very much while their expenses have not increased proportionally and in some directions have actually diminished. On the other hand, while the pay of the medical men remains stationary their expenses have greatly increased. Not only do medical men share in the increased burden of taxation now borne by the middle and lower middle classes, but medical education is, by reason of its length and the arduous nature of its pursuit, a more costly affair than it was in times but recently gone by. Again, many of the drugs that now as a matter of routine find places in the medical man's armamentarium cannot possibly be procured at a cheap rate, while the dressings required by antiseptic surgery, not to mention all the modern developments of preventive therapy, make fresh inroads on his depleted purse. Lastly, the necessity that is now put upon the practitioner to employ only fully-qualified men as his assistants—a necessity which in spite of its hard bearing upon many men we are bound to recognise—has practically doubled the amount which the colliery surgeon must pay in salaries, for no man can discharge his duties as medical officer to a large colliery or manufacturing works single-handed. In view of these facts there can be but one opinion—the colliery surgeons have a right to better pay. We believe that in some isolated districts practitioners are receiving 9*d*. per fortnight from each adult workman, and this is the rate of pay which a combined effort is now being made to obtain for all the Durham medical men conducting practices of this character.

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A circular has been issued to all Durham practitioners to ascertain how far their feelings are in accord in the matter, and if a substantial majority approves a formal notification of their intentions will be sent to the men. We can see nothing but justice in the demand of the medical men for adequate payment, while there is no way of obtaining the desired reform save by combination.

DEATH UNDER OPERATION WHEN ETHER WAS ADMINISTERED.

THE lamented death of Miss Mabel Webb, M.B. Lond., of whom we published an obituary notice last week, whilst undergoing an operation for the relief of a perforation of a gastric ulcer offers some special points for remark. We understand from Dr. Pidcock, the lady's medical adviser, to whom we are indebted for some notes of the sad occurrence, that Miss Webb returned home from her hospital duties on Oct. 27th complaining of being ill. Her condition was diagnosed as being due to gastric ulcer with perforation causing peritonitis, and on the following day Mrs. Scharlieb, M.D., M.S. Lond., saw her and operated. Ether was given in very small quantity and taken well. After ten minutes, during which the operation was being performed, and when, indeed, it was nearly completed, fatal syncope occurred. The death appears to have arisen from collapse—the danger in such desperate conditions—and in spite of the ether. It is important to emphasise this, as study of most of the cases imputed to ether reveals that death was due to the collapsed state of the patient and not to the anæsthetic. It is more general than formerly to employ ether in these desperate conditions, and so it is not surprising that the death-rate under this anæsthetic has apparently increased within the last few years.

THE CASE OF DR. J. A. CAMPBELL.

THE trial of Dr. J. A. Campbell, the late superintendent of the Carlisle Lunatic Asylum, on a charge of criminal assault on a female patient, has resulted in a verdict of "Guilty, but insane." The gruesome circumstances of Dr. Campbell's crime need no repetition in our columns. It is sufficient to say that the evidence against him was complete and overwhelming. On the other hand, the evidence of his mental impairment was just as strong. Mr. Norman, the medical superintendent of Richmond Asylum, Dublin; Dr. Clouston, of the Mornington Asylum, Edinburgh; Sir John Batty Tuke, Dr. Rayner, and Dr. Yellowlees, of the Glasgow Royal Asylum, all testified to the unfortunate man's irresponsibility. The judge, in summing up, commented on the fact that Dr. Campbell, according to the evidence, showed signs of insanity months before the act, in spite of which he was allowed to go on in his position superintending the asylum. No one who has seen much of Dr. Campbell of late years when he was away from his asylum work will be surprised that he has landed himself in serious trouble. Drink cannot be indulged in without some amount of deterioration of brain and of mental capacity and the earliest breaking down is sure to take place in those higher controlling centres which enable a man when at his best to subordinate his passions and those grosser weaknesses which, when they become actively dominant, prove that he is not in his right or normal mind. The eminent authorities who gave evidence of Dr. Campbell's insane condition of mind are above suspicion of swearing beyond the mark even to assist an old fellow-worker in his hour of trouble, and there can be no doubt that his criminal act was the outcome of a brain deranged by persistent alcoholism. Indeed, to us it would appear that the act itself, committed upon such a person and in such surroundings, was characterised by an indiscriminate vigour that points not to mere intoxication or alcoholism but to an active wave of diseased mental aberration. There are those possibly who without looking closely into the circumstances of the case may say that Dr. Campbell was fortunate in being found insane, yet these would have been among the first to have declared that an imprisonment for two years would, when all considerations were taken into account, have been a wrongful sentence. Few, indeed, will envy his enforced seclusion as a criminal lunatic. The case is not without its lessons and its warnings to those who give themselves to drink. The legislature were well advised when they made fornication or attempted fornication on the part of an asylum official or servant with a female inmate a statutory offence and one liable to condign punishment.

A JEW'S OBJECTION TO SERVE ON A CORONER'S JURY.

ON Nov. 4th, at Cheetham, Manchester, Mr. Frederick Shires, who had been summoned to serve at the city coroner's court, asked to be relieved of the duty on Scriptural grounds. The Bible, he said, told him he was not to be in the same apartment as a dead body. He had never been in a house where there had been a dead body, and he did not intend to go into one. He handed a letter from Dr. Salomon which, he said, contained proof that he was a son of Aaron. The coroner was very persistent in his objection to such a reading of the Scripture, especially of Leviticus, 21st chapter and 1st verse, and maintained that the objection was only to touching the dead, whichwas not required in a juryman. But he was no match for Mr. Shires in the quality of persistency, and in the end he did not require him to view the body and discharged him. We cannot help feeling regret that Mr. Shires did not strain a point and discharge his duty as a citizen. None of us like contact with the dead and we should all be glad to evade the duty. But it is imposed upon us in the nature of things and we should accept it and cleanse ourselves as best we can. The Jewish religion itself did not allow contact with the dead to exempt from certain duties and to its credit it provided means of cleansing. In a country where the Jews properly enjoy perfect freedom and protection they should take their share in discharging the duties imposed on all citizens by law. We are much mistaken if all who claim to trace their descent from Aaron would take such an impracticable position as that which Mr. Shires assumed.

THE ISLINGTON MEDICAL CHARITIES.

THE parish of Islington has the largest population of any parish in the United Kingdom. An inquiry into its medical charities cannot fail to be interesting at this time of day when the whole system of medical charity is being criticised from all points of view. Such an inquiry has just been made by a fairly representative committee with Mr. G. T. Keele, M.R.C.S. Eng., as its honorary secretary. The committee was nominated by the Islington Ruri-Decanal Conference in November last. For some twelve months it has held a series of inquiries into the working of the various institutions for dealing with the sickness of that portion of the population which cannot command the attendance of private practitioners on ordinary terms. The amount of information and suggestion in this report is very surprising. We shall probably not be far from the truth in assigning the principal credit of this mine of information to Mr. Keele, whose interest in these questions is of long duration. The report needs to be studied as a whole. The main conclusions of it are that there is no need for any more hospital charities but that the existing charities need and deserve support. Many persons think that with the increase in wages of the working classes and the appearance of cheap dispensaries at which all ailments from corns to

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convulsions can be prescribed for at 6*d.* a head, all existing and old-fashioned charities may be allowed to die out. The report shows that they are threatened with death by inanition and that society is not feeling the responsibility for their existence which it did a generation ago, but a careful reader of this report and of the conclusions of the committee of the Ruri-Decanal Conference will pause before deciding to starve all such institutions. In London, at least, where rent represents so large a proportion of expenditure and the struggle for life is so keen, there seems still a place for the work of the Dispensary and the Medical Mission. Some suggestions of the report, such as payment of the honorary staffs of hospitals, larger payments by patients, additional collections from churches and even vestries, would require much consideration and qualification to receive our approval. There is a tendency to throw upon overburdened churches and over-rated parishes duties which comfortable citizens should discharge in their own private capacity. A consideration of all the misery which is implied in the work of institutions as detailed in this report will convince such citizens of their responsibility. The corresponding obligation of the institutions not to abuse charity is not overlooked and due credit is given to the Great Northern Central Hospital for rules intended to exclude unfit patients.

PRIMARY MALIGNANT DISEASE OF THE SUPRARENAL BODIES.

IN the *American Journal of the Medical Sciences* for October Dr. H. D. Rolleston and Mr. H. W. J. Marks have published an exhaustive paper on this subject, based on 6 cases which occurred in St. George's Hospital and which they examined microscopically, and 20 collected from literature or obtained from other sources. In order to be quite certain of malignancy they include only cases where there were secondary growths or where there was invasion of adjacent parts, and probably excluded some genuine cases. The incidence in both sexes was exactly equal. The average age was 37½ years; the extremes were 9 months and 73 years. Dr. Rolleston and Mr. Marks remark that it is almost impossible to differentiate histologically an adenoma disorganised by hæmorrhage from a primary malignant growth. Hence they prefer to rely for diagnosis of malignancy on metastasis and invasion of adjacent parts and not on the microscope—a noteworthy fact. In the 26 cases the liver was the seat of secondary growths in 14, the lungs in 6, the bronchial glands in 2, the pleura in 3, the kidneys in 3 (they were also invaded by continuity in 4), the aortic lymphatic glands in 6, and the peritoneum in 3; the heart, cerebrum, cerebellum, bones, and skin each in 1; the other adrenal in 2 (it was also invaded by continuity in other cases). It is difficult to prove, but it has been asserted that both suprarenals were simultaneously affected by primary growths in 2 cases. In 24 cases the nature of the growth is stated: 15 were sarcomata and 9 carcinomata. Suprarenal tumours are soft and vascular and have a tendency to soften in their interior with the formation of a central cavity. The symptoms of Addison's disease in a characteristic form are never induced because the disease proves fatal too soon; but some of the symptoms may occur. Pigmentation of the skin is rarely observed. Vomiting was a marked symptom in some cases. Asthenia was very notable in some cases, but not perhaps more marked than in malignant disease elsewhere. Pain in the back may occur. Dyspnœa may result from pressure on the diaphragm. Œdema of the legs was present in 5 out of the 6 cases observed in St. George's Hospital. In one case pressure on the lumbar plexus caused pains in the left leg. There was also irregular temperature which, as Butlin and Colby have shown, with regard to sarcoma (St. Bartholomew's Hospital Reports, 1895) is not unusual in patients with rapidly growing malignant tumours. Excessive development of hair has been occasionally noted, emaciation is often marked, but in the case of a child, aged three years, the weight was 44 lb.—much in excess of the normal. As to diagnosis, though of considerable size the tumour may from its soft and cystic character entirely escape detection during life, and the symptoms may merely suggest deep-seated malignant disease, latent gastric cancer, or aneurysm. Again, secondary growths in the liver may produce enlargement and give rise to a diagnosis merely of malignant disease of that organ. Peritoneal effusion which may be sanguineous occurs in some cases. If felt the growths are from softening liable to resemble cysts in contrast to renal tumours which are solid and readily palpable. The prognosis is hopeless unless the growth is removed—a more difficult operation than for renal tumours. Mr. H. Morris successfully removed a suprarenal growth, but secondary tumours existed in the liver at the time of operation.

A DEFENCE OF THE MIDWIFE.

DR. THOMAS J. HILLIS of New York lately read a paper at the meeting of the New York County Medical Association which is reported in full in the *Medical Record* of Oct. 1st. The paper was entitled: "Some Remarks on the Midwifery Question—Must the Midwife Perish?" The writer dwelt with eloquence on the past history of the midwife in all countries and stages of civilisation, and with much reverence for antiquity argued that she should be spared—that her abolition would be the ruin of the general practitioner and the triumph of the lady doctor. He maintained that on the whole she is the friend of the general practitioner and sends for him whenever a difficulty arises or a fee has to be obtained. He denies that the mortality is excessive under her gentle and unpretentious rule. He evidently thinks that there is a very peculiar Providence over midwives and their work. "Nature is kind to the puerperal woman in her simple and lowly condition, especially when surrounded by squalor and filth." He draws a vivid picture of the difference between her quiet and homely ways and the ostentatious style of the young disciples of Æsculapius who, with their large and much-containing obstetric bag, invade the households of the parturient women in numbers and for days together before the event comes off, "making about 300 examinations each" with disastrous results, of course. He tells us that half the obstetric work of New York is done by women, most of whom are ordinary midwives, and a small fraction are women doctors; the remainder, a goodly portion, is accomplished through the good offices of neighbours and janitresses, which latter often take the place of first assistants to the historic and much-abused midwife. Dr. Hillis asks us to take a kindly view of the midwife. He certainly is "to her faults a little blind and to her virtues very kind." He insists on her cheapness and on the impossibility of the State preventing lying-in women from having such attendants if they please to have them, all which is too clear to us who have had very recent experience of the limited power of the State to enforce legislation for the promotion of health against the will of the people. But he carries his apology for midwives too far and is correspondingly unjust to medical teachers and students, who, at least in this country, are more careful than at any previous time to do the most good and the least amount of harm to mother and child. In a letter by Mrs. Elizabeth Jarrett, M.D., criticising Dr. Hillis's paper, the writer argues, with very doubtful truth, that women prefer to be attended by women. But she incidentally mentions that "the city of New York is taking care to protect its poor

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by paying a proper fee to such institutions as will guarantee to send a reputable physician to attend poor women in their confinements." This is an interesting fact, worth the consideration of those amongst us who wish to improve the chances of lying-in women. No Midwives Bill which we have yet seen contains any provision for ensuring that in every serious case a lying-in woman, however poor, shall have the benefit of qualified medical attendance, and without such provision no Midwives Bill should pass.

THE PUBLIC SCHOOLS AND HOSPITAL STAMPS.

BOYS are all fond of the Prince of Wales and will be very apt to do anything which he asks them to do. He appealed in the early part of the year to the public schools to help him in connexion with his Hospital Fund. The sixth forms and the head-masters have coöperated in circulating the appeal, and already lectures have been delivered on the work of the London Hospitals in the following schools: Epsom College, Marlborough, Shrewsbury, Wellington, and Cheltenham. Hopes are entertained that as the movement spreads, permanent small subscriptions will come from the great public schools to the London hospitals.

THE INQUEST ON THE LATE MR. HAROLD FREDERIC.

THE proceedings at the inquiry before Mr. W. P. Morrison, coroner for the Croydon district, into the cause of the death of the late Mr. Harold Frederic, the well-known author and journalist, terminated on Wednesday last in a verdict of "Manslaughter" against Miss Kate Lyon, a young woman with whom the deceased cohabited, and Mrs. Mills, a Christian Scientist. The verdict registered the opinion of the coroner's jury that Mr. Harold Frederic was influenced by Lyon and Mills when in a state of physical and mental helplessness to his detriment, so that he neglected to take medical advice, with the result that his death was accelerated. The two women were arrested later and released on bail.

DEATHS UNDER ANÆSTHETICS.

THE following particulars of a death under chloroform have reached us. The patient, a child, aged six years, suffered from malignant disease of the jaw. She had three teeth removed at the Birmingham Dental Hospital and was there advised to go to the General Hospital for removal of a portion of the jaw. It was, however, eventually undertaken in a private house and chloroform was administered by a medical man, the "open" method being employed. Mr. Newton, the surgeon in charge of the case, proceeded to remove three teeth and was about to resect a portion of the jaw when the child stopped breathing and eventually died from asphyxia due to the anæsthetic. The death appears to have followed an overdose, the method being one which only too easily leads to such an occurrence. A death occurred recently at St. Mary's Hospital which, although it appears to have been in no sense a death due to ether, yet demands some notice, since it illustrates how deaths "under" an anæsthetic are frequently not "from" the anæsthetic. The patient, a man, aged fifty-one years, described as not being strong, fell some 20 feet into an area and sustained severe injury. He was seen at a hospital and offered admission. This he declined. After treatment at home his medical adviser called into consultation a surgeon from another hospital, who found the man in a most exhausted condition from abdominal distension. This distension had pressed upon and hampered the heart. It was decided that the only chance for the man lay in an abdominal section, and with a view to this he was removed to the hospital and given a small quantity of ether. He was at this time practically moribund, being almost pulseless. While being conveyed to the operating-theatre his pulse ceased and vomiting occurred and the respiration grew laboured, finally ceasing. A post-mortem examination revealed, besides great distension of the abdomen, bruising of the mesenteries. The lungs were œdematous, but they and the upper air-passages were entirely devoid of vomited matter and admitted air freely. There was splintering of the body of the fifth dorsal vertebra, but no injury to the spinal cord except possibly slight compression. The death was syncopal in character and was in no way due directly or indirectly to the small quantity of ether which had been inhaled. We are indebted to Mr. C. H. Straton, house surgeon at St. Mary's Hospital, for particulars of this case. The peculiar danger of cases of distension of the intestines from the point of view of the anæsthetist is the risk of vomiting and the entrance of vomitus into the air-passages. Although vomiting took place in this case the care exercised appears to have prevented this danger. The exhausted state of the patient contra-indicated lavage before giving the anæsthetic or such a procedure would have been advisable. In manipulation of the intestines during operation "reversed peristalsis," so liable to occur, causes regurgitation of intestinal contents into the stomach and induces vomiting. In many instances this has caused death through the vomitus being sucked into the lungs.

CRUSHING OF THE CERVICAL SPINAL CORD: PROLONGATION OF LIFE FOR THREE AND A HALF HOURS BY ARTIFICIAL RESPIRATION.

IN the *Medical Chronicle* for September Mr. J. W. Smith and Dr. J. G. Clegg have published the following case. A cab-driver fell from his box and was admitted to the Manchester Royal Infirmary four minutes later. He was unconscious and his face was livid. Respiration had stopped and the radial pulse was absent, but the heart was beating feebly. Artificial respiration was performed; in ten minutes the lividity disappeared and the pulse became full and strong. When artificial respiration was stopped there was no attempt at natural breathing; the face became cyanosed and the pulse failed. He recovered consciousness and could mutter a few words. Motion and sensation were normal in the face, absent below the neck. If artificial respiration were now stopped an attempt at respiration—spasmodic depression of the lower jaw and angle of the mouth, dilatation of the nares, and protrusion of the tongue—took place. There was abnormal mobility of the head with crepitus, and a hard prominence could be felt in the mouth pressing forward the soft palate. After 2½ hours the general condition was worse and the thorax gradually became rigid, making artificial respiration difficult and finally impossible. He died at the end of 3½ hours. At the necropsy the odontoid process and upper third of the body of the axis were found separated, the atlas was fractured in three places, and the cord was almost completely divided. Mr. Smith and Dr. Clegg have been unable to find any other case of spinal injury in which life was thus prolonged by artificial respiration.

AN ITALIAN CRITIC ON "OPTIONAL VACCINATION."

IF there is a prominent journal in Europe which might be supposed to make "liberty of the subject", supreme, even in matters affecting the public health, it is the *Secolo* of Milan. This very advanced organ, in touch, nay, in active sympathy, with the most uncompromising radicalism, comments in a tone of "pained surprise" (*dolorosa sorpresa*) on the Vaccination Bill which in August last became the law of the land

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in England. Considering the authority justly exercised by British practice and British precedent in the hygienic sphere it deplores the enactment as not only disastrous for the community it immediately affects but as supplying an all too welcome weapon for the *laissez-faire* policy which, extended to sanitation, has proved so calamitous in Italy. "Facts, however, are stronger" (it continues) "than the affirmations and the votes even of a British Parliament," and it cites from the statistics of Dr. Ramella, medical adviser in chief to the Turin municipality, most overwhelming evidence as to the benefits which vaccination and revaccination have wrought for Italy in the last decade. Dr. Abba, director of the Municipal Laboratory of Bacteriology, also in Turin, contributes corroborative testimony, and, going further afield than Italy or the European continent, adduces the experience of Buenos Ayres and holds it to be "crucial" in favour of Jenner's discovery. Quoting with entire approval the rescript of the Royal College of Physicians of London as adding an authoritative imprimatur to the views held by all sound sanitarians throughout Christendom the Milanese organ reproduces textually the statement of Dr. Vallin, the distinguished French hygienist: "In France the healing art as a whole, and her scientific bodies generally, have not ceased for the last twenty years to insist on compulsory vaccination;" and it concludes: "And we in Italy who have had such vaccination for ten years, and for ten years have been able to attest its good results, are now to be told that vaccination is useless where it is not mischievous. Fortunately with us the abolitionists are apostles without followers and without credit."

PSEUDO-HYPERTROPHIC PARALYSIS.

FOR once in a way we make an exception to our general rule and answer a layman on a question of medical treatment. The following letter is our excuse: "I have a little boy, aged ten years, suffering from hypertrophy (mock paralysis). Up to nine years of age he was still able to walk a certain distance, although in his gait he waddled somewhat from infancy. He has been under electric treatment for eight months in a hospital, but has returned home so much worse that he cannot stand or walk. ..... I should be most thankful if you could advise or suggest in such a case anything that could be done for him." It is evident that our correspondent's letter refers to a condition of pseudo-hypertrophic paralysis, in such a case as is described probably one of the most hopeless of maladies. It is true that with the wider experience of this disease which recent years have brought we are justified in regarding it more hopefully in many cases. The disease was formerly regarded as inevitably progressive. Now it is recognised that in many cases after a certain stage is reached it ceases to progress and a patient may even improve a little. But before this stage is reached it usually happens that a condition of greater or less helplessness has been established. Unfortunately medical treatment seems to have little if any effect in modifying the progress of the malady. Electrical treatment, massage, passive and active gymnastic exercises have all been tried, but so far as we are aware without any striking result. The usual nerve tonics, strychnia, arsenic, &c., have also been used, and no doubt their influence is in the right direction. Unfortunately it seems as if the cases in which the malady begins in early life and rapidly attains a degree in which it disables the patients are the worst in regard to any hope of improvement in the power of locomotion. But the general health often remains good and the condition is at least one which is unassociated with physical pain. Our correspondent may feel sure that from the staff at the hospital at which the patient has been under

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the raised portion of bone can be easily laid down with the scalp flap when the wound is being closed. In agreement with the most general practice nowadays in these operations Dr. O'Neill never drains unless it is absolutely necessary. When the wound has been dressed it is not disturbed for at least a week unless the temperature exceeds 100° F. or the patient complains of severe pain and restlessness. In order to illustrate the practical results of this treatment 4 cases were quoted in which patients with very severe injuries to the head were dealt with by these methods and the patients themselves were exhibited to the meeting. In one case marked dementia had appeared after a fall from a height of 12 ft. on to the head, but three or four days after trephining on the site of a fissured fracture of the skull the mental symptoms entirely subsided. This case is illustrative of the best modern treatment, for even if no fracture be discernible an exploratory examination of the contents of the skull is fully justified if marked functional derangements succeed the primary effects of intracranial injury.

ON Sunday afternoon, Nov. 20th, Dr. E. Baxter Forman, J.P., L.C.C., will lecture at the South Place Institute, South-place, London, E.C., on "Medical London," with lantern illustrations, being the sixth of a course of Sunday Afternoon Free Lectures on "Our Cities and Municipalities."

THE annual meeting of the Fellows and Members of the Royal College of Surgeons of England will be held on Thursday, Nov. 17th, at 3 P.M., as has already been announced in our columns.

THE Roentgen Society will hold a conversazione at St. Martin's Town Hall on Monday evening, Nov. 21st, from 8.30 to 12, at which there will be music and demonstrations of x rays.

PROFESSOR WILLIAM MACEWEN, M.D., LL.D. Glasg., has been elected a corresponding member of the Medical Academy of Rome.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE thirty-second sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, Nov. 7th. The Commissioners present were Lord Llandaff (chairman), the Right Hon. John William Mellor, Q.C., Sir John Dorington, M.P., Sir George Barclay Bruce, Mr. de Bock Porter, Major-General Scott, and Mr. Robert Lewis.

At the commencement of the proceedings the CHAIRMAN said that he proposed to deal first with one small subject of the inquiry—the intercommunication between the mains of the different water companies. The President of the Local Government Board had asked the Commissioners to report upon that subject as soon as possible with a view to immediate legislation.

Mr. POPE, Q.C., on behalf of the water companies, said that they had considered their position with regard to this question and were prepared to offer evidence as to the practicability of an interchange of water between the companies. The question, however, involved so many considerations of detail that it seemed best to them to save the time of the Commission by dealing with the general question rather than to go into great detail with regard to any particular scheme of connexion. The companies had come to the conclusion that the intercommunication between them would be convenient, and they therefore proposed to promote next session a Bill dealing with the matter. At the present time the companies had not the statutory power to undertake work for any purpose beyond their authorised districts of supply, and there were special obligations which bound individual companies not to supply

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water beyond their authorised areas. On behalf of the associated water companies he wished to call the attention of the Commissioners to a series of resolutions which expressed in general terms their views with regard to the contemplated legislation. Briefly, the scheme of intercommunication was practicable, but it was desirable that some authority should be armed with the necessary power to say in what way the connexions should be made, not only in the case of an emergency but at any other time, and they suggested that matters of detail should be left to the Local Government Board to decide, and that the companies should be placed under an obligation to carry out decisions on the subject given by that Board.

The CHAIRMAN pointed out that they had been asked to advise not only whether it was practicable to connect the different systems of supply, but if so by whom and in what proportion the cost should be borne, and what new legal powers were necessary to give effect to such an arrangement.

Mr. POPE said that these matters had been considered by the companies and that they had agreed to introduce a bill dealing with the matter. The provisions of the bill which the companies proposed to submit were, *inter alia*, to the following effect:—

1. The companies forthwith to consider what works are required for the above objects and to submit proposals to the Local Government Board for approval. The Local Government Board to be empowered to approve and authorise such works with or without modifications or to authorise and order other works for the like objects.
2. Further works for the above objects may in like manner be from time to time authorised and ordered if and when required.
3. The respective companies to carry out in their respective districts all works so authorised.
4. The Local Government Board to be empowered to authorise the supply of surplus water from the works of any company to the works of any other company for the time being requiring the same and the Local Government Board to have power in case of emergency to authorise any of the companies to take more water from the Thames than they are now authorised to take.
5. All expenditure of the respective companies in relation to any such works to be deemed capital expenditure and for the purpose of meeting such expenditure the Local Government Board to be empowered from time to time to authorise the respective companies to issue an additional amount of debenture stock.
6. No contribution to any sinking fund to be made in respect of capital issued for the foregoing objects.
7. Subject to reasonable contribution by any company taking and utilising by means of the proposed works and powers water which it would not otherwise have been enabled to take and utilise, the interest on debenture stock applied by the respective companies for the foregoing works to be borne by the eight companies in proportion to their respective water rentals.
8. Any company taking water from another company to pay for such water to the company supplying it at a rate to be agreed upon or fixed by arbitration.
9. A standing arbitrator to be appointed by the eight companies or failing such appointment by the Local Government Board, and in case the respective companies do not agree amongst themselves such arbitrator at the end of each year to decide as to the contribution of either company taking and utilising the water rendered available by the proposed works and also to decide any matters in difference between the companies.

The CHAIRMAN pointed out that the proposed legislation was designed to give novel powers to the companies. In the first place they were to be allowed to draw water from the Thames under new regulations; in the second place, there was no provision for a sinking fund; and, thirdly, the Local Government Board was authorised to arrange for the raising of capital for an emergency.

Mr. POPE said that the extra amount of water from the Thames was only allowed to be taken in cases of emergency, that the expenditure in carrying out the connexions between the mains might rightly be deemed capital expenditure, and that it was proposed to appoint an arbitrator to decide any questions of detail with regard to the issue of additional debenture stocks.

Mr. ERNEST COLLINS, one of the engineers to the New River Company, was examined by the Chairman with regard to the question as to whether it was practicable from an engineering point of view to connect the different systems of supply in the case of all the existing water companies. The witness admitted that at the present time in periods of drought hardly any of the companies had water to spare.

The CHAIRMAN asked in that case what was the use of intercommunication and the witness replied that that point had been considered in drawing up the scheme, and that the engineers of the companies had received instructions in the autumn of last year to consider the real practicability of the scheme. At that time they found that the Chelsea Company was the only one that had any surplus water at times of the greatest pressure. The Chelsea Company was authorised to draw from 8,000,000 to 10,000,000 gallons every day from the Thames in excess of the amount which they really required for the supply of their district. At the time of pressure the other companies had sufficient for their own supply but none to spare That fact seemed to the witness to strike at the root of the desirability of intercommunication. Intercommunication was useless if there was nothing to communicate.

Mr. POPE pointed out that since the time at which the engineers consulted on the matter (September, 1897), the Southwark and Vauxhall Company had obtained additional powers to abstract water from the Thames. The witness said that their report of 1897 had been drawn up with a view to providing for the accidental breakdown of a pumping engine, the fracture of a main, or a temporary disablement of the works. It would not provide for any great failure of supply such as that which had taken place in East London during last summer. At the present time the Southwark and Vauxhall Company were authorised to take about 10,000,000 gallons daily in addition to the quantity which they required for carrying out their present supply, and the Chelsea Company had a surplus of 8,000,000 to 10,000,000 gallons.

In answer to the CHAIRMAN the witness said that he did not consider the report which the engineeers had drawn up in 1897 was the best mode of giving intercommunication, and in answer to Mr. DE BOCK PORTER he said that the experience of the past year had led the engineers to modify the proposal originally made. He thought that with the exception of the East London Water Company the other companies were capable of taking care of themselves.

In answer to the CHAIRMAN the witness said that he had a better scheme than that which the engineers had originally suggested, but that he was not authorised to say that it had been approved by the boards of directors of the water companies. A permanent scheme such as the one he had in view would require a considerable outlay. The cost of the original scheme on which, as the Chairman suggested, he now threw cold water, amounted to something over £307,000, and that scheme was practically only wanted for the use of the East London Waterworks Company. The original scheme, however, would not be sufficient to make good the effects of a drought like that experienced last summer; it would be sufficient only to overcome some temporary breakdown in the machinery and mains. The scheme which the witness suggested as being the best was to make use of the station at Battersea which belongs to the Southwark and Vauxhall Waterworks Company. He suggested that that company instead of giving up this station as at present proposed should make an arrangement by which it might be utilised by all the water companies. A description of this station has already been given in THE LANCET; it contains reservoirs, filter beds, and pumping engines. According to Mr. Collins's scheme water would be filtered at this station and pumped in different directions by mains specially laid to convey it. The first main would go from Battersea to Campden-hill to the reservoirs of West Middlesex and Grand Junction Companies. The second main would pass from Campden-hill to New River Head. The third main would go from Battersea to Claremont-square, another New River station. The fourth main from Battersea to the Brixton station of the Lambeth Company and the fifth from Battersea to the Nunhead station of the Vauxhall and Southwark Company. With regard to the cost of this scheme the witness suggested that the value of the Battersea station for building purposes was about £10,000 an acre and that it contained 30 acres. The Southwark and Vauxhall Company had sold part of the land and it was arranged that the station should be given up. The new proposal, therefore, was that the Battersea station should be continued in working order and that new mains should be laid down in the directions suggested. In addition to this, to complete the scheme it would ultimately be necessary to lay another main from the Thames intake to the Battersea station to convey the unfiltered water, for the main at present used for that purpose will ultimately be required for the distribution of water by the Southwark and Vauxhall Company for the supply of their own customers. The work of laying mains from Battersea to the reservoirs of the different companies would take about eight months to carry out.

The CHAIRMAN asked who should pay for it, and the witness said that he could give no help with regard to the solution of that problem.

Mr. RESTLER, engineer to the Southwark and Vauxhall Company, described the Battersea station of that company at

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Battersea, giving some information which has already been published in THE LANCET in the description of these works. He said that in his view the scheme which had been propounded by Mr. Collins was in every way superior to that which had previously been advised by the engineers of the companies.

Mr. W. H. BRYAN, engineer to the East London Waterworks Company, in answer to the Chairman said that he had that morning received a letter asking him to give details as to what connexions it would be necessary to make in order that his company should be able to ensure the proper supply of water next year in case there should be a drought similar to that which has obtained during the present year. The witness said that since the morning he had been unable to go into the details which he had been asked to give and that he would be prepared to give the necessary evidence next week. In answer to Major-General SCOTT Mr. Bryan said that he thought that if the work were vigorously proceeded with the works mentioned by Mr. Collins could be completed by the end of next summer, but it would be impossible to finish it if they had to wait for an Act of Parliament for its authorisation. At the present time the East London Waterworks Company were receiving 5,000,000 gallons of water daily from the Southwark and Vauxhall Company, 200,000 gallons from the Kent Company, and 8,000,000 gallons from the West Middlesex, Grand Junction, and New River Companies.

Mr. JOHN HOLLAMS, legal adviser to the Associated Water Companies, gave it as his opinion that it was impossible to formulate any definite permanent scheme of intercommunication. The plan must vary from time to time as population increased or circumstances changed. It would be better, therefore, if the companies under the control of the Local Government Board were to be empowered to meet emergencies as they arose. In the opinion of the waterworks companies, including, he believed, the East London Company, the proposed works were unnecessary, yet the companies were prepared to carry them out to guard against difficulties in the event of some unlooked-for event.

The thirty-third sitting was held at the Guildhall, Westminster, on Tuesday, Nov. 8th, Lord Llandaff presiding, when Mr. John Hollams concluded his evidence, and the chairman of the Southwark and Vauxhall Company, Sir Henry Knight, emphasised an opinion that there had not been an insufficient supply of water in East London during the summer of 1898. We must delay a detailed report until next week.

"THE RECENT EPIDEMICS OF PLAGUE IN BOMBAY."

A VERY interesting as well as elaborate and carefully considered paper, on this subject was read before the Geographical Society of Manchester in May last by Mr. H. M. Birdwood, C.S.I., LL.D., and has now been issued in the form of a pamphlet. Mr. Birdwood was formerly a Member of Council and one of the judges of Her Majesty's High Court of Judicature at Bombay, and was present during the first epidemic of plague in that city. He is consequently entitled to speak with some authority on the subject, and his legal and official training has enabled him to sift and arrange the facts so as to present us with a very clear and relevant historical record, as well as a concise but correct medical history, of the epidemic. All medical authorities, in the first place, are agreed as to the identity in character of the "bubonic fever" of Bombay with the disease historically known as plague, and also as to the probable identity of the highly infectious pneumonic type of the disease, in which the characteristic glandular enlargements are not always present, with the Black Death of the fourteenth century. In the latter form, of which the recent occurrences at Vienna have furnished a very striking example, the bacillus pestis of Kitasato is present in large quantities in the patient's sputum. That this bacillus is endowed with highly pathogenic properties and is the cause of the disease does not admit of any doubt, for the tragic occurrences of the Vienna outbreak have almost partaken of the nature of a scientific experimental demonstration of it. There are, as we have frequently said, various conditions connected with the life-history of the plague bacillus about which we as yet know little or nothing, such as its habits and manner of life, whether in the soil or in the air or in the bodies of men and the lower animals, the conditions which favour its growth and the development of its poisonous powers, the ways by which it effects an entrance into the body, and the methods by which susceptible individuals, races, and communities may be rendered immune to its attacks. We require also to study the conditions favourable to the rapid growth and diffusion of this micro-organism and the way in which it comports itself when multiplied and aggregated so as to give rise to epidemics. A brief and interesting summary is given in the paper under review of the history of plague and its geographical distribution and the part it has played in the world in past times. The bacteriological researches of modern inquiry have thrown a new and most important light on the subject and given a precision to our studies such as we did not possess hitherto. We are consequently making some real progress in our knowledge in various respects. The great difficulty with which we have to contend in the case of plague and other epidemic diseases is that attending the discovery of their first importation into any given place and the prompt recognition of the cases primarily attacked. The circumstances connected with the importation of plague into Bombay, for example, have not been definitely traced and the disease was, no doubt, actually present and spreading in a densely crowded community for several months before its real character was recognised, and it had consequently had time to take root and to establish itself as an epidemic before official methods for its control could be properly or efficiently applied. Although the measures adopted in India may not have been so successful in stamping out the disease as could have been desired, it is quite a mistake to suppose that they have therefore done no good, for the evidence points the other way. Practically it all depends upon carrying the natives with us if our efforts are to be successful. The Indian Government have taken immense pains and gone to great expense, as well as incurred great opposition, in their attempts to combat the disease.

At Poona, which is a hotbed of disaffection, the efforts which have been made in this direction have been very successful. The whole question of plague requires to be thoroughly gone into with the view not only of finding out its various endemic centres—the geographically independent plague foci for its periodical spread—but the insanitary conditions which favour its development in different localities, as well as the question of the prophylactic safeguards against the disease which can be adopted, in which direction M. Haffkine, for example, has worked with so much scientific zeal and apparent success. We are very glad that a scientific commission has been appointed to investigate and report upon all these points. Meanwhile Mr. Birdwood's paper is well worthy of study.

Telegraphic reports from India show that the plague returns for the week ending Oct. 29th have continued to decline as regards Bombay city, the deaths reported being 96, as compared with 116 in the previous week. Nearly 5000 deaths, however, occurred in the other districts of the Bombay Presidency. The disease continues to increase in Mysore State, 400 deaths being reported from Bangalore, and it shows a tendency to spread. There is a slight decline in the Madras districts, while Upper India is free.

"THE ADMINISTRATIVE CONTROL OF TUBERCULOSIS."

TUBERCULOSIS AND THE CONTROL OF OUR MEAT-SUPPLIES.

SIR RICHARD THORNE, who has chosen the above title for the Harben lectures of this year, delivered the first of a series of three weekly lectures at the Examination Hall of the Conjoint Examining Board, Victoria-embankment, on the 2nd inst. The earlier portion of the lecture was taken up with a review of the action which had been adopted during the last forty-five years in the control and prevention of the different forms of tuberculosis, and of the results achieved, as shown by certain vital statistics which had been specially prepared by Dr. J. F. W. Tatham for the purposes of the Royal Commission on Tuberculosis appointed in 1896.

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The diminution in the rate of death effected during this period was illustrated by contrasting the period 1891–95 with that of 1851–60, and it was shown that for all forms of tuberculosis collectively the diminution had been constant, that it had applied to all ages, and that at certain age periods it ranged from no less than 30 to over 50 per cent. In the case of phthisis the diminution had been even greater, reaching at certain periods of life a reduction of over 60 per cent. All this had been effected before the discovery of the tubercle bacillus had led to any special action based upon bacteriological knowledge; it had resulted in the saving of hundreds of thousands of lives and, as the lecturer put it, if with the advantage of increased and accurate knowledge as to the causation of tuberculosis as much can be accomplished during the next half century as has been accomplished in the period 1851–95, death from pulmonary tuberculosis at many age periods will then be entirely abolished in this country. This point was urged because the lecturer deemed it so important that the former methods of prevention should not be lost sight of but should still be pressed forward in continuation of a work which had been so eminently successful in the past. These methods were explained at length. They had to do, in the main, with all the administrative measures by which increased movement of air and access of light were secured about and within our dwellings and with those which had led to a lowering of the level of subsoil water in our towns and in the neighbourhood of villages and dwellings.

But in contrast with this great success it was next pointed out that in the case of death from tabes mesenterica the diminution in the rate of death had not only been quite trivial at most ages, but that under one year of age the whole of the advantages from sanitary measures had been lost, and there was in addition an actual increase in the amount of death when the later years of the past half-century were compared with the former ones. This was held to be due to the fact that whilst in the case of phthisis the infection is in the main received aerially it is received by the digestive tract in the case of tabes mesenterica; and it was sought to ascertain what change or changes had taken place during the term of years in question which had turned the gain achieved in the case of the aerial infection into a loss in the case of an infection received by the alimentary tract. The answer was that the explanation was to be found in food supplies—namely, meat and milk.

The remainder of this first lecture was devoted to the question of meat in relation to tuberculosis. The view expressed was that the source of danger from this cause had been overrated by some who demanded measures of considerable stringency, and it was shown that the experiments on which some of these opinions had been based—such as the intentional inoculation of meat used for feeding purposes—were of the nature of laboratory experiments and found little or no parallel in everyday life. So also it was pointed out that the greatest diminution in the rate of tuberculous death had taken place not only at the meat-eating ages, but during a term of years in which there had been an enormous increase in the amount of meat consumed in this country.

The demand for compensation by butchers out of public funds when tuberculous carcasses were seized was next considered, and the lecturer held, for a number of reasons which were set out in detail, that it would be altogether wrong in principle to allow a trader who voluntarily placed an article of food on sale to take the whole profits if the article was sound and to be compensated out of the public funds if it turned out that he had made a bad bargain. The true remedy, it was held, for the control of such danger as existed from eating meat that was tuberculous lay in the abolition of private slaughter-houses and the provision of public ones in which a uniform system of inspection and a uniform standard for condemnation would be observed. This matter of public slaughter-houses was held to be the governing factor in dealing with the risk due to tuberculous meat.

As regards imported carcasses it was maintained that inspection of them should be instituted at the ports of arrival, the expenses of the staff and necessary establishments to be covered by a small tax on each carcass imported.

TUBERCULOSIS AND THE CONTROL OF OUR MILK-SUPPLIES.

The second lecture was delivered on Nov. 9th, on the subject of the administrative control of milk-supplies in relation to tuberculosis in man. Sir Richard Thorne adverted again to the fact that during the last half-century there had been an immense reduction in the death-rate from many forms of tuberculosis, notably of phthisis, in connexion with great sanitary improvements that had been effected, and he recalled the fact that infants and children must, according to all experience, have benefited correspondingly. But when the death-rates from tabes mesenterica, a form of tuberculosis in which the infection is received into the alimentary canal instead of into the lungs were examined, it was found not only that all the gain attained at other ages had been lost in the case of children and infants, but that in addition to this there had been a very heavy increase in deaths from this cause amongst infants under one year of age. The saving of life from tuberculosis in all its forms and from phthisis had been at the rate of from 45 to 66 per cent. at different ages; whereas in the case of infants under one year of age, not only did all this gain disappear in so far as tabes mesenterica was concerned, but there was in addition an actual increase of 21·7 per cent. during the past fifty years. Very similar results had followed as regards tuberculous meningitis; and both these forms of tuberculosis were essentially due to the reception of the tuberculous infection into the alimentary tract. This increase had also gone hand in hand with a steady increase in the consumption of cow's milk as a food in this country; English people being almost the only civilised nation in the world who habitually consumed uncooked milk. He then showed from official returns how large was the amount of tuberculosis amongst milch-cows; and quoting the report of the Royal Commission on which he had served he explained that the artificial conditions under which milk was now produced in cowhouses, which the animals sometimes never left for a single moment during the period they were in milk and which at times reached a whole year, were precisely those most certain to produce that increase of this disease in cows which had been going on. Fortunately the immediate danger to man was limited to the existence of tuberculosis in the cow's udder, but the early stages of this affection were most difficult to detect and it was a form of tuberculosis which tended at times to spread with great rapidity. The danger to man, and especially to the infant population, was one of real gravity, and the loss of child-life due to this disease in milch-cows was appalling. He did not recommend, as some had done, the removal of every tuberculous cow from the dairies and cowsheds, for this, at the lowest estimate, would mean the removal at once of over half a million cows from our milk-supply, but all cows with advanced tuberculosis in any part of the body, and all cows with suspicious disease of the udder, should be at once seized and slaughtered. Amongst the most prominent of remedies was the provision of adequate cubic and floor space in cowsheds so as to ensure proper ventilation; and he showed that this was often more necessary in country than in town cowhouses because the latter are often much more under control than the former. Both in Liverpool and in Manchester the percentage of samples of milk containing tubercle bacilli was far greater in the case of country milk than in that obtained in those cities themselves. He further advised the abandonment of the practice of keeping cows for months with their mouths and nostrils against a wall—a practice which secured for them the least chance possible of breathing fresh moving air, and he advocated frequent and systematic inspection of cowsheds and dairies by expert officials. As regards compensation for animals seized his views were not the same as those which he had expressed against any such payment from public funds in the case of the seizure of tuberculous carcasses voluntarily put on sale by the butcher. In the case of the milch-cow the milk alone was placed on sale, and whilst the use of the milk should be at once stopped, the cow might be perfectly good and of value for feeding purposes to be sold as meat, and whatever value attached to a cow in this sense should be repaid, if the animal was seized and slaughtered, by the local authority. He further maintained, as he did in the case of meat-supplies, that any stringency of control over home supplies in the case of milk should, as far as practical, be also maintained over imported milk and milk products, as, for example, by appointing inspectors at our ports and by chemical and bacteriological examinations of the materials imported; the whole expense to be borne by a small tax on all such articles as are imported. Incidentally he referred to the success attained in the diminution of tuberculosis in cows in Denmark by the aid of the tuberculin test, and finally he most strongly urged that

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English people should be educated to acquire the habit of cooking their milk before using it. He set aside the ordinary objections raised to this proposal, and he showed that if milk were boiled for a single instant the danger of tuberculosis would be gone, and a cause of thousands of deaths every year amongst children and young adults would be removed. He appealed to the medical profession to use their great influence in thus controlling the present waste of life which followed on the use of uncooked milk.

The third lecture, to be delivered on the 16th inst., will deal with the question of the compulsory notification of tuberculosis.

THE LATE OPERATIONS ON THE INDIAN FRONTIER.

THERE was a large muster of members and guests at the Camera Club, Charing-cross-road, on Thursday, Nov. 3rd, when Major Beevor, R.A.M.C., Surgeon-Major of the Scots Guards, exhibited a series of views of the Indian frontier taken during the recent campaign. For some two hours Major Beevor kept his audience in rapt attention and brought the conditions of active service vividly before them.

Our Indian frontier lies upon a line drawn east and west along the very high range of mountains called the Samana range, at one end of which is a deep defile and at the other side a long line of hills called the Dargai heights where it will be remembered the Gordon Highlanders displayed such courage in storming the heights. The difficulties which our troops had to encounter and overcome could never have been brought home to people here except by the aid of photography and that art never received a better testimonial to its value than on Thursday when Major Beevor showed the results obtained by the camera in the field. The marksmanship of the Afridis was remarkable, though their boast that they could easily pick out a man's right eye from his left as a target was never demonstrated. The ridge above the heights was held by more than 8000 men, and so accurate was their fire that anyone who for a moment appeared in view was immediately shot. Indeed, had it not been that our men showed an utter disregard of certain death the sacred valley of the Afridis would never have been entered and the superstition that no white man even dared to look into it would have been verified. It must therefore be recorded to the honour of Colonel Mathias, of the Gordon Highlanders, that to his bravery we in a very great measure owe the initial victory. The accuracy of the reports of this gallant officer's speech on the heights of Dargai has been impugned, but Major Beevor vouches for the truth of the reported words. Standing upon a piece of high ground Colonel Mathias addressed his men and said—"The General says that position" (pointing to the top of the hills) "must be taken at all risks and the Gordons shall do it. Follow me." We need not dwell on the lecturer's description of the taking of the heights, as that story is now quite familiar to our readers, but there are other details which are interesting. Incidentally the lecturer mentioned that on one occasion while storming these heights the men in hospital broke out and all bandaged as they were rushed after their comrades to take part in the charge. As showing the deadliness of the enemy's fire on this occasion as many as 15 or 20 bullets were found in some of the killed. At the other side of the heights the men encamped in a valley and during the night were assailed by the enemy, who, however, received such a warm reception that they soon retired. On the following morning a man was found outside the camp with a quantity of string attached to his body and it is supposed that he had descended from the heights during the night to find a weak spot in the British encampment, the object of the string being apparently to signal to his companions where and when to make the rush.

The country of the Afridis is very mountainous and in some places almost impassable. The engineers, however, worked with so much will that the making of roads was only a question of time. On one occasion it took three hours to travel half a mile with the transport and on another ten hours to go four miles. Some parts of the country were found to be fertile and cultivated and the inhabitants, who were very industrious, understood agriculture and irrigation. In these places cherry, walnut, and apple trees grew in abundance. In some cases the hard rock was cut into terraces upon which were grown corn, barley, and rice. As was stated by the lecturer in his opening remarks the Afridis are very expert marksmen. Among the wounded were found wounds from almost every kind of sporting rifle and also from rifles of the best modern make. Of Dum-Dum bullets the enemy had a plentiful supply and in one of their raids they managed to capture 13,000 rounds. The number of wounds from this latter kind of bullet numbered many hundreds. The Afridis prefer the rifle, but have, however, an old-fashioned mounted gun called a jazail, which will fire anything, from stones, slugs, and pieces of telegraph wire to soldiers' buttons. Of this latter curious kind of ammunition it was no infrequent thing to receive a charge through the tents at night. Transport of the wounded was a very difficult matter owing to the ruggedness of the country and in crossing swollen mountain streams the occupants of the stretchers were sometimes precipitated into the water. The native mule-drivers in charge of the transport frequently deserted. The food was good but it was often impossible for the men to venture from under shelter to get it on account of Afridi sharpshooters.

Major Beevor concluded his remarks with a testimonial to the Sikhs, who, he said, were the finest men in the world and possessed excellent manners.

At the Camera Club on Nov. 28th Major Beevor will give an account of the use of the x rays in the field during the same campaign.

MUNICIPAL HONOURS AND THE MEDICAL PROFESSION.

WITHIN the last few years an increasing interest has been taken by the profession throughout the country in municipal affairs, and we venture to think that the corporations which have elected medical men as their mayors, while honouring the individuals, have done a good stroke for themselves in availing themselves of technical knowledge which is sure to be of the highest use. To emphasise this point let us review the usual committees in an average provincial corporation. There are the Watch, the Finance, the Works, the Sewage Outfalls, the Burial Board, the Waterworks, the Health, the School Attendance, the Lighting, the Technical Education, and in some towns we find a special committee for "the Housing of the Working Classes" as well as a Railway and Parks Committee. In at least six out of the first ten enumerated the services of the medical profession are eminently appropriate, while in one particular instance—that of the Health Committee—all will allow that there should always be at least one medical member on it. To be sure that this is so we have only to recall the work of a Health Committee the duties of which consist in carrying out the provisions of the Food and Drugs Act, the Public Health Acts, the Factory and Workshop Acts, the Contagious Diseases (Animals) Act, the control of a sanatorium or isolation hospital, of indoor and outdoor baths, of public abattoirs—in fact, the general sanitary supervision of the borough. When the control of sanitary matters is delegated to representatives of various trades and commercial enterprises, the presence of a medical man on a Health Committee must contribute to strengthen the position of the medical officer of health, while it will act as a wholesome stimulus in the matter of local sanitary inspection. The chief difficulty in the way of the active practitioner is the time required to perform the duties of a town councillor, but that an increasing number of gentlemen do not allow this to constitute a drawback to their participation in civic duties is seen by the list which we append of medical men who have during the past few days been elected to the office of mayor. The list is possibly not complete, as at the time of going to press full returns have not been received, but as it stands it constitutes a record:—

Carnarvon: Mr. Robert Parry, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. (re-elected). Chester: Mr. Henry Stolterfoth, M.A. Cantab., M.D. Edin. Conway: Mr. Morgan J. Morgan, L.R.C.P., L.R.C.S. Edin. Cowbridge: Mr. Richard Moynan, M.D., M.Ch. R.U.I. Coventry: Mr. T.

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Webb Fowler, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. (re-elected). Darwen: Mr. J. T. Ballantyne, M.B., C.M. Glasg. Eccles: Mr. W. Moffett Hamilton, M.D., M.Ch. R.U.I., Dip. State Med. R.C.P.S.I. Harrogate: Mr. Ernest Solly, M.B. Lond., F.R.C.S. Eng., L.R.C.P. Lond., L.S.A., D.P.H. Eng. Hedon: Mr. James Soutter, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. (re-elected). Henley-on-Thames: Mr. James Lidderdale, M.R.C.S. Eng., L.S.A. (re-elected). Kingston-on-Thames: Mr. W. E. St. Lawrence Finny, M.B., M.Ch. R.U.I. Llandovery: Mr. R. Jeffreys Owen, L.R.C.P. Lond., M.R.C.S. Eng. Oswestry: Mr. William Alma Aylmer Lewis, L.R.C.P., F.R.C.S. Edin. (re-elected). Saltash: Mr. Robert T. Meadows, M.D., M.B., C.M. Edin., D.P.H. Eng. Conj. (re-elected). Ruthin: Mr. J. Medwyn Hughes, M.B., C.M. Edin. (re-elected). Totnes: Mr. G. J. Gibson, M.D., M.Ch. R.U.I. Winchelsea: Mr. Ernest W. Skinner, M.D., M.B., C.M. Edin. Worthing: Mr. Frank Parish, L.R.C.P. Edin., M.R.C.S. Eng.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6695 births and 3663 deaths were registered during the week ending Nov. 5th. The annual rate of mortality in these towns, which had declined in the eight preceding weeks from 24·6 to 17·9 per 1000, further fell last week to 17·0. In London the rate was 16·1 per 1000, while it averaged 17·6 in the thirty-two provincial towns. The lowest death-rates in these towns were 6·7 in Croydon, 10·4 in Derby, 12·2 in Huddersfield, and 13·0 in Bristol; the highest rates were 20·7 in Blackburn, 21·3 in Salford, 21·7 in Manchester, and 22·2 in Liverpool. The 3662 deaths in these towns included 420 which were referred to the principal zymotic diseases, against 538 and 455 in the two preceding weeks; of these, 123 resulted from diarrhœa, 91 from "fever" (principally enteric), 69 from diphtheria, 68 from measles, 43 from scarlet fever, and 26 from whooping-cough. No fatal case of any of these diseases occurred last week in Croydon; in the other towns the lowest zymotic death-rates were recorded in Brighton, Cardiff, Birmingham, and Bolton, and the highest rates in Portsmouth, Swansea, Wolverhampton, and Norwich. The greatest mortality from measles occurred in Portsmouth, Plymouth, Norwich, Nottingham, and Sunderland; from scarlet fever in Norwich; from whooping-cough in Halifax; from "fever" in Sheffield and Huddersfield; and from diarrhœa in Plymouth, Wolverhampton, Leicester, and Preston. The 69 deaths from diphtheria included 28 in London, 8 in West Ham, 7 in Swansea, 5 in Portsmouth, 5 in Liverpool, 4 in Leeds, and 4 in Sheffield. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment during the week in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Nov. 5th, was 3092, against 2728, 2915, and 3032 at the end of the three preceding weeks; 318 new cases were admitted during the week, against 357, 381, and 336 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 263 in each of the two preceding weeks, declined to 237 last week, and were 147 below the corrected average. The causes of 46, or 1·3 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Salford, Leeds, Hull, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·0 and 20·0 per 1000 in the two preceding weeks, declined again to 18·9 during the week ending Nov. 5th, but exceeded by 1·9 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 17·4 in Dundee and 17·9 in Glasgow to 22·2 in Aberdeen and 28·9 in Perth. The 571 deaths in these towns included 32 which were referred to diarrhœa, 18 to "fever," 10 to diphtheria, 7 to measles, 7 to whooping-cough, and 6 to scarlet fever. In all, 80 deaths resulted from these principal zymotic diseases, against 86 and 73 in the two preceding weeks. These 80 deaths were equal to an annual rate of 2·7 per 1000, which was 0·7 above the mean rate last week from the same diseases in the thirty-three large English towns. The deaths referred to different forms of "fever," which had been 9 and 15 in the two preceding weeks, further rose to 18 last week, of which 11 occurred in Glasgow, 2 in Edinburgh, 2 in Paisley, and 2 in Greenock. The fatal cases of diphtheria, which had been 6 and 8 in the two preceding weeks, further increased to 10 last week, of which 5 were recorded in Glasgow. The 7 deaths from whooping-cough were within one of the number in the preceding week, and included 4 in Glasgow and 2 in Dundee. The fatal cases of scarlet fever, which had declined from 14 to 4 in the four preceding weeks, rose again to 6 last week, of which 3 occurred in Glasgow and 2 in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 120 and 119 in the two preceding weeks, rose to 126 last week, but were 16 below the number in the corresponding period of last year. The causes of 36, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the four preceding weeks from 22·1 to 26·4 per 1000, declined to 24·8 during the week ending Nov. 5th. During the past four weeks the rate of mortality in the city has averaged 25·5 per 1000, the rate during the same period being 17·1 in London and 18·9 in Edinburgh. The 166 deaths registered in Dublin during the week under notice showed a decline of 11 from the number in the preceding week, and included 18 which were referred to the principal zymotic diseases, against 20 and 13 in the two preceding weeks; of these, 6 resulted from diarrhœa, 3 from diphtheria, 3 from whooping-cough, 3 from "fever," 2 from scarlet fever, and one from measles. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·2 in Edinburgh. The deaths referred to "fever," which had been 4 in each of the two preceding weeks, were 3 last week. The 3 fatal cases of diphtheria corresponded with the number recorded in the preceding week. The deaths from whooping-cough, which had been 7 and 1 in the two preceding weeks, rose again to 3 last week. The mortality from scarlet fever and from measles also exceeded that recorded in the preceding week. The 166 deaths in Dublin last week included 42 of infants under one year of age, and 43 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons showed a decline from the number in the preceding week. Six inquest cases and 5 deaths from violence were registered; and 52, or nearly a third, of the deaths occurred in public institutions. The causes of 16, or nearly 10 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Surgeons: George E. Glynn to the *Galatea*; Francis F. Lobb to the *Alexandra*; Harold J. Chater to the *Colossus*; Herbert W. B. Shewell to the *Rodney*; George E. Macleod to the *Benbow*; Ernest S. Reid to the *Collingwood*; Harry E. Raper to the *Trafalgar*; Frederick C. B. Gittings to the *Nile*; and Alan G. Eastment to the *Howe*.

ROYAL ARMY MEDICAL CORPS.

Major W. R. Crooke-Lawless, the Royal Army Medical Corps, from Surgeon-Major, Scots Guards, to be Surgeon-Major, Coldstream Guards, vice Major W. C. Beevor, the Royal Army Medical Corps, who exchanges. Major W. C. Beevor, the Royal Army Medical Corps, from Surgeon-Major, Coldstream Guards, to be Surgeon-Major, Scots Guards, vice Major W. R. Crooke-Lawless, the Royal Army Medical Corps.

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who exchanges. Lieutenant-Colonel J. Fraser, to be Colonel, vice W. D. Wilson, promoted.

Major Wilkinson embarks for India. Lieutenant-Colonel Keays, Major Yourdi, and Lieutenant Bowen are posted to the Punjab, Madras, and Bengal Commands. Captain Copeland is posted to the Western Heights, Dover. Major Phipps assumes Medical Charge at Warley, vice Major Morse, under orders for India. Major Thompson embarks for India.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant David James Lawson, 1st Dorsetshire Volunteer Artillery, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 3rd Durham (Western Division, Royal Artillery): James Henry Hunter to be Surgeon-Lieutenant. *Rifle:* 1st Roxburgh and Selkirk (the Border): Surgeon-Major J. S. Muir to be Surgeon-Lieutenant-Colonel. 3rd Volunteer Battalion the South Staffordshire Regiment: Surgeon-Lieutenant E. Morton resigns his commission.

VOLUNTEER OFFICERS' DECORATION.

The Queen has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force. *Eastern District: Rifle:* 1st Volunteer Battalion the Suffolk Regiment: Surgeon-Major Maurice Edward Ling. *Home District: Rifle:* 1st Bucks Volunteer Rifle Corps: Brigade-Surgeon-Lieutenant-Colonel William Henry Bull. *North-Western District: Rifle:* 3rd Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Major Frederick Flood Moore, retired. 4th Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Lieutenant-Colonel William Somerville Limrick. *Scottish District: Rifle:* 1st Roxburgh and Selkirk (the Border) Volunteer Rifle Corps: Brigade-Surgeon-Lieutenant-Colonel George Hogarth Turnbull.

LORD KITCHENER OF KHARTOUM.

IT goes without saying that the nation and the army alike are gratified that the Queen has been pleased to confer the dignity of a peerage upon Major-General Sir H. Kitchener, Sirdar of the Egyptian army, under the style and title of Baron Kitchener of Khartoum and of Aspall in the county of Suffolk. There is no need to dwell upon the great services, military and political, which he has rendered, for they are fresh in the recollection of all. It is somewhat rare, however, for a successful general to exhibit such qualities of statesmanlike tact and judgment under trying circumstances as Lord Kitchener has done. We may add that the medical services are among the foremost in their congratulations, for they are proud of the highly appreciative terms in which their work has been recognised on the occasion of the recent arduous campaign in the Soudan. We are glad to learn that the strain upon the military hospitals of Egypt has been much diminished, owing to the number of sick and wounded from Atbara and Omdurman having greatly decreased.

THE DIRECTOR-GENERAL OF THE INDIAN MEDICAL SERVICE AND SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

We are glad to congratulate Surgeon-General Harvey, C.B., on his appointment to the above posts in succession to Surgeon-General Cleghorn, C.S.I., retired. Surgeon-General Harvey has had a long and varied experience in India in both the civil and military branches of his service and has gained much distinction and reputation in both directions. He joined the Indian Army March 31st, 1865. His war service includes the Bhootan expedition, 1865–66 (medal with clasp); the Looshai expedition, 1871–72 (mentioned in despatches, clasp); the Miranzai, first and second expeditions, 1892, as P.M.O. (mentioned in despatches, clasp and D.S.O.); the Hazara expedition, 1891, as P.M.O. (clasp); and the Izazai expedition, 1892, as P.M.O.

THE SUBORDINATE MEDICAL DEPARTMENT IN INDIA.

We are glad to notice that the Secretary of State for India has sanctioned the proposals of the Indian Government for improving the position of assistant surgeons of this very deserving and useful department. The subordinate medical service will in future be divided into four classes on Rs. 85, 110, 150, and 200 respectively, the existing class on Rs. 60 being abolished. Promotion will be given after certain fixed periods of service, the highest class being attained after nineteen years, instead of the present average of twenty-four years' service.

DEATHS IN THE SERVICES.

Brigade-Surgeon Frederick Pennington, at Lugano, in his sixty-ninth year. He entered the army in 1858 and retired in 1885. He was engaged in the operations against the rebels in Oude in 1858–59 (medal) and served in the Ashanti war of 1873–74 (medal). He also served in the Egyptian War of 1882 (medal and Khedive's Star).

"THE TITLES OF RETIRED ARMY MEDICAL OFFICERS."

In our paragraph under this heading in our last issue suggesting that the Royal Army Medical Corps titles should be conferred upon the retired members of the Army Medical Service our meaning is somewhat altered by an obvious printer's error. The word "but" at the end of the third line should, of course, be *non-*.

COLONEL SLOGGETT, R.A.M.C.

This officer is to be greatly congratulated on having made such a rapid and apparently complete recovery from the serious gunshot wound of the chest which he sustained at the battle of Omdurman.

ARMY MEDICAL SCHOOL, NETLEY.

On the departure for India of Professor Wright, Captain W. B. Leishman, R.A.M.C., will join the Army Medical School as Assistant Professor of Pathology.

Correspondence.

"Audi alteram partem."

THE EASTBOURNE PROVIDENT MEDICAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—As you have taken an interest in the Eastbourne Provident Medical Association since its formation three years ago[1] you may be glad to hear something of its present position. The association does not print an annual report, but this letter includes all the important features of the report read at the annual meeting recently held. The association has completed the third year of its existence. Its membership now amounts to 5338. This is an increase of 1185 on last year's numbers. The population of Eastbourne is something under 44,000. We have had our acting medical staff still further strengthened this year by the addition to it of three old-established practitioners who hitherto have constituted the staff of the old Provident Dispensary. Between 700 and 800 members of that dispensary have followed their medical advisers and have become members of the Provident Medical Association. The income of the association for the past year has been £877 3*s.* 3*d.*, derived solely from members' payments and the payments for membership cards. On account of it having become necessary to employ a paid assistant-secretary the working expenses have been increased. The amount deducted for these expenses during the year has been 17½ per cent. of the income. The balance remaining goes directly to the medical staff. No complaints connected with the working of the association have been brought to the honorary secretary's notice during the year.

The most important event of the year is the addition to our acting medical staff of the whole of the medical staff of the old Eastbourne Provident Dispensary, which came about thus. In March last these three gentlemen received letters from the committee of the Provident Dispensary giving them notice that their appointments as medical officers to the dispensary would terminate at midsummer. The reason given them was that on account of the "considerable and continued diminution of the number of members of the dispensary in recent years" the committee considered "a revision of the remuneration of the medical officers was advisable." No opportunity was given to these gentlemen to continue as the dispensary medical officers even under "revised" salaries, although in their report issued only a month previously the committee had offered "their best thanks to the medical officers

[1] THE LANCET, Oct. 5th, 1895.

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for their attention to the patients." On the contrary, the Dispensary Committee approached other medical men in the town with a view to their appointment to the dispensary in succession to the late staff. In the meantime the old staff of the Provident Dispensary applied for admission and were unanimously elected to the staff of the Provident Medical Association. During the month of June two medical men were found in Eastbourne who were willing to fill the vacancies caused by the dismissal of the staff of the Provident Dispensary. One of these two was at the time on the staff of the Provident Association, but he, of course, resigned on accepting the dispensary appointment. Our committee heard of this gentleman's action with the greatest regret and not a little surprise, for from the inception of the association our committee, while wishing to deal fairly with the Provident Dispensary, have always felt that it was conducted on lines which they could not approve. And yet these two gentlemen were willing to accept appointments under an institution worked on principles directly contrary to those which, after prolonged and careful consideration, the profession in Eastbourne had adopted as the only satisfactory lines upon which the medical treatment of the poor could be conducted (vide THE LANCET, July 27th, 1895).

The virtual dismissal of the Provident Dispensary staff forcibly illustrates the truth of the opinion of the association that it should not be possible for medical practitioners to be suddenly severed from their patients—even from those of the humbler classes—at the will of a committee composed mainly, if not entirely, of laymen. The remedy lies in the adoption of the principles of the Eastbourne Provident Medical Association, and the best evidence of the soundness of these principles is the steady growth in the number of our members. I may, in closing, mention that our methods have been adopted in New South Wales, where the Sydney and Suburban Provident Medical Association has been started, and has, I am informed, attained, in spite of considerable difficulties, "a creditable degree of efficiency."

I am, Sirs, yours faithfully,

ALEX. HARPER, M.D. Durh.,
Hon. Sec. Eastbourne Provident Medical Association.

Eastbourne, Nov. 8th, 1898.

THE ASSOCIATION OF PUBLIC VACCINATORS.

To the Editors of THE LANCET.

SIRS,—A general meeting of the Association of Public Vaccinators was held on Nov. 1st, in the offices of the Medical Defence Union, 4, Trafalgar-square, Mr. Greenwood, Public Vaccinator for Marylebone and President of the association, in the chair, for the consideration of the new vaccination order of the Local Government Board. The meeting, which was largely attended, included representatives from all parts of England and Wales.

The following recommendations have been communicated to all members of the association:—

1. That the fee to be applied for under Article 3, paragraph (*a*), of the order should be 2*s.* 6*d.* It was pointed out that this fee was in no real sense a fee on the birth-rate, since the number of births in which it is to be assessed is subject to such extensive deductions; and, again, that in every case in which the fee is payable at least one visit to the home of the child will be necessary.
2. That the fees provided for successful vaccination and revaccination at homes or elsewhere by Article (3), paragraphs (*b*) and (*c*) be accepted as a minimum.
3. That mileage be allowed for at the rate of one shilling per mile or part of a mile, one way, for distances greater than two miles from the public vaccinator's residence, for each statutory visit paid.

We trust that public vaccinators generally will take note of these suggestions in approaching their various boards of guardians. Any public vaccinators who have not yet joined the association may obtain particulars from either of us.

We are, Sirs, yours faithfully,

VICTOR A. JAYNES (157, Jamaica-road, S.E.),
ALBERT E. COPE (26, Bessborough-gardens, S.W.),
Nov. 9th, 1898. Honorary Secretaries.

"THE VACCINATION ORDER, 1898."

To the Editors of THE LANCET.

SIRS,—In your excellent article on the New Vaccination Order of the Local Government Board in your last issue there are one or two points you have not commented on, on which I should be grateful to you for an expression of your opinion.

In Schedule 1 (6) is the attendance on the child sick from vaccination to be paid for by the parents or is it to be given at the public vaccinator's expense? If in the first case the paragraph is unnecessary, if in the second it greatly increases the public vaccinator's responsibility, and should be considered in his remuneration. Again, it will frequently happen that both parents will be away when the public vaccinator calls, on the vaccination officer's order, and if he vaccinates, having only the consent of a child or other person in charge of the infant, would he be liable to be convicted for assault? And is the grant for successful vaccination now abolished?

I am, Sirs, yours faithfully,

Beckington, Bath, Nov. 6th, 1898. W. G. EVANS.

*** (*a*) The treatment by a public vaccinator of a child vaccinated by him and who, in his opinion, is suffering "in consequence of the vaccination," is to be carried out at the public vaccinator's expense. This requirement does not really increase the public vaccinator's responsibility. In all vaccination contracts hitherto the public vaccinator has always undertaken "to do all such acts and things to the best of his judgment" as "shall seem necessary for the purpose of causing such vaccination to be successfully terminated." This has always included advice, &c., for any ailment in consequence of vaccination; and the only difference is that whereas such advice and action is, under the existing system, probably limited to occasions when the suffering child is brought to the station, they must hereafter be given at the home of the child. Account of this in the case of these rare incidents was taken when the minimum fee of 1*s.* 6*d.* for stational vaccination was altered to 6*s.*; the latter being also a minimum. (*b*) If the public vaccinator has given notice to the parents as to the date of his intended visit, as required under the general order, it will devolve on the parents to make such arrangements as are necessary for the child to be vaccinated if they are away. The public vaccinator will have no further duty if the child is not available when he calls at the date specified.—ED. L.

THE STATE SERVICE IN ST. PAUL'S CATHEDRAL.

To the Editors of THE LANCET.

SIRS,—There is a growing conviction among medical men that the service in state yearly organised by the Guild of St. Luke in St. Paul's Cathedral possesses many highly objectionable features and tends decidedly to lower the profession in the eyes of the intelligent. To prove this latter contention the general tone of the notices of the function in the lay journals is sufficient, and if the members of the Guild were not so very thick-skinned these notices would themselves be sufficient to deter them from repeating their annual display.

Unlike some other professions, that of medicine has never been given to show. A public muster of members in gorgeous attire is in itself an innovation requiring some justification, but the matter becomes much more serious when we remember that this display is preceded by preliminary puffs in nearly all the lay papers, evidently inspired, wherein certain names are given, and that notices of the function are inserted in most lay and religious papers, names being again introduced. What is this but advertisement? Yes—advertisement of a most insidious and reprehensible character, for not only do those whose names appear advertise their persons and occupations, but they also contrive to establish in the minds of the weaker sort a reputation for piety. The Guild cannot in reason plead religious enthusiasm in mitigation of their offence; for the Founder of Christianity, whose followers they profess to be, has sternly forbidden any such display. In His Sermon on the Mount, Mat. vi., 5 and 6, occur these words: "And when thou prayest, thou shalt not be as the hypocrites are: for they love to pray standing in the synagogues and in the corners of the streets, that they may be seen of men. Verily I say unto you, they have their

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reward. But thou, when thou prayest, enter into thy closet, and when thou hast shut thy door, pray to thy Father which is in secret; and thy Father which seeth in secret shall reward thee openly."

I am, Sirs, yours faithfully,

Bowes Park, N., Nov. 7th, 1898. ANGUS CAMPBELL.

"THE WATER TEST AS APPLIED TO SEWER CONNEXIONS."

To the Editors of THE LANCET.

SIRS,—I have read with interest the letter in THE LANCET of Oct. 29th by Mr. J. W. Mayne on the above subject. I quite agree with him that the connecting drain to the sewer is often carried out in an unsatisfactory and slipshod manner, but I do not quite understand Mr. Mayne's difficulty. Why should he not test the connexion put in by the local authorities himself? It can easily be done and without very much trouble, and if found leaky and defective, as he seems to think it would be, surely he can compel the persons who have done the work and charged him for it to make it good. I make a point of testing all sewer connexions three or four days after they are executed, and this has been done in a connexion made last year from a large hospital in Mr. Mayne's own district (Wimbledon).

In London, where there are often large brick sewers, the thing is simple enough—to plug the drain from the sewer in the ordinary way, seeing that the plug is secure and water-tight, and then test. I may say that I have always found the authorities willing and ready to help me in this matter. Only this week on a very large drainage work I am carrying out at the Incorporated Law Society in Chancery-lane I have had three separate connexions made with the sewer (which are under the jurisdiction of two distinct authorities) and tested in the above manner, although it was necessary to walk a great distance up the sewer in order to get at the connexions to see that they were effectually plugged, and these plugs were in the drain while it was filled with water for 24 hours and three days after the work was executed.

For small pipe sewers of course this method is not possible, so I have the connexions tested by means of one of the inflated bag plugs. The distance to the sewer can easily be ascertained and the bag pushed down the connecting drain nearly to the inlet to the sewer and then inflated by means of the rubber tubing (the bag should be held also by means of a cord), the drain then tested by water, and afterwards the bag emptied and withdrawn. I have no doubt whatever that, as Mr. Mayne states, many miles of defective connexion to sewers are laid and are a source of great danger, but this might, I think, be largely overcome if proper professional supervisors were employed who would insist on seeing that the work was carried out in an effectual manner.—I remain, Sirs, yours faithfully,

H. PERCY ADAMS, F.R.I.B.A.

Woburn-place, W.C., Nov. 4th, 1898.

To the Editors of THE LANCET.

SIRS,—Mr. Mayne's letter in THE LANCET of Oct. 29th impels me to give a recent experience. A relative of mine was taking a house in a London suburb. By my advice the agreement was not signed until the drains had been tested. They were exposed in the garden as far as the street; the smoke test was applied; smoke issued from every joint without exception. As usual the joints had been cemented in front but not behind (out of sight). This is an old story, but it needs repetition. My friends would have "backed their luck" unless I had been urgent with them, although, strange to say, their drinking-water is taken from a well in the garden and the drain-pipe passes within 8 ft. of it.

I am, Sirs, yours faithfully,

Nov. 7th, 1898. T. C.

INVERSION OF UTERUS CAUSED BY A "MIDWIFE."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Oct. 22nd I notice an annotation headed "Midwives and the Deaths of Children." I think that the following facts will confirm the opinion expressed that the mothers' and the children's lives are sacrificed by the absence of proper medical attendance.

Not many weeks ago I was called to see a midwifery case; the message was that "the midwife could not manage." On arrival at 4 A.M. I found that the patient had been delivered of a female child at 3 A.M. by an "uncertificated midwife." The patient was dead, lying on the bed in the obstetric position, and on examining the body I found the following state of things. The uterus was entirely inverted, the whole of the uterus lying on the sheet under the patient, only the broad ligaments remaining in the vagina. The placenta was attached to the fundus of the uterus and had been adherent, but two-thirds of the placenta were separated from the placental site, no doubt due to force employed by the midwife; the remaining third I peeled off and returned the inverted uterus into position. There had been considerable hæmorrhage. On questioning the "midwife" she told me that she was called to the deceased at 7 o'clock on the previous evening and that the labour pains were irregular and often at fifteen minutes' interval, that the child came naturally, but when "she went to get the placenta," repeating her own words, the deceased bore down and that it all came at once. The deceased was an anæmic woman in poor circumstances, and this was her second child. The so-called "midwife" stated at the inquest the same as she told me, that she had attended cases for seventeen years and never had a fatal case or one with any serious complications before, and that she had had no training except what she had learnt from her own experience. The coroner severely censured the "midwife" and told her that she would in attending cases do so at her own risk. There can be no doubt, as I stated at the inquest, that the "midwife" made traction on the cord and that the placenta being adherent to the fundus caused the inversion; but the inversion was caused by the ignorance on the part of the midwife and thus brought about a fatal result.

When one reads of cases in THE LANCET of certificated midwives giving ergot before the delivery of the child and then has such a case as this one it impresses the fact more clearly that the sooner these so-called "midwives" are registered and act under proper medical advice one will not see such a lamentable result as the foregoing.

I am, Sirs, yours faithfully,

RICHARD G. WORGER, M.R.C.S. Eng.

Radstock, Somerset, Nov. 1st, 1898.

THE DIPLOMA IN SANITARY SCIENCE OF THE ROYAL UNIVERSITY OF IRELAND.

To the Editors of THE LANCET.

SIRS,—I have once before in the medical press called the attention of the Senators of the Royal University of Ireland to the absurdity of continuing to offer to its medical graduates a qualification which is called "Diploma in Sanitary Science" to candidates passing a qualifying examination in a number of subjects similar to those specified for the D.P.H. Cambridge, or D.P.H. London conjoint colleges examinations. The title of the diploma too nearly resembles that of a qualification such as is usually given to a sanitary inspector. Is a man going to spend six or twelve months in close study and laboratory work to be rewarded with a mere Diploma in Sanitary Science? Evidently the medical graduates of the Royal University of Ireland think such a prize is not worth seeking, for on looking through the University Calendars I find such a diploma offered annually for the last seven years or so, but no record is to be found of anyone having obtained this qualification. Its graduates have to go to other licensing bodies and universities for their Diplomas in Public Health. There is no difficulty in seeing that the fault lies in the name of the diploma this University offers. Therefore I address myself to the Senators of this University through the medium of THE LANCET to remedy the title of the diploma they offer in the special branch of Public Health. And I would venture to suggest (1) either that the name of the diploma be changed to D.P.H. R.U.I., or (2) preferably, as in the University of Edinburgh, that they give after proper examination a B.Sc. (Hygiene). I feel sure if either change be made there will be many graduates going up for the special Diploma in Public Health instead of as at present.—I am, Sirs, yours faithfully,

CHARLES LEO BIRMINGHAM, M.D. R.U.I.

Highgreen, Yorkshire, Nov. 4th, 1898.

THE OXFORD MEDICAL MISSION.

To the Editors of THE LANCET.

SIRS,—Your annotation in THE LANCET of Nov. 5th, entitled "The Abuse of Medical Charities," conveys an

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erroneous impression of the Oxford Medical Mission. This is one of the branches of the Church in Bermondsey and its object is the special care of the sick and dying among the poorest classes. Complaint was made at the inquest referred to that patients were treated at the Mission without regard to their circumstances. This is not true. Inquiry is always made and patients are daily refused. I have made special inquiry about the child referred to. I learn that the mother was wholly without means and was supported by friends while looking for work. The child was only seen once at the mission house. It was brought again when none of the medical staff were present and the mother appears to have been referred by the clergyman to the nearest practitioner. I may say that in any case you cannot call this an "abuse" of a medical charity, seeing that the funds are almost wholly provided by the secretary and a few Oxford men who know perfectly well how their money is used. When the Mission was started last winter I called on a number of the local medical men and said we were most anxious not to interfere with their practice and that if ever they pointed out to us a case of undeserved treatment we would stop it at once. We have had no complaint and one leading medical man has given us most valuable help.

I am, Sirs, yours truly,

JOHN STANSFELD, M.A. Oxon., M.R.C.S. Eng.,
Nov. 9th, 1898. L.R.C.P. Lond.

"THE LANCET ANALYTICAL COMMISSION ON SHERRY: ITS PRODUCTION, COMPOSITION, AND CHARACTER."

To the Editors of THE LANCET.

SIRS,—We read in THE LANCET of Nov. 5th a letter from Dr. H. Howard Murphy respecting your very able article on the above-named subject. Dr. Murphy says that having questioned several friends "in the trade" he is assured that the blending of sherry is essential and universal, and that the blending consists of adding water, spirits, curaçoa, burnt sugar, &c. How any members of our trade can have made such a statement as this surpasses our understanding, for, speaking with many years' experience, we are in a position to say that Dr. Murphy has been grossly misled.

We are sherry shippers and have the pleasure of shipping Jerez wine—sherry such as described by your Commissioner—to many of the leading wine merchants in the United Kingdom, firms old-established and of the highest integrity, and we shall be pleased to put Dr. Murphy in communication with any of them he may wish, when we are certain they will to his satisfaction prove the sherry that they import is supplied to the public exactly as they receive it and that in the vast majority of cases it is bottled straight from the cask in which it is imported. Different vintages of sherry are blended together in Spain but not in England; blending of this kind, however, is a very different thing to the mixing of wine with the ingredients named by Dr. Murphy's informants.

We trust that Dr. Murphy will investigate the matter further, when we are convinced that he will be satisfied that he can with every confidence recommend the wine, upon which we are, indeed, glad to see you have been able to report so favourably.

We are, Sirs, yours faithfully,

WILLIAMS AND HUMBERT.
17, Mincing-lane, E.C., Nov. 7th, 1898.

P.S.—We take this opportunity of pointing out, also, that in a paragraph in the *St. James's Gazette* of Nov. 3rd it is stated that fine sherries are not to be obtained at a price which brings them within the reach of all and that fiery blends coming *viâ* Hamburg take the place of choice dinner sherry. This is not so. Genuine and good sherry is now cheap and the most humble cellar could contain a small stock, and, moreover, Cadiz wine is now lower in price than any blend coming from Hamburg; so that there could be no object in importing from that port. We have the best authority for saying that the amount of white wine now coming from Hamburg to the United Kingdom is infinitesimal.

THE MOSQUITO AND DRINKING WATER.

To the Editors of THE LANCET.

SIRS,—Is it advisable to allow the mosquito to have access to drinking water? In view of recent research work I should certainly think not. And when the water-supply is in the vicinity of dwellings the recent work connecting the mosquito with malaria appears to discountenance such a proceeding. But apparently this view of the matter is not accepted by all tropical practitioners, for I know at least one gentleman who advocates that mosquitoes should be encouraged to breed in water-supply, on the ground that by devouring any organic matter which may be present the larvæ purify the water. I am, Sirs, yours faithfully,

Nov. 5th, 1898. C. H. E.

THE GENERAL MEDICAL COUNCIL AND THE UNQUALIFIED ASSISTANTS.

To the Editors of THE LANCET.

SIRS,—Am I mistaken or is it really the case that in spite of its regulations the General Medical Council will not take the initiative in enforcing their observance? I am informed that any grievance which one practitioner may have against another in the matter of unqualified assistants will receive no attention if reported to the Council. Or, to be plainer, the Council will simply act as a tribunal before which a case of the kind may be brought, but the conduct of the case and the expenses thereof are left to the complainant. The Pharmaceutical Society protects those whom it registers and on information investigates and prosecutes offenders. Surely registered medical men merit the same protection from the General Medical Council. It is a very unpleasant thing for a man to have to act as his own policeman. Often among a number of medical men in a small town only one of them will be at all injured by another keeping an unqualified assistant. For two reasons he has to quietly submit to this unfair opposition. First, informing the General Medical Council privately is of no use; he must occupy the invidious position of prosecutor. Secondly, were he willing to do this the expense is prohibitive. The result of this is that the Council's late regulation is set at defiance by all who think they can do so safely.

In my own case one of my opponents employs and sends round visiting patients in my district an unqualified man. I am obliged to put up with it or render myself odious to those among whom my opponent and his assistant are popular by acting as his prosecutor. Were the General Medical Council ready to take the initiative on my positive information my path would be perfectly smooth, as, though I am the only man affected by this breach of the regulations, there are others who for aught the public know might be the informants. I also know of another case in which a personal friend of my own is acting as unqualified assistant to a practitioner who has a lucrative practice as well as private means. His salary is £30 a year and time for attending classes. Only last month appeared an advertisement for a surgery attendant "able to ride and cycle." What does that mean? Simply an unqualified assistant and the setting at defiance of the Council's regulations. The unqualified assistant would disappear entirely and a great injustice to medical men in a small way of practice be removed if the Council would do its rightful duty and enforce the observance of its laws with its own hand.

I am, Sirs, yours faithfully,

Nov. 7th, 1898. JUSTICE.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Commission.—Rabies in India.—Madras and its Plague Measures.—The Progress of the Plague.—The New Plague Regulations.—The English Plague Nurses.

THERE is plenty of work for the Plague Commission—the only regret is that it was not appointed sooner. The immense quantity of plague literature which has been accumulated consists for the most part of official reports and from a medical point of view is of little value. It is said that the Commission will deal chiefly with the origins of the different outbreaks, the manner in which the disease is communicated, and the effects of curative serum and preventive inoculation. It is to be hoped that it will collect evidence from unofficial and independent persons. The two civil officers of Indian experience are Mr. J. P. Hewett, secretary to the Government of India Home Department, and Mr. A. Cumine, I.C.S. The names of the medical members have not yet been published here. Mr. C. T. Halifax, Deputy Commissioner, Lahore, has been selected for appointment as secretary.

Almost every week some European is bitten by a rabid dog

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and travels to Paris for treatment at the Pasteur Institute. Now five soldiers have just been sent. Rabies is rife in nearly all parts of India and these accidents are constantly occurring, yet the establishment of an institute for India is treated with indifference and the anti-vivisectionists are active and take every opportunity to vilify the work of Pasteur and his successors.

Different Presidencies adopt different plague measures. For Madras the Government have declared its willingness to contribute towards the cost of erecting private plague hospitals while leaving the internal management to certain native practitioners who enjoy the confidence of the people. The Government will pay half the cost of construction and half the cost of maintenance, provided the arrangements meet with the approval of the local medical officers, the collector, or the president of the municipality. How different all this is from the regulations made in the Bombay Presidency. Although Madras city has had for some time an excessively high death-rate the authorities indignantly deny that it is due to unrecognised or concealed cases of plague, but it is admitted that the sanitary state of the city is very bad. In some districts there are few or no drains, crowding is excessive, and an enormous waste of water keeps the subsoil perpetually damp. It is said that cholera has been more prevalent than has been reported and that there has been an increase of population by immigration from certain distressed districts. The system of registration of the causes of death seems to be as bad as in Bombay. It is dependent upon ignorant persons who cannot be expected to furnish correct returns. Anything that is not fever or cholera or dysentery will generally come under the head of "other diseases." Beyond the daily or weekly totals of deaths such returns are absolutely valueless.

The progress of the plague during the past fortnight has been irregular. While there has been an extraordinary interruption in its development in Bombay city it continues severely in the Dharwar, Belgaum, and Satara districts and in Bangalore city it is gaining ground rapidly. If the diminution of plague deaths in Bombay is due to the excessive heat of the past fortnight there is no hope for improvement with the onset of cooler weather. It cannot be due to the measures taken against the plague because now it is practically left to take its own untrammelled course. The Presidency plague returns for the past week show an increase in the number of attacks, but a slight decrease in the total of fatal cases. The numbers were 5803 attacks and 4311 deaths, as compared with 5637 attacks and 4394 deaths in the previous week:—

—	Cases.	Deaths.
Cities.		
Bombay	290	211
Karachi	61 (?)	61 (?)
Poona	2	0
Districts.		
Kaira	8	8
Broach	19	14
Surat	13	14
Thana	44	41
Nasik	198	105
Poona	106	63
Satara	670	486
Sholapur	36	21
Belgaum	1696	1150
Dharwar	1574	1273
Political agencies.		
Baroda	172	99
Kathiawar	109	86
Kolhapur	732	582
Cutch	46	36
Rewa Kantha	11	6
Pelanpur	—	1
Akalkot	12	10
Aundh	29	20
Bhor	71	52

The total from September, 1896, to October 14th, 1898, is 158,379 cases and 125,239 deaths.

The new plague regulations which were announced several weeks ago have at last been published. They concern chiefly the travelling public. The Government has now come to the conclusion that "as a permanent feature of epidemic regulations detention camps and passes are impossible. It is evident that it is impracticable over a large area and a prolonged period of time to close the ordinary channels of daily business and intercourse without very sorely trying the patience of the public and jeopardising general prosperity." This was pointed out in the press twelve months ago. Detention camps and passes will consequently be abolished. To replace detention camps and passes a very strict medical examination, accompanied by disinfection of clothing where necessary, will be instituted at convenient railway centres and at places of arrival. Persons coming from infected localities will also be subject to surveillance for ten days after arrival. Elaborately detailed instructions are publicly issued with regard to the examination of travellers. At each examining station the examination should be conducted in the same way as for passengers departing by sea from Bombay. For first- and second-class passengers and purdah ladies (!) the usual pulse examination will suffice. Does the Government imagine that such an examination is anything more than a farce? Plague cannot be detected by such means. Third-class passengers, except purdah ladies (!), must be required to detrain. There must be stationed women qualified to make the examination of travellers of the female sex. Whom do the Government recognise as qualified? There are certainly not lady doctors at all the examining stations and, as a matter of fact, a large part of the examinations are left to more or less trained nurses. There are, in addition, detailed rules with regard to the use of the thermometer, as if the Government had not confidence in its own medical officers. Persons travelling with certificates of inoculation will *ordinarily* be allowed to pass the examination prescribed for first- and second-class passengers except that they will probably be required to detrain and disinfection of clothing, bedding, and baggage, may be enforced. It is difficult to see what benefit inoculated persons derive from this rule. The same half-hearted support to inoculation is given in Bengal, where it is officially notified that the Government has ruled that persons inoculated by M. Haffkine's process, unless actually suffering from plague, shall be exempted from detention at plague observation camps in Bengal except for such period as may be required to disinfect baggage and clothes if they are considered suspicious. As detention camps will probably be abolished everywhere, as has just been notified for the Bombay Presidency, this concession to inoculated persons is of little value. It is evident that travelling is to be made as inconvenient and troublesome as possible. After having gone through the process of minute examination and perhaps disinfection of clothes the traveller will be given a ticket showing his identity. This will be operative for twenty-four hours. Even when he arrives at his destination he will still be subject to surveillance for ten days. When it is borne in mind that on an average one case of plague has been discovered amongst about 30,000 travellers some idea of the value of these elaborate regulations can be gathered. There is at any rate one new regulation of great importance. "No subordinate will be empowered to order detention or to decide as to the results of examination." The amount of blackmail which has been hitherto levied by subordinates has been at the root of a great deal of the ill-feeling created by the old regulations. As these new regulations were delayed in publication in order that the provisions might be discussed with the heads of the Government of India at Simla it may be assumed that what has been decided for the Bombay Presidency will ultimately be carried out in India wherever plague occurs in epidemic form. Up to the present time there has been no uniformity in the measures carried out and the measures have varied from extreme severity to practical uselessness. The Government have been compelled to modify and relax the regulations. It was imagined at first that elaborate and stern measures would eradicate the plague. It is only too clear that they have not. The plague will practically be allowed to take its own course, and it is hardly a prophecy to say that the new regulations with regard to travellers will have to be modified and relaxed at no very distant date. The movements of hundreds of thousands of people cannot be interfered with for an indefinite time.

Most of the English nurses who were sent out by the

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Secretary of State for India have been asked by the Government of India to continue service for another year. Many have declined and have returned to England as soon as the term of their agreement was fulfilled. Several, however, have accepted the fresh agreement, which is somewhat different from the old. There is no increase of pay offered and there is no provision made for leave. Although it was found necessary to allow the nurses first-class travelling expenses in the Bombay Presidency this is not guaranteed, nor is the second-class return to England by the Peninsular and Oriental Steamship Company, as the Government reserve the option to themselves of paying the sum of 450 rupees instead. Service for one year is enforced on the nurse, but the Government can dispense with her services after six months. It is difficult to see what attraction these ladies see in these appointments to induce them to prolong their engagements. The work itself is unpleasant and sometimes arduous, and the pay is not so large as to make up for all other disadvantages. The novelty of Indian life and scenery when not changed soon passes off and from a professional point of view a year or two years at this kind of work must distinctly deteriorate the capacities of any woman as a modern well-trained nurse.

Oct. 15th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Prevention of the Spread of Consumption.

AT a recent meeting of the Health Committee of the City Council it was resolved to have printed for circulation handbills giving advice for the prevention of the spread of consumption. This, it is pointed out, is a disease which is said to be not inherited but contracted, and is therefore properly a preventable disease, though one of the most fatal, causing 1 death in every 10 in England. It is shown that it is almost always taken from a person who is suffering from the disease or through infected air, milk, and possibly meat. Intemperance, overcrowding, bad air, darkness, dampness, cold, sore-throats, &c., make people more liable to take consumption. The handbill gives directions in plain language for preventing the spread of the disease, and the coöperation of various associations and societies is asked to assist in making known the importance of the details noted.

Prevention of Cruelty to Children.

The tenth annual meeting of this society was held on Oct. 28th. The complaints for the year were 806, as compared with 725 last year—namely, general ill-treatment, 88; abandonment and exposure, 10; immorality, 7; neglect, 669; begging, 22; other wrongs, 9; and assault, 1. Of these there were convicted, 40; discharged, 3; warned, 620; otherwise dealt with, 111. Of these cases proceeded against there were, legitimate, 2135; illegitimate, 96; nurse children, 8; stepchildren, 27; other children, 27. The financial statement showed a remittance of £65 15*s.* 3*d.* from the branch to the central society, the number of subscribers on the books being 1214.

Hospital Sunday.

The amount collected at the various churches and places of worship on Hospital Sunday, Oct. 30th, is recorded at £5075 6*s.*, the proceeds this year going to the General Hospital.

Nov. 9th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University College, Liverpool: Medical School Building Fund.

THE fund which is being raised for new buildings for the departments of anatomy, medicine, and surgery has now reached the substantial sum of £13,000, thanks to the additional contributions of £5000 from Mrs. George Holt and Miss Emma Holt and £1000 from Mr. John Rankin. As only £4000 or £5000 more will be required to complete the necessary amount, the governors have asked that plans for the construction of the building may be submitted to them in order that the work may be proceeded with as soon as possible.

Honour for Professor Oliver Lodge.

The Rumford Medal of the Royal Society has been bestowed upon Dr. Oliver Lodge, F.R.S., the Professor of Physics in University College.

The New Professor of Midwifery and Gynæcology in University College, Liverpool.

Dr. Henry Briggs, the newly-appointed Professor of Midwifery and Gynæcology in University College, has had a very creditable record for hard work since his first appointment in 1877 as Demonstrator of Anatomy in the old Royal Infirmary School of Medicine, for which he was recommended by Sir William Turner of Edinburgh. After filling several minor but important posts he became connected with the Lying-in Hospital and the Hospital for Women, Shaw-street. He has devoted himself exclusively for many years to the practice of midwifery and gynæcology, and he has published some valuable contributions to the literature of those subjects. He is ex-President of the North of England Obstetrical and Gynæcological Society.

Hospital Sunday and Saturday Funds.

A meeting of the committee of these funds was held on Nov. 7th at the town-hall under the presidency of the Lord Mayor. The annual report and statement of accounts were adopted. The total receipts, including £405 brought forward from last year, amounted to £13,003 8*s.* 11*d.*, and the grants to the different charities amounted to £12,000. After payment of printing and advertising expenses there remained a balance of £490. The Saturday Fund exceeded the Sunday Fund by £102.

Medical Visitor to Licensed Houses under the Lunacy Act.

Dr. James Barr, physician to the Royal Infirmary, has been reappointed an additional visitor to houses licensed under the Lunacy Act within the city of Liverpool.

The Liverpool Select Vestry and Vaccination.

The Select Vestry at their recent meeting passed the following resolution unanimously: "That the Local Government Board be informed that the Select Vestry feel strongly the undesirability of wholly discontinuing in the parish of Liverpool the use of the public stations for the purpose of vaccination; and that the Board be requested to sanction the use of them by way of trial for a period of twelve months." The resolution arose out of the order of the Local Government Board to close the public stations on Dec. 31st, after which date the public vaccinators will be required to vaccinate infants at their own homes.

The Royal Infirmary and the Workmen's Compensation Act: Action at Law.

The committee of the Royal Infirmary have had to defend an action in the Liverpool County Court in which a laundry hand at the infirmary sought to recover from the trustees £300 for the loss of a finger and other injuries to the left hand which had been drawn into a steam wringer whilst she was in the respondents' employ. The plaintiff contended that a returned nurse's apron was sent to her and though she was on that day engaged in the ironing room it was not contrary to her duty to proceed to the washing room and use the wringer for the purpose she was doing. She admitted that it would not be her duty to wash or deal with the servants' aprons, which in due course would be washed at a different laundry and by different laundry maids. For the defence it was alleged that the apron which the plaintiff was attempting to pass through the wringer was an apron belonging to a servant at the infirmary who was then away on her holiday; that she had no right to go into the washing room, but she took the opportunity of it being the tea hour to hurriedly pass this apron through the wringer for her own purpose during the absence of the head laundry maid; and that in her haste she carelessly allowed her finger to become entangled in the machine. After the accident, upon an examination of the machine, the apron was found in it dry, and it was not a nurse's apron, as alleged by the plaintiff, but a servant's. The judge found for the defendants on the ground that the apron belonged to a servant, and that by passing it through the machine the plaintiff was not doing work for her employers but for own purposes and use. The defendants did not ask for costs.

Nov. 8th.

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SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow University.

THE graduation ceremony on Nov. 3rd attracted a crowded audience, the undergraduate element being exceptionally strong. In view of recent events the occasion was anticipated with some anxiety both by the University authorities and the Students' Representative Council. The good sense of the majority, however, asserted itself, and though the ceremony was hardly conducted in a strictly orderly atmosphere the proceedings passed off successfully and with good temper. As is usual at this period of the year the medical graduates were not numerous. Six gentlemen received the degree of M.D., Mr. J. T. Biernacki, M.B., Mr. H. H. Thomson, M.B., and Mr. Alfred Webster, M.B., being respectively awarded "commendation" for graduation theses. Under the old regulations 13 candidates graduated M.B. and C.M.; whilst 18, according to the new style, received the degrees of M.B. and Ch.B., Mr. James Barrowman graduating "with commendation." Amongst the new medical graduates it is noteworthy that there are no less than 7 of the lady students from Queen Margaret College. The same college, too, supplied some very distinguished graduates to the other faculties. Thus, for the M.A. degree Miss Elizabeth Pettigrew Taylor graduated with first-class honours in mathematics and second-class honours in English, Miss Helen Rutherfurd with first-class honours in classics, Miss Helen Rule with first-class honours in English, and Miss Daisy A. M. Clark received the degree of B.Sc. in pure science. Quite a feature of the graduation was the hearty reception which the lady graduates received from the students.

Glasgow Philosophical Society.

The current session was opened on Nov. 2nd, when an address was delivered by the President, Dr. Ebenezer Duncan, on Recent Social Progress in Scotland. The address was a continuation of a former paper in which Dr. Duncan traced the ancestry of the Scottish people and maintained that they were more Teutonic than the English. To this strain he attributed certain of their virtues and on the present occasion he discussed the vices known to be specially associated with the Teutonic races—viz., drunkenness and sexual immorality. By an elaborate series of statistics arranged from many points of view he showed that together with a decrease in the consumption of alcohol per head of the population there had been a decrease in the number of deaths from delirium tremens and liver disease in Scotland, whilst an increase in the use of ardent spirits in England had been attended by an increase in the number of deaths from these causes. On the subject of sexual immorality Dr. Duncan, by taking the number of illegitimate births in various districts, argued that this was more common in those of Teutonic than in those of Celtic descent. Amongst both, however, there was decided evidence of improvement in recent years. Related to both the above considerations is the fact that pauperism in Scotland has much diminished during recent years, whilst insanity, if it has not actually diminished, has certainly not increased. In conclusion Dr. Duncan expressed the opinion that the growth of great city communities was likely to lead, not to a deterioration of the race, but to a higher standard of physical life and a nobler development of moral character. At the same meeting Dr. W. J. Fleming demonstrated a simple and inexpensive method of localising objects by means of the x rays.

University of St. Andrews.

Mr. James Stuart, M.P., has been unanimously elected Lord Rector of the University.

University of Aberdeen.

The opening address for this session at the Aberdeen University Medical Society was delivered by Professor Hamilton, whose subject was Self-help in the Study of Medicine. Professor Cash occupied the chair.—The University Assistants' Association has been reconstituted on a broader basis under the title of the Aberdeen University Association of Lecturers and Assistants, with Dr. John Gordon as President and Herr G. Hein and Dr. David Rennet, assistant professor, as vice-presidents; Dr. Murray is treasurer and Dr. Warrack and Dr. Findlay are members of committee.—The annual report of the Students' Representative Council shows that during the past year the total membership was 34, made up as follows: arts, 12; medicine, 15; law, 3; divinity, 2; and science, 2. During the year 12 meetings were held, and there is a balance in hand of nearly £36. Only two new students have entered the University Divinity Hall this session, and at the opening meeting of the Church of Scotland Students' Association Professor Cowan, one of the honorary vice-presidents, delivered an address on the Causes of the Diminution of Divinity Students throughout the Church. In the course of his address he said that not many years ago the number of licentiates was believed to exceed the Church's requirements, while at present attention had emphatically to be called to the fact that the supply was now too small for the need.—The bust of the late Mr. Charles Mitchell, LL.D., Jesmond Towers, Newcastle, a liberal friend to the University, was unveiled in the Mitchell Hall early this week. The bust has been presented to the university by Dr. Mitchell's son, Mr. C. W. Mitchell.

Aboyne (Aberdeenshire) Isolation Hospital.

It has been remitted to the chairman of the Deeside District Council and Dr. Watt, county medical officer, to report as to the propriety of enlarging this hospital, where cases of enteric fever had lately to be refused owing to the whole accommodation being taken up by scarlet fever patients of both sexes.

Morningside Hospital, Aberdeen.

At the close of the hospital year there were 69 adult patients (labouring under incurable disease). Steps are to be taken for the erection and maintenance of a children's wing, and a donation of £1200 from the Thurburn trustees has been set aside as the nucleus of a building fund. Meantime, two small wards in the main building, each capable of accommodating five cots, have been prepared for the reception of children. The whole expense of the institution is £25 19*s.* 5*d.* per inmate per annum, but there was a net deficiency on last year's accounts of £37 17*s.* 6*d.*, and an appeal to the public for further aid is made.

Nov. 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Academy of Medicine in Ireland.

THE opening meeting of the session took place on the evening of Nov. 4th, when the Pathological Section, under the presidency of Professor Purser, met at the hall of the Royal College of Surgeons in Ireland.

The Royal College of Surgeons in Ireland.

The Professorship of Midwifery and Gynæcology, rendered vacant by the resignation of Dr. Samuel Mason, is about to be filled by the Council of the College. Dr. H. C. Tweedy, Dr. More Madden, Mr. Andrew Horne, and Dr. Frederick Kidd are candidates for the office.

Belfast Maternity Hospital.

A public meeting was held on Nov. 2nd in the Town Hall (the Lord Mayor in the chair) in aid of the rebuilding of this old Belfast charity, which was started more than 100 years ago. It is entirely managed by ladies, and they propose first to build a new wing at a cost of £2000 and afterwards another building at a cost of £4000. There can be no doubt that the extension of the hospital is much needed both in the interests of poor women (as there is not by any means sufficient accommodation at present), and also as a most important factor of the medical school in Belfast, as it is in this institution in the main that the medical students receive their clinical instruction in midwifery. A lady announced that she had got a promise of £1000 provided the ladies themselves raised £2000. The ladies should aim at building a completely new up-to-date maternity hospital in Belfast.

The Public Health Committee of the Belfast City Council.

The City Council of Belfast have beaten all previous records for lengthened sittings. The November meeting began on the first day of the month and was devoted to the question of tramway extensions; the next day was all spent in an acrimonious discussion on the new city hall; while the most important question of public health was, as one of the

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members of the council complained, relegated to the tail end of the agenda, and only came up on the third day, when the corporate fathers were thoroughly sick of the prolonged discussions of the two previous days. From the report of the medical superintendent it is seen that between Sept. 18th and Oct. 15th, 1898, the number of cases of typhoid fever notified was 636. The deaths from zymotic diseases were 191, while in the corresponding period of last year there were 76 deaths from zymotic diseases. The death-rate was 28·3 per 1000, while in the corresponding four weeks of last year it was 21·6. The death-rate from zymotic diseases was 8·2, while in the same period of last year it was 3·5. The chairman of the Public Health Committee was not present, but in his absence the vice-chairman said the outbreak of typhoid fever had been reduced within rather narrow limits, there having been only 8 fatal cases reported during the week. He also made an attack on "black sheep" in the medical profession for notifying cases of typhoid fever which they had never seen, but Councillor Browne, M.D., said he was sorry that some members of the medical profession had been referred to in such terms. He stated that not a single notification had been wrongly entered except in one instance, and that case he dared to say was a mistake on the part of the gentleman who was responsible for it. The latest returns of cases of typhoid fever notified during the week ended Oct. 29th were 98, as compared with 125, 149, 151, 172, 164, and 247 in the previous six weeks. It would appear that fees to the extent of £366 3*s.* 6d. were paid during the past three months for notifications and £1041 0*s.* 9*d.* were spent in disinfectants. I am very glad to be able to report that the typhoid fever outbreak is distinctly diminishing, but it is thought to be due to the prevalence of cold weather and the heavy rainfall and probably the putting of disinfectants down the drains is of very little service. To be sure, it looks as if something was being done, but why not grapple with the real difficulty—that is, have the sewers properly cleaned out—or have a complete new main drainage system, the present being admitted on all hands to be a complete failure? It does not even prevent flooding of certain parts of the city in heavy rains. Very possibly there is a good deal of truth in what Councillor O'Connell, M.D., a member of the Public Health Committee, stated in reference to Belfast, "It would be necessary to begin at the houses and end at the very efflux of the sewerage. This must be done, even if it did cost a lot of money"; and Alderman Lawther was quite correct when he said they would in future have to tackle the serious question of making the sewerage system of the city equal to its population, and if they wanted to keep pace with the growth of the city they must deal with the question of the sewerage of the future. The real risk is that once the typhoid fever scare is over the sanitary reformers in the corporation may be defeated in their most laudable efforts to introduce those reforms so absolutely necessary in Belfast.

Medical Men and Affidavits.

A curious case, of great interest to medical men holding public appointments, came before the Belfast Recorder on Nov. 7th in the local bankruptcy court in reference to the discharge of a man from the Belfast District Asylum. Affidavits made by Dr. W. Graham, resident medical superintendent of the asylum, and by the assistant, Dr. Patrick, to the effect that the man was now of sound mind and able to look after his own affairs, were read. Dr. Graham, in answer to his Honour the Recorder, said he was a public officer paid by the Government and that he had stated that his fee for giving an affidavit would be 3 guineas, and that his attending there (in court) would incur additional expense. His Honour said he had no right to demand anything and that it was his duty to attend there in court and make an affidavit stating the condition of the lunatic, that duty being paid for by the Government. Dr. Graham stated, in reply, he was only asking for what he would get in other courts. He had been a medical superintendent of asylums for ten years and he was only asking for what he received in his former county (Armagh). If he went to the prison, the Prison Board gave him 2 guineas; if he went to the military barracks he got 1 guinea; and the postal authority gave him 2 guineas. The present was the only case in which he had been asked to make an affidavit without a fee. He said he would be glad if the Recorder would communicate with the authorities in Dublin Castle (Dr. Graham's superiors), and inquire of them—he would be guided by their ruling—if he was asking for anything that was not customary, or getting anything to which they objected. The Recorder said this was a matter that he had nothing to do with. Dr. Graham's predecessor did not make such charges and he would follow his practice until he was controlled by a higher authority.

Nov. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Aneurysm by Injections of Gelatinised Serum.

IN THE LANCET of Oct. 22nd the communication of M. Lancereaux to the Academy of Medicine on the employment of gelatinised serum as a method of treating aneurysm of the aorta was published. At the same meeting Dr. Huchard opposed this treatment upon certain grounds. At the meeting of the Academy held on Oct. 24th Dr. Huchard returned to the charge and reported another case of death after this treatment in addition to the one he had mentioned before. According to him there is great risk of the coagulation produced by this method extending too far and being brought about too quickly; the gelatinised serum should be very weak—not more than 1 in 100; a stronger solution is apt to act too quickly and to be followed by a rise in temperature. Finally, at the meeting held on Oct. 31st M. Laborde pointed out that ordinary commercial gelatin, which, he supposed, M. Lancereaux used, is not entirely soluble. Its solutions always contain undissolved particles which, when injected act as foreign bodies and act as foci of coagulation. It is therefore not to be wondered at that these particles once introduced into the circulation should bring about coagulation in vessels more or less distant from the aneurysmal sac and thus bring about results which considerably discount the benefits of M. Lancereaux's treatment. The possibility of such accidents is by no means imaginary. They had been brought about experimentally after intravenous injection of the serum; more than that they had occurred in practice, as Dr. Huchard had shown at the preceding meeting. As it is obvious that gelatin does exercise a coagulative action the method is sound fundamentally, but it must be used with the very greatest care. The injection should be made into the aneurysmal sac itself or, failing that, as near to it as possible, absorption in the latter case being rapid owing to the development of the circulation in the vicinity of the aneurysm.

Obstinate Constipation relieved by Massage of the Hepatic Region.

At the meeting of the Academy of Medicine held on Oct. 31st M. Berne read a paper on a case of obstinate constipation occurring in a little girl, aged three and a half years, who had previously suffered from chronic muco-membranous entero-colitis. No drugs were found to be of any use and the condition eventually yielded to massage. On the eleventh day of treatment natural motions were passed, the patient's condition gradually improved, and by the thirteenth day the motions became quite regular, a condition which has lasted up to the present time. M. Berne considers that massage is a most useful method of treatment in cases of obstinate constipation, especially when employed in the region of the gall-bladder. Massage restricted to this region will relieve those cases of constipation which are accompanied by a deficient secretion of bile, and has the additional advantage that it can be performed in the cases of such patients as are unable to bear general massage. For instance, in a patient suffering from an abdominal tumour massage of the hepatic region will cause no discomfort unless, indeed, the tumour be in the hepatic region. Apart from constipation the method is useful in all cases of deficient biliary secretion.

The Surgical Treatment of Adherent Pericardium.

This treatment consists in the division or destruction of the adhesions. At the meeting of the Society of Surgery held on Oct. 26th M. Delorme mentioned that he thought of applying to cases of adherent pericardium the same treatment which he had devised for similar conditions occurring in the lungs. Functional troubles occurring in adherent pericardium are enough to enable a diagnosis to be made.

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The complications accompanying this condition are exceedingly grave and very common; they include hypertrophy and dilatation of the heart, failing nutrition of the cardiac muscle, valvular troubles, and stenosis of the large vessels. Separation of the adhesions is often very difficult, especially in those patients of advanced age, so that the field for operation is practically limited to the young, who have greater resistant powers. The opening is made at the level of the fifth intercostal space. The pericardium is incised and the parietal layer being raised the right border of the heart is first freed, the operator working towards the lower border. It is necessary to stop at the level of the auricle, for the walls of this cavity are too thin to bear manipulation. The bands are divided either by the finger or by cutting.

Medical Aid and the Army.

The Minister of War has just taken a step which has been sharply criticised by the whole medical press. It has recently been decided that workmen employed in the military workshops at Toulouse should be entitled to free medical aid for themselves and their families. The Minister therefore applied to the medical men and midwives of the town, and in order to carry out his views as cheaply as possible he put up the office to auction in a way. Notices were posted up saying that medical men desirous of being employed in this manner should send in their names and the fee they should demand, either per case or by a yearly subscription. Preference, it was intimated, would be given to the lowest tender. This is the first time that a public body has sought to impose such humiliating conditions upon medical men—not even the clubs have hitherto done such a thing.

Dr. Lucas Championnière and the Prince of Wales's Fracture.

In an article in his own paper, the *Journal de Médecine et de Chirurgies Pratiques* of Oct. 25th, Dr. Lucas Championnière answers those who have criticised in the English press his opinions on fracture of the patella and his criticism on the way in which the Prince of Wales has been treated. He held to all his opinions as to the doing without an immobilising apparatus, which he considers harmful, and also as to the superiority of treatment by opening the joint and massage. He brings forward a case of complete cure which occurred in a little village of the Alps where the patient, a female, who had a very bad fracture, was massaged by her servant and had no surgical treatment whatever except advice from a military surgeon who happened to be passing through the district that day to take part in some military manœuvres. Dr. Lucas Championnière complains that some critics in certain English papers have made this a personal and international question, whereas for his part he only wished to look at it from a scientific point of view and in support of the trust which is put in this method of treatment outside France where it has very quickly become popular.

The Case of Dr. Boisleux and Dr. La Jarrige.

These two medical men, who were condemned about eighteen months ago on a charge of procuring abortion, have been set at liberty. Dr. Boisleux was working out his sentence in the prison at Étampes, where he had already attempted suicide twice. He considers he was in danger of getting general paralysis. The common report is that he will no longer practice as a medical man but is going to become a member of a large firm of surgical instrument-makers. Dr. La Jarrige, who is a brother of a general who some time ago retired from the service and died from grief, was placed in a *maison de santé* at Versailles on the plea of morbus cordis. After being set free he returned to Montreuil, close to Paris, where he practised formerly, and where he intends to continue, as everybody manifests the greatest sympathy for and confidence in him.

Nov. 8th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Death of the "Father of Seismology."

COUNT MICHELE STEFANO DE ROSSI, who made seismology a science by his work on "telluric storms" and his observatories, and the instruments of his own invention for forecasting the same, died last week in his château at Rocca di Papa in the Agro Romano. He was brother of the equally distinguished Count Giovanni Battista de Rossi, the greatest authority of his time on Christian antiquities, particularly as contained in the Catacombs. Count Michele in 1881 and again in 1883 predicted, weeks before their occurrence, the calamitous earthquakes in Ischia, but his warnings were unheeded by the hotel-keepers or rather kept dark lest they should scare away from the sulphur baths the numerous public which frequents them. With the Padre Denza of the Vatican Observatory, and Professor Luigi Palmieri of the Observatory on Mount Vesuvius, whose deaths in October, 1894, and in September, 1896, respectively, were noticed in THE LANCET, he contributed to earn for Italy the honoured place she holds in that field of Nature-study which concerns itself with the earth's crust.

Malaria Studies.

The Roman school deserves all the praise it received from Professor Koch at the close of his recent visit for its good work in the therapeutics of malaria. On this point Professor Koch bears effective witness. One evening last autumn among the admissions to the clinical wards of the Santo Spirito Hospital he saw a patient in the final stage of malaria perniciosa. Anticipating the man's death in a few hours he bespoke the body so as to proceed to the necropsy with the least loss of time. The request, as usual, was courteously granted and next morning Professor Koch appeared at the Santo Spirito Hospital, expecting to find everything ready for the post-mortem examination. To his astonishment he found the moribund patient of the previous day sitting up in bed, cured. Inquiring as to what had occurred to account for this quasi-resurrection he was told that the man had been at once subjected to the usual treatment in such aggravated cases—the intravenous injection of quinine as proposed and practised years ago by Baccelli—and that the response had been, as it generally was, quite satisfactory. With the chivalry which characterises him he hastened at once to the Ministry of Public Instruction and then and there congratulated Baccelli on the success of his treatment. A few weeks afterwards Baccelli himself, presiding at the Congress of Internal Medicine, repeated the anecdote in the course of an address on the contributions of Italians, not only to the therapeutics, but to the etiology of disease, malaria included. In this latter field they have been working steadily and silently and have obtained results only now becoming known. Profiting by the experience of Laveran, if not by that of Manson and Ross, Dr. Amico Bignami, *privat-docent* in pathological anatomy at the University, had in 1896 by observation and experiment convinced himself that malaria was a "disease of inoculation." The same year, working in concert with Dr. Dionisi, also of the Roman school, he experimented on the possibility of engendering malaria fever by means of the punctures of mosquitoes. Their experiments yielded no positive result, but were repeated in the August and first half of September (still in 1896), once more with a negative response. Dr. Bignami and Dr. Dionisi had failed to satisfy themselves, among the numerous tribes of mosquitoes, as to that one which had relations, mediate or immediate, with malaria. However, Dr. G. B. Grassi, Ordinary Professor of Comparative Anatomy, whose work in illustration and reinforcement of the Darwinian induction was rewarded two years ago by the Royal Society of London, succeeded last summer in completing a series of observations by which he ascertained and determined the mosquito tribes which had power to convey the disease. Italian medicine, already distinguished in the malarial field by the studies of Tommasi-Crudeli, Baccelli, Golgi, Celli, Marchiafava, and others, chiefly of the Roman school, expects to establish a claim to having made out the special tribes of malaria-conducting mosquitoes—tribes three in number and found exclusively in the fever-infected localities. I am further informed that Dr. Dionisi has discovered in bats a malaria-infection due to parasites olosely resembling those found in the blood of malarious man. Here, again, a new field for observation opens up. Professor Koch, indeed, on his return to Rome next spring for the further prosecution of his researches, will find no lack of material provided by Italian colleagues for the checking or confirming of the conclusions at which he has provisionally arrived.

Nov. 7th.

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Medical News.

APOTHECARIES' HALL OF IRELAND.—The following candidates passed in the First, Second, and Third Professional Examinations at the October examinations:—

Physics.—William Long.
Chemistry (including Theoretical and Practical).—Henry T. De Blacquiere.
Biology.—Henry T. De Blacquiere.
Second Anatomy.—John Thompson.
Physiology (including Histology).—John Thompson.
Hygiene.—M. A. O'Carroll.
Pathology.—M. A. O'Carroll.
Mr. John Thompson has completed the Second Professional Examination.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND THE ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates have been successful in the examinations for the diploma in State Medicine and Public Health:—

Honours Division.—W. M. H. Spiller, M.B., and H. K. Abbott, M.D.
Pass Division.—J. J. Brownlee, M.D., R. Cheyne, L.S.A., L.R.C.P. Edin., J. E. Dods, M.B. Edin., and J. G. Shea, F.R.C.S. Irel.

FOREIGN UNIVERSITY INTELLIGENCE.—*Vienna:* Professor Knoll of Prague has been appointed to the chair of Experimental Pathology vacant by the death of Professor Stricker.—*Breslau:* A new Anatomical Institute has just been opened. It is under the direction of Professor Hasse.—*Erlangen:* Dr. Friedrich Schneider has been appointed to give instruction in Odontology. — *Lausanne:* Professor Bourget has been appointed Director of the Medical Clinic and Professor Rabow has succeeded to the chair of Pharmacology.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the monthly meeting of the President and Fellows held on Nov. 4th, Mr. Henry Jellett, M.D. Dub., was admitted to the Fellowship of the College.

UNIVERSITY COLLEGE OF WALES.—The annual meeting of the Court of University College of Wales was held at the University College, Aberystwyth, on Nov. 3rd, under the presidency of Dr. Isambard Owen, the senior deputy chancellor. The Registrar reported that the number of candidates who entered the matriculation examination was 430, being 61 in excess of the number for 1897. There were 422 entries of candidates for the degree examination, being 137 in excess of last year. The congregation for the admission to degrees was afterwards held.

SALFORD ROYAL HOSPITAL.—The annual meeting of the Salford Royal Hospital was held on Oct. 26th. The number of patients treated in the hospital at the Pendleton Branch Dispensary during the year was 26,776, against 25,024 in 1897 and 25,558 in 1896. The officers of the District Provident and Charity Organisation Society had inquired into the circumstances of 12,685 applicants for medical relief and reported that 459 were in a position to obtain medical relief through the provident dispensaries or to pay for private attendance. The income for the year was £5447, rather more than that of the previous year, and the expenditure was £6477. There was a slight falling off in the annual subscriptions and the number of subscribers was given as 432, a very small proportion of the population of the borough. The lists of subscribers to the various charities in both Manchester and Salford show that giving is confined to the few. Though there are many wealthy people connected with Salford the majority of those living in the town itself may be called comparatively poor, yet a large proportion could give small sums and probably would be glad to do so if it were made easy for them, but they do not like their names with their small contributions to appear as a contrast to the larger sums given by their richer neighbours. The board thanked the promoters of the Manchester and Salford Cyclists' and Harriers' Charity Parade for the handsome contribution of £344 11*s.* 9*d.*, being the amount collected at the parade in September last. During the year the electric light has been introduced and efficient telephonic intercommunication established throughout the hospital. The medical report told of increasing work and the urgent need for more accommodation, especially for surgical cases. The Dean of Manchester suggested the advisability of asking various football clubs to devote the "gates" at some of their matches towards the funds of the hospital.

MEDICAL TOWN COUNCILLORS.—Mr. Paul Swain, F.R.C.S. Eng., has been elected a member of the Town Council for Plymouth. Mr. John Grant Wilson, M.R.C.S. Eng., L.S.A., J.P., has been returned for Monmouth.

BICYCLES FOR NURSES.—The Managers of the Doncaster Infirmary have already provided one bicycle for the use of the nurses during recreation hours and have now opened a subscription for another "wheel" for the nurses' use.

LITERARY INTELLIGENCE. — *The Medical and Surgical Review of Reviews*, a monthly magazine edited by Mr. Nathan E. Boyd, M.D., and published at Connaught Mansions, S.W., is a publication on the lines of Mr. Stead's well-known journal, but deals of course exclusively with medical and cognate subjects. The first number was published last month. As a guide to current medical literature the new *Review of Reviews* will be found extremely useful to busy practitioners and more especially with regard to foreign publications.

FREEMASONRY.—*The Rahere Lodge, No. 2546:* An emergency meeting of this lodge was held at Frascati's Restaurant on Tuesday, Nov. 8th, Bro. Burns, W.M., in the chair. Messrs. Coventon, Tucker, Gay, and Griffiths were elected members of the lodge and were initiated into Freemasonry. Dr. Roberts was elected a member, and Bro. A. M. Jackson, M.D. Oxon., was elected a joining member. Bros. Folliott, Christopherson, Mackintosh, Briggs, and Keats were admitted to the third degree. The brethren and their guests afterwards dined together.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Theodor Gsell-Fels, the well-known writer of handbooks for travellers, has died in Munich at the age of seventy-nine. He was Doctor of Medicine, of Philosophy, and of Theology, and published several scientific works on Balneology and Climatology, the best known of which, perhaps, is his "Baths of Switzerland."—Dr. Wilhelm Kochs, Docent of Physiology in the University of Bonn. He had published several researches on the physiology of the nerves and of respiration. His age was thirty-six. — Dr. Ewald Geissler of Dresden, one of the authors of the "Real-Encyclopädie der Pharmacie."—Dr. Bouchacourt, formerly Professor of Midwifery in the Medical Faculty of Lyons.—Dr. Morrison, formerly Professor of Physiology in Nashville, U.S.A.

PRESENTATIONS TO MEDICAL MEN.—On Oct. 28th Mr. T. J. Vallance, M.D. St. And., who recently resigned the post of medical officer to the West Ham Union Workhouse, was entertained to a complimentary dinner at the Langthorne Rooms by nearly forty of the officers connected with the union. Mr. W. A. Grogono, one of the senior medical officers, presided. In proposing the health of Dr. Vallance he remarked that his appointment as medical officer to the workhouse dated back as far as 1867 and during the whole of his thirty-two years' service he had been conscientious, kindly, and in good fellowship with his fellow workers, and on behalf of all the officers he had great pleasure in presenting Dr. Vallance with a liqueur stand, which bears the following inscription: "Presented to Dr. T. J. Vallance by the officers of the West Ham Union as a mark of their high appreciation and esteem on his retirement as medical officer after 32 years' service."—The occasion of the resignation of Mr. John Rees James, M.R.C.S. Eng., L.S.A., medical officer of the second district of the Neath Union and surgeon to the Cwmavon Copper Works, was taken advantage of by the inhabitants of the district to present him with a testimonial in recognition of his twenty-eight years' residence amongst them. The presentation consisted of three massive silver salvers, suitably inscribed, a purse of gold, and a pearl and ruby bracelet for Mrs. James.—Last week the Mayor of Swansea presented certificates to the successful candidates in connexion with the London and North-Western Railway (Swansea branch) of the St. John Ambulance Association and afterwards presented Mr. Edgar Reid, L.R.C.P. Lond., M.R.C.S. Eng., with an aneroid barometer as a mark of appreciation for his services as honorary lecturer to the class.

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UNIVERSITY COLLEGE, LONDON.—Mr. Swale Vincent, M.B. Lond., M.R.C.S. Eng., has been elected to the Sharpey Physiological Scholarship (£150 per annum), which carries with it the post of chief assistant in the physiological laboratory. Mr. D. J. Armour, M.B., M.R.C.P., has been appointed to the vacant demonstratorship in anatomy.

DIPHTHERIA IN LONDON.—For the four weeks ended on Oct. 8th the notified cases of diphtheria in the county of London numbered 1039, a notable increase on the 699 notifications of the similar period ended on Sept. 10th, for the average number of 175 notified cases weekly of the earlier period rose to a weekly average of 260, the excess of the October period being in this way markedly shown. In the September period all the sanitary areas were invaded, but not one returned as many as 50 cases, whereas in the October period two sanitary areas escaped attack. Nevertheless, as many as five districts had each of them upwards of fifty attacks, with an aggregate of 346, as against a total of 9 in other five invaded localities. The registered deaths of the September period were 107 in number, giving a case mortality rate of 15·3 per cent., but while the fatal cases registered in the October period increased to 125 (or a weekly average of 31, with a minimum of 29 and a maximum of 34), the excessive number of attacks resulted in a decline in the case rate of mortality to 12·0 per cent. In the outer circle the registered deaths from diphtheria in the September period amounted to 39, and reached 50 in the October period, the weekly data being 11, 12, 17, and 10 respectively, of which 8, 6, 7, and 6, or 27 in all, belonged to the West Ham registration district. In the completed weeks that have since elapsed, the weekly deaths from diphtheria registered in the county of London have been 41, 30, 46, and 28, or 145 in all. In the outer circle the registered deaths have been 6, 9, 19, and 17, or 51 in all.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BEATTIE, JAMES M., M.A. New Zealand, M.B., C.M. Edin., has been appointed Assistant to the Professor of Pathology, University of Edinburgh.

BEGGS, S. T., M.B., B.Ch. Irel., has been appointed a Demonstrator of Physiology, Queen's College, Belfast.

BENNETT, W. B., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Workhouse of the parish of Liverpool.

CANDLER, J., M.R.C.S., has been re-appointed Medical Officer of Health by the Depwade Rural District Council.

COLE, J. W. E., L.R.C.P. Lond., M.R.C.S, has been appointed an Assistant Medical Officer for the Bow Infirmary.

EVANS, H. M., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed an Assistant Surgeon for the Lowestoft Hospital.

EVISON, F. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the North Witchford Union, vice F. O'Conner.

GODSON, J. H., M.B., B.C. Cantab., has been re-appointed Medical Officer of Health by the Cheadle and Gatley Urban District Council.

HEPBURN, M. L., M.D. Lond., B.S., L.R.C.P., F.R.C.S. Eng., has been appointed an Assistant Surgeon for the Lowestoft Hospital.

HERMON, J. M., M.B., C.M. Edin., has been appointed a Medical Officer for the Crofton Sanitary District of the Wakefield Union.

LAVER, P. G., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Colchester Union.

LAW, DR., has been appointed Medical Officer of Health by the Macduff Town Council.

LOVEDAY, W. D., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Hundred Sanitary District of the Wantage Union.

MACEWEN, WM., M.D., C.M. Glasg., F.F.P.S., has been appointed a Corresponding Member of the Royal Medical Academy of Rome.

MAJOR, HERBERT C., M.D. Edin., has been appointed a Consulting Physician to the Bradford Royal Infirmary.

MORSE, EDWARD, L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health for Great Torrington.

PROCTER, G. L., M.B., C.M. Edin., has been appointed Medical Officer for the Dawley Sanitary District of the Madeley Union, vice C. B. H. Soame, resigned.

RICHARDS, H. M., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer of Health by the Dronfield Urban District Council.

ROBERTS, R. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer or Health for the Cwmavon Sanitary District of the Neath Union.

SCHOLEFIELD, GEORGE E., M.D., D.P.H., has been appointed Medical Officer of Health to the West Lancashire Rural District Council, vice H. Peck.

SEQUEIRA, J. H., M.D. Lond., M.R.C.P., F.R.C.S. Eng., has been appointed Physician to the Tower Hamlets Dispensary, vice H. B. Donkin, resigned.

SIMPSON, G. A. G., M.R.C.S., has been re-appointed Medical Officer of Health by the Acton Urban District Council.

STARLING, E. H., M.D. Lond., B.S., F.R.C.P., M.R.C.S., has been appointed an Examiner in Physiology at the University of Cambridge.

TYSON, W., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Surgeon for the Lowestoft Hospital.

WILLIAMS, J. H., M.D., C.M. Edin., has been re-appointed Medical Officer of Health by the Flint Urban District Council.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM PROVIDENT DISPENSARY (SANDS COX TRUST), HOCKLEY BRANCH.—Medical Officer. Salary in proportion to the number of members, with a minimum of £250 per annum and residence.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence. Also Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £140 per annum, with lodging. Appointee to board himself.

DERBY COUNTY ASYLUM, Derby.—Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with board, lodging, and washing.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary £100, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Physician.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

FINSBURY DISPENSARY, Brewer-street, Goswell-road, E.C.—Resident Medical Officer for one year. Salary £100 per annum, and a furnished residence provided in the institution, with attendance, coals, and gas.

GENERAL HOSPITAL, Birmingham.—House Surgeon for six months. Residence, board, and washing provided.

GLAMORGAN COUNTY COUNCIL.—Bacteriologist to work in the Council's Laboratory at Cardiff. Salary £250 a year. No pension is attached. Applications to the Clerk to the County Council, Glamorgan County Offices, Cardiff.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months. Unmarried. Salary £20, with board and residence in the hospital. Also House Physician for six months. Salary £20, with board and residence in the hospital. Also Assistant Surgeon.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Assistant Surgeon. Salary £80, rising to £90 per annum after the first years' service, with board and residence.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Also Medical Registrarship.

LONDON LOCK HOSPITAL, 91, Dean-street, Soho, W.—House Surgeon for the Male Hospital. Salary £50 per annum, with board, lodging, and washing. Applications to the Secretary at Harrow-road, Paddington, W.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer for the Convalescent Hospital at Cheadle for twelve months, unmarried. Salary £150, with board and residence.

MASON UNIVERSITY COLLEGE, Birmingham.—Lecturer on Osteology and Chief Demonstrator of Anatomy.

METROPOLITAN HOSPITAL, Kingsland-road, N.E. — Anæsthetist. Honorarium 25 guineas per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Two Visiting Medical Assistants for one year at least. Salary £120 for first year and £150 afterwards.

NORFOLK COUNTY ASYLUM, Thorpe, Norwich.—Junior Assistant Medical Officer, unmarried. Salary £110 per annum, with £10 annual increase, with board, lodging, and washing.

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NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising £10 yearly to £155, with board, lodging, and washing.

PARISH OF ST. JOHN, Hampstead.—Workhouse Medical Officer. Salary £150 per annum, and extra fees value about £40 per annum, subject to statutory reduction. Applications to the Clerk, Guardians' Offices, New End, Hampstead, N.W.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £40 per annum, with board, washing, and residence.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, and 26, Hanover-square, London.—House Surgeon and Anæsthetist for six months. Unmarried. Salary at the rate of £100 per annum, with residence and partial board.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Assistant Surgeon. Also Clinical Assistants, to be held for six months.

ST. PETER'S HOSPITAL, Henrietta-street, Covent Garden, London.—House Surgeon for six months. Salary at the rate of £100 a year, with board, lodging, and washing.

SEAMEN'S HOSPITAL SOCIETY (*Dreadnought*), Greenwich.—House Surgeon for Branch Hospital, Royal Victoria and Albert Docks, E. Salary £50 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Resident Junior Assistant House Surgeon. Salary £50 per annum, with board and washing.

STAFFORDSHIRE COUNTY COUNCIL.—Medical Superintendent for the Staffordshire County Asylum at Cheddington. The salary will commence at £500 per annum, with £200 in lieu of board. The asylum is not yet completed, and the successful candidate is to reside at the residence provided. In addition to the above salary the emoluments include a partly furnished residence, &c.—Applications to the Clerk to the Council, Stafford.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Assistant Physician for the Out-patients for two years.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon for six months. Gratuity £20, and board, lodging, and washing in the hospital.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House Surgeon. Salary £120 per year, and £30 a year for Dispensing, with furnished apartment and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BRAND.—On Nov. 3rd, at Driffield, E. Yorks., the wife of Dr. Brand of a daughter.

JACKSON.—On Nov. 4th, at Winchmore-hill, Middlesex, the wife of John W. Jackson, F.R.C.P., M.R.C.S., of a daughter.

LUMSDEN.—On Nov. 4th, at Lower Leeson-street, Dublin, the wife of J. Lumsden, M.D., of a daughter.

SANSOM.—On Nov. 6th, at West-end-lane, West Hampstead, N.W., the wife of H. Arthur Sansom, M.D. Lond., &c., of a daughter.

YOUNG.—On Wednesday, Nov. 4th, at 45, Stamford-hill, the wife of John Young, M.D., B.S. Lond., of a daughter.

MARRIAGE.

GARDE—BURROWS.—On Nov. 2nd, at the Church of the Holy Cross, Crediton, Walter Henry Ormond Garde, Surgeon, Royal Navy, to Ethel, youngest daughter of the late Surgeon-Major H. P. Burrows, Bombay Staff Corps.

DEATHS.

BARRY.—On Oct. 21st, 1898, at 10, Brompton-square, London, S.W., Julia, the dearly beloved wife of W. J. M. Barry, M.D., M.R.C.P. Requiescat in pace.

HACON.—On Tuesday, Sept. 20th, at Christchurch, New Zealand, suddenly from apoplexy, Walter Edward Hacon, M.R.C.S., L.R.C.P., L.S.A. Lond., aged 47 years, only surviving son of Edward D. Hacon, F.R.C.S., of Hackney, Middlesex.

PENNINGTON.—On Nov. 4th, at Lugano, Brigade-Surgeon Frederick Pennington, aged 68.

WOODHAMS.—On Nov. 3rd, suddenly, at Park-place, Gravesend, Sidney Woodhams, M.R.C.S., L.R.C.P. Lond., aged 34.

WYATT.—On Nov. 7th, at his residence, Clissolds, Shelly-road, Worthing, William Thomas Wyatt, M.A., M.D. Oxon., aged 44.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (19th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (14th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Cases:—The President: A Patient after Gastro-enterostomy performed for Pyloric Obstruction.—Mr. Openshaw: Excision of the Larynx.—Dr. H. Mackenzie: Vascular Murmur of Obscure Origin audible at the Base of the Right Lung.—Dr. S. Taylor: Aneurysm of the Right Carotid.—Dr. Hadley: Diabetes Insipidus.—Mr. Battle: (1) Recovery from Sarcoma treated after Coley's Method; (2) Genu Retrorsum; (3) Hepatoproptosis; (4) a Patient with Three Patellæ.

TUESDAY (15th).—PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. T. Carwardine: Tumour of the Rectum.—Dr. W. Hunter: Thrombus on the Breast with Embolism of the Common Iliac Artery in the course of Enteric Fever.—Prof. J. R. Bradford: Carcinoma of the Gall Bladder without Gall Stones.—Dr. W. Hadley: Intrathoracic Sarcoma.—Dr. A. C. Latham: Multiple Abdominal Dermoids.—Dr. Freyberger: Embolism of both Middle Cerebral Arteries. Card Specimens by Dr. W. Hunter (Carcinoma of Gall Bladder) and Dr. Rolleston.

WEDNESDAY (16th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—7.30 P.M. Exhibition of Thum's Slides of Diatoms mounted in High Refractive Media.

ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Papers:—By the Wind Force Committee: Report on Experiments upon the Exposure of Anemometers at Different Elevations.—Capt. D. Wilson-Barker: Comparison of Estimated Wind Force with that given by Anemometers.—Mr. W. Marriott: The Tornado at Camberwell, Oct. 29th, 1898.

THURSDAY (17th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchbourne-street, Edgware-road).—8.30 P.M. Dr. St. C. Thomson: Functional Dysphagia.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Prof. Ramsay: Pure Anæsthetics.

FRIDAY (18th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Dr. Rayner: The Lunatic Asylum. (Course of Lectures on Medical Relief.)

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Dr. F. Parsons: Half a Century of Sanitary Progress and its Results. (Presidential Address.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. H. Tilley: Demonstration of Selected Cases (Ear, Throat, and Nose).

TUESDAY (15th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-sq., W.C.).—3.30 P.M. Sir W. Gowers: Degenerative Diseases of the Nervous System in relation to Causation.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Mr. J. Cantlie: Cases illustrating the Surgery of the Brain.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Scabies.—Bethlem Hospital, 2 P.M., Dr. Craig: General Paralysis.

THE LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—4 P.M. Mr. A. Harbord: Syphilis—Treatment.

WEDNESDAY (16th).—HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Green: The Symptomatic Treatment of Pulmonary Tuberculosis.

LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Air.

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WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. W. A. Turner: The Methods of applying Electricity in Medicine.

THURSDAY (17th).—ROYAL COLLEGE OF SURGEONS.—3 P.M. Annual Meeting of Members and Fellows.

LONDON POST-GRADUATE COURSE. — Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Dr. G. Oliver: The Pulse.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. A. Routh: Gynæcological Cases. (Post-Graduate Class.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Voelcker: Demonstration of Selected Cases.

FRIDAY (18th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Typhoid Fever and Diphtheria.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. W. A. Turner: The Methods of applying Electricity in Medicine.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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HYPODERMIC INJECTION OF CARBOLIC ACID IN TETANUS.

IN the *Supplemento al Policlinico* of Oct. 15th Dr. Livio Metelli of Cologne Ortano, Brescia, publishes a case of recovery from tetanus under the hypodermic administration of carbolic acid, as suggested by Professor Baccelli. The patient, a farmer, twenty-one years old, complained to him on May 1st of difficulty in swallowing. Ten days before he had sustained a bruise of the right toe, which was healing but still retained visible traces of earth. After a lapse of twelve hours he was found to present the characteristic signs of tetanus—trismus, slight opisthotonos, spasm of the thoracic muscles, and a feeling of suffocation. He perspired profusely, his temperature was 38° C. (100·4° F.), and his pulse was 110. On the third day he had three injections of an ordinary Pravaz syringeful of 4 per cent. carbolic acid solution; this was repeated on the fourth and fifth days; on the sixth day he had in twenty-four hours five injections of a 5 per cent. solution. From that time he began to recover slowly, but the treatment of the sixth day was continued for fifteen days, the administrator being a member of the patient's family. Not the slightest symptom of carbolic acid poisoning was produced, and in fifty days the man was quite well.

SCARLATINIFORM ERUPTION IN INFLUENZA.

To the Editors of THE LANCET.

SIRS,—I have lately attended a large number of cases of influenza of the usual types, but scattered through them, I have also seen some cases with a scarlatiniform eruption which was occasionally followed by desquamation. I shall be most grateful if any of your readers will tell me whether other observers have seen such eruption and desquamation in influenza, and if so what are the points of distinction between this influenzal rash and that of scarlet fever?

I am, Sirs, yours faithfully,

Nov. 7th, 1898. ERUPTION.

EUCALYPTUS GLOBULUS.

A CORRESPONDENT, Dr. Harry Benjafield of Hobart Town, sends us a communication in praise of the virtues of the Eucalyptus globulus. Although Dr. Benjafield is perhaps somewhat too enthusiastic in his praise we print the following extracts from his letter as we think they possess a certain amount of interest.

"..... Although Tasmania is the land where Eucalytus globulus grows everywhere it is the most popular of all remedies. One sees it in the homes of the wealthy citizen, who rubs his gout with the oil and puts it in his baths for any aches and pains he may have and uses it for a hundred other purposes. So much is this the case that the wife of one of our judges told me that in her house it had supplanted nearly all the old household remedies. Again, in the most remote bushman's hut it is invariably seen and he swears by it for pretty nearly every ill that flesh is heir to; if he gets a cold he sniffs it; if a cough he puts it into boiling water and inhales the steam; he rubs in the pure oil for lumbago and for fevers takes it on sugar. For sore legs he uses the green ointment, or failing that binds green leaves on the sore; and I frequently see cases which justify them in their belief. A huge Irishman some two years ago came to me with the smoker's sore on his lower lip as large and thick as a coat-button. As his age, appearance, and pains indicated epithelial cancer I ordered him to have it taken out at once before glandular enlargements made removal useless; and I considered it the more urgent as it had been growing for several months. Some three months after I met him on his cart and pulling him up demanded why he had not been to have it out. 'Begad,' says he, 'look for yourself if it isn't out.' I looked and saw a lip as sound as any lip could be. Then he told me that after leaving me he went to Dr. C——, who also told him he must have it out. Then he thought that before having it out he would try a box of green eucalyptus ointment upon it, and to his astonishment and delight it perfectly healed and the thickening disappeared under its use. To say that I was perfectly nonplussed is saying but little in explanation of my astonishment, as I felt perfectly certain that it was a case of true epithelioma, which I had never before seen disappear under any treatment. Suffice to say that I never now excise such a case without trying this green ointment upon it. ..... M. S., aged four years, who bumped her head against a frying-pan half-full of boiling fat and spilt a great part of it down over her face, ears, and shoulders. I saw her immediately after the accident and found her frightfully burnt, and in a short time the shock to the system produced coma. I made a mask of cotton-wool and soaked it with eucalyptus and olive oil, and enveloped the face, neck, and ears with it. The face rapidly swelled until eyes, mouth, and ears were scarcely visible. By evening the temperature rose to 105°, and coma increased. During the night the nurse, mistaking my directions, poured nearly a pint of pure eucalyptus oil on the dressings, and the following morning the patient was lower in temperature and improved in other ways, still for two or three days she hung between life and death. The eucalyptus and olive oil was the only dressing used and she recovered without a scar on the face and but one on the neck. I have always thought that the nurses' mistake saved the life of the patient."

Dr. Benjafield gives a warning against those purveyors of drugs who sell oil distilled from other varieties of eucalyptus than the globulus. Such oils, he says, are comparatively useless.

A MAN STRUCK BY LIGHTNING ON A RAILWAY TRAIN.

IN the Chicago *Railway Surgeon* of Oct. 4th Dr. C. F. Leslie of Clyde, Kansas, describes a remarkable case. A brakeman on the Missouri Pacific Railway was struck by lightning near Clyde, Kansas, on Aug. 2nd, 1897, and knocked from the brake on the top of a freight car where he was sitting at the time while the train was running at full speed. He was severely burned by lightning on the right side of his chest, on the right hip and buttock, and in the right groin. A

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handkerchief which he wore about his neck was cut squarely in two and a portion of his watch and chain was melted by the lightning. He fell head foremost from the top of the brake to the ground, a distance of about 14 ft., the momentum due to the speed of the train being added to the fall. When taken up he was insensible and had two scalp wounds. He also sustained, as the symptoms afterwards showed, two distinct fractures of the base of the skull. Blood was running from the nose, mouth, and ears, and was also vomited more or less for thirty hours. The scrotum was nearly torn off, and there was a deep laceration five inches long in the right groin. The tissues here were burned black, would not hold stitches, sloughed in a short time, and subsequently healed by granulation. The scalp wounds and the burns on the body healed in a reasonable time. On the third day the symptoms of concussion had nearly subsided. He then began to take nourishment and to recognise friends, but he was entirely deaf. The hæmorrhage and serous discharge from the ears ceased on the tenth day. He made a good recovery, going back to work on Jan. 1st, 1898.

EMIN PASHA'S MEDICINE CHEST.

WE have received from Messrs. Burroughs, Wellcome and Co. a photograph of a most interesting "Tabloid" Medicine Chest which has just been returned to them by an officer of the Congo Free State, who recovered it from natives near Kenia in the Aruwhimi Dwarf Country. This chest formed the last medical equipment of Emin Pasha, Gordon's Governor of the Equatorial Soudan, and was supplied to him just before he started on his last expedition to Central Africa. The case accompanied him throughout his subsequent travels, and was taken by Arabs after his massacre at Kibungi in October of 1892. After passing through many adventures it was recaptured by Baron Dhanis, commandant of the Congo Free State troops, after the battle of Kasongo, in which the Congo Arabs were defeated. Emin Pasha's journal and a quantity of his property was recovered at the same time, but the "Tabloid" compressed drugs which had been in the chest were found to have been removed. The chest was subsequently stolen by natives and before its final recovery was used as a village treasury chest.

VEGETABLES GROWN ON SEWAGE SLUDGE.

"S. K. P." asks us if vegetables grown in large quantities of sewage sludge are dangerous as human food, and if so, why and to what extent. He makes the inquiry because in his locality the district council have acquired large tracts of land which they are as a matter of economy treating in the following manner. The earth, which is loamy clay, is dug in trenches about 3 ft. deep, into which is conveyed sewage sludge from which some of the liquid has been separated to the depth of about 2½ ft. It is then covered with a mixture of earth and dustbin refuse about 6 in. in depth—that is, until the field has a fairly level surface—and then it is planted with cabbages. He wishes to know if there is any doubt of the wholesomeness of food thus grown.

*** The depth at which the sewage sludge is placed (30 in. beneath the surface) is, we should imagine, too great to allow the cabbages to derive much manurial value therefrom, and also too great to allow of the rapid destruction of the organic matter in the sludge. The danger, if any, from eating cabbages grown in such a way must be entirely neutralised by the cooking to which they are subjected.—ED. L.

THE THERMOPSYCHROPHOR.

THE alternate application of heat and cold to the rectum has been used as a means of treatment in chronic prostatitis, and the thermopsychrophor is an instrument devised for this purpose. It has a tubular stem terminating in an enlargement through which alternate currents of hot and cold water circulate every quarter of a minute. The patterns hitherto in use have some inconveniences, and an improved instrument is described by Dr. Scharff of Stettin in the *Deutsche Medicinische Wochenschrift* of Nov. 3rd. In this pattern the stem is curved at a right angle and is connected to a three-way stopcock by means of a flexible tube surrounded by a wire spiral to prevent it doubling on itself. The other two tubes attached to the stopcock lead each into a reservoir of water of the proper temperature, which may be made to flow through the instrument most conveniently by gravitation, which failing, caoutchouc enema syringes may be used. The tubular stem has a lateral branch to carry away the waste water. The makers are the Medicinisches Waarenhaus, Friedrichstrasse, Berlin.

GONORRHŒA OF THE UTERUS AND ITS APPENDAGES.

IN a paper read before the Philadelphia Medical Society and published in the *Philadelphia Polyclinic* of Oct. 8th Dr. Anna M. Fullerton, of that city, remarks that gonorrhœal inflammation when once established in the vagina usually becomes quite obstinate and is very serious because of its liability to extend to the uterus and its appendages, giving rise to that form of pelvic inflammation which is beyond all comparison the severest. The uterus and appendages may be so changed in structure through the effects of this poison as to be a constant source of ill health. Gynæcologists at first thought it sufficient to remove the appendages when thus diseased, but as the uterus, which had been the avenue of transmission of the poison, was found to be liable to subsequent attacks of inflammation incited by the gonococci and as a uterus without appendages was of no use, the practice came into vogue of removing the uterus as well as the appendages. A strong reaction has of late come about against the total removal of ovaries, but in actual practice the conservation of the ovary has been found to lead to the necessity for numerous secondary operations. As illustrating "the futility of attempting conservative work in at least this class of cases" Dr. Anna Fullerton gives details of 8 patients suffering from gonorrhœal inflammation of the tubes. She removed all the appendages in five instances and one ovary in the sixth.

PROTECTION OF ICE CREAM CONSUMERS.

AT the meeting of the Manchester City Council on Oct. 26th Alderman McDougall adverted to the Corporation Omnibus Bill which was to include the power of framing regulations for preventing the sale of "diseased" milk, and said that in view of the large quantities of milk used in the city for the manufacture of ice cream a clause should be added which would provide that ice cream makers and vendors should be under the same supervision as milk dealers. A resolution in favour of this was passed. In view of the revelations made from time to time of the conditions under which this substance is sometimes concocted, the proposed supervision will not be deemed unnecessary.

Electricity.—"Medical Electricity," by Lewis Jones, M.D., F.R.C.P. (London: H. K. Lewis). This is on the whole the best book on the subject in a small compass. The illustrations representing patients with paralysis of certain muscles or groups of muscles are very valuable. "A Manual of Practical Medical Electricity," by Dawson Turner, M.D., F.R.C.P. Edin. (London: Baillière and Co.), is also a very useful book and contains a chapter on the X Rays. Of larger treatises there are Erb's Treatise in von Ziemssen's Handbook of General Therapeutics, and Beard and Rockwell's Medical and Surgical uses of Electricity. As for apparatus there are many firms, and our correspondent will find no difficulty in selecting one. It would be invidious on our part to particularise.

Izal.—We cannot possibly recommend our correspondent to break the literal wording of his bond. If he agreed not to practise within a radius of a certain number of miles until after the lapse of a certain time he must adhere to his agreement. The arrangements surrounding the practice at B—— are not such as to induce us to alter our opinion.

M.D.—The matter is one upon which we see no very good reason to comment, for the patent preparation is not called by the medical man's name, and in the abridged description sent to us from the local paper the fact that the patentee is a medical man is not mentioned.

L.R.C.S. and P. (Pilsley) has omitted to say what appointment it is concerning which he is inquiring.

G. L. K.—The matter is not without difficulty. We will write.

The substance of *H.B.'s* letter has been forwarded.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 10th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Nov. 4	29·91	W.	0·09	81	57	42	42	44	Fine
,, 5	29·76	S.W.	...	90	61	44	49	51	Cloudy
,, 6	30·05	W.	...	71	56	44	44	45	Hazy
,, 7	30·07	S.	...	96	56	44	48	49	Hazy
,, 8	29·97	S.E.	...	72	56	46	47	48	Hazy
,, 9	30·17	E.	...	65	60	48	51	52	Foggy
,, 10	30·04	E.	...	56	54	52	52	53	Foggy.

During the week marked copies of the following newspapers have been received: *Malton Gazette, Dursley Gazette, Western Press, Birmingham Post, Harrogate Advertiser, North Wales Chronicle, Times of India, Pioneer Mail, Essex Telegraph, Derby Times, Citizen, Scotsman, Builder, Sussex Daily News, Yorkshire Post, Midland Counties Express, Newcastle Leader, Architect, Bradford Observer, Eastern Post, Staffordshire Chronicle, Dover Express, Huddersfield Examiner, Liverpool Daily Post, Leicester Post, Glasgow Herald, Folkestone Express, Cambridge Express, Dundee Advertiser, Bristol Mercury, Brighton Gazette, Sanitary Record, Essex Telegraph, Doncaster Chronicle, Mining Journal, Hertfordshire Mercury, City Press, Reading Mercury, Local Government Chronicle, Local Government Journal, Kent and Sussex Courier, Argus (Melbourne), Free Press (West Bromwich), West Bromwich and Oldbury Chronicle, Surrey Advertiser, Guy's Hospital Gazette, Weekly Free Press and Aberdeen Herald, South Wales Echo, Manchester Guardian, Leeds Mercury, Civil Service Gazette, Bridgwater Independent, Leek Times, Craven Herald, Bristol Times, Loughborough Monitor, Leamington Courier, Warwick and Warwickshire Advertiser, &c., &c.*

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Communications, Letters, &c., have been received from—

A.—Dr. J. Althaus, Lond.; Mr. H. Allwright, Lond.; Mr. Edward Atkinson, Boston, Massachusetts, U.S.A.; Dr. James Adam, West Malling; Australian Wine Importers, Lond.; Messrs. R. Anderson and Co., Lond.

B.—Dr. Lionel S. Beale, Lond.; Mr. C. Birchall, Liverpool; Mr. W. B. Buxton, Flaxton; *Birmingham Daily Post;* Birmingham Provident Dispensary, Secretary of; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Benger and Co., Manchester; Messrs. Boulton and Paul, Norwich; British Art Club, Brussels; Bradford Royal Infirmary, Secretary of.

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An Inaugural Address

ON

CERTAIN UNDEFINED FACTORS IN THE SPREAD OF DISEASE.

Delivered before the Chelsea Clinical Society on Oct. 18th, 1898,

BY J. FOSTER PALMER, L.R.C.P. LOND., M.R.C.S. ENG.,

PRESIDENT OF THE SOCIETY.

GENTLEMEN,—I must first take this opportunity of thanking you for the honour you have done me in selecting me to be the first President of this society. A man can have no greater honour than to be thus chosen by those best qualified to judge of his shortcomings—viz., those of his own profession. I can only hope, with the help and support of the vice-presidents, committee, and secretary, that the said shortcomings will not be conspicuous during my year of office. Secondly, I must express an ardent and somewhat confident hope in the future of the society. May it be useful and permanent. A society, it is true, may be useful though temporary. But I am not sure that now local societies may not have before them as long and useful a career as central ones. Decentralisation is one of the marks of progress of the age. There is another factor which makes for the stability of this society. It is largely composed of general practitioners, and there can be no doubt to those who watch the signs of the times that the future of medicine is in the hands of the general practitioner. The physician, as such, must sooner or later become extinct. The pure general consulting physician is already almost a rarity. "Send for a specialist," is now the almost universal cry. It is only the antique type of patient who thinks of calling in a "physician." The very word is barbarous: faulty in its derivation and its root obsolete or degraded. We do not "physic" people now in the old sense. If a "physician" means anything it means a student of "physics," not of "physic," a slang word for drugs. We need a new word derived from the Latin "medicus," or, better still, the Greek κλινικός. The physician has done good work, from the time of Linacre, of Caius, and of Harvey, to the present, but his days are numbered. So great has been the progress of surgery during the last thirty years in comparison with that of medicine that we have now almost come to look upon the physician as the lame and halting follower of the surgeon. One by one, too, his provinces are invaded. The great abdominal cavity has practically gone over to the surgeon; the thorax and the nervous system are in the hands of the specialist; the investigations on fevers are largely carried on by the bacteriologist; while the treatment of diphtheria often falls to the throat specialist, who is generally a surgeon. There will be nothing left. If anything is left it will be swallowed up by the Roentgen rays, which will become another speciality, and will, I have no doubt, do much to bring medicine once more abreast of surgery. Long before the close of the coming century the profession will consist mainly of general practitioners and specialists, with a few operating surgeons. The bacteriologists will probably be outsiders. Meanwhile, it remains for us, individually as men and collectively as a society, independently of any shuffling of cards within the profession, to do our best to maintain the high tone and standard which has always, as a rule, characterised its relations with the world outside.

And, thirdly, I have to bring forward some subject of general interest, and, if possible, of usefulness also, to the members of the society. We are a *clinical* society. We have elected, and rightly so, to base our researches primarily on the visible manifestations of disease which we see before us at the present time and in the human subject. But we need not, and we must not, neglect as collateral branches the great records of the past, which show us the course of disease on a larger scale, or the experiments of the laboratory, which show it to us under changed surroundings. These, however, are secondary; our *primary* object is to know the effect of disease, not on other people in other times, nor when cultivated in bottles or on potatoes, but on the particular individual subject before us. For this purpose we must know something of the patient besides his disease. Each patient we see has a distinct pathological individuality; our prognosis of any single case depends more on our knowledge of the life, habits, surroundings, and hereditary tendencies of the patient than on the character of the disease itself. "I know," says the old doctor in one of Oliver Wendell Holmes's works,—"I know the families that have a way of living through everything, and I know the other set that have the trick of dying without any kind of reason for it. I know the folks that think they're dying as soon as they're sick, and the folks that never find out they're sick till they're dead." For this reason, valuable as are hospital records and observations for making out statistics of mortality and the study of morbid anatomy, there are matters of vital importance to a true study of medicine which can only be observed in private practice.

We are sometimes told that our only duty as students of medicine is to observe and collect facts and tabulate results; that we must have no ideas and formulate no hypotheses. I venture to say that this is absolute humbug. No man, woman, or child, ever yet took the trouble to collect facts unless he had some theory to verify. It is this that gives him his interest in the work. The idea may be wrong, it may be changed in the course of the investigation; but it has been worked out in the mind before the investigation commences. Do you suppose Harvey would have made his numerous experiments, Hunter have dissected his lions and tigers, Jenner have spent his time inoculating with vaccinia, or Lister tried his antiseptic treatment, if they had not already thought out some hypothesis which they hoped to prove, but might disprove? There is no dearth of facts. They are as plentiful as blackberries. There are tons of them. What we want is the intelligence to weigh, to interrogate, to classify, to examine and get at the relative value of them. "Non numerandæ sed perpendendæ sunt observationes." There may be men who are fit for nothing better than to collect facts for others to work upon. If so, let them do it. But lack of brain-power is not a common complaint in our profession; and if we have brain-power it is our duty to use it. We have, all of us, a valuable store of knowledge and experience, the outcome of daily observation, which we use for our own and our patients' benefit. It is almost criminal not to attempt to make some further use of it for the public good and for future generations. This society affords us one opportunity of doing so.

In discussing some of the uncertain factors in the spread of disease I must confine myself to three, the extent of whose influence is still doubtful and undefined. These are: (1) pathogenetic evolution; (2) retrograde metamorphosis; and (3) abnormal objective receptivity. Contagion and infection, in view of the researches of bacteriology, can no longer be considered doubtful causes and can only be discussed in their relation to the foregoing. Practically all diseases may be considered communicable. Inoculation, contagion, and infection merely imply different degrees and conditions of communicability. With the leprosy bacillus actually before our eyes we can no longer doubt the wisdom of the great Hebrew legislator in looking upon leprosy as a contagious disease and enforcing disinfection and quarantine by stringent laws. This is only one of numerous instances in which the opinions of the ancients, having been discarded and ridiculed for centuries, have been found to be true ones after all. What appears to be ignorance or superstition is often merely truth expressed in metaphorical language. When Herodotus tells us that Venus inflicted a loathsome disease on the Scythians for violating her temple we have not much difficulty in the diagnosis, although we with our supposed superior wisdom should express it differently. Perhaps, after all, the Greeks knew as much of the pathology of syphilis as we do. Whether they were acquainted with bacteria evidence does not show. At any rate, antiseptic treatment was not unknown to the Romans. It is alluded to by Virgil in the third book of the Georgics:—

> "Aut tonsum tristi contingunt corpus amurca,
> Et spumas miscent argenti, et sulfura viva,
> Idæasque pices, et pingues unguine ceras,
> Scillamque, elleborosque graves, nigrumque bitumen."
>
> Lib. iii., ll. 448–451.

We find mentioned in these four lines (besides squill and black hellebore) the bases of nearly all the antiseptics of the

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present day, olive oil saturated with some substance not stated, nitrate of silver, sulphur (probably sulphurous acid), tar and paraffin, with lard and wax for ointments. These were used as protectives against disease. For what reason if not to prevent the ingress of bacteria?

During the plague of London in 1665 the bacterial origin of the disease was distinctly anticipated, and, as usual, ridiculed, as you may see on reference to Defoe's "Journal of the Plague."[1] The same has occurred much more recently. I have a copy of part of the evidence given before the Commission appointed to inquire into the sanitary state of the army in India in 1861. One of the experts examined, Surgeon-Major Wallich, a well-known microscopist, said he believed that the causes of malaria, fevers, dysentery, and cholera (which he defined as minute plants) might be made quite visible by the microscope. At this suggestion Sir Ranald Martin, one of the members of the Commission, walked out of the room, because, as he afterwards confessed to the witness, he thought the latter was talking "nonsense." The "nonsense" of forty years ago is thus the accepted science of to-day, while some of the discarded hypotheses of antiquity are found to contain a substantial basis of truth.

Let us not, therefore, discard everything that is old simply because it is old or grasp at everything that is new simply because it is new. There is very little real evidence to show that the human intellect is better now than it was in the time of Homer. Our morals are better (I hope), our tools are better, and we have more knowledge and experience in the use of them, but I am afraid this is all. We are naturally elated at our progress in the comparatively new field of bacteriology, but we must rejoice with trembling. Twenty years of further progress in this field will shed a far different light both on etiology and treatment from that we now see by. With regard to the latter, it is hardly possible that the study of therapeutics will ever resolve itself into a long list of immunised sera. It is more probable that the chemical products by means of which immunisation is brought about will be known and manufactured by artificial means, and that thus therapeutics will become an exact science instead of an empirical art. With regard to the former there is also much to be learnt, and the three factors referred to above—(1) pathogenetic evolution; (2) retrograde metamorphosis; and (3) abdominal objective receptivity—are only types of a large number of unknown or imperfectly known conditions under which the pathogenic bacteria increase and multiply, effect an entrance into the human body, and when there convert some of its natural organic products into deadly poisons. To keep ourselves constantly abreast of the latest researches in this department of science will be one of our most important objects.

I. *Pathogenetic evolution.*—The ancient belief in the possibility of spontaneous generation in the organic world has long ago died a natural death and has been followed by a belief that every organism is produced by one like itself in every particular, or at least by one of the same species. This view, however, has been shown by the researches of Charles Darwin to be true only in part. It is now generally admitted that generation is progressive and that the more complex organisms have been gradually evolved from simple ones. Even if evolution is not a complete solution of organic life, but is subject, as I believe it is, to exceptions and reversions, it is still a force to be reckoned with. It is therefore natural that when we come upon a comparatively new branch of biological study like that of bacteriology we should ask ourselves what part, if any, is played by evolution in the history and progress of disease. Have the microphytes of all the diseases flesh is heir to come down in an unbroken line of descent or are they traceable to some simple germ of prehistoric ages when man's only diseases were the wounds received in battle with those extinct monsters he has now exterminated? And what relation in the biological scale do these organisms bear to one another? Are those most destructive to life to be considered higher or lower in the scale than those which only cause inconvenience? Are plague and cholera, e.g., higher types than influenza, small-pox than chicken-pox? These questions must be answered before medicine is an exact science. It is of the utmost importance that we should know whether the micro-organism of influenza (if there is one) can ever become evolved into the organism of cholera or of plague; whether the microphyte of syphilis can under any special conditions, or after an innumerable succession of slight variations, evolve itself into that of leprosy or of cancer; whether any of the bacteria found in ordinary membranous or herpetic sore-throat may, with favourable surroundings, develop either in the same patient or during the course of an epidemic in other patients the well-known Klebs-Löffler bacillus of diphtheria.

1. It is among the records of past epidemics that we must first look for evidence of evolution in disease, for there only can we trace it over sufficiently long periods of time. The oldest known disease is plague. There is no doubt that plague has existed in the world more than 5000 years, and it is still endemic in Egypt and the adjacent parts of Asia and Europe. The earliest epidemic on record is one mentioned by Manetho, the Egyptian historian, as occurring in Egypt in 2500 B.C. From a very early period, in nearly all the ancient writers, there are accounts of constantly recurring epidemics bearing the same general features in the same geographical area. We find them in the Old Testament, in the "Iliad" of Homer, in Ovid's "Metamorphoses" (vii.), in Plutarch's Lives, in Thucydides, in Livy, in Strabo, in Tacitus, and in Pliny. When we come to the plague of Athens, described by Thucydides, and that of the sixth century, by Gibbon, there is no longer any doubt that we are dealing with the same disease that is still endemic in Turkey and in Egypt and was lately so prevalent in Hong-Kong. "The greater number," says Gibbon, "were surprised by a slight fever. The same, the next, or the succeeding day, it was declared by the swelling of the glands, particularly those of the groin, of the arm-pits, and under the ear, and when these buboes or tumours were opened they were found to contain a *coal* or black substance of the size of a lentil." Translate this into modern bacteriological language and we have almost an exact counterpart of the most recent descriptions of the same disease. "Plague," says Kolle in a paper on the plague bacillus in the *Deutsche Medicinische Wochenschrift* of March 4th, 1897—"plague is a polyadenitis, the glands being the starting-place of a septicæmia." "Black pustules or carbuncles," says Gibbon. "Carbuncles, pustules, spots, and petechiæ," says Aitken, almost word for word. Thus we appear to have been dealing with the same disease for two thousand, probably for four or five thousand years. If evolution were the law of pathological life we should expect, considering the short life-history and rapid generation of micro-organisms, to see some change of type in disease after so long a period. The history of the plague does not seem to favour this view. The only difference appears to be that it is less fatal than in the third, sixth, and fourteenth centuries, when it is said to have carried off one-fourth of the population of the world. This is clearly the result of improved sanitation.

Let us take another standpoint. If plague is always the same disease whenever we find it, is the general type of disease changing and is the plague gradually giving way to some other pathological manifestation? Since the seventeenth century it has been practically extinct in the British Isles, although for a thousand years it had been constantly epidemic if not endemic,[2] and during these last two centuries it has been steadily retiring from the continent and going back to its original haunts in Turkey and Egypt. It is possible that plague and cholera may have existed side by side, as they do now, from the foundation of the world; but it appears as if the position formerly held by the former had during the last hundred years begun to be occupied by the latter. We need not accept without question the statements of all the ancient writers, but we cannot deny their knowledge. The writer of the "Iliad," who must have lived 3000 years ago, was a better anatomist than his translator Pope, who lived in the last century. Homer never confused nerves with tendons as Pope did in the description of Achilles's operation on the dead body of Hector.[3] In Walford's "Chronology of Pestilences" there is a list of about 1700 epidemics beginning 2500 B.C. and ending with the plague in Persia and Alaska in 1882. Of these, the large

[1] "Which I look upon with contempt . . . . likewise the opinion of others who talk of infection being carried on by the Air only, by carrying with it vast numbers of Insects, and invisible creatures, who enter into the Body with the Breath, or even at the Pores with the air, and then generate or emit most accute (*sic*) Poisons or poisonous Ovæ (*sic*), or Eggs, which mingle themselves with the Blood, and so infect the Body."

[2] One of the first records of plague on an extensive scale in the British Isles was in 665 A.D., the last in 1665 or 1667 A.D., a plague-wave of just 1000 years. On the continent it began earlier and receded later.

[3] X, 395-404, Pope, xxii., 495-510.

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majority (between 900 and 1000), 54·47 per cent., refer almost certainly to the plague, the rest being made up of epidemics of uncertain type, of dysentery, leprosy, throat affections, venereal disease, intermittent fevers, small-pox, and other epidemic fevers, and in the later centuries of influenza, typhus fever (including typhoid fever), and cholera. In the twenty-five centuries B.C. the proportion of plague to other diseases is 137 to 18, 88·38 per cent. In the first five centuries A.D. the proportion is 61 to 17, or 69·43 per cent.; in the five following centuries it is 99 to 37, or 72·79 per cent.; in the eleventh century 37 to 14, or 72·54 per cent.; in the twelfth century 28 to 10, or 73·15 per cent.; in the thirteenth century 46 to 8, or 85·18 per cent.; in the fourteenth century (including, of course, the Black Death, which devastated so large a portion of the world and besides which all other epidemics sink into insignificance) 55 to 57, or 49·1 per cent.; in the fifteenth century 82 to 31, or 72·56 per cent.; in the sixteenth century 127 to 63, or 66·84 per cent.; in the seventeenth century (which includes the Great Plague of London) 144 to 96, or 60 per cent.; in the eighteenth century (including the plague of

TABLE I.—*Plague.*

Periods.	Total number of epidemics.	Number of plague epidemics.	Percentage of plague epidemics.
2500 B.C.—0 A.D.	155	137	88·38
0— 500 A.D.	88	61	69·43
500—1000 ,, ...	136	99	72·79
1000—1100 ,, ...	51	37	72·54
1100—1200 ,, ...	38	28	73·15
1200—1300 ,, ...	54	46	85·18
1300—1400 ,, ...	112	55	49·1
1400—1500 ,, ...	113	82	72·56
1500—1600 ,, ...	190	127	66·84
1600—1700 ,, ...	240	144	60·0
1700—1800 ,, ...	295	66	22·37
1800—1882 ,, ...	228	44	19·29
Totals	1700	926	54·47

Marseilles, the disease being now practically extinct in Great Britain and Ireland) 66 to 129, or 22·37 per cent.; and in the nineteenth century, during which cholera more than once established itself as a European epidemic, 44 to 184, or 19·29 per cent. (Table I). During this century the proportion of cholera was 52 to 176, or 22·8 per cent. (Table II).

TABLE II.—*Cholera.*

Period.	Total number of epidemics.	Number of cholera epidemics.	Percentage of cholera epidemics.
1800—1882 A.D.	228	52	22·8

The proportion of typhus fever since the year 1500 has been 7·86 per cent. (Table III), and of influenza altogether 8·92 per cent.; the only century showing any considerable proportion of influenza is the eighteenth, coming between the decline of

TABLE III.—*Typhus Fever.*

Periods.	Total number of epidemics.	Number of typhus fever epidemics.	Percentage of typhus fever epidemics.
1500—1600 A.D.	190	15	7·89
1600—1700 ,, ...	240	15	6·25
1700—1800 ,, ...	295	19	6·44
1800—1882 ,, ...	228	26	11·4
Totals	953	75	7·86

plague and the advent of cholera, where it is 50 to 245, or 16·94 per cent. (Table IV.). These figures, again, are hostile to any belief in a continuous line of pathogenetic evolution, although cholera seems to have stepped into the place formerly occupied by plague. But evolution may take another form. If the general type of disease does not change from century to century is it possible that a series

TABLE IV.—*Influenza.*

Period.	Total number of epidemics.	Number of influenza epidemics.	Percentage of influenza epidemics.
1700—1800 A.D.	295	50	16·94

of shorter changes takes place and that the milder epidemics may evolve, in the course of a few months or years, under favouring conditions, into the more fatal ones? It has been constantly observed, both in ancient and modern times, that the great destructive plagues have been preceded by minor epidemics of catarrh, influenza, measles, and diseases of a less virulent type. Thucydides, a careful observer, says that during the plague of Athens other diseases declined. "None of those diseases to which they were accustomed afflicted them at this time, or whatever there was ended in this" (Hist., lib. ii., 51). More recent observations confirm this. The fatal Black Death of the fourteenth century was preceded by a long succession of outbreaks of influenza and other less fatal epidemics.[4] Of the nineteen epidemics recorded by Dr. Theophilus Thompson in the "Annals of Influenza" seventeen at least were followed by epidemics of a more fatal character: those of 1510, 1557, and 1580 by plague; that of 1658 by a series of continued fevers until 1664; then by malignant fever (probably typhus fever), and this by the Great Plague of 1665; that of 1675 by small-pox and dysentery; that of 1710 by plague; that of 1729 by typhus fever, small-pox, and cholera; that of 1738 by diphtheria; that of 1743 by typhus fever; that of 1758 by scarlet fever; that of 1762 by dysentery; that of 1775 by scarlet fever and diphtheria; that of 1803 by typhus fever; those of 1829, 1831, 1833, and 1837 by Asiatic cholera; also that of 1847 (Table V.). That of 1829 is very remarkable; for cholera,

TABLE V.—*Sequences of Influenza.*

Date.	Followed by	Date.	Followed by
A.D. 1510	Plague.	A.D. 1743	Typhus fever.
1557	,,	1758	Scarlet fever.
1580	,,	1762	Dysentery.
1658	Continued fevers until 1664.	1775	Scarlet fever; diphtheria.
,,	Malignant fever (typhus?) in 1664.	1803	Typhus fever.
,,	Great Plague of 1665.	1829	Asiatic cholera.
1675	Small-pox; dysentery.	1831	,, ,,
1710	Plague.	1833	,, ,,
1729	Typhus fever; small-pox; cholera.	1837	,, ,,
1738	Diphtheria.	1847	,, ,,

having travelled from India to the south of Russia in 1823, patiently waited seven years for the influenza epidemic, and then immediately spread through the whole of Europe, following practically the same route. Coming to more recent times, the epidemic of influenza in Iceland in 1862 was followed by an extremely virulent epidemic of pneumonia the following year. These facts are striking if evolution could be otherwise established, but alone they only point to a bare possibility.

2. Then arises the question, Does evolution ever take place in the progress of a single case? This clinical observation must teach us, and it is one which may well be borne in mind by those who place their experience at the disposal of this society. My own experience leads me to conclude that it is certainly not the rule and that the exceptions may be explained in other ways. The very rarity of the occurrence makes each instance of it a subject of special observation. When we have once made up our minds that a certain doubtful case of sore-throat is not one of diphtheria we are

[4] The first recorded general epidemic of influenza was in 1173. Besides numerous instances recorded in history of plague being preceded by epidemics among the lower animals it is found that in the present day, whether in Asia or Africa, it is usually preceded by an enormous mortality among the rats.

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not much disturbed by the thought that it may develop into diphtheria later. It is possible, of course, that the diphtheria bacillus may be engrafted on a sore-throat of some other description, but this seems to be rather unusual. The same remarks apply to doubtful cases of scarlet fever, small-pox, typhus fever, and typhoid fever. Some years ago I saw a case of soft chancre under the prepuce which had been neglected for two years. Amputation became necessary and microscopic examination amply confirmed the diagnosis that the case had now become one of epithelial cancer. The patient died shortly after from a recurrence of the disease. Sir James Paget, who must have had more experience of cancerous tumours than most men, had never seen a case before. The chancre, by reason of its chronicity, had become a suitable soil for the cultivation and growth of the cancer microphyte. The rarity of such cases makes it highly improbable that they are due to any general pathological sequence.

There is, however, another class of cases in which we might be led to expect from the frequency of their occurrence a more natural order of transition from one disease to another. We have spoken of influenza being followed by other epidemic diseases in the same geographical area, but pneumonia following a specific attack of influenza in the same patient we are all familiar with. The zymotic nature of pneumonia is now generally admitted[6] and its micro-organism is known. The influenza epidemics of 1891 and 1892 were especially fatal on account of pneumonic complications. Clinical observation here seems to indicate a special and direct tendency for one zymotic or epidemic disease to run into another of a more virulent type. Whether or not this is an instance of micro-organic evolution can only be finally decided by observation in the bacteriological laboratory. On the other hand, has not clinical observation constantly shown us that in the greater epidemics, whether of plague or cholera, a steady diminution of intensity is the rule? From a mortality of 90 per cent. at the onset of the epidemic it gradually falls to 10 per cent. or less. Is not this an upside-down kind of evolution—degradation rather than progress? In the case of specific attacks of zymotic disease, too, the tendency is, with the exception noted above, to run on to what we consider to be lower forms. We may be wrong in our estimate of the relative biological importance of diseases or of the correct position in the social scale of the various bacteria, but we naturally look upon scarlet fever as a higher type of disease than its sequelæ, nephritis, otitis, stomatitis, rheumatism, &c.; typhus fever and typhoid fever than pneumonia; measles than bronchitis; small-pox than ophthalmia or purulent absorption. Thus, whether we consider the variations of epidemic disease from century to century, or those of a single great epidemic from week to week or from month to month, or those which occur in the course of an attack of zymotic disease in the individual patient from day to day, retrogression appears to be the rule, and evolution, contrary to the general order of organic nature, the exception.

3. We have now to inquire what bacteriology has to say on the subject. At the threshold of this inquiry we are met by the very important experiments of Pasteur on the somewhat similar organisms of mould and yeast. After a long series of experiments and counter-experiments by various observers it has been conclusively demonstrated that it is not possible by any methods of selection or changes of environment through any number of generations to cause mould to evolve into yeast or yeast into mould. These experiments, however, although useful as a standpoint, are by no means conclusive on the general question. If I understand evolution at all it would be equally impossible, however many millions of years were allowed for the experiment, to turn man into an ape or the ape into a man. Yet this would be no proof that they had not the same ancestor. Nor should we with any greater facility breed a horse from a donkey or *vice versâ*. Yet no one now doubts that the horse and the ass are both descended from the extinct hipparion. That there exists under certain conditions a tendency, limited perhaps in extent, to some evolutionary process seems to be shown by the experiments which have been made on the typhoid (Eberth-Gaffky) bacillus and others. These bacilli—the typhoid bacillus, the bacillus enteritidis of Gärtner, and to a still greater extent the bacillus coli communis—are found to increase in virulence in passing through the bodies of animals. In the last-named, according to Dr. Sidney Martin's experiments (referred to in the Croonian Lecture at the Royal College of Physicians of London), evolution seems to proceed in a regular mathematical series, the same effects being produced at first by 6 c.c. of a certain culture then by 4 c.c., then by 2 c.c. (then by 1 c.c.?), then by 0·5 c.c., then by 0·25 c.c., and then by 0·1 c.c. Many observers, too, he says, have noticed not only an increase in the numbers, but also an exaltation of this bacillus in the course of a case of typhoid fever. The experiments of Marmorek on the streptococcus pyogenes point to precisely the same conclusion. The pathological powers of this organism were greatly exalted "by alternately growing it in guinea-pigs and in a medium made of human blood-serum and bouillon."[6] The virulence of the typhoid bacillus was augmented in like manner, but less rapidly than the bacillus coli. Beginning with 4 c.c., the same effect was produced at the thirteenth inoculation with $\frac{1}{2}$ c.c. and at the sixteenth with half a platinum loopful (whatever quantity that may represent) of an agar culture. None of the ordinary laboratory cultures of the typhoid bacillus, Dr. Martin found, would kill an animal until they had been rendered virulent; in other words, until they had undergone the process of evolution in the bodies of certain animals and under certain special conditions.

There is, therefore, no doubt that, independently of any increase of the number of bacilli in the serum, the later generations of these organisms have a greater functional activity than the earlier ones; and functional activity is in organic nature generally the prelude to structural development. "It is manifest," says Mr. Herbert Spencer, "that there can be no variation of structure but what is directly or indirectly consequent on variation of function." "Function is from beginning to end the determining cause of structure."[8] At the same time they seem to exhibit a very strong tendency towards reversion to the earlier types. This, I think, is as far as the results of bacterial research will at present carry us. Whether microphytic life goes on thus throughout the ages in a series of advancing and receding cycles of short duration, or whether it has an earlier and a later history, one preceding its least virulent and one succeeding its most virulent stage must be left to occupy the minds of future observers. At present, observation has not extended beyond these two points. There are two distinct lines along which this extended life might proceed. In the first place, the micro-organism might commence its existence in a low form of pathogenic life as the organism of some mild catarrhal or local affection and evolve into that of one of the greater epidemics. And secondly, it might begin its career as one of the harmless or useful bacteria acquiring pathogenic functions at a certain period of its career, and losing them again as it passes on to higher forms of life. Major Giles, I.M.S.,[9] in a paper on the Micro-organisms of Pneumonia, goes so far as to say that "the difference between the organisms of disease and those found everywhere in earth and water are so small that it must be conceded that they cannot have diverged far from some common parent stem." The evolutionary theory certainly receives some support from the numerous instances in which the greater epidemics have been preceded by epidemics of a milder character as well as in many cases by epidemics among the lower animals. At the same time it seems to be negatived by the remarkable permanence of type which is found to have extended over thousands of years as well as by the extreme rarity of any change of type in the history of individual cases. The particular instance of the organism of influenza developing into that of pneumonia is hardly conceivable in view of bacterial research, for the organisms belong to different species. That of influenza, which, however, has not yet been identified with any degree of certainty, is a bacillus while that of pneumonia is a coccus. This is a gulf we shall hardly be prepared to bridge over; certainly not within the limits of a single case. When we remember, too, that the symptoms of influenza have not yet been definitely induced by cultures of the bacillus and that these symptoms have actually been induced experimentally by inorganic gases[10] it seems at least possible that influenza

[5] In a recent trial one witness spoke of an attack of pneumonia being useful in "setting up the constitution." This is probably only a popular and somewhat unscientific way of expressing the fact of its protective influence against a second attack.

[6] Brit. Med. Jour., June, 1898, p. 1579.

[7] Principles of Biology.

[8] Ibid., vol. ., p. 167

[9] Collective Investigation Record, vol. ii., p. 106.

[10] Many years ago Dr. Prout produced all the symptoms of influenza with seleniuretted hydrogen, and Berzelius produced a severe attack

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may not necessarily be in every case of bacterial origin, but may sometimes be the result of chemical products generated by other means. If this is the case it would perhaps explain the constant reference both in ancient and modern times to earthquakes and volcanic eruptions and the presence in the air of gases popularly called "mephitic vapours" as preceding pestilential outbreaks. There is no doubt that influenza does precede many of the greater epidemics, but this is no proof that the pathogenic microbes are continuous. An attack of influenza, whether of bacterial origin or not, would, by its depressing influence on the nervous system, render the subject of it less resistant to the attacks of zymotic disease. Thus the direct causes of influenza would be the indirect causes of the epidemic which follows it. To this category, as we have already seen, pneumonia undoubtedly belongs. We are forced, therefore, to the conclusion that the causes of pneumonia following attacks of influenza are to be looked for in the increased receptivity following the latter disease rather than in any direct succession of micro-organisms, and that however tempting and plausible may seem the hypothesis of pathogenetic evolution it is not, in the present state of our knowledge, supported by any trustworthy proof.

II. *Retrograde metamorphosis.*—When we come to the subject of the decomposition of animal and vegetable matter as furnishing a nidus for the growth and development of pathogenic organisms we are on surer ground. Its influence on the spread of disease, indeed, has in recent times been strenuously denied and so has the protective influence of vaccination. Such "argumenta ad ignorantiam" may be good enough for politicians, hardly for scientific men. In this instance past history, clinical observation, and bacterial research all agree in affirming some relation of cause and effect between the presence of decomposing organic material in air and water and the prevalence of zymotic disease.

1. All nations and races, whether savage or civilised, ancient or modern, have made careful provision for the disposal of the dead. This is a universal recognition of the evil effects following the exposure of decomposing organic matter. The onset of epidemics, too, from time immemorial has always been referred to the period of autumn, when the ground is covered with fallen leaves and decaying vegetation. We may go back to Homer. We find in the twenty-second book of the "Iliad":—

> Ὃν τε κύν' Ὠρίωνος ἐπίκλησιν καλέουσι·
> Λαμπρότατος μὲν ὅδ' ἐστὶ, κακὸν δέ τε σῆμα τέτυκται,
> Καί τε φέρει πολλὸν πυρετὸν δειλοῖσι βροτοῖσιν.
>
> X. 29, 30, 31.[11]

Everything goes to show that Homer was an accurate observer. Virgil also. In the third book of the Georgics we have the same fact expressed:—

> "Hic quondam morbo cœli miseranda coorta est
> Tempestas, totoque autumni incanduit æstu,
> Et genus omne necî pecudum dedit, omne ferarum;
> Corrupit lacus; infecit pabula tabo."
>
> III., ll. 478–481.[12]

It is again repeated by another great observer, Shakespeare, in his "Henry V.":—

> "A many of our bodies shall no doubt
> Find native graves; upon the which, I trust,
> Shall witness live in brass of this day's work:
> And those that leave their valiant bones in France,
> Dying like men, though buried in your dunghills,
> They shall be fam'd; for there the sun shall greet them,
> And draw their honours reeking up to heaven;
> Leaving their earthly parts to choke your clime,
> The smell whereof shall breed a plague in France."
>
> Act iv., sc. 3.

The consensus of opinion is striking. Indeed, all observation, ancient and modern, tends to show that this view is well founded. The greater epidemics since the world began have always shown a decided preference for the autumn and late summer or else they have followed close upon large battles and extensive military campaigns, when the air has been impregnated with the emanations from the dead bodies of slaughtered human beings and animals of war, or after epidemics among the lower animals, vertebrate or invertebrate. The decomposing material may proceed from dead horses or cattle, rats or locusts. Koch found that a large mortality among the rats was always looked upon as a certain precursor of the plague, whether in Africa, India, or China.

The Great Plague of London commenced in November, 1664, and after remaining quiescent throughout the winter reached its maximum degree of virulence the following autumn. More than half the entire number of fatal cases took place during September and the first two weeks in October. The same sequence of events took place at the plague of Moscow. It was first introduced in November, 1770, remained inactive during the winter, and reached its climax in September, 1771, the mortality at one time being 1000 a day. The great cholera epidemic in this country ran a similar course. It began to take on an epidemic character in October and November, 1848; declined, but was not extinct, during the winter, and reached its highest rate of mortality the first week in September, 1849, during which 2000 deaths occurred in London. In the first cholera epidemic, too, that of 1832, by far the greatest number of deaths took place in September. Towards winter, when the temperature is lower and decomposition less active, epidemics almost invariably decline. The more recent epidemics of influenza, even, have been most active in the milder winters, being apparently postponed for a time when the weather is particularly severe. A low temperature means a partial arrest of decomposition. It would seem, therefore, that whatever may be the organisms by means of which disease is conveyed the condition of the atmosphere most favourable to their development and transmission is that resulting from the presence therein of those proximate constituents of organic life which are formed during the retrograde metamorphosis of animal and vegetable tissue. Under no other conditions does this process take place upon so extensive a scale as on the field of battle. Epidemic disease, both among human beings and animals, has always followed in the wake of war. It is not that pestilence is a necessary sequence, but that favourable conditions are brought about for the spread of any epidemic which may be latent. When from the carnage of battle or from any other cause the atmosphere has been impregnated with decomposing animal matter it forms a suitable nidus for the cultivation and development of any pathogenic organisms which may chance to be introduced into it. This took place in this country during the wars between Charles I. and the Parliament in the seventeenth century, and when, a few years later, in 1665, the plague was introduced it raged with excessive violence. The plague of Copenhagen, too, in 1712, followed the invasion of Denmark by Charles XII. of Sweden. And in those regions where certain zymotic diseases are always endemic or latent—i.e., in the vicinity of their natural geographical distribution—war is almost invariably followed by an immediate outbreak. In addition to the accounts given in ancient history, which are too numerous to mention, we find that in the present century every attack of Russia upon Turkish territory, which may be considered the natural home of the plague, has been followed by an epidemic of the disease. The Crimean War was no exception. Nor was the Russo-Turkish War of 1877-78. On the latter occasion plague broke out at Astrakan in the Caucasus and at several places on the Volga; and it was thought by many that we were then within measurable distance of a European outbreak. In this country no prolonged military operations have taken place since the latter part of the seventeenth century. Since the reign of James II. there has been no civil war except the short-lived rebellions of 1715 and 1745. The cessation of civil war was exactly coincident with that of the plague.

2. It is hardly necessary to appeal to modern clinical experience to confirm this great consensus of opinion. The dangers of overcrowding are practically recognised by all. And overcrowding is, after all, simply the presence in the atmosphere of an increased proportion of the decomposing products of animal exhalations, forming a nidus for the propagation of pathogenic bacteria. If the modern open-air treatment of phthisis has any meaning at all it means that even the tubercle bacillus, except in advanced cases of phthisis, is powerless for evil if it be not sufficiently supplied

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him himself lasting fifteen days and paralysing the olfactory nerve by a small bubble of the same gas.

[11] "Orion's dog (the year when Autumn weighs),
And o'er the feebler stars exerts his rays;
Terrific glory! for his burning breath
Taints the red air with fevers, plagues, and death."
Pope's version, Book xxii., ll. 39–42.

[12] "Here, from the vicious air and sickly skies,
A plague did on the dumb creation rise;
During th' autumnal heats th' infection grew,
Tame cattle and the beasts of nature slew,
Pois'ning the standing lakes and pools impure,
Nor was the foodful grass in fields secure."
Dryden's version, III., ll. 721–726.

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form the air with the products of retrograde metamorphosis to form a suitable soil for its cultivation. The dangers of the post-mortem room can only be accounted for in the same manner. Decomposing organic tissue is inhaled by the lungs and any microbes introduced through a wound in the skin may find in the blood the necessary nidus for their growth. This condition of susceptibility may be transferred, as is well known, to a puerperal or surgical patient either through the exhalations of the lungs or from contact with the skin. The explanation in all these cases is the same. I have known one member of our profession who, without the least abrasion of the skin, was always attacked with erysipelas after being present at a necropsy, whatever might have been the cause of death. The entrance of decomposing material into the lung was sufficient to excite bacterial growth.

3. The experiments of the laboratory appear in this case fully to bear out the conclusions both of ancient history and of modern clinical experience. The fact stated by Dr. Arthur Ransome[13] that tubercle bacilli are killed by daylight and fresh air means, in other words, that they are unable to grow without the presence of decomposing organic tissue in the atmosphere. His most successful cultivations were made on the condensed moisture of the breath both of healthy and phthisical people, of the air of a wine-cellar, of that of a weaving-shed in Blackburn, and of that in the cellars of some insanitary cottages. Indeed, experiments have abundantly shown, and practically all observers will agree, that none of these organisms will submit to cultivation except in the presence of organic matter, and if such matter is found at all in the atmosphere it is in the form of certain products of retrograde metamorphosis. In the absence of these products the growth of bacteria, and consequently the spread of disease, must be practically *nil*.

III. *Objective receptivity.*—The first question that meets us here is whether receptivity is a normal or an abnormal condition. Is the human body the natural habitat of the pathogenic organisms or is it only certain exceptional individuals, certain exceptional morbid conditions, which furnish the necessary pabula for these microphytes to grow and thrive upon? "To breed vegetation," says Dr. Giles in a paper already referred to, "accustomed to develop in the blood of a living mammal, on scraps of potato, on gelatin, and what not, seems at first sight much like attempting fish culture out of water." The fact thus stated suggests the possibility that such organisms may not, after all, have any special affinity for the animal tissues, but may have commenced their career on other soil. In other words, is it the animal tissue *per se* or is it the animal tissue plus some pathological disturbance which forms a nidus for the reception of the pathogenic organism?

1. We shall not be able to answer this question by an appeal to the history of past epidemics. At the same time there are certain broad facts we are taught by a reference to such history, the knowledge of which will clear the ground for further inquiry. In the first place, we find that the pathogenic state is distinctly exceptional. Only once or twice in the history of the world has epidemic disease even appeared to threaten a universal prevalence. We find, too, in the constant association of famine with pestilence an indication that the pathological effects of starvation are in many cases the determining causes of the extensive incidence of epidemics. A similar pathological condition, but originating in the nerve-centres instead of in the blood, is brought about by licentiousness, while the auto-intoxication caused by sloth and gluttony has been found by experiment to be an equally potent factor in the incidence of zymotic disease. Both these factors have been at work in most pestilential periods. The earlier part of the fourteenth century preceding the Black Death was a time of unbridled luxury and debauchery. A reference to the "Decameron" of Boccaccio will convince anyone of this. He himself attributes the enormous mortality in Florence chiefly to this cause. It may also explain the greater susceptibility of Eastern nations generally than Europeans to plague and to cholera. The converse certainly explains the extraordinary longevity and healthfulness of the Jews both as a race and as individuals.

Coming to more recent records, the remarkable fact already mentioned that most of the greater epidemics of the last five centuries have been preceded by influenza, a disease the origin of which we have not yet been able to trace, again points to the conclusion that some preliminary cultivation is necessary before the human subject falls a victim to the onslaughts of pathogenic bacteria. The comparative infrequency with which these organisms run their virulent, and what we suppose to be their natural, course in the animal body is not in itself a proof that the latter is foreign soil. Waste, as we should call it, appears to be a part of nature's system. There are probably thousands of seeds, animal and vegetable, wasted to every one that grows. Still, it is consistent with its being so, and the frequency of this initial preparedness when they do run that virulent course is *primâ-facie* evidence that it is.

2. Nor is the evidence of clinical observation by any means conclusive. Few would venture to say offhand whether, *ceteris paribus*, zymotic disease attacks by preference the healthy or the unhealthy. Naturally most men would take the latter view, and they would be justified in doing so; but the apparent exceptions are so numerous that we are often staggered in our opinion. This, I believe, is partly due to an ancient superstition, not yet extinct even in our profession, which associates health with a florid complexion and a tendency to obesity. As a matter of fact the contrary is more often the case. Granted that in our present state of civilisation no man's sanitary condition is perfect, the pale, thin student, the active brain-worker and consumer of midnight oil, is a nearer approach to the perfectly healthy type than the red-faced, muscular, fox-hunting squire or the equally muscular agricultural labourer. On this subject I quote the words of a great observer of human nature, the High Master of St. Paul's School; he says: "I do not hesitate to say that if two boys start life together equally sound in constitution, and circumstances lead one to choose an open-air career of muscular exertion and the other the life of the study and the cultivation of the brain the student has the better chance of health and long life." Within the profession I have never yet heard this well-known fact so clearly stated. It is important to recognise it, for not until we can truly estimate the degrees of initial proximity to a normal standard, as well as the deviations caused by evil habits, modes of living, and hereditary tendency, can we even approach the question of receptivity from the clinical side. Meanwhile we are in possession of certain definite facts. We know the prevalence of epidemic disease after the depressing effects of influenza. We know—for we have excluded the possibility of pathogenetic evolution—that pneumonia constantly attacks those whose system is abnormally depressed by the effects of influenza, measles, &c., and even in many cases those whose normal habits of life are interfered with by enforced inactivity from accident. We know, too, that unless inoculated under the skin the syphilitic organism (as well as that of gonorrhœa) practically never invades the human system except when it is under the influence of the depression following an explosion of nervous force.

Heredity is another important factor in determining the incidence of disease. The susceptibility of some families to attacks of zymotic disease is truly striking. Such hereditary tendencies must have had an abnormal origin somewhere. In many cases it is not far to seek. I once knew a family the members of which appeared to catch small-pox on every possible opportunity independent of vaccination. Some were attacked twice, others three times, at intervals of five or six years. The father was a feeble, miserable-looking epileptic. Observation on a more extended scale shows that the children of drunken parents are more liable to attacks from prevailing epidemics and sink under them sooner than other people.[14] The above are both instances of known hereditary deviations from the normal standard. In other cases the tendency is seen, but its origin is lost in obscurity. We know, though we cannot account for, the remarkable elective affinity which seems to obtain between the typhoid and Klebs-Löffler bacilli and the members of our own Royal family. When any of these cases of illness have occurred numbers of other people without this special affinity have been subject to similar conditions, have lived under the same roof, breathed the same air, drunk the same water, eaten the same oysters, and, of course, have swallowed the same bacilli with impunity. In the *Practitioner* for August, 1898, Dr. Hector Cameron brings forward some striking instances of family tendency to diphtheria. In one case it was called "the disease of the family." In another, out of 23 descendants of one man 11 had diphtheria and 7 died.

[13] Experiments on Tubercle Bacilli (reported to the Royal Society) Brit. Med. Jour., April 23rd, 1898.

[14] London Medical Record, Jan. 15th, 1878, pp. 8, 9.

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In nearly all the cases there was no communication between the different families. Lastly, we have the well-established fact of the concurrence of zymotic diseases. This is not a matter of popular observation only, but has been worked out statistically by Dr. Barnes of Eye, in Suffolk,[15] not in large towns, where the constant presence of zymotic disease would confuse the results, but in a number of small country villages with populations of under 10,000 and where zymotic disease is only an occasional visitant. (Tables VI. and VII.) It is inconceivable that the microbes

TABLE VI.—*Combination of Diseases.*

Disease.	Estimated number of concurrences.	Actual number of concurrences.	Excess of actual over estimated concurrences.	Percentage of excess.
Small-pox and measles	77	124	47	61
,, ,, scarlet fever ...	141	177	36	25
,, ,, diphtheria ...	62	75	13	20
,, ,, whooping-cough	166	199	33	19
,, ,, fever	286	371	85	29
,, ,, diarrhœa	256	295	39	15
Measles and scarlet fever	115	159	44	38
,, ,, diphtheria ...	50	75	25	50
,, ,, whooping-cough	134	211	77	57
,, ,, fever	233	319	86	36
,, ,, diarrhœa	208	295	87	41
Scarlet fever and diphtheria ...	93	118	25	26
,, ,, whooping-cough	247	285	38	15
,, ,, fever	425	495	70	16
,, ,, diarrhœa	379	451	72	19
Diphtheria and whooping-cough	108	140	32	29
,, ,, fever	186	226	40	21
,, ,, diarrhœa	167	202	35	20
Whooping-cough and fever	499	587	88	17
,, ,, diarrhœa	447	522	75	16
Fever and diarrhœa...	770	1004	234	30

TABLE VII.—*Proportion of Non-concurrent Attacks.*

Disease.	Single occurrences.	Total occurrences.	Percentage of single to total occurrences.
Measles	89	612	14
Small-pox	140	754	18
Diphtheria	97	492	19
Scarlet-fever	248	1122	22
Whooping-cough	293	1315	22
Diarrhœa	501	2032	24
Fever	583	2268	25

of measles and diphtheria, for instance, should elect to travel about the country hand in hand to the extent of 50 per cent. in excess of their estimated probable concurrence. We are thus driven to the conclusion that the microbes of both diseases are constantly present in the air and that some insanitary condition renders each individual liable to fall a victim to the first microbe that crosses his path; in fact, that personal receptivity is the determining cause of the prevalence of both diseases.

3. There are many of the recent researches in bacteriology which have an important bearing on this question. Among the most striking are those of Poehl of Vienna.[16] He finds that tissue respiration is always abnormal in infectious disease and that infection is always preceded by auto-intoxication. The causes he gives are—(1) diminished alkalinity of blood; (2) insufficient supply of oxygen; (3) abnormal fermentation processes in intestine; (4) poisoning from without; and (5) retention of metabolic products. These experiments, if confirmed, seem to be almost conclusive. Remlinger, of the Pasteur Institute,[17] fed eight rabbits for ten days on cabbage soaked in water containing cultures of the typhoid (Eberth-Gaffky) bacillus. The bacilli were found in the fæces all the time, yet only three of the rabbits took typhoid fever. It is possible, then—and this I want to draw special attention to—for an animal to have typhoid bacilli constantly passing through the intestinal canal without contracting the disease. This, I maintain, is what continually takes place under perfectly normal conditions. Of a similar character and tendency are the experiments of Dr. Friedländer and Major Giles, I.M.S., on pneumonia.[18] The latter failed to inoculate some recently captured dogs, while the former succeeded with others which had been confined. On the other hand, Dr. Friedländer failed with his newly-caught rabbits, while Major Giles successfully inoculated some that had lived in the insanitary atmosphere of a rabbit-hutch. I must confess that I am not yet entirely converted to a belief in the bacterial origin of rickets. Yet the remarks of Mercoli[19] of Italy on his experiments accurately express what I believe to be the case with regard to other pathogenic organisms. Rickets he believes to be caused by streptococci and staphylococci. These, he says, are constantly found in children's mouths and are as constantly being swallowed. As long, however, as the alimentary canal is healthy nothing happens, but if it is out of order they enter the blood and affect the nervous system and epiphyseal ends of the bones, causing a form of chronic osteo-myelitis. Dr. Arthur Ransome,[20] in his experiments on tubercle bacilli, found that they were killed by daylight and fresh air, two normal conditions which ought to be everywhere present for this purpose. In their experiments on the typhoid bacillus Achard and Bensaude "have shown that the agglutinating substance may be absorbed by all mucous cavities when introduced into them, provided that such introduction produces lesions. If, however, the mucosa remains healthy it is not absorbed."[21] This statement is made as bearing on an extremely rare case reported by Castaigne in *Médecine Moderne* for Nov. 13th, 1897, of the agglutinating property of the serum being communicated to a child four and a half years old from the mother's milk. In this case, which appears to be almost unique, the child was previously suffering from non-typhoid gastro-enteric disorder, which accounted for the transmission.

In dead or decomposing organic matter the pathogenic bacteria can, as we know, be cultivated *ad libitum*. In a perfectly healthy living body, free from lesions, free from auto-intoxication, and with all the secretions in their normal state (*inter alia*, the saliva itself is a powerful bactericide),[22] I doubt if they would ever be able to reproduce themselves in a virulent form. In other words, we may conclude that the pathogenic microbe is powerless to cause disease in an ideally healthy subject; it requires for its development a soil prepared for its reception, and such a soil does not exist in any perfectly healthy organ or organism. A healthy organism is one in which the brain is in a constant state of normal activity. There may be external conditions of air, water, and surroundings which render such a condition impossible, but in most cases the onset of zymotic disease is the sequel to some individual defect, either hereditary or acquired;[23] some cause of depression of the vital powers, either temporary or permanent.[24] The ancient writers were, perhaps, not altogether wrong when they attributed disease, metaphorically, to the influence of some evil demon. It

[15] St. George's Hospital Reports, vol. vii., p. 59.

[16] Wiener Medicinische Wochenschrift, 1897, No. 4. Brit. Med. Jour., June 5th, 1897.

[17] Annales de l'Institut Pasteur, No. 11, Nov. 25th, 1897; Ibid. March 12th, 1898.

[18] On the Micro-organisms of Pneumonia, by Major G. M. J. Giles, Collective Investigation Record for 1884, p. 115.

[19] Brit. Med. Jour., April 23rd, 1898; Gazzetta degli Ospedali e delle Clin., Jan. 30th, 1898.

[20] Communicated to the Royal Society, Brit. Med. Jour., April 23rd, 1898.

[21] Ibid., Jan. 22nd, 1898.

[22] Ibid., Feb. 26th, 1898; Triolo: Revista d'Igiene e di Medicina Pratica, An. 2, N. 12, Naples.

[23] The remarkable health and longevity of those who practically spend their lives in foul and unhealthy sewers shows how little the freedom from zymotic disease is necessarily dependent on such external surroundings.

[24] It is possible that here we may have to make an exception in favour of small-pox. The incidence of small-pox prior to vaccination and among the unvaccinated has been found to be so universal that this disease appears to have acquired an affinity for the human subject which has become a part of its nature. The recent Act of Parliament for the propagation of small-pox will soon give us the opportunity of renewing our experience of this disease.

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would not be wrong to do so now. Of all such demons the most potent for evil is perhaps the demon of Sloth. It is Sloth which leads to ignorance and the neglect of all sanitary precautions. Individually, Sloth is the direct cause of auto-intoxication and the indirect cause of licentiousness and intemperance—all potent factors of susceptibility to disease. To this particular demon we are not, as a profession, especially liable, and we may congratulate ourselves that it is so. Indeed, we have some of us wished on occasion that we had rather more of it. But let us remember that idleness is not only an evil condition, but that it is an unhappy one. In the words of the great poet of the last century:

> "She mark'd thee there,
> Stretch'd on the rack of a too easy chair;
> And heard thy everlasting yawn confess
> The pains and penalties of idleness."[25]

If there is any danger of our ever lapsing into this state I hope it will be avoided by the mental work and food for thought which may hereafter be provided by the discussions and researches of the Chelsea Clinical Society.

FURTHER OBSERVATIONS ON A CASE OF TOTAL EXTIRPATION OF THE STOMACH IN THE HUMAN SUBJECT.

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(*Specially translated for* THE LANCET.)

ON Sept. 6th, 1897, I performed total extirpation of the stomach in the case of a woman, fifty-six years of age, suffering from diffuse carcinoma of the entire stomach. The continuity of the digestive tract was maintained by stitching a loop of the small intestine to the lower end of the œsophagus and in the results the operation was a complete success. An examination made by Professor Ribbert showed that the excised stomach was affected with small-celled alveolar glandular carcinoma (Kleinalveoläres Drüsenzellencarcinom) and that of the two incisions isolating its extremities one passed through the œsophagus and the other through the duodenum. The patient recovered completely and on Oct. 30th I was able to show her at the meeting of the Central Association of Swiss Medical Practitioners held at Olten. My published articles on this case of œsophago-enterostomy, together with observations on nutrition and digestion after complete removal of the stomach, appeared in the *Correspondenz-Blatt für Schweizerärzte* (1897, No. 23), in the *Beiträge zur Klinischen Chirurgie* (vol. xix., Part 3), in the *Medical Record* (New York, Dec. 25th, 1897), and in THE LANCET (Jan. 15th, 1898). On April 14th, 1898, Professor Krönlein exhibited the excised stomach at the German Surgical Congress held in Berlin, gave a short account of the subsequent condition of the patient, and drew particular attention to the fact that this case was the only one which could with absolute accuracy be described as extirpation of the stomach, on which account it was of entirely exceptional value for the study of the digestive processes which take place in the absence of the stomach.

There are several reasons which induce me at the present time, fully nine months after the operation, to draw up a comprehensive account of the further progress of the patient and of the investigations which have hitherto been made upon her. A period of observation extending over nine months would in itself justify an elaborate report. She was fit for discharge long ago, but we have been permitted to retain her in the hospital, where she is well taken care of and has suitable occupation. On the one hand, we attached great importance to the protracted careful examination of the case and to the prolongation of the chemico-physiological observations, while, on the other hand, the very straitened circumstances of a friendless woman, now fifty-seven years of age, gave reason for apprehension that at her own home she would hardly have the food she required, to say nothing of proper cooking. Unfortunately, the hospital regulations with respect to admission will make her early discharge inevitable, which is an additional motive for the drawing up of a clinical report. Moreover, some important series of observations have been completed.

[25] The Dunciad.

On Oct. 30th, 1897, hardly eight weeks after the operative intervention, the patient had so far recovered from her cachectic state that the long railway journey and the appearance in public at Olten were in no way injurious to her. Her weight had increased about 4·4 kilos. (9½ lb.) since the operation. Her condition at that time may be best judged of from a dietetic error which was committed with impunity before she appeared at the meeting, for she took advantage of her first liberation from hospital control to indulge heartily in vegetables (cauliflower). A few weeks later, at the end of November, her food differed little from the ordinary patients' diet, and her hours for taking it have since then been the regular mealtimes of the other inmates of the hospital. The few departures which have been made from the ordinary patients' diet have been occasioned principally by her completely toothless condition. For some months she has been wearing artificial teeth, but her power of mastication is nevertheless far from being good. She felt herself at that time perfectly well and was engaged all day long at work of various kinds in the wards.

The following diet lists, selected from those of different months in 1898, will give a good idea of the quantity and kind of food which she took in the course of the day. [The grammes and cubic centimetres of Dr. Schlatter's MSS. are here represented by their equivalents in ounces.] Jan. 17th: Milk, 33 fl. oz.; coffee without milk, 13 fl. oz.; 3 rolls; 3 eggs; soup, 3½ fl. oz.; fried sausage, 4 oz.; stewed apples, 7 oz.; whortleberries, 3 oz.; and claret, 7 fl. oz. Feb. 5th: Milk, 11½ fl. oz.; 3 rolls; 3 eggs; soup, 4 fl. oz.; sweetbreads, 10½ oz.; cauliflower, 7 oz.; and claret, 7 fl. oz. March 4th: Milk, 10½ fl. oz.; coffee without milk, 7 fl. oz.; soup, 4 fl. oz.; roast veal, 4 oz.; carrots, 14 oz.; 4 rolls; and claret, 7 fl. oz.

Her hours for meals and the amount taken on each occasion were usually as follows:—6.30 A.M.: coffee with milk, from 7 fl. oz. to 10½ fl. oz., and 1 roll. 9.30 A.M.: 1 egg, 1 roll, and 3½ fl. oz. of claret. 12 noon: soup; half the day's allowance of meat and vegetables or fruit. 3 P.M.: coffee with milk, from 7 fl. oz. to 10½ fl. oz., and 1 roll. 6 P.M.: the remaining half of the day's allowance of meat and vegetables. 5.30 P.M.: 1 roll and 7 fl. oz. of claret Her animal food generally varied between roast veal, Vienna steak, chops or cutlets, beefsteak, fried sausage, brain, sweetbread, and fowl. Along with it there was given either something made with flour, groats, or eggs, or, in the absence of this, peas, beans, carrots, potato soup, cauliflower, stewed apples, whortleberries, small plums, and such like.

The following table of the patient's weight at different periods will be the best proof of the excellent assimilation of her food. When she was shown at Olten on Oct. 30th, 1897, she weighed exactly 36 kilos. (79¼ lb.), having gained about 4 kilos. (8¾ lb.) since the operation.

Date.	Weight. Kilos.	lb.	Date.	Weight. Kilos.	lb.
1897.			1898.		
Nov. 19th ...	36·5 =	80¼	Feb. 23rd ...	37·9 =	83½
Dec. 3rd ...	37·5 =	82½	March 10th ...	38·1 =	83¾
,, 17th ...	37·0 =	81½	,, 24th ...	38·1 =	83¾
,, 31st... ...	36·5 =	80¼	April 7th ...	39·0 =	85¾
1898.			,, 22nd ...	39·3 =	86½
Jan. 12th ...	36·5 =	80¼	May 10th ...	40·0 =	88
,, 25th ...	37·0 =	81½	,, 24th ...	38·2 =	84
Feb. 9th... ...	37·5 =	82½	,, 28th ...	39·0 =	85¾

Her greatest gain in weight since my first public statement relative to the case, made on Oct. 30th, 1897, has therefore been exactly 4 kilos. (8¾ lb.), as observed on May 10th, 1898, being a total increase of 8·4 kilos (18½ lb.) since the operation. On two occasions there were considerable set-backs in the slowly-increasing series of weights. From the middle of December, 1897, to the middle of January, 1898, there was a reduction of 1 kilo. (2¼ lb.), caused by a severe attack of angina (i.e., tonsillitis or sore-throat) accompanied by high temperatures. The second fall in weight, recorded on May 24th, 1898, was the result of a serious error in diet. Some days previously the patient had eaten excessively of French beans; immediately after doing so she suffered from violent abdominal pain, and for several days she had no appetite. At the end of May her appetite and digestion regained their ordinary condition and her weight rose to 39 kilos. (85¾ lb).

Through her relaxed abdominal walls there cannot at present be felt either a tumour or a spot sensitive to pressure, so that there are no indications of a relapse. The only

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unusual sensation experienced by the patient is a feeling of pressure in the epigastrium and in both hypochondriac regions after a hearty meal. A quantity of milk amounting to 300 grammes (10½ fluid oz.) or upwards is quite capable of producing this feeling of pressure. The patient also says that she limits her meals from dread of these painful sensations of pressure or tension. Until a short time ago she asserted that she had quite lost the feeling of hunger through the operation, but these two statements do not agree well with one another. The promptings of hunger seem now to be resisted only for fear of the pains which follow too hearty a meal.

In my previous work I have touched upon the various functions of the stomach, which are of course in this case abolished. Dr. Wroblewsky, at that time chemical assistant in the Zürich Medical Klinik, has published his chemical investigations of the patient's urine and fæces in full in the *Centralblatt für Physiologie*, vol. xi., No. 91 (Jan. 8th, 1898); I am much indebted to him for the examination of these excreta undertaken immediately after the operation. He is disposed to regard the remarkably low figures representing the chloride of sodium contained in the urine as an argument in favour of Köppe's view relative to the production of hydrochloric acid in the stomach. According to this theory the hydrochloric acid is not formed from the chlorides of the blood and is not excreted by the gastric mucous membrane, but is formed directly from the chlorides of the food on the surface of the gastric mucous membrane by dissociation of the chloride of sodium and exchange of the sodium-ions and hydrogen-ions of the blood by a process of diosmosis. On account of the absence of gastric mucous membrane no hydrochloric acid is formed in this patient and only small quantities of the chlorides of the food are absorbed in the intestine, so that only an inconsiderable amount is excreted in the urine.

Hofmann,[1] who has in recent months made a series of valuable investigations of the metabolic processes occurring in our patient, does not accept Wroblewsky's explanation of the diminished chlorine in her urine. He was surprised at the retention of chloride of sodium, which, moreover, continued as long as his observations lasted. In addition to ascertaining the chloride of sodium present on each occasion in the separate samples of urine he also determined the total amount of chloride of sodium contained in the fæces, and found that the latter was quite normal in quantity, which proved that the chlorides were absorbed to the normal extent. Hofmann's explanation of the long-continued retention of the chloride of sodium is that the stock of it which is essential for the organism became exhausted during the preceding long period of partial starvation and has not yet been made up to its full amount, and that in particular the extra quantity of chloride of sodium which is, according to Voit, present in the blood of well-fed persons has not yet attained its previous standard. The diminished excretion of chlorine is therefore a favourable symptom in the present case, a proof that the organism is successfully endeavouring to bring its metabolism back to its original healthy condition. Both investigators found a remarkably high acidity of the urine, and both alike observed that the fall in the acidity of the urine which occurs normally after a hearty meal was completely absent in our patient. After dinner the urine is normally either very faintly acid, neutral, or even alkaline. Wroblewsky, however, on the contrary, found an acidity of from 18 to 20 per cent. and Hofmann an acidity even reaching 25 per cent. The difficult micturition after food, which was frequent with the woman, no doubt depended on this high acidity of the urine. The explanation of the fall in the acidity of the urine after food is to be sought in the increased excretion of hydrochloric acid in the gastric juice. In this case there is no production of hydrochloric acid, so there is no fall in the acidity of the urine.

The opinion expressed in my first published statement that the assimilation of the albumin of the food was normal notwithstanding the absence of the stomach, was not at that time supported by any exact determinations of the metabolism. The condition of the patient in the first weeks after the operation obviously did not permit the undertaking of such researches, tending, as they would do, to discourage variety in her diet. Wroblewsky's analyses of the fæces and urine yielded remarkably small amounts of nitrogen and consequently indicated an abundant absorption of albumin. Microscopical examination of the fæces showed not the slightest departure from the normal condition. Moreover, there was the fact that the patient had gained remarkably in weight since the operation. Hofmann has now by an exact estimation shown the results of the absence of the gastric digestion on the assimilation of the albumin of the food. His first series of researches extended over six days and was commenced on Jan. 4th, 1898, four months after the operation. On the first day 1400 grammes (50 fl. oz.) of milk and 5 rolls were given and on the five following days 1540 grammes (55 fl. oz.) of milk, together with the same number of rolls. The fæces corresponding to this diet were of normal aspect, firmly moulded, and appeared in from thirty-six to forty-eight hours after eating. From the nitrogen values obtained for it, which varied between 0·7 and 1·4, and were therefore quite within normal limits, it resulted that "the assimilation of the ingested albumin was very good and that the absence of the gastric juice which acts on albumin made no difference to the assimilation." Hofmann remarks further that "during the six days for which the research was continued the ingestion and excretion of nitrogen did not exactly balance one another, as would have been the case with this number of heat units in a healthy person of corresponding weight. There was a daily retention of nitrogen varying from 0·1 gramme to 1·14 gramme, amounting on the whole to 4·25 grammes and equivalent to 26·5 grammes of albumin and 725 grammes of lean meat (Muskelfleisch). During the six days occupied in the research no increase of weight could be satisfactorily recognised, so that this retention of nitrogen is to be explained as an accumulation of the circulating albumin, an improvement in the condition of the blood which had been greatly impoverished by the previous long-continued cancerous cachexia. The daily retention of, on an average, 0·53 gramme of chloride of sodium gives additional support to the opinion that an increase in the circulating albumin is taking place."

The second investigation of the patient's capacity for assimilation lasted nine days and was carried out a month and a half subsequently with a mixed diet, the daily allowance of which was as follows: 1200 grammes (43 fl. oz.) of milk, 150 grammes (5 fl. oz.) of bouillon with egg, 80 grammes (3 oz.) of fried sausage, 150 grammes (5 fl. oz.) of gruel, 2 eggs, 4 rolls, 20 grammes (¾ oz.) of butter, and 65 grammes (2½ oz.) of whortleberries. In this instance also the mixed diet proved itself to be very well assimilated, for the smallest amount of nitrogen excreted with the fæces was 0·41 gramme nitrogen in 11·6 grammes fæces, while the largest was 2·06 grammes nitrogen in 49·9 grammes fæces. These figures being quite normal demonstrate that, so far as this question is concerned, the absence of the functions of the stomach does not make itself seriously felt. Furthermore, an investigation of the conditions of assimilation of the fatty part of the food confirms my previous statements. With a daily consumption of fat averaging 84·5 grammes there was a daily excretion of fat averaging 4·64 grammes; the loss was therefore only 5·5 per cent. of the whole, so that the assimilation could not have been better under any circumstances.

Hofmann draws from these results the practical inference that it is a mistake to allow no more than the least possible quantity of food to patients suffering from chronic disease of the stomach, and that the failure of nutrition and strength manifested by such patients is in most cases brought about by the regimen to which they are subjected even more than by the disease itself. With regard to this inference it should be remarked that it can only find practical application when it is at the same time possible to shut off the affected organ from the digestive tract. To give the quantity of food ordinarily taken would hardly be an advantage, for it produces considerable mechanical irritation, especially in certain cases which have to be regarded from a therapeutic point of view, and it often will not pass from the stomach into the remainder of the digestive canal.

Although the previous daily examinations of the urine and fæces for putrefaction products enabled me to give a reply in the negative to the much-debated question whether the hydrochloric acid of the stomach has any influence or not over the processes of putrefactive decomposition of food products in the intestine, the more elaborate investigations made by Hofmann at a later period were nevertheless valuable to me. The food given to the patient during the earlier observations was selected with a definite object and was not particularly liable to undergo putrefactive changes. Hofmann ascertained the amounts of A and B sulphuric acids in the urine for fifteen consecutive

[1] Hofman: Observations on Metabolism after Total Resection of the Stomach, Münchener Medicinische Wochenschrift, No. 18, 1898.

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days. The patient's food consisted principally of milk, different kinds of animal food, three or four eggs, soup, gruel, and rolls; the quantity of milk was from 500 c.c. to 700 c.c. (17½ fl. oz. to 25 fl. oz.) and that of animal food from 100 to 150 grammes (3½ oz. to 5 oz.). On the third and fourth days she took 300 c.c. (10½ fl. oz.) of kephir (partially fermented milk) instead of 300 c.c. of ordinary milk in order that the subsequent fall in the ethereal sulphates might be watched. From the sixth day onwards she took in addition 50 grammes (1¾ oz.) of old Gervais cheese and afterwards about 30 grammes (1 oz.) of Liebig's peptone, substances abounding in putrefactive germs, albumin, and casein, from which a certain amount of increase in the putrefaction processes was to be expected. Finally, 20 grammes (¾ oz.) of butter were added, for with fatty diet there is an enhanced excretion of ethereal sulphates. From the comparison of his results it appears that the daily value of the ethereal sulphates varied between 0·086 gramme (on the first day of taking the kephir) and 0·165 gramme (on the second day of taking the peptone). By these figures it is proved that the entire absence of the gastric juice, charged as it is with hydrochloric acid, is without any influence on the extent to which putrefactive decomposition is developed in the intestine, since the values found for the (ethereal) sulphuric acid are less than those which occur normally (about 0·20 gramme). Hofmann concludes from this that it is useless to prescribe hydrochloric acid with the view of disinfecting the intestine, although this plan is often proposed and carried out in practice, for even the hydrochloric acid abundantly poured forth by the stomach, the quantity of which is not approached by the amount ordinarily prescribed, may be entirely absent without any increase in the putrefactive changes in the intestine.

I am indebted to Dr. Otto Veraguth of Zürich for a further series of valuable researches on theoretical and practical points, which researches he has in the kindest manner handed over to me for publication. In the year 1896 there appeared an article by Dr. Tschlenoff[2] the title of which was "Der zeitliche Ablauf der Stickstoffausscheidung im Harn nach einer Mahlzeit" (The Successive Stages of the Excretion of Nitrogen in the Urine after Food), and in which it was shown, contrary to what was previously supposed, that the excretion of nitrogen after the taking of food rich in albumin could not be represented by a line gradually rising and then falling, but that the curve of hourly elimination contained *two* maximum points, the first from two to four hours and the second from five to seven hours after the taking of the food; the first maximum is followed by an obvious decline and a subsequent rise to the second maximum. Experiments with peptonised food brought the first maximum very plainly into view. Dr. Tschlenoff believes that these facts must be explained on the assumption that the quick rise of the curve in the first two or three hours is due to absorption in the stomach and that its decline in the fourth and fifth hours is to be referred to the passage of the acid chyme into the intestine, where it is neutralised and digested, whilst the second rise of the curve is in connexion with the active absorption in the intestine.

From these results Dr. Tschlenoff drew the following conclusions: "Nitrogen determinations made every hour after taking food give us some insight into the conditions of digestion and absorption in the stomach and intestine respectively, since we can from inspection of the nitrogen curve recognise the separate action of the stomach and the intestine. The curves yielded by animal food and by peptone differ essentially from one another, for the peptone curves are almost entirely curves of absorption in the stomach. If the processes of digestion and absorption which take place in the stomach are disturbed the nitrogen curve loses its regular contour. Hourly determination of the nitrogen in the urine after the ingestion of ordinary animal food and of peptone may under certain circumstances be employed as a means of diagnosis in diseases of the stomach."

The importance of these questions induced Dr. Veraguth a short time afterwards to repeat and extend Dr. Tschlenoff's experiments, and the results obtained by him have appeared in the *Journal of Physiology*[3] under the title "The Effect of the Meal on the Excretion of Nitrogen in the Urine." In his first group of experiments Dr. Veraguth examined the urine every hour after the taking of food containing variable amounts of albumin. Without being affected by this last-mentioned circumstance the curve always assumed such a form that on an average the first maximum occurred in from two to five hours and the second in from four to eight hours. His experiments therefore confirm Dr. Tschlenoff's results, but Dr. Tschlenoff's explanation that the first maximum corresponds to an absorption of the albumin of the food by the stomach necessitated at the least a following up of the question according to a modified plan. Moreover, his opinion with respect to the amount of the absorption of albumin in the stomach is not in harmony with current scientific views. In a second group of experiments an attempt was therefore made to arrive at an exact analysis of the first rise of the curve by causing the person to pass urine at shorter intervals of about half an hour or a quarter of an hour after taking food containing amounts of albumin which varied from time to time, the underlying idea being that secondary (*reflectorische*) processes occurring in the body after food were very probably responsible in part for the form of the urea excretion curve. Harley's experiments with Mosso's ergograph have proved that there is an immediate increase of muscular power after taking food. Might not, therefore, the taking of food equally well give a secondary impulse to the metabolism as a whole and consequently to the excretion of urea and nitrogen in the urine? This conjecture made by Dr. Veraguth found its confirmation in the second group of experiments, but only to the extent that a quarter of an hour or half an hour after taking food a third rise in the curve was discovered, not so high as those already mentioned, but very constant. This rise can hardly be regarded as other than secondary, but the question whether this mysterious second elevation of the curve corresponded to absorption of albumin by the stomach was nevertheless as far as ever from being answered. Control experiments in a person without a stomach were therefore exceedingly valuable for the solution of this question.

Dr. Veraguth's description of his investigation has been placed at my disposal in the most disinterested way and may be re-stated here with a few abbreviations. "The patient passed urine at 6 A.M.; the urine was measured and a sample preserved. At 7 A.M. there was a second emptying of the bladder, measuring of the urine, and setting aside of a sample. Then the patient took her breakfast, consisting of eggs, rolls, and milk. At 8 A.M. she passed urine again, and so on until 12 noon, and on a subsequent occasion until 2 P.M. The observations were not at first carried further because the experiment, which in itself was harmless even for this particular individual, might have been made serious by longer fasting. It was only on the concluding day (May 20th, 1898) that they were continued to 4 P.M., which could be done without risk on account of the patient's remarkably good condition. In the intervals she drank tea without milk whenever so disposed in order to relieve her thirst and promote diuresis. Half-hourly or quarter-hourly collections of urine could not be arranged for as the patient was not equal to such frequent urination. The urea was determined by the Knop-Hüfner nitrogen method,[4] which consists in decomposing the urea into carbon dioxide, water, and nitrogen, by shaking a measured quantity of urine with solution of sodium hypobromite. The carbon dioxide and water are immediately absorbed by the solution, while the nitrogen remaining free is measured and is multiplied by the coefficient 0·002683 in order to calculate the urea. The volume of the nitrogen was not reduced to 760 mm. (30 in.) atmospheric pressure and 0° C. (32° F.) temperature, as the analyses were made within a moderate compass of time and therefore without important variations in the pressure and temperature. Dr. Tschlenoff has laid stress on the applicability of the method to these experiments, but as a matter of fact it is, when taken by itself, very inexact; in the present case, however, the object was only to obtain relative values—namely, the comparison of the quantities of urea from one hour to the next.

Observation I. (Jan. 29th, 1898).

Time.	Amount of urine.	Nitrogen.	Urea.
	c.c.	c.c.	Grammes.
6 A.M. (night's urine). (Then a cup of tea without milk.) ...	600	8·0	13·8
7 A.M. (breakfast: 2 eggs, 1 roll, milk)	—	—	—
8 A.M.	65	10·0	1·74
9 A.M.	100	1·8	0·48
10 A.M.	300	3·8	3·05
11 A.M.	100	6·0	1·00
12 NOON	45	8·0	0·94

[2] Correspondenz-Blatt für Schweizerärzte, 1896, No. 3. Dr. B. Tschlenoff of the Medico-Chemical Institute in Bern.

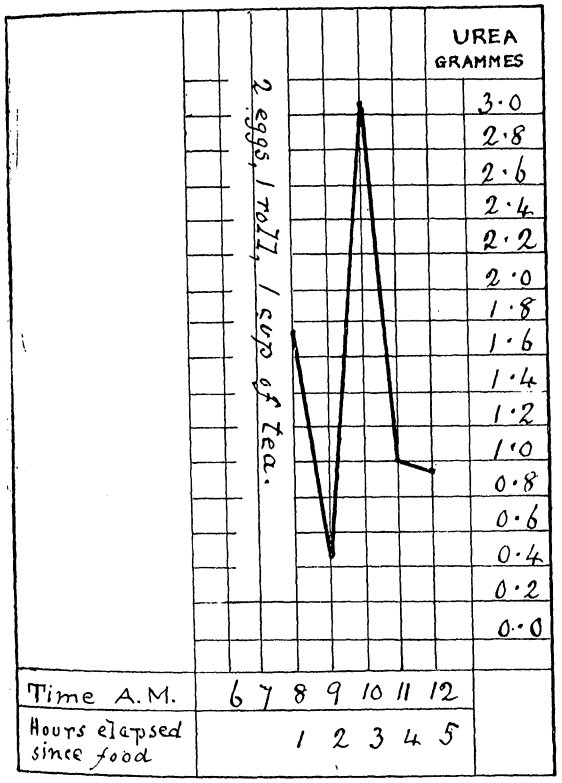
[3] Vol. xxi., Nos. 2 and 3, March 17th, 1897.

[4] Practically identical with the Russell-West process.—*Translator.*

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With a view to this experiment the patient drank a cup of tea at 6 A.M. in order to excite diuresis. At 7 A.M. she had her breakfast, consisting of two eggs, one roll, and about one-third of a litre (12 fl. oz.) of milk; it therefore contained a tolerably considerable quantity of albumin and casein. The night's urine, voided at 6 A.M., measured 600 c.c. and yielded 8·0 c.c. nitrogen, which corresponded to 13·8 grammes urea. Unfortunately the patient was not able to micturate again at 7 A.M., so that the next sample (collected at 8 A.M.) contained the nitrogen excreted immediately before and after the food. This, however, did not seem to have any important effect in vitiating the course of the curve, for it continued to descend during the next hour—the second since the food—the urea falling to 0·48 gramme. After that, however, in the third hour there was a sudden rise of the urea to 3·05 grammes, in the fourth hour a fall to 1·00 gramme, and in the fifth hour a further fall to 0·94 gramme. In other words, a patient whose stomach has been removed exhibits three hours after a meal a very decidedly increased excretion of nitrogen, followed by an equally obvious decrease, a sequence which appears to be usually the case also in normal individuals. (See Fig. 1.)

FIG. 1.



Curve showing hourly excretion of urea (Jan. 29th, 1898). Apparently the words "1 cup of tea" ought to be read as on the 6 A.M. line, and the words "2 eggs, 1 roll, milk" as on the 7 A.M. line.

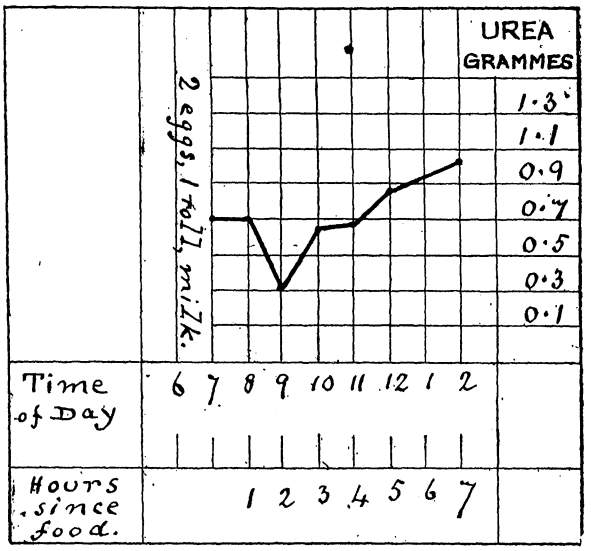
An account of Observation II. is not obtainable, as circumstances unfortunately prevented the work from being completed.

Observation III. (Feb. 16th, 1898).

Time.	Amount of urine.	Nitrogen.	Urea.
6 A.M.	115	?	?
7 A.M. (Breakfast: 2 eggs, 1 roll, 400 grammes milk)	105	2·5	0·70
8 A.M.	60	4·5	0·72
9 A.M.	600	0·2	0·33
10 A.M.	300	0·8	0·65
11 A.M.	100	2·5	0·67
12 NOON	80	3·8	0·81
1 P.M. (Tea)	—	—	—
2 P.M.	100	4·0	1·07

The food in this case was the same as in the preceding one, and in it similarly there was after the second hour a sudden change of direction in the previously falling curve, which did not fall after that period, but maintained itself at the same level during the fourth hour, subsequently rising until the observation was concluded at 2 P.M. Unfortunately the patient did not micturate at 1 P.M., so that whether this rise was really uninterrupted or not must remain an open question. (See Fig. 2.)

FIG. 2.



Curve showing hourly excretion of urea (Feb. 16th, 1898). Apparently the words "2 eggs, 1 roll, milk" ought to be on the 7 A.M. line.

It will be seen that although the amounts of albumin ingested in Observations I. and III. were similar, yet the curves show that in each case taken by itself very different quantities of nitrogen were reported—a discrepancy which has been pointed out in previous investigations under normal conditions of the alimentary canal. The essential thing, however, to be kept in mind just now is the fact that in this case, exactly as in a normal individual, the elimination of nitrogen undergoes a notable increase two hours after meals.

Observation IV. (May 20th, 1898).

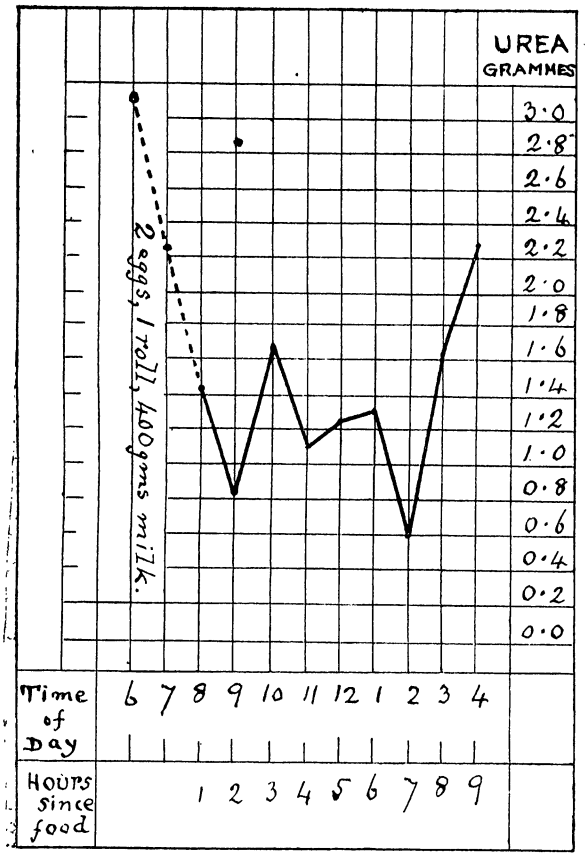
Time.	Amount of urine.	Nitrogen.	Urea.
6 A.M.	100	11·5	3·08
7 A.M.	80	11·4	2·23
8 A.M.	65	8·1	1·41
9 A.M.	75	4·2	0·84
10 A.M.	105	6·0	1·68
11 A.M. (One cup of tea.)	80	5·3	1·14
12 noon	90	5·1	1·23
1 P.M.	70	7·2	1·32
2 P.M.	110	2·2	0·59
3 P.M.	135	4·5	1·63
4 P.M.	170	5·0	2·28

The food taken on that day agreed exactly with that which was taken during the previous observations, consisting as it did of two eggs, one roll, and 400 grammes (14 fl. oz.) of milk; at 11 A.M. the patient drank a cup of tea. Urine was passed hourly till 4 P.M. It might perhaps be thought that by reason of their too short duration the foregoing observations had not given absolutely unequivocal curves, for the increase of urea appearing in them from two to three hours after food ought, in an individual who had no stomach, to correspond not to Dr. Tschlenoff's first maximum but to the second maximum, which he supposes is due to absorption in the intestine. However this may be the present curve leaves nothing to be desired in respect of clearness, that is, in respect of agreement with the curves obtained under normal conditions. In

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the third hour after food it rises to a first maximum, then sinks with oscillations to the seventh hour, and in the eighth and ninth hours rises suddenly to a second maximum. In other words, it is an excellent copy of Dr. Tschlenoff's curve. (See Fig. 3.)

FIG. 3.



Curve showing hourly excretion of urea (May 20th, 1898). Apparently the words "2 eggs, 1 roll, 400 gms. milk" ought to be read as on the 7 A.M. line.

This patient's case must therefore be taken as proving with absolute certainty that the successive stages of the excretion of nitrogen in the urine after food are quite independent of gastric digestion, because removal of the stomach from the digestive tract does not cause the excretion curve to deviate in any way from those which are obtained under normal conditions.

Notwithstanding these extremely instructive observations on our patient, it unfortunately still remains an open question which organs give the curve of nitrogen excretion its characteristic form. This much, however, is certain, that the stomach is not responsible for it, that Dr. Tschlenoff has not given the right interpretation to his very interesting results, and that hourly determination of the nitrogen in the urine after taking meat and peptone is not to be relied on as a means of diagnosis. It is to be hoped that Dr. Veraguth's indefatigable exertions in this field of inquiry may very soon supply incontestable scientific evidence to confirm his hypothesis relative to the excretion curve of nitrogen.

Postscript by Dr. Schlatter.—After the completion of the foregoing observations I received news of another successful case of total extirpation of the stomach. Induced by the account of my case which appeared in the *Medical Record* (New York) of Dec. 25th, 1897, Dr. Charles Brooks Brigham of San Francisco on Feb. 24th, 1898, removed an entire stomach affected with carcinoma, the patient being a woman sixty-six years of age.[5] He succeeded in uniting the duodenum to the œsophagus. Seven weeks after the operation the patient's condition was in every way satisfactory.

[5] Case of Removal of the Entire Stomach for Carcinoma; Successful Œsophago-duodenostomy; Recovery. Boston Medical and Surgical Journal, May 5th, 1898.

A CONTRIBUTION TO THE SURGICAL TREATMENT OF PHTHISIS OF THE APEX.

BY NORMAN PORRITT, L.R.C.P. LOND., M.R.C.S. ENG.,
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THAT phthisis may be treated surgically has been the hope of many besides the writer of this article; and when the natural history of the disease is studied, when its physical signs are considered, when some of the cases which have been seen are recalled to mind and the subject is illuminated with the light of clinical experience, and when the lessons of the post-mortem room are learned aright, it is felt that the hope is not altogether unjustifiable. For above all things phthisis is a curable disease. One is too apt to look upon it as a hopeless affection, less to be dreaded tha cancer perhaps but for its ultimate result equally to be feared. But not only does phthisis respond to treatment as readily as most other affections, but much more readily than many, whilst the records of the post-mortem room show that many phthisical lesions of the lung end in actual cure.

The achievements of surgery have put beyond question the curability of tubercle. Even diffuse abdominal tuberculosis is curable in a number of cases by a simple surgical operation; and no message comes to us in clearer language than that which tells us that it is to local treatment we must look for our greatest triumphs over tubercle. From the joints, the cervical glands, the viscera, and the peritoneum the message comes with unwavering certitude and emphasis. Moreover, we have in the lungs a local condition which explains not only why so many lung lesions heal and so many cases of phthisis show such remarkable improvement, but a condition which is one of the best auguries for the after-success of any local operative measures. For readiness to heal wounds of the face are pre-eminent, the explanation being that the blood-supply of the face is so lavish—lavish in the freedom of anastomosis as well as in the supply of vessels. But the lavish blood-supply of the face is not to be compared with the exuberant network of the lungs. The tendency of all lung lesions is to heal, and for that tendency they have to thank the prodigality of their blood-supply. The tendency of lung lesions to heal is constantly exemplified in all but cases of acute phthisis. Some time ago I wrote the death certificates of two cases of phthisis which had been under my observation more or less for between five and six years. In each case the whole of that period was marked by periodical disablement and recovery of the patient. From some cause, perhaps a chill, the patient would be confined to his bed or room and after a variable period would emerge to take up the duties of life as before. So complete, indeed, were some of the recoveries from these exacerbations that the patients believed themselves quite well until a further breakdown disillusioned them. This characteristic of phthisis is too common to need any other remark than that the more acute the disease the less marked are the remissions or, as I prefer to call them, the attempts at healing. But for this tendency on the part of the lung to heal few cases of phthisis would survive many months, and hæmoptysis would be one of the most fatal and dreaded events. But when on examining a case of phthisis we find flattening of the chest-wall from retraction of the ribs and interspaces, we know that whatever may be the destructive process which is going on within, a degree of healing—not perhaps sufficient to cure the disease and bring the case within the category of the cured, but enough to postpone the fatal event and give the patient a few more years or months of life—is taking place; for sinking of the chest-wall is the inevitable result of the shrinking of the lung. A destructive and a reparative process are going on side by side. On the one hand there is loss of substance; on the other hand, healing and contraction of the cicatrix, if I may be allowed to use the word in this connexion. That the process is as much reparative as destructive is evident from the extreme contraction sometimes seen. In the case of a woman, aged twenty-nine years, who came to my out-patient room on Feb. 26th, 1895, the whole of the upper part of her right chest in front above

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the fourth rib was shelving and flattened. Over the whole of the area indicated quite up to the sternum was a deep depression, the sternum being very prominent and the joint between the body and the manubrium quite pointed. This area was quite dull, and even on deep inspiration there was very little movement in it. Except at the extreme apex where the breathing was tubular and amphoric, the respiratory sounds were very faint, with prolonged expiration. The patient gave a history of three years' illness, and it was not the right lung which caused her to seek aid, but the outbreak of phthisis in the left. I saw this patient on only one other occasion, and I assume that the trouble in the left lung soon incapacitated her from further attendance, notwithstanding the desperate attempt made by the right lung to heal and cure itself.

Having learnt, on the one hand, that lung lesions heal and, on the other hand, that they make attempts which end almost in success, we shall not be surprised to learn that surgeons have endeavoured to give them additional help by applying to them principles successful in other parts of the body. The measures adopted may be divided into excision of portions of the diseased lung and opening and draining of cavities.

Dr. Lowson of Hull has excised the right apex of the lung of a woman, aged thirty-four years,[1] and the patient recovered with a sinus. I am not aware that he or anyone else has repeated the operation in the human being, and many additions to our experience and knowledge of pulmonary surgery will have to be made before such an operation, with its obvious risks, can find a place among orthodox surgical procedures.

And when we turn to the treatment of phthisical cavities we are met by difficulties which, even at the present time, cannot be said to have been surmounted. In theory beautiful and simple, the attempt to open and drain a pulmonary cavity is in practice difficult and uncertain, for the determination of the character of an excavation of the lung must be as precise as the definition of its position must be exact. It may answer the requirements of the physician to put his finger on the chest wall and say the cavity lies here. Whether it does or not no harm is done, and the efficiency of his remedies will not be jeopardised. But a mistake of half an inch in the location of a pulmonary cavity may foil a surgeon and baffle all his efforts; and even if he hit the excavation he may find that he has opened not a cavity, but a honeycombed space which it is impossible properly to deal with in the cramped narrow space within which he has to conduct his manipulations, even though some of the ribs may have been removed. If a cavity is near the surface, if it is a cavity and not a molecular breaking down of the lung, if its limits can be clearly defined and the information gained by physical examination can be confirmed by the use of the exploring needle, it may be within the scope of successful surgical interference. But few phthisical cavities realise this ideal condition. More than one attempt to reach phthisical excavations at the apex are recorded in the medical journals with barren results, for it would seem that the conduction of sounds through the lung has caused physicians to locate and operators to cut down upon places where no cavity was. Moreover, in most phthisical cavities the exploring needle gives no help; the ribs are an ever-present hindrance, and notwithstanding the admirable results of Mr. Godlee, I think we may sum up this section of our subject with the conclusion that the treatment of phthisical lesions of the lung by drainage is an attempt to attain that which with few exceptions has thus far proved to be the unattainable.

On one point, however, I have no doubt, and that is that if drainage of cavities of the apex is to be successful it will have to be undertaken, not from the front, as has hitherto been the case, but from behind. If an incision be made above the scapula over the most prominent part of the ribs portions of the second and third ribs are easily removed, and the finger finds itself in a cavity the roof of which is formed by the first rib with the pulmonary apex below it. This is the most direct and sure route to the apex of the lung. But comparatively easy as the operation is on the dead body it is, from the depth and confined limits of the wound, impossible in the living subject to deal with the affected lung. I have twice attempted to do so without success. We see, therefore, that the help the surgeon has been able to give to phthisical lungs is insignificant compared with the inherent power of the lung to help itself. Drainage has been a comparative failure, and the removal of a diseased portion of lung is not an operation which can be considered within the practicable bounds of accepted usage. It is evident, therefore, that any new procedure must be upon fresh lines.

We have seen that not only can phthisis be cured, but that it makes prodigious attempts to cure itself. Let us try to discover—if we can—why it so often falls just short of doing so. Why does the lesion, surrounded as it is with an abundant supply of nutritive material, not heal? I venture to suggest that the reason, the reason of all, is a mechanical one. The damaged and diseased lung shrinks as far as it can, drawing in the ribs and distorting the chest in the manner which is familiar. If the lung were surrounded with a wholly fleshy case instead of a rigid bony framework we should have many more examples of healed phthisical lesions to add to those found in the post-mortem room. The lung becomes adherent to the chest wall and the unyielding ribs hold the walls of the cavity apart. We see nature—I use the word for want of a better—doing her best, the lung contracting as far as it can and the phthisis becoming for the time arrested. Some cases, such as that of my out-patient previously referred to, would heal but for the ribs, and I venture to think that this is an instance where we ought to return the lead which nature gives us and endeavour to place the lung in such circumstances that the healing process may be carried to the fullest possible extent. I propose, therefore, that portions of ribs should be removed both back and front from the upper part of the chest. Two soft, yielding surfaces are formed with a loose length of rib between. The area from which the portions of rib are taken is now free to follow the contracting and healing lung, whilst the floating pieces of rib can be drawn bodily towards the spine or in any other direction that the shrinking lung takes. They are, in fact, loose fragments lying upon the soft tissues instead of, as before, part of a hard framework supporting and holding the soft, fleshy structures. I have now done the operation in three cases and have suggested it in a number of others, but when the almost inevitable improvement has begun most of the patients have been glad to shun the bugbear of an operation, being buoyed up with the fallacious hope that they were getting better. Three patients gave their consent to operation and afterwards withdrew it, and in the case of others disease in the other lung supervened before I saw my way to make definite proposals for the operation.

CASE 1.—A man, aged sixty-five years, was admitted to the Huddersfield Infirmary on July 7th, 1893. He was a thin, spare man with a fresh-looking, healthy complexion. Nine months previously he caught a cold and had had a cough, with spitting of thick, yellow phlegm, ever since. For some years he had been short of breath. There was no pain. He spat most freely from 6 to 9 A.M. There was no hæmoptysis, but he had lost weight during the last nine months, whilst the appetite had been very poor. With regard to the chest the right side was flattened, especially in the infra-clavicular region. Expansion on both sides was poor, especially on the right. On the right side, except over the second rib in front, there were impaired resonance, especially at the apex, with feeble breath sounds, and over the middle and lower lobes coarse crepitations. In the regions of the second rib the resonance and vocal fremitus were increased. On the left side there was vesicular breathing throughout, with marked and prolonged expiration. The heart was healthy. On July 10th the anterior portions of the second and third ribs were removed through an opening in the pectoralis major along the course of the second rib. A drainage-tube was inserted from the axilla. Portions of the same ribs were removed from behind through an oblique incision at the posterior and upper part of the upper aspect of the chest. The patient bore the operation well and the drainage-tube was removed on the third day. He was discharged on Nov. 3rd, four months after his admission. His long stay in hospital was caused by the continued suppuration of the cavity below the pectoral muscle. No dressing seemed to check the too abundant discharge and the patient would not for a long time consent to a further surgical operation, and when at length he did so and the wound was opened up a piece of gauze, which had found its way into the wound cavity unperceived, was found. On its removal the wound slowly healed. On leaving the hospital he was ½ lb. heavier than on admission. He attended periodically

[1] Brit. Med. Jour., June 3rd, 1893.

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as an out-patient till July, 1895, when from increasing weakness he was unable to make the journey of 10 miles to the hospital, with a walk of over 2 miles between his home and the village station. On Nov. 6th, 1895, two years after he left the hospital, I saw him at his home. He looked greyer and thinner. The pulse was 84 and of fair strength, the respirations were 27, and the temperature was 98·9°F. He was spitting thick, muco-purulent, stiff phlegm, in which there was no blood. He slept badly and coughed a good deal, but it was not the cough which interfered with sleep. As to his chest, immediately below the right clavicle was a quadrate gap measuring 4½ in. across and 4⅜ in. from above downwards. When he inspired this gap did not move at all. The supra-clavicular space was sunken and dipped down behind the clavicle obliquely—almost perpendicularly if he stood up—1⅝ in. The hand sank behind the clavicle into this hollow in a remarkable manner. Near the shoulder the gap below the clavicle was no bigger than on the opposite side; but, unlike the other side, on which the rounded barrel of the chest at once came to the front, the gap sank till near the sternum. The movement throughout this lung was very small indeed, and in the gap there was none at all. The first rib could be felt most perceptibly bordering it, with a rounded prominence at the extreme inner and upper corner. It was difficult to decide whether there had been renewal of bone after the removal of the portions of ribs. The whole floor felt hard, but there was no continuation of any ribs from either of the cut ends. The pectoralis major seemed adherent throughout, but this was probably due to the long-continued suppuration from the retained dressing and ought not to occur in another case. The depth of the cavity, ascertained by measuring from a sheet of stiff paper laid across it, was exactly 1 in. Percussion over the whole of the upper part of the right lung gave a dull note. There was increase of fremitus as well as of vocal resonance, especially in the middle of the cavity. Behind, the right lung was completely dull above the spine of the scapula, and below the resonance was much impaired. Râles and rhonchi were heard over the lower part of the right lung, but above the level of the lower margin of the parietal depression no breath-sounds could be heard. The left lung was hyper-resonant except at the extreme apex, where it was dull, and bronchial râles were heard pretty generally all over it; in addition there was cavernous breathing for a space of three fingers' breadth below the dull area at the apex. The patient died on May 13th, 1896, having lived six weeks short of three years after the operation. As I did not hear of his death till several weeks afterwards no post-mortem examination was possible. Nor had I the opportunity to take a plaster cast of the condition of the chest, for the patient would not permit me to do so during his lifetime. I regret this the more as words cannot convey an adequate impression of the remarkable condition to which it attained. I can only say that neither before nor since have I seen anything approaching it, the depth of the gap and its absolute immobility during respiration being scarcely conceivable.

CASE 2.—A girl, aged fifteen years, was admitted to the Huddersfield Infirmary on Dec. 11th, 1896. Four months previously she had vomited "enough blood to fill a two-pint jar" and was in bed for a month. Since then she had had night sweats, loss of flesh, and cough without much expectoration. Her father was dead, but the patient had not been ill before the present illness. There was dulness in the left infra-clavicular region, with coarse râles over the whole of the left side and marked tubular breathing near the apex of the left lower lobe behind. Both apices expanded indifferently, whilst the respiration generally was markedly abdominal and the movement of the chest on respiration was much impaired. At the inner end of the right clavicle cog-wheel breathing with a few moist râles were heard. On Dec. 13th portions of the four upper ribs were removed. An oblique incision was first made beginning between the spine and the upper part of the scapula and with much difficulty portions of four ribs were removed. The pleura was opened several times. Through an incision along the lower margin of the pectoralis major portions of the second, third, and fourth ribs were removed from the front of the chest. The patient bore the operation badly and on the second day incessant vomiting came on and she died the same day. No post-mortem examination was allowed. In this case I think I unwittingly took away a portion of the first rib posteriorly and probably injured some of the important nerves passing over it.

CASE 3.—The patient was a man, aged forty-seven years. He had been very unsteady, had had influenza three years ago, and had not been well since. For a year he had been attending as an out-patient. His shoulders were rounded and he complained of cough and loss of flesh. The left side of the chest was flattened in front, with dulness from the supra-clavicular region to the cardiac area. Behind there was dulness on the left side from the seventh cervical to the fourth dorsal vertebra. Over the dull area the breath-sounds were diminished and there was cog-wheel respiration over the lower part of the left lung and at the right apex. On March 29th, 1897, ether was administered and through an incision along the lower border of the pectoralis major portions of the second, third, and fourth ribs were removed from the left side of the front of the chest, the ribs being divided as far back as possible in the axilla. The patient took ether very badly and the removal of portions of rib from behind was deferred. There was a good deal of pain after the operation, and on the following day the temperature went to 104·4° F., but the wound when dressed the following morning looked well and the patient complained of nothing but a somewhat troublesome cough. On April 5th he began to ramble at night, signs of pneumonia at the left base subsequently developed, and he died on April 12th. At the post-mortem examination 3 oz. of pus were found in the left pleural cavity. The left lung was adherent throughout and its lower lobe was a mass of red hepatisation. The wound cavity was unhealed and much shrinking of the lung had taken place already.

In the last two cases the anterior incision was made along the lower border of the pectoralis major and the portions of ribs were removed from beneath the muscle. This, however, is a more difficult plan than that of cutting through the muscle straight down to the rib. Nor should I again begin at the posterior aspect of the chest. The ribs approach very close to each other here and it is difficult to apply either cutting forceps, rib shears, or saw in the narrow interspaces. After the ribs are divided in front they move much more readily and the insertion of the blade of the forceps or shears is facilitated. The death of the patient in Case 2 was, I think, attributable to the difficulties encountered by attempting to deal first with the posterior aspect of her chest. She was a delicate girl, not well fitted to bear an operation, which proved unexpectedly tedious as well as dangerous from the admission of air into the pleural cavity and probable interference with important structures in the neck. In subsequent cases these dangers ought to be, and can be, avoided. The patient in Case 3, who died a fortnight after the operation, was a broken-down, dissolute man, who was cast off by his friends. I had suggested the operation to him nearly a year before he had it done. He was not a good subject for any operation, and I did it at his own request, after explaining to him that I could not promise that he would survive the ordeal.

In the case of the other patient (Case 1) there can be no doubt that the operation prolonged his life, whilst the local effects upon the chest and its contents show that the theoretical aim of the operation is capable of practical attainment. After leaving the infirmary the man went back to his home and received only the attentions to be obtained in the home of a cottager in the humbler walk of life. The case was one of fibroid phthisis and not one of tuberculosis, and whilst it may be premature to draw the conclusion that a case of tuberculous phthisis would show so marked a degree of contraction after removal of portions of ribs the case proves that where fibrosis is going on the ribs are an obstacle which will check its fullest possible development. And when we remember how large a share fibrosis has in the arrest of chronic tuberculous phthisis the result attained in the case of my patient suggests that a method lies before us of making the degree and effects of fibrosis still more complete and beneficent. By allowing this process to have fullest scope we strangle the disease by cutting off its blood-supply, and the operation may be compared in its mode of action to the treatment of a growth by ligaturing the vessels. Moreover, the effects of the check to the blood-supply of the lung and the physiological rest which the affected area receives are augmented by the state of functional inactivity to which the area of lung is reduced. The portion of lung, in fact, ceases to be of any use as lung, is brought into a carnified condition, and merely fills the space of the body and chest which it occupies. No attempt whatever is made to touch the lung. The operation is entirely extra-pleural.

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It is an operation which can be done deliberately and all the manipulations are conducted within sight. Removal of ribs has been practised for long-standing empyema, and in suitable cases is a useful procedure, though the *rationale* of the operation in phthisis and empyema is not quite similar. In empyema portions of ribs are removed from the wall of the cavity so that the chest may meet the pleural surface of the healthy lung and the lung ultimately re-expand. In removal of ribs for phthisis the object is to promote the contraction of an already cicatrising lung. When air is admitted to the pleura the lung as a rule collapses and carnifies. The lung may be compared to an indiarubber cricket-ball permeated with air and constantly tending to return to its solid state. If it were not for the ribs the act of respiration and the pressure of the atmosphere would reduce the lung to a semi-solid mass. And we know from cases of atelectasis in the newly born when once the process has begun how quickly it goes on to a fatal issue. When adhesions have obliterated the pleural cavity—as they do in most cases of phthisis—removal of the ribs brings this atmospheric pressure to bear almost directly upon the lung beneath, and in addition to the contraction of the lung itself we have the additional aid of atmospheric pressure to ensure the collapse of any healthy lung which may be present around the focus of the disease.

It is not necessary to touch the first rib, and possibly the fourth may be left. Phthisis rarely begins at the extreme apex of the lung, and the shrinkage which will take place after the removal of portions of the second, third, and fourth ribs will be enough for the purpose. In the successful case the apex has fallen in at least one inch. Now an inch of contraction of the apex is worth two or three inches over the middle lobe. If in this narrow strip of lung we can get an inch of contraction—in young subjects with more supple tissues we ought to get more—we place the lung in those circumstances which are favourable to the fullest possible measure of the curative contraction.

Phthisis is usually spoken of as most commonly occurring at the apex of the lung; in other words, at the upper part of the upper lobe of the lung. In this connexion it is important to remember the wide area of the upper lobe which comes to the front. The right upper lobe in front fills the space between the clavicle and the diaphragm, whilst the upper lobe of the left side dips down for a very considerable distance into the axilla. We are apt on hearing the physical signs of phthisis extending more or less generally over the front of a patient's chest to assume that the whole of the lung is involved. But this is by no means necessarily the case. If we find at the posterior aspect evidence of disease only at the upper part of the lung we may be tolerably sure that one lobe only is implicated and that the disease has not spread to the body of the lung. This anatomical fact would explain those apparently hopeless cases of phthisis which, to our surprise go on from month to month and even from year to year, when according to the physical signs dominating the front aspect of the chest they ought to have been dead long ago.

Having seen, on the one hand, the help which we can give a contracting portion of lung by removal of the ribs over it, we see now that we have the very part of the lung prone to phthisis almost beneath the ribs which are most easily dealt with. Desirous to ascertain what extent of lung surface could be easily exposed I examined the body of a woman who, with the exception of a fibroid tumour and ruptured pyosalpinx, from which she had died, was healthy. The trachea having been tied 2½ in. of the second, third, and fourth ribs were removed, beginning close to the cartilages. An area of 2½ in. by 5¾ in. was exposed, reaching from the clavicle above to the lower limit of the chest below, for the upper border of the fifth rib was the boundary of the area below. The first rib projects so little upon the front of the chest as to make but an insignificant encroachment upon the exposed space. With the lung still *in situ* the outline of this space was marked upon it with a knife and the lung was then removed. It was not difficult to understand, after examining it, that the removal also of portions at the back of the apex would leave the affected part of a phthisical apex free scope to contract to an extent sufficient to permanently arrest the disease.

We have to remember that by encouraging carnification we are bringing about a condition unfavourable to the development of tubercle. It is said that tubercle rarely attacks a lung compressed by fluid in the pleura and by promoting the contraction and collapse of the affected lung we are putting the lung into a state less favourable for the development of tubercle than it is naturally, for the lavish blood-supply is a sword with a double edge—it hastens the spread of tubercle as well as supplies the nutritive material for the healing forces. On the other hand, whilst carnification and cicatrisation of the lung are destructive of tubercle by modifying the soil in which the tubercle is planted, they do not interfere with the healing process, because they are an integral part of it.

Writing three years after the date of my first operation Dr. Stuart Tidey,[2] in proposing strapping of the chest in cases of phthisis, says: "The suggestion to strap the chest in phthisis is invariably met with the objection that one of the objects of treatment in that disease is to expand the chest and so call into play portions of lung which in conditions of sub-active health take little or no share in the respiratory process. This objection does not recognise the change in the mechanical conditions of respiration produced by diseases of the lung substance. In health the respiratory capacity of the lung is commensurate with the semi-circumference of the thorax. The diseased lung may be regarded as decreased in bulk, so far as function is concerned, by the amount of lung tissue involved, and it follows that the best mechanical conditions of respiration will be secured by reducing the thoracic cavity in proportion to the reduced bulk of lung. Natural processes tend to secure these conditions, but only lead to complete cicatrisation when the disease is of a very limited extent. We then find clinically a flattening of the chest wall, dislocation of adjacent organs or hypertrophy of the opposite lung, and anatomically a cicatrix, bands of fibrous tissue, a puckered lung surface and thickened pleura—all evidences of natural effort to fill up space originally occupied by healthy active lung tissue. Natural processes are unable to overcome the mechanical obstacles to complete cicatrisation when the disease involves more than a small maximum of lung tissue. ..... The obvious indication, then, is to aid the natural processes of repair by reducing the thoracic cavity, thereby relieving them of the work of strenuous, prolonged, and often inefficient cicatricial traction. In so far, then, as the inflammatory element in phthisis is concerned rest and relaxation of the inflamed tissues seem indicated and essential to the healing process. Comparative rest of the lung may be secured by keeping the patient at absolute rest day and night, but this system has obvious disadvantages, while it fails to fulfil the local indications of rest with relaxation. The English school aims at developing the latent resources of the lung so as to compensate for the loss of respiratory surface, while placing the patient under conditions inimical to the extension of the specific element of the disease and promoting general nutrition. In extreme cases where this object has been attained one finds an immense development of the base of the lung with extensive cavitation towards the apex. ..... Such cases suggest how much better it would have been if the compensatory hypertrophy had extended inwards instead of outwards so as to have invaded and occupied the excavated region." Dr. Tidey put his views to practical effect by strapping the lung, and he relates four cases all of which were greatly benefited by his method of rendering the lung functionally less active.

His results may be fairly claimed as a recommendation of the more radical procedure of attaining the same end by removing portions of rib to allow the fullest scope for those curative processes to which Dr. Tidey refers. Dr. Tidey concludes his paper with words which deserve to be well weighed: "I do not propose this method as a cure for phthisis, but as an essential element in the treatment of that disease directed against the inflammatory lesion, an element which will greatly enhance the value of specific and climatic treatment and without which those methods will be powerless to restore an extensively damaged lung to a condition of mechanical integrity. The latter essential is now habitually left to natural conservative processes which are inadequate to fulfil it when the lesion is extensive and only does so with difficulty when it is limited."

If the removal of portions of ribs by allowing contraction of the diseased portion of lung scotches, but does not absolutely strangle, the disease, it is worthy of consideration. Many men in the colonies who have gone out phthisical are going about at this day with damaged lungs, lungs with disease still in their apices, but innocuous and quiescent, and by promoting the formation of a case of

[2] Brit. Med Jour., March 21st, 189[illegible]

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protecting tissue around the focus of the disease we may, perhaps, bring our patients into a similar state to those who go about their daily work in the colonies with disease in their lungs. But we shall, at any rate, do much to prevent absorption; we shall make the lung almost functionally inactive at the diseased spot and do something to prevent that most common and fatal occurrence—the lighting up of disease in the opposite lung. If we do this then I think the operation is justifiable—as justifiable as, if not more justifiable, than operation for cancer, where the hope of a few more months of life is enough to justify operations much more dangerous than the removal of portions of rib. Even as a palliative the procedure is worthy of careful consideration. And it has, at any rate, one recommendation—it does not interfere with any other method of treatment, medicinal, dietetic, hygienic, or climatic. As to which are the best cases for operation and at what stage of the disease it should be done further experience can alone determine. It should certainly be avoided in those cases which are running a rapid course; the more chronic the case the better suited to the operation will it be; moreover, it should be done early, without waiting for a cavity to form. I have watched several cases with the intention of operating as soon as excavation took place, but the onset of disease in the opposite lung and the rapid failure of the powers of the patient made me give up thoughts of doing it. This has occurred sufficiently often to make me say emphatically, Operate early. I would add to this recommendation that shrinking and flattening of the apex should be an indication for the operation, so as to give the fullest scope to the reparative process that shrinking indicates. At present the operation is applicable perhaps only to a minority of the cases—a minority which increasing experience may convert into a majority.

I am bold enough to think that the possibilities of this operation are not exhausted when the patient leaves the operation table. There seems to me no reason why at the apex of the lung the operation should not be the half-way-house to intra-pulmonary procedures. Let us assume that the operation does not cure and that a mass of tuberculous deposit or a cavity remains. The operation has been done; the falling in of the chest wall shows that the apex of the lung is contracted around the disease. The pleura will be adherent, and instead of an emphysematous layer teeming with blood-vessels intervening between the surgeon and the disease, the more or less solid, carnified, and altered lung substance, riddled here and there by bronchi and bronchioles but with blood-vessels small and contracted, has to be cut into. Not only will the disease be easier to locate and find but the attempt to reach and remove disease through such a covering will more resemble an operation in any other accessible part of the body. The possibilities in this direction may be such as to bring operations such as that of Dr. Lowson within the domain of the practicable, and with the aid of increasing experience we may emulate, if we cannot surpass, some of the triumphs of abdominal surgery. With the lung in a carnified state there should be no more, if as much, hæmorrhage in operating directly upon the lung than there is in the removal of the thyroid body, a structure with which carnified lung may for this purpose be not unfairly compared. We know how successful some of the operations upon abdominal viscera have been when done in two stages. It is evident that for pulmonary surgery to make any advance some fresh mode upon new lines is necessary; and it is with no other wish than to suggest a line of thought which has occurred to myself for the consideration of those of greater experience and ability that I venture to submit my views to the notice of my *confrères*.

Huddersfield.

EAST SUBURBAN MEDICAL PROTECTION SOCIETY.

The Plaistow branch of the East Suburban Medical Protection and Medico-Ethical Society held a well-attended meeting on Nov. 4th, Mr. Alfred E. Kennedy being in the chair. The following officers were elected:—Chairman: Mr. R. Buksh. Honorary treasurer: Dr. Edwin Hegan. Honorary secretary: Mr. Napier Jones. Representative on the Executive Council: Mr. F. E. Bromley. A sub-committee was appointed to collect evidence of the abuse of medical charities and provident institutions by persons resident in the district, and it was decided to compile a black list of bad payers of medical accounts. The next meeting will be held on Dec. 7th.

AGORAPHOBIA.[1]

BY J. HEADLEY NEALE, M.B. EDIN., M.R.C.P. LOND.,
PHYSICIAN TO THE LEICESTER INFIRMARY AND FEVER HOUSE.

AGORAPHOBIA (from the Greek, ἀγορά, a market place, and φόβος, fear), or the dread of an open space, is the symptomatic title given to a nervous affection which to my mind does not receive the attention which it merits from the profession at large. Typical cases were described by Benedikt in 1870, and in 1872 by Westphal, who, I believe, was the priest who christened the infant phenomenon by its present name. In 1884[2] Dr. Prosser White of Wigan gave a clinical account of a case under his care, one paragraph of which, touching upon treatment, is of so much significance that I shall take the liberty later of quoting it verbatim. Having been myself the victim of bad attacks of agoraphobia I followed suit with a paper describing my own experiences and symptoms, but just as I was about to despatch my MS. to the Editors of THE LANCET a somewhat sweeping letter appeared in that journal from a West-end physician, the gist of which was tantamount to saying that agoraphobia was all bosh and due to excess of wine and venery. As he was an old-established practitioner and I had been established as such only a year and a half, I think you will approve the discretion I showed in letting my paper remain where it was—viz., in my own keeping, where it still is. Unfortunately, after a lapse of thirteen years I have not been able to lay my hands upon it or I would have read it to you to-night. I am sure, however, that I have but little to add to what I then wrote, except that my personal experiences have since been confirmed by numbers of cases in my hospital and private practice, in the practices of my friends, and in individuals whom I have met with in a social but not professional capacity.

The "agoraphobic" is a much more common individual than you might be led to infer from the little which is said or written of him. You may recognise him as you walk behind him in the street, or, better still, if he finds his way into your consulting-room you will have occasion to ask him but few if any questions, so graphic and pathognomonic will be his statement of his symptoms. I am using the male pronoun for brevity, for be it understood that female agoraphobics exist in plenty, although the disorder is more common in males and is essentially one of adult life only. I have heard medical men pooh-pooh agoraphobia and vaguely hint at "male hysteria," as if some storm were raging in the sinus pocularis. It might rightly be described as a "gastro-neurosis," as I do not think I have met with a single case (my own included) in which there was not a previous history of long-standing dyspepsia.

If I describe my own case and the mode of onset of the first attack, I hope I shall not be thought guilty of obtrusive egoism—I do so merely for the purpose of illustration. So far from my agoraphobia being due to excess of wine and venery, it came on first when I was a student at Edinburgh, leading a strictly temperate and celibate life, working at high pressure and drawing largely upon my reserve forces. A day's programme of a summer session consisted of continuous work, rushing from theatre to theatre note-taking at lightning-like speed, demonstrations, ward work, &c., from 9 A.M. till 5.30 P.M., with only half an hour for a hasty lunch and a breath of fresh air. Then home to my lodgings; half an hour's sleep, followed by a hearty meal, and then the real work of the day began—rewriting and illustrating all my notes of the day, a certain amount of reading, and then out came the microscope, and it is no exaggeration to say that I constantly turned out the lamp to let the sun in, and was back at College by 9. My way home lay through Chalmers-street, a short, broad, lonely street ending in a *cul-de-sac* with a gate into the "Meadows," lined with grey, uncompromising-looking stone houses, the road so unused to traffic that the grass grew up between the stones. Walking briskly one evening down the slope I have my first attack; and it is the suddenness and unexpectedness of the first attack that is so alarming—a feeling that something dreadful is going to happen, that the end of all my strivings and longings has come. I stop; the heart seems seized in an iron grip. I feel as though I were going down into the

[1] A paper read before the Leicester Medical Society on Nov 4th, 1898.
[2] THE LANCET, Dec. 27th, 1884.

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earth and the earth were coming up to meet me. There is no semblance of giddiness or faintness in these attacks, it is more a feeling of collapse as though one were being shut up like a crush hat or a Chinese lantern. I have a strong inclination to cry out and I feel that I must fall, so I lay hold of, and steady myself by, the palings. A deep heaving sigh, the breaking out of a cold sweat upon the forehead, and in less time than it takes to describe (a few seconds only) the attack has passed. Then quick as lightning comes the introspection and deception of the "agoraphobic." "Anyone looking out of his window will think I'm drunk," flashes through my mind, so I drop a book or stoop to tie a shoe-lace and then hurry homeward, restored by the consciousness that I am not dead.

This "fear of impending death" is the worst symptom of the disorder. Next in order comes that from which it takes its title—viz., the dread of an open space; this is called up by the sensation of vastness, infinity, and solitude. Then the inability to sit in the body of a church or a crowded meeting. All the time that I was an "agoraphobic" I attended church regularly with my family, but we always sat close to the door. There I was safe; but several times when attending public functions or when visiting I have been compelled to take a seat in the body of the church; an attack has come on, more especially when the organist, on any reference to lightnings or tempests has suddenly felt himself under an obligation to let fly every stop in the organ, and I have been obliged to hold on firmly to the back of the pew in front of me till the attack passed off. A sudden noise or a flash of bright sunlight upon a white pavement will induce an attack.

Now for a word as to the possibility of agoraphobia endangering life. Under ordinary circumstances the danger is *nil*, but under special conditions it may become serious. In the early days of my practice a journeyman carpenter with typical agoraphobia consulted me. I counselled him that if ever in the course of his work an attack came upon him to be sure and put himself in a place of safety till it had passed off, but that under ordinary conditions he could laugh at his complaint. I saw nothing of him for a long time, until one day I found him in the "accident ward" of our infirmary. He had been putting down the flooring in a new building, an attack had seized him, and he fell through the rafters, sustaining a compound fracture of the leg. And now I must relate how I very nearly lost my own life. I had gone to our county asylum one day in a professional capacity and on leaving, the late Dr. Higgins, the medical superintendent, who was an expert climber, pointed to a long ladder reaching to the roof, and said, "Come on up with me and I will show you one of the finest views to be had in Leicestershire." Up he went like a monkey and I followed. When within about a dozen rungs from the top a fit of agoraphobia came on. Had I once looked down I should not have been here to address you to-night. I looked up, counted the rungs of the ladder, called to him to give me his hand, laid hold of each rung with a strong muscular effort till I was able, with his assistance, to "land" upon the roof, where I nearly collapsed. It is needless to say that I have never been up a ladder since.

I have referred to the possibility of recognising the "agoraphobic" as he walks along the street. Apart from the coarser evidence of his suddenly pausing to lay hold of a paling or to place his hand upon a wall, he will hardly ever be without a stick or umbrella, which you will notice he will plant at each step at some distance from him, in order to increase his base line of support.

Now to discuss the selection by agoraphóbia of its victims. In my experience professional men suffer most, clergymen in particular, but I have known merchant princes, commercial travellers, middle-aged spinsters, and even young married women caught in its toils. I remember the case where a clergyman, the brother of a well-known doughty colonel (now deceased), holding a living in this county, suddenly collapsed and fell in a heap in the pulpit, which he never again entered. The last I heard of him was that he had gone on the Stock Exchange and was doing well. It seldom attacks poor people, but I had lately evidence of the exception to this rule. A strong, healthy-looking young married woman presented herself one day for admission to the infirmary. She staggered into the room and convulsively laid hold of the table, all the while swaying to and fro. Asked why she did this she said that she "always felt that she was sinking through the earth." I admitted her, and on my first visit to the ward I found her clutching the pillows as though her life depended on the effort. When remonstrated with for her foolish action she explained it by saying that she "felt as though she were going through the bed." I tried to reason her out of her silly fancies and told her plainly that if she continued to indulge in them she would finally find herself in the lunatic asylum. She discharged herself later, and has since become an inmate of that institution.

Under suitable conditions and treatment the prognosis of agoraphobia is favourable, but sometimes, especially in the case of weak, dyspeptic women, it runs through the course of deception, introspection, hypochondriasis, on to melancholia.

Treatment must be conducted primarily and essentially on a psychological basis. You must try to convince your patient that there is nothing in his condition inimical to life or which may not be overcome by strength of will. *Apropos* of this I will quote Dr. Prosser White's remarks upon his case: "These feelings and attacks may sometimes be avoided or lessened in severity by moral determination; deep concentration of thought will enable him to cross an open space, or certain places which otherwise induce these attacks of dread; companionship relieves the feeling of loneliness and fear. ..... The presence of a cart, even a stick or umbrella in the hand, gives a sense of confidence. ..... Cheerful and lively conversation with a congenial companion will always ward off the attacks." For the rest, the avoidance of overmental strain and of all excesses, a careful dietary, aids to digestion and tonics, will together contribute to a satisfactory issue and ensure the disappearance of this pathological "spook"—it being in reality but a phantom disorder.

Leicester.

A CASE OF PHTHISIS WITH PECULIAR CARDIAC PHYSICAL SIGNS.

By W. HALE WHITE, M.D. Lond.,
PHYSICIAN TO GUY'S HOSPITAL.

A MAN, aged forty-two years, a hall porter, was admitted into Guy's Hospital on August 17th, 1898. He had been a soldier. His family history and previous history are unimportant. He had been ill for about seven months, losing flesh and suffering from pain in the chest, cough, abundant expectoration, and sweating at night.

On admission he was pale, thin, and wasted. The left lung appeared normal, except for prolonged respiration at the apex in front and behind. The right chest was resonant down to the third intercostal space, and over this resonant area there were loud amphoric breathing and a bruit d'airain. Below the third interspace the front of the chest was absolutely dull, and loud bronchial breathing could be heard, together with consonating râles. Behind there was nothing noteworthy about the physical signs, except that there was evidence of a cavity at the apex of the lower lobe.

The heart.—On looking at the chest a beat exactly like the normal apex beat of the heart could be seen in the fifth right intercostal space just internal to the nipple. On placing the finger over this spot a beat was felt exactly like the normal cardiac apex beat. On auscultation over this spot the heart sounds were heard very much louder than at any other point in the chest. In the third and fourth right intercostal spaces a faint cardiac beat could be seen midway between the nipple and the sternum. In a bad light no impulse of the heart could be seen in the normal position internal to the left nipple, nor, indeed, could any cardiac beat be detected on the left side, although with the same amount of light the beat on the right side was easily visible. In a bright light a faint cardiac impulse could be seen in the fifth left intercostal space just internal to the nipple. This beat could be felt and the cardiac sounds could be heard over it, but the tactile impulse was very poor compared with that below the right nipple, and the sounds over the left impulse were not nearly so loud as they were over the right.

Cardiac dulness.—The resonance of the left lung extended over the normal cardiac dulness. On the right side the cardiac dulness could not be determined because of the consolidation of the lung.

The patient developed pleurisy and suddenly and unexpectedly died on Sept. 2nd. The physical signs remained unaltered during the time he was under observation.

When I saw this man it seemed to me that the only way to satisfactorily account for his physical signs was to believe that pleuritic adhesions and contraction of fibroid tissue in

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the right lung had dragged the heart over to the right, so that the apex or some other part of the heart was causing an impulse in the fifth right intercostal space. I thought that the very much fainter impulse on the left side might be due to the normal attachments of the pericardium. The explanation here suggested would also account for the loudness of the sounds near the right nipple. The only objection to this view was that there was not much falling-in of the right side of the chest.

The post-mortem examination, however, showed that the heart was in its natural position. It lay in its usual position in the pericardium and its right side was naturally adjacent to the right lung. The whole of the upper lobe of the right lung was converted into a large cavity, the largest, I think, I have ever seen, while the middle and lower lobes were completely solid, except that the lower lobe had some small cavities in the upper part at the back. This condition of things readily explained why the cardiac sounds were heard so loudly on the right side, for the solid lung would have conducted them well and the adjacent large cavity acting as a resonator would have intensified them. But there was no explanation why the impulse should have been so well marked both to sight and touch in the fifth right intercostal space. I know of no reason why solid lung should conduct it to this spot; indeed, as a rule, solid lung does not cause the impulse to be felt in abnormal positions, for this transference of impulse is not a feature of lobar pneumonia.

I have thought this case worthy to be put on record because it seemed to me to show that we must not assume that when the heart's impulse is seen and felt far on to the right side of the chest the organ is necessarily dragged or pushed over or altered in size.

Harley-street, W.

LAPAROTOMY FOR INTUSSUSCEPTION.

BY R. W. MURRAY, F.R.C.S. ENG.,
SURGEON TO THE LIVERPOOL INFIRMARY FOR CHILDREN.

THE treatment of intussusception in young children has of recent years been frequently dealt with in the columns of THE LANCET and it would appear that there is an ever-increasing tendency on the part of surgeons to discard the uncertain and somewhat dangerous method of attempting reduction by means of rectal injections and to practise earlier the more certain method of abdominal section. As to the uncertainty of reduction by rectal injection Dr. Holme Wiggin[1] in his most interesting and instructive review of the treatment of intussusception, showed that the failures to effect reduction after rectal injections amount to 75 per cent., and, curiously enough, the same proportion of failures holds good in the cases of this nature so treated at the Liverpool Infirmary for Children during the last ten years. Of 16 cases of intussusception under treatment during that period rectal injections were tried in 12 and were successful in 4 only. In 2 of these 12 cases laparotomy was subsequently performed and the invaginated portion of the bowel reduced, and the patients recovered. As to the dangers of rectal injections Mr. J. D. Mortimer[2] has demonstrated that if the funnel of the injecting tube be raised to a greater height than 3 ft. from the level of the child's body there is a very real danger of rupturing the young and inflamed gut.

My personal experience of laparotomy for intussusception is limited to 6 cases. In one case, that of a boy aged four years, the intussusception was of a chronic nature, and after several unsuccessful attempts at reduction had been made by means of rectal injections of water the abdomen was opened and the intussusception, which was of the ileo-cæcal variety, reduced. The child completely recovered. In the other 5 cases the patients were all under twelve months of age and much collapsed at the time of operation. In one instance the intussusception had existed for four days without treatment. Laparotomy was performed, but the reduction was a matter of considerable difficulty, the peritoneal coat of the bowel tearing. The child died twelve hours later. In a second case I first saw the child on the fifth day of the illness. Rectal injections had been previously tried. I opened the abdomen at once, but the intussusception could not be reduced; it was excised and the patient died. In a third case the symptoms of intussusception had existed for twenty-four hours. Primary laparotomy was performed. The reduction was difficult, the peritoneal coat of the bowel tearing. This child also died. In a fourth case I saw the patient twenty-four hours after the onset of the symptoms and the invagination could then be felt from the rectum. Reduction by means of water was attempted, which, however, was not successful, and on the following day I opened the abdomen and the bowel was so tightly strangulated that reduction of the invagination was impossible. It was therefore excised and the child died shortly afterwards. In this instance I believe the bowel became strangulated very early, and I doubt whether if primary laparotomy had been performed we could have saved the patient. The fifth case was successful and therefore presumably being more interesting I will relate it a little more fully.

A female infant, aged six months, was seen in the out-patient department of the Liverpool Infirmary for Children by my colleague, Dr. Percy Marsh, on the afternoon of May 27th, 1898, and was at once admitted. The patient was a well-nourished breast-fed infant and had been quite well up to 11.30 P.M. of May 26th, when she cried apparently from pain and was restless and vomited. The next morning the child was seriously ill and blood and mucus were passed per rectum. I saw her shortly after her admission and the collapse was so great that when I entered the ward oxygen was being administered. The intussusception could be easily felt through the abdominal wall and occupied the position of the transverse colon. No tumour could be felt from the rectum, but on withdrawing the finger blood and mucus escaped. It struck us as being extremely doubtful whether we could save the child, and if anything was to be done it must be done at once and done quickly. A little chloroform was given, the abdomen opened in the middle line, and the intussusception, which was of the ileo-cæcal variety and about 6in. in length, was found, brought to the surface, and reduced. The reduction was easy up to the final piece, which offered some resistance. The portion of the gut which had been invaginated was washed with warm boric lotion and returned into the abdomen. The abdominal wound was completely closed. The general condition of the child afterwards appeared to be much the same as it was before the operation, but the next morning there was a marked change for the better. The subsequent convalescence was uneventful and the patient completely recovered. In this particular instance, though the case was brought early for treatment, I feel sure we did the right thing in at once performing laparotomy, for although the intussusception was reduced with the fingers without much difficulty, still I doubt very much whether rectal injections would have been equally successful, and the condition of the child would not admit of primary failure. In performing the operation I was so admirably assisted by my house surgeon and the nurses that the time occupied was exceptionally short, and as, other things being equal, in cases of this nature rapidity makes for success I may perhaps be excused for mentioning the following details. Dr. Percy Marsh, who was present at the operation, told me afterwards that he had timed it and that the abdomen was opened and the intussusception reduced in four minutes, the bowel returned and the abdominal wound sewn up in three and a half minutes, so that the whole operation lasted only seven and a half minutes.

If, then, it is a fact that the chances against the successful reduction of an intussusception by means of rectal injections are as three to one, surely it would be well when circumstances permit of it to perform primary laparotomy, for it is a far more certain method, and the record of published cases of laparotomy for intussusception during the last five years is very encouraging, and as an operation it is not necessarily more dangerous than attempted reduction by means of rectal injections.

It is, I believe, impossible to say in any individual case whether the intussusception will be easily reduced or not, and if after opening the abdomen the invagination is easily reduced then the operation may be completed in a few minutes. If, on the other hand, the reduction is difficult or impossible the child is obviously in a better condition to stand a severe operation than if he had already been subjected to a rectal injection.

Liverpool.

[1] THE LANCET, August 28th, 1897.
[2] THE LANCET, May 23rd, 1891.

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Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

DIPHTHERIA BACILLI IN THE URINE.

BY CAPTAIN FREDERICK SMITH, R.A.M.C., D.P.H. DURH.,
LATE OF THE BACTERIOLOGICAL DEPARTMENT OF THE ARMY MEDICAL SCHOOL.

THE following notes were made some ten months ago, but were not published as it was hoped that a more complete inquiry into the subject could first be carried out. The exigencies of active military service, however, prevented anything further being done, and as there is no immediate prospect of an opportunity to resume the work it is thought desirable to put forward this instalment of the subject.

A guinea-pig which had been some days before injected with live broth culture of diphtheria bacilli was noticed to be passing hæmorrhagic urine, and the idea at once suggested itself—if blood, why not bacilli? The animal was killed and opened aseptically and the bladder was exposed. The viscus was touched with a heated glass rod and pierced at the sterilised spot by a glass pipette. Bloody urine thus obtained in the pipette was run over the surface of coagulated serum in a Petrie dish. After incubation a copious growth of typical Klebs-Löffler bacilli was the result.

A second guinea-pig was injected with a living culture. The animal was killed five hours later and the urine was obtained aseptically in the manner above detailed. The urine was normal in appearance, but a plentiful growth of diphtheria bacilli on serum was obtained.

The result in the case of the second guinea-pig is somewhat surprising considering the short time which elapsed between injection and death. These facts go to prove that, in the guinea-pig at any rate, bacilli in the blood-stream are some of them eliminated alive through the kidneys. It does not follow, of course, that diphtheria bacilli are passed alive through the kidney of a human being suffering from diphtherial disease. For all that, the results obtained suggest that, at least in hæmorrhagic diphtheria, bacilli will be found in the urine. It may further be anticipated that in all cases in which the bacillus (whether in small or large numbers) escapes into the blood-stream it will be present in the urine. It may be predicted even that in order to prove the presence of the bacillus in the blood search for it will be made in the urine in future. The practical bearing of this question is important from the public health point of view. If the urine of diphtheria patients is liable to contain the bacillus, the urine and fæces (for the solid excreta are almost invariably mixed with more or less urine) will have to be disinfected just as rigorously as those of patients suffering from enteric fever. Those hygienists who have so strenuously maintained that there is a connexion between general insanitation, middens, &c., and diphtheria will have a new fact to strengthen their argument.

Sherbro, Sierra Leone.

IDIOSYNCRASY TOWARDS POTASSIUM CHLORATE?

BY WILLIAM ROBERT CULLING, L.R.C.P. EDIN., L.S.A.

Is this a case of idiosyncrasy towards potassium chlorate, or how are the symytoms to be interpreted?

A man, aged about fifty years, a painter, consulted me on June 28th, 1898, for a general dermatitis, especially on the legs. I prescribed liquor arsenicalis, 3 minims; potassium chlorate, 10 grains; tincture of hyoscyamus, 15 minims, twice daily in a wineglassful of water. The first dose made him feel cold, and as he persevered he noticed after each dose that the time he felt cold was evidently longer; however, as he improved he stuck to his medicine pretty regularly until Sept. 16th, when he began to think that the remedy was nearly as bad as the disease. His description to me of his trouble to take his medicine was: "You ordered me to take it after breakfast and after supper in a wineglass of water." "Quite right," I remarked. "Well," he said, "I tell you what I do. After breakfast I get my wife to make up the kitchen fire. I then drink off my dose, button up my coat as you see (an ordinary frock coat), get my overcoat, put it on and button it up, and there I sit till dinner time, teeth chattering—in fact, shivering and shaking all over. When I get my dinner I feel better." "Breakfast at 8 A.M. and dinner at 1 P.M.?" I remarked. "As near as possible," he replied, "and then at night I take the medicine directly after supper, get into bed and cover myself up just as I should in the midst of winter, going through the same as I described after my morning dose." These are as nearly as possible his own words. Now he wished to be let off his performance, so under the circumstances I advised him to discontinue his mixture for a week at any rate to see if the external applications would not complete a cure.

Jermyn-street, S.W.

NOTE ON A CASE OF PERSISTENCE OF HYMEN; RETAINED MISCARRIAGE.

BY W. HARPER WIGHAM, M.B. DURH., M.R.C.S. ENG.

IN THE LANCET of Nov. 12th were published the notes of Dr. N. Cullinan on a case of persistence of the hymen into the second stage of labour, in connexion with which the following case may be worth recording.

I was consulted—I purposely refrain from giving dates—by a young woman who complained of being "irregular" and of having "the whites." Without local examination, of course, but after an examination of the heart and, what was as important, an inspection of the breasts, which gave no indication of pregnancy, I prescribed an iron tonic for internal use and an astringent lotion for local application. Going away for a holiday I did not see the patient again for nearly three weeks, but on her calling again in my absence my prescriptions had been once repeated. I saw her in consultation on my return with her mother who accompanied her. I continued the treatment, at the same time suggesting a local examination if the symptoms did not abate. A few days later I was requested to make the examination at the parents' house in the presence of the mother. On visual examination the labia were found to be covered with a discharge of a very unpleasant and sickly odour. On carefully attempting to make a digital vaginal examination I found an obstruction—an extremely tough and dense hymen—existing, with a great convexity downwards and outwards and with a feeling of resistance, as if something solid existed beyond. There was found to be one small opening in the membrane in the anterior third just below the pubes through which an attempt was made to insinuate the forefinger. The patient cried out that she was being very much hurt; but being satisfied in my own mind that there was something beyond which required investigation, with the consent of the patient and her mother I administered chloroform and then continued my examination. Having enlarged the opening in the membrane by forcing my forefinger through I discovered a hard mass behind and on withdrawing my finger a disagreeable putrid odour clung to it. I deemed it necessary to break down the hymen in its entirety, upon which there was a fair amount of hæmorrhage. Proceeding I discovered that the mass above was none other than a fœtus of about the fourth month with cord and placenta all lying together in a globular dilatation of the upper part of the vagina. Having got them away I prolonged my examination upwards, only to find that the os was closed and apparently normal and that the uterus was well contracted down. From the above facts with regard to the uterus and from the putrefaction of the fœtus the condition had apparently existed over a month at least.

There are in this case, then, the fact of impregnation taking place with non-rupture of the hymen, the more extraordinary one of its persistence on the occurrence of abortion, and the further one that the patient did her ordinary work under the conditions which are recorded above.

South Molton, North Devon.

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A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

WESTMINSTER HOSPITAL.

A CASE OF COMPOUND SEPARATION OF THE LOWER EPIPHYSIS OF BOTH RADIUS AND ULNA, FOLLOWED BY ACUTE TETANUS, TREATED WITH TETANUS ANTITOXIN AND IRRIGATION OF THE WOUND WITH OXYGEN GAS WITHOUT RELIEF.

(Under the care of Mr. CHARLES STONHAM.)

ALTHOUGH the injury inflicted on the radius and ulna in the following case is of great rarity, yet the chief interest in it is associated with the use of tetanus antitoxin. Numerous cases of tetanus have been recorded in which the administration of this substance has been followed by recovery, but it is very far from being certain that tetanus antitoxin has much influence on the result. In a fair proportion of cases tetanus ends in recovery when only sedatives have been employed, and this is especially true of those cases in which the onset of the symptoms is long delayed. In acute cases all forms of treatment seem equally useless, and it cannot be said that any more favourable results are obtained by the use of the antitoxin than by other remedies. It is possible that large doses might be successful, for the antitoxin seems rarely to give rise to any unfavourable symptoms. The failure of the substance in Mr. Stonham's case is a greater reason for the publication of the case than if the patient had recovered. In all cases in which antitoxins have been employed it is desirable to record the source whence it has been procured. For the notes of the case we are indebted to Mr. E. Percy Paton, surgical registrar.

A boy, aged fourteen years, a plumber's mate, was admitted into Westminster Hospital on Dec. 11th, 1896, having just fallen 20 ft. from a ladder. On examination there was found a wound, between 2 in. and 3 in. long, extending transversely across the right forearm just above the wrist-joint on the flexor aspect. The wound was begrimed with dirt and through it protruded the lower ends of the diaphyses of the radius and ulna. He was at once anæsthetised and the wound was cleaned, the fractures were reduced, and the wound was closed by the house surgeon, the arm being put up on a splint. All went well for the next day or two except that the temperature rose somewhat, and the stitches had to be removed to let out some pus on Dec. 13th, and treatment by an arm-bath was commenced. He seemed gradually to improve, the temperature steadily falling. On the 16th the patient complained of a little pain in the right shoulder, but nothing to account for it was found, and it seemed to be due merely to fatigue from holding the arm in the arm bath. At 6 A.M. on the 18th he was suddenly seized with a kind of fit; there was general rigidity, especially of the muscles of the neck and the muscles of the back. The head was drawn backwards and the jaws also were tightly clenched. The severity of the pain made him cry out. At 11.45 A.M. the stiffness of the jaw was rather better, but the risus sardonicus was slightly marked and occasionally the muscles of the neck were distinctly stiff and the back was strongly arched, but no rigidity was noticeable in the limbs. The condition of the wound was unaltered from the day before and the temperature was rather lower. At 12 noon he was given 15 gr. of chloral hydrate and of bromide of potassium. At 2 P.M. chloroform was given and the wound was thoroughly cleaned and irrigated with oxygen gas. On recovery from the anæsthesia the general rigidity of the trunk and head returned, but the limbs were still very little affected. At 4 P.M. he was given croton oil (½ m.), which acted well, and at 5.30 the chloral and bromide mixture was repeated. At 10 P.M. 15 c.c. of the tetanus antitoxin, obtained from the Institute of Preventive Medicine, were injected; it was not followed by any immediate results, but at 2 A.M. on the 19th it was noticed that he opened his mouth widely several times, and a little later the stiffness of the back and neck seemed much less; but by 3 A.M. these symptoms had all returned. At 4 A.M. 8 c.c. of antitoxin were injected and at 6 A.M. the chloral and bromide mixture was repeated, but without any signs of improvement, though there were no violent spasms. At 8.50 A.M. he had a bad spasm, which lasted about twenty minutes, and in which all the limbs moved. It was followed almost at once by a second spasm which only lasted two minutes. In both there were very marked opisthotonos and trismus. Immediately afterwards the wound was dressed and again irrigated with oxygen. At 10.30 A.M. 12 c.c. of antitoxin were injected and at 12 noon the chloral and bromide draught was repeated, but at 2.30 P.M. he was seized with a more violent spasm, became very blue, and died.

Necropsy.—The wound showed extensive laceration of the soft parts surrounding the ends of the radius and ulna; the epiphyses of both bones were separated; the median nerve had been torn across and its upper end was bulbous. The brain weighed 56 oz. and seemed somewhat flabby, but otherwise neither it nor the spinal cord showed any abnormal naked-eye appearances. There was a small amount of greenish pus in the left middle-ear. Nothing abnormal was discovered in any other organ or part of the body. An examination was also made during life of the pus from the wound, which was found to contain the tetanus bacillus. This was further demonstrated by cultivation, when specimens were obtained of the bacillus showing typical spore development.

Remarks by Mr. PATON.—This case appears to be worth recording, in the first place because of the infrequency of separation of the lower epiphyses of the radius and ulna, but more especially as a case in which the tetanus which supervened was treated with tetanus antitoxin, and this without any relief to the symptoms. The antitoxin treatment of tetanus is still on its trial, so that it seems advisable that as far as possible all cases, both successful and unsuccessful, should be recorded. It will no doubt be said by the advocates of the treatment that in such an acute case as this, in which the disease ran its course in about thirty-six hours from commencement to termination, no treatment is likely to be of any avail. On the other hand, it may be said with equal truth that the less acute the case is the more tendency there is for a spontaneous cure to result from the mere resisting power of the patient and thus a fictitious appearance of success may be given to any treatment, such as that by antitoxin, which may have been tried, so that it may be argued with some reasonableness that the acuter the case the better test it will be of any form of treatment which professes to cut short the disease process. In the case of which the notes are given above, as far as could be seen, no relief to any of the symptoms resulted from the injections, while, on the other hand, they appeared to have no deleterious effect.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

A CASE OF CARBOLIC ACID POISONING TREATED BY VENESECTION AND INJECTION OF SALINE FLUID; RAPID RECOVERY.

(Under the care of Dr. T. OLIVER.)

APART from the severe local effects of carbolic acid, which of themselves may cause death, the fatal result is due to the action of the poison after absorption. The attempt to remove this absorbed carbolic acid by injecting saline fluids into the vascular system is well deserving of extended trial, for the added fluid is in great part rapidly excreted by the kidney and carries no small portion of the poison away with it. The method employed in the case recorded below to remove still more of the drug by performing venesection is ingenious, but we do not think that it is likely to prove of much value. In Dr. Oliver's case 8 oz. of blood were removed; now this quantity is only about 5 or 6 per cent. of the total quantity of blood in the body, and therefore the withdrawal of this amount of blood would only mean the withdrawal from the body of the corresponding percentage of the poison. Of course the removal of even 5 per cent. of the poison absorbed will assist the recovery, but we do not feel inclined to look for so much benefit from it as we should

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expect from the method of saline injection. In considering that 8 oz. of blood would only equal 5 or 6 per cent. of the total weight of blood in the body we have taken the usual estimate that the blood forms one-thirteenth of the body weight, and we may fairly suppose that the patient weighed between 8 st. and 10 st.

An unmarried woman, aged twenty-one years, was admitted to the infirmary in a state of coma due to carbolic acid intoxication. She was received by the house physician, Dr. Rowell, to whom is due the merit of successful treatment of the patient. In the article on Carbolic Acid Poisoning in Allbutt's "System of Medicine," vol. ii., Dr. Oliver draws attention to the desirability once carbolic acid in any quantity has been absorbed into the blood of washing out the poison by means of saline fluid, but in the present instance venesection was practised as well. It appears that about three-quarters of an hour before her admission into the infirmary the patient, who had had a quarrel with her father, swallowed seven drachms of ordinary commercial carbolic acid. When Dr. Rowell saw her she was comatose and collapsed; there was no corneal reflex; the pupils were contracted; she was cyanosed; respiration was slow and shallow, and if the lower jaw was not supported it fell back and stopped the breathing. The pulse, at first of medium rate and volume, became flickering and was with difficulty counted. The breath smelt strongly of carbolic acid. The lips, mouth, and fauces were corroded and blistered. A soft indiarubber stomach tube was passed with difficulty down the œsophagus and the stomach was freely washed out with warm water containing some sulphate of soda. While this was being done the internal saphenous vein of the left leg was opened and eight ounces of blood were removed Four pints of a normal saline solution at a temperature of 110° F. were then injected into the vein; $\frac{1}{10}$ gr. of sulphate of atropia was given hypodermically to stimulate her respiratory centre. Half a pint of milk beaten up with two eggs, to which was added one minim of croton oil, was passed down the stomach tube. By degrees the patient, who at first seemed moribund, began to come round, her pulse gradually improved, and the respiratory movements became stronger. In a few hours she had rallied sufficiently to recognise those around her. Glycerine in drachm doses was given frequently to allay the burning sensation in her throat and œsophagus. On the following day when seen by Dr. Oliver she seemed remarkably well and the pulse was good. There was still pain on pressing the epigastrium. For three days the urine was dark green in colour; it contained phosphates but never albumin. The wound made in the leg healed kindly and recovery generally was rapid and complete.

Remarks by Dr. OLIVER.—Once a poison like carbolic acid has got into the blood washing out of the stomach is not enough. The rational treatment is, in addition, to transfuse, or to do as was done in this case, bleed and transfuse.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Gastro-jejunostomy.—Anomalous Murmur.—Aneurysm of the Common Carotid Artery.—Diabetes Insipidus.—Sarcoma treated by Coley's Fluid. — Hepatoptosis. — Multiple Patellæ.—Genu Retrorsum.—Multiple Fibromata.

A CLINICAL meeting of this society was held on Nov. 14th, the President, Mr. EDMUND OWEN, being in the chair.

The PRESIDENT showed a case of Gastro-enterostomy performed for Inoperable Disease of the Pylorus. The patient, a man, aged thirty-one years, for a twelvemonth had discomfort in the pyloric region with vomiting after meals. He had lost his appetite and could neither work nor sleep; he was greatly emaciated. The stomach was much dilated. On July 18th abdominal section was performed; the pylorus was obscured and fixed by a hard mass surrounded by enlarged lymphatic glands. A communication was made between the front of the stomach and an adjacent piece of jejunum by means of a Murphy's button. The man can now eat and drink anything; he has lost his dyspepsia and has become almost robust. Nothing has yet been seen of the button, but, wherever it is, it is doing no harm.—Mr. BATTLE asked what size of button was used, also the exact position of communication with the stomach. He also asked how soon after operation food was given by the mouth and as to the duration of the previous illness. He inquired what was the amount of the glandular enlargement. He gathered that the President believed it to be a case of malignant disease of the pylorus, in which case, of course, the prognosis was necessarily unsatisfactory. He himself had operated on a man, aged twenty-eight years, last year for pyloric obstruction of some duration though the symptoms were acute. Although the duration of the malady was but short he found extensive growths in the glands and multiple growths on the peritoneum. The patient did extremely well after the operation but died six weeks later from malignant disease of the pleura.—The PRESIDENT, in reply, said the lumen of the stalk of the button was of about the size of the top of his little finger and when it sloughed away would leave an aperture of about the size of a shilling, which he feared would go on contracting. The disease in his case had lasted about twelve months. He made his opening into the stomach in the anterior part low down quite clear of any vessels. He had fixed a piece of jejunum to the front of the stomach, where it was in apposition. He said the question had been raised as to the advisability of making the opening in the anterior part of the stomach on account of the risk of a kink, but his experience had not suggested anything of the kind. He began to give the patient home-made beef jelly on the day after the operation. He thought it was a malignant growth and the prognosis was therefore decidedly bad.

Dr. HECTOR MACKENZIE showed a case of Vascular Murmur of obscure origin, audible at the base of the right lung. The patient was a man, aged forty-one years, who had been under treatment for recurrent hæmoptysis at the Brompton Hospital during the last four years. Throughout the first period of attendance, from August, 1894, to May, 1895, there were five attacks of hæmoptysis, which were all slight, and the only abnormal physical signs then observed were diminished resonance, bronchial breathing, and pectoriloquy at the right apex. The patient kept fairly well until August, 1897, when hæmoptysis recurred and he again presented himself at the hospital. He had a cough with yellow expectoration and complained of night sweats and loss of appetite. The physical signs at the right apex were the same as before with the addition of crepitations, but it was now discovered that at the base of the right lung a very peculiar vascular murmur was present. The murmur was loud and blowing and occupied nearly the whole period of the cardiac cycle. In character it very closely resembled the murmur produced by a communication between an artery and a vein, such as sometimes occurred in cases of aneurysm. The murmur increased in intensity with inspiration, but was not obviously altered when the patient held his breath either in inspiration or expiration. The position of maximum intensity was situated over the seventh, eighth, and ninth ribs in the posterior axillary line, on either side of which the murmur was distinctly audible for two or three inches. There were no other abnormal physical signs at the right base, no dulness, no phlsation, no alteration of breath or voice sounds. Since it was first noticed the murmur had not altered either in character or situation. During the last year there had been numerous slight attacks of hæmoptysis, but during the intervals the patient had been fairly well and able to continue his work as a draughtsman. There had been no change in the physical signs at the right apex. Dr. Mackenzie was unable to offer any explanation of the cause of the vascular murmur. It was possible that it might be due to a vascular growth in the lung. It was unlikely from the situation that it was produced by an aneurysm. The fact that the patient had pulmonary tubercle was sufficient explanation of the attacks of hæmoptysis, which probably was quite unconnected with the condition which gave rise to the murmur.—Dr. MAGUIRE said the only condition he could suggest as the cause of the murmur was an angioma of the liver. The murmur resembled that heard over the jugular vein in anæmia and was increased in intensity during inspiration. Moreover, the upper part of the liver seemed to be somewhat irregular behind on percussion. He admitted that angiomas of the liver were usually small and were often embedded in the substance of the organ, but he had seen one as large as a duck's egg which would suffice to cause a similar murmur.—The PRESIDENT asked whether there were any "mother's marks" which might suggest the murmur being due to a nævoid formation.—Dr. CALEY suggested that the murmur might be

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generated in connexion with the vena cava at its passage through the diaphragm. It was remarkable what a difference there was during inspiration and this he thought was consistent with a relative stenosis of the vena cava in that situation.—Dr. MACKENZIE, in reply, said there were no mother's marks and he had not been able to make out any irregularity of the upper border of the liver as stated by Dr. Maguire.

Dr. SEYMOUR TAYLOR showed a case of Aneurysm of the Right Common Carotid Artery occurring in a man, aged thirty-five years. The aneurysm was of the size of a turkey's egg, extending from the left sterno-clavicular joint to the level of the hyoid bone. It caused no pain or distress and the vocal cords were not paralysed. The symptoms had developed after the ligature of both superficial femoral arteries for popliteal aneurysm. There were no signs of aortic aneurysm.—The PRESIDENT observed that if one asked a student the causation of arteritis he would certainly incriminate syphilis, but personally he was not so sure that it was an important factor in the etiology of arteritis. He recalled the observation of an officer in the Indian Medical Service who commented on the fact that while syphilis was prevalent in India aneurysm was very rare. It was an interesting fact that this patient had at the same time two popliteal aneurysms and a swelling of the carotid at its bifurcation. He himself would not advise proximal ligature in such a case and suggested that it might be better to try the effects of distal ligature followed by the injection of a coagulating fluid into the sac.—Dr. TAYLOR, in reply, agreed with the last suggestion, adding that of course ligature of the common carotid presented two great risks, viz., sepsis and the danger of hemiplegia as the result of interference with the cerebral circulation. If the obstruction to the circulation could be done gradually it was quite possible that a collateral circulation would be established. He had not attempted any treatment so far, but as Mr. W. G. Spencer described the case as one of syphilitic arteritis he would now try the effect of anti-syphilitic medication.

Dr. WILFRED HADLEY showed a case of Diabetes Insipidus in a woman. There was no family history bearing on the case. She had purulent otorrhœa when twenty-one years of age. She had had thirst and polyuria for over two years and attacks of giddiness with misty vision, and she had lost 2 st. in weight in the last two years. There were no other signs of disease of the nervous system. The average amount of urine passed per diem was 216 oz. The specific gravity was low, but the total daily nitrogen was slightly above the average.—Dr. S. TAYLOR said that on first seeing the patient he thought it was a case of myxœdema. Her face was swollen and bloated and there was a tendency to the red patch on the cheeks. Her voice was of the typical leathery intonation, and he thought if the case was watched that symptoms would develop showing that the case was one of typical myxœdema. It was just on the borderland of the kind referred to by Dr. Ord in his last Bradshaw Lecture.—Dr. MAGUIRE said the pathology of these cases was extremely obscure. It was difficult to decide the usual state of the blood tension and neither feeling the pulse nor the sphygmometer gave trustworthy information. He had recently tried to use a sphygmometer but with indifferent success, but if in the future they could obtain the means of telling more accurately the state of the blood tension in general they would be enabled to get at a pulse tension which might be characteristic of the disease as a whole. In this case it seemed to be high.—Mr. BATTLE said that when he was house physician at St. Thomas's Hospital a patient was admitted, unconscious, under the care of Dr. Payne, passing many pints of urine in the day, in whom post mortem a gumma was found in the floor of the fourth ventricle. He asked if there was any specific history in Dr. Hadley's case.—Dr. HADLEY, in reply, said that he had noticed the myxœdematous appearance and he had, moreover, noticed the same thing in other cases of the kind. He thought the symptoms might be due to the enormous amount of fluid drunk by the patient, which being consumed quickly might determine heightened arterial tension, which in its turn might determine the bloated appearance. Her appearance was that of a person who drank. The voice was worse when she had had nothing to drink for some time. He thought the peculiarity was due to the sticky dryness of the fauces. The blood tension appeared to him to be medium. She had always a faint but unmistakeable trace of albumin in the urine and there was always a doubt in these cases whether they might not be abnormal cases of commencing granular kidney. The patient was a single woman who had never had a child or a miscarriage and there was nothing to suggest a specific history. He had therefore not administered iodide of potassium. Bernard had shown that polyuria might be produced by puncture of the fourth ventricle at a spot higher than the spot puncture whereof gave rise to glycosuria.

Mr. BATTLE showed a man who had already been exhibited before the society while under Treatment for Sarcoma by Coley's Fluid. He then presented a large tumour under the right clavicle extending down the chest, another above the clavicle extending into the posterior triangle of the neck, and others over the sternum, &c., with numerous diseased glands in the axilla. He was treated by half-minim doses of Coley's fluid injected into the arm, gradually increased to one minim. The total quantity did not exceed twenty-four minims. The treatment was carried on for three months, ceasing in May last. His progress had been very satisfactory, and actually there was no trace of the tumours. Microscopical examination of portions of the growths from the sternum, &c., had shown the growth to be composed of spindle cells with some large cells.—The PRESIDENT said the diagnosis of sarcoma did not appear to be certain, and he thought the examination of specimens removed from the living subject apt to mislead. If it were a sarcoma why were the glands in the axilla enlarged? It would be very unlikely that a sarcoma of the breast or in its neighbourhood would infect the axillary glands. He suggested that it might be a case of granuloma of syphilitic or tuberculous origin. He asked whether the patient had had syphilis.—Mr. MANSELL MOULLIN congratulated Mr. Battle on having shown the first authentic case of dispersion of tumour by Coley's fluid in England. He himself had seen the tumour and the various secondary growths, and he had also seen the microscopical sections and he could not conceive that the tumour was anything but sarcoma. He said there was a great tendency to doubt Coley and Coley's statements. Last year he himself had brought forward two cases before the society in which the tumours had disappeared under this treatment. They were intra-abdominal tumours, so that he was not in a position to affirm positively that they were sarcomatous. He had also published a third case of a tumour growing in the iliac region which also did not admit of conclusive proof, but it completely disappeared. He admitted that none of his cases could be proved to be sarcomatous, but they were certainly not inflammatory and they were not gummatous and they disappeared under treatment by Coley's fluid. Mr. Battle's case was the first in which there had been a thorough microscopical examination. He said he had seen a good deal of Dr. Coley and he believed everything that gentleman stated. Coley had published a large series of cases of spindle-celled sarcoma, every one of which had been influenced by his fluid, though all had not been cured. He believed, however, that all the spindle-celled cases had been favourably influenced and in a large proportion of the cases the tumours had disappeared completely and in some there had been no recurrence for upwards of seven years. These cases were authenticated by microscopical examination by well-known American observers. He believed that in Coley's fluid they had a remedy for spindle-celled sarcoma, not perhaps an ideal remedy, because it was somewhat dangerous and it did not succeed in all cases, but they were evidently on the right track. Recurrence sometimes took place, but so it did sometimes after operation, yet he had never heard operation decried because it did not afford a guarantee against recurrence. Therefore, if recurrence did take place with the fluid the latter was not in a worse position than operation.—Dr. MAGUIRE related a case at St. Mary's Hospital sent to him by Mr. J. E. Lane, who had amputated through the upper third of the thigh for sarcoma. The patient was spitting blood and there was evidence of recurrence in the stump and probably also in the stomach. It was an absolutely hopeless case, but with the patient's consent he tried Coley's fluid, injecting it directly into the veins of the arm so as to obtain a constitutional effect. He injected first 3 and then 5 minims for ten days every other day without the slightest ill effect and with relief to some of the symptoms. The patient died and post mortem it was shown that the case was necessarily quite hopeless, the lungs being riddled with sarcomatous nodules.—The PRESIDENT said that while they did not doubt Coley in the

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least, that did not prevent a feeling of scepticism as to the diagnosis of sarcoma in these cases. It was good that there should be some enthusiasts. One case which was treated for malignant disease of the end of the femur by Coley's fluid eventually found its way into another hospital, where the patient underwent excision for tuberculous hip-joint disease. If that case had got well under Coley's fluid what a splendid triumph it would have been. He admitted that he was a sceptic and wanted these cases proved up to the hilt before being recorded. He did not agree that this was a case of sarcoma cured by Coley's fluid, and it would not figure in the Transactions as such.—Mr. WATERHOUSE concurred with the President in being absolutely sceptical with regard to Coley's fluid. His own experience was limited to 5 cases of inoperable sarcoma. In 3 of these cases rigors occurred and in 2 even with medium doses the patients had died from hyperpyrexia. It was therefore a most dangerous remedy and in no case did it do any good whatever. He related the case of a man suffering apparently from sarcoma of the lower third of the femur. He absolutely declined amputation, but he allowed an incision to be made into the mass, from which specimens were removed for examination. One portion was examined and it was declared to be a round-celled sarcoma, and another portion was sent to a well-known pathologist in Germany. He also reported that it was sarcoma. Nevertheless, two or three months later some suppuration occurred and a piece of necrosed bone came away. The patient recovered without Coley's fluid.—Mr. BATTLE, in reply, recalled that the patient was shown last year when about to undergo the treatment. His own impression at the time was in favour of a syphilitic origin, and he therefore put him on iodide of potassium in increasing doses until he was taking as much as 25 grains three times a day. This he did for two months without any effect whatever on the tumours. In order to satisfy himself as to the exact nature of the growth sections were taken from the tumour over the sternum and also from over the clavicle. These were examined by Dr. Jenner and by Mr. Shattock, and from both he received the assurance that it was a case of spindle-celled sarcoma with some large cells. While under iodide of potassium the tumours had been slowly getting larger and the arm had become greatly swollen from pressure on the vessels. Having heard of Mr. Moullin's case he thought it worth while, in the interest of the patient, to try the effect of the treatment, especially as no operative treatment could be thought of. The result they could see for themselves. The patient was now strong and healthy and no trace remained of the tumours. He asserted his belief that it was a case of spindle-celled sarcoma which could not have been dealt with in any other way.

Mr. BATTLE showed a woman, aged sixty-four years, who exhibited in a remarkable degree the phenomenon of Hepatoptosis. When she was erect the liver came down into the iliac fossa, and even when recumbent the hand could be passed above it under the ribs.

Mr. BATTLE also showed a man with Three Sesamoid Bones, which were shown by skiagraphy to be mainly bone in place of a patella.

Mr. BATTLE also showed a lad, fifteen years of age, exhibiting Genu Retrorsum. The weakness of the joint only dated back five weeks but was probably due to some defect of development of the upper epiphysis of the tibia. He proposed to fit him with a special knee-cap.

Mr. BATTLE also showed a patient with Multiple Fibrous Bodies all over the skin, especially of the trunk and head. On the head the growths were soft and nævoid in appearance.

PATHOLOGICAL SOCIETY OF LONDON.

Exhibition of Specimens.

A MEETING of this society was held on Nov. 15th, the President, Dr. PAYNE, being in the chair.

Dr. T. D. LISTER showed a specimen of Sarcoma of the Right Auricle of the Heart associated with Sarcoma of the Right Kidney from a child, aged four years. The symptoms had been of short duration, hardly a month having elapsed between the first symptom of abdominal pain and the death of the child. The growth was a small round-celled sarcoma with considerable extravasation of blood. He suggested that the growth was primary in the heart and secondary in the kidney.

Mr. T. CARWARDINE (Bristol) communicated a short account of a Tumour of the Rectum which he had treated with success by excision of the rectum. On clinical and naked-eye examination it had all the appearances of an epithelioma, but the microscopic and naked-eye sections, which were exhibited, proved it to be a spindle-celled sarcoma with some large round cells and giant cells. Very few such cases are recorded and Mr. Carwardine had not come across any similar one in Great Britain. Their authenticity had been doubted, but the specimen proved their reality.—Mr. A. E. BARKER mentioned a case of primary sarcoma of the colon in a man, aged twenty-six years. This was removed, but secondary nodules of a similar nature subsequently recurred.—Mr. STANLEY BOYD mentioned a case of alveolar sarcoma of the rectum in a woman.—Mr. TARGETT thought that such specimens were rare except as secondary to lympho-sarcoma. The type of such growths was in general that of a spindle-celled sarcoma.—Dr. HUNTER quoted another case of new growth of the cæcum which microscopically appeared to be a round-celled sarcoma. There were disseminated growths in various parts of the body, and those in the stomach had formed ulcers and were on examination found to be of the same nature.—Dr. ROLLESTON doubted the rarity of round-celled sarcoma of the digestive tract. He himself had shown a specimen in the œsophagus and referred to a specimen in the museum of the Royal Free Hospital, to a specimen of melanotic sarcoma shown at the society by Mr. Heaton, and also to its occurrence in white horses.—Dr. A. VOELCKER recalled a case of spindle-celled sarcoma in the ileo-cæcal valve of a child and another of melanotic sarcoma of the rectum. He did not think that sarcoma of the rectum was extremely rare.

Dr. WILLIAM HUNTER showed specimens of: (1) Thrombus in the Left Ventricle; (2) Embolus Impacted at the origin of the Right Common Iliac Artery; (3) Corresponding Veins Secondarily Thrombosed; and (4) Recent Infarcts in the Kidneys and Spleen from a youth, aged nineteen years, who died on the twenty-third day of illness from typhoid fever. A rigor had occurred on the seventeenth day of illness with agonising pain in the middle of the right thigh; five hours later the limb was of a dead white colour and no pulsation could be felt in the arteries of the foot. Gangrene supervened and a line of demarcation occurred in the middle of the thigh. In the left ventricle of the heart was a pale thrombus. Impacted at the point of origin of the common iliac artery was an embolus of pale colour, similar to that in the heart; the artery beyond and all its branches were filled with soft red thrombus. He commented on the comparative frequency of embolism in the above condition, emboli in the spleen being not uncommon, emboli in the kidney being less frequent, and emboli in the liver being still less frequent. He thought that the present case was due to embolism and not to thrombosis, the character of the clot in the common iliac artery closely resembling that in the heart.—Mr. STANLEY BOYD doubted whether this condition was due to embolism; he thought it more probable that the condition was due to thrombosis, and suggested that from the situation of the pain the occlusion of the vessel had first taken place at the level of the profunda and had extended from that point. This view was further borne out by the occurrence of thrombosis of the corresponding veins.—Dr. F. H. HAWKINS (Reading) quoted a case of occlusion of the middle cerebral artery giving rise to hemiplegia in typhoid fever and in the same case a clot was found in the auricle. He quoted another case and stated that Osler's view with regard to these cases was that they were thrombotic and not embolic.—The PRESIDENT did not consider gangrene as uncommon in fevers; he thought that there was considerable difficulty in ascertaining whether such a condition was due to an embolus or to thrombosis, but was inclined to the view that the changes which occurred in the blood tended to the occurrence of the latter.—Dr. HUNTER, in reply, said that a distinction ought to be drawn between small areas of gangrene which occur frequently in fevers and gangrene of a whole limb. He was still of the opinion that the blocking of the artery was due to embolism on account of the position and character of the clot in the common iliac artery.

Professor ROSE BRADFORD showed a specimen of Carcinoma of the Gall-bladder removed from a patient aged fifty-three years. No other growth was found except a small nodule in the head of the pancreas. No gall-stones were found in this case. The growth occupied the whole of the common

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bile-duct and extended up into the hepatic ducts. The common bile-duct and the cystic duct were completely occluded. The hepatic ducts in the liver were greatly dilated. The interest of the case depended upon the absence of gall-stones. The patient from whom the specimen was taken was perfectly well till 27 days before admission; she then had pain in the right hypochondrium and in 3 days became jaundiced. The patient died two months after admission to hospital. The jaundice was persistent and he thought that this ought to have pointed to the presence of new growth rather than to gall-stones, which condition he had suspected during life.—In reply to a question by the PRESIDENT, Professor BRADFORD said that there was no cirrhosis of the liver, but that it was fatty.—Dr. VOELCKER doubted if the irritation of calculi would produce carcinoma in the gall-bladder, although they were commonly associated. In 6 cases of primary cancer of the gall-bladder biliary calculi were present in 5, and in 9 cases of secondary growth in the liver no gall-stones were found. He instanced the rarity of new growth in the kidney in association with calculus.—Dr. HUNTER quoted a case of primary cancer of the bile-duct round an impacted calculus. In two cases of primary cancer of the gall-bladder biliary calculi were present in both. He did not, however, believe that cancer was directly due to the irritation of the calculi.—Dr. ROLLESTON quoted the observations of Siegert, who had shown that in cases of carcinoma of the gall-bladder biliary calculi were present in 95 per cent., whereas in secondary cancer of the liver biliary calculi were only found in 50 per cent. He was of the opinion that gall-stones were the exciting cause of the new growth.—The PRESIDENT said that cancer of the whole alimentary tract seemed to be increasing, not only in the tongue and rectum, but also in the digestive organs.

Dr. WILFRED HADLEY showed two specimens of Malignant Disease of the Lung. In the first case the growth began in the peri-bronchial tissue at the root of the organ and was seen running along the bronchial tubes, especially at the upper portion of the lung. The mediastinal tissues were also involved to a less extent, and the whole lung was contracted down on to its roots, the pleural cavity being filled with sanious fluid. The corresponding portion of the diaphragm was infiltrated with growth to the thickness of an inch, and secondary deposits were found in the mesenteric glands and the liver. Microscopically the growth presented the well-defined appearances of scirrhous carcinoma. In the second case the growth apparently began in the pleuræ, both sides being almost equally affected. Patches of flattened, cartilaginous material, varying in size, were seen scattered profusely over both pleuræ. The root of the lung was hardly implicated and the bronchial tubes and peri-bronchial tissue showed no infiltration. There were, however, a few deposits of rather softer growth scattered throughout the lungs, notably one at the base of the right one. The outer surface of the parietal pleura was thickened with growth, but it had not affected the serous lining. Secondary deposits were found in the heart, kidneys, and arm. Microscopically the growth showed mostly the appearances of encephaloid carcinoma, though in portions there was little, if any, fibroid stroma. The cells were not well-defined epithelioma, but more like those seen in large round-celled sarcoma, whilst throughout the whole tissue a considerable admixture of lymphoid tissue could be made out.

Dr. A. C. LATHAM showed specimens of Multiple Abdominal Dermoids. Two specimens were shown, one a dermoid of the right ovary, the other a dermoid in connexion with the stomach. Both these specimens were removed from the body of a woman who had died from acute general peritonitis set up by the perforation of the dermoid of the ovary. There were also numerous other small dermoids in connexion with the stomach, the descending colon, and the suprarenals. Nothing abnormal was found in the structure of the walls of these cysts and no nerve cells were observed. Dr. Latham pointed out that this condition was very rare and that extremely few cases of multiple dermoids had been recorded. Kolaczek, Fraenkel, and Hulke had each described a somewhat similar case. In discussing the question whether such a condition could be regarded as a malignant one Dr. Latham mentioned a case recorded by Montgomery of a teratoma in which the author considered that the recurrence pointed to a malignant type, but concluded by regarding the above generalisation of an innocent tumour to be due to transplantation.—Mr. TARGETT doubted the malignancy of the disease. He had seen epithelioma develop in the wall of a dermoid. He thought that dissemination of dermoid cyst occurred through transplantation of the cells.

Dr. FREYBERGER showed the Brain and Head from a case of Embolism of both Middle Cerebral Arteries. The patient, a woman, aged thirty-nine years, had a paralytic stroke, in consequence of which she was completely paralysed on her right side and aphasic. Fourteen days afterwards she became suddenly comatose and died nine hours after the onset of the coma. At the post-mortem examination an embolus was found in the left middle cerebral artery; the thrombus was firmly adherent to the inner coat of the artery. There was a second and much larger embolus in the right middle cerebral artery, succulent, not adherent to the vessel wall. Numerous anæmic infarcts were in the spleen and kidneys. There were cancer of the pancreas and liver and recurrent vegetating endocarditis. The case was interesting on account of (1) the concurrence of cancer and endocarditis; (2) the embolism of both middle cerebral arteries; and (3) because of the difference in the appearance of the two emboli due to the retrograde changes having taken place in the first embolus, whereas the second was comparatively recent.

CLINICAL SOCIETY OF LONDON.

Primary Sarcoma of the Knee-joint.—Hyperpyrexia.—Excision of Intestine.—Restoration of the Ulna by Insertion of a Rabbit's Femur.

A MEETING of this society was held on Nov. 11th, the President, Mr. LANGTON, being in the chair.

Mr. HOWARD MARSH read a paper on a case of Primary Sarcoma of the Synovial Membrane of the Knee-joint. A man, aged twenty-one years, was in St. Bartholomew's Hospital in September, 1892, for a swelling on the inner side of the left knee of fourteen months' duration, situated over the inner condyle of the femur, close to its articular border. It was of about the size of a small flattened Tangerine orange. Its nature was doubtful, but it was regarded as probably due to tuberculous periostitis, with thickening of the adjacent parts. When cut into, however, it proved to be situated entirely in the subsynovial tissue and to be of the nature of a new growth. It was freely removed by cutting it out, together with a zone of surrounding synovial tissue. The wound healed without complication. Microscopic examination showed that the new growth was a mixed spindle- and round-celled sarcoma. In March, 1895, the patient was admitted with a recurrence of the growth, and a mass as big as a marble was dissected out from the upper end of the original scar. This had the same structure as the original growth. In December, 1895, a nodule of the size of a small walnut was removed from the subsynovial tissue to the outer side of the joint. In August, 1896, two small nodules of sarcomatous growth were removed from the inner side of the joint, and in October, 1897, two small masses of a similar nature were detected and removed. In December, 1897, a mass could be felt at the posterior part of the joint, apparently as large as a walnut. This had displaced the popliteal artery, so that it could be felt close beneath the skin. The patient complained of severe pain down the back of the calf. There was no affection of the femoral glands. As the limb was now almost useless, and as the growth was extending, amputation was performed through the middle of the thigh. On examining the joint a growth as large as a bantam's egg was found springing from the synovial membrane at the back of the joint, and there was a second but smaller mass extending forwards into the joint between the condyles. These growths, like those previously removed, presented a microscopic structure of a spindle-celled sarcoma with some small round cells here and there. Mr. Marsh remarked that the case was one of considerable rarity. He had not himself met with any other instance of primary sarcoma of a synovial membrane. The history of the case was remarkable; it extended in all over at least six years. The disease remained entirely local, and the various recurrences which took place involved different parts of the membrane, so that in turn the inner, an outer, and the posterior portions of the synovial membrane were involved. Up to the present time the patient had remained well.—Mr. JONATHAN HUTCHINSON, Jun., mentioned a case in

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which he removed a sarcoma growing from the posterior ligament of the knee-joint. Recurrence took place in the posterior ligament within the year and there was also a firm series of nodules in the subcutaneous tissue of the thigh. Amputation at the hip was performed, but the patient did not survive. No secondary growths were found in the internal organs. He asked if the growth in Mr. Marsh's case was a pure sarcoma or a fibro-sarcoma. In some ways the case resembled those of "regional tumours" which recurred repeatedly in the same position but did not become disseminated. Such cases had been described by Mr. Hutchinson's father and by Sir Thomas Smith, and the speaker quoted one in which during several years tumours of sarcomatous structure developed repeatedly in the abdominal wall, but did not occur elsewhere.—Mr. HOWARD MARSH, in reply, said that the microscopic characters were those of a fibro-sarcoma. He thought that the cases mentioned by Mr. Hutchinson were those which Sir James Paget described in his "Surgical Pathology" as "recurrent fibroids"—tumours having fibro-sarcomatous structure, recurring locally eighteen or twenty times, but without recurrence in any internal organs. There was a case probably of this nature affecting the cheek now in St. Bartholomew's Hospital in whom such local recurrences had taken place three times and now the growth was too large for removal.—The PRESIDENT mentioned a case in which a "recurrent fibroid" had been removed twelve times from the foot, after which no further recurrences took place.

Dr. NEWTON PITT brought before the society a case of Hyperpyrexia in a Neurotic Woman with Bronchiectasis. The patient, a young woman, aged twenty-six years, had been troubled with chest mischief with abundant expectoration and hæmoptysis since the year 1891. Her condition was supposed to be due to phthisis, until she came under the care of Dr. Boswell at Faversham, when it was recognised that she had bronchiectasis; she then passed under the care of Dr. Anderson, who sent her to Dr. Pitt in 1895. She had periodic attacks of severe dyspnœa lasting for two or three days, preceded by a diminution in the expectoration. In these attacks the temperature was found almost always to be much higher in the left than in the right axilla, the difference amounting to two or four degrees. The difference on the two sides of the chest amounted to a degree or so, and at times on the left side the temperature ran up to 110°F. occasionally to 114°, and once even higher. The dyspnœa was so intense that the temperature, which was not excessive, could rarely be taken in the mouth. The patient was so prostrate during the attacks that it was not possible to carry out extensive and systematic examinations of any kind. The rectal temperature was not extreme. The temperatures changed within an hour or so and the patient was bathed in the most profuse perspiration, which was not limited to one portion of the body. It was noticed that at the acme of the attack the left palpebral fissure was smaller than the right. The appetite failed absolutely and the urine was extremely concentrated during an attack. The pulse-rate ran up to 140 sometimes. During a period of seven weeks, while the patient was under observation, the amount of general bronchitis varied from time to time, but there were physical signs of a cavity at the angle of the left scapula. No tubercle bacilli were present in the sputum, but staphylococcus aureus, another coccus, and a sarcina were found, the last-named being especially abundant. As an example of the temperatures it was noted once that when the temperature in the right axilla was 102° that in the left was 109·7° and in the mouth 99·4°. Many text-books refer to the albuminuria of fever. This is surely a misnomer, as when there is albumin in the urine it is, together with the fever, the result of a toxic process and is not proportional to the severity of the fever but to the intensity of the toxæmia. We ought to speak of toxic albuminuria. In this case there never was a trace of albumin in the urine in spite of the temperature being so high. The patient when last heard of was still liable to these attacks and she remained in much the same condition. Dr. Pitt did not wish to offer any explanation of these extraordinary temperatures, but merely to put the case on record. He thought that the temperatures were reliable and that the fact that with the temperature taken every four hours for many weeks by different people the more or less persistent difference between the temperatures in the two axillæ must be accepted as a fact. The extreme prostration of the patient and the dyspnœa present prevented her from taking the slightest interest in her temperature. In similar cases it has been suggested that the patient has artificially raised the temperature of the thermometer by friction, &c., but by any such means it is only possible to raise the temperature slightly, and it is quite impossible to do it without detection when a patient is under careful observation. In a similar case mentioned in a debate at this society by Dr. Mahomed in 1891, where a patient had temperatures of 114° on several occasions and once up to 128°, he came to the conclusion that there must have been fraud although he could not detect it. Still it is by no means certain that this conclusion was justified even in that case.—Sir DYCE DUCKWORTH wished for an expression of opinion from physiologists as to the possibility of such localised hyperpyrexia. All the recorded cases had been in women of a neurotic temperament and in many fraud on the part of the patient had been proved, and his own conviction was that the others were undiscovered frauds practised by mentally disordered patients, whose ingenuity in this direction was without limit.—Dr. BEZLY THORNE, with reference to the occurrence of unilateral symptoms in a neurotic patient, mentioned the case of a woman suffering from asthmatic attacks which came on rapidly, caused great alarm, and then passed off. On one occasion he found the heart beating under the right nipple although there were no signs of pleural effusion, an observation confirmed by Sir William Jenner. The condition could not have been due to transposition of the viscera as it passed off after a few days.—Mr. CLEMENT LUCAS mentioned a case in which a patient was detected heating the thermometer in a poultice and Dr. SIDNEY PHILLIPS one in which a cup of tea was used for a similar purpose.—Mr. D. DREW mentioned the case of a young woman who had been operated on for necrosis of the frontal bone and who had subsequently repeated attacks of hyperpyrexia, the temperature reaching 109°, for which no cause could be found.—Dr. KINGSTON FOWLER said that in nearly all cases of bronchiectasis there was some rise of temperature and dyspnœa attending any diminution of expectoration, but he had never seen the high temperatures described by Dr. Pitt. He observed that oral and axillary temperatures were unreliable, and in doubtful cases the rectal temperature alone could be trusted.—Mr. G. EASTES referred to the well-known case recorded in 1875 by Mr. Teale of Scarborough. Physiologists then denied that such temperatures were compatible with life.—Dr. PITT, in reply, said that his patient was so ill at the time that he thought that it would have been impossible for her to have played any tricks and she was most closely watched. In the Guy's Hospital Reports for 1893 Dr. Bryant had collected 100 cases of hyperpyrexia, including Mr. Teale's case.

Mr. CLEMENT LUCAS related the case of a boy, aged five years, from whom he had removed successfully 24½ in. of Small Intestine by the aid of a Murphy's button. The child had suffered every year from birth with bronchitis and from the age of a fortnight it had been noticed that there was a swelling on the left side of the scrotum which always remained irreducible. An operation on the hernia was attempted by a surgeon in the country on April 11th, 1897. Vomiting occurred on the following day and the patient's condition growing rapidly worse he was sent up to Guy's Hospital to be under the care of Mr. Lucas. The scrotum was much inflamed and peristaltic action could be seen beneath the skin. He was first seen by the assistant surgeon on duty, who laid open the scrotum and found fæcal extravasation and two wounds in the gut, which he attempted to close by suture, but did not reduce the bowel into the abdomen. The patient's condition remained critical and on April 17th it was found that the sutures had given way and that fæces were being discharged through the scrotum. In spite of great care the constant discharge of fæces caused ulceration of the surrounding skin. On April 25th the temperature rose to 104° but no general abdominal tension or tenderness occurred. From April 27th to May 18th the temperature ranged between 99° and 100°; almost the whole of the contents of the bowels were discharged through the fistula in the scrotum. On May 18th, 1897, Mr. Lucas determined to perform resection of the bowel with the object of restoring the continuity of the intestine, curing the fæcal fistula, and getting rid of the hernia. The bowels were cleared and the fæcal fistula was thoroughly washed out with an antiseptic lotion, then all the ulcerated parts were firmly bound up with aseptic pads. The skin of the abdomen being disinfected a central laparotomy incision was made under A.C.E. mixture. The bowel passing out and returning through the left inguinal canal was

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surrounded by sterilised pads. On the parietal side the two pieces of bowel were ligatured near the internal abdominal ring and on the proximal they were clamped. Having divided between the clamps and ligatures Murphy's button was used to give end-to-end continuity to the bowel. The ligatured distal ends were further secured by turning in the mucous membrane and sewing over them. The pads were removed and the abdominal wound was sewn up. Attention was now turned to the scrotum, which was laid freely open, and the damaged and adherent bowel was separated by the fingers. The sealed ends within the abdomen were pulled through the inguinal canal. When detached and measured the bowel removed was found to be 27½ in. in length. The suppurating scrotum was thoroughly washed and packed with iodoform gauze. There was little to remark on in the subsequent progress towards convalescence. The temperature, which was 100° when the operation took place, fell to normal on the second day, and never again reached 100°. On the fourth day the laparotomy incision was found to be united primarily. Ten days after the operation the temperature became regular at 98·5°. As the button had not come away on the twenty-second day a dose of castor oil was given and it was passed on the twenty-third day after the operation. Mr. Lucas attributed the successful result in this case largely to the care which was taken to prevent any contamination of the laparotomy wound or peritoneum through the fæcal fistula, and to the method he adopted of closing the ends inside the abdomen before drawing the bowel out through the scrotum. The patient was shown at the meeting eighteen months after the operation in good health and free from hernia.—Mr. HOWARD MARSH mentioned a case of a child who had an abscess in connexion with the appendix which had existed for about a month. He opened it and then it did well for six weeks, and then fæcal extravasation occurred. He could not close the fistula which formed, so he performed laparotomy and excised the cæcum, joining the ileum to the colon by end-to-end anastomosis.

Mr. ARBUTHNOT LANE showed two cases illustrating the Restoration of the Shaft of the Ulna by the Insertion of the Femur of a Rabbit. One of the patients was a child the subject of a congenital abnormality of the shaft of the ulna. She had suffered from a progressive incapacity and deformity of the forearm and hand since birth. It hung in a position of considerable flexion and abduction when the child attempted to use it, which she did very imperfectly indeed. The ulna consisted of two separate parts, the pointed extremities of which overlapped and the axes of which varied considerably in direction. The lower end of the ulna was situated considerably above that of the radius. He exposed both fragments freely and separated them from the surrounding parts. Extension was made on the lower fragment till the hand assumed its normal position. The femur of a rabbit was split longitudinally and its halves were wired securely to the fragments so as to bring their longitudinal axes into their normal relationship to one another and to retain the lower fragment on a level with the lower end of the radius. The result of this operation was most satisfactory both as regarded the removal of the deformity and the restoration of the normal functions to the part. The second was that of a man, aged nineteen years, who lost the shaft of the ulna in 1896. He was admitted into Guy's Hospital in September, 1898, when the radiograph showed that there extended from either extremity of the ulna a fine spicule of bone. An incision was made along the length of the ulna and these spicules were exposed and freed from the soft parts in which they were embedded. A femur of a very large rabbit was then wired securely to the ends of the ulna, the spicules being included in the loops of wire. The result as shown by the skiagraph was most satisfactory, and Mr. Lane hoped at a later date to render the usefulness of the arm even more complete by removing some of the new bone which had been thrown out about the extremities of the ulna in consequence of the original inflammation.

OPHTHALMOLOGICAL SOCIETY.

The Accommodation Theories of Helmholtz and Tscherning.—Myxo-fibroma of the Optic Nerve Sheath.—Toxic Amblyopia due to Lead.—Exhibition of Cases.

AN ordinary meeting of this society was held on Nov. 10th, Mr. F. RICHARDSON CROSS, Vice-President, being in the chair.

Mr. PRIESTLEY SMITH read a paper entitled "The Accommodation Theories of Helmholtz and Tscherning: Suggested Explanation of their Discrepancy." He said that Tscherning's theory was sharply opposed to the generally accepted explanation but was based on very accurate observations. The question was whether the accommodation change in the lens depended on slackening of the zonula (Helmholtz) or on tightening (Tscherning). The anatomical arrangement of the parts concerned and nearly all clinical and experimental facts, especially the observations of Hess, which showed that during strong accommodation the lens was often tremulous and displaced downwards by gravity, strongly favoured the former view. Tscherning, however, had proved that during accommodation the anterior lens surface changed from a globular to a hyperboloid curve—that is, tended to become conical—sharper at the centre of the pupil and flatter towards the margin, and this, he contended could only be caused by tightening of the zonula supplemented by internal resistance at the pole of the lens. Mr. Priestley Smith's object was to show that this change could be equally well explained by slackening of the zonula. Let the case of an elastic circular hoop of steel first be taken. Traction at the sides transformed it into an ellipse; the curve flattens at the poles and sharpens at the equator, and somewhere intermediate between these regions was a point where no change took place. The position of this point and the general contour assumed by the hoop were governed by the varying resistance which it offered at different points. By modifying the resistance the curve could be modified at pleasure. Let the resistance at the pole be increased and the conical form observed by Tscherning was obtained; let it be increased towards the equator and the opposite effect—namely, a flattening at the pole and a sharpening of the curve elsewhere—was obtained. Mr. Priestley Smith exhibited a model consisting of an elastic hoop of metal bent so that it assumed in exaggerated form the shape of the lens during accommodation—namely, conicity of the anterior surface. It was strengthened with supplementary elastic strips in such a way that its resistance or rigidity increased progressively from the pole towards the equator. Traction at the equator, representing tightening of the zonula, reduced the conical to a spherical form. In the latter condition it represented the lens when subjected to the influence of the zonula; in the conical state it represented the accommodative change which occurred when the zonula was slackened by contraction of the ciliary muscle. It would be easy to theorise as to the resistance proper to the crystalline lens and to show reason for supposing that the arrangement of the fibres was such as to render the resistance progressively greater towards the equator, but Mr. Priestley Smith said he would not go beyond demonstrable facts. What he desired to show was that the changes which Tscherning had demonstrated with such admirable skill and ingenuity were not incompatible with the theory of Helmholtz. To his mind they were explained more satisfactorily by this theory than by any other.—Mr. CROSS, Mr. LANG, Mr. ERNEST CLARKE, Mr. BASS, Mr. DOYNE, and Mr. HARTRIDGE took part in the discussion.—Mr. PRIESTLEY SMITH said, in reply, that the continuous growth of the lens was inconveniently obvious in the enlargement and sclerosis of the organ with advancing age, both changes representing the steady development of enclosed epithelial elements in a site where there were no means of escape. The lens when free actually took the shape he had described, of which the model presented was a gross exaggeration. Helmholtz and Tscherning demonstrated the change in shape of the lens during accommodation by duplicating the image reflected from its surface. The anterior capsule was thicker than the posterior and the softness of the juvenile lens was very remarkable, needing the slightest force only to change its shape. He animadverted strongly on the manner in which Helmholtz's measurement of the antero-posterior diameter, 3·7 mm., had been copied into various text-books and monographs, whereas the more recent measurements, 4·5 to 5 mm., were much nearer the truth.

Mr. ARNOLD LAWSON reported a case of Myxo-fibroma of the Optic Nerve Sheath. The patient was a well-nourished girl, aged two years. The sight of the left eye had been thought defective for three months; it had been getting prominent for a few weeks. The personal health and family history were both good; the left eye was slightly prominent, but its movements were good and the pupil acted to light; the fundus was normal, except that the veins were rather full. Five weeks later there was decided proptosis, the pupil was inactive, the optic nerve was pale, and the eye was blind; the

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movements, however, were good. From this time the symptoms progressed rapidly till the time of operation, five months after the first visit; the disc was then chalky white, the eye was proptosed forwards and slightly downwards, and the movements were strictly limited. The eye and contents of the orbit were removed; the tumour, which was as large as a partridge's egg, nearly filled the orbit and completely surrounded the optic nerve from the lamina cribrosa to the optic foramen. The child is now, six months after operation, in good health. The optic nerve was not involved in the tumour, which arose from the outer dural sheath. Microscopically the growth was found to be a myxo-fibroma. Mr. Lawson thought it inadvisable to attempt to save the eye in these cases; if the growth extended to the optic foramen, this latter should be scraped out. Myxo-fibromata were very rare; as a possible origin he suggested that a portion of the mesoderm intended to form the vitreous became included in the sheath of the optic nerve during its closure.

Mr. HERBERT H. FOLKER (Stoke-on-Trent) reported 5 cases of Toxic Amblyopia due to Lead which occurred among employés in the pottery district. 1. A female, aged twenty-six years, had worked in the dipping-house two years; on four occasions she had had symptoms of lead poisoning, colic, vomiting, and headache. Vision failed in the left eye and four days later in the right; the failure began with flashes of light and coloured vision and rapidly proceeded to total blindness. The pupils were dilated and inactive, the optic discs were pale and blurred, the retina was œdematous, and there were several hæmorrhages in it. There was some albumin in the urine. 2. A female, aged twenty years, six weeks after beginning work as a lithographer had headache and colic; after a year she had sudden total loss of colour vision, followed by sensations of flashes of light. There was typical neuro-retinitis with hæmorrhages. In this case vision improved. 3. A male, aged sixteen years, employed in the dipping-house, after two years had diplopia with headache, colic, and vomiting; the vision failed shortly after, and in six weeks he was totally blind. He also had coloured vision for a time and flashes of light. The optic discs were very white and the arteries were reduced to white cords. He had a trace of albumin and a gum line. 4. A female, aged eighteen years, employed in the dipping-house, after three years had headache and vomiting; the vision failed in one night; she had flashes of light of various colours. The optic discs were intensely white. 5. A female, aged eighteen years, employed in the dipping-house, had had for ten months several attacks of headache, colic, and vomiting; then the sight failed, and in two months she was blind. The optic discs were white and the vessels were small. In this series of cases all other toxic agents were excluded. None of the patients who had worked in the dipping houses responded to treatment, the case of the lithographer did; in the former the poison was introduced by absorption through the skin, in the latter by inhalation. With one exception all the cases experienced coloured vision. Treatment was by iodide of potassium or strychnine by the mouth or hypodermically.

The following cases were shown:—

Major M. T. YARR, R.A.M.C.: Case with Fundus Changes and Fibrous Tissue Formation in Vitreous, ? Congenital.

Mr. TREACHER COLLINS: Case of Monilethrix affecting Eyelashes and Eyebrows.

Mr. DOYNE: Case of Pigmentation of the Conjunctiva.

PATHOLOGICAL SOCIETY OF MANCHESTER.

Exhibition of Cases and Specimens.—Pathology of Cancer.

A MEETING of this society was held on Nov. 9th, Dr. R. B. WILD, the President, being in the chair.

Professor DIXON MANN showed an Aneurysm of the Abdominal Aorta in which rupture, accompanied by profound collapse, occurred three days before death. The patient recovered from the collapse and although the radial pulse could plainly be felt no pulsation of the tumour was perceptible. After death, which took place suddenly, it was found that subperitoneal hæmorrhage had taken place by which the pulsation of the aneurysm was masked and which also to some extent impeded the communication between the sac and the aorta.

Professor MANN also exhibited some Blood from a case of Acute Fatal Poisoning by Water Gas. The presence of carbon monoxide hæmoglobin was made evident by means of Kunkel's test (a 3 per cent. solution of tannic acid), and in order to afford a means of comparison a specimen of normal blood was treated in the same way. The blood which contained the carbon monoxide hæmoglobin yielded a precipitate of bright whitish-pink colour, whilst that thrown down from the normal blood was the colour of *café au lait*.

Dr. W. H. B. STODDART read a paper entitled "A Contribution to the Pathology of Cancer." The paper dealt with a case of cancer which had come under Dr. Stoddart's observation at Prestwich Asylum. The patient (an alcoholic dement) suffered for some months from obstinate constipation and died from perforative peritonitis. Post mortem a growth was found extending along the whole length of the mesenteric border of the stomach, small and large intestines, to the anus. It was limited to the intestine and microscopical examination showed it to be a spheroidal-celled carcinoma. Discussing the pathology of the case, Dr. Stoddart showed that there were two possible hypotheses to explain the anomalous distribution of the growth. The first was that the cancer began in the stomach, the rest of the intestinal tract being infected through the food-stream, the infective particles becoming arrested at the junction of the intestinal and mesenteric lymphatics; the second was that the whole growth arose on account of a rod of sub-notochordal mesoblast with dormant hypoblastic characters, assuming those characters in advanced life and giving rise to the epithelial growth. The specimen was shown, together with sections and microphotographs.

Mr. E. STANMORE BISHOP and Dr. FOTHERGILL showed an Ovary and Tube, with photo-microscopic sections and drawings. The specimen was removed by Mr. Bishop from a patient who had long suffered from pelvic mischief of infective origin following abortion. The clinical interest of the case lay in the fact that the symptoms and signs of ectopic pregnancy were exactly simulated. After an attempt to remove the mass by the vagina, during which a cyst containing blood was ruptured, the abdomen was opened, and after separating dense adhesions the ovary and tube were removed. The pathological interest of the case lay in the connexion which it illustrated between septic ovaritis and the origin of cystic disease of the oöphoron. The ovary was full of small cysts caused by the interrupted development of Graafian follicles, but closely resembling the early stages of ovarian cysts which are as a rule examined only when they have attained larger dimensions.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Tetany.—Enteric Fever complicated with Pregnancy.—Pemphigus Foliaceus.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Nov. 4th, the President, Mr. EDWIN LEE, being in the chair.

Mr. MAYO ROBSON read a paper on Tetany and Tetanoid Spasms associated with Gastric Dilatation treated Surgically. He related three cases and referred to others in which he had seen these complications associated with simple pyloric stenosis. He thought that the complications were much more common than was generally recognised, as attention had only been drawn to the more serious and almost universally fatal cases. In the cases which he related operation had been undertaken successfully and in all the cases intervals between the severe tetanoid attacks had been selected. He thought that the disease might be looked on more hopefully if the cases were treated surgically at an earlier period before the extreme manifestations of tetany had supervened.—Dr. TREVELYAN expressed a doubt as to whether Mr. Robson's cases could be really classed as genuine gastric tetany. Even Case 1, which resembled strychnine poisoning, was anomalous. He looked upon gastric tetany as a very rare disease. In the severe and dangerous attacks such as he had seen he thought that no other treatment was admissible than emptying and washing out the stomach, stimulation, and supplying the body with fluid by means of saline rectal injections or subcutaneous infusion, &c. He drew special attention to the fact very generally noted that the attack of tetany followed upon prolonged vomiting in cases of gastric dilatation. It was important to treat this vomiting, and if other means failed operative treatment directed to the gastric dilatation might have to be considered. Dr. Trevelyan looked upon the intoxication theory of gastric tetany as the most satisfactory,

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but as yet it had not been definitely established.—Dr. CHURTON, while recognising the evidence of a connexion between gastric dilatation and tetany, thought that there must be some other factor necessary for the production of the disease, inasmuch as gastric tetany seemed to be extremely rare, although separately both gastric dilatation and tetany were common. Indeed, from cases which had been related to him recently during a consultation upon a case of typical tetany in a woman, aged forty-eight years, he inferred that this disease was of much more frequent occurrence in some districts than is usually supposed and that it was sometimes fatal.—Dr. CHEETHAM bore evidence as to the severity of one case of gastric tetany referred to by Dr. Trevelyan. There was no gastric dilatation, but the attacks always followed upon vomiting. The patient was now well.—Dr. GRIFFITH and Mr. LITTLEWOOD agreed with Dr. Churton as to the rarity of gastric tetany. Mr. Littlewood was under the impression that he had seen something of the kind in some cases after gastro-enterostomy.—Mr. ROBSON replied.

Mr. A. E. PEARSON described a case of Enteric Fever complicated with Pregnancy in a woman, aged eighteen years, who was admitted into the Leeds Fever Hospital on Sept. 8th, 1898. From the time of the cessation of the menstrual periods her health had been indifferent. She had suffered from morning sickness, which gradually became more frequent. There was also headache. On Sept 4th she took to her bed. On admission the temperature was 104°F. Signs of enteric fever, diarrhœa, meteorism, irregularly intermittent temperature, rapid pulse, and vomiting, especially in the morning, marked the succeeding days. Subsequently the vomiting and diarrhœa declined considerably until the third week of the patient's stay in hospital, when the vomiting became more frequent, the pulse was 140 to 160, and thready, and the meteorism rapidly increased. On several occasions the patient became so seriously collapsed that perforation was diagnosed, but under treatment the urgent symptoms subsided. In the fifth week marked jaundice supervened, there was considerable tenderness in the hepatic region, and the liver dulness appeared to be increased. On Oct. 12th as suppuration was suspected the liver was explored with a negative result. The patient aborted on the same evening. The fœtus measured about 4 in. in length and the placenta was adherent. The next day the patient was much easier. The vomiting ceased and the circulatory disturbance declined. The progress towards recovery was almost uninterrupted.—Mr. LITTLEWOOD, who had explored the liver, spoke of the harmlessness of the procedure.—Dr. TREVELYAN suggested that the jaundice was due to a typhoidal cholecystitis. Dr. WRIGHT, Mr. MAYO, and the PRESIDENT also joined in the discussion.

Dr. HELLIER read notes of a case of Pemphigus Foliaceus which attacked an apparently healthy female child on the ninth day after birth. The disease was virulent and rapidly fatal. On the tenth and eleventh days huge flaccid bullæ formed on the trunk, the face, and the limbs, and when the child died early on the twelfth day the skin of about half the surface of the body was either covered by enormous serous clots or entirely denuded of its cuticle. The child looked as though she had been scalded by boiling water. The cause of the attack was unknown. The mother was a healthy primipara and the father was a strong and healthy man. There was no specific history in either parent. The child was born in a healthy middle-class house and neighbourhood and received every care as regards cleanliness and nursing. There was no known source of navel infection. The mother made an excellent recovery from childbed. Dr. Hellier said that such cases are not necessarily specific. The disease is rare and very fatal. It is said to have occurred in epidemic form.—Dr. LIDDELL did not think that Dr. Hellier's case was one of syphilis, as it presented none of the distinguishing characteristics of that disease. Pemphigus neonatorum was considered to be due to septic causes in connexion with the surroundings of childbirth. Pemphigus foliaceus was a rare disease usually running a chronic course, while Dr. Hellier's case was one of exceptional rapidity. Under the term "dermatitis exfoliativa neonatorum" Ritter has described a class of cases in infants some of which bear a resemblance to pityriasis rubra, while others presenting flaccid bullæ like pemphigus foliaceus are regarded by some authorities as cases of that disease.—Dr. CHURTON referred to several cases of pemphigus and discussed the treatment.—Mr. KNAGGS mentioned a case in which continuous bath treatment was followed by recovery.—Mr. MAYO referred to a case and Dr. HELLIER replied.

The following cases, pathological specimens, &c., were exhibited:—

Dr. MANTLE: A case of Scleroderma with Rheumatic History.

Mr. MAYO ROBSON: Extra-uterine Gestation Sac at Eleventh Month removed entire.

Dr. HELLIER: (1) Uterus with Myomatous Tumour removed by Abdominal Hysterectomy; and (2) 30 Gall-stones removed by Cholecystotomy.

Dr. ALLAN: (1) Senile Uterus showing Ovarian Cysts; (2) Liver showing Malignant Disease, &c.; and (3) Kidneys from a case of Pernicious Anæmia.

Dr. CHADWICK: A case of Diphtheritic Peripheral Neuritis associated with Right Hemiplegia.

Mr. LAWFORD KNAGGS: Fibro-cystic Tumour of Uterus.

Dr. T. WARDROP GRIFFITH: (1) Specimen showing one of the possible relations of Mitral to Aortic Disease; and (2) Dissection of a Malformed Hand.

Mr. LITTLEWOOD: (1) Ovarian Cyst with Twisted Pedicle (specimen); and (2) Vermiform Appendix with Perforation (patient and specimen).

Dr. BARRS: A case of Spasmodic Torticollis.

Mr. MOYNIHAN: (1) Congenital Absence of Femur; and (2) Cyst of Kidney, partial nephrectomy.

Dr. TREVELYAN: (1) A case of Rapid Recovery from a Paraplegia due to Spinal Caries; and (2) a case of Relapsing Paralysis of One Leg of Obscure Causation.

Dr. WARDROP GRIFFITH showed a specimen of Gangrene of the Lung produced by the breaking down of a caseating bronchial gland which had caused a communication between the œsophagus and the lung. The patient was fifteen months old and was under treatment for cough. A widely distributed tuberculous lesion was found after death.

LIVERPOOL MEDICAL INSTITUTION.

Ringworm.—Exhibition of Specimens.

A MEETING of this society was held on Nov. 10th, Mr. F. T. PAUL being in the chair.

Dr. J. C. M. GIVEN communicated an interesting and well-illustrated paper on Clinical and Microscopical Varieties of Ringworm. After a *résumé* of the work done by various investigators up to the present time he gave a detailed account of his own researches, which consisted of a very thorough examination of 50 consecutive cases met with in the out-patient department of the hospital. He furnished a complete description of his methods, &c. His cases were arranged in three clinical groups: (1) cases in which the scalp was scaly and rough, with broken stumps of hairs showing a white sheath; (2) cases where the patches were smooth and there were few stumps; and (3) cases in which suppuration had occurred. His investigation was to ascertain (1) if these clinical varieties were associated in any way constantly with either of the three main varieties of the ringworm fungus and (2) whether the rapidity of cure was in any way related to the variety of fungus present. The microsporon audouini was found in 39 cases, or 85 per cent. Of these 31 were scaly, 5 bald, and 3 suppurative. The megalosporon endothrix was present in 15 per cent. The megalosporon ectothrix was not found in any scalp cases. In all cases of suppuration in the scalp the microsporon was found, including one well-marked case of kerion. When ringworm occurred in several members of the same family the parasite was always found to be of the same variety. He found that the ease with which the cases yielded to treatment in no way depended upon the variety of organism present. The paper was well illustrated by numerous excellent microscopic preparations and by a series of micro-photographic lantern transparencies.—Dr. G. G. STOPFORD TAYLOR had followed Dr. Given's investigations with great care and pleasure. The cases came from his (Dr. Taylor's) clinic and he could confirm clinically all Dr. Given had said.—Dr. BARENDT alluded to the confusion which still prevailed in this country as well as on the continent as to what should be the accepted criteria in deciding upon the plurality of the ringworm fungus. For his own part he considered he had evidence that megalosporon might become microsporon under modification of the culture media. He agreed that Dr. Given's three clinical types of ringworm were in the main correct and, like him, questioned whether a distinct variety of trichophyton produced always the same clinical results.—Dr. ABRAM, Dr. BUCHANAN, Dr. GRÜNBAUM, Dr. LOGAN,

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Mr. PAUL, and Dr. N. RAW also entered into the discussion.—Dr. GIVEN replied.

Dr. ALEXANDER showed:—1. The Cerebellum of a boy, aged eleven years, with an Abscess occupying the greater part of the right hemisphere. Basilar meningitis was also present. The patient was brought by a drunken mother into the workhouse hospital a few days before death. Vomiting and retraction of the head were present and later coma supervened. No history was given and other circumstances prevented exploration being undertaken. Afterwards it was learnt that the boy had been operated upon for mastoid disease in another hospital a few weeks previously and had been discharged "well." 2. Three specimens of a rare variety of Sebaceous Tumour—probably an adenoma. They were all removed from the same subject and two of them were partially calcified. 3. Epithelioma of the Cheek and Ear. 4. Sarcomatous Epulis. 5. Papilloma of the Penis.

Mr. HAWKINS-AMBLER showed: (1) 132 Gall-stones which he had removed while exploring a carcinomatous gall-bladder; and (2) a specimen of Tubal Pregnancy removed by operation.

Dr. W. T. ALLEN exhibited a large Aneurysm of the Innominate Artery which caused death by rupturing into the pleura in a man aged forty-three years.

Mr. R. A. BICKERSTETH showed:—1. An Intra-testicular Hæmatocele as the result of an injury. A large quantity of blood had been effused within the tunica albuginea and the glandular substance of the organ was pressed aside. 2. A microscopic specimen of a Pedunculated Fibroma of the Tongue.

Dr. BUCHANAN showed:—1. Spermatozoa from Stains in Rape Cases. In one specimen the stains were recent, in another thirteen months old. From both excellent specimens of spermatozoa were obtained. 2. Microscopic Interstitial Fibroids of the Uterus.

Dr. E. T. DAVIES showed what is happily nowadays a rare pathological specimen—an enormous Ovarian Cyst removed post mortem from a woman, aged thirty-three years. She had persistently and absolutely refused operation. The abdomen became enormous, the legs were swollen and cracked and discharged great quantities of serum. Emaciation became extreme and dyspnœa great. She died somewhat suddenly from rupture of the cyst. Post mortem the peritoneal cavity was found to be full of ovarian fluid. The tumour was the usual multilocular cyst with one large and many small cysts, and could have been easily removed, there being no important adhesions.

Dr. T. B. GRIMSDALE showed a microscopic section of the Uterine Scar two months after Cæsarean section. The patient died from carcinoma of the rectum, for which colotomy had been done some months previously. Post mortem the silk sutures in the uterus were found to be surrounded by small, whitish, nodular growths, which were thought to be cancerous, but the microscope showed them to be fibrous, and the question was raised whether silk was more likely to produce these irritative fibromas than was catgut.

Mr. THELWALL THOMAS exhibited a Tuberculous Kidney removed by Nephrectomy. It contained several small abscesses and miliary tubercles were dotted all through it.

A considerable discussion followed, in which Mr. PAUL, Dr. WARRINGTON, Dr. ALEXANDER, Dr. E. T. DAVIES, Mr. A. E. DAVIS, Dr. CARTER, Mr. LARKIN, Dr. ARCHER, and Dr. BUCHANAN took part.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Tuberculous Neuritis.—Acute Yellow Atrophy.

THE first meeting of the seventy-eighth session of this society was held on Nov. 2nd, Dr. WILLIAM CRAIG, Vice-President, being in the chair.

Mr. ALEXIS THOMSON showed a patient after Resection of the Pylorus. She was the subject of a large and visible pyloric tumour of eight months' development when she came under notice. Pyloric carcinoma was diagnosed; it seemed so large as to be quite beyond surgical relief, but it was considered advisable to have a look at it. There was no dilatation of the stomach; simple diet could be taken; there was not much sickness nor much pain; her weight had fallen from 12 st. to 8 st. 3 lb. On operating a large carcinomatous tumour of the pylorus was found and removed; there were no glands involved. It was the largest tumour Mr. Thomson had removed in cases of pyloric carcinoma. Since the operation in July the patient had gained 2 st. 4 lb., never had an untoward symptom or pain, and is now perfectly restored to health. The operation was performed by Kocher's method, a Murphy's button of ⅞ in. being used, which was passed on the thirteenth day.

Dr. ALLAN JAMIESON showed a case of Tylosis of the Palms and Flexor Surfaces of Both Hands, associated with hyperidrosis and with nævus neuroticus. For the latter condition nothing had been done, but for the ichthyosis manifestation—i.e., the tylosis—resorcin plaster had been applied and pumice rubbed on. The hands had under this treatment become soft and the fingers could be extended.

Dr. AITCHISON ROBERTSON showed a large Tonsillar Calculus, in length about 1½ in. and in weight about 1 oz.; it was probably the largest yet recorded. For many years the patient had been subject to repeated attacks of tonsillitis; ultimately, outside the neck, a large abscess formed, which was opened. Some glands were at the same time removed; the opening healed well, and there was no more tonsillitis or other trouble for two years. The patient then gradually felt difficulty in swallowing; suddenly one night he was awakened by a choking sensation and the accompanying violent cough resulted in the extrusion, without any hæmorrhage, of the large calculus shown. There could be felt a depression in the tonsil in which the calculus had been embedded.

Dr. ALEXANDER JAMES read a paper dealing with the clinical aspects of Tuberculous Neuritis He noted that any part of the nervous system might be affected—cranial nerves, phrenics, &c. It was remarkable for its tendency to appear, disappear, and again reappear. On account of this transitory character it was by many said to be a hysterical manifestation. Now it was generally ascribed to vaso-motor changes. Dr. James, however, thought that the affection was due to poisoning of the nerve tissues by tuberculous toxins. The condition had been discussed by many observers. He narrated several cases in illustration of his thesis. The first case was that of a man, aged forty years, with well-marked phthisis and hæmoptysis. The skin sensibility over the legs and feet was slightly impaired; formication had been present and there was a degree of tenderness in the muscles. Evidences of neuritis became more marked in both legs, as shown by drop-foot, loss of power of extension, and pain in the muscles. The reflexes were absent and electrical reactions diminished. In this cases the motor paralysis was greater than the sensory. The second case showed that sensory tracts may be more affected than the motor. The patient was a boy, aged sixteen years, suffering from lupus and tuberculous disease of the tarsus together with advanced phthisis. The larynx was so affected that tracheotomy had to be performed on account of the stridor and dyspnœa. Shortly after this he lost feeling in the right arm and leg and to a lesser extent in the right side of the face. There were no motor affections. This condition lasted three days but had entirely disappeared in a week. A month later, however, the right arm and leg were numb and to a less extent the right side of the face and trunk. Sensibility to heat and touch were also lessened. He complained of pain on the right side of the head when it was combed. The muscles of the affected arm and leg were tender and wasted. The knee-jerks were increased, especially on the right side. The third case was that of a man, aged twenty-two years, a miner; the motor nerves were chiefly affected, but the duration was short. He complained of loss of power in the left arm during four months with stiffness of the wrist. He exhibited marked disease of the left lung. The left arm as a whole was distinctly smaller than the right, the muscles being considerably atrophied and paralysed. The sensibility to touch, pain, and temperature was hardly affected, but the muscles were painful. Electrical and reflex excitability were increased. The left knee-jerk was more marked than the right and ankle clonus was present in the left leg. The left wrist was affected by tuberculous disease. Under treatment the motor power increased remarkably. The fourth case was that of a stable-boy, whose illness began suddenly five months previously with pain in the left foot without history of sprain. Next morning the foot was swollen and painful. The swelling went down under treatment but the pain remained. He looked healthy and no disease was evident except slight thickening on the inner side of the left tarsus. Sensation was normal, but voluntary

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power in the left thigh and leg was impaired and the muscles were atrophied. The knee-jerks were exaggerated in both legs but especially in the left. Electrical excitability was lessened. He improved for a time, but the left tarsus showed marked tuberculous disease and the left foot required amputation. The increased irritability gradually lessened in degree until in six months it had gone from the right leg. The cause of the irritability was doubtless due to some slight sclerosis in the lower part of the cord together with poisoning as a result of tuberculous toxins. In many of the cases of causeless hemiplegia which occurred in the course of tuberculosis and which might last only two or three days a tuberculous meningitis might be present. Such cases also occurred, however, where there had been no meningitis or anything to account for the hemiplegia. It was said by many that such cases of hemiplegia were due to vaso-motor changes, as œdema of the brain. Dr. James thought, however, that they were much more probably due to the action of tuberculous toxins. In tuberculous meningitis occurring in children paralyses might be largely due to toxins. The patient might exhibit very few symptoms but suddenly develop convulsions or coma and might die. In such cases no evidence of brain or heart disease might be found but tuberculous disease was present, as happened in the following case. A male, aged fifty years, was found lying on a seat unconscious. The condition was not due to the action of any drugs. It became known that he had been troubled with a slight cough for some time. On shaking him he was able to give his name and address. The pupils were small and there was ocular divergence; no spasticity was present; rhonchi and râles were present over the chest. After the administration of whisky he had a fit and remained in the opisthotonic condition for fully a minute. The pulse became much weaker; three fits followed at short intervals and he died three hours after having been first seen. The brain tissue was very œdematous. In the lungs there was extensive tuberculous disease, but the other organs were healthy. Other possible causes for death might be suggested, but Dr. James thought that such cases were examples of general nerve tissue poisoning by tuberculous toxins. The mental stupor which came on towards the end of most cases of phthisis might have the same origin. Of course, the toxic effects might be due to other organisms besides those of tubercle bacilli. The conclusion which he arrived at was that a tuberculous toxin was produced which might cause more or less distinct effects on the nervous system.—In the course of the discussion which followed Dr. GRAHAM BROWN recalled a case of sarcoma accompanied by toxin poisoning. At first the patient had no symptoms of any diagnostic value; when he died numerous sarcomata were found, many in the skin, one at least in the liver, one in the stomach, and one in the abdominal cavity. What had led him to seek advice was a patch of anæsthesia on one foot; there was a further area of anæsthesia on one little finger. There was atrophy of the right shoulder and of the left forearm and hand. Dr. Graham Brown considered the condition closely simulated poliomyelitis anterior acuta and was due to a toxin poisoning of the cells of the anterior cornua, and that it could not have been a tumour growing in the cord and attacking only the anterior horns and missing the white matter.—Dr. R. A. LUNDIE said he could almost wish another title had been chosen, for neuritis had such a definite pathological meaning. The term neuritis might be appropriate to some of the cases, yet such a title did not cover all the ground. The chief symptom in one case he had in mind was an anæsthesia over one-half of the body and strictly limited to that half; such might be hysterical and quite came under the class of cases called "hysterical." They were not warranted in calling a disease developed all over one-half of the body a neuritis.—Dr. CHURCH suggested the possibility of phrenitis as a cause of the rapid death in some tuberculous cases and asked if the phrenic nerves had been examined in the instance of the death due to rapidly-acting toxin.—Dr. FLEMING said that the cases of most interest were those of multiple neuritis in tuberculosis. In any debilitated individual the mere bending up one arm for long enough would cause ulnar anæsthesia. In tuberculous cases people were very likely to be infected by other toxins; many, however, did not die from toxin poisoning. Why did so many escape? He thought the hemiplegia cases were probably hysterical and not neurotic.—Dr. JAMES, in reply, said that with regard to Dr. Graham Brown's narration of the case of sarcoma he agreed that in malignant disease there were toxins circulating and producing changes, and that in the end there was a toxin produced which clouds over the nervous system. Why the toxin should fall on certain parts was difficult to explain, but this was the way with all toxins—e.g., those of locomotor ataxia and lateral sclerosis. As regards Dr. Lundie's criticism Dr. James said he meant an inflammation of nerve tissue as G. H. Lewis used the term—an inflammation not limited to peripheral nerves, but affecting the whole tract of the cerebro-spinal axis. As to the possibility of phrenitis he thought that as this toxin affects the whole nerve tissue death might be due to the toxin affecting the respiratory centre in the medulla.

Dr. ROBERTSON DOBIE read a paper on Acute Yellow Atrophy, in which he reported a case of a rare disease which had occurred in his practice in the summer and which he had diagnosed as one of acute yellow atrophy. The unique points of the case were the clearness of mind maintained throughout the illness, the absence of delirium, the ultimate reappearance of the normal liver dulness after it had entirely disappeared, and the return to good health. For the excessive internal hæmorrhages Dr. Dobie had given oil of turpentine freely and to the use of this remedy he attributed the successful result.

SOUTH-WEST LONDON MEDICAL SOCIETY.—At a meeting held on Nov. 9th at Wandsworth, Dr. J. J. Macwhirter Dunbar, President, in the chair, Mr. Macleod Yearsley read a paper on Chronic Discharges from the Ear and their Treatment. He confined himself to discharges from the ear which have become chronic, pointing out that the offensive nature of the discharge is of less value in diagnosis than the rapidity of the disappearance of the fœtor under simple antiseptic treatment, the persistence of fœtor usually pointing to the retention of pus in the antrum or the presence of caries of the ossicles or temporal bone. Discharge in both ears, appearing without pain in a weakly child, suggests tubercle. The plan and method of careful diagnosis were pointed out with reference to attention being paid to the following points: the presence of polypi or granulations, the locality and size of perforations in the membrana tympani, the condition of the rest of the membrane, the condition of the inner wall of the tympanum, and the condition of the external auditory meatus. Perforations of the superior posterior quadrant of the membrane are often associated with caries of the incus, a bone specially liable to caries because, probably, of its blood-supply being more easily cut off owing to inflammation of the reflected mucous membrane, from which it gets its supply, whereas the malleus being partly in the substance of the membrana tympani and the stapes being attached in the fenestra ovalis have a better supply. The principal complications of chronic middle-ear suppuration are granulations, polypi, disease of ossicles and temporal bone, mastoid involvement and cholesteatoma, and the sequelæ—meningitis, cerebral or cerebellar abscess, lateral sinus, thrombosis, and pyæmia. In regard to treatment the removal of post-nasal adenoid growths is often of more importance in adults than in children, the thorough cleansing of the tympanic cavity by removal of polypi or granulations, &c., which may block up the passage and retain pus, and the thorough cleansing of the cavity by means of gentle syringing of the ear with hot antiseptic lotion, such as carbolic acid, 1 in 40; lysol, 1 per cent. to 2 per cent.; resorcin, 2 per cent. to 3 per cent.; boric acid, 1 drachm to a pint; perchloride of mercury, 1 in 3000 to 4000; or permanganate of potassium three or four times a day when the discharge is profuse, may be sufficient to cure simple uncomplicated cases. For other cases the use of hot instillations once or twice a day of carbolic acid, 1 part to 15 parts of rectified spirit and 15 parts of water; perchloride of mercury, 1 in 1000 parts of water, or in 25 parts each of water and rectified spirit; resorcin, 4 per cent.; salicylic acid, 1 in 200 of water or 2 per cent. to 5 per cent. of spirit (but this drug may produce a severe inflammatory reaction); boroglyceride, 10 per cent. to 50 per cent. solution; or a 6 per cent. solution of peroxide of hydrogen may be employed. The patient is laid upon the sound ear, the solution, comfortably warm, taken up in a dropper and a little poured into the diseased ear, retained for ten minutes, the tragus being pressed backwards and inwards to force the fluid through the perforation when this is small. The instillation of warm rectified spirit, diluted at first and increased in strength as

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it is borne, is a valuable agent, especially where antiseptic instillations fail and in cases where no caries is present. The operation of ossiculectomy was described and recommended for cases of persistence of discharge with perforation in Shrapnell's membrane due to caries of the head of the malleus with disease of the incus or the anterior attic wall before resorting to the mastoid operation.—A discussion followed in which the President, Dr. Duke, Dr. Barkwell, Major Mark Robinson, I.M.S., and Mr. Gay took part.—A fine collection of specimens illustrating the lecture was shown and a very cordial vote of thanks was accorded to Mr. Yearsley.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Nov. 2nd at the Medical Institute, Birmingham, the President, Dr. W. G. Lowe, being in the chair. The following gentlemen were elected members of the society: Mr. H. D'A. Ellis, Mr. R. H. Gilpin, Dr. F. V. Milward, Dr. A. Croll, and Mr. F. J. V. Hall.—Mr. Chavasse showed a case of Ectopion Vesicæ. The patient was a girl, aged four years. Various plastic and osteoplastic operations had been unsuccessfully performed. In December, 1897, Mr. Chavasse separated the ureters from the bladder and transplanted them into the vagina and cut away the posterior wall of the bladder. The remaining cleft was closed at a later period by Thiersch's method. The urine passed into the vagina and was caught in a urinal applied to the vulva.—Mr. J. T. J. Morrison showed a man, aged twenty-four years, who on Oct. 4th had been kicked on the upper and inner angle of the left orbit by a pony whilst he was stooping down behind the animal. The blow, which was not very forcible, appeared to have been struck by the inner calkin of the shoe on the near hind foot. Soon after the injury both the left eyelids began to swell and some hours later the swelling greatly increased when the patient was blowing his nose and a little blood-stained mucus came from the left nostril. When seen on Oct. 7th there was considerable surgical emphysema of the left eyelids and pressure on the upper and inner part of the orbit caused pain. There was also some proptosis (noted by Mr. Priestley Smith), but no diplopia. No sign of bruising could be seen. The history and appearances excluded injury of the frontal sinus, antrum, or nasal bone; the air must therefore have escaped from the anterior ethmoidal cells as a result of fracture of the posterior portion of the lacrymal bone, or adjacent part of the os planum of the ethmoid, or both these bones. A pad of wool was applied to the lids and the nostril was irrigated daily with izal lotion. In a week all traces of the injury had disappeared.—Mr. Haslam showed a Tumour of the size of a hen's egg which he had removed from the penis of a man, aged forty-three years. Ever since the patient could remember he had had a small lump on the right side of the penis just in front of the scrotum. For some time this had been gradually increasing in size and for the last two months its growth had been rapid. On admission the tumour was found to be attached by a broad base to the right corpus cavernosum on its lateral and ventral aspects, but was not interfering in any way with the urethra, though at the operation it was found to be very close to this. On section after removal the tumour had all the appearances of a fibro-myoma of the uterus, and its structure, as shown by the microscope, consisted of fibrous tissue with a very large proportion of involuntary muscular tissue.—Dr. Lamb read a paper on the Diagnosis of Suppuration in the Accessory Cavities of the Nose. For diagnostic purposes he divided the cavities into an anterior group which drain through the hiatus semilunaris into the middle meatus, and a posterior group which drain into the olfactory fissure and naso-pharynx. He described the systematic examination of the various cavities including transillumination, the manipulations necessary in catheterising them through the natural openings, and the operation of exploratory puncture in certain cases.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on Oct. 28th, Dr. J. Middlemass Hunt, President, being in the chair.—The President showed a case of Epithelioma of the Larynx (with microscopical specimens) occurring in a man, aged forty-four years, who had suffered from increasing hoarseness for six months and was now quite aphonic. On examination the anterior commissure was seen to be occupied by a pedunculated growth.—Dr. Hunt proposed to perform thyrotomy and to remove the growth and surrounding parts.—Dr. Furniss Potter showed a case of Black Tongue in a man, aged forty-eight years. A dark patch was seen on the dorsum immediately anterior to the circumvallate papillæ, which consisted of epithelial and food débris, apparently pigmented and adherent to hypertrophied papillæ, which latter terminated in hair-like processes about ¼in. long. Dr. Potter also showed a case of Loss of Abductor Movement in the Left Vocal Cord. The patient who is a healthy-looking man, aged thirty-three years, had been under treatment during the last two years for chronic pharyngitis and nasal polypi. There was no history of syphilis—or (with the exception of influenza four years ago) any previous illness. On examination the left cord was seen to be motionless and practically fixed slightly to the left of the middle line, the right cord overlapping the middle line to meet the left on phonation. The chest had been examined but no sign indicating intrathoracic pressure had been discovered. The knee-jerks and pupil reflexes were normal; in fact, there was complete absence of any sign or symptom to indicate the cause of loss of motor power.—Dr. Whistler suggested that pressure on the recurrent nerve might be caused by enlargement of one of the laryngo-tracheal glands.—Mr. Mayo Collier cited a case in which paralysis of a vocal cord was caused by an empyema situated over the apex of the lung and in which motor power returned after surgical treatment of the empyema.—Mr. Mayo Collier exhibited a case showing Deformity of the Palate, Teeth, and Face due to early Nasal Obstruction. The patient, a man, aged eighteen years, presented a markedly typical appearance of the effect of chronic nasal obstruction on the growing skull.—Dr. Milligan read the notes of a case of Suppurative Catarrh of the Right Maxillary Antrum and Right Frontal Sinus in which at the time of operation on the antrum, though a careful examination was made, frontal sinus suppuration was not diagnosed.—The President delivered his inaugural address on "An Appreciation of Three British Aurists—Wilde, Toynbee, and Hinton," dwelling strongly on the respect in which these workers were held by continental authorities on aural surgery.—Dr. Milligan described two cases of Extradural Abscess following Chronic Suppurative Middle-ear Disease.—Dr. Dundas Grant showed a case in which he had removed an Epithelioma from the auricle.

ULSTER MEDICAL SOCIETY.—The opening meeting of this society for the session 1898–99 was held on Nov. 3rd. The retiring President, Dr. J. A. Lindsay (who was accorded a very cordial vote of thanks for his admirable management of the affairs of the society during the past year) introduced his successor, Dr. Joseph Nelson, who delivered his presidential address. After thanking the members for the high honour conferred upon him in electing him President of that old and honourable society, Dr. Nelson said that in thinking over what was the best subject to bring before them he had decided, as the great majority of the members were general practitioners, to treat certain subjects which were of mutual interest to them and to specialists like himself. He then discussed very fully the three topics of (*a*) ophthalmia (blennorrhœa) neonatorum, (*b*) mastoid disease, and (*c*) middle-ear suppuration. With reference to all three he emphasised the importance of prevention. In regard to the ophthalmia of newly-born children he said it was lamentable, notwithstanding Credé's well-known teaching, that blindness was so common owing to a purely preventable disease. It had been thoroughly dealt with in maternity hospitals, but it was among the poor treated in their own homes that its ravages were especially seen. He dealt with the preventive measures to be adopted in reference to mother and child. As to mastoid disease he showed its important bearing on affections of the brain and narrated a case treated by himself so far back as 1883 in which a most successful result had been obtained by opening through the mastoid antrum and evacuating and draining an extradural abscess. Dr. Nelson then discussed very fully the important subject of middle-ear inflammation, its relation to throat affections, its connexion with general diseases such as scarlet fever, and its prophylaxis and treatment. The address was full of practical remarks and suggestions, and at its conclusion Professor Symington moved a hearty vote of thanks to the President for an address the practical nature of which, he was sure, was very much appreciated. He stated that he (Professor Symington) was the first British anatomist

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to direct attention to the mastoid antrum.—Mr. W. G. Mackenzie seconded the vote of thanks, which was most cordially passed by the large audience of medical men present.—The President having thanked the members it was decided that the annual dinner should be held on Nov. 24th. Several new members were then elected.

BIRKENHEAD MEDICAL SOCIETY.—A meeting of this society was held on Nov. 11th, the President, Mr. H. Nazeby Harrington, being in the chair.—Mr. Ellis Pearson opened a discussion on the Practical Application of Antiseptics in General Midwifery Practice. He maintained the extreme desirability of midwifery nurses having a general training in surgical nursing before their special training in order that they should become thoroughly imbued with antiseptic principles. As a lubricant for obstetric work carbolic acid with vaseline (1 in 20) was suggested as one against which the usual strong objections to most lubricants could hardly lie. Washing of the pudenda by the nurse before labour with some fairly powerful disinfectant was recommended as a procedure which, though it might at first sight seem fussy, would probably in these days of spreading knowledge concerning germs be accepted without demur by intelligent patients. Douching Mr. Pearson held was best limited in normal cases to one douche given immediately after labour by the practitioner himself; at the same time he considered (always provided that the nurse could be thoroughly trusted) that regular douchings throughout the puerperium were desirable because they prevented many of those evanescent appearances of slight pyrexia, which cause the medical attendant so much anxiety.—The discussion was continued by Dr. Marsden, Mr. Stansfield, Mr. Wilkinson, Dr. W. Floyd, Mr. Vacher, Dr. Brien, Mr. Laird Pearson, and the President.

Reviews and Notices of Books.

The Eye as an Aid in General Diagnosis: a Handbook for the Use of Students and General Practitioners. By E. H. LINNELL, M.D. Philadelphia: The Edwards and Docker Co. 1897. Pp. 248.

IN giving Dr. Linnell credit for taking much trouble in collecting a large number of facts showing the relations of affections of the eye to particular diseases of the general system we doubt the utility of the work to either the student or the general practitioner. A few years ago Professor Knies of Freiburg-in-Baden took the same subject into consideration and wrote a very good treatise upon it, but treated it in a manner exactly opposite to that adopted by Dr. Linnell. Taking the diseases of the several systems of the body—as the digestive, respiratory, circulatory, and nervous systems—he described the affections of the eye which they are severally liable to induce. Dr. Linnell, on the other hand, takes the several diseases of the eye and endeavours to show their value as a means of enabling a diagnosis to be made or, rather, of assisting a diagnosis to be made. The difficulties which present themselves, however, are very numerous and great. Taking, for example, one of the first subjects mentioned by Dr. Linnell, "ocular paralysis," it scarcely helps our diagnosis to be told that whilst tabes and syphilis are responsible for the larger number of cases, yet paralysis of one or more muscles may result from multiple sclerosis; that it may be the consequence of diabetes and renal affections; that it may be rheumatic or may follow diphtheria; that in the latter case it is usually peripheral and is the sequence of hæmorrhages or neuritis, but is sometimes nuclear; and, finally, that an ocular paralysis due to peripheral neuritis "is most frequently caused by alcohol and we should expect to find associated symptoms of peripheral neuritis in other localities." We fear that a reference to this chapter would give little assistance to a well-instructed practitioner who meets with a case of paralysis of the third nerve, beyond the suggestion of a number of conditions to which it might be owing.

The author especially disclaims any discussion on the differential diagnosis of the various forms of disease of the fundus of the eye on the ground that such a diagnosis requires special training and skill not possessed by the majority of general practitioners, yet he immediately proceeds to consider the features common to several varieties of retinitis and the appearances presented by choked disc as well as those seen in ocular affections caused by drugs which are not recognisable and certainly not distinguishable without a considerable amount of special skill in the use of the ophthalmoscope. Yet it is in these very cases that the eye symptoms sometimes afford important aid in diagnosis.

Researches on Leadless Glazes. By W. J. FURNIVAL. Stone, Staffordshire: W. J. Furnival. 1898. Pp. 132. Price £5 5*s*.

LEADLESS glazes for pottery ware seem to be coming to the front and to be likely to take an important position in the future. So recently as 1893, when the Asquith Committee held its inquiry into the "dangerous trade" of pottery manufacture, there was only one "leadless" glaze submitted to a member of the committee and that one proved to contain considerable quantities of lead. Since then Messrs. Minton have stated that they have successfully used a leadless glaze and have exhibited the result, and we have now this work by Mr. Furnival containing a large number of practical trials and receipts, many of which seem to be very successful. Consequently, those who limited their hopes of improvement in this industry to the introduction of fritted lead glazes will go further and begin to ask for the absence of lead altogether.

Readers of THE LANCET do not require to hear again the oft-told story of the lead poisoning in the Potteries due to dipping and painting the ware with glazes and colours containing "raw"—that is carbonate of—lead or to be reminded of the proposals made to diminish this danger by fusing or fritting the lead into a glass before use. That this precaution, if properly carried out, will largely diminish, if not remove, the danger of lead poisoning has been shown both by experiments on the solubility of frits and by the practical experience of certain large firms who have adopted them, and as this involves a comparatively small change in the present process of manufacture reformers have been content to ask this of the manufacturers and no more. Unfortunately, in most cases they have not even got this much, and if successful experiments continue to be made with leadless glazes, will probably, as so often happens in the history of reforms, demand and ultimately get much more than they originally hoped for. Mr. Furnival is himself connected with the pottery trade and has obviously a close practical acquaintance with its working processes and the difficulties to be overcome. He is evidently enthusiastically in favour of leadless glaze and has made hundreds of practical experiments the results of which will be found in the latter part of the book. He has very wisely published his failures as well as his successes so as to save others the tedium of passing over the same ground, but the percentage of successes is very large. The experiments have all as nearly as possible been made under practical working conditions and he discusses very fully the difficulty of ensuring absence of lead during the grinding of the leadless glaze, or its fritting, or even the possibility of lead fumes entering the glaze during subsequent baking. In fact, he seems to have considered all the difficulties and looked out for all the defects of which a glaze is capable and to have met them successfully in a certain number of his receipts. The earlier portion of the book is less important, but contains an interesting history

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of leadless glazes with perhaps a somewhat too copious quotation from well-known authorities.

Taking the work altogether it is a valuable contribution to the subject and has only one serious defect. The author has published it at the almost prohibitive price of £5 5*s*. Surely it would have been better to have either regarded his receipts from a purely commercial point of view and sold them as trade secrets or to have published his book at a reasonable price and given the result of his experiments freely to the world. This, however, is a small matter and the experimental results are here, and the practical reformer will ask, What next? The reply is probably, Nothing, unless the Home Office can be persuaded to seriously undertake the work of reform on the lines more than once laid down in these columns.

The *Times* correspondent in the Potteries has been defending the character of the manufacturers and declaring that they are really quite kind-hearted and well-meaning individuals. This is most readily admitted and has never been denied, but, like other people, they are very busy men, struggling against fierce outside competition and fighting to keep a market for their goods. They have no time to experiment; they cannot stop to think of the condition of the work-people; lead-poisoning has become such a matter of course that both work-people and manufacturers take it for granted until aroused by criticism from outside. Here and there large and wealthy firms with a scientific staff can afford to experiment and consequently obtain valuable results, but in few English industries is the English manufacturer's contempt for, and disbelief in, science more marked than in pottery manufacture.

This being the state of the case the pottery manufacturer must be stimulated. It must be made worth his while to abolish raw lead and to adopt safe frits—or, better still, leadless glazes—and this the authorities of the Home Office can do by a stroke of the pen if they like. They have only to draw up a sufficiently stringent set of rules for manufacturers using raw lead and then grant exemption from the more stringent rules (such as raising the age of workers in the dipping house to eighteen) to those manufacturers using a glaze approved by the Home Office. If the manufacturers object the House of Commons would endorse such special rules in the form of an Act. Prohibition of raw lead is a long way off, but it is easy to make it pay to abolish it, and the final blow to its use would be given by bringing lead poisoning under the Workmen's Compensation Act.

Such books as this show clearly the necessity of strong action on the part of the Home Office. Experiments are tried, results are obtained, there is much writing in newspapers and talking in Parliament, and drawing up of special rules, but the lead poisoning goes on just the same, and will go on until the Home Office takes one of two courses, either prohibits the use of raw lead or by suitable regulations makes the introduction of harmless glazes a paying affair for the manufacturer.

A Manual of Physiology with Practical Exercises. By G. N. STEWART, M.A., D.Sc., M.D. Edin., Professor of Physiology in the Western Reserve University, Cleveland. Third edition, University Series. London: Baillière, Tindall, and Cox. 1899. Pp. 848. With 5 Chromolithographs and 300 Woodcuts. Demy 8vo. Price 15*s*. net.

THE present edition of this treatise as compared with the first, which was published in 1895, is enlarged to the extent of fifty-two pages, while twenty-two woodcuts have been added. The text has been revised throughout and many small corrections have been made, whilst the well-ascertained facts which have been made out during the last three years have been intercalated. In this short period it is not to be expected that any material alteration has been required in the plan of the work, but the author has evidently taken a pleasure in keeping his knowledge up to date. Thus in the description of the chemical composition of living matter a notice of the nucleo-proteids and the proteoses or albumoses is introduced in the account of the blood, the characters of the oxyphile and basophile cells are given, and the identity of Ehrlich's neutrophile cells with the oxyphile cells of Kanthack and Hardy is pointed out, together with the proportion which these bear to each other in the blood. In human blood, says Dr. Stewart, "the finely granular oxyphile cells make up 60 to 80 per cent. of the whole number of leucocytes, the lymphocytes (and hyaline cells) 20 to 30 per cent., and the coarsely granular oxyphile cells less than 5 per cent.," though, he adds, "these proportions are far from being constant." New paragraphs are inserted dealing with the electrical conductivity of the blood and the relative volume of corpuscles and plasma in unclotted blood. The paragraphs on the coagulation of the blood have been re-written, though even yet it scarcely seems that the last word has been said in regard to it. The hypothesis here advanced, supported on recent researches, is that the presence of calcium is essential to the formation of fibrin, whilst the fibrin is formed by the union of calcium with fibrinogen (or thrombosin) under the influence of fibrin ferment (or nucleoproteid.

The author entertains no doubt about the cause of the second sound of the heart, but he speaks with hesitation of the cause or causes of the first sound, attributing that sound in part to the sudden tension of the auriculo-ventricular valves and in part to the contraction of the muscular tissu eof the heart, which he regards as being to some extent a resonance tone of the (listener's) ear. We should have thought that it was hardly worth while to revive Sir Richard Quain's theory that the first sound of the heart is due to the impact of the ventricular blood on the semilunar valves at the moment of the systole and the resistance which it encounters as it passes through the orifices of the aorta and pulmonary artery. Considerable additions have been made to the chapter on Absorption as well as to those on the Nervous System, especially in regard to its histology, and to that on the Organs of Sense. With the improvements which have been made in this edition we regard Dr. Stewart's "Manual" as one of the best works on physiology at the command of the student. It is written with great clearness and by one who is practically familiar with his subject.

A Manual of Bacteriology, Clinical and Applied. By RICHARD T. HEWLETT, M.D., M.R.C.P., D.P.H. Lond., &c., Assistant in the Bacteriological Department, British Institute of Preventive Medicine. London: J. & A. Churchill. 1898. Pp. viii., 439. Price 10*s*. 6*d*.

THE student of bacteriology has now no reason to complain of any lack of text-books; rather is he liable to be bewildered by their number and by their increasing size. It is only by a judicious selection of facts, guided by a due sense of perspective, that a writer can now hope to produce a book which will really be of practical use to the student. Dr. Hewlett has, in our opinion, achieved a marked success, and we are unable at the moment to point to any one of the smaller and less pretentious works on bacteriology which more completely fulfils the requirements of the student, especially from a practical point of view, than does the present volume. The author is actively engaged in the practical applications of bacteriology and he is not without experience in teaching the subject.

He commences with a short but sufficient account of the

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structure, chemistry, and classification of bacteria, accompanying his facts with enough scientific explanation to render them intelligible. The methods of study of bacteria and bacterial diseases are given in practical detail, such selections of staining methods being described as have been found by experience useful and necessary. In describing the microscope many valuable practical hints are given, and the use of immersion lenses is illustrated by diagrams. The subject of immunity is dealt with in a not very conclusive chapter, the fault perhaps of the subject rather than of the author. The chief pathogenic organisms are described in adequate detail, commencing with the subject of suppuration and septic conditions, under which are described the pyococci proper and various other organisms having relation to sepsis. We do not find any good connected account of septicæmia—an omission which should be remedied in the next edition. Space fails us to follow the author in detail through the different sections, but the facts appear to be clearly expressed and to include the most recent information. Throughout the book those methods are given which may be most usefully employed in studying each particular organism, especially those relating to clinical examination. The bacteriology of air, water, soil, milk, &c., is dealt with in a special chapter.

The practical methods of preparing antitoxins and vaccines occupy the greater part of a useful appendix Although the grouping of pathogenic organisms in the book leaves something to be desired, and although individual statements made here and there will not command universal acceptance, yet we think Dr. Hewlett's manual is one which in its scope and method will be of great value to the student, and one, moreover, which can be taken as an accurate and safe guide both in theory and practical work.

LIBRARY TABLE.

Surgical Technics in Hospital Practice: a Handbook for House Surgeons, Students, Dressers, and others engaged in Hospital Work. By K. W. MONSARRAT, M.B., F.R.C.S. Edin., Assistant Surgeon to the Liverpool Cancer Hospital. Bristol: John Wright and Co. 1898. 8vo. Pp. 132. Price 3*s.* net.—The author tells us in his preface that this book is intended chiefly for house surgeons, and it is so essentially practical in nature that its perusal will well repay the house surgeon who is desirous of thoroughly doing his duty to the patients under his charge. Much of the success of modern surgery depends on a minute observance of many small points, and the surgeon's knowledge and skill may be all in vain unless seconded by those who have to assist him in the operation and after-treatment. The chapter devoted to personal asepsis is very good; many operators, house surgeons, and dressers are lax in cleansing their hands and some seem to imagine that a momentary dip in an antiseptic solution will suffice to render them free from germs. The best corrective for this state of mind is a course of culture experiments made from the hands after these valueless attempts at cleansing. The charge of the patient both before and after the operation is dealt with and the treatment of the chief complications which may arise after the patient is put back into bed is carefully described. Much of this information is not to be found in the ordinary text-books and therefore it is likely to prove valuable. The author advises that saline transfusion should be performed by means of a glass syringe, but the funnel and tube are certainly more convenient. One chapter describes the treatment before, during, and after the operation of "special cases," such as "operations on the brain," "operations involving the mouth and pharynx," "tracheotomy," "empyema," "abdominal section," and "intestinal obstruction." An appendix contains a code of rules for surgical nurses which might prove of value.

Injuries and Diseases of the Ear. Being reprints of papers on Otology. By MACLEOD YEARSLEY, F.R.C.S. Eng., Surgeon in Charge of the Department for Diseases of the Throat, Nose, and Ear, the Farringdon Dispensary, &c. London: The Rebman Publishing Co. 1897. Pp. 40. Price 2*s.*—The substance of this book first appeared as articles in the *Medical Times* and *Pediatrics*, though much has been rewritten. The work does not pretend to deal with the whole of the diseases of the ear, and its scope will be best indicated by quoting the headings of the six chapters which it contains; they are: "On an Artificial Membrana Tympani," "Foreign Bodies in the Ear and their Treatment," "What not to do in Diseases of the Ear," "The Use of the Pneumatic Aural Speculum," "On the Care of the Ear in Children," and "Aural Reflexes." These papers will prove useful to those who have but an elementary knowledge of the subject and therefore will appreciate the hints and cautions which the book contains.

JOURNALS AND REVIEWS.

The Journal of Comparative Pathology and Therapeutics. Edited by J. MCFADYEAN, M.B., B.Sc., F.R.S. Edin. September, 1898.—This number opens with an article on the Pathology and Treatment of Spavin, translated from an article by Dr. Eberlein of Berlin which appeared first in the *Monatshefte für Praktische Thierheilkunde*. This is an admirable paper and deals very fully and lucidly with the history, pathology, and clinical treatment of spavin and similar diseases. Though all pathologists will not agree that the first change is simply an osteo-porosis there will be little doubt that most will agree as to the subsequent changes. Of course, if the meaning of the term be limited in its pathological and not in its clinical sense an agreement may be arrived at amongst pathologists, but this alone would not be of much assistance to the clinician. Professor McFadyean contributes a most valuable article on the Situation and Order of Development of the Lesions in Bovine Tuberculosis, from which it may be gathered that in cattle, at any rate, tuberculosis in the large majority of cases is contracted through infection of the bronchial and mediastinal glands, that is, through the respiratory tract. In 36 tuberculous animals a careful examination was made and one or other set of these glands was, or both were, always affected. In 5 cases the discoverable lesions were confined to the bronchial glands, in 2 cases to the mediastinal glands, and in 9 cases to the two groups of glands; 16 cases in all, or 43 per cent. of the total. In only one case were both of these groups of glands apparently healthy. The order of the occurrence of the process in more advanced tuberculosis in cattle appears to be, first, in the lungs and the pleura, then the mesenteric glands, the peritoneum, the liver, the heart and pericardium, the udder, and the uterus and ovaries, whilst the kidneys, the bones and joints, the brain and spinal cord, the spleen, the skin and the muscular systems are not nearly so frequently affected. As regards generalised tuberculosis, Professor McFadyean lays down a series of rules which will be of very great interest and assistance to those who are engaged in the examination of carcasses for tuberculosis. In an editorial article the Report of the Royal Commission on Tuberculosis is returned to and some of the salient points are brought prominently forward, especially those relating to the prophylaxis of tuberculosis. "Some Abdominal and Uterine Operations in the Dog and Cat" are recorded by Professor F. Hobday, who, summing up his cases of abdominal and uterine surgery, states that "the abdomen of the dog and cat can be opened without any great dread of the consequences, although of course no one should treat carelessly any operation involving laparotomy. With strict attention to asepsis, thanks to the researches of Lister, the surgeon

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nowadays need not dread interfering with the peritoneal cavity whenever that may be considered absolutely necessary." Reviews and the report of the opening meeting of the Royal Veterinary College, London, make up the number.

Scottish Medical and Surgical Journal.—Dr. Alexander Bruce (Edinburgh) writes on the Origin of the Facial Nerve. He considers that it has a crossed root which does not arise from the opposite facial nucleus but can be traced in an upward direction through the posterior longitudinal fasciculus, and is probably concerned in the innervation of the upper facial muscles. Dr. Robert Jardine (Glasgow) gives notes of four cases of Cæsarean Section. Dr. McVicar (Dundee) describes a case of Visual Aphasia and Amnesia Verbalis.

Edinburgh Medical Journal.—Dr. H. W. G. Mackenzie and Dr. W. E. Dixon discuss the action and properties of podophyllin. They have found that the Indian podophyllin is nearly twice as physiologically effective as the American. Dr. G. A. Gibson writes on Paralysis of the Sixth and Seventh Cranial Nerves. Dr. Alexander Morison has a short paper on the Innervation of Intracranial Vessels. Dr. A. A. Warden (Paris) describes a successful case of Internal Urethrotomy with Maisonneuve's instrument.

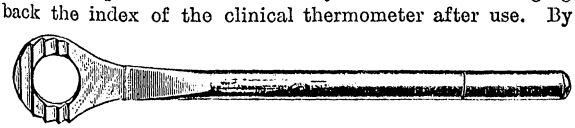
Dublin Journal of Medical Science.—The original articles are on the Treatment of Tetanus with Antitoxic Serum, by Mr. R. G. Patteson; on the Relations between Preventive Medicine and Vital Statistics, by Dr. T. W. Grimshaw, C.B., Registrar-General for Ireland; and a Medico-Statistical Sketch of the North-West Frontier Disturbances in India, by Surgeon-General A. A. Gore.

Écho du Bien.—The October number has two articles on Hospital Abuse, one by Dr. Variot of the Hôpital Trousseau, whose refusal to give gratuitous advice to well-to-do out-patients has recently attracted much attention to this question in Paris and has already been referred to by our Paris Correspondent in THE LANCET of Oct. 8th and 15th. Dr. Variot refers in terms of approval to the objects of the Hospital Reform Association in this country.

New Inventions.

A COMBINED TONGUE DEPRESSOR AND THERMOMETER CASE.

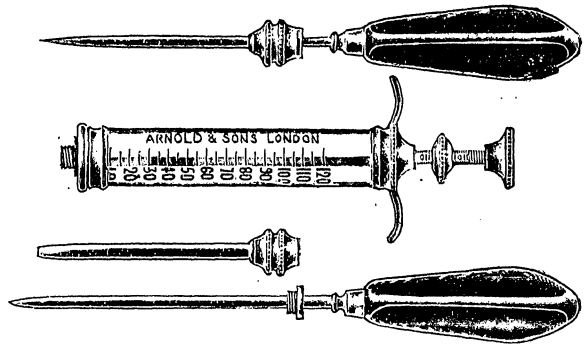
THIS useful combination, designed by Mr. J. B. Gabe of Swansea, is very compact and combines the two articles in the space and at the price of one. One advantage which this instrument possesses is the facility it affords for bringing back the index of the clinical thermometer after use. By



placing the thermometer in the case bulb upwards the index may be shaken down without any danger of breakage and with little or no trouble, the tongue depressor forming a handle for this purpose. The price is 2*s.* 6*d.*, and the manufacturers are Messrs. Lynch and Co., Ltd., Aldersgate-street, E.C.

HYDROCELE INJECTION APPARATUS.

MESSRS. ARNOLD AND SONS, of West Smithfield, London, have manufactured, at the suggestion of Dr. Cuthbert Bowen, of Bridgetown, Barbados, West Indies, a hydrocele injection apparatus which possesses several distinctive qualities. The barrel is graduated with clear black markings so that the exact amount of fluid drawn up is indicated, and the piston rod is similarly graduated and provided with a sliding stop ratchet, thus preventing the injection of more iodine or bichloride of mercury solution than is intended. The cannula screws on firmly by threads to the syringe, so that none of the injection fluid can be lost and the surgeon's fingers cannot come into contact with the iodine. The special feature of the instrument, however, lies in the fact of the trocar screwing into the cannula and becoming incorporated with it. When the point of the trocar protrudes to the extent regulated by the threads it will be found that the trocar and cannula are invisibly merged one

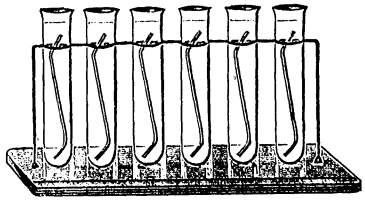


The upper figure shows the trocar in the cannula, the next the syringe, and the two lowest figures the cannula and trocar separately.

in the other, and on running the finger up and down the outside of the instrument there is an entire absence of collar. After having been in use for some time cannulas of ordinary make hang loosely on their trocars and the patient experiences discomfort during the injection, but in Dr. Cuthbert Bowen's apparatus the cannula and trocar together form an apparently solid needle which causes the patient hardly any pain in its introduction. The projecting horns on the syringe enable the operator to work it with one hand, leaving the other free for the manipulation of the part to be injected.

AN ASEPTIC FEMALE CATHETER STAND.

MESSRS. REYNOLDS AND BRANSON, Ltd., of 13, Briggate, Leeds, have submitted to us an aseptic stand which they have specially designed for use in female hospital wards. It consists of a heavy plate-glass slab with rounded corners,



having a half-inch frosted strip running along the whole length of it, upon which the patient's name may be easily written with a pencil. The ringed support for holding the six strong glass test-tubes is made of metal thickly tinned, so that the whole apparatus is quite aseptic. The test-tubes can either be used to hold the fluids necessary to asepticise the glass catheters or as specimen glasses for urine. By the way, glass catheters do not commend themselves to the majority of surgeons, and the risk of accident in their use, however remote, must not be forgotten.

FOOTBALL FATALITIES.—A young man, aged nineteen years, of Farnworth, near Bolton, who was injured while playing for a Walkden football club in a match on Nov. 5th, died on the following Wednesday. He collided with another player, whose knee struck him in the abdomen.—A young man, aged twenty-four years, while playing a game on Nov. 10th, sustained injuries to the abdomen from which he died on the following Sunday, an operation proving futile to save him.—In a match at Association rules between Dewsbury and Sheffield at Dewsbury on Nov. 12th, the visitors' centre forward, a young man, aged twenty years, died on the ground. He was struck by the ball in the abdomen and fell, after continuing to dribble for some 20 yards. A medical man was playing in the match so that the deceased received medical attention at once. All efforts were without avail and death ensued in a few minutes. The body was subsequently removed to the Dewsbury and District Infirmary.

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THE LANCET.

LONDON: SATURDAY, NOVEMBER 19, 1898.

THE General Medical Council will meet at two o'clock on Tuesday next and it is not very difficult to make a forecast of its discussions and work. The Council has a bad habit of putting off to the last hours of its session some of the most important subjects, leaving them as a legacy for the next session and, like another Parliament that might be mentioned, of grappling with too many topics at once, a method of procedure which leads to an endless waste of time. As we read the proceedings of the last meeting of the Council and of the Executive Committee as contained in the respective minutes of the two bodies, we can with much confidence anticipate that most of the following subjects will again engage the attention of the Council: the memoranda of the Council on the reciprocity of practice between this and foreign and colonial countries; the features essential to any workable Midwives Bill; the disciplinary powers of the diploma- and degree-granting bodies; the efficiency of the examinations of the Apothecaries' Hall of Ireland; the raising of the standard of the preliminary examinations recognised by the General Medical Council; and the extension of the rule against the employment of unqualified assistants to dentists. This is a sufficient programme to occupy the Council for several days. But it is far from complete. It does not include penal cases, which generally occupy two days of the Council's time; nor does it include a very sweeping proposal by Mr. GEORGE BROWN to disestablish all the committees and relegate the work of all of them to the branch councils, or another by the same member to add to the number of Direct Representatives in consideration of the large increase in the number of practitioners on the Medical Register. Finally, the programme takes no notice of questions which were settled, in a way, at the last meeting of the Council but which may be found to have been rather too vaguely disposed of. Nor does it provide for reports of such committees as that appointed at the last meeting to take such steps as were deemed most effective to induce the Government to insert a clause in the Companies Act Amendment Bill in order to prevent the registration of companies formed to carry on medical, surgical, and dental work.

It will be generally admitted that the most important subject in the above list is the proposal to raise the standard of preliminary education by revising the list of preliminary examinations now recognised by the General Medical Council. Already the action of the Council on this subject has been challenged, and so challenged that it had to defer the operation of its resolution of Nov. 29th, 1897, to bring a revised list into force on Jan. 1st, 1899. The notice given under this resolution was thought to be too short, especially as some of the bodies affected by it, notably the College of Preceptors, felt aggrieved. It is of great moment that this sense of grievance should be removed, and of still more moment that the question of standard should be settled. There is a universal consensus of opinion in favour of raising the standard of general education. This consensus embraces educational authorities both in and out of the profession. The supply of students is so plentiful, and the general means of education so improved, that the experiment can be made with safety. Under these circumstances it may be hoped that the General Medical Council will give its best and its early attention to this subject and settle it boldly, without favour or fear.

The next most pressing subject in the above list is that of the disciplinary powers of the various diploma- and degree-granting bodies. The entire want of the most obvious and elementary powers in some of these, notably in certain of the universities, leads to the scandal of persons who have been convicted of felony and whose names have been removed from the Medical Register still continuing in full possession of their status and titles as graduates of ancient universities. Some bodies have the power of removing from their rolls the names of their members without any corresponding power of restoring them; hence the reluctance to inflict necessary punishment when the punishment cannot be graduated in proportion to the offence. The General Medical Council itself often removes names with the intention of restoring them; at any rate, it often does restore them. It would be as absurd to remove some names from the Register without the possibility of their being re-instated as it would be to pass sentence of capital punishment in cases of minor offences. The lawyers of the Council have expressed the strongest opinions as to the necessity for some legislation for the removal of these evils, and at the last meeting of the General Medical Council the President was requested to put himself into communication with the Lord President of the Council in reference to this subject. We shall hear how far such communications have been successful. The present state of the law makes the Bodies represented on the General Medical Council ineffective in maintaining the full discipline of a profession in which the public itself has such a great interest. It is not to be expected that the Government will undertake such legislation *proprio motu*. It has too much to do in other directions. But the need for such legislation is obvious. If the Council can convince the Government that it and the qualifying bodies are in earnest in asking for such powers doubtless the Government will find ways of bringing in a Bill for the purpose.

IF Italy is the recruiting ground of the political assassin she is also the parent of the "criminal anthropologist," and rightly so. Given a CASERIO and a LUCCHENI, we have as a scientific aftergrowth a LOMBROSO and a FERRI—the bane, as in the universal economy of nature, evoking its antidote. The fact is one to be remembered and duly weighed by those whose attitude towards the subalpine professor and his school is too critical to be cordial. "Put yourselves in our place," say LOMBROSO and his disciples, "and you will look with tolerance, not to say benevolence, on our studies." This argument *ad hominem* is as justifiable as such arguments can possibly

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be. Italy, as criminal statistics amply attest, exceeds all Europe put together (minus the Iberian peninsula) in the number of her homicides. As her able statistician, Baron GAROFALO, words it: "She commits a murder every two hours." Not only so, but she lends herself as the prompt and effective tool for homicidal purposes abroad. Of the three anarchist assassinations perpetrated in Europe within as many years all of them were the work of Italians. Italian, moreover, was the nationality of the miscreants who on the eve of the Emperor WILLIAM'S visit to Palestine were by the vigilance of an English official arrested at Alessandria when plotting against His Majesty's life. By none are such facts more freely admitted and more poignantly deplored than by right-minded Italians themselves—so much so, indeed, that the working men of Rome have formed a league *contro il coltello*, to disarm their fellows of the homicide's favourite, because all too handy, weapon. What wonder in these circumstances if patriots, as well as nature-students like LOMBROSO and his school, should endeavour to go a step deeper and in addition to impounding the knife seek to improve the men who wield it?

"It is for this reason we are criminal anthropologists," says the Turin professor, and none who wish well to Italy but must applaud his inspiration, even while doubtful as to the scientific basis of his methods. But are these methods so unsound as certain extravagances in their tenour or over-confidence in their pretensions seem to indicate? They are neither more nor less than an adaptation to modern conditions, in the light of a profounder, more refined physiology, of what the brothers COMBE, of Edinburgh, some eighty years ago imported from Germany; they proceed from a practical recognition of the truth that character is largely, if not wholly, conditioned by organisation, and that this in turn is largely, if not wholly, conditioned by inheritance and environment, physical and moral. Take the child, says LOMBROSO, at the earliest stage possible, above all before coming into contact with other children at school, and let him undergo the thorough examination, "anthropometric and psychiatric," which can detect abnormalities, congenital and other, at a stage when they can be remedied or removed. From such an examination his up-bringing should start, and according to its findings he should be allowed to associate with his fellows or be segregated from them till such time as his defects are overcome. Had this procedure been carried out in the case of ninety-nine-hundredths of her criminals and assassins Italy would now be witnessing a depletion of her engorged prisons and penitentiaries and, instead of being in imminent danger of becoming an international pariah, would have seen her immigrants welcomed by the most normally developed of the sister powers as a special force in domestic progress and in common evolution. Now, however, her capital is shortly to be the appropriate seat of a Congress to devise means for counteracting a "diseased development" of which she supplies the most typical exemplars—a development which reached its sinister culmination in the *belva umana* (the human wild beast), as she calls him, who has just been sentenced at Geneva.

Scarcely had the tragic death of the Austrian Empress become known, when LOMBROSO began to collect information as to its author with a view to confirm the "family likeness" common to all such miscreants and once more drive home the moral it carries to an all too apathetic Government. Every reminiscence of LUCCHENI'S parentage, youth, and occupation which could be extracted from companions and employers LOMBROSO has laid under contribution, and he has supplemented the whole by as copious an assortment of specimens of the man's handwriting and photographs from time to time taken of him as he could amass. On these materials he has lavished the professional acuteness and the vast personal experience in criminal developments which he is known to possess and the result is before us in an elaborate paper—"LUCCHENI giudicato dal punto di vista antropologico-psichiatrico" ("LUCCHENI judged from the anthropo-psychiatric point of view"). A careful and keenly analytical narrative of the man's illegitimate origin from a dipsomaniac father, of his abandonment when yet of tender years in one of those *ricoveri* which are simply "criminal forcing-houses or preserves," of his early addiction to lying whenever an abnormal vanity prompted it, and of the instability of character thus fostered in one not wholly vicious or even unamiable, leads up to a detailed anthropometric and psychiatric examination in which practice aiding personal aptitude has made LOMBROSO a master. The organic nexus between the traits, intellectual and moral, and the development, cranial and corporeal, is lucidly indicated, until the diagnosis seems fairly established that we have to deal with a "brachycephalous epileptic," in whom, "as in primitive man and as in the typical anarchist, crime is confounded with action"—the natural expression of an "absolute want of the moral sense." Then follows an example of LOMBROSO at his best in a comparison of the calligraphy of LUCCHENI not only with that of other criminals but with LUCCHENI'S own at different stages of his career—a curious and significant resemblance being noted between his handwriting and that of CASERIO immediately before he murdered President CARNOT and also that of the assassin of General ROCHA. In these LOMBROSO finds evidences of a "double personality," further indicated by the man's mental revelations—a *doppia personalità* explaining and reconciling certain contradictions in his life and his actions which the mere forensic pleader is apt to insist upon in abatement of guilt or as disproving innocence. This double personality he has found in nearly all such *belve umane* capable of proceeding without apparent motive from the gentlest dealing to the most ruthless ferocity, dominated by an *impulsività* hysterical or epileptic, betrayed even in the unstable handwriting which alternates between the *macrografia* (large calligraphy) and *microgrāfia* (small calligraphy) characteristic of them.

Leaving LUCCHENI to be dealt with by the judicial tribunal, "according to its lights" and "in conformity with legal precedent," LOMBROSO appeals once more to his Government for a reform in education which would minimise the production of such diseased developments or in good time save society from the contamination or the risks which their unrestrained intercourse with it must incur. Into this part of his exposition we cannot enter. Such a vast rehabilitation of her system of public instruction as he demands would imply on Italy's part a political

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and administrative transformation for which she has long to wait. Meanwhile she can do something towards relieving her "bloated armaments" of their plethora and correcting thereby the anæmia of her primary schools. She has as Education Minister a large-minded and accomplished medical man, well known to be in sympathy with the propagation of the subalpine school. It will be disappointing if another change of Cabinet brings about that "solution of continuity" which has proved fatal to much of her best legislation—to none more than to that repeatedly introduced for scholastic and university reform by his Excellency Dr. BACCELLI. But perhaps the International Congress about to meet in Rome will end by infusing better counsels into her Parliament and restoring her to her healthier and nobler personality in which the CASERIOS and LUCCHENIS, actual and potential, will have ceased to be more than exceptional phenomena.

THE liberty of the press is dear to our hearts, and by liberty we do not mean licence. But a recent trial at the Central Criminal Court would seem to show that the law finds it as difficult a task as less instructed folk to distinguish where the one begins or the other ends. The facts of the case to which we refer will be remembered. GEORGE BEDBOROUGH, a publisher, was charged with publishing and selling certain obscene literature. He pleaded guilty on three counts, the first relating to a book, the second to a lecture, and the third to a magazine. With the last two counts we have nothing to do, but on the charge concerning the book we purpose to speak and we make a somewhat lengthy reference to the matter because of its great importance to medical and scientific authors. The Recorder, after the formal plea of guilty had been entered, said that the defendant had acted wisely in pleading guilty to the three counts, for it would be impossible to persuade anybody that the book, magazine, and lecture were not obscene works. While he was willing to believe that the defendant might at the outset have been gulled into the idea that some might call the book a scientific work, it was impossible for anyone of ordinary judgment not to see that to be a sham. As the defendant had taken only a very small part in the matter the Recorder did not consider it right that he should suffer while others much more guilty went scot free. But the publication of indecent literature must be put down by the strong arm of the law. So he bound the defendant over in his own recognisances in £100 to come up for judgment if called upon.

Now, the result of this trial places the person or persons to whom in the Recorder's opinion greater blame should be attached in a very awkward position. There is, for example, the author of the book. The trial closes his mouth and prevents him from making any defence other than the unsatisfactory method of writing to the newspapers or publishing an Apologia, and Mr. HAVELOCK ELLIS, the writer in question, would seem to be obviously indicated in the Recorder's speech. His book is the first of a series of studies in the psychology of sex and deals with a phase of the question which we must all admit to exist—namely, sexual inversion. It is allowed that this subject touches the very lowest depths to which humanity has fallen. But for all that it is a subject which cannot be ignored and one which is not made any less powerful for ill by the pretence that there is no such thing. But while we admit that the subject of sexual inversion has its proper claims for discussion we are very clear as to the propriety of limiting that discussion to persons of particular attainments. When Mr. HAVELOCK ELLIS'S book was sent to us for review we did not review it, and our reason for this neglect of the work of the Editor of the "Contemporary Science Series" was not connected with its theme or wholly with the manner of its presentment. Mr. HAVELOCK ELLIS'S book is written in a purely dispassionate and scientific style and the only exception we take to the treatment is that we consider some of his quotations unnecessary because a scientific public is already familiar with the originals, and some of them useless, being drawn from tainted sources. We may say also that we do not agree with his view of the question, for we consider that such matters are far better treated from the psycho-pathological standpoint of KRAFT-EBBING than from that of ULRICHS, with whose theory as to the naturalness of homo-sexuality Mr. HAVELOCK ELLIS seems in agreement; but a difference of opinion would not have prevented us from giving publicity to the author's labours. What decided us not to notice the book was its method of publication. Why was it not published through a house able to take proper measures for introducing it as a scientific book to a scientific audience? And for other reasons, which it would serve no purpose to particularise, we considered the circumstances attendant upon its issue suspicious. We believed that the book would fall into the hands of readers totally unable to derive benefit from it as a work of science and very ready to draw evil lessons from its necessarily disgusting passages. It must be pointed out, too, that a more than ordinary danger is attached to Mr. HAVELOCK ELLIS'S work as a book for laymen in that the author's views happen to be that sexual inversion is far more prevalent than we believe it to be and that the legislature does injustice to many by regarding as crimes the practices with which it is bound up. He has failed to convince us on these points; and his historical references and the "human documents" with which he has been furnished will, we think, fail equally to convince medical men that homo-sexuality is anything else than an acquired and depraved manifestation of the sexual passion; but, be that as it may, it is especially important that such matters should not be discussed by the man in the street, not to mention the boy and girl in the street.

What constitutes indecent literature? Is a book indecent because it deals with an indecent subject? Surely there is no reasonable person who will say "Yes." A book written solely in a spirit of scientific inquiry into a subject which, though odious in itself, has yet to be faced cannot possibly be included under the head of indecent literature. But such a book may become indecent if offered for sale to the general public with a wrong motive. BEDBOROUGH was, we suppose, held by the Recorder to be guiltless of wrong motive or he would have been punished. But why this wrong motive should be imputed to the author we cannot guess; while if no such imputation was intended the reference

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to the more guilty persons who went scot free is meaningless. Mr. HAVELOCK ELLIS seems to us to have been badly treated in the matter and unfortunate in his publisher, for BEDBOROUGH, it must be remembered, pleaded guilty to the issue of two other indecent works with which the author of "Sexual Inversion" had no connexion whatever. The moral of the story for scientific writers, who must often publish what would be obscene if appearing in doubtful channels or confided to dirty hands, is obvious. It is—be careful about the publisher.

Annotations.

"Ne quid nimis."

THE SOUDAN GAZETTE.

WE heartily congratulate all, of whatever service and rank in that service, whose names compose this week the list of honours in recognition of services in Egypt during the recent military operations. We also congratulate the authorities upon their promptitude in awarding these honours. Among the names occur those of twelve officers of the Royal Army Medical Corps. Surgeon-General William Taylor and Colonel W. H. Macnamara receive the Companionship of the Order of the Bath; Lieutenant-Colonel G. A. Hughes, Major E. M. Wilson, Major H. B. Mathias, and Captain C. S. Spong receive the Distinguished Service Order; Lieutenant-Colonel T. J. Gallwey, C.B., Principal Medical Officer of the Egyptian Army receives brevet rank as full Colonel; Major G. W. Robinson receives brevet rank as Lieutenant-Colonel; Captain R. H. Penton, D.S.O., and Captain H. E. H. Smith receive brevet rank as Majors; Lieutenant E. W. Bliss receives brevet rank as Captain; and Lieutenant-Colonel A. T. Sloggett is granted the next higher rate of pay to his rank. The medal for Distinguished Conduct in the Field has been granted to 5 non-commissioned officers and 1 private of the Royal Army Medical Corps—viz., to First-class Staff-Sergeant Hoist, Sergeant F. Crooke, Sergeant G. A. Benson, Sergeant Scrase, Lance-Sergeant A. P. Mears, and Private A. Davidson. We also record with pleasure that Veterinary-Captain L. J. Blenkinsop receives the Distinguished Service Order, Veterinary-Lieutenant T. E. W. Lewis the brevet rank of Veterinary-Captain, and Veterinary-Captain G. R. Griffith, D.S.O., the next higher rate of pay of his rank; and that the decoration of the Royal Red Cross has been conferred upon Miss S. E. Webb and Miss A. F. Grist of the Army Nursing Service, and Miss E. Geddes of the National Society for Aid to the Sick and Wounded in War. No medical man receives on this occasion the much-coveted Victoria Cross, which is so rightly bestowed upon Captain P. A. Kenna, Lieutenant the Honourable R. H. L. J. de Montmorency, and Private Thomas Byrne, of the 21st Lancers, for gallant behaviour during the famous charge of that regiment; and upon Captain N. M. Smyth, of the 2nd Dragoons Guards for saving the life of a camp-follower at imminent risk to himself during the battle of Khartoum.

LAY CRITICISM OF MEDICAL AFFAIRS.

WHEN the man in the street criticises some isolated incident in which questions scientific or technical alone are involved he is apt to do so by the light of his necessary ignorance, so that he falls inevitably into error and unintentionally into injustice. Similarly the writer for the lay press, who is often but the man in the street with the practised habit of ready writing, is apt not only to be wrong himself but also to mislead others. The same, however, cannot always be said in the occasional cases in which wider interests are involved, in which the public good is at stake, and in which, although scientific knowledge may be necessary in order to fully appreciate them, there is a side of the question not exclusively professional or of which the scientific aspects are capable of being grasped by anyone bringing an intelligent mind to bear upon them. We need not say that the British public is anxious to form correct opinions and to form them honestly, while the British press is, as a rule, anxious to guide it according to its lights upon the right path. On the question of vaccination, for example, valuable support has recently been received by the medical profession from the healthy common-sense and sound criticism brought to bear upon it by the more important part of both press and public. On such questions it is sometimes easier for laymen to give open expression to their opinions than it is for medical men, as they at least cannot be said to be actuated by a bogey known as professional jealousy or prejudice. This, perhaps, is why the criticism recently accorded by an evening contemporary to the society fad known as "Christian Science" has proved of considerable value to the public. The articles, published some weeks ago, have been reprinted in the *Westminster Budget* and are instructive reading. The most stringent form, however, of lay criticism, that which can least easily be ignored and the results of which are most widely known, is to be found in our courts of law. To this, as the result of a recent inquest, which we noted in THE LANCET of Nov. 12th, "Christian Science" is now to be submitted in the person of a lady professing to heal by its means in return for a monetary consideration, and of another upon whom lay, in the opinion of a coroner's jury, the duty of summoning medical aid to a sick man. The danger of coming into collision with the law for the deliberate and intentional neglect of duty towards the sick and helpless has hitherto been demonstrated by cases where the sect known as the Peculiar People have allowed their children to die rather than call in medical aid, a gruesome test of faith to which apparently no "Christian Scientists" have hitherto in this country submitted themselves.

THE FATAL GLOVE FIGHT.

MR. TROUTBECK, the coroner for Westminster, held an inquiry on Nov. 14th into the circumstances attending the death of Thomas Turner, aged twenty-three years, who died on Nov. 10th in Charing-cross Hospital after engaging in a glove fight at the National Sporting Club on Nov. 7th. The fight was "a match of twenty rounds at 8 st. 8 lb. with 4 oz. gloves." Actually 5 oz. gloves were used. The referee gave evidence that the fight was in no way a severe one. The men were very evenly matched and during the thirteenth round Turner received a light blow on the side of the head close to the right eye but some inches away from the "point." He then collapsed and the referee stopped the fight. After some brandy had been administered he revived, stood up, shook hands with his opponent, sat down again, and became unconscious. Mr. Jackson Lang, who was present as a spectator, said that he attended Turner, who showed symptoms of extreme collapse and inequality of his pupils. Mr. Malcolm Smith, who made the post-mortem examination, said that Turner's heart was extremely weak and small. On the right side of the brain was a clot of blood. The jury returned a verdict of "Accidental death," with a rider suggesting that the club should

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instruct a medical man to examine the physical condition of candidates for boxing competitions before allowing them to take part in any fight. Turner, it appears, had not undergone any medical examination before fighting, but even if he had we are not certain whether any medical man could have certified him as unfit. We doubt whether the diminution in the normal size of the heart could have been diagnosed, and if it had been, a small heart need not necessarily mean an unhealthy heart. However, there can be no harm in the National Sporting Club adopting the suggestion of the jury, but this particular accident appears to us to have been unavoidable.

INSTRUCTION IN TROPICAL MEDICINE.

IT is now generally known that at the instigation of Mr. Chamberlain it is proposed to establish an institution for the teaching of tropical medicine. A circular has been sent from the Colonial Office to the medical schools in reference to the matter, the essence of which is the following. In a previous letter it had been stated that Mr. Chamberlain had been endeavouring to make arrangements for giving to colonial medical officers special clinical instruction in tropical medicine, such as is given at Netley and Haslar in the case of medical officers of the Army, Navy, and Indian Medical Services, for from lack of the necessary material this tuition cannot be given in a satisfactory manner at the medical schools. Such arrangements have now been made. "The directors of the Seamen's Hospital at the Albert Docks, which offers exceptional opportunities for studying cases of tropical disease, are providing the necessary buildings and teachers for the accommodation and instruction of the medical officers who may hereafter be selected by the Foreign Office and the Colonial Office for appointments in the tropics. A substantial contribution towards the initial cost of the buildings is being made by the Government, and it is hoped that by Oct. 1st, 1899, it will be possible to receive medical officers at the hospital for purposes of instruction." It is proposed that, as is at present the case, candidates for medical appointments in the British colonial possessions shall be fully qualified before they can be put upon the Secretary of State's list; that from this list a certain number shall be elected annually to fill the vacancies which may occur in the colonial medical service; that the selected candidates shall be trained for a period of at least two months at the Seamen's Hospital; and that they shall then be sent to the colonies or protectorates to which they have been allotted, where, when practicable, they will be attached in the first instance to the headquarters hospital for the purpose of gaining additional experience. The circular goes on to state that although the school at the Seamen's Hospital is designed for the training of medical officers for the Government service, doubtless there will be many other medical men, such as the medical officers of missionary societies and trading corporations and private practitioners who propose to settle in tropical countries, who will be glad to avail themselves of the advantages which such a school can offer. The colonies are being asked to make pecuniary contributions, to collect pathological material for use in the school, and to support the scheme in every possible way. The Royal Society has nominated two competent observers to proceed to Italy and then to Africa to study the subject of tropical malaria, and in addition the Secretary of State for the Colonies has nominated an experienced medical officer of the Colonial Service to aid in the investigations. Such, then, are the main features of the scheme for special instruction in tropical medicine. All members of the medical profession will support Mr. Chamberlain in his endeavours to increase the facilities for the teaching of that branch of medicine which is so important for the welfare of Englishmen residing in tropical countries, but we doubt whether the opinion will be so unanimous as to the suggested methods in the circular of which we have given an abstract. Our naval and army surgeons have not suffered in this respect, for the teaching at Haslar and Netley is of the very best, and at the latter place there are more cases of tropical disease than are to be found in any other hospital in Europe. At nearly all the medical schools, also, courses of lectures on tropical medicine have been delivered by medical men well qualified by experience to do so, but practical teaching, which of course is essential, has been lacking. The question therefore arises, Is the selection of the branch hospital of the Seamen's Hospital at Albert Docks a wise one? There are many objections—for instance, the size of the hospital, the difficulties of access, and the depletion of the old parent hospital at Greenwich of its most interesting material. And then arises the all important question—Are the cases of tropical diseases met with at this hospital sufficiently numerous to justify its selection as a school for the teaching and investigation of such diseases? Full details on this point would be valuable. We may refer to one disease most commonly met with in the tropics—namely, hepatic abscess. In twenty-five years at this hospital and its branch at the docks only 50 cases have been so diagnosed, and it is, of course, open to doubt how many of these were cases of ordinary subphrenic abscess. It would be profitable before any large sum of money is laid out to compare such statistics with those of other hospitals, notably those of Haslar and Netley, the London Hospital, and Guy's Hospital, in order to satisfy the minds of all as to the wisdom of selecting the branch hospital at Albert Docks for the very excellent purpose designed by Mr. Chamberlain. The proposed school is estimated to cost £13,000 to build and equip and £3000 annually to maintain. Of the £13,000 the Colonial Office will contribute £3500. The remaining £9500 it is proposed to levy from the British public, colonists, and Indian subjects. But no information is at hand as to the source of the annual £3000. If it be necessary that tropical medicine should have a school all to itself in London, why should it be placed so far away? The *Dreadnought* is much nearer and with its 235 beds is more capable of affording clinical material than is its branch with its present 18 and proposed 45 beds.

A CASE OF TYPHUS FEVER IN SOUTHWARK.

A REPORT on a recent case of typhus fever was read by Dr. F. J. Waldo, medical officer of health, to the vestry of St. George, Southwark, on Tuesday evening last. The facts of the case were simple. A young man, aged nineteen years, a brushmaker, resident in the parish of St. George the Martyr, was admitted to Guy's Hospital, where he developed what was recognised to be an attack of typhus fever. Dr. Waldo, when notified of the occurrence, at once took steps for the thorough disinfection of the patient's dwelling and its contents. The house consisted of two rooms, inhabited by a family of six persons, father, mother, and four children, of ages ranging from nineteen to ten years, who all slept in a single upstairs bedroom. Of the inmates who had been exposed to the infection four were at once removed to the recently established reception house belonging to the parish, and two days later the fifth entered the same place, where they and their belongings were disinfected. They remained in the reception house upwards of 14 days. The special precautions taken consisted in burning bedding and clothes and in disinfecting and cleansing the rooms at the cost of the vestry, together with the isolation of the persons exposed to infection above

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referred to, and in view of the highly infectious nature of typhus fever it is satisfactory to note that no spread of the disease has hitherto occurred. From a careful consideration of the facts Dr. Waldo concluded that the case, if not actually contracted from disease germs latent in the house, was certainly rendered more dangerous by the crowded condition as to space both of the house and of the neighbourhood, and pointed out that powers were already in existence in Part III. of the Housing of the Working Classes Act, 1890, whereby the London County Council as local authority under the Act might provide dwellings for the working classes, the intention of the Act appearing to be the relief of overcrowding in poor districts. Dr. Waldo is to be congratulated upon his expressed intention of following the matter up, and we may add that in all large urban districts medical officers of health will do well to be on the alert against typhus fever, which, though a rare disease in England, is not obsolete. The sad little epidemic of last year in North Kensington would prove this, even if reports of recent cases in Islington, Kensington, and Southwark did not arouse apprehension.

AN INFANT'S STARVATION DIETARY.

WE learn that the Hackney vestry have distributed at the instance of their medical officer of health a circular throughout the district warning all parents and guardians of the real nature of "condensed separated" and "condensed skimmed" milks. It cannot be too widely known that these preparations are utterly incapable of supplying those food elements which are essential for the proper nourishment and growth of the body of an infant. At their best these preparations are but a concentrated nitrogenous and sugary food which is calculated to overtax the digestive organs of the infant, affording no nutrition, and probably leading to exhaustion. It is monstrous, we think, that there is apparently the necessity of issuing such a warning. There is no doubt that thousands of poor mothers buy this stuff under the delusion that it is an efficient substitute for natural milk. Instead of the issue of a warning of this sort we should like to see the sale of milk thus denuded and otherwise fabricated prohibited altogether or else the tins compulsorily labelled in bold and striking letters to the effect that in no case should the contents be regarded as taking the place of the natural article.

THE CERTIFYING OF WORKHOUSE LUNATICS.

A CORRESPONDENT writes to us as follows:—"As medical officer to the workhouse I informed the relieving officer that a patient there required removal on account of insanity. The magistrate to whom the relieving officer applied called in another surgeon who certified the insanity. This is a new departure here, pauper cases having been previously certified as a matter of course by the medical officer." The point raised by our correspondent is one which is not infrequently raised by medical officers of workhouses, and the solution of it not infrequently gives some trouble to boards of guardians. Like most questions of this sort it has two distinct aspects from which it may be viewed—a legal and a common-sense point of view. From a legal point of view the medical officer of the workhouse is powerless to do anything in the matter referred to. The Lunacy Act places absolute discretion in the hands of the justice whom he shall summon to his aid to investigate a case of lunacy concerning which he has received notice in due form from the relieving officer, constable, or overseer of the parish. Nor can the board of guardians or the relieving officer do anything in the matter, if the justice has a fancy for one particular medical man. It is true that the relieving officer sometimes ventures to remark, when he takes his notice, as he usually does, in person to the justice, that "Dr. A. is out of town," or that "Dr. B. has had this particular case under his observation," but he renders himself liable to be told to confine his attention to his own duties. Turning now to the common-sense view, there is much to be said in favour of the medical officer of the workhouse being selected by the magistrate to examine and certify in cases of alleged lunacy brought into the workhouse. No one is so likely to be possessed of all the facts of the case as he is, and no one knows better whether the case is a suitable one for a lunatic asylum, an imbecile asylum, or to be discharged, as the medical officer who has been watching the patient from day to day and who sent the notice to the relieving officer concerning the case. Indeed, in many parishes there is a semi-official agreement (we say "semi-official" because the discretion is so absolutely in the hands of the justice under the Lunacy Act that no agreement can override it) between the guardians and the medical officer of the workhouse, the justice concurring, that the medical officer shall certify in all cases which pass through the workhouse at a fixed fee. But, on the other hand, it is alleged, though we cannot for one moment admit the truth of the suggestion, that an arrangement of this sort is liable to abuse by the medical officer of the workhouse sending notices about cases unnecessarily. Even in cases where it may appear unnecessary it is desirable in doubtful cases that the justice should have an opportunity of examining the case and either discharging or certifying for the removal. Many alcoholic cases present considerable difficulty as to a diagnosis of lunacy and they should always be certified in due form, after consultation between the medical officer and the justice. As well might it be alleged that the justice in summoning a medical man to examine an alleged lunatic of whom he has received information from the relieving officer is guided by personal considerations (it has been alleged, for instance, that a justice thus rewards his family medical attendant) in preference to those of the practitioner's suitability and knowledge of lunacy. In reference to the special case of our correspondent he can do nothing but discuss the matter amicably when occasion offers with the more influential of the guardians and in that way endeavour to induce the justice to acquiesce in some such arrangement as that indicated above.

A JEW'S OBJECTION TO SERVE ON A CORONER'S JURY.

IN THE LANCET of Nov. 12th (p. 1282) we mentioned that a difficulty had arisen in Manchester with regard to viewing the body when a Jew was summoned on a coroner's jury. On Nov. 14th, in the same city, two Jews were summoned—one for the sixth, the other for the second time—to serve on the city coroner's jury, and, as before, they objected to do so on the ground that viewing the body was opposed to their religious convictions and that it was against the Jewish law. The coroner said it would simply make them "unclean" for a certain period. One of the objectors is reported to have said that he "was no Biblical scholar, but a conscientious believer in the Jewish law." The coroner said that if they were made unclean they could not give the blessing in the synagogue for seven days. It was an unpleasant duty to view the body, but they ought to do their duty as citizens, and he asked what reason there was why they should not be unclean? Unfortunately one of the objectors gave it out when the summons was served that he was in London when it was known that he was in Manchester and he was asked if telling an untruth made him unclean. Some elements in the case suggested a comic side, and it would be

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easy to turn the whole proceedings into a farce. It does not seem fair, however, that persons whose consciences are so elastic in some directions should string them up so tightly in others as to enable them to enjoy the advantages of citizenship while they evade its duties.

THE DENTAL HOSPITAL OF LONDON.

THE annual dinner of the staff and present and past students will be held on Saturday, Dec. 3rd, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. Storer Bennett. Gentlemen either now or formerly connected with the hospital or medical school who may through inadvertence not have received special notice and who desire to be present are requested to communicate with the dean at the Dental Hospital, 40, Leicester-square.

PAY WARDS IN BRUSSELS HOSPITALS.

ACCORDING to the report of the Conseil des Hospices in Brussels it appears that last year nearly 1100 persons were admitted to the public hospitals as paying patients, the tariff varying from 3 fr. to 15 fr. per diem, for which everything, including professional services and even important operations, was provided. The total amount received last year was 70,000 fr. The medical journals are beginning to complain that this system of admitting paying patients is very unfair to medical men and that reform is needed which must take one of the following shapes: (1) the total abolition of paying wards or (2) the permission for paying patients to select their own professional attendants who must be allowed to have free access to them. It is suggested that the Brussels College of Medical Practitioners should take the matter up.

"MUSCULAR DYSTROPHIES."

IN the *American Journal of the Medical Sciences* for September, 1898, Dr. A. A. Eshner publishes a paper entitled "A Contribution to the Study of the Muscular Dystrophies." The writer first refers to Erb's views—namely, that the changes in the muscles in these conditions are not purely myopathic, but that they may depend upon impalpable nutritional alterations in the ganglion cells of the anterior horns of the spinal cord not capable of demonstration with our present resources—and therefore proposes to designate such cases as come under this group as "muscular dystrophies," thus not indicating definitely any theory of their pathology. Several types of the disease have been described, as, for instance, the idiopathic, the pseudo-hypertrophic, the juvenile or scapulo-humeral of Erb, the infantile of Duchenne, or the facio-scapulo-humeral of Landouzy-Déjérine, and the hereditary of Leyden; but Dr. Eshner thinks it is doubtful if any useful purpose is subserved by this classification, inasmuch as the boundaries of the several so-called types are ill-defined, and many, if not most, cases present features of two or more varieties. It is probable that these several forms represent rather differences in degree and distribution than variations in essential character. Details are then given of 20 cases. Most of the cases are of mixed type, with a predominant tendency to muscular pseudo-hypertrophy. Of the whole number but 4 occurred in females. So far as could be ascertained the first symptoms in the cases reported were noticed in none later than the thirteenth year, in 2 at birth, in 2 during the first year, in 2 during the second year, in 2 during the third year, in 2 during the fourth year, in 3 during the sixth year, in 1 during the seventh year, in 3 during the eighth year, in 2 during the ninth year, and in 1 during the tenth year. The ages of the patients at the times when they came under observation varied from three to twenty-four years. In only 2 of the cases (in brothers) was it definitely ascertainable that similar disease existed in any other member of the same family. In 11 cases one or more of the infectious diseases had preceded the onset of the dystrophic manifestation. In 3 cases there had been falls upon the back before the advent of the symptom of the muscular trouble. Dr. Eshner calls attention to the contraction of the muscles of the upper part of the thigh noted in two of the cases, when the sole of the foot was gently irritated notwithstanding the absence of the plantar reflex.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

EXAMINATIONS for the certificate of the Association in psychological medicine will be held in London, Edinburgh, Glasgow, Aberdeen, and Dublin, on Thursday, Dec. 15th, 1898. Candidates intending to present themselves for examination should give fourteen days' notice to the Registrar (Dr. Spence, Burntwood Asylum, Lichfield), from whom any further information may be obtained.

THE DIAGNOSTIC VALUE OF KOPLIK'S SPOTS.

IN the *New York Medical Journal* of Oct. 15th, 1898, Dr. J. Sobel confirms the claims of Koplik's spots as a pathognomonic sign both in the pre-eruptive and eruptive stage of measles. As stated in an annotation in THE LANCET of April 30th, 1898, these spots are limited to the mucous membrane of the cheeks and lips and are small, irregular, and bright red. In the centre of each is a minute speck, bluish-white in strong daylight, which, according to Koplik, is absolutely pathognomonic of measles. In the early stages of 35 cases of measles Dr. Sobel never found this sign wanting. On the other hand, he never found them present in 1000 adults suffering from a number of affections or in children affected with various eruptions—varicella, scarlet fever, vaccinia, rötheln, congenital syphilis, urticaria, purpura, erythema multiforme, miliaria, eczema, and bromide and antipyrin rashes. He corroborates Slawyk's observation that the spots occur most frequently opposite the region of the lower molar teeth.

THE SMOKE NUISANCE

ON Nov. 12th a summons was heard at the West London police-court at the instance of the Vestry Clerk of Hammersmith against the East India Produce Company for allowing their chimney at Albert Mills, Upper Mall, to emit black smoke in such quantities as to be a nuisance. The principal witness against the company was Sir William Blake Richmond, who said that the smoke issuing from the chimney was "as black as his coat and so thick that he could not see through it." A vestry sanitary inspector gave similar evidence. The defence was that only yellow and brown smoke issued from the chimney and that smoke-consumers had been applied some two months ago. We do not doubt this fact, but it is quite evident that the smoke-consumers do not do their work properly. Mr. Rose, in describing Sir William Richmond as a public benefactor, referred to the difference of opinion as to the colour of the smoke, and said that that gentleman from his profession was the most fitting witness to describe it. He should make a prohibitory order for the prevention of the recurrence of the nuisance and should allow the vestry five guineas costs. We are glad to see that the incriminated company did not put forward any plea about not being able to get Welsh coal, for whether they can or not that has nothing to do with it. We should like to see the sanitary authorities take in hand the case of certain big restaurants and hotels which are much to blame as regards polluting the air, and also we should like to know whether there is any power by which the London County Council can make it obligatory on the builders and architects of any new house or houses to fit the fireplaces

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with some kind of smoke-preventing apparatus. If the council has not such powers the sooner it applies for them the better. New houses are being built every day, and it is ridiculous to allow new centres of pollution to arise without hindrance.

THE RECORDER AND THE SUPERINTENDENT.

OUR special correspondent at Belfast called attention last week to the extraordinary action of the Belfast Recorder in declining to allow Dr. Graham, the medical superintendent of the asylum, a fee for making an affidavit in reference to the condition of a lunatic and for attending the court. Dr. Graham's action has now received considerable official support, as will be seen in our special correspondent's letter in another column, and he is to be warmly congratulated upon the dignified way in which he has pressed his rights. It is to be hoped that the Recorder, who is on all accounts a most kind as well as honourable gentleman, will, now that both his statements in reference to Dr. Graham's predecessor have been disproved and his legal decision called in question, see that the proper course is to reverse his previous judgment. In our opinion life would be intolerable to medical men if they were to be compelled to attend civil courts and prepare important medical reports simply because they are Government officials.

ANKYLOSTOMUM DUODENALE.

IN the *Berliner Klinische Wochenschrift*, No. 36, 1896, Dr. W. Ginn and Dr. Martin Jacoby published certain observations which they had made on the presence of the ankylostomum duodenale and other parasites in the intestines of natives of India and they arrived at two main conclusions: (1) when the ankylostomum has gained a hold amongst a native tribe of India it spreads with great rapidity amongst the members of the tribe; and (2) it appears very probable that a person may have the ankylostoma in his intestine without being the subject of ankylostomiasis. In the summer of this year, 1898, the same observers had opportunities of examining the stools of several natives. Of the fæces of 8 natives of Ceylon, in 8 the ova of ankylostomum duodenale were found, in 7 those of the trichocephalus dispar, and in 6 those of the ascaris. In the stools of 6 natives of Madras in 6 were observed the ova of ankylostomum duodenale, in 6 those of trichocephalus dispar, and in 5 those of ascaris, and in 2 of the Madras natives the larvæ of anguillula intestinalis appeared. The first of the above proportions was therefore corroborated by the new investigations. As supporting the second of their conclusions Dr. Ginn and Dr. Jacoby found that a large number of Asiatics and Africans in whose stools the ova of the ankylostomum were found exhibited no signs of anæmia. Amongst certain tribes there seemed to exist a certain immunity from ankylostomiasis. But the immunity was limited and by no means absolute.

THE CHEMICAL SOCIETY.

WHEN the idea was mooted more than half a century ago of forming a chemical society doubts were expressed by several chemists as to whether success would attend the experiment. The Chemical Society is now amongst the most active scientific bodies connected with the parent Royal Society. We believe, too, that financially its position is very satisfactory. The work done by the Fellows of the Chemical Society during the past fifty years embraces some of the most important discoveries which have appeared in the annals of the world of scientific research. Amongst the fellows are six past presidents who have belonged to the society for half a century. These are Sir Joseph Henry Gilbert, Sir Edward Frankland, Professor William Odling, Sir Frederick Augustus Abel, Dr. Alexander William Williamson, and Dr. John Hall Gladstone. The death of Lord Playfair a few months ago removed a member who had also served as a president. A banquet in honour of these scientific men was projected early in the year and was eventually arranged to take place on June 9th. In consequence, however, of the death of Lord Playfair the banquet was postponed till Nov. 11th, when a very representative company of distinguished men of all branches of science entertained the surviving past presidents who have been Fellows for half a century and whose names appear above. In replying to the toast of "The Past Presidents" which was given by the present President, Professor Dewar, each veteran gave a most interesting historical sketch of the progress of chemistry during the last five decades. The guests present included Mr. Haldane, Q.C., M.P., and Dr. Böttinger of the Reichstag, who replied to the toast proposed in their honour by Dr. T. E. Thorpe, the treasurer of the society. Congratulations were received and announced from the Russian and German chemical societies. Professor Michael Foster, who followed Lord Lister in an interesting speech, remarked that when the British Association met their French friends at Dover and Boulogne next year Fashoda would have been forgotten and they would not be using the resources of science to make the two nations as small as possible but each would be using the resources of the other to advance their common knowledge.

THE SPECTACLE MAKERS' COMPANY'S OPTICAL EXAMINATION AND THE EXAMINATION OF THE BRITISH OPTICAL ASSOCIATION.

OUR contemporary the *Optician* gives in this week's issue the questions set by the examiners of the above bodies for their optical examinations. The examination of the Spectacle Makers' Company is the first of them and is divided into two parts—a *vivâ voce* and a written, the latter occupying two hours and a quarter. It is stated that 93 candidates presented themselves and that amongst these there were a large number of old members of the industry, the provinces being well represented by candidates from Leeds, Tunbridge Wells, Deal, Tenby, Carlisle, Kilmarnock, and other places. The questions seem to have been carefully thought out, and if anything like satisfactory replies were obtained the standard of knowledge in the possession of the opticians is very high, and it is clear that those who pass the examination will not only be thoroughly grounded in their subject, but will be very competent judges of the prescriptions sent to them by ophthalmic surgeons. As it is certain that a large proportion of the public do, and will always continue to, apply to the optician for incipient failure of vision it is obvious that the glasses selected by the optician should be given with judgment and a sound knowledge of the principles of optics. At the same time the opticians should remember the motto, "Ne sutor ultra crepidam," and take care when unusual or suspicious phenomena are observed to recommend the patient to obtain the advice of the surgeon. We append a few of the questions set at the former of these examinations. 1. How would you determine the focal length of a simple biconvex lens with faces of equal curvature? Give all the practical methods you know of. 2. In what way is the position of the principal focus of a lens dependent upon the choice of the curvatures? Illustrate your answer by reference to the positions of the front and back foci of a plano-convex lens of + 20 D. Does it matter which surface you turn towards the source of light as regards definition? 3. A prescription is given you as follows: − 3 D. C. axis horizontal ◯ + 1·5 D. C. axis vertical R. & L. State the different methods of working such a lens and give reasons for your choice of curves. 4. A boy, aged ten years, has vision = $\frac{1}{18}$ and with − 2·5 D. S. he sees $\frac{2}{18}$, but on testing, his P.P. is found to be at 12 cm. What is probably his defect and

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give your reason? The British Optical Association's examination has also been held this month and twelve candidates presented themselves, out of whom only one failed to pass. This examination occupies about two and a half hours and is divided into three parts—optic, dioptric, and ophthalmometric. Amongst the questions were the following: 1. Show how images formed by concave lenses are always vertical, erect, and diminished. 2. Transpose the following lenses into other combinations: (*a*) 1·73 cyl. axis 45° ⊂ + 3·25 cyl. axis 135°; (*b*) + 3·00 spher. ⊂ − 1·5 cyl. axis 105°; (*c*) + 1·25 sph. ⊂ + 2·75 cyl. axis 90°. 3. In dislocation of the crystalline lens, the periphery of the lens being located, say, in the middle of the pupil; how would you prescribe lenses to assist the refraction for distance? These are sufficiently reasonable questions and no exception can be taken to them from a professional point of view. We must add, however, that in the ophthalmometric part of the examination of this association some of the questions trench on purely medical subjects and imply that the young optician has gone somewhat beyond his *métier*—for example, Question 3 is, How would you diagnose tobacco amaurosis? Question 4 is, How would you measure scotoma? Question 7 is, What are the indications that would lead you to suspect incipient glaucoma? If the candidate be expected to diagnose tobacco amaurosis, why should he not know the retinal changes in Bright's disease and diagnose the nature and position of an intracranial lesion from the observed defects in the field of vision? Surely, all this is quite outside the optician's work.

SWEET SPIRIT OF NITRE.

NOW that the expression "sweet spirit of nitre" is included in the new Pharmacopœia as a synonym for spirit of nitrous ether druggists are bound to supply this article when asked for under the popular name and the article may be demanded in accordance with the strength officially laid down. It is well known that when druggists in the past were asked for sweet spirit of nitre they now and then supplied an article of deficient strength against which no remedy could be provided because sweet spirit of nitre had no official existence and no recognised definite strength. However, the new Pharmacopœia now provides that when sweet spirit of nitre is asked for the official spiritus etheris nitrosi shall be supplied. It is early yet to decide upon the effect of this alteration but in one case an inquiry has been made. Dr. Bernard Dyer in his report as the analyst to the county of Leicester found that of the 51 samples of sweet spirit of nitre obtained 23 were of first-class quality, 21 were fairly good, while 7 samples were decidedly unsatisfactory. In the last instances the retailing druggists were only warned, as it was considered probable that these specimens had been in stock before the new Pharmacopœia was published. The inquiry is instructive and timely and it should place retailing druggists on their guard so that they may not unwittingly commit an offence under the Food and Drugs Act.

MEDICAL OFFICERS OF HEALTH AND PRIVATE PRACTICE.

THE vacancy of the post of medical officer of health of the Burgh of Perth is the cause of much discussion as to whether the newly-appointed medical officer should be debarred from private practice and at the same time of course be offered suitable remuneration. Hitherto in the Burgh this has not been the case, although the county medical officer is debarred. The late medical officer for the Burgh, Dr. Simpson, now dead, had, we believe, £105 per annum as medical officer and £52 10*s*. as police surgeon, and was in addition allowed to carry on private practice. To our minds it is in no way desirable that the medical officer of health should be also in private practice, for the holding of the two posts must at times bring him into disagreeable and anomalous positions. To begin with he might very well often come into conflict with his fellow practitioners and as he is in private practice himself, with professional rivals. Also cases might arise where as medical officer of health his duty might be directly opposed to his interests as a practitioner. It is for these reasons that we hope that the Burgh of Perth will see its way to appoint a medical officer of health who will be debarred from private practice but who will also receive sufficient remuneration to enable him to devote his whole time to the duties of his office and who will be in a position to exercise them without fear or favour.

THE KITCHENS OF PARISIAN EATING-HOUSES.

IN December, 1897, the Société Française d'Hygiène resolved to appoint a commission to inquire into the sanitary conditions under which the kitchen employés in Parisian hotels, restaurants, and other establishments of a similar character where food is prepared for public consumption, are compelled to carry on their work, and in due course a report embracing the whole subject was published in the *Journal d'Hygiène* over the signature of Dr. Bruhat, the secretary of the commission. It is not too much to say that the condition of things disclosed in this exhaustive report can only be described as deplorable. Until a few years ago all kitchens, with their offices and annexes, where eatables were cooked for the use of the public were under Government surveillance by virtue of several decrees dating back upwards of twenty years, but in July, 1894, this important safeguard to the general health was withdrawn. A Ministerial circular suddenly appeared directing the sanitary inspectors of the municipality of Paris to abstain in future from the inspection of eating-houses of every description because it had been ruled that such establishments were no longer to be regarded as trading places but rather as partaking of the nature of private houses. And yet, to judge by the copious extracts which Dr. Bruhat has cited from official reports dated prior to the retrogressive circular, the need for efficient supervision and control remained as urgent as ever. Writing to the Minister of Commerce in 1892 M. de Maroussen, with reference to the junior employés in public kitchens, says: "A wretched existence; cooking arrangements badly installed; hygienic conditions deplorable." In July, 1888, MM. Hudelo and Napias wrote the following description of the kitchen in one of the principal boulevard restaurants:—

"Everything is on the narrowest scale and one was consequently roasted on all sides. The ceiling is scarcely 3 metres high, while overhead the gas flares. Under foot are the pipes from the range, between which and the grill the distance is so small that if two men want to pass each other one of them has to squeeze himself up against the heated metal. To the left is the spit; alone the right end is unoccupied. Imagine eight or ten people working together under such circumstances! This is, nevertheless, the state of affairs in 80 per cent. of the kitchens not only in Paris but also in our larger towns, and even in Algeria."

In a report by M. Schaere the following passage occurs:—

"The kitchen is underground, less than 2½ metres high, and along with the larder and offices receives its light and air through narrow slits, three opening at the level of the street and two on the garden. There are two ventilators, but they work badly. The street sewer being on a higher level than the floor it is impossible to drain into it, so a cess-pit has been sunk which has to be emptied by pumping. The smell from it is most offensive. The sink drains into the sewer, but sometimes the contents of the latter inundate the kitchen. A urinal hard by is in communication with the cess-pit."

Another reporter writes:—

"The kitchen is invariably the filthiest spot in the house. ..... In some establishments you will find a latrine in direct communication with the kitchen or else with the

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larder, but this is a trifle, seeing that in others the hands are obliged to convert provision-tins into urinals, being forbidden to obstruct the narrow space by passing to and fro."

Working from five or six o'clock in the morning until ten o'clock at night, with only short intervals for eating, but none for repose, it is no wonder that the hapless people whose fate has made them Parisian cooks should suffer excessively from preventable diseases, chiefly tuberculosis and gastro-hepatitis, and be the victims of an abnormal mortality. Their surroundings are insanitary to a degree almost beyond belief, and in addition they have to breathe an atmosphere heated "not merely up to 104° F., which is the ordinary temperature in Parisian kitchens, but even as high as from 140° to 160°." The number of cooks employed in the public eating establishments of Paris is estimated at 20,000, of whom 8000 are males and 12,000 females. During the quinquennium 1891–95 the death-rate among them was 26·98 per 1000 per annum, or about double that of the adult population of the city. The same factors which are responsible for the unhealthiness thus so lamentably exemplified must also react disadvantageously on the food prepared. For the sake of the poor people chiefly concerned and also in the interests of the immense number of visitors to Paris, of whom British subjects form no small part, who naturally are obliged for the most part to frequent hotels and restaurants, it is imperatively necessary that remedial measures of a radical description should be forthwith devised for the crying evil which has been so fearlessly exposed by the Société d'Hygiène. The commission, in conclusion, strongly recommend the immediate resumption of systematic supervision in all kitchens where food or comestibles of any kind are prepared for general use; and they are also of opinion that every employé should be allowed at least one free day per month. These recommendations do not err on the side of unreasonableness, but no doubt it is better to ask for a little and get it than to paralyse a timid executive by an excessive demand.

CHRISTOPHER COLUMBUS AND THE MEDICAL PROFESSION.

IT is stated in *Italia Termale* that Dr. A. M. Fernandez de Ybarra has published an interesting work on the medical history of the expeditions which Christopher Columbus undertook in his search for a new world. During the great discoverer's first voyage his slender following, which all told numbered but 120 souls, included two physicians—to wit, Master Alonzo, on board the caravel *Santa Maria*, and Master Juan, on board the *Pinta*. When Columbus returned to Spain the last-named officer remained behind at Fort Navidad, and made one of the thirty-eight victims who were massacred by the natives of San Domingo. The principal medical officer of the second expedition, which consisted of 1500 men, and sailed from Cadiz in the month of September, 1493, was Dr. Diego Alvarez Chanca, of Seville, physician in ordinary to the King and Queen of Spain. In a report addressed to Ferdinand Columbus referred to this officer in the following flattering terms: "I make a point of directing the attention of your Highness to the never-ending work wherewith Dr. Chanca is overwhelmed in consequence of the heavy sick roll together with the dearth of provisions; but in spite of all difficulties he evinces the utmost zeal in everything that concerns his art. Your Highness having left me free to fix the amount of his remuneration (although it is perfectly certain that neither I nor anyone else in my position could give him a sum even approaching what he would gain on land), I have opened for him an annual credit of 50,000 maravedis."[1] Dr. Chanca is given the credit of having cured Columbus of a malignant fever which had brought him to death's door, and he is also said to have been the first person to write a description of the New World, his contribution taking the form of a report to the Municipal Council of Seville. On his return to Spain he produced his "Commentum Novum in Parabolis Divi Arnoldi de Villanova" which was published at Seville in 1514. But it was not solely to the members of the medical profession who sailed in his company that Columbus expressed his indebtedness. Paolo dal Pozzo Toscanelli, a famous physician and astrologer of Florence, gave him what is described as excellent advice regarding the possibility of reaching India from the West, and in order to simplify matters likewise presented him with a map showing the course he ought to steer. The value of the Florentine's counsel is open to question, but there was another less pretentious practitioner who undoubtedly was able to render the hero an inestimable service at a turning point in his career. Discouraged by persistent opposition and well-nigh broken-spirited, Columbus had sought asylum in the convent of Santa Maria della Robida in Andalusia, whereupon the Prior believing him to be mad sent for Dr. Garcia Fernandez, an unassuming country surgeon from the neighbouring hamlet of Palos do Moguer. Happily the village Galen was a man of discernment. He quickly perceived that his patient was no lunatic but a man of genius, and instead of consigning him to chains and a dungeon after the fashion of the day he not only restored him to health by his treatment but also won for him the goodwill of the Prior, who furnished him with means and introduced him at Court. It is generally stated that Columbus died from gout, but Dr. de Ybarra disagrees with the authorities who are responsible for this diagnosis. In his opinion death was due to cardiac complications consequent on chronic rheumatism, and in support of this contention he adduces the testimony of several persons who aver that they saw the dying navigator during the last month of his life and that his body was enormously swollen from the chest downwards.

[1] About £144 sterling.

YELLOW FEVER IN NEW YORK CITY.

THE first case of yellow fever which has occurred in New York city for many years terminated fatally about three weeks ago. Colonel Waring, one of the best known public men in New York, who made a name for himself and earned the lasting gratitude of his fellow citizens under the *régime* of the late mayor by efficiently and thoroughly cleansing the streets, had been sent by the United States Government to Cuba to make a report on the condition, and to suggest plans for the sanitary regeneration, of Havana and Santiago. Colonel Waring having completed his task arrived at New York on Tuesday, Oct 25th. On his arrival he complained of feeling unwell, but thinking that he was suffering from a slight attack of malaria he proceeded to his home to rest for a day or two before going to Washington to report the results of his mission to President McKinley. The family physician was called in and he decided that his patient was suffering from a severe cold and it was not until the Thursday that suspicions were aroused as to the true nature of the malady. Dr. Doty, the health officer of New York Harbour, was summoned in consultation and he quickly came to the conclusion that Colonel Waring had contracted yellow fever. At 1 A.M. on Saturday, Oct. 29th, the dreaded black vomit made its appearance and, becoming weaker and weaker after each recurrence of the vomit, Colonel Waring expired at eight o'clock on Sunday morning. Immediately after death the body was placed in a lead coffin which was hermetically sealed and was conveyed on board the Health Department boat to the State crematorium on Swinburne Island, where it was burned. Much fear was evinced that the contagion might spread and every sanitary

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precaution was taken to prevent such an occurrence. It was pointed out, however, by experts that at this time of the year and in a city like New York where the hygienic arrangements were so good there was no cause for alarm. Colonel Waring was an authority on sanitary engineering and he had written many books on the subject. It will be remembered that in 1896 Colonel Waring made a tour of the large towns of the European continent and of Great Britain in order to inspect their different methods of sewerage, draining, and street cleaning, the results of his investigations being set forth in a series of valuable articles.

DR. GIUSEPPE SANARELLI, of the Uruguayan Medical School and Director of the Hygienic Institute at Montevideo, whose discovery of the microbe of yellow fever has brought him much distinction, has been offered by Dr. Baccelli (Minister of Public Instruction) the chair of Hygiene in the University of Bologna left vacant by Professor Roncati. The offer was made in accordance with the express wish of the Bolognese medical faculty.

THE Alvarenga prize of the College of Physicians of Philadelphia for 1898 has been awarded to Dr. S. A. Knopf of New York City for his essay, entitled "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home."

THE County Council of Wiltshire on Tuesday last, after a debate lasting nearly three hours, resolved by 31 votes against 29 to appoint a medical officer of health to the county at a salary of £500 per annum with travelling expenses.

A DONATION of £1000 from "H." and one of £500 from "E." have been received towards the Charing-cross Hospital special appeal for £100,000.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE thirty-third sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Nov. 8th. Lord Llandaff, the chairman, presided, and the other Commissioners present were the Right Hon. John William Mellor, Q.C., Sir John Dorington, M.P., Sir George Barclay Bruce, Mr. de Bock Porter, Major-General Scott, and Mr. Robert Lewis.

At the commencement of the sitting Mr. John Hollams continued his evidence. The other witnesses examined were Sir Henry Knight, chairman to the Southwark and Vauxhall Company; Mr. Walter Hunter, engineer to the Grand Junction Company; Mr. Restler, engineer to the Southwark and Vauxhall Company; and Mr. Thomas Parkes, engineer to the Lambeth Company.

Mr. JOHN HOLLAMS, in answer to the CHAIRMAN, said that the proportion of interest on the Debenture Stock which it would be necessary to issue for carrying out the proposed inter-communication between the companies could be arranged by an arbitrator. In case of water being taken from the Southwark and Vauxhall Station at Battersea each company should, in his opinion, pay the interest on the debentures issued in the manner arranged by the arbitrator. If one or more companies used the water that company or those companies should pay for the amount used.

In answer to Mr. DE BOCK PORTER the witness said that if the mains of one company were used to conduct water for the use of another a payment for the "way leave" should be charged.

In answer to the CHAIRMAN the witness said that in the East-end of London many houses were supplied at a loss to the company; practically the rich were made to pay for the poor. The Staines Reservoir Act prohibited intersale of water derived from that source and there were many clauses in existing Acts of the water companies which would have to be repealed to render an inter-communication system legally possible. Statutory provisions would also have to be made to give the water companies power to spend money outside their authorised districts of supply. The witness thought, however, that a scheme of inter-communication might be sanctioned by a very simple Act of Parliament.

Lord LLANDAFF said that the Commissioners wished to hear from the engineers of the water companies what their resources were; to know what extra amount of water each company had over that required for the supply of their customers; and whether they possessed sufficient plant for the filtration and pumping of that water.

A question arose with regard to the legality of a circular recently issued by the Local Government Board referring to the Act of 1897, and on this point the CHAIRMAN said he would not take upon himself to express the slightest opinion. The witness contended that the companies were not bound to supply water in times of drought and that should the companies carry out a scheme for inter-communication they would lay upon themselves a serious burden for the benefit of the public.

Sir HENRY KNIGHT, chairman to the Southwark and Vauxhall Company, said that in his opinion the scheme of inter-communication which had been brought before the Commissioners was practicable. It was necessary that some such scheme should be adopted to satisfy "public outcry." The witness said it would be possible for a comparatively small sum to make some provision for inter-communication. The Battersea scheme must be looked upon as a "continuous perpetual" arrangement made to satisfy "public anxiety." The witness did not admit that there had been an insufficient supply of water in East London during the present summer. There was, he said, "not such an admirable supply" as usual and he admitted not a constant supply. If any want of water had been experienced it was due to "the ridiculous system" which had recently been inaugurated of building houses without a sufficient storage for water. The witness emphasised his opinion by thumping the table and suggested that no sane man would have a house without sufficient storage of water.

The CHAIRMAN pointed out that the Commissioners had seen specimens of matter found in cisterns in the East-end and that they were not attractive. The witness related his personal experience that when his cistern was cleared out "not half a teacupful of sediment" was found in it, and he advocated a cistern with a sloping bottom, an arrangement, it may be remembered, which has already been brought before the Commissioners, and which has, as the Chairman pointed out at the time, the merit of conducting any deposit straight into the supply-pipe of the consumers for their immediate consumption.

In answer to Major-General SCOTT the witness said he could not tax his memory with regard to the exact area of the filter-beds of the company of which he was chairman, but he was not prepared to deny that they had only twenty-two acres of filter-beds for the filtration of 46,000,000 gallons of water daily. He stated that the East London Waterworks Company had been supplied with water derived by this company from sources other than the Thames. The supply given was what he called "manufactured water" (filtered water). With regard to the amount of water drawn by the metropolitan companies from the Thames the witness gave it as his opinion that no limitations should be placed with regard to the amount which they should be allowed to take. As long as London wanted water to drink it should be taken from the Thames. It was perfectly useless and unnecessary that anything like 200,000,000 gallons should be allowed to flow over Teddington Weir. It occasionally happened, doubtless, that barges got aground, but there were two tides a day so that they were able to get off.

Mr. WALTER HUNTER, engineer to the Grand Junction Waterworks Company, in answer to the CHAIRMAN, said that in his opinion the Battersea scheme would be useful. The scheme could be carried out by next summer. The cost of the new mains and connexions would, roughly speaking, come to about £255,000. Ultimately a new 36 in. main would have to be made from the Thames intake to the Battersea station. The other expenses of the scheme would be a payment for the use of reservoirs at Campden-hill and a rent charge to the Southwark and Vauxhall Company for their Battersea station.

Mr. RESTLER, engineer to the Southwark and Vauxhall

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Waterworks Company, agreed with the last witness that if the Battersea scheme were carried out it would be the best solution that could be arrived at for the whole question.

In answer to a question from the CHAIRMAN the witness pointed out that there would be great difficulties in supplying the East London Waterworks Company with an extra amount of water by the passage of water through the mains of more than one water company. The chief difficulty arose from the fact that the pressures in the mains of different companies varied from one another and that the pressures varied in the mains of each company at different times during the day. From this simple consideration it followed that a passage, for example, of the Chelsea Company's water through the mains of the Southwark and Vauxhall Company to those of the East London Company would practically not be a good working scheme.

Mr. THOMAS F. PARKES, engineer to the Lambeth Company, said that his company with their present plant and equipments would be unable to spare any water during the time of maximum supply—that is to say, in the months of July and August. They had, however, storage works in progress which would enable them to supply 5,000,000 or 6,000,000 gallons daily. They had not, however, legal power to abstract that extra amount of water from the Thames. The witness stated that they obtained a considerable amount of water from gravel beds near the Thames.

The thirty-fourth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, Nov. 14th. The Commissioners present were Lord Llandaff (the chairman), Major-General Scott, Mr. de Bock Porter, and Mr. Robert Lewis. The whole of the sitting was occupied by the examination of Mr. William Booth Bryan, engineer to the East London Waterworks Company.

It may be well to mention here that since the last sitting a paper has been printed for the benefit of the Royal Commissioners giving a plan showing the proposed trunk mains which would have to be made in the Battersea scheme for supplying water to the various companies. The paper is called "Amended Report of the Engineers of the London Water Companies prepared in view of events which have happened since their report, dated October, 1897, on the proposal to make interchangeable connexions between the mains of the several companies." It will be remembered that the stations which would be used are the Battersea station of the Southwark and Vauxhall Company, the Campden-hill station of the Grand Junction Company, Claremont-square station of the New River Company, the Nunhead station of the Southwark and Vauxhall Company, and the Brixton Hill station of the Lambeth Company. Some of the mains which at present exist would be utilised. These are, the main which conducts the unfiltered water to the Battersea station, the main which conducts the filtered water from Battersea to Nunhead, and the 24 in. main which conducts water to Claremont-square. The new mains which would have to be laid are: (1) from Battersea to Campden Hill; (2) from Campden Hill to Poland-street, where it would join an existing main belonging to the New River Company; (3) from Battersea to the Angel, Islington, to a New River main; (4) from Battersea to Brixton Hill; and (5) from Nunhead to the Tower subway through which the water would pass for the supply of the East London Company's mains. At this sitting no intimation was made that the Battersea scheme was unanimously accepted by the directors of the various metropolitan water companies.

Mr. BRYAN, in answer to the CHAIRMAN, said that he had been sixteen years chief engineer to the East London Waterworks Company. The population at present supplied by the company was 1,300,000. The quantity supplied monthly from June to October during the year 1898 was as follows:—June, 42,563,000 gallons per day; July, 44,959,000 gallons per day; August, 43,170,000 gallons per day up to August 22nd, when they commenced the intermittent supply in place of the constant; August, 40,656,000 gallons per day as the average of the whole month; September, 33,149,000 gallons per day as the average of the whole month; and October, 34,202,000 gallons per day as the average of the whole month.

The CHAIRMAN said that he had received a communication from a gentleman named Glover, living at Upton Park, who said that in his case it would be more nearly the truth to say that the house received 25 gallons than that that amount was supplied to each consumer. He further observed that his was not an isolated case. On many days water did not reach his cisterns, so that he was placed in a worse position than that of the people who obtained their water direct from the main.

The witness admitted that a difficulty had arisen in the case of some of the high cisterns when the water was first turned on, because the lower cisterns had first to be filled, and only after this was done could the water reach the higher cisterns.

Mr. DE BOCK PORTER asked if in that case in some houses the highest cisterns got no supply at all. The witness, in reply, said that if that were the case the customers would have to get their water from taps on the lower floors. He added that he had received very few complaints and that if the gentleman (Mr. Glover) had written to him he would have been able to see whether the fittings of the house were in an efficient state. In many cases it was found that the ball-taps were out of order. It occasionally happened also that the taps were left running in a street so that the water did not reach some of the cisterns. In one case the amount of water which was allowed to run away through open taps was so great that the sewer man came to the company's foreman and stated that he could not go into the sewer because of the immense amount of water which was running away. When the turncock turned off the taps the water in the sewer was immediately lowered and the man was able to resume his work. During the time in which the company gave an intermittent supply they published a time-table like a railway time-table saying at what hour the water would be turned on.

The CHAIRMAN asked if when water was turned on in the morning from six to eight o'clock it would be necessary for a would-be consumer to rise and turn on his tap? and he suggested that as an alternative a water-rent payer might think it advisable to leave the tap running rather than rise at so early an hour. The witness admitted that this might be so and said that the company had less trouble at the present time than they had had at first with regard to the number of taps which were left running. The supply of water was still restricted to four hours a day throughout the whole district. The witness handed in a paper giving the daily supply of water during the months of July, August, September, and October. It is as follows:—

Source from which water is taken.	Gallons pumped into the district daily on the average during:—			
	July.	August.	September.	October.
1. River Lee	9,479,000	6,354,000	1,032,000	4,693,000
2. River Thames and wells	16,967,000	19,056,000	19,153,000	18,419,000
3. Storage reservoirs.	17,500,000	9,900,000	4,600,000	*Nil*
4. New River Company.	1,013,000	5,346,000	6,129,000	6,093,000
5. Southwark and Vauxhall Company.	—	—	2,029,000	4,801,000
6. Kent Company.	—	—	206,000	196,000
Total pumped into district of supply	44,959,000	40,656,000	33,149,000	34,202,000

The storage reservoirs, which have a capacity of 1,200,000,000 gallons, were filled on June 20th. The amount of water taken during the months of July, August, and September reduced them to a very low state at the end of that month. The witness contended that there was really no water famine because during the driest time 33,000,000 gallons a day were distributed and this quantity amounted to an average of 25 gallons per head. He contended that had there been proper cisterns or means of storage little inconvenience would have been felt. Cisterns had been removed from the houses contrary to the wishes of the company soon after a constant supply of water was first given. The sanitary officers and authorities could not insure cleanliness of the cisterns and for that reason they had caused them to be removed. The supply of covered cisterns would remedy this evil, but the company had not sufficient power to enforce such a regulation. The company had provided 30,000 jars for storage of water and had put up stand-pipes to the mains so that water could be drawn from them. In the opinion of the witness the real evil was due to the absence of cisterns. This deficiency caused considerable inconvenience even in case of a temporary breakdown in the water-supply, which might be due to the fracture of a main.

In reply to the CHAIRMAN the witness said that it was

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difficult to say whether the company had power to order that cisterns should be put into the houses of existing customers. There was a clause in one of the Acts of the company which provided that cisterns should be fixed. The clause, however, did not specify the size or character of the cistern and consequently the company had practically little control. In some cases cisterns of about the size of a hat had been put in. In many cases, especially in the Essex district, it had been the habit of the builder to fix a cistern and demand that the water should be laid on to a new house. After the water had been laid on the cistern was removed and taken to the next house. By this simple device one cistern had been made to do duty for a whole row of houses.

The CHAIRMAN asked whether it was not possible to prevent so transparent a fraud and the witness replied that there would be many difficulties in obtaining a conviction in such a case.

The CHAIRMAN asked how the company proposed to obtain a constant supply during the year 1899. The witness replied that should a similar drought occur he thought that with the connexions already made the company would be able to keep up a constant supply by obtaining the amount of water given in a table which he handed in. The witness assumed that 46,000,000 gallons in July, 45,000,000 gallons in August, 44,000,000 gallons in September, and 42,000,000 gallons daily in October would be required to keep up a constant supply. The table is as follows:—

Source from which water is taken.	Gallons pumped into the district daily on the average.			
	July.	August.	September.	October.
1. River Lee	10,000,000	6,000,000	1,000,000	4,000,000
2. River Thames and wells	24,000,000	24,000,000	24,000,000	24,000,000
3. Storage reservoirs	*Nil.*	3,000,000	7,000,000	2,000,000
4. New River Company and during August, September, and October with the assistance of the Grand Junction and West Middlesex Companies.	6,000,000	6,000,000	6,000,000	6,000,000
5. Southwark and Vauxhall Company	6,000,000	6,000,000	6,000,000	6,000,000
Total pumped into district	46,000,000	45,000,000	44,000,000	42,000,000

The witness said that in order to carry out the arrangements which he had indicated they would take no water from their storage reservoirs until the end of July and that the position would, he hoped, then be as follows:—

Storage water	1,200,000,000 gallons.	
August, 3,000,000 gallons per day ...	93,000,000 ,,	
	1,107,000,000 ,,	(i.e., at end of August.)
September, 7,000,000 ,, per day ...	210,000,000 ,,	
	897,000,000 ,,	(i.e., at end of September.)
October, 2,000,000 ,, per day ...	62,000,000	
	835,000,000 ,,	(i.e., at end of October.)

The company propose for the present to "husband" their storage water and hope to fill their reservoirs and then to keep them full until August 1st. They would then be able to give a constant supply and would have 835,000,000 gallons in store at the end of October. It might also be possible for them to obtain an additional 2,000,000 gallons a day from the New River Company, which would get this amount supplied by the Grand Junction and West Middlesex Companies. The means of inter-communication which existed at present between the systems of the East London Waterworks and those of the other companies were: 1. By means of the River Lee. (This, however, is not strictly inter-communication. The arrangement has already been fully described in THE LANCET. The so-called inter-communication amounts simply to this—that the New River Company refrains from taking a certain amount of water which, therefore, is allowed to flow down the Lee to the intake of the East London Waterworks Company. The matter was made clear to the Commissioners by questions asked by Major-General Scott.) A new 24 in. main had been laid from the Grand Junction Company's district to the New River Head and a connexion to this main had been made by the West Middlesex Company. It was suggested that (1) some quantity of water might be supplied by these two companies to the New River and that a corresponding amount of water should be passed by the New River Company to the East London intake at the River Lee. 2. The Kent Company could supply water through two 4 in. mains which passed under the Thames in the Blackwall tunnel. 3. There was also a connexion with the mains of the Southwark and Vauxhall Company. A 20 in. main from Nunhead reservoir had been continued through the Tower subway (this subway belongs to the London Hydraulic Company and an easement has been granted to the East London Waterworks Company for a term of years). This main can convey 5,000,000 gallons of water daily, but is capable of carrying more. The East London Waterworks Company propose also by agreement with the Grand Junction Company to make additional connexion between their Thames main and the Campden-hill reservoir of the latter company. By this means it is hoped that they may obtain another 2,000,000 gallons daily.

The thirty-fifth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Tuesday, Nov. 15th. The Commissioners present were Lord Llandaff (the chairman), Sir John Dorington, M.P., Sir George Barclay Bruce, Mr. de Bock Porter, and Mr. Robert Lewis. The witnesses examined were Mr. BRYAN, engineer to the East London Waterworks Company, who was cross-examined by Mr. Pember on behalf of the water companies, by Mr. Balfour-Browne on behalf of the London County Council and by Lord Robert Cecil on behalf of the Hertfordshire County Council. The witness exhibited and explained a map showing the geological formation of the valley of the Lee. The other witnesses examined were Mr. Hervey, engineer to the West Middlesex Water Company; Mr. Hack, engineer to the Chelsea Company; Mr. Morris, engineer to the Kent Company; and Mr. Francis, one of the engineers to the New River Company. These gentlemen all gave evidence in favour of the Battersea scheme, which was more fully explained by Mr. Collins, an engineer to the New River Company.

Mr. PEMBER, on behalf of the metropolitan water companies, said that the Battersea scheme had the unanimous sanction of the companies.

Sir ALEXANDER BINNIE gave evidence to the effect that the scheme was unnecessary.

Mr. BALFOUR-BROWNE, on behalf of the London County Council, said it was more a matter for "argument" than for "evidence" and he wished to address the Commissioners. He suggested that the East London Waterworks Company's undertakings might now be bought cheaply because it was a defaulting company.

The Commissioners unanimously decided not to hear counsel on either side and at the conclusion of the sitting it was intimated that the Commissioners would meet privately on Monday next to consider the evidence which had been taken with regard to the inter-communication of the companies' mains.

The next public sitting of the Commissioners will be held on Tuesday, Nov. 22nd.

THE BATTLE OF THE CLUBS.

ANCIENT ABBEY LODGE, WALTHAM ABBEY, AND THEIR MEDICAL OFFICER.

ON Oct. 27th a meeting of the members of the Ancient Abbey Lodge of the Independent Order of Oddfellows, Waltham Abbey, was called for the purpose of presenting Dr. J. B. Henderson, who has for twenty-five years filled the office of lodge surgeon, with a testimonial to the worth in which they held his services. Hitherto the articles which we have inserted under the heading, "The Battle of the Clubs," have been unfortunately all of one tenour. It is, therefore, with all the more pleasure that we insert an account of the proceedings, which did the utmost credit to all concerned, and we must specially congratulate the chairman upon the

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facts—for they are facts and not merely opinions—mentioned in his speech.

The chair was taken by the Rev. J. H. Stamp and there was a large attendance of members and friends. After the usual loyal and patriotic toasts the chairman said: We come now to the most important part of our programme. We are assembled in our lodge-room to-night to express our respect and esteem for Dr. Henderson and to show our appreciation of his valuable services as our lodge surgeon during the long period of twenty-five years past. We have good reasons for regarding medical men as the greatest benefactors of our race. They are summoned to our aid in the greatest emergencies of life, when we are stricken down by disease and brought face to face with death. They employ for our benefit their knowledge and experience, their skill and remedies, and above all they put forth their energies to heal us of the evils which flesh is heir to, and do all in their power to alleviate our sufferings. If the old proverb is at all reliable, "a friend in need is a friend indeed," then the medical man is one of our truest friends. Their noble profession is second only to that of the clergy, who are entrusted with the care and cure of immortal souls. Its very importance renders it an arduous and most anxious task. The medical man is supposed to be always on duty. His patients require his services at all hours of the day and night. He cannot make sure of any time to call his own, not even for necessary sleep or recreation. He is debarred from sharing the benefits of the eight hours' system, which are now enjoyed by many of our working men. The drain upon his time is continuous and severe and that upon his patience is equally trying and exhausting. He has many various tempers to bear with, but he is expected to dispense with his own temper both in the surgery and in the sick room. He must meet the most unreasonable patient with a smiling face and calm demeanour. The demands made on the time and patience of the clergy are trying enough, but they are few and small in comparison with those which fall to the lot of the physician. The good services of the medical man are essential to the well-being of society in general, but especially to that of institutions like our own, which have been established to give a helping hand to suffering brothers in the time of adversity and affliction. The most anxious part of the work of our society falls to the lot of the lodge surgeon, who is called upon to attend us in the time of sickness and danger. However much we may boast of our independence of the medical profession when we are in good health we are glad to acknowledge our dependence upon it and to claim its good services in time of illness. Dr. Henderson, the reverend chairman went on to say, spared neither time nor trouble in helping members when they were ill and all alike admired and esteemed his good qualities and faithful services. He would ask Dr. Henderson to accept the silver waiter which he handed him, for which 150 members had subscribed as a slight token of their esteem and respect.

The salver bore the following inscription: "Presented to J. B. Henderson, Esq., M.D., by the members of the Loyal Ancient Abbey Lodge, No. 2632, Waltham Abbey District Independent Order of Oddfellows, as a token of their esteem for his twenty-five years' valuable services as surgeon.—Oct. 27th, 1898." Dr. Henderson's health having been enthusiastically drunk he thanked the members very warmly for their kindness and the proceedings terminated with a concert. Our account of the proceedings is taken from the *Waltham Abbey Weekly Telegraph*.

ISOLATION HOSPITAL ACCOMMODATION BY COUNTY COUNCILS.

THE Isolation Hospitals Act, 1893, has not up to the present time proved in application altogether a success, in spite of the fact that it confers upon county councils very considerable powers as to isolation accommodation. The district councils are obviously not anxious to call into operation the provisions of the Act, and it cannot be said that county councils have, in the main, taken up a very strong position in the matter of enforcing the powers conferred upon them. The Act in question is certainly not an ideal one, but it is to be hoped that some means may be found to make it answer its purpose in a more satisfactory manner than has hitherto been the case. The Staffordshire County Council are evidently bent on gentle persuasion, coupled with substantial pecuniary assistance, rather than on compulsion, and if they are able by this means to bring about a proper system of isolation, ambulance provision, disinfection, and nursing in the county, all should be satisfied. Compulsion is an unpopular measure, more particularly when popularly elected councils are in question.

That there is, in very many cases at least, considerable advantage to be derived from joint hospitals goes at the present day almost without saying. There should be by this method economy in construction and economy in administration; but, above all, there should be efficiency in both, and a maintenance of that attractiveness which should be ever present in a properly managed fever hospital. There is, however, with joint hospital schemes, as with separate schemes, the financial difficulty—a difficulty which will always prove a stumbling-block where the ratepayers' representative is to the fore; and although to some extent this element is, with a growing popular appreciation of the monetary value of prevention, a diminishing one, any scheme which can offer financial assistance is bound to receive respectful consideration.

It is doubtless with a due appreciation of this aspect of the question that Dr. George Reid, the medical officer of health of Staffordshire, has recently presented a proposal to the council to contribute an annual sum of some £5600 out of the county funds towards the maintenance of isolation accommodation in the county. Dr. Reid estimates that in order to properly equip the whole administrative county some 640 beds are necessary, and deducting from this total 144 of the existing beds which can be regarded as satisfactory, there remain 496 to be provided for. The cost per bed, exclusive of site and furniture, is estimated at £230 and, allowing a certain sum for alterations of existing accommodation, it is thought that about £116,000 will be required. The annual establishment and maintenance charges, exclusive of interest on capital, is put at £16,800, and the county council has apparently agreed provisionally to contribute *annual grants* of about £5600 towards the establishment and maintenance expenses.

This is a liberal bid towards bringing the local authorities into line on the isolation question, and although the bestowal of the grant would in each case be dependent upon satisfactory provision, the local authorities will probably take the proposal into their very serious consideration, and other county councils will watch the development of it with interest and curiosity. Doubtless a comprehensive proposal such as this will not be carried out without some friction, but local authorities should remember that they can appeal to the Local Government Board against any grouping of districts which they may consider to be unfair, and this fact alone should give them confidence to discuss the matter freely. Too much time is often lost in schemes of this nature by what may be called the sulking of some local authorities.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6910 births and 3706 deaths were registered during the week ending Nov. 12th. The annual rate of mortality in these towns, which had declined in the nine preceding weeks from 24·6 to 17·0 per 1000, rose again last week to 17·2. In London the rate was 16·3 per 1000, while it averaged 17·9 in the thirty-two provincial towns. The lowest death-rates in these towns were 11·3 in Croydon, 11·6 in Sunderland, 11·9 in Derby, and 12·4 in Burnley; the highest rates were 21·5 in Norwich and in Manchester, 22·5 in Swansea and in Liverpool, 22·6 in Gateshead, and 23·3 in Preston. The 3706 deaths in these towns included 411 which were referred to the principal zymotic diseases, against 456 and 420 in the two preceding weeks; of these, 96 resulted from "fever" (principally enteric), 85 from diarrhœa, 77 from diphtheria, 71 from measles, 42 from scarlet fever, and 40 from whooping-cough. No fatal case of any of these diseases occurred last week in Croydon; in the other towns the lowest zymotic death-rates were recorded in Cardiff, Leicester, Birkenhead, and Huddersfield, and the highest rates in Leeds, Newcastle-upon-Tyne, Sheffield, Nottingham, and Swansea. The greatest mortality from measles occurred in

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Portsmouth, Plymouth, Nottingham, Blackburn, and Sunderland; from scarlet fever in Derby; from whooping-cough in Swansea, Preston, and Halifax; and from "fever" in Norwich, Blackburn, Leeds, Sheffield, and Hull. The 77 deaths from diphtheria included 31 in London, 9 in Swansea, 8 in Leeds, 6 in Sheffield, 4 in West Ham, and 3 in Newcastle-upon-Tyne. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Nov. 12th, was 3188, against 2915, 3031, and 3092 at the end of the three preceding weeks; 340 new cases were admitted during the week, against 381, 336, and 318 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 263 and 237 in the two preceding weeks, rose again to 248 last week, but were 157 below the corrected average. The causes of 52, or 1·4 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Hull, Newcastle-upon-Tyne, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Wolverhampton, Birmingham, Liverpool, Manchester and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·0 and 18·9 per 1000 in the two preceding weeks, rose again to 19·4 during the week ending Nov. 12th, and exceeded by 2·2 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 14·5 in Greenock and 15·3 in Perth to 19·9 in Glasgow and 23·7 in Dundee. The 584 deaths in these towns included 28 which were referred to diarrhœa, 16 to "fever," 11 to measles, 11 to diphtheria, 11 to whooping-cough, and 9 to scarlet fever. In all, 86 deaths resulted from these principal zymotic diseases, against 73 and 80 in the two preceding weeks. These 86 deaths were equal to an annual rate of 2·9 per 1000, which was 1·0 above the mean rate last week from the same diseases in the thirty-three large English towns. The deaths referred to different forms of "fever," which had been 9, 15, and 16 in the three preceding weeks, declined to 16 last week, of which 12 occurred in Glasgow and 4 in Paisley. The 11 fatal cases of measles showed a further increase upon recent weekly numbers, and included 4 in Glasgow and 4 in Aberdeen. The deaths from diphtheria, which had increased from 6 to 10 in the three preceding weeks, further rose to 11 last week, of which 5 occurred in Aberdeen and 3 in Glasgow. The 11 fatal cases of whooping-cough exceeded by 4 the number in the preceding week, and included 7 in Glasgow. The deaths from scarlet fever, which had been 4 and 6 in the two preceding weeks, further rose to 9 last week, of which 5 occurred in Glasgow, 2 in Edinburgh, and 2 in Dundee. The deaths referred to diseases of the respiratory organs in these towns, which had been 119 and 128 in the two preceding weeks, were 129 last week, and were 32 below the number in the corresponding period of last year. The causes of 27, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·4 and 24·8 per 1000 in the two preceding weeks, rose again to 30·0 during the week ending Nov. 12th. During the past four weeks the death-rate in the city has averaged 26·8 per 1000, the rate during the same period being 16·5 in London and 18·3 in Edinburgh. The 201 deaths registered in Dublin during the week under notice showed an increase of 35 upon the number in the preceding week, and included 22 which were referred to the principal zymotic diseases, against 13 and 18 in the two preceding weeks; of these, 8 resulted from diarrhœa, 5 from "fever," 4 from whooping-cough, 3 from scarlet fever, 2 from diphtheria, and not one either from small-pox or measles. These 22 deaths were equal to an annual rate of 3·3 per 1000, the zymotic death-rate during the same period being 1·4 both in London and in Edinburgh. The deaths referred to different forms of "fever," which had been 4 and 3 in each of the two preceding weeks, rose again to 5 last week. The 4 fatal cases of whooping-cough and the 3 deaths from scarlet fever showed a further increase upon those recorded in recent weeks. The fatal cases of diphtheria, which had been 3 in each of the two preceding weeks, declined to 2 last week. The 201 deaths in Dublin last week included 60 of infants under one year of age, and 45 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in the preceding week. Eleven inquest cases and 9 deaths from violence were registered; and 64, or nearly a third, of the deaths occurred in public institutions. The causes of 11, or more than 5 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1898.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during October in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 11·5 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 8·1, 6·5, and 8·9 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Kensington, St. George Hanover-square, St. James Westminster, Marylebone, St. Giles, St. Martin-in-the-Fields, and Strand; while they showed the largest excess in Fulham, Hackney, Holborn, Clerkenwell, St. Luke, Newington, Bermondsey, Battersea, and Plumstead. Not one case of small-pox was notified in London during October, the numbers in the three preceding months having been 2, 5, and 2 respectively; and no small-pox patients were under treatment last month in any of the Metropolitan Asylum Hospitals. The prevalence of scarlet fever in London showed a considerable further increase upon that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Islington, Hackney, Holborn, Clerkenwell, St. Luke, Newington, Bermondsey, and Plumstead. The Metropolitan Asylum Hospitals contained 2977 scarlet fever patients at the end of October, against 2255, 2207, and 2425 at the end of the three preceding months; the weekly admissions averaged 350, against 242, 202, and 270 in the three preceding months. The prevalence of diphtheria in London during October showed an increase upon that recorded in the two preceding months; this disease was proportionally most prevalent in Fulham, Holborn, St. Luke, Newington, Bermondsey, Battersea, Greenwich, and Lee sanitary areas. There were 1182 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of October, against 1014, 865, and 1024 at the end of the three preceding months; the weekly admissions averaged 172, against 146, 107, and 163 in the three preceding months. The prevalence of enteric fever in London showed a marked further increase upon that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in Westminster, Hackney, St. Martin-in-the-Fields, Limehouse, Poplar, and Greenwich. The Metropolitan Asylum Hospitals contained 223 enteric fever patients at the end of October, against 87, 118, and 155 at the end of the three preceding months; the weekly admissions averaged 41, against 16, 21, and 28 in the three preceding months. Erysipelas was proportionally most prevalent in Holborn, St. Luke, Bethnal Green, Whitechapel, and Mile End Old Town sanitary areas. The 22 cases of puerperal fever notified in London during October exceeded the number in any recent month, and included 5 in Kensington sanitary area.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, Oct. 29th, the deaths of 5983 persons belonging to London were registered, equal to an annual rate of 17·3 per 1000, against 14·7, 20·7, and 21·0 in the three preceding months. The lowest death-rates in the various sanitary areas were 7·3 in St. Martin-in-the-Fields,

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ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1898.

(Specially compiled for THE LANCET.)

Sanitary Areas.	Estimated population in the middle of 1898.	Notified Cases of Infectious Disease.										Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	—	1815	1118	1	438	5	22	592	—	3991	11·5	1	47	38	150	58	—	66	2	315	677	2·0	5983	17·3	158
West Districts.																										
Paddington	127,480	—	27	29	—	12	—	1	5	—	74	7·6	—	—	—	10	4	—	—	1	5	20	2·0	142	14·5	163
Kensington	172,174	—	33	21	—	9	1	5	12	—	81	6·1	—	1	—	1	—	—	1	—	8	11	0·8	193	14·6	176
Hammersmith	107,370	—	49	20	—	10	1	—	10	—	90	10·9	—	—	—	2	2	—	2	—	6	12	1·5	117	14·2	179
Fulham	125,275	—	100	49	—	12	—	1	11	—	173	18·0	—	—	3	6	2	—	2	—	4	17	1·8	148	15·4	132
Chelsea	96,713	—	36	11	—	8	—	1	6	—	62	8·4	—	—	1	2	1	—	1	—	6	11	1·5	119	16·0	190
St. George Hanover-square	80,608	—	16	9	—	4	—	—	4	—	33	5·3	1	—	—	2	1	—	1	—	1	6	1·0	77	12·5	81
Westminster	52,574	—	10	6	—	9	—	—	8	—	33	8·2	—	—	—	1	4	—	1	—	3	9	2·2	75	18·6	167
St. James Westminster	22,200	—	5	2	—	—	—	—	—	—	7	4·1	—	—	—	—	—	—	—	—	3	3	1·8	30	17·6	243
North Districts.																										
Marylebone	140,483	—	24	14	—	14	—	—	21	—	73	6·8	—	1	3	1	2	—	2	—	3	12	1·1	185	17·2	100
Hampstead	78,755	—	28	8	—	5	—	—	5	—	46	7·6	—	—	1	—	—	—	3	—	—	4	0·7	78	12·9	65
St. Pancras	243,416	—	114	43	—	33	—	1	49	—	240	12·9	—	—	6	9	3	—	8	—	17	43	2·3	348	18·6	119
Islington	344,616	—	177	36	—	34	—	—	32	—	279	10·6	—	2	1	6	1	—	5	—	24	39	1·5	387	14·6	161
Stoke Newington	34,660	—	11	3	—	3	—	—	4	—	21	7·9	—	—	—	—	—	—	—	—	—	—	—	33	12·4	78
Hackney	219,630	—	125	77	—	45	—	1	43	—	291	17·3	—	3	2	8	1	—	6	—	9	29	1·7	241	14·3	139
Central Districts.																										
St. Giles	37,519	—	6	3	—	5	—	—	5	—	19	6·6	—	—	—	1	1	—	—	—	—	2	0·7	55	19·1	129
St. Martin-in-the-Fields	12,424	—	1	1	—	3	—	—	1	—	6	6·3	—	—	—	—	—	—	—	—	—	—	—	7	7·3	—
Strand	23,284	—	3	—	—	1	—	—	3	—	7	3·9	—	—	—	—	—	—	1	—	3	4	2·2	40	22·4	158
Holborn	30,056	—	16	13	—	2	—	—	8	—	39	16·9	—	1	—	1	—	—	—	—	4	6	2·6	59	25·6	308
Clerkenwell	66,120	—	62	11	—	7	—	—	6	—	86	17·0	—	2	3	1	1	—	—	—	14	21	4·1	108	21·3	253
St. Luke	41,076	—	36	18	—	—	—	—	11	—	65	20·6	—	4	3	1	—	—	—	—	7	15	4·8	88	27·9	139
City of London	29,088	—	9	3	—	1	—	—	4	—	17	7·6	—	—	—	—	—	—	—	—	—	—	—	31	13·9	100
East Districts.																										
Shoreditch	121,485	—	41	20	—	13	—	—	20	—	94	10·1	—	4	2	2	—	—	2	—	10	20	2·1	194	20·8	214
Bethnal Green	129,027	—	33	33	—	17	1	—	34	—	118	11·9	—	8	1	4	1	—	2	—	8	24	2·4	219	22·1	204
Whitechapel	80,559	—	20	15	—	5	—	1	27	—	68	11·0	—	1	—	—	—	—	1	—	6	8	1·3	120	19·4	130
St. George-in-the-East	48,241	—	7	6	—	6	—	1	11	—	31	8·4	—	—	—	2	1	—	1	—	7	11	3·0	77	20·8	185
Limehouse	58,661	—	10	14	—	9	1	—	8	—	42	9·3	—	2	1	6	2	—	1	1	5	18	4·0	92	20·4	133
Mile End Old Town	112,528	—	34	25	—	6	—	—	28	—	93	10·8	—	9	1	7	1	—	2	—	10	30	3·5	180	20·9	172
Poplar	170,220	—	51	43	—	27	—	—	22	—	143	11·0	—	1	—	7	—	—	3	—	19	30	2·3	265	20·3	170
South Districts.																										
St. Saviour Southwark	24,562	—	9	6	—	2	—	—	4	—	21	11·1	—	4	—	—	—	—	—	—	1	5	2·7	36	19·1	119
St. George Southwark	60,466	—	25	18	1	9	—	2	11	—	66	14·2	—	1	—	3	2	—	1	—	9	16	3·5	123	26·5	175
Newington	123,183	—	78	45	—	15	—	—	18	—	156	16·5	—	—	2	5	2	—	—	—	17	26	2·8	196	20·7	190
St. Olave Southwark	11,288	—	5	1	—	—	—	—	—	—	6	6·9	—	—	—	—	—	—	—	—	—	1	1·2	13	15·0	79
Bermondsey	85,738	—	75	49	—	7	—	—	8	—	139	21·1	—	—	1	7	4	—	—	—	10	22	3·3	153	23·3	203
Rotherhithe	40,849	—	12	4	—	2	—	—	8	—	26	8·3	—	—	—	1	—	—	—	—	1	2	0·6	51	16·3	105
Lambeth	304,073	—	89	99	—	22	1	2	36	—	249	10·7	—	1	—	10	8	—	4	—	19	42	1·8	371	15·9	144
Battersea	171,921	—	90	105	—	10	—	2	22	—	229	17·4	—	—	2	18	2	—	2	—	10	34	2·6	227	17·2	153
Wandsworth	202,526	—	48	60	—	14	—	2	13	—	137	8·8	—	1	1	7	1	—	3	—	12	25	1·6	218	14·0	121
Camberwell	261,189	—	122	64	—	11	—	—	32	—	229	11·4	—	1	2	8	2	—	1	—	21	35	1·7	319	15·9	160
Greenwich	180,441	—	70	67	—	28	—	1	26	—	192	13·9	—	—	2	3	4	—	7	—	13	29	2·1	277	20·0	188
Lewisham (excluding Penge)	88,562	—	23	27	—	4	—	—	2	—	56	8·2	—	—	—	4	1	—	—	—	12	17	2·5	96	14·1	157
Woolwich...	41,478	—	23	7	—	2	—	—	1	—	33	10·4	—	—	—	2	—	—	1	—	3	6	1·9	71	22·3	137
Lee	39,717	—	8	23	—	2	—	1	5	—	39	12·8	—	—	—	2	2	—	1	—	2	7	2·3	42	13·8	171
Plumstead	62,531	—	54	9	—	6	—	—	8	—	77	16·1	—	—	—	—	1	—	1	—	3	5	1·0	82	17·1	204
Port of London	—	—	—	1	—	4	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 27 cases of membranous croup.

† Including deaths from membranous croup.

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12·4 in Stoke Newington, 12·5 in St. George Hanover-square, 12·9 in Hampstead, 13·8 in Lee, 13·9 in London City, and 14·0 in Wandsworth; the highest rates were 22·1 in Bethnal-green, 22·3 in Woolwich, 22·4 in Strand, 23·3 in Bermondsey, 25·6 in Holborn, 26·5 in St. George Southwark, and 27·9 in St. Luke. During the four weeks of October 677 deaths were referred to the principal zymotic diseases in London; of these, 1 resulted from small-pox, 47 from measles, 38 from scarlet fever, 150 from diphtheria, 58 from whooping-cough, 66 from enteric fever, 2 from ill-defined forms of continued fever, and 315 from diarrhœa. These 677 deaths were equal to an annual rate of 2·0 per 1000; no deaths from any of these diseases were recorded last month in Stoke Newington, St. Martin-in-the-Fields, or London City; in the other sanitary areas the lowest zymotic death-rates were recorded in Kensington, St. George Hanover-square, Hampstead, St. Giles, Rotherhithe, and Plumstead; and the highest rates in Clerkenwell, St. Luke, St. George-in-the-East, Limehouse, Mile End Old Town, St. George Southwark, and Bermondsey. The fatal case of small-pox belonged to St. George Hanover-square sanitary area and was the first death referred to this disease in the metropolis since August, 1897. The 47 deaths referred to measles were 75 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in St. Luke, Bethnal Green, Mile End Old Town, and St. Saviour Southwark sanitary areas. The 38 fatal cases of scarlet fever were less than half the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Clerkenwell and St. Luke. The 150 deaths from diphtheria were 58 below the corrected average number; this disease showed the highest proportional fatality in Paddington, Fulham, Limehouse, Mile End Old Town, Poplar, St. George Southwark, Bermondsey, Battersea, and Lewisham sanitary areas. The 58 fatal cases of whooping-cough were 23 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Westminster, Bermondsey, and Lee. The 66 deaths referred to enteric fever were slightly below the corrected average number; this disease showed the highest proportional fatality in Hampstead and Greenwich sanitary areas. The 677 fatal cases of diarrhœa were 138 above the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Clerkenwell, St. Luke, St. George-in-the-East, St. George Southwark, and Newington. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was 10 per cent. below the average.

Infant mortality in London during October, measured by the proportion of deaths of children under one year of age to registered births, was equal to 158 per 1000. Among the various sanitary areas the lowest rates of infant mortality were recorded in Marylebone, Hampstead, Stoke Newington, St. Martin-in-the-fields, London City, and St. Olave Southwark; and the highest rates in St. James Westminster, Holborn, Clerkenwell, Shoreditch, Bethnal Green, Bermondsey, and Plumstead.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: John Boyan, W. H. Daw, Cyril Shepherd, Hugh L. Norris, Adrian A. Forrester, James M. G. Swainson, John Stoddart, James A. Forrest, Warren G. Westcott, Francis J. McKenna, Fairman R. Mann, William W. Keir, Edward C. Sawdy, Percy H. Bannister, Richard S. Osborne, Mervyn W. Falkner, Edward O. B. Carberry, John K. Raymond, and Henry W. M. Rees, to the *Victory*, for Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

Captain Tate and Lieutenant Penny are held in readiness for service in West Africa. Major Woods is posted to the Dublin District for duty pending embarkation for Egypt. Lieutenant-Colonel Somerville-Large is transferred from the Dublin District to the charge of the hospital for soldiers' wives and children at Portsmouth. Lieutenant O'Gorman is placed under orders for service in South Africa. Captain Henry Vincent Dillon retires from the Service receiving a gratuity.

INDIA AND THE INDIAN MEDICAL SERVICES.

Major W. Dugdale, R.A.M.C., is transferred from Bombay to the Nagpore District. Captain R. H. Castor, Civil Surgeon, Akyab, has been granted furlough for two years from the date on which he may avail himself of it. Lieutenant-Colonel Joshua Duke, Medical Officer, Bhopawar Political Agency, is appointed to succeed Colonel Deane as Residency Surgeon, Kashmir. Lieutenant-Colonels Charlton, R.A.M.C., and P. F. O'Connor will be the Principal Medical Officers of the Northern and Southern Divisions respectively at the cavalry camp of exercise in January. Lieutenant-Colonel E. H. Fenn, C.S.I., R.A.M.C., doing duty at Peshawur, is appointed Surgeon on the Staff of Lord Curzon of Kedleston, and will join on the Governor-General's arrival in India.

VOLUNTEER CORPS.

Artillery: 1st Banff: William Donald to be Surgeon-Lieutenant. 1st Cumberland: Surgeon-Captain J. Little to be Surgeon-Major. 2nd Middlesex: Surgeon-Lieutenant A. B. Lyon, from the 1st Banff Volunteer Artillery, to be Surgeon-Lieutenant. *Rifle:* 3rd Lanarkshire: Surgeon-Lieutenant-Colonel J. Dunlop. 1st Volunteer Battalion the Worcestershire Regiment: Surgeon-Lieutenant J. Robinson to be Surgeon-Captain. 1st Volunteer Battalion the East Lancashire Regiment: Surgeon-Lieutenant W. Moir resigns his commission. 1st (City of Dundee) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Captain J. M. Whyte resigns his commission. 21st Middlesex (the Finsbury): Surgeon-Lieutenant E. Jones to be Surgeon Captain. 4th (Donside Highland) Volunteer Battalion the Gordon Highlanders: Surgeon-Lieutenant J. O. Wilson to be Surgeon-Captain. 6th Volunteer Battalion the Gordon Highlanders: Surgeon-Lieutenant-Colonel R. S. Turner resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the battalion on his retirement.

THE SOUDAN GAZETTE.

We print below some of the awards for service during the recent campaign in Egypt. It will be noticed that we depart somewhat from our usual custom of recording in this column the names of members of the medical profession alone and include the Army Veterinary Department, the rank and file of the Royal Army Medical Corps, and nurses:—To be Ordinary Members of the Military Division of the Third Class, or Companions of the Most Honourable Order of the the Bath: Surgeon-General William Taylor, A.M.S., and Colonel William Henry Macnamara, R.A.M.C. To be Members of the Distinguished Service Order: Lieutenant-Colonel George Arthur Hughes, R.A.M.C.; Major Edmond Munkhouse Wilson, C.M.G., R.A.M.C.; Major Hugh Broderick Mathias, R.A.M.C.; and Captain Charles Stuart Spong. *Brevet:* Lieutenant-Colonel T. J. Gallwey, C.B., Principal Medical Officer, Egyptian Army, to be Colonel; Major G. W. Robinson to be Lieutenant-Colonel; Captain R. H. Penton, D.S.O., employed with the Egyptian Army, to be Major; Captain H. E. H. Smith, employed with the Egyptian Army, to be Major; Lieutenant E. W. Bliss to be Captain; and Veterinary-Lieutenant T. E. W. Lewis, employed with the Egyptian Army, to be Veterinary Captain. The Medal for Distinguished Conduct in the Field has been granted to the under-mentioned: Royal Army Medical Corps: First Class Staff-Sergeant Hoist, Sergeant F. Crooke, Sergeant G. A. Benson, Sergeant Scrase, Lance-Sergeant A. P. Mears, and Private A. Davidson. The under-mentioned officers are granted the next higher rates of pay of their rank: Lieutenant-Colonel A. T. Sloggett, Royal Army Medical Corps, and Veterinary-Captain G. R. Griffiith, D.S.O., Army Veterinary Department. The Queen has conferred the Decoration of the Royal Red Cross upon the under-mentioned nurses in recognition of their services in tending the sick and wounded: Miss Sarah Emily Webb, Army Nursing Service; Miss Amy Florence Grist, Army Nursing Service; and Miss Elizabeth Geddes, National Society for Aid to Sick and Wounded in War.

THE ROYAL NAVAL EXAMINATIONS.

The under-mentioned gentlemen, who competed on Oct. 31st and following days at the Examination Hall,

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Victoria Embankment, for appointment as surgeons in the Royal Navy, have been granted commissions:—

Names.	Marks.	Names.	Marks.
J. Boyan	2656	F. R. Mann	2152
W. H. Daw	2582	W. W. Keir, M.B.	2101
C. Shepherd	2488	E. C. Sawdy	2096
H. L. Norris	2435	P. H. Bannister, M.B. ...	2054
A. A. Forrester, M.B. ...	2408	R. S. Osborne	2031
J. M. G. Swainson	2388	M. W. Falkner	1987
J. Stoddart, M.B.	2334	E. O. B. Carberry, M.B.	1962
J. A. Forrest, M.B. ...	2323	J. K. Raymond, M.B. ...	1948
W. G. Westcott	2252	H. W. M. Rees	1847
F. J. McKenna, M.B. ...	2172	H. R. Gardner, M.B. ...	1836

Gratuities to British Troops in the Soudan.

A gratuity is to be issued to the British troops engaged in the recent operations in the Soudan. Every officer, warrant officer, non-commissioned officer, and other soldier of such troops who was employed south of Wady Halfa will be entitled to participate in the grant. The gratuity will also be issued in special cases upon the recommendation of the general officer commanding in Egypt to certain officers and men who were employed at Wady Halfa and Assouan. The unit of the scale will be £3 in the case of those who took part in both the battles of the Atbara and of Khartoum and £1 10*s.* in all other cases.

The Medical Department of the German Navy.

According to the project that was passed by the Reichstag last year the German Navy, which, without reckoning torpedo boats, training ships, special service vessels, and gunboats, consisted in 1897 of 12 ships of the line, 8 armoured coast protectors, and 33 cruisers, should in 1904 be constituted as follows: 19 ships of the line, 8 armoured coast protectors, 12 cruisers of the first class, and 30 cruisers of the second class, being an increase of 16 fighting units, or 30 per cent. This augmentation will entail the addition of 8839 officers and men to the strength, which will thus be increased from 18,898 to 27,737 of all ranks, an increment equal to 46·7 per cent. The scheme for the Medical Department provides for an additional *personnel* equal to rather more than 49 per cent., the total number of medical officers being increased from 122 to 182. The relative strength in the various grades is shown below:—

	1897.	1904.
Surgeon-General	1	1
Station surgeons	2	2
Staff surgeons...	17	33
Surgeons	45	67
Assistant surgeons	57	79
Total	122	182

Lord Kitchener and the Grenadier Guards.

Lord Kitchener of Khartoum recently distributed the Soudan medals, which had been struck by order of the Egyptian Government, to the Grenadier Guards at Wellington Barracks, where between 500 and 600 men were paraded for the purpose, but some 80 men were absent owing to their being sick in hospital. His lordship therefore subsequently proceeded to the Guards' Military Hospital at Rochester-row and there distributed the medals to the non-commissioned officers and men on the sick-list—86 in all we believe—to several of whom the General made a few congratulatory remarks.

Pasteur Institute for India.

Some idea of the need for the establishment of a Pasteur Institute in India may be formed from the fact that since July 1st no less than nineteen British soldiers, the *Times of India* states, have been sent to Paris for treatment at the estimated cost of about 1000 rupees per head. We hope to see the day when there will be an institute, furnished with a bacteriological laboratory and all appliances for the scientific investigation of the diseases of India, in each of the three Presidencies. Some institution of this kind might well form part of a sanitary or public health department for India.

Deaths in the Services.

Brigade-Surgeon Frederick Pennington, (retired), A.M.S., at Lugano on Nov. 4th in his 69th year. He joined the army in 1858, became Surgeon in 1873, Surgeon-Major in 1873, and retired with the honorary rank of Brigade-Surgeon in 1885. He served in the Indian Mutiny, 1858–59 (medal), in the Ashanti War, 1873–74 (medal), and in the Egyptian expedition, 1882 (medal and Khedive's star).

THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

SECOND YEAR.

(From our Special Commissioner.)

The number of cases of typhoid fever notified last year as occurring in the town of Belfast amounted to 3269. This was a severe lesson; but, as a new town council had been elected and many of the successful candidates were pledged to a programme of energetic sanitary measures, it was only natural to hope that these effective reforms would at once be realised. Far be it from me to say that nothing has been done, but whatever was attempted has certainly proved ineffectual, for there has been another and equally severe epidemic. During the four weeks ending July 16th of the present year 226 cases of typhoid fever were notified. In the following four weeks, ending on August 20th, 784 cases were notified. The climax was reached during the ensuing four weeks when 1121 cases were notified. After this the epidemic showed signs of abatement though there were still many cases—namely, 636 notifications from Sept. 18th to Oct. 15th last. During the two weeks following this last date there were 125 and 98 more notifications, but it is now stated that the epidemic seems to be drawing to an end. In any case we have here the record of 2990 cases occurring in 18 weeks and this cannot be considered an improvement on the 3269 cases notified during the 52 weeks of last year. Yet, and in spite of this repeated and appalling lesson, entailing such widespread suffering and the loss of so many lives, strenuous efforts are still made to prevent the enforcement of those sanitary reforms which are obviously necessary. During the epidemic last year I described at length the sanitary defects of the town of Belfast. Apart from the main drainage system, which is defective, I pointed out that the more urgent grievance was the presence of numerous and foul privies. In his report for the year 1897 which was issued this week the superintendent medical officer of health, Dr. Henry Whitaker, states that he examined the condition of 2211 houses where cases of typhoid fever had occurred. Of these, 352 had privies with back passages and 750 had privies without back passages; therefore, to remove the excreta from these latter houses it had to be carried through the ground-floor rooms of the house. This means a back bedroom, scullery, wash-house or pantry, and the front room, which is generally the parlour, the living room, and the place where all the cooking is done. The contents of these privies is simply shovelled out into buckets. Some of it is often spilt inside the house as it is carried through to reach the street. In thus stirring up this foul matter, abominable odours arise. The gases liberated permeate the entire house, are absorbed by milk and whatever other articles of food may be about, and these may also receive particles of dust, &c., that have been in contact with the dejecta removed. It is not surprising that such houses are more liable to typhoid fever than those which drain into water-closets. Dr. Whitaker calculates that whilst typhoid fever has occurred in 2·7 per cent. of the houses having water-closets it has occurred in 5·5 per cent. of the houses having privies, and we have seen that among the privy houses by far the greater number of cases were found to be in the houses which have no back passages.

The figures which Dr. Whitaker gives concerning the injurious effect of the privy system are fully confirmed by the calculations of the medical officers of health of other towns. For instance, Dr. Charles Porter, medical officer of health of Stockport, shows that during the last five years the incidence of typhoid fever in the water-closet houses in that town was equal to 1·21 per cent., while that in privy-pit houses was equal to 3·39 per cent.[1] Nevertheless, and in spite of these most conclusive facts, on Nov. 2nd the town council held its quarterly meeting, and the discussion was prolonged for three days. One of the chief subjects debated was a Bill to be introduced into Parliament in order to obtain money and powers to carry out various improvements. Before the opening of the business proceedings a deputation waited on

[1] See The Lancet, Oct. 29th, 1898.

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the council headed by Mr. J. B. Dunlop, probably the largest owner of workmen's cottages and also of a better class of property in Belfast. In the name of the deputation he objected to the increase of taxation which the proposed Bill would entail. As against the compulsory application of the water-closet system he urged that the system of "dry closets" was the proper one, as was shown by the fact that he had hundreds of houses so supplied and not a case of typhoid fever had occurred in any of them. He did not wish to threaten, but he forcibly pointed out that the Bill would meet with strenuous opposition. In reply the Lord Mayor said that some members of the Corporation were in favour of the "dry closet system," but that the majority of the Corporation thought the system was one impossible of being properly worked.

What seems to me to be misleading in the above is the use of the term "dry closet." The danger, on the contrary, rests in the fact that these closets are wet, reeking with liquid and concentrated sewage that soaks into the subsoil, that oozes through the brick walls, and in some cases even penetrates into the dwelling portion of the houses. Anyone taking up a text-book on sanitation or reading the opinion of some well-known authority on the subject would find that a great deal has been said in favour of dry closets such as Moule's patent earth-closets. But the secret of such merit depends on the absolute dryness of these closets and the frequent, almost daily, removal of their contents. Dry closets, however, are impracticable in a town. They require an immense amount of attention. The constant removal of the metallic pails, the ample provision of carefully prepared, dried, and broken-up earth, cinders, or ash would all cost very much more than water-closets. Where in country districts it is not possible to provide sewers to drain water-closets the dry-earth system is an excellent way out of the difficulty, but it is quite impracticable in large towns. At Manchester it has been applied for many years at a great expense and with the display of much ingenuity and care; still Manchester is giving up the system and introducing water-closets in its stead. But the dry-pail system of Manchester cannot be compared for a moment with the plague-promoting wet privies of Belfast. It will be seen that the use of the term "dry closet" is most misleading. It would be quite unjustifiable to utilise the well-known arguments that have been adduced in various countries in favour of dry closets to defend the wet privy-pits of Belfast. Under these circumstances it is regrettable that the term "dry closet" has come into general use in Belfast, for in this town at least it is altogether a misnomer.

Fortunately, it is generally recognised that the privies, whether qualified as dry or wet, must be done away with. It is also admitted that passages must be provided behind all the houses, even though through the introduction of water-closets these passages would serve to remove the contents of the dustbins only, and not as at present fæcal matter. But these measures still meet with strenuous resistance even within the town council. The opponents of sanitary improvement, it is true, have almost ceased to argue the question, but they punctually attend committee meetings of the corporation and record a silent though solid vote against sanitary reforms. Councillor Dr. O'Connell did not hesitate to denounce this proceeding at the public general meeting of the town council. This arose on the question of testing drains. Out of eight aldermen six had voted against such a measure and the two other aldermen abstained from voting. Dr. O'Connell protested that there were too many aldermen on the Public Health or Improvement Committees. Councillor Liddell also complained that proceedings were not instituted to enforce the making of back passages and the introduction of water-closets. He urged that the town council should set a good example by prosecuting some of its own members. Councillor Magee pointed out that the Public Health Committee had resolved to institute proceedings against a house where the privy was in a very bad condition and where there was no back passage, and they recommended the landlord to put in a water-closet. On the other hand, the Improvement Committee had recently approved plans for the erection of new houses where there would be neither water-closet nor back passages. Thus one committee prosecutes for what the other committee sanctions. By some piece of good fortune this particular instance has not slipped by unperceived and the owner has now undertaken to provide a back passage and water-closets.

With regard to domestic drainage a resolution had been passed to the effect that all water-closet drains in the town should be tested. Thereupon it had been argued that this would necessitate the employment of an extra staff of thirty-nine sanitary inspectors. This argument was well calculated to frighten the timorous ratepayer. Another objection was raised, not this time for the purpose of obstruction, but rather with the view to defend trade union interests. The labour members of the council urged that the inspectors appointed to test the drains should be fully-qualified plumbers. They seemed to think that men who had no particular trade could be secured for a salary of 25*s*. a week, whereas a plumber would have to be paid a much higher wage. A good deal was said about the incompetence of cheap inspectors. These objections seem outside the mark. A plumber would be very useful inside a house, but outside the house, and especially where brick drains had been laid, a bricklayer would be better qualified. The real fact is, however, that what is wanted is neither a bricklayer nor a plumber but a much larger and a more efficient staff of carefully-trained and fully-qualified inspectors of nuisances. For the moment the examination of house-drains and plumbers' work may take up most of the time of such inspectors; but there is other sort of work to be done of a totally different nature for which a man who is only a plumber would be absolutely incompetent. It was ultimately decided that seven extra sanitary inspectors with assistants should be appointed subject to the approval of the Local Government Board. Considerable vigilance will, however, have to be exercised to see that thoroughly qualified men are appointed to these posts and that they are paid a proper salary. Here the labour representatives on the town council will be acting in harmony with their principles and programme if they see that "blackleg" sanitary inspectors, who are incompetent but willing to accept less than the usual salary, are not selected in preference to properly qualified and properly paid inspectors. A plumber is not an inspector of nuisances and has not received the proper training. Last year the old municipal boundary, which comprised 3806 acres, was extended to the surrounding suburban districts, so that it now consists of 16,503 acres. The added portions only contain 23,000 inhabitants, though the medical officer of health considers this figure is not correct, and that 30,000 would be nearer the truth. However this may be, as the number of inhabitants within the old boundary is now set down at 310,000 it will be seen that the population in the vast and newly added districts must be very much scattered. The work of sanitary inspection among these people will consequently take much time, and this is another reason for considerably increasing the sanitary staff.

(To be continued.)

BIRKENHEAD AND DISTRICT NURSES' FUND: VISIT OF H.R.H. PRINCESS CHRISTIAN OF SCHLESWIG-HOLSTEIN.—H.R.H. Princess Christian was present at a meeting held at Birkenhead in connexion with the Birkenhead and District Nurses' Fund on Nov. 3rd. The object of the meeting was to bring before the public the work done by the Birkenhead and District Nursing Society. In the autumn of last year the society became affiliated with the Victoria Jubilee Nursing Institute and in February last the institute sent down two nurses who began local work on Feb. 10th. In July two other nurses were added in spite of the small amount of subscriptions which had come in, but as the society had received a promise of £300 from the Jubilee Institute the committee considered their action to be justifiable. The rules of the Birkenhead Society are practically similar to those of the Queen's Institute and the work is carried on upon unsectarian lines. Up to the present time 213 cases have been attended with a total of 6448 visits. During the month of October 1163 visits were paid. The subscriptions collected this year have so far amounted to £147 13*s*. 6*d*. and the donations to £26 2*s*. 6*d*., the total amount having been £435 5*s*. It is satisfactory to find that after paying expenses there is a balance in hand of £233 4*s*. 5*d*. Her Royal Highness was accorded a hearty vote of thanks for the interest which she had taken in the society and which it is hoped will act as a stimulus in enlisting the sympathy of the public in aid of its charitable objects.

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Obituary.

WILLIAM CAMPBELL MACLEAN, C.B., LL.D., M.D. EDIN.,

SURGEON-GENERAL, I.M.S.; LATE PROFESSOR OF MEDICINE IN THE ARMY MEDICAL SCHOOL AND HONORARY SURGEON TO THE QUEEN.

WE regret to announce the death of Surgeon-General Maclean, which took place on Nov. 10th, at Sidmouth, Devonshire, whither he had gone hoping to be benefited by the mildness of the climate.

William Campbell Maclean was born on Nov. 29th, 1811, at Blackburn House, in Ayr, and was of Highland descent through both his paternal and maternal ancestors. His father was the representative of the family known as the Macleans of Boreray (the first branch of the Macleans of Ardgour in Argyllshire) and had early in this century purchased the estate of Drimnin, in Morvern, on the Sound of Mull, from Macdonald of Glenaladale. His mother was the youngest daughter of Donald Macleod of Bernera, in the county of Inverness. The subject of this notice was their tenth child and youngest son, and was named after his father's bosom friend, William Campbell of Ainsay, Colonel of the 78th Highlanders, who in 1811, the year of the future Surgeon-General's birth, fell at the head of his regiment at the capture of Java.

About the year 1818 the family moved to Edinburgh and took up their residence at Deanbank House, near Stockbridge. In the year 1824 young Maclean was sent to Dollar Academy in Clackmannanshire and afterwards to Edinburgh Academy, in 1829 he commenced the study of medicine in Edinburgh University, in 1832 he became a Licentiate of the Royal College of Surgeons of Edinburgh, and in 1833 he graduated as M.D. at the University.

In the autumn of 1833 his uncle, Sir John Macleod, informed him that Sir John Keene (afterwards Lord Keene of Gaznee) had been appointed Commander-in-Chief of the Bombay Army and that he was posted surgeon of the ship *Upton Castle*, in which his Excellency was to sail for that presidency and in which he embarked in November of that year. After a second voyage to the East, made in 1836 on board the *Marquis Camden*, he returned to England, and spent the winter of 1836-37 in Paris visiting the hospitals, pursuing the study of anatomy and natural history, and attending the lectures of Andral on general medicine and the clinique of Chomel, who was then considered the most distinguished clinical teacher in France. Dr. Maclean's commission of Assistant Surgeon in the Madras Army is dated April 15th, 1838. Proceeding to India on board the *Orwell* he landed at Madras and entered on his probationer course in the General Hospital under Dr. Mortimer, the senior physician to that institution. After two months' duty he received orders to embark in a transport for Masulipatam, there to ship a native infantry regiment for Moulmein in Burma, and to return with the relieved regiment, the 13th, to Madras.



WILLIAM CAMPBELL MACLEAN, C.B., LL.D., M.D. EDIN., SURGEON-GENERAL, I.M.S.

On arrival at Madras his regiment was ordered to the station of Palaveram, near St. Thomas's Mount, where Dr. Maclean remained in medical charge until relieved by a senior medical officer just arrived from England. After leaving the 13th he was ordered to proceed to Secunderabad in the Deccan to do duty with the 55th regiment, and as there was no combatant officer available for the duty some young officers recently arrived in India were placed under his authority, under a special order by the Commander-in-Chief, until they should complete the march to that station. The 55th was then under the command of Colonel Schoede, a Peninsular veteran, Dr. Shanks being the surgeon of the regiment.

Early in 1839 a wing of the 55th regiment was ordered to Madras and Dr. Maclean was placed in medical charge of it, but on arrival at the presidency town he was posted to the charge of the Queen's Garrison Hospital by Dr. John Murray, Inspector-General of Queen's troops. After holding this appointment at Madras for three months it became known that, consequently on the high-handed proceedings of Commissioner Lin in destroying opium the property of British merchants, and in interference with British trade, contrary to treaty engagements, an expedition was preparing against China, and Madras was to furnish the artillery and engineers. Dr. Maclean volunteered, his services were accepted and he sailed on the *Rustomjee Cowasjee* on April 14th, 1840, with the two companies of artillery, under Colonel Peter Montgomerie, C.B., to which he was attached for duty. He served in China until the end of the war and was mentioned in despatches. He was present at the first capture of Chusan; at all the operations in the Canton River and heights above the city; at the bombardment and capture of Amoy; at the second capture of Chusan; at the battle of Chinhai, the occupation of Ningpo, and the repulse of the enemy from that place; at the battle of Chapu; at the heights of Segoan; at the bombardment of Woosung, and the other operations on the Yang-tzi-Kiang River; and at the battle of Chin-Kiang-Foo. In these operations he was for the most part attached to the 18th Royal Irish Regiment, and was responsible for all the medical duties of the regiment in the field during this arduous service, the surgeon of the regiment having been laid aside by ill-health. During these operations he was five times employed with the advanced guard, and on three occasions landed with attacking troops under fire. At the battle of Chapu he assisted in carrying out Colonel Tomlinson, of the 18th Royal Irish, from the passage in the building which was defended by a brave body of Tartar soldiers, where he had been mortally wounded. He died in Dr. Maclean's arms within a few minutes. At the capture of Chin-Kiang-Foo Captain Collinson fell into Dr. Maclean's arms as he dropped dead from a ball in his heart, and a few minutes afterwards, when dressing a wounded officer of the same regiment (the 18th), Dr. Maclean was nearly killed by a ball which, striking the parapet a few inches above his head, covered him and the wounded officer with the débris of the broken wall. Taking his final

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leave of his gallant friends of the 18th Royal Irish on Nov. 1st, 1843, he returned to India in medical charge of the C troop of Madras Horse Artillery and served for six months at Arcot in medical charge of a wing of the 1st Madras Fusiliers.

In 1844, his services in China having been brought to the notice of the Governor-General of India by the Commander-in-Chief, Lord Gough, Dr. Maclean proceeded to Bengal and joined the camp of the Governor-General with the Army of Exercise in Central India. It was at this time that the medical service was in danger of losing one of its brightest ornaments, for on one occasion Dr. Maclean was summoned to the office of his lordship's private secretary and offered an appointment in the Mysore Commission, by order of the Governor-General, in very flattering terms. Captain (afterwards Sir) Henry Durand pressed the offer on the ground that it opened up a new career, with no inconsiderable opportunities of advancement and distinction. This offer, however, Dr. Maclean declined as it involved turning his back on a profession which he loved and, as it were, the throwing away of the years spent in its study. On his decision being known the Governor-General conferred on him the appointment of residency surgeon at the Court of Hyderabad, in the Deccan, the best appointment a man of his rank could hold in his own department of the public service. At Hyderabad he served under Major-General Stewart Fraser, Sir John Low, Mr. Bushby of the Bengal Civil Service, and Major Davidson, until the year 1855, when he vacated the appointment on promotion. Not long after joining at Hyderabad the Resident obtained the sanction of the Nizam's Government and of the Governor-General to establish a medical school at the residency with a view to educate a body of native doctors through the medium of their own language. Dr. Maclean was appointed the first superintendent of this school, an office involving much labour. This was the first vernacular school of medicine in India; the pupils were all Mahomedans. The great majority turned out remarkably well. Some entered the civil service of H.H. the Nizam and were employed in their professional capacity in various parts of his dominions, others settled as civil practitioners in the great city of Hyderabad where they attained to wealth and consideration, and, as has been repeatedly acknowledged by the Nizam's Minister, Sir Salar Jung Bahadur, have been of inestimable service to all ranks of the people. The school is still in vigorous existence. In connexion with this appointment Dr. Maclean on three occasions received the approbation of the Court of Directors of the Honourable East India Company and the thanks of the Government of India. When the time came for him to vacate his appointment on promotion Lord Dalhousie acknowledged his services in the most handsome manner in a letter to the Resident and requested him to nominate another officer as his successor. Dr. Maclean sent up three names and was by return of post requested to name one of the three. He named Dr. George Smith, who was appointed and more than justified his nomination.

In the year 1855 Dr. Maclean returned to England on medical certificate after seventeen years' continuous service, but again sailed for India early in 1857. He then served for nearly a year as garrison surgeon at Visagapatam, but towards the close of that year he was appointed medical officer of the third district of Madras, including the charge of the Military Asylum. He discharged the duties of this large division until November, 1860, when he finally embarked for England. While holding this post he was appointed by Lord Harris, the Governor of Madras, to be a Fellow of the University of Madras with a seat on the council of the governing body of the College.

When Mr. Sidney Herbert, afterwards Lord Herbert of Lea, then Secretary for War, founded the Army Medical School at the close of the Crimean war a medical officer competent to teach tropical diseases was required. The India Office was applied to, the records were searched, and the reports sent to the Court of Directors by the Government of India, based on those of the Residents at Hyderabad, led to Dr. Maclean's nomination. When appointed as Professor of Medicine in the Army Medical School he was commissioned to the home service without prejudice to the officers of that service as a deputy-inspector-general and subsequently as a surgeon-general. After a probationary trial of two years he was permanently appointed and occupied the chair for twenty-five years, first at Fort Pitt, Chatham, and afterwards at the Royal Victoria Hospital, Netley. In due course, in 1871, he was made a Companion of the Most Honourable Order of the Bath, civil division, and an Honorary Surgeon to the Queen. The University of Glasgow also conferred on him (*honoris causâ*) the degree of Doctor of Laws.

Dr. Maclean's career as a writer was a long and varied one. He communicated to the medical press at home and in India a great variety of articles on the medical and surgical questions of the day and on questions affecting the constitution, status, and work of the public medical services, many of which have appeared from time to time in our columns. He contributed nearly all the articles on tropical medicine to the great work of Dr. Russell Reynolds, the "System of Medicine," and the articles on tropical fevers to the successive editions of Sir Richard Quain's "Dictionary of Medicine." He was also the author of "Diseases of Tropical Climates," 1886, a work which was long the text-book used in the Army Medical School and the foremost authority on these complaints. Among his other contributions to medical literature were the following papers:—The Influence of the Knapsack and Accoutrements on the Health of the Infantry Soldier, *Journal of the Royal United Service Institution*, vol. viii., 1865; Sanitary Precautions to be observed in the Moving and Camping of Troops in Tropical Regions, ibid., 1874; Prevalance of Enteric Fever among Young Soldiers in India, International Medical Congress, 1881; Remarks on the Cases of Enteric Fever admitted from Egypt into the Medical Division R.V. Hospital, Army Medical Report, vol. xxiii., 1882; and the Fever of Malta and Gibraltar, *Practitioner*, vol. xxxiv., 1885. As a writer we cannot help feeling that his career of usefulness might have been even more extended had not his desire to publish the lectures delivered in the Army Medical School from time to time, chiefly for the benefit of the officers of the services scattered over the tropics, been interfered with by the Secretary of State for War. It will be remembered that the lecture which he published in THE LANCET on the very disgraceful conduct of affairs during the epidemic of yellow fever at Bermuda in the year 1863 caused a great storm to burst about his head, and that although the War Minister, after inspecting the lecture, could find no fault with it, yet he was pleased to direct that in future all lectures delivered at the school should be submitted to him before publication—an order which acted as a permanent check on Dr. Maclean's intended policy, for, as he writes in his charming work, "Memories of a Long Life," "I am so constituted that I cannot publish under a censorship, however mild, judicious, or even generous."

Hitherto we have sketched, as far as our space will permit, a record of Dr. Maclean's life-work—a record of a man's labour ably carried out, of the engrossing work of an able physician; but what of the man himself? From the foundation of the Army Medical School to the day he delivered his last lecture no less than 1476 officers received instruction from him, and we know we are right in saying that to one and all of the survivors the report of his death has carried a sense of personal loss. We publish a reproduction of the picture by Mr. W. R Symonds now adorning the walls of the ante-room at the Officers' Mess, Netley, which was subscribed for by the officers of the Sister Services. It is a faithful portrait of Dr. Maclean's truly noble countenance and frame. In stature he was tall, with a commanding presence, and a fine head well poised on broad shoulders. His manner had a charm which at once set those around him at their ease, and all those associated with him were quickly convinced of the absolute sincerity of all he uttered. Frankness, we should say, was his great characteristic—his voice, the grip of his hand, the glance of his eye, all made one feel that he was a trusty and trusting friend; and, withal, he was strong, mentally, physically, morally—a man upon whom many others leant and gathered strength from the association. As a lecturer and public speaker he had few equals, and as he spoke so he wrote. To the circle to whom he gave copies of his latest literary effort, his "Memories of a Long Life," what pleasure has been conveyed, for as they read the details of a life well spent they can almost fancy they are listening to his well-loved tones. In his last lecture delivered at the Army Medical School, in which he passed in review what had been done for the army by the Netley teaching, in speaking of his own special work he said: "Unless treatment had to a large extent kept pace with sanitation the results we contemplate with so much satisfaction could not have been obtained. If this is so—and the fact appears to me undeniable—we may claim for this school that the money spent on it has not been spent in vain, and that the wisdom of those who founded it has been justified."

All through his life Dr. Maclean was a keen sportsman,

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After his second return from India he never missed an annual visit to Hythe Hall every 12th of August, always remaining there until obliged to return to his professional duties on Oct. 1st. This routine never varied until the death of his friend Mr. Hugh Maclean in 1885. For the last years of his life Dr. Maclean was a great sufferer from phosphatic stone and enlargement of the prostate, and we believe underwent as many as eight crushing operations performed by Mr. Reginald Harrison.

Happy in his public career Dr. Maclean was no less so in his private life. Returning to Hyderabad on Jan. 30th, 1845, soon after the death of his well-loved brother, Roderick Norman Maclean, who had served as aide-de-camp to Lord Ellenborough when Governor-General of India, he there met Louisa, daughter of John Maclean of Branley, in Inverness, a niece of his brother-in-law, General Duncan Macpherson. An engagement soon followed and he was married on Sept. 9th, 1845, from the house of his friend Dr. Alexander Walker of the Bombay Army. The issue of the marriage was three sons and two daughters—two of the sons are now planters in Ceylon, while one son is a member of the Mexican Legation; of his two daughters, the elder married Mr. John Macpherson of the Inner Temple, the younger is the wife of Colonel Stevens of the Royal Artillery. Mrs. Maclean survives him, and to her all those who knew her husband are extending the sympathy which words are inadequate to express.

ALEXANDER SIMPSON, M.A. ST. AND., M.D., B.SC. EDIN.

DR. ALEXANDER SIMPSON, medical officer of health of the city of Perth, died at his residence there on Oct. 23rd in consequence of injuries sustained by falling downstairs on Oct. 21st. Dr. Simpson took the degree of M.A. at St. Andrews University in 1871, studied medicine at Edinburgh, and graduated in the university there as M.B. and C.M. in 1878. After spending a short time as assistant to an uncle who was in practice in London he settled in Perth and was appointed medical officer of health of the city and police surgeon on the resignation of these offices by Dr. Buist about seventeen years ago. In 1885 he took the degree of M.D. and in 1892 that of Bachelor of Science in Public Health. Dr. Simpson was deeply interested in the work of the St. Andrew's Ambulance Association, conducting large classes to which the usual course of instruction in first aid was given. He has left a widow and four young children.

EDWARD DEANE MACDERMOT, M.A., M.D. T.C.D.

DR. EDWARD DEANE MACDERMOT, who was one of the oldest medical practitioners of Bath, died at his residence, The Circus, on Nov. 9th, after an illness of only two weeks' duration. Dr. MacDermot, who was a member of an old Irish family, received his education at Trinity College, Dublin, and graduated M.A. and M.D. in 1848. Shortly afterwards he went to Bath as an assistant to a medical man at Bathwick, and subsequently started practice in Brook-street, removing from there to The Circus. The deceased was highly esteemed and popular in Bath and possessed a considerable amount of Irish wit and humour. Dr. MacDermot was twice married, his second wife being Lady Wade, the widow of Sir Claude Wade, a distinguished diplomatist and soldier, by whom he leaves a son. The funeral took place at Ardcarne near Boyle, the family burial place in the west of Ireland.

ALLEGATIONS AGAINST A MEDICAL OFFICER.—At the meeting of the Newport Board of Guardians held on Nov. 5th the report was read of Mr. Bircham, of the Local Government Board, who has recently held an inquiry in connexion with the allegations against the medical officer of the workhouse (Dr. T. G. Macormack). This completely exonerated that gentleman from the charges of neglecting the patients at the infirmary, Mr. Bircham remarking that he found the patients were exceedingly well treated by Dr. Macormack and the nursing staff. The report added that there was considerable friction between the infirmary branch of the workhouse and the administrative portion, which it was hoped would have the special attention of the guardians.

Correspondence.

"Audi alteram partem."

"OBSERVATIONS ON AN INFECTIOUS DISEASE IN LASCARS HAVING CLOSE RELATIONS WITH VARIOLA AND VARICELLA."

To the Editors of THE LANCET.

SIRS,—I have read with much interest the paper bearing the above title by Dr. Thomson and Dr. Brownlee of Glasgow in your issue of Oct. 22nd last. Therein they refer at some length to a paper of mine read before the Epidemiological Society of London in 1866, on "Epidemic Varioloid Varicella in Jamaica," in which I described an outbreak of a peculiar form of disease which neither before nor since have I met with. I gave it the name I did for want of a better, and it was not until I read the paper of Dr. Thomson and Dr. Brownlee that I appreciated the possibility that I had described a disease which had hitherto not been classified. As pointed out by them, the two epidemics in all their important characteristics are nearly identical, and any slight differences may be accounted for by the fact that I had at least 115 cases and they only 16, the larger number of cases affording a greater variety in the clinical manifestations of the disease. After the lapse of thirty-five years I fear I cannot depend upon my memory to afford information on the points whereon Dr. Thomson and Dr. Brownlee indicate that my account is deficient.

To clear up two questions involving uncertainty referred to by Dr. Thomson and Dr. Brownlee, I may, however, state that my epidemic was certainly not varicella modified by *racial* differences. I attended persons of all colours with it—not only blacks, but whites, and many of the mixed races. Nor was it due to *climatic* differences. In thirty-four years' practice in the tropics I have observed many epidemics of both variola and varicella, the result of my experience being that these diseases present precisely the same symptoms and are as clear, distinct, and easy of diagnosis as in England, the only difference being that in the coloured races the rosy areola surrounding the eruption is not so well marked. Neither, in my opinion, was the disease variola, of which I have seen several epidemics. Many months after this anomalous epidemic one of genuine small-pox broke out and I attended a large number of cases, none of which presented the slightest approximation to the one that I described in my paper. Appended to my paper in the Transactions of the Epidemiological Society of London is a note by my partner, the late Dr. Bowerbank—an extremely able physician of long experience—who saw a large number of these cases with me. It is as follows:—

"March 10th, 1863.—We are at present suffering from a severe influenza and also from a most peculiar epidemic of varicella, I suppose. To me it looks much more like varioloid or modified small-pox; most of the vesicles suppurate and in some cases are distinctly umbilicated and are sometimes confluent. I never saw varicella like it before."

"Jan. 25th, 1864.—We have had among us a peculiar varioloid affection, something like purulent chicken-pox. Many of the pustules, however, exactly resemble true variola. The disease spread through the penitentiary and reformatory schools, 40 or 50 having it at one time. Since then it has appeared from time to time in a home and gone through the family, but it did not appear to me to take hold of a district."

For further information regarding this epidemic I would refer to my original paper. But I may here state that it occurred among old and young, vaccinated as well as unvaccinated, and also in some who had had severe attacks and were deeply pitted by antecedent small-pox. The constitutional symptoms were extremely mild and none of the patients died. It would be interesting to learn whether practitioners in the tropics or among those recently arrived therefrom have met with similar cases or whether possibly they have been noticed in this country. I certainly consider that it is highly desirable that this subject should receive further consideration, as thereby some anomalous circumstances regarding the relations between small-pox and vaccination might be cleared up. At present I feel

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strongly inclined to adopt the suggestion of Dr. Thomson and Dr. Brownlee that "the disease is neither variola nor varicella but is probably a third disease of a specific character presenting resemblances to both, while at the same time it possesses certain features which entitle it to be placed by itself as a specific entity, and having the same relation to both the diseases mentioned as exists between the more familiar forms of small-pox and chicken-pox."

I am, Sirs, yours faithfully,

IZETT ANDERSON, M.D. Edin.

Eastbourne, Nov. 14th, 1898.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—I regret that I am unable to accompany some of your correspondents in the tremendous journeys they seem to contemplate, nor do I think it would be profitable just now to discuss what happened many millions of years ago. Although unquestionably our sun is "with surpassing glory crowned," there is no evidence of his having created, constructed, or built anything, nor can I believe that the sun with all his mighty energy can form a muscle, give origin to a weed, or build a wigwam. The doctrines favoured by my old friend Dr. Hooper and by Dr. Rowe concerning the origin of life in the remote past may be discussed when the general nature of *existing life* has been more fully considered.

I have long ago given my reasons for my belief in *vital power*, and have ventured to appeal to members of the profession to consider the conclusions arrived at as well as my microscopical observations extending over many years upon which they are founded. The main question applies to life *as it is*, as we know it here—life always followed by death—the nature of living matter, from that which exists in the lowest and simplest of living organisms, to that concerned in the formation and action of the so-called "cell" of our brain; and I beg my friends to freely criticise my contentions; to expose my errors or explain away my facts, in order that I may, perhaps in a modified way, further extend the account of my investigations in hope of being able to help in establishing conclusions of great interest and consequence, with reference to one of the most important scientific problems ever presented for solution—*the nature of vital power now* in active operation throughout the whole living world in which we find ourselves the highest of all living forms.

Now, one most important characteristic of all life is *growth*—the growth known *only in connexion with life*. It has been said, and it is widely believed, that growth also occurs in non-living matter and that the process I hold to be vital only, is but a form of aggregation of material particles. This doctrine I can only meet with a direct negative. The formation and increase of every tissue—every structure of every living organism that I have been able to study—does not take place according to any such process, and is absolutely dependent upon purely vital phenomena in each case. The facts of microscopical investigations extending over a long period have convinced me that there is no "community of nature" between *growth* as it occurs in everything that lives, and *inorganic growth*, as has long been taught by Mr. Herbert Spencer, and is re-asserted in his new edition just published and dated August, 1898. I venture to maintain that living and non-living matter belong to *absolutely different categories;* and that there is no analogy whatever between aggregation and accretion—and *growth* as it occurs in all living. The statements in the first paragraph of the chapter on Growth, § 43, p. 135, seem to me to be contrary to evidence, opposed to reason, and incompatible with *broad facts of living nature*, as well as with the results of minute investigation.

"Crystals grow" (Herbert Spencer). If the solution containing the crystallisable substance passed through the *outer part of the crystal* and crystallised within: *if* the new matter somehow reached the central part of the crystal: *if* the outer layers of the crystal consisted of the matter *first* deposited from the solution: *if* the crystal increased in size by deposition *from within* so that the superficial layers were pushed outwards as the crystals increased in dimensions—in short, *if* the deposition of crystallisable matter from its solution occurred in a direction *the very opposite of that* in which it does occur—the existence of some slight analogy between *growth* as it takes place in the "cell" of a living organism and the so-called *growth* of the crystal might be conjecturally assumed.

If the "fungus-like accumulation of carbon" upon the wick of an unsnuffed candle was increased by the last-formed portion of the carbon being somehow carried inwards through the outer layer towards the wick, so as to push out the layer first deposited, it might be said that the order of deposition was in the same direction and situation as occurs in the so-called cell-wall as in certain cases it is thickened.

If the deposition of sediment occurred beneath the stratum just deposited instead of *upon* it, the process might be roughly compared with *living growth*. *If* "celestial bodies" increased by deposition *from within*, and the last matter added reached the nucleus or central part, their increase might by some authorities be compared with growth "in its widest acceptation" (Herbert Spencer).

Evolution surely is applicable to vital phenomena only, aggregation to non-living matter only—evolution *from* already existing centres, movement *from* a spot, movement *towards* a spot—centrifugal, centripetal—towards, away from—to, from. If this be so, aggregation and evolution are *opposed* and cannot involve the same particles of matter; and the genesis of bodies "celestial" can hardly proceed like the "genesis" of living organisms terrestrial. Aggregation of lifeless particles seems therefore to belong to a category far away from that to which living growth belongs. *Aggregation* is absolutely different in essential nature from *growth*, and the two processes are absolutely opposed and cannot possibly affect the same particles at the same time. *Evolution must be restricted to the living world* or it can have no meaning.

So far, then, I feel compelled to maintain that between life and non-life the difference is *absolute*, whether we consider the life of the lowest fungi growing and multiplying in teeming millions at this moment upon every dead moist leaf, or the life of the so-called cells of the wonderful grey matter of our own cerebral convolutions.

I am, Sirs, yours faithfully,

Nov. 7th, 1898. LIONEL S. BEALE.

"A CASE OF DEATH UNDER CHLOROFORM, WITH REMARKS."

To the Editors of THE LANCET.

SIRS,—In sending some comments on the article under the above heading by Mr. Alexander Wilson, published in THE LANCET of July 30th, 1898, I must first apologise for the delay, which has been to a great extent unavoidable.

Firstly, I would say that the considerable fulness of detail given in the description of the case is a great improvement on the manner in which his former cases, published in THE LANCET of Sept. 11th, 1897, were described. This may or may not be due to my criticisms on them published in THE LANCET of Nov. 13th, 1897, but whether that is so or not the result is so far satisfactory. I say "so far," because in the case under criticism the description of the essential part of the case is second-hand. Mr. Alexander Wilson ought certainly to have asked the qualified medical man who was personally superintending the administration of the anæsthetic to give a first-hand account of the essential part of the case. It would have been easy to do so and it is absolutely necessary that the medical profession should have first-hand evidence of such essentials. With regard to the remarks on the case let me insist on one point. Surely any departure from normal anæsthesia is a sign of danger in chloroform administration and normal anæsthesia is characterised among other things by regular breathing with slight pallor.

It seems to me that the pith of Mr. Wilson's remarks lies in this sentence: "The practical point is that in these cases the first warning of danger is exhibited by a change in the circulation." Now, one has only to turn to the description of this case to see that, so far from this being so, the first departure from normal anæsthesia, and therefore the first sign of danger, was irregularity of respiration. It is so long since the case was published that I venture to quote the first items of clinical information given. They are as follows: "During the stage of excitement there was some struggling *with holding of the breath*, during which the lint was withdrawn from the face. Suddenly the patient began to breathe deeply and he became pale, the pupils were widely dilated, and no pulse could be felt." (The italics are mine.) Can anything be more evident than that the first departure from normal was a respiratory irregularity and that the syncopal symptoms

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were subsequent to it? What, then, of these remarks by Mr. Alexander Wilson? "The symptoms in these cases indicate that the primary lesion is a paralysis of the circulation." "The first warning of danger is a change in the circulation." "The practical point is that in these cases the first warning of danger is exhibited by a change in the circulation." "It cannot be too much insisted on that as the primary lesion is in the circulation to the circulation must we look for the first signs of danger and to the improvement of the circulation must treatment be directed." They are all entirely pointless. Since the first sign of danger was in this case abnormal respiration it is scarcely worth while to pay any more attention to the remarks based on the opposite supposition.

With regard to treatment, the indications are plain: maintain absolutely regular respiration from beginning to end of the anæsthesia; do not early in the anæsthesia give the vapour in such concentration that the patient holds his breath; remember that a strength of vapour which one man will breathe with ease will so irritate the laryngeal mucous membrane of another that there will follow spasmodic adduction of his vocal cords and holding of the breath; and remember, too, that during all this time the chloroform imprisoned in his lungs is being absorbed with perhaps fatal effect. Later, too, be equally careful to maintain regular breathing, remembering that irregular breathing may mean either too much or too little chloroform (a point to be determined by other signs), and that either condition is one of considerable danger. With regard to the giving of ammonia vapour bear in mind that it equally with chloroform vapour may produce laryngeal spasm in the first stage of chloroform anæsthesia and plunge a patient from a condition of comparative safety into one of imminent danger. Seeing that Mr. Alexander Wilson has published several chloroform fatalities in his own practice, and that he makes a special point of the danger from syncope due to chloroform poisoning, and therefore presumably takes special pains to note the state of the circulation during his chloroform administration, would it not be worth his while in the future to direct his attention to merely maintaining regular respiration? The result, should he do so, can scarcely fail to be satisfactory to all concerned.

I am, Sirs, yours faithfully,

CLAYTON A. LANE, M.D. Lond.,
Mussooree, Oct. 19th, 1898. Lieutenant, I.M.S.

"A DEFENCE OF THE MIDWIFE."

To the Editors of THE LANCET.

SIRS,—In your annotation under the above heading in THE LANCET of Nov. 12th, pp. 1283–84, you say: "No Midwives Bill which we have yet seen contains any provision for ensuring that in every serious case a lying-in woman, however poor, shall have the benefit of qualified medical attendance, and without such provision no Midwives Bill should pass." In my Sick and Obstetric Nurses Bill, already reviewed in your columns, special provision is made for this very thing and by Clause 3: "It shall be unlawful for any person (male or female) to assume the title of midwife, or to practise as such, or to act as a sick or obstetric nurse for gain or otherwise, without the supervision and control of a fully-qualified and registered medical practitioner. Any person infringing this provision and neglecting or refusing to send for medical or surgical aid at or immediately after a confinement shall be liable to a fine of £10 or imprisonment for a month in default." Surely this is strong enough and the *modus operandi* is worked out in the schedules to the Bill. The Bill is printed in full in the *Medical Magazine* for March, 1898.

I am, Sirs, yours faithfully,

East Sheen, Nov. 14th, 1898. ALEXANDER MCCOOK WEIR.

"THE ETHICS OF CLUB PRACTICE."

To the Editors of THE LANCET.

SIRS,—I have read with interest and fellow-sympathy the letter *re* the above in THE LANCET of Oct. 15th. Leaving the possible legal obligation to pay the bill out of the question, should "Beta" pay it he will find that the smoothness and friendly feeling which have characterised his relations with the club members for thirty years will speedily disappear and that it will only be the thin edge of the wedge and the signal for other malcontents to be on the war-path, and that he will very soon be pestered with similar bills from quite unexpected quarters on account of some fancied neglect, and if he makes the dangerous precedent he will find a large hole made in the receipts from his clubs. So long as clubs exist so long will like cases crop up. There are always so many malcontents who are never satisfied, and very often it is those who get the most attendance who are the first to turn round and accuse you of neglect and will frequently tell you quite straight that because your money is sure you just do as you like. Then the medical practitioner, on the other hand, is called out over and over again, often at night and at unreasonable hours, to cases that are quite trivial, and if he dares to demur he is told that "he will be reported" or "he *must* come," or "he will be made to come or someone else will be called, and he will be made to pay the bill."

One knows when a message comes to attend a private case that it is necessary, but to attend a club case out of hours is in a great many cases unnecessary. The members pay so much and they must have their pound of flesh. Who of club doctors has not experienced the big strong man come to the surgery and after untying several large handkerchiefs hold out a slightly abraded finger, or slight crush, or small cut from a pocket-knife, &c., &c.? Who has not seen his surgery filled on a fine summer evening chiefly by women, who have just been passing the surgery during a walk and just dropped in to see what the medical man says about some very trivial matter, not only trivial in the doctor's estimation, but one which would be trivial also in a private patient's eyes? The private patient would not waste a fee on such a small matter, but the club patient has nothing more to pay no matter how often he consults his surgeon, so he abuses his privileges. All this is very degrading, but will exist so long as clubs exist—and I suppose that will be until the end of time. If one could get club members to understand, as you point out in your leading article in THE LANCET of Oct. 22nd, that the medical man must himself, and he only, be the judge as to the urgency of the cases and the order in which they are to be seen things would go more smoothly. I think the great majority of club doctors will agree that I have in nowise overstated, in fact have understated, the annoyances attached to club practice. Clubs are pernicious for both sides—they take from the doctor his dearest possession, his independence, and very often put the club member in a false position.

I have never seen a club yet, and that may seem a sweeping statement, which did not possess its malcontents—some fewer, some more—and it is from them that bills for attendance emanate. "Beta" should strenuously resist paying. The matter will be brought before a meeting of the committee and he will probably find that it will decide in his favour, though most likely, so as to mollify the malcontent, with a rider or suggestion, if not actually a warning, to be more particular in future. "Beta" is singularly fortunate in having been thirty years without such an experience.

I do not wish to seem at all to class the whole of the members of clubs as so inconsiderate—quite the reverse. The great majority are grateful for your attention and will thank you for coming during the night or at inconvenient hours and will express regret at having to trouble you, and it is a pleasure to attend such people, for who does not appreciate gratitude? The mere monetary consideration is not everything. I hope I have not trespassed too much on your space.

I am, Sirs, yours faithfully,

Oct. 29th, 1898. CONSTANT READER.

THE FEE FOR THE REGISTRATION OF DIPLOMAS IN PUBLIC HEALTH.

To the Editors of THE LANCET.

SIRS,—In the "Abstract of the Principal Laws Affecting the Medical Profession" contained in a recent edition of the Medical Directory I read under "Registration" that "a registered practitioner who obtains a recognised diploma for proficiency in sanitary science, public health, or state-medicine after special examination in the United Kingdom is entitled to have such diploma entered in the Register," and further that "any registered person who obtains any ..... of the qualifications mentioned above other than the qualification in respect of which he was registered is entitled to have such ..... additional qualifications inserted in the Register ..... on payment of a fee of 5*s*." Recently

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I wished to register a diploma in public health and went to the Registrar's office expecting to have to pay 5*s.* as usual, but to my dismay I was informed that the fee was £2.

Will you kindly enlighten me as to any reason there may be for thus taxing one particular branch of medical knowledge? On the face of it to me it certainly seems unfair.

I am, Sirs, yours faithfully,

Nov. 14th, 1898. D.P.H.

*** We sympathise with our correspondent in having to pay a fee of £2 for the registration of his diploma in public health instead of 5*s.* Five shillings used to be the fee in accordance with the rule that additional qualifications might be registered for that sum. But the fee was increased in 1893.[1] There is some reason, too, for the larger fee. The diploma is of a different kind from others and confers altogether a new qualification. Also in 1893 inspections of the examinations were instituted and these, of course, cost money, which it was thought, perhaps, should be provided for in this way.—ED. L.

A POINT UNDER THE PUBLIC HEALTH ACT.

To the Editors of THE LANCET.

SIRS,—Will you kindly help me as to the following? Section 124 of the Public Health Act, 1875, says "Any person who is suffering from a dangerous infectious disorder and is without proper lodging or *accommodation*, &c.," "may be removed, &c." Does the word "accommodation" in that section justify the removal of a child or person who cannot be sufficiently isolated (say for diphtheria) from the rest of the family (the patient being one of the same family)? Perhaps you will kindly refer me to some cases on the point. I am, Sirs, yours faithfully,

Nov. 15th, 1898. M.O.H.

*** This question has received various interpretations by different magistrates, but it has never been finally decided on appeal. Some have held that since the section is one of a group under the heading "Provisions against Infection" it has primarily to do with the protection of the healthy. But others have maintained that since one of the conditions named in the section under which compulsory removal of an infectious patient to a hospital is permitted relates to a sick person "lodged in a room occupied by more than one family" interference of the sort referred to was not intended where the patient was in a room occupied by members of his own family, provided that the sick person had "proper lodging and accommodation" for his own treatment and recovery. Owing to the differences of opinion which exist on this point it is generally deemed expedient in ordinary cases to rely rather on persuasion than on compulsion.—ED. L.

THE VACCINATION OF CLUB PATIENTS.

To the Editors of THE LANCET.

SIRS,—May I ask the courtesy of space in your columns to call the attention of my professional brethren holding posts as medical officers to friendly societies to the question of the admission of unvaccinated candidates to the medical benefits of these societies. When the older—the parent—societies were founded, from which juvenile branches have for the most part sprung, vaccination, more or less compulsory, was general throughout the country. Underneath the contract between medical officer and club lay, therefore, at this time the tacit assumption that the majority of the members entering the different lodges would be vaccinated. Circumstances are now altered. Not only has legal vaccination been for several years neglected but under the new Act it seems probable that primary vaccination among the uneducated classes will fall very largely into abeyance.

We must expect, therefore, from this time forward an increasing proportion of unvaccinated candidates, both juvenile and adult, for admission to the membership of these societies. Under these circumstances the conditions of contract between the societies and their medical officers are no longer what they were before the abandonment of vaccination, and it behoves each medical officer to endeavour to protect himself under the altered conditions. He has now laid upon his shoulders the increased responsibility, risk, and liability to expenditure arising from the presence among his club patients of a large body of members unvaccinated and therefore peculiarly susceptible to small-pox in its severest form. What that susceptibility is among unvaccinated children, both as to attack and as to a fatal issue when attacked, need not be argued here.

The report of the Royal Commission (Final Report, p. 58, par. 217) shows that among children between the ages of one year and ten, and counting as vaccinated all doubtful cases, the average fatality-rate in six carefully observed epidemics was fifteenfold higher among the unvaccinated attacked than among the vaccinated attacked. It is desirable, therefore, that those who hold positions as medical officers to these societies should decide, and if possible decide unanimously, as to the course which they will adopt in dealing with this matter. Several courses appear to be open: 1. Where medical officers are in a position to make their own terms they may refuse to accept unvaccinated candidates. 2. In less favourable circumstances they might accept them, but at an increased subscription adequate to the extra risk involved. 3. They might accept them, but with a saving clause, which should appear in writing, that the unvaccinated members when suffering from small-pox shall have no claim on the gratuitous services of the medical officer.

I shall be glad if this communication calls forth an expression of opinion from others who have considered this matter. I am, Sirs, yours faithfully,

Nov. 14th, 1898. A CLUB DOCTOR.

[1] See Minutes, vol. xxx., p. 154.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Progress of the Plague.—The Three Outbreaks in Bombay.—Concealment of Plague Cases.

A FEW odd cases of plague continue to occur in Karachi but Calcutta remains apparently free. The epidemic appears to be extending towards Madras, where some doubtful cases of fever have already been reported. In the Dharwar district and in Bangalore it is now raging with great virulence. When I reported that for some months past plague in Bombay city had been allowed practically to take its own course I referred to the comparatively mild steps which are now being taken, compared with the rigorous measures adopted by the late committee. There being now no compulsion patients are allowed to remain in their own homes and to have their friends around them. A certain number of dirty houses are cleaned or emptied and a certain amount of disinfection is employed, but as far as infection goes it may be said that plague has a clear field. Notwithstanding the confidence restored by these considerate measures the number of reported cases of plague falls very far short of the excess in the total mortality, which is probably the only true guide to any estimate of the prevalence of the disease. But the lesson I want to point out is that plague did not increase with the abandonment of the strict repressive measures but rapidly went down, and that now during the third outbreak, which has already lasted thirteen weeks, we are experiencing a mild attack compared with the two preceding developments. The following table shows the total mortality for each week since July 5th:—

			Deaths.				Deaths.
Week ending	July	5th	440	Week ending	Sept.	6th	869
,,	,,	12th	523	,,	,,	13th	823
,,	,,	19th	563	,,	,,	20th	748
,,	,,	26th	583	,,	,,	27th	864
,,	August	2nd	615	,,	Oct.	4th	1001
,,	,,	9th	655	,,	,,	11th	990
,,	,,	16th	743	,,	,,	18th	828
,,	,,	23rd	765	,,	,,	25th	711
,,	,,	30th	811				

The general mortality is about 500 a week, and it stood at about this figure during the early part of July. Any excess

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over this is probably due to plague. It will be seen that the mortality rose almost continuously until it attained 1001 in the first week in October and that since then it has rapidly declined. All this time infection has had free play. The vast majority of cases have remained in their own homes, only a moderate proportion going to the hospitals. In the two previous epidemics the weekly mortality rose to over 1800 and over 2000 respectively. The justification of the present method of procedure lies chiefly in the fact that concealment of cases, either ignorantly or intentionally, is largely practised, and that compulsion, even in its old severe form, did not lead to the report of a larger proportion of cases than occurs at the present time. In short, the measures of severity were frustrated and consequently proved themselves to be practically useless. The milder measures have not been attended with that extension of the disease which the opponents of the "let alone" policy prognosticated. The late Plague Committee were erroneously given credit for the decline of the epidemic in the spring of 1897, but they only commenced their work during that decline and it can be pretty clearly shown that the outbreak had spent itself. During the second development, when their organisation was complete and when if they had power to control the course of the epidemic they certainly had the opportunity, plague pursued exactly the same course, if not a more virulent one. It may be said that for a city like Bombay sanitary organisations have proved themselves impotent to alter the natural course of a plague epidemic. Roughly, one in every forty persons was attacked in the first epidemic and about the same proportion in the second. Both epidemics lasted rather over six months. The disease exhibited similar stages in the epidemics at Poona and Karachi during the first and second developments in each city. When we look back on the history of these outbreaks it is evident that plague pursues epidemically a definite course. As there have already been more than thirteen weeks of the present third outbreak in Bombay it may be reasonably concluded that the decline since the beginning of October is a real one and not merely a lull before a more extensive advance.

Concealment of cases occurs everywhere, in the country as well as in the towns. The recorded mortality from plague must fall very considerably short of the actual figures. The Government of India in a recent letter state that "the information that has been gained regarding inoculation against plague by M. Haffkine's method is all in favour of the efficacy of the system. It has now become possible to agree generally that inoculated persons should be exempted from segregation unless they are actually attacked with plague." They go on to say that inoculated persons will still remain liable to evacuate infected houses, and when travelling will be kept under observation and subject to the disinfection of their clothes. It is now two years since plague first appeared. The efficacy of inoculation was proved twelve months ago. The Bombay Plague Committee and the Government were repeatedly asked to allow that inoculated persons should be exempted from segregation, but the plague authorities, and especially the Bombay Plague Committee, persistently refused to admit the benefit of inoculation. When the last outbreak of plague in Bombay was subsiding all measures were practically dropped, yet little or no harm seems to have resulted. If during the height of the epidemic there had been the option of inoculation for segregation thousands upon thousands would have accepted it in preference to detention in camps. Now that a third epidemic is commencing and the disease is spreading towards Madras the concession is granted. On and off quarantine has been more or less employed, but the system has practically broken down. It failed to prevent the spread of plague and it was extremely vexatious and unpopular. Very different to the measures attempted in Bombay and other parts of the Presidency were the precautions taken in Hyderabad. When plague appeared in certain villages orders were issued that no money was to be wasted on disinfectants. The means adopted were removal of the occupants of infected premises and burning the latter down. Probably these are the two most effective measures which can be taken. Compare with some of the above recent civilian orders the following. Ten days' segregation will be enforced for troops and followers moved during the ensuing relief season from any station which may have become plague-infected. Corps moving from an infected station or through an infected district will be conveyed by rail. Doubtless it is necessary to exercise extra precautions for the troops and they can be more readily carried out, but the military authorities do not yet seem to recognise that plague is only slightly contagious and that provided infected dwellings are avoided there is little or no danger in passing through a plague-stricken district.

Some returns have just been published in the *Government Gazette* concerning the outbreak of plague in various towns and districts of the Presidency which show amongst other things the decided value of evacuation of houses, especially when promptly carried out. During the wet season, when this measure was not possible, towns and villages suffered in consequence more severely. In Jalgaon (population 14,672) plague appeared on Dec. 6th, 1897. The town was quickly evacuated and the disease disappeared in March. Only 108 deaths occurred (0·7 per cent. of the population). In Nasik (population 24,429) plague appeared in October, 1897. Evacuation was carried out ward by ward and the town became free in March. Of the population 1·5 per cent. succumbed. In Malegaon (population 19,261) plague occurred in November, 1897. Here also evacuation was gradually carried out and the outbreak lasted until March. Of the population 1·6 per cent. died. In Ahmednugger (population 41,689) the outbreak commenced in September, 1897, and lasted until April. The town was completely evacuated by the end of December and the mortality was only 0·7 per cent. of the population. There being no regularity in the particulars furnished it is impossible to make a more complete comparison. In Belgaum (population 40,737) evacuation was carried out with apparent success, but re-occupation was permitted too soon. The disease quickly reappeared and the outbreak has continued to rise ever since. In other places where evacuation has not been practised, either on account of the rains or from imperfect administration, the proportion of the population attacked has been much higher. The incidence of the disease has, however, varied very considerably. Places which one would have imagined would early have been attacked have either escaped altogether or have experienced but a mild visitation. Again, other places without apparent cause have been almost decimated. As reported previously, Hubli and Dharwar are excellent examples of the immense benefits of prophylactic inoculation.

Oct. 29th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Salford Corporation Bill.

THE Salford corporation intend to introduce a Bill into Parliament during the next session which, if passed, will, amongst other things, greatly extend their means of controlling certain dangers to the public health. They will seek powers to compel the removal to and the retention in a reception-house for a period not exceeding fourteen days of persons living in any house in which a case of infectious disease has occurred if the medical officer of health considers this necessary for the protection of the public health; to prevent the holding of "wakes" on the bodies of those who have died from infectious disease; to prevent the removal of such bodies by rail without the certificate of the medical officer of health that satisfactory precautions have been taken; to impose penalties on parents or guardians for knowingly allowing children to attend school when infectious disease exists in the home and on teachers for knowingly admitting such children to school; to require milk-dealers to let the medical officer of health know the sources of their milk-supply and to furnish a list of their customers when required; to prohibit the sale of milk from farms where infectious disease exists; to obtain power to enter cowsheds, &c., and to examine the cows; to compel the owners of such cows to assist in making such examination under penalty; to ensure the notification to the Health Department of disease in cows and to make the selling of milk from diseased cows a punishable offence; to obtain powers to proceed against the original seller of diseased animals; and to regulate the manufacture and sale of ice-cream.

Victoria University.

A meeting of the Court of the Victoria University was held at Owens College on Nov. 10th under the presidency of Earl Spencer, Chancellor of the University. Dr. Bodington, Principal of Yorkshire College, was elected Vice-Chancellor for a term of two years and Professor Wilkins and Dr.

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Leech were elected pro-Vice-Chancellors for the same period. The adoption of the report of the Council on the Preliminary and Entrance in Arts Examinations was moved by Professor Tout. The report ran:—

The Council, having at the request of the Court considered the resolution of Convocation that "it is desirable that there should be only one standard qualifying for entrance to the different faculties of the University," beg to report that it is in their opinion advisable to substitute for the present Entrance in Arts examination an examination the papers of which shall be the same as those of the Preliminary examination. In consequence of the requirements of the Medical Council it will not be possible to offer to students who enter the Faculty of Medicine the same number of options as is given to students entering other faculties, but provision is already made in the present regulations that any students who have satisfied the examiners in the Preliminary examination may at a subsequent stage pass in those subjects only which the Medical Council has made compulsory for the purpose of registration.

Consequent on this report, the Council recommended certain changes, which were set forth, in the statutes and regulations. Dr. Leech seconded the adoption of the report, and the motion was passed.

Death from Water-gas.

An inquest was held by the city coroner on Nov. 8th on the body of a man who had died at the Bradford-road Gas-works. In the course of his duty the deceased took off the covering of a water-gas cooling manhole in order to fix a blank flange or disc used for distributing water for cooling purposes. He had been shown how to do this by means of a hook without entering the manhole and had been cautioned against going into it under any consideration. However, he did go into the manhole, where he was overpowered by the water-gas. The yard foreman, John Mason—his name deserves mention—found him there and at great risk descended the hole himself to attempt his rescue. He was in turn almost overpowered and only just managed to scramble back. When he was got out the deceased was alive but unconscious. He was taken to the Ancoats Hospital, where he died the same day without having recovered consciousness. The coroner paid a well-deserved tribute to Mason's courage, and said that he did "a noble act in trying to rescue the deceased and the gas committee ought to be proud of him." We have heard much of late about the courage of our soldiers, and it is satisfactory to feel that the same trait runs through the whole population.

Bequests to Medical Charities.

The trustees of the late Mr. James Holden of Marland, near Rochdale, have promised a grant of £10,000 to endow a wing of the Children's Hospital at Pendlebury. They have also promised £10,000 to St. Mary's Hospital as an endowment of the new hospital which is being built in Oxford-road. By the will of the late Mr. Joseph Ellis, solicitor, besides legacies of £250 each to the Solicitors' Benevolent Institution and the Manchester Law Clerks' Friendly Society, the Manchester Hospital for Consumption, &c., the Manchester Royal Infirmary, the Southern Hospital and the Manchester Eye Hospital will each receive a legacy to the same amount.

Manchester Museum, Owens College.

Mr. C. B. Crampton, M.B. Edin., has been appointed assistant keeper in the Geological Department of the museum, in succession to Mr. Herbert Bolton.

Nov. 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Unusual Arrangements at the Edinburgh Royal Infirmary.

ON Monday, Nov. 14th, at the weekly meeting of the managers of the Edinburgh Royal Infirmary, Dr. John Wyllie, one of the consulting physicians to the institution, was appointed to the charge of Professor Fraser's wards during his absence in India. The proposal to make this arrangement emanated from Professor Fraser and the medical faculty in the university and it has now been accepted by the infirmary managers. The proposal has met with a keenness of disapproval on the part of the staff, always excepting the professors who support one another whatever their personal views may be, which has had few, if any, precedents within recent years. To understand the position aright excerpts from the minute sent from a meeting of the staff to the infirmary managers may be quoted; it says "they (the staff) are strongly of opinion that it would be unjust and inexpedient to replace a member of the acting staff by a member of the consulting staff, and have come to this conclusion for the following reasons: 1. There is in the whole history of the Royal Infirmary no precedent for the proposal now made. 2. On all previous occasions in the absence of a clinical professor or ordinary professor his place has been taken by another member of the acting staff, and since the appointment of assistant physicians the substitute has always been the assistant physician who was associated with the professor or physician then absent." It then proceeds to give examples of this having been the ordinary practice. To understand this aright it is necessary to state that each full physician, whether he be a university professor or not, has an assistant physician attached to his wards whose duty is to take charge of the wards and to conduct the clinical teaching in the absence of his senior from any cause. Most of the assistant physicians have sole charge for months every year; the four senior assistant physicians are men of long experience and have lectured and taught in the school of medicine for many years and are all men ready equipped to perform professorial duties at an hour's notice and frequently have to do so. In spite of that, this extraordinary proposal has met with the sanction of the managers. The minute sent by the staff was signed by 31 of the 41 members of the staff, and of the 10 who did not sign 7 are professors. It is much to be regretted that the University in its corporate capacity should so act as to arouse resentment and ill-feeling, the results of which are far reaching and can only be deplored by all right-thinking persons.

Nov. 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Outbreak of Fever in the Armagh Union.

AT the weekly meeting of the Armagh Board of Guardians, held on Nov. 8th, Mr. Patterson, dispensary medical officer (Caledon), reported that there was a serious outbreak of typhoid fever in a place known as Enagh and the outskirts of the town of Caledon. Five persons had been removed to the Armagh Union Fever Hospital. It would appear that bad drainage is the probable cause, as within a few yards of the doors of the houses where the outbreak occurred the main sewer of the lower end of the town passes and empties its contents into a covered tank on the opposite side of the road, and two of the gulley-traps are placed opposite the windows of these houses and are rendered both useless and dangerous by being used by the occupants of the houses as receptacles for refuse and filth. A similar outbreak occurred in this place some time ago. Mr. Patterson made a very complete report, recommending an analysis of the water-supply and a careful examination of all the suspicious premises in the town, &c., and it was finally decided to refer the whole matter to the Caledon Dispensary Committee.

The Typhoid Fever Outbreak in Belfast.

I am glad to report that the outbreak is gradually subsiding. The number of cases notified for the week ended Nov. 5th was 72, the numbers for the previous six weeks being 98, 125, 149, 151, 172, and 114 respectively. The death-rate for the same period from all causes was 26·2, while that from the principal zymotic diseases was 4·3.

The Drainage of Belfast.

A special meeting of the corporation was held on Nov. 9th to consider a proposed drainage scheme for the "Cregagh" district, which has recently come within the city boundaries. The matter was one of great importance, but in regard to it the most diverse views are held. Some think the scheme unnecessary at present, others that it is too expensive. Others question the apportionment of the cost, while the senior alderman, Mr. Lawther, advised that the time had come when the whole question of the sewerage of the city should be taken up. Belfast had, he said, now an area of 17,000 acres, 11,000 of which comprised the added area. Their system of sewers was inaugurated thirty years ago and he was of opinion that they should have a comprehensive scheme of drainage for the whole of the city and they should procure the best skill and advice it was possible to get and have a report on the whole subject. Apparently a large number of

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the corporation have no feeling in the matter, as the meeting came to a collapse for lack of a bare quorum, although a number of professional gentlemen representing those interested in the matter were present with witnesses.

The Belfast Recorder and the Medical Superintendent of the Asylum.

Attention was called in THE LANCET of Nov. 12th, p. 1299, to the extraordinary action of the Belfast Recorder, who declined to allow Dr. Graham, medical superintendent of the asylum, any fee for making an affidavit in reference to the condition of a lunatic and for attending in court. The Recorder made this ruling on the ground that, being a public servant, Dr. Graham was paid for that duty by the Government, and, further, he stated that his (Dr. Graham's) predecessor did not make such charges. At the usual meeting of the asylum governors on Nov. 14th Dr. Graham referred to the lecture which he had received in court from his Honour the Recorder and which had been published in the Belfast papers of Nov. 8th. Dr. Graham said that he could prove that his predecessor (Dr. Merrick) did charge fees for making affidavits on the mental condition of patients under his care and he read letters to show that the custom he had followed of charging a fee was the usual one. In the first letter Mr. Colles, Registrar in Lunacy, Four Courts, Dublin, writes, under date of Nov. 9th, that in his opinion the medical officers of district asylums are, as regards the giving of evidence in civil proceedings, in the same position as any other medical man. "That," he says, "is the principle on which successive Lord Chancellors have, without any exception, acted during the twelve or thirteen years that I have been here." "Asylum officers," he adds, "are frequent witnesses in lunacy cases before the Lord Chancellor in cases where the patient is under their care and their fees are always paid as a matter of course." The other communication read by Dr. Graham was from Mr. Smith, Office of Lunatic Asylums, Dublin Castle, and is dated Nov. 12th. In this letter he writes to Dr. Graham: "With reference to your communication of the 7th inst. asking if you can be compelled to make an affidavit and attend in court to give evidence on the mental condition of a patient under the care of the county court without being paid a fee, I am directed by the inspectors to state that they have not yet been able to obtain legal opinion on the question, but so far as the custom in other parts of Ireland is concerned they can state that in all such cases within their knowledge the resident medical superintendents of district asylums have always received fees for making affidavits and giving evidence in court relating to such patients."

Report on the Health of the City of Belfast for the year 1897.

It is interesting to note that the total deaths from zymotic diseases during 1897 was 1111 as compared with 1005 in 1896. The deaths registered under most of the zymotic headings were fewer in 1897 than in 1896, but in the former of these two years there were 336 deaths from typhoid fever and 355 from diarrhœa, as compared with 136 from typhoid fever and 206 from diarrhœa during 1896. Dr. Henry Whitaker, medical superintendent officer of health and author of the report, states that whilst typhoid fever occurred in 2·7 per cent. of the houses having water-closets, the houses with privies had 5·5 per cent. The disease was not confined to any district of the city, but it is a curious fact that the two districts (Dock and Millfield) which in his opinion were the most insanitary were those in which typhoid fever was the least prevalent.

Nov. 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Aneurysm by Subcutaneous Injections of Gelatin.

AT the meeting of the Academy of Medicine held on Nov. 8th M. Lancereaux answered certain objections to this method of treatment which had been put forward by MM. Huchard and Laborde. M. Lancereaux referred to some experiments which he had made upon animals, which showed that in a very short space of time after the injection of gelatin blood drawn from the general circulation would coagulate in a few minutes. In man after an injection he had never seen coagulation occur anywhere else than in the aneurysmal sac. The operative technique of the injection is as follows. White gelatin in a quantity of from 4 to 5 grammes is dissolved in a 7 per cent. solution of sodium chloride in measure 1000 to 2000 c.c. The solution is placed in a flask which is sealed and then sterilised with its contents at a temperature of 120° C. For the injection a flask of the capacity of 500 c.c. is got ready, fitted with a cork and two tubes like a wash bottle. The long tube is connected with a sterilised needle and the short tube with an indiarubber air-ball. The gelatin is liquefied in a water bath at a temperature of 35° C. and poured into the flask which is also kept in a water-bath. The injection is made slowly into the subcutaneous tissues and should take fifteen minutes. Thus performed it is not painful and no reaction follows. It should be repeated every six or eight days until the sac is obliterated. M. Lancereaux concluded by saying that this method, if carried out with care, gave excellent results in the most desperate cases.

The Surgical Treatment of Ptosis.

At the same meeting of the Academy of Medicine M. Motais introduced details of a new method for the treatment of ptosis. M. Motais considers that the anatomical and physiological connexions of the muscles which elevate the eyeball and the upper eyelid afford good grounds for supposing that the action of the one can supplement that of the other. Acting on this theory he has invented an operation which he has already practised in five instances. This operation, which consists in grafting the superior rectus to the eyelid, is of course of no use in those cases of ptosis where this muscle is paralysed as well as the levator palpebræ. Grafting the eyelid will suffice in most cases of ptosis, but where the eyelids are much thickened a combination of grafting and resection must be employed. The results obtained are practically perfect, the normal physiological conditions and movements of the eyelid being restored.

The Painless Treatment of Cracks in the Nipples.

At the meeting of the Obstetrical Society held on Nov. 10th a paper was read by MM. Maygrier and R. Blondel upon the Treatment of Forty Cases of Cracked Nipples at the Charité Hospital. They had dressed the cracks with orthoform which brought about complete anæsthesia during suckling and kept the cracks aseptic. The application of the powder causes only slight smarting. The infant was put to the breast a quarter of an hour afterwards and sucked eagerly, as orthoform has neither taste nor smell. The anasthesia persists for some time. MM. Maygrier and Blondel made trial of orthoform powder alone, of orthoform followed by a moist dressing of boric acid, and finally with a strong alcoholic solution of orthoform dropped into the cracks. They considered this last method the best for it caused no more initial smarting, but it quite did away with infection of the breast, probably because the solution was able to penetrate into the recesses of the fissures.

The Toxicity of Appendicitis.

At the meeting of the Academy of Medicine on Nov. 8th M. Dieulafoy argued that appendicitis is not only infectious but actually toxic. This theory explains those grave and sometimes fatal effects which supervene in cases of patients attacked with appendicitis. M. Dieulafoy related the case of a young man, aged twenty years, who had walked into the hospital. He was slightly jaundiced and complained of abdominal pain which had lasted for four days. The seat of the greatest pain was at MacBurney's point. The urine contained urobilin and albumin and his temperature was 37·4° C. (99·3° F.). The pain gradually diminished, he had no signs of peritonitis, and there was no puffiness in the iliac fossa. Laparotomy was performed and the parts were apparently healthy, but on passing the finger into the true pelvis a collection of foul-smelling pus was opened up and the appendix was bathed in this. It was exceedingly swollen and gangrenous in places, so it was removed and the patient recovered. The gravity of these lesions in no way corresponds with the gravity of the symptoms. The appendicular toxins may impair the action of the liver and the kidney, the result being urobilinuria, symptoms of which are frequently observed in the course of an attack of appendicitis. The toxæmia may be only very slight or it may be intense and even fatal. It is therefore necessary to make up one's mind so as to act at once. There is a toxic centre which it is necessary to do away with as soon as its presence is obvious. Jaundice, a sign of the invasion of the liver, is often a warning signal

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of very grave toxæmia which acts upon the nervous system. The only means of coping with this disease is to do away with the toxic centre. With a correct diagnosis and an operation performed in good time all these disasters may be avoided, for no one, M. Dieulafoy urges, ever ought to die from appendicitis.

Matriculation Fees in the Universities.

The readers of THE LANCET are already conversant with the agitation set up among the students of medicine at the University of Paris against the new regulation by which admission to the library to the Faculty of Medicine is only to be procured by payment of a fee. Dr. de Lavarenne has set out the causes which made the University take this step in a long and very detailed statement. According to the new law the State revenue and the University revenue are very definitely allotted. The State pays the expenses of all the professors and administrative staff, but all questions of upkeep and various other expenses are laid to the charge of the University. The State only takes over the graduation fees and the University takes all the others, but this latter body has in addition the right of receiving legacies. As a matter of fact, although these laws were laid down with the view of favouring the University, a deficit for this year exists of 46,000 francs. In two or three years' time, it is hoped, legacies which will doubtless come in will have wiped off this deficit, but it was with the view of liquidating this year's debt that the University had imposed new fees, and among others the one dealing with the right of entry to the library. With the view of enabling his readers to compare the differences existing under the old regulations and the present ones M. de Lavarenne brings forward figures to prove his point. In 1896, when the State took all the fees and equally paid all the expenses the State received fees brought in by all departments of the University, amounting to a total of 820,150 francs. On the other hand, it paid personal expenses, laboratory expenses, building and furnishing charges, lighting, warming, printing, and office expenses, examination expenses, museum charges, laboratory and practical work expenses, prizes and medals—a total of 357,565 francs. In addition to this it paid the salaries of all the staff, both teaching and administrative, amounting to 1,080,975 francs, and gave a sum of 39,950 francs as well for library staff expenses. In 1899 the State will pay as formerly the expenses of the teaching and administrative staff, say 1,111,600 francs; it will also pay the library expenses, but, as has been said already, it will not incur any further charges. The fees arising from graduations will be the sole fees which the State will take in future; they amounted in 1896 to 509,027 francs. Consequently if it be considered that 820,000 francs is the total income (*le total des recettes*) of the University, and of this the State will take 509,000 francs, it necessarily follows that the University will only have 311,000 francs left to pay all the expenses of the Faculty of Medicine. In the days when the State paid everything the share of the Faculty was 357,565 francs, so that under the present regulations there is a deficit of 46,000 francs.

Nov. 15th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Medical Officers for Schools.

THE municipal authorities of Berlin have decided to appoint medical officers to the municipal schools. This step will certainly meet with the general approval of the medical profession which has for a long time past recommended medical supervision of schools. According to the instructions drawn up by the municipal school board the duties of these medical officers will be as follows: (1) They will examine children as to their state of health before they enter a school; (2) in cases of bodily or mental abnormalities they may recommend the adoption of special instruction; (3) they will have to look after children who are absent from school without sufficient reasons; (4) they will have to advise the headmaster in cases of infectious diseases; (5) they must give notice to the school board when they have found the health of the children unfavourably affected by the unhygienic conditions of a school; (6) they will have to be present at a certain hour at the school once a fortnight so that the masters may obtain their advice in individual cases; (7) they will have to control the class-rooms without reference to the hours of instruction; and (8) all the medical officers to schools will have to meet regularly under the presidency of a member of the school board to discuss matters relative to the hygienic conditions of schools, &c. The duties of these medical officers will be thus rather complex and a good deal of tact will be required on the part of these gentlemen to avoid friction with the teachers or with the family medical attendants of the children. A large proportion of school managers and teachers is opposed to the appointment of these medical officers because they are anxious that their own authority shall be supreme in everything that belongs to the schools and they are of opinion that the medical men may eventually undermine discipline. These apprehensions, however, seem to be unfounded, for a similar system has given satisfactory results in other towns, as, for instance, in Wiesbaden.

Hydropathy and Vegetarianism.

The late Professor Baron, a member of the faculty of law at the University of Greifswald, has bequeathed a sum of 500,000 marks (£25,000) to the city of Berlin for the purpose of erecting a home for orphans. The late professor was a strong adherent to the principles of vegetarianism and in his will he stipulated that none but vegetarian food should be used in the home. In addition to being a fervent vegetarian he also looked on the medical profession with disfavour and there was therefore another paragraph in his will to the effect that medical men were excluded from the board of managers and that in cases of illness the advice of a "hydrotherapeutist" was to be obtained. The municipal council is in great difficulties in connexion with this legacy, especially its last-mentioned proviso. Our "ædiles," of course, would like to accept the large sum left to them and would like to employ it for the philanthropic work devised by the testator. But they cannot do so without strictly executing the peculiar provisions contained in the will. A sub-committee elected to find a way out of this dilemma has not been able to come to a definite opinion and the matter continues to be discussed both in the vegetarian and medical associations, one party asking the municipal council to accept, the other to reject, the sum given under such conditions.

Female Medical Practitioners.

The medical supervision of prostitutes and of women arrested for immoral conduct on the streets is exercised by the police medical officers and an unfortunate event has lately drawn public attention to the subject. A girl waiting one night in the street for a man to whom she was engaged to be married, who happened to be detained rather late, was charged by a man with having made immoral proposals to him. She was accordingly arrested by a policeman, taken to a police-station, and kept there till the next morning; she also had to undergo examination by the medical officer. The charge proved to be an act of revenge, and both the man who made it and the policeman were severely punished. This case caused a considerable sensation in Berlin. The journals pointed out that similar events may occur not infrequently and that women's feelings must be greatly hurt by medical examinations of this kind. In the hope of conciliating objectors the chief of the police proposed that the examinations of prostitutes should henceforth be made by medical women, a suggestion which was at once severely criticised in the medical press, the chief of the police being asked whether he did not know that legally qualified medical women do not exist in Germany and that all the ladies engaged in practice here are unqualified in the eye of the law since they hold none but foreign diplomas, obtained chiefly in Switzerland. The chief of the police then explained that the lady to be appointed would be regarded as an unqualified assistant to the police surgeon to whom she would be responsible, and who would decide what part of his duties he would delegate to his assistant. In this way the requirements of public opinion as well as the laws relating to medical qualifications would be complied with. As these proposals were obviously an evasion of the law some of the practitioners' associations have petitioned the medical chamber that measures may be taken to prevent an unqualified person from holding a Government medical appointment. They point out that if the prostitutes were entitled to decline to be attended by male practitioners a general precedent applicable to all classes of

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society would be established. In fact, the Association of Female School Teachers has already asked the Municipal School Board that the certificate of health required for appointments at public schools should henceforth be given by female medical officers. Not only is there a strong agitation among the women's associations relative to this matter, but the cause is furthermore supported by a number of the younger medical men.

Periostitis of the Orbit a Complication of Measles.

A rare complication of measles is described by Dr. Strubell in the *Münchener Medicinische Wochenschrift*. A boy of sixteen years of age had a pyrexial relapse in the period of desquamation after measles. He complained of severe headache especially near the left eye, abundant discharge of tears, photophobia, together with œdema of the eyelids, chemosis, exophthalmos, and injection of the ciliary vessels. The cornea and the pupil were normal but there was severe pain at the edge of the orbit. The fever in course of time disappeared and when the inflammatory symptoms had decreased Dr. Strubell found a swelling of the inferior wall of the orbit. The swelling got better within a short time and it was therefore evident that it was due not to cellulitis behind the eyeball but to simple periostitis. A similar complication after scarlet fever in a child of eight years has been observed by Dr. Wagenmann and Dr. Krehl; all the symptoms disappeared within a fortnight.

Nov. 14th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Connexion of Mosquitoes with Malaria: Who first Discovered it?

QUESTIONS of "priority" in scientific discovery are dear to the Italian mind to judge from the space their discussion occupies in journals professional and lay. I recently communicated the claims of the Roman school to having determined the fact that it is "zanzare" (mosquitoes) which convey the poison of malaria and I pointed out what Dr. Bignami had contributed in concert with Dr. Dionisi towards that demonstration. His "mosquito-hypothesis," according to one of his most strenuous vindicators (Dr. N. Arcangeli of the San Giovanni Hospital), dates as far back as 1894, but his means of putting it to the experimental test were so imperfect that he could get nothing but negative results. "Meanwhile," says Dr. Arcangeli, "the hypothesis sustained by him more than held the field and was accepted by Laveran, who had till then supported the 'water-hypothesis.' Professor Koch, on his visit to Africa, had also adopted it, but what he has done to reinforce it will not be known till his promised report sees the light. The next step in Dr. Bignami's researches was his working on the lines of Dr. Grassi (Professor of Comparative Anatomy in the University of Rome), who had come to the important conclusion that in malarious localities there are found some kinds of 'zanzare' which are not found in healthy ones, and that these could inoculate the special poison. Repeating his experiments," continues Dr. Arcangeli, "Bignami employed the mosquitoes indicated by Grassi" and proved his hypothesis that it is by such means that malaria is inoculated in the human subject. But now comes Professor Grassi himself in correction, if not in abatement, of Dr. Bignami's claims, and his letter (which appears in to-night's *Corriere della Sera* of Milan) is so important that I shall quote its leading matter, translating Professor Grassi's own words: "I do not ignore Bignami's merit in having rendered probable the hypothesis that malarious fevers come by inoculation from mosquitoes, and in having first tried experimental proof in that sense, together with Dionisi, who thereafter extended his friend's hypothesis and experiments to birds. The fact, however, stands that both of them supposed that the 'zanzare' and cognate insects inoculated malarial germs taken from the soil, *while their experiments* [the italics are Professor Grassi's] *were always negative*. I cannot keep silence on the fact that it was I who first thought and proved that in places where malaria can be developed in man there exist peculiar mosquitoes which are absent where malaria is not so developed. Let it be added that from this proof and from a series of demonstrations and experiments made by me coincidently with the said proof I was led to maintain that *special mosquitoes* play the part in malaria which the 'zecche' (the *schaflaus* of the Germans) perform in Texas cattle-fever, and to exclude the necessity of recurring to the hypothesis of malarious germs in the soil. Nay, I proposed to Bignami (who had this year experimented largely and always in vain with mosquitoes held by me to be innocuous) to renew the attempt with those special mosquitoes I had procured for him. He accepted the proposal and so made the experiment which I had not at the time the opportunity of carrying out—the experiment which consisted in getting the mosquitoes, by me determined, to puncture an individual who had long been punctured in vain by the mosquitoes held by me innocuous. The experiment which was therefore reduced to this—namely, to liberate my mosquitoes in a room, with healthy atmosphere, inhabited expressly by the individual referred to—succeeded perfectly. The reader can now see for himself what part of the merit belongs to Bignami and what to me." So far Professor Grassi. It will be of interest to know the distinguishing marks of his "special mosquitoes," so as, *inter alia*, to understand how it is that in Rome, where there are no mosquitoes properly so-called, malaria is prevalent, while in Florence, where mosquitoes (properly so-called) abound, there is no malaria at all.

Nov. 12th

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Health of the British Troops in Cairo.

A STATEMENT recently published in the London papers that "there are about four deaths every day from enteric fever in the Cairo hospital," and that there are numbers of cases of "both officers and men," requires a little modification. For some days, it is true, there were as many as four deaths in a day and even more, but this was for very few days. Now the number of enteric cases is lessening and the severity of the disease is less, so that the death-rate as well as the sick-rate is lower. By the last weekly returns the Cairo strength is returned at 3623; the sick-rate is 365, and the number of enteric fever patients among the sick is 96. The remainder of the sick were chiefly affected as follows:—simple, continued, and other slight fevers, 28; dysentery and diarrhœa, 40; ague and remittent fever, 17; venereal diseases, 48 (which is relatively small); debility, 12; and gunshot wounds, 13. The cases of dysentery, which were never very severe, are no longer coming in, for the incubative period of dysentery is considerably shorter than enteric fever. The Citadel Hospital is not now inconveniently overcrowded and there are no longer patients in tents. There are now 6 officers ill in the hospital, 4 from the British troops and 2 from the Egyptian Army. The whole number of officers who have contracted enteric fever is 6, 2 belonging to the Cairo command and 4 to the Alexandria garrison. Unfortunately, 3 of the latter have died. The officers have suffered from enteric fever and from all other diseases much less in proportion than the men. The Camerons head the sick-list with 90 of their men, and it is worth noting that the company which visited Fashoda has suffered from enteric fever and from dysentery considerably more than any other company in the same regiment. The Seaforths have 80 sick and the 21st Lancers have 40 in hospital, but one-third of these supply the few wounded who still remain.

The British Troops in Alexandria.

Out of a garrison of 1550 there are 198 sick, 61 of them being returned as "enteric." The other important figures in the weekly return are: venereal, 38; remittent fever, 17; dysentery and diarrhœa, 14; Mediterranean fever, 12; debility, 9; tubercle, 4; and gunshot wounds, 4. It is noteworthy that eye diseases are represented by 6 cases in Cairo and 2 in Alexandria, and that at no time has there been any serious ophthalmia. This is considerably different from the French expedition in Egypt a hundred years ago when the troops suffered terribly and two of Napoleon's generals each lost an eye from ophthalmia. The Fusiliers at Alexandria contribute now 57 to the sick-list, while there are 33 from the Gordons who are fresh from India, besides a large number of sick soldiers left behind by regiments which have now gone away.

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A Comparison of Enteric Fever Occurrences with Former Years.

None of the enteric fever above mentioned has been caught in Cairo; already there have been 350 cases traced to the expedition this autumn. The soldiers who did not go to the front have not suffered from enteric fever, and the same applies to the barracks full of women and children. In 1897 there were only 30 cases of enteric fever in the army in all Egypt out of an average strength of 4450. This is not a large number when it is remembered that the young soldiers are at the most susceptible age and that in the bazaars they drink all sorts of foul liquids. In 1896 there were 97 cases of enteric fever in Egypt, but 47 of these were traced to the Dongola expedition, so that the number of Egyptian cases was 50. This, again, was an improvement on 1895, when there were 76 cases recorded. This gradual diminution from 76 to 50 and again to 30 is believed to be due to the extra precautions taken in barracks and hospitals to supply filtered and boiled water to the men.

The coming Cairo Season.

In spite of the absence of the German Emperor the season promises to be exceptionally good. The principal hotels have already double the number of visitors which they had last November and most of the dahabiyehs on the Nile have been engaged. Two new hotels will be opened next month and several existing ones have enlarged their premises during the summer.

Cairo, Nov. 8th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

A Medical Bill for New South Wales.

ONCE more a Bill has been introduced into the Legislative Council of New South Wales to regulate the practice of medicine. In addition to the usual clauses as to persons who not being legally qualified medical practitioners within the meaning of the Act take any name implying qualification the Bill contains clauses referring to persons advertising that they treat disease—to the effect that any person so doing must in such advertisement state Christian and surname in full and place them on any house referred to in the advertisement, and any person purporting to be but not being the person so stated in the advertisement is liable to a penalty of £20. In connexion with this subject a meeting of representatives of the various medical societies of New South Wales was held recently, at which it was resolved that the Council of the New South Wales Branch of the British Medical Association be requested to take action in urging on the Government the necessity for placing a Medical Act on the Statute Book and also an Indecent Advertisement Suppression Act. It was also suggested that a medico-Parliamentary committee should be appointed to watch all medico-Parliamentary matters.

Registration of Midwives in New South Wales.

The Bill to register Midwives has passed the second reading in the Legislative Assembly of New South Wales with some slight amendments in Committee. Dr. Graham, in moving the Bill, said the measure sought to place midwives under supervision and control by causing them to have their names placed on a Government register. The Bill would not prevent any woman carrying on the business of nursing, but to be a licensed midwife a woman would have to possess reasonable qualifications. Any woman who prior to the passing of the Act had carried on the business of a midwife would be entitled to a licence on production of a certificate of good character signed by medical men.

The Public Health of Tasmania.

The Central Board of Health, Tasmania, has issued its report for the year 1898. It appears that, in spite of epidemic visitations of typhoid fever, diphtheria, and scarlet fever, the general health of the colony has been good. The death-rate from all causes was very slightly lowered, being 11·53 per 1000 living. The increase in the number of notifications of disease was over 100 per cent., but the increase in the mortality from the same was under 5 per cent. The low mortality is attributed to the facts that the diseases were of a mild type and that more cases were treated in hospitals. The decrease in the mortality from diphtheria having coincided with a great increase in the use of antitoxin the Board "cannot but regard it as the cause." The incidence of typhoid fever as regards locality is noteworthy. The two principal cities—Hobart and Launceston—contributed 35 per cent. of the total, while six townships—Beaconsfield, Lefroy, Queenstown, Teehan, Macquarie, and Hamilton—contributed 43 per cent., and the remainder of the country districts only 21 per cent. The report does not explain this incidence, except that in Hamilton it "is certainly in part due to the inferior quality and insufficient quantity of the water-supply." The Board has drafted a Bill for Amending the Vaccination Acts. Although it believes "that the only efficient preventive measure against small-pox is universal vaccination," it has modified the compulsory clauses in accordance with the suggestions of the report of the recent Royal Commission on Vaccination in England. It is also provided that all parents may demand the use of glycerinated calf-lymph. Since this report was issued the Bill, as drafted, has passed both Houses of Legislature, and it will come into force on Jan. 1st, 1899.

Cremation in Victoria.

A Bill to regulate cremation has been introduced into the Legislative Council of Victoria. It provides that trustees of cemeteries may undertake cremation instead of burial and expend moneys for that purpose and charge fees. No cremation is to take place without the production of two special medical certificates. It is understood that the Bill was drafted by the Council of the Cremation Society, and chiefly by its President, Mr. Justin A'Beckett. At the annual meeting of this society held recently a proposal was mooted for starting cremation by private enterprise, but it did not meet with approval.

The Poisons Act in Victoria.

A Bill to amend the Poisons Act has been circulated in the Legislative Assembly of Victoria by the Government. It provides that the Poisons Act shall not apply to the sale of any poison when made up as a medicine by a legally qualified practitioner or chemist; or in the form of homœopathic medicine, unless in the crude state or of a greater strength than the third decimal potency; or to patent medicines, veterinary medicines, photographic materials, vermin destroyers, fly papers; or to wholesale dealings. The burden of proof that an article does not contain poison is placed on the defendant. A record of the sale of any article containing poison is to be kept and the wrapper of the article is to have the word "Poison" printed conspicuously thereon.

A Druggist Sued for £3000 for Negligence.

Reference has been previously made to the case of Mr. S. P. Williams,[1] of Fitzroy, Melbourne, who died from the effects of a hypodermic injection which was self-administered and which was alleged to be atropine, given him by a druggist in mistake for morphine. His widow has now brought an action against the druggist, claiming £3000 damages. The jury returned a verdict for the defendant. The judge in summing up said that negligence was admitted by the defendant and the real issue the jury had to try was whether death resulted from the negligence. Not one of the medical witnesses was able to say positively that death was due to atropine poisoning. Some of the medical witnesses did not think the appearances were in keeping with those of atropine poisoning. The two medical men who first saw the deceased were told by his wife that he had injected cocaine. The analytical chemist had failed to find any trace of atropine in the body. The deceased was a confirmed morphiamaniac and was also in the habit of injecting cocaine, and the medical evidence showed that the post-mortem appearances were perfectly consistent with cocaine poisoning.

Medical Litigation.

At the Newcastle District Court (N.S.W.) Dr. Harold Knowles Bean of Wallsend sued Dr. John Brady Nash of the same place for £200 for alleged slander. The plaint set out that in May last the defendant falsely and maliciously spoke of the plaintiff and of his treatment of a patient then under his care in the Wallesend Hospital, saying, "I consider your treatment of this leg the most disgraceful piece of surgery I have ever seen. You are the most incompetent surgeon I ever met and a disgrace to the hospital. I have watched

[1] THE LANCET, May 14th, 1898.

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you before and just laugh at you." The plaintiff said that ever since he had settled in Wallsend there had been friction between himself and the defendant, and the latter had threatened to get him out of the place. His treatment of the fractured leg was perfectly warranted by the circumstances and the patient was in attendance to give evidence. Four medical witnesses gave evidence that Dr. Bean's treatment was correct. Dr. Nash gave evidence that the bones of the leg were necrosed, that the dead bone should have been removed sooner, and that the man had a stiff joint which should have been prevented. He had offered to withdraw the strong language he had used about Dr. Bean, but Dr. Bean also wanted him to admit that his opinion about the treatment of the case was wrong. The judge here suggested that the case should be amicably settled out of court. The parties retired and when the judge returned he announced that Dr. Nash had unconditionally withdrawn the charges made against Dr. Bean, and that he had admitted that they were without foundation and had expressed regret for having made them. The complainant accepted the apology and withdrew the plaint.

A Health Officer Suspended.

Mr. Collier, health officer of the shire of St. Arnaud, Victoria, has been suspended by the local council for neglecting to report a case of diphtheria which had been treated for some days in a private house in the centre of the town.

A Medical Officership at the Melbourne Benevolent Asylum.

As the outcome of the complaints as to not holding inquests at the Melbourne Benevolent Asylum the committee have decided to appoint a paid resident medical officer and have advertised the position at a salary of £200 per annum.

St. Vincent's Hospital, Melbourne.

The sisters of charity have purchased a fine site in Melbourne known as Chalmers' Church, formerly the property of the Presbyterian Church, on which it is probable that they will erect a new St. Vincent's Hospital, though they have not finally decided whether they will do so or erect schools there and enlarge the existing hospital on its present site. The sum already subscribed for building purposes amounts to £3000. The sisters hope to raise sufficient funds by a bazaar and carnival next Easter.

Retirement of Dr. G. E. Rennie.

Dr. G. E. Rennie of Sydney has resigned his appointments as deputy coroner, honorary physician and pathologist to the Prince Alfred Hospital, examiner in pathology to the University of Sydney, and honorary secretary of the New South Wales Branch of the British Medical Association. Dr. Rennie is leaving Sydney, and has been presented with addresses by the Council of the New South Wales Branch of the British Medical Association and the Sydney and Suburban Provident Medical Association, placing on record their appreciation of his valuable services, their regret at his departure, and their good wishes for the future. Dr. Rennie has for a long time held one of the foremost positions in the profession in Sydney as a highly scientific and energetic pathologist and physician and his departure will be a great loss to Sydney.

Removal of both Internal Jugular Veins.

In the *Intercolonial Medical Journal* for September, 1898, Dr. R. A. Stirling records a case of recurrent epithelioma of the glands of the neck in which he had removed the whole of the right sterno-mastoid muscle and the internal jugular vein from 1½ in. above its union with the subclavian to just below its emission from the skull with a mass of glands firmly adherent to it. About twelve months later recurrence necessitated a similar operation on the left side, which was successful.

Sept. 30th.

UNIVERSITY OF CAMBRIDGE.—The University Lectureship in Chemical Physiology has been filled up by the appointment of Mr. F. G. Hopkins, M.B., B.Sc. Lond., formerly of Guy's Hospital. During the past year 39 candidates out of 75 examined have received the Diploma of Public Health. Mr. P. J. A. Seccombe, M.A., of St. John's College, has been admitted to the M.B. degree. The first and second examinations for M.B. and B.C. will begin this term on Dec. 12th and the third examination on Dec. 13th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF THE COUNCIL.

AN ordinary meeting of the Council was held on Nov. 10th, the President, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., being in the chair.

A letter was read from the Committee of the Medical School of St. Bartholomew's Hospital, calling attention to the serious dislocation of the teaching arrangements for students of the first year resulting from the altered regulations of the Combined Examining Board issued in July last in regard to Dissections, and strongly recommending the removal from the Regulations of the following clause, viz.: "This period of Dissection must be subsequent to having received instruction in the subjects dealt with under subparagraphs 2 (*a*) (Chemistry and Physics and Practical Chemistry), and (*c*) (Elementary Biology)."

The matter was referred to the Committee of Management to consider and report.

The Council adopted the report from the Court of Examiners and in accordance therewith directed that Diplomas of Membership should be issued to 120 candidates.

The Secretary reported the notices of motion sent in for the meeting of Fellows and Members on Nov. 17th.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

The annual meeting of the Fellows and Members was held on Nov. 17th at 3 P.M. There were present 104 Fellows and Members (including 14 members of the Council).

The PRESIDENT (Sir William Mac Cormac, Bart., K.C.V.O.) who was in the chair, presented to the meeting the Report of the Council for the year ending July, 1898. He referred to the success which had attended the representations of the Council in inducing the Government to establish a Royal Army Medical Corps and also the action of the Council in regard to a proposed interference with the practice of British medical men in Italy.

In moving the first resolution—

That this meeting congratulates the Council on the successful results of its representations in the matter of the reform of the Army Medical Service and trusts that it will now turn its attention towards remedying the notorious abuses which exist in connexion with civil medical practice—

Mr. GEORGE BROWN said that there were many great abuses which needed the earnest attention of the Council. Medical practice could only be carried on if the fees were on a remunerative scale.

The resolution was seconded by Dr. DANFORD THOMAS, who urged on the Council the importance of obtaining a new Medical Act which of itself would remedy half the existing medical abuses. If the Council would grant their support the movement would surely be successful.

The resolution was carried *nem. con.*

Mr. JOSEPH SMITH moved the second resolution—

That in view of the expressed opinion of the Council that it "represents the whole and therefore all parts of the Corporation," and in view of the fact that, so far as it has hitherto been possible to ascertain their sentiments both individually and at general meetings, the opinion of a large number of the Members is and has been for many years past that they should have some share in the election of the governing body, this meeting requests the Council to again consider whether some means cannot be found of fulfilling this desire—

and remarked that this resolution had appeared every year since 1884. He thought the best arguments in favour of the resolution were contained in a letter of Mr. Hutchinson which appeared two years ago. He proceeded to read the greater part of this letter.

Dr. THOMAS MORTON seconded the resolution, and urged the Council to withdraw from the impossible position taken up by them at their meeting in May, 1897, when they claimed to represent the whole College.

The resolution was supported by Sir ROBERT CRAVEN, Mr. HOUGHTON, Mr. WATTS, Mr. RICHMOND, and Mr. BELL, and was carried *nem. con.*

Mr. W. G. DICKINSON then moved—

That this meeting notes with satisfaction that the Council has at last definitely expressed its disapproval of canvassing for patients and of the employment of professional advertisements addressed directly to the lay public, and this meeting further trusts that the Council will extend its disapproval to the acting by Fellows and Members of the College as paid officials of any association which adopts these unprofessional practices—

and said that the Council did not seem to understand what

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was wanted by those who brought before the Council cases of Members of the College who acted for medical aid associations. The important point in the whole matter was that advertising should be put down and no Member of the College should be allowed to accept a post under any advertising association.

Dr. HERBERT SNOW seconded the resolution, which was carried.

The next resolution—

That this meeting approves of the proposal to institute a gown for the Members of the College and trusts that the Council will see its way to carry this suggestion into effect—

was introduced by Mr. BRINDLEY JAMES and seconded by Dr. F. H. ALDERSON.

The PRESIDENT informed the meeting that the Council had already apppointed a sub-committee to consider the subject.

The resolution was carried.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen have passed the First Examination of the Board under the "Five Years" Regulations in the subjects indicated, viz. :—

Part I., Chemistry and Physics :

Adam, George Henry.
Avery, John.
Barnes, Ernest Charles Edward.
Bourgault, Auguste René.
Clowes, George Martin.
Coltart, Charles Herbert Romer.
Copland, John Brightman.
Cunninghame, Harry Bell.
Goldstein, John Leopold.
Graves, Harman John Howland.
Griffin, Ernest Harrison.
Grote, Robert George Ernest.
Howard, James.
Hughes, William Shelbourne.
Im Thurn, Robert Mackenzie.
Jeffery, Thomas Walter.
Johnson, Henry.
Johnson, Marchant Richard.
Lloyd, John Daniel Stuart.
Lovell, William.
Marshall, Oliver.
Porter, James Houston.
Power, Tom Costello.
Reatchlous, Henry Arnold.
Ring, Charles Augustus Eamonson.
Roberts, Frederic Emilius.
Stansfield, Walter.
Stephenson, John Leeming.
Thomas, Daniel Jenkins.
Waldron, Charles Edward.
Williams, Augustus Scott.
Wood, René William Louis.

Part II. Practical Pharmacy :

Alderson, Percy Francis.
Bateman, Ambrose Harold.
Bennett, Francis Grey.
Bird, Albert Edward.
Birt, Amelius Cyril.
Bond, Henry.
Bridges, David.
Brookes, James William Auston.
Bulteel, Cecil Edward.
Butler, Harold Branson.
Child, Harry Norman Rix
Claye, Everard.
Conolly, Noel Alfred William.
Cooke, Reginald Torriano.
Cope, Gilbert Edgar.
Cotton, Frederick William.
Crozier, George Rowland Henderson.
Dall, Elliot Wilfred.
Dyer, Walter Percy.
Ellis, Ernest Fitzgerald.
Enderby, Thomas Sydney Dawber.
Farquharson, Charles Henry.
Fletcher, George William.
Foster, Arthur Herbert.
Gee, Claude Alfred Heath.
Graves, Robert Kennedy Grogan.
Hagger, Roger Lionel.
Hartslet, Lewis Eccles.
Hope, Percy Lake.
Iles, Alfred John Hopkinson.
Keir, John Duncan.
Latham, Thomas Jones.
Lightfoot, John Henry.
Lipscomb, Neil.
Lloyd, David George.
Lowe, George Carter.
McIlroy, James Archibald.
McQueen, John Falconer.
Matheson, Farquhar Mackenzie.
Mieville, George Christian Blake.
Millar, Ernest Richard.
Neil, William Herbert.
Nimmo, Wilfred Cowan.
Parker, Charles Seymour.
Petrie, Alexander Sturrock.
Reid, James Derham.
Richard, George Herbert.
Rose, Edmund Frederick.
Rose, Thomas.
Row, Edward Reginald.
Scoones, Harold Edward.
Sheehan, Michael.
Spencer, Sandy.
Swindale, Henry Vernon.
Turner, Harry Stanley.
Vaughan, John C. F. Dudley.
Walters, Henry Blanchard.
Watson, Cecil Francis.

Part III., Elementary Biology :

Bishop, Thomas Henry.
Le Bas, Dumaresq.
Stephenson, John Leeming.

The following gentlemen have passed the First Examination of the Board under the "Four Years" Regulations in the subjects indicated, viz. :

Part II., Materia Medica :

Cooke, Percy Seymour.
Garman, Joseph Marcus.
Higgs, Thomas Frederic Walker.
King, Thomas Arthur.
Shanks, Henry Priest.
Whalley, Edgar.

Part III., Elementary Physiology :

Cope, Ricardo.

FOREIGN UNIVERSITY INTELLIGENCE.—*Gratz :* Dr. A. von Rosthorn of the German University of Prague has been appointed to the chair of Midwifery and Gynæcology in succession to the late Dr. von Rokitansky. Dr. Oskar Zoth has been appointed Extraordinary Professor of Physiology.—*Munich :* Dr. Jakob Berten of Würzburg has been appointed Extraordinary Professor of Odontology.—*Utrecht :* Dr. B. J. Kouwer of Haarlem has been appointed to the Professorship of Midwifery and Gynæcology.—*Vienna :* Dr. Heinrich Obersteiner has been promoted to an Ordinary Professorship of Neurology.—*Zürich :* Dr. von Frey of Leipsic has been appointed to the chair of Physiology.

VACCINATION AT CARDIFF.—At a meeting of the Cardiff Union Vaccination Committee held on Nov. 7th it was stated that last year the births in Cardiff numbered 5784 and the vaccinations were 4794.

THE CANTOR LECTURES. — The next Cantor Lecture at the Society of Arts will be delivered on Monday, Nov. 21st, by Professor Vivian B. Lewes. The subject of the lecture will be Acetylene.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At a meeting of the President, Vice-president, and Council, held on Friday, Nov. 11th, Mr. Fred. W. Kidd, M.D., L.R.C.S.I., Master Coombe Hospital, was elected Professor of Midwifery and Gynæcology.

NEW WATERWORKS FOR SWANSEA.—The ceremony of cutting the first sod of the new Swansea Waterworks at Cray, Breconshire, was performed by the Mayoress on Nov. 10th. The plans are for a reservoir to contain not less than a thousand million gallons.

FORGING A DEATH CERTIFICATE.—On Nov. 7th a man was charged at St. Asaph with forging a death certificate. Defendant went to the St. Asaph registrar and produced a certificate of death of his mother-in-law, alleged to have been issued by Dr. Jones of Rhyl. He then asked for a copy for an insurance company. Defendant pleaded guilty and was fined the full penalty, £10 and costs.

THE LATE MR. LLEWELLYN COUCH.—A meeting was held at Swansea on Nov. 8th, presided over by the Mayor, at which it was decided to raise a fund for the widow and children of the late Mr. Llewellyn Couch and to perpetuate his heroic self-sacrifice by erecting a suitable memorial. The father and brother of the deceased are members of the medical profession practising in Swansea.

THE BRITISH MEDICAL TEMPERANCE ASSOCIATION. — On Nov. 9th a breakfast meeting was held at the Cannon-street Hotel, London, convened by the British Medical Temperance Association, to which students from the various London hospitals were invited. Seventy guests sat down. After the breakfast the President of the association (Dr. Sims Woodhead) spoke of the important influence they would be able to exert in their future practice if they were total abstainers. Many years ago it was the fashion to bleed and salivate, and when this was found to be injurious some of the older men said it was due to a change in the type of disease. He had no doubt that hereafter the same excuse would be made to account for the disuse of alcohol. Dr. Louise Appel also addressed the audience and strongly urged them to join the association, no pledge being required or subscription from students but simply the practice of total abstinence. Eighteen students joined the association.

A SANATORIUM FOR PHTHISICAL PATIENTS.—A meeting to consider a proposal for providing a sanatorium for phthisical patients in Yorkshire was held at the Mansion House, York, on Oct. 27th. The Lord Mayor presided and there was a numerous attendance, including the Marchioness of Zetland, the Countess of Harewood, Mrs. W. H. A. Wharton, Sir William Broadbent, Bart. (chairman of the Executive Committee of the National Association for the Prevention of Consumption), Mr. Malcolm Morris (treasurer of the association), and Sir J. Crichton Browne. Sir William Broadbent in the course of an address which he delivered gave a very encouraging account of the results obtained by the open-air treatment of tuberculosis. Mr. Malcolm Morris referred in terms of warm commendation to the efforts made by Mrs. W. H. A. Wharton and the Marchioness of Zetland on behalf of a sanatorium in Yorkshire. On the motion of the Marchioness of Zetland, seconded by Dr. Eddison, it was resolved: "That it is desirable to found a sanatorium for the cure of consumption in Yorkshire," and it was decided to form in York a local branch of the National Association for the Prevention of Consumption.

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THE STUDY OF LEPROSY IN BRESLAU.—Arrangements are being made for the careful study and treatment of leprosy in the Breslau University Clinic for Skin Diseases, the patients being brought from Eastern Prussia with great precautions as to isolation and disinfection of the railway carriages.

THE PLAGUE.—The newly appointed scientific Commission for the investigation of plague in India will unfortunately find a great deal to engage their attention on arrival in that country, for the latest telegraphic intelligence from India does not show that there are any signs of abatement of the disease.

PRESENTATIONS TO MEDICAL MEN.—On Nov. 5th, at Sherburn, on the presentation of certificates and medallions to the members of the South Milford (North-Eastern Railway) Ambulance Class, Mr. E. P. Pickersgill, L.R.C.P. Edin., M.R.C.S. Eng., was the recipient of a carriage clock in token of appreciation of his services to the class.—Mr. J. Todd, M.R.C.S. Eng., of Gateshead-on-Tyne, who is one of the town's oldest medical practitioners, and who has been for twenty years the medical officer of the Gateshead Branch of the Boiler-makers' Iron and Steel Ship Builders' Society, has been entertained to supper at the Royal Hotel, Gateshead, by the present and past officials of the branch, and presented on the occasion with a gold-mounted umbrella as a mark of the high esteem in which he is held by them.

MUNICIPAL HONOURS TO MEDICAL MEN.—In the Borough of Tunbridge Wells at the recent municipal elections the following members of the medical profession were duly elected: Mr. George Abbott, L.R.C.P. Lond., M.R.C.S. Eng.; Mr. Lawson Dodd, L.R.C.P. Lond., M.R.C.S. Eng; and Mr. Norman Hay Forbes, F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S. Eng.—Dr. F. J. A. Waring was elected an alderman at the first council meeting at Hove under the new charter of incorporation of that town.—Mr. Joseph Harper, M.R.C.S. Eng., L.R.C.P. Lond., J.P., has been elected an alderman for Barnstaple; Mr. George Swithin Adee Waylen, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., an alderman for Devizes; Mr. William Banks, M.B. Lond., M.R.C.S. Eng., an alderman for Falmouth; and Mr. James Bunting, M.R.C.S. Eng., L.S.A., has been appointed deputy mayor of Torquay.

ROYAL METEOROLOGICAL SOCIETY.—The opening meeting of the session was held on Wednesday evening, Nov. 16th, at the Institution of Civil Engineers, Great George-street, Westminster, when a report on experiments upon the exposure of anemometers at different elevations was presented by the Wind Force Committee. The experiments have been carried out by Mr. W. H. Dines and Captain Wilson-Barker on board H.M.S. *Worcester* off Greenhithe, and among the conclusions arrived at was one that no other form of anemometer offers such advantages as the pressure-tube from the fact that it can be run up and secured easily at the necessary height above a building and that the pipes and stays can be slight so as to offer no resistance to the wind or cause any deflecting current.—Mr. W. Marriott exhibited some lantern slides showing the damage caused by the tornado which burst over Camberwell about 9.30 P.M. on Oct. 29th. The damage was confined to an area of about half a mile in extent and within that space chimney-stacks were blown down, houses unroofed, trees uprooted, and windows broken.

MEDICAL REFORM.—On Nov. 5th the Gateshead Medical Association formally entered into affiliation with the Corporate and Medical Reform Association, Limited, as the result of two meetings held on Oct. 15th and Nov. 1st. The former was a meeting of the medical profession of Gateshead and neighbourhood convened by the local association, the President, Mr. J. H. W. Ridley, in the chair, to hear an address by Mr. R. B. Anderson, F.R.C.S. Eng., submitting as its representative the policy and proposals of the Corporate and Medical Reform Association. A resolution was passed in favour of the policy of the association, and a vote of thanks to Mr. Anderson for his address was carried by acclamation. Dr. Cox, who moved the resolution, said that he had always supported, and would continue to support, any association which offered a reasonable expectation of benefit to the body of the profession. He warned Mr. Anderson that the support of Gateshead would only be continued if useful work were seen to be in progress. Dr. Mearns seconded the resolution, which was supported by several others. At an ordinary meeting on Nov. 1st it was moved by Dr. Cox, seconded by Mr. Ridley (President), and carried unanimously: "That this association endorses the policy of the Corporate Medical Association, Limited, and will take steps to affiliate with it."—On Oct. 28th the New Cross Medical Society formally entered into affiliation with the Corporate and Medical Reform Association, Limited, pursuant to resolutions unanimously adopted at general meetings on Oct. 5th (Dr. C. P. Handson, President, in the chair), to support the association and coöperate in its policy and measures, and on Oct. 12th to affiliate with the association. The affiliation is to take effect from the date of the second resolution.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
- The Throat and Nose and Their Diseases. By Lennox Browne. Fifth Edition. Coloured Plates. 1899. Price 31*s.* 6*d.* net.
- A Guide to the Examinations by the Conjoint Examining Board in England. By F. J. Gant, F.R.C.S. Seventh Edition, revised by W. Evans, M.D., B.Sc. Lond., F.R.C.S. 1899. Price 5*s.*
- Aids to Materia Medica. Part II., Drugs of Vegetable Origin. By William Murrell, M.D., F.R.C.P. 1899. Price 2*s.* 6*d.*

BALE, J. & SONS, Great Titchfield-street, London.
- Cerebral and Mental Symptoms: A Thesis. By J. C. Simpson, M.B., C.M., M.D. 1898. Price 5*s.* net.
- West London Medical Journal. Edited by P. Dunon, F.R.C.S. Vol. III. Nos. January, April, July, October, 1898.

BLACKIE & SON, Old Bailey, London.
- A Mystery of the Pacific. By Oliphant Smeaton. Illustrated. 1899. Price 5*s.*
- Courage! True Hearts. The Story of Three Boys who Sailed in Search of Fortune. By Gordon Stables, M.D., C.M. Illustrated. 1899. Price 3*s.* 6*d.*
- Under Wellington's Command. A Tale of the Peninsular War. By G. A. Henty. Illustrated. 1899. Price 7*s.*
- At Aboukir and Acre. A Story of Napoleon's Invasion of Egypt. By G. A. Henty. Illustrated. 1899. Price 5*s.*
- Chips and Chops and Other Stories. By R. Neish. Illustrated. 1899. Price 2*s.*
- The Reign of the Princess Naska. By Amelia H. Stirling, M.A. Illustrated. 1899. Price 2*s.* 6*d.*

BLACKWOOD, WM., & SONS, London and Edinburgh.
- Windyhaugh: a Novel. By Graham Travers (Margaret G. Todd, M.D.). 1898. Price 6*s.*
- Dr. Southwood Smith: A Retrospect. By his Grand-daughter, Mrs. C. L. Lewes. 1898. Price 6*s.*

BUTTERWORTH & Co., Fleet-street, London.
- The Housing of the Working Classes Act, 1890, and Amending Acts. By C. E. Allan and F. J. Allan, M.D., D.P.H. 1898.

CASSELL AND COMPANY, London.
- Diseases of the Skin. By Malcolm Morris. Illustrated. New Edition. 1898. Price 10*s.* 6*d.*
- Gout: Its Pathology and Treatment. By A. P. Luff, M.D. Lond. 1898. Price 5*s.*

CHURCHILL, J. & A., Great Marlborough-street, London.
- A Handbook of Hygiene and Sanitary Science. By Geo. Wilson. Eighth Edition. 1898. Price 12*s.* 6*d.*

DORNAN, W. J., Philadelphia.
- Transactions of the American Surgical Association. Vol. 16. 1898.

FURNIVAL, W. J., Stone, Staffordshire.
- Researches on Leadless Glazes. By Wm. J. Furnival. 1898. Price 5 guineas.

GLAISHER, H. J., Wigmore-street, Cavendish-square, London.
- On the Study of the Hand for Indications of Local and General Disease. By Edward Blake, M.D. 1898. Price 2*s.* 6*d.* net.

GREVEL, H. & Co., King-street, Covent-garden, London.
- Chemistry in Daily Life. By Dr. Lassar-Cohn. Translated by M. M. P. Muir, M.A. Camb. Illustrated. Second Edition. 1899. Price 5*s.*

HIRSCHWALD, A., Berlin.
- Die Nebenwirkungen der Arzneimittel. Von Professor Dr. L. Lewin. Dritte Auflage. 1899.

INSTITUT DE BIBLIOGRAPHIE SCIENTIFIQUE, Paris.
- Chirurgie de l'Utérus. Par H. Delagénière. 1898.

LEHMANN, J. F., München.
- Atlas der äusseren Erkrankungen des Auges, nebst Grundriss ihrer Pathologie und Therapie. Von Professor Dr. O. Haab in Zürich. 1899.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
- Transactions of the Clinical Society of London. Vol. 31. 1898.

MASSON ET CIE., Paris.
- Énergétique Musculaire. Par F. Laulanié. 1898.
- L'Occlusion Intestinale. Par J. Bauby. 1898.

MEDICO-LEGAL JOURNAL OFFICE, Broadway, New York.
- Medico-Legal Studies. By Clark Bell of the New York Bar Vol. V. 1898.

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OLIVER AND BOYD, Edinburgh.

The Transactions of the Edinburgh Obstetrical Society. Vol. XXIII. Session 1897-1898.

PENTLAND, YOUNG J., Edinburgh and London.

Contributions of Clinical Medicine. By T. McCall Anderson, M.D. Edited by Jas. Hinshelwood, M.A., M.D. 1898.

PLON, E., NOURRIT, ET CIE., Paris.

Leçons de Clinique Thérapeutique sur les Maladies du Système Nerveux. Par Dr. Gilles de la Tourette. 1898.

PRINTED FOR THE ASSOCIATION OF AMERICAN PHYSICIANS, Philadelphia.

Transactions of the Association of American Physicians. Vol. 13. 1898.

SAMPSON LOW, MARSTON AND CO., Fetter-lane, Fleet-street, London.

A Primer of Psychology and Mental Disease. By C. B. Burr, M.D. Second Edition. 1898.

Practical Uranalysis and Urinary Diagnosis. By C. W. Purdy, M.D., LL.D. Fourth Edition. Illustrated. 1898.

Madeira and the Canary Islands. A Practical Guide with Coloured Maps and Plans. By A. S. Brown. Fifth Edition. 1898. Price 2s. 6d.

The Guide to South Africa. With coloured Maps, Plans, and Diagrams. Edited annually by A. S. Brown and G. G. Brown for the Castle Mail Packet Company. 1898-99 Edition. Sixth Edition. Price 2s. 6d.

SCOTT, WALTER, Paternoster-square, London.

Degeneracy: Its Causes, Signs, and Results. By Eugene S. Talbot, M.D., D.D.S. Illustrated. 1898. Price 6s.

SMITH, ELDER, AND CO., Waterloo-place, London.

Transactions of the Pathological Society of London. Vol. 49. 1898.

STEINHEIL, G., Paris.

Traité de l'Allaitement et de l'Alimentation des Enfants du premier âge. Par Dr. A. B. Marfan. 1899.

Traité de la Dysurie Sénile et de ses diverses Complications. Par Victor Rochet. 1899.

Leçons de Clinique Chirurgicale, faites à l'Hôtel-Dieu (Août-Septembre, 1897). Par Pierre Delbet. 1899.

UNWIN, T. F., Paternoster-square, London.

Life of Man on the High Alps. By Angelo Mosso. Translated from the second edition of the Halian by E. Lough Kicsow. 1898. Price 21s.

VEIT AND CO., Leipsic.

Grundzüge einer allgemeinen Pathologie der Verdauung. Von S. M. Lukjanow. 1899.

Tenth Report of the State Board of Health of the State of Maine for the two years ending Dec. 31st, 1897—1896-1897. (Kennebec Journal, Point Augusta, 1898).—Wright's Improved Physicians', Surgeons', and Consultants' Visiting Lists for 1899. A., B., and C. compiled by R. Simpson, L.R.C.P., L.R.C.S. Sixth Edition. (J. Wright and Co., Bristol). Price, each, 5s. 6d. net.—Shakespearean Daily Calendar for 1899. The Poetical Daily Calendar for 1899. (Bemrose and Sons, London). Some Health Aspects of Education. By Dr. Percy Lewis. (The Scientific Press, Southampton-street, Strand, London, W.C. 1898). Price 1s.—Drs. Harvey and Davidson's Syllabus of Materia Medica. By William Martindale, F.L.S., F.C.S. Tenth Edition. (H. K. Lewis, Gower-street, London, 1898). Price 1s. net.—Smith's Physicians' and Surgeons' Visiting List for 1899. This is the oldest of the Medical Diaries and is adapted for different numbers of patients. (Hazell, Watson, and Viney, 52, Long-acre, London).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

AGAR, MORLEY, L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Surgeon and Surgeon in charge of the Nose, Throat, and Ear Department at the Hospital of St. Francis, New Kent-road, London.

BAUMANN, E. P., M.B., Ch.B. Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon for the Glasgow Royal Infirmary.

BLAMEY, J., M.R.C.S., has been re-appointed Medical Officer of Health by the Penryn Urban District Council.

BOOTH, J. MACKENZIE, M.D. Aberd., has been appointed Second Surgeon to the Aberdeen Royal Infirmary.

BOYCOTT, ARTHUR NORMAN, M.D. Lond., Senior Assistant Medical Officer, London County Asylum, Cane Hill, has been appointed Medical Superintendent to the new Hertfordshire County Asylum, Hill End, St. Albans.

BRANWELL, CHARLES, L.R.C.P. Lond., M.R.C.S., has been appointed to the Royal Cornwall Infirmary, Truro.

CARLESS, EDWARD NICOLLS, M.D., C.M. Aberd., L.F.P.S. Glasg., J.P., has been appointed Medical Officer of Health for Devizes.

CHURCH, ANNA L., M.D. R.U.I., has been appointed Medical Officer in charge of the Victoria Hospital, Calcutta.

COLTART, WILFRID H., M.R.C.S., L.R.C.P., has been appointed House Physician to the Queen's Hospital, Birmingham.

COWIE, GEO., M.B., C.M. Aberd., has been appointed an Assistant Medical Officer for the City-road Workhouse of the Holborn Union, London.

CROSSLEY, H. J., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Crumsall Workhouse of the Township of Manchester.

DENT, HOWARD H. C., M.B. Durh., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Queen's Hospital, Birmingham.

DU CANE, EDGAR, B.A., M.B., B.Ch., has been appointed Assistant Surgeon for the Great Western Railway Hospital and Works, New Swindon.

DUNCAN, CECIL C., has been appointed an Analyst for the County of Worcester.

FIELD, R. C., M.B. Lond., has been appointed Resident Obstetric Officer for the General Infirmary at Leeds.

FOX, E. H. BRUCE, L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Royal South Hants Infirmary.

GAIRDNER, J. FRANCIS R., M.B., C.M. Glasg., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Surgical Officer for the General Infirmary at Leeds.

GARDEN, R. J., M.D. Aberd., has been appointed Senior Surgeon to the Aberdeen Royal Infirmary.

GRAY, H. M. W., M.B., C.M. Aberd., has been appointed an Assistant Surgeon to the Aberdeen Royal Infirmary.

HAY, J., M.B., Ch.B. Vict., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary of the West Derby Union, vice S. R. Christophers, resigned.

JOLLEY, J. H., L.S.A., has been appointed a Medical Officer for the Sixth Sanitary District of the Bridgwater Union.

LAMPLOUGH, CHARLES, M.D., M.R.C.S., L.R.C.P., has been appointed Medical Officer of Health by the Chatteris Urban District Council.

LEAH, THOMAS, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for Stonehouse, Devon.

LORD, C. COURTENAY, M.A. Cantab., M.R.C.S., L.R.C.P., has been appointed Ophthalmic and Obstetric House Surgeon to the Queen's Hospital, Birmingham.

MCANALLY, E. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the No. 3 Sanitary District of the Hollingbourne Union.

MCKINLAY, J. R., L.S.A., has been appointed an Assistant Medical Officer for the Gordon-road Workhouse of the parish of St. Giles, Camberwell.

OGSTON, W. F., M.B., Ch.B. Vict., has been appointed a House Physician for the General Infirmary at Leeds.

PALMER, HORACE J., L.R.C.P. & S. E., L.F.P. & S. Glasg., has been appointed a Certifying Factory Surgeon to the Civil Parish of Gamlingay in Caxton and Arrington Rural Sanitary District, and the Civil Parishes of Potton, Cockayne-Hatley, Sutton, and Wrestlingworth Rural Sanitary District.

PITT, CHARLES WIGHTWICK, M.R.C.S., L.S.A., has been appointed Medical Officer of Health for Devizes.

PITT, G. N., M.D., B.C. Camb., F.R.C.P. Lond., M.R.C.S., has been appointed a Physician to Guy's Hospital, London.

RIDDELL, J. S., M.B., C.M. Aberd., has been appointed Third Surgeon to the Aberdeen Royal Infirmary.

SHARPE, C. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer by the West Bromwich Guardians.

SKIPWORTH, H., L.R.C.P. Irel., M.R.C.S., has been re-appointed Medical Officer of Health for the Quorndon Urban Sanitary District.

SPONG, R., M.B., Ch.B. Vict., has been appointed a Resident Medical Officer at the Ida Hospital, Leeds.

STANSFIELD, H., M.B., Ch.B. Vict., has been appointed a House Physician for the General Infirmary at Leeds.

TORRENS, J., M.D. Irel., has been appointed a Medical Officer for the Workhouse of the Seisdon Union.

TRETHEWY, A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer for the Haileybury College.

TROTTER, E., M.B., Ch.B. Vict., has been appointed a House Surgeon for the General Infirmary at Leeds.

TURTON, E., M.B., Ch.B. Vict., has been appointed a House Surgeon for the General Infirmary at Leeds.

TYNDALE, W. R., M.B., C.M. Aberd., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Hampton District Council.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COLLEGE, LONDON, FOR WOMEN, York-place, Baker-street, W.—Professorship of Hygiene.

BIRMINGHAM PROVIDENT DISPENSARY (SANDS COX TRUST), HOCKLEY BRANCH.—Medical Officer. Salary in proportion to the number of members, with a minimum of £250 per annum and residence.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-Inn-road, W.C.—Assistant Surgeon.

CHICHESTER INFIRMARY.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £140 per annum, with lodging. Successful candidate to board himself.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary £100, with board and lodging.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

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FINSBURY DISPENSARY, Brewer-street, Goswell-road, E.C.—Resident Medical Officer for one year. Salary £100 per annum, and a furnished residence provided in the institution, with attendance, coals, and gas.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Board, residence, and washing provided.

GLAMORGAN COUNTY COUNCIL.—Bacteriologist to work in the Council's Laboratory at Cardiff. Salary £250 a year. No pension is attached. Applications to the Clerk to the County Council, Glamorgan County Offices, Cardiff.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Assistant Surgeon. Salary £80, rising to £90 per annum after the first year's service, with board and residence.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Also Medical Registrarship.

MASON UNIVERSITY COLLEGE, Birmingham.—Lecturer on Osteology and Chief Demonstrator of Anatomy.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, to be raised by five equal annual increments to £150 per annum, with furnished apartments in the Asylum, and board and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £40 per annum, with board, washing, and residence.

ROYAL BERKS HOSPITAL, Reading.—Assistant Medical Officer for six months. Board, lodging, and washing provided. An honorarium of ten guineas will be awarded conditionally.

ST. PETER'S HOSPITAL, Henrietta-street, Covent Garden, London.—House Surgeon for six months. Salary at the rate of £100 a year, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—Resident Junior Assistant House Surgeon. Salary £50 per annum, with board and washing.

STAFFORDSHIRE COUNTY COUNCIL.—Medical Superintendent for the Staffordshire County Asylum at Cheddington. The salary will commence at £500 per annum, with £200 in lieu of board. The asylum is not yet completed, and the successful candidate is to reside at the residence provided. In addition to the above salary the emoluments include a partly furnished residence, &c.—Applications to the Clerk to the Council, Stafford.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Assistant Physician for the Out-patients for two years.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House Surgeon. Salary £120 per year, and £30 a year for Dispensing, with furnished apartment and attendance.

WILLITON UNION, Somerset.—Medical Officer and Public Vaccinator for the Stogursey District of the Union. Salary £80 per annum, with certain extra fees. Subject to statutory reductions. Applications to the clerk, Williton, Somerset.

Births, Marriages, and Deaths.

BIRTHS.

ATKINSON.—On Nov. 11th, at Holloway-road, N., the wife of R. Atkinson, M.R.C.S., of a son.

CLARKE.—On Nov. 16th, at 3, Chandos-street, Cavendish-square, the wife of Ernest Clarke, M.D., F.R.C.S., of a daughter.

HAZLETON.—On Nov. 7th, at York House, Abbey Dale-road, Sheffield, the wife of Edward B. Hazleton, M.D., of a daughter.

LIGHTFOOT.—On Nov. 12th, at Trevor House, Leyburn, R.S.O., the wife of J. P. Lightfoot, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

MARRIAGES.

COLMAN—CAINE.—On Nov. 16th, at Grafton-square Congregational Church, Clapham, Walter Stacy Colman, M.D., F.R.C.P., of Wimpole-street, W., son of S. C. Colman, of Peterborough, to Dorothea Caine, M.D., second daughter of W. S. Caine, J.P., of North Side, Clapham-common.

LAMPLOUGH—OWEN.—On Nov. 9th, at St. Mary Abbotts, Kensington, Charles Lamplough, M.D., M.R.C.S., L.R.C.P., son of Robert Lamplough of Leamington Spa, to Edith Mary, daughter of Allen Owen of Avonmore Mansions, Kensington.

SCOTT—ROSE.—On Nov. 5th, at the English Church, Funchal, Madeira, by the Rev. W. Graham, John Geddes Scott, L.R.C.P. Lond., M.R.C.S. Eng., of Funchal, only son of the late W. B. A. Scott, M.D., to Mabel Bessie Louise, only daughter of the late Charles Rose, Esq., of Western Australia, and Mrs. Rose, of Funchal.

SMITH—RUSSELL.—On Nov. 9th, at St. Mark's Church, Greenwich, Captain Henry Smith, M.D., I.M.S., to Hester Dill Russell, M.D., R.U. Irel.

YELD—BOND.—On Nov. 10th, at St. Nicholas's Church, Brighton, Walter Harry Yeld, M.R.C.S., L.R.C.P. Lond., younger son of the late W. Walter Yeld, to Ellen Minnie, younger daughter of the Rev. C. W. Bond, M.A., Vicar of St. Nicholas's, Brighton.

DEATHS.

DODSWORTH.—On Nov. 12th, suddenly, at his residence, Evian, Stanmore, George Henry Dodsworth, M.R.C.S.

MACDERMOT.—On Nov. 10th, at The Circus, Bath, Edward Deane MacDermot, M.A., M.D., in his 83rd year.

MACLEAN.—On Nov. 10th, at Oakleigh, Sidmouth, Devon, aged 87 years, Surgeon-General William Campbell Maclean, C.B., LL.D., M.D., Honorary Surgeon to the Queen, sixth son of the late John Maclean of Boreray and Drimnin, N.B.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (26th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (21st).—SOCIETY OF ARTS.—4.30 P.M. Prof. V. B. Lewes: Acetylene. (Cantor Lecture.)

TUESDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.15 P.M. Demonstration:—Mr. J. L. Thomas: (1) Penile Stricture from a Case of Urethrectomy; (2) Vermiform Appendix containing a large Concretion. 8.30 P.M. Papers:—Mr. E. Owen: A Distinct Variety of Hip-joint Disease in Children and Young Persons.—Mr. J. Hutchinson, jun., and Mr. H. L. Barnard: On an Improved Method of Treatment of Separation of the Lower Epiphysis of the Femur.

WEDNESDAY (23rd).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases. 5 P.M. Paper:—Mr. C. Williams: Congenital Syphilis: a New Theory. Dr. A. Hall (Sheffield): (1) Note on Eczema produced by Phenyl Hydrazin Hydrochlorate; (2) Photograph of a Case of Primary Syphilis with Two Hard Sores on the Hand.

HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Dr. T. G. Lyon: An Enquiry into the Production of Blood Plasma, its Vital Properties and mode of Nourishing the Tissues.—Mr. T. H. Targett; Two Cases of Cancer of the Uterus with Pregnancy.

FRIDAY (25th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Miss A. Hughes: District Nursing. (Course of Lectures on Medical Relief.)

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. W. G. Spencer: Gumma of the Liver—Cases in which Surgical Measures were followed by Relief.—Dr. M. Fletcher: Green Urine.—Mr. F. C. Wallis: Two Cases of the Effects of Gastric Ulcer treated by Operation.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

SUNDAY (20th).—SUNDAY AFTERNOON FREE LECTURES (South-place Institute, South-place, E.C.).—Dr. E. B. Forman: Medical London, with lantern illustrations. (Course of Lectures on Our Cities and Municipalities.)

MONDAY (21st).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. C. Wilkin: Nasal Polypi.

TUESDAY (22nd).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-sq., W.C.).—3.30 P.M. Dr. Taylor: Cerebral and Spinal Paralysis in Children.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. T. D. Savill: Cases of Hemiplegia and the Treatment of the Affection.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Syphilides.—Bethlem Hospital, 2 P.M., Dr. Craig: Puerperal, Lactational, and Climacteric Insanities.

WEDNESDAY (23rd).—HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. S. Martin: Asthma and its Treatment.

LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Infectious Diseases.

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WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Dunn: Examination of the Eye.

THURSDAY (24th).—LONDON POST-GRADUATE COURSE.—Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Mr. J. Croft: Clinical Lecture.
LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.
CHARING-CROSS HOSPITAL.—4 P.M. Dr. Willcocks: Demonstration of Medical Cases. (Post-Graduate Class.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow.

FRIDAY (25th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Erysipelas and Suppuration.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Dunn: Examination of the Eye.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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"DOUBLE PERSONALITY."

UNDER the above heading Dr. William Lee Howard of Baltimore describes in the *Maryland Medical Journal* of Nov. 5th "a psychical condition which dissociates the elements of the mind and then combines them into a distinct separate and strange personality. During this state the individual has no recognition of his normal state. He bears a different name, has another occupation, perhaps resides in a different town from his own, acts rationally, and is fairly successful in his new vocation. He suddenly returns to his primary self, and goes back to home and business." The case was that of Mr. B., a respected business man, married, and the father of three children. His position caused him to travel extensively in America: from the Pacific to the Atlantic oceans, from the Gulf of Mexico to Hudson Bay. About ten years' ago he commenced to go away from home without giving any definite statement of where he was going or when he would return. Upon his return he would not, or could not, give any direct answer as to where he had been. On these occasions he appeared slightly dazed in memory and intellect and his appearance was that of a man who had aged greatly from want of sleep. Two years ago, in the month of October, he disappeared and no trace of him could be found until he returned home on Jan. 14th. A man who knew him in his own city found him a month prior to this date conducting a country cross-roads store on the upper Potomac. He carried on business under the name of Simpson and had been known under this name since he had been in the village. He did not know his former acquaintance, and the repeated mentioning of his true name "Mr. B.," he at first took as a joke, then became indignant and was so positive in stating that he was Simpson, giving his past history, stating that he was from Oregon, and going into full and complete details of his life and business in that State, that the former friend went away fully convinced of his mistaken identity. On Jan. 14th he appeared at his own house to the surprise and joy of his family. He was Mr. B. again, but no question as to his past whereabouts could he answer. Dr. Howard continues: "Appreciating his lapse of memory his wife persuaded him to consult me. In his normal condition I could elicit no information, yet he did his best to aid me. His memory of the last three months was a blank and he was pitiably nervous and worried. Without much difficulty he was hypnotised and through tentative suggestions he gradually veered around to his other personality. He said, when I suggested his name was unknown to me and he must tell me, 'D——n it, you know my name is Simpson; what do you want to bother me about it for?' ..... By this manner of questioning Mr. Simpson I found where the body of Mr. B. had been. The next day I hunted up Mr. Simpson's store, and found, indeed, that such an individual existed in the life of the village. Subsequent investigations cleared the whole matter satisfactorily as far as Mr. Simpson was concerned. ..... This man had passed through all the privations and excitement of the civil war. He received his discharge along with an unstable neurotic temperament, which demonstrated itself in a demand for alcoholic stimulants, which demand merged into the disease dipsomania. ..... His continued and reiterated statement that he came from Oregon can be traced to the fact that shortly after the war he had had some exciting and memory-marking episodes in that then wild and unsettled country."

DISEASED MEAT COOKED PREVIOUSLY TO SALE.

THE *Gazzetta degli Ospedali* of Nov. 3rd states that the municipality of Milan intends to provide an apparatus in which the flesh of diseased animals may be subjected to a steam heat of 115° C. (239° F.) previously to sale. It is considered that in this way wholesome food may be obtained from animals affected with tubercle, foot-and-mouth disease, and pleuro-pneumonia, as well as from those which have died from hæmorrhage or injury. The meat so prepared is as juicy as if cooked by the ordinary domestic methods and is in no way deteriorated as an article of food. Shops will be established for the sale of this meat; the price of which will be about 50 centesimi per kilo (2*d.* a pound); the juices which come from the meat in the process will be sold as soup *(brodo)* at 1½*d.* a pint.

THE CARRIAGE BY SEA OF INFECTIOUS CASES.

To the Editors of THE LANCET.

SIRS,—It has occurred to me that attention should be drawn to the risks incurred by healthy passengers making a long sea voyage. I have just reached South Africa from England. On the way out the next cabin to mine was occupied by a youth who had been suffering from pulmonary phthisis for a year. He depended for ventilation on the air from neighbouring portholes, which passed through a 6 in. opening running round the top of his cabin, which had no port. Unfortunately the sea was rough and my port was closed for 11 days (5 days consecutively once). The ventilation then became reversed, the air from the hatch and skylight passing over the phthisical youth and bringing germs, &c., into the *cul-de-sac* formed by my cabin. Apart from the unpleasantness of hearing him cough, &c., no disinfectants were used for his expectoration. He used the same knives and forks and china and glass as the other passengers, and these were naturally washed up with and dried on the same cloths as the rest. Now tuberculosis is regarded as infectious, is it not time that steamship companies should make some provisions to protect their healthy passengers, though the problem may not be an easy one?

I am, Sirs, yours faithfully,
M. W.

Oct. 24th, 1898.

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AN ACCOUCHEMENT ON THE TOP OF A TRAM CAR.

To the Editors of THE LANCET.

SIRS,—As an illustration of remarkable places to choose for accouchement you will perhaps be interested to know that in my capacity as police surgeon for Bow I was called by the police a short time ago at 9 P.M. to attend a woman who was about to be confined on the top of a tramcar in Bow-road. On getting there shortly after I found the tram run off the metals on to a siding and surrounded by a cordon of police to keep the crowd at a respectful distance. With the assistance of the police matron and a bull's eye lantern everything passed off very satisfactorily, the woman being safely delivered of an infant weighing not less than 8½ lb. They were removed home shortly afterwards on the ambulance and are both at the present moment perfectly well.

I am, Sirs, yours faithfully,
E. A. LIGHTBURNE,
Surgeon, K Division, Metropolitan Police.

Bow-road, E., Nov. 12th, 1898.

THE IMPORTATION OF MICROBES.

ACCORDING to the *Times* the Government of Victoria has taken a very decided line with regard to the importation of microbes. A medical man who recently returned to Melbourne from India, where he had been studying the plague, brought with him a stock of plague bacilli. The authorities of Melbourne strongly objected to the bacilli being imported and asked for their surrender. The medical man is said to have declined to give up the microbes unless compensated to the amount of £300, on which the authorities seized the culture tubes and destroyed them.

A QUESTION.

A, B, and C are practitioners in a country town. All are on the honorary staff of the local cottage hospital. There is a quarrel, a matter connected with the hospital, and B and C *resign*. Thus A is left as the sole honorary surgeon. D now comes on the scene and purchases A's practice and during the introduction by request of the committee assists A to do the work of the hospital. Finally A leaves the town and D is unanimously elected as honorary surgeon to the cottage hospital, which post he fills alone for a time. Then B and C are re-elected as honorary surgeons. D asserts that he is *senior* by priority of election. Is that so?

*** We consider that D is the senior, but under the curious circumstances related he would be well advised not to insist too much on his position.—ED. L.

"VEGETABLES GROWN ON SEWAGE SLUDGE."

"S. K. P." writes to us again upon this subject:—"I thank you for your reply to my question on the above subject in THE LANCET of Nov. 12th, but fear from its tenor that I did not make myself understood. You say, 'the depth at which the sewage sludge is placed (30 in. beneath the surface) is, we should imagine, too great to allow the cabbages to derive much manurial value therefrom, &c.' It appears from this that I conveyed to your mind the impression that there was 30 in. of earth, &c., above the sludge, whereas I intended to explain that the cabbages are planted in earth and dust-bin refuse of the depth of 6 in., beneath which is 30 in. of sludge thus. As this matter is causing a great sensation in the neighbourhood I should be glad to know if this further explanation will at all modify your reply."

*** Under the circumstances detailed it is not likely that the cabbages will be unwholesome. The cabbage is a short-rooted plant and will get most of its nourishment from the top 6 in. rather than from the bottom 30 in.—ED. L.

"SCARLATINIFORM ERUPTION IN INFLUENZA."

To the Editors of THE LANCET.

SIRS,—In reply to the query of "Eruption" in THE LANCET of Nov. 12th as to the appearance of a scarlatiniform rash in influenza let me state that I have noted such an eruption fairly frequently during epidemics of influenza. In my experience it differs from scarlet fever rash in appearing on all parts of the body (which show a rash) simultaneously and with equal distinctness, and in disappearing from all parts simultaneously. The temperature in such cases seldom exceeds 100° or 101° F. Sore-throat and albuminuria are rare in conjunction with the influenzal eruption. Desquamation may occur, but is usually more limited in extent than in scarlet fever and appears not so much in the form of flakes as in the form of fine powder or dust.

I am, Sirs, yours faithfully,
West Hartlepool, Nov. 14th, 1898. W. GRAY, M.D. Edin.

To the Editors of THE LANCET.

SIRS,—With reference to the letter of inquiry in THE LANCET of Nov. 12th from "Eruption" on the above subject, I beg to inform him that I have lately had a number of such cases as he describes. In some instances there is practically no difference between the character of the eruption and that of scarlet fever, but in the majority of cases it is somewhat of a mottled character. There is, however, never the strawberry tongue of scarlet fever, the throat is not so much affected, and the fever is of very short duration. Where the eruption is well marked desquamation often occurs. I have considered these cases to be a mixture of influenza and rubeola.

I am, Sirs, yours faithfully,
Brentwood, Nov. 14th, 1898. J. R. WHITE, M.B. T.C.D.

M.D.—Several high-class medical journals are published weekly in Germany and Austria. In Berlin are the *Deutsche Medicinische Wochenschrift* and the *Berliner Klinische Wochenschrift*, each of 12 leaves—i.e., 24 pages—and costing 6 marks per quarter; in Munich there is the *Münchener Medicinische Wochenschrift*; and in Vienna there is the *Wiener Medicinische Wochenschrift*, sent post free out of Austria for 24 marks per annum. All these are printed in Roman characters. The German dictionary published by Cassell and Co. will serve every ordinary purpose, but for reading medical works a dictionary of medical terms is almost essential. The "German-English Medical Thesaurus," published in 1895 by the author, the Rev. Henry Losch, M.D., of 4109, Pine-street, Philadelphia, U.S.A., is copious and good in the anatomical and pathological part. (Pp. 323. Price $2.50.) Sudthausen's "Sprachführer für die Aerztliche und Pharmaceutische Praxis" (two little volumes, price 4.80 marks; Leipzig: Eduard Besold, 1896) has fairly good lists of surgical requisites and pharmaceutical appliances. There are one or two more works of the same kind published in Germany. The German columns in the "Nomenclature of Diseases" may also be consulted with advantage.

E. H. S.—Medical Nursing: Notes of Lectures given to the Probationers at the London Hospital, by the late James Anderson, M.D., F.R.C.P. (London: H. K. Lewis. 1894.); Lectures on Medicine to Nurses, by Herbert Cuff, M.D. Lond., F.R.C.S. (London: J. & A. Churchill. 1896.)

Persevere.—To adopt the style of "Colonel" under the circumstances mentioned by our correspondent would not be in strict accord with any of the Royal Warrants. The titles applying to the active service have not, as yet, been conferred upon retired officers unless those officers are employed.

L.R.C.P., M.R.C.S.—Such a medical man has passed an examination in surgery and is admitted to the Medical Register as a fully qualified man on terms of equality with the rest of the profession. Under these circumstances we do not think the description need be cavilled at.

Senex.—The course in both cases is a matter of taste. There is no prescribed ritual. Different localities have different customs and it is well for the new-comer to consult an old inhabitant as to his procedure.

A Provincial Surgeon.—The letter is a little long for our columns and is, moreover, written on both sides of the paper, which gives great trouble to the printers. Also such a letter should be signed by its author.

F. C. J.—We do not give such advice. The questions can be answered by the medical adviser, to whom we shall be happy to give any assistance he may need.

Subscriber.—As our correspondent puts the case we do not see anything unprofessional or ungentlemanly in the conduct of the resident medical man.

Rural.—1. To make such calls is unusual and unnecessary. 2. It would be much preferable to give the address of an agent.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 17th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Nov. 11	30·03	S.E.	...	65	57	49	49	49	Foggy
,, 12	29·81	S.E.	...	62	56	47	48	48	Foggy
,, 13	29·80	S.W.	0·01	74	56	48	49	50	Fine
,, 14	30·27	S.W.	...	63	54	42	42	42	Foggy
,, 15	30·29	S.W.	0·01	62	55	42	48	49	Foggy
,, 16	30·20	S.W.	...	64	59	49	54	55	Overcast
,, 17	30·26	S.	...	57	57	55	55	56	Dense Fog

During the week marked copies of the following newspapers have been received: *Western Morning News, Glasgow Herald, Ayr Observer, East Essex and Halstead Times, Accrington Observer, Leicester Post, Pioneer Mail, Times of India, Warrington Guardian, Architect, Builder, Cambridge Express, Yorkshire Post, Le Temps (Paris), Bedford Standard, Citizen, Scotsman, Bristol Mercury, Bradford Observer, Eastern Morning News, Birmingham Mail, Bournemouth Guardian, Liverpool Daily Post, Temperance Chronicle, North British Daily Mail, Manchester Guardian, Midland Evening News, Brighton Gazette, Weekly Times and Echo, Scarborough Mercury, Leeds Mercury, Herts Advertiser, Daily News, Sussex Daily News, Telegraph, Electricity, Sanitary Record, Hertfordshire Mercury, Reading Mercury, Local Government Chronicle, City Press, Surrey Advertiser, Local Government Journal, Sheffield Daily Telegraph, Guernsey Star, Western Mail, Sunday Chronicle (Manchester), Fife Herald, Bury Free Press, Mining Journal, Spalding Guardian, Essex Times, Wigan Observer, &c., &c.*

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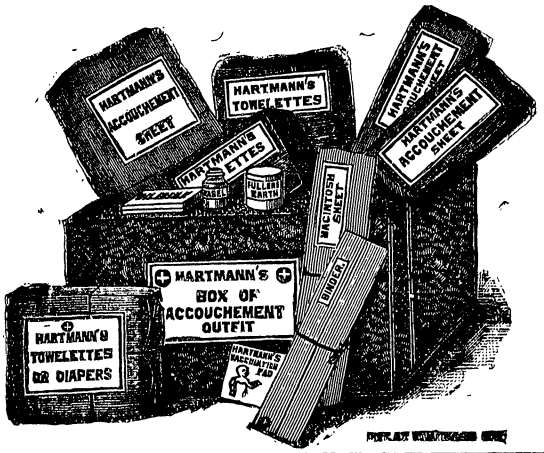
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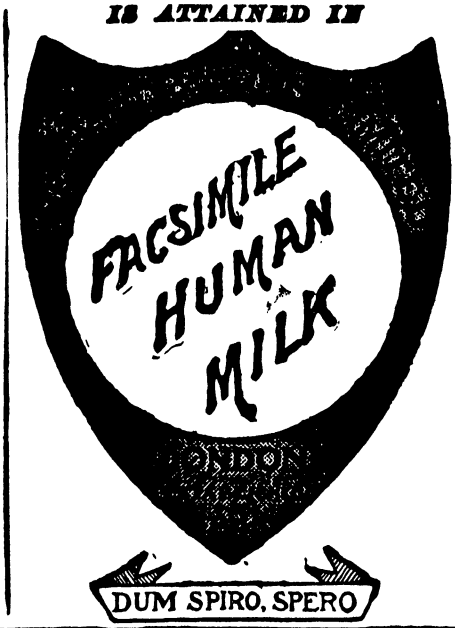
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An Address

ON

THE DEVELOPMENT OF LONDON HOSPITALS DURING THE NINETEENTH CENTURY.

Delivered at the Portman Rooms on Nov. 4th, 1898,

BY CLINTON T. DENT, F.R.C.S. ENG.,
SURGEON TO ST. GEORGE'S HOSPITAL.

THREE EPOCHS OF DEVELOPMENT.

THE development of London hospitals, the changes which have been brought about in their working, their administration, and to some extent their aims, and the improvements which they have undergone have shown, as might be expected, a fairly constant rate of progress during the century; but there have been certainly two, and possibly three, epochs when the development has been very marked. As instances of this I may cite the early part of this century, when efforts began to be directed to the improvement of sanitation; to the years following the Crimean War, when the change of ideas with regard to hospital construction, ventilation, &c., was not less remarkable than the simultaneous development of the art of nursing; and, lastly, the period when the practical application of the science of biology and the introduction of the antiseptic system began to make themselves felt. It is not my intention to dwell too long on the past. Antiquarian research is profoundly attractive to the searcher, but the unearthed results lose much of their interest when set out ticketed and captive on museum shelves. Yet unless we can form some picture of the hospital of 100 years ago we have no material for comparison.

I need only give an outline sketch of London hospitals as they were at the close of the last century and I will limit myself to the principal large general hospitals of London. With lunatic asylums, even when called hospitals, I am not now concerned. I have collected information about some seven of the older London hospitals, and in what I have to say about them at the close of the last and the beginning of the present century I shall seek rather to draw a general picture — every detail of which is to the best of my knowledge accurate; but I shall not endeavour to reproduce, as it were, a photograph of any one in particular. Nor need I specify them. Each hospital had its own individual features then as now (and it is, in passing, distinctly to the interests of the public that such should be the case), but the general standard of the leading hospitals was probably much the same in all. Nor shall I make allusion to the numerous, and often unnecessary, small hospitals which then, it may be, as now, existed. I may ignore institutions run for the gratification of a particular fad or the advertisement of a particular faddist, or worked ostensibly for the benefit of the deserving poor, the promoter being sometimes the poor person whose case, in his own estimation, was the most deserving. Probably institutions of the kind were always to be found, but I am not now concerned with hospitals which were only such in name and not in real object. They may have filled their temporary purposes and vanished. It matters not. If they have disappeared let them have but the epitaph which the poet suggested for himself—

> "Unknown, unhonoured, let them die,
> And let no stone mark where they lie!"

CONSTRUCTION AND FITTINGS OF A HOSPITAL 100 YEARS AGO.

In construction the hospital of 100 years ago was of course inferior, as we should judge, to the standard of to-day. Yet the buildings were, as a rule, planned according to the most enlightened views of the moment. In one or two instances, however, an attempt was made to convert buildings designed as houses into hospitals, an experiment which is always unsatisfactory and invariably expensive. The ground plan was usually of the type still frequently adopted. The building was either enclosed like many of the colleges at our universities, or laid out in the shape of a capital letter E or T or H. The separate block system—excellent where there is much space available and a large income—was an innovation of recent date. The windows would seem small to us now, but compared with the prevailing architecture appeared unusually numerous and large. Much, I may mention at once, of my information is derived from the writings of John Howard. The excellence of his philanthropic work with regard to prisons is well known. But his work in connexion with hospitals is quite as good and shows him equally to be many years in advance of his time as a sanitarian. And he set down in writing only what he saw. Within the building the first thing that would have struck the modern beholder would probably have been the rough wooden passages, landings, and staircases, for we live now, architecturally, in an iron and stone age. John Howard in 1789 notes that the staircases in almost all our hospitals are of wood and adds: "The stone staircases in hospitals abroad are more proper." The corridors were often—in fact, usually—narrow and dark. At one large hospital it was noted that they were 8 ft. wide. The windows were sometimes on both sides of the ward, frequently only in one, and in the latter case there was not always even corridor ventilation. The air in much of the ward was therefore stagnant. The wards themselves were commonly poorly lighted and decidedly crowded. The male and female wards were often on the same side of the house. Medical and surgical patients were in some instances mixed in the same ward. As a rule the wards were very low, in one hospital being only 9½ ft. in height; 20 ft. was an average width. Sometimes, however, they were lofty, perhaps 12 ft. or 14 ft. in height. The walls were whitewashed, when they *were* whitewashed, for often they appear to have been exceedingly in want of that process. The floors were often sanded. In a somewhat rare print representing a ward in one large general hospital eleven beds are shown arranged along the wall and five windows are shown. Some of the wards in this hospital contained thirty beds. In the general wards there appears to have been a fair amount of ventilation and the windows were generally kept open, especially on the women's side. Frequently, however, the lower sashes of the windows alone were constructed to open, and sometimes the upper sashes were so cumbersome and heavy that they could not be moved without trouble, so that it is pretty safe to assume that they were more often closed than open. In one hospital the windows of one of the men's wards situated on the ground floor opened inconveniently low down close to a main thoroughfare. It was brought to the knowledge of the governors of this hospital that the friends of patients were in the habit of passing in victuals and drink from the road into the ward. With a laudable desire to put an end to this dangerous practice the governors took the practical step of ordering the lower sashes to be fastened down. They thus substituted for the dangers of insobriety the perils of asphyxia, for it is not very clear how, after the order was executed, any ventilation at all was provided. But at one hospital which was rebuilding gradually at the end of the last century the new wards were "very large and lofty" and free ventilation was secured. Moreover, ventilating openings were provided to communicate with the chimney—a method which, re-invented within the last few years, has now again fallen into disfavour. The bedsteads were usually wooden and almost invariably provided with testers, that is to say, they were fourposters with a square canopy on the top, and in addition generally pretty closely curtained up. Sometimes, as one print shows, they were built right along the wall, forming a series of boxes like cubicles. It could have been no easy matter, therefore, to get to both sides of the bed and in order to reach the windows it was necessary apparently to climb over the beds. The mattresses were usually of straw. John Howard noted with approval that in some cases hair mattresses had been recently introduced. The beds were so arranged that the occupants lay parallel to the wall, and in the print which I have mentioned no space is shown between the beds, perhaps to economise the woodwork. The defects of these wooden bedsteads did not pass without comment. Thus, Samuel Sharp, a surgeon to Guy's Hospital, in the course of a journey to Italy about 1765, noticed with approval in Florence an iron-framed bedstead, and he mentions that attempts to make similar bedsteads in England had failed. The ingenuity of the ironworkers improved or prejudice was slowly overcome, for some forty years later iron bedsteads began to be introduced. Sharp makes an observation on another subject which, though unpleasant, we cannot pass by

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and may dismiss by merely quoting what he says. Speaking approvingly of the iron bedstead he argues for its adoption on another ground and tells us (I quote his words), "that in the hospitals at London bugs are frequently a greater evil to the patient than the malady for which he seeks a hospital, and could I have interest enough with the governors to bring about an imitation of this frame I should be exceedingly rejoiced in the comfort it would afford to so many thousands of miserable wretches as are tormented sometimes even to death by these noxious vermin." This statement is strong, but there is abundant evidence to show that it is little exaggerated.

SPECIAL WARDS.

In all hospitals of that date, and for long after, there existed what were known as "foul" wards. The object of these wards was the segregation of particular classes of diseases and the arrangement was not enforced solely on medical grounds. The epithet applied really to the disorders of the patients, but the common supposition that it referred to the ward was not without justification, for in these rooms the ventilation seems to have been more defective than elsewhere. Thus Howard notes when on a visit to one large hospital that in none of the four foul wards for men was a single window open, and at another, in which the other wards are described as fresh and clean: "There were three foul wards in which were 53 men and 27 women and there was no window open."

The extent to which, in a general hospital, patients suffering from different disorders should be treated in a common ward and the extent to which they should be classified according to their complaints and treated in special wards is a question of the day. At present there is a strong tendency to classify; this is the outcome of the modern craze for specialism in medicine. For instance, erysipelas wards—perilously akin to the old "foul" wards—were common a very few years ago. But now that disorder happily occurs rarely and is met by isolation rooms. But the advisability of treating typhoid fever in general wards is a question of the moment, while it is possible that our paulo-post-future successors will marvel at the principles we adopt now in dealing with that scourge of civilised communities—tubercle.

VENTILATION AND SANITATION.

To return from this digression. It was owing, I think, in great measure to John Howard's crusade that improvements in structure, ventilation, and cleanliness in hospitals were gradually effected. The managing authorities were at all times keenly alive to the necessity of providing air, light, and improved sanitation, but were hampered constantly by want of funds.

With regard to the underground sanitary system there is not much to be said—for somewhat obvious reasons. A century ago people if not tolerant of nuisances crying aloud in their midst were at any rate extremely slow to remedy or do away with them. It is not much more than a hundred years ago that the pestilential Fleet Ditch was finally arched over and ceased at length, in Pope's words, to "roll its large tribute of dead dogs to Thames" under the very eyes—and noses—of Londoners. We learn of other imperfections in hospitals from John Howard's observations. He remarks that the water-supply was not particularly abundant and notes in 1790 with much admiration that one hospital then in process of rebuilding had a free supply of water to its lavatories, this arrangement being evidently a rare exception and innovation. There was no great supply of baths. In one hospital Howard notes that in a dirty room in the cellar was a hot and cold bath, which seemed to be seldom used. In another hospital with over 400 patients there was a large cold bath and a room adjoining for a warm bath. In another there were excellent baths in clean and neat rooms, while yet another had a good cold bath, but not used. The conditions, then, to modern ideas seem unfavourable enough, but it was in institutions such as these, assisted by the very imperfectly skilled but often most devoted nursing, that men like John Hunter, Astley Cooper, Benjamin Brodie, and others worked, and not only worked but succeeded.

I may seem to have drawn an unduly dark picture of the old hospitals in the vital matters of ventilation and sanitation. That they were not perfect from the sanitary point of view then must be admitted. I trust that we shall not hinder progress by assuming that they are perfect now. But beyond all doubt hospitals then, as now, were infinitely in advance of other institutions and dwelling houses. Let me quote a passage from a recently published book in support of my assertion. The author of "Collections and Recollections," speaking of the development of humanitarianism, points out that this was evidenced to the eye by the changes in domestic architecture. He writes: "There was less pretension in exteriors and elevations, but more regard to convenience and propriety within. The space was not all sacrificed to reception-rooms. Bedrooms were multiplied and enlarged, and fireplaces were introduced into every room, transforming the arctic 'powdering-closet' into a habitable dressing-room. The diminution of the window tax made light and ventilation possible. Personal cleanliness became fashionable and the means of obtaining it were cultivated. The whole art or science of domestic sanitation—rudimentary enough in its beginnings—belongs to this century. The system which went before it was too primitively abominable to bear elaborate description. Sir Robert Rawlinson, the sanitary expert who was called in to inspect Windsor Castle after the Prince Consort's death (1861), reported that within the Queen's reign 'cesspools full of putrid refuse and drains of the worst description existed beneath the basements. ..... Twenty of these cesspools were removed from the upper ward and twenty-eight from the middle and lower wards. ..... Means of ventilation by windows in Windsor Castle were very defective. Even in Royal apartments the upper portions of the windows were fixed. Lower casements alone could be opened, so that by far the largest amount of air spaces in the rooms contained vitiated air, comparatively stagnant.'" Public opinion in these matters pursued its usual course. People for long—for the best part of a century, in fact—remained indifferent even where they felt something was wrong. The voices of the preachers of science were heard crying persistently that the "sanity of sanities was sanitation," but they were disregarded. Then the usual thing happened; of a sudden public opinion exploded and people said that these defects were abominable, disgraceful, and scandalous, never ought to have been, and should instantly be remedied. There was a mighty stir and the movement affected hospitals also, but these institutions, already far in advance, had no difficulty in maintaining their position and still leading the way. The old superstition—it is no more—that hospital air is necessarily foul is pretty well exploded now. You have but to look to results to recognise that from the first, as now, it was a libel. Still, the improvement in sanitation constitutes one of the greatest features of hospital development during the century.

RECENT IMPROVEMENT IN HOSPITAL MANAGEMENT.

The second great impulse followed shortly after the Crimean War. Public opinion had been roused by the horrors incidental to crowded hospitals. The result in home hospitals was a tremendous outcry for space and light in wards. Cubic capacity was everything for the time till really it seemed as if an ideal type of hospital building would have been a kind of Crystal Palace. Opinion has since toned down on these points and now the tendency is rather to look upon area of floor space as a most important point. A still further and great impulse was given to details of hospital construction within quite recent years by the introduction of the antiseptic system, perhaps the most beneficial and far-reaching discovery of the present century. Like many another great discovery—like most, in fact—others had had a vague inkling of it. A study of history always reveals men in advance of their time, whose minds seem almost inspired with prophetic gifts—men, for instance, like Dr. William Budd of Bristol or Edward Jenner, of the colossal value of whose discovery of vaccination the "conscientious objector" will in a few years convince all men. But the whole credit of the antiseptic system is, of course, to be assigned to the man—Lord Lister—who, focussing the work of others and supplementing it by his own, forced mankind to recognise its full value.

On many details which might be of interest I have no time to touch. In every department progress, though often slow, was decided. The domestic administration of hospitals reflected the customs of the time. Thus, in old days the diet of the patients was much the same as now. The allowance of meat was large; cheese was commonly included. In some hospitals, Howard notes, the allowance of vegetables was very scanty. As might be expected, stimulants were given rather freely. The quantity of beer allowed was

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curiously large, three pints being almost the usual quantity in summer and two pints in winter. The beer is usually described as "small," and no doubt justified its title fully. There was constant trouble with regard to the illicit introduction of stimulants, and the resident staff, nurses, and others in the hospitals of former days seemed to require a good deal to sustain them in their arduous duties. Howard speaks with not unmerited disapproval of the common practice that obtained of bringing great quantities of beer into hospitals. Moreover, at some, as he ascertained, the patients could easily get out, there being no proper attention to the gate, so that "the adjoining ginshop often prevented the efficacy of medicine and diet." It was no uncommon thing—it was, in fact, almost a common practice—for the potman to go his rounds of the ward like a medical officer might in the present day.

NURSING.

To the subject of nursing in hospitals I can only briefly allude. Nursing generally has attracted so much attention of late that some may regard it as almost a new adjunct to hospital treatment. This is, however, far from being the case. Sir James Paget, speaking from hospital experience of about the first fifty years of the Queen's reign, remarks that "in the nursing department the happiest changes of all have come about." True enough; but the passage signifies development, not a new departure. It must be remembered that the, so to speak, original nurses were members of religious orders. I date back to the time of St. Vincent de Paule and the Foundation of the "Gray Sisters." These women were bound by vows and were prompted by motives of mortification and penance to engage in work at once philanthropic and a little degrading. But without arguing as to motives they were unquestionably animated by a very high ideal; and I could sometimes wish that this same spirit were more common than it is now. Gradually these nursing sisters departed from their fine traditions. There is overwhelming evidence to show that the original nursing sisterhoods in their zeal were too often inclined to care for more than the bodily welfare of their patients. And so it came to pass that the nursing of the sisterhoods fell into disrepute. They were succeeded by an inferior class. At the beginning and even in the middle of this century nursing was still considered a menial occupation. Still, in every hospital many high-class nurses were to be found devoted to their work and fully abreast of the knowledge of their time. They had not the scientific acquirements of the nurse of to-day, neither had the sanitarian or the medical man. A great change during the century has been the recognition of nursing as a profession, and a fine one; the training and education of nurses as nurses from the beginning of their career, their relegation from the outset to true nursing duties and their separation from the ranks of ward maids, scullery maids, and scrubbers. It is in the all-round standard of hospital nursing that the change is so marked and not so much in the individual excellence of matrons and sisters. As medical knowledge advances scientific nursing should advance too, and I trust that each will develop on its own true lines.

THE DISCIPLINE OF PATIENTS.

The general tone and discipline of hospitals are matters I must allude to, as they bear on the conclusions towards which I have been working all along. In the early part—say, the first quarter—of the century discipline was evidently lax in some respects, but it was unduly stringent in others. A hospital a hundred years ago would scarcely have dared to enforce a curious old ordinance which I find once existed. The porter, whose duty was also to see that the male patients said the appointed prayers of this hospital, had the following instruction: "And whatsoever poor person shall be found a swearer or an unreverent user of his mouth towards God or His holy name, or a contemner of the Matron, or other officer of this house, or that shall refuse to go to bed at the lawfull houres before appointed, him shall ye punish (after once warning given) in the stocks." But though such forcible methods of ensuring discipline would have been out of the question a century ago the spirit which dictated them still prevailed. Hospital patients when able were almost universally required to assist in the work. This is the case no longer. The inmates formerly were kept tightly in hand and never allowed to forget for a moment that they were the recipients of charity, that hospital relief was a favour rendered possible by the benevolence of others, and that for benefits gained they were indebted not only to the medical man who treated them, the sister who nursed them, but also, and chiefly, to the managing authorities representing the subscribers who provided and maintained the institution. I will not trace the change. I do not use here the word improvement. Just consider hospitals as you see them to-day. The contrast is astounding. And those of you who know hospitals and have studied their history will agree with me that no feature in hospital development during the century is so remarkable as the change of relation between the hospital and the public and the fundamentally different view-point from which the public and the hospital patient class have come to regard the hospitals. Many causes have contributed to this—all, in fact, which I have hitherto dealt with.

THE RISE OF HOSPITAL ABUSE.

The old and more stringent laws of discipline were only possible when the hospital patient class was well defined and limited to the very poor. There is good reason to suppose that hospitals in the early part of this century were, on the whole, utilised by the class for whom they were originally intended—that is, the poor and the very poor. There are not wanting indications that the managing authorities were always quite alive to the possibility of abuse. Thus in an old ordinance printed in 1652 of one hospital it is laid down as an order of the hospital to the "chirurgians" "that we utterly forbid and command you that ye by no coloure, pester, or burden this house with any sick or diseased person, for the curing of which person ye before have received a sum or sums of money, upon paine to be dismissed this house." The best guarantee, however, that the comparatively well-to-do did not seek relief in hospitals lay in the fact that these institutions not being much known were rather held in dread. We are not concerned with the kind of ailments which enabled a poor person to gain admission to a hospital. For the most part they must have been much the same as they are now. One London hospital reserved a certain number of beds—14 out of 71—for incurable cases. In Bowles's print of Guy's Hospital, dated 1725, a scroll across the sky bears the inscription "Guy's Hospital for Incurables"; but Guy in his will made it abundantly plain that he desired the benefits of the institution to be given to those whose ailments admitted either of relief or cure, and it does not appear that at any time cases such as we should now class as incurable were admitted. They had to seek relief, as is very right and proper, from the parish or the State and were not considered fit objects for private benevolence. In the same way in another of the old ordinances of St. Bartholomew's Hospital the "chirurgians" were directed to "signify to the almoners or hospitalers their judgment of the diseased person brought before them and to signify without all affection whether he or she be curable or not, to the intent there may be none admitted into this house that shall be incurable to the great let and hindrance of the curing and helping of many another, nay, none rejected and put back that are curable to the great slander of this house and the displeasure of God." A previous passage refers to the poor of this hospital and the "chirurgians" were directed "to show equal attention to the poorest, destitute of all friends and succours, setting aside all favour, affection, gain, or lucre." The letter of such ordinances might read differently in these days but the spirit has prevailed and should prevail. At most hospitals the patients made payment, that is, the part payment system was in early days enforced. Some, however, from the very first accepted no sort or kind of fee, reward, gratuity, or payment, and to their great credit refused to alter their rules even when in very low water financially, preferring to close some of their wards rather than abandon any of their principles. At one hospital the "parish poor and soldiers" had to pay 4*d.* per day for their subsistence. At another fees were taken for the admission of patients. For clean patients, 2*s.*—viz., 1*s.* for the sister, 6*d.* for the nurse, and 6*d.* for the beadle. For foul patients, £1 5*s.* 8*d.*—that is to say, 5*s.* for flannels, 18*s.* 8*d.* for two months' subsistence at 4*d.* per day, and 2*s.* for "ward dues." At another hospital every clean patient had to pay 3*s.* 6*d.* on admission and a "foul" patient 10*s.* 6*d.*, besides 4*d.* a day. These latter patients had also to pay the nurses for washing their linen. Howard notes that at another hospital he saw a woman bring a child and "with tears leave the fee of 2*s.* 9*d.* for the nurse and 6*d.* for the steward." The foul patients

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for this hospital paid 7s. This part-pay system was gradually dropped entirely, and the methods which some hospitals adopted from the outset of exacting no payment whatever and of holding that anybody capable of paying was thereby disqualified for admission became general. Lack of funds, however, within recent times has again caused the payment system to come into vogue to a limited extent, though on a different kind of footing. But it shows happily signs now of soon coming to an end in all general hospitals. Of course, many cases that would, a hundred or fifty years ago, have been legitimately classed as "incurable" would now no longer fall into that category, for with the advance of medicine and surgery many who would previously have been deemed hopeless can be now, if not set on the high road to recovery, at least materially relieved. This diminution of the cases formerly deemed incurable has of course largely added to the number of eligible cases, and the fact may as well be faced at once that the number is likely to increase. It would be true and easy of proof to contend that the beneficent work of hospitals has enormously increased during the century, and that they are highly efficient now; but this would be a cheap boast. We may hug ourselves with the comfortable conviction that things now are better than they were formerly. A certain Pharisee adopted this attitude of mind and was not highly commended for so doing. It is as unquestionable that improvement and progress have been made as it is certain that the final point has not been nearly reached and that a future generation will far surpass the standard of to-day. The point I wish to repeat and emphasise is that the improvement has brought reputation to hospitals which formerly they lacked. If people did not criticise hospitals so much in old days it was only because they paid less attention to them. Hospital patients in very early times were almost cut off from mankind, as if they were lepers, and, indeed, mediæval hospitals were as much founded for the protection of the sound as for the relief of the sick. They were, in fact, regarded much as we regard hospitals for infectious diseases now. Gradually and during the present century all this has altered. Hospitals have become better known, and the public generally, as well as the beneficent and charitable, who support them have begun to take an interest in their medical and social aspect. People became aware that patients in hospitals were not all suffering from highly contagious and infectious disorders, so that it was positively dangerous to go into such institutions. Such ideas, of course, only arose from ignorance of these places, but they were none the less widely entertained. The establishment of infectious hospitals and the better understanding of infectious disorders again improved vastly the general reputation of hospitals. But it all comes in short to this—the better you build, ventilate, and drain, the better you officer and nurse, the more you modify regulations in the direction of placing the patient who pays nothing and costs much in the same position as the patient who pays more than he costs—the more you pursue these lines the more you drive the benevolence of the supporters into the background from the hospital patient's point of view and the more you encourage the feeling of prescriptive right to hospital treatment. And from these causes, too, it has gradually come about, as I have been trying throughout to indicate, that during the century hospitals, whether founded and supported by the voluntary subscriptions of the charitably disposed or by the munificent endowment of private individuals, have become public institutions. I think this fact is too apt to be overlooked. I offer no opinion as to whether this state of things is matter for approval or regret. I only desire to draw your attention to matters as they are.

PROPOSALS FOR HOSPITAL REFORM.

The increased reputation of, or, if you prefer the phrase, the increased interest taken in, hospitals gradually brought into prominence the alleged existence of evils, rather vaguely designated under the generic title of "hospital abuse," that it is stated have grown, are growing, and ought to be diminished. The results of the inquiry of the Select Committee of the House of Lords in 1892 are probably fresh in your minds. The practical conclusion set forth in that most admirable though almost too impartial report amounts broadly to an admission that some "abuses" did exist, but to a far less extent than had been alleged. Recently there has been much talk of hospital reform, though hitherto very little action. Many proposals have been put forward for modifying and altering the work and the administration of hospitals. Some of these are quite outside my scope and I can only just mention them. Of one you have already heard here—the proposal for a Central Hospital Board. The idea is a good one, but there are two great difficulties to be overcome before it can be called into existence. One of these difficulties is the representation, and the second is that the board, however well constituted, could do little effective work unless it had the command of adequate funds. Another proposal of a much more sweeping character is to nationalise or municipalise hospitals, throw their expenses, that is to say, on the taxpayers or the ratepayers. This is a subject not for the end of one lecture but for a course of several lectures. The change may come, but it seems as yet happily far off, and when I point out to you that if the rates or the State take over hospitals they must perforce take over medical education also you may recognise that the question is not to be approached without due consideration. Possibly the first step may be to recognise that hospitals have gradually become public institutions. The granting of subsidies from the State is a method which finds little favour in this country. And the system which obtains in France of recognising particular institutions as of "public utility" is not adopted. The position of our hospitals really is that they are "recognised as of public utility" and have to bear the responsibility attached to that position, but that they do not get the consequent grant. The much-needed subsidy has again to be supplied by individual effort and by charitable appeals. The Hospital Sunday Fund and the Prince of Wales's Fund are attempts to do what some think the State should do, and not a few think the State will have to do before a great many years. The present subsidising bodies exercise only a very limited control. A State subsidy would mean some degree of State control, though possibly leaving intact to a great extent the individuality of the different hospitals. On this ground the Select Committee did not report in favour of the plan. Through the State alone I believe will it be found possible to institute and maintain a really efficient Central Hospital Board with sufficient power to exercise the necessary control and sufficient permanence to ensure good working. At the same time, let me express my conviction again that I believe, as strongly as I hope, that such solution of the difficulty is yet far distant. I only hope so, for as far as I have studied the question I feel assured that State or rate hospitals would be less efficient than the present institutions and would cost from three to five times as much. The day may come for this change, but when it does it will not be for the good of the poor. It will diminish the efficiency of hospitals, damage seriously medical education, and benefit only the hospital medical staff who will flatly refuse to work any longer without adequate payment.

THE OUT-PATIENT QUESTION.

I may only touch on one other subject of hospital reform—namely, out-patients. Let me state at once my own conviction that an out-patient department at general hospitals is essential in the interests of the poor and in the interests of medical education. Now it must be borne in mind that the out-patient system has grown up during the present century. At my own hospital—St. George's—they seem to have begun as we know them now about sixty years ago. The assistant physician and assistant surgeon of to-day are mainly concerned with out-patients. But this was not the case a hundred years ago. At St. George's Hospital we had no assistant physician till 1830, and the assistant surgeons were really appointed as assistants to the surgeons when the latter applied for such help. Patients who had been in the hospital often attended for a time after their discharge, but such were obviously on a wholly different footing. Mr. Loch, who has inquired closely into this point, finds the first mention of out-patients in 1564 at St. Bartholomew's Hospital. The physicians then had 8 under their care. In 1749—nearly 200 years later—the number had increased to 200. I believe that these were not out-patients in the modern sense but principally in-patients who had been discharged and whose progress was being watched and to whom some treatment was allowed.

Now there is no doubt at all that the number of out-patients at hospitals has increased very largely of late. Under the heading of "out-patients" are generally included in statistical returns what are known as casualties, and it is especially in the list of casualties that the numbers have swollen. Thus I find by a published return at one hospital

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that the number of out-patients is almost exactly ten times as great as it was sixty years previously. It is stated that the number of patients properly qualified for hospital relief is not increased in anything like the same proportion, and that many must therefore be seen at hospitals who, according to the original intentions of the founders, would have been deemed ineligible. It is asserted, too, that this relief is almost indiscriminate and that the ease with which a person can obtain gratuitous treatment with little or no inquiry has the twofold effect of pauperising the applicants and depriving the practitioner of his means of livelihood. As to the extent of this "abuse" I will only say this—that I am as convinced that some exists as I am certain that its amount is greatly exaggerated. I have endeavoured to suggest that the increased efficiency and the improved repute of hospitals accounts for the increase of the work they try to achieve. While this is matter for congratulation we must at the same time face the altered condition of affairs. If any "abuse" at all exists it ought to be checked, and even if there is no abuse preventive measures to guard against its occurrence are none the less desirable in the interests of the hospitals, of the public, and of a large, hard-working, and most deserving body of men whose cry is bitter and not without justification—I refer to the general practitioners whose work lies among the poor.

Limitation of the number of out-patients is a reform of a much larger character than people who are not conversant with hospital statistics might suppose. The system of limitation has stood well the test of experience. If generally adopted by London hospitals the beneficial effect would be marked and far-reaching. There are signs that the principle of limitation is becoming more widely accepted, and I have little doubt that if a Central Hospital Board could be constituted in which all the leading hospitals were represented the question would be one of the first to be discussed and probably settled. The individuality of different hospitals is a great advantage, but this need not be carried to the length of preventing joint action altogether in a matter of public importance.

In Conclusion.

Of other minor "reforms" which have been recently advocated I have left no time to speak. Some interesting suggestions have been put forward in a scheme of the Belgrave Hospital for Children, recently published and commented on in THE LANCET of April 30th, 1898. The principle underlying many of these proposals is the recognition of the general practitioner as one whose interests may be affected prejudicially by hospitals and whose claims to consideration are therefore admitted. The scheme is novel and as it is meeting with support more is likely to be heard of it.

I have alluded to many changes, but in one all-important respect there is little or none to record. All the hospitals which I have had in mind were founded on benevolent, judicious, and enlightened general principles, and these, crystallising gradually into traditions, have been faithfully carried out by those responsible for their management and government.

BRIGHTON AND SUSSEX THROAT AND EAR HOSPITAL.—The new building in Church-street, Queen's-road, Brighton, will be publicly opened by the Duke of Norfolk on Tuesday, Nov. 29th, at 12 o'clock. The building, which has been erected at a cost of £4600, will accommodate 20 in-patients, besides having a convenient out-patient department.

THE PLAGUE.—The latest telegraphic intelligence from India is not by any means satisfactory. The epidemic continues to prevail in Bombay city and district, at Karachi, and at Bangalore. Six districts of the Madras Presidency are also infected as well as some other stations. The Government of India have asked for more medical aid to be sent out for plague duty in the Madras Presidency.—— News has been received from St. Petersburg of a very severe outbreak of plague at the village of Kischlah, in Central Asia; out of a population of 350 there have been 225 deaths. The Duke of Oldenburg, president of the Government Commission which has been appointed by the Emperor to devise means for arresting the propagation of the plague, was expected at Samarkand with eighteen doctors and officers of health and fifteen Sisters of Charity, as well as four cooks. It will be the first time that a member of the Imperial family has visited Turkestan.

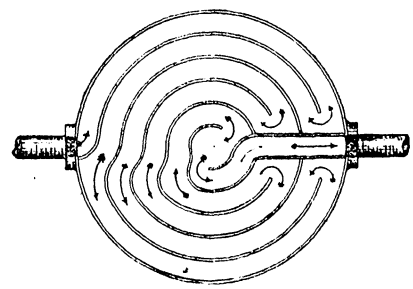
ON THE TREATMENT OF NEURALGIA AND RHEUMATISM BY CURRENTS OF HOT AIR, WITH SOME ACCOUNT OF THE APPARATUS EMPLOYED.

BY WILLIAM TAYLOR, M.D., F.R.C.P. EDIN.

ONE of the most obstinate cases of rheumatism I ever had to treat was contracted by a patient whose writing-table was in close proximity to a window in his counting-house. There he sat and suffered without ever suspecting that a slight draught from that window was the immediate cause of his trouble. It did not create that trouble, for its foundation was in his rheumatic constitution, and the keenness with which he entered into his business affairs made him forgetful of cold feet and a certain chilliness of the arm and knee nearest the window. It was only the consequent illness that awakened his recollection. This is but one example of what must meet the experience of every member of our profession from day to day, and the very mention of it must recall numerous instances of less obstinate but more painful affections, classed under the general term of neuralgia, which owe their existence to an equally slight and far more transient exposure. A consideration of such cases and their apparent causation suggested to me that the application of a current of hot or warm air might perhaps have the opposite effect to that which I believed to be produced by a current of cold air. The difficulty which met me and which I set myself to solve was how to obtain such a current. I found that air, although easily warmed, is very rapidly cooled, so that it cannot be carried far from the source of its heat, that the degree of temperature is difficult to regulate so as to keep it within extremes, and that to confine its action within definite limits so as to act on and not beyond a prescribed area is no easy task.

My first device consisted of a flattened coil of brass tubing bound together and placed over the flame of a Swedish "Primus" lamp. Through this coil by means of bellows a current of air was forced which became heated in transit and emerged hot at the free end. The tubing was difficult to coil and the process employed was tedious and expensive. It was superseded by a hollow casting made from a design suggested by the plan of the "walls of Troy" (Fig. 1). It

FIG. 1.



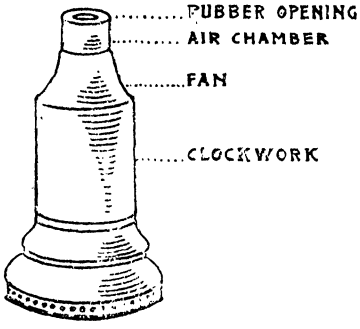
is circular in shape and the interior is subdivided into a tortuous channel in traversing which the air becomes heated and emerges directly from the hottest part at the centre. I employed this with benefit in an obstinate case of torticollis and in recent rheumatism of the knee-joints. It may still be useful in such cases, but it is not suitable for the treatment of pain affecting limited areas such as have to be dealt with in facial neuralgias. It is very heavy, not difficult to heat, but when heated dangerous to handle. The blowing of the bellows is very tiresome and the heat and fumes from the lamp become very disagreeable. These inconveniences have been remedied by the substitution of glass for brass, a rotatory fan for the bellows, and electric heat for the offensive lamp. In the attainment of these improvements I have to acknowledge the invaluable assistance of my friend Dr. Milne Murray.

The apparatus which I next devised and which I now use is composed of two parts—one of metal and the other of

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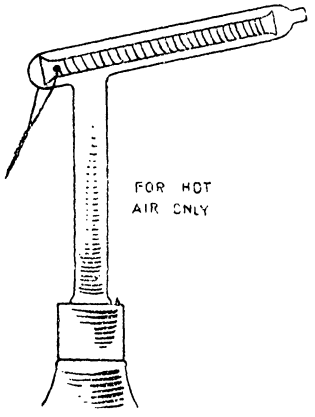
glass (Fig. 2). The metallic portion consists of a shell containing a rotatory fan, the clockwork or electro-motor which actuates it, and a small air chamber above the fan, which is perforated on the top by a rubber-lined orifice adapted for

FIG. 2.



the reception of the glass portion of the apparatus (Fig 3). This consists of two tubes, one within the other. The lower end of the outer tube is inserted into the opening on the top of the air chamber, the other end is free. It may be straight, or fashioned into a variety of shapes, and may or may not terminate in a contracted nozzle. Close to the free end there may be an expansion for the reception

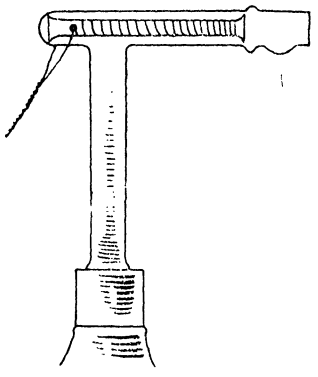
FIG. 3.



of volatile substances for use as inhalants or as auxiliaries in the treatment of localised pain (Fig. 4). Such medicaments are inserted by means of a suitable pipette into the expanded portion and are speedily volatilised by the hot current passing over them. The inner tube is wound round with a spiral of fine wire, the ends of which are connected with terminals fixed in the outer tube. To these terminals are attached insulated conducting wires, by means of which a current of electricity is conveyed through the spiral of sufficient strength to heat it. The fan revolves at a rapid rate and sends through the tubes a current of air which in its transit becomes heated and leaves the mouth of the outer tube in a condition suitable for direct application to the affected part. Intermediate between the source of electricity and this apparatus is placed a lamp-holder supplied with lamps of such calibre as to interpose a suitable resistance to the electric current. By means of these the temperature of the heated air can be suitably regulated. (If the voltage be from 100 to 130, as in many parts of London, two 16 candle lamps may be introduced into the circuit. If the voltage be 230, as in Edinburgh, two 32 candle lamps may be used.)

The lamp-holder (Fig. 5) has four terminals. Two of these at one end communicate through conducting wires with the terminals of the coiled wire, the other two are attached to a length of similar wire which terminates in an adapter suited for fixing into the socket used for holding the stem of

FIG. 4.



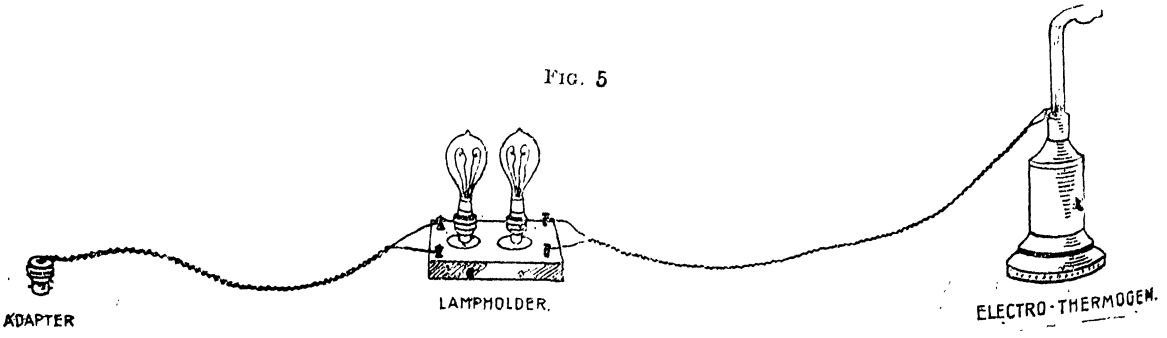
an ordinary incandescent electric lamp. The name which has been suggested to me for the apparatus is the electro-thermogen (Fig. 6).

When all the attachments are completed as above, and not till then, one of the house lamps in any convenient place should be removed from its socket and the adapter inserted in its place. This done, the lamp in the lamp-holder will immediately glow provided that there is no defect in the connexions (if the lamps do not glow the adapter should be removed from the lamp socket *before* the connexions are examined). The clockwork should then be wound up fully and the hot-air current will begin to flow.

I do not know to what degree of heat the temperature of the air can be raised by the electro-thermogen. I tested it with my own thermometer and found that it rose rapidly until it reached 212°. It rose even higher, for in a few moments it burst the bulb. This satisfied me as to its capabilities.

We are told that in the Arctic regions, where the air is still, persons can endure a far lower temperature than where the air is in motion, so that the effect experienced is not regulated so much by the degree of cold as by the successive impinging of cold particles upon the surface, say, by the action of a gentle breeze. Hence the detrimental effects of a slight draught. With heat a similar rule holds good. In a still temperature of 260° a beef-steak can be cooked in 33 minutes, but if air of the same temperature be blown upon the meat by bellows it can be cooked in 13 minutes. In accordance with these facts I have found that in treating neuralgia a moderate current long continued is far more effective than a more intense current of short duration. The almost invariable remark of patients when so treated is,

FIG. 5

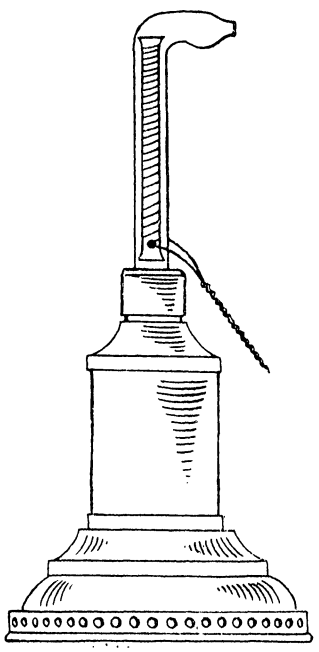


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"That is very soothing," and no more welcome observation could be made, for anything that is to benefit one suffering from neuralgia must be of a soothing nature.

In applying this treatment for certain cases of persistent long-continued neuralgia I have been struck with the existence of thermal anæsthesia in the affected areas. These patients do not feel either the soothing or burning effect of the hot-air current. In one case, that of a woman aged twenty-two years, who had suffered from neuralgia for thirteen months in a spot 1 in. distant from, and in line with, the left eyebrow, this anæsthetic condition was present. On applying the hot-air current I was surprised to find that she made no remark. I increased the temperature but still she did not seem to feel it, although the adjacent parts were sensitive. By-and-by the surface of the affected part became blanched, and I told

FIG. 6.



THE ELECTRO-THERMOGEN FOR GENERAL PURPOSES.

the patient on leaving that if it blistered it would do no harm but she should return and let me see it. This was at 10 A.M. At 2 P.M. she returned with the cleanest, most perfect blister I ever saw. It occupied the site of the neuralgic spot. It was of the size and shape of a half-walnut and filled with a serum of a deep orange colour. On again questioning her as to pain she said: "I felt no pain then from the heat nor do I feel any now from the blister." The neuralgia did not return.

Another patient, aged twenty years, had suffered for eleven months from severe pain affecting the left ear. The auricle was tumid and so painful that she had been unable for months to rest that side upon the pillow. Thermal anæsthesia was present, and the result of treatment by hot air was a crop of small blisters clustered round the meatus. This was after five applications, but before the blisters appeared the pain had gone and the patient was able to sleep on the affected side. There was deafness on that side. The first day she could only hear the ticking of my watch when it was applied to the ear. At the end of the fifth day she could hear it 3 in. away. This leads me to hope that in the treatment of some cases of deafness associated with morbid conditions of the fifth nerve the treatment by a hot-air current may be of service.

In paralysis of the portio dura (where, of course, there is no cerebral lesion) we find a condition which, on theoretical grounds at least, ought to be benefited by the hot-air treatment. The history and appearance of such cases are familiar to most of us. A person in health exposes one side of the face to a slight draught, say, in a railway carriage or elsewhere. This is followed by pain, stiffness, and ultimately paralysis of that side of the face. The unequal balance so occasioned between the opposing muscles gives rise to great distortion of the features, but sensation remains unimpaired as the seventh pair alone is involved. Recovery may take place in three weeks or it may be delayed for years. Within such wide possibilities it is difficult to estimate the proportion of improvement which may be due to any treatment, but the stimulus conveyed by the hot air seems to favour recovery, and it is always acceptable and comforting to the patient.

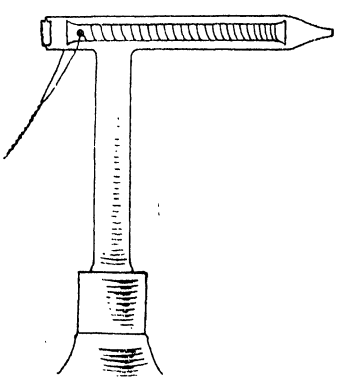
The unexpected sometimes happens. A medical friend of mine had suffered from toothache for three days, and he informs me that five minutes' application of the hot air current by means of the electro-thermogen cured him. This was before the commencement of the winter session. The toothache had not returned when I last saw him on June 13th. Such a result I could never have anticipated. Another medical friend informs me that he has found it of benefit to a patient affected with twitching of the facial muscles. This was also an unexpected relief.

One evening a woman entered my consulting-room complaining that the act of swallowing caused her great pain on the right side of the neck. She informed me that she had suffered from a relaxed throat, which was better, but she appeared to be considerably run down. I asked her to swallow a mouthful of water and in doing so the muscles of the neck immediately jerked out in painful and continued spasm. I applied the hot air for ten minutes and she swallowed more easily, again for ten minutes and there was a further improvement, then again and at the end of half an hour she could swallow without wincing. The treatment was resumed on two following days for minor attacks, but no return of the spasm occurred after the third day. This was a purely functional disorder and it might have been relieved by other means; possibly a hypnotist might have been more speedily successful, and I merely give it as one variety of the cases in which hot air may be employed with some hope of success.

The electro-thermogen has also been of use in such cases as those in which medicated inhalations are usually of any avail. These include clergymen's sore-throat, spasmodic cough, asthma, bronchitis, and most other affections of the throat and larynx. In the initial stage of catarrh and in that distressing tickling cough which often accompanies or follows influenza I have found that a solution of cocaine in oil of cloves when volatilised and inhaled gives considerable and often speedy relief. In cases of sciatica accompanied by cough in which each paroxysm produces a sharp pain in the area of the affected nerve I have found that such an inhalation relieves the cough whilst the application of hot air to the pained limb relieves the sciatica. The chief advantage possessed by the hot air over steam seems to be that the substances administered are volatilised instead of vapourised, so that the particles are much more finely disintegrated and are conveyed to the air-passages by dry heat without the accompaniment of steam, which is less penetrating and always leaves a disagreeable and dangerous moisture about the face and neck.

By the kindness of Dr. Allan Jamieson I have been placed in possession of an unexpected addition to the list of ailments

FIG. 7.



FOR CAUTERIZATION

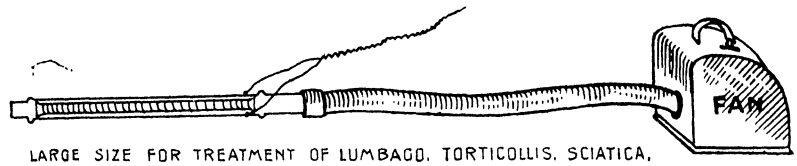
in which the electro-thermogen may be of possible service. He has drawn my attention to a paper in *La Presse Médicale* of Oct. 30th, 1897, in which M. Hollander of Berlin relates

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how he treated a case of lupus of the face by a current of air heated to the temperature of 300°. For this purpose he employed a gas flame in which was placed a pointed metallic tube which became very hot. The air was blown through this by means of an indiarubber hand-bellows and so heated. The hot air current produced an escharotic effect on the diseased surface with great exactitude, without metallic contact and without encroaching as steam does on the healthy textures adjoining. The result, as shown by the illustrations accompanying the article, was very successful. In similar cases the electro-thermogen shown with the pointed nozzle may be found useful (Fig. 7) for cauterisation.

For the treatment of lumbago, torticollis and painful affections of the knee joint and other large surfaces I have used the larger apparatus shown in the illustration (Fig. 8). In this the air is blown from a separate fan in a much stronger current. The glass tube is from 14 to 18 in. long and 1¼ in. in diameter. It is adapted for the full voltage of the electric supply without the intervention of resistance lamps, and is very convenient and effective in the treatment of the diseases named as well as those cases of shingles which are accompanied and followed by persistent pain.

FIG. 8.



LARGE SIZE FOR TREATMENT OF LUMBAGO, TORTICOLLIS, SCIATICA, AND AFFECTIONS OF LARGER JOINTS.

Edinburgh.

A CASE OF FRACTURE OF THE INNER TABLE OF THE SKULL WITHOUT INJURY TO THE OUTER TABLE.

BY R. F. STANDAGE, L.R.C.P. LOND., M.R.C.S. ENG.,
CAPTAIN I.M.S., S.M.O. UNYORO FIELD FORCE.

DURING the fighting against the Soudanese mutineers around Jaruba Fort on the east bank of the Nile a picket of the enemy was surprised on Jaruba Hill, and a corporal, a Somali in the Uganda Rifles, received a Martini bullet wound on the left side of the head while pluckily rushing a hut held by the enemy. This occurred at 4 A.M. on Aug. 4th, 1898. He was dressed by the hospital assistant who described the wound as a "scalp wound." I saw the patient at 5 A.M. The man was pale, with a small, thready pulse, and said that he had been sick. He did not complain of pain in the head, but showed me his right hand in which there was a sensation of "pins and needles." He was extremely excited, rushed wildly up and down the small hill fort which he had assisted in taking, and was very anxious to join in the advance on the main fort which was just beginning. I was much hurried, as firing had commenced, but I thought it as well to examine the wound, though I was assured that the bone was not injured. My examination confirmed this and I ordered the man to be put on a stretcher and went off to join the general advance. The attack successfully concluded, this man, with other wounded, was carried back to the base hospital at Mruli and I accompanied him. He vomited twice on the road. On arrival at the hospital he was put to bed and a careful examination of his condition was made. This showed that the temperature was sub-normal and that the pulse was 90 and small; that the pupils were contracted and equal and responded naturally to light, and that the tongue was clean and protruded in the middle line. The patient answered questions perfectly rationally though somewhat slowly. He complained of thirst and of pain in the right hand, the grasp of which was weakened. It was supposed that he had fallen on the hand and that the weaker grasp was due to stiffening of the tendons. The scalp wound was in an oblique direction from right to left and from before backwards, was 3¼ in. long and situated over the upper part of the left parietal bone. The bullet had ploughed through the tissues of the scalp, making a long furrowed wound. In the middle of its course it had removed a small piece of pericranium, exposing the skull over an area as big as a threepenny-piece. A most careful examination with the fingers and a probe failed to disclose any depression or fracture of the outer table of the skull. I roughly mapped out the line of the Rolandic fissure by joining a point 2 in. behind the bregma to a point 2¾ in. behind and 1 in. above the right external angular process. The point of impact of the bullet on the skull was found to be ¼ in. behind the lower half of the upper third of that line. The wound was antiseptically dressed and a calomel purge was given and milk diet was ordered.

On the next day (August 5th) the patient's temperature was 99·2° F. During the night he had two attacks of bleeding from the nose. His tongue was clean and protruded straight. The pupils were normal and reacted to light and accommodation. The pulse was 96 and much fuller and somewhat hard. I had no apparatus for examining the urine. The condition of the right hand was much the same. The fingers could only be moved slightly, and though he could take hold of my hand he could not forcibly grasp it. His answers to questions were slow and not always to the point. This, I thought, might be attributable to his limited knowledge of Hindustani—our only common tongue—so I ordered his native officer to ask him questions in Somali. The officer reported him to be "very stupid." He complained of hunger, but was still kept on milk diet with some sago. On May 6th he had complete paralysis of the right hand and forearm and of the biceps muscle. He could extend his forearm when he was told to do so and hold the arm out, though with a distinct wrist drop, but in order to raise the hand to the mouth he had to employ the other hand. There was right facial paralysis with inability to purse up the lips or to whistle. The tongue was protruded to the right of the mid-line. The movements of the right leg were perfect and the knee-jerks were normal. The right pupil was slightly dilated, irregular, and immobile; the left was small and reacted to light. The temperature was 100° and the pulse was 90 He was conscious, but drowsy, and had to be awakened to answer questions, dosing off between each question and lying in his cot in a position of general flexion. Hæmorrhage between the dura mater and the bone was diagnosed and I decided to trephine at once at the site of the injury. The head was shaved and thoroughly washed with antiseptic solution and dressed till the hour for operation with lint soaked in perchloride of mercury solution (1 in 1000). All preparations having been made and the instruments boiled he was put under chloroform by my assistant, Mr. Salvee. An incision 4 in. long was made in the line of the bullet wound and another crossing it at right angles. The four triangular flaps were turned back and the pericranium with them. At the point of impact of the bullet there was a small dark discolouration caused by the scrape of the lead bullet against the bone, but no fissured fracture or depression was found. The pin of the trephine was inserted over the discoloured part and a disc of bone removed. A fissure of the inner table was found crossing the disc in an upward and backward direction and attached to the disc of bone was a firm clot of venous blood as big as a hazel nut. It was evidently caused by venous oozing from the diploë. This clot impinged on the dura mater and compressed it and the subjacent brain, but beyond this the dura, mater was healthy, it did not bulge in the trephine hole, and pulsated normally. A careful exploration with an

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aseptic grooved needle did not find blood below the dura mater, so the wound was washed out with warm perchloride solution and closed with silkworm gut sutures, which at the base hospital were kept permanently in 1 in 20 carbolic acid solution. Though this clot was found and removed, and though there was a distinct improvement of intelligence and some return of power to the biceps muscle on August 7th, I was anxious about the patient as I could not reconcile the production of so marked a brachial and facial monoplegia with a clot compressing the motor area for the lower limb, which was absolutely unaffected. I was therefore prepared to trephine again lower down on the first indication of compression persisting over the brachial and facial area. On August 8th the patient was conscious, answering questions slowly but sensibly. The paralyses were the same. The right pupil was more dilated and was still immobile. The pulse was 90 and the temperature was 100·8°. At 2 P.M. he suddenly became unconscious with stertorous breathing and a hot, sweating skin, and at 2.30 P.M. he had a spasmodic seizure of the right side of the face, both eyelids, and the right arm and forearm. The forearm was flexed and the wrist was flexed on the forearm, the thumb was forcibly pressed into the palm, and the fingers were clenched on it. Both eyes were twisted to the right and both pupils were widely dilated and immobile. This spasm lasted till 3 P.M., when the twitchings gradually ceased, the face being the first to recover. At 3.30 P.M. I again applied the trephine, having reopened and enlarged the old wound downwards. It was united by first intention. Two discs of bone were removed, one over the middle third of Rolando's line and the other on the same plane but in front of the line. The intervening bone between these two discs and the old one was removed by Hey's saw and bone forceps. It was then found that an angular piece of the inner table had been fractured, the angle pointing downwards and being almost directly over the fissure of Rolando. The sides, formed by fissured fractures, extended upwards on either side of the line over the ascending parietal and ascending frontal convolutions. From these fissures venous oozing had occurred resulting in a circumscribed clot of the size of a walnut lying over the middle third of the Rolandic fissure and the adjacent convolutions. There was no hæmorrhage below or wound of the dura mater, or evidence that the fracture of the inner table was sufficiently depressed to compress the brain. The clot was removed and the wound was closed as before. The course of the case after this was uneventful. The patient did not recover consciousness. He had no further spasmodic attacks but he gradually sank into a deeper and deeper state of coma and died on August 13th. I was exceedingly anxious to obtain a post-mortem examination, but Somali superstition was deaf to the voice of science, his comrades objected and my case was left incomplete.

Stationed 800 miles from civilisation and nearly as many thousand miles from a medical library I cannot now refer to the literature of this subject, but I believe that fracture of the inner table of the skull with no discernible injury to the outer is of sufficiently rare occurrence to warrant the publication of this case. That the splintering of the inner table did not radiate from the point of impact of the bullet is peculiar, but is not inconsistent with the theory of diffusion of force widely over the table not directly struck. I certainly expected to find a star-shaped fracture immediately beneath the point struck by the bullet, and this expectation led me to trephine there and not over the brachial area in the first instance. I do not think that by so doing the result would have been altered, as it is probable that severe laceration of the brain substance, if not a fracture of the base extending across the anterior fossa, was present. The occurrence of epistaxis would suggest the latter. Certainly the tremendous energy of a Martini-Henry bullet, striking the skull at five yards from the muzzle, would be sufficient to produce either lesion.

Unyoro, East Africa.

BARRY SCHOOL BOARD.—The triennial election of the Barry School Board took place on Nov. 18th, when nine members were elected. Of their number three were members of the medical profession—viz.: Mr. Peter J. O'Donnell, L.R.C.S. Irel., Mr. John L. Livingston, M.D., C.M. Glasg., and Mr. William Lloyd Edwards, L.R.C.P. Lond., M.R.C.S. Eng. The first-named of these gentlemen was returned at the head of the poll.

CURE OF LEFT CAROTID ANEURYSM BY MANIPULATION.

BY RICHARD SLOCOCK, B.A. OXON., M.R.C.S. ENG., L.R.C.P. LOND.,

HOUSE SURGEON TO THE ROYAL PORTSMOUTH HOSPITAL.

A MAN, aged twenty-eight years, healthy, of spare build, was admitted into the Royal Portsmouth Hospital, under the care of Dr. Lloyd Owen, on Sept. 14th, 1897, with a well-marked aneurysm of the left common carotid artery. He stated that a swelling, which gave him no inconvenience beyond a little neuralgia, had existed six weeks before admission. There was no history of injury or of syphilis. The pupils were symmetrical and normal. The swelling was situated near the bifurcation of the common carotid artery and was of about the size of a pigeon's egg, with most definite expansile pulsation both seen and felt. This ceased on compressing the artery below. Its walls were so thin that an immediate operation was indicated. The patient, who was a nervous and apprehensive man, reluctantly consented to an operation. It was decided to ligature the artery below the sac. The patient, however, suddenly took alarm and obstinately refused to have any surgical treatment. It seemed dangerous for him to even move under his present condition. He left the hospital on Sept. 18th and sudden rupture of the aneurysm was feared. No more was heard of him until February, 1898, five months afterwards, when Mr. Bond, of Havant, to whom I am indebted for the following notes, wrote "that a few days after his return from the hospital he examined him, and to illustrate the nature of the operation necessary for cure he pressed firmly over the sac and artery. When next seen, two days afterwards, the beating in the neck had ceased and never returned. The tumour gradually diminished." And writing in April Mr. Bond reports: "There is not the least vestige of the aneurysm. It is completely cured. ..... He is quite well and in regular employ."



Illustration showing aneurysm of carotid.

This case may, I think, be regarded as a cure of carotid aneurysm, effected in an unintentional and unexpected manner by manipulation, a method introduced by Sir William Fergusson in 1862. Probably, when the aneurysm was being examined a detached clot became impacted in the mouth of the sac and acted as a check to the circulation. Such a happy termination to such a serious case must be rare, and is therefore of sufficient interest to be recorded as a welcome accident and not as a mode of treatment to be followed. No one would, except by accident, employ such treatment in aneurysm at the root of the neck, for the fear of producing head symptoms from embolism of the cerebral arteries must be very great. Two cases are reported[1] in which the examination for diagnostic purposes of carotid aneurysm produced paralysis and death. This case confirms the observation[2] that carotid aneurysm is more common in men than in women (of 88 cases of this disease 55 were those of men and 28 those of women, the sex in 5 not

[1] Virchow's Archiv, Band xi.; Medical Times and Gazette, vol. i. 1859.
[2] Ashhurst's Surgery, vol. iii., p. 496.

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being stated) and also that a very large proportion of cases of aneurysm of the carotids, 87·25 per cent., belongs to the common carotid at or near the bifurcation.

My thanks are due to Dr. Lloyd Owen for permission to publish the case and to my colleague, Mr. C. H. Newby, for the illustration.

Portsmouth.

INJECTION OF SALINE SOLUTION IN SHOCK.

BY W. THELWALL THOMAS, F.R.C.S. ENG.,

HONORARY ASSISTANT SURGEON TO THE LIVERPOOL ROYAL INFIRMARY; ASSISTANT LECTURER IN SURGERY, UNIVERSITY COLLEGE, LIVERPOOL.

WHEN an animal is killed by bleeding all the blood does not escape, yet the animal dies. The quantity remaining in the tissues, although containing a large number of blood cells, is of no use because it ceases to circulate, a small stream being unable to travel by reason of the great inequality between its size and that of the large vessels. The heart has little or nothing to contract upon, and even if a little blood gets into the large arteries the vessels cannot pass it along. The more sudden the loss—i.e., the larger the divided vessels—the quicker the collapse and death; slow loss of blood allows time for transudation of fluid into the vessels from the tissues and thus enables the circulation to be quietly, though often very feebly, carried on. In surgical cases where large vessels are divided serious collapse may be produced, or even death. In the serious cases the pulse becomes imperceptible at the wrist, the skin ghastly pale, the lips and mucous membranes almost white, and failure of respiration heralds death. In such an alarming sequence promptitude on the part of the surgeon may avert a fatality. What he has to do is to quickly stop the leak (if possible) and provide the necessary blood or liquid.

Transfusion of arterial or venous blood necessitated a hero or heroine willing to part with the requisite amount and a cumbersome, complicated apparatus. These conditions were not often found together and even when they were only occasional good results were recorded, for the mortality was very high. Experimental research demonstrated that coagulation emboli were the cause of death. Blood from the lower animals always produced disintegration of the corpuscles, so its use was quickly abandoned. In 1862 Nussbaum[1] suggested defibrinated blood to diminish the risk of emboli, but its preparation in an emergency being somewhat tedious and necessitating several processes soon placed it out of court. Goltz recognised the salient fact that death from loss of blood was really due to loss of liquid from the vascular system, and that any suitable solution—e.g., saline solution or artificial serum—would do for injection. This was an important advance. It is only within recent years that the practical application of the truth has been realised and the lectures delivered by Dr. Wm. Hunter in 1889 at the Royal College of Surgeons of England[2] had a large share in emphasising it. He showed (1) that the immediate source of danger from sudden loss of blood is the rapid fall in blood pressure; (2) that the value possessed by transfused blood is almost solely physical and dependent upon its volume; and, lastly, that all the advantages of transfused blood can be more readily and safely obtained by the use of simple saline solution. Normal saline solution, 6 parts of sodium chloride to 1000 parts of sterilised water, promptly injected into the venous system, will wash up the stranded corpuscles and give the heart something to contract upon—liquid within—its normal stimulus, and enable the circulation to be carried on and the oxygenation of the red blood cells to proceed. If the patient be not too old, manufacture of new blood cells goes on rapidly and in a few hours the change produced is little short of marvellous, and anyone for the first time seeing a patient saved even when apparently at his last gasp will be astonished at the effect.

The emergency method of dissolving a teaspoonful of common salt in a pint of hot water gives about 1 in 875, but for all practical purposes it is near enough. When patients are only suffering some degree of collapse short of imminent peril the solution may be injected into the rectum. In the same way hot saline solution left in the peritoneal cavity during abdominal operations produces rapid improvement in the patients. The fluid may be injected by pressure into the cellular tissue, under the mammary gland, in the groin or in the axilla, and by becoming absorbed takes the place of the lost liquor sanguinis, but all these methods are only serviceable when circulation is proceeding and absorption possible, and are of necessity slower in their action than injection into the veins direct. In extremis, nothing short of salt solution directly into a vein is of any use. For this purpose the apparatus generally used by me consists of a glass syringe (capacity 4 oz.), 2 ft. of rubber tubing, and a curved metal canula to fit a vein of the size of the median basilic vein. The wad of the piston is made of sterilised gauze; the material generally found on the piston when it leaves the maker's hands consists of white, clean looking material in the superficial layers, but "abominations" underneath in the shape of common—very common—tow, a whited sepulchre in truth. The piston is withdrawn and the whole apparatus filled with salt solution before fitting the canula into the vein, to prevent, of course, entrance of air into the venous system. The canula is tied into the vein selected and the syringe is elevated; if the fluid does not run in quickly enough the piston is inserted and the solution is forced in. A finger-and-thumb clamp of the tubing at the nozzle of the syringe enables the syringe to be withdrawn, filled again, and reapplied, and so on until enough fluid has been forced in. I have used a Higginson's syringe as the motive power. The following three cases illustrate the value of resort to saline injection.

CASE 1.—On Oct. 5th, 1894, a man was brought to the Liverpool Royal Infirmary on a police ambulance with his "throat cut." The out-patient clinique was being conducted at the time, so no delay occurred, although half-an-hour must have elapsed since the incision had been made. The man was unconscious, deathly white in colour, and pulseless, even in the exposed cut common carotid. The lower jaw spasmodically dropped with a feeble inspiratory effort. There was a deep gash in the left side of the neck. The internal jugular vein was cut clean through, the cut ends being three-quarters of an inch apart; the common carotid was cut into and the external and anterior jugular veins were divided. There was no blood escaping from the cut vessels; he had lost all the blood which it was possible to lose. The cut vessels were clamped; a small jerk of blood—less than a teaspoonful—escaped, however, when the common carotid was clamped. He seemed to be as near death as it was possible to get. I exposed the left median basilic vein by an incision to which the patient did not object—being no doubt "too far gone"—and 20 oz. of normal saline solution were slowly injected. After 7 oz. he took a short, distinct, inspiration; at 10 oz. a deeper one; the carotid was noticed to pulsate at 15 oz. and his breathing became regular and deep; and at 18 oz. he opened his eyes but did not appear to be conscious. His radial pulse was distinctly felt. The injection was stopped, all the clamped vessels were tied and a dressing was hurriedly applied. Thus far the treatment had been carried out on the ambulance, elevated at the foot. He was then wheeled to bed, surrounded by hot water bottles, and the foot of the bed was raised 18 in. An hour later he had sufficiently recovered to answer when called loudly to. He rapidly improved in condition. On Nov. 5th, owing to secondary hæmorrhage, he became collapsed. A quart of hot saline solution was injected into his rectum; all of it was absorbed and acted most beneficially in reviving him. This patient died two and a quarter years later and the unique dissected specimen of the neck is in the museum of University College, Liverpool.

CASE 2.—A man, aged twenty-five years, had to lose his leg and part of his thigh on account of extensive suppurative (gummatous) disease of the knee-joint. The operation was perforce performed through diseased tissues by Mr. Hamilton on Oct. 13th, 1896. The flaps were loosely brought together. The stump appeared to be healing well when, on Nov. 2nd, the twentieth day, at 8 P.M., he suffered from severe secondary hæmorrhage. The ward sister promptly applied a tourniquet, but he had lost a large quantity of blood. The house surgeon, Dr. Graham Martin, on being summoned, realised the extreme gravity of the case. In the absence of Mr. Banks and Mr. Hamilton I hurried to the Infirmary. The patient was very much emaciated

[1] Medical Times and Gazette, vol. i., 1862, p. 600.
[2] Quoted by Erichsen: Science and Art of Surgery, tenth edition, vol. i., p. 411.

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by his previous disease and collapsed from loss of blood. He was taken to the operating theatre, where a few whiffs of ether were administered. The flaps were torn open, when the oozing of blood appeared to be coming from the femoral vessels—arteries and veins. A ligature was rapidly passed around the group by means of a Macewen's hernia needle and tied. An incision was then made over the common femoral artery, when a mass of suppurating glands was found; these were roughly thrown out by finger dissection, and the artery exposed, which was barely pulsating. His condition was so desperate that I clamped the artery and at once injected saline solution into the median basilic vein with a Higginson's syringe through rubber tubing and a canula. He quickly improved, and when a pint and a half had been injected the artery pulsated vigorously. It was now tied in two places and cut between. Suitable dressings were applied. Next morning he was out of all danger, and he recovered rapidly. He would surely have succumbed on the table had he not been filled with salt and water—of that we all felt certain.

CASE 3.—On Oct. 7th of this year a strong, muscular young man, twenty-six years of age, was brought to the Infirmary with his right leg and part of the thigh mangled, the result of an accident received during railway shunting operations, a wagon having passed over his leg. The ambulance on which he had been carried bore evidence of the inefficiency of the three tourinquets which had been applied, there being at least a pint of blood on it. He was ghastly pale and his radial pulse was scarcely perceptible. A few whiffs of ether were administered and an amputation through the middle of the thigh was performed and the main vessels were tied. When the tourinquet was liberated the pulsation in the femoral vessels was so feeble and his general condition so critical that I injected saline solution into the internal saphena vein in the flap. I went on pumping until the main artery pulsated vigorously in the stump and the colour returned to his face. The flaps were rapidly sutured and a glass drainage-tube was inserted behind. That night his temperature rose to 100° F.; next morning it was normal, and he looked so well that no one seeing him would ever have guessed that he had suffered from amputation through the thigh so recently. On the second day he felt so well that he wanted to know "why he was not allowed meat and potatoes like the man in the next bed." His pulse was markedly dicrotic. The stump healed by first intention and on the twentieth day he was up and about the ward.

The ward sisters have noticed that patients perfused always appeared to have a good night after the operation and rarely complained of pain. The solution appeared to possess anodyne properties.

In other cases where local and general conditions were not so favourable temporary resuscitation took place. In one of these a thin, anæmic woman with a septic, discharging pyonephrosis, during an operation for extirpation of the kidney, collapsed on the table. The condition could hardly have been from loss of blood, for the kidney pedicle was securely clamped. I injected a little over a pint of saline solution into the median basilic vein with immediate effect in both restoring respiration and circulation. She, however, died on the third day. In another case—one of extensively-fractured skull—the man appeared to be dying on the table during an operation for tying both branches of the middle meningeal artery by Mr. Rushton Parker. Injection of 15 oz. of salt solution brought him around, but, alas, only to start fresh bleeding from a long rent in the superior longitudinal sinus—beyond repair. He succumbed. From observations extending over some years I am convinced that in saline flushing of the abdomen, injection into the rectum or into veins, we have a most valuable, probably the most valuable, means of dealing with collapse, whether due to loss of blood or not.

In cases which are not extreme, elevation of the foot of the patient's bed 12 in. or 18 in. and the injection of a quart or more of hot saline solution into the rectum by means of a Higginson's syringe, with a French catheter on the nozzle so that the fluid can readily enter the colon, acts in a few seconds like a charm; the fluid disappears like water on a blotting pad. It is of very little use in such patients to endeavour to stimulate the heart by ether or alcohol; what it needs most is a physiological stimulus from within its walls. I have resorted to this proceeding so often and with such gratifying results as to consider it my stock treatment for collapse.

I have not thought it necessary to give weary details of every case, my object in drawing attention to saline injections is merely to emphasise the simple and powerful means at our disposal. While conscious that much has been written on the subject, still I think saline injection is not sufficiently often resorted to by surgeons.

Liverpool.

A CASE OF EMPHYSEMA, A SEQUEL OF MALIGNANT DISEASE OF THE SIGMOID FLEXURE.

BY H. KERR, M.A., M.B. GLASG.,
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EMPHYSEMA arising from a communication with the alimentary tract must, I think, be somewhat rare, and on that account I venture to put on record the following case, the patient in which was an insane inmate in the Bucks County Asylum.

The patient, a female, had been resident in the asylum for thirty-six years and at the time of her death she was sixty-six years of age. She was quite demented and unable to give any account of her symptoms. She enjoyed good bodily health and was well nourished, and until the onset of acute symptoms she showed no signs of disease. The first thing which called attention to her condition was that during the night she vomited and appeared to have pain in the epigastrium. On examination in the morning she looked pale and ill. The pulse was 96 per minute, weak, and thready; respiration was shallow and increased in frequency; and her temperature was 98·2° F. Extensive emphysema, indicated by characteristic crepitation, was found present over the whole of the left side and back, extending from the axilla and front of the chest to the left iliac region in the front of the abdomen. No fracture of ribs, which suggested itself as the most probable cause, could be ascertained, and there was no history of any violence. Some swelling was noticed in the right iliac region over the sigmoid flexure; this disappeared on manipulation and was considered to be due to gas in the large intestine. In the evening the patient's temperature was 100°. On the second day the emphysema was more extended and the swelling over the sigmoid flexure was more pronounced, although it could still be in great part reduced, returning almost at once. The bowels had not acted and an enema was given, the fluid being rejected forthwith. However, after the injection of 4 oz. of olive oil she had a loose motion on that day and on the following days fæces were passed in small quantity. Her pulse was 120 and her temperature 101°; the skin over the lower part of the chest and back was red and indurated, that over the swelling in the iliac region being natural. During the next four days her condition became gradually worse; the temperature ranged from 101° to 102°, the pulse varied between 120 and 140 and was very weak and thready, and the respiration was increased. She also vomited on one or two occasions, the vomited matter being dark in colour and slightly fæculent in odour. She died on the seventh day from the onset of acute symptoms. The treatment was simply directed to combat the tendency to collapse, and she was put on milk diet and given stimulants.

A post-mortem examination was made on the day after death. On opening the chest air was found present in the tissues of the chest wall, and at the lower and back parts of the chest there was diffuse suppuration which was more marked in passing downwards. In the left iliac region a cavity of some size was found, the contents being liquid fæcal matter and gas; and on the floor of this cavity a small opening was found to communicate with the intestine, admitting an ordinary probe easily. On opening the abdomen the sigmoid flexure was found firmly adherent to the abdominal wall over an area rather larger than a crown-piece, and the intestine at this point was found to be the seat of a new growth, firm in character, involving the whole circumference of the bowel, and causing such narrowing of its lumen that it would only admit the forefinger with difficulty. The surface of the tumour was ulcerated, and at the point of adhesion to the abdominal wall was a small opening leading to the cavity on the surface. The intestine above the flexure was much

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dilated and contained a quantity of liquid fæces. The small intestine was also somewhat dilated, and the contents of the stomach were dark in appearance and slightly fæculent in smell. The other organs presented nothing noteworthy, except the heart, which was very fatty. The tumour on microscopical examination was found to be of the nature of a columnar-celled epithelioma.

The points of interest in the case appear to be the probably long duration of malignant disease with stricture of the bowel giving no urgent symptoms; the supervention of extensive emphysema from a communication between the tissues of the abdominal wall and the bowel; and the difficulty in forming a diagnosis of the condition and of being sure that it was not due to fractured ribs, certainty being only assured by the post-mortem examination. The immediate cause of the condition was probably the increased pressure of the intestinal contents arising from the stricture acting upon a part of the diseased bowel weakened by the process of ulceration.

Stone, Aylesbury.

TETANY AND TETANOID SPASMS ASSOCIATED WITH GASTRIC DILATATION TREATED SURGICALLY.[1]

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,

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AN interesting paper by my colleague, Dr. Trevelyan, in THE LANCET of Sept. 24th, 1898, has attracted my attention to the importance of a symptom—tetany—which in the severe form described in his paper is manifestly a rare disease, but of which Case 1 in the present paper is a good example. It does not seem, however, to have been generally noticed that severe muscular spasms of a tetanoid character, possibly allied to if not really an early stage of true tetany, are frequently associated with gastric dilatation; yet it is a symptom which in a more or less severe degree frequently attends pyloric obstruction and which I have come to look on as a very frequent concomitant of the disease. A careful study of Dr. Trevelyan's paper leads one to the conclusion that fully-developed tetany, in association with stomach dilatation, is a symptom of extreme gravity and that in such cases a fatal termination is to be feared in a considerable percentage of cases. To quote from Dr. Trevelyan's paper: "If the term 'gastric tetany' is allowed to include the milder as well as the severer cases, and there is no sufficient reason against this view, then the disease may turn out to be more common than is usually supposed. The transition between gastric tetany strictly so-called, tetany with gastro-intestinal symptoms, and ordinary tetany would seem to be a gradual one. The prognosis of tetany occurring in gastric dilatation is undoubtedly very serious; nearly 75 per cent. of the cases die. The largest mortality occurs in the groups 2 and 3 [referred to in Dr. Trevelyan's paper], that is, where the spasm in the extremities is associated with tonic spasm in the head and trunk muscles or with clonic spasm. If the very strict views are held as to the disease then the outlook is almost hopeless; thus of the 11 cases recognised by Frankl Hochwart only 1 recovered. There is a danger here, as in some other diseases, that the fatal issue is raised to be the chief criterion as to the nature of the affection."

My own experience of tetany and of the severe muscular spasms in association with gastric dilatation leads me to think that we may possibly take a more hopeful view if the cases be treated surgically at an early period. I hope on some future occasion to report my experience in dilatation of the stomach treated surgically, as it has fallen to my lot out of nearly 60 operations which I have performed on the stomach to operate for this condition in nearly 30 patients, several of whom have had tetany or severe muscular spasms in a more or less pronounced degree. The following cases will serve to illustrate my remarks. In the first, the tetany was so pronounced that the question of strychnine poisoning crossed my mind. In the second and third cases, though there were well-marked tetanoid spasms, the cramps were limited to the extremities and the abdomen.

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on Nov. 4th, 1898.

CASE 1.—A man was sent to me by his medical attendant in January, 1895, with a view to having something done in the Leeds Infirmary to relieve his condition. He had been suffering for five years from pain after the ingestion of food, with attacks of vomiting. Latterly his condition had become aggravated, the pains occurring from half an hour to one hour after each meal, being relieved only by vomiting, so that for the last six months he had had to give up his work as a printer. For some time before coming under my notice there had been very evident peristalsis from left to right in the epigastric region. Throughout the period over which his stomach symptoms extended his bowels had for the most part been very constipated, but there were occasional attacks of diarrhœa. During this time he had attacks of what he described as "cramps" in his limbs and especially in the legs. He had lost very considerably in weight, for in December, 1892 he weighed 9 st. 6 lb., whereas in January, 1895 his weight was only 7 st. 7½ lb. On examination there was found well-marked dilatation of the stomach, but the feature of the case which presents most interest in connexion with the present paper was the occurrence while under observation of severe tetanic spasms affecting almost all the muscles of the body. So extreme were these and so widespread (the muscles of the trunk and of the cervical region as well as those of the limbs being affected) that on Jan. 17th the question of possible poisoning from strychnine was raised. As palliative treatment of the stomach condition gave no relief he was submitted to pyloroplasty on Jan. 24th. The abdomen was opened and the diagnosis of cicatricial stenosis with hypertrophy of the pylorus was confirmed. The modified operation which I described some time ago[2] was done, a bone bobbin being employed. Recovery was uninterrupted, and although the cramps were present up to the time of operation he never had even a threatening of cramp afterwards. On Feb. 15th he was able to take a mutton chop for dinner without inconvenience, and by March 2nd (five weeks after operation) he had gained 8½ lb. Since then he has done very well. Two years after operation he had quite recovered his strength and was working as usual, his weight then being just over what it was in December, 1892, and quite 2 st. above his weight at the time of operation. There has been no recurrence of any "cramps" or of muscular spasms of any kind. In a letter received at the beginning of last month he speaks of some slight symptoms which may have had their origin in some stomach disorder, but he adds, "you will please understand that I am a new man to what I was when you saw me last."

CASE 2.—A man, aged twenty-four years, was seen by me on Oct. 5th, 1897, in consultation with his private medical attendant, on account of severe painful cramps of the extremities and of the abdomen with persistent vomiting. He gave the history of having had pain after food several years previously and of having vomited blood, since which time he had never been well and had gradually lost flesh. For some little time before I saw him he had vomited every day unless the stomach was washed out, and his weight from being over 10 st. had diminished to a little over 8 st. There was well-marked dilatation of the stomach but no pyloric tumour could be felt and simple stricture of the pylorus was diagnosed. He was admitted to the infirmary in October, 1897, and on the 21st of that month I performed pyloroplasty, as the pyloric orifice would only permit the passage of a No. 10 catheter. The transverse incision in the pylorus was sutured vertically over one of my bone bobbins. Recovery was uninterrupted, and from that time the cramps and vomiting ceased. He returned home within the month. On Oct. 23rd of this year I received from him the following letter: "It is with a grateful heart I write to thank you for the good received at your hands twelve months ago. I am thankful to say I have never had any trouble with my stomach since. I feel it my duty to acknowledge the good I received and also to thank you for your extreme kindness."

CASE 3.—A woman, aged twenty-nine years, was sent to me from the east coast in the spring of 1895, suffering from severe pain in the abdomen, associated with vomiting and loss of flesh; there was well-marked dilatation of the stomach, and the pain always started on the left of the abdomen and passed to the right, on which side, just below the ninth rib, there was well-marked tenderness with rigidity of the right rectus muscle. Operation was declined and I did not see the patient until

[2] Brit. Med. Jour., July 20th, 1895.

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nearly the end of the year, when she told me that the pain in the abdomen was excruciating and that it recurred every day; she said it was associated with severe cramp in the limbs, especially in the legs and thighs, and that at night she was kept awake by the pain. Vomiting of large quantities of fluid occurred daily and she was steadily losing weight and strength. Her symptoms begun in 1888 and she had lost 2 st. in weight between that year and 1895. On Dec. 14th, 1895, I opened the abdomen and found the pylorus adherent to the gall-bladder, liver, and abdominal walls, and it was so much thickened as to form a distinct tumour. Pyloroplasty was performed after the adhesions had been separated. Recovery was uneventful and satisfactory in every way and she returned home within the month. She never had any return of the tetanic symptoms, and a report sent to me in March was to the effect that she had gained flesh and was well. The further history of the patient is not germane to the present paper. It will therefore suffice to say that in July, 1896, I saw her again, when she complained of stomach symptoms, but there was not much loss of flesh. Later the vomiting, loss of flesh, and well-marked stomach splash showed that the pyloric trouble had recurred. I performed gastro-enterostomy a month ago as I found a distinct tumour of the pylorus, which I believed to be simple inflammatory induration and not malignant, otherwise I should have excised the pylorus. The patient has made a good recovery and has returned home. The interesting point in her case is that there has never been any return of the painful cramps in the limbs since the first operation.

Though tetany occurs apart from gastric dilatation—for instance in children during teething, when it is frequently associated with gastro-intestinal disorders and not infrequently merges into general convulsions, and in other conditions apart from stomach disorders—yet tetany or painful muscular spasms of a serious character are so frequently associated with that condition that one cannot ignore the association as being merely accidental. It is curious that I have never seen the symptom in other than dilatation due to simple causes, such as adhesions to the pylorus, gall-bladder or liver, or in stricture of the pylorus due to the cicatrisation of ulcers. I have never seen it in simple unobstructive dilatation or in dilatation due to cancer of the pylorus, though Dr. Trevelyan gives single examples of its association with both in his paper.

The immediate cause of tetany is perhaps beyond the scope of a surgical paper, but as my views are based on clinical experience they may be worth relating. I have noticed that the exacerbations of the tetanic state, especially in the first case related, were always associated with a painful contraction of the stomach, and that when the wave of contraction had reached the pylorus, which was previously incapable of being felt, it formed a distinct hard tumour. The abdominal pain then became very intense and the tetanic cramps in other muscles came on, or if already present became intensified. From this sequence of events I have come to the conclusion that the cause of the tetany is a double one—(1) the absorption of some poison from the dilated stomach which increases the excitability of the nervous system and (2) a reflex effect produced by the painful contraction of the pylorus. The practical outcome of my paper is that where tetany is, or its allied conditions are, associated with gastric dilatation surgical treatment is well worth considering before the symptoms become so severe as to lead to the almost hopeless condition described in the report of some of the fatal cases.

Leeds.

THE USE OF MORPHIA IN CARDIAC DISEASE.[1]

BY F. S. TOOGOOD, M.D. LOND.,
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BEFORE studying the clinical effect of morphia in diseases of the heart let us first consider what effect it has upon the heart and circulation in health. When a full dose of morphia is injected the first thing noted is some increase in the pulse-rate; this is effected partly through the cardiac centre and partly through the ganglia in the heart-substance. Then succeeds a period when the heart-beats diminish in frequency due to the stimulation of the vagus. If a sufficiently large dose be given this stimulation is succeeded by a period of depression or paralysis of the vagus which is shown by an increased frequency of the pulse due to the loss of balance between the inhibitory action of the vagus and the accelerator fibres. In the majority of cases, however, the intrinsic ganglia of the heart have ere this become paralysed themselves, so that they are unable to take advantage of the withdrawal of the inhibitory influence of the vagus, and so there is a persistence of the slow pulse, which gradually gets weaker and weaker until death ensues.

The action upon the vessels appears to be depressing from the first. The one period which physiologically suggests that morphia might be beneficially used in the treatment of cardiac disease is in the stage where the vagus is stimulated and the heart-beats are diminished in frequency. In the first instance I approached the subject entirely from the clinical side, and it was not until the treatment which had been begun in despair had proved of great benefit in several cases that I sought a physiological basis for that which is, I think, a clinical fact. Those books to which I have access universally agree in condemning the routine administration of morphia in cardiac disease, although most of them record the bald fact that it is occasionally useful. I have little to offer beyond the bare recital of the cases treated, but before considering these let me briefly glance at the action of the drug upon the kidneys, as it was here that I apprehended the greatest danger.

Of all the lessons which were hammered into me during my hospital career none was more persistently driven home than the fact that it is extremely dangerous to administer morphia in kidney disease or derangement; and as in an imperfectly working heart there is nearly always associated renal trouble, either in the shape of diminution in the amount of urine excreted or in the presence of albumin and diminution of the amount of urea and other excretives, so it may be imagined that I watched the quantity and quality of the urine passed by the patients under observation with much interest. Morphia can be detected in most of the secretions; a large proportion is excreted in the bile. It can also be found without much difficulty in the urine. The action of morphia is to diminish the amount of urine passed, to render probable the re-absorption of the drug from the dulled sensibility of the bladder, while in those cases where there is diminished excretory power of the kidney due to disease the danger of retention and accumulation of the drug on the system is sufficiently alarming.

I was first led to try the administration of the drug in those distressing cases of heart-disease (mainly of mitral incompetence) where the exhibition of digitalis and its allies, strophanthus and convallaria, appears to do nothing more than excite persistent vomiting and where the stomach retains practically nothing, where the heart is extremely irritable and irregular in rhythm and the pulse in volume, where often an ever-present dyspnœa renders the condition of the patient intolerable from exhaustion and from want of sleep, and where there may also be œdema from a failing circulation, and a scanty amount of albuminous urine. In these cases I have seen the hypodermic injection of morphia effect the most gratifying results. The pulse has become steady, strong, and regular, the œdema has disappeared, the dyspnœa has been relieved, and the urine, instead of being scanty, high-coloured, of high specific gravity, and containing albumin, has become normal in amount and character and the albumin has become much less or has entirely disappeared.

CASE 1.—A man, aged fifty years, was seen by me in consultation in June, 1897; he had been confined to his bed for two months and had been unable to go to business for six months. He was suffering from urgent dyspnœa which had prevented his sleeping for many days. His legs were œdematous and his urine was scanty, loaded with urates, and it contained one-tenth albumin. His pulse was small, easily compressible, 120 to the minute, and irregular in time and volume. His heart was enlarged, the apex beat occurring in the sixth interspace 1 in. outside the nipple line. There was a distinct systolic murmur heard best over the aortic area. Every drug which had ever been suggested as of use in cardiac cases had been tried and had proved of no avail. I suggested hypodermic injections of ¼ gr. of tartrate of morphia and the effect was marked from the first. He slept quietly and comfortably, the heart gradually came down to 80 beats in the minute, the urine increased to 70 oz., the albumin cleared up, and the œdema disappeared. The

[1] A paper read before the West Kent Medico-Chirurgical Society on April 1st, 1898.

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dyspnœa varied a good deal and was from the patient's point of view the most troublesome symptom, but he was now free from it except slight paroxysmal attacks when the effect of an injection was wearing off. He gradually improved in general health and two months after the commencement of the treatment was able to take short walks in the neighbourhood and to resume most of his former occupations.

CASE 2.—This patient was a man, aged thirty-two years, a labourer, formerly a soldier, who was admitted to the Lewisham Infirmary from the casual ward on Oct. 5th, 1896, complaining of dyspnœa and pain in the heart. On examination he was found to have his apex beat in the nipple line in the fifth interspace, and to have a reduplication of the first sound and a diastolic murmur well heard at the base and conducted down the sternum. The pulse-beat was of the typical water-hammer character. The urine was of specific gravity 1020, acid and clear, and contained no albumin and no sugar. There was a history of rheumatic fever seven years ago. Under rest and digitalis he recovered his usual state of health, but on Oct. 21st of the following year he had a severe attack of anginal pain and dyspnœa which, unlike some of his previous attacks, did not yield to liquor glonoini or to amyl nitrite. It, however, was relieved by a mixture of 10 minims of liquor morphiæ and 1½ minims of liquor atropiæ sulphatis every four hours. These anginal attacks now began to recur more frequently but were not very severe and were always relieved speedily by the morphia mixture and in the intervals he was able to get about and to assist in the duties of the ward. On Nov. 1st I find a note that the liver and spleen could be distinctly felt below the ribs. From this time he took to his bed and became progressively weaker and thinner. On Dec. 8th a severe anginal attack necessitated the injection of ¼ gr. of morphia which at once relieved him. Although he took a fair amount of nourishment his emaciation became extreme; an occasional injection when he had any return of the pain kept him absolutely comfortable and he died from sheer asthenia on Dec. 12th, 1897. In this case I claim that morphia succeeded in relieving the anginal attacks when everything else had failed; that it had no bad effect but on the contrary always left him better than it found him; that it rendered his last weeks comfortable and gave him an easy and painless departure instead of an agonising end, without in any way shortening his days.

CASE 3.—A man, aged fifty-one years, a labourer, was admitted to the Lewisham Infirmary on Jan. 6th, 1897, complaining of pain in the chest in the cardiac area off and on for nine months and of dyspnœa for over a year. On examination his apex beat was found to be 2½ in. below the nipple and just outside the nipple line; there was also a loud aortic systolic and diastolic murmur. Under rest, stimulants, and cardiac tonics, including digitalis and strychnine, he gradually grew worse; he could not sleep and he vomited incessantly, and his condition was considered absolutely hopeless. On Feb. 3rd 15 minims of liquor morphiæ were added to his mixture and from that time he steadily improved; the morphia required to be increased once or twice and an occasional hypodermic injection of the same drug was used in anginal attacks, but he steadily improved, contracted a fresh lease of life, and took his discharge on June 5th, 1897, with his heart thoroughly compensated and doing its work well.

CASE 4.—A woman, aged thirty-four years, was admitted to the Lewisham Infirmary on July 28th, 1897, complaining of shortness of breath and of great weakness. There was a history of rheumatic fever twenty-four years ago. She was suffering from urgent dyspnœa, constant distressing cough, and had œdema of both legs. The apex beat was in the seventh interspace just outside the nipple line. The pulse was very irregular in force and frequency, over 120, and could scarcely be counted. There were well-marked systolic and presystolic murmurs. There were râles and rhonchi all over the chest. The urine was of specific gravity 1024, acid, very dark, and scanty, was one-third albumin, and contained no blood and no sugar. Rest, digitalis, and stimulants did not afford any relief and on August 3rd persistent vomiting set in which the omission of the digitalis did not relieve. On August 12th 10 minims of liquor morphiæ were given every four hours. The effect was marked from the first; the vomiting ceased and the urine became more copious, increasing steadily from 10 oz. to from 60 oz. to 70 oz. in the twenty-four hours. The albumin gradually decreased, and on Sept. 11th it disappeared altogether. It was thought that this might have nothing to do with the morphia, so on several occasions the morphia was withheld, but this was invariably followed by a marked diminution in the quantity of urine and by an increase in the amount of albumin. I will not weary you by a recapitulation of a convalescence. A too early withholding of the morphia caused a relapse which at once cleared up on the renewal of the dose and after a prolonged and careful probationary course of exercise she took her discharge on March 19th with no symptoms and with her heart presumably compensated for a time but still acting irregularly and with the murmurs quite as distinct as before.

CASE 5.—A woman, aged twenty-four years, was admitted to the Lewisham Infirmary on Dec. 2nd, 1897, complaining of "pains in the heart." She was thin, anæmic, and slightly yellow. The apex beat was in the fifth interspace and gave no evidence of hypertrophy or dilatation. The action of the heart was irregular and quick and the pulse was easily compressible. There was a loud mitral systolic murmur heard. The first sound was suggestive of mitral obstruction. Rest and iron were prescribed. On the 22nd, there being no improvement, 5 minims of tincture of digitalis were ordered. A slight improvement followed, but on Feb. 10th her condition, which had been very carefully watched, became very alarming. The action of the heart became tumultuous, there was great cardiac pain, and a distinct presystolic murmur developed. 4 oz. of stimulant in the twenty-four hours were ordered. On the 12th the pulse was almost imperceptible and the patient was in a state of collapse and apparently dying. She was only passing 16 oz. of urine in the twenty-four hours and was vomiting incessantly. The digitalis was omitted. A hypodermic injection of ¼ gr. of morphia was given every twelve hours and the patient did what she had not done for many days—viz., she slept soundly. She immediately began to improve; the vomiting ceased, the urine became normal in amount, and the tumultuous action of the heart subsided. The presystolic murmur became less and less pronounced and the action of the heart more and more regular, until by March 17th the presystolic murmur had entirely disappeared and the heart's action was absolutely regular, although a well-marked mitral systolic murmur remained, and the patient was to all intents and purposes well.

I have chosen these 5 cases as being fairly good examples of the beneficial results of this method of treatment, although many more might be cited, and I may say here that I have had no accident. That morphia in large doses is a cardio-vascular depressant is well known, but its sedative and soothing effects upon irritable conditions of other organs are so well recognised that I am inclined to think that the undoubtedly beneficial results in cardiac disease are due to its action upon the nervous apparatus of the cardio-vascular system, both central and local, bringing rest to an overstrained organ and allowing it the chance of developing its recuperative power.

Lewisham, S.E.

A CASE OF

DEATH FROM DIABETES MELLITUS IN WHICH THAT DISEASE GAVE NO PREMONITORY SYMPTOMS.

BY T. WILSON PARRY, M.A., M.B. CANTAB.

A MESSAGE was brought to me at 8 o'clock on the morning of Nov. 9th that a woman living in a village some five miles from here had suddenly fallen down while in the act of dressing at 6 A.M. and could not "get her breath"; would I come at once? I started with the least possible delay and arriving at the house found that the patient, a woman sixty-eight years of age, had suddenly fallen, as my messenger had informed me, while dressing, without any previous warning of any kind and had been in a comatose state ever since. On examination I found the pupils to be contracted and only very slightly, if at all, reacting to light; the reflex was entirely abolished. All the limbs were flaccid and the knee-jerks were absent. I immediately put my stethoscope to the heart expecting to find an accentuated second sound (superficially diagnosing the case—from the suddenness of its onset, the age of the patient, and her previous apparently

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good health—as an apoplectic seizure), but the heart sounds were normal in every respect. I was unable then to get a sample of her urine, as she had passed both urine and fæces under her and I had no catheter with me. As I had a couple of patients in that district to visit I returned to her in the course of about two hours and found her in precisely the same state as before. I could not make up my mind at all about its being an apoplectic attack and I was naturally anxious to examine the urine before giving the patient's friends a decided prognosis, and I fully explained to them the necessity of my so doing. Towards evening I called again and found her in the same completely comatose condition. I then drew off her urine. She died on the following morning at eight o'clock, her condition apparently having remained unchanged. The analysis of the urine gave the following results. It was acid in reaction; the specific gravity was 1023; a slight trace of albumin only was found, but a large quantity of grape-sugar was present, a few drops of urine only being necessary to reduce a large quantity of Fehling's standard solution. The amount of glucose present was 1·6 grammes per cent.

The points of interest in this case centre themselves as follows. The woman was, to all accounts, perfectly well up to the time she was seized with the coma; in fact, on Nov. 7th—that is, only two days before the attack came on—some one who was capable of judging had remarked how extremely well she looked and had told her this. She had not consulted a medical man for at least fourteen years. There was no history of anything which was not compatible with perfect health. There were not even any distinctive premonitory symptoms of diabetes mellitus, the disease she was undoubtedly suffering from. There was no emaciation—the general agreement was that she was getting stouter if anything; no undue thirst or hunger—she was very abstemious; no asthenia—she was strong and robust and worked hard; no polyuria—the woman who slept with her told me that she never got out of bed more than once in a night, if at all, to pass urine and that she had never complained to her of suffering either from extreme thirst or of passing more urine than she normally should. I have not the slightest doubt in my own mind that the coma in which this patient passed away was diabetic. The news brought to me, and which had evidently indelibly impressed itself on the mind of the messenger, that the woman could not "get her breath," bespoke the characteristic "air-hunger" which accompanies this coma, and the presence of a large quantity of glucose in the urine confirmed the diagnosis, in my mind, to an absolute certainty.

There is room for the suggestion that the coma was apoplectic and that the somewhat low specific gravity of the urine and the presence in it of some albumin, even although it was merely a trace, showed it to be renal in origin; but the condition of the heart, with its normal size, regular beat and rhythm, and sounds free from any murmur or accentuation—pulse without tension and arteries without atheroma—abolished from my mind entirely the apoplectic nature of the coma. Syphilis is practically unknown in this neighbourhood, and even if it were prevalent there were certainly no signs whatever to suggest that the patient was suffering from its tertiary effects. Epilepsy, too, has to be entirely abolished from the diagnosis as the coma was instant and was not preceded by any clonic or tonic spasms, nor was there any frothing from the mouth.

Summing up, then, this somewhat dramatic termination to an apparently absolutely healthy life—the suddenness of the onset of the attack suggestive of "stroke" but due in reality to hidden processes which must have been working in the dark for some definite appreciable time, the secret action of the disease culminating in a sudden attack and a short fatal illness of twenty-six hours—is to me a thing instructive in the highest possible degree. In the rush of general practice, when sometimes speedy examinations have to be made on account of quantity of work or lack of time, the practitioner is often tempted to neglect to examine the urine for sugar unless the patient exhibits symptoms suggestive of diabetes. Such a case as the present one has vividly brought to my mind the absolute essentiality there is of examining all urines for sugar, as well as for albumin, as there is the possibility that a person of apparently sound physical health may be suffering from a disease which may make itself manifest in an alarming way at any time but from the knowledge of which the patient himself may be happily entirely ignorant. It sometimes may be discreet to keep certain facts from a patient, but we should fail in doing our duty if we did not inform the relatives or friends of the patient of the possibly serious nature of an unsuspected disease. The legal aspect of such a case as this will at once present itself to the mind, hence again the vital importance of making it a habit to always examine the urine for sugar in every case taken in hand—an importance which to my mind cannot be overrated.

Youlgreave.

A CASE OF CEREBRAL TUMOUR:

RAPID ONSET OF CHARACTERISTIC SYMPTOMS; OPERATION; DEATH; REMARKS.

BY EDWARD ARMITAGE, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.,

GOVERNMENT PHYSICIAN FOR THE WAILUKU DISTRICT; PHYSICIAN TO THE MALULAUI HOSPITAL, ISLAND OF MAUI, HAWAIIAN ISLANDS.

THE following case, bearing as it does upon the difficult question of the localisation of intra-cranial lesions, seems to me to be of interest, particularly so at a time when this subject is receiving so much attention and in view of the admirable address by Professor Augusto Murri of the University of Bologna, published in THE LANCET of Jan. 30th, 1897.

A male Hawaiian, aged about fifty years and residing in Wailuku, was admitted to the Malulaui Hospital on March 14th, 1895. He was brought to the hospital in a *nack* by his friends and was in an unconscious state on admission. Immediately after being carried into the male ward he was seized with an epileptiform convulsion. Being present at the time of his arrival I directed him to be laid on the floor of the ward until the convulsion had ceased, when he was placed on a bed and I at once proceeded to relieve the urgent symptoms. The patient was quite unconscious. His pupils were slightly dilated and, suspecting cerebral apoplexy, I bled from the left arm and applied a blister to the nape of his neck. This treatment was succeeded in a few minutes by the most encouraging results; he recovered consciousness, was able to speak and to recognise his relatives, as also an old friend who was a patient in the same ward. On inquiry from his relatives I learned that on the previous New Year's day he had fallen from the roof of his house; since which time he had suffered from headache until two days prior to his admission, when he had been seized with convulsions, unconsciousness, and vomiting of blood. Later I learned that he was in this state at least four days prior to admission, and I have no doubt that a "kahuna" or native soothsayer, had been consulted. On interrogating the patient, he told me that the headache affected the whole vertex but was particularly severe over the forehead. The patient was a strong-looking, well-developed man, profusely tattooed. On the right frontal region at the upper margin of the forehead and above the centre of the orbit was an old scar the posterior portion of which presented a fungoid granulation. His pulse was strong, regular, normal, and of high tension, and his temperature was 102° F. in the axilla. During the convulsion there was tremor of the lower limbs and his whole body was violently agitated by the powerful clonic contractions of his left arm which was strongly flexed, the fist being clenched. The head was turned to the left side, as were also the eyes; the mouth worked spasmodically, the teeth being gnashed together and the left corner of the mouth being drawn upwards. After he was restored to consciousness I directed his head to be shaved, cold to be applied to the vertex, a five-grain dose of calomel to be administered, and the patient to be kept as quiet as possible. Towards evening the convulsions recurred and the patient again lost consciousness. I consequently decided to operate, expecting to find an abscess beneath the site of the former injury.

At 9 A.M. on March 15th, the scalp having been shaved and washed with antiseptic solution of carbolic acid, I administered a hypodermic injection of half a grain of morphine, and my friend Dr. Moroura anæsthetised the patient with chloroform, which was well taken. Raising the scalp by a horseshoe flap, including the cicatrix, I found the scalp tissues and the pericranium strongly adherent to the

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bone by fibrous bands beneath the old scar. Exposing the bone with the raspatory, a crown was removed by means of the trephine and elevator. The dura mater bulged somewhat into the aperture, but was not congested. On incising the dura mater and raising a flap the brain was found to be of normal appearance. I punctured it first with the needle of a hypodermic syringe and then several times with an aspirating needle, using the greatest care to pass the needle gently and perpendicularly to the brain surface. No collection of pus having been found the wound was washed with a solution of corrosive sublimate 1 in 2000, closed (drainage being allowed for by threads of catgut projecting from the posterior angle), and dressed with iodoform and boric acid lint. The crown of bone which had been placed in a warm solution of corrosive sublimate was not replaced, the signs of intra-cranial tension being so marked. During the course of the operation, whilst the patient was not fully under the influence of the anæsthetic, the convulsion recurred four times with great violence, retarding proceedings considerably; but when fully under the anæsthetic he lay quite quietly, breathing heavily. Each convulsion was preceded by a distinct aura, during which the respiration became shallow, the eyes were fixed, and the patient appeared to be gathering himself together prior to the approaching nerve-storm. During one of these attacks the tongue was severely bitten, a portion 2 in. in length of the left side of the tongue being almost severed; this I sutured and I kept the teeth apart with a gag.

Consciousness did not return after the operation and the patient was put to bed. The convulsions appeared to be of shorter duration; they came on with great regularity as before, at intervals of from fifteen to twenty minutes and lasting for about half a minute, the patient being perfectly unconscious during the intervals. After the administration of the chloroform the pupils were contracted. A large rectal injection of oil, soap, and water was ordered, which brought away considerable fæcal matter, after which two drachms of bromide of potassium dissolved in 4 oz. of water were injected per rectum and retained. The patient never recovered consciousness, and died the same night about 10 P.M.

On the following day I performed a necropsy. On removing the cranium the veins of the dura mater were found to be somewhat congested. The dura mater was easily removed from the subjacent membranes except at one point where the membranes were adherent and thickened over a surface of 1⅛ in. in length by ⅝ in. in width. This surface overlay the bases of the superior and middle frontal convolutions of the right cerebral hemisphere. The inferior frontal convolution on the same side was not involved. The above surface marked out the limits of a tumour about ¼ in. in thickness and apparently taking origin from the dura mater. On further examination of the brain substance there was no sign of meningitis, accumulation of pus, or hæmorrhage. The punctures into the brain substance made at the time of operation had entered the right middle frontal convolution.

The remarkable points about the above case are four. 1. The rapid onset of acute symptoms when a period of more than two months had elapsed since the injury. 2. The marked relief to intra-cranial tension which followed on bleeding from the arm. 3. The difficulty of making an exact diagnosis of the intra-cranial lesion, all the symptoms before operation appearing to indicate abscess. 4. The difficulty of localising the lesion by means of the characters of the convulsion, the motor disturbance indicating irritation of the ascending frontal and parietal convolutions rather than of the bases of the middle and superior frontal convolutions.

Wailuku, Maui, Hawaiian Islands.

UNIVERSITY COLLEGE, BRISTOL.—The annual meeting of the governors of University College, Bristol, was held on Nov. 16th, under the presidency of Mr. Lewis Fry, M.P. The report stated that the total number of students in attendance had been 525, of whom 90 had entered the courses of the Faculty of Medicine. Mr. Albert Fry, in moving the adoption of the report, stated that the College urgently required more funds. Mr. Bryant, F.R.C.S., in supporting the resolution, regretted the indebtedness of the College and added that he hoped that in time a university would be established in Bristol which would become an educational centre for that part of England. The resolution was carried unanimously.

VESICO-VAGINAL SEPTUM TORN DURING LABOUR; SLOUGHING VAGINITIS; SUBSEQUENT CLOSURE OF THE VULVA.

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INDIRECT operative treatment of vesico-vaginal fistula may be carried out in two ways—by closure of the vagina or of the vulva. Of these the former is to be preferred whenever possible, but in the following case this would have been useless because of the partial destruction of the urethra and neck of the bladder. Closure of the vulva or episiorrhaphy was done by Vidal de Cassis, who freshened the labia majora; and Fritsch suggested that the freshening in these cases should be done by a process of flap-splitting, but I am not aware that there is any account of a similar procedure to that carried out in this case previously on record as having been carried into practice.

A young woman, aged eighteen years, was admitted to the Wolverhampton and South Staffordshire General Hospital on May 19th, 1892, having been ill since her confinement nine days previously. The labour only lasted six hours. The child was large, was born dead, and there appeared to the mother of the patient to be nothing unusual until after the labour was finished, when the urine dribbled away. The patient was attended by a midwife and only knew that she had had a good deal of headache and smarting in the front passage. On the seventh day Mr. A. Hands was called in for the first time, and on his recommendation the patient was sent into hospital. On admission the girl was found to be acutely ill, very weak and pale, but well nourished. There were slight dyspnœa and frequent loose cough with pale, frothy sputum. The tongue was dry and the breath had a strong, offensively sweet odour. The temperature was 102·2° F. and the pulse was 130 and feeble. A hurried examination showed no abnormal signs in the heart or lungs; the abdomen was prominent, but no tenderness or localised swelling or resistance could be made out. The perineum was split back to the edge of the sphincter and the whole vulvar region was much swollen, brawny, and red, the raw surface being covered with a putrid, stinking, whitish slough or false membrane; the urine constantly dribbled over the raw surface. On the following day the condition, local and general, remained the same and in the afternoon chloroform was administered and a careful examination made, the vagina being first flushed out with a gallon of very hot water. The floor of the urethra was wanting, the bladder and vagina forming one large cavity, at the upper end of which posteriorly was felt what was taken to be the partly closed cervix, on the right of which was another cavity into which the vaginal tube readily passed. The whole of the walls of this large irregular cavity were swollen, hard, brawny, and as much as could be seen was covered with the dirty white sloughy material above mentioned. The rectum was intact. The uterus could not be distinguished, and at any rate did not extend above the pubes. The interior of the cavity was scraped with a sharp spoon, glycerine with carbolic acid was swabbed over the surface, and a plug of gauze was introduced. The patient remained in a very critical condition for a week after this attempt at cleansing, the temperature ranging from 100·6° to 103·6°, and the pulse from 120 to 140, but she took four pints of milk and two eggs daily, and brandy freely, 16 oz. in the twenty-four hours for five days. For the following fortnight she continued steadily but slowly to improve and by June 9th the sloughs were all away, and the temperature had become normal in the mornings, but still rose to about 100° in the evenings; all the urine still dribbled away, and the exact local condition could not yet be made out. From June 22nd to 29th, without any apparent cause, the patient again became more febrile, the temperature varying from 100° to 102°, and the general condition being less satisfactory, but nothing locally could be discovered except some tenderness in the region of the right iliac crest. From the 29th the temperature remained

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normal and on July 11th the girl was transferred from the infectious block to the general ward, having been up and about for a week and seeming strong and well. There was little, if any, vaginal discharge, but no control over the urine. On the 19th, under ether, the vagina was found to be considerably contracted and its walls were hard and resistant; the urethral floor had disappeared and its upper wall was adherent to the pubes and formed the upper boundary of the urethro-vaginal orifice. The wall of the rectum and the external sphincter were intact. The base of the bladder had almost entirely disappeared; in the hard roof of the irregular vesico-vaginal cavity an offset which admitted the index finger went upwards and to the right behind the pubes. The vagina admitted the forefinger for 2 in., and at the further extremity there were two offsets, one, the orifice of which felt like a dimple, into which a sound passed easily, going upwards and backwards for 1½ in.; and to the left of this a larger but shallower offset. No trace of the cervix uteri could be felt, and neither by vaginal nor rectal examination could anything be found resembling the uterus distinct from the hard walls of the irregular cavity just described. On August 8th, under ether, an attempt was made to close the orifice of the vagina while re-forming the urethra. A V-shaped incision was made with scissors round the orifice about ¾ in. deep except anteriorly, where a short longitudinal incision was made on either side; these short incisions enabled the urethra to be re-formed and the margins were united with silkworm gut sutures. The flap made by the V-shaped incision was then turned inwards, but with great difficulty, on account of the dense cicatricial resistance, and united with two strong wire sutures. On August 11th, three days later, a note was made that the urine still mostly dribbled, but 10 oz. had been passed on one occasion. On the 16th the urine was being passed in quantities of about 6 oz., and in the previous two days was only passed involuntarily on one occasion. One wire suture was removed on the 26th and the patient was allowed to get up on the 30th. On Sept. 3rd the last suture was removed and the parts had all healed satisfactorily, the vagina being completely closed, and a urethra of somewhat above the normal size having been formed. The patient could retain her urine for two hours or so when standing or walking, but if she went longer there was still occasional dribbling, though not to a great extent. On August 29th and 30th, and again from Sept. 29th to Oct. 2nd, the urine was discoloured with menstrual discharge. On Oct. 7th the patient was sent home and she was again seen in the out-patient room on Nov. 18th, well, and with complete control over the bladder.

Mr. Arthur Hands very kindly visited this patient for me in April, 1894, and finding that she had been married at the preceding Christmas he was good enough at my request to send her to see me. On April 24th she appeared well and healthy; she had returned to her work one month after leaving hospital and had continued till the last three weeks, when she left at her husband's request. The periods have appeared regularly every month, lasting three days or so; they are painless; the fluid passes in the urine, which becomes a little red. There are no clots. The patient would not know she was "poorly" if she did not examine her urine. The urine can be retained for three or four hours in the daytime and seven or eight hours at night; it is never passed involuntarily even in sleep. Since her marriage there has been no pain or difficulty in connexion and the sexual feeling is the same in all respects as before her child was born. There is now a thick, soft, fleshy perineum; the index finger passes easily along the canal which was intended for a urethra into a *oul-de-sac* lined with soft mucous membrane, partly divided into two by a septum, in front and above which, between it and the pubes, the examining finger passes into the freely communicating bladder; this anterior part is very tender to examination. Nothing that feels like a sphincter to the bladder can be made out. No opening can be felt in the wall of the posterior part of the *oul-de-sac*. Bimanually the fingers meet behind the pubes and at the sides and nothing definite can be made out. Per rectum, through the anterior wall is felt a firm, tightly fixed body, rounded from side to side with the convexity backwards, extending from immediately above the sphincter ani internus upwards for about 3 in.; nothing further can be made out by bimanual examination with the finger in the rectum.

What happened at the delivery of this girl will never be exactly known, the only certain facts being that there was a dead child born after a short first labour, that there was complete incontinence of urine from the time the labour was finished, and that on the seventh day the patient was in a gravely septicæmic condition with sloughing vaginitis, the result of urine flowing freely over the raw torn surfaces of the parturient canal. Her recovery from the grave condition she was in when admitted to the hospital is a striking instance of the value of alcohol in treating septicæmic conditions. Sixteen ounces of brandy daily for five days is a large dose for a girl of eighteen years; still, not only did this produce no sign of alcoholism, but it enabled her to take and digest a sufficient quantity of milk and eggs to satisfy our minds that it was acting as a tonic as well as a stimulant. The condition of the parts locally was such as to preclude a thorough cleansing of the surfaces, and we had to be contented with a partial cleansing, followed by repeated douchings.

After the recovery of the girl the injury was found to be too extensive to hope to restore the bladder, and as the urethral floor was also wanting some method had to be devised by which, if possible, a new sphincter could be provided. There seemed to be no way of testing the natural condition, nor did it appear to be worth while troubling too much about this since it was not clear whether any—or, if any, how much—of the uterus was left. The best way appeared on consideration to be that which was carried out with complete and permanent success—to split flaps by a V-shaped incision round the vulvar orifice, extending forwards as far as the level of the urethral floor, with two incisions at this level at right angles to the rest of the incision; by then bringing the raw surfaces together it was hoped to restore the muscular wall of the urethra at least sufficiently to get some power of retaining urine. The measure of success obtained was most gratifying. After the vulva was thus closed the uterus, as has often happened after colpocleisis for extensive vesico-vaginal fistula, gave evidence of its being still present by menstruation recommencing and continuing regularly. Since leaving the hospital the patient's general health has continued perfect and her marriage appears to have afforded complete satisfaction to herself and her husband, the repaired urethra having added to its functions without difficulty and with perfect success. The total absence of any irritation of the lining membrane of the bladder, or rather the new urine reservoir, and of any phosphatic deposit or subjective discomfort are notable facts, as also is the comfort with which the menstrual function is carried on under the new conditions. *A priori* some troublesome symptoms relating to these functions might be expected, and as a matter of experience in some of the cases in which the vagina has been thrown into the bladder vesical catarrh, metritis, pyelonephritis, or phosphatic calculi have been observed, but in the majority of subjects, as in the present instance, the different functions are continued in comfort.

Birmingham.

A Mirror
OF
HOSPITAL PRACTICE.
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON LOCK HOSPITAL.

A CASE OF ACUTE PEMPHIGUS; RECOVERY.

(Under the care of Mr. BUXTON SHILLITOE.)

IT is very probable that several distinct forms of bullous disease of the skin are classed together under the name of pemphigus. It is at all events certain that in a large number of cases of bullous dermatitis a very definite micro-organism has been repeatedly found, while it is apparently not discoverable in all. When constitutional symptoms appear they are probably to be attributed to the absorption of toxins from a secondary streptococcic infection of the serum of the bullæ. We are not told in the record of the

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case below in what doses the arsenic was administered, and therefore it is difficult to be sure that this was an instance of pemphigus in which arsenic failed. The diagnosis of a bullous syphilide from pemphigus is sometimes very difficult, but on the whole a true pemphigus is more liable to be mistaken for a syphilide than for the reverse error to occur. For the notes of the case we are indebted to Mr. C. F. Marshall, resident medical officer.

The following case was sent to the Lock Hospital as there was a suspicion of its being syphilitic in origin. The patient, a girl aged nineteen years, had no other signs of syphilis and the progress of the case without any specific treatment shows that it was not a bullous syphilide. The rash appeared on Jan. 1st in the form of clear blebs on a slightly reddened base, first on the hips and arms; afterwards it spread over the whole of the lower limbs, the greater part of the back, neck, forearms, and slightly on the chest and chin. The front of the abdomen, the palms of the hands, the soles of the feet, and the mucous membrane of the mouth were free. The bullæ varied in size from that of a pea to that of a walnut; they contained clear fluid at first but in a few days this became purulent and in some cases slightly hæmorrhagic. They soon coalesced when close together, forming large areas of sodden epithelium with sero-purulent discharge, but at no time were there any constitutional symptoms. The progress of the case is briefly as follows. By the 25th most of the bullæ had burst and coalesced; a few fresh ones were appearing from day to day; some were clear and others were purulent from the first when appearing on parts already affected. By Feb. 2nd the bullæ were nearly all healed, leaving a brownish-red staining of the skin. Some fresh pustules had appeared on the inner side of the thighs. The stains were mostly confluent on the back and limbs and were discrete on the neck. On the 24th the patient was sent away to the country. Only a few small blebs had appeared from time to time. Her general health was good. On March 11th there was a recurrence of fresh bullæ and pustules on the thighs, arms, and chin. These increased on the lower limbs till the condition was nearly as bad as at first. By the 23rd the skin was quite clear again except for fresh staining. On the 29th some fresh pustules appeared on the thighs, forearms, and face. On April 6th she was sent to the seaside, but a few days later, the 10th, she had another relapse. Clear bullæ appeared as at first, involving the whole of both upper and lower limbs, and slightly affecting the shoulders and chin. By May 2nd the skin was quite clear again and the general health was much improved. On the 15th a few small pustules appeared about the wrists and ankles. The stains of the old rash were fading. By June 1st she was well and no subsequent relapse has occurred. With regard to treatment arsenic was given internally nearly all through the illness, but it did not seem to have much effect. Locally the most satisfactory result was obtained from iodine baths (about 1 in 5000), which were given daily while the eruption was active. During the last severe relapse (April 10th) the local treatment consisted of liquor carbonis detergens, which acted equally well.

Bacteriological examination.—This was carried out by Dr. Bulloch at the British Institute of Preventive Medicine and we are indebted to him for the following notes:—Examination of fluid from the clear bullæ showed the presence of a diplococcus agreeing in almost every particular with the diplococcus first found by Demme in cases of pemphigus, and also found by Dr. Bulloch in other cases of acute pemphigus. Fluid from the bullæ which marked the relapse of April 10th was also examined, but the diplococcus was not present in this, only streptococci and staphylococci.

Remarks by Mr. BUXTON SHILLITOE.—This case is remarkable chiefly on account of recovery after such a severe attack of pemphigus and also for the total absence of constitutional symptoms. It is also of interest that a diplococcus was found by Dr. Bulloch agreeing with that found by Demme in similar cases. A further point is the fact that a month before the appearance of the rash superficial whitlows formed on several of the fingers. This is of interest in that Mr. George Pernet[1] collected several cases of pemphigus in butchers all of which were preceded by whitlows, suggesting the possibility of the poison being contained in the meat. In the present case there was no distinct history of contamination from meat except that the patient frequently did cooking. With regard to treatment I should like to draw attention to the benefit derived from local antiseptic treatment of the skin both by iodine and by liquor carbonis detergens, and to the apparent failure of arsenic to modify the course of the disease. I am much indebted to Dr. Bulloch for making the bacteriological examination and also to Dr. Roberts of the Folkestone Hospital for notes of the case during the relapse.

[1] British Journal of Dermatology, 1896.

LIVERPOOL ROYAL INFIRMARY.

TWO CASES OF OMENTAL UMBILICAL HERNIA ATTENDED BY SLOUGHING.

(Under the care of Mr. RUSHTON PARKER.)

SLOUGHING of the skin over an umbilical hernia is a rare occurrence and even for that reason Mr. Rushton Parker's two cases deserve to be recorded, but there are other points of interest about them. In the first case the ulcer left after the separation of the slough healed rapidly with very little treatment. In the second the connexion between the interference with the circulation in the hernia and the two confinements is interesting, though easily explicable by the increased abdominal pressure. Mr. Parker's explanation of the manner in which the sloughing was brought about appears to be extremely probable.

CASE 1.—A woman, aged thirty-nine years, was admitted into the Liverpool Royal Infirmary on July 5th, 1880, having an umbilical hernia which was 2 or 3 inches in diameter and over which a small piece of skin had sloughed. After separation there was exposed œdematous and juicy connective tissue of a pale greenish colour, suggesting bile-staining. An offer of herniotomy was made to the patient for the purpose of curing the rupture, but this she declined. The exposed tissues healed without difficulty or complication under some antiseptic dressing. The rupture had given her no inconvenience until the slough appeared, and when the aperture closed over her purpose was served and she left the hospital after a few weeks. The contents of the sac were apparently omentum, but were never seen.

CASE 2.—A woman, aged forty-two years, was sent to Mr. Rushton Parker's ward at the Liverpool Royal Infirmary on the night of May 1st, 1891, by Dr. Henry Briggs, who informed Mr. Parker that he had found her in a feverish condition with an umbilical hernia in a state of acute inflammation, with sloughing of the skin over the sac, which evidently required operative treatment without delay. Mr. Parker therefore went up to the ward about midnight and learnt that the hernia was an old one; that the patient had been confined eighteen months previously, after which the hernia had become discoloured and had remained so; that three weeks before admission she had also been confined; and that the hernia had become acutely inflamed. An operation was performed at once under chloroform, the hernia being of about the size of a man's fist, surrounded by an acutely inflamed area and having a black skin slough in its centre somewhat larger than a crown piece. The sac was laid open and was found to contain extremely fœtid pus and gangrenous omentum. The skin slough was cut away and the interior was well washed with a 1 in 1000 solution of perchloride of mercury. The neck of the sac appearing to be free from contamination the omentum was pulled out and transfixed with two large pins, behind which it was tightly tied with a piece of strong bandage soaked in the sublimate solution of the strength above mentioned. All the gangrenous portion was cut away and with it the anterior portion of the sac, which was also gangrenous. The wound was left open and filled with iodoform gauze. Some more sloughs separated in the course of about ten days and healing was gradually accomplished without local incident or complication by the last day of June, two months after admission, the site of the former hernia being well depressed. The temperature at the time of the operation was over 102° F., but fell during the early morning to normal and remained so for three weeks except for a rise of a single degree on the fourth day. Then the temperature rose to 100° but fell to normal for a day and a half, then rising again to 100°. In the middle of the fourth week there was an evening rise to nearly 105°, but the temperature fell a degree each evening and at the end of the fourth week the normal was again reached and so remained during the fifth week. The temperature in the morning was 3° or 4° lower than in the evening during this rise. The sixth week commenced with

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another evening rise to 105° and the fever continued for three days, the temperature being 1° lower each evening and being about 100° each morning. After a day's remission the temperature rose to 103° and 102° for three more days and finally dropped. No certain explanation of these feverish attacks was ascertained. The pulse was 120 and bounding, the tongue was dry but not coated, and there was thirst. But the contracting and healing wound showed neither suppuration nor retention; nor was there any abdominal tenderness. The fever may have been due to constipation which was relieved by glycerine enemata.

Remarks by Mr. RUSHTON PARKER.—In Case 1 I was puzzled at the time to account for the sloughing, and apparently had an idea then that there must have been a small fæcal fistula. The case is merely catalogued and the following words are appended: "Sloughing skin and fæcal fistula." But I cannot now remember whether this fistula was an observed fact or only, as I rather suppose, a mere inference from the biliary staining beneath the slough. In any case the wound healed very simply. The question arises, How did the sloughing and inflammation start in Case 2? I am inclined to attribute it to, first of all, sloughing of the skin from stretching, probably during the efforts of parturition. Then followed infection of the adjacent parts, of the sac, and eventually of the contained omentum. The bacterial invasion must have come either from the intestine or from the skin. There is no evidence that it came from the intestine, which never came into the case at all, much less gave any suggestion of a fæcal fistula. It can easily be accounted for by the pressure and stretching of the skin of the over-distended sac on the over-distended abdomen at the end of pregnancy. The occurrence of this case seemed thus explained at the time. Moreover, it appeared to me also to throw light on the previous case, which I am inclined to regard as a milder form of the same accident.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Hip-joint Disease.—Exhibition of Specimens.

A MEETING of this society was held on Nov. 22nd, the President, Mr. BRYANT, being in the chair.

Mr. EDMUND OWEN read a paper on a Distinct Variety of Hip-joint Disease in Children and Young Persons. He drew attention to a very important group of cases of acute suppurative disease of the hip-joint which must be carefully separated from the much more common tuberculous disease of this joint. The disease was caused by the invasion by the micro-organisms of osteomyelitis of the very active tissue at the upper extremity of the diaphysis of the femur. Reference was made to the fact that the hip-joint differed from all other joints in that the end of a diaphysis entered into its formation, and that, therefore, when this diaphysis was the seat of osteomyelitis suppurative arthritis almost inevitably resulted. The symptoms of this form of disease were especially characterised by sudden onset, acute course, and intense severity. There was often a history of injury or some lowering disease preceding the onset of the attack, and it was suggested that such conditions, by lowering the vitality of the growing tissue, render it more vulnerable to infective organisms. Death from septicæmia was liable to occur if the disease was not speedily recognised and adequately treated. The treatment advocated was the free opening of the joint, with removal of the epiphysis and the affected part of the diaphysis, and the thorough application of germicides to the interior of the joint, and this operation must be followed by drainage. In view of the urgency of these cases Mr. Owen laid stress on the extreme importance of early correct diagnosis and immediate efficient treatment. He concluded with the report of four illustrative cases under his care. Reference was made to a paper on this disease by the late Dr. J. S. Bristowe, published in the Transactions of the Pathological Society for 1862.

Mr. A. E. BARKER called attention to the fact that the paper described a condition which was well recognised and emphasised the very important point that in osteomyelitis affecting the hip-joint active measures must be promptly resorted to and carried out. The treatment which in acute tuberculous disease of the hip-joint he had advocated some years ago, and which he now was glad to see Mr. Owen fully endorsed—viz., the clearing out of the joint and closing of the wound—would in the cases described by Mr. Owen lead to disastrous results. He referred to one class of case in which such a procedure was advisable and had been successfully carried out by himself—viz., in the case of gonorrhœal infection of the hip-joint. He did not agree with Mr. Owen that strong germicidal solutions were necessary for washing out the joint, but considered that thorough washing with an indifferent fluid was most effectual and did not give rise to the destruction of tissue which arose from the use of strong mercurial solutions.

Mr. W. G. SPENCER drew attention to the fact that the disease as described by Mr. Owen as septic disease of the upper end of the diaphysis of the femur was the same as epiphysitis and acute periostitis of the upper end of the shaft. The fact that the diaphysis entered into the formation of the hip-joint did not, he considered, make so essential a difference in the affection of this joint as Mr. Owen in his paper seemed to infer, for in 3 cases under his care in which the disease was situated in the diaphysis the joint contained pus; in the first of these the upper end of the humerus was affected, in the second the lower end of the femur, and in the third the upper end of the femur. He could not agree with Mr. Owen's radical procedure of removing the head of the femur, but thought that the more conservative process of washing out the joint and drilling into the diaphysis was often attended with good issue, and in this manner the results of thrombosis of the Haversian canals migh tbe relieved, and the head of the femur be preserved. He was always in such cases accustomed to use a strong germicide solution, and he preferred carbolic lotion to perchloride of mercury owing to its less poisonous character.

Mr. WARRINGTON HAWARD said that the special treatment advocated in Mr. Owen's paper was necessary in this acute form of hip disease in order to save the life of the patient; a treatment less radical did not remove the seat of the disease, and therefore it was essential to remove the head of the femur and the diaphysis. The treatment of simply washing out the joint did not remove the original seat of the disease and jeopardised the life of the patient.

Mr. F. C. WALLIS reminded the society that he had shown a case of somewhat similar nature at the Clinical Society, a child, two years of age, in whom after an accident an abdominal swelling appeared associated with pain in the leg. On opening the abscess in the abdomen three-quarters of a pint of pus were evacuated and the head of the femur was found loose in the abscess cavity. The child made a good recovery.

Mr. GOLDING-BIRD differed from Mr. Owen with regard to the removal of the head of the bone. He did not himself think it necessary in all cases which were of a fulminating nature and the following case which had come under his care proved that recovery might take place without such a procedure. A boy, aged eight and a half years, fell on his hip. The next day he limped and on the following day he was so ill that he was brought to the hospital, the diagnosis then made being acute septic inflammation of the hip. On the following day an incision was made over the hip-joint and pus was evacuated from the joint. No evidence of any bone disease could be detected. The joint was accordingly washed out and the wound closed with the exception of a small gauze drain, after which the boy made an uninterrupted recovery. Either the case belonged to a group distinct from that described by Mr. Owen or the radical procedure advocated in Mr. Owen's paper was not always necessary. In the former case it was difficult to see how such a case could be distinguished clinically from those cited by Mr. Owen.

Dr. STUART MACDONALD cited a case of a boy, aged sixteen years, whose illness had lasted seven days. He had pain and swelling in the upper part of the thigh. An abscess was opened and the joint appeared to be normal and no further operation was carried out. The boy, however, died on the following day and at the necropsy it was found that the joint contained 2 drachms of pus and the whole body showed signs of general pyæmic infection. On making a section through the head of the femur no evidence of any inflammation along the epiphysis could be found, though there was some thickening and separation of the periosteum about the neck of the bone. In some of these cases when the disease began in the periosteum recovery might result from simple irrigation of the joint.

The PRESIDENT remarked that some years ago he wrote a

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paper on pyæmia and that he had pointed out that the cases of what he had called "acute ostitis" were the most typical cases of advanced pyæmia associated with purulent pericarditis and with abscesses in the tongue. He related a case of infection of the hip-joint of six days' duration in which after evacuating the pus from the joint, he drilled the neck of the bone and let out a sero-purulent fluid. The patient recovered. He could not therefore follow the strong opinion expressed by Mr. Owen that it was necessary to use freely the gouge, the scoop, and germicides. He insisted that the process of drilling the bone should not be omitted.

Mr. OWEN, in reply, thought that the term "acute ostitis," as suggested by the President, might be used with advantage, but even that was likely to be misunderstood and misused. He said that he was not in favour of excision in early tuberculous disease of the hip-joint, as Mr. Barker seemed to suggest. He was of opinion that the disease did not begin in the epiphysis, but started in the end of the diaphysis. He had possibly, as suggested by Mr. Spencer, somewhat exaggerated the importance of the situation of the diaphysis in the hip-joint with regard to the occurrence of suppuration in the joint. He was of the opinion that the case quoted by Mr. Golding-Bird was one of acute purulent synovitis and not a case of the variety which he had described in his paper.

Mr. T. LYNN THOMAS exhibited two specimens of (1) Excision of Traumatic Structure of the Urethra and (2) Excision of Goitre.

EPIDEMIOLOGICAL SOCIETY.

Sanitary Progress and its Results.

A MEETING of this society was held on Nov. 18th, the President, Dr. H. F. PARSONS, being in the chair.

The PRESIDENT delivered the Inaugural Address of the Session 1898-99, on Half a Century of Sanitary Progress and its Results. It was, he said, just fifty years since the passing of the first general Public Health Act, and the last published report of the Registrar-General was the fiftieth since the classification of causes of death had been carried out uninterruptedly. In 1844-45 the Health of Towns Commission issued reports on the sanitary conditions of what were then the fifty largest towns in the kingdom, and the state of things therein described was almost incredible. The poor lived in slums such as were now rarely to be seen, cesspits were universal, and often within the houses, pipe-drains were unknown, and flat-bottomed, pervious brick drains for the carriage of slop waters were confined to the best streets, open gutters receiving the filth elsewhere; traps did not exist and the air of streets and houses alike was poisoned with stenches; the water-supply was drawn from polluted wells or from rivers without filtration and stored in open butts, &c.; and filth of every kind was accumulated in middens and laystalls in the most crowded quarters. Fevers were rampant and consumption decimated the population, while the condition of the rural districts was little if at all better. In 1838-42 the average death-rate was 22·1 per 1000, of which 4 per cent. were due to fevers, and in 1847-50 it was 23·4 per 1000, that from fevers being 5·3 per cent. On the other hand in 1891-96 the death-rate was 18·1, with 1 per cent. only due to fevers. In London the mortality from fevers had sunk from 1·339 per 1000 inhabitants in 1838-40 to 0·142 in 1891-96, or one-tenth of the former rate. Some of this improvement was doubtless due to the better social conditions of the people, for, as Lord Macaulay in his history published in 1848 pointed out, instead of one person in 40, one in 23 died every year in London in the time of Charles II., and since he wrote this wages had risen, the food of the working classes had improved, the consumption of meat had increased enormously, while the greater facilities for intercommunication and migration had tended to equalise the labour market so that since the cotton famine in the early sixties there had been no widespread distress sufficient to affect the public health, and the proportion of persons in receipt of Poor-law relief had been reduced from 57 per 1000 in 1849-51 to 23·4 in 1892-6. It was impossible, too, to ignore the progress of medicine and surgery, especially the antiseptic treatment of wounds, which had greatly lessened the fatality of accidents incident to the extension of machinery into every industry. On the other hand, there were conditions tending in the contrary direction, such as the aggregation of the population in towns. The proportion of persons resident in urban districts to 100 in rural had risen from 100 in 1851 to 212 in 1881 and 258 in 1891; and at the last census the number of persons resident exceeded those born—in London, by 18 per cent. in Lancashire by 19, and in Glamorgan by 42. In purely rural districts the reverse proportion was met with, the persons throughout the country born in Huntingdonshire exceeded the population of that county by 38 per cent. This migration to towns tended to a higher death-rate, the comparative mortality of the agricultural labourer being the lowest of all among the working classes, the death-rate during the last ten years having been 19·5 in the town as against 16·9 in the country districts, or if corrected for age and sex 22·32 and 16·95 respectively; while the density of population throughout the country had risen from 325 per square mile in 1851 to 527 in 1896, the increase being, of course, much greater in the towns and in industrial districts. Dense population tended to raise the death-rate, especially from infectious diseases, the spread of which was also favoured since 1870 by compulsory school attendance. The first general Public Health Act was passed in 1848, the year following the earliest attempt at legislative control of water-supplies. It was based on the recommendations of the Royal Commissioners and dealt with most of the matters covered by subsequent Acts, though infectious diseases received but scant attention, and it was to a great extent partial and optional in its application. The General Board of Health which was then created did noble work, but being considered in advance of public opinion was abolished in 1854, its functions being relegated to the Privy Council and Home Office until, in 1871, they were transferred to the newly constituted Local Government Board and the sanitary authorities. The sanitary authorities experienced changes, not always for the better, under the Local Government Act of 1888; though the creation of the county councils, especially when they appointed county medical officers of health, led to better control of the rural districts. The Sanitary Acts of 1855, 1866, 1872, and the Public Health Act of 1875—a codification of the preceding, further amended and strengthened by the Public Health Amendment Act of 1890—the Infectious Diseases Acts of 1889 and 1890, and those for the Housing of the Working Classes of 1868 and 1875 amalgamated by that of 1890, and lastly the Public Health Act for London of 1891, had brought the sanitary administration of the country to its present state of efficiency. The Vaccination Act of the present year was, however, a retrograde step, and the defaults, who had risen from 4 or 5 per cent. of infants born twenty years ago to 20 per cent. in 1894, would probably soon amount to a majority. Sewerage was now almost universal in towns and the drainage of houses was yearly becoming more satisfactory, though the question of the disposal of sewage was still unsettled, various methods being employed more or less provisionally. The health of towns was improving through better sanitation, opening up of thoroughfares and open spaces, new building regulations, the abolition of slums and the tendency to the erection of warehouses in the central parts, the displaced population migrating to suburban districts. Hospitals for isolation of infectious diseases were springing up everywhere, and were now willingly utilised by the parents of children not only of the poor but of the middle-classes.

The average annual death-rate had sunk from 23·1 in 1847-51 to 18·1 in 1892-96, with a saving on the population at the last census of 145,000 lives per annum; in the rural districts it had fallen from 19·9 to 16·7, and in the urban from 24·7 to 18·8. In the thirty-three largest towns it was now 20, scarcely more than in the country districts from 1851 to 1860. That this improvement was due to sanitary measures was evident from the fact that it began with the passing of the Public Health Act of 1872 and had been greater in each successive quinquennium, though for the twenty years 1851-71 it had been practically stationary. It was most marked in the zymotic class, the death-rate per 1,000,000 from continued fevers having fallen from 1184 to 184, that from scarlet fever from 1001 (in 1862-66) to 118 (in 1892-96). Typhus fever had almost disappeared, but diphtheria seemed to be increasing and there was unfortunately no great diminution in the general mortality of infants. A comparison of successive life tables showed that while the mean duration of life was greater by four years for males and six years for females fewer persons reached *extreme* old age, though more survived to or beyond middle life; and consequently cancer,

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diabetes, and other diseases of advanced life appeared to be greatly on the increase. Enteric fever was most prevalent in the northern counties, where sanitation was less advanced and the "midden" still held its ground. Epidemics, like those at Maidstone, Newport, Worthing, and Kidderminster, caused by casual pollution of public water-supplies, occurred from time to time in various places. "Diarrhœa," though properly a symptom only and now often registered as enteritis, was in the form of infantile diarrhœa prevalent in the autumn under certain meteorological conditions. This was a specific disease and more confined to towns, the etiology of which deserved further study, as did the peculiar and changing distribution and prevalence of diphtheria. The remarkable reduction in the mortality from scarlet fever was to be ascribed rather to the lesser fatality which had marked it of late; for it was still very prevalent and in local outbreaks, amid grossly insanitary conditions, exhibited all its former virulence. After the widespread epidemic of small-pox in 1871–72 vaccination became general and small-pox had in consequence almost disappeared as a cause of death, especially in those towns where the cases were removed to hospitals beyond their borders; but the outbreaks at Leicester, Sheffield, Gloucester, and Middlesbrough, afforded indications of what we might expect from the abandonment of general vaccination. The last disease he would consider was tuberculosis, which in all its forms, with one exception, had shown a marked reduction, the mortality from phthisis being now less than half that which it was fifty years ago—a result attributable to the better drainage of land, the improved ventilation and sanitation of houses, factories, and workshops, and the higher standard of living and comfort now enjoyed by the mass of the people. The one exception was that of tabes mesenterica or the intestinal tuberculosis of infants, which was certainly to be attributed to the increasing use of the milk of cows, a large proportion of these animals suffering from tuberculosis. Such milk could be rendered innocuous by boiling or sterilisation; and attention having been called to the subject it might be hoped that steps would be taken to reduce, if not to stamp out, the disease in dairy farms. The discovery of the bacillus had fully explained the etiology of tuberculosis in every form, and could the public mind be brought to realise also the dangers arising from the diffusion of the dried sputa of phthisical persons the prevalence of this disease might be reduced to a point hitherto unhoped for or deemed beyond the possibility of attainment.

SOCIETY OF ANÆSTHETISTS.

Pure Anæsthetics.

A SPECIAL meeting was held on Nov. 17th at the society's rooms, 20, Hanover-square, W., the President, Dr. DUDLEY BUXTON, being in the chair. It was decided to alter the day of meeting from the third Thursday to the third Friday in each month. At the conclusion of the special meeting the first ordinary meeting of the present session was held.

The PRESIDENT in welcoming the members at the opening of the session urged upon them the necessity for individual effort in promoting the interests of the society.

Professor W. RAMSAY, F.R.S., read a paper on Pure Anæsthetics. He drew attention to the unpleasant effects produced by giving chloroform in the presence of lighted gas or lamps. The pungent odour affecting the eyes, nose, and throat was due to the formation of carbonyl chloride the result of burning chloroform vapour. The body was a gas at ordinary temperatures which condensed to a colourless liquid, and in the presence of moisture decomposed into carbonic acid and hydrochloric acid. Chloroform on exposure to sunlight or diffused daylight and to air undergoes decomposition with the formation of phosgene gas. The addition of alcohol prevented the formation of carbonyl chloride when moist air and light were excluded. Other impurities were practically eliminated by ordinary care in the manufacture. The best test of the presence of carbonyl chloride was, he thought, to breathe it when its irritant action on the throat revealed its presence. To remove this impurity agitating the suspected chloroform with slaked lime proved effectual. The chloroform was then filtered off. Professor Ramsay quoted statistics, collected by Dr. Newman of Glasgow, which showed that the use of chloroform thus purified lessened the after-effects. Referring to ether, Professor Ramsay stated that a sticky residue, which was probably an ethyl peroxide, was liable to be formed in ether which had been exposed to light and air. To purify ether it was suggested that to shake it with metallic mercury was the most satisfactory method. The "A.C.E. mixture" had been investigated by Mr. Smiles for Professor Ramsay. He found that the presence of alcohol might be considered of no advantage while the percentage of chloroform in vapour rapidly increased until finally it was as much as 62 per cent.

Mr. WILLETT thought the test by smell was inadequate. He regarded the method adopted by Professor Ramsay in estimating the evaporation of the constituents of "A.C.E. mixture" as too dissimilar to what obtained when that mixture was employed clinically to carry much weight.

Dr. SILK referred to the different views held by anæsthetists with regard to what makes of chloroform and ether contained the least impurities and were therefore best for inhalation. He believed that methylated ether was as good as pure ether, but thought most opinions favoured the use of pure chloroform.

Dr. A. COOK contended that the "A.C.E. mixture" if given from a Rendle's mask was not evaporated in the irregular manner suggested by Professor Ramsay. He thought it possible that carbonyl chloride might be produced even without the presence of a flame and instanced a case in which an irritating vapour was given off from chloroform in the daytime.

Mr. MCCARDIE said he had been informed that some methylated spirit contained a certain amount of naphtha which might possibly account for some of the impurities of methylated ether, although his experience went to show that the methylated ether was as good clinically as pure ether.

Mr. CARTER BRAINE quoted two cases in which chloroform which had been exposed to air for a fortnight had caused great coughing and distress to the patient.

Dr. PROBYN-WILLIAMS had read of severe symptoms leading to death ensuing upon the administration of chloroform in the presence of lighted candles during a prolonged abdominal operation undertaken at night. His experience showed that methylated ether was in every way satisfactory.

Mr. E. F. WHITE corroborated this view. He thought it was a matter of importance to elicit whether ethers of different specific gravities differed in their clinical behaviours. Referring to Dr. Newman's results he thought the amount of sickness noted was excessive and more than was usual by the methods in use in England.

Dr. E. A. STARLING believed that the methylated chloroform and ether produced more after-effects than the pure anæsthetics. The A.C.E. mixture he considered to be unreliable, and his clinical experience bore out the experiments which Professor Ramsay had quoted.

The PRESIDENT, after thanking Professor Ramsay for his valuable paper, drew attention to the fact that impurities in chloroform and ether might be introduced during the process of manufacture or as a result of exposure. In the "Pictet" process, although an absolutely pure product was secured, yet it was largely diluted with added alcohol to maintain its purity, and was even then as liable to subsequent decomposition as other varieties. The same remark applied to the more modern methods of manufacture from the grey acetate of lime and by the chloral process.

Professor RAMSAY, in reply, believed that most of the reliable manufacturers turned out pure chloroform and ether. No naphtha impurities appeared in the methylated ether. The "Pictet" method was inferior to those depending upon fractional distillation for their purification.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—After-Treatment of Abdominal Section.—Combined Method of Pelvic Surgery.

A MEETING of this society was held on Nov. 10th, Dr. H. MACNAUGHTON-JONES, President, being in the chair.

Dr. J. MACPHERSON LAWRIE (Weymouth) showed (1) a large Broad Ligament Cyst and (2) Double Broad Ligament Cysts.

Dr. HERBERT SNOW resumed the adjourned discussion on Mr. Christopher Martin's paper on Some Moot Points in the After-Treatment of Cases of Abdominal Section. He held

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that after-treatment was of more importance than the actual operation. Cleanliness and dryness were the cardinal points, and they were more important than antiseptics. As regards sutures he thought it important to secure the peritoneum separately, but it was often a waste of time to suture the fascia and skin separately. He agreed with Mr. Martin that silk was not reliable and that it might give rise to sinuses and sepsis. For purgation he preferred an enema at the end of forty-eight hours; after that morphia might be given if necessary. But he had a strong prejudice against the drug, especially as it increased the tendency to constipation.

Dr. C. H. F. ROUTH was an advocate of drainage in every case. He objected to iodoform for the wound, since it might give rise to poisoning by absorption. His plan was to dip cotton-wool in iodine and to apply it to the sides of the wound. He discountenanced morphia and considered that trional and paraldehyde were far better as they were sedatives without any injurious effect.

Dr. BANTOCK remarked that the paper was concerned with matters of detail on which there would always be room for divergences of opinion. He agreed with Mr. Martin on some points, such as the importance of dry dressings and the value of silkworm gut as a suture material. But on other points he disagreed, for instance on the question of posture and the administration of morphia. Why did Mr. Martin use iodoform and boric acid in septic cases? For his part he endorsed the dictum of Knowsley Thornton that it was no use employing antiseptics when the patient was herself septic. In the case of a healthy young subject the abdominal wound could quite well be closed in one layer, but in emaciated women separate layers were necessary, requiring buried sutures. Stitch abscesses were caused simply by tying sutures too tightly. His rule as to drainage was—when in doubt drain, for if unnecessary it could do no harm, whereas if not used when it ought to be the patient's doom was sealed in forty-eight hours.

Mr. BOWREMAN JESSETT agreed with Mr. Martin's views as to posture, but pointed out that moving must be carefully done and not by the patient, but by a skilled nurse. When drainage was used he thought the patient should be kept on her back. Formerly he sewed the wound in one layer with silkworm gut, and if all the tissues were included this often answered perfectly. But there was a risk of drawing up the peritoneum between the muscular layers. He now generally sewed up in three layers. He had abandoned silk and silkworm gut for buried sutures, and used instead catgut prepared according to the directions of Martin of Berlin. For the skin he used silk or horsehair. His rule about drainage was, like Dr. Bantock's—when in doubt drain. The administration of morphia must depend on the patient; it was generally indicated in neurotic cases. As to purgation, he generally got the bowels open on the second day.

Dr. PURCELL remarked that the preparation of the patient had a great deal to do with the after-treatment. The opening of the peritoneum was an important point; it was better to go not through the linea alba but through the rectus muscle. If a drainage-tube were used a loose suture should be put in and tied. He generally purged early, giving 5 gr. of calomel on the second day. He had once lost a patient through morphia and had given up its use.

Mr. CHARLES RYALL asked Mr. Martin why he waited till the fourth day before purging the patient. He saw no reason why an aperient should not be given on the night after operation.

Dr. TRAVERS thought the dressing was one of the most important things. He used a dusting-powder of chinosol and boric acid. Morphia should be given sparingly and in small doses—$\frac{1}{8}$ gr. was usually sufficient. For purgation he relied largely on calomel and did not give enemata if he could help it.

Dr. HEYWOOD SMITH was glad to hear favourable opinions about calomel. One of the most anxious symptoms after operation was flatulence, because the question always arose whether it was the precursor of peritonitis.

The PRESIDENT regarded the dorsal position after operation as most important and as anatomically indicated. He always sutured the wound in three layers, using silk for the peritoneum and fascia and silkworm-gut for the skin. He thought Mr. Martin went too far when he said that stitch abscesses should not occur in clean cases, but at the same time he did not agree with Dr. Bantock that they were due to sutures tied too tightly. He would say—when in doubt drain, for he thought that blood should not be left in the peritoneal cavity, even clean blood. He never gave morphia. For purgation he preferred sulphate of magnesia given on the second or third day in drachm doses every half hour or hour till the effect was produced.

Mr. CHRISTOPHER MARTIN briefly replied.

Mr. STANMORE BISHOP (Manchester) read a paper on the Combined Method in Pelvic Surgery, the discussion on which was postponed till the next meeting.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Cancer in Relation to the Dwelling.

A MEETING of this society was held on Nov. 11th, Dr. E. GWYNN, President, being in the chair.

Dr. W. H. SYMONS read a paper on Cancer in Relation to the Dwelling, a subject to which he said he had turned his attention since his appointment as medical officer of health of Bath, in the hope that the study of the vital statistics of a city notorious for its high mortality from cancer, and the population of which was exceptionally constituted, might throw some light on certain aspects of the etiology of cancer. For forty years the population of the borough had been stationary, amounting to about 52,000, of whom two-thirds were females. The proportion of persons over sixty-five years of age was 76, as against 45 in England and Wales, and of children under five years of age 89, instead of 123, per 1000 living; while that of persons living on their own means was 101, as against 36, Hastings only among towns in the southern counties having a like proportion. The health of the town was good and improving, the actual number of deaths being as follows:—

—	Standard fully corrected.	Mean, 1881-90.	Mean, 1891-5	1896.	1897.
All causes	1056	1043	931	921	361
Typhoid fever	12	5	3	5	3
Phthisis	94	38·5	73·2	61	64
Other respiratory diseases	377	361	345	300	308
Cancer	**42**	**53·8**	**57·4**	**62**	**65**

At the same time cancer had shown a steady increase until the deaths were 50 per cent. higher than they should be after correction for age and sex. In the English counties, great as were the differences in the crude and even the standard death-rates from cancer, the extremes fell between + 10 and − 10 per cent. if the population over thirty-five years of age were alone taken into account. Dr. E. N. Nason, Dr. T. W. Blake, and Dr. Lloyd Jones had endeavoured to establish a relation between the conditions of the habitations of a people and the prevalence of cancer, Dr. Nason maintaining its preference for low-lying, damp dwellings as Mr. Haviland had for places liable to floods; but the high death-rate of Shrewsbury could not be so explained since but a small part of the town was affected by the inundations. The city of Bath, situated in a deep valley traversed by a sluggish river, on a dense surface soil overlying lias and oolite, with ground-springs and hard water, and surrounded by steep, in some places precipitous, hills, from 300 ft. to 500 ft. in height, presented every variety of site. Some local practitioners believed in the existence of a "cancer zone," but he could find nothing in the distribution of the cases to support this opinion, though there were some peculiarities, as that of a street in which 13 deaths had occurred in ten years on one side and only one on the other. Neither the elevation nor the aspect nor the class of house seemed to have any constant relation to the incidence of the disease, while the fact that in the course of thirty years 4 deaths had never been known in the same house, 3 in six only, and 2 in very few, the vast majority being the only ones recorded, seemed conclusive against any hypothesis of the disease being influenced by the conditions of the dwelling.

Dr. NEWSHOLME believed the increase of cancer to be apparent rather than real, due to better diagnosis and certification. This view was supported by the fact that in insurance offices whose members were of a class able to

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command skilled medical advice no such increase had been observed, nor was it so marked among women in whom the organs mostly affected were palpable, the increase being mainly in the cancers of the stomach, liver, &c., especially among men, which were formerly registered as "internal disease" or other vague designation. Street distribution resolved itself into social differences, and these involved those of mean age and therefore of liability to cancer. In comparing towns the presence of large hospitals must be considered and whether these were county hospitals or not, for the Registrar-General excluded the deaths of strangers in the case of the former only. The death-rate among persons over thirty-five years of age was dependent on the mean longevity of the classes to which they belonged; thus, among farmers over that age it was 23 per 1000 and among tailors 20 only, simply because fewer of the latter attained to the age at which cancer was most frequent.

Dr. HERBERT SNOW (present by invitation) maintained that all statistics dealing with cancer as one disease instead of a group of diseases having little in common were necessarily fallacious. There were in all predisposing and exciting causes. Thus, epithelioma commonly followed the mechanical irritation of an unhealthy mucous surface. Carcinoma, a glandular neoplasm, was in the female organs a deviation from the normal devolution or degeneration of the uterus or breast, when their functions ceased to be exercised, induced by previous excessive activity or other depressing influences. Heredity could be asserted of "blastomata" only and sarcomata differed essentially from the rest of the so-called cancers. Cancer was a disease of civilised life and was more frequent in domestic animals than among wild ones, and especially so in cows whose lives were most removed from a state of nature and who were subject to debilitating influences and local irritation.

Dr. SYMONS, in replying, remarked that while the large number of retired officers and elderly ladies in Bath would tend to the greater prevalence of cancer, the excess of females over males, as 150 to 100, and in Bathwick as 200 to 100, being chiefly due to the number of domestic servants, would have the opposite effect, they being largely drawn from the country, whither they returned if ill.

LIVERPOOL MEDICAL INSTITUTION.

Nutshell in the Larynx. — Exhibition of Radiographs.— Rupture of the Membranous Urethra.—The Open-air Treatment of Tuberculosis.

A MEETING of this society was held on Nov. 17th, Dr. MACFIE CAMPBELL, President, being in the chair.

Mr. MITCHELL BANKS read notes of a case of a Piece of Nutshell in the Larynx removed by tracheotomy from a girl aged seven years. The foreign body was seen by Dr. Hunt to lie immediately below the cords, the vocal cords being excoriated by its passage. The child had a severe attack of dyspnœa in the night and next day Mr. Banks performed tracheotomy and removed the foreign body.

Mr. BANKS also showed Radiographs of (1) a Bullet in the Foot and (2) a Bullet in the Thigh (photograph taken by Mr. C. T. Holland).

Dr. ALEXANDER described a case of Complete Rupture of the Membranous Urethra in a man, aged twenty-seven years, who was run over by a dray and sustained in addition a compound fracture of the right femur. A sac filled with blood and serum was found on perineal section in front of the bladder. This sac was at first mistaken for a ruptured bladder and drained. Next day the bladder was found, pushed far back at the pelvis, and completely separated from the urethra; it was opened by Cock's method. The bladder was drained by tube and the large sac by gauze. The necessary splints for the fractured thigh interfered somewhat with after treatment but the patient was going on well.—Mr. BANKS and Mr. RUSHTON PARKER spoke.

Dr. NATHAN RAW read a paper on the Open-Air Treatment of Tuberculosis in Sanatoria. He alluded to the general prevalence and high mortality from tuberculous disease, which, although diminished in recent years by improved sanitation and food inspection, still ranked too high. He mentioned the poor results of treatment in general hospitals and considered it unfair to both the patient and the other inmates of a general ward that he should be treated therein. He combated the "inheritance" of phthisis and insisted on its infectivity. He concluded by considering it the duty of the legislature to deal thoroughly with the question of cure in sanatoria, and urged municipalities, boards of guardians, &c., to establish sanatoria.—The PRESIDENT, after congratulating Dr. Raw upon the excellence of his paper, remarked that while by the tables shown the mortality from tuberculous disease in adults had enormously decreased Sir Richard Thorne had pointed out that the mortality from this cause under one year of age had increased—due, he thought, to the greater use of cow's milk at that age. A pure milk-supply became a necessity. Country milk brought into Liverpool had been shown by Dr. Hope to contain the bacillus of tubercle in 13 per cent., while milk from town shippons only contained it in 4 per cent. It was interesting to know that heating milk to 195° F. was sufficient to sterilise it.—Dr. HOPE emphasised the close identity between measures which had been successful in the prevention of tuberculosis and measures which promised to be successful in treatment. He did not consider that under existing circumstances any useful purpose would be served by scheduling tuberculosis as one of the notifiable infectious diseases, but there were no doubt cases in which the medical officer of health might with advantage supplement the advice and action of the medical adviser, and it was desirable that in every case thorough disinfection of the house, &c., should take place. The remarkable decline in the mortality from tuberculous disease in Liverpool was in the main owing to sanitary measures having as one principal object improvements in ventilation. These improvements, carefully thought out and slowly elaborated, had reduced the mortality per 100,000 from all forms of tuberculosis from 430 in 1866 to 292 in 1896, the rate above five years of age from phthisis having fallen from 363 to 233, and below five years of age from tabes mesenterica, &c., from 637 to 497 in the period alluded to. He remarked on the analogy furnished by tuberculosis in cows, those shippons which were ill-ventilated and insanitary being centres of infection, whilst in the well-ventilated ones the disease was rare. 4 per cent. of the samples of milk taken from shippons in Liverpool were found to be tuberculous, but in samples of country milk more than three times that amount was found—viz., 13 per cent. This instances the much greater advance made in cities than in rural districts in these matters. —Dr. BUCHANAN considered it necessary in the treatment of tubercle to remove the patient to an atmosphere from which the tubercle bacillus and other organisms were absent, and, if possible, to one in which they cannot live and at the same time to increase the resistance of the host. He advocated sanatoria for collective cases but urged that we must all strive to make a man's dwelling his sanatorium. Fifty years ago Professor Virchow said "it is the duty of mankind to overcome tuberculosis as scurvy has been overcome."—Dr. CATON, who had visited various foreign sanatoria, expressed regret that hitherto Great Britain should have lagged behind continental nations in this matter. In proximity to every great centre of population sanatoria ought to be established by municipalities, county councils, or boards of guardians. The expenditure involved would in the end prove an economy as well as delivering the population from the scourge of tuberculosis. General hospitals ought not to admit cases of phthisis. Dr. Caton urged the desirability of making widely known the infectivity of phthisis.—Dr. A. DAVIDSON pointed out that the principle of open-air treatment of phthisis was not new and quoted from Dr. Hughes Bennett's book, published in 1853, where it was considered of supreme importance and where he deprecated the sending of phthisical patients to warm climates abroad. Dr. Bennett expressed a hope that large sanatoria would be established in this country. Dr. Davidson referred to the great success which, in his experience, attended the plan of sending young phthisical patients to winter on the north cost of Wales.—Dr. GRÜNBAUM thought that, desirable as sanatoria might be, too much must not be expected and promised as regards results. The infectivity of phthisis was of a different order to that of typhus fever, small-pox, &c., as was probably also the morbific agent. The evidence showed that hygienic measures had not the same remarkable effects on tubercle, typhoid fever, and diphtheria as on scarlet fever, small-pox, and typhus fever.—Dr. T. R. BRADSHAW hoped the discussion would lead to some practical steps being taken in Liverpool. He thought a good deal was to be said for notification; it need not of necessity prevent

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a phthisical patient from following his employment, as each case could be treated on its merits. He mentioned instances where permitting phthisical patients to follow their occupations indiscriminately as at present was not without danger to other persons. He thought the Medical Institution ought to endeavour to move the public in the matter.—Dr. ABRAM gave two instances to illustrate the marked infectivity of pulmonary tuberculosis. He drew attention to what, in his opinion, was generally overlooked—namely, that the reputation of the open-air treatment was in the main based on the results obtained in high-altitude sanatoria. He counselled moderation in urging the virtues of low-lying sanatoria lest there should come a reaction in the public mind with regard to the provision of pure air for tuberculous patients.—Dr. CARTER, Dr. BARR, Dr. GLYNN, Dr. MACALISTER, Mr. S. KELLETT SMITH, and Dr. STOOKES took part in the discussion.

CLINICAL SOCIETY OF MANCHESTER.

Exhibition of Cases.—Extra-uterine Pregnancy.—Placenta Prævia.

A MEETING of this society was held on Nov. 15th, Dr. A. HILL GRIFFITH, President, being in the chair.

Dr. JUDSON BURY showed the following cases of Nervous Disease:—(1) Hemiplegia from Embolism the result of Aortic Disease; (2) Hemiplegia the result of Syphilitic Endarteritis; (3) Syringomyelia; and (4) Chronic Anterior Poliomyelitis affecting a Limb already Atrophied in consequence of Infantile Paralysis in Early Life.

Dr. WAHLTUCH showed two cases. The first was that of a man, aged forty-two years, who had come under his care at the Hulme Dispensary on Oct. 27th, 1898, suffering from Paralysis of the Median Nerve. He had been ill since May 23rd, when he awoke with pain in the neck and along the left arm, the forearm, and the palm of the hand. There was numbness in the second and third, and, to some extent, in the fourth, fingers. Treatment by massage and electricity twice a week had been carried out during the preceding three weeks. The patient had felt better after each application; the pains were less frequent and less severe and the numbness was almost gone. The second case was one of Paralysis of the Deltoid of the Left Arm. The patient, a man, aged sixty-four years, had had a fall in August last, and a fortnight later had felt weakness and pain in the left arm, especially in the deltoid. The muscle was wasted and the patient could not lift up his arm. He had attended as an out-patient at the Hulme Dispensary on Oct. 1st. Treatment by massage and electricity had been carried out. Slight improvement had taken place at the end of four weeks.

Dr. DULBERG showed a case of Subacute Articular Rheumatism in a patient who was undergoing the Tallerman treatment. He had benefited considerably, although he had had only three baths. The treatment was described and the opinion was expressed that it deserved to be tried in suitable cases.

Dr. T. ARTHUR HELME read notes of a case of Extra-uterine Pregnancy of Twelve Years' Duration. The history pointed to the facts that the extra-uterine pregnancy had existed for twelve years; that ten years ago the patient had given birth to a child *per vias naturales*, whilst the ectopic pregnancy was still there; and that the latter had lain dormant until two years ago, when suppuration began and pus was discharged *per vaginam*. Dr. Helme opened through the posterior vaginal fornix, removing the fœtal skeleton and draining the sac through the vagina.

Dr. HELME also discussed the Treatment of Placenta Prævia, dealing especially with the central variety and showing the correctness on anatomical grounds of Barnes's description of his method of "stripping the placenta" from that portion of the uterus below Barnes's boundary line, now known as Bandl's ring—the contraction or retraction ring.

EDINBURGH OBSTETRICAL SOCIETY.

Presidential Address: Surgical Interference in Gynæcology.—Latency of Gonorrhœal Infection.

A MEETING of this society was held on Nov. 9th, Dr. HALLIDAY CROOM, President, being in the chair.

The following office-bearers were elected for the ensuing session:—President: Dr. J. Halliday Croom. Vice-Presidents: Dr. N. T. Brewis and Dr. J. W. Ballantyne. Treasurer: Dr. W. Craig. Secretaries: Dr. J. Haig Ferguson and Dr. W. Fordyce. Librarian: Dr. R. Milne Murray. Editor of Transactions: Dr. J. W. Ballantyne. Members of Council: Professor Simpson, Dr. Alex. Ballantyne, Dr. Melville Dunlop, Dr. F. W. N. Haultain, Dr. Owen Mackness, Dr. Macvie, Dr. Berry Hart, and Dr. T. Brown Darling.

Dr. CROOM read his presidential address on Surgical Interference in Gynæcology. It was with satisfaction at the commencement of the sixtieth session that the society could look back upon the work accomplished in former years. Originated by the exceptional brilliance of Sir James Y. Simpson, it did much to further gynæcology in Scotland, and there was probably no society in Scotland which had met month by month and lived and flourished as this had done. During the last ten years it had preserved its obstetrical character, as there had been twice as many papers on this branch as on the gynæcological. In recent years gynæcology had progressed into a science and might now be said to be divorced altogether from obstetrics, for by easy gradations it had digressed from the domain of the physician to that of the surgeon. The obstetric physician must be relegated to the lying-in hospital, while the gynæcologist must be classed among the surgeons of a great hospital. It must ever be a difficulty to a surgeon who is not accustomed to either obstetrical or gynæcological work to make his diagnosis a certainty. There was no doubt that the surgical treatment of diseases of women had been much overdone, as in the case of removal of the ovaries and tubes for inflammatory diseases. We could not be too glad that the tendency now was becoming more and more conservative and that the perfected methods of antiseptic surgery enabled us to deal with even limited areas of affection in ovaries and tubes. We realise that it is only in grave pathological lesions that these organs should be entirely removed. The means of dealing with a tubal pregnancy before rupture were well determined and its removal was a matter of comparative safety compared with the risks of rupture. But it was just possible that the resort to the knife had been overdone and that many early ectopic gestations, even after rupture, had become absorbed and disappeared without the arbitrament of the knife. The operation for the entire removal of the uterus by the vagina had developed enormously. It could be done swiftly and easily in a few minutes, but the question was in the case of carcinoma if it tended to the prolongation of the life of the patient. It stopped hæmorrhage and fœtid discharge, but relief was only temporary. Even temporary alleviation would be an advantage were it not that with the recurrence of the disease the ultimate pain and suffering were greater than if there had been no interference at all. In an experience of twenty years Dr. Croom had tabulated every case of malignant disease of the uterus which had come under his supervision. They amounted to 260, and of these only 15 fulfilled all the conditions requisite to justify hysterectomy with expectation of success. Of these 12 were operated on, and though the patients—to use the hackneyed phrase—made absolutely uneventful recoveries they all died within a year and, in Dr. Croom's opinion, with greater suffering than if they had been left alone. This applied to several cases in which the disease was absolutely confined to the fundus and where, as far as could be made out, there was no involvement of the broad ligament; and yet in all the disease recurred in the peritoneum and the patient died in great distress within the year. After an initial diagnosis of cancer a woman's expectation of life was from two to two and a half years. Many forms of cancer were painless and most destroyed life by hæmorrhage, exhaustion, and uræmic poisoning. The question was: Did women live longer lives and die less painful deaths if the uterus were removed or if the disease were allowed to run its ordinary course? In Dr. Croom's opinion surgical interference was better left alone. Statistics might be given of the German results, but whatever the explanation might be neither in this country nor in America could results be obtained at all in comparison with what the Germans claim. Cancer in Germany must be one thing and cancer in Great Britain another, or the respective diagnostic skill of the two countries must vary considerably, or women must present themselves to German surgeons at a period when the disease was in its most initial stage, when it was confined to a small nodule in the cervix or limited to the mucous membrane of the cervix. Another explanation of the discrepancy might be that cases of marked cervical catarrh and gross erosion.

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had been mistaken for cervical cancer and treated as such. This had occurred in the personal knowledge of Dr. Croom. And it was easy to mistake advanced senile uterine catarrh of a pronounced type for a fundal cancer. In all Dr. Croom's cases before operation the suspected tissue was examined microscopically. The whole point was that it was quite conceivable that with a cancer very early diagnosed and operated on the prolongation of life was possible, but after a cancer had developed beyond its most initial stage Dr. Croom held that the removal of the uterus did not prolong life and that the subsequent death was infinitely more terrible. As regarded the operation perhaps Edward Kelly, acting on Freund's suggestion, might be on the right lines in giving up vaginal hysterectomy for cancer and dealing with the whole uterus and broad ligaments from above. The operation of vaginal hysterectomy had been so improved that anything less than a successful immediate issue would be scarcely warranted, but that "the patient left the hospital well" was no addition to our knowledge of results. Cancer was extraordinarily prevalent, but in our efforts to ameliorate it we seemed to have come against a dead wall. It was possible that the solution of the question might yet be found in treatment in some animal extract or in the principle of antitoxin remedies. In groping for light it was our duty to keep an open mind for any theory and to welcome any suggestion, however extreme, in dealing with this awful disease. At the present day every surgical proceeding was accepted and adopted; it was striking to think how medical innovations were received with distrust. Even anæsthesia was at first scorned and regarded in the light of charlatanism. With regard to hysterectomy for conditions other than cancer, such as prolapsus, subinvolution, and inflammatory disease of the uterus and appendages, the operation was one which from its simplicity required to be safeguarded. It bade fair to be overdone. Unlike uterine cancer, these diseases were not in themselves necessarily fatal and the symptoms and discomfort to which they gave rise could in many cases be alleviated by other less drastic measures. In small bleeding fibroids and prolonged hæmorrhages from the uterus which had resisted all other means of treatment this operation gave, perhaps, the best prospect of cure. With regard to fibroids, removal of the ovaries for bleeding or rapidly growing tumours was gradually being supplanted by the operation of abdominal hysterectomy, an operation much more certain in its results though more dangerous for the moment. Even yet the death-rate was high and it was an operation which, except in the hands of experienced operators, was not to be undertaken without considerable anxiety.

Dr. MILNE MURRAY read notes on a case bearing on the Latency of Gonorrhœal Infection. He had attended a woman in three confinements; the mother did well each time. The first two children were healthy and remained so. The third child showed signs of ophthalmia on the third day after labour and soon developed very severe symptoms. The right eye was affected some days after the left. The mother had not suffered from any leucorrhœa before the birth of the child and the father was at that time free from any symptoms. He had contracted gonorrhœa eight years before and to all appearance was soon quite cured. No other possible source of the ophthalmia could be found but latency in the father. Dr. Milne Murray discussed the question and adduced Noeggerath and Tait as giving cases where there was latency for as long a period.—Professor SIMPSON, Dr. CROOM, Dr. HAULTAIN, and others joined in the discussion.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held in the library of the Royal Infirmary, Newcastle-on-Tyne, on Nov. 10th, Dr. Limont, President, being in the chair.—Dr. R. A. Bolam gave a valuable and interesting Demonstration on the Nutrient Value of various Meat Extracts, &c.—Dr. T. Beattie, in the absence of Dr. Drummond, showed: 1. A child, aged nine years, suffering from Congenital Heart in whom the cyanosis and the clubbing of fingers and toes were extreme. The murmurs present indicated pulmonary stenosis, tricuspid regurgitation, and patent foramen ovale. 2. A child, aged fifteen years, with Congenital Heart in which patent ductus arteriosus had been diagnosed. Over a limited area in the pulmonary region there were a continuous thrill and a continuous buzzing murmur having systolic and diastolic exacerbations simulating the murmur of an arterio-venous aneurysm. 3. A man with Aneurysm of the Ascending Aortic Arch which had apparently ruptured into the superior vena cava, evidenced by sudden swelling of the head, neck, arms, and upper part of the thorax, intense cyanosis, marked pulsation of the veins of the neck, continuous thrill, and a buzzing murmur heard with maximum intensity over the first and second right interspaces close to the sternum. 4. A man with Aneurysm Springing from the Left Side of the Arch and presenting above the left clavicle, and therefore simulating a subclavian aneurysm. The intra-thoracic origin was proved by definite signs of pressure on the left bronchus. 5. A case illustrating the diagnosis of Adherent Pericardium.—Dr. Beattie, for Dr. Oliver, brought forward a man showing a Pulsating Tumour in the Back presenting opposite the fourth and fifth ribs to the left of the spine. The ribs were eroded and although no bruit was audible the tumour was thought to be an aneurysm of the descending aorta.—Dr. Hume showed a young miner in whom he had Resected a Foot of Small Intestine which had been torn from its mesentery as the result of a bicycle accident, the subsequent enterorrhaphy being effected by a Murphy's button.—Dr. Hume and Dr. H. Bramwell showed an old man after operation for Cerebral Abscess following a head injury. Previously to the operation the patient had been completely hemiplegic and after evacuation of pus from the hemisphere rapidly and completely recovered.—Mr. Albert Martin brought forward the following cases: 1. A boy, aged nine years, with Bilateral Congenital Displacement of the Hip-joint, comparing the gait with that of a case of pseudo-hypertrophic paralysis. 2. An infant with Congenital Radial Deflection of the Terminal Phalanges of both Thumbs, one of which had been cured by division of resisting structures. 3. An infant with congenital suppression of the Growth of the Forearm and the Hand with Webbing of the Fingers.—Mr. Rutherford Morison showed: 1. A man after Pylorectomy for Glandular Carcinoma, who had made an uninterrupted recovery and is now able to take ordinary food. 2. Another patient who, after Pylorectomy for Glandular Carcinoma, is now able to eat anything and has passed a stone since operation. 3. A patient after Removal of the Pyloric Half of the Stomach, with specimen. Mr. Morison described by means of diagrams the method of operation and stated that now, one month after the operation, the patient was able to eat ordinary diet.—Dr. Limont showed the following interesting examples of skin disease: (1) A case of Lichen; (2) a case of Seborrhœic Dermatitis; (3) cases of Rodent Ulcer; (4) a case of Pityriasis Rubra; and (5) a case of Pustular Syphilide.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 16th, Mr. T. D. Pryce, President, being in the chair.—A paper was read by Dr. W. B. Ransom on the Vis Medicatrix Naturæ. The paper pointed out the large range of conditions under which living beings could maintain health and the great adaptability of animals and plants to variations in these conditions. Repair of injury and regeneration of lost parts were shown to be extensive in the highest, as in the lowest, forms of life and the fact of a functional reserve of energy was insisted on. The indirect influence of parts of the organism on the whole was illustrated, and, finally, the means by which the body resists the attacks of microbes were put forward.—The paper was discussed by the President and Dr. Cattle.—Mr. R. C. Chicken showed Three Stones which had been removed from a Female Urinary Bladder by Dilatation of the Urethra. There were two smaller ones lying free in the bladder itself and one large one which was contained in a sacculus. The latter measured 2¼ in. by 1⅝ in. in diameter and 6½ in. by 4⅝ in. in circumference, and it weighed 795 grains. Mr. Chicken observed that in all probability the smaller stones were fragments broken off from the original one and had since grown by accretion. As far as he could ascertain, Mr. Chicken said, the large stone was the largest which had ever been removed by dilatation of the urethra and was much larger than the limit of size laid down by authorities as being sufficiently large for this method of removal to be adopted without injury. Inasmuch as there were no injurious after-effects following the operation in his case Mr. Chicken gave it as his opinion that removal by this method ought to be adopted in every case of stone in the female bladder where the size did not exceed the dimensions of the one he had removed. — Mr. Anderson showed: 1. Uterus removed by the Abdominal Method for Fibroid

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Tumours. The patient's age was forty-eight years; the tumour had been noticed for three years. The menopause began two years before operation. There had been no hæmorrhage other than the ordinary catamenial discharge. The tumour had been rapidly growing since it was noticed. The whole tumour weighed 11¼ lb. and reached nearly to the liver, occupying the right loin. In parts it was calcified. 2. Two Stones removed from the Pelvis of a Kidney. Symptoms of stone had existed for twenty years, but during the whole of this time there had been no hæmaturia observed. 3. Appendix Vermiformis containing a Fæcal Concretion removed at a period of quiescence; there had been three attacks of appendicitis and there was no perforation.

BRITISH ORTHOPÆDIC SOCIETY.—A meeting of this society was held on Oct. 21st at the National Orthopædic Hospital, Great Portland-street, Mr. A. H. Tubby being in the chair.—Mr. Luke Freer showed a Modification of Holland's Arch for Flat-foot containing a pad of porous rubber in place of steel which he had found much more satisfactory.—Mr. Muirhead Little, Mr. Openshaw, and Mr. Tubby showed some interesting cases of Tendon Transplantation. In Mr. Little's cases the peroneus was inserted into the tendo Achillis. In one of these the wound suppurated freely, in spite of which there had been some improvement; another operated on in a similar manner had so far been most successful. He thought the kangaroo tendon had been responsible for the suppuration. In Mr. Openshaw's cases one had been treated by exposing and dividing the peroneus longus and tibialis posticus; then passing the forceps through an incision in front of the tendo Achillis he drew the peroneus longus across the back of the leg and stitched it to the tibialis posticus with the idea of correcting the valgus by diminishing the power of the peroneus and increasing the power of the tibialis posticus. The result had been fairly good.—Mr. Tubby showed a case of Congenital Hip Displacement treated by the Open Method. Mr. Robert Jones and he had attended the case together at the Evelina Hospital. The girl was twelve years old and had 2½ in. shortening. They made an anterior incision. There was a rough bony prominence inside the acetabulum. They made a square surface on the head of the femur, cut two-thirds through the neck of the femur, and gave it a twist to correct the inversion. Their object was not so much to make an acetabulum as to bring about fibrous union. By this method uprising was prevented, but there remained some shortening as the neck of the femur was horizontal. The case had been previously treated by Lorenz's operation. — In the subsequent discussion Mr. Reeves said that he had always opposed these operations. A case of his own which was sent to Vienna to be operated upon was not one bit benefited.—Mr. Openshaw said that he had performed six operations of the kind, but he considered that only two of them were really successful.—The discussion was continued by Mr. Eve, Mr. Noble Smith, Mr. Muirhead Little, and Mr. Keetley, and a number of skiagrams illustrative of this condition were shown.

FORFARSHIRE MEDICAL ASSOCIATION.—This society met in the University College, Dundee, on Nov. 2nd, Dr. J. Mackie Whyte, vice-president, being in the chair.—Mr. Greig showed (1) a Cast of the Head of a Microcephalic Idiot whose age at death was twenty-one years, the measurement from glabella to inion being 12 in., and (2) a Cathcartine Cast of a Hypertrophied Prepuce.—Dr. Rogers read a paper on Œdema Neonatorum, describing the case of a child who was born at the eighth month and who developed symptoms of this disease on the third day. On the eighteenth day acute enteritis set in and after recovery from this the œdema disappeared and the child is now well and putting on flesh. He believed that in this case the condition was due to atelectasis and a patent foramen ovale. He then discussed the points which distinguished it from sclerema.—Dr. Buist did not think that Dr. Rogers's case could be distinguished from one of sclerema. — Dr. Kynoch considered that œdema and sclerema were the early and later stages of the same disease.—Dr. McVicar read notes of a case of Gastrostomy which he had performed for cancer of the cardiac end of the stomach. The patient was a woman, aged fifty-three years. Up to the third day after the operation there was sickness and retching and later there was some trouble owing to leakage, otherwise the patient had done well till three months after the operation, when pain immediately on receiving food again troubled her. This, Dr. McVicar thought, was due to extension of the disease.—Dr. Buist read a paper on the Treatment of Ineradicable Cancer of the Uterus by Interference with the Blood-supply, giving an account of a case in which he had ligatured the uterine arteries and removed the ovaries. This treatment caused a diminution in the discharge, but apparently very little alteration in the rate of growth of the disease. He showed the bladder, uterus, and rectum, which were all involved to some extent in the growth.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Nov. 18th, the President, Mr. D. H. Goodsall, being in the chair.—Dr. A. Haig read a paper on Diabetes and showed a man, aged thirty years, a diabetic subject, who had gained 5 kilos. in six months under treatment by salicylate, avoidance of meat, and the giving of "Protene" biscuits. Dr. Haig said that there was always an excess of uric acid in the blood, that all the useful drugs in diabetes relieve the circulation of uric acid, that diabetic coma was due to uric acid and was not a part of diabetes, and that all was a result of defective combustion due to a defective capillary circulation. Glucose present was made up partly of a functional remediable and partly of an organic irremediable factor.—Dr. Arthur T. Davies showed two specimens of Œsophageal Carcinoma from men aged respectively fifty and fifty-two years. In one the lower part of the gullet and the outer coat of the aorta were involved and the right lung was tuberculous, as determined microscopically; in the other ulceration extended from the œsophagus through the pleura into the lung. In the case of the latter patient there was a history of difficulty in swallowing for a period of four months.—Mr. W. L. Brown showed a Rectal Slough from a child with rectal prolapse which came away on the tip of the examining finger as a complete ring about 2 cm. in length. There had been bloody stools for six months and there was a tight phimosis.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The second meeting of the session was held in the Medical Library of University College on Nov. 9th, Dr. R. Roxburgh being in the chair.—Mr. Carwardine showed a patient and specimens of Hydatid of the Liver.—Dr. Stack (for Dr. J. E. Shaw) showed some interesting specimens of Brain Tumour.—Dr. Michell Clarke and Mr. Roger Williams spoke on the subject. — Mr. Carwardine showed a specimen of Double Hydro-salpinx.—Mr. Paul Bush showed a portion of a Large Tumour which he had successfully removed from the axilla, which he considered to be tuberculous.—Mr. Morton, Mr. Lace, and Mr. R. Williams commented on the tumour.—Mr. Paul Bush showed a series of cases of Enlarged Bursæ in housemaid's knee.—Mr. Harsant, Mr. Barclay, and Dr. Roxburgh spoke on the subject.—Dr. B. Rogers showed some microscopic specimens of Blood from a case of Leucocythæmia.—Dr. Stack showed a specimen of Aneurysm of the Vena Cava; Professor Fawcett remarked on the specimen.—Dr. H. L. Ormerod read a most instructive paper on a case of Ulcerative Endocarditis.—Dr. Shingleton Smith, Dr. Waldo, Dr. B. Rogers, Dr. Parker, Dr. Symes, Dr. W. C. Swayne, Mr. R. Williams and Dr. F. H. Edgeworth discussed the paper.

MANCHESTER THERAPEUTICAL SOCIETY. — A meeting of this society was held at the Owens College on Nov. 1st, Dr. Leech, the President, being in the chair.—Dr. R. B. Wild read a communication on the Toxic Effects of Boric Acid in which he narrated two cases in which dermatitis and other disagreeable symptoms were produced by the continued administration of boric acid in doses of from 10 to 15 gr. Dr. Wild also related experiments which he had made in order to test the rate of elimination of boric acid by the urine. He found that it was excreted partly as free boric acid and partly as borax. He believed that with diseased kidneys elimination might be very slow and thus favour the onset of toxic symptoms. He thought it was not justifiable to add boric acid to foods in such large quantities as was done sometimes.—A discussion then took place on the Various Forms of Extract of Meat and Similar Preparations, a large number of samples being shown. The general opinion seemed to be that though some of these were readily taken and might serve occasionally as useful stimulants the majority were almost devoid of nutritive properties and that probably the raw meat juice

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freshly prepared was more useful than the proprietary preparations.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Nov. 15th, Mr. J. Foster Palmer, President, being in the chair.—Dr. J. B. Ball read a paper on the Indications for Operation in Cases of Adenoid Vegetations of the Naso-pharynx. He recapitulated the main symptoms of the disease, laying stress on those which he considered to furnish indications for operative interference. He strongly disagreed with those who advise operation in every case of adenoids regardless of whether symptoms are present or not, and deprecated the tendency which existed in many quarters to exaggerate the ill effects of these growths. At the same time he insisted on the importance of early operation in cases where operation was indicated. He finally enumerated the symptoms which he believed to indicate an operation. The President, Dr. C. C. Gibbes, Dr. C. A. Morris, Dr. V. Dickinson, Dr. P. White and Dr. D. Vinrace also spoke and Dr. Ball replied.

HULL MEDICAL SOCIETY.—The following have been elected as office-bearers for the session 1898–99:—President: Dr. Alfred Parkin. Vice-Presidents: Dr. Edward O. Daly and Mr. A. Legge Roe. Librarian: Dr. James McNidder. Council: Dr. T. Cameron, Mr. A. G. Francis, Dr. R. Grieve, Dr. E. M. Hainworth, Mr. E. H. Howlett, Dr. David Lowson, Dr. John Merson, and Mr. H. W. Pigeon. Honorary Secretary: Dr. James L. Waters.

NEWPORT MEDICAL SOCIETY.—A meeting of this Society was held on Nov. 2nd, the President, Mr. H. E. Williams, being in the chair. Dr. Paterson (Cardiff) read an interesting paper on the Supra-tonsillar Fossa as a Starting-point of Infection (with lantern slides).—Mr. J. McGinn read notes upon and exhibited a remarkable case of Chronic Hydrocephalus.—Dr. A. G. Thomas showed a case of Double Ankylosis of the Shoulder-joint.

Reviews and Notices of Books.

Atlas of External Diseases of the Eye. By A. MAITLAND RAMSAY, M.D. Glasg., Ophthalmic Surgeon, Glasgow Royal Infirmary; Professor of Ophthalmology, St. Mungo's College, Glasgow; and Lecturer on Eye Diseases, Queen Margaret College, University of Glasgow. With 30 full-page Coloured Plates and 18 full-page Photogravures. Glasgow: James Maclehose and Sons. 1898. Quarto. Price £3 3*s.* net.

THE handsomely illustrated work which has been brought to a happy conclusion by Dr. Ramsay is one of a small class. The great expense involved in its preparation, the delicacy of the artistic work, and the comparatively limited number of purchasers combine to make both author and publisher hesitate before commencing a work of this magnitude. The chief treatises with which it can be compared are those of A. P. Demours ("Traité des Maladies des Yeux," with an atlas of 65 plates, Paris, 1818); of von Ammon, whose well-known and frequently referred to "Klinische Darstellung der Krankheiten des Menschlichen Auges," was published in Berlin in 1847, with 55 plates and 956 figures; the "Iconographie Ophtalmologique" of J. Sichel, with 80 plates, published in Paris between the years 1852–1859; and the "Pathology of the Human Eye," by John Dalrymple, published in London in 1852. All of these works were excellent in their day, Dalrymple's easily taking the lead in the brilliancy of the delineations of the diseases depicted. The original water-colour drawings of his atlas were made by Mr. Kearney and Mr. Leonard from cases occurring in the practice of Mr. Scott and Mr. Dalrymple, and in transferring the outlines to the plates Mr. Dalrymple had the good fortune to obtain the services of an accomplished artist, Mr. W. Bagge, by whose hand the illustrations were coloured. Sichel's "Iconographie" comes next and includes a number of very good chromolithographs touched up by hand. Von Ammon's drawings show less refinement than either of the others, but are yet very generally recognisable and make up for their defects by their number and variety, whilst Demours's drawings are not to be despised. All these works are—or rather were, for they are now out of print—very expensive.

The Atlas of Dr. Ramsay, at a very moderate cost, contrasts favourably with those of Demours, von Ammon, and Sichel, and in many of the drawings quite equals Dalrymple's in artistic delicacy and finish, whilst it has the great advantage of giving in numerous instances photographs of not the disease alone but the whole face of the patient, so that the expression, which is so marked a feature and so characteristic of many ophthalmic diseases, is placed before the reader in a very instructive fashion.

The value of such a work as this depends not only on the fidelity with which nature is copied, but upon the selection of typical cases, and in this respect Dr. Ramsay has exercised a wise discretion, many of the illustrations being excellent examples of the particular disease exhibited; those, for example, of eczema, of nævus of the lid, of rodent ulcer of the lid, of buphthalmos, orbital abscess, tumour of the sphenoid, aneurysm of the orbit, exophthalmic goitre, and proptosis are all good and instructive, and they are all reproductions of photographs. Some, of course, are better than others, and we certainly should not have wasted a full-page plate on a case of lagophthalmos, which, after all, only looks like a boy endeavouring with much effort to wink. The plate showing congenital ptosis with epicanthus is good and saves a world of description. The plates representing epithelioma and chancre might have been selected from better examples, and it would require a very sharp observer to distinguish from the plates the case of muco-purulent conjunctivitis from that of ophthalmia neonatorum; the former might have been omitted to make room for something else. In the smaller drawings representing the eyes alone we miss an example of keratitis punctata, which is capitally represented in Demours's twenty-seventh plate; but the drawings of gumma of the conjunctiva and of lupus of the lid, and those representing lacrymal abscess, pannus scrofulosus, xerophthalmia, pterygium, and various forms of iritis and choroiditis are very accurately pourtrayed. Dr. Ramsay has adopted a clever mode of designating the several diseases, obviating the spoiling of the plates by letterpress, which consists in prefixing to each plate a leaf of tissue paper bearing the name of the disease beneath the level of the drawing which can be seen through it. Each drawing or set of drawings representing a particular disease is accompanied by a short chapter giving the etymology, the synonyms in the English, French, German, and Italian languages, an account of the symptoms and pathology, with in many cases a brief history of the patient from whom the illustration was taken. We would particularly refer in this respect to the chapters on Glaucoma and Exophthalmic Goitre. We congratulate Dr. Ramsay on the completion of his work and regard it as a valuable contribution to British ophthalmological literature. It will prove very useful to al those who are placed at a distance from the larger centres where the advice and assistance of an ophthalmic surgeon can be obtained, and in conjunction with one or other of the treatises which we have recently had occasion to notice will enable all the ordinary and some of the extraordinary forms of the diseases of the eye to be recognised and treated with success by those who have had but little opportunity of studying them.

Gout, its Pathology and Treatment. By A. P. LUFF, M.D., F.R.C.P. Lond. London: Cassell and Co. 1898. Crown 8vo. Pp. 248. Price 5*s.*

THE author of this compact treatise has already done much work in relation to the pathology and causation of gout and we are glad that he has collected his

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conclusions and presented the medical world with their practical bearings on the treatment of this common disease. His views are, as is well known, diametrically opposed to those of that energetic writer on uric acid and gout—Dr. Haig—and the reader in want of intellectual exercise will find plenty of occupation in comparing the rival theories of these two authors. The present work is divided into four parts; the first, on the pathology of gout, is mainly a reproduction of Dr. Luff's Goulstonian Lectures on the Chemistry and Pathology of Gout delivered before the Royal College of Physicians of London in 1897. In it he states his reasons for the belief that gout is of renal origin and that lesions of the kidney are an important factor in the production of ostensible gout. The chemistry of gout is fully discussed and Dr. Haig's views come in for a considerable amount of rigid criticism. In the second part, after the etiological factors have been referred to, a brief account of the clinical features of the various forms of gout is given. This portion is extremely condensed and in no way on the same lines as the rest of the work; but, as shown in the title, the clinical aspect of the disease is outside the scope of the present essay. The third part consists of the author's experimental researches into certain points bearing on the treatment of gout. He finds that there is no reason to believe that an acid dyscrasia underlies the gouty condition and that the noxious properties of some wines and beer are not accounted for by the contained acids, ethers, or sugar; he considers that these drinks lead to gout by exercising such an effect on the liver that more glycocine is produced; this body is then converted by the kidneys into uric acid; and if the kidneys are not capable of excretion the uric acid thus formed accumulates in the body. Another important point is that the mineral ash of most vegetables increases the solubility of sodium biurate, while the mineral ash of meat has the opposite result. It further appears that the treatment of gout by alkalies, lithium, piperazine, and salicylates is erroneous. After these original and certainly somewhat startling conclusions the practical treatment is considered in the fourth and concluding section.

Colchicum is recommended and is probably useful in that it diminishes the production of uric acid; it may be given every other night in the form of a pill composed of 1 gr. each of the acetic extract of colchicum and of blue pill and of 2 gr. of euonymin. A mixture of 30 gr. of chloride of ammonium and 15 minims of dilute nitro-hydrochloric acid is also advisable. Full attention is also given to dietetic, spa, and other forms of treatment. The style is clear and concise and the work will, doubtless, appeal to, and be appreciated by, all interested in the numerous problems surrounding the causation and successful treatment of gout.

Uric Acid as a Factor in the Causation of Disease. By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Lond. Fourth edition. London: J. & A. Churchill. 1897. Pp. xiii.–698. Price 12*s.* 6*d.*

IT may be conceded that Dr. Haig has done good service in insisting upon the uric acid factor in the causation of certain diseases—notably migraine. Starting from observations on his own case he has shown how migraine can be held in check and reasonably treated. It is the experience of those who have adopted his line of treatment that at least in many cases it is successful. It is probable that uric acid plays a part in the causation of certain other diseases besides migraine and, of course, gout in its various manifestations, though the evidence of this is by no means so decisive. It is, however, very easy to push the uric acid theory of disease to unwarranted excess, and this, in our judgment, Dr. Haig has done. In this fourth edition of his book he has endeavoured to include so many and such various diseases within the uric acid fold that it is difficult to take him seriously. When we proceed to inquire into the solid basis of exact fact upon which many of his propositions rest we find that it is not always so solid or so exact as we have a right to demand. It has been pointed out again and again that Haycraft's method for estimating uric acid, upon which all Dr. Haig's statements and figures are based, is by no means of sufficient accuracy. We have before protested in these columns against the use of the barbarous word "uricacidæmia." We now find the term "collæmia" used as a synonym of uricacidæmia on the assumption that the rise of blood-pressure met with in certain uric acid diseases is due to mechanical capillary obstruction by uric acid salts in the colloid form. No adequate grounds are set forth for the assumption. Dr. Haig is a vegetarian and he is of opinion that much uric acid is introduced into the body as such in certain articles of food, especially meats and their derivatives. The processes by which the estimations have been made are not such as to satisfy an organic chemist. Space fails us even to enumerate all the diseases which the author connects in one way or another with uric acid, much less to criticise his various lines of reasoning. There appears to us to be a considerable amount of assumption and in many cases a somewhat slender basis of indisputable fact. It is indeed to be regretted that by pushing his theories to extremes Dr. Haig tends to discredit the real importance of many of his earlier observations.

Laboratoire Bactériologique de l'Hôpital Grec d'Alexandrie: Recherches Bactériologiques sur la Pathogénie de la Dysenterie et de l'Abcès du Foie d'Égypte. Faites par le Docteur A. P. PETRIDIS, Médecin adjoint au service du Docteur Zancarol et Directeur du Laboratoire Bactériologique. (*Bacteriological Laboratory of the Greek Hospital, Alexandria: Bacteriological Researches on the Pathogeny of the Dysentery and the Abscess of the Liver of Egypt.* By Dr. A. P. PETRIDIS, Assistant Medical Officer to Dr. Zancarol and Director of the Bacteriological Laboratory.) Alexandrie. 1898.

As a result of observations on 9 cases of multiple abscess of the liver in the human subject which were opened, but which were followed by death, on 15 similar cases which recovered and of which a bacteriological examination was made during life, and on 11 other cases in which no bacteriological examination of the blood was made during life (6 of which recovered and 5 died), Dr. Petridis has no hesitation in coming to the conclusion that the endemic dysentery of Egypt is microbic in its origin and that the real cause is not amœbic but streptococcic in character. He finds that by injecting the streptococci separated from these cases directly into the rectum of a cat that he is able to produce in about half of the cases so treated a condition similar in character to dysentery. As bearing out his contention he also gives the following observations: the pus from one of these abscesses in the human subject, taken at the time of operation, almost invariably contains streptococci which may be isolated on cultivation. Sections of the hepatic tissue taken during the operation or after death also contain streptococci or cocci in zooglœa. Blood drawn before the operation always contained streptococci. Similar observations were made in cats submitted to experiment. Abscess of the liver he believes in most cases results from dysentery or other irritation of the intestinal mucous membrane, by which exfoliation of the epithelium is brought about. Amongst the causes of such conditions he includes the entozoa. In every case where an abscess of the liver was produced experimentally in cats the dysenteric condition of the intestinal canal could be demonstrated, but in not a single abscess of the liver of the cat was he able to demonstrate the presence of numerous living amœbæ. Abscess of the liver usually commences as

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minute foci of suppuration which gradually run into one another and form a single large abscess. In those cases, however, in which they are far apart these abscesses cannot run together and so may remain "multiple." These opinions, based on so many observations, cannot but carry weight in the discussion concerning the part that streptococci play in determining dysenteric abscess of the liver.

LIBRARY TABLE.

A Manual of Operative Surgery. By LEWIS A. STIMSON, B.A., M.D., Surgeon to the New York, Bellevue, and Hudson-street Hospitals; Professor of Surgery in the University of the City of New York, &c.; and JOHN ROGERS, jun., B.A., M.D., Assistant Demonstrator of Anatomy in the College of Physicians and Surgeons (Columbia College), New York; Surgeon of the Out-patient Staff, Hudson-street Hospital. Third Edition, with 334 Illustrations. London: H. K. Lewis. 1897. Pp. 598. 8vo. Price 12*s.* 6*d.* net.—The first two editions of this book were so well known and appreciated in this country that it would almost suffice to say that this, the third edition, is as good as its predecessors. Ten years have elapsed since the second edition appeared, and so many important changes have taken place in the methods of doing many operations and so many new operations have been introduced, that it was found necessary almost wholly to re-write the book in order to bring it fully up to date. For this purpose Dr. Stimson associated with himself Dr. Rogers, who has had the work of collecting the material and writing the book; but it has all been carried out under Dr. Stimson's supervision. The result is eminently satisfactory, and we find in a volume of just 600 pages all the essential parts of what might very easily have been made to occupy a much larger work. Much space has been saved by excluding from the volume all accounts of the conditions for which the operation may be required. All the common and most of the rarer operations are given and the descriptions, though brief, are sufficient to enable a surgeon to perform any operation if previously unacquainted with it. The special surgery of the eye occupies 50 pages, and gynæcological operations are described in about as many. In our opinion the best chapter in the volume is that devoted to the plastic surgery of the face; it is better than the matter which is to be found in most special treatises on the subject. The whole work is profusely illustrated and can be recommended to the student as clear, concise, and complete. The only fault which we have to find with the book is that the index is not sufficiently full.

Brief Essays on Orthopædic Surgery. By NEWTON M. SHAFFER, M.D., Surgeon-in-chief to the New York Orthopædic Dispensary and Hospital; Clinical Professor of Orthopædic Surgery, University of New York City, &c. New York: D. Appleton and Co. 1898.—This little volume consists of seven articles which have already appeared in some American medical journals at various times during the last few years and their general object is to insist upon the desirability of the existence of orthopædic surgery as a specialty. The author points out that special training in orthopædics is needed to enable a surgeon to obtain the best results in this department and that this can only be obtained at special hospitals or at general hospitals where a special orthopædic department has been established. He argues that a surgeon should give to the instrument-maker the measurements and patterns for the apparatus required in an orthopædic case and that to leave the measurement and fitting to the instrument-maker who cannot appreciate the requirements of the case is only to court failure. Every orthopædic department should have a workshop where the apparatus can be made, and Dr. Shaffer shows that this workshop may easily be made self-supporting by selling the instruments to the patients at cost price. If this be done they obtain the apparatus at a much less cost than from the ordinary instrument-maker. One further point is raised in this book: the author thinks that an orthopædic surgeon should operate only on those cases which require special treatment after the operation and that all other cases should be handed over to the general surgeon.

Where Two Worlds Meet. By ROSA E. MARCH. London: Skeffington and Son. Price 2*s.* 6*d.* net.—This is a collection of thoughtful little essays written in a simple and devotional spirit. The one entitled "Break up your Fallow Ground" was specially written for the sick and would very likely be of considerable service to those of a particular kind of temperament. There is a contemplative side of the religious life as well as an active one.

The Natural History of Digestion. By A. LOCKHART GILLESPIE, M.D., F.R.C.P.Edin. Pp. 427, figs. 48, diagrams 12, charts 23. Price 6*s.* The Contemporary Science Series. Edited by HAVELOCK ELLIS. London: Walter Scott. 1898.—This work gives an account of the processes of digestion both in plants and animals. This in itself is no slight task, but there is more than this in the volume before us, for chapters on metabolism, animal heat, stimulants, and food have been added so as to render the whole more complete. The first chapter contains an interesting *résumé* of the theories held by the ancients on digestion and records the phases which accepted opinion has since gone through, thus carrying the reader up to comparatively recent times. After an interesting description of carnivorous plants the author goes on—in Chapter IV. and those following—to the anatomy and physiology of digestion. This constitutes the bulk of the work and it is done with great ability. Considerable detail has been introduced, especially in small print, and the outcome is a useful source of reference, written in a clear and concise style and well illustrated by figures, diagrams, and charts, which will be welcomed by the medical profession as well as by the lay public for whom the Contemporary Science Series is chiefly intended.

Contributions to Clinical Medicine. By T. MCCALL ANDERSON, M.D.Glasg. Edited by JAMES HINSHELWOOD, M.A., M.D. Glasg. 8vo, cloth. Pp. 415, 28 Illustrations. Edinburgh and London: Young J. Pentland. 1898.—This is a collection of commentaries on cases and short clinical lectures, and is presented to the reader as an epitome of some of the experiences of one who has been a hospital physician and teacher for more than a quarter of a century. Dr. McCall Anderson's name is perhaps more generally known in connexion with diseases of the skin, and the present volume contains some valuable articles dealing with this branch of medicine, such as those on hæmidrosis, Addison's disease, and hydroa æstivale. The "Contributions," some of which have been already published, are arranged under six headings, general diseases coming first, then those of the nervous, the circulatory, the respiratory, the digestive, and the urinary systems. In the course of some remarks on the phenomena of embolism a remarkable case is given in which it appeared probable that a primary hydatid cyst in the heart gave rise to multiple embolism of daughter cysts in the carotids and other branches of the aorta. Another very interesting paper—especially at the present time when the subject of the treatment of tuberculosis is so much to the fore—is that on the Curability of Acute Phthisis (galloping consumption). Altogether these extracts from a physician's case-book are well worth reading and will prove especially attractive to the author's old students who may, perhaps, as he suggests, recognise some familiar friends among the recorded cases.

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JOURNALS AND REVIEWS.

Journal of Experimental Medicine (New York and London: D. Appleton and Co.).—In No. 3 of the third volume the first two papers deal with a case of Teratoma of the Abdominal Cavity recorded by Dr. Douglas W. Montgomery, from a study of which Dr. Montgomery and Dr. Lewellys F. Barker are of the opinion that they have a definite fact in support of Cohnheim's vestigial doctrine regarding the origin of tumours in general. Dr. C. A. Herter contributes a Study of Fat with a special Reference to the Production of Serous Atrophy of Fat, from which he concludes that prolonged fat starvation leads to the entire disappearance of fat from the adipose tissues and that this form of fat atrophy is essentially of the same type as that found in the epicardial and perirenal fat in the human subject as the result of any wasting disease. He also notes that the lecithins of the brain and the fat of the liver are not materially reduced by fat starvation; that carbohydrate food or carbohydrate and proteid constituents of milk in considerable quantities may largely take the place of fatty food in preventing serous fat atrophy of the subcutaneous fat (fat starvation), but this may cause a very imperfect absorption of the salts of phosphoric acid from the intestine. Dr. Thomas R. Brown, in a paper on Studies on Trichinosis with Special Reference to the Increase of the Eosinophilic Cells in the Blood and Muscle, the Origin of these Cells and their Diagnostic Importance, maintains that there is a marked increase of these cells under the above-mentioned conditions; that the muscle fibres are split longitudinally and undergo a characteristic degeneration; and that near these degenerated muscle masses he has seen a few of these cells accumulated. He holds that the increase in the eosinophiles may in certain instances take place in the muscles by direct transition from the neutrophiles, as here he finds various transitional stages between the two forms. Dr. Mark Wyman Richardson draws attention to the fact that the typhoid bacillus in the urine of typhoid fever patients occurs in a proportion of about 25 per cent. in 38 cases examined in large numbers and in practically pure culture; that they occur more frequently in the later stages of the disease and especially where albuminuria is present. The importance of this observation from the point of view of preventive medicine can scarcely be over-estimated. The other papers in this number are one on the Branched Form of the Bacillus Tuberculosis in Sputum, by Dr. Charles F. Craig; another on the Effects upon the Blood of the Tufnell Method and the Calcium Salts in the Treatment of Aortic Aneurysm, by Dr. Alonzo Englebert Taylor; and Experiments on the Application of the Roentgen Rays to the Study of Anatomy, by Ernest Amory Codman, M.D. In numbers 4 and 5, Volume III., of the same journal Dr. W. T. Councilman, in an article on Acute Interstitial Nephritis, draws attention to the important part that Unna's plasma cells play in forming the cellular foci which occur in this condition during the course of diphtheria, scarlet fever, and similar conditions. These are not due necessarily to the local action of the bacteria, though in three cases plasma cells were found in the interstitial tissue in definite diseases of the kidney; but as he points out in these cases they were not found in connexion with the lesions produced directly by the bacteria but in the periphery of the purulent foci. Other papers comprise a Case of Mycetoma (Madura Foot), by James H. Wright; Pseudo-Tuberculosis Hominis Streptothricha, by Simon Flexner, M.D.; and a Comparative Study of Bovine Tubercle Bacilli and of Human Bacilli from Sputum, by Dr. Theobald Smith. This last paper is in many ways extremely suggestive; but the author does not take up any definite thesis, though he insists, and very rightly so, that from his experiments it is desirable to study the tubercle bacillus in its various aspects in order to determine the relation of the sputum bacillus to the bovine bacillus as regards virulence, and that it is especially necessary to do so in connexion with the intestinal tuberculosis met with in children. It will be gathered, however, that Dr. Smith holds to the opinion that there is a marked difference in virulence between the tubercle bacilli of cattle and those derived from sputum of the human subject. Dr. William Hallock Park and Dr. James P. Atkinson contribute a paper on the Relation of the Toxicity of Diphtheria Toxin to its Neutralising Value upon Antitoxin at Different Stages in the Growth of Culture. Whilst agreeing generally with Ehrlich as to the composition of diphtheria toxin and as to the varying neutralising value of a minimal fatal dose of toxin, they hold that epitoxoids are not necessarily formed, as suggested in Ehrlich's original paper, and that it is possible to obtain a toxin of a known and suitable neutralising value by using the same bacillus—not necessarily the same broth—but growing the culture at the same temperature for a definite period of time. They think that this will give a better standard than, or at any rate an equally good standard as, Ehrlich's standard antitoxin. Dr. T. M. Cheeseman and Dr. S. J. Meltzer, in a most interesting paper on the Inoculation of Bacteria into the Spleen, maintain that cultures of bacillus coli communis, bacillus typhosus and staphylococcus pyogenes aureus, when injected into the tissue of the normal spleen, soon disappear from that organ and, indeed, from the normal body generally. When, however, the vessels have been previously tied these micro-organisms multiply rapidly in the spleen, although those which escape into the circulation are soon destroyed. It is only when lesions have been made in the spleen or any other organ or subcutaneous tissue that these organisms can multiply, and those escaping, as a rule, are rapidly destroyed as they make their way into the blood.

Birmingham Medical Review.—In a paper in the November number on the Treatment of Chronic Disease Dr. Alfred Carter recommends (1) the formation of clinical laboratories where chemical and physiological investigations of cases can be conducted by trained assistants at a minimum cost; and (2) the establishment of fully equipped sanatoria available for the treatment of chronic disease. Under the heading of "A Modern Social Problem" Mr. Henry May, late medical officer of health for Aston Manor, calls attention to the reduction in the birth-rate and marriage-rate and to the "modern undercurrent towards restraint of fertility."

Journal of Pathology and Bacteriology.—In the third number of Volume V., October, 1898, the following papers appear:—Bacillus Coli Capsulatus: a Study in Virulence, by Dr. Louis Jenner; A New Micrococcus, with a Note on the Bacteriology of Lymphadenoma, by Dr. John Hill Abram; Mouse Favus, by Dr. John Hill Abram; On a Method of Estimating the Production of Acid by Bacteria in Nutritive Media, by Dr. William Hanna; The Durability of Passive Diphtheria Immunity, by Mr. Wm. Bullock; A Contribution to the Study of Passive Immunity, by Dr. J. W. W. Stephens and Dr. W. Myers; The Condition of the Salivary Glands and Pancreas in Chronic Tuberculosis, by Dr. Vincent Dormer Harris; Experiments to Determine whether Sewer Air will raise the Toxicity of Lowly Virulent Diphtheria Bacilli, by Mr. Samuel G. Shattock; Molluscum Contagiosum in Two Mated Bunting Sparrows, by Mr. Samuel G. Shattock; Supernumerary Dorsal Fin in a Trout, by Mr. C. G. Seligmann; The Changes Occurring in the Blood of Dogs after Removal of the Thyroid, by Dr. A. G. Levy; Note on the Presence of Iron in the Liver and Spleen in Two Cases of Malaria, by Dr. J. Everett Dutton; On the Effect of Injecting Dilute Sulphuric Acid into the Common Bile Duct, by Mr. Wakelin Barratt; The Effect of Marchi's Fluid on Nervous

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Tissue that has Undergone Post-mortem Change, by Dr. Frederick E. Batten; The Bone Marrow of Cancer Patients: a Reply to Dr. Francis Villy's First Paper, by Dr. Herbert Snow; A Case of Deciduoma Malignum, by Dr. J. K. Kelly and Dr. John H. Teacher; Laboratory Notes: A Simple Method of Restoring the "Spiking" of the Bacillus Anthracis in Gelatine Stab Cultures and A Modification of Pitfield's Method for Staining Flagella, by Mr. Richard Muir. This number contains much matter of interest alike to the bacteriologist and pathologist and to the physician and surgeon.

Revista Medica de S. Paulo.—We have received several numbers of this Brazilian monthly medical journal, which made its first appearance in the early months of the present year. The opening article of the March number is a Portuguese translation of an address delivered in Italian by Professor Sanarelli on his first experiments on the employment of serum as a remedy and prophylactic against yellow fever. The June number has an illustrated description by Dr. Francisco Fajardo of a hæmatozoon found in beri-beri. The September number contains papers on Yellow Fever by Dr. Vital Brazil, Dr. Victor Godinho, and Dr. Benigno Ribeiro. Dr. Adolpho Lutz has an interesting series of articles on Intestinal Worms and the Diseases produced by Flies in San Paulo. The editors of the journal, Dr. Victor Godinho and Dr. Arthur Mendonça, have made an excellent beginning.

Mercy and Truth.—One of the articles in the November number is Dr. Carr's account of a week's hard riding in Persia, being an urgent journey from Julfa to Kirman, in order to attend the late Rev. H. Carless, who had been taken seriously ill at the latter place.

THE ADMINISTRATIVE CONTROL OF TUBERCULOSIS.

THE QUESTION OF THE COMPULSORY NOTIFICATION OF PHTHISIS.

THE third and last Harben Lecture on Administrative Measures for the Control of Tuberculosis was delivered by Sir Richard Thorne, K.C.B., F.R.S., at the Examination Hall of the Conjoint Board, Victoria Embankment, on Nov. 16th, the subject discussed being the question of the compulsory notification of phthisis.

The lecturer pointed out that a certain number of sanitary authorities had applied to the Local Government Board for their statutory approval to add phthisis to the list of the infectious diseases which are now included in the Infectious Disease (Notification) Act, 1889, but that this approval had never yet been given. He agreed with the action of the central authority, and he pointed out that there was no such similarity between phthisis and the diseases now notifiable—namely, small-pox, scarlet fever, diphtheria, &c.—as would, in his opinion, justify compliance with the demand made. The Notification Act was passed in order to enable authorities to control the movements of persons who for a few weeks only of their lives were in a state which constituted a danger to the public health, such persons being, by reason of a temporary and acute illness unfit to follow their usual avocations or to mingle with others. In the case of phthisis, however, any corresponding sanitary control would often have to be exercised for a series of years, during which time the phthisical persons were not only quite capable of continuing in their employment, but it was often absolutely essential that they should be able to maintain themselves and at times a family as well. The Act was never passed to enable such persons to be subjected to restrictions in the manner intended to apply to the acute infectious fevers. He referred in some detail to the notification of phthisis in New York City because it was often held out as an example to be followed; but he showed that the New York provision has hitherto been most partial in its application, that its operations were in the main limited to persons living in tenement- and lodging-houses, and that apart from this no sanitary control was exercised except with the actual or tacit consent of the medical practitioner in attendance on the patient. Even the statistical results which were quoted in favour of the New York practice showed that the diminution in the phthisis death-rate was in full operation for years before the notification system was established. This was doubtless to a large extent brought about by the same administrative measures which in this country had already led to a saving of no less than 60 lives out of every 100 which at many age-periods were formerly sacrificed to this disease. Instances were then given to show what would certainly follow if the stringency of our laws as to infectious disease were made applicable to this disease. The system of inspection by sanitary officials would lead to publicity and to loss of employment, with the consequent deprivation of food and comforts which are essential to the cure of the disease in its incipient stages, while it would hinder people from seeking medical advice at a time when this was most useful, and thus would defeat the main object in view. It was next pointed out that the same proposal had come before the Academy of Medicine in Paris and that on a report from a committee of that body the system of compulsory notification had been rejected on the ground that it was likely to do more harm than good. The conclusion at which the lecturer arrived did not, however, justify inaction as regards a disease which still caused some 40,000 deaths every year in England and Wales and which is largely spread by means of highly infective sputa which when dried were carried about as dust. The duty of giving to individuals advice as to dealing with these sputa which was likely to be followed devolved, in his opinion, on the medical practitioners whose counsel and help were voluntarily sought by the phthisical patients; and the lecturer appealed to all physicians, whether in hospital practice or in private practice, to give this advice in some such simple form as is to be found in the leaflets now distributed to patients visiting certain of the chest hospitals of the metropolis. Any action by way of notification should, for the present at least, be under a voluntary and not a compulsory system, and such action might well be supplemented by the construction out of public funds of sanatoria for the temporary isolation of persons suffering from this infectious disease, who during their sojourn in these establishments would acquire habits of dealing with infectious materials which would tend to prevent that spread of infection now so largely due to the want of simple and inexpensive precautions. In conclusion, it was pointed out that the success attained under our English system of public health is largely due to the fact that the leaders of that system have been content to lead, and have avoided pressing so far ahead of public opinion as to alienate that support on which success is most dependent.

EAST SUBURBAN MEDICAL PROTECTION AND MEDICO-ETHICAL SOCIETY, LIMITED.—This society is progressing and since the last general meeting in October reported in THE LANCET it has elected about 30 new members. Two council meetings have been held and numerous matters of interest discussed. Action has been taken in 1 gross case of unprofessional conduct and the matter dealt with by the practitioners' licensing body upon evidence laid before it by the society. The Plaistow Maternity Home has sent a favourable reply to the requests of the society for the abolition of midwifery fees by the home, and the representation of the local medical practitioners upon the committee of the home is still under discussion. The debt collecting department has been still further made use of by the members and with success. Sub-committees have been appointed to consider the working of medical aid societies, to arrange for the holding of clinical and social meetings, and to deal with other subjects. Active local branches have been formed at Manor Park, Leyton, Canning Town, and Plaistow, and other branches are in course of formation in other districts. The local branches have also appointed sub-committees to collect evidence and otherwise consider the question of the abuses in local medical charities. The next executive council meeting is to be held on Thursday, Dec. 8th, when the council will proceed to consider *inter alia* the nominations of the officers of the society for election at the general meeting in January. A nomination paper and notice will shortly be sent to all members and they are reminded to return them duly filled in at least two days before the meeting or they will be disqualified.

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THE LANCET.

LONDON: SATURDAY, NOVEMBER 26, 1898.

As was to be expected, the new Vaccination Order, with which we recently[1] dealt at considerable length, has given rise to much discussion amongst public vaccinators. The Association of Public Vaccinators has had a largely attended meeting[2] at which it was agreed to forward to all its members certain recommendations regarding fees. The minimum fees for successful vaccination and revaccination are, it is advised by the Association, to be accepted as in the Order, but the preliminary minimum fee of one shilling (Article 3 (1) (*a*) of the Order) is objected to as insufficient, owing to the facts that (as we have already pointed out) this is not really a fee on the birth-rate and that many a domiciliary visit may not result in a vaccination, in which case, of course, the vaccination fee itself will not be payable. Public vaccinators are also recommended to see "that mileage be allowed for at the rate of one shilling per mile, or part of a mile, one way, for distances greater than two miles from the public vaccinator's residence for each statutory visit paid." The public vaccinators of the Bridgwater Union have gone a step further and have petitioned their board for a mileage allowance for all distances over one mile, instead of over two miles as in the above scheme. The purpose of the recommendation of the Association of Public Vaccinators is to ensure that the payment shall vary with the work and that the public vaccinator of a rural district shall have due consideration given to the fact that his duties involve a greater expenditure of time and money than do the duties of a vaccinator in a town district. The object is admirable and we must assume that before issuing the recommendation the Association has satisfied itself that the method proposed for achieving it is feasible. Article 3 (1) of the Order states that the contracts for public vaccinators "shall be made in the form set out in the first schedule hereto, with such modification, if any, as the guardians and the contractor shall, with our approval, adopt." The form contains no blank space to be filled up for mileage fees and no mention of such fees is made in any part of the Order, but the Association may have ascertained that the Local Government Board would be willing to look on such payments as additions to the minimum, and to sanction the necessary modification in the form of contract. We judge the Board's own view to be that the fees for visits and vaccinations should be so fixed in each district as to cover all incidental charges and loss of time, and that it matters little by which method the object is attained.

We have pointed out that the new Order gives no security of tenure to public vaccinators, though it gives very considerable protection to vaccination officers. The evils of the existing insecurity, which will be imported into the new system, seem likely to receive immediate exemplification at Cardiff. The board of guardians there have decided to discharge their present public vaccinators and to appoint in their place one medical man debarred from all other work. Now, if the Order had provided that in future no public vaccinator could either directly or indirectly be dismissed from office without the approval of the Whitehall Department we should have hailed with the greatest satisfaction the prospect of the inauguration of a system of exclusive service, provided such a system were to be introduced without injustice to the large body of medical men already engaged in vaccination work throughout England and Wales. But at present it would be simply illegal for boards of guardians to give anything in the way of compensation or pension to public vaccinators, though their dismissal were for the public benefit as part of an arrangement for the introduction of a better system. To carry out a scheme therefore which involves the dismissal of old servants without consideration would be to inflict great hardship. Still less can it be recommended from the point of view of the men who would take the place of the dismissed public vaccinators. They would have to give up and refrain from all other medical work. They might go on in the vaccination service until middle life or old age, but at any moment, as the result of some whim on the part of the guardians, or on some trumped-up charge of neglect of duty, or through some local election fought out on the question of vaccination, they might receive four weeks' notice that their services were henceforth to be dispensed with, and, probably burdened with the cares and responsibilities of a family, would have to endeavour to find some new employment and to make a fresh start in medical life, handicapped by the fact that their theoretical knowledge of medicine and surgery had long been rusty, and that their experience in treatment had been confined to the rare cases in which vaccinated patients had required a visit or two extra following on their vaccination. We can conceive of no department of medical work in which reasonable protection against dismissal would be more necessary than in a whole-time public vaccination service. The injustice and practical cruelty which have not infrequently been experienced owing to this same want of protection in the public health service are well known. But likely as sanitary work is to be subjected to unfair and capricious local control, vaccination work is in even a worse position and for a medical man to determine to devote his life to an office so precarious would be indicative rather of foolhardiness than of courage.

We do not for a moment deny that a whole-time vaccination service, established under proper conditions, would be a public and a professional benefit. It would give to children and parents the advantage of the highest possible degree of skill and experience—a concentration of thought and attention in all that relates to the practice of vaccination—and it would tend to preserve good relationships between public officials and private practitioners. But the medical profession has already abundantly sacrificed itself, and has already borne sufficient obloquy and abuse, in its determination to protect the population against anti-vaccinationist folly and to succour children against

[1] THE LANCET, Nov. 5th, 1898, pp. 1210-12.
[2] THE LANCET, Nov. 12th, 1898, p. 1293.

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the results of parental ignorance and self-conceit. It is out of the question to expect that if whole-time public vaccinatorships were advertised all over the country to-morrow without a provision for security of tenure the *élite* of the profession would be induced to apply for them. The first step towards the establishment of a proper system is to make it certain that the men appointed shall not be liable to be made the plaything of local feeling, or the victims of prejudiced malevolence. Until reasonable protection is obtained the idea of such a service must be put aside as alike unworthy of the profession and hurtful to the public interest, for it is obviously in the public interest that vaccinatorships should be so conditioned as to attract a thoroughly satisfactory class of applicants. Under existing conditions medical men cannot safely risk more than a part of their time in employment so precarious, and, indeed, the country is to be congratulated on the fact that the medical practitioners who already hold vaccination appointments are so well qualified to fill them, most of them having entered on their work at a time when communities were less exposed to the venom and passion of anti-vaccination crusades. In certain respects the new Order makes an improvement in the position both of public vaccinators and of vaccination officers—a fact on which the Local Government Board are to be heartily congratulated. And those who have experienced the recent evil times have a right to expect that they shall not be deprived of office when its conditions are being more or less ameliorated. But whatever becomes of the proposals for whole-time appointments the official vaccinators throughout the country ought to make a strenuous effort to secure such protection against disturbance as already obtains in some other branches of the public service.

THE Royal College of Surgeons of Edinburgh have presented a memorial to Lord LANSDOWNE regarding the army medical service to which Her Majesty's Secretary of State for War has furnished a very considerate reply. These documents were published in full in THE LANCET of Nov. 12th, but it may be well to recapitulate very succinctly their salient points. The College gratefully acknowledge the interest evinced by Lord LANSDOWNE in the well-being of the service by the constitution of a Royal Army Medical Corps and other beneficial changes; they recognise the importance to the efficiency of the army of having a medical service fully manned and equipped by the best men sent out from the medical colleges and universities and are desirous of encouraging their Licentiates to enter the army. But they point out that certain changes and modifications are still required and might, they think, be advantageously made in the regulations for admission to that service. Scotchmen are an eminently level-headed, practical race and some of the best and most valuable public servants in the world have hailed from the other side of the border, therefore anything which Scotland has to say is always well worth listening to and considering.

The memorial, very pertinently we think, calls attention to the fact that since 1892, by order of the General Medical Council, the course of professional education has been extended to five years, with the recommendation that the fifth year should be devoted to clinical work. The result of this has practically been that the first three years are now devoted to the study of subjects which are the necessary basis of, but which are nevertheless more or less introductory to, medical and surgical science, leaving the last two years to be devoted to clinical work in hospitals and the acquirement of an applied and practical knowledge of the work and duties which have to be discharged as soon as young men are professionally qualified to practise. In the army regulations for the competitive entrance examination too much importance in the opinion of the memorialists is attached to elementary subjects and too little to the practical and clinical work which now occupy the latter years of professional study. Intending candidates for the army competitive examination—who have, it must be remembered, been subjected to a thorough and objective kind of examination on these subjects and have already qualified themselves for the active duties of their profession—are deterred from competing for the army because it either necessitates a return to elementary studies or recourse to a "crammer" to renew and refurbish that kind of knowledge which had been acquired in the earlier stages of their curriculum, whereas the subjects with which the intending candidate has been mainly concerned during the later stages of his career do not occupy the position in the army examination which in the opinion of the Royal College of Surgeons of Edinburgh they should; and they proceed to indicate the direction and lines on which the regulations could in this respect be very advantageously amended. We are very glad to notice, by the way, that the authorities of the College cordially approve of the intimation to medical candidates for the army that they may be rejected for bad spelling or composition. Speaking generally, we recognise the force and wisdom of their reasoning and so, apparently, does Lord LANSDOWNE, although he does not at the present moment consider it advisable to make any change in the subjects prescribed for examination. That a change in this direction will soon be made, however, we have no doubt.

As regards "study leave" for officers of the Royal Army Medical Corps and the constitution of the Examining Board—the other matters alluded to in the College memorial—we think the reply of the War Office is couched in a reasonable and conciliatory spirit. About the importance of "study leave" there cannot be two opinions. Lord LANSDOWNE fully sympathises with the memorialists and has already given his sanction to the grant of leave for the purpose. Owing, however, to the unusually severe demands on the medical service at the present time and to its being so much below its normal establishment it ha not yet been possible to give full effect to this privilege. We are bound in common fairness to say that Lord LANSDOWNE has, we believe, done his best for the army medical service, that he has shown himself well affected towards it, and that, as now constituted, that service merits and should attract the attention of young medical men, offering them, as it does, a good and promising career.

THE *Liverpool Daily Post* recently reported the hearing of a case by the Bootle magistrates in which the vice of drunkenness among women, and its consequences, was

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illustrated. It was that of CATHERINE HUGHES, who was charged with neglecting her child. The charge was brought by Mr. A. CLEAVER on behalf of the Liverpool Society for the Prevention of Cruelty to Children. The evidence showed that the woman was almost constantly in a state of drunkenness. "She was drinking all day on Monday, and in the evening she was so drunk that she was not even able to arrange the bed that was made up on the floor. A neighbour had to do it for her, and she then lay down with the child, which was subsequently found suffocated." A charge of manslaughter was first made, but was afterwards changed for one of neglect. The bench convicted the woman and sent her to gaol for six months. She had been under the observation of the society for two years. She had been fifty-five times before the court and on four previous occasions she had been charged with neglect of children. The child just suffocated was the only one left in her charge.

We direct attention to this case both for its own sake and because it graphically illustrates the bearing of the drunkenness of women on the domestic life of the nation and especially on the care of children. The woman on one occasion could not make her bed because she was so drunk and on the death of her child she was "in such a state" that she fell over the dead body. It needs little imagination to conceive what chance of care and proper feeding a child in such a home has. As a matter of fact, the law had removed the other children from her care and stepped into the place of the parent. To afford even obtuse people a clearer view of the home of a drunken woman we may give a short account of a visit paid to it by Inspector WILLIAMS, who had been watching the prisoner for the Liverpool Society for the Prevention of Cruelty to Children. Since 1896 "Mrs. HUGHES occupied the back room, which was practically destitute of furniture, with the exception of a table, a basket, and a shakedown on the floor, while the windows were broken and filled up with old sacking. The apartment was in a filthy condition, and on that occasion the woman was sitting on the basket helplessly drunk with the baby in her arms. ..... He spoke strongly and warned her. He returned about a week afterwards and again found her under the influence of drink." Can anything be more vivid or call more loudly for the attention of the State and of the municipal authorities? Here was the chance of every accident—such as fire, falls, filth. Here was the certainty of improper food. How could wholesome milk be forthcoming when so large a proportion of the income was spent on drink and in producing maternal incapacity? In the end this particular child died—doubtless was killed—before the State came to its assistance. In the case of the other children the conditions were so shocking that the State had intervened and assumed parental responsibility. What do the advocates of freedom as against sobriety say to a case like this? They say, of course, that it is an isolated case. But is it really so isolated as they contend? There is far too good reason to believe that it is not so. The drunkenness of women is forced upon our attention in every newspaper and in passing every public-house. Old men say that there was nothing in their younger days to correspond with the present unblushing use of public-houses by women, who seem to vie with men in their visits. We need not labour the proofs of an evil so obvious. But the case before us shows us the meaning and the result of such habits in women. As long as the woman keeps sober and "at home" there is a chance for that home. Even if her husband has a tendency to alcoholism her presence and the comfort of his house under her care is a restraining influence for him. But if she takes to drinking and the public-house the case is well-nigh hopeless and in a degree it will approach to that of CATHERINE HUGHES. The State cannot escape responsibility. If it is not to accept the parental relation to the children of drunken parents in a very large number of cases it will have to consider what help it can give to weak parents against an influence which experience shows to be well-nigh irresistible and which the law has in past times too little restrained. Medical men, perhaps, of all others, have the best means of knowing the urgency of this evil of the drunkenness of parents and are most entitled—are, indeed, bound—to make it clear to the public mind.

In connexion with the above remarks we are glad to note that at a recent conference on public health in Manchester Dr. ASHBY, whose authority on the subject will be admitted, has directed attention to the rate of mortality amongst the children of the lower classes. In Manchester it is very serious. Dr. ASHBY is physician to a children's hospital with a dispensary department in Manchester. Of 10,000 cases admitted into this institution 4000 were those of children under ten years of age. Of the deaths, 85·5 per cent. were those of children under two. Dr. ASHBY says that the death-rate of children in Norway and in the rural parts of England is at the rate of 100 per 1000 births, while in Manchester it is at the rate of 203 per 1000, and in some of the congested districts, where poverty, drunkenness, and vice abound, it amounts to 300 and even 500 per 1000—something like one half of the infants born dying before attaining the age of one year. This is a scandal to the municipal authorities and to the State. As a profession we cannot be too careful to expose it and to wipe our hands of all responsibility for it. Dr. ASHBY has done his part and he attributes this infanticide to artificial foods, bad milk, and infant life insurance. Very many of the children who die prematurely are insured. Of 155 who died 105 were insured, and in about one-fifth of the insured cases the payment was made wholly or in part in drink by clubs in public-houses.

THE subject of the appointment of county medical officers of health which has been raised from time to time is once again under discussion. It is now ten years since county councils were constituted by Act of Parliament and since they received statutory power to appoint and pay county medical officers of health, and yet only 16 out of 51 administrative counties have availed themselves of this power. Many county councils complain somewhat bitterly that their sanitary functions are few and far between and that if Parliament had passed the Local Government Act, 1888, in the form in which the Bill was originally drawn up there would then have been good grounds for the appointment in all administrative counties of a medical officer of health. There is truth in this contention, but it is a somewhat curious fact that some of the most frequent complaints which county councils make as to the

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failure of local district councils within their areas to perform their statutory duties in matters relating to public health are concerned with duties the performance of which has not been made obligatory; and yet the county councils themselves fail in precisely the same way, for the appointment of county medical officers of health has been made a statutory duty but not a statutory obligation.

Thus, county councils are empowered to make "representations" to the Local Government Board as to default on the part of the local councils, and a very frequent cause of complaint at one time had to do with the failure of the local authority to provide means of isolation for infectious patients. But the local authority stands in precisely the same position as regards hospital provision as does a county council in the matter of a medical officer of health. In both cases statutory provision has been made as to a matter that is an obvious duty in the interests of the public; but in neither case has that duty been imposed as a matter of absolute obligation. Another somewhat common ground for making a "representation" is concerned with the failure of local authorities to deal efficiently with the removal of refuse and the excreta of the population, and appeals are made by county councils that the Local Government Board shall by order require this matter to be dealt with by the local authority instead of its being left to owners and occupiers. But this again is a matter which apart from the issue of such an order is left to the discretion of the local authority. Indeed, it seems strange that county councils who are so alive to the failure of the authorities within their jurisdiction in matters concerning which they have no definite obligation should be so blind to their own failure in precisely the same direction.

Whilst, however, we point to such activity of county councils in making complaints, it is a matter of general experience that in those counties where no health officers have been appointed there is an extraordinary laxity in matters relating to the public health. We might place, for example, at opposite poles some of our northern administrative counties such as Lancashire, Durham, and the West Riding, where county health officers have been appointed, and Somerset, Devon, and Cornwall where no such officers have been appointed. From the former have come well-formulated representations based on the results of an inspection of the sanitary circumstances of the districts within the counties, and these representations have always received the attention of the central authority, with the result that great gain has been effected and that the public have benefited. From counties like those in the latter group there have, we believe, been some querulous complaints based upon something that a local district health officer has written to his own council, or on something which a compiler of reports has summarised for the county council; and so far as we know no action beyond the writing of a few letters has ever resulted. Indeed, it is difficult to conceive how the matter could well have been otherwise, for it is hardly likely that a Government department would support the views or opinions of a county council which, for the purposes of economy, has never taken the means to ascertain for itself the facts about which it makes complaint. When such county councils act up to the powers already conferred upon them, then it will be time enough for them to ask for further powers.

Since the passing of the Local Government Act of 1888 another Act has been passed enabling county councils themselves to intervene in the matter of the erection, for combined areas, of hospitals for infectious diseases, and a very strong indication has been given to county councils in this Act to the effect that they are not deemed competent to perform their sanitary functions in this respect, at least, until they have appointed a medical officer of health, their intervention being practically limited to the receipt of a report from their medical officer of health on the subject. But even this strong hint has been largely ignored; and county councils still refrain from undertaking this elementary step in the direction of efficient sanitary administration, although a few have tried to get out of the difficulty by paying some medical practitioner to act as their medical officer of health for certain odd purposes, the officer having a small retaining fee and being at times called on for a report on some special subject.

The latter class of officer has, we need hardly point ont, absolutely no weight in the county; his intervention is often resented by the local medical officers of health, and the counties where such an arrangement has been made are practically in the same position as those where it has not been thought worth while to make any appointment to the office. But when a county health officer has been appointed at a salary which justifies the demand for his whole services for county purposes the matter is quite different. Such an officer is often sought out by the district health officer to give the weight of his county and independent influence in the furtherance of an object about which there are small local difficulties and jealousies which make the local officer practically helpless. Such county health officers, again, can take cognisance of a number of matters which affect multiple local districts but which the local health officers can only deal with up to the boundaries of their respective districts, or cannot deal with at all because they involve areas over which they have no control. In short, properly appointed county health officers have already shown that it is a distinct advantage to the public that appointments such as theirs should be generally made, and in the face of the facts that are patent to those who know what has been done no real object is gained when chairmen of certain county councils declare that it is nugatory to make these appointments until more sanitary duties are devolved by statute on the counties. The truth is that some of the county health officers have to do already more than they can. In the West Riding of Yorkshire, for example, it has been found necessary to hand over the question of river pollution, which was formerly dealt with by the county medical officer of health, to an entirely independent officer.

Now that this subject has once more been raised it is to be hoped that proper consideration will be given to it. But it is not a mere appointment that is wanted: the post must be properly constituted. Parliament has already decided that a county health officer must have special statutory qualifications; it is equally important that he should receive an emolument that will give him the necessary status of a county official. This requirement is in some cases being ignored. Thus, when a sum of £500 a year is bestowed on

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such an officer, one of two things must necessarily arise. Either the officer cannot, on such a salary, maintain for himself the position which is necessary to his proper influence, or else he will at the first opportunity use his appointment as a means of securing another one which is more adequately remunerated. In other words, just when he has acquired the local knowledge and experience necessary to the proper performance of his duties he will resign and the county will be handed over to a new official who will have to pass through the same training as his predecessor before he can attain the same position of usefulness and influence.

Annotations.

"Ne quid nimis."

THE ACCIDENT TO THE PRINCE OF WALES.

IT is with much satisfaction we are enabled to inform our readers that His Royal Highness the Prince of Wales has now made an excellent and, we may really say, complete recovery from the severe accident which he met with in July last, and after the interval which has elapsed of more than four months the cure may be reasonably considered permanent. It will be remembered that while descending a spiral staircase the Prince missed his footing and the extreme effort which he then made to recover his balance caused a rupture of the insertion of the left quadriceps extensor muscle which tore away with it at the same time the upper portion of the patella. At present the nature of the union which has taken place leaves little or nothing to be desired. The fragments of bone were separated by a considerable interval which gradually became reduced and the gap is now completely filled with strong fibrous material which shows no sign of stretching and has throughout been carefully prevented from yielding. Massage of the limb and passive movement of the joint were begun at a very early stage and have been followed by the happiest results. The knee readily bends to considerably more than a right angle and the power of active extension at the joint is very good indeed. The Prince can readily go up and down stairs, and can walk with ease and comfort and with a scarcely perceptible halt which is, moreover, only due to the slight embarrassment to the joint movement caused by the light splint which he is wearing and will continue to wear for a few weeks longer as a matter of precaution. So far as the injured limb is concerned His Royal Highness will be able to use it in all his many occupations as well as he did before he met with an accident which is not infrequently followed, as we know, by serious consequences to the usefulness of the extremity.

THE FEEDING OF OUR SCHOOLBOYS.

THE question of the feeding and health of boys in connexion with the public and other large schools in this country has of late been occupying a good deal of attention. It is, of course, very difficult to get at the exact truth in a matter of this kind, but there cannot be a doubt that complaints about school dietary are very common. From inquiries we have instituted we have arrived at the conclusion that these complaints as to the quantity, quality, variety, or cooking of the food supplied at such schools are too numerous for them all to be considered unreasonable or unfounded, nor are we satisfied that, in point of time, the daily meals are always as well distributed as they might be. What is strongly corroborative of there being something faulty in the system is the fact that boys very frequently spend their money in the purchase of such food as bread-and-cheese and bread-and-butter, and not in the various small luxuries that commonly prove so tempting to schoolboys. It would surely be easy to ascertain by inquiry as to how the boys actually spent their pocket-money whether this were the fact or not. If it be spent in the purchase of ordinary articles of diet the inference would be that they had to supplement their school dietary to make it sufficient. But it is not after all, we believe, so much in respect of the quantity as in the cooking and carving of the meat supplied at schools that there is legitimate ground for complaint. The cooking is commonly bad or uncertain in character and the carving is also such as to lead to a wasteful and unequal distribution of the food supplied. The whole subject is well worthy of careful inquiry and practical consideration on the part of schoolmasters. For years the dietary and cooking for the soldiers of our army were badly and uneconomically managed until they were practically taken up and reforms were introduced with very great advantage to the soldier; and similar results would probably follow in the case of public schools if the systems of dietary and cooking were made the subject of investigation by men practically acquainted with the matter.

INSTRUCTION IN TROPICAL MEDICINE.

LAST week we briefly referred to some of the objections which might be raised against the scheme of establishing a School of Tropical Medicine at the Branch Hospital of the Seamen's Hospital at the Royal Albert Dock. The committee who are at present conducting the preliminary arrangements propose to concentrate the teaching material at this branch, meaning thereby keeping the cases at the branch instead of sending them to the parent hospital at Greenwich. The Branch Hospital was built as an emergency hospital and was never intended for the reception of any cases which could be allowed to cross the river. Last week we instanced the futility of such a proposal by pointing out that in 25 years only 50 cases of "tropical abscess" had been received at the hospital and on further studying the "tables of cases under treatment at the hospitals and dispensaries of the Seamen's Hospital Society in 1895 and 1896," we are at once struck with the very small number of patients suffering from "tropical diseases" who have been under treatment. Amongst the general diseases we find 73 cases of malarial fever and 2 of bubonic fever but no other recognised tropical fever. Amongst diseases of special organs or tissues there were 44 cases of beri-beri and 4 of "hepatic abscess." Where, then, are the tropical diseases? The explanation is obvious. The acute cases either die at sea before they can reach the hospital or are of an infectious nature. In the former case they will not be available for "concentration," and in the latter the port sanitary authorities would interfere to prevent such "concentration." On the other hand, the Seamen's Hospital would seem in a great measure to be an asylum for sick sailors, for there were in the period stated 221 cases of pulmonary tuberculosis, of which 73 proved fatal, and of these 1 was in the hospital over 600 days, 5 were in over 300 days, 2 over 200 days, and 15 over 100 days. Whilst, therefore, fully desirous that support should be given to Mr. Chamberlain's scheme we cannot but wonder how he came to be advised to select the Branch Hospital at the Royal Albert Dock as the nucleus of the school. Further, it is intended that laboratories should be equipped at the new school for the purposes of research. But surely that is unnecessary. Laboratories already exist with every requisite appliance for such work on the Victoria Embankment, at Chelsea, and at certain metropolitan medical schools. Here qualified medical men already attend from all parts of the world, such

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as Uganda, West Africa, Australia, Canada, &c., and diseases of tropical climates—such as malaria, leprosy, plague, cholera, Madura foot, &c.—have especially been made the subjects of original research. A knowledge of bacteriology is essential to colonial practitioners, but we doubt whether anything would be gained by the establishment of new laboratories, as is laid down in the scheme for the new school. There is another aspect in the present management of the proposed school to which we must refer—namely, the conduct of the committee towards the honorary staff of the *Dreadnought* Hospital at Greenwich. Sir Henry Burdett, in his letter to the *Times* of July 11th, stated that "the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich, as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school." A few days later, however, a letter appeared in the same journal, signed by Dr. Curnow and Dr. John Anderson, the physicians to the hospital, and Mr. G. R. Turner, the surgeon, stating that Sir Henry Burdett's letter was the first intimation of any kind that they had that such a scheme was on foot, and that the statement was made without their authority. Such conduct on the part of the committee certainly needs an explanation, for on the face of it but scant consideration has been shown towards Dr. Curnow, Dr. Anderson, and Mr. Turner. At the last meeting of the Comitia of the Royal College of Physicians of London a letter was read from the Seamen's Hospital Society "asking the College to nominate a representative" on a committee appointed to organise a School of Tropical Medicine in connexion with the Branch Hospital. After some remarks, however, from Dr. Curnow and Dr. Anderson, the "previous question" was carried—an act of great significance as tending to show that without further explanation the College was unwilling to be represented on the committee.

THE INTERNATIONAL CONGRESS FOR THE SUPPRESSION OF ANARCHISM.

LUCCHENI, anarchist and assassin, has been condemned to life-long seclusion with hard labour—a sentence which John Stuart Mill thought so much severer than capital punishment that in the House of Commons thirty years ago he voted against the abolition of the latter on the ground of its greater humanity—and so from at least one active instrument of social chaos and destruction the world is now free. We have referred in a leading article in THE LANCET of Nov. 19th to the "anthropo-psychiatric" view of the case, but what of the organised conspiracy of which he was a member? Is civilisation to look idly on and let the anarchist propaganda extend and multiply proselytes? Is it only to drop its inertia when the head of a state or the scion of a royal house is done to death? The answer is an emphatic negative and comes appropriately from the Italian Government under which the conspiracy itself takes most congenial root and rears the most daring executants of its decrees. In the present week, accordingly, in Rome and on the invitation of the Minister of Foreign Affairs (Signor Canevaro), the European Powers, through their delegates, are assembling in the Palazzo Corsini to consider the best means of wiping out what Lord Salisbury calls "this monstrous affliction of humanity." The hall in which the congress meets is itself significant of the many interests which combine to inspire its deliberations. It is that in which the Accademia dei Lincei (the Italian Royal Society) holds its sittings and it has been watched and guarded with a precautionary vigilance which shows what scant consideration the anarchist is known to have for science and its treasures any more than for human life when they come between him and his fiendish purpose. The Prefect of Rome and the Questor (head of the police) have had all the substructure of the palace minutely examined and a special "surveillance-service" will be maintained over the building and its representative inmates till the proceedings have closed. Lord Salisbury indicated that with every wish for the Congress to attain its end he had little expectation of its doing so; and his lordship is justified in the remark. None know better than the British leaders of hygiene how difficult it is to get foreign Powers to agree as to the best mode of meeting a threatened epidemic. At the conference, for example, held in Rome some thirteen years ago to concert measures against the advance of cholera, the representatives of the southern Powers were unable to look at the question from the same point of view as their brethren from the north. They insisted on regulations and restrictions which would have made the remedy worse than the disease, while their whole habit of thought and of legislation was utterly opposed to what in Great Britain is regarded as lawful and sound. Instead of setting their own houses in order and keeping off disease by denying it the pabulum on which it feeds, they could think of nothing but quarantine or sanitary cordons, and while their ports were inviting the foe by their defective hygiene they were contented by creating artificial barriers to its approach which, even if effective, would have cost civilisation and its forces too dear. We venture to predict that the experience of our own delegates at the Anti-Anarchic Congress will be similar to that of their sanitary predecessors thirteen years ago. These same southern Powers by their misgovernment, their "bloated armaments," their intolerable taxation, their scant employment for the wage-earning poor and the hardness of living thus induced are themselves the fosterers, if not indeed the parents, of the social malady which they are seeking to suppress. But rather than reform or even abate the above sinister conditions they will devise and propose systems of surveillance and modes of repression which more healthily constituted Powers can neither approve nor adopt. It was this doubtless which Lord Salisbury had in view when he indicated how little hopeful he was of the success of the congress. It will not, however, have met in vain if its discussions should put in clearer light the economic and social abuses by which anarchism seeks to justify itself, if, indeed, it does not spring from them. The Italian press has recently been dealing with M. Moriand (Luccheni's counsel) and his contention that such privations as those to which Italy subjects her poor cannot but be prolific of the desperadoes who swell the contingents of lawlessness and crime. The more candid of her organs, indeed, admit the justice of the Swiss advocate's plea and contrast the misery prevalent south of the Alps with the contentment so visible on the north. They are beginning to appreciate what the professional classes in the kingdom—above all, the medical men—have long been advocating and fighting for: the enlargement of the resources of education at the expense of the merely combatant interests; the deflecting of the country's means and energies from the military and naval establishments to the schools primary and secondary and in the last resort to the Universities. This is a large programme, not to be carried out in its integrity but after much controversy in the constituencies and in Parliament. But it is one in which the welfare of Italy in particular is vitally involved, if she is not to be added to the list of those "decaying Powers" on whose "manifest destiny" Lord Salisbury discoursed so wisely and so well.

A CURIOUS CASE OF PHOSPHORUS NECROSIS.

A CASE of phosphorus necrosis due apparently to the inhalation of phosphorus fumes is recorded in a recent issue of *L'Odontologie*. The patient was a man, of good health, but addicted to the habit of excessive cigar-smoking,

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consuming about 20 cigars a day and using many matches to each one, as he frequently interrupted the smoking during his work. It was computed that for the last 20 years he had daily inhaled the vapour of phosphorus given off by over 100 matches. The early symptoms were pain in the right eye, with swelling involving the whole side of the face. Suppuration supervened and the pus obtained a free flow into the oral cavity. The patient's condition grew worse and the maxilla was eventually removed. A few months later a fresh operation was necessary, but the patient collapsed dying from meningitis. The patient's teeth were in a deplorable condition, so that it is possible the phosphorus acted through the medium of the teeth as the cause of the necrosis.

"ANOTHER STREET DANGER."

IN an annotation under this heading in THE LANCET of Oct. 22nd we drew attention to the dangers which arise from the use of "flash-light" advertisements—advertisements, that is, which are alternately displayed and withdrawn by the turning on and off of a strong light—in the streets of London. Our attention was called to the matter by a report of an inquest on the body of a woman who was run over by a coal waggon at Kilburn. In this case it appears a horse had taken fright at one of these advertisements displayed in a first-floor window. The driver lost control of the animal and the woman was killed. In giving their verdict of "Accidental death" the jury added a rider protesting against the use of advertisements manipulated in this way. With this protest we expressed our hearty agreement, and it seems worth while to point out with greater fulness the nature and extent of the dangers which may arise from these inventions. These advertisements are often lighted by powerful electric lights and during the ten or twenty seconds in which the lights are turned on they brilliantly illuminate the part of the street in which they are placed. Suddenly this brilliant light is turned off and the streets are left in that condition of semi-darkness which the nearest gas lamp is wont to produce. The result of this sudden transition is obvious. If we suddenly pass from brilliant sunshine into a dimly-lighted room it is a matter of common knowledge that for the first half-minute or more we are quite unable to see anything. The eye takes an appreciable time to accommodate itself to the altered conditions in which it finds itself and fails to distinguish objects which after a moment or two it can discern with comparative ease. So it is with these most dangerous advertisements. For a few seconds everything is as bright as day. Then in a moment we plunge into what appears to be complete darkness. If we are so unfortunate as to find ourselves in the middle of the roadway when the light is turned off we have an excellent chance of never reaching the pavement except on a stretcher. The foot-passengers cannot see; the drivers cannot see; the horses cannot see, and, moreover, they are often rendered nervous by the sudden change from light to darkness, as seems to have happened at Kilburn. And if any one is run over it is difficult to apportion the blame. It may be urged that there is a remedy at law. If such a light is a nuisance and a danger an injunction could be obtained against its use. But this, after all, is an unsatisfactory method of safeguarding the public. It is not easy to find a man sufficiently public-spirited—or sufficiently litigious, if the term is preferred—to spend time and money upon a lawsuit to abate a nuisance from which other people suffer equally with themselves. Most people will prefer to run the risk or—if they are timid folk—will choose another place for crossing the road. But is it not rather ridiculous that the inhabitants of London and any other large town where these irritating advertisements are permitted should not be able to use their own streets in comfort and safety without such precautions? We should like to have the opinion of the policeman on duty at some point where a flash-light advertisement is in operation as to the additional difficulties which it causes him. A constable on duty, say at the top of Sloane-street, has none too easy a task in regulating the traffic even when all the conditions are favourable and he has a steady light to see by. But place him at intervals of twenty seconds in the full glare of a powerful electric light and then in what appears by contrast to be total darkness and he is practically helpless. A man cannot regulate the traffic when he cannot see it. And yet this very point, the top of Sloane-street, a narrow and very crowded thoroughfare where several lines of traffic converge, has been selected for one of these electrically lighted advertisements. It seems to us astounding that such a state of things should be permitted. It should be possible to find methods of advertising a tobacco, a beef tea, or a patent medicine, which are not actually dangerous to the safety of the community. We imagine that this aspect of the case has not struck the firms who make use of this method of calling attention to their wares. If this is so it is hardly too much to hope that the perils of the system, emphasised as they have been by the death from this cause which occurred so recently at Kilburn, will cause them to withdraw such advertisements altogether.

BILE PIGMENTS.

THE results of an elaborate series of researches on the bile pigments in the higher animals and in some of the invertebrates have been recently published in the *Archives de Physiologie* by MM. Dastre and Floresco. These experimenters started with the intention of demonstrating that biliprasin pigment, which it will be remembered was originally obtained by Städeler from gall-stones, corresponds to an intermediate stage between the two chief pigments, bilirubin and biliverdin. The experimenters arrive at this conclusion from an examination of the effects produced by oxidation in the air, those produced by oxidation by means of iodine, and those resulting from deoxidation owing to exposure in a vacuum. They have satisfied themselves that bilirubin—i.e., bilirubinic acid— does not exist free in bile, except perhaps in some strongly pigmented kinds of bile, as that of the pig, but that it is in combination with sodium as a neutral bilirubinate, for bilirubin is insoluble both in normal bile and in the decolourised bile of Plattner; moreover, the alkaline bilirubinates, contrary to the statement of Städeler, are only to a small extent soluble in water, whilst they are soluble in the alkalies and in the alkaline carbonates. Bile is, in regard to the nature of its fundamental pigment, a solution of sodium bilirubinate in the alkaline carbonates. The second principal pigment, green pigment, biliverdinic acid, is in similar case. It is, however, slightly soluble in normal bile and in decolourised bile, whether neutral or acid. It exists in the bile principally in the state of sodium biliverdinate dissolved in the carbonates. Solutions of bilirubin do not absorb oxygen from the air to pass into the condition of biliverdin. This absorption only occurs with the bilirubinates in becoming biliverdinates. The colour of solutions of the fundamental pigment depends on the quantity of the pigment and varies from a deep red containing $\frac{3}{1000}$ths or more to a pale yellow, which is always the colour of neutralised solutions. In normal bile taken from the gall-bladder MM. Dastre and Floresco have discovered two other intermediate pigments which they have named biliprasinic pigments. One of these is of yellowish brown colour and is the biliprasinate of soda. It is converted into biliprasin or green pigment by a current of carbon-dioxide and by acetic and most other acids, especially in presence of alcohol. It is not stable *in vacuo*, being decolourised

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by the action of light, and when exposed to air and light it becomes green (changes to sodic biliverdinate). It is this biliprasinic pigment which gives its yellow colour to the bile of the calf, but it exists in other yellow biles. The second biliprasinic pigment is a green pigment; it is biliprasin. It differs from biliverdin—i.e., the biliverdinates—in becoming yellow (forming biliprasinate) on the addition of a few drops of alkali, and in becoming red (forming bilirubinate) on exposure to a vacuum. It is slightly soluble, especially in liquors charged with CO_2. It constitutes the ordinary pigment of the bile of the calf, of the fresh bile of the ox, and of the bile of the rabbit. The relation of the two pigments to one another is very simple. The yellow pigment is an alkaline salt of the green pigment. They are converted into each other by the alternate action of acids and of alkalies; thus, the acid forms one pigment, the alkaline salt another. This is in opposition to what occurs with bilirubin and the bilirubinates which are equally yellow, and with biliverdin and the biliverdinates which are equally green. Hence, contrary to what is usually stated, yellow bile can become green without oxidation. True biliverdin is less common than is supposed in bile. The biliprasinic pigments are intermediate to the fundamental pigments, bilirubin and biliverdin, in point of oxidation and of hydration. Those processes affecting the original fundamental pigment of the bile, bilirubin, commence possibly in the hepatic cellules and in the biliary ducts and certainly go on in the gall-bladder, but the artificial conditions for this change are not here realised. Hence the hypothesis of an agent or condition for inducing oxidation (hepatic oxidasis). In the invertebrata MM. Dastre and Floresco distinguish pigments soluble in water and pigments soluble in chloroform. The pigment soluble in water is named by them "ferrine" and contains iron combined with some proteid. The pigment soluble in alcohol and chloroform contains no iron and is identical with cholechrome. It has a spectrum with four bands and appears to be identical with the chlorophyll of plants.

THE COLOUR OF NEWLY-BORN NEGRO CHILDREN.

AN article appeared in the July issue of *Pediatrics*, commenting on the statement of the French physician, Dr. Farabery, that negro children when born are of exactly the same colour as are those born of white parents. The writer in *Pediatrics* quoted Dr. Farabery's assertion that he had had ocular proof of this fact at the Soudanese Exhibition held in the Champs de Mars, Paris, where he had seen negro infants up to the age of seven days and, in some instances, to a considerably later period, who were similar in every respect to white infants. The article in *Pediatrics* has called forth many letters from medical men practising in the Southern States of North America where the black race abound. They one and all stoutly deny the truth of Dr. Farabery's assertion, although it is somewhat curious to notice that they are not agreed as to the exact colour of the negro newly-born infant. For instance, one gentleman writing from Birmingham, Alabama, says: "I have been actively engaged in the practice of medicine, including obstetrics, in Alabama, without intermission, since the spring of 1886. Many others have had an equally large and ample experience to assume the attitude of authority on the subject under discussion, and our deductions would be that babies born of negro parents are black; some of them very black, others not quite so black as they get to be later. Those born of mulattoes, or mixed blood, vary according to the predominance of the white or black race; but however light the general surface may be, if negro blood exists the scrotum in the male is usually black, the female genitals do not show such distinguishing features so clearly." Another medical practitioner, living in New Haven, Missouri, writes thus: "Our experience tells us that the newly-born negro child is not of exactly the same colour as its white brother. The 'exhibition in the Champs de Mars' could not convince us against facts which have come under our own experience for many years. The colour of the newly-born scion of African parentage, whether of immediate or remote descent, is not the same as that of the Caucasian or American. It is a sallow or creamy white without the pink glow or tinge that marks the scions of Caucasian origin. We must take issue with the French physician that there ever appears 'a tender pink colour' if the slightest trace of African or negro blood is present. The 'tanned leather,' familiarly known as 'saddle colour,' belongs exclusively to a mixture of the white and black races. The pink rosy hue of the cheek of the Caucasian never has been seen in the cheeks of those having even one-eighth of negro blood in their veins." Here are three different opinions with regard to the colour of the newly-born negro. Dr. Farabery says that it is exactly like that of a white infant up to seven days old; the American doctor from Alabama says that it is always black; while his fellow-countryman from Missouri says that it is sallow or creamy white. The question is—who is right? There can be no doubt that from their greater experience the dictum of the American medical men is worth more than that of Dr. Farabery, but even they do not agree. It would be interesting to hear what practitioners in our African colonies and Egypt have to say on the matter. The Rev. J. G. Wood, in his "Natural History of Man," remarks: "As is the case with the negro race the newly-born infant of a Kaffir is nearly as pale as that of a European, the dark hue becoming developed by degrees." It surely would not be difficult to clear up this point.

SERUM *v.* VACCINE IN PESTIS BUBONICA.

PROFESSOR ALESSANDRO LUSTIG, director of the pathological laboratory attached to the Florentine School of Medicine, endeavours to dissipate the erroneous views which he finds prevalent, particularly in Continental Europe, on "serotherapy as contrasted with vaccino-prophylaxis" in pestis bubonica. The first serum used in Bombay, he says, was the French (Yersin), and that only in a limited number of cases during the epidemic of 1896-97. This, according to the official report printed in 1897, gave but poor results in the human subject—a finding subsequently confirmed by Koch. This was followed, in 1897 and in a limited number of cases, by the serum prepared (on a very different method from the French) in the Florentine laboratory. It succeeded in Bombay and at Poona in reducing the mortality in hospital to 40 per cent., while among the patients not so treated the deaths were 86 per cent. Coincidently with these experiments trial was made of the serum prepared at St. Petersburg on the Yersin method, with a mortality officially given as 82 per cent. In 1898, on the recrudescence of bubonic plague, there were made, almost contemporaneously and in the same hospitals, experiments with serum prepared on three different methods: (1) the Haffkine serum, giving a mortality of 82 per cent.; (2) the serum prepared in Russia on the Yersin method, yielding identical results; and (3) the serum prepared in Florence, reducing the mortality to 46 per cent. This last serum, which is hitherto the only one which has been systematically tried in several hundreds of cases, is now under the charge in Bombay of Dr. Gino Galeotti and Dr. Giovanni Polverini, of the Florentine school, who carry on their work in a laboratory fitted up for this purpose by the Bombay sanitary authorities. "To omit nothing," continues Dr. Lustig, "I may mention that towards the defervescence of the last epidemic, trial was made

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of the French serum, not, however, in the hospitals, but only in isolated and distant centres. Of this the official report has yet to appear. Great confusion of thought," he adds in words which we translate textually, "is prevalent as to 'vaccine' and 'serum,' and so we often see mention made of the 'Haffkine serum,' instead of the 'Haffkine vaccine.' Now, Haffkine is a Russian physician who at first prepared a serum which proved inefficacious and who at present undertakes in India preventive vaccination—that is, inoculating the healthy subject with attenuated bacilli of the pestis. This practice appears to give good results, but the efficacy of a prophylactic means is determined with difficulty. We can pronounce better on a curative procedure, especially when the mean death-rate is very high. In any case this vaccinal treatment is not to be confounded with serotherapy, as is constantly done in the lay press."

THE DANGERS OF IRRIGATING EMPYEMATA.

IN the *American Journal of the Medical Sciences* (October, 1898) Dr. E. G. Janeway relates the following case. A man who had been operated on for sacculated empyema used to irrigate the sac with hydrogen peroxide. One day, three and a half months after operation, two minutes after the injection of a wineglassful of the peroxide he felt very peculiar and became for a second unconscious and of a pale greenish colour. He then found that his right arm and leg were numb and powerless; this condition lasted for twenty-five minutes. Three days afterwards he had an exactly similar attack except that also he lost power in his neck, his head drooped, and he had difficulty in breathing. The occurrence of serious nervous symptoms on irrigating empyemata has been noticed by several. M. Bonveret, in his work on Empyema, published in 1888, collected a series of such cases which he has grouped under the head of Embolic, Slow Paralytic, Syncopal, and Convulsive. The following case, published by Leudet, is somewhat similar to the one just described. A young man had the sac of an empyema regularly irrigated with a solution of iodine. On one occasion he was suddenly seized with malaise, a sensation of numbness in the right side of the body, and loss of speech. Gradually power of motion returned. Two attacks of the same kind occurred later. Afterwards this irrigation was continued for a year without further accident. Dr. L. Forgues relates another case in the *Archives de Médecine et Pharmacie Militaires*, 1894. During the irrigation the patient suddenly became unconscious, with pale face, cadaveric look, open eyes, and dilated pupils. Heart-beat and respiration were suspended. After cold flagellation they returned in about a minute. When the patient became conscious the right arm and leg were paralysed. After twenty-five minutes power returned to the right leg, but it was three hours before the right arm could be used. In our own literature, which Dr. Janeway seems to have overlooked, similar cases are recorded. In the Transactions of the Clinical Society, 1877, Dr. Cayley has recorded the case of a man who had an empyema repeatedly washed out. One day this was followed by convulsions, opisthotonos, and death in sixteen hours. In THE LANCET of March 17th, 1894, Dr. Fisher has published a case where collapse and hemiplegia occurred during perflation of an empyema. In THE LANCET of May 4th, 1895, p. 1101, Mr. Stephen Paget mentions a number of cases and also the case of a child who died at once after a cold lotion had been used to irrigate an empyema. What is the explanation of these accidents? Dr. Cayley and Mr. Paget regard them as so far unexplained. To the theory that they are due to cerebral embolism, from passage of some substance into the circulation during the irrigation, which naturally suggests itself, there is the objection that in fatal cases no cerebral lesions, embolic [or other, have been found. Dr. Janeway, however—and it seems quite rightly—adopts the embolic theory as the only one which can account for the hemiplegia. He supposes that the emboli are of such a nature as soon to disappear—air or gas. He remarks that the symptoms occurred when the conditions were such as to produce pressure in the sac: the liberation of oxygen from peroxide of hydrogen; the measuring of the sac; changing of the tube; and pressure to hold the tube in its place. In support of this view he refers to Professor Lewin's experiments where death was produced by injecting air into the bladder, the air entering the venous system through the pelvis of the kidney. However, is not an alternative explanation tenable—that the emboli are solid particles so small as to have been overlooked at the necropsies? Dr. Samuel Gee, writing in Allbutt's System of Medicine, condemns injections in the treatment of empyemata as dangerous. He attributes the serious and fata consequences which may ensue to syncope, the cause of which is not understood. He refers to a fatal case in which the right cavities of the heart were found distended with gas, which supports Dr. Janeway's hypothesis.

A MEMORIAL TO THE LATE DR. BARRY OF THE LOCAL GOVERNMENT BOARD.

A TOUCHING indication of the esteem and respect in which Dr. Barry, the late senior medical inspector of the Local Government Board, was held is to be found in the fact that a handsome lych-gate has recently been erected to his memory in the village of Down in Kent, where he resided at the time of his sudden and premature death. The memorial in question has been erected by subscriptions from Dr. Barry's colleagues in the medical and other departments of the Local Government Board, as also from many medical officers of health throughout the country. The Yorkshire branch of the Society of Medical Officers of Health, amongst the members of which Dr. Barry spent some years of his official life, have collectively borne testimony by their contributions to the appreciation in which he was held by them. On the inside of the lych-gate is a tablet bearing Dr. Barry's name, together with the following inscription, "Erected by his colleagues and friends in token of their affectionate regard and high esteem of his life's work."

"LIVER-COUGH" AN UNDESCRIBED SYMPTOM OF HEPATOPTOSIS.

IN the *Journal de Médecine Interne* of Oct. 15th, 1898, M. Louis Vène relates the following case. A woman had suffered from cough for eighteen years, which since she came under observation (in 1891) was dry and incessant. Drugs were useless. She was examined by a laryngologist and by a number of physicians, including Professor Simon Duplay. The diagnoses of nervous cough and of hysterical cough were made. She happened to break her clavicle and a bandage was applied for a month which compressed the thorax and upper abdomen. During this period the cough was never heard, which was attributed to preoccupation. M. Vène's attention was attracted to a peculiar symptom—the patient never coughed at night. She said, "I sleep very little, perhaps two or three hours a night; but whether I sleep or not I never cough lying down whatever be my position in the bed." Examination showed that the liver extended to the level of the umbilicus in the right hypochondriac region. Hepatic dulness began at a lower level in the upright than in the recumbent posture—at the seventh rib. The thorax was compressed with a flannel bandage extending from the nipples to the umbilicus. The effect was remarkable. The patient had not a single fit of coughing. This result was maintained by bandaging from the

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pubes to the nipples with rigid material—cotton or flannel—but corsets and complicated elastic belts proved useless. In none of the various observations on hepatoptosis is cough mentioned as an important symptom. But since Hippocrates "liver-cough" has been known, and, curiously, in 1831, when hepatoptosis was unknown, J. B. de Larroque, physician to the Necker Hospital, in a work on Certain Abdominal Diseases which Simulate, Provoke, and Maintain Diseases of the Chest, distinguishes "liver-cough" due to hepatitis and "liver-cough" coming on in the standing position caused by the weight of the organ. As to the manner of production M. Vène suggests that as the liver is (according to Faure) suspended from the vena cava, which is connected with the diaphragm, excitation of the latter produces the cough. He concludes that before making a diagnosis of hysterical cough the absence of any pathological reflex from the abdominal organs in connexion with the diaphragm, and particularly the liver, should be ascertained.

THE ETIOLOGY OF PUERPERAL FEVER.

THE question of the etiology of puerperal fever must always be a matter of special interest to all engaged in midwifery practice. In 1880 Pasteur first demonstrated the presence of streptococci in a case of puerperal infection, and for a long time it was thought that the streptococcus pyogenes or the products of its growth were the important agents in the causation of puerperal septicæmia. The further researches, however, of Brieger in 1888 and of von Franqué and Krönig in 1893 showed that puerperal fever might be caused not only by streptococci but also by staphylococci, colon bacilli, and gonococci. In the September number of the *American Journal of Obstetrics* Dr. Whitridge Williams records the results of the bacteriological examination of 40 cases of fever in the puerperium. In 22 instances pathogenic organisms were found—viz., the streptococcus in 8, the staphylococcus in 3, the colon bacillus in 6, the gonococcus in 2, the typhoid bacillus and the diphtheria bacillus in 1 each, and in 1 case the bacillus aerogenes capsulatus (gas bacillus) associated with the streptococcus. In 10 of the cases the usual pathogenic organisms were absent, but non-pathogenic bacteria were found, while in 11 cases where there was a more or less marked elevation of temperature the bacterial examination was entirely negative. In the cases where pathogenic organisms were absent it is uncertain what part the bacteria found played in the production of the symptoms, and it is quite possible that their presence may have been a mere coincidence. In the group of cases where negative results were obtained the temperature was no doubt due in some to auto-intoxication from the bowel, as shown by the results of purgation, and in others to mammary disturbances, while in a few no cause could be discovered. It is a well-known clinical fact that many cases of fever in the puerperium readily yield to brisk purgation, and the proof afforded by Dr. Williams's bacteriological examinations that in such cases the temperature is not due to septic infection from the uterus is of the utmost importance. With the fuller knowledge we now have as to the presence of pathogenic organisms in the uterus in cases of puerperal fever the question of what organisms are usually found in the vagina has a renewed interest. In the October number of the same journal Dr. Williams publishes a further paper upon the Bacteria of the Vagina based upon the bacteriological examination of the vaginal secretions of 92 pregnant women. The paper contains a full summary of all the work done upon the subject up to the present time, and Dr. Williams's results fully confirm the important results obtained by Krönig. We cannot do more than quote some of the conclusions arrived at by Dr. Williams although the whole paper will well repay perusal. They are as follows: "The vaginal secretion of pregnant women does not contain the usual pyogenic cocci. As the vagina does not contain pyogenic cocci auto-infection with them is impossible. It is possible, but not yet demonstrated, that in very rare cases the vagina may contain bacteria which may give rise to sapræmia and putrefactive endometritis by auto-infection. Death from puerperal infection is always due to infection from without and is usually due to neglect of aseptic precautions by physician or nurse." The vexed question of auto-infection cannot be regarded as completely settled, but the results of Dr. Williams's examinations enable him to assert positively that the usual forms of puerperal infection are not due to auto-infection, and although it is not impossible for this variety of infection to occur so far it has not been demonstrated. We shall not go far wrong, therefore, if in our midwifery practice we regard the vagina of a healthy woman as free from all such organisms as usually produce puerperal fever and if we remember Dr. Williams's conclusion that death from puerperal infection is always due to infection from without.

FATAL MISREADING OF A PRESCRIPTION BY A NURSE.

A PATIENT suffering from typhoid fever in the Tolworth Isolation Hospital has died from the effects of an overdose of laudanum given by the nurse in mistake. A card for the guidance of nurses was placed at the patient's bedside. On this was written by the medical officer the order for the patient to have an injection of half a drachm of laudanum. The matron directed the nurse to give this. Instead of half a drachm she gave half an ounce. The patient became insensible and died the next day. The nurse admitted at the inquest, held at Kingston-on-Thames, that she had misread the prescription. The jury found that the deceased died from an overdose of opium and expressed an opinion that greater care should be exercised with regard to poisonous drugs.

THE RIGHTS OF CHILDREN IN INDIA AND THE COLONIES.

IT is a regrettable fact that it is still true to a much greater extent than there is any justification for, and in spite of an advanced and Christian civilisation, that the weakest goes to the wall. Illustrations of this fact could be multiplied, but it will be sufficient to quote one of the most obvious. It consists in the cruelty, deliberate and regardless, to which very many children are subjected. With the efforts put forth by the National Society for the Prevention of Cruelty to Children all our readers are familiar. It is to be remembered, however, that that society has hitherto been a national one in the purely insular sense. Even so it has been most useful. We now learn with satisfaction that there is a prospect that other lands than our own will witness the rise of agencies identical with it in their purpose as they are one with it in their justification. A society has recently been formed in Calcutta for the protection of ill-used Indian children and the terms of its constitution are now under discussion in the daily press of India. It has been objected that this new organisation has been established in an exclusively Christian and even sectarian form. While sympathising with the implied ideal we cannot but think that it represents in this instance an error in principle and in policy. The practice of humanity, it should be remembered, is not exclusively Christian, though it has undoubtedly found its best advocacy and its highest development where Christian principles have been allowed to operate. No doubt the present difficulty will be judiciously settled so

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as to enlist the cordial coöperation of all sorts and conditions of those resident in India, and thus to ensure the more effectual prevention of cruelty in that country. It is of equally happy omen that steps have been lately taken to organise the work of prevention of cruelty to children in Australia and other colonies. The methods pursued by the National Society for the Prevention of Cruelty to Children at home are such that no reasonable objection can be taken to them. Repressive though they must be they are no less powerfully educative, and numerous instances might be quoted in which with a minimum of friction a veritable reformation has been wrought by their means in the treatment of children by their guardians. We regard those methods indeed as representing a species of sanitary procedure in the realm of morals, and we therefore naturally desire for them the widest possible extension.

CYCLONE NEUROSES AND PSYCHOSES.

ST. LOUIS was visited in May, 1896, by a severe cyclone followed by slighter storms. Dr. Bremer some months later read before the St. Louis Medical Society a paper dealing with the nervous effects produced by this series of storms, and an abstract of this appears in a recent number of the *Neurologisches Centralblatt*. Among the most common effects were so-called hysterical and neurasthenic conditions induced in persons who were previously of a neurotic temperament. Hysterical monoplegia, aphasia, and aphonia were among the most common sequels and, on the other hand, there was not infrequently a transitory improvement in the condition of patients who were chronically hysterical. A true "cyclonophobia" was also of not uncommon occurrence and, indeed, everyone was taken with a kind of panic. One case of epilepsy was seen, apparently induced at this time, and malaria was more common than usual, as also was diarrhœa—a state of things considered to be analogous to the alleged connexion between earthquakes and epidemics. In some women the hair became dry and fell out; many people went about as if in a dream, and amongst the healthy there were several who confessed that for weeks and even for months they continued to dream of cyclones. The lower animals, also, especially fowls, dogs, and horses, showed the greatest fear in any subsequent storm. Finally, the interesting question is propounded—What deleterious influence is the cyclone likely to have upon the children born just after it—will there be "cyclone children" as there were the well-known "enfants de siège" in Paris after 1870?

DEATH AFTER MERCURIAL INUNCTION.

THE medical officer in charge of a large asylum—or workhouse as we should term it—in Belgium has recently been compelled to make his appearance in the law courts in a very unpleasant manner. Some months ago he instituted a kind of routine treatment on the admission of all infirm inmates in order to free them from vermin with which they were usually found to be swarming. This treatment consisted in the inunction of a compound of two parts of strong mercurial ointment with three parts of vaseline, followed an hour later by a bath. The average quantity of ointment used was a trifle more than a drachm. The number of patients subjected to this process was 630. Of these 30 showed signs of mercurial stomatitis, 17 of them being obliged to remain in their wards; 3 of these last had to be taken into the infirmary, 1 of whom, an old man, aged sixty-seven years, died a month later. A necropsy was made by the official medical officer attached to the courts and he gave it as his opinion that the mercurial inunction was responsible for the death. In consequence of this report the asylum medical officer was charged with the manslaughter of 1 inmate and with having injured 15 of the others. Several medical men gave evidence that in their opinion the treatment was proper. The court found that "it was not proved that the death was due to mercurial poisoning as it did not take place for a month after the inunction and there had been periods of improvement, and that though the ointment might have caused the stomatitis, this became 'ulcero-gangrenous,' assuming a serious and unexpected character in consequence of organic conditions which induced special morbid phenomena independent of the original cause." A fine of 15 francs was, however, imposed as the court considered that such heroic measures were not suited to all persons and that such a strong preparation should not have been ordered indiscriminately or without a medical examination of each person. This judgment when brought before the Court of Appeal was not sustained and the defendant was finally acquitted. Regarding the contention that he ought personally to have examined the inmates on admission it is stated that he was the sole medical man in charge of the 4000 inmates, that the infirmary always contained from 100 to 200 patients, and that from 50 to 100 consultations had to be given daily to those not in the infirmary, added to which the sole medical charge of the 125 officials and their families, some of whom resided at a considerable distance, devolved upon him, so that it would have been absolutely impossible for him to see and examine all the poor old vagrants and others who might be admitted. The moral of the whole case surely is that workhouses in Belgium require a larger number of medical officers.

THE REMOVAL OF TATTOO MARKS.

IN the *Archives de Médecine Navale* for October there is an instructive article by Dr. Félix Brunet, a junior surgeon of the French navy, on *Détatouage*, or the art of removing pictorial designs and inscriptions from beneath the outer skin. Soldiers and sailors — the latter especially — are notoriously fond of this species of adornment, but men at best are but fickle creatures and with advancing years many among them become anxious to be relieved of the too persistent records which they then no longer look upon as ornamental. As Dr. Brunet says, there are few naval medical officers who have not been asked by patients to remove tattoo marks, but unfortunately when their services are thus required they are obliged to depend upon their own resources, as little or no information is afforded by the text-books. It is true that an immense number of methods have been recommended both in ancient and in modern times, but all are more or less inefficient, while many of them are barbarous. Tattooing varies so considerably as to site, extent, and depth that no single method, however elastic, can possibly answer in all cases. Dr. Brunet enters into an elaborate historical survey of his subject, exhibiting a vast amount of erudition. Among other stories he tells once more how Bernadotte died rather than lay bare his arm for phlebotomy. In his salad days Napoleon's famous general had been an ardent Republican, and had he consented to the uncovering of the limb an elaborate design attesting to his unalterable devotion towards the Republic One and Indivisible would have come to light. In conclusion Dr. Brunet formulates his procedure as follows. "The empirical means proposed for the removal of tattoo marks being either inefficacious or dangerous, while the scientific expedient of re-pricking with various caustics is insufficient, we propose a method, more complicated but surer, and separable into the following stages: (*a*) delimitation of site to be operated on by diachylon plaster, anæsthesia by cocaine; (*b*) vesication by ammonia (*c*) removal of epidermis, free rubbing of exposed design by nitrate of silver

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pencil; (*d*) after five minutes salt or boricated water dressing, to be renewed the next day, when also the diachylon may be removed; (*e*) cicatrisation under a powder formed of equal parts of iodoform, red bark, charcoal, and salicylate of bismuth. This method is not applicable to all cases. Sometimes, notably in tattooing of the face, dissection is the best treatment. When a very large design is in question it can be dealt with piece-meal." The method would probably be drastic, but whether its author is quite consistent in reflecting upon the barbarity of other processes while recommending his own is open to question.

TUBERCULOUS PERFORATION OF THE SOFT PALATE.

AT the meeting of the Société Médicale des Hôpitaux on Oct. 21st, 1898, Dr. Du Castel read the following case. A man, aged forty-two years, who had been very vigorous, lost flesh considerably. He entered hospital for a painful condition of the throat which almost completely prevented him from taking food. There was an oval perforation of the soft palate, in the middle line, measuring 6 mm. by 4 mm. At first sight it appeared to be syphilitic, but neither history nor examination of the patient revealed anything to support this view. Near the last right upper molar tooth and extending some distance on the palate was an irregular ulcer with granular surface and a yellowish-grey and sanious coating. At its circumference were numerous little yellow granulations presenting all the appearances of miliary tuberculosis of the mouth. At the left border of the perforation was a small granular ulcer with a pultaceous coating exactly resembling that on the former ulcer. Near the latter were three miliary granulations with tuberculous characteristics. The patient was manifestly tuberculous; he had pulmonary cavities, profuse expectoration, night sweats, and diarrhœa. He died some days after admission. The necropsy showed diffuse tuberculosis of both lungs. The nasal mucous membrane near the perforation was ulcerated and papillomatous. Numerous tubercle bacilli were found at the margins of the ulcer. Tuberculous perforation of the soft palate is very rare. M. Talamon published a case in the *Journal de Médecine Moderne* of Sept. 2nd, 1893, and declared that he could not find another in medical literature. M. Talamon's patient, unlike Dr. Du Castel's and the majority of patients with tuberculosis of the mouth, showed no sign of pulmonary tuberculosis and had a cough only a short time. When first seen he had had for several days sharp pains in the throat. There were dusky redness of the posterior part of the soft palate, uvula, pharynx, and tonsils, and irregular ulceration of the left tonsil. Near the latter on the soft palate were three yellow points, presenting all the appearances of tuberculous granulations. They enlarged, coalesced, and ulcerated. On the eighth day the soft palate was perforated. The bacillus tuberculosis could not be found. The patient was treated with cantharidate injections and applications of lactic acid, under which the ulcers almost healed and the perforation became almost obliterated. He then left the hospital.

ON Dec. 6th the meeting of the Pathological Society of London will be devoted to the exhibition and discussion of tumours and other morbid lesions of the pineal body. About eight specimens will, as far as is known at present, be available for the meeting, but any members who are willing to exhibit or read communications on the subject are requested to communicate with the junior secretary, Pathological Society, 20, Hanover-square, W.

THE Indian Government have asked for ten more medical men to serve temporarily on plague or general duty in Madras. Of these, four have already been appointed. Volunteers who may be ready to start for India at two or three days' notice are invited to send their names to the Revenue Secretary, India Office, Whitehall. Candidates must be under forty years of age. Other information may be obtained on application.

SIR JOSEPH FAYRER will soon leave London for a short space of time, but in view of previous incorrect rumours we take this opportunity of stating that his visit will be a short and temporary one. As readers of THE LANCET know it is not our habit to chronicle the movements of medical men, but as a report of Sir Joseph Fayrer's retirement from practice has been widely circulated we consider it fair to contradict it.

AS announced by Sir William Turner the 20,000 copies of the British Pharmacopœia originally printed have already passed into circulation and a reprint has been ordered. We are informed that the opportunity has been taken of indicating a few manifest errors and misprints. A slip containing these corrections may be obtained gratis from the publishers, Messrs. Spottiswoode and Co., Gracechurch-street, E.C.

THE London University Commission appointed under the University of London Act, 1898, has commenced its sittings. The Commissioners are Lord Davey (Chairman), the Bishop of London, Sir Owen Roberts, Sir William Roberts, Professor Michael Foster, Professor Jebb, and Mr. E. H. Busk. The Secretary is Mr. Bailey Saunders.

ON Monday, Nov. 28th, at the Camera Club, Charing Cross-road, Major Beevor, R.A.M.C., will deliver an address on the Use of the X Rays on the Battlefield in the late Operations on the Indian Frontier.

WE are glad to be able to state that there is not the slightest foundation for the rumour that Dr. Hale White contemplates resigning his post of physician to Guy's Hospital.

THE PRESENT STATE OF UNIVERSITY EDUCATION IN GERMANY.

THE November number of the *Nineteenth Century* contains an able and important article upon Recent Progress in German Universities. The writer points out how the events of the last two or three decades have tended to consolidate Germany and to give pre-eminence to Berlin. "Berlin has become a *Welthauptstadt*, a capital among the capitals of the world, conscious of her strength and fully capable of using it. Between the overgrown barracks, set in a plain, and the sovereign city of Imperial Germany, there lie the two great eras which have succeeded the victory over France—the Bismarckian era of union and the era of expansion under the Emperor William II. Both have tended to the aggrandisement of Berlin. The stream of creative invention has turned aside from the minor kingdoms and duchies, and the long line of princes who made of their provincial courts imperial seats of culture is gradually coming to an end." In other words, centralisation, so long the note of French culture, is now to have its turn in Germany, where in the past Weimar has divided intellectual honours with Berlin, Leipzig with Frankfurt, Dresden with Munich. We are spectators of a great secular movement which may be for good or for evil but which seems irresistible. The consequences of this movement must be far-reaching and

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important. "The young German of to-day," proceeds the writer in question, "has to be educated in quite different duties and ambitions from those which sufficed for the young Prussian, Saxon, Bavarian, or Westphalian whom Matthew Arnold visited thirty years ago. His mental equipment must comprise those signs of union and expansion under which his country has developed. It is not enough to build engines in Dortmund, to worship Goethe in Weimar, to paint pictures in Munich, to tread grapes on the Rhine. The German eagle has planted his talons deep in the united Fatherland, and we are taught that on his wings is commerce and in his flight is peace." The new conception presented to the youth of Germany and to their instructors in culture is that of an epoch of scientific progress, industrial development, and colonial expansion, directed, controlled, and protected by the vigilant eye of the Kaiser. It will be admitted, at all events, that this is a much higher and nobler conception than that of a pure military *régime* of drill, barracks, and conquest.

This new conception of the object of life and the probable trend of national development is powerfully affecting university education in Germany. New subjects are being introduced into the curriculum, old subjects are being appraised by new standards, technical education and economical questions are receiving a great impetus. There are now, it would appear, no less than 4000 technical chemists in Germany who have enjoyed a university education. Thirty years ago the professors in the Berlin University devoted thirteen hours a week to the study of political economy. This amount of time is now more than doubled. The range of this subject has been extended and now includes such questions as labour rights, currency problems, social protective legislation, economic meaning of machinery, and so forth. The result is, on the one hand, to spread abroad juster conceptions of economic and industrial questions, and, on the other hand, to put into the hands of the Socialist party powerful weapons which they have been quick enough to use.

It is interesting to note what has been the German development of the idea of university extension, inasmuch as opinion in this country is somewhat divided with regard to the utility of the movement. It would appear that at various centres *Volkshochschulkursen*—popular university courses—were established and that their fortunes were various. In most cases the universities favoured the movement, while the State was hostile. At Munich Professor Brentano and some of his colleagues in the university threw themselves into the work, but the Bavarian Government refused to recognise the movement, and withheld the loan of the university lecture rooms with their various fittings and appliances. In spite of this opposition no less than 1500 persons, of whom about 1000 were males, attended the lectures in one session. Artisans and shopkeepers made up more than half the roll, and followed the instruction with regularity and intelligence. In Berlin the university senate has always refused its adhesion to university extension. It would appear that the movement is on the whole languishing in Germany from want of funds. The State is generally more or less hostile and private benevolence has not been conspicuous. The official hostility to the university extension movement seems to be chiefly influenced by a dread of the further growth of Socialism among the masses of the people.

The writer in the *Nineteenth Century* gives much interesting information regarding the status and functions of the *privat-docent*—that peculiar feature of German university life. He quotes Matthew Arnold to the effect that the *privat-docent* is "peculiar to Germany and is the great source of vigour and renovation to her superior instruction. ..... The *privat-docent* is an assistant to the professoriate and his lectures count as professors' lectures to those who attend them. His appointment is this wise. A distinguished student applies to be made *privat-docent* in a faculty. He produces certain certificates and performs certain exercises before two delegates named by the faculty and this is called his *habilitation*. If he passes the faculty names him *privat-docent*. ..... He is then free to lecture on any of the subjects proper to his faculty. He is on his probation, he receives no salary whatever, and depends entirely on his lectures; he has, therefore, every motive to exert himself." There can be little doubt that this is an admirable system, but it has grown up naturally in Germany and it is a serious question whether it could be transplanted to this country. It must be remembered that the *privat-docenten*, although often men of the highest culture and attainments, are content to work on year after year upon the scantiest incomes in the hope of future promotion. The comparative simplicity of manners in Germany, and let us in justice add the widespread love of knowledge for its own sake which exists in that country, make such a system possible. It is doubtful if many Englishmen of first-class attainments would work on for years upon the income of a clerk or an engine-driver.

The "modern" side of education is, we are informed, making great strides in Germany, and the technical colleges have kept pace with this development. A "Commercial College" was opened at Leipsic on April 25th of this year, and its aims and programme are understood to be in consonance with the Kaiser's views regarding the industrial development of the Empire. "The college aims at training a generation of business men, intellectually and socially as fully equipped as any 'Herr Doctor' of the conventional university course. It is not only, it is not primarily, designed for the benefit of trade itself. Indirectly, no doubt, the Empire will gain when its commercial classes and consular profession are recruited by men of university stamp. But its chief aim is the ideal one of benefiting the recruits themselves."

A VISIT TO THE SANATORIUM FOR CONSUMPTIVES AT NORDRACH.

BY THOMAS GLOVER LYON, M.A., M.D. CANTAB.,
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AND
CHARLES LAMPLOUGH, M.D. BRUX.,
LATE RESIDENT MEDICAL OFFICER TO THE HOSPITAL.

NORDRACH is a village situated about 1400 ft. above the level of the sea, some 20 miles south of Baden-Baden, in a valley of great natural beauty running up in a winding fashion towards the north-east amongst the mountains of the Black Forest. It is best reached by a drive of nine miles from Biberach-Zell. The rainfall is rather above the average, but there is plenty of bright sunshine. The atmosphere, remarkably free from dust, is at once genial and invigorating. Even in winter the patients can sit about in the open air with comfort. There are no mists here and catarrh is unknown. The valley is far away from all public entertainments; there is nothing to distract the patients from following the somewhat rigorous treatment. The means of communication with the rest of the world are under control and the right to open parcels coming to patients is reserved. The village inn was secured by Dr. Walther at the foundation of the colony, so that it is impossible for patients to break the dietary rules laid down for them.

The four pavilions, containing between 40 and 50 beds, present no special features except that arrangements are made for a complete system of airing, washing, and sunning of the rooms and corridors. Ledges where dust might collect are avoided. The bedrooms all look towards the south-west and the windows are of the "French" pattern

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with a broad flap at the top opening outwards and upwards, so that this window space can be utilised for ventilation even during a heavy rainstorm. Each bedroom contains a shower-bath. There is a large dining-room, amply provided with windows, which are rarely closed, even in winter. There are no specially constructed shelters; protection from the weather is provided by the pavilions and places protected by nature. Attached to the sanatorium are a laundry, where all articles are steam-cleaned, a steam disinfector, an ice-house for keeping provisions, and an electric-lighting plant. Cows are kept for the use of the sanatorium. There are paths marked out as to distance and gradient running on the hillside amongst the trees.

The nursing staff has been specially trained at Nordrach. It is found here, as at other sanatoria and hospitals for phthisis, that women who have not gone through the exciting work of surgical and acute medical wards are more easily induced to take interest in phthisical patients and to carry out details of treatment essential in their management.

Patients are under strict medical supervision, being visited in their bedrooms three times a day, and the resident physician takes his meals with those patients who are allowed to dine "in hall." The patients are weighed every week and their temperatures taken four times daily. The only object recognised in the treatment is the cure of the disease; all other considerations must give way to this. Any deviation on the part of the patients from the daily routine prescribed is certain to come to the cognisance of the medical superintendent. However, the marked improvement noticed by the patients themselves soon reconciles them to the rather trying *régime;* here the good offices of the senior patients are found to be of great service.

As some misunderstanding exists about the matter a sketch of the method of treating phthisical patients at Nordrach, gathered from Dr. Otto Walther, who has carried out this system for the past nine years, may not be without interest. This should be prefaced by saying that no treatment for "hardening" patients is used, as at some sanatoria, anything of the sort being found quite unnecessary. The treatment proper may be placed under six headings: (1) sanatorial and self-discipline; (2) medical supervision; (3) fresh air; (4) regulated and induced feeding; (5) regulated exercises and rest; and (6) limited recreation.

1. *Sanatorial and self-discipline.*—These are very important points in the Nordrach treatment. It is here that the personality of the medical officer plays a great part. The details will appear later, but, generally speaking, the discipline referred to consists in suppressing habits which have aggravated or caused the disease and in cheerful submission to the line of treatment calculated to restore the patient and ensure non-recurrence of the disease after leaving the sanatorium. Seclusion from the busy world and freedom from the visits of friends materially assist in the treatment. If it is impossible to get to public entertainments the desire to go to them is easily suppressed. The disturbing influence of the visits of friends is well known in every hospital, but in such a colony as Nordrach they are more than usually harmful. They engender discontent and so depress the patients. People suffering from phthisis do not want "sympathy" except when *in extremis;* they like someone to make light of their symptoms and give them encouragement.

2. *Medical supervision.*—All patients are seen three times a day, some even more frequently. It is thought that one medical officer cannot with advantage look after more than from forty to fifty patients. Medicine is rarely given; tuberculin, antiseptics, and antipyretics have been tried in cases where the ordinary open-air treatment has failed, but the results have always been disappointing. The two drugs found most useful have been salicylate of soda and iodine, of which mention will be made later. A modified form of Dettweiller's flask is carried by each patient for use out-of-doors, spitting on the roads being prohibited; cups containing water are used indoors.

3. *Fresh air.*—This is the cardinal factor in the treatment. Patients are always in the fresh air—they sleep, eat, rest, and exercise themselves in the open. The windows are never closed whilst the patients are indoors; in very cold weather the patients shut them as they go out, so that they may return to warm rooms. It is surprising to hear how soon patients become reconciled to all this. In fact, any attempt to close windows is soon resented, for the patients immediately feel the depressing influence of vitiated air, and the necessity for a continual supply of fresh air remains with them after leaving the sanatorium. The genial climate of Nordrach is doubtless of great importance in this part of the treatment; not only must it be of service in making easy the assumption of open-air habits, but the absence of the depressing effects of many climates at certain times of the year must claim a considerable share in the result attained.

4. *Regulated and induced feeding.*—Except in severe cases, when the abundant use of milk is obligatory, there is nothing very special in the dietary. Food is taken regularly three times a day with nothing to eat or drink between whiles. Patients are induced to take as much as possible, especially of fatty food, and in most cases rather more than the natural appetite dictates. A little wine or beer with the food is allowed if desired. Encouragement to self-discipline plays an important part in this connexion, and a reference to the change of weight also is found to have a marked effect on the powers of deglutition. In some cases persuasion to take food is carried to an extent justified only by the surprising results obtained. It is considered that the vomiting and anorexia frequent in cases of phthisis are caused either in a reflex manner from irritation of the lungs or by the action of the tuberculous poison on the nerve-endings in the stomach itself. It is found that with perseverance, even after several vomitings, food is usually retained. It has been observed here and elsewhere that this condition of stomach is sometimes relieved by administration of tincture of iodine in 3 minim doses or so, or of about 10 grains of salicylate of soda, the ordinary stomachic drugs being inert. It should be remembered in this connexion that at Nordrach catarrh is unknown. Exaggerated ideas as to the system of feeding have got abroad owing probably to the use of the term "forced feeding." Dr. Walther suggested "induced feeding" as more accurately descriptive of his method. It is more by the example set them by senior patients that new arrivals are induced to partake of large meals than by any method of forcing employed by the physician. This system of calling upon the assimilating powers of the patient to fight a wasting disease must be a prominent factor in producing the astonishing results obtained.

5. *Regulated exercises and rest.*—These means of increasing vitality are used with the greatest care and vigilance. As long as any fever is present the patient is kept strictly in bed, no one except the nurse is allowed to enter his room, and she converses with her patient as little as possible. A week after the temperature has not risen above 100° F. or fallen below 98° walks regulated to the case are prescribed. The temperature is taken immediately after every walk, and if there is a rise above 100° a reduction of distance or gradient, or even return to bed, is ordered. The temperature is always taken in the rectum, for temporary rises due to over-exertion often disappear before they could be registered in the mouth or axilla. After each walk and before meals an hour's absolute rest is enforced. This rest must be taken alone, even conversation being forbidden.

6. *Limited recreation.*—Exciting amusements of all kinds and such as necessitate crowded rooms are prohibited, but recreation of a quiet nature is allowed. Formal entertainments are never given, but a piano is provided for the patients' use.

It will be seen from the above that the method of treating phthisis at Nordrach does not consist in pushing one or two supposed specific remedies, but in carefully employing to the utmost, under specially favourable conditions, means well known to assist the patient to battle with the disease. It is very important to bear this in mind at the present moment, when there is too great a tendency to rely upon "fresh air" alone as a specific for phthisis.

As to the results of the treatment, a cure is claimed if the temperature remains normal, if the patient regains his normal weight and strength, if he is able to follow his occupation with comparative comfort, and if he maintains this condition for some years. In some of these cases bacilli may be found in the sputum, but the disease is assumed to be arrested by fibrous tissue from further invading the lungs. Patients are encouraged to send reports of their condition to the resident physician after leaving the sanatorium. It is found that unless the *régime* inculcated at Nordrach can be continued to a large extent after the patient returns home relapses are very common, so that in the case of poor patients living in towns all the benefits produced by the treatment are often found to vanish in a very short time. It has been asserted by many that the cure is more permanent when

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the patient is treated in his native country, but the evidence brought forward in support of this statement is as yet, we think, insufficient. The most obvious course to pursue is to put all patients as far as possible under the most favourable conditions for recovery. The result of the Nordrach treatment on the general appearance of the patients is very striking. It is difficult to believe that they are suffering from pulmonary tuberculosis. The anxious look and slow, constrained movements of the phthisical patient are wholly wanting. Those who can get about are bronzed and healthy-looking, with a cheerful, confident expression of face and brisk, free movements. More than 50 per cent. of the patients are English, the rest are chiefly Germans and there are a very few French people. Dr. Walther did not quote statistics, which are always difficult to apply correctly, but gave us the following general account of the result of his treatment. He refuses no sufferer from phthisis admission if there is room in his establishment, so that patients in all stages come under his treatment. Some in spite of every care continue to get worse, but these cases are quite exceptional—they appear naturally unable to combat the disease. Of the rest early cases do the best and usually go away cured. Respecting the seriousness of any case physical signs are not taken as the guide, but rather the effect of treatment on the general condition during the first few weeks after admission, for it has been found that patients presenting signs of advanced disease in both lungs have made a very good recovery even when on arrival they were extremely emaciated and suffering from the grave symptoms which accompany such a condition.

What cases, it may be asked, should be sent to Nordrach or to similar institutions? As the success of the treatment at these sanatoria depends, within limits, upon the resisting powers of the patient rather than upon the exact stage of the disease, it is advisable before sending a patient abroad to watch the effect of treatment as nearly as possible like that employed by Dr. Walther, either under private supervision or at a sanatorium. If no definite improvement take place the case is not likely to derive much benefit from the treatment at Nordrach and removal from England should not be urged. Some, especially the early cases, will recover under treatment at home. Others after improving up to a point will remain stationary for a time and then if more effectual measures are not taken will slowly sink. These cases imperatively call for treatment in a more favourable climate and unless financial or other reasons render it impossible they should be sent without delay to Nordrach or a similar establishment. Of course, if there is no reason to the contrary it would be best to send all except the hopeless cases to a place like Nordrach as early as possible. Another question naturally arises, How far could these methods be pursued with advantage in England? A careful consideration of the matter must end in the conclusion that our climate is an insuperable bar to the carrying out of such treatment in its greatest efficiency. Recent reports show that much can be done by establishing well-organised sanatoria in favourable situations, but these cannot be expected to produce quite the results obtained in the Black Forest. The impression left upon the mind by a visit to Nordrach is most encouraging. However sceptical one may be one comes away with the conviction that means are within our reach to cure in most cases a disease which a short time ago was regarded as almost hopeless.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE LANCET of Nov. 19th contained a brief note on the thirty-fifth sitting of the Royal Commissioners which was held on Nov. 15th. At the commencement of the proceedings Mr. PEMBER asked the chairman to allow him to put a question to Mr. Bryan, engineer of the East London Waterworks Company, with regard to a complaint which had been sent to the chairman as to the water-supply in Green-street, Upton Park. Mr. BRYAN explained that the deficiency in the supply was due to a defect in the ball-valve in the house of the customer who had complained. The witness, in answer to further questions, said that according to the returns of the Registrar-General there was no increase of typhoid fever in the metropolitan part of the East London Company's district.

The CHAIRMAN said that he had received a communication from the Board of Guardians of the West Ham Union saying that they had an unprecedented number of cases of typhoid fever, which they believed was due to the insufficient supply of water during the past four months. The witness said that he had no statistics with regard to the borough of West Ham, but that lately the mortality there had been nearly as low as that of Brighton, and according to the death-rate of the past six or seven months it might become a "new sanatorium almost."

Mr. BALFOUR BROWNE pointed out that according to the figures which the witness had given on the previous day the supply in September, 1897, was 42,128,000 gallons, and in September, 1898, 24,785,000 gallons, and that there was therefore a deficit which the company had to make good from elsewhere of 17,343,000 gallons, and that this amounted to no less than 41 per cent. of the total supply which should have been given. He pointed out also that in October, 1898, the supply as given by the witness was 41,752,000 gallons daily, and that the supply from the sources of the company was 23,112,000 gallons, and that this left a deficit of 18,640,000 gallons, or 44½ per cent. of the total quantity which should have been supplied and would have been necessary had there been a constant supply.

In answer to the CHAIRMAN Mr. BALFOUR BROWNE pointed out that the 41 per cent. and 44 per cent. were 41 and 44 per cent. respectively given on the average supply of 1897 during those two months.

In answer to Lord ROBERT CECIL, who appeared on behalf of the Hertfordshire County Council, the witness said that the company had six wells now working and that they were situated respectively at Lee Bridge, Walthamstow, Chingford, and Waltham Abbey, and that wells were under construction at Ponder's End, Rammey Marsh, Walthamstow, and Old Ford. At Waltham Abbey when pumping ceased the water overflowed; at Chingford, the next well, when pumping ceased the water rose to within about 12 ft. or 14 ft. of the surface. At Walthamstow the water level was about 30 ft from the surface and at Lee Bridge about the same distance. As, however, pumping had been going on continuously for many months the witness could not say what the present rest level would be. They were extending the underground channels at Walthamstow and the water was therefore kept constantly pumped out.

In answer to the CHAIRMAN the witness said that during the late period of drought the water rose in the wells when pumping ceased. They had had to stop on two occasions at Chingford in order to pack the pumps. They had also found it necessary to stop at Walthamstow and at Lee Bridge. In every case the water had risen to a height of perhaps from 100 ft. to 170 ft. above the pumps. This happened during the last fortnight.

Lord ROBERT CECIL examined the witness with regard to the flow of water in the Lee. He called attention to a paragraph in the report of the Balfour Commission to the effect that "the supply of the New River Company from the River Lee is regulated by the River Lee Water Act of 1855, under which a quantity of about 5,400,000 gallons daily is reserved for navigation, and as much as may be necessary in addition to keep up the head of water in each level of the river." The witness said that according to his reading of the Act this amount of 5,400,000 should be reserved for navigation.

In answer to further questions the witness said that of 8,000,000 gallons which were discharged over Fielde's Weir the company in September took 7,100,000 gallons and that therefore only about 1,000,000 gallons were left for navigation purposes. In October the flow was about 15,000,000 gallons daily, of which 10,700,000 gallons were taken by the East London Waterworks Company. It followed, therefore, that the statutory rights conferred for the purpose of navigation by the Act of 1855 were not enforced by the Lee Conservancy. The witness said that the Lee Conservancy did not enforce the provisions of the Act.

Mr. MATHEW WILSON HERVEY, engineer to the West Middlesex Waterworks Company, in answer to the CHAIRMAN, said that during the month of June they pumped 23,124,933 gallons; in July, 23,917,011 gallons; in August, 22,870,405 gallons; in September, 23,504,445 gallons; and in October, 21,372,626 gallons. These quantities were sufficient to supply their district. The quantity of water which they had to spare in June was 1,375,067 gallons per day; in July, 582,989 gallons per day; in August, 1,629,595 gallons per

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day; in September, 995,555 gallons per day; and in October, 3,127,324 gallons per day. The company had now ample filtering capacity and had just finished four additional acres of filters, which brought their total filtration area up to nineteen acres. They would therefore be able to treat from 33,000,000 to 35,000,000 gallons daily.

In answer to the CHAIRMAN the witness said that at present they would not be able with their present pumping power to supply more than 1,500,000 gallons a day to any other company. The total amount of storage capacity which they possessed at present was 397,500,000 gallons. The witness agreed with the engineers of the other companies that the Battersea scheme would be a good one. He was not prepared to say, however, that each respective company would be likely to require it. The West Middlesex Company had not required such help in the past, and if they maintained their works in their present state of efficiency he did not think that they would require it in the future.

In answer to Mr. DE BOCK PORTER the witness said that the West Middlesex Company had always been in a position to meet the requirements of their district. From time to time it became necessary to extend their works and the company had always been prepared to do so when it was necessary.

In answer to Major-General SCOTT the witness said that at the present time the companies had statutory rights to take 185,500,000 gallons daily from the Thames and there was at the present time a considerable surplus—that is to say, all this water was not required for the supply at present given. The amount actually taken from the Thames was on an average 114,000,000 gallons daily. The margin between 114,000,000 and 185,500,000 was surplus.

Major-General SCOTT suggested that by an arrangement between the companies, by intersale or by some other means, the companies without increasing the statutory limits of their total authorised intakes could provide 15,000,000 gallons of water daily for Battersea.

In answer to Mr. BALFOUR BROWNE the witness said that at present, as far as the West Middlesex Company was concerned, he did not think the Battersea scheme was necessary except as an insurance, but "one never knows what misfortune may befall one."

Mr. RICHARD HACK, chief engineer to the Chelsea Water Company, in reply to the CHAIRMAN, said that they had statutory power to take nearly 10,000,000 gallons of water daily in excess of the amount which they required for their own customers. They were authorised to take 22,000,000 gallons daily, but at the present time they had not sufficient works to filter more than 17,500,000 gallons daily.

In answer to Mr. DE BOCK PORTER the witness said that the largest supply given on any one day was 16,000,000 gallons, which left 1,000,000 gallons which they would be able to spare.

Major-General SCOTT examined the witness at some length with regard to the passage of water from the mains of the Chelsea Company to those of the Southwark and Vauxhall Company. The witness said that in the daytime the pressure in the Chelsea Company's mains was greater than that in the Southwark and Vauxhall Company's mains, but in the night the pressure, he believed, was less. The Chelsea Company could, therefore, only supply water into the mains of the Southwark and Vauxhall Company during part of the day.

In answer to the CHAIRMAN the witness said that they would not be able to supply more than 3,000,000 gallons during any day. The Chelsea Company did not want the intercommunication scheme for themselves, but he thought that it was desirable that intercommunication should be made because it was useful in case of breakdown. Hitherto they had had no trouble in connecting up their own mains in cases of accident.

A question here arose as to the paper called the "Amended Report of Engineers" which had been sent to the Commissioners.

The CHAIRMAN pointed out that the Battersea scheme, or Scheme No. 2 as it was called, had been originally spoken of by Mr. Collins as a scheme of his own. Afterwards a print had been handed to the Chairman through the Secretary, he did not know by whom. The paper had never been proved.

Mr. FREEMAN pointed out that it was not on the notes and the CHAIRMAN said that it never had been put in by anybody.

Mr. PEMBER explained that the companies had sent the amended report "as an official communication from all the companies concerned, and they thought that would probably be enough."

Mr. ERNEST COLLINS was then examined by the CHAIRMAN, who asked: "Is this print Scheme No. 2?" The witness replied that it was.

The CHAIRMAN asked whether it was approved by all the companies. The witness replied that it had been sent in with the knowledge of the chairmen and proceeded to explain its working.

Mr. WILLIAM MORRIS, chief engineer to the Kent Company, said that he generally approved of the Battersea scheme, but he thought it required a little modification in order to give the Kent Company the benefit of it. The point was that the Kent Company would be able as a receiving company to obtain 4,000,000 gallons daily should they require it, whereas the Chelsea Company was to have 10,000,000 and some of the other companies 20,000,000 gallons daily. If it were provided that the Kent Company should if they required it receive the same amount of water as the Chelsea Company it would probably place them on a fair footing.

In answer to the CHAIRMAN the witness said that he did not expect that the Kent Company would require an extra supply of 4,000,000 gallons daily. It was a question of insurance. The CHAIRMAN asked what they wanted to insure against? The witness replied that it was against accident or unforeseen emergency; but in answer to a further question he said that he could not foresee anything beyond accident.

In answer to Major-General SCOTT the witness said that they were pumping from one of the very best reservoirs they could possibly have—that is, from the chalk, that any change taking place would be very gradual, and that they therefore had a very large insurance at present.

In answer to Mr. DE BOCK PORTER the witness said that the drought had affected the Orpington well, the ground elevation of which was 120 ft. above ordnance datum. No other well had been affected.

Mr. JOSEPH FRANCIS, one of the engineers of the New River Company, in reply to the CHAIRMAN, said that he had charge of the wells in the northern part of the New River system. The company had pumped more than usual during the past summer. The witness said that he had not the figures with him but that he would have provided them had he expected to be called. The Chadwell spring had failed this year.

In reply to Sir JOHN DORINGTON, the witness said that the water was delivered into a round basin and a leakage had occurred in that basin which allowed the water to flow out into the surrounding chalk.

In answer to the CHAIRMAN the witness said that the crack in the basin had prevented the water from rising to the usual level.

In answer to Lord ROBERT CECIL the witness said that his reason for believing in the existence of this crack was that the water had never sunk from the basin before; that, he thought, absolutely proved the existence of a fissure.

In reply to further questions from Lord ROBERT CECIL the witness said that they took gaugings of the Chadwell Spring, and in answer to a further question as to whether they had any objection to supplying the gaugings he said he thought that they had.

In answer to the CHAIRMAN the witness said that the Lee had been lower this year than they had ever known it in previous years. The deficiency was due to the higher sources; there was no connexion whatever between pumping from the wells and the deficiency. The effect of pumping from the wells was purely local. The wells were fed by a stream of water passing through the chalk from high ground. In answer to a further question the witness said that the high ground was situated more than a quarter of a mile off. The pumping from the well affected the underground stream on the lower side of their well—that is, in the direction in which the water was going, but beyond a very small range it did not have any effect in the other direction.

Sir ALEXANDER BINNIE, in answer to the CHAIRMAN, said that he had considered the Battersea scheme and that he did not think under existing circumstances that it was necessary. He was more in favour of Sir Henry Knight's scheme.

Mr. BALFOUR BROWNE, on behalf of the London County Council, suggested that he should be heard with regard to

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the Battersea scheme. He thought the question was more a matter for argument than for evidence.

The CHAIRMAN thought the question was more one for the consideration of evidence than for argument.

THE HEALTH OF THE CITY OF BELFAST FOR 1897.

THOSE who are interested in the question of public health will find in the report just issued for 1897 by Dr. Whitaker, superintendent medical officer of health of the city of Belfast, an amount of material well worthy of perusal. There were 336 deaths from typhoid fever during the year 1897, as compared with 136 in the preceding twelve months; and, as we might expect, during the prevalence of the disease the deaths from diarrhœa were also more numerous than usual. 4813 cases of infectious diseases were reported (the Notification Act came in force on March 1st) and of these 3269 were cases of typhoid fever, the next largest number being 431 cases of scarlet fever. It is curious that the deaths from infectious diseases during the past year were not as numerous as in some of the preceding years, the increased numbers being entirely due to typhoid fever and diarrhœa.

There were 995 deaths from phthisis and 1675 from other diseases of the respiratory organs. The annual death-rate was 23·0 per 1000, while the birth-rate was 33·3, these calculations being based on a population estimated by Dr. Whitaker as 310,000. This population, of course, refers to the old municipal boundary. At the end of the year the suburban districts were added, so that in his next report Dr. Whitaker will deal with a city whose area has increased to 16,503 acres, with a population of 340,000. Coming to the causes of death, of the total number registered (7225) during the year it is appalling to find that 2670 were attributed to phthisis and diseases of the respiratory organs; of these 995 were due to the former and 1675 to the latter cause. This truly terrible loss of life, Dr. Whitaker says, beside which that from zymotic diseases sinks into comparative insignificance, occurs not only in Belfast but is quite as serious in other Irish cities and towns which have more healthy surroundings, a more equable temperature, and less unhealthy industries. Truly, here is ample material for the new crusade against tuberculosis to investigate. The medical officer of health of Belfast thinks that the effect of good sanitary work would be to reduce the death-rate from phthisis. The public in Belfast have clearly not grasped the fact that it is hopeless to eradicate this disease if they will not give up overcrowding and have ventilation and go in for sunshine and fresh air, and also take steps to prevent its spread by getting rid of the bacilli in the expectoration. Phthisis in Belfast causes more than half the number of deaths due to all other chest affections and about one-seventh of the total mortality. There can be no doubt that in Belfast the bad drainage, the damp atmosphere, and the frequent absence of sunshine contribute largely to the prevalence of phthisis, but overcrowding in the various industries and the prevailing ignorance as to the contagiousness of the disease are more important factors; and it is worth remembering in this connexion that it was in Belfast that Dr. Henry Mac Cormac (father of the President of the Royal College of Surgeons of England) long ago taught the enormous importance of fresh air.

With reference to typhoid fever it is deplorable to find Dr. Whitaker stating that while in almost every other town in the United Kingdom the deaths from this cause have been steadily declining in Belfast it is the reverse. He has examined the condition of 2321 houses in Belfast in which the disease occurred and has found that 353 of these had privies and pits with back passages; that 750 had privies and pits without back passages, and the excreta had to be removed through the dwelling house; and that 1218 occurred in the houses which had water-closets. Inasmuch as there are some 65,000 houses in the city, and of these only about 45,000 have water-closets, it is evident that typhoid fever was much more prevalent in the houses with privies than in those of the former class. It is a very noteworthy fact that whilst typhoid fever occurred in 2·7 per cent. of the houses having water-closets the houses with privies had 5·5 per cent. Dr. Whitaker says he agrees with the medical officer of health of St. Helens that the three most patent factors in fostering typhoid fever are defective sewerage and drainage, privy middens, and other filth nuisances, and yet he is puzzled in many cases to account for the disease. He says that in many of the cases the sanitary conditions in and about the houses where the disease prevailed were of a very bad order. On the other hand, he has inspected many well-built, well-sewered, newly-built, and airy houses with good sanitary arrangements in which cases of the disease have occurred, and on strict examination and inquiry he could find no cause for the prevalence of the disease. But surely this proves nothing. For if it be admitted that a disease like typhoid fever prevails in a city with a large working-class population it is easy to understand how one set of individuals who happen to have insanitary dwellings may infect others who live in houses apparently free from any defects. Dr. Whitaker mentions that in the early months of the year, when the number of cases of typhoid fever became numerous, a number of members of the Public Health Committee visited the Stoneyford reservoirs for the water-supply of the city and inspected the adjacent grounds. They found that the ground in the neighbourhood was heavily manured, and in some cases a stream communicating with the works was being contaminated by farm-yard refuse. They also found that there had been three cases of typhoid fever which had occurred about that time in a farmhouse immediately adjoining one of these streams, and although it could not be said positively that the contamination of the water had been the cause of the outbreak in Belfast yet the facts admitted of grave suspicion. It would appear that the disease has not been confined to any district of the city, but it is a curious fact, Dr. Whitaker says, that the two districts of Belfast (Dock and Millfield) which he considers most insanitary are those in which typhoid fever is least prevalent—an observation noted as also applying to other cities, as, for instance, Paris. The worst districts for typhoid fever appear to be Ballymacarrett and the Shankhill. In the former the houses are built on low-lying ground; in the latter they are on a high level with a tenacious clay soil. In both places there is a working-class population.

It will be seen that Dr. Whitaker comes to no definite conclusion as to the cause and prevalence of typhoid fever in Belfast. While he hints that the facts observed at Stoneyford admits of grave suspicion that contamination of the water has been the cause of the outbreak his report proves to the hilt how insanitary a city Belfast is, and explanation is badly wanted to show why it is that such institutions as the gaol and the asylum, situated within the city of Belfast and using the town water, have to such a great extent escaped the disease? We congratulate Dr. Whitaker on his most careful and highly interesting report, and although he has not solved the riddle how it is that typhoid fever is so prevalent in a new city like Belfast he has printed a series of recommendations drawn up by a number of professional gentlemen in Dublin (who investigated the causes of the prevalence of the disease there) which certainly if applied should go far to stamp out typhoid fever, and he has also given ample justification for the series of letters written last year by our Special Sanitary Commissioner. May we in conclusion suggest that a map of Belfast showing the boundaries of registrars' districts would be a most useful addition to Dr. Whitaker's excellent and suggestive report.

BURIAL WITHOUT CERTIFICATES.—At Helston (Cornwall), on Nov. 17th, the sexton of Godolphin Church pleaded guilty to burying on Sept. 24th two bodies of infants (one stillborn, the other having lived nine hours) without certificates. The case was brought forward by the Registrar-General as a warning, but he did not wish to press hardly on defendant. The man was fined 2*s.* 6*d.* and 6*s.* costs.

SCHOOL HYGIENE IN JAPAN.—An order has been issued, says the *Allgemeine Medicinische Central-Zeitung*, by the Japanese Minister of Education that the medical officers attached to the public schools shall not only inspect the schools as heretofore at the beginning and end of the school year but must visit them at least once a month during school hours for the purpose of noting any points of defective sanitation.

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Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Manchester Sanitary District.—The estimated population of Manchester at the middle of 1897 was 536,426, the birth-rate was 32·88, and the death-rate was 22·36 per 1000. For two years in succession the death-rate has been below 23 per 1000 and as there are indications that the 1898 rate will not exceed this figure (which has never been so low for two years following before) Dr. Niven hopes that the efforts of the past few years have not been without their effect on the death-rate. Of the deaths occurring in Manchester during 1897 20 per cent. took place in public institutions. There are always so many matters of interest in Dr. Niven's annual report that it is somewhat difficult to know what to select for notice—so much so, indeed, that it is perhaps almost better to indicate briefly the contents of the volume for the guidance of our readers than to devote space solely to one subject in it. Into the question of school influences Dr. Niven has gone very minutely, and it is interesting to learn that the results of his inquiry clearly support the conclusions of Mr. Shirley Murphy, with which our readers are familiar. Dr. Niven has approached the subject in a fashion which will doubtless commend itself—i.e., he has endeavoured to trace the influence of each school in spreading, or in influencing the spread of, scarlet fever. It is clearly important to study this aspect of the question since it is obvious that in dealing with the district figures as a whole the influence for harm which may have been exerted by two or three schools may be entirely swamped by the absence of such influences in the remainder of the schools in the district. In connexion with the subject of enteric fever Dr. Niven speaks most highly of the value of the blood-serum test which has been carried on during 1897 and he promises us a full and detailed report upon the subject at a future date. Enteric fever manifested considerable infective power in Manchester during the year and in as many as fifty-four cases strong evidence was obtained pointing to personal infection. Outbreaks of this disease occurred in certain institutions under circumstances throwing grave suspicion upon infected closets as the source of the mischief, and valuable records are given illustrative of the manner in which enteric fever may cling to houses once infected with this disease. As regards the prevalence of tubercle in milk imported into Manchester as compared with that drawn from cows in the city itself Professor Delépine has carried on a series of examinations of samples collected at the railway station. Dr. Niven will present a full report on this question later, but he states that the examinations show that the average milk imported from the country is nearly as capable of conveying tuberculosis as is the milk collected from the most diseased cows in the city of Manchester, including even those with obvious tuberculosis of the udder. There has been during 1897 a check put upon the wholesome conversion of back-to-back into through houses owing to the enormous demand there is at the present time in Manchester for all sorts of houses, and the difficulty there is in obtaining unoccupied houses of any description. With a view to relieve this condition of affairs an effort is being made to obtain convenient means of transit for workmen under the Cheap Trains Act, 1883, in order that the central congestion may be relieved and the workmen enjoy better health.

Sunderland Urban District.—Dr. Harold Scurfield has compiled a complete and interesting report upon the health of this district (population 142,107) during 1897. Amongst the 33 great towns Sunderland does not at present occupy a very creditable position, being for 1897 twenty-seventh on the list as regards "fever," seventeenth as regards diarrhœa, and tenth as regards infantile mortality. Dr. Scurfield thinks that the relatively good position of Sunderland in this latter respect is due to the small amount of female factory labour in the district. In reference to the control of measles and whooping-cough arrangements have been made by which the school attendance officers report to the medical officer of health all cases of these diseases which come under their notice, and it is hoped that this method of notification will lead to good results in lowering the fatality-rate of these two diseases. Enteric fever is still abnormally prevalent in Sunderland, and the presence of 11,000 open privy middens is thought to be in large part responsible for this endemicity. It is of interest to read that in streets where the privy middens have been converted into water-closets there has been a considerable reduction in enteric fever incidence. Dr. Scurfield reports that an inspection of the public elementary schools was made during the year under review and that tests were made of the air in the class-rooms both before and after the usual recreation interval. Before the interval the average amount of carbonic acid per 10,000 parts of air was in the Board schools 10·36 and in the denominational schools 13·6; some thirty minutes after the interval in the Board schools 8·9 and in the denominational schools 9·32. The average amount of cubic space per scholar is greater in the Board than in the denominational schools. The investigations showed, amongst other things, that the class-rooms were not always emptied during the intervals and that in order for this to be done even in wet weather sufficient covered playground should be provided. It will, too, be noted how much the carbonic acid was in excess of the standard usually accepted.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6537 births and 3672 deaths were registered during the week ending Nov. 19th. The annual rate of mortality in these towns, which had been 17·0 and 17·2 per 1000 in the two preceding weeks, declined again last week to 17·1. In London the rate was 16·6 per 1000, while it averaged 17·4 in the thirty-two provincial towns. The lowest rates in these towns were 8·8 in Croydon, 10·9 in Derby, 11·6 in Oldham, and 12·0 in Hull; the highest rates were 22·4 in Newcastle-upon-Tyne, 22·6 in Liverpool, 23·1 in Wolverhampton, and 24·2 in Preston. The 3672 deaths included 371 which were referred to the principal zymotic diseases, against 420 and 412 in the two preceding weeks; of these, 90 resulted from diphtheria, 84 from "fever" (principally enteric), 61 from measles, 61 from diarrhœa, 45 from whooping-cough, and 30 from scarlet fever. No death from any of these diseases was recorded last week in Plymouth; in the other towns they caused the lowest death-rates in Croydon, Oldham, Wolverhampton, and Birmingham, and the highest rates in Nottingham, Burnley, Swansea, and Norwich. The greatest mortality from measles occurred in Norwich and Nottingham; from scarlet fever in Burnley; from whooping-cough in Halifax; and from "fever" in Derby, Sheffield, Norwich, Preston, and Birkenhead. The 90 deaths from diphtheria included 44 in London, 8 in Sheffield, 7 in Liverpool, 6 in Swansea, 5 in Blackburn, 4 in Leeds, and 3 each in West Ham, Cardiff, and Leicester. No fatal case of small-pox was registered during the week under notice, either in London or in any other of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Nov. 19th, was 3259, against numbers increasing from 2178 to 3138 at the end of the twelve preceding weeks; 319 new cases were admitted during the week, against 336, 318, and 340 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 237 and 248 in the two preceding weeks, further rose last week to 285, but were 136 below the corrected average. The causes of 41, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Bradford, Hull, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in Swansea, Liverpool, Burnley, Halifax, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·9 and 19·4 per 1000 in the two preceding weeks, further rose to 19·5 during the week ending Nov. 19th,

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and exceeded by 2·4 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·8 in Paisley and 15·0 in Leith to 21·6 in Edinburgh and 23·0 in Aberdeen. The 588 deaths in these towns included 22 which were referred to diarrhœa, 14 to "fever" (principally enteric), 11 to diphtheria, 9 to whooping-cough, 8 to scarlet fever, and 6 to measles. In all, 70 deaths resulted from these principal zymotic diseases, against 80 and 86 in the two preceding weeks. These 70 deaths were equal to an annual rate of 2·3 per 1000, which was 0·6 above the mean rate last week from the same diseases in the thirty-three large English towns. The deaths referred to different forms of "fever," which had been 18 and 16 in the two preceding weeks, further declined to 14 last week, of which 8 occurred in Glasgow, 3 in Edinburgh, and 2 in Paisley. The 11 fatal cases of diphtheria corresponded with the number in the preceding week, and included 5 in Dundee and 3 in Glasgow. The 9 deaths from whooping-cough showed a decline of 2 from the number recorded in the preceding week, and included 5 in Glasgow. The fatal cases of scarlet fever, which had been 6 and 9 in the two preceding weeks, were 8 last week, of which 6 occurred in Glasgow and 2 in Edinburgh. Of the 6 deaths from measles 5 occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 126 and 129 in the two preceding weeks, were 130 last week, and were 15 below the number in the corresponding period of last year. The causes of 36, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·8 and 30·0 per 1000 in the two preceding weeks, declined again to 27·7 during the week ending Nov. 19th. During the past four weeks the death-rate in the city has averaged 27·2 per 1000, the rate during the same period being 16·3 in London and 19·3 in Edinburgh. The 186 deaths registered in Dublin during the week under notice showed a decline of 15 from the number in the preceding week, and included 9 which were referred to the principal zymotic diseases, against 18 and 22 in the two preceding weeks; of these, 4 resulted from "fever," 2 from whooping-cough, 2 from diarrhœa, 1 from diphtheria, and not one either from small-pox, measles, or scarlet fever. These 9 deaths were equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 1·5 in London and 3.3 in Edinburgh. The deaths referred to different forms of "fever," which had been 3 and 5 in each of the two preceding weeks, declined to 4 last week. The fatal cases of whooping-cough, which had increased from 1 to 4 in the three preceding weeks, declined to 2 last week. The mortality from scarlet fever showed a further decline from that recorded in recent weeks. The 186 deaths in Dublin last week included 45 of children under one year of age, and 39 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from those recorded in the preceding week. Nine inquest cases and 5 deaths from violence were registered; and 60, or nearly one-third, of the deaths occurred in public institutions. The causes of 11, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Staff-Surgeons: Horace Elliott to the *Philomel*, and Percy W. Bassett-Smith to the *Ganges*. Surgeons: Herbert L. Penny to Cape of Good Hope Hospital, George G. Borrett to the *Pembroke*, and Robert H. Mornement to the *Niobe*.

ROYAL ARMY MEDICAL CORPS.

The under-mentioned officers retire on retired pay: Lieutenant-Colonel Nicholas Leader and Lieutenant-Colonel Kenneth S. Wallis. Major Russell has embarked for Bombay and Major Freyer has arrived at Shorncliffe for duty. Major W. Dugdale is transferred from Bombay to the Nagpore District. Major Morse has embarked for India. Captain Tate and Lieutenant Penny embark for Sierra Leone. Lieutenants Nickerson and Hall join the Eastern District for duty, and Lieutenants Archer and Heffernan join the Dublin District for duty. Captain Blenkinsop embarks for service in West Africa.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotions among the officers of the Indian Medical Service:—Majors to be Lieutenant-Colonels (dated Sept. 30th, 1898): *Bengal Establishment:* Terence Humphreys Sweeny, Daniel Francis Barry, George Francis Angelo Harris, John Anderson, Charles James Bamber, and Malachi O'Dwyer. *Madras Establishment:* Clement Mallins, Edulji Manekji Damla, and Herbert St. Clare Carruthers. *Bombay Establishment:* Charles George Walton Lowdell, Harry Beecham Briggs, and Walter Peter Carson. Captains to be Majors (dated Sept. 30th, 1898): *Bengal Establishment:* Robert Joseph Macnamara, Herbert Wilson Pilgrim, George Brooke French, Francis Wyville Thomson, Edwin Harold Brown, Charles Norman Bensley, Selby Herriot Henderson, David Wilson Scotland, Charles Robert Mortimer Green, James Henderson Sellick, Edward Christian Hare, Frank Cecil Clarkson, John Gregory Jordan, Herbert Mackinlay Morris, Allan Rupert Postance Russell, James Morwood, and Edmund Alexander William Hall. *Madras Establishment:* Richard Henderson Carter, Frederick George Maidment, and Ignatius Purcell Doyle, D.S.O. *Bombay Establishment:* Blenman Buhot Grayfoot and Thomas Edward Dyson. The Queen has also approved of the transfer of the under-mentioned officer to the Half-pay List: Lieutenant Ernest Le Fevre Payne (dated Nov. 3rd, 1898). The Queen has also approved of the retirement from the Service of the under-mentioned officers: Colonel Daniel Frederick Bateman, Madras Establishment (dated Oct. 31st, 1898), and Major Moscardi Bellarmin Braganza, Bombay Establishment (dated Sept. 15th, 1898).—*The London Gazette.*

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Clement Godson, 18th Middlesex Volunteer Rifle Corps, to be Surgeon-Major, and Surgeon-Lieutenant Albert Henderson, 1st Aberdeenshire Royal Engineers (Volunteers), to be Surgeon-Lieutenant.

MILITIA MEDICAL STAFF CORPS.

John Davies to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 2nd Hampshire (Southern Division, Royal Artillery): Paul McKenna Terry to be Surgeon-Lieutenant. 1st Lancashire: Frederick Francis German to be Surgeon-Lieutenant. *Rifle:* 3rd Volunteer Battalion the Welsh Regiment: Surgeon-Major E. Jones to be Surgeon-Lieutenant-Colonel. 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment): Surgeon-Lieutenant-Colonel F. Orton resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the battalion on his retirement. 2nd Volunteer Battalion the Highland Light Infantry: The under-mentioned officer resigns his commission: Surgeon-Captain W. B. Moir.

HOSPITAL TRAIN.

A correspondent writes:—"In the late war with Spain the United States not only made use of hospital ships but also of hospital trains. The hospital ships, although not altogether novel, were brought to such a degree of efficiency during the Hispano-American war that to all intents and purposes they initiated a new departure in warfare. The hospital train, however, is seemingly an absolutely new experiment. Mr. Sanbom, the gentleman who was in charge of it, thus describes it: 'The establishment of a regularly equipped hospital train is an entirely new departure in the time of war and to the United States Government the entire credit is due. Heretofore many inconveniences and dangers were met in transferring the wounded from the scenes of conflict, but it can now be done expeditiously and without the risk of aggravating wounds or subjecting the sick to undue excitement or the jolting incident to other forms of conveyance. This train is composed of 15 easy riding cars of Pullman build, very similar to the colonist sleepers. Twelve of these cars are fitted each with 30 berths, wash-rooms, lavatories, compartments for drugs, nurses' room, &c. Each car has its

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own nurses, who are under the direct charge of an assistant to the head surgeon of the outfit. There is also a dining car with its chef and a corps of assistants which serves alike to patients, officers, and help. In addition to the Government rations there are provided many delicacies by the Ladies' Aid Society of the United States. This association also supplies quantities of night-shirts and underwear for the soldiers received into the hospital on wheels. Another car is fitted up as a complete operating theatre, with its varied assortment of instruments and furniture and a separate room for the disinfection of the soldiers' clothes. In this car is every appurtenance for an emergency surgical operation *en route*. Then there is a car devoted entirely to supplies, etc., and last, but not least, the rear car is fitted up as headquarters for the officers and surgeons. The train has its own locomotive, runs on a specially fast schedule, and is manned by the crews of the various systems over which it runs.'"

SIR FRANCIS GRENFELL AND THE ROYAL ARMY MEDICAL CORPS.

The *Army and Navy Gazette* says: Upon the return to Cairo of the Nile Expeditionary Force an address was delivered by Sir Francis Grenfell, the General Officer Commanding Her Majesty's Forces in Egypt, at a general parade on Oct. 8th:—

"Colonel Barrow, Officers, Non-commissioned Officers, and Men of the Royal Army Medical Corps,—I am glad of this opportunity of telling you of my high appreciation of the valuable services rendered by your corps during the late operations on the Nile. I regret that Surgeon-General Taylor and Colonel Macnamara are not present that I could personally thank them for their valuable coöperation. I have lately visited the hospitals at Atbara and Abadia, and was much pleased and greatly struck with their efficiency, by the care and attention shown to the sick and wounded, and by their general appearance of comfort. I can assure you that all branches of the service have been loud in their praise of the way that the sick and wounded were looked after both in the hospitals and on the field, and I may tell you that I have not heard a single adverse criticism with regard to the working of the medical arrangements."

The Director-General in a special order has recorded his extreme appreciation of the services rendered by the corps which have earned this commendation. The high character earned by all ranks of the corps certainly reflects great credit not only upon its members but also upon Surgeon-General Taylor, P.M.O., who has thus added to his reputation as an administrator.

THE ROYAL NAVY LIST DIARY FOR 1899.

All who are interested in the Royal Navy—and who is not?—will welcome the second annual issue of this useful naval handbook and diary. To mention some only of the contents, there is a Summary of the Year's Naval Progress, by Mr. L. Carr Laughton; complete schedules—monthly, quarterly, half-yearly, and yearly—for the recording of all drills and duties, and the making up of returns; obituary for the year, with the war and meritorious services of deceased officers; a calendar of notable naval events; and a detailed list of the benevolent funds and institutions in connexion with the navy, together with a brief statement of the objects for which they were founded. The diary gives a page to a day, and the whole book is complete in every respect. The frontispiece, "The First Line of Defence," which shows H.M.S. *Victory* off Cadiz in 1805, and H.M.S. *Illustrious* in 1898, is intended to illustrate the evolution of a first-class line of battleship in the nineteenth century. Messrs. Witherby and Co., 326, High Holborn, are the publishers, and the price of the diary is 3*s*.

THE STAFF OF THE NEW VICEROY OF INDIA.

Lieutenant-Colonel E. H. Fenn, R.A.M.C., who is at present, we believe, serving at Peshawar, has been selected for the appointment of surgeon on the Viceroy's staff. He held that post during Lord Lansdowne's Viceroyalty.

THE DIRECTOR-GENERAL OF THE INDIAN MEDICAL SERVICE.

Surgeon-General R. Harvey has proceeded on a tour of inspection in connexion with the duties of his new appointment as head of the Indian Medical Service.

LIEUTENANT-COLONEL FRANKLIN, I.M.S.

This officer returns with Lord Elgin, the late Viceroy. On his going back to India Lieutenant-Colonel Franklin will be appointed Inspector-General of Civil Hospitals, Punjab.

Correspondence.

"Audi alteram partem."

"THE QUESTION OF INDECENT LITERATURE."

To the Editors of THE LANCET.

SIRS,—With reference to your very fair and reasonable article on the questions that are raised rather than settled by a recent trial, will you allow me to state that the defendant was not the publisher of my "Studies in the Psychology of Sex"? He was not in any way connected with its publication, though he occupied premises formerly occupied by the publisher, and until these proceedings were initiated I was not even aware that he acted as an agent for its sale. It was stated in court that he sold in all three copies only.

You ask the very pertinent question: Why was not the book issued by a medical publisher? The answer is simple. None of the medical publishers whom I approached cared to take up a book on the subject of sexual inversion, one or two adding that they would have done so with pleasure had it not been their privilege to live in England. After a delay of two years due to this cause, I heard through a scientific friend that a gentleman interested in various philosophic and scientific subjects was preparing to go into business under a trading name for the publication of a few philosophic and scientific works and that he would be willing to issue my book. Ultimately I agreed to place the work in his hands on the definite condition that it should not be advertised or sent for review in any but medical and scientific quarters. In justice to the publisher I must point out that my book is the only one of his publications, mostly very serious in character, which has been incriminated.

With reference to your remarks concerning Ulrichs I should like to say that while I have inserted an appendix to my book (by another hand) expounding the views of that copious writer I do not consider that these views are of any scientific value and have explicitly rejected them. Ulrichs' writings are mainly of historical interest. He was himself an invert and he succeeded in directing scientific attention to the abnormality of which he was a victim. So far as standpoint is concerned, my own position is not materially different from that of Krafft-Ebing, though I am by no means in sympathy with the Viennese professor's treatment of these subjects. Certainly inversion when it arises on a congenital basis is "natural," but only in the same sense that all pathological anomalies are natural—colour-blindness, for instance, or hypospadias. I am not prepared to admit that congenital inversion is natural in any other sense.

I am, Sirs, yours faithfully,

H. HAVELOCK ELLIS.

THE EXAMINATION OF THE BRITISH OPTICAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—You make a comment in THE LANCET of Nov. 19th on the above in a tone of modified approval. If one may judge from the advertisements in the newspapers this association exists chiefly to furnish material for advertisements by its members. The prescribing chemist may be objectionable, but he does not generally do actual harm, whereas the consulting optician (or eyesight specialist) often causes harm and pain to young people who may consult him. My experience is that an emmetropic or slightly hypermetropic young person in his teens, doing some extra work and having a certain amount of spasm induced, is frequently by these advertisements lured to the "eyesight testing-rooms," where probably a couple of pairs of slightly differing low concave spherocylindrical spectacles are supplied, and then for a time the patient sees well, but ultimately in a few weeks worse spasm is induced and more pain.

The proportion of girls with defective visual acuity is greater than it is in boys at every age of school life; in them this spasm is exceedingly common, and it is girls who most frequently suffer from the wrong glasses of the

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optician. The method, so far as I have been able to make it out as advertised, "Sight testing for the general practitioner," is on a level with that of the "honourable company" of spectacle sellers, being one which neglects spasm of the eye, and is on that ground to be condemned as likely to be unreliable if used to prescribe spectacles for young people. We now have our Board School children tested as to visual acuity, and errors of refraction become obvious as soon as young people go to work, so that glasses are becoming more necessary every day at earlier ages. The correction of the causes of the pain and inconveniences from refractive errors is part of a medical man's work and should not be allowed to pass into the hands of those who seem to be organising themselves into a vested interest; whilst at the same time their methods for the reasons given above are daily becoming unsuitable and actually harmful to increasing numbers of their patients.

I am, Sirs, yours faithfully,

JAMES KERR,

Honorary Surgeon to the Bradford Eye and Ear Hospital.

Bradford, Nov. 22nd, 1898.

*** We think the association will find our approval very modified.—ED. L.

THE TREATMENT OF TETANUS BY ANTITOXIN.

To the Editors of THE LANCET.

SIRS,—Mr. Stonham's case of tetanus recorded in THE LANCET of Nov. 19th is of much interest as a case of tetanus, but it could hardly be a matter of surprise that in so acute a condition the treatment with antitoxin should have failed. Every surgeon will, I think, agree that as a general rule the shorter the period of incubation in tetanus the more acute in all probability will be the course of the disease, and the greater the likelihood that whatever the treatment adopted the remedy will fail. It is in the chronic cases where the symptoms are delayed and are in themselves less severe that internal remedies, and antitoxin amongst them, have seemed to be of most use, but in all cases the suspicion may fairly be entertained that the disease might have passed away without them. But if antitoxin may seem to fail or to be of comparatively small value as a mode of treatment in the course of the disease it is possibly far otherwise when it is used as an immunising agent. Happily, I have not myself had a case of tetanus in my wards for many years, and the experience of other surgeons is doubtless the same, because of the care now taken in the cleansing of all wounds. I am unable, therefore, to speak from personal observation, but a great impression was made on my mind by a paper in the *Annals of Surgery* of December, 1897, by Professor Dennis of New York on the Treatment of Tetanus. In speaking of antitoxin as an immunising agent he says: "All surgeons agree that it would not be justifiable to immunise a patient on the vague supposition that tetanus might develop. The use of the antitoxin as a prophylactic measure is consequently limited to those cases where the wound has been inflicted in such a manner as to allow garden-earth, plaster from walls, or manured soil to come in contact with it, or where the traumatism has been caused by a rusty nail upon which the bacilli are discovered, or in a given locality where tetanus is prevalent, or where the wound is a lacerated one with entrance of foreign bodies into it." And then, having referred to the marvellous prophylactic influence of the diphtheria antitoxin, he goes on: "If such results follow from the use of antitoxin as an immunising agent in diphtheria it is logical to expect that even more brilliant results will ensue in the adoption of this treatment in tetanus, since the antitoxin of tetanus shows even better results in lower animals. Under such conditions immunisation is a proper line of treatment and one from which success is sure to follow. Bazy, a French surgeon, had 4 fatal cases of tetanus in his practice in one year and subsequently began injecting 20 c.c. of serum into all patients who suffered from lacerated wounds into which extraneous matter had of necessity entered. Since he adopted this practice tetanus has not followed in those cases in which a strong probability existed that this dreaded disease might develop. Lambert mentioned that Nocard in veterinary surgery immunised 375 animals and in no single case did tetanus develop, while he had 55 cases of the disease in animals in the same environment."

It is open, of course, to everyone to question the value of evidence like this, where the prediction of tetanus might never have been verified, but the evidence, to say the least, is very striking. It is, moreover, in accordance with all that is known of the disease itself and of the behaviour of antitoxins in general to draw the conclusion that the antitoxin of tetanus is more likely to succeed in warding off the disease altogether than in arresting or putting an end to it when the symptoms have developed—that really is to say when the mischief has been done. In recording a case of hydrophobia in THE LANCET of Feb. 8th, 1890, where opium and eserine had been pushed to their physiological effects without result, I wrote: "The fact of the matter, however, is this: that at that period of the disease no drug treatment can be of the least avail to stay the progress of the effects which the specific poison of rabies has wrought in the most vital parts of the nervous system. The antidote must begin its work at an early period and no unprejudiced mind can doubt that that is to be found in the inoculations of M. Pasteur." Immunisation against hydrophobia, a very similar malady, has long been above question. I would urge the like treatment in the case of tetanus whenever there is reasonable ground for fearing that it may arise. I cannot help thinking that the antitoxin will then be proved of greater value than the record of cases treated by it up to this time seems to warrant.

I am, Sirs, yours faithfully,

Nov. 22nd, 1898. HERBERT W. PAGE.

"PHARYNGO-MYCOSIS."

To the Editors of THE LANCET.

SIRS,—The attention which has been drawn to the subject of this disease, as treated of in Dr. Lubet-Barbon's work on the subject and reported in your columns,[1] is extremely well deserved, if we may judge by the alarm which is experienced when its presence is accidentally discovered—an alarm which is absolutely uncalled for. From a consideration of the histology of the condition I have been led to adopt a plan of treatment to which no reference is made in your report—namely, the application of salicylic acid which is known to have so marked an effect in breaking up and destroying masses of cornified epithelium. The opportunities for treating such cases are not common, but I have found this remedy more effective than any other. The mode of use is to twist a very thin layer of cotton-wool on the tip of a fine bent probe. This is dipped in a 25 per cent. solution of salicylic acid in alcohol and is then applied to each spot of pharyngo-mycosis. In the intervals the patient may apply a 5 per cent. solution in rectified spirits to which a small proportion of glycerine is added. Although I hit upon this method of treatment without suggestion from elsewhere I understand that it has already been employed by Spengler. I recommended the remedy to my friend Dr. Herbert Tilley, and was gratified to find that his experience of its use was as favourable as my own.[2] I may add that I have employed the remedy in cases of recurring papilloma of the larynx with most satisfactory results, and I believe that even in pachydermia of that organ I have obtained by its use beneficial results such as no other treatment at my hands has brought about. I have great expectations as to the value of salicylic acid in various diseases of the throat.

I am, Sirs, yours faithfully,

Upper Wimpole-street, W., Nov. 21st, 1898. DUNDAS GRANT.

"AGORAPHOBIA."

To the Editors of THE LANCET.

SIRS,—After reading the very interesting article on agoraphobia written by Dr. Headley Neale in THE LANCET of Nov. 19th I would like to draw attention to symptoms which he would doubtless attribute to agoraphobia that are referred to in a recent publication, "The Secret of Good Health and Long Life" (Bowden), but which I consider belong to acute "tea-poisoning." I am not one who would consider that agoraphobia is "all bosh" exactly, but I have found some of the very characteristic symptoms

[1] THE LANCET, Nov. 12th, 1898.

[2] Proceedings of the London Laryngological Society, May 11th, 1898.

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Dr. Neale refers to in those who have been in the habit of drinking a lot of tea and who now and then take it very strong, particularly the fear of death or that something dreadful is going to happen, which symptoms have disappeared when tea-drinking has been stopped.

As regards giddiness or faintness and nervous seizures on hearing a great noise or on going up a high ladder, I would attribute these to ordinary liver, heart, or nervous conditions rather than count them pathognomonic of agoraphobia, knowing as I do that the best observers may be worked up to such enthusiasm over some pet, or perhaps personal, ailment that they may sometimes be inclined to put down almost every disease under the sun to—eating butcher's meat, say, for instance. Dr. Prosser White found that "moral determination" and "lively conversation" were good in the way of treatment. I have advised these methods also in cases of acute "tea-poisoning" with success. Moreover, Dr. Neale writes that "the avoidance of over-mental strain and of all excesses, a careful dietary, aids to digestion and tonics, will together contribute to a satisfactory issue and ensure the disappearance of this pathological 'spook.'" No doubt he also told most of his patients to drink weak tea or none. It would be interesting to know whether Dr. Neale was in the habit of drinking strong tea during his student days when agoraphobia used to seize him. Something kept him awake, what time lamps were outshone by the sun. I should think it very likely he did, under the "temperate and celibate" but withal "rushing" and hard circumstances under which he moved and had his being.

I am, Sirs, yours faithfully,

Buckhurst Hill, Nov. 21st, 1898. HAYDN BROWN.

THE "OPEN-AIR" TREATMENT OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—At the present moment probably nothing is attracting more attention both amongst the profession and the public at large than the possibility of grappling with that terrible scourge, tuberculous lung disease. The most rational and the recognised only satisfactory method of dealing with this disease is what is called the "open-air" method, and to carry out this treatment it is proposed to establish in England sanatoria with the object of so dealing with tuberculous lung disease. Now there is no question that the erection and maintenance of these buildings, wherever they are, will absorb a large amount of capital and a considerable expenditure annually. If all that is talked about and expected of these places were one-tenth realised, looked at from a charitable view only, anything would seem justifiable, but it is because I have very grave doubts of their success in treating the disease in question that I would ask you to publish these facts as to what the "open-air" treatment really is, or should be, and whether it is possible even in a small degree to carry it out in England.

Its primary and essential point is—out of doors all day and till bedtime (i.e., from 8 A.M. till 10 P.M.) except for meals. The conditions under which this is carried out in the various continental health resorts are as follows. There is almost perpetual bright sunshine from 9 A.M. till 4 P.M. in mid-winter and longer as the season alters; the air is of an extreme dryness, and this is probably one of the two most important points, the other being height, from 5000 ft. to 6000 ft., with the barometer standing from 24 in. to 22·5 in., the constant automatic expansion of the lung going on under the greatly reduced pressure, causing around cavities and deposits an emphysematous zone which cuts them off from the healthy lung; the great purity of the air caused by the cold and the surrounding snow and brilliant sunshine—the finest germicide known; the almost total absence of wind which no affected lung will stand, and the actual great heat and brilliancy of the sunshine, shining through the rarefied air with great power, without the intervention of an obstructing dense atmosphere;—these, then, are the conditions which enable a tuberculous patient to be out in the balconies or walking out in the snow from daybreak till bedtime, and hence the favourable results; it is, in fact, the nearest approach to treating the lung aseptically that is possible. We cannot treat it as we do any other wounded portion of the body, we cannot dress the cavities in it, but we can apply very dry aseptic perfectly pure air day and night (for the windows are open at night, with the thermometer 10° or more below zero), and this aseptic treatment of the lung is very successful.

Now let us turn to the suggested treatment in England; and I may say at once that almost every necessary condition is wanting. The sun is often absent and without power, the air is certainly often far from pure—it is during a greater part of the winter saturated with moisture, and this is most important as it almost seems as if moist air is an exciting cause of tubercle, certainly almost an incubator for the bacillus. There is constant wind from all directions—S.W. laden with moisture, N.E. biting and often damp. There is no reliable dry cold of any duration and there is no possibility of producing expansion of the lung from rarefied atmosphere in England. It is evident from this that all the conditions recognised as necessary are absent from our climate, and there are but few days in the winter and early spring in England when a patient with tuberculous lung disease could lie out of doors all day or walk about. Face which way the balconies or promenades in England will, they would be liable to be invaded with drifting rain or sleet and blown out with gales of wind. The result would be that they would be closed in and then the "open-air" treatment ceases to exist. I am sure that upon consideration many will agree with me that it is impossible in England to satisfactorily, even in a small degree, carry out the treatment I have indicated and which is the method pursued on the continent. To my mind all the necessary conditions are absent, and as it used to be said that "bricks could not be made without straw," so it seems to me that it is well to pause and consider before embarking on a scheme which will probably end in great disappointment to both patient and medical man, and which seems to me to be trying to do the "impossible." No one can deny that as much "fresh air" as possible is a great improvement on the horrid old system of stuffy rooms and hot air for tuberculous lung diseases; but that the "open-air" treatment can be pursued in England during an English winter, where not one single necessary condition is present or can be obtained, seems to me to be perfectly impracticable. One day spent out of doors, followed by two or three in the house because of mist, fog, wind, or rain, or cold without sun, would more than undo any good which had been obtained, and that seems to be the best which can be hoped for. I have written at great length on a very important subject and I hope it may elicit the opinions of medical men more competent to judge than I am. But I do think the questionable benefit may follow the partial open-air treatment I do not deny, especially to patients removed from their insanitary surroundings. But under the climatic conditions, both present and absent, I do not think that we can look for, or hope to see, many, if any, actual cures—the conditions would conduce to the opposite direction.

I am, Sirs, your obedient servant,

Nov. 14th, 1898. A. G. P. GIPPS.

To the Editors of THE LANCET.

SIRS,—I pointed out some years ago[1] that the late Dr. George Bodington, of Sutton Coldfield, Warwickshire, was the first to devise and carry out the present system of generous diet and open-air exposure for the cure of consumption. In those days (1840) before the theory of "phlogiston" had collapsed under the influence of microscopic pathology, he had many difficulties to contend against, and his plan of treatment, although successful with a certain number of cases, met with such derision and contempt that he finally gave up the practice, taking lunatics into his house-sanatorium instead of consumptives—a laudable course to pursue in his case, as he was returning good for evil to the class who criticised and reviled his project. The effect of adopting a suitable diet and fresh country air for the treatment of phthisis is rather ancient history, but Dr. Bodington grasped the points of their efficacy and brought these remedial agents into systematic working order. Much that he has written in a faded little volume of some 60 pages might be reproduced as a fresh article on the dietetic and open-air treatment of consumption. Why so many writers on this

[1] Alpine Winter in its Medical Aspects, 1884.

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subject represent the method as having been "made in Germany" I am unable to say. Certainly Dr. Brehmer carried it out with satisfactory results in 1860, but the plan had been clearly laid down and described by Dr. Bodington, who practised it twenty years previously to Dr. Brehmer and who published his success with the cases which submitted themselves to his scheme of treatment.

Our attention has been directed recently to the remarkable results reported as having occurred under the system of feeding and fresh air as conducted in the Black Forest, a climate which has been compared with that of the English lake district, in winter. There is no question as to the efficacy of over-feeding and fresh air in those cases which are fortunate enough to possess digestive organs fairly strong and unimpaired, but we must not lose sight of the important part which climate plays—especially mountain air—in the cure of pulmonary consumption. One good effect following the success of sanatoriums established in inferior climates will be to stimulate the scheme of providing similar institutions in England, where a great deal of what is lacking in "climate" can be made up in a nutritious and digestible dietary. There is no country in Europe where good food is so cheap and abundant, nor meat, fish, poultry, and game of a better quality. The advantage also of patients being treated by medical men of their own nationality, who have an intuitive knowledge of the national constitution, are familiar with the habits and customs of English people and their requirements, is not to be forgotten.

Personally, I am sorry to see our well-tried old remedy—alpine climate—temporarily slighted in favour of rival sanatoriums with quaint innovations, but in the main simply carrying out effectually the treatment originated by Dr. Bodington, from whose "Essay on the Cure of Pulmonary Consumption on Principles Natural, Rational, and Successful" I may be permitted to quote. He writes:—

"I should recommend to one thus consuming away under the influence of this *wasting disease* a nutritious diet of mild, fresh animal and farinaceous food aided by the stimulus of a proper quantity of wine, having regard to the general state and condition of the patient. ..... I have, as will be found by a perusal of the following pages, employed a nutritious and moderately stimulating diet with much success; and without that I do not think the other means could have been so effectual or the treatment complete. ..... I have taken for the purpose a house in every respect adapted, and near to my own residence, for the reception of patients of this class. ..... It is presumed that the advantages to be derived from systematic arrangements with regard to exercise, diet, and general treatment, with the watchfulness daily, nay, almost hourly, over the patient of a medical superintendent, great advantages may be obtained by the consumptive patient treated in this way."

Speaking of the therapeutic agents in use at that time (in 1839) he continues:—

"One mode of treatment consists in shutting the patients up in a close room, to exclude, as far as possible, the access of the atmospheric air, and thus forcing them to breathe over and over again the same foul air contaminated with the diseased effluvia of their own persons. ..... This is, indeed, a treatment founded on the most erroneous principles."

Referring to the inhalation of gases of various kinds Dr. Bodington says:—

"The only gas fit for the lungs is the pure atmosphere freely administered without fear; its privation is the most constant and frequent cause of the progress of the disease. To live in and breathe freely the open air, without being deterred by the wind or weather, is one important and essential remedy in arresting its progress, one about which there appears to have generally prevailed a groundless alarm lest the consumptive patient should take cold. ..... Farmers, shepherds, ploughmen, &c., are rarely liable to consumption, living constantly in the open air, whilst the inhabitants of towns and persons living much in close rooms, or whose occupations confine them many hours within doors, are its victims. The habits of these latter ought, in the treatment of the disease, to be made to resemble as much as possible those of the former class, as respects air and exercise, in order to effect a cure. ..... I come now to the most important remedial agent in the cure of consumption, that of the free use of a pure atmosphere. The abode of the patient should be in an airy house in the country. ..... The patient ought never to be deterred by the state of the weather from exercise in the open air; if wet and rainy a covered vehicle should be employed, with open windows. The cold is never too severe for the consumptive patient in this climate; the cooler the air which passes into the lungs the greater will be the benefit the patient will derive ..... and means applied to stimulate and invigorate the nutritive, sanguiniferous, and muscular powers; wine and such nourishing diet as the stomach could bear and by means applied to soothe and allay nervous excitement locally and generally. ..... Apartments should be kept cool and airy, corresponding to the external atmosphere, which should be courted and indulged in to the utmost."

After impressing on the reader the necessity of a generous diet, consisting of fresh meats, eggs, farinaceous food, beef-tea, milk, &c., as much as the digestion could bear, with wine or wine and water, according to circumstances, he concludes by the relation of some cases and a reiteration that the bedroom should be cool, airy, and properly ventilated and the sitting-room should have the windows wide open. I have quoted Dr. George Bodington at some length in the endeavour to point out by his own words and practice that we must regard him as the originator and introducer of the modern treatment of pulmonary tuberculosis. I am not aware of anyone having forestalled him in clearly laying down the principles which now guide us in all health resorts and sanatoriums devoted to the cure of consumption. Dr. Bodington must be accredited, too, with the courage of his opinions, for in those days of antiphlogistic remedies it was a bold, intelligent innovation deserving of all recognition and praise. Even that distinguished physician Sir James Clark sarcastically alluded to it at the time as the "beef steak and porter system," which he decidedly condemned.

I am, Sirs, yours faithfully,

A. TUCKER WISE, M.D. Brux., Diplôme Suisse Fédéral, M.R.C.S. Eng., L.R.C.P. Lond.

Montreux, Switzerland.

"THE WATER TEST AS APPLIED TO SEWER CONNEXIONS."

To the Editors of THE LANCET.

SIRS,—I, like your three previous correspondents (*vide* THE LANCET of Oct. 29th and Nov. 12th), have never been quite satisfied with the manner in which the portion of the drain between the intercepting trap and the sewer is put in by the authorities' workmen or contractors in London or elsewhere or of the connexion in the sewer. When, however, one is aware of the seriously unsound condition of main sewers, and thereby the greater contamination of soil and earth currents, and their ready conducts into the residences by means of water and gas pipes and the larger conduit outside the drain, also the contamination of water-supply *vid* unsound pipes or joints of the water-mains, the outcry against this small portion of probably unsound drain is very much like "jumping at gnats and swallowing camels."

Old practical sanitarians have by their experience always been convinced of the benefit inmates of houses with sound drains obtained in improved health and vitality, and I hope that serious attention will be drawn to the dangerous condition the sewers of London (and also our principal health towns) are in, more especially where towns are sewered upon the "combined" system, in consequence of the correspondence commenced in THE LANCET, and still greater benefits to health obtained to a larger number of people.

I am, Sirs, yours faithfully,

DANIEL THOMAS BOSTEL, R.P.C.

Ebury-street, S.W., Nov. 16th, 1898.

"A NEW SYMPTOM IN PARALYSIS AGITANS."

To the Editors of THE LANCET.

SIRS,—The new symptom to which Dr. Purves Stewart draws attention in his interesting paper in THE LANCET of Nov. 12th is present in a case now under my care. The patient, a woman, complained to me about a month ago of this "curling up" of the toes on the right foot. I have seen her this morning and the symptom was described to me again. It almost always occurs after walking about 200 yards, generally commencing in the third toe and rapidly spreading to the others, including the big toe. Walking is then very painful and soon impossible, although she has often persisted for a time by treading on the side of the foot or heel only. The "curling up" itself is not painful and passes off at once on her sitting down. Any little excitement when walking is apt to produce it immediately. In this case it was not an early symptom, the disease having declared itself some months previously. As this is the only case of paralysis agitans under my care at the present time it is, I think, an interesting corroboration of Dr. Stewart's observation.

I am, Sirs, yours faithfully,

W. J. ERNELY SUMPTER, L.R.C.P. Lond., &c.

Sheringham, Nov. 15th, 1898.

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THE ANNUAL MEETING OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—A very important question underlies that raised at this meeting concerning the abuse of medical aid associations. It is whether our profession has a right to enforce its unwritten laws on its members. These laws consist in essence of the opinions of the great majority of the profession. There can be no doubt as to this opinion so far as advertising and canvassing in a direct form are concerned, and the Council of the College has often imposed an extreme penalty. Can there be any doubt whatever as to the views of the profession at large on this most flagrant form of the same offences carried on in the name of their medical officers by these trading associations? Why, then, should there be any difficulty in putting a stop to the scandal? Is it not high time that the corporations should more readily and promptly reflect professional opinion? Laymen, whether as individuals or as associations, must be shown that professional services can only be rendered under professional conditions. This doctrine will be called by some trades-unionism. It is, however, nothing of the kind, since it is entirely in the public interest that the profession should retain its independence. As Mr. Bryant says: "It is all-important for the interests of the public as well as for the due exercise and dignity of our profession that every practitioner of medicine should hold a perfectly independent but responsible position and that in his professional work he should be left entirely free from lay control, though amenable to lay censure. It is also necessary that he should be adequately paid by all classes according to their means."[1] The modern trading medical society is entirely subversive of these principles, and we call on Mr. Bryant to make good his words on the Council of the College.

I am, Sirs, yours faithfully,

Nov. 19th, 1898. W. G. DICKINSON.

RESECTION OF INTESTINE.

To the Editors of THE LANCET.

SIRS,—May I ask you to correct a slight error in the report in THE LANCET of Nov. 19th of the case I brought before the last meeting of the Clinical Society of London? The bowel removed measured 27½ in., not 24½ in. as stated.

I am, Sirs, yours faithfully,

R. CLEMENT LUCAS.

Wimpole-street, Cavendish-square, W., Nov. 19th, 1898.

"THE DIPLOMA IN SANITARY SCIENCE OF THE ROYAL UNIVERSITY OF IRELAND."

To the Editors of THE LANCET.

SIRS,—Dr. C. L. Birmingham has, in THE LANCET of Nov. 12th, directed attention to a defect in the title of the diploma in hygiene which the Royal University of Ireland offers to its own graduates and he cites, as a result of this defect, the interesting information that not one candidate has presented himself for that particular qualification during the past seven years. Certain it is that the title of "Diplomatist in Sanitary Science" savours very much of the qualification of a sanitary inspector and it is equally certain that it is not appreciated by Royal University medical graduates, who prefer to qualify elsewhere in public health. At the last examination for the D.P.H. of Cambridge at least 3 of the 14 successful candidates were Royal University men. Why should not the Royal University emulate Cambridge and hold D.P.H. examinations twice yearly, open to all qualified men who have completed the prescribed curriculum? As a young university it should be far more progressive and offer in addition degrees in hygiene to its graduates. Many who do not care about the "Diploma in Sanitary Science," so named, would be proud of a B.Hy. or a D.Hy. A gold medal offered annually would constitute an additional stimulus to the study of hygiene. There is an enormous amount of public health legislation demanded in Ireland and if its execution is to be efficient not only must great facilities be offered for the study of hygiene, but the universities must be alive to their duties and responsibilities in this matter. I hope that the Senate of the Royal University will earnestly consider Dr. Birmingham's suggestions. The Royal College of Surgeons is the only body in Ireland granting a D.P.H., but its examination should be raised to an average standard.

I am, Sirs, yours faithfully,

J. E. O'CONNOR, M.B. R.U.I., D.P.H. Cantab.

Lowestoft, Nov. 21st, 1898.

[1] THE LANCET, Feb. 10th, 1894.

INQUEST FEES FOR HOSPITAL MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—Will you kindly tell me in your columns whether I am entitled to a fee for attending an inquest under the following circumstances?

I am medical officer of a hospital and was ordered to appear at the coroner's court last Wednesday to give evidence as to the death of a child in the hospital, following an injury three weeks before. No fee was forthcoming, the coroner telling me that I was not entitled to one. I understand that the medical officers of infirmaries now get inquest fees in such cases, and I think my position is precisely the same as theirs, as I have to contribute to a superannuation fund under the Poor-Law Officers' Superannuation Act. I am, Sirs, yours faithfully,

Nov. 20th, 1898. A.M.O.

*** Medical officers of Poor-law infirmaries in the metropolis are entitled to fees for evidence, but medical officers of hospitals were left unaffected by the new arrangement of 1892 and are not entitled to fees for evidence. The Poor-law Officers' Superannuation Act does not affect our correspondent's position in this matter.—ED. L.

FEES TO PUBLIC VACCINATORS.

To the Editors of THE LANCET.

SIRS,—If any of your readers who are public vaccinators in the country have already come to an agreement with their board of guardians as to the scale of fees to be paid for work done under the new Act I should be greatly obliged if they would kindly furnish me through the columns of THE LANCET with the amount of such fees and as to whether postage is to be paid by the board of guardians or otherwise. I am, Sirs, yours faithfully,

Nov. 21st, 1898. PUBLIC VACCINATOR.

"THE ETHICS OF CLUB PRACTICE."

To the Editors of THE LANCET.

SIRS,—I agree with all "Constant Reader" says *re* clubs and club patients in THE LANCET of Nov. 19th. My way is to do exactly as I think best and show the club members that I care nothing at all for their opinions in any way whatever and if they do not like it they need not. I have little or no trouble; only once have I attended a meeting to reply to any complaint, and on that solitary occasion, after showing that the complaints were uncalled for and that I should always act in the same way, I tendered my resignation, but was at once met with a vote of confidence at the rate of 100 for to 4 against. It is the very worst thing to pander to any of the whims of club patients. I do my best, but I do it my own way, for all the clubs I have. I am, Sirs, yours faithfully,

Nov. 21st, 1898. ANOTHER READER.

VACCINATION AT CARDIFF.—At the meeting of the Cardiff Board of Guardians held on Nov. 12th it was decided, from January next, to act upon the advice of the Vaccination Committee and to appoint a medical man not engaged in private practice to act as public vaccinator for Cardiff under the new regulations provided by the Vaccination Act, 1898. At present there are three public vaccinators for the town districts of Cardiff. A letter was read at the meeting from the honorary secretaries of the Cardiff Medical Society, stating that in the opinion of the society it would be unwise to disturb the existing vaccination appointments.

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THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

SECOND YEAR.

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 1360.)

THERE are some features about the prevalence of typhoid fever in Belfast which, at first sight, seem somewhat puzzling and not in keeping with what might be expected. On closer examination, however, explanations of at least a plausible character may be obtained. For instance, on the west bank of the Lagan the older and low-lying quarters are more exempt than the higher and newer districts. These latter which stretch out on either side of the Shankhill- and Crumlin-roads seem to be more favourably situated. Also many persons have gone to higher levels so as to live on sandy soil and have suffered in consequence. There is much to be said in favour of sandy soil; but in a town like Belfast where, as it will be shown, the most cruel callousness has prevailed in respect to sanitation, it is far from safe. The fact that the soil was sandy and readily absorbed liquids has led to the greatest carelessness in the construction of drains. Indeed, in some instances it was found that no attempt had been made to connect private drains with the public sewer. After wandering some distance the drain stopped. The liquid matter would filter through the sand and it was only after a considerable time that the solid deposits accumulated to such an extent as to entirely block up the sewer. The nuisance became so urgent that the drain had to be dug up, and then only was it discovered that no connexion had been made with the sewer. Of course this could be rectified, but in the meanwhile the subsoil had become thoroughly contaminated. Apart from such gross defects as this, many drains and branch sewers have been unsatisfactorily constructed and are constantly leaking. Sand is an excellent filtering medium, it therefore retains on the spot the foul matter contained in the water of the sewage. This matter ferments, decomposes, and gives off effluvia, which readily ascend through the sand and are breathed by the inhabitants who pass or live close by. Thus a house built on sandy soil may be extremely unhealthy though it may be topographically speaking well placed. The houses in the lower part of the town which are apparently not so well situated rest on a plastic, blue, soapy clay which has some sand in it. The district is damp and waterlogged because it is barely above the high-tide level. On the other hand, the soil is not porous. Soiled water with its contents flows away. In any case such effluvia as may be generated underground cannot rise up through the clay. This fact is demonstrated when any gas-pipe gets out of order. The odour of the gas does not rise into the street. Eighteen inches of this clay soil seem sufficient to keep out the smell of the gas which, however, is noticed when this amount of the boulder clay has been removed from the spot where there is a leak in the gas-pipe. Now, many of the houses in the older part of the town, where at first sight it would be natural to expect that numerous cases of typhoid fever would occur, are built on this clay soil, and this may in a measure explain why, instead of suffering more, they have suffered less than other districts. Yet there are low-lying districts on both sides of the river, but more especially on the County Down side, where many cases of fever have occurred. It will, however, be found that for the most part the houses are here built not on the clay but on what was formerly hollow ground which has been artificially filled up not only with road sweepings but also with the foul contents of privies and ashpits.

Hence we may, with some degree of certitude, conclude that the incidence of typhoid fever is in part due to the contaminated character of the subsoil. But there are many other causes. There is notably the question of sewer ventilation. The high level main sewer is some 30 ft. below the street. It had to be constructed by tunnelling. Perhaps it was laid at this great depth so as to drain more distant districts which are at a lower level, but whatever may be the explanation the fact remains that this main sewer has become a tank sewer. For about sixteen hours in the day, instead of carrying the sewage right away to the sea, it gradually fills up. As the sewage accumulates in this locked-up sewer it must of necessity displace the air which the sewer contains and force it up into the town. When the state of the tide permits the discharge of the sewage into the salt waters of the Belfast Lough air is drawn down into the sewer. As the sewage has been stagnant for several hours heavy deposits must have been formed and the question arises whether the final but long-delayed outrush of the sewage is strong enough to remove these deposits. Even such deposits as are moved forward are stirred up in the process and must give up effluvia. With the effluvia the air which comes in to replace the water is freely mixed. It also comes into contact with the filth still adhering to the side and bottom of this great sewer. The air has every opportunity of being corrupted. Then the mouth of the sewer is closed, and as the sewage accumulates the air thus rendered foul is forced back into the town. The main sewers are, in fact, like a big lung which breathes in the air of the town for some four hours, pollutes it in every way, and then breathes it back again into the town for eight hours; thus the process is repeated twice in every twenty-four hours. The breathing, if it may thus be described, is sometimes much heavier than the normal, and then a much greater quantity of sewer air is forced up into the streets and houses. This is due to the accumulation not merely of sewage but of rain-water. If the rains are heavy not only is the main sewer filled but so also are many of the branch sewers. At times the volume of rain-water exceeds the holding capacity of the sewers and very disastrous floods ensue. By connecting little streams which drain outlying districts with the main sewers the probability and frequency of floods have been increased. The backwash thus occasioned has been known to flood the High-street, which, in spite of its name, is on the low level, and the water in this street has accumulated to the depth of 18 in.

Nor are floods occasioned only by the fact that the main sewers are not large enough to act as reservoirs capable of storing the rainfall of several hours. Some of the branch sewers are not large enough to carry away with sufficient promptitude an extra heavy rush of water. They therefore overflow. Thus, there have been floods even at an altitude of 90 ft. above the sea-level. On the other hand, these sewers, which at one moment are not large enough, are in normal weather far too large to be self-cleansing. For this purpose a sewer should be half full of water at least once in the day, so that the whole of the lower half of the circle or oval may be thoroughly swept by the water and all adhering deposits carried away. It was because these sewers were not sufficiently flushed that some of the small streams were conducted to them, and this arrangement is very useful in dry weather, but with very heavy rainfalls it may occasion floods. It will thus be seen that the main drainage scheme is altogether defective. Tide-locked sewers are absolutely indefensible, nor can the outfall be considered safe. It consists of a wooden shoot or trough. Piles were driven in on each side, but the ground was so unstable that the driving in of one pile would sometimes force out a neighbouring pile. This wooden trough is, so to speak, floating on a moist soil and is therefore very likely to become defective. Under these circumstances the whole of the sewage may not be carried out as far as is intended and thought desirable. In any case it is said that some cockle-beds on the coast near Belfast have been contaminated. Some of the cockles from these beds are very large but have a suspiciously black appearance. One curious fact may be noticed in this respect. There are not many Jews in Belfast, but the colony is compact. It consists for the most part of immigrants and refugees from Poland and Russia who are particularly strict in their religious observances. Consequently they never eat any shellfish and eschew with pious horror the allurements of the cockle stall. Now it is a remarkable fact that not one of these Jews has suffered from typhoid fever. Nevertheless it would not be safe to conclude that abstention from eating cockles is the only reason which can explain this favourable circumstance. The fact that in Russia they were bred and born amid the most insanitary conditions is more likely to have rendered them immune. This latter theory meets with some confirmation from the experience of the Christian population. It has been observed that the number of policemen who have suffered from typhoid fever is altogether out of proportion to the rest of the population. But, on the other hand, the policemen for the most part are not natives of Belfast. They generally come from country districts where more healthy

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conditions prevail. Consequently they are not immune and readily fall victims to the poisonous atmosphere of the town. The same observation is made with regard to the civil population of Belfast. There are many more cases of typhoid fever among the new-comers than among the old inhabitants. This is a condition which will be found to prevail in several other towns where typhoid fever is endemic. The natives are comparatively free from the disease; while in the barracks the recruits from other districts and the strangers who come to the town readily contract the disease. At Belfast not only have the comparative strangers supplied a larger contingent of cases, but the proportionate rate of mortality, especially among the police, has been higher. The Constabulary force in Belfast numbers about from 700 to 800 men. One of the barracks stands on bad soil; still in many respects the men lead healthier lives than a large part of the population and physically they are an exceptionally fine set of men. It does seem, therefore, that they have suffered because they are not accustomed to the unwholesome surroundings of town life. They have not been in the habit of breathing the air which the rising waters in the sewers force up into the streets. They have not lived on soil partially formed of the contents of privies or contaminated with organic matter which has escaped from leaking drains. These are conditions which even a stalwart Irish constable cannot always resist.

Nov. 21st.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Native Practitioners and Inoculation for Plague.—The Progress of the Epidemic.—The Native Chiefs' Institute of Public Health.—The Plague Commission.

THE present position of prophylactic inoculation for plague has been recently discussed at a meeting of the Bombay Medical Union. This is a large society composed entirely of native medical practitioners, and the subject was brought forward on purpose to discuss the strictly scientific aspect of the question. M. Haffkine attended and answered numerous inquiries concerning the results as well as the technique of the process. Although the statistics are very satisfactory they were not accepted by many members without cavil, and several evils were attributed to the operation, although not on very good grounds. The chief figures have been already published. The chairman, however, gave some statistics which went to show that those who were inoculated more than once enjoyed greater immunity from attacks of plague than those who were only once inoculated. The importance of the assistance of the native qualified medical practitioner in furthering the process of inoculation is very great, especially as the process can hardly be said to have "caught on" in Bombay. It is therefore satisfactory to know that the following resolutions were passed at the meeting :—

1. This meeting is of opinion that considering the data now available and the satisfactory result of the observations collected regarding the protective effect of Professor Haffkine's plague prophylactic the time has now arrived for the profession to make a definite pronouncement on the subject and invite the public to resort freely to the protective treatment as the only safeguard against plague. 2. The immunity derived from inoculation when done with a full dose appears to last for at least six months, but there is the possibility of its lasting much longer. 3. From the observations collected lately it appears that a second inoculation done ten days or so after the first further reduces the incidence of plague in those who resort to inoculation, and it is likely that a third inoculation, if such be practicable, would increase the immunity still further. The public are therefore invited to resort to at least two inoculations and even to a third if practicable. The duration of protection is also likely to be enhanced by such a repetition. 4. This meeting of medical men who have had a wide experience of inoculation in persons of all positions, ages, and constitutions, declares emphatically that rumours of inoculation originating different diseases, such as leprosy, syphilis, &c., are devoid of any foundation; that, considering the nature of the prophylactic which does not contain any living germ, such an eventuality is absolutely impossible; and that there are no facts to show that inoculation aggravates any existing ailments despite the rare and isolated instances which may at first suggest such an idea.

I hear that inoculation has been so popular in the Dharwar District that it has been found possible to make a small charge towards covering the cost of the operation

The following figures are very suggestive. Up to Oct. 21st there were in Dharwar town :—

	Persons.	Attacks.	Deaths.
Once inoculated	5712	 69	 31
Twice inoculated	3349	 9	 5
Uninoculated	5614	 957	 756

The flight of large numbers of the people, and these almost entirely of the uninoculated, gives the impression of greater virulence than the figures actually warrant, but even if the percentage were reduced to half it would still indicate the enormous value of these inoculations.

The decline in the plague mortality in Bombay city continues and expectation that the third outbreak was an abortive one and practically over finds confirmation. The weekly mortality has now almost descended to its normal number. There is also a decline in the virulence of the epidemic in other parts of the Presidency. During the previous week there were over 5000 deaths from plague but this has been reduced by nearly 500. The week's totals of 5927 cases and 4651 deaths, however, hardly attract the attention such a mortality demands. The continuance of occasional cases in Karachi is very suggestive, and amongst other things points to the probability of a recrudesence in the near future. Immense improvements have, however, been made in the sanitary condition of the city, so that the chances of a return of the epidemic in its former virulence are much diminished. The occurrence of 2 cases in the Punjab after a long interval of apparent cessation is very disquieting. The immense processes of scavenging, disinfection, and general cleaning up which have been accomplished in consequence of the plague have been in numerous places blessings helping to compensate for the disasters of the disease.

The proposed Indian Pasteur Institute languishes partly from want of funds and for this reason it has been decided by the central committee that any attempt to start an institution for the sole purpose of antirabic treatment was out of the question. Fortunately, the Native Chiefs' Institute of Public Health is likely to take practical shape. It is reported that over twenty lakhs of rupees have been collected for the health scheme, which will include the Pasteur treatment. We seem, therefore, to be within measurable distance of the establishment of the long-looked for institution—the absence of which is a discredit to Indian medical administration

I have referred to the mild but equally effective measures now adopted in Bombay as compared with the policy of the late Plague Committee. The Commissioner has lately submitted an outline of the measures which are now in progress for dealing with the plague. In the detailed instructions issued to the district officers considerable latitude is allowed in the direction of relaxation. In addition to the general measures—viz., removal of the sick to hospitals, observation of "contacts," and evacuation and disinfection of affected houses—particular attention is paid to the following points. Inoculation is being encouraged (this, however, has barely affected one-thirtieth of the population); rats are being destroyed; arrangements have been made for the local preparation of Lustig's serum (not yet shown to be of much value, however); the different communities are being assisted to form health camps and hospitals of their own; arrangements have been made for tile-turning; and a systematic survey of houses is being made with a view to their sanitary improvement. In addition passes and detention camps for travellers by railway have been abolished. It must be noted that all the measures now in force depend upon the assistance of the native volunteer committees—the object being to discover plague cases. There is no hesitation in saying that the object is only very partially achieved, but some of the measures are doubtless effective and the general plague administration works much more smoothly than before.

Nov. 5th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Proposed Hospital in Liverpool for Chronic Diseases of Children.

A NUMBER of ladies and gentlemen interested in the promotion of a hospital for the treatment of the chronic diseases of children on open-air lines in the vicinity of

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Liverpool held a meeting at the Deaf and Dumb Institute on Nov. 17th. The chair was taken by Dr. William Carter. Dr. C. J. Macalister, in strongly advocating such an institution, wished it to be understood that it must not be confused with a convalescent institution but must be conducted on the lines of a hospital, suitably placed and providing for a long period of residence on the part of the patient. It should not be affiliated with any special hospital, as that would practically limit the recipients of its benefits to the patients of that particular charity. Mr. Robert Jones also strongly urged the claims of such a hospital and said that in this matter we were far behind our continental neighbours. The argument that our climate was unfitted for open-air treatment no longer carried weight. It was necessary that children should be treated under the best hygienic conditions, and these were only to be found in the country. Having occasion to visit a small French village near Boulogne he had been much interested in visiting three hospitals there which were built for children, one containing 1000 beds, another 300 beds, and another 30 beds. The convalescent home was of incalculable benefit as an annexe of city hospitals, but it did not fulfil the *rôle* of a hospital in the country where cases could be taken in to be cured and where no time limit would be prescribed, and where the prevention of deformity would be the aim. A resolution was unanimously carried "that a committee be formed for giving definite details of the scheme and for furthering the object of the meeting."

The Royal Southern Hospital: Annual Dinner; Proposed School for the Study of Malaria.

The ninth annual dinner in connexion with this hospital was held on Nov. 12th at the Exchange Station Hotel. Dr. William Carter, in his reply to the toast of "The Royal Southern Hospital," claimed for the hospital priority in Liverpool in accepting the antiseptic principles enunciated by Lister. He also alluded to the special opportunities enjoyed by the hospital for the treatment of malarial diseases, a fact recognised by the Government in subsidising six beds for such cases after the late Ashanti war. Principal Glazebrook of University College, in responding to the toast of "The Visitors," advocated the establishment by the Government of a school in Liverpool for the study of malaria. From its connexion with the West Coast of Africa Liverpool was more likely to have such cases than even London, near which, at the Albert Docks, the establishment by Government of such a school was contemplated. One of the guests at the dinner, Mr. Alfred L. Jones, has offered £400 to start a school in Liverpool for the study of malaria.—The Lord Mayor and members of the city council were present in state at St. Michael's Church on Sunday, Nov. 20th, when a sermon was preached by the Dean of Norwich on behalf of the Royal Southern Hospital. The collection amounted to £121 18*s.* 5*d.* The committee contemplate the expenditure of £3000 on new boilersand machinery and additional bed-room accommodation for the staff.

Pathological Diagnosis Society.

Professor Boyce and Dr. W. B. Warrington entertained the members of the Pathological Diagnosis Society at a conversazione in the Thompson-Yates Laboratories on Nov. 2nd. The reunion was suggested by the transference of the work of the society from Ashton Hall to new premises in the Thompson-Yates Laboratories, where a spacious room has been fully equipped for carrying on the research work of the society. During the past six months Professor Boyce and his assistants have examined and reported upon 398 morbid specimens, sputa, &c., which work has been of incalculable benefit to busy practitioners who have not the time and means at their disposal to make the examinations themselves. The membership of the society has now reached 110. The annual subscription has been increased to 10*s.* 6*d.*

University College, Liverpool: Medical Students' Annual Dinner.

The medical students' annual dinner was held on Saturday, Nov. 19th, at the Adelphi Hotel, under the chairmanship of Dr. James Barr, physician to the Royal Infirmary. Upwards of 120 gentlemen sat down to dinner. The proceedings were of the most agreeable and harmonious character, the speeches being short and the merriment great. The annual dinner is looked forward to with much eagerness by both past and present students, the former seizing the occasion for the renewal of old acquaintanceship.

Liverpool Biological Society.

Professor Sherrington, F.R.S., read an interesting paper, with lantern illustrations, before the members of this society in the zoology theatre, University College, on "Adaptation to Function as Exemplified by the Structure of the Arm." Modern men of science were asking how, not why, and were trying to ascertain how, an organ was made for its particular purpose. At first when the great German Helmholz pointed out that the eye *per se* was imperfect as an optical instrument his declaration was considered impious. The lecturer thought that there was nothing impious in it as an attempt to answer how the extraordinary perfection of vision was achieved with the aid of the brain. Professor Sherrington's experiments were devoted to the same question in regard to the human arm. As the result of extensive work in the laboratory he had found that the further one succeeded in unravelling the structure of the arm the more marvellously adapted to its uses one found it to be, and the more multiplied its adaptabilities.

The Children's Convalescent Home, West Kirby.

The applicants for admission to this institution have been so numerous that the committee have decided to erect a new wing at a cost of £5000, of which a great part has already been subscribed. Last year 832 children were admitted, the greater proportion of whom were sent from Liverpool and its suburbs.

Donations to the Chester Infirmary, &c.

The Chester General Infirmary has received £500, and the Parkgate Convalescent Home £30, from the Duke of Westminster, being the proceeds of the fees paid by visitors for admission to Eaton Hall during the past summer.

Nov. 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Reception at the Royal College of Surgeons, Edinburgh.

INVITATIONS have just been issued by the President of the Royal College of Surgeons and Mrs. Chiene to an "At Home" in the College on the evening of Friday, Dec. 9th. A similar reception was given at the Royal College of Physicians some years ago and was by many regarded as a more satisfactory kind of entertainment than the annual dinner.

Illness of Professor Struthers.

I regret to say that Sir John Struthers for some months has been on the sick-list although able to move about a little and to attend to some of his public duties. Last summer he started on a tour to Norway, but had no sooner crossed the North Sea than he deemed it desirable to return. He is now quite confined to his house and in the case of a man of his indomitable spirit this means, I fear, that his condition has become worse.

Complimentary Supper to Dr. Muir.

To-morrow, Wednesday, Nov. 23rd, Dr. Robert Muir is to be entertained to supper by the members of the Edinburgh Pathological Club. This complimentary entertainment is on his appointment to the St. Andrews Professorship of Pathology in Dundee and in recognition of his services as secretary to the club for some years.

Glasgow University.

The University Court has agreed to recognise for purposes of graduation in medicine the lectures of Dr. Hugh Galt on Forensic Medicine and Public Health at St. Mungo's College, Glasgow; the lectures of Dr. W. Ernest Thomson on Physiology at Anderson's College Medical School, Glasgow; and the lectures of Dr. Robert A. Fleming on Medicine at the School of Medicine, Edinburgh. Mr. Matthew Arthur and Mr. Alan E. Clapperton have been appointed to represent the Court on the board of managers of the Western Infirmary.

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Faculty of Physicians and Surgeons, Glasgow.

At the annual meeting of the Fellows held at the beginning of the present month Dr. Hector Clare Cameron was re-elected president; Dr. A. L. Kelly, visitor; Dr. James Finlayson, honorary librarian; and Dr. J. D. Maclaren, treasurer. The Examining Board for the Licence in Dentistry has been reorganised and Mr. H. E. Clark has been appointed one of the examiners. Much interest was exhibited in the appointment of two representatives to the managing board of the Western Infirmary, and after a contest Dr. Archibald Sloan was re-elected and Dr. Bruce Goff was appointed in place of Dr. J. B. Russell, who desired to retire on account of his removal to Edinburgh. Professor Ralph Stockman, M.D., F.R.C.P. Edin., has been admitted a Fellow of the Faculty.

Royal Hospital for Sick Children, Glasgow.

Dr. George S. Middleton has been appointed visiting physician to the hospital in succession to Dr. James Finlayson, who has resigned. Dr. Finlayson has been one of the physicians since the establishment of the hospital and the directors have now elected him honorary consulting physician.

Glasgow University Club, London.

The club gave a very successful dinner party in the Café Royal, Regent-street, on the evening of Nov. 18th. The Very Rev. Principal Storey occupied the chair, and in proposing the toast of "The Club" took occasion to refer to the recent changes instituted in the Scottish Universities by the late Commission. He regarded the present day as the commencement of a new era in University development and insisted upon the necessity for an increase of funds if the new claims now made upon them were to be adequately met. He trusted that the influence of the members would be of value in this direction, and pointed out that it was specially necessary that the University should be able to increase its laboratories, both for the extension of practical teaching and the encouragement of research. The medical members sent a strong contingent, which included Dr. Heron, Dr. Brisbane, Mr. David Donald, Dr. Guthrie Rankin, Dr. C. O. Hawthorne, Dr. C. D. F. Phillips, and Dr. Norman Maclehose.

University of Aberdeen.

The portrait of the Marquis of Huntly, Lord Rector of the University, painted by Mr. J. Coutts Michie, A.R.S.A., and presented by him to the University, has now been received at Marischal College.—An opportunity has been afforded to the lady students of seeing the proposed home at Aberdeen for the women students there.

Aberdeen Hospitals.

Entertainments are to be held on Sundays in the Palace Theatre for the benefit of these institutions.

Nov. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin University Biological Association.

THE opening meeting of the session will be held in Trinity College, when the President, Dr. William S. Haughton, will deliver the inaugural address on the Present Position of the Roentgen Rays in Surgery and Medicine.

Health of Belfast.

The death-rate for the week ended Nov. 12th from all causes was 26·9 and from the principal zymotic diseases 2·4. The number of cases of typhoid fever notified during the same period has been 47, as compared with 72, 98, 125, 149, 151, and 172 for the six previous weeks respectively. These statistics show that the outbreak of typhoid fever is still, fortunately, subsiding. At a meeting of the Public Health Committee, held on Nov. 17th, the estimates of the probable expenditure for the year 1898 were considered and very fully discussed, and it was found necessary to provide for an expenditure greater than that of the present year by several thousand pounds, the house-cleaning department and the new drain-testing scheme, recently passed, contributing the larger portions of the increase. The very long distances to which the house refuse has now to be carted and the increasing difficulty of finding outlets for it—in which connexion the growth of the city will be responsible for great expenditure—point conclusively to the necessity of refuse destructors being provided for the several districts and also to the desirability of the utilisation of the tramway system for the conveyance of this material to places of disposal where it can be rendered innocuous.

The Annual Dinner of the Cork Medical and Surgical Society; Important Pronouncement with regard to the University Question.

The annual dinner of the Cork Medical and Surgical Society took place at the Imperial Hotel, Cork, on Nov. 12th, when the number of members and their guests amounted to over fifty. Amongst the latter were the Mayor of Cork, Mr. Maurice Healy, M.P., Sir Rowland Blennerhassett (President of the Queen's College), Sir John Scott (ex-Mayor of Cork), Mr. M. D. Daly (chairman of the Cork Dispensary Committee), and other prominent citizens. Dr. Edward Magner, president of the society, occupied the chair, and by delegating to others the duty of proposing some of the toasts introduced what proved to be a very successful novelty. Mr. Healy, M.P., proposed the toast of "The Cork School of Medicine," and in doing so delivered an important speech which is likely to have results. He mentioned that when the Local Government Bill was passing through Parliament he had urged that the Cork hospitals, being part of a successful school of medicine, should be treated more generously than the majority of county infirmaries in Ireland, and though he was not as successful as he could desire he was happy to say that some concessions had been granted. He alluded in complimentary terms to the status of the Cork medical profession and said he was aware that the teachers of the Cork School of Medicine kept well abreast with the wonderful progress of medical science. Touching on the education question he said that addressing such an audience he had no desire to deal with the political aspect of that complex problem, though he had no doubt his opinions on the subject were well known; but one thing he would say with the greatest emphasis—and that was that no solution would be acceptable to him which would have for its purpose the destruction of the Cork School of Medicine and the transference to Dublin of the grant of money now given to Cork. If such a contingency should possibly occur he would regard it as a catastrophe, not alone for his own constituency, but for the whole of the south of Ireland. Mr. Healy was listened to with the greatest attention and when he resumed his seat there was enthusiastic applause. There is no doubt that the sentiments expressed by Mr. Healy will, if occasion require, be emphatically endorsed by his constituency and urgently and persistently pressed on the consideration of any Government that may undertake the solution of the Irish University question. Afterwards Dr. Magner proposed the toast of "The President and Professors of the Queen's College." Sir Rowland Blennerhassett, when replying, stated that one of the first universities known to history was practically a medical school, and the ordinances of that university were so excellent that one of the most modern universities, that of Strasburg, practically adopted them in their entirety. Referring to the pleasure with which he had listened to Mr. Healy's speech he said he felt quite sure that not alone he himself but all the professors had but one desire—to make the Queen's College, Cork, as useful as possible to the community in the midst of which they lived. The President of the society then proposed the toast of "Our Guests" and coupled with it the name of the mayor. He referred to the exertions of his Worship when mayor some years ago to settle the dispute between the local profession and the clubs and said the mayor's sympathies were with the medical men of the city. The Mayor, in reply, expressed the gratification it had been to him to be present at the annual dinner of the society each year he had been mayor, and referring to the club fight said he never could understand how it was that the tradesmen of the city, themselves members of trades union associations, could give opposition to the demands of the medical profession, which were moderate and reasonable. In reply to the toast of the "Navy and Army" Colonel Riordan, R.A.M.C., referred to the sympathy of the profession at large in the desire that the status of his brethren should be improved. Brigade-Surgeon Moriarty, M.D. R.U.I., in

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very felicitous terms proposed the toast of the "South of Ireland Branch of the British Medical Association," and it having been duly honoured a most enjoyable evening came to a conclusion, music and song forming an attractive portion of the programme.

Curious Order issued at the Cork Barracks with Reference to the Attendance of Civilian Practitioners on the Families of Non-Commissioned Officers.

Recently a medical man practising in Cork was requested to see the child of a sergeant of the King's Royal Rifles. On arriving at the barracks he ascertained that the child was under the care of one of the military medical officers, and accordingly sent a message to him requesting him to see the child in order that they might have a consultation with regard to the case. The military medical officer could not be found as he happened to be out of town, and as the civilian practitioner ascertained that the little patient was very seriously ill he considered it desirable to prescribe for the child. He then wrote explaining his connexion with the case and requesting the military medical officer to meet him in consultation on the following morning. The latter replied declining to do so, as the parents had treated him discourteously by not previously intimating to him their desire to have a consultation, and added in very friendly terms that he had no doubt the civilian practitioner had acted entirely in accordance with professional etiquette. Soon afterwards the same civilian practitioner was requested to visit two other children in barracks and found one of them suffering from a severe attack of septicæmia. The parents were very anxious about the condition of the child and pressed the medical man for a diagnosis. He informed them that it was a case of blood-poisoning. The commanding officer, who was much interested in the child, on hearing of the nature of the illness requested the medical man to send him a report and he courteously acceded to his request. Some days afterwards a board, consisting of medical and engineering officers, held an inquiry, but what the result of the inquiry was has not transpired, but it is understood that the question of the child's illness being produced by insanitary surroundings was before them. Whether it was a case of *post hoc, propter hoc* cannot be ascertained, but almost immediately afterwards an order was issued applying to the whole military district of the south of Ireland that in future non-commissioned officers and privates desirous of procuring the services of civilian medical practitioners must intimate the fact to the commanding officers of regiments in order that it might be communicated to the military medical officer on duty. In the interests of military discipline it may be necessary to issue an edict of this kind, but if so why should it not be made to apply equally to the families of commissioned and non-commissioned officers. Is it as true now as in the days of Shakespeare that what is a mere idle word when uttered by an officer is rank blasphemy when coming from a private? It is stated that the quarters in which the child suffering from septicæmia resided were built on ground contiguous to, if not actually on, the site of closets which had probably been erected at a time when little was known of sanitary science. It has been ascertained, too, that former occupants of the same house were attacked by diphtheria.

Outbreak of Diphtheria in Monaghan.

An outbreak of diphtheria, so far not of a very serious nature, has taken place in Monaghan. The medical men are using every effort to stamp out the disease by isolating the cases, and the schools have been closed up to Jan. 14th, 1899.

Outbreak of Fever at Ballymena.

An outbreak of typhoid fever has occurred at a place called Bridge End, Ballymena, and there are now 15 cases in the Fever Hospital, one patient having died. The Local Government Board has instructed their medical inspector, Dr. Clibborn, to hold an inquiry into certain statements made by the matron of the Workhouse Hospital as to the manner in which cases of fever were treated in the hospital.

Nov. 20th.

DIPHTHERIA AT OLDBURY.—At the meeting of the Thornbury Board of Guardians held on Nov. 11th the medical officer of health (Dr. Bond) reported that 11 cases of diphtheria had been notified during the past two weeks, 10 of these cases having occurred at Oldbury.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Operations for Disease of the Stomach.

DISEASES of the stomach have of late occupied the attention of the learned societies. At the Academy of Medicine on Nov. 15th M. Charles Périer showed a woman, aged fifty-three years, from whom one year ago he had removed the whole of the central portion of the stomach together with the centre of the transverse meso-colon for a new growth which was of about the size of the palm of the hand. After the annular excision had been performed the two ends of the stomach were entirely separated the one from the other. They were joined together by a double row of sutures reinforced externally by a strip of omentum. The colon was found to be enormously distended with fæces, and M. Périer and his assistants were able to manipulate these into the sigmoid flexure and thence into the rectum. Three days afterwards all this mass was removed by means of injections. As long as the mass remained in the intestine the state of the patient was very grave, but after the bowel had been cleared out her state improved and the improvement was continued uninterruptedly until she had completely recovered. M. Périer lays great stress upon this, for he considers that similar retention of fæcal matter is in great measure to blame for the want of success which has hitherto attended gastro-enterostomy and that a favourable result should certainly be brought about if the intestine be emptied in this way. At the present time the patient's appetite is good and digestion is easily performed. Her weight has gone up 15 kilos. since the operation and within the last month she gained 1 kilo. No tumour whatever can be felt in the abdomen and great attention is paid to keeping the bowels regularly open.—At the meeting of the Society of Surgery held on Nov. 9th M. Terrier reported that he had performed jejunostomy for a very extensive case of cancer of the stomach where resection and gastro-enterostomy were out of the question. The patient was now being fed by the intestinal fistula. The operation, however, is only practicable in very few cases. M. Terrier followed the operative technique laid down by Sursnay—an operation which he has performed twice. It is the best operation of a palliative kind, not difficult, and often prolongs the life of the patient.

The Organisation of the Medical Congress of 1900.

The Organising Committee, with Professor Lannelongue in the chair, held a sitting on Nov. 5th at the Academy of Medicine and has definitely settled arrangements for the congress which will open on August 2nd, 1900, and close on the 9th. The entrance fee, amounting to 25 francs, can either be sent to the general manager at Paris or to the committees who are acting in foreign countries. Every subscriber will receive a document showing the extent and arrangement of the section in which he is interested. The congress is divided into five sections: A. Biology: (1) anatomy, descriptive and comparative; (2) histology, embryology, teratology; (3) physiology, physical and biological chemistry; and (4) anthropology. B. Medicine: (1) general and experimental pathology; (2) bacteriology and parasitology; (3) pathological anatomy; (4) visceral pathology; (5) medical diseases of children; (6) therapeutics and pharmacology; (7) nervous diseases; (8) mental diseases; and (9) dermatology and syphilology. C. Surgery: (1) general surgery; (2) surgical diseases of children; (3) surgery of the urinary organs; (4) ophthalmology; (5) laryngology and rhinology; and (6) otology. D. Obstetrics and Gynæcology. E. State Medicine: (1) hygiene, sanitary medicine, and epidemiology; (2) forensic medicine; and (3) military medicine and surgery, naval medicine and surgery, and colonial medicine. Two general meetings will be held, the one on the opening day of the congress and the other at the end. Only those members nominated and invited by the committee will be able to read papers. All proposals relative to the work of the congress must be handed in to the committee before May 1st, 1900. The committee will decide upon these and reserve to themselves the right of examining into their claims. No communication must

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exceed fifteen minutes in length and speakers in the discussions must not exceed five minutes. The text of the papers or communications or discussions must be given in the same day to the secretary of every section. French is the official language of the congress, but English and German may be also employed in the general meetings and in the sectional meetings.

Hysterical Gastralgia.

At a meeting of the French Electro-therapeutical Society, held in Paris on Nov. 17th, Dr. Apostoli and his assistant, M. Planet, made a communication relative to a case of severe hysterical gastralgia of ten years' standing. It had been suspected to be of tabetic origin but disappeared under treatment by static electricity (*franklinisation*). Static electricity supplies a valuable means of differential diagnosis between hysterical gastralgia and the gastralgia which is an early symptom of incipient tabes. It very quickly detects hysterical conditions by demonstrating peripheral perversions of sensibility, and when applied sufficiently long it has a beneficial effect on hysterical gastralgia.

Nov. 22nd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Vaccination.

THE Senator Dr. Giulio Bizzozzero (whose work in the histology of the circulation won him an honoured name in medical science and led to his appointment to the chair of Pathology in the University of Turin) was the principal speaker at the last meeting of the Turinese Society of Practical Medicine convened in the Policlinico of that city to discuss the all-important question of vaccination and the duties which it imposes on State and citizen alike. Mournful to relate, Italy has, this time for the worse, been influenced by the example of England to relax her faith in the grand Jennerian prophylactic, and at the instance of a man of whom better things were expected, Professor Carlo Ruata of the University of Perugia, to deny the State the right of making vaccination obligatory, on the grounds (mainly) that isolation suffices to keep small-pox at bay, without entrenching on the liberty of the subject. Professor Bizzozzero began by observing that we cannot now as erewhile believe that vaccination can give a life-long immunity from small-pox. If we reflect that out of 1000 vaccinated persons 910 or 920 after eight or ten years are once more accessible to revaccination, there is manifest proof that the immunity is not for life. Proceeding to answer the question, "Are there in Europe nations which are really well-vaccinated?" he remarked that in England vaccination being entrusted to Poor-law guardians (who are not medical men) is carried out by them according to their lights, while revaccination is not obligatory. France, Belgium, and Spain have not obligatory vaccination. On the other hand, Germany stands alone in fulfilling in great measure the demands of hygiene, having in consequence of the calamitous small-pox epidemic of 1870–71 enacted the law of 1874 which "makes vaccination obligatory in the first year of life and revaccination also obligatory at the tenth year." What was the result? With a population of 50,000,000, having in 1871 lost 143,000 lives by small-pox, she found by her law of 1874 the mortality diminished so rapidly that to-day the disease numbers only 116 victims a year. These cases, moreover, occur almost exclusively in towns on her frontier. If it were true, continued Professor Bizzozzero, that a good vaccination does not protect from small-pox we ought to find in small-pox epidemics that the disease diffuses itself in the well-vaccinated no less than in the non-vaccinated countries. But it is not so. In 1870–71, during the Franco-German war, the two peoples interpenetrated each other, the German having its civil population vaccinated optionally but its army completely revaccinated, while the French (population and army alike) were vaccinated perfunctorily. Both were attacked by small-pox; but the French army numbered 23,000 deaths by it, while the German army had only 278; and in the same tent, breathing the same air, the French wounded were heavily visited by the disease while the German wounded, having been revaccinated, had not a single case. These figures made a profound impression on Professor Bizzozzero's audience, as well they might. Coming to Italy, the anti-vaccinationists assert that the country is well vaccinated; and yet, in spite of that, in 1887 there were 17,000 deaths from small-pox, the majority of them infants in whom immunity ought to be at its best. In reality, however (continued Professor Bizzozzero), Italy was always an ill-vaccinated country, revaccination not being obligatory as it is in Germany. Moreover, it has been demonstrated that of the children vaccinated only one-third are in their first year; no wonder, then, if the two-thirds not vaccinated till after that year contribute to swell the death-rate. Again, the anti-vaccinationists contend that obligatory revaccination as in Germany has not wrought the well-nigh complete disappearance of small-pox, but the decree of 1883 as to isolation of the small-pox patient, together with the relative disinfection. They forget, rejoins Professor Bizzozzero, that that decree is in force only in Prussia, and that in the other German countries it is not in force at all, while in these, thanks to obligatory revaccination only, small-pox is well-nigh unknown. In conclusion he said: "Our own experience reinforces that of other countries in placing beyond doubt the efficacy of vaccination when not disjoined from revaccination. Let us then persevere in the struggle for a cause so sacred!" The meeting was all but unanimous in approving Professor Bizzozzero's address; while the anti-vaccinationist minority was but poorly represented and its familiar arguments had all been anticipated and refuted. Dr. Belfanti, director of the Istituto Sieroterapico of Milan, gave evidence as to the inefficacy of isolation supplemented by disinfection, and proved that revaccination had well-nigh stamped out small-pox in the Lombard capital. Dr. Ramello, director of the Municipal Office of Hygiene (Turin), contributed a most instructive history of vaccination in Piedmont from 1805 as a conclusive demonstration of the efficacy of vaccination followed by revaccination, and his facts and figures were supplemented by Professor Pagliani of the Direzione della Sanità Pubblica, showing analogous experience during the last decennium. The meeting shortly afterwards rose, having voted unanimously the following order of the day: "The Society of Practical Medicine considering: (1) that vaccination and revaccination are the only available and effective means of preventing the diffusion of small-pox; (2) that these operations present not the slightest danger when performed *secundum artem*; (3) that not only do they not present any danger during an epidemic of small-pox, but are the only means of arresting such epidemic; (4) that small-pox is almost unknown in countries practising regularly vaccination and revaccination; (5) that therefore this disease ought entirely to disappear from civilised countries; and (6) that we have in animal vaccine a pure source of vaccine which gives absolute security, and can meet every eventuality—resolves that the Istituto Vaccigeno of the State be reopened, while also keeping open those other institutes which guarantee the good preparation of vaccine; and that, by the best means possible, there should be promoted the most effective carrying out of the legislative arrangements now existing concerning vaccination, revaccination, and animal vaccine."

Honour to a Medical Man.

The Senate has just been reinforced by a considerable number of new members, all of them more or less distinguished in public or professional life. General satisfaction is expressed at the elevation to the Upper House of Dr. Enrico De Renzi whose work on the serotherapy of pneumonia[1] is the last of a long series of original and practical contributions to clinical medicine. Born in 1839 in Campania, Dr. De Renzi graduated after a brilliant course of study in the Neapolitan school, and while still a very young man competed successfully with formidable rivals for the Chair of Practice of Physic in the University of Genoa. He shared in the patriotic movement which resulted in Italy's unity and independence and served on the medical staff under Garibaldi in more than one campaign. In 1884 he did useful and intrepid work in the calamitous cholera epidemic in Naples, having previously distinguished himself in tracing the cause and effecting the cure of the strange form of anæmia which proved so fatal to the workmen employed in tunnelling the St. Gothard. Recalled to his *alma mater* to fill the Chair of Clinical

[1] THE LANCET, Oct. 22nd, 1898, p. 1075.

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Medicine and to act as supplementary professor of pathology, he wrote his well-known treatise on Cirrhosis of the Liver, and has of late been actively engaged in the study of thoracic ailments, chiefly with a view to their treatment by sero-therapeutic methods. He sat in Parliament for the constituency of Avellino, having been elected in 1888, and was for years one of the most useful members in the promotion of public hygiene and in the legislation directed towards the reafforesting of Italy.

Nov. 20th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Medical Report on the British Troops in 1897.

CONSIDERABLE sanitary improvements have taken place in the barracks and hospitals, for it is only during the last few years that intelligent interest has been aroused in the drinking supply of the troops. For the first thirteen years of the British occupation the water from the lavatories and laundries of Kasr-el-Nil barracks was allowed to drain into the Nile just above the intake of the water company of Cairo. But now for three years percolating cesspits have been provided and are found to work very well, even when the Nile and the subsoil water are at their highest. The level of the Kasr-el-Nil barrack square has been raised 2 ft., well above the annual infiltration level, and now it is no longer necessary to send the regiment quartered in those barracks into the desert during the months of September and October. At Abbasiyeh a comprehensive drainage system has been laid down and it works well. Last year's figures show that the sanitary reforms are already bearing fruit. The average of sick during 1897 in all Egypt was 54 per 1000, as compared with 63, which was the figure in the two previous years. The actual number of admissions to hospital was 3242, out of an average annual strength of 4449. The death-rate of Cairo alone was 8 per mille less than in 1896. The chief sickness of the year occurred in a regiment which came direct from Malta to Alexandria and had many cases of Mediterranean fever. The highest figures for sick troops occurred, as usual, among young men at the ages of from twenty to twenty-five years. There were 3 cases of small-pox, 1 of scarlet fever, and 6 of diphtheria. 520 cases were returned as "simple continued fever," a term covering many cases of Mediterranean fever and perhaps a few of mild enteric fever. Of the 30 cases of enteric fever 8 patients died; this very high ratio is probably due to the fact that many of the men do not report themselves sick until the disease is far advanced. In 1896 there were 50 cases returned as "enteric" and 10 deaths. It is almost impossible to decide for certain where the soldier gets his typhoid fever, but everyone agrees that it is generally out of barracks. However, the principal medical officer draws attention to the fact that 4 cases occurred among the Royal Engineers all quartered in one portion of the barracks and all admitted to hospital within a period of four days. This certainly seems suggestive of some temporary contamination of the local drinking-supply. Nearly all the cases of enteric fever during the twelve months occurred in men who had been less than one year in Egypt. The enteric fever cases included 2 officers, 1 child, and 1 sergeant's wife. There were 66 cases of dysentery but only 2 deaths. Four officers died and 7 were invalided. The women furnished 266 admissions (51 being normal confinements) and 5 deaths out of an average strength of 216. The children's figures were: average strength, 375; admissions, 618; and deaths, 26, of which 12 were entered as due to dentition or diarrhœa.

The Nile Expedition, 1898.

I have been favoured with copies of the printed advice as regards sanitation issued to all commanding officers and medical officers of the force. The latter were all furnished in addition with "Notes on Medical Services in War" by Colonel Macnamara, R.A.M.C. Special advice is given about drinking water and the advantages of the Pasteur filter, one of which was provided for each unit, were very clearly recognised. Colonels were reminded that a good deal can be done towards training men to abstain from drinking or to drink only small quantities while actually on the march. It is well known that the tyro from sheer nervousness empties his water-bottle in the desert within the first hour of leaving the Nile bank. The hints as regards personal cleanliness include special counsel with regard to care of the eyes. Instructions are given to disinfect beds, stretchers, and railway-carriages which have been fouled by cases of dysentery or enteric fever. Lord Wolseley is quoted as writing that during a campaign provision should be made for twice the ordinary sick-rate of soldiers in the country. This would be about 8 per cent., and to this must be added 6 per cent. of wounded after a severe action. Every medical officer is recommended to have for use in action a strong clasp-knife, morphia solution for hypodermic injection, tabloids of various medicines, antiseptic dressings, and brandy. His orderly should carry more brandy, milk, and beef-tea.

The Quarantine Board.

Dr. Armand Ruffer will leave Alexandria to-morrow to join Professor Fraser of Edinburgh and Professor Wright of Netley as the third member of the Plague Commission. He was specially applied for by the Indian Government a month ago, but it seemed at first impossible to spare him because there was no one on the Quarantine Board qualified to act as president during his absence of six months. Eventually the difficulty was overcome by Dr. Ruffer resigning and by Captain Garner, R.A.M.C., being lent for the time being by the Sanitary Department. When the Commission has finished its labours Captain Garner will resign and Dr. Ruffer will be re-elected.

The Cigarette Trade.

In the early days of the British occupation about 80,000,000 cigarettes were exported from Egypt every week, but now this number is more than doubled. About 65 per cent. are despatched to British possessions, 30 per cent. to Germany, and the remainder to various countries. The great number sent to Germany is due to the fact that German custom-house rules are much less stringent than are custom-house regulations in England. Therefore manufacturers here send their goods to America and elsewhere by preference through agents in Germany instead of sending the cigarettes to London.

Cairo, Nov. 14th.

Obituary.

WILLIAM SMITH, M.R.C.S. ENG., J.P.

ON Nov. 21st, at the ripe age of eighty years, Mr. Smith passed quietly away after some months' illness due to prostatic and bladder troubles. Sixty years ago Mr. Smith went to Redditch as assistant to the late Dr. Pratt, and after the death of that gentleman some five years later he succeeded to the practice. Mr. Smith obtained the Licence of the Society of Apothecaries of London in 1840, and became a Member of the Royal College of Surgeons of England in 1841. Of active and energetic habits, he soon identified himself with the progress of the place, and when the volunteer company was started he became the honorary surgeon to the corps. In all local public improvements he was a prominent factor, bringing to bear clear judgment and sound common-sense into the undertakings with which he was connected. In 1862, when Redditch was made the centre of a petty sessional division, he was the first magistrate appointed, the duties of which office he fulfilled with exemplary diligence up to within the past few months. A colour in political life being almost necessary amid so much public work, Mr. Smith always avowed himself as a Liberal, though not taking a very active part in demonstrations of this kind. Genial in manner, kind-hearted and sympathetic to his patients, Mr. Smith spent an honourable and useful life among the many who esteemed his virtues and valued his friendship. He leaves a name and a personality which will be long regarded with affection and happy memory.

WALTER EDWARD HACON, M.R.C.S. ENG., L.R.C.P. LOND.

MR. WALTER EDWARD HACON of Christchurch, New Zealand, died suddenly on Sept. 20th, at the age of forty-seven years. He was unwell on Sept. 19th, but no anxiety

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was felt until the following day, when Dr. Mickle, Dr. Stewart, and Dr. Anderson were called in, but unfortunately nothing could be done to avert the fatal issue. Mr. Hacon, himself the son of a medical man, studied medicine at Guy's Hospital and became qualified in 1872 as M.R.C.S. Eng. and L.R.C.P. Lond., after which he held an appointment at Warwick Asylum. Arriving in New Zealand in 1879 he acted as surgeon to the armed constabulary on the west coast of the North Island for one year, and was then appointed resident medical officer in charge of the Sunnyside Asylum, which office he held until 1887, when he took up private practice in Christchurch. While at the asylum he distributed throughout New Zealand a large quantity of vaccine lymph obtained from calves inoculated by himself. Mr. Hacon was the founder of the Canterbury Branch of the St. John Ambulance Association and was also a member of the Christchurch Savage Club. He has left a widow and three young children, for whom much sympathy is felt.

DEATH OF AN EMINENT FOREIGN MEDICAL MAN.—The death is announced of Dr. Konstantine P. Delijiannis, Professor of Pathology in the University of Athens. He studied in Vienna, Würzburg, Berlin, and Paris, where he worked under Pasteur. After his return to his native country he was appointed Extraordinary Professor, and he established a special laboratory in Athens, and in 1882, when an epidemic of enteric fever broke out, he was able to trace its origin to the water-supply, in which he discovered typhoid bacilli. He was delegated to attend various medical congresses in Germany, Belgium, and France, and was a frequent contributor to Greek medical literature on pathological topics. Shortly before his death, too, he published a paper in French on Diseases of the Blood. Besides his medical work he took an active part in promoting general education amongst his countrymen. The cause of his lamented death is said to have been septicæmia.

DIPHTHERIA IN LONDON. — The amount of diphtheria in the county of London in the four weeks ended Nov. 5th shows an increase over that in the same period ended on Oct. 8th. In the like period ended Sept. 10th only 699 notifications came to hand, in the succeeding period the total reached 1039, or 260 as a weekly average, and in the four weeks to Nov. 5th there were recorded 1087 notifications, or 272 as a weekly average. In the October period 2 sanitary districts escaped attack, as against 1 in the November period, but while in the earlier period 5 districts had each 50 attacks or more, with an aggregate of 346, there were 7 such districts in the later period, with an aggregate of 507 attacks. But as a set off against this latter figure other 7 invaded areas had only 10 cases in all. In the earlier four weeks the registered deaths were 125 or 31 weekly, with a minimum of 29 and a maximum of 34; whereas during the later period the total was 145, or 36 weekly, 30 being the minimum and 46 the maximum. The case mortality of 12·0 per cent. in the October period was succeeded by a rate of 13·3 per cent. In the Outer Circle the aggregate of 50 registered deaths gave place to 51 in the respective periods.

THE NATIONAL DENTAL HOSPITAL AND COLLEGE.—The annual dinner of the staff and students took place at the Holborn Restaurant on Nov. 18th, Professor Francis Gotch, F.R.S., occupying the chair, and there was a large attendance of past and present students. Amongst the visitors were Mr. C. S. Tomes, F.R.S., Mr. J. Smith Turner, Mr. Raymond Johnson, Dr. Pasteur, Dr. Dudley Buxton, Dr. H. R. Spencer and Professor J. Rose Bradford, F.R.S. The chairman, in proposing the toast of "The Hospital and School," criticised the modern methods of examinations and claimed that at all events the teachers should be represented on the Examining Boards. In respect of the dental curriculum he thought that some of the general anatomy and physiology now required might well give place to some pathology and bacteriology. From his former experience as Dean of the Medical Faculty at Liverpool he was able to speak in high terms of the good qualities of the modern dental student and he thought that an effort should be made to secure a degree in dental surgery at the new University of London. Amongst other items in an excellent programme a song by Mr. Alfred Smith with violin *obbligato* by Mr. E. W. Roughton and the recitations by Mr. Frank Braine, were much appreciated.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THE programme of the General Medical Council has seldom been loaded with more numerous or weighty questions than on the present occasion. We enumerated a few of these last week, but hardly any of them have been discussed as yet. The Council is deeply engaged in the consideration of penal cases. Several applications for restoration to the Register have been disposed of. Unless care is taken to save time there is a prospect of a somewhat prolonged session.

The address of the President shows that he does not allow the distance between Edinburgh and London to interfere with his attention to the duties of his high office. The account of his communications with the Lord President of the Privy Council as to the practicability of obtaining an amendment of the Medical Act such as would prevent "de registered" persons from flaunting all their titles and practising as though nothing had happened and of his communication with the Home Office on the subject of informal death certification is satisfactory. The answers of the Lord President on the former subject are significant and should be well considered by those who talk glibly about amendments of the Medical Act as though we had only to wish for them to have them accomplished.

The first letter of Sir Charles Lennox Peel, the clerk to the Privy Council, on this subject was published in the minutes of the Executive Committee on July 12th. In this he says he is desired by the Lord President to say that he cannot hold out any hope of legislation being undertaken to effect an amendment of one provision of the Act of 1858, even if the degree-giving bodies had expressed a desire for the amendment, which, added the Duke of Devonshire, "does not appear to be the case." His Grace appears to think that the degree-giving bodies are not anxious for an increase of their powers of dealing with graduates who discredit their profession and their university. But there has lately been a great development of feeling on the part of the universities on this subject and there is little doubt that Sir William Turner will be able to correct this impression. Sir William Turner is an important representative of the Scottish universities and of one in particular which was the latest to see the necessity for such additional powers of discipline as are asked for by the General Medical Council. Happily now there is reason to believe that all the universities are of the same mind in wishing for amendment, and at the Executive Committee on Monday last Sir William Turner was requested to get from them and from other qualifying bodies also an expression of their wishes on the subject. We shall be disappointed if the result of Sir William Turner's inquiries is not to evoke such a reply as to leave the Lord President in no doubt that in promoting the amendment sought for by the General Medical Council he would be complying with the views of the universities and corporations alike. It is not conceivable that the universities which now vie with the corporations in qualifying men for the medical profession would be permanently opposed to such a reasonable change in the law, one which will tend to secure in the public interest a high standard of professional conduct.

Remarkable testimony to the stringency of the examinations of the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons

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of England was forthcoming during Tuesday's sitting. From certain tables supplied by the Medical Department of the Royal Navy (which still require verification), by the Director-General of the Army Medical Service, and by the Under Secretary of State for India, it appeared that, whereas there had been a very high percentage of rejections among candidates for commissions in the services holding the degrees of the Universities of Edinburgh, Aberdeen, Glasgow and Dublin, the diplomas of the Irish and Scottish Conjoint Boards, and the Licence of the Society of Apothecaries of London, out of 39 candidates holding the diploma of the English Conjoint Board 32 had obtained commissions by competitive examination. The success of the English students impelled Dr. McVail to propose that the Examination Committee of the Council should be asked to report upon the tables—a motion which, in our opinion, was rightly rejected, for it reflected unjustly upon the examiners for the commissions in the services and at the same time sought an explanation where no explanation is needed. The examinations of the English Conjoint Board are very thorough and the men who hold their diplomas are—everyone knows it—as highly educated as the graduates of many universities and in some directions more practically equipped. Dr. McVail by his motion called marked attention to the unfair position in which, as yet, the London student is placed in being unable to obtain an M.D. degree at the conclusion of studies severe enough to procure him the distinction elsewhere.

Most of the short sitting of Tuesday afternoon was occupied in discussing Mr. Horsley's resolutions asking for the production of all documents in relation to certain cases in which unregistered persons had been prosecuted by the Council, and a similar resolution of Mr. Brown in regard to the case of the late Mr. H. Kingsley Hunter. The Council by large majorities and with little dissent passed resolutions showing that it has no real objection to the inspection of such documents under conditions securing their preservation in such order as may make them available for easy reference. The members of the Council will thus have the opportunity of seeing documents which cannot but be instructive. It is to be hoped that they will share with Mr. Horsley the study of them. There are too many proofs that either the system of conducting prosecutions at present adopted is faulty or that the law is inefficient. If this latter supposition be the correct one the occasion is good and the time is ripe for asking the Government for amendments despite the views of the Privy Council. Within the last few weeks a prosecution against an unregistered person has ignominiously failed in Scotland before the High Court of Justiciary, more, as we read the deliverances of the judges, from faulty presentation of the case than from any merits in the defendant. If the inspection of documents will throw light on such failures it will confer a very great service on the public and the medical profession.

On Wednesday the Council sat much of the day *in camerâ*, while on Thursday they commenced the investigation of the penal cases.

In connexion with the meeting of the General Medical Council we are glad to be able to state—and the members of the Council as well as other members of our profession will be pleased to hear—that the health of Mr. W. J. C. Miller B.A., who was for so many years registrar of that body, is very satisfactory. Writing to a friend he states that what he now suffers chiefly from is a great difficulty with his handwriting and slight weakness in walking. It will be remembered that Mr. Miller was obliged to resign the duties which he had so long and so faithfully and ably discharged owing to a sudden breakdown in his health. He would like his old friends to know that he now lives with his sister in a very pleasant house; he is often heard to say that the lines have fallen unto him in pleasant places.

TUESDAY, NOV. 22ND.

The session of the General Council of Medical Education and Registration was opened to-day in the offices of the Council, Oxford-street, London. Sir WILLIAM TURNER, President of the Council, occupied the chair and there was a full attendance of members.

The President's Address.

The PRESIDENT, in accordance with custom, opened the proceedings with an address. He said:—

"It is not my intention to trespass on your time and attention by the delivery of a lengthy address. It may, however, be useful to refer to some of the subjects to which the Council will require to give consideration during the present session. In the first place I may call to your recollection that during the session held in May I, as your President, was asked to put myself into communication with some of the Government departments regarding questions in which the Council and the medical profession are greatly interested. The disciplinary powers exercised by the Council and the licensing bodies have frequently been under the consideration of the Council and the Executive Committee, and at the May meeting of Council I was requested to communicate with the Lord President of the Privy Council as to the practicability of obtaining such an amendment of the law as would effectually prevent the holder of a medical diploma or degree from using the title thereof after his name had been erased from the Medical Register under Section 29 of the Medical Act, 1858, and for so long as the erasure continued in force. The Council will find in the minutes of the Executive Committee, July 12th, 1898, a print of the letter which I wrote to the President and of his reply. Subsequent to this correspondence I was requested by the Executive Committee to ask an interview with the Clerk of the Privy Council with reference to this matter. As I thought that it would facilitate the consideration of the subject if I could place in the hands of the Privy Council some definite proposal as to the direction which legislation should take I requested Mr. Muir Mackenzie to draft clauses which might be embodied in a Bill. This was accordingly done and at an interview with Mr. Almeric Fitzroy, who has succeeded Sir Charles Lennox Peel in the office of Clerk to the Privy Council, I explained the purport of these clauses and left a copy with him. The subject will, I was assured, receive due consideration. I was given to understand that as a preliminary step it will be necessary to ascertain if the universities would offer no opposition to the Medical Act, 1858, being amended, so that if a graduate in medicine had his name erased from the Medical Register, under Section 29 of this Act, his right to use the title or titles obtained from his university should be suspended so long as the erasure remained in force. At the meeting of the Executive Committee yesterday I was requested to continue in communication with the Privy Council and also to ascertain the opinion of the medical licensing authorities on the question of suspension of the right to use a title or titles so long as the erasure of a name and title remains in force. The subject of death certification and the amendment of the law regarding it has frequently been before the Council, and a strong opinion has been expressed that the law required alteration, so that the irregularities, which now only too frequently occur, should be in the future no longer possible. At the request of the Executive Committee I put myself into communication with the Home Department on this subject, and requested Dr. Church to accompany me to an interview with the Permanent Under-Secretary. The whole question was discussed at our meeting at considerable length, and the evils which exist were fully recognised by the Under-Secretary. We were assured that the matter had been for some time under consideration, with a view to an amendment of the law, and that a communication would be made by the Home Office to the Local Government Board on the subject. In the month of May the Council appointed a committee,

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consisting of Mr. Tomes, Mr. Horsley, and myself, to take steps to induce the Government to insert a clause in the Companies' Act Amendment Bill with the object of preventing the registration of companies to carry on medical, surgical, and dental practices. A meeting of the committee, at which Mr. Muir Mackenzie was present, was held early in October, when a discussion took place as to the best means to carry out the instruction of the Council. It was arranged that clauses should be drafted by Mr. Muir Mackenzie and placed in the hands of the Lord Chancellor. This has accordingly been done. It is due to Mr. Tomes to state that he has taken an active and important part in bringing the whole of this question before the notice of the Lord Chancellor. In connexion with the resolution of the Council, which remitted to the Executive Committee to take steps to secure that the Medical Council shall receive due recognition and representation in national functions and ceremonies, a sub-committee, consisting of Sir Dyce Duckworth, Mr. Carter, and myself, was appointed to obtain the necessary information. So far as our inquiries have gone we have not received much encouragement and we have been told that, as regards recognition and representation in national functions and ceremonies, no corporate body has any vested right of participation. In any public ceremony the director of the function considers applications to participate, and grants them as far as he is able, or he may issue invitations at his own discretion, but there are no rights or privileges in relation to the matter. At our meeting in May a committee, consisting of Sir Richard Thorne, Dr. Glover, Dr. MacAlister, and Sir Christopher Nixon, was appointed to confer with delegates from the committee which had framed the Midwives' Bill and to report to the Council. The conference was held on June 25th, 1898, and the report of the proceedings has been circulated amongst the members of the Council. I thought it advisable to authorise its circulation so that members should have ample time to read and consider what took place at the conference before the Council enters on the consideration of the report which our committee is to present on the subject. The Council will, I am sure, hear with much satisfaction that of the first impression of 20,000 copies of the British Pharmacopœia issued in the spring of the year all the copies have been sold. After consultation with Dr. Leech, chairman of the Pharmacopœia Committee, in the month of October 1500 additional copies were ordered to be printed to meet immediate necessities, and of these 500 have been sold. Dr. Leech and his committee will, I have no doubt, during the present session advise us as to the future. The Executive Committee will submit for your consideration a revision of the memorandum on reciprocity of medical practice in relation to foreign countries so far as it affects the question of the conditions under which foreign medical practitioners are allowed to practise medicine in the United Kingdom. The treasurers will present a report on the proposed alterations on our building and another on a proposed sinking fund to meet the charge for the alterations which have been made on our property. You will also have to take into consideration, on a report from the Examination Committee, the inspector's report on the examinations of the Apothecaries' Hall of Dublin held during the spring and summer. In this connexion I have to state that, owing to Dr. Sidney Coupland having accepted the appointment of a Commissioner in Lunacy, he has found it necessary to resign his position as our inspector. Whilst congratulating Dr. Coupland on his appointment to the responsible office for which he has been selected the Council will, I am sure, join with me in expressing regret that we are no longer to have the benefit of his valuable services. In conclusion, I have to state that, under the instructions of the Penal Cases Committee, several charges made against registered practitioners will have to be investigated. The Council will, I feel sure, give to these cases the thoughtful care and attention which are essential when questions affecting the character and conduct of members of our profession are being inquired into."

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, the Council thanked the President for his address and requested him to allow it to be printed in the minutes.

Examinations for the Services.

The first business on the programme was to receive three tables, one showing the results of the competition held on Oct. 31st for commissions in the Medical Department of the Royal Navy; the second showing the results of a competition held in August for commissions in the Royal Army Medical Corps; and the third showing the results of a competition held in August for commissions in the Indian Medical Service.

Mr. ALLEN (Registrar) said he must ask that the first table, that referring to the Navy, be withdrawn because some of the figures in it would require to be verified.

On the motion of Dr. P. HERON WATSON, seconded by Sir RICHARD THORNE, the Council received the second and third tables and thanked for them respectively the Director-General and the Under Secretary of State for India.

Dr. MCVAIL said he wished to call attention to a somewhat extraordinary state of things disclosed by the tables. Taking the three tables he found that there were 39 candidates from the English Conjoint Board and all got commissions excepting 7. From the Irish Conjoint Board there were 7 candidates and 4 got commissions; from the Scottish Conjoint Board 5 candidates and only 2 got commissions; from the University of Edinburgh, 13 candidates and 6 commissions; from the University of Glasgow, 4 candidates and 3 commissions; from the University of Aberdeen, 3 candidates and 3 commissions; from the University of Dublin, 5 candidates and 2 commissions; and from the Apothecaries' Society of London, 4 candidates and 2 commissions. Though the others were fairly comparable there was an extraordinary difference between them all and the Conjoint Board in England. The matter was a serious one and he moved that the tables be remitted to the Examination Committee for report.

Mr. BROWN, seconding the motion, said that this apparently wholesale rejection of candidates should be inquired into.

Sir DYCE DUCKWORTH said that Dr. McVail should indicate in his motion what it was that he desired the Examination Committee to inquire into. For eight years he had been an examiner in medicine for the navy and therefore he could speak with some authority so far as the navy examinations were concerned, though he might explain that he was no longer an examiner. In examining a candidate for the navy the examiners knew nothing about the man; he was a mere number to them. They did not know what school he had studied at and the marks were given simply according to the merit displayed in the examination. There was no bias whatever, and indeed he could not conceive a better or more impartial examination. He had no doubt that the same held good with regard to the other services.

Mr. TEALE submitted that the question of the fairness of these examinations lay entirely outside the functions of that Council.

Mr. CARTER said that information as to the particular grinder with whom the candidate had worked would be more useful and to the point than information as to the school from which he had got his diploma.

On a show of hands being invited 11 were held up in favour of the motion and an equal number against it.

The PRESIDENT said it was evident that a considerable number of the members had not taken part in the vote. He had taken occasion before to point out the difficulty of the position when a considerable number of the members present refrained from voting and he would point it out again.

Dr. MCVAIL claimed that the names and numbers be recorded.

Sir RICHARD THORNE asked as a point of order whether members who had refrained from holding up their hands were entitled to vote now when the names and numbers were recorded.

The PRESIDENT said he had noticed on former occasions that members who had not held up their hands responded when the names were taken and there was no Standing Order against such proceeding. It was a question, however, which might very well be considered.

Dr. MACALISTER submitted that the show of hands was not the formal vote.

After some further discussion had taken place the members of the Council expressed a desire to have a ruling from the chair on the point, whereupon the PRESIDENT ruled that when the names were called it was open to members who had not raised their hands to respond and thus record their votes.

The roll being called 13 members voted against the motion, 11 for it, and 5 declined to vote. The motion was accordingly lost.

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The Employment of Unqualified Assistants.

A number of communications on this subject were (in accordance with the recommendation of the Executive Committee) referred for consideration and report during the present session to a committee consisting of Dr. Church, Dr. MacAlister, Dr. Bruce, Mr. Bryant, Mr. Brown, and Mr. Teale, the last-mentioned to be chairman.

The Inspection of Documents.

Mr. HORSLEY asked the leave of the Council to consider next in order all notices of motion on the programme relating to the inspection of documents.

Dr. MACALISTER submitted that the notices standing in the name of Mr. Horsley did not comply with the new Standing Order with reference to the inspection of documents in as much as the notices did not specify the purpose for which the inspection was to be made.

Mr. HORSLEY said Dr. MacAlister surely did not suggest that he should put down on the public programme the purpose for which he desired to see the documents.

Dr. GLOVER suggested that Mr. Horsley might give the Council his reasons *in camerâ*.

Mr. HORSLEY said he would have no objection to that course, but as to the notices being in order he had taken legal advice on the subject and he submitted that they were strictly in order.

After some further discussion leave was given to Mr. Horsley as desired.

The first notice of motion stood in the name of Mr. Brown and was to this effect:—

That all minutes, papers, and documents relating to the recent prosecution of the late Mr. H. Kingsley Hunter, Licentiate of the Society of Apothecaries of London, be presented to the Council —

and Mr. BROWN moved accordingly.

Dr. MACALISTER said that there was an appeal pending in this case and that in consequence many of the documents could not be produced, certainly could not be printed, as the motion suggested.

Mr. HORSLEY admitted that there might be a difficulty about printing, but there was no difficulty in the way of a confidential inspection by the members of the Council.

Sir RICHARD THORNE urged Mr. Brown to withdraw his motion on the ground that many of the documents were in other hands.

Mr. BROWN said that wherever the documents might be at the present moment the whole case would have to be gone into very thoroughly because the profession took the very deepest interest in it. He appealed to the Council to give to him and others interested in the matter an opportunity of informing themselves as to all the facts of the case. If the documents could not be printed, then he asked an opportunity for their confidential inspection.

Mr. HORSLEY, seconding Mr. Brown's motion, said with regard to the documents not in the possession of the Council that they were in the hands of the servants of the Council and could be brought here without the slightest inconvenience. He was not aware that the appeal case was even in the list. At the present moment certain of the members of the Council knew all the facts and he saw no reason why they should be in this exceptional position. With all respect he claimed for himself the same privileges as the committee in this matter.

Dr. ATTHILL thought that in view of the appeal case it would not be wise to produce the documents.

Dr. GLOVER said that in his opinion Mr. Horsley was perfectly within his rights in making the claim he did and he supported the motion. Every member of the Council was entitled, he held, to see the material upon which the Penal Committee had acted in the case.

Sir JOHN BATTY TUKE said he felt quite clear on the point that any member of the Council was entitled to see the documents.

Mr. TOMES contended that as the Council and not the Committee was the party to the action no obstacle should be thrown in the way of any member of the Council seeing the documents.

The Council then agreed to the motion in the form that all minutes, papers, and documents, &c., "be produced to the Council," the motion being agreed to by a very large majority.

Mr. HORSLEY moved:—

That all documents in relation to the case of an unregistered person named Hamilton be produced for inspection by members of the Council.

He said that this person had been prosecuted unsuccessfully by the Council and he intended to move a resolution with reference to the case.

Sir CHRISTOPHER NIXON seconded.

The proposal was agreed to.

Mr. HORSLEY next moved:—

That all documents in relation to the case of an unregistered person named Steel be produced for inspection by members of the Council.

Steel, he said, had been successfully prosecuted by the Council, but he wished to raise the question of his conduct since his conviction. He could not do so without seeing the documents in the case.

Mr. BROWN seconded and the motion was also agreed to.

Mr. HORSLEY further moved:—

That all documents in relation to the case of an unregistered person named Allinson be produced for inspection by members of the Council.

He stated that this case was parallel with that of Steel.

Sir CHRISTOPHER NIXON, in seconding, said he would be prepared to second a motion in similar terms from whatever member of Council it came. He had the strongest possible feeling that all the documents belonging to the Council should be open to the individual members of the Council. There should be a Standing Order to the effect.

The motion was agreed to.

The PRESIDENT pointed out that after the adoption of the four resolutions just passed it was essential to arrange that the documents in question should be inspected under conditions such as to ensure the preservation of their privacy. There must be a room in which they could be exhibited, someone must be responsible for them, and hours at which they could be seen must be fixed.

Some conversation ensued, and this resulted in the determination that documents which members wanted to inspect might be seen in the store-room under the Council Chamber, that they might be seen at such times as suited the convenience of those members who wished to inspect them, and that if inspected before or after office hours the superintending clerk should be paid for overtime.

The Council adjourned.

WEDNESDAY, NOV. 23RD.

The Council met again to-day, Sir WILLIAM TURNER being in the chair.

The Case of Charles Alexander Ducket.

The Council proceeded with the consideration of the case of Charles Alexander Ducket, of 74, Brooksby's-walk, Homerton, registered as Mem. R. Coll. Surg. Eng. 1888, Lic. R. Coll. Phys. Lond. 1888, Lic. Soc. Apoth. Lond. 1888, of 12, St. George's-terrace, Great Yarmouth, who had been summoned to appear before the Council on the following charge as formulated by the Council's solicitor:—

That he, being a registered medical practitioner, caused and permitted an unqualified person named David Moses Roberts to attend and administer medical treatment to patients who required his (Ducket's) services, as if he had been a duly qualified practitioner, and in particular that he (Ducket) caused and permitted the said unqualified person to attend and administer medical treatment to a woman named Louisa White and to an infant named Hilda Helen Bailey in the circumstances stated in the evidence and in the verdicts of the coroner's juries taken and given at inquests held on the deaths of the said deceased. The complaint against him (Ducket) was that in the said matters he had been guilty of infamous conduct in a professional respect. The information and evidence consists of the depositions taken and verdicts given at the said inquests, which have been transmitted by the coroner to the General Medical Council.

Mr. DUCKET attended without legal assistance.

After Mr. MUIR MACKENZIE had read the depositions taken and the verdicts of the juries, Mr. Ducket was asked by the President whether he had anything to say to the Council by way of explanation.

Mr. DUCKET said he had to confess that in the two cases mentioned he had been negligent, and he could only plead that he was a little pressed with work on account of the absence of the principal, Mr. Evans. He denied, however, that he had any design to cover the unqualified assistant. It was Mr. Evans who employed him (Mr. Ducket), and while he was with him he was a very good master and he should not like to suggest that it was in any way at Mr. Evans's instigation that Mr. Roberts attended these cases.

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The PRESIDENT asked whether he understood Mr. Ducket to admit neglect of the patient in these two cases.

Mr. DUCKET said he admitted that there must have been neglect.

Sir RICHARD THORNE pointed out that there was nothing in the charge as formulated about negligence and asked whether it was competent and go beyond the charge.

Mr. MUIR MACKENZIE said that as long as his experience went back the practice had been ever to consider the neglect of patients, and neglect of patients certainly came within Section 29 of the Medical Act. The charge that was directed by the Penal Cases Committee to be formulated was that of causing and permitting an unqualified person to attend.

Mr. DUCKET, in reply to questions addressed to him by various members of the Council, said that he was assistant to Mr. Evans, and although he acted as substitute for him when he went away this made no difference in his position or salary. In Mr. Evans's absence Mr. Roberts was under his control in a general way and after the first case happened he warned him that he should call in a qualified man. He had no interest in the practice beyond his salary, and after these inquests he was discharged by Mr. Evans. He had no power to dismiss Mr. Roberts nor did he consider himself in any way responsible for what Mr. Roberts did. When he (Mr. Ducket) was engaged Mr. Evans told him that he already had an assistant, but in view of the action of the General Medical Council he required a qualified man and he would keep on the unqualified assistant as a dispenser and collector of rents. It was with this clear understanding that he engaged himself as assistant to Mr. Evans. Though he was on the best of terms with Mr. Evans while in his employment he had not seen him since he left it, nor had Mr. Evans volunteered to come forward and speak for him before this Council. He was quite aware that what he had done had damaged Mr. Evans's practice as it had certainly damaged his (Mr. Ducket's) reputation and he was extremely sorry for what had occurred.

After deliberating *in camerâ* for a time the Council decided that the charge had not been proved to their satisfaction.

Restoration to the Medical Register.

The Council decided to deal with a report in which the Executive Committee stated that they had considered petitions for the restoration of certain names to the Medical Register by medical practitioners whose names had been removed therefrom under Section 29 of the Medical Act, 1858.

The PRESIDENT said that as the report referred to persons who were not present it ought to be taken in private.

Members of the public who were in the hall thereupon withdrew. On their readmission, one hour and a quarter afterwards,

The PRESIDENT said: The Council have considered the report of the Executive Committee on the petitions for the restoration of names to the Medical Register by medical practitioners whose names have been removed therefrom under Section 29 of the Medical Act. As regards William John Patterson the Council decline to restore his name to the Register at present. As regards Robert Ingram Robertson the Council resolve to call the attention of Mr. Robertson to his statement that though unregistered his occupation has been that of a medical practitioner and they refuse his application. As regards Robert Alexander Douglas Lithgow, the Council resolve that his application be refused. As regards Herbert Tibbits the Council resolve that his application be refused. As regards Alfred Freeman the Council resolve that his application be adjourned and that the documents now before the Council be forwarded to the Royal College of Physicians of Edinburgh for its consideration.

Inspection of Documents.

Mr. HORSLEY obtained the leave of the Council to proceed with the two notices of motion which he had placed upon the business programme for the day. The first of the two was—

That all documents in relation to the case of Dr. Farrar be produced for inspection by members of the Council.

He explained that this related to a case of "covering" of great importance, for it contained a point that had not arisen in any previous case. His intention was to draw attention later in the session to the procedure of the Council in considering cases of "covering."

Asked if the case had been before the Council and if it had been adjudicated upon—

Mr. HORSLEY replied that no judgment had been given upon it as it had been withdrawn by the complainants, the Medical Defence Union. The record in the case appeared in the Council's minutes of 1895, pages 61 and 62.

Sir DYCE DUCKWORTH: This name is not on the Register.

Dr. MACALISTER: He is dead.

The PRESIDENT: If the man is dead what can you do with him?

Mr. HORSLEY: I have nothing to do with the case of "covering." It is known that the man is dead and that the unqualified assistant took a public-house shortly after the Council gave their decision. What I want the document for has relation to the extremely important point as to the way in which evidence is laid before us, because I have a distinct resolution relating to that point which I will give notice of at the proper time.

The PRESIDENT: This is a case which death has determined. What object is there in the question of how the evidence has been tendered in the case of a person who is gone past recovery?

Mr. HORSLEY: I have nothing to do with the case itself. I was simply asking for the documents, for I know as a matter of fact that certain evidence was brought before this Council in a certain way and it ought to form a test case in regard to our procedure in cases of "covering." The request for documents has nothing to do with the merits of the case.

Dr. MACALISTER suggested that as all the documents were printed at the time for private circulation it would be easy to provide a copy for inspection.

Sir RICHARD THORNE said he hoped they would pass the motion. When a member asked for documents he ought to get them without opposition. If the Standing Order on the subject passed last session came forward again he would not vote in the way he did then.

The motion was agreed to.

Mr. HORSLEY next moved:

That the lawyer's bill of costs for 1897 be produced for inspection by members of the Council.

Dr. MACALISTER suggested that this had no reference to penal cases.

Mr. HORSLEY said that it related entirely to the penal cases which he wished to cite to the Council. The bill of costs in question related to their legal procedure, especially in regard to "covering" cases. It fell under the notice which he had given to "draw attention to the procedure of the Penal Cases Committee in relation to certain complaints of 'covering' made to the Council."

Mr. BROWN seconded.

Dr. MACALISTER: There are two classes of documents, one relating to penal cases and the other not to penal cases, and this document does not seem to refer to penal cases.

Mr. HORSLEY rose to a point of order. He said that when Dr. MacAlister talked on this subject as he was doing he was calling in question his (Mr. Horsley's) honour. He had informed the Council that he required this document for penal cases in relation to the case which had just been referred to.

Dr. MACALISTER said that that was exactly what it was necessary to bring out.

Mr. HORSLEY retorted that that was exactly what he had brought out already and that it was so was the reason why he had risen to a point of order.

Sir JOHN BATTY TUKE considered that discussion of this kind was to be altogether deprecated because it was calculated to give the public outside an impression that there was something to hide, and there was not.

Sir DYCE DUCKWORTH said that he could not see that any objection could arise to a member of Council seeing bills of costs. His view, as one of the treasurers of the Council, was that it was quite open to any member of the Council to see any particular bills of costs which he might wish to see.

The motion was then agreed to.

Mr. HORSLEY thereupon moved:—

That all the documents relating to the penal cases referred by the Penal Cases Committee to the present session of the Council be produced for inspection by members of the Council.

He remarked that after what had fallen from Dr. MacAlister in connexion with the previous motion he declined to give any reason for making the present proposal.

Dr. MACALISTER said that what was now wanted were distinctly documents relating to penal cases.

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Mr. BROWN seconded the motion, which was agreed to without further comment.

Midwives' Registration.

On the motion of Dr. MACALISTER, seconded by Dr. BRUCE, a report from the Midwives Bill Conference Committee was received and entered on the minutes.

Tropical Diseases.

Dr. MACALISTER moved the insertion into the minutes of a communication on this subject. The programme showed that the letter in question had reference to the measures adopted by the Government, after requesting the opinions of the General Medical Council and the British medical schools. Its terms were as follows:—

Downing-street,
November 9th, 1898.

SIR,—1. In the fifth paragraph of the letter from this Department of the 11th of March last it was stated that Mr. Secretary Chamberlain, with a view to supplementing the instruction afforded by the medical schools, was endeavouring to make arrangements for giving to colonial medical officers special clinical instruction in tropical medicine such as is given at Netley and Haslar in the case of medical officers of the Army, Navy, and Indian Medical Services, and which, from lack of the necessary material, cannot invariably be given at the medical schools.

2. These arrangements have now been made. The Directors of the Seamen's Hospital at the Albert Docks, which offers exceptional opportunities for studying cases of tropical disease, are providing the necessary buildings and teachers for the accommodation and instruction of the medical officers who may hereafter be selected by the Foreign Office and the Colonial Office for appointments in the tropics. A substantial contribution towards the initial cost of the buildings is being made by the Government, and it is hoped that by the 1st of October, 1899, it will be possible to receive medical officers at the hospital for purposes of instruction.

3. It is proposed that, as is at present the case, candidates for medical appointments in the British colonial possessions shall be fully qualified before they can be put upon the Secretary of State's list, that from this list a certain number shall be selected annually to fill the vacancies which may occur in the Colonial Medical Service, that the selected candidates shall be trained for a period of at least two months at the Seamen's Hospital, and that they shall then be sent to the colonies or protectorates to which they have been allotted, where, when practicable, they will be attached in the first instance to the head quarters hospital for the purpose of gaining additional experience. In estimating the respective merits of candidates on the Secretary of State's list regard will be had to the fact whether or not they have already received instruction in tropical medicine.

4. Judging from the replies which have been received from the General Medical Council and the medical schools, Mr. Chamberlain believes that the above arrangements will prove acceptable.

5. Although the school at the Seamen's Hospital is designed for the training of medical officers for the Government service, doubtless there will be many other medical men, such as the medical officers of missionary societies and trading corporations and private practitioners, who propose to settle in tropical countries, who will be glad to avail themselves of the advantages which such a school can offer.

6. The colonies are being asked to make pecuniary contributions, to collect pathological material for use in the school, and to support the scheme in every possible way. So far, then, as this Department is concerned, no effort is being spared to make the school a success, and Mr. Chamberlain feels confident that the medical schools of this country will also do what is in their power to assist the development of an institution which is likely to be of general service and to benefit medical science not only by giving a stimulus to the investigation of tropical disease, but also by qualifying a body of men to become investigators.

7. Mr. Chamberlain is so impressed with the importance of this subject as affecting the administration and well-being of the tropical colonies that in addition to this scheme for providing a thoroughly efficient colonial medical staff, he wishes to encourage by every means in his power scientific inquiry into the causes of tropical diseases. Accordingly, he has already, after correspondence with the Royal Society, instituted a commission to study the subject of tropical malaria on the following lines.

8. The Royal Society has nominated two competent observers who have already proceeded to Italy for a short preliminary study and will afterwards go to some place in Africa, probably in the first instance to Blantyre, in the British Central Africa Protectorate, where it has been ascertained that there exist good opportunities for carrying out the purpose in view.

9. In addition the Secretary of State has nominated an experienced medical officer of the colonial service to aid in the investigation. This officer will, in the first place, proceed to India in order to study under Surgeon-Major Ronald Ross for about two months so as to make himself acquainted with the result of that gentleman's researches. He will then join the other two observers in Africa, where they will together pursue their studies, which will probably occupy about two years, and report from time to time to a committee in England nominated jointly by the Royal Society and the Secretary of State.

10. Mr. Chamberlain has been glad to learn from the replies which have been sent to the letter referred to above that arrangements already exist, or are about to be made, for giving special instruction in tropical medicine in upwards of twelve British medical schools, and he trusts that these schools, some of which (such as that of University College, Liverpool; University College, Bristol; and the University of Durham College of Medicine at Newcastle-on-Tyne), being situated in large seaports, possess exceptional facilities for the study of tropical disease, will keep in correspondence with the School of Tropical Medicine at the Seamen's Hospital with a view to mutual assistance and advice.

11. In conclusion, Mr. Chamberlain desires to express his thanks to the General Medical Council and the British medical schools for the warm interest which they have taken in this matter, and for the ready and cordial support which they have afforded him. He will welcome any suggestions which may be made in furtherance of the object in view.

I am, Sir, your obedient servant,
EDWARD WINGFIELD.

The President of the General Medical Council.

Sir DYCE DUCKWORTH, in seconding Dr. MacAlister's motion, pointed out that the Colonial Office letter did not commit the Council to anything.

Sir JOHN BATTY TUKE said that it contained an indication that Mr. Chamberlain would welcome any suggestions which might be made by the Council.

Dr. MACALISTER reminded members that anyone could propose a motion on the subject.

The letter was then ordered to be entered on the minutes.

The Council adjourned.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and having conformed to the by-laws and regulations have been admitted Members of the College:—

Acland, Hugh Thomas Dyke.
Adam, John Law.
Alexander, Kenneth Bush.
Ambrose, William Cole.
Balderston, Robert.
Bates, Thomas Wright.
Berry, Thomas Percival.
Berryman, Edmund Newton.
Blackburn, Vernon Kent.
Bonnet, Saint René.
Brown, James Warburton.
Burd, Cyril Pritchard.
Canman, David.
Carsberg, Alfred Ernest.
Chadborn, Charles Nugent.
Churton, John Gaitskell.
Clayton, Ernest Tomlinson.
Clogg, Herbert Sherwell.
Cogswell, Philip Dare.
Coltart, Guy Hemming.
Coltart, Henry Neville.
Colyer, Stanley William Randolph.
Cooper, Frank.
Crispin, Edward Smyth.
Dalgado, Patrick.
Darby, William Sydney.
Davies, David.
Eason, Herbert Lightfoot.
Eddison, Francis Ryalls.
Eichholz, Oreste.
Ereaut, Harold John.
Evans, John Rees.
Foss, Edwin Vincent.
Fox, Herewald Evelyn Croker.
Frankling, Herbert George.
Fuller, Laurence Otway.
Galloway, William Hearfield.
Gardiner, Alexander Stoker.
Glasier, Howard.
Glynn, Ernest Edward.
Harris, John.
Hart-Smith, Humphrey Morshead.
Heath, Francis Harold Rodier.
Henderson, John Hunter.
Hoban, Thomas.
Hollander, Bernard.
Hutchinson, Frederick Ernest.
Irvine, Guy Harle.
Jeffreys, Herbert Castelman.
Johnston, Joseph.
Jones, William James.
Jordan, Alfred Charles.
Keeling, George Sydney.
Lawson, Frank Howard.
Leaning, Robert Craske.
Letchworth, Thomas Wilfred.
MacCallan, Arthur Ferguson.
McGavin, Lawrie Hugh.
McKay, Robert.
McMullen, William Halliburton.
Marrack, George Comyns.
Martin, Francis John Hensley.
Martin-Leake, Arthur.
Maynard, George Darell.
Mayo, Thomas Alfred.
Milner, Norton.
Morris, Frank Mayo.
Morris, John Ignatius Vernon.
Murray, Richard Galway.
Nourse, Arthur William.
O'Neill, Thomas.
Osborde, Harry.
Owsley, George Chetwode.
Page, Algenon Fountain.
Parsons, Arthur Ruscombe Crane.
Payne, Robert Whitworth.
Peake, Arthur Edward.
Pennington, S. B. A. Cullen Carter.
Pierce, George Oliver.
Pollard, Sidney Pochin.
Powell, Cecil.
Powell, John Edward.
Pugh, Charles Grant.
Renshaw, Graham.
Rice, David.
Richardson, Walter Silverwood.
Rowland, Lewis Thomas Archibald.
Rowland, Penry William.
Ryder, Claude Clifford.
Sandison, James.
Saward, Arthur Henry Michael.
Scaping, Harold Massey.
Scholefield, Ernest Hall.
Sills, Clarence Ham.
Simpson, Adam Pearson Hope.
Simson, Colin Coape.
Simson, Harold.
Smith, Sidney Robert.
Smyth, Alexander.
Somerville, John.
Sprawson, Cuthbert Allan.
Spurgin, Percy Bertram.
Sumner, Fred William.
Symes, Ernest.
Tarbet, Peter Rowley.
Telling, Walter Henry Maxwell.
Thomas, Charles James.
Thorp, Harold.
Trotter, Edward.
Tucker, William Hancock.
Turner, James William.
Turton, Edward.
Underhill, Sydney V. Hercules.
Unwin, William Howard.
Urwin, John Johnson.
Vernon, Alexander Apfell.
Verley, Reginald Charles.
Walker, Arthur Nimmo.
Wilcox, Richard Loy.
Woodforde, Robert Edmond Heighes.

The following gentlemen passed the First Professional Examination for the diploma of Fellow:—

Monday, Nov. 14th:

Robert Ainslie Ross, Maurice Vincent Dee, M.R.C.S. Eng., L.R.C.P. Lond., M.B., C.M. Edin., Edinburgh University and King's College, London; Herbert Stanley French, B.A. Oxon., Oxford University; Henry T. Hadley Williams, M.R.C.S. Eng., L.R.C.P. Lond., M.D. Western University, Ontario, and Edinburgh University; Henry Rollinson Whitaker, St. Bartholomew's Hospital; William Wright, M.B., Ch.B. Vict., Owens College and Royal Infirmary, Manchester Stanley Copley, M.R.C.S.

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Eng., L.R.C.P. Lond., Guy's Hospital; Thomas Copeland Savage, University College, London; and Alec. Leslie Matthews, London Hospital.

Seven gentlemen were referred to their professional studies for six months.

Tuesday, Nov. 15th:

William Henry Clayton Green, B.A. Cantab., Cambridge University; Hugh Davies-Colley, B.A. Cantab., Cambridge University and Guy's Hospital; Evan Laming Evans, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Cambridge University, St. Bartholomew's Hospital, and King's College, London; Arthur Maurice Colloutt, M.B. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Cambridge University and St. Thomas's Hospital; Bertrand Seymour Jones, St. Thomas's Hospital; Henry Bennett Bailey, M.R.C.S. Eng., L.S.A. Lond., M.D. Brux., Guy's Hospital; Alwyne Compton Norman Maclaren, B.A. Cantab., St. Bartholomew's Hospital; Bernard Elwell Potter, M.R.C.S. Eng., L.R.C.P. Lond., Charing-cross Hospital; Arthur Hubert Brodribb, M.R.C.S. Eng., L.R.C.P. Lond., St. Mary's Hospital.

Six gentlemen were referred to their professional studies for six months.

Wednesday, Nov. 16th:

Shapurji Hormasji Modi, M.R.C.S. Eng., L.R.C.P. Lond., L.M. & S. Bombay, Grant Medical College, Bombay, St. Bartholomew's Hospital, and King's College, London; George I. Thompson Stewart, M.B., C.M. Aberd., Aberdeen University and St. Thomas's Hospital; John Atkins and Thomas Frederick Robinson, Guy's Hospital.

Twelve gentlemen were referred to their professional studies for six months.

Thursday, Nov. 17th:

John William Thomas Walker, M.R.C.S. Eng., L.R.C.P. Lond., M.B., C.M. Edin., Edinburgh University and Middlesex Hospital; Frank Everitt Murray, Cambridge University and St. Bartholomew's Hospital; Arthur Edmunds, King's College, London; Francis Dawson Blandy, Middlesex Hospital; Charles Ernest West, Oxford University and St. Bartholomew's Hospital; Lawrence Jones and William Francis H. Coke, St. George's Hospital; Michael Foster Reaney and Frank Challans, London Hospital.

Seven gentlemen were referred to their professional studies for six months.

Friday, Nov. 18th:

Edmund Henderson Hunt, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Thomas Waddelow Smith, M.R.C.S. Eng.; L.R.C.P. Lond., King's College, London; and Harold Walker, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital.

Five gentlemen were referred to their professional studies for six months.

UNIVERSITY OF LONDON.—At the B.Sc. Examination the following candidates were successful:—

First Division.—Charles Edmund Ashby (i., iii., iv.*), Owens College, Pharmaceutical Society and University Tutorial College; Frank B. Barrett (iii., iv., viii.), Mason University College; Albert William Bartlett (v., vi., viii.), Royal College of Science and private study; Alfred George Cracknell (i., ii., iii.), University Tutorial College; Henry Thomas Davidge (i., ii., iii.), Royal College of Science and private study; William Henry Eccles (i., ii., iii.), Royal College of Science; James Lewis Forbes (iii., iv., v.), University Tutorial College; William George Freeman (v., vii., viii.), Royal College of Science; William Henry Harwood-Yarred (iv., vi., vii.), St. Thomas's Hospital; R. W. H. T. Hudson (i., ii., iii.), St. John's College, Cambridge; W. Allan Picknett (ii., iii., viii.), Royal College of Science and Private study; Richard Thomas Robinson (i., ii., iii.), private study; Frank Shedden (iii., iv., viii.), Mason University College; and H. H. Swinnerton (v., vi., viii.), private study and Royal College of Science.

Second Division.—Sophia G. L. Adams (i., ii., v.), Royal Holloway College; Richard Appleton, B.A. (iv., viii., ix.), University Tutorial College and People's Palace; John Sydney Bailey (i., iii., vi.), University College, Sheffield; Anne E. A. Baker (iv., v., vii.), Bedford College, London; George William Baker (iv., v., viii.), private study; Frank Barlow (v., vi., ix.), Royal College of Science and private study; George Robert Barnard (i., ii., iii.), King's College and private study; S. E. Baynes-Smith (v., vi., vii.), University College, Sheffield; John Cardew Bedwell (iv., v., viii.), private study and University Tutorial College; Mary Bell (i., iii., iv.), Ladies' College, Cheltenham; Emily Mary Berridge (i., iii., v.), Royal Holloway College; Agnes G. D. Bigby (i., iii., v.), University College and University Tutorial College; Arthur William Bird (i., ii., iii.), private study and University College, Nottingham; Stuart Blofeld, B.A. (i., ii., iv.), University Tutorial College, Birkbeck Institute, and private study; Ernest Edward Brooks (i., iii., iv.), private study; Alfred Edwin Case (i., iii., iv.), Mason University College; Thomas John Cheater (iv., v., ix.), Finsbury Technical College and private study; Herbert Richard Chilton (i., iii., iv.), private study; Ernest Clark (i., iii., iv.), University College, Sheffield; John Alexander Clark (i., ii., ix.), and Ethel M. Conder (i., v., viii.), University College, Aberystwith; Arthur Samboll Cox (i., ii., iii.); Hartley College and Royal College of Science; Ernest Crosland (ii., iii., iv.), Royal College of Science and private study; Alexander N. Crosskey (ii., iv., viii.), private study and Carlyon College; Thomas Crossland (i., ii., iii.), Firth College and University College, Bristol; Robert Crosthwaite (i. iii., iv.), private study; L. A. E. De Zilwa (vi., vii., ix.), University College and private study; G. T. Dickin, B.A. (i., ii., iii.), Kingswood School and private study; Edwin Henry Dixon (i., iii., iv.), University College, Bristol; Ernest E. L. Dixon (v., vi., viii.), Royal College of Science; Charles Vickery Drysdale (i., ii., iii.), private study; H. B. Dutton, B.A. (iv., viii., ix.), Owens College and private study; Charles G. Fernie, B.A. (i., iii., iv.), University Tutorial College and private study; Margaret S. Freeman (i., ii., vi.), University College, Aberystwith; Felix Fritsch (v., vi., viii.), private study and University Tutorial College; Ernest Goulding (iii., iv., v.), Pharmaceutical Society and University Tutorial College; Edward Graham Guest (iv., viii., ix.), private study; Henry L. Heathcote (i., iii., iv.), Mason University College; Henry Arthur Hinton (v., viii., ix.), Royal College of Science, Birkbeck Institute, and private study; Francis William Hodges (iv., v., vi.), University Tutorial College; Fred Hodson (i., ii., iii.), University College; Sarah Ann Hunt (iv., viii., ix.), University College and private study; Alfred Edward Ikin (i., ii., ix.), private study; Albert Joseph James (i., ii., iv.), private study and tuition; Marguerite Jefferies (i., iv., viii.), Westfield and University Colleges; John Henry Leonard (v., vi., viii.), King's and University Colleges and private tuition and study; Louis Lownds (i., ii., iii.), University College, Nottingham; Thomas Luxton, B.A. (i., ii., iv.), private study; Hugh Main (iv., v., vi.), Birkbeck Institute and University Tutorial College; Edward Daniel Mason (i., iii., iv.), Mason University College; John Beurle Miles (v., viii., ix.), Carlyon College and Birkbeck Institute; Harold Moore (iii., iv., ix.), Middlesbrough High School and private study; Arthur Mort (iii., iv., viii.), Royal College of Science, Dublin, and Salford Tutorial Institute; Alexander Morton, B.A. (v., vi., viii.), Heriot Watt College, Edinburgh and private study; R. Mundy, B.A. (v., vi., viii.), Owens College; John H. Nightingale (iv., v., viii.), private study and University Tutorial College; Albert Ernest H. Pakes (iv., vii., ix.), Guy's Hospital, Carlyon College, and private study; James Parsons (iv., viii., ix.), University College, Bristol; Ernest Alfred Pinchin (iii., iv., vi.), private study and Birkbeck Institute; Peter Polding Platt (i., ii., iii.) and Percy Rawlinson (i., ii., iii.), private study; William C. Reynolds (iii., iv., viii.), Royal College of Science; Samuel S. Richardson (i., ii., iii.), Royal College of Science and private study; Winnifred M. Ross (v., vi., viii.), University Colleges, Aberystwith and Liverpool; Edward Russell (iii., iv., v.), private study and Birkbeck Institute; F. H. Shoosmith (iii., vii., ix.), University Tutorial and King's Colleges and private study; Cyril J. Silverston (iii., iv., viii.), Mason University College; Charles Simmonds (iii., iv., viii.), University Tutorial College and Birkbeck Institute; Robert Walter Sloley (i., ii., iii.), private study; Clarence Smith (i., iii., iv.), Royal College of Science and private study; Lilian B. Voss Snook (i., ii., iii.), University College, Bristol; Margaret Emma Taylor (i., ii., iv.), Bedford College, London; Albert Edward Thomas (iii., iv., v.), Merchant Venturers' Technical College and University College, Bristol, and private tuition; Frank Norman Tinkler (ii., iii., iv.), University College, Bangor, and Royal College of Science; Elinor A. N. Twigg (v., vi., viii.), Mason University College; Winifred Esther Walker (i., iii., v.), University College, Bristol; George Hardstaff West (i., iii., iv.), Mason College, Royal College of Science, and private tuition; Michael Edgar White (i., iii., iv.), University College, Aberystwith; William Morris Williams (i. ii., iii.), University College, Bangor; Ernest Witham, B.A. (i., iii., iv.). University College, Sheffield; and P. Malcolm Wright (i., iii., ix.), private study and University Tutorial College.

* The numerals in parenthesis indicate branches of the examination.

SOCIETY OF APOTHECARIES OF LONDON.—In November the following candidates have passed in the subjects indicated:—

Surgery.—W. H. I. Bathurst (Section I.), London Hospital; E. R. R. Cheesman, Charing Cross Hospital; E. L. D. Dewdney, King's College Hospital; E. E. Evans, Royal Free Hospital; J. B. Hall (Section I.), Leeds; J. Welsh, Dublin; and J. M. Wood, Middlesex Hospital.

Medicine.—H. J. De Saram, Middlesex Hospital; J. E. H. Scott, Leeds; T. J. Vick, Guy's Hospital; and A. F. Weston (Section II.), St. George's Hospital.

Forensic Medicine.—J. E. H. Scott, Leeds; and T. J. Vick, Guy's Hospital.

Midwifery.—G. H. Bedford, Guy's Hospital; R. F. Ellery, St. Bartholomew's Hospital; J. B. Hall, Leeds; P. O'Sullivan, Dublin; J. E. H. Scott, Leeds; and H. J. Watts, Manchester.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: Messrs. E. R. R. Cheesman, H. J. Watts, J. Welsh, and J. M. Wood.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berne:* Dr Wilhelm Zimmermann, prosector of the Anatomical Institute, has been appointed Extraordinary Professor of Anatomy. *Geneva:* Dr. de Marignac has been appointed to the chair of Gynæcology. *St. Petersburg (Military Medical Academy):* Professor A. Lebedeff has been appointed to the chair of Midwifery and Gynæcology in succession to the late Dr. K. Slavianski.

PRESENTATIONS TO MEDICAL MEN.—At the last of the course of ambulance lectures provided by the Surrey County Council Technical Education Committee given by Mr. Laurence Potts, M.R.C.S. Eng., of Leatherhead, on Nov. 10th, he was the recipient of an engraved silver cigarette case as a token of appreciation of his services. —On Nov. 12th, at the Wicker Congregational Lecture-hall, Burngreave-road, Sheffield, the Lord Mayor of the city presented certificates to the successful members of the Midland Railway Goods Department, Sheffield, Ambulance Class and afterwards presented Mr. John H. Brown, M.D. Edin., lecturer to the class, with an electro-plated flower-stand bearing this inscription, "Presented by the Midland Railway Ambulance Class to their lecturer, J. H.

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Brown, M.D., November, 1898."—In the Bath Hotel, Glasgow, on Nov. 18th, in the presence of a large meeting of friends, Mr. D. Campbell Black, M.D. Glasg., was presented with his portrait painted in oils. The Rev. Dr. Maclean, St. Columba Church, presided, and in presenting the portrait expressed the hope, on behalf of Dr. Black's many friends, that he might long be spared to adorn his profession and to continue his unselfish work in the community.

COLSTON DAY IN BRISTOL.—Colston Day was celebrated at Bristol in the usual manner on Nov. 14th, and the customary banquets took place in the evening, at which the collections for the various charities amounted to £4355, as against £3551 in 1897.

THE TALLERMAN TREATMENT AT BADEN.—The Tallerman apparatus has been placed in the Landesbath and has been visited there by the Grand Duke and his guests. It is not often that the Germans borrow an idea in practical therapeutics from the English; we therefore note the adoption of the Tallerman system at Baden with interest.

A CLERGYMAN ON SANITATION.—The Rev. D. Watcyn Morgan, vicar of Morriston, in the course of his sermon on Nov. 13th, is reported to have said that "diphtheria is now prevalent in our midst and many parents, made disconsolate by the deaths of their children, in their moments of despair have doubtless felt inclined to blame Providence. Do not blame Providence: blame the Swansea corporation, and blame yourselves for allowing the laws of sanitation to be ignored."

QUEEN'S FACULTY OF MEDICINE, MASON UNIVERSITY COLLEGE, BIRMINGHAM.—The annual dinner of the medical students (present and past) of this faculty was held at the Grand Hotel, Birmingham, on Nov. 10th, Mr. Frank Marsh presiding, Mr. Lucas and Mr. Leedham-Green being the Vice-presidents. Many past students and members of the hospital and college staffs were present, including Sir James Sawyer, Mr. Jordan Lloyd, Mr. Haslam, Mr. Eales, Dr. Foxwell, Mr. Gamgee, Mr. Morrison, Dr. Kauffman, Dr. Russell, Mr. Heaton, Dr. Thomas Wilson, and Captain Nott, I.M.S. Letters of apology were received from Sir Walter Foster, Dr. Windle (Dean), Dr. Heath (Principal of the College), Dr. Robert Saundby, Dr. Simon, Mr. Gilbert Barling, Dr. Chavasse, Dr. Carter, Mr. Bennett May, Mr. Priestley Smith, Dr. Douglas Stanley, and others. After proposing the toast of "The Queen," which was enthusiastically received, the President gave "The Students, Past and Present." He referred to the many men of distinction who acknowledged the Birmingham Medical School as their *alma mater*. It was with very great pleasure that he was able to welcome such a large number of present students to this dinner. Meetings of this kind helped to promote that *esprit de corps* and feeling of good-fellowship which was so essential in the medical profession. He referred with emphasis to the important part which athletics played in a man's career. He advised students to take their part in sports, adding that "a good athlete is a good student." He alluded to the active duties of a medical man on the battle-field, mentioning the recent Soudan campaign as evidence of the laborious and unceasing toil of medical men at the front. Sir James Sawyer responded to the toast on behalf of the past students, urging on qualified men the necessity of taking up a hobby of some description so as to give them relief and change from their professional duties. Mr. Satchwell Smith replied for the present students. Mr. Eales then proposed the toast of "The Medical School," congratulating the students on the excellent opportunities afforded them, and expressing the hope that some day all the hospitals in Birmingham would be amalgamated for the purpose of clinical study. Mr. Haslam (honorary secretary, Clinical Board) responded, remarking that in his opinion the Birmingham Medical School was second to none in the kingdom. Mr. C. Leedham-Green proposed the toast of "The Visitors," to which Mr. H. A. Pearson (coroner for South Staffordshire) responded in a humorous speech. Mr. Jordan Lloyd proposed the toast of "The Officers of the Dinner," mentioning the cordial relations which he was pleased to say existed between the teachers and those taught. Mr. Lucas and Mr. F. W. Bywater suitably responded. A short musical programme brought the proceedings to a close.

THE AUTUMN MEETING OF THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The autumn general meeting of the above Association, which now numbers 750 members, was held on Wednesday, Nov. 23rd, at the Café Monico, the President, Dr Mapother, being in the chair. There was a large attendance of members. A vote of thanks was given to Dr. Abraham for his admirable conduct of the business of the association as chairman of the Council during the three years just concluded and a similar compliment was paid to Mr. O'Callaghan for his services in promoting the success of the gatherings of the society during the last two years. A new rule was passed enabling the erasure of the name of any member from the roll whose name had been removed by the General Medical Council from the Medical Register. An addition was made to the list of officers of the association, on account of the increasing number of provincial members, in the person of a vice-president of the Council. The chairman of the Council announced that it was the intention of the Council to immediately consider the question of how far the association could further the movement on the part of the Universities of Ireland for obtaining powers to deprive of their degrees those who had committed any offence leading to a conviction in courts of law or deprivation of the right to have their names on the Medical Register. The members and their friends, to the number of 161 subsequently proceeded to dinner. Sir William Mac Cormac Bart., K.C.V.O., President of the Royal College of Surgeons of England, whose health was proposed in a highly laudatory speech by Dr. Mapother, gave some interesting details of his past professional life and said that much of his success was due to the support and encouragement which he had received from, first, his wife and, secondly, his medical brethren in London. A large number of ladies were present, including Lady Mac Cormac. The evening was enlivened by Irish songs rendered by Miss Gladys Grove, R.A.M., and Mrs. S. F. Freyer, Miss Maud Jaques being at the piano.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

AHRENS, H., L.S.A., has been appointed a House Surgeon for the Royal Ear Hospital, Soho-square, London, vice John Fallows, deceased.

BAILEY, T. R., M.D. Edin., has been appointed a Public Vaccinator for the No. 1 District at Bilston.

BEDDARD, WILLIAM OLIVER, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Hospital, Dover.

BOND, FRANCIS THOMAS, M.D. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Thornbury Guardians and District Council.

BRADBURNE, A. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a House Surgeon for the Teignmouth Hospital, vice E. P. Hasluck.

BROWN, HAYDN, L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer of Health for the Urban District Council of Buckhurst Hill.

BRUSHFIELD, ARCHIBALD N., M.R.C.S., L.R.C.P., has been appointed a Senior House Surgeon to the Macclesfield Infirmary.

BURTON, E. T., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Workhouse Infirmary, Birmingham.

CLARKE, F. A. H., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Beech Avenue Workhouse, parish of Nottingham.

GIBBON, A. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the St. Mary's District of the Bury St. Edmunds Incorporation.

GRANT, W. TORREY, M.B., C.M. Edin., has been appointed Delegate for Sweden and Norway to the Quarantine Board of Egypt.

GREENWOOD, A. C., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Burton Coggles Sanitary District of the Grantham Out-relief Union.

HEFFERNAN, H. H., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Wolston Sanitary District of the Rugby Union.

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HORROCKS, HERBERT, M.D., B.Sc. Lond., M.R.C.S., L.R.C.P., D.P.H., has been appointed Honorary Assistant Physician to the Public Hospital, Perth, West Australia.

KENDRICK, GEORGE, L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer and Public Vaccinator for the No. 2 Medical Relief District at Bilston.

MACKENZIE, JOHN W., M.B., Ch.B. Edin., has been appointed Assistant House Physician to the Cardiff Infirmary.

MCKINLAY, JOHN R., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Gordon-road Workhouse of the parish of St. Giles, Camberwell.

MORGAN, JOHN H., M.A. Oxon., F.R.C.S., has been appointed Examiner in Surgery for the University of Oxford.

PIRIE, W. R., M.B., C.M., A.M. Aberd., has been appointed Assistant Anæsthetist for the Royal Infirmary, Aberdeen.

PRICHARD, A. HEAWORD, M.R.C.S., L.R.C.P., has been appointed a House Surgeon to the Cancer Hospital, Brompton, S.W.

RATTRAY, P. W., M.B., C.M. Aberd., F.R.C.S. Eng., has been appointed a Medical Officer for the temporary Highgate Hill Workhouse.

ROBERTSON, WM., M.D. Glasg., D.P.H. Glasg., has been appointed a Factory Certifying Surgeon, vice P. A. Simpson.

ROWLEY, OSWALD F., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Beckett Hospital and Dispensary, Barnsley, vice Edward Jeffery, deceased.

SCOTT, CHARLES R., M.B. Edin., has been appointed Assistant Medical Officer to the Warneford Asylum, Oxford.

STANTON, T. W., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Osbournby Sanitary District of the Sleaford Union.

THOMSON, A., M.B., C.M. Edin., D.P.H. Camb., has been re-appointed a Medical Officer of Health by the Stratford-on-Avon Urban and Rural District Council.

VERNON, W., L.R.C.P. Edin., M.R.C.S., has been re-appointed a Medical Officer for the North Stoke Sanitary District of the Keysham Out-relief Union.

WILLETT, G. G. D., M.R.C.S., has been re-appointed a Medical Officer for the second and Kelston Sanitary Districts of the Keynsham Out-relief Union.

WILLIAMS, RALPH PAUL, M.B. Lond., has been appointed a House Surgeon to the Hospital for Sick Children, Great Ormond-street, London.

WYLLIE, JOHN, M.D., F.R.C.P. Edin., M.R.C.S., has been appointed *pro tem.* a Medical Officer for the Edinburgh Royal Infirmary during Professor T. R. Fraser's absence in India.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COLLEGE, LONDON, FOR WOMEN, York-place, Baker-street, W.—Professorship of Hygiene.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £50 per annum, with apartments and board.

BRISTOL CITY LUNATIC ASYLUM, Fishponds, Bristol.—Medical Assistant, unmarried. Salary £120 per annum, increasing by £10 a year to £150, with furnished apartments, board (except beer, &c.), and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-Inn-road, W.C.—Assistant Surgeon.

CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c. Salary rising £10 per annum up to £150.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

CROYDON UNION.—Resident Assistant Medical Superintendent and Dispenser at the Infirmary, Mayday-road, Croydon. Salary £100 per annum, increasing £10 annually to a maximum of £130, with furnished apartments, rations as per scale, and washing. Applications to the Clerk to the Guardians, Union Offices, Mayday-road, Thornton-heath.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Physician. Board, residence, &c., provided, and an honorarium of £25 will be granted on the completion of six months' approved service.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Board, residence, and washing provided.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence and maintenance.

LONDON LOCK HOSPITAL, Harrow-road, and 91, Dean-street, Soho.—Registrar. Applications to the Secretary, Harrow-road, W.

MASON UNIVERSITY COLLEGE, Birmingham.—Lecturer on Osteology and Chief Demonstrator of Anatomy.

PRESTWICH COUNTY ASYLUM, Manchester.—Assistant Medical Officer, unmarried. Salary £100, rising £25 yearly to £250, with board, lodging, and washing.

ROYAL BERKS HOSPITAL, Reading.—Assistant Medical Officer for six months. Board, lodging, and washing provided. An honorarium of ten guineas will be awarded conditionally.

ROYAL INFIRMARY, Hull.—House Surgeon, unmarried. Salary 100 guineas per annum, with board and furnished apartments.

ST. LUKE'S HOSPITAL, Old-street, London, E.C.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

ST. MARY'S HOSPITAL, Quay-street, Manchester.—House Surgeon and Resident Obstetric Assistant Surgeon for twelve months. Salary £100 per annum, with board and residence.

SALOP INFIRMARY.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum.

UNIVERSITY OF GLASGOW.—Five Examinerships in Medicine for three years each. Salaries £30 and £50 respectively.

WEST-END HOSPITAL FOR NERVOUS DISEASES, Welbeck-street, W.—Qualified Dispenser. Salary £120.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Honorary Physician Accoucheur, and for Diseases of Women.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon, for six months.

WREXHAM INFIRMARY AND DISPENSARY.—House Surgeon. Salary £80 per annum, with furnished rooms, board, gas, coal, and attendance

Births, Marriages, and Deaths.

BIRTHS.

EDGECOMBE.—On Nov. 14th, at 2, Royal Villas, Station Parade, Harrogate, the wife of Wilfrid Edgecombe, M.D. Lond., F.R.C.S. Eng., of a daughter.

GRINLING.—On Nov. 21st, at Dene House, Walker-on-Tyne, the wife of Frod. N. Grinling, M.R.C.S., L.R.C.P., of a daughter.

POPE.—On Nov. 18th, at 74, Mortimer-street, Cavendish-square, W., the wife of Percy Pope, of a daughter.

RYGATE.—On Nov. 16th, at Horwood House, Witham, Essex, the wife of H. B. Rygate, B.A., M.B., B.S., F.R.C.S., of a son.

STORRS.—On Nov. 21st, at Springfield, Chelmsford, the wife of Kennet S. Storrs, M.B., B.C. Cantab., of a daughter.

THOMSON.—On Nov. 14th, at Payton House, Stratford-on-Avon, the wife of Arthur Thomson, M.B., of a daughter.

DEATHS.

CHEETHAM.—On Nov. 18th, Charles Francis Cheetham, M.R.C.S., L.R.C.P., aged 33 years, second son of the late Charles Henry Cheetham, of York-place, Manchester.

MCKENDRICK.—On Nov. 18th, at Maxieburn, Stonehaven, Mary Souttar, wife of John Gray McKendrick, Professor of Physiology in the University of Glasgow.

MITCHELL.—On Nov. 19th, at Brookwood, Hollington, St. Leonards-on-Sea, Robert Nathaniel Mitchell, M.D., formerly of Brockley, S.E., aged 64 years. Friends will kindly accept this the only intimation.

SMITH.—On Nov. 21st, at his residence, Church Green House, Reddit William Smith, M.R.C.S., J.P., aged 81 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (28th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. P. Gould: A Consideration of the Value of Pressure in the Treatment of Wounds.

THURSDAY (1st).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchbourne-street, Edgware-road).—8.30 P.M. Dr. W. Ewart: Disease, its Treatment and the Profession of Medicine in 1899. (Harveian Lecture.)

FRIDAY (2nd).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Mr. F. G. P. Neison: Sick Insurance. (Course of Lectures on Medical Relief.)

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Mr. Cheatle, Mr. Wingrave, Mr. Lake, Dr. Bond, Dr. Spicer, Dr. Grant, Dr. Tilley, Dr. Hill, and others.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—8. P.M. Clinical Evening. Dr. F. H. Alderson: Recovery from Cirrhosis of the Liver.—Mr. S. Edwards: (1) Operation for Encysted Hernia; (2) Urinary Extravasation following Urethrotomy.—Mr. C. B. Keetley: Three Cases of Fractured Olecranon after Operation.—Mr. McA. Eccles: Cases of Swellings in the Parotid and Submaxillary Glands.—Dr. J. B. Ball: Rheumatoid Arthritis in a Boy.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Dr. A. E. Sansom: Some Practical Points in the Treatment of Heart Disease. (Purvis Oration.) Mr. T. Moore: Demonstration of Roentgen Rays. Exhibition of Microscopical Specimens, Surgical Instruments, &c. Conversazione.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (28th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. H. Tilley: Demonstration of Selected Cases (Ear, Throat and Nose).

TUESDAY (29th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-sq., W.C.).—3.30 P.M. Mr. Balance: A Case of Fifth Nerve Neuralgia treated by Operation.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. H. Campbell: Cases of Muscular Rigidity.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham; The Surgery of the Skin.—Bethlem Hospital, 2 P.M., Dr. Craig: Moral and Impulsive Insanities and Lunacy Law.

WEDNESDAY (30th).—HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Biss: Principles of Treatment of Pulmonary Tuberculosis.

LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Disinfection and Disinfectants.

THURSDAY (1st).—LONDON POST-GRADUATE COURSE.—Central London Sick Asylum Cleveland-st., W., 5.30 P.M., Mr. J. Cantlie: Splenic Enlargements.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Wallis: On Some Rectal Disorders. (Post-Graduate Class.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Colman: Demonstration of Selected Cases.

FRIDAY (2nd).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Tetanus, Rabies, and Cholera.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. A. Beddard: Clinical Examination of Urine.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

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AN UNSIGNED MANUSCRIPT.

"*On the Bacteriological Diagnosis of Diphtheria and the Desirability of providing Local Facilities for its use by the Profession Generally.*"—A manuscript bearing the above title is in our possession. It bears neither name of an author nor an address. Will the author kindly communicate with us?

A POINT OF ETIQUETTE.

A CORRESPONDENT writes as follows:—"A and B are medical men practising, in the same town. One of A's patients calls on him with an urgent request that he will see his wife. A is not at home and on his return finds a letter from the patient saying that as the case did not permit of delay he had called on A's partner, but not finding him at home had obtained the services of B, so that it would not be necessary for A to call at present. A writes to B thanking him for his courtesy in seeing the case. Previously, however, to receiving this letter B notifies A that the patient has called on him (B) asking him to attend his wife in future. A thereupon forwards to B the patient's explanatory letter and intimates that he considers B should decline further attendance. B replies that he has adopted this course. The patient then calls on A, apologising for

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having called in B, regretting A was not at home, and pleading the emergency of the case. In reply to A's query as to why B had continued attending when A was available he states it was at his request, as his wife was about to proceed to London in a couple of days and it did not appear necessary to 'change doctors.' On the following morning B meets A and informs him that on the previous evening the patient had called on him requesting him to continue attendance and suggests that it shall be left to the patient's option as to whom he will send for in future. A demurs to this proposal, urging that such will constitute the patient an arbiter in a matter of professional etiquette and again calls on B to retire from the case, maintaining that had either he or his partner been at home B would not have been sent for. B absolutely refuses to surrender the case and states that he intends to attend in future whenever summoned. A then writes to the patient pointing out his very inconsistent conduct and demanding an explanation, and receives a reply to the effect that he wishes B to attend in future. Under these circumstances, (1) was B justified in continuing attendance after the real facts of the case were notified to him by A? and (2) is he justified in continuing to act as medical attendant to the family?"

*** The routine dictated by professional etiquette and no less by good feeling is well known. When a practitioner is called to an urgent case usually attended by another medical man he must, when the emergency is provided for, resign the case. But seeing that the patient was only to be two more days under a medical man's care in this neighbourhood we can understand her husband's feeling in desiring that no change should be made in her medical adviser. It seems probable that matters could have been arranged in this way amicably if A, B, and the husband had conferred together. Is it too late for such a meeting? B ought not to attend the patient, but, judging from the statement of one side only, it seems quite clear that if B does not attend A will not be asked to attend. Such a situation would only punish the patient and her husband, who are not supposed to know all about medical etiquette.—ED. L.

MONSTERS.

To the Editors of THE LANCET.

SIRS,—Can you kindly inform me where I could find the best description of anencephalic monsters and of congenital deficiencies of the skull? I am, Sirs, yours faithfully,

Nov. 20th, 1898. J. B. ADDISON.

*** Our correspondent should consult Hirst and Piersol: "Human Monstrosities," part ii., Pentland, 1892; Hughes: THE LANCET, Dec. 17th, 1887, p. 1212; and Lancereaux: "Anatomie Pathologique," vol. i., Delahaye, 1875.—ED. L.

WANTED A HOME.

To the Editors of THE LANCET.

SIRS,—I am much exercised to know what to do with a young fellow of feeble intellect who is without relatives to take charge of him, but who is in possession of a small capital which provides about £50 per annum. He has been for some years past in a provincial town, but as he gets older he becomes more troublesome and has lately given much annoyance. He is not vicious at all, but his vagaries take an obtrusively religious form mingled with much vanity. Personally I think he would be better under certificates, but he cannot be treated as a pauper and it is difficult to find suitable quarters for him where the available income is so small. If any of your readers could help me I shall be most grateful. I am, Sirs, yours faithfully,

Nov. 18th, 1898. G. H.

"SCARLATINIFORM ERUPTIONS IN INFLUENZA."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Nov. 12th "Eruption" asks for information regarding cutaneous rashes accompanying attacks of influenza. A reference to the "Medical Digest," Section 655:1, will show that they have been described since 1890 by both English and foreign observers.

I am, Sirs, yours faithfully,

RICHARD NEALE, M.D. Lond.

Finchley-road, Hampstead, N.W., Nov. 17th, 1898.

ENDERMIC MEDICATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly inform me through THE LANCET whether there is an institution in London where the endermic treatment of syphilis by mercury is carried out? I have a patient whom I am anxious to send over. I am, Sirs, yours faithfully,

Nov. 22nd, 1898. VIENNA.

*** We do not know of any institution specially devoted to this method.—ED. L.

THE TENDER MERCIES OF THE PARAGRAPHIST.

THERE is an amusing little paper called *M. A. P.*, edited, we believe, by a Member of Parliament who is also a very able journalist. Therefore we are sorry to see twaddle of the kind we quote admitted into its columns, and we are quite sure that Miss Arabella Kenealy and Dr. Jane Walker will not be particularly pleased at being bracketed with irregular practitioners like "Dr. Muriel Maitland King" and "Dr. Longshore Potts." We learn that "Dr. Muriel Maitland King, the nerve specialist, has an extensive and fashionable *clientèle*, and at her parties in Park-street, W., one is sure to meet many social stars." This lady also finds time to give "most interesting lectures on various phases of nervous exhaustion, insomnia, *embonpoint*, and other subjects attractive to women." The paragraphist kindly informs us that Dr. Longshore Potts is over sixty years of age, and he waxes eloquent over the complexion and manners of Miss Kenealy and Dr. Walker. We are quite certain that the two latter ladies have nothing to do with the insertion of these particulars, but we hoped for better things from the editor of *M. A. P.*

TREATMENT OF VARICOSE ULCER.

To the Editors of THE LANCET.

SIRS,—I shall be very glad if any of your readers could suggest a method of treatment for the following condition. The patient, an elderly woman, has suffered for several years from a large varicose ulcer on the lower and inner third of the right leg. The ulcer is 3 in. in length and 1½ in. in breadth, the surrounding tissues are hard and inflamed, and the pain is very severe at times. Complete rest in bed for some weeks has been tried, but with little success, likewise indiarubber bandaging, strapping the limb, &c., have received their due share of attention, while various lotions and ointments have been applied to the surface of the wound. The patient has become reconciled to the ulcer if she could obtain relief from the almost constant pain, and therefore I should be glad to hear of any lotion or ointment which would have the desired effect of relieving the pain.

I am, Sirs, yours faithfully,

Nov. 22nd, 1898. "ULCER."

Mr. James Griggs.—Our correspondent will find the names and addresses of various institutions of the kind in "Burdett's Hospitals and Charities" or "The Annual Charities Register and Digest" (Messrs. Longmans, Green and Co.).

Filter.—We see no novelty in the arrangement or in the material employed, and we very much doubt whether by this means a bad water would be made safe.

Mr. A. Bennett.—We never prescribe. If our correspondent's means do not permit of his calling in a medical man he had better seek advice at a hospital.

Kentigern.—The article referred to appeared in the *Asclepiad* in 1887, p. 301.

Worried.—We do not prescribe. The patient should consult a medical man.

S. E. H. has omitted to enclose his name and address.

Cape Colony.—We know of no such journal.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 24th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Nov. 18	30·32	S.E.	...	72	55	50	48	51	Cloudy
" 19	30·19	E.	...	66	50	48	47	50	Cloudy
" 20	30·14	S.W.	0·05	54	51	46	45	47	Cloudy
" 21	30·04	ENE	0·42	50	50	47	48	50	Foggy
" 22	30·04	N.E.	...	61	42	37	36	38	Cloudy
" 23	29·44	S.	0·15	43	43	34	38	39	Raining
" 24	28·95	S.	...	44	44	38	41	42	Raining

During the week marked copies of the following newspapers have been received: *Hampshire Post, Sussex Daily News, Craven Herald, Observer and Chronicle, High Peak News, Western Press, Manchester Guardian, United Service Gazette, Glasgow Herald, Newcastle Leader, Cambridge Express, Edinburgh Evening News, Dunstable Borough Gazette, West Middlesex Advertiser, Leicester Post, Times of India, Pioneer Mail, Yarmouth Independent, Liverpool Daily Post, Local Government Chronicle, Architect, Leeds Mercury, Citizen, Builder, Scotsman, Cambrian, Yorkshire Post, Bristol Mercury, Observer, Birmingham Mail, Cheltenham Free Press, East Essex Times, Portsmouth Times, Eastern Morning News, Le Courier de la Presse, Temperance Chronicle, Sanitary Record, Public Health Engineer, Reading Mercury, City Press, Hertfordshire Mercury, West Sussex Gazette, Local Government Journal, Surrey Advertiser, Yarmouth Independent, Nantwich Guardian, Kent and Sussex Post, Southport Visitor, Evesham Journal, Salisbury Express, Teesdale Mercury, Falkirk Herald, Poole Herald, Kelso Mail, Perth Constitutional, Newry Telegraph, Brighton Gazette, Todmorden News, Weekly Free Press and Aberdeen Herald, Evening Express (Cardiff), Devon and Exeter Daily Gazette, Kettering Observer, &c., &c.*

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IS
SAVORY & MOORE'S
PANCREATIC EMULSION.

FAT forms about 18 per cent. of the adult human body. It is stored up as a reserve in adipose tissue, and the loss falls chiefly upon this in starvation or in the wasting of disease, so that nearly the whole of the fat may disappear. Adipose tissue is very fluctuating in quantity. A large amount may disappear in a very short space of time, and within an almost equally short period the quantity present in a body may be several times multiplied. Stored-up fat comes from the fat of food, which in an ordinary diet varies from one to two and a half ounces. It is also formed from carbo-hydrates, such as starch and sugar, but both these substances, especially sugar, are frequently clinically counter-indicated. Fat is naturally indicated in all cases of wasting and loss of weight, and, conversely, a tendency to corpulency may be counteracted by restricting the fats and carbo-hydrates and increasing the proportion of proteid which augments the general metabolism of the body.

Digestion consists in the conversion of non-diffusible proteids and starch into more diffusible peptone and sugar and in the emulsifying of fat by its division into minute particles. In certain diseases the action of the pancreas on fat is weakened, if not entirely suspended, with the result that much of the fatty part of the food passes through the intestine undigested.

The action of the healthy pancreas on fat is chiefly an emulsifying one, though under some conditions there is also an appreciable splitting up of the fat into its component fatty acids and glycerine. The fluid containing the elaborated product of digestion in its final stages—viz., chyle—owes its whiteness and opacity to fat, of which it often contains, after a meal, as much as 5 per cent., the fat existing in the form of exceedingly minute spherules or granules, far smaller than any globules to be seen in milk. It is the most perfect emulsion known, and is the only one that is not broken up by the action of ether.

The immense importance of maintaining the proper proportion of fat in chyle will be realised when we consider that an amount of chyle equal to half the whole blood of the body may pass through the lacteals from the alimentary canal in the twenty-four hours. The formation of an Emulsion of Fat, *identical with the emulsion as it exists in chyle passing through the lacteals*, has now been arrived at, outside the body, by the action of the pancreas. This Emulsion is known as *Pancreatic Emulsion*, and by its means we can present the fat of food in the condition necessary for immediate assimilation where the natural power of emulsifying fat is lost or impaired.

In disease arising from defective nutrition, and in phthisis and all scrofulous conditions, fat is often found of the greatest benefit. It is also invaluable in the convalescence of acute disease, and as a tonic to the nervous system in neuralgia and nervous debility. It is obviously an advantage in a dietary to give solid animal fat, which, like human fat, contains a considerable proportion of stearin and palmitin, as well as olein, in preference to a fat like cod-liver oil, which consists almost entirely of olein. "PANCREATIC EMULSION" provides the natural fat of food, emulsified so that it can be assimilated and absorbed with the greatest ease. Experience shows that it is free from the drawbacks so often attending the administration of cod-liver oil, and that it can be continued for any necessary length of time without disagreeing or causing nausea or diarrhœa, and that a rapid increase of weight and immediate improvement in health result from its use.

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A Clinical Lecture

ON

A CASE OF GALL-STONES IN THE COMMON DUCT CAUSING SIMPLE INFECTIVE CHOLANGITIS.

Delivered at Guy's Hospital on Nov. 19th, 1898,

BY W. HALE WHITE, M.D., F.R.C.P. LOND.,
PHYSICIAN TO GUY'S HOSPITAL.

GENTLEMEN,—The case I want to bring before you is a very long one, so I have abbreviated the excellent report by Mr. W. P. Ker. A married woman, aged thirty years, was admitted into Mary Ward on July 20th, 1898, for pain in the right side of the abdomen, vomiting, and a temperature of 103·2° F. Her history did not begin to be important till eight months before, when she had a severe attack of pain in the right side of the abdomen and back. Three weeks before admission she had a similar attack, this time accompanied by jaundice and very light-coloured motions. One week later she had a third attack and since then she has had repeated attacks of pain and vomiting, accompanied by high temperature. During this fortnight her motions have been clay-coloured, she has sweated profusely, has had some shivering, and has felt very ill. On admission she was found to be slightly jaundiced; her temperature was 103·2°, her pulse was 104, and her respirations were 40. She was very thirsty. Her bowels were regular and the stools were light-coloured. The liver reached nearly to the umbilicus; it was uniformly enlarged, firm, tender, and smooth. There was a very tender point to the right of, and slightly below, the umbilicus. At this spot we thought there was an ill-defined swelling which might have been a gall-bladder, but we were not certain about it. The respiratory, circulatory, nervous, and generative systems did not present any symptoms to call for comment. The urine contained some bile, otherwise it was healthy. She was obviously in great pain. Soon after admission she had a rigor. She had had three shortly before admission. The diagnosis made was that the patient was suffering from gall-stones which being in the common duct caused the jaundice and enlarged liver, and that they, damaging the mucous membrane of the duct, had set up general infection through the branches of the portal vein which return blood from the walls of the duct. Hot fomentations were applied over the liver. The patient was given a little brandy, some lemon juice and barley water, and milk and bread-and-butter. On July 22nd there had been no further rigors, the temperature had ranged about 100°, the jaundice was less, and the liver was smaller and less tender. As a result of an enema she passed three small facetted gall-stones. On the 23rd her condition was about the same as in the last note except that her temperature was about 103·4° on this date. On the 25th she was much better. The liver was smaller, the jaundice was not visible, and the pain and tenderness were less. The temperature was normal. She continued to steadily improve and had a nearly normal temperature till August 6th, when she had another rigor and the temperature rose to 102·8°; we thought that day that the gall-bladder could be felt to be enlarged. In spite of the rigor she had very little pain and tenderness over the liver. On the 9th she had another rigor. The temperature this time was 101·6°. From this date until August 31st she had very irregular temperature; usually it was normal or below normal in the morning and rose to between 101° and 104° in the evening. Often this rise was accompanied with rigors, but they were never severe. More often, however, she simply complained of feeling cold all over; occasionally she was sick. She was not jaundiced during these three weeks nor was there much tenderness over the liver, and this organ was not so large as before. In spite of this long-continued severe pyrexia she maintained her ground fairly well although she sweated and looked ill. On the 30th she passed three fair-sized gall-stones. On Sept. 6th she was much better. On that day she passed some large gall-stones, the largest being of the size of a cherry-stone. On the 11th she had an attack of pain over the region of the gall-bladder. This part of the abdomen was so tender that nothing could be made out on palpation. On the 17th she had another attack of severe pain in the same region. Her temperature at the same time rose to 102·6°. On that morning a large three-cornered gall-stone was found in her motions. The liver was rather enlarged again, reaching down to the umbilicus. On the 26th she had another rigor and an attack of pain. On Oct. 1st she had another rigor, an attack of pain, and a rise of temperature to 102°. On the 3rd the patient passed two gall-stones, one of which was the largest she had ever passed. On the 8th the patient got up. From this time until the 16th she did uniformly well. She went out on the latter day. Her liver then reached to 1½ in. above the umbilicus, she was in no pain, and she had no tenderness over the gall-bladder. She looked quite well, and in spite of her attacks of pain and her rigors she had been gaining ground steadily since Sept. 1st.

No special treatment was adopted. Hot fomentations, morphia injections, and slight inhalations of chloroform were used to relieve the pain. She was given plenty of light nourishing food and she was always enticed by variations of diet to eat as much as possible. Usually she was taking some gastric carminative stimulant medicine and her bowels were always kept thoroughly open. During part of her illness some anti-streptococcic serum was used, but it was left off as it had no beneficial effect.

I think the easiest way for us to handle this case will be to first of all consider what could be the cause of the jaundice. You will find enormously long lists given of the causes for jaundice, but in actual practice it is in adults nearly always due either to (*a*) the disease called catarrh of the ducts or simple jaundice; (*b*) cirrhosis; (*c*) cancer of the glands in the portal fissure or of the head of the pancreas; (*d*) some specific fever, usually yellow fever, ague, more rarely acute yellow atrophy, or epidemic jaundice; (*e*) phosphorus poisoning; (*f*) congestion of the liver, in this country, at least, due to backward pressure from the heart or lungs; and (*g*) gall-stones in the common duct. From time to time we see patients suffering from jaundice due to other causes, as in the man we had in the hospital some time ago in whom it was due to a moveable kidney, but they are so rare as to be mere curiosities.

Now our patient was far too ill to be suffering from (*a*) catarrhal jaundice; in this disease the patient is not very ill, he has indigestion and jaundice with very little pain, and is in a few days quite himself again. Probably the disease is due to catarrh of the duodenum spreading into and closing the duodenal orifice. Although both cirrhosis and cancer of the liver, especially cancer, may be accompanied by a raised temperature it is never so high in cirrhosis as it was in our patient, and it would be quite exceptional to find so much pyrexia in cancer, although some striking instances are recorded by Osler. But our patient was very young for cancer, there were none of the other signs of it, and the pain from which she suffered was not at all like it. Specific fevers of this country are very rarely accompanied by jaundice; there was no evidence that she had been anywhere where she could contract ague, and her whole illness was unlike it. She had not got phosphorus poisoning and she had no cause for congestion of the liver, so you see that by a process of exclusion we were able quickly to arrive at the diagnosis that she was suffering from gall-stones, a view which was confirmed by the history of paroxysmal attacks of pain in the region of the liver. Indeed, her account of them showed that they were so severe and constant in position that in a woman they were of themselves almost enough to establish a diagnosis of gall-stones.

You will notice that I have drawn no distinction between obstructive jaundice and non-obstructive. My reason is that the exact mode of production of jaundice is often so obscure that it is, I think, better at the bedside not to draw such a distinction, for it may lead you into error. In many instances there is undoubtedly an obstruction, but in some it is very doubtful whether there is; probably in some forms of jaundice, as, for example, that associated with malaria, the yellow pigment is produced in the blood; but we must to-day keep to the clinical side of the case.

The other point to which I have not alluded is the statement made by the patient that the stools were light. Patients are such bad observers, shades of colour are so difficult to describe, and the stools vary naturally so much in colour that you should give very little weight to a statement about the colour of the stools. Always examine them yourselves and even then remember that they may be very pale, especially if much milk be taken, quite apart from any

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obstruction to the flow of bile. Before you can decide from them that probably the bile-duct is obstructed they ought to be of a light clay colour, hard, and usually foul-smelling.

Gall-stones are very common. The figures from the Strasburg Hospital show that 20·6 per cent. of all the female bodies examined contained them. They are especially common in married women and are very frequent in the decade from thirty to forty, so that you see they are very common in people of the age, sex, and condition of our patient. Fortunately, however, the sufferers from them do not often suffer as our patient suffered. Usually they have attacks of pain more or less severe, and then as they grow older the attacks cease. Any of you who have attended necropsies regularly will bear me out in the statement that it is very rare to see death attributable to gall-stones, but it is also rare for elderly persons to complain of the symptoms produced by gall-stones, so we may conclude that, as a rule, either the stones are passed or they remain quiescent in the gall-bladder, and in favour of the latter statement is the well-known fact that they are frequently found in the bodies of those in whom they were quite unsuspected during life.

In passing I should like you to notice that our patient's account of her earlier attacks of pain was very typical, for she made it quite clear to us that her pain was agonising, sudden in onset, paroxysmal, and situated in the hepatic region. She, like other women, said that it was worse than the pain of labour. With her, as is usually the case, it lasted a few hours.

The next fact I want to bring before you is that the passage of a stone along the common duct not only frequently gives rise to an ordinary attack of biliary colic and transient jaundice, but, as shown in our patient's earlier and late attacks, these two symptoms may be accompanied by a rigor and a rise of temperature. Ordinarily the temperature is only raised a short time, the stone passes, and the patient is well. The cause of the rise of temperature in these cases is unknown. Generally it is thought to be reflex, and I have given you, when lecturing on pyrexia, other instances in which severe stimulation of the peripheral nerves will lead to pyrexia. Perhaps some day these attacks will be shown to be due to a micro-organism infecting from the bile passages and be merely a slight degree of what will be described directly as simple infective cholangitis; if so, they are so much slighter that their clinical importance is quite different.

But the gall-stones in our case caused the patient to look ill, and she had prolonged pyrexia, the temperature in a few hours rising from normal to a considerable height, many rigors, attacks of sweating, vomiting, and an enlarged tender liver, in addition to her pain and jaundice. Gall-stones may produce these symptoms in the following ways: (*a*) The stone may set up inflammation of the duct with subsequent ulceration or perhaps the formation of a local abscess. Pyæmic infection may follow because the venous blood from the wall of the duct is returned into the portal vein, and as a result multiple small pyæmic abscesses in the liver may be formed. This condition of portal pyæmia is always fatal. (*b*) Stones in the common duct may cause pain, jaundice, sometimes severe, but often slight and variable (in which case we must suppose the duct is not completely blocked), an enlarged and tender liver, rigors, sweating, vomiting, and pyrexia lasting for many days without the formation of secondary abscesses in the liver. The probable explanation is that in these cases also there is inflammation of the mucous membrane of the common duct with subsequent infection, but if this is the right explanation it is a different kind or degree of infection from that which leads to multiple small abscesses in the liver, for patients may for many years be subjected to attacks like that of our patient. We may, provisionally at any rate, speak of this group as cases of gall-stones of the common duct accompanied by simple infective cholangitis which will distinguish them from cases with pyæmic abscesses and cases of suppurative cholangitis. Both streptococci and bacilli coli are so very variable in virulence that either may well be the cause of groups (*a*) and (*b*). (*c*) The gall-stone may set up suppurative inflammation of the common duct which quickly spreads back and all the ducts in the liver become full of pus; this condition is called suppurative cholangitis. (*d*) The gall-stone in the common duct might have been producing only jaundice and the other symptoms might have been due to an abscess in connexion with some other stone; for example, there might have been an empyema of the gall-bladder in connexion with a stone in it or in the cystic duct.

When our patient came in, ill as she was, she did not seem ill enough to be suffering from suppurative cholangitis, and although we thought that the gall-bladder was tender and perhaps enlarged we did not think the enlargement definite enough, or the tenderness great enough, for there to be pus in it, and we could find no evidence of an abscess elsewhere, so we concluded that either she was in the early stage of (*a*) portal pyæmia due to gall-stones in the common duct, or that she was suffering from (*b*) simple infective cholangitis due to gall-stones in the common ducts. As I repeatedly pointed out to you at the bedside the difference between the two diagnoses was probably only one of degree; in both cases we believed that infection was taking place from the mucous membrane of the common duct and therefore we often spoke of her loosely as suffering from portal pyæmia, but kept the two above possibilities (*a*) and (*b*) before us.

Some of you asked me what the word "cholangitis" meant. It simply means inflammation of the mucous membrane of any of the biliary passages; therefore the word is allied to such words as "gastritis," "enteritis," &c. The word is coming very much into use. It sounds a little uncouth, like most of the modern terminology connected with the bile passages. Fancy how pleased the old woman who liked the word "Mesopotamia" would be if you told her that she had "cystic cholelithiasis associated with infective cholangitis, that if an operation was necessary you could either do cholecystotomy, or cholecystendysis, or cholecystectomy, or cholecystenterostomy, or cholecystolithotripsy, or choledocholithotomy, or choledochostomy, or choledochoenterostomy, or choledocholithotrity, or choledochectomy, or choledochotomy, or choledochoduodenostomy, or cysticolithotomy."

You will remember that on July 22nd the patient passed three gall-stones and that from July 25th to August 6th she was pretty well with a normal temperature. This went a long way to confirm our diagnosis that the gall-stones had caused simple infective cholangitis. From August 9th to August 30th she had such high, irregular temperature that we often feared that after all the gall-stones had set up portal pyæmia with small abscesses in the liver; the only thing against this view was that she did not lose ground so much as would have been expected if it were correct. She improved so much during September that it was quite clear she never had had pyæmic abscesses in her liver and that the diagnosis of simple infective cholangitis due to a gall-stone in the common duct was correct, and the illness during August shows you how severe this infection may be. Whether you should regard the rigors and transitory rises of temperature associated with the passage of gall-stones which occurred during September as mild instances of the same infective process is open to question, but clinically there is no doubt that they are examples of the fact that I have already pointed out to you that the passage of gall-stones will often cause a rigor and transient rise of temperature.

The disease from which our patient suffered—namely, gall-stones in the common duct accompanied by simple infective cholangitis—is fortunately not common. There is a very good collection of eight cases by Dr. Osler in the Johns Hopkins Hospital Reports for January, 1890. I have already given you the symptoms and we will now consider them in detail. The jaundice is usually deep, and, like all long-lasting jaundice, gradually gets darker as time goes on; sometimes, however, as in our patient, it is only slight. Whatever its maximum depth it varies much in intensity from time and may, as in our case, go altogether. Generally when a rigor or chill comes on it deepens considerably, but this was not so with our case. These variations in intensity are difficult to explain, for the stone is always present and in most of the cases some bile must get past it. Possibly the variations are due to variations in the swelling of the mucous membrane near the stone. The jaundice may last for years and it may be accompanied by any or all of the phenomena due to the circulation of bile in the blood. The pyrexia occurs in paroxysms usually associated with rigors. The temperature rises suddenly, sometimes as high as 105°. The patient feels cold, often shivers very severely, her skin is dry, but in the course of a few hours it becomes moist, she sweats profusely, and the temperature falls as quickly as it rose. The paroxysms generally occur at irregular intervals and Dr. Osler says he has seen them recur daily for a week or ten days; but ours was a more severe case, for in the worst group of attacks they occurred daily,

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sometimes two a day, for three weeks continuously. In very mild paroxysms a slight rise of temperature, a feeling of chilliness or sweating may either of them occur alone. Even when the attacks are severe the intervals between single paroxysms or groups of paroxysms may be several days or weeks so that the whole illness may be spread over months or years. Pain is nearly always present. Sometimes it is severe and agonising genuine hepatic colic. In other cases it is very slight, and, as in our patient, it may be very severe during some attacks and not in others. Vomiting often accompanies an attack. Our case illustrates this. There may be nausea and a furred tongue. The liver is generally uniformly enlarged, smooth, and tender. Our case exemplifies this and appears to show that the gall-bladder may be enlarged and tender. It is very noteworthy that the patients do not lose flesh much and quickly recover from their attack. This was very noticeable in our case.

You must bear in mind that the common duct may be completely obstructed by a gall-stone or stenosis for many months without producing the train of symptoms here described. On the other hand, it is said that simple stenosis may cause them.

You see here the gall-stones which this woman passed, and it must at once strike you as impossible for them to get through the narrow orifice by which the duct opens into the duodenum, but you will remember that the duct lies in the wall of the duodenum for ¾ in.; what happens is that the stone lying in this position ulcerates into the duodenum. When once this has occurred other stones can easily pass through the opening.

I do not think that in England there ought to be much difficulty about diagnosis from most other diseases, but in countries where severe malaria is common, and especially where it makes the patients yellow, the diagnosis may be very difficult, for the paroxysms and shiverings which characterise the disease which we are discussing very closely resemble ague, and, indeed, the diagnosis has sometimes been only satisfactorily made after finding the malarial parasite in the blood. But it may be very difficult to tell whether the gall-stone is setting up merely a simple infective cholangitis, suppurative cholangitis, or portal pyæmia, for the diagnosis will rest upon the correct estimation of the severity of the symptoms. A very good example of this difficulty occurred in a woman, aged sixty years, whom I saw with Mr. A. G. Wells. She had rigors, an irregular high temperature, jaundice, a tender liver, and was desperately ill. The position was explained to her friends and in the faint hope that it might turn out to be simple infective cholangitis and that it might be possible to remove a stone Mr. Arbuthnot Lane opened the abdomen, but could not reach the common duct because the parts were so matted from old local peritonitis due to gall-stones. At the post-mortem examination I found the liver studded with pyæmic abscesses, a stone in the common duct, the biliary passages inflamed, and the lining membrane in places gangrenous.

The treatment of the patient the subject of this lecture gave rise to much discussion. Many urged that if I thought there was a stone in the common duct setting up simple infective cholangitis I ought to have suggested an operation, but the following reasons prevented my doing this. If the case had been portal pyæmia or suppurative cholangitis, both of which were possible, an operation could do no possible good; if, on the other hand, the case were one of simple infective cholangitis we could safely wait to see what course the malady would take, for this disease is very chronic, and, bad as our patient was, she never, as far as her general strength went, appeared to lose ground. Then, too, it is a very difficult operation, especially when the liver is very large, to remove a stone from the common duct. In the case I have just mentioned matting prevented Mr. Lane from even reaching the common duct. Out of Dr. Osler's 8 cases 2 were operated upon and both died. Waring quotes Jourdan, who says that out of 72 cases operated upon and published up to 1895 22 died, and when you remember the inevitable tendency for more successful than unsuccessful cases to be published I should think that represents a mortality of about 50 per cent. Then, again, gall-stones are usually multiple and even if you remove the offending one and any there may be in the gall-bladder others will probably be formed later and passed down the duct. So that while I would most certainly not say that operation is never desirable it is very important that you should hesitate for some time before embarking upon such a very difficult and dangerous operation. Probably you never ought to do it if the patient is keeping her ground, for there is always the possibility that she may pass the gall-stones into her duodenum. That fortunate result occurred in our case, and when you see the size of the stones she has passed you will agree with me that her common duct is now probably sufficiently large to admit of the passage of subsequent stones, and as she wrote to me only yesterday and appeared from her letter to be in good health and able to be up and about at her household duties you will see the justification of our not having advised operation. Since she left the hospital she has passed one other gall-stone without much difficulty. The course we adopted of relieving pain, keeping her bowels open, and maintaining her strength appears to be justified by Dr. Osler's figures, for of his 8 cases 2 died after operation, 2 died from the effects of long-continued jaundice, 3 recovered without operation, and 1 passed out of observation.

To sum up, while I am far from saying that you should never advise operation you should always watch the case before advising it, and do not advise it if the patient is not losing ground. If you recommend it and it rests with you to select the surgeon do not do the operation yourself unless you are a skilful surgeon, for it may be very difficult. Want of time prevents to-day a proper discussion of the best means of preventing for the future the formation of gall-stones in our patient.

THE RESULT OF THE TREATMENT OF DIPHTHERIA BY ANTITOXIN IN LONDON COMPARED WITH THAT IN PARIS AND BERLIN.

BY LOUIS COBBETT, M.A., M.B. CANTAB., F.R.C.S. ENG.

IT may appear to some unnecessary at the present time to discuss the evidence of the utility of diphtheria antitoxin. Yet I think that no one who is aware how unfavourably the death-rate and the case mortality of diphtheria in London compare with those of the great continental cities will deny that some inquiry is desirable. The first attempts to cure diphtheria in human beings with the serum of immunised animals were made in 1891 and failed because the antitoxic power of the serum was too small. It was not until 1894 that antitoxin strong enough to produce a marked effect was obtained. Early in that year reports of cases treated by the new remedy were published in Berlin. Some months later the serum treatment received its great impulse from Roux's memorable address to the International Congress of Hygiene and Demography at Budapest, and the serum treatment may be said to have generally commenced in the great cities of Europe from that time. The statistical returns from hospitals and other sources which have appeared since show a very remarkable reduction in the fatality of diphtheria.[1] But several more or less weighty objections have been made to concluding that the new treatment has been the cause of the improvement.

In the first place, it has been argued that the bacterial method of diagnosis which was introduced about the same time as the antitoxic treatment has caused a considerable increase in the number of cases reported as diphtheria, the increase consisting chiefly of cases which, without the aid of the new test, would have been regarded as cases of simple sore-throat. But it must not be forgotten that the new test has also eliminated a considerable number of cases of membranous pharyngitis which previously would have been regarded as diphtheria. On this point Professor Welch concludes that the new test has on the whole excluded more mild cases than it has admitted.

In the second place it has been said of hospital statistics that the smaller fatality of diphtheria which they show in recent years may be accounted for on the supposition that the fame of the new remedy has attracted more patients to the hospitals, with the result that the average severity of the

[1] In 1895 Professor Welch of Baltimore collected 82 reports dealing with a total of over 7000 cases treated with antitoxin, of which the average fatality was 17·3 per cent. In 45 of these reports the previous or simultaneous fatality was given and averaged 42·1 per cent. (The Treatment of Diphtheria by Antitoxin, Transactions of the Association of American Physicians, vol. x.)

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cases admitted has declined. This is certainly not true of the Berlin hospitals, as a glance at Table II. will show. For there the ratio of the cases treated in the hospitals to those occurring in the whole of the city has not increased since the introduction of the serum treatment. On the other hand, the ratio of admissions for diphtheria into the hospitals of the Metropolitan Asylums Board to notifications in the whole of London has considerably increased. Nevertheless, the severity of the cases treated there does not seem to have lessened. For the medical superintendents reported[2] that in their opinion the average severity of the cases treated in 1895 was about equal to that of those treated in 1894, the death-rate in that year having been slightly lower than that of any previous year; and that "during 1896 a larger proportion of children under five and ten years and of cases admitted on the fourth day or later have been under treatment than was the case in 1895, so that, other things being equal, a heavier mortality was to be expected." Again, "the years 1895 and 1896 were somewhat worse off than 1894—viz., in the proportion of cases in which laryngeal symptoms were present before admission to the hospital, the percentage of such cases on the total admissions being—in 1894, 11·4; in 1895, 15·1; and in 1896, 13·5."

In the third place it has been suggested that the introduction of the new treatment has been followed by a succession of years during which the disease has been of a mild type. In answer to this the opinion of the medical superintendents may be again cited as to the type of diphtheria recently prevalent in London. But even if it had been so it would probably not have affected the hospital statistics to any great extent. For when diphtheria is of a mild type a larger proportion of cases remain at home than when it is severe, so that the average severity of the hospital cases remains fairly constant.

In 1894 Roux, Martin, and Chaillou[3] reported 300 cases treated with antitoxin in the Hôpital Trousseau, in Paris, with a fatality of 26 per cent. During the period referred to in the report the fatality of the Hôpital des Enfants-Malades, where the antitoxin was not used and where the fatality in diphtheria had always approximated very closely to that of the Hôpital Trousseau, was 60 per cent. Baginsky[4] reported 525 cases of diphtheria in children treated in the Kaiser und Kaiserin Friedrich's Hospital for Children in Berlin between March 15th, 1894, and March 15th, 1895, with a fatality of 15·6 per cent. In the middle of this period, during the months of August and September, the supply of antitoxin entirely failed, with the result that the mortality rose higher than it had been before the new treatment was introduced—viz., to 48·4 per cent. The same failure in the supply of antitoxin caused a similar involuntary experiment to be carried out at Prague, Vienna, and Trieste, with the result that the fatality which fell during the period of antitoxin treatment to 12·7, 22, and 18·7 respectively, rose again during the interval when no antitoxin could be procured to 53, 65·6, and 50 per cent.[5] In the Charité, in Berlin,[6] during the eight years which preceded the antitoxin treatment the fatality rate of diphtheria was over 50 per cent., while during the 4-year period from March, 1894, to March, 1898, the rate was under 16 per cent. Moreover, although the admissions during this latter period had increased by about 50 per cent., yet the absolute number of deaths fell from 316 in 1886–90 and 308 in 1890–94 to 134 to 1894–98.

TABLE I.—*Admissions for, and Deaths from, Diphtheria in the Charité Children's Hospital, Berlin, and in all the Berlin Hospitals.*

—	Period.	Admissions.	Deaths.	Mortality per cent.
Charité, Berlin... ...	1886–1890	603	316	52·0
	1890–1894	564	308	54·6
	1894–1898	842	134	15·9
All the Berlin hospitals...	1886–1889	6,442	2,302	35·7
	1890–1893	8,080	3,106	38·4
	1894–1897	10,026	1,823	18·2

[2] Reports upon the Use of Antitoxin in the Hospitals of the Metropolitan Asylums Board, 1895 and 1896.
[3] Annales de l'Institut Pasteur, September, 1894.
[4] Die Serumtherapie der Diphtherie, Berlin, 1895.
[5] Welch, loc. cit.
[6] Kossel: Deutsche Medicinische Wochenschrift, No. 15, 1896, p. 229.

In all the Berlin hospitals[7] the percentage mortality of diphtheria, which was 35·7 in 1886–89 and 38·4 in 1890–93, fell to 18·2 in 1894–97. In 1896 and 1897 it was only 13. Moreover, in spite of increased admissions the total number of deaths for each of the three periods of four years each was 2302, 3106, and 1823. Much might be added, but enough has been said to show that the fatality of diphtheria in the hospitals of some of the great cities of the continent has very considerably diminished since the introduction of the serum treatment.

Turning now to the London hospitals we find that there has been a very satisfactory diminution in the fatality of diphtheria in the hospitals of the Metropolitan Asylums Board, and that, as already pointed out, there is no reason to attribute this diminution to any falling off in the average severity of the cases treated. I shall briefly refer to that part of the evidence as to the influence of the new treatment contained in these reports which seems to me to be least open to criticism, and for this purpose I have drawn up the following table (Table II.).

TABLE II.—*Number of Deaths from Diphtheria per 100 Case in the Metropolitan Asylums Board Hospitals, both those Treated with Antitoxin and those not.*

—	1894.	1895.	1896.	1897.
Treated from the first day of the disease	22·5	11·7	4·7	—
Treated from the second day of the disease	27·0	12·5	12·8	
Total	29·6	22·5	20·8	17·5
Laryngeal cases...	62·0	50·6	29·6	30·9
Tracheotomies	70·4	57·7	42·5	41·0
	1890–1894.			
Post-scarlatinal diphtheria, laryngeal cases	60·80	—	22·7	8·4

The considerable fall in the fatality of the cases treated from the first and second day of the disease in 1895 and 1896 as compared with those treated in 1894 cannot, I think, be attributed to any other cause than the introduction of the new treatment. It is probable that the classification according to the days of disease upon which the treatment was commenced is not quite accurate. But it is certain that the treatment did not commence at an earlier period than that stated, and consequently if it were possible to correct these figures the evidence which they would then afford would probably be still more strikingly in favour of the antitoxin treatment. This is borne out by the records of post-scarlatinal diphtheria, of which the day of commencement could be accurately determined because the disease attacked patients already under observation. In 1896 the fatality of 250 of these cases treated from the first day and of 163 cases treated from the second day was 2·3 and 3·6 per cent. respectively.

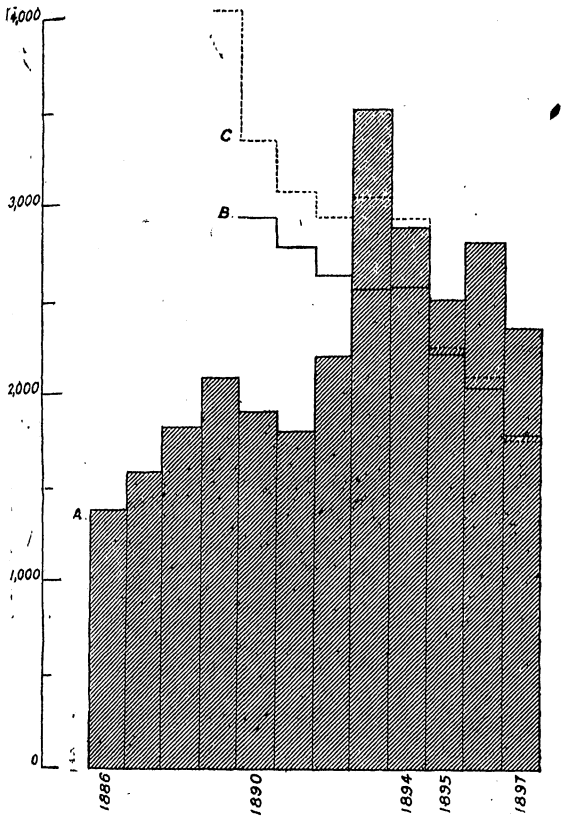
The remarkable fall in the mortality of all cases of post-scarlatinal diphtheria from over 50 per cent. in the five years which preceded the antitoxin treatment to 5 and 3·7 per cent. in 1896 and 1897 respectively cannot be entirely put to the credit of the remedy, for it is admitted that the bacterial test has enormously increased the number of mild cases which are now recognised as post-scarlatinal diphtheria.[8] But the fact that the *total number* of deaths among these cases fell from over 48 per annum in 1890–94 to 35 in 1896 and 29·452 in 1897 can fairly be ascribed to the treatment, as can also the fact that the mortality of all the laryngeal cases in this group fell from 60 to 80 per cent. in the years preceding 1895 to 22·7 in 1896 and 8·4 in 1897.

The statistics of laryngeal diphtheria afford perhaps the surest evidence of the influence of treatment, for these cases form a class of which the mortality rate is but little affected by the inclusion or exclusion of a variable number of mild cases in consequence of alteration of the criteria of diagnosis. No doubt they are relatively more frequent in severe epidemics than in mild ones, yet the average severity of the cases which constitute this class remains nearly constant. It is therefore very satisfactory to find that the

[7] Ibid.
[8] Between 1890 and 1894 the average yearly number of post-scarlatinal cases was 96·4. In 1896 it had risen to 695 and in 1897 to 796.

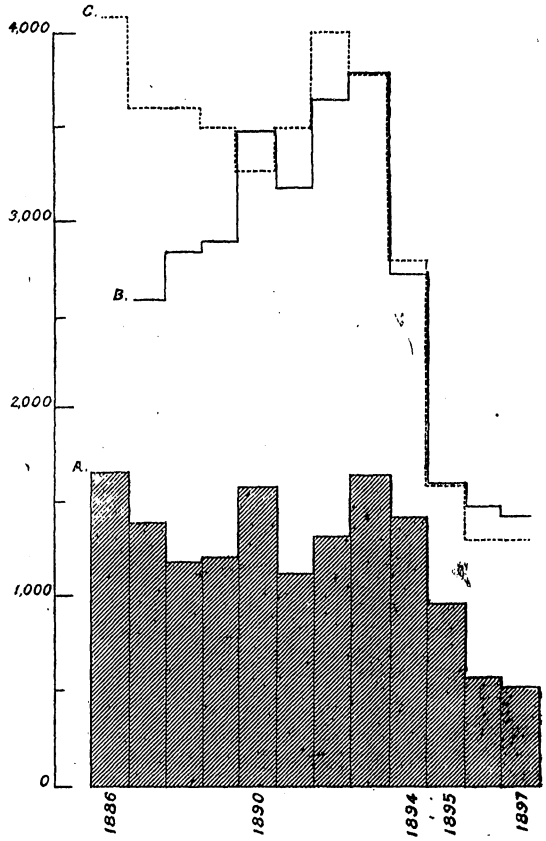
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FIG. 1 (LONDON).



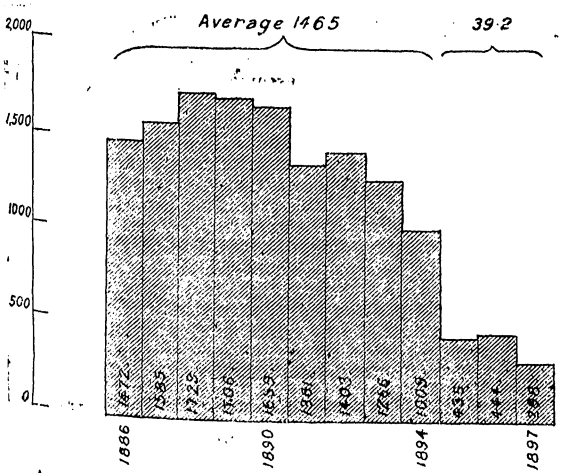
A, Annual number of deaths from diphtheria and croup registered in London and in the hospitals of the Metropolitan Asylums Board situated outside London. *B*, Annual number of deaths per 10,000 notifications. *C*, Annual number of deaths in the Metropolitan Asylums Board hospitals per 10,000 admissions.

FIG. 2 (BERLIN).



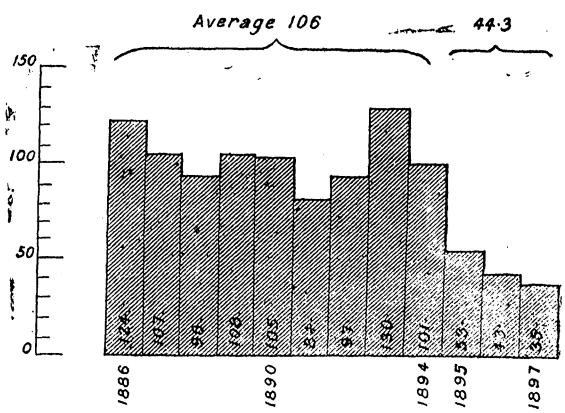
A, Annual number of deaths from diphtheria registered in Berlin. *B*, Annual number of deaths per 10,000 notifications. *C*, Annual number of deaths in all the Berlin hospitals per 10,000 admissions.

FIG. 3.



Annual number of deaths from diphtheria and croup in Paris.

FIG. 4.



Annual number of deaths from diphtheria per 10,000 inhabitants in 266 German towns with a population of over 15,000.

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mortality rate of all laryngeal cases has fallen 50 per cent. since 1894, that the necessity for tracheotomy is less frequent, and that the mortality rate of those cases which still require operation has fallen from 70 to 41 per cent.

But while the hospital returns of this and of other countries afford such remarkable evidence of the benefits of the antitoxin treatment of diphtheria I have all along felt that the case for the new remedy would not be complete until the annual number of deaths from this disease in great towns and other large areas should have shown a well-marked and lasting decline. I say a lasting decline because, as is well known, the annual number of deaths from diphtheria in any one area varies considerably. This is very clearly shown in Dr. Newsholme's recent work.[9] Such a decline, lasting already over three years and unprecedented in magnitude, has indeed been recently shown by figures published by the Imperial Health Office and the Municipal Statistics Office in Berlin to have occurred in Paris and Berlin and in 266 German towns of over 15,000 inhabitants each. These figures are cited by Dr. Kossel in the *Deutsche Medicinische Wochenschrift* of April 14th, 1898, p. 229. I thought it would be interesting to compare these figures with those relating to London and so I have constructed diagrams which represent the annual number of deaths from diphtheria in these places. And I have added to the diagrams for London and Berlin curves showing the number of deaths in per 10,000 notifications and the number of deaths in the hospitals per 10,000 admissions. The figures upon which the diagrams for Berlin and the other German towns are based are taken from Dr. Kossel's paper. To the Registrar-General and the medical officer of health for the County of London I am indebted for the numbers of deaths and notifications in London, and to M. Bertillon, chief of the Statistical Department in Paris, I am indebted for the number of deaths in that city. I should like to take this opportunity to express my gratitude to these gentlemen for the great kindness which they have shown in supplying me with the information which I required.

These charts show that in Paris, Berlin, and the 266 German towns there has been a remarkable fall in the annual total number of deaths from diphtheria—a fall which commenced abruptly with the introduction of the serum treatment, has steadily continued since, and has had no parallel in the previous eight years. In London, on the other hand, they show that though there has been on the whole an improvement since 1893, yet the number of deaths in each of the last three years has been greater than that of any of the seven years that immediately preceded 1893. Moreover, the case mortality in Berlin has fallen to a considerably lower point than it has in London. Indeed, the chart for London shows a marked and deplorable contrast to those of the other towns.

How are these facts to be accounted for? The following suggestions present themselves for examination:—(1) There was more room for improvement on the continent than in London; (2) the prevailing type of diphtheria has been very severe in London during the past three years; (3) the serum used in this country is inferior to that used abroad; and (4) the remedy is more extensively used there than here.

TABLE III.—*Diphtheria Notifications, Admissions, and Deaths in London, 1886–1897.*

Year.	All London.		Metropolitan Asylums Board Hospitals.		Ratio of hospital admissions to notifications.
	Notifications.	Deaths.	Admissions.	Deaths.	
1886	—	1,381	—	—	—
1887	—	1,579	—	—	—
1888	—	1,812	99	46	—
1889	—	2,075	722	275	—
1890	6,420	1,877	942	316	1 : 6·8
1891	6,412	1,174	1,312	397	1 : 4·9
1892	8,345	2,182	2,009	583	1 : 4·1
1893	13,694	3,484	2,848	365	1 : 4·8
1894	11,180	2,861	3,666	1,035	1 : 3·05
1895	11,222	2,479	3,685	820	1 : 3·1
1896	13,808	2,793	4,508	948	1 : 3·06
1897	13,192	2,328	5,673	987	1 : 2·3

[9] Origin and Spread of Pandemic Diphtheria, London, 1898.

TABLE IV.—*Diphtheria Notifications, Admissions, and Deaths in Berlin, 1886–1897.*

Year.	All Berlin.		All Berlin hospitals.		Ratio of hospital admissions to notifications.
	Notifications.	Deaths.	Admissions.	Deaths.	
1886	6,968	1,662	1,738	609	1 : 4·00
1887	5,438	1,392	1,636	598	1 : 3·35
1888	4,190	1,195	1,446	523	1 : 2·87
1889	4,220	1,210	1,623	573	1 : 2·6
1890	4,586	1,601	1,792	695	1 : 2·55
1891	3,504	1,106	1,764	623	1 : 2·00
1892	3,683	1,342	2,074	837	1 : 1·77
1893	4,315	1,637	2,450	951	1 : 1·76
1894	5,220	1,416	2,890	801	1 : 1·80
1895	6,106	987	3,061	484	1 : 2·00
1896	4,345	559	2,138	285	1 : 2·00
1897	3,723	546	1,947	263	1 : 1·9

1. It is true that in the years which immediately preceded the antitoxin treatment the ratio of deaths from diphtheria to inhabitants[10] was considerably higher in Berlin than in London; it is therefore certain that there was more room for improvement there than here. But, on the other hand, the Berlin rate has now fallen to a considerably lower level than our own. The same may be said of the case-fatality rates. Our present condition is therefore unsatisfactory.

2. Reference to Table III. will show that the notifications of diphtheria in the metropolitan area have more than doubled since 1890. A considerable rise occurred in 1892; in 1893 the figures rose to the alarming total of 13,694. A slight decline took place in 1894 and 1895, but again in 1896 and 1897 the figure has been over 13,000. In Berlin, on the other hand, the number of notifications has been more constant (Table IV.). But while the great prevalence of the disease in London in recent years may explain why the annual numbers of deaths from diphtheria there have not diminished as in Berlin it does not account for the difference in the fatality rate of the affected in the two cities.

3. In 1896 THE LANCET Special Commission on the Relative Strengths of Diphtheria Antitoxic Serums[11] reported unfavourably of the serums prepared in this country: have they improved since that time? I have personal knowledge that some at least of the antitoxin used as recently as the first half of last year, and coming from more than one London laboratory, had very much less antitoxic power than that claimed for it.[12] But the methods of preparing the serum and of estimating its strength have improved since then, and we have it on the authority of Dr. Sims Woodhead[13] that the average strength of the serum now issued from the laboratories of the two Royal Colleges is 375 units per c.cm. If, then, our comparative ill-success has been due in part to the weakness of our antitoxin we may look with some confidence for better results in the near future.

4. But if our antitoxins have been weak, is this the sole reason for our comparative ill-success? Or is it partly due to the remedy being more freely used in Berlin than in London? We may, I think, assume that in our hospitals the antitoxin is used about as freely as it is in those of Berlin. And it is shown by the charts that the fatality rate of all cases goes closely hand in hand with that of the hospital cases only both in Berlin and London. It is therefore at first sight tempting to conclude that the remedy is used to an equal extent by the private practitioners of the two cities as it is by the hospital physicians.

On further consideration, however, I think this reasoning is unsound. For in Berlin, where the fatality rate of diphtheria prior to 1893 was very high, and where the hospital rate was in that year no higher than that of the whole city, the introduction of the new treatment was followed by a

[10] See Dr. Newsholme: loc. cit., pp. 30 and 75.

[11] Report of THE LANCET Special Commission on the Relative Strengths of Diphtheria Antitoxic Serums. THE LANCET, July 16th, 1896.

[12] The majority of the estimations were made by Ehrlich's old method, but several were repeated, using the new method and a standard toxin sent by Professor Ehrlich himself. These showed that the original estimations were substantially correct.

[13] Report of the Council of the Royal College of Surgeons of England, October, 1898.

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remarkable fall both in the general and in the hospital rate. In London, on the other hand, where, prior to 1894,[14] the fatality rate of diphtheria was steadily improving and where the rate for the whole city was considerably lower than that for the hospitals alone, the introduction of the new treatment was followed by a fall in the hospital rate, which then came to coincide with that for the whole city; but the latter was scarcely affected and continued to follow the direction of its previous course. It would even appear that the improvement in the case mortality of diphtheria in London has been due to other causes than the new treatment. On the other hand, the enormous fall in the case mortality of Berlin which took place in 1894 and 1895 cannot, I think, be attributed to anything else. And unless our serum has been entirely worthless, which is certainly far from the truth, one can only conclude that it has not been used in London to anything like the extent it has in Berlin.

Can anything more be done to improve the deplorable fatality of diphtheria in London? I think that without doubt much might be done to diminish the prevalence of the disease by the isolation of convalescent patients until bacterial examination of the throat showed the absence of the Klebs-Löffler bacillus. Not many months ago I was asked by the house physician in one of our provincial hospitals to examine a child and report as to his fitness to return home. A day or two later I reported that virulent diphtheria bacilli were still present in the throat, whereupon the house physician replied that the child had already gone home, as he could not wait for the result of my examination. I fear that this is no isolated instance. No doubt if the patients were not sent home until the bacillus diphtheriæ could no longer be found in their throats, in some instances children would have to be isolated for several months. But even so that would be cheaper—to put it on the meanest grounds—than allowing them to go home and spread the seeds of the disease.

The fatality rate of diphtheria within the hospitals both in London and Berlin used to be considerably greater than of cases treated in their own homes, and this is not surprising, seeing that it is only the severer cases and often the moribund which are brought to the hospitals. But on the introduction of the antitoxin treatment the hospital fatality rate fell as low as the general rate in Berlin, even a little lower. This, I think, indicates that both there and here the new remedy has been more readily adopted by the hospital physicians than by general practitioners, and affords grounds for the hope that when the latter become fully alive to its advantages the fatality rate of private cases may fall and become as much better than that of the hospital cases as it was in former years. By many medical men I fear the antitoxin is looked upon as being in an experimental stage. They do not recognise that they possess a remedy which is capable of robbing diphtheria of its terrors, the evidence as to the utility of which is such that those incur a grave responsibility who do not use it. Called into a case they too often trust that it will be a mild attack and hesitate to apply the means of cure until it is too late. The parents of the little patients are in the majority of cases ill-informed, and either do not know of the remedy or look upon it as a dangerous substance obtained from a diseased animal and consequently they do not call for assistance until they are seriously alarmed. It is scarcely too much to say that if these ignorant people could be induced to bring their children for treatment as soon as the first symptoms of disease appear, and if the medical men would make thorough use of the remedy, the greater part of the mortality of diphtheria would disappear.

Cambridge.

[14] The influence of the new treatment is shown in the Berlin returns for 1894. But in London it can scarcely be said to have commenced before 1895.

ISOLATION HOSPITALS IN GLAMORGANSHIRE.—At a meeting of the Isolation Hospital and County Laboratory Sub-committee of the Glamorganshire County Council held at Cardiff on Nov. 22nd plans were approved for isolation hospitals at Pontardawe and in the Rhondda Valley. Mr. T. H. Morris, M.B., C.M. Glasg., Alderman R. W. Jones, M.B., C.M. Glasg., J.P., and Mr. H. N. Davies, L.R.C.P. Lond., M.R.C.S. Eng., were appointed commissioners to inquire into the proposed establishment of an isolation hospital for Penarth. Dr. Morris and Dr. Jones were appointed a sub-committee on the question of fitting up the chemical section of the county laboratory.

THE

INOCULATION THEORY OF MALARIAL INFECTION.

ACCOUNT OF A SUCCESSFUL EXPERIMENT WITH MOSQUITOES.

BY DR. AMICO BIGNAMI,

PHYSICIAN TO THE HOSPITAL OF SANTO SPIRITO, ROME; UNIVERSITY LECTURER ON PATHOLOGICAL ANATOMY.

IN a former article on Hypotheses as to the Life-History of the Malarial Parasite outside the Human Body[1] I expressed the opinion that an investigation of the mechanism by which the parasites penetrate into the blood of man ought to be the first step which would lead with certainty to a knowledge of the extra-corporeal phase of these hæmatozoa. I therefore reviewed afresh the old controversy as to how the fever is contracted, examining the various hypotheses most generally held, to show which of them is most in harmony with the best ascertained facts regarding the epidemiology and pathology of malaria. The theories most discussed were, and still are, those which regard as the vehicles of infection air and water respectively. With respect to the water-conduction hypothesis, I reviewed the theories and facts which Laveran, its principal supporter, adduced in its favour and showed how it can no longer be sustained after the experimental investigations of Celli and various other observers and especially in view of our experience of many malarious places in the Roman Campagna, where water of the same excellent quality is drunk as in perfectly healthy places in their immediate neighbourhood. I may add that the greater number of recent observers who have studied malaria in the most diverse parts of the world attach no value in their own experience to water as a vehicle of infection.

It was a more difficult matter to dispose of the air-conduction theory. Of all infectious diseases there is none whose origin from, or at least close connexion with, the soil is more generally admitted by epidemiologists than that of malaria. Now, in regard to the hypothesis that the malarial parasite exists in a free state and resists desiccation so as to be breathed with the atmospheric dust, I pointed out that *malaria does not comport itself in the least degree like a disease due to the inhalation of dust*. And apart from this I showed that the theory of the passage of germs from the moist earth to the "ground air" ("grundluft") has various difficulties to encounter which are not easily surmounted. Other difficulties which I noted which the supporters of the air-conduction theory had to contend against lie in explaining why malaria is not transported by the wind or, at least if it be so transported, why the fact is of no practical importance in the diffusion of the disease; and why the malarious load carried by the atmosphere should vary notably at different hours of the day, &c. And I contended that those who accepted the view that malarial germs pass from the soil into the air could offer only artificial and inadequate explanations of these and other facts. From this I passed to an exposition of the hypothesis of inoculation, asking myself whether this theory agreed with known facts regarding the diffusion of the fever and the conditions which favour the contracting of it. I pointed out that, granted the truth of this hypothesis, the explanation of many of the facts which are difficult to understand in the air-conduction theory becomes at once easy and satisfactory. Thus, if it be true that malaria is inoculated on man by the agency of mosquitoes it is not difficult to understand why, for example, it is not transported by the wind; why the hours of evening and of night are most dangerous for contracting it; why the infection does not extend in the vertical direction excepting to slight altitudes; and why it should be dangerous to sleep in a malarious locality. I cited finally some observations which proved the utility of mosquito curtains in malarious localities. Taking into consideration these and other facts, which are here omitted for the sake of brevity, I arrived at the conclusion that "malaria behaves itself with regard to man as if the malarial germs were inoculated by mosquitoes."[2] I omit, likewise for brevity's sake, to refer in detail to what I supposed to be the relations existing between malarial parasites

[1] THE LANCET, Nov. 14th and 21st, 1896.
[2] THE LANCET, Nov. 21st, 1896.

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and mosquitoes. But I wish to recall the fact that I laid great stress upon, and attached great value to, one argument in favour of the inoculation theory—viz., its analogy to the cattle fever of Texas, in regard to which the beautiful experiments of Smith and Kilborne were already known.

That mosquitoes might in some way be connected with the life-history of the malarial parasite had already been surmised by various authors. But with the exception of a few of the most recent these writers all looked upon the mosquito as acting the same part in malaria as it does in filaria disease and not as an inoculating agent. Thus Laveran, in his celebrated "Traité des Fièvres Palustres,"[3] at page 457, after having stated that he had repeatedly examined the water of malarious places and had several times found motile filaments very closely analogous to the microbes present in the blood of malarial patients, but that he had never in this search encountered pigmented elements analogous to the cystic bodies No. 1 and No. 2, goes on to say: "It is easily understood that the microbes of malaria may be encountered in the blood in forms which may differ considerably from those which they present in the outer world. The natural history of parasites offers us numerous examples of such transformations. I shall restrict myself to recalling the curious facts which have been discovered during the last few years in regard to filariasis. The filaria embryos which are found in the blood of those affected by this disease make their way into mosquitoes with the blood which these insects suck up from individuals suffering from filariasis. In the body of the mosquito they undergo a transformation, and when the latter eventually dies on the surface of some stream the filaria make their escape into the water and are subsequently swallowed in drinking-water by man. Has the mosquito a similar *rôle* in the pathogenesis of malaria to that which it has in that of filariasis? The thing is not impossible, and it is a noticeable fact that mosquitoes abound in all malarious places." These are the actual words of Laveran,[4] who then goes on without absolutely excluding the air-conduction theory to bring together and discuss facts which in his opinion support the hypothesis that malaria is contracted through drinking the water of malarious places.

In all this there is not the slightest hint at the theory of inoculation, nothing but a speculation as to the possibility that the mosquito has the same relation to malarial parasites as it has to the filaria nocturna; in other words, we have here something of the same kind as the theory of Manson, but nothing whatever of the theory which I have expounded above. Laveran expresses himself in the same way in the edition of his book of 1891. In an article published in 1896[5] he relinquishes the water-borne theory, since he observes that whilst many facts go to prove that infection may be brought about by drinking-water, yet none of these facts are absolutely demonstrative, and he states that the mosquito theory tends to gain ground as being that which better accords with what we know of the circumstances in which malarial infection may be contracted. In the last edition of his book (1898) Laveran alludes to the hypothesis of inoculation.[6]

The article of Manson[7] is very well known, in which he revives in the main the hypothesis of Laveran, contending that mosquitoes comport themselves with respect to malaria in the same manner as they do with regard to filariasis. Manson, in order to give a rational basis to his conception, avails himself of his extensive parasitological knowledge and formulates the hypothesis that the flagella of the so-called malarial flagellates are the forms which, developing in the bodies of mosquitoes, there commence the extra-corporeal life-cycle of the malarial parasite. Thereupon the mosquitoes, dying in the water, sow it, so to speak, with malarial germs, and the water in this way becomes the carrier of the malarial infection to man. Also in a recent work[8] he upholds the idea that man becomes infected by drinking water contaminated by mosquitoes or through the medium of inhalation.

I will not revert here to the criticisms which I have already made upon this view of Manson, who at any rate has the merit of having prompted and guided the extremely interesting researches of Ross. While these researches were still going on Dionisi,[9] in our laboratory, observing pigeons infected with the halteridium-Labbé (or *Laveranie*-Grassi), advocated the inoculation theory as the most plausible explanation of the infection, since the birds became infected as a rule after moulting, when they were vulnerable to the bites of mosquitoes. Ross, working in Calcutta, succeeded in determining the phases of the life-cycle of proteosoma from sparrows and other birds infected through bites by a particular species of mosquito (grey mosquito).[10] These hæmatozoa having entered into the stomach of the grey mosquito develop into forms which Ross considers as coccidia (proteosoma-coccidia); in the mature coccidia "germinal rods" are formed which find their way to, and collect in, the veneno-salivary glands of the insect which at this point becomes capable of injecting the proteosoma with its bite into healthy sparrows.

After these most interesting observations of Ross on the biology of the parasites of birds, Manson, who communicated them to the recent Congress at Edinburgh, admits that the malaria of man may also be inoculated by mosquitoes, but without maintaining that this is the only possible mode of infection.[11]

Quite recently the theory of inoculation has found a further supporter in R. Koch[12] who has been studying malaria in the German colony of East Africa and who puts forward the hypothesis that the malarial parasites have the same relation to the mosquito as the parasites of the fever of Texas have to the cattle-tick. He does not, indeed, add any new fact in its favour, but it will be attributable to the great authority of this writer if the theory of the inoculation of malaria by means of mosquitoes has become more widely known and has gained more credence among us during the present year. Of the very interesting observations of Grassi[13] on the same subject I shall have occasion to speak several times further on.

In 1894—i.e., nearly three years before the publication of my paper in THE LANCET—I made some experiments with the object of finding whether my hypothesis of inoculation would withstand the test of facts. In these experiments I had Dr. Dionisi as my co-worker. They did not succeed because for want of means we could not secure for them conditions similar to those in which infection is contracted naturally. And to this explanation adopted by myself another may be added (as Dionisi remarks)—namely, that in all probability among the species used by us those by which the natural infection is carried were not represented (*loc. cit.*). For these reasons I do not believe that the negative result of the experiment ought to discredit the value of the hypothesis.

In resuming the experimental study of this question I had to consider two ways by which it might be approached. In the first place, I might make use of an indirect method of investigation, carrying out experiments in some locality of a highly malarious character on a large number of individuals all living under similar conditions. Of these, one portion would be protected in some way from the bites of mosquitoes, especially at night, while the other portion would be left undefended like the ordinary inhabitants of the place. Such protection might be afforded by thick mosquito nets, by providing the windows of sleeping apartments with frames covered with gauze, and also by means of fumigation, for which purpose the smoke of ordinary wood is known to be efficacious. The effect might likewise be tried of anointing the body with aromatics, as the ancients were in the habit of doing and as some tribes living in tropical climates still do, apparently with the object of defending themselves against the bites of these insects. All possible precautions having been adopted towards securing that end it would then be seen whether the protected persons were preserved by this means from attacks of fever. But this way of solving the question I was obliged to abandon for want of sufficient means and

[3] Paris: Octave Doni.

[4] I cite the words of Laveran because some have said (including recently Grassi) that I had revived the theory of Laveran, which is not the case.

[5] Revue d'Hygiène, December, 1896. Comment prend-on le paludisme?

[6] Traité du Paludisme. (Paris: Masson et Cie, 1898.)

[7] The Life History of the Malarial Germ outside the Human Body. THE LANCET, March 14th, 21st, and 28th, 1896.

[8] Tropical Diseases. (London: Cassell and Company, 1898.)

[9] Dr. A. Dionisi: Sulla Biologia dei Parassiti Malarici nell' Ambiente (Policlinico, 1898.)

[10] Ross: Report on the Cultivation of Proteosoma-Labbé in Grey Mosquitoes. (Calcutta, 1898.)

[11] P. Manson: The Mosquito and the Malarial Parasite. (Annual meeting of the British Medical Association, July, 1898.)

[12] Die Malaria in Deutsch-Ostafrika, Arbeiten der kaiserlichen Gesundheitsamte, Band xiv., Heft ii., 1898.

[13] Rapporti tra la Malaria e peculiari Insetti (Rendiconti della Reale Accademia dei Lincei, vol. vii., Serie 5a, Fasc. 7, and Policlinico, 1898).

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on account of the great difficulty of maintaining rigorously the conditions of the experiment. It would, in fact, have been necessary to have had a certain number of men entirely at one's disposal, to have exercised a rigorous and continuous surveillance over them, and to have obtained the consent of a portion of them to submit to the measures indicated above. Now, anyone acquainted with the population, so largely nomadic, of the Roman Campagna can easily imagine how difficult it would be to attain the desired end under such conditions. I therefore applied, with the support of Professor Celli, to the military authorities, proposing that the experiment should be carried out in the forts surrounding Rome, many of which are situated in localities highly malarious. It is well known that many of the soldiers who man these forts fall ill from fever from the month of July onwards. Now, I proposed that one part of the troops should remain shut up from sunset till morning in dormitories protected against the entrance of insects—an easy matter, one would suppose, to arrange—whilst the other part should be left under the habitual conditions. If, then, let us say, some of the men who had been left to follow their ordinary habits took fever while none of those who had been protected from mosquito bites were affected (the other conditions of life being identical for both) we should have obtained an indirect demonstration of the way in which the fever is contracted. But unfortunately, for reasons connected with the military service, it was not possible to carry out such an experiment.

In the second place it was open to me to try afresh the direct method of investigation, modifying in various ways the conditions of the experiment. I have already recorded the negative result which attended the first experiments instituted by me in 1894 at the Hospitals of Santo Spirito and San Giovanni. These were made with a large number of mosquitoes captured on the estate of Porto, near Fiumicino (a highly malarious locality), and set at liberty in rooms specially prepared for the purpose. The non-success of this experiment was due, I consider, to the fact that the conditions under which it was carried out were too dissimilar in the subjects experimented upon to those under which the fever is contracted naturally. It is well known, indeed, that mosquitoes have but a brief existence; hence it is necessary, in order to keep the individual in what I may be allowed to call an *artificially malarious* environment, that the supply of these diptera should be renewed very frequently. Again, it is an ascertained fact that only exceptionally do persons exposed for only a short time to the infection contract the fever even in the most highly malarious localities and that in general a sojourn of at least a week or two weeks in such a locality is necessary. Not having at the time any person at my disposal suitable for such a purpose, and not possessing the means of procuring one, I could continue the experiments for only a very short time. As the mosquitoes collected in my first experiments were naturally representative of the species most prevalent in the malarious locality from which they were taken, I shall be correct in saying that these experiments were carried out in precisely the same way as the latest ones to which I am now about to refer, and the result of which has been to decide this question. The sole difference between the first unsuccessful experiments and these last consists in this—that the first for want of sufficient means were too soon interrupted.

It was clear, then, that in making a fresh attempt this year to solve the problem, I must assimilate the conditions of my experiment as nearly as possible to those natural ones under which the fever is usually contracted. It was further necessary, in order that the result should be positively demonstrative, to surround the experiment with the greatest precautions and with this in view to carry it out in an environment known for certain to be non-malarious, where no one had ever contracted the fever; to employ for the purpose an individual who had never had malaria and who had been in the hospital for as long a time as possible under medical supervision; and to continue the experiment for several weeks and during this period to renew rather frequently the supply of mosquitoes. It will be easily understood that it was no easy matter to satisfy with certainty the first of these conditions; it was more especially difficult to find anyone in the circumstances indicated willing to allow himself to be subjected to the test. And, given all this, it must not be forgotten that the persons experimented upon are placed in conditions much less favourable to the contracting of disease than are the inhabitants of the Campagna. Everyone knows how important are good food, a regular, tranquil life, and the avoidance of over-exertion in warding off the fever even in highly malarious places, and how much less frequently persons living under such conditions are attacked than those labourers who are badly fed and overworked and exposed to a broiling sun and to inclement weather—in short, to all those causes which favour the development of infection. Thus, even supposing that the subjects of my experiments had been inoculated with malaria, it is conceivable that in the conditions under which they were placed they might be able to resist the development of the infection in virtue of good nourishment, rest, and the absence in general of circumstances unfavourable to health. If it is further taken into account that there are individuals who enjoy a natural immunity from malarial infection it will be conceded that a negative result could not be looked upon as conclusive evidence against the theory, whereas a positive result obtained under the conditions indicated would have the force of a complete demonstration.

My last experiments were commenced in the beginning of August of this year. They were carried out upon three individuals, with various modifications which will be described later. A small room of two beds was selected on the second floor of the Hospital of San Carlo (near Santo Spirito), in connexion with the section under my charge. Its two windows having been closed with frames covered with gauze, adult mosquitoes brought from a malarious locality were set at liberty or receptacles containing larvæ of mosquitos collected in the Campagna were placed in it. The persons selected all submitted themselves voluntarily to the experiment after I had clearly explained to them what I wanted to try. They were shut up in the "mosquito chamber" in the evening a little before dusk and were kept there all night. In the morning they came out and passed the day in the ordinary wards.

(To be continued.)

FUNCTIONAL DYSPHAGIA.[1]

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PHYSIOLOGY OF DEGLUTITION.

DEGLUTITION is the muscular movement by which liquids and masticated boluses of food are transmitted from the mouth to the stomach. It might be well, as a preliminary, to briefly recall the physiology of the process. Although the passage from the mouth to the stomach is one continuous and uninterrupted movement, still, for convenience of description, it has been divided into three acts. In the first act the masticated food is gathered up into a bolus in the mouth, and then (chiefly through the action of the tongue) pressed backwards past the anterior arch of the fauces. In the second act it is grasped by the constrictors of the pharynx and passed downwards over the entrance to the glottis until it reaches the œsophagus, when the third act begins, to terminate on the entry of the food into the stomach. This third act is very rapidly performed, as may be observed in animals with thin necks, such as the swan, in whom a rapid ripple in the situation of the gullet indicates the rate of transit. The first act is voluntary, although usually performed unconsciously. It is carried out by the muscles of the tongue and palate, chiefly the former. In the second act the muscles of the anterior faucial pillars contract on the morsel, and then behind it, so as to shut off the return to the mouth; the soft palate and posterior faucial pillars bar the route to the posterior nares; the entrance to the glottis is protected by the contraction of its own muscles, and by the tongue being retracted while the larynx is lifted with the pharynx and carried forward beneath its base. At the same time the pharynx is raised to receive the food when it, in its turn, contracts, and so the bolus is passed downwards till it enters the œsophagus. The point of separation between the pharynx and œsophagus is purely an arbitrary one. The upper third of the latter tube is composed entirely of striped voluntary muscle fibres, and the

[1] A paper read before the Harveian Society of London on Nov. 17th, 1898.

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level of the cricoid cartilage is simply chosen as a convenient situation to draw a boundary line between them. Arrived at this point the tonic contraction of the circular muscles is relaxed, and the food leaves the pharynx to enter the peristaltic grip of the œsophagus, which, as already observed, rapidly passes it on to the stomach. In this process "if we suppose the bolus to be at one particular place in the tube," as Halliburton well remarks, "it acts stimulatingly on the circular muscular fibres behind it and inhibitingly on those in front; the contraction therefore squeezes it into the dilated portion of the tube in front, where the same process in repeated and this travels along the whole length of the tube.[2]

INNERVATION OF DEGLUTITION.

The first of the three acts of swallowing is entirely a voluntary one. The second and third acts are involuntary. This refers, of course, to a physiological condition; we shall have occasion to see that volition has a certain amount of control during the second part. The nerve centre, coördinating the action of the muscles employed in the second and third acts, is situated in the medulla oblongata. In the reflex portion of the act the following nerves are concerned: *sensory* or afferent, branches of the fifth supplying the soft palate; glosso-pharyngeal, supplying the tongue and pharynx; and the superior laryngeal, supplying the epiglottis and larynx. The *motor* fibres concerned are: branches of the fifth, supplying part of the digastric and mylo-hyoid muscles, and the muscles of mastication; the glosso-pharyngeal, supplying the muscles of the pharynx; the vagus, supplying the soft palate, and the muscles of the larynx through the inferior laryngeal branch; and the hypoglossal, the muscles of the tongue. With regard to the œsophagus the nerve structures concerned are the ganglia contained in its walls and the pneumogastrics. These nerves supply the gullet with motor branches and act as inhibitory on the tonic sphincter at the cardiac extremity. When they are divided therefore the cardiac end remains firmly contracted, while the œsophagus becomes paralysed, and if food is swallowed it accumulates in the gullet and does not arrive at the stomach. As in the peristalsis of the intestines, the motor property of the muscle of the œsophagus is an inherent property in it, although controlled by nervous agency. Hence if the gullet is cut across leaving the nerve branches intact a wave of contraction will travel from one end to the other across the solution of continuity.

With regard to the swallowing of liquids it has been shown by Kronecker that the act of deglutition is differently produced and that its division into three stages is true for solids only. A mouthful of liquid is, in fact, projected from the mouth into the gullet by a sort of force-pump action of the two mylo-hyoid and hyo-glossi muscles. These muscles combine to pull the base of the tongue first upwards and backwards and then backwards and downwards. In this way the pharyngeal muscles hardly contract on the liquid at all. These preliminary considerations as to the mechanism of deglutition will find their application in many points which will present themselves in the course of this paper. True paralysis of the œsophagus is very rare. It is most often due to central disease—cerebral tumour, bulbar paralysis, or general paralysis of the insane. It is sometimes peripheral and due to diphtheria.

FUNCTIONAL DYSPHAGIA.

Functional dysphagia may be manifested under two forms—a paralytic and a spasmodic. There is either a difficulty in passing the bolus of food (which for brevity we may refer to henceforth as "the morsel") from the mouth into the pharynx or else the morsel cannot be passed from the pharynx into the gullet and is, as a rule, rejected. Once the food passes the level of the cricoid cartilage there is generally no functional affection which arrests its passage downwards to the stomach. One might imagine a condition of "œsophageal constipation" from muscular atony, but I do not know if it has ever been demonstrated. A form of spasmodic stricture of the gastric extremity of the œsophagus has been described by Dr. J. C. Russel of Southport.[3] This appears to occur at all ages and in both sexes; it is not markedly associated with what we understand as hysteria and neurasthenia, and the two chief symptoms are dysphagia and vomiting, and the bougie will sometimes, but not always, detect a spasmodic stricture of the cardiac end of the gullet. The condition is often ascribed to some affection of the stomach, and Dr. Russel considers that dilation of the stricture with bougies is not sufficient—it should be stretched by an expanding dilator.

Functional dysphagia is not necessarily associated with the affection known as "anorexia nervosa," so well described by Sir William Gull. There is sometimes a loss of appetite for solid foods, but as a rule no distaste for it. In the first form of functional dysphagia the patient is able to masticate food thoroughly but appears unable to gather it into a bolus and pass it through the anterior pillars of the fauces. This, strictly speaking, can hardly be termed difficulty of swallowing; frequently no attempt at all is made to swallow; there is often no complaint of pain; the patient simply states her inability to get the food out of her mouth. It might more correctly be termed "aphagia." Before they come under observation these patients—the majority of whom are females—have given up every idea of even making the effort to swallow solids and have nourished themselves entirely on liquids. If they can be induced to attempt the deglutition of some solid food it will be observed that the first step of the first act is made with an effort which, in the absence of local symptoms, is too palpably overdone. The lips are too firmly compressed, the jaws too steadfastly clenched, the chin is pushed forwards and the head appears to sink to meet the rising pharynx. Still the morsel may exit from the mouth, but it will be noticed that the second stage of deglutition does not follow quickly, the raised pharynx does not sink down again as it should do when the food passes from its grasp, and the patient retains her head in a fixed position, while her face shows an anxious and expectant expression. Generally within a few seconds and with a gulping action the bolus is returned into the mouth or shot out straight through it, while the patient looks relieved, or martyrised, or complacent—or all three! This gulping action is not unlike that which one sees in a dog when, being pursued or from other causes which demand despatch in eating, it tries to bolt a half-masticated piece of food. Finding that it will not pass the cricoid cartilage the animal gulps it back into the mouth for further trituration. In the condition I have been describing, however, the dysphagia is not due to any undue bulk in the bolus; it is caused by the second of the two forms of functional dysphagia—in other words, by spasm of the upper constrictor of the œsophagus. This latter is frequently referred to by the title of "œsophagismus," but I think it might be a good plan to bear in mind that although one form of functional dysphagia is associated with œsophagismus, still this latter term is also applicable to the spasm of the gullet which may occur in the course of certain nervous disorders, such as chorea, epilepsy, hydrophobia, and tetanus. Œsophagismus may result from long-continued or violent retching, and it may be associated with an early stage of malignant disease of the œsophagus. It might therefore be advisable to avoid the use of the term when we mean functional spasm and to limit "œsophagismus" to the above nervous conditions and to that met with in pseudo-hydrophobia, in reflex spasm from causes situated in the gullet itself (foreign bodies, &c.), or at some distance (the base of the tongue, the pharynx, teeth, nose, ear, stomach, &c.), or due to general affections, such as gout.

ETIOLOGY.

Functional dysphagia is therefore an affection which may be paralytic, or spasmodic, or both. The starting point is not infrequently some form of sore-throat, the temporary lodgment of a foreign body in the pharynx, or some other occurrence which attracts the patient's attention to her power of swallowing. Or it may date from some mental or physical strain, prolonged lactation, recovery from acute illness, &c. As already mentioned, the large proportion of sufferers are females and it is said to occur in those of a neurotic type between the ages of nineteen and thirty. But I have come across it in females of almost any age—a most typical case occurred in a young man aged eighteen years—and cases have been met with in children. Undoubtedly it is met with most frequently in those of an hysterical temperament, but it is very difficult to detect a history or stigmata of hysteria in those who apply for this condition, for this trouble is rare in old-standing hysteric cases (Weir-Mitchell) and when it occurs it is frequently amongst the first hysterical symptoms complained of. There are certain symptoms of hysteria which appear early in that disease, just as there are others which do not show themselves as a rule till the later

[2] Kirkes' Handbook of Physiology, fourteenth edition, 1896.
[3] Brit. Med. Jour., June 4th, 1898.

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stages. As Weir-Mitchell puts it, "Dysphagia one sees often in cases which are afoot."[4]

DIAGNOSIS.

The patient may therefore present herself before her hysterical character has been revealed, and her condition enlists so much sympathy and the diagnosis is sometimes so difficult that its differentiation from much more serious affections is not always readily arrived at. It is a very different affair, for example, from functional aphonia, where not uncommonly there is a history of previous attacks of sudden loss of voice with sudden recoveries, and a glance with a laryngeal mirror settles the diagnosis. In functional dysphagia our suspicions may be aroused if the patient states that she "cannot get the food out of her mouth," or if she states that "it goes down but comes up again before it is half swallowed," or that "when she goes to swallow she feels a ball rising in the throat to meet it." The patient may also present herself without any loss of weight, being able to nourish herself on liquid food. In other conditions of dysphagia the amount of liquid nourishment taken is not always compensatory. In malignant disease, for example, the sufferer may be able to swallow a much larger amount of liquid nourishment than another patient with functional dysphagia, but the latter may remain plump while the former wastes steadily. Still, many cases of functional dysphagia do become remarkably thin, but then the observer is at once struck by the fact that, as a rule, they are, as Weir-Mitchell says, not only "afoot," but though frequently pale they are not cachectic, they have no secondary affections and are able to get through a considerable amount of work. A patient with a similar amount of wasting from malignant disease would not only have the undoubted look of cachexia, but probably be too weak to leave his room. The history may be of assistance, as revealing a longer duration and arrested wasting when the dysphagia is functional, whereas in malignant disease the loss of weight is only too steady and rapid. Very few cases of malignant disease of the œsophagus last more than a year; in well-marked instances a short three months will often bring the relief of death to the sufferer. Carcinoma is rare before the age of forty years, though it sometimes occurs in early life. It is much more frequent in men than in women, in whom the proportion is between 14 and 29 per cent. of all cases; but the diagnosis is made difficult from the fact that when malignant disease does occur in early life it is chiefly met with in females.

Functional dysphagia may be associated with organic disease just as we meet with functional aphonia with pathological changes in the larynx, and of course the diagnosis is then rendered more difficult. But in an uncomplicated case there are a large variety of affections which might occur to the mind and which must be excluded before a positive diagnosis is arrived at. Many of these possibilities can promptly be considered and ruled out of court if a thorough inspection is made of the pharynx and larynx. Sir Felix Semon has pleaded for the imperative necessity of a thorough larnygoscopic examination in all cases of persistent hoarseness in patients over forty years of age so as to be prepared for the possibility of an early diagnosis of laryngeal cancer. He has also pointed out the necessity of careful inspection of the throat as a first step in dealing with a foreign body impacted in the upper air or food passages. The same pleas apply to the condition under consideration, and it is to be hoped that the time is fast approaching when neither a diagnosis nor an attempt at treatment will be meditated before a thorough direct observation has been made. Perhaps this applies particularly to children, who frequently give us little help in localising their symptoms. The rare condition of congenital atresia should be borne in mind when dealing with infants. Thrush may in infants spread from the mouth to the gullet and so give rise to dysphagia. Retro-pharyngeal and peri-œsophageal abscesses have to be borne in mind. It is not uncommon for children while holding some toy in their mouths to swallow it and never mention that it has disappeared from their buccal cavity—inwards and not outwards. In any suspected case of foreign body in a cavity the Roentgen rays have proved of the greatest value, not only in diagnosis, but in assisting treatment by localising the point of impaction.

Turning to adult patients, diphtheria may in them, as well as in children, lead to a paralysis of the soft palate and so to dysphagia by reflux of liquids through the nose. Diphtheria may also attack the gullet and the presence of membrane lead to dysphagia. Cases might not infrequently be put down as functional were a careful examination neglected. I have seen such a diagnosis made when the actual cause was a commencing epithelioma at the base of the tongue deep between its margin and the infra-tonsillar region and only visible with a laryngeal mirror. The characteristics of quinsy and other tonsillar affections are so obvious that they hardly present themselves for diagnosis. But a careful inspection of the base of the tongue and of the larynx is most important, the latter particularly if there is any alteration in voice. Acute inflammation of the lingual tonsil is sure to attract attention to the region by the severity of the symptoms; but other less-marked conditions might escape detection if not particularly looked for. Hypertrophies and enlarged veins at the base of the tongue have been credited with being the original points of irritation of functional dysphagia and a cure has been attributed to their direct treatment, generally with the galvano-cautery. The connexion between the two is not satisfactorily established and the same result might have been obtained by any other manipulation which would impress the patient. Malignant disease of the larynx is another possible point of diagnosis which may be ruled out of court by the use of the laryngeal mirror; and still more likely is laryngeal tuberculosis from its frequent occurrence between the ages of twenty-five and thirty-five years. It is not at all uncommon for foreign bodies to get lodged in the naso-pharynx and for the patient to complain only of dysphagia and refer all his symptoms to the front of his neck. I once had to treat an old gentleman, aged seventy years, who came complaining of difficulty of swallowing, slight alteration of voice, and pains shooting up to both ears. Nothing was to be seen in his pharynx and larynx, and such symptoms at his age naturally aroused the suspicion of a malignant affection of the œsophagus. The routine of examination directed me to inspect his post-nasal space, and in the site of election was a distinct syphilitic gumma the heritage of an infection of fifty years previously. Suitable treatment brought relief in a few days and within a month he was free from all symptoms.

Inspection of the larynx is of importance, not only as it may reveal the actual cause of the dysphagia, but also because it may point to pathological changes more remote. I refer to the paralysis of one of the vocal cords—or more rarely of both—from pressure of an aneurysm on the recurrent laryngeal nerve, or from involvement of the nerve in a cancer of the œsophagus. This condition is sometimes suggested by the peculiar voice of "phonative waste" which is heard when one cord is affected. This is apt to disappear when the unimpaired cord takes on increased action and crosses the glottic space to meet with the fixed cord. Those who are not expert with the laryngoscope can often, however, make a very thorough exploration of this region with the forefinger, which can be readily swept over the base of the tongue down round the rima glottidis, behind the arytenoids to the entrance to the gullet and even be carried over the ventricular bands and vocal cords. The whole post-nasal space and the posterior choanæ can be examined in the same way. Next to careful inspection of the upper air and food passages the diagnosis may be facilitated by examination of the neck. It seems almost too elementary to refer to such a matter, but the fact remains that a complete exploration of the interior of these cavities will often be made, and an observer will sometimes neglect to see if there is an enlarged thyroid pressing on the gullet. Much of the dysphagia of acute illness, fever, &c., is due to mere dryness of the mucous membranes. In some instances it is consequent on the mouth-breathing which results from the nasal catarrh and obstruction connected with many specific fevers.

Coming now to affections which are beyond the ken of the frontal mirror we have to refer to some affections of the œsophagus. In chronic œsophagitis, according to Mackenzie,[5] the dysphagia "is constant, whilst in spasm it varies to some extent from day to day, and even from meal to meal. The most important point of distinction, however, between these two affections is that whilst in spasm solids or semi-solids can often be swallowed with comparative ease in simple chronic inflammation liquids pass down much more readily." This distinction does not appear to be very well marked. The diagnosis may be based

[4] Diseases of the Nervous System, Philadelphia, 1881. p. 203.

[5] Diseases of the Throat and Nose, vol. ii., 1884.

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on the general features of the case and on the fact that in functional dysphagia the difficulty is met with in the first and second acts, while in chronic œsophagitis it is the third act which is painful, and it is more a case of odynphagia than of dysphagia.

The rare conditions known as acute catarrhal œsophagitis and phlegmonous inflammation of the œsophagus may cause dysphagia, but they can readily be distinguished by the acuteness of the symptoms, the pain on speaking and even on moving, the tenderness on pressure, and other symptoms of local inflammation. Psilosis or sprue may give rise to dysphagia, but then it is only met with in Europeans who have resided in the tropics. Traumatic œsophagitis may arise from swallowing boiling water, solutions of strong alkalies or acids, or from inhaling steam. The immediate dysphagia may be recognised by its acuteness and by the history or by the stains on the lips. The secondary dysphagia resulting from the subsequent cicatricial contraction may not in mild cases set in until some months after the accident, and even after an interval during which swallowing was normally performed. In the absence of information as to the original traumatism suspicion may be aroused by the cicatrices on the lips or in the mouth. It will be noted that I do not suggest looking for any stains or cicatrices in the pharynx, and their absence is explained by reference to the introductory remarks in which it was pointed out that liquids are, so to speak, "shot" through the pharynx without coming into contact with its walls. Tuberculous disease of the œsophagus is too rare an affection to detain us. In syphilis we must depend chiefly on other signs of the disease and the diagnosis can never amount to more than a conjecture. Of simple ulceration, apart from trauma, and of the ulcers consequent on typhoid fever, variola, and pemphigus I have no experience. Some attention has lately been given to the subject of pressure-pouch of the œsophagus, a condition which is apt to be mistaken for the pouching of the œsophagus above the stricture. An excellent description of this condition is given by Mr. Butlin[6] in an article from which it will be seen that it need lead to no confusion with functional stricture. It occurs chiefly in men and is not generally noticed until after forty years of age. There is no real dysphagia, but the one constant symptom is the return of fragments of undigested food, not immediately after being swallowed, but hours and even days afterwards. Pressure on the side of the neck in the posterior triangle, generally on the left side, causes liquids and fragments to return to the mouth. A case illustrating all these conditions was shown by Mr. Cresswell Baber at the last meeting of the Laryngological Society.[7]

Turning finally to the extrinsic causes of œsophageal obstruction which might be confused with functional dysphagia we may have to consider mediastinal new growths, enlarged glands, dislocation backwards of the sternal end of the clavicle, abscess in connexion with Pott's disease, large pericardial effusion (rare), and aneurysm of the aorta. The latter is really the only condition which need detain us, firstly because of its importance, and secondly because of the difficulty it may present in diagnosis. I note that Osler[8] says that dysphagia is a comparatively rare symptom of aneurysm of the thoracic aorta. If this is so it shows the mistaken ideas which might be obtained by limiting oneself to a special department of practice uncontrolled by larger teachings. For the experience gathered from a throat hospital would lead me to the opinion that dysphagia from pressure of an aneurysm is not uncommon. In this view, however, I am supported by the experience of Dr. G. A. Gibson, who states in a recent publication[9] that in aneurysm of the transverse arch of the aorta "interference with swallowing is extremely common," and that when the descending portion of the arch is affected dysphagia is "usually the symptom which calls the attention of the patient to the fact that there is anything wrong." The general symptoms of aneurysm need not here be recapitulated, but brief reference might be made to those cases showing pressure on the œsophagus. To begin with, it should be an inviolable rule to carefully examine every person for aneurysm of the thoracic aorta before forming a diagnosis as to stricture of the œsophagus and before thinking of passing an œsophageal bougie. Sir William Broadbent makes the useful division of aneurysm into aneurysm of symptoms and aneurysm of physical signs. The latter should, if associated with symptoms of pressure on the œsophagus, at once put the practitioner on his guard against passing a bougie for diagnostic purposes. It is in the "aneurysm of symptoms" that great difficulties present themselves. Space prevents me from enlarging on this point, although it requires the most careful consideration, for many are the tales which are related of physicians who have diagnosed a stricture of the œsophagus, either spasmodic or organic, and have passed a solid india-rubber bougie straight into the sac of an aneurysm. Two methods of examination remain to be considered: auscultation of the œsophagus and the use of the œsophageal bougie.

AUSCULTATION OF THE ŒSOPHAGUS.

Stethoscopic examination of the gullet seems to have fallen into some disuse, and it must be confessed that it is a difficult art to acquire and one which is not always reliable in the impressions it conveys. In normal deglutition there may be no sound at all or at most a confused and continuous bubbling. As a rule it is quickly over. When there is organic stricture the most striking symptom is the prolongation of the œsophageal bruit. The test is generally applied with mouthfuls of liquid and the arrest is revealed by a confused and bubbling noise, which gradually diminishes and can be heard descending as the liquid trickles through. In spasmodic functional stricture there is frequently practically no bruit at all if the liquid passes into the œsophagus. If it is rejected there is a loud and sudden bubbling as it is returned.

DANGERS OF THE ŒSOPHAGEAL BOUGIE.

The passing of an œsophageal bougie is sometimes undertaken light-heartedly, as if it were one of the most trivial of diagnostic procedures. For my own part I must confess that I employ it comparatively rarely—it is always the last step in an examination; if there is any suspicion of the presence of an aneurysm or of ulcerated malignant disease it is not passed at all for diagnostic purposes, and I never pass one except in the presence of a third person. These precautions may appear suggestive of timidity, but although those who have had misfortunes with the bougie are doubtless reluctant to publish their experiences there is, I fear, a record of undoubted accidents sufficient to put every practitioner on his guard and to surround the sounding of an œsophagus with the greatest circumspection. One well-known story records that a hollow bougie was passed easily—presumably into the stomach—and a pint or more of milk was poured through it. At the post-mortem examination a few days afterwards the milk was found in the left pleural cavity. The instrument had perforated the floor of a latent form of carcinoma of the gullet. But it is not only that there is danger of a bougie penetrating an aneurysm or the wall of the œsophagus, the simple passage of the instrument into a gullet where it meets with no pathological change is, in itself, not unattended with risk. Gratz is quoted by Lowman as having reported three cases of death from simply passing a stomach tube. Lowman[10] states that he himself knows of a case where a tube was passed into the stomach and the cavity washed out with warm alkaline solution. The patient complained of feeling weak and he was made to lie down, but he continued looking pale; stimulants were given, but he shortly afterwards died. In seeking for an explanation of these unfortunate accidents I have been reminded of the close association between the act of deglutition and the action of the heart. Kronecker has discovered that the act of swallowing seems to remove entirely the inhibitory action of the vagus upon the heart for the time being so that the pulse becomes exceedingly rapid. Dr. Lauder Brunton, who has called attention to this,[11] finds that sipping half a wineglassful of water will raise his own pulse from 76 to considerably over 100. It is, I fancy, possible that in a sensitive subject the passage of a bougie along the œsophagus might remove the inhibitory action of the vagus to a dangerous extent. I readily grant that much can be learned from the passage of a bougie, and as Rolleston remarks in his excellent article in Allbutt's System of Medicine[12] "By means of the bougie, spasm, stricture due to organic cause, and paralysis can be distinguished from each other." All I wish to lay stress on

[6] Brit. Med. Jour., Jan. 1st, 1898.
[7] Proceedings of the Laryngological Society, November, 1898.
[8] Practice of Medicine, third edition, 1898.
[9] Diseases of the Heart and Aorta, 1898. Pp. 850-851.
[10] Transactions of the American Laryngological Association, 1897, p. 30.
[11] The Disorders of Digestion, 1886.
[12] Vol. iii., p. 362.

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is the necessity for great caution before deciding to employ the instrument.

SOUNDING THE ŒSOPHAGUS.

A few words as to the passage of the œsophageal bougie. The usual form is that known as Mackenzie's, flattened antero-posteriorly, and, in the words of the advertiser, "I know no better." 13 sizes are made, the measure of each being based on the number of millimetres in the transverse—i.e., their long—diameter. The sizes are reckoned from No. 3 to No. 15. Thus No. 3 measures 3 mm. from side to side, No. 4, 4 mm., and so on through the scale. Nos. 1 and 2 are not made, as they are too small to be of any use. In introducing this the patient should sit in front of a good light with his neck freely uncovered. The upper part of his body and neck is craned forward, while the face is thrown upwards. A moderate sized bougie, from No. 8 to No. 12, is safer to begin with than a sharp-pointed one. It is softened sufficiently by being dipped in warm water. The books always recommend us not to dip it in oil, which is very disagreeable to the patient, but to lubricate it with glycerine. As a matter of practice it has been pointed out by Mr. Hovell that no lubricant whatever is required. It is probable that when any is used it does not pass with the bougie along the gullet—it is mostly deposited in the mouth. The natural secretion of mucus which is sufficient to slide down walnuts, apples, and other hard and angular morsels is quite sufficient to facilitate the passage of the bougie. The instrument should be slightly bent at about an inch from its extremity, so that it will glide easily along the posterior wall of the pharynx. It is then grasped in the operator's right hand about half a foot from its extremity. The left forefinger depresses the tongue so as to reveal the margin of the epiglottis, and at the same time it serves to guide the tip of the instrument behind the larynx. It is then pressed gently but steadily into the gullet. As it passes the cricoid cartilage—especially in cases where the patient spasmodically contracts the upper part of his œsophagus—it is a good plan to make the patient bend his head forwards and at the same time request him to make an attempt to swallow. When he is seen to be doing this the bougie can generally be slipped past the constriction and then, in sailor language, "paid out" into the gullet. This method of "surprising" a stricture is the only one I am conversant with and I think the only one to be recommended. Other methods of "forcing" a stricture appear to me to be too full of risk to be employed. Sometimes the application of cocaine will facilitate the sounding, but it is as well to bear in mind that in neurotic subjects, in whom functional dysphagia is apt to occur, there may be a special predisposition to cocaine intoxication. In many uncomplicated cases some patience, and the trial of different sizes, is required; but if not soon successful, and there is no indication demanding the immediate passage of the instrument, I think that, if the patient shows much nervousness and tendency to spasm, it is wise to defer the examination. Once the patient gets nervous the difficulty of passing the instrument is greatly increased, whereas at a second visit he is more reconciled to the idea, especially if the procedure is approached with confidence. The administration of a general anæsthetic is rarely required.

When the bougie is felt to encounter an impassable obstruction, or when it is grasped in a stricture, it should be seized on a level with the incisor teeth before being withdrawn. It will be remembered that the upper margin of the œsophagus is 6 in. (from 15½ to 17 cm.) distant from the front teeth and that the stomach is reached at a depth of 15½ in. In functional dysphagia the bougie can always be passed. The resistance it meets with is, in my experience, always at the superior constrictor of the œsophagus. Once this is overcome the bougie is felt to be free and easily moveable. In pressure-pouch the bougie will sometimes pass into the pouch and its tip can then be felt on one side of the neck. If two metal bougies are passed, one into the pouch and the other down into the stomach, and a Roentgen photograph be taken, the situation and relation of these two bougies will be seen. Malignant disease occurs with almost equal frequency at either end of the gullet. It may be quite impassable. If a passage is found through it the bougie continues to be grasped by the stricture and is not felt to yield on moving the instrument up and down. Its withdrawal is often accompanied with some blood.

PROGNOSIS.

The prognosis of these cases is good in so far as regards the length of days. As regards their duration, some remain unaltered for years, continuing to nourish themselves sufficiently on fluids. In some the symptoms are intermittent. In many they recur after relief by treatment.

TREATMENT.

The experience of the study or out-patient room might lure us into the conviction that such cases are readily curable, and it is often said in an offhand way that the passage of a bougie is sufficient to cure functional dysphagia. No doubt in a large majority of cases a striking result is speedily brought about. Possibly the laryngologist's *mise en scène* conduces to this rapid result. The darkened room, the glaring bull's-eye lamp, the flashing frontal mirror, and the long, glittering, red bougie which is seen and felt disappearing, apparently by the yard, down the gullet are doubtless all calculated to make an impression on these generally hysterical subjects. If to this procedure strong suggestion is added the patient will generally go straightway and consume a good solid meal with ease. But only too often, and particularly if after-treatment is not followed up, their dysphagia recurs. Some present themselves again and are again relieved; the older cases probably go elsewhere, where they know the bougie is not so readily produced, and a large number refuse to consult anyone and cling to a condition which not unfrequently gives them a local reputation. I have known several cottagers' wives afflicted with this malady—poor women leading a hard life, the hardness of it being increased by the necessity of expending money on milk, eggs, and beef-tea, and who either refuse any treatment or who, having once been relieved by the passage of a bougie, decline to have recourse to it again. Weir-Mitchell writes:[13] "You will be well if you escape this exasperating disorder in your early hysterical cases. It is most enduring and difficult of relief." Personally I have generally found that the mental effect of the passage of the bougie has acted admirably. I have never had recourse to intra-œsophageal electricity and I imagine that it might not be without risk. It is most important to keep up the influence of suggestion. A large number of cases are remarkably anæmic, whether as cause or effect I am unable to say. A long course of hæmatinics is therefore frequently indicated. The further details of treatment do not require particular mention. Our whole armamentarium against hysteria may be called into requisition, and in addition to the nervine tonics we may have to persevere with diet, change, rest, spa treatment, massage, general electricity, &c.

In those cases where a reflex point of irritation is discoverable the treatment is obvious. The irritation must be combated and, if possible, removed. Ovarian or uterine irritation as well as gout and rheumatism may require attention. The cases where the condition is chiefly one of "aphagia" are generally the result of some functional spasm or are associated with it, so that the same treatment is applicable to both forms of functional dysphagia. In the diagnosis of many of these cases we would do well to remember that carcinoma is the most common of all the affections of the œsophagus. In approaching the diagnosis of any case of dysphagia we should have present to our minds the following possibilities in the following order of frequency — cancer, aneurysm, other forms of ulceration (traumatic, syphilitic, and tuberculous), and functional disease. The old advice is very applicable in cases of dysphagia—viz., to hope for the best and prepare for the worst.

Queen Anne-street, W.

[13] Loc. cit.

DEVON AND EXETER HOSPITAL.—At a meeting of the governors of the Devon and Exeter Hospital held on Nov. 24th the financial position of the institution came under discussion. One of the governors stated that when it was decided to erect the present new buildings the expenditure was estimated at about £12,000 and a contract was entered into for that amount. He added that at present they had spent £25,000, they owed a further sum not yet ascertained, and they had used all the money given and specially subscribed; they had further sold out stock which brought in £800 per annum towards the maintenance of the hospital. In conclusion he moved that the further work, for which a tender of £4500 had been accepted, be not proceeded with and that a sum not exceeding £700 be expended upon necessary improvements. The motion was eventually carried by 27 votes to 2.

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THE MOSQUITO AND THE MALARIA "PARASITE."

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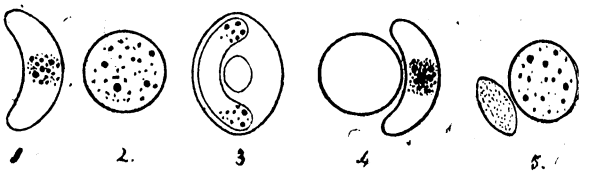
IN THE LANCET of Nov. 13th, 1897, Dr. MacCallum of the Johns Hopkins University published an account of a "sexual process" in halteridium, a body which is stated by Dr. Patrick Manson to be "an intra-corpuscular parasite of birds closely allied to the malaria parasite in man." In THE LANCET of Feb. 12th following it was pointed out that Dr. MacCallum's description appeared to be modelled after the account of the fertilisation of the ovum by von Beneden, in the section on Embryology by Professor Schäfer, in Quain's Anatomy. No explanation has been offered of the similitude between the two accounts. The subject is one of such vast importance that the leading facts of both descriptions are reproduced here:—

VON BENEDEN. *The fertilisation of the ovum.*	MACCALLUM. *The fertilisation of the Laveran body.*
1. The spermatozoon embeds itself in the ovum.	1. One flagellum plunges its head and wriggles its whole body into the female sphere.
2. The ovum becomes slightly protruded at the point of contact.	2. A conical process appears at one side of the female organism.
3. One spermatozoon only embeds itself in the ovum.	3. One flagellum only embeds itself in the female sphere.
4. As the spermatozoon passes towards the centre of the ovum it exerts a peculiar action upon the granules.	4. As the flagellum passes into the centre of the female sphere the "granules are churned up."

The offspring of Dr. MacCallum's fancied "sexual process," which was warmly welcomed and heralded by the zealous Professor Osler, was depicted by him as an organism of spindle shape with a hyaline beak, which "*may be* the resistant form which escapes from the body during life into the external world." The words "may be" were italicised in order to call attention to "the ingenious way the plasmodists have of throwing out a hint or suggestion which is afterwards quoted by themselves as an approved scientific fact." Events have demonstrated the entire reasonableness of this *caveat*. Dr. Patrick Manson has recently quoted Dr. MacCallum's version as an approved scientific fact and Major Ronald Ross has made it the sole basis of his romantic verification of Dr. Manson's hypothesis that the mosquito is the liberating agent of malaria as well as filaria. It is obvious that if Dr. MacCallum's account of the fertilisation of the Laveran body is not founded upon fact the whole of the mosquito theory of malaria falls to the ground.

The facts with regard to the Laveran body in the blood in malaria and its *alter ego* in the blood of healthy birds are as follows. In malarious fever in man when the spleen is not very much diseased cells are found in the blood, either intra- or extra-corpuscular, which contain dark granules similar to the granules of the leucocyte. These cells are called after their discoverer Laveran bodies or plasmodia. *They are not found in all cases of malarious fever.* Therefore they cannot be the cause of the disease. When the granules in the Laveran body are scattered throughout its protoplasms its shape is spherical; when they are collected in the centre of the cell it becomes spindle-shaped and semilunar and it is known as the malarial crescent. In drawn blood, if the relative density of the fluid in the cells and that in which they lie is altered, as, for example, by the addition of water, the crescent becomes spherical, the granules dance about with the boiling-water movement of Laveran, and processes of protoplasm are occasionally thrown out which are called flagella. On the other hand, in certain birds which are apparently in perfect health—pigeons, crows, and sparrows, for instance—cells are found in the blood, either intra- or extra-corpuscular, which contain dark granules similar to the granules of the leucocyte. These cells are called by the plasmodists *halter*-idia or proteosoma, according as they are semilunar or spherical in shape. When these cells are intra-corpuscular they are at first spherical. Afterwards they become semilunar because their shape is determined by the nucleus of the red blood corpuscle in which they grow. When they grow still larger they push the nucleus aside and eventually burst out of the corpuscle, and after they become free if the density of the fluid in which they lie is altered, as, for example, by the addition of water, they become spherical, if they are not so already, the granules exhibit the true boiling water movement of Laveran, and flagella are occasionally thrown out.

The so-called halteridia and proteosoma are identical with the Laveran bodies in every respect except one. The one difference between them is that in the malaria crescent the granules are collected in the centre of the cell, whereas in the halteridium and in the early stages of proteosoma they are found principally towards the ends. The following diagram shows the points of resemblance between the Laveran bodies in malarial blood and the halteridium of proteosoma in the blood of apparently healthy birds.



1. The malaria crescent.
2. The spherical form assumed indifferently by 1 when water is added to the blood and by 3 when it escapes from the red blood cell.
3. The "halteridium" in the oval-shaped nucleated red-blood corpuscle of birds, showing how it is compelled by the position of the nucleus to take the semilunar form.
4. The malaria crescent as it is frequently seen in contact with a red-blood corpuscle, showing how it may be compelled by pressure against the round blood cell to take the semilunar shape.
5. The "halteridium" free, having attached to it, as it almost invariably has, the nucleus of the red-blood corpuscle in which it grew.

The semilunar shape of the Laveran body, whether intra- or extra-corpuscular, must be regarded as due to mechanical causes and adventitious; and whether these bodies—the plasmodium, halteridium, or proteosoma—are met with in the blood or man or of birds they are one and the same thing, and to save confusion and misleading error they should all be called by the one name of Laveran bodies.

The following facts have been established by an examination of the blood of birds in the laboratory of the Hyderabad Medical School. 1. Laveran bodies are found in the blood of apparently healthy birds. 2. They are not found in the blood of birds before they are fledged and leave the nest. This was pointed out originally by Captain Johnston, I.M.S. 3. They are not met with in the blood of all birds. In 101 sparrows examined they were found in the blood in 81 per cent.; in 36 crows in 70 per cent.; in 38 pigeons they were found in every one of 32 adult birds; none were found in the blood of any unfledged birds or in that of 10 ducks, 12 fowls, and 4 hawks. 4. The Laveran bodies in birds, like those found in malarial blood, cannot be cultivated in pure media outside the blood. 5. The Laveran bodies cannot be propagated or reproduced by inoculation. 6. Two young unfledged pigeons were brought up by hand in the laboratory. Neither had Laveran bodies in the blood. One was fed on grain and filtered water; the other on grain, on the spleen of a crow and the blood of a pigeon with halteridium, and water taken from malarious swamps. The one fed on filtered water developed Laveran bodies in the blood on the twentieth day;[1] the one fed on swamp water and halteridia has not yet developed them. 7. The temperature of the birds, and the size and weight of their spleen, bear no relation to the Laveran bodies found in the blood. 8. No such phenomena as "*ex*-flagellation" or a "sexual process" was ever observed among the Laveran bodies. Flagella sometimes separate from the cell from which they are thrown out originally as processes of protoplasm, but this only takes place in drawn blood as part of the process of their ultimate disappearance.

We are now in a position to form a correct opinion as to the accuracy of the Ross-Manson hypothesis of the mosquito and malaria. Before considering it there are one or two points which demand some explanation. In the first place the average length of an ordinary mosquito's body in this part of the world is about 3 mm. In the diagram of the insect's empty stomach given with Dr. Manson's paper in the *British Medical*

[1] The young pigeon fed upon swamp water is since dead. We tried to colour the blood corpuscles during life by subcutaneous injections of methylene blue, but it died after the second injection. On post-mortem examination the heart was found to be coloured bright blue; very few of the blood cells had taken the stain.

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Journal the length of this organ, together with the cut ends of the œsophagus (*sic*) and intestine, is 2·5 mm. according to the scale appended to the diagram by Major Ross. In the second place Major Ross refers repeatedly to feeding mosquitoes on the blood of sparrows and larks. It would be interesting to know if these birds were plucked beforehand as it is almost an impossibility for a mosquito to sting a bird and suck its blood as long as the feathers are intact. In the third place Dr. Manson and Major Ross write of the dissection of a mosquito as if it were child's play; "hecatombs of mosquitos" were treated in this way "in the cause of science"—245 in one batch and 249 in another. This is far too easy. Let any one who is inclined to regard the dissection of a mosquito as an easy matter try it and he will find that even with a very high-power dissecting microscope it is impracticable to display the insect's stomach in such a manner as to be able to count "pigmented cells" on its wall.

The story as told by Dr. Patrick Manson of Major Ronald Ross's discoveries with regard to the mosquito and malaria may now be briefly referred to. About a year ago Major Ronald Ross discovered a cell containing pigment in the stomach of a "dapple-winged" mosquito, and the optical characters of this pigment "were such that it seemed to be in every way identical with the pigment which is so characteristic of the malarial parasite." It has never been proved yet that there is any connexion whatever between malarious fever and "pigment," and it is not pretended that there was anything but "pigment" to identify this pigmented cell of Major Ross's with malaria, but on these slender grounds Major Ross "was sure that he had now discovered the extra-corporeal form of the malarial parasite. Here, however, fact and theory seemed to diverge. Fortunately at this juncture help came from America." The help from America consisted of Dr. MacCallum's "sexual process," the results of which are described and improved upon by Dr. Manson in graphic terms: "After a time the impregnated spheres changed shape and acquired locomotive powers—became, in fact, *travelling vermicules* containing the entire substance of the original halteridium, including its pigment. They exhibited great powers of penetration. Depend upon it this locomotive penetrating power has a purpose."

It is a pity that before putting forward a controvertible theory as an approved scientific fact Dr. Manson and Major Ross did not take steps as they were bound to do to confirm Dr. MacCallum's observations on the locomotive penetrating animal with the hyaline beak. This would have been a simple matter if Dr. McCallum's animals actually existed in the blood, but it was not done, and the story, which Dr. Manson truly says is "a really marvellous story," may be continued for what it is worth from this point by Major Ross. Having opportunely discovered the "pigmented body" in the dissected stomachs of mosquitoes fed on the blood of malarious sparrows Major Ross asserts that because Dr. MacCallum's halteridium organism with the hyaline beak possesses locomotive penetrating power which enables it to "pass indifferently," according to Dr. MacCallum and Dr. Manson, "through red blood corpuscles and white blood corpuscles," therefore his "pigmented body," which is the unattested offspring of proteosoma, must also possess the power of penetration and consequently of passing indifferently through the wall of the mosquito's stomach. This is, of course, a *non sequitur*, nevertheless it is a fair specimen of plasmodial logic. When once the proteosoma organisms have penetrated as far as the outside of the mosquito's stomach it is an easy task to call them "proteosoma coccidia" and to trace their progeny in the form of Major Ross's "germinal rods"—first cousins apparently of Dr. Manson's "travelling vermicules"—through the "well-known white blood of the mosquito," into its poison gland, out again through its proboscis, and so back into the circulation of man and birds. Thus happily is the *rôle* of the mosquito in malaria completed by Major Ross on the lines conjectured by Dr. Manson. Henceforth in order to free the world of malaria it is only necessary to free it of mosquitoes. The *British Medical Journal* recommends the Government of India to do this by "the application of kerosene once a month to the surface of their breeding pools."

This, then, is the outcome of malarial parasitology, a crusade against the mosquito. Although not one single theory of fever based upon this "science" is founded on a proved fact, and notwithstanding that it is known that pools constitute one only of the many places in which the mosquito breeds, all the water in India is forthwith to be polluted once a month with kerosene. That a crusade against mosquitoes should be gravely proposed by a very influential section of the medical press is strong evidence of the profound disorganisation of professional opinion which has resulted from the speculations and conjectures of the plasmodists. Fortunately, certain facts are known about malaria which no hypothesis and no amount of sophistry or untruth can alter. 1. The commonest form of malarious fever is the quotidian, in which there is an attack every day, 1, 1, 1, 1, 1. 2. The tertian form of ague is less common, in which there is an attack every alternate day, 1 –, 1 –, 1 –, 1 –, 1 –, 1 –. 3. Quartan ague, in which there is an attack every fourth day, is comparatively rare. 1 – –, 1 – –, 1 – –, 1 – –, 1. 4. In irregular ague the fever is of a remittent rather than of an intermittent type. 5. Quinine prevents and also cures malarious fever. 6. Malarious fever can as a rule be readily and with certainty diagnosed by the history of the case, by the clinical thermometer, and by the condition of the spleen.

These are solid facts which have long been well known to every observant practitioner in malarious localities. It is only necessary to add that it is not possible to diagnose malarious fever, either the fever itself or its type, with any certainty at all by means of the microscope. One case only need be cited by way of illustration. Not long ago a patient was sent to me from the country to be operated upon for an abdominal tumour supposed to be ovarian. I diagnosed the tumour to be a displaced malarious spleen and she had fever every day. If the microscope were reliable in the diagnosis of malaria the point could have been decided in a few minutes, but on microscopic examination there were no Laveran bodies in the blood. The diagnosis had therefore to be settled by quinine, under the influence of which the tumour slowly disappeared. To meet the speculations and conjectures of the plasmodists no less than the requirements of malaria "parasite" an attempt has been made to overthrow the nomenclature of malarious disease. Quotidian ague has to be proscribed because of the difficulty the plasmodists experience of adapting the otherwise plausible and fascinating life-cycle of the "parasite" to a single day. The most credulous individual can hardly be expected to believe that the quotidian "parasite" can in one day as a mere spore chase and capture a red corpuscle in the circulating blood, get into its interior, grow up and devour its hæmoglobin, digest it and develop "pigment," and then sporulate and give birth to from 10 to 12 young ones. But there is not the same difficulty about swallowing a forty-eight hours' cycle, therefore the majority of "parasites" in future are to be tertians. If anything were wanting to complete the confusion in the profession which has been brought about by the grotesque science of malarial parasitology it is furnished by the amusing, if hurried, African tour of Professor Koch. Koch has announced that there is no such condition as quotidian ague; that he has discovered a new form of tertian ague in which the intermissions occur every

1 2 3 4,1 2 3 4,1 2 3 4,1 2 3 4.

fourth day —, 1 1 —, 1 1 —, 1 1 —, 1 1 —; that the most pernicious form of African fever is nothing but cinchonism; and that the presence of the malaria crescent in the blood is a sign of immunity.

There has been too much unscientific speculation and conjecture with regard to malarious fever, and what is now required is a commission to inquire into the true physiology of the blood-cells, of which very little is known and without which the pathology of malaria will remain a sealed book. Until the physiology of the healthy blood corpuscles is thoroughly worked out speculation regarding the Laveran bodies is necessarily idle. The Laveran bodies are to be looked upon as perverted modifications of the natural cells in the blood, in which they occur as mere "sports," so to speak, of the natural blood corpuscles, and in no way as new or independent formations. The essence of this belief is that the Laveran bodies are products of the blood and are the progeny of the cells already existing there, their physical peculiarities being entirely due to the altered cell formation of natural structures. Formation in a word outstrips organisation, and the offspring of the blood corpuscles—the "sports" or Laveran bodies—fail to arrive at precise resemblance to the parents from which they take their birth.[2]

[2] This passage is taken, *mutatis mutandis*, from the *Times* leading article on Virchow of Oct. 6th, 1898.

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NOTES ON A CASE OF BLACKWATER FEVER.

BY F. PERCIVAL MACKIE, L.R.C.P. LOND., M.R.C.S. ENG.,

JUNIOR ASSISTANT MEDICAL OFFICER, COUNTY ASYLUM, SHREWSBURY; LATE ASSISTANT HOUSE PHYSICIAN AT THE BRISTOL GENERAL HOSPITAL.

I MUST express my indebtedness to Dr. Theodore Fisher, of Clifton, for permission to publish the case and also for clinical notes supplied.

The patient was a missionary who had recently returned from Africa. He described an attack of "hæmoglobinuric fever" from which he suffered in September, 1894, when at Benguella on the west coast. That was his first attack. After returning from a cycle ride from Bath to Bristol against a strong wind he was taken ill with vomiting and fever running up to 102·6° F., but without an initial rigor. The next day at 2 A.M., however, he had a severe rigor lasting twenty minutes in which the temperature went up to 103°. On the third day a second rigor occurred, the temperature going up to the same height as before. He continued to vomit at intervals and his condition was considered to be very serious. That evening his urine was noticed to be black, like porter, and his temperature was then 102·6°. On the fourth day the vomiting ceased, the rigors also left him, and the temperature went down to 99°, where it remained for several days. The dense, porter-like colour of the urine remained for fifty hours from its first appearance before any change became evident, when it began gradually to clear up.

Examination of the blood was made twenty-four hours after the last rigor. The count showed the presence of 4,000,000 red cells and 6200 colourless corpuscles per cubic millimetre. The white corpuscles were in the following proportion: polymorphonuclear, 75 per cent.; lymphocytes, 18 per cent.; large mononuclear, 4 per cent.; and coarsely granular eosinophile, 3 per cent. The examination of the fresh specimen of blood showed absence of rouleaux formation; there was very little distortion of blood-cells either in shape or size, and no organisms were visible. In specimens of blood fixed in Gulland's solution and counter-stained with methylene blue the following changes were noticed. The most obvious point was the presence of a considerable number of faded or phantom-like red cells which looked as if they had had the colour washed out of them and presented only a thin pink rim and centre, whilst the more normal cells around them were deeply stained with eosine. These corpuscles were not distorted or in any way broken up, neither did they contain any malarial organisms. In the examination of 6 or 8 films of blood about 8 definite intra-corpusclar malarial organisms were seen, all of a spherical shape and containing a dot of black pigment. All of them were small, none of them nearly filling up the cell they inhabited. In one place a rosette-shaped organism had evidently just broken up, as there was a collection of 8 or 10 spore-like bodies loosely arranged around a small mass of pigment. There were a considerable number of faintly stained extra-corpuscular bodies, mostly in groups of 2 or 3 from which could be traced delicate flagella. The blood which had been collected in the pipette of a Thoma Zeiss hæmocytometer was re-examined after two days and there was a great increase apparent in the extra-corpuscular variety, as numbers of actively motile organisms were seen hurrying about the field. These when examined with an oil immersion lens were seen to be spherical and not bacilli, although owing to the free dilution of the blood with saline solution at the time of its withdrawal satisfactory permanent preparations could not be obtained.

Examination of the urine was unfortunately not carried out until it had almost regained its normal colour. Spectroscopic examination revealed a faint hæmaglobin band. The reaction was acid. The specific gravity was 1015. There was no albumin or reducing substance. There was a dirty-brown sediment. Microscopical examination showed the presence of some reddish-brown granular tube-casts and also numbers of small rounded cells resembling the bladder epithelium cells and containing some refractile spherical bodies. There were no blood corpuscles. Scattered about the field were seen small clusters of oval transparent bodies collected in groups of about 4 or 6, and sometimes smaller individuals were seen radiating from the central group. They stained easily and deeply with methylene blue and were seen to be growing by gemmation. The urine, which had been kept in a stoppered bottle, was examined at the end of a few days and the number of these bodies was found to have considerably increased. Some of the sediment was added to a solution of glucose in water and put in a warm place. When examined at the end of forty-eight hours the fluid was turbid and there were considerable numbers of these torulæ, but there was no decrease in the specific gravity of the liquid nor was there any gas formation. Thus, although they seemed to be some kind of torula, yet it was evidently not the common yeast plant. Some such bodies as these have several times been noticed by other observers in the urine of patients suffering from hæmoglobinuric fever, but their origin and significance are quite unknown.

Shrewsbury.

AN OUTBREAK OF ACUTE DERMATITIS DUE TO ZINC SALT AND ASSOCIATED WITH CLOTHING.

BY GODFREY TAUNTON, M.R.C.S. ENG., L.R.C.P. LOND.,

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ON Nov. 23rd, 1898, a man came to the out-patient department of the General Hospital, Birmingham, complaining of a rash on the front of his right wrist which presented the appearance of a patch of urticaria. It was associated with itching, was apparently present on no other part of the body, and there was nothing to distinguish it from ordinary urticaria. The patient ascribed the condition to a new blue frieze overcoat which he had only put on that morning, and he mentioned that several of his fellow workmen who had also been provided with similar new overcoats that morning were suffering from the same complaint. He was immediately succeeded by another man in the same employ who exhibited a rash, also in the region of the wrists and corresponding to the margins of the sleeves. This case presented a somewhat different appearance from the former, and appeared to be a more advanced stage of the same condition. On one of the second patient's wrists was a patch about 1½ in. by ½ in. of numerous minute cream-white spots, and in the middle of each of these there was a hair follicle which stood out as a dark centre. The margin of the patch was outlined by a narrow zone of hyperæmia. This patient complained of a pricking rather than an itching sensation. The second man was followed by others who presented the same appearances on one or both wrists or on the neck. In one of the cases a patch was present on the back of the calf of the right leg, corresponding to the level of the lower margin of his overcoat. For some reason he had omitted to put on his leggings that morning, and as the day was wet the moisture from his coat had soaked through his trousers. Towards the evening other men similarly affected arrived, their cases exhibiting a still later stage in the condition. There were now patches averaging from ⅛ in. to ¼ in. They were of a uniform cream-white colour, evidently resulting from the spreading and fusion of the individual minute white spots which I have already mentioned. The patches were slightly depressed and the appearance was now strongly suggestive of necrosis of the epidermis following the application of a strong irritant. On the margins of some of the necrosed patches was an inflammatory zone, while in places the minute white spots were to be seen as before. Tactile sensation at this stage was impaired but not lost. Some of the patches had a somewhat bluish tint, probably due to the dye of the coat. Altogether 21 patients were seen on Nov. 23rd. On the next day (Nov. 24th) the old cases appeared for inspection, in addition to which there were 13 new cases. The old cases more or less presented the same appearance as on the previous evening, but tactile sensation was now entirely lost in the necrosed areas. It was noticed that the appearances were most marked in the neighbourhood of existing abrasions. In 3 cases there was some spreading inflammation up the arm with enlarged glands in the axilla.

There seems no doubt that the cause of the condition described was to be found in some irritating substance contained in the new overcoats. The day being wet the moisture absorbed some of this deleterious material and so

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brought it into contact with the skin at the most exposed parts, especially at the wrists. The association of the condition with moisture is confirmed by the fact that one or two boys in the same employment received their overcoats about a fortnight earlier but only exhibited symptoms on the same day as the others, Nov. 23rd being the first really wet day since that time. An infusion of the cloth was made. It had an acid reaction and a sweet astringent taste and on analysis it was found to contain zinc chloride.

Birmingham.

DIPHTHERIA BACILLI IN URINE.

BY H. W. L. BARLOW, M.B. OXON., M.R.C.S. ENG., D.P.H.

IN view of the observations of Captain F. Smith, R.A.M.C., on diphtheria bacilli in the urine of guinea-pigs[1] the following case may be of interest.

The patient, a well-nourished single woman, aged nineteen years, was admitted to Brighton Isolation Hospital on Jan. 8th, 1898, with patches of yellowish membranous exudate containing Klebs-Löffler bacilli on both tonsils, together with moderate pyrexia, a relatively slow but high-tension pulse, and smoky urine. All else was normal: there were no signs of cardiac hypertrophy, there had never been any œdema, and there were no retinal hæmorrhages. She had had small-pox in infancy and influenza a year or two ago, but no other illness except occasional attacks of headache and vomiting. Dark-coloured urine was first noticed on the morning of admission—i.e., the third day. It was acid, it contained both albumin and blood, and it showed urates, casts, and bacilli, some of the latter resembling those of diphtheria. Serum cultures plated out on agar showed on the third, fourth, eighth, twelfth, thirteenth, sixteenth, and twenty-first days of the disease a diphtheria-like organism besides some other forms. This bacillus disappeared as the nephritis wore off (no bacilli and very little albumin were found on the fifteenth day) and reappeared for a short time with a relapse on the sixteenth day, ultimately disappearing altogether. In one doubtful instance only did cultures from other urines in the ward show an organism at all similar to this. A pure culture obtained by plate cultivation was compared step by step with similar cultures of the same age of long Klebs-Löffler bacilli from a fatal case, of Hoffmann's pseudo-diphtheria bacillus, and of a doubtful form isolated from the throat from another case. The last-named proved quite distinct and need not be further considered. The points of difference between the organism from urine and the Klebs-Löffler bacillus did not amount to more than are usually present between the three or four different types of diphtheria bacilli in throat swabs. These bacilli were just as characteristically irregular in form, but they were shorter and apparently of more rapid growth. Their distinguishing features were, first, no growth on gelatin at room temperature; secondly, alkaline glucose broth acidified within twenty-four hours; thirdly, each bacillus showed three or four granules apiece when stained with methylene blue and bismarck brown; and, fourthly, both colonies and streak cultures only differed from those of Klebs-Löffler in minor details. Owing to an accident their pathogenicity to guinea-pigs was not tested. A remarkable point is that cultures could be obtained from the acid urinary sediment after standing for eight days at the room temperature; but this does not, as was first thought, militate against the organisms being diphtheritic, for Klebs-Löffler bacilli not only live but multiply in faintly acid peptone broth containing urea if kept at 37° C. The bacilli in the throat swab were both long and short, the latter being most persistent. The urine always reacted acid to litmus to a degree not determined.

Day of Disease.	Amount in 24 hours.	Grammes nitrogen.	Grammes albumin.	Grammes chlorine.
4th	425 c.c.	2·8	5·1	0·47
8th	700 c.c.	4·4	7·6	0·98
19th	850 c.c.	7·4	4·25	1·36
36th	1650 c.c.	9·1	4·9	4·45

[1] THE LANCET, Nov. 19th, 1898.

Some kind of micro-organism might nearly always be found in urine and it would not be supposed to have reached it through the kidney unless all other paths were closed. Though cleanliness was ensured it was manifestly impossible in this case to take all the precautions which Captain Smith adopted and it must remain to that extent inconclusive. The presence of other forms shows that contamination did occur, but they were variable and the diphtheria constant and if not explained by a kidney infection the casual co-existence of nephritis and bacilli on seven or eight occasions throughout a fortnight or more would remain a rather curious coincidence.

Diphtheritic nephritis, always rare, is decreasing year by year in the metropolitan hospitals. During the last three years it occurred in only 0·77 per cent. of over 13,000 cases and, taking 1897 alone, the percentage is less than half this—namely, 0·34 per cent.—while that of albuminuria remains about 45 per cent. Bacilli have been found post mortem in the kidney by Kanthack and others, but they do not seem to be always associated with nephritis, and if found in other cases their presence is evidently exceptional.

Urmston.

THE TREATMENT OF WHOOPING-COUGH

BY G. ARBOUR STEPHENS, M.D., B.SC. LOND.

I HAVE lately been investigating the subject of whooping-cough, by which I mean the very infectious disease characterised by a convulsive cough terminating in the readily recognised "whoop." In this investigation I have been considerably assisted by the fact that Mr. Hubert Thomas placed a large number of the cases of this complaint which existed extensively in his district at my disposal. My attention was particularly drawn to the subject by a small experiment upon myself. When I had an attack of pharyngitis I found that by tickling the external auditory meatus or the tympanum I produced a cough with the characteristic "whoop." This led me to inquire into the state of the patients' ears in cases of whooping-cough and in nearly every case I found that they either had pain in their ears, as evidenced by the fact that they resented their mothers' washing or even touching those organs, or else that there existed a semi-fluid discharge which in some cases had been present for some time. Having found such a persistent sign or symptom I decided to find out whether treatment applied locally might ease the pain or diminish the discharge and by so doing modify or terminate the course of the disease

The course of treatment I decided on was as follows. I syringed out the ears night and morning with lukewarm boric lotion or water and applied to the meatus and tympanum a paint consisting of 23 gr. of hydrochlorate of cocaine, 4 drachms of glycerine, 20 minims of solution of perchloride of mercury, and water to 1 ounce. The result of this treatment was that in every case the patient was benefited and the whooping-cough was got rid of. In many cases, in addition to what I consider the essential symptoms of whooping-cough, there were present bronchitis, pharyngitis, or laryngitis. These, I need hardly say, did not yield to the treatment above described, and in some cases they persisted for several days after the "whoop" had disappeared. As has been often noticed by other observers the whooping-cough followed in the wake of measles, and in those cases which did succeed measles there was nearly always found a discharge which had continued from the prior attack of measles. In the first few cases I had some trouble in introducing such a novel form of treatment as a substitute for the more othodox bottle of medicine, but having got the first few patients better their friends and relations paved the way for the others. The following are a few of the cases:—

CASE 1.—A boy, aged four years, had had cough for two or three weeks and a discharge from the ears for eleven months. With the cough there was vomiting. The mother "could not touch the ears" owing to the pain. The ears were syringed and painted. The child slept better the same night and "whooped" much less the next day, when the ears were again syringed and painted. On the third day the child was not very bright and the tongue was furred, but the "whoop" continued to improve and the patient had had a very good night. I ordered a dose of mercury with chalk. The child was decidedly better on the fourth day, having

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only "whooped" once in the twenty-four hours, and on the fifth day he was out playing and quite free from "whoop."

CASE 2.—A girl, aged seventeen months, had had cough with "whoop" for a week and, as in Case 1, there was vomiting with the cough. For six months there had been discharge from the ears. The child frequently put her hands up to her ears. There was some bronchitis. Both ears were syringed and painted. On the second day I found the child very peevish and irritable and she was evidently no better. I again syringed and painted the ears. The next day the child was much less peevish and altogether much better. She hardly "whooped" at all, but there was still some bronchitis. On the fourth day she had, it appeared, only "whooped" once in the twenty-four hours and she took food better. The child was practically well on the fifth day, except for an occasional cough, which was, however, unaccompanied by "whoop."

CASE 3.—A girl, aged four years, had had cough with "whoop" and vomiting for from two to three weeks, and the ears had been discharging for six months, "ever since," it was said, "she had had measles." I only syringed the ears but did not paint them. The child was no better on the second day. She had had a bad night. I syringed and painted the ears and she had a much better night and slept well, being only troubled once during the night with a bout of "whooping" cough. On the third day she was much better. She was still better on the fourth day, having hardly "whooped" at all for twenty-four hours, but she "whooped" once or twice in the evening. Syringing, however, stopped it and she slept well. On the sixth day the child was quite well.

CASE 4.—A girl, aged four and a half years, had had cough with "whoop" for two weeks. Her mother had been unable to wash her ears for four weeks. She had had bad nights and her cough was accompanied with vomiting. Her face was puffed with coughing, there was an ulcer under the tongue and a semi-fluid discharge from the ears which I syringed and painted at 6 P.M. The patient slept well till 10 P.M. but had a restless night, though she "whooped" less than on the previous night. On the third day the child, as reported to me, "had not got so phlegmy a cough." She had slept much better on the previous night and had only "whooped" twice between 11 A.M. and 7 P.M. She had not vomited since the first painting. The child was much better on the fourth day. She had had such a good night that the mother was able to sleep throughout the night, an experience she had not had for a fortnight. The child was so well on the fifth day that the mother told me that "the neighbours were asking what medicine she had had."

CASE 5.—A boy, aged two and a half years, a brother of the little girl mentioned in Case 4, had a nasty cough with vomiting but no "whoop." The remark made to me was that the child "looked exactly as if he were going to have whooping-cough." I syringed and painted the ears. The boy slept well and the next day I found that there had been no vomiting since. The patient had quite lost the cough on the third day and developed no "whoop."

CASE 6.—A girl, aged four years, had been suffering from whooping-cough for sixteen days and had had very bad nights. There was discharge from both ears and I painted and syringed them. I saw the patient four days after. She was no better, though the first night after painting she slept very well. I again painted and syringed the ears and the next day the child was much better, the "whoop" being considerably less. The child was practically well on the sixth day, so much so that the mother ceased to bring her to me.

CASE 7.—A girl, aged two years, a sister of the patient in Case 6, had had whooping-cough for fourteen days, with very bad nights. She coughed till she, in the mother's words, "got black in the face." There was discharge from both ears, which I syringed and painted. The child had a good night and on the next day took food much better. She hardly whooped at all on the following day and she became quite well on the fourth day.

CASE 8.—An infant, aged three months, had had whooping-cough for three weeks. As in the previous case it was said that "she got black in the face." Both ears were discharging and I was told that she had had "two fits." The ears were syringed and painted. The child had a better night and "whooped" less the next day and took the breast better. She again had a good night, having only "whooped" once and she has not "whooped" since.

I have given these 8 cases as typical of a cough which after being under treatment for a few days entirely lost the bouts of "whooping," though in some cases bronchitis lasted for several days. I could add many other cases to show both the ear symptoms and the effect of local treatment but do not think it necessary. As an explanation of the pathology of these cases I consider that there is a small local inflammation in the meatus starting independently of or succeeding to an attack of measles, and that this inflammation irritates the nerve filaments which are connected with the root ganglion of the vagus and so stimulates the vagus itself in some or all of its branches. The laryngeal branches will account not only for the spasm but also for the "whoop" by producing a temporary trophic lesion of the laryngeal mucous membrane against which the cold air, which is invariably drawn in through the mouth, strikes. I also think a similar trophic lesion of a temporary nature occurs in the stomach and lungs by a passing irritation of the vagus branches which results in the secretion of a large amount of mucus.

I have made an attempt to cultivate some bacteria from the ear, but so far I have not succeeded. There is one difficulty in the way of such cultivation, and that is that in a large number of the cases the patients are dirty and live in dirty houses. However, whether the cultivation be successful or not, I trust that I have shown that by syringing and painting the ears a great improvement can be produced, which is, after all, of greater consequence to the little patients than the cultivation of any amount of germs.

Swansea.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF CYST OF THE GREAT OMENTUM REMOVED BY OPERATION.

BY JAMES BRAITHWAITE, M.D. LOND.,
OBSTETRIC PHYSICIAN AND SURGEON TO THE LEEDS GENERAL INFIRMARY; EDITOR OF THE "RETROSPECT OF MEDICINE," ETC.

A FEMALE child, aged four years, was brought to me in December, 1897, in consequence of the abdomen being swollen. The abdomen clearly contained a large amount of fluid which, as it lay in front of the bowels, presumably was encysted. The whole of the front of the abdomen was dull on percussion except for about 3 in. below the ensiform cartilage. Both loins were resonant. The least touch caused a fluid wave from side to side. Presumably, therefore, the fluid was thin in consistence and the cyst, whatever it might be, was probably unilocular. The body measured 1 ft. 10½ in. round at the level of the umbilicus, and this increased 1 in. during the next two months. Otherwise the child appeared to be in good health and was described by its parents as "very energetic." I recommended operation and this was done on March 10th last. Mr. Appleyard o Bradford gave ether and Dr. Lawson of Hebden Bridge and Dr. Oldfield of Leeds assisted me. The cyst was found to be entirely in the great omentum and was, except for an adhesion to the intestine, removed without any difficulty. It contained three and a half pints of fluid which was clear and watery. Necessarily a certain amount of the omentum was removed with the cyst. When opened the fresh cyst showed on its inner surface a number of iridescent patches almost like mother-of-pearl. These, however, now show much less distinctly, as it has been kept in spirit eight months. The child recovered rapidly and satisfactorily except that there was a small stitch abscess at one spot.

The extreme rarity of omental cysts seems to render this case worth publishing. I have not been able to find records of more than six such cases. The most interesting is one related by Mr. Alban Doran for Dr. Bantock in the Transactions of the Obstetrical Society of London, 1881. This was a cyst of considerable size, and the case was precisely parallel to the one I have related except that it occurred in an elderly woman. There is a case of what is called "a remarkable cyst in the omentum" related by Dr. Gairdner in the Transactions of the Pathological Society of

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London, 1851–52. The only German case which I can find is one by Schwartzenberger, published in 1894. He styles it "a multilocular lympho cyst of the omentum." Besides these there are 2 other cases, 1 in the *Medical Times and Gazette* in 1862 and the other in the *Medical Press and Circular* in 1883. Mr. Alban Doran mentions, too, that there is a small omental cyst without any clinical history contained in the Museum of the Royal College of Surgeons of England.

The cyst belonging to the case which I have related, when empty and collapsed, is about as big as a large cocoanut and its walls are tough and strong. When distended with fluid at the time of the operation the walls were thin and of the bluish colour seen in an ordinary ovarian cyst. It is impossible from an examination of this cyst to say in what structure it had its origin. It is now in the Museum of the Medical Department of the Yorkshire College.

Leeds.

A NEW METHOD IN SHOULDER PRESENTATIONS.

BY A. J. TURNER, M.D. DURH.

IF there is one form of presentation in midwifery practice which a busy practitioner dislikes more than another to encounter I suppose it is the shoulder, especially if well advanced before it comes under his notice. I have therefore been prevailed upon to describe a method which I have made use of for the last ten years, for though happily these cases are comparatively rare it has been of great practical value in five.

In the first stage, the arm of the fœtus being protruded, it is doubled at the elbow, the fingers resting on the shoulder, forming as it were the point of a wedge which is now pushed back again into the uterus, in the interval of the pains, the upward movement being continued by the operator's bent forefinger pressed against the shoulder. In the second stage the accoucheur's middle finger is extended and by preference placed in the mouth of the fœtus or on some firm bony point of the head. Now, with the assistance of the operator's other hand external to the mother's abdomen, the head is drawn into a better position, where, should the pains still be strong, it may be left to nature, or the instruments applied if considered advisable.

This method saves all efforts at podalic version, over-distension of the uterus by the addition of the hand (only two fingers actually entering the uterus), as well as decapitation, &c. It may be made use of after the arm has been protruded for some time and takes but a few minutes to perform.

The cases alluded to had been in hand for from one to ten hours before coming under my care and in all of them the infants have been born alive with the exception of one in which the arm had protruded for ten hours and was then quite black from congestion and in which the infant gave but a few spasmodic movements after delivery.

Bournemouth.

LEAD POISONING IN AN INFANT FOUR WEEKS OLD.

BY FREDK. W. M. STEPHENSON, M.B., C.M. EDIN.

I VENTURE to think that the particulars of this case—unique as far as my experience goes and, I believe, at least uncommon in that of others—may be of general interest. On Oct. 10th, 1898, I attended a patient in confinement. The child was well nourished and healthy and continued so until the end of my visits about a week afterwards. On Nov. 8th I was hurriedly sent for, the message stating that the infant was dying. I was informed by the mother on my arrival that the child appeared to her to be just recovering from a fit. I found the patient evidently in considerable pain, screaming violently, and with the legs flexed upon the abdomen. My first and most natural conclusion was that these symptoms indicated colic due to imperfectly digested food, but on examining the tongue I noticed an unmistakeable blue line on the gums. This with a history of constipation was quite sufficient to confirm my diagnosis that lead was the cause of the trouble. The child had never taken milk from the breast, but the feeding bottles were, I found, above suspicion, as well as the water-supply and general surroundings. Finally I discovered that the nurse, considered an experienced woman, had been freely dusting the child with a powder, procured by herself quite innocently from a local chemist, and which was shown to me in a packet bearing the label "Powdered White Lead." This had been liberally dusted about the neck and behind the ears, and consequently would at such times be freely inhaled. In addition the powder had been kept loosely upon the mantelshelf where the feeding bottle and a "dummy teat" were frequently placed.

I am pleased to be able to add that under the usual treatment, modified to suit the age, the child is making a good recovery.

Blackburn.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

DERBYSHIRE ROYAL INFIRMARY.

A CASE OF CEREBRAL TUMOUR; NECROPSY.

(Under the care of Dr. G. H. MILNES.)

THE success which often attends attempts to localise cerebral tumours is remarkable, but it not infrequently happens, as in the very interesting case reported below, that the data presented by the signs and symptoms are not sufficient to allow any exact diagnosis to be made. The presence of more than one growth increases largely the difficulty; great extension of the growth has a similar effect. In the following case the most striking point is the interference by the tumours with the intracranial venous circulation, leading to dilatation of the collateral vessels. For the notes of the case we are indebted to Dr. H. M. Tickell, house physician.

A man, aged twenty-eight years, a railway guard, applied for treatment at the Birmingham Eye Hospital on May 3rd, 1897, on account of failure of sight, and on examination was found to have double optic neuritis. The first symptom noticed by him, ten weeks previously, was severe pain in the head. Shortly after this he had vomited for some weeks and had pain down the left side of the face, the pain passing off when the sight began to fail and being succeeded by numbness. The only history of previous illness obtained from him was an attack of small-pox three years previously, and syphilis was denied. On the 17th the knee-jerks were found to be exaggerated. A few days later he began to have attacks of vomiting without relation to food and he also complained of pains in the head and at the root of the nose. On June 21st he was admitted as an in-patient of the Derbyshire Royal Infirmary. It was then observed that the plantar reflexes were greatly increased. As regards vision, he had but a bare perception of light, the discs passing into atrophy. He was discharged from hospital on July 10th. There had been no headache or vomiting since his admission and he described himself as feeling much better. On the 14th he came again to the hospital as an out-patient. The next symptom of importance which was noticed was an enlargement and varicose condition of the veins in the frontal region about the middle line. A short time afterwards a similar prominence consisting of a bunch of dilated veins appeared above the external occipital protuberance. On the occurrence of severe headache these veins were observed to become more swollen, thus indicating that the headache was due to increased cerebral pressure. On Nov. 15th he was re-admitted into the hospital. He was then quite blind from optic atrophy. There were occasional occipital headache and continual numbness of the left side of the face and all round the mouth. He also had pain in the eyes, especially the right eye. On Dec. 4th there were

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frequent occipital headache and vomiting and increased varicosity of the frontal and temporal veins. He was again discharged on Jan. 8th, 1898, but on March 11th he was admitted into the hospital for the third time suffering from much vomiting and headache. The next day he had an attack of convulsions and was unconscious for twenty-five minutes. These convulsions were at first general, but towards the end of the attack the features were drawn to the left side. He afterwards complained of pain all down the left side. On April 22nd he was strange in manner and he passed urine unconsciously. The varicose veins, especially those at the back of the head, were much swollen. He was again discharged on June 10th. On August 1st the sense of smell was found to be absent, and, becoming worse, he was again admitted to the hospital on Sept. 10th. He was found to be very much weaker and more wasted than when he was last in the hospital. He frequently rambled and muttered but was at times quite conscious and was able to answer simple questions. The lips and both sides of the face and forehead with the front of the tongue and the hard palate were insensitive to touch. An examination of the eyes showed paralysis of the orbicularis, the conjunctivæ were inflamed, hazy, and quite insensitive, but some movements of the eyeballs were noticed. The mouth was always half open and there was double facial paralysis. There was no paralysis or anæsthesia of the limbs, the knee-jerks were excessive, and the plantar reflexes were greatly exaggerated. On Sept. 21st his head was found to be turned stiffly to the left. The left forearm was flexed and kept close against the chest. No movement of the arm was seen. Death occurred on the following day.

Necropsy.—At the post-mortem examination the body was found to be emaciated. Visible grooves in the calvarium marked the course of the dilated veins which had been observed during life in the frontal and temporal regions. The occipital veins were engorged. The scalp adhered to the bone more firmly than in a normal condition; and there was a thickening of the connective tissue under the situation of the frontal mass of veins. The skull was thinned in three places—in the frontal region and at one spot on each parietal bone. These spots corresponded to the prominences of the convolutions under the dura mater, which structure was somewhat adherent at those points and engorged with blood. The absorption of skull in the frontal region corresponded to a large solid mass occupying the greater part of both frontal lobes—two-thirds of the mass occupying the right frontal lobe and one-third the left. The falx cerebri in this region was involved in the growth and was unremovable. The fissure of Rolando and the ascending frontal convolutions were uninvolved on either side. The other frontal convolutions could not be recognised. There was great varicosity of the veins of the whole vertical region, one special prominence on each side corresponding with one of the thin spots on the parietal bones, and at these points the varicose veins inside and outside the skull appeared to communicate. The whole brain substance was hyperæmic, the venæ Galeni being especially enlarged and varicose. The right lateral sinus was full of clot, in some places partially organised and softly adherent to the lining membrane of the veins, which at those points was roughened. The superior longitudinal sinus was not obliterated at any point, but at one spot about 1½ in. posterior to the tumour its lumen was markedly contracted, apparently from old inflammatory thickening. The origin of the inferior longitudinal sinus was completely obliterated by the growth, but its central portion was open and contained no blood or clots. The lumen of this sinus at its junction with the straight sinus appeared to be entirely obliterated by an old inflammatory thickening. This thickening appeared to involve the mouths of the venæ Galeni, for a fine bristle could not be passed from the veins into the sinus. Along the superior longitudinal fissure the membranes were softly adherent in many places which seemed to correspond to the areas where the varicose veins were most marked. The ventricles of the brain were normal excepting the right lateral ventricle, the anterior horn of which was greatly enlarged and ran forward round the outer border and underneath the growth and even in front of it, being in close relationship with a cyst in the substance of the growth which contained about two drachms of fluid and did not communicate with the ventricle. The veins of this right lateral ventricle were very much enlarged. The olfactory nerves were flattened and the olfactory lobes were atrophied, apparently from pressure. A portion of the tumour was sent to the Clinical Research Association and the following report upon it was made: "This tumour is composed of interlacing bundles of spindle-shaped cells with large areas of hyaline change between the bundles. It is certainly a sarcoma, but with a very low degree of malignancy." Under a $\frac{1}{12}$th objective distinct traces of fibrous structure could be discerned in the substance between the bundles. Several small cysts were found in the tumour.

Remarks by Dr. TICKELL.—In the above case we were fortunate in obtaining the records of observations almost from the first-noticed symptom, and the effects of the gradual extension of the disease up to its fatal termination can be followed. The diagnosis of "cerebral tumour" was made with some confidence at quite an early stage, but the question of localisation was complicated by the fact that the symptoms did not appear to be capable of explanation on the supposition of a single tumour, and even the result of the necropsy did not supply an entirely satisfactory solution of the problems involved, but it was nevertheless instructive. During life there was no question as to the presence of a cerebral tumour, but it will be gathered from the history that its situation could not be ascertained with sufficient precision to allow of any suggestion of an operation for its removal. It has been mentioned in the notes that severe pain was frequently complained of in the occipital as well as in the frontal region, and therefore this case bears out the observation that no deduction as to the site of a tumour in the brain can be drawn from the position of the headache. In considering the localisation of the tumour the following important features required explanation: 1. The presence of dilated veins in the scalp which formed especial prominences about the middle line. This condition pointed to obstruction in the longitudinal sinuses and the consequent establishment of a collateral venous circulation. The necropsy showed obstruction at the commencement of the sinuses and also at the posterior part of the inferior longitudinal sinus; it is probable that the latter had the most important effect in impeding the venous flow. 2. Paralysis of nerves. The fifth nerve was partially paralysed early and the seventh nerve later in the case. The olfactory nerve was probably paralysed a considerable time before the discovery was made. Paralysis of the third nerve in the later stage could not be definitely excluded; it was probably involved to some extent, but it was naturally difficult to test accurately the action of the various muscles of the eye. The loss of the sense of smell—an important localising symptom—was doubtless caused by pressure of the tumour on the olfactory bulbs and nerves. The explanation of the paralysis of the previously mentioned nerves was the main difficulty of the case. It is perhaps possible that some minute changes had taken place in the pons about the region of the nuclei of the fifth and seventh nerves in connexion with the altered venous conditions, but there is no direct evidence on this point; and, indeed, the character of the facial paralysis pointed rather to involvement of the seventh nerve after leaving its nucleus. On the whole, then, it seems most probable that these nerves were paralysed in consequence of the general increase of intracranial pressure, of which there was abundant evidence, although at the same time the reason why other nerves escaped the same fate cannot be stated.

LEEDS GENERAL INFIRMARY.

A CASE OF HÆMOPHILIA; OXYGEN INHALATION; RECOVERY.

(Under the care of Mr. W. H. BROWN.)

IT would be difficult to furnish a more typical family history of hæmophilia than that recorded below; and that alone would have justified its publication, but the success of the treatment employed was so striking that it is worthy of a more extended trial. Although the disease has been known nearly a hundred years, having been first observed in 1803 by Dr. J. C. Otto,[1] yet the treatment is usually very unsatisfactory. Of recent years the two most valuable suggestions have been chloride of calcium and extract of the thymus gland. The use of the former was based on the physiological fact that the presence of a calcium salt is

[1] Medical Repository of New York, 1803.

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necessary for coagulation to occur, and it is said that it has been found of use; in employing it, however, it must not be forgotten that excess of calcium salts will prevent the occurrence of coagulation. The extract of thymus gland was recommended on the ground that, as Wooldridge showed, the injection of it into the blood-stream of an animal causes almost instantaneous death by intravascular coagulation; therefore this also must be used with caution, but it evidently possesses great influence over the coagulability of the blood. Mr. Brown's use of oxygen by inhalation is new to us as a remedy in hæmophilia, but after this striking case it should certainly be given a trial. For the notes of the case we are indebted to Mr. E. J. A. Dodd, house surgeon.

The patient, a boy aged thirteen years, was admitted into the General Infirmary, Leeds, on Nov. 6th, 1897, with a large swelling on the outer side of the right thigh. A fortnight before he had "sprained" his thigh whilst getting into bed. The family history was as follows. The patient's mother had had 14 children, 7 boys and 7 girls; 6 of the boys were dead, the mother stating that all died from bleeding. The girls were all alive and well; two were married and had borne children. The patient's uncle on the mother's side died from bleeding from the stomach; an aunt also on the mother's side had a son who died at the age of fourteen years from bleeding. The patient's personal history was that he had had many swellings in his joints following slight injuries. He had bled from the gums and nose many times. He had been an in-patient on three former occasions—namely, in 1894 for bleeding from the roof of the mouth following a prick with a pin, in 1896 for bleeding from the gums after a fall, and early in 1897 for hæmorrhage into the knee-joint from a slight accident. On admission the patient was found to be a fairly well-grown boy, but very anæmic. On the outer side of the right thigh there was a large fluctuating swelling, tender to the touch; the skin over the swelling was red and very thin. As it seemed to be likely that the skin would give way a fine aspirating needle was introduced and about 4 oz. of bloody fluid were withdrawn. A firm pad was applied over the swelling. Internally iron was given and the diet included green vegetables and fresh fruit. During the next three weeks the aspirator was used several times, but the swelling refilled. Then a small incision was made through the skin and a quantity of clot and some purulent fluid escaped. Firm dressings were applied, but these quickly became soaked through and the continual oozing kept on in spite of packing and pressure and the free administration internally of styptics. The boy grew rapidly weaker, his digestive powers failed, and vomiting commenced and continued. Bleeding from the nose and gums took place. The pulse was about 140 and the temperature was subnormal. As it seemed to be useless to continue the ordinary treatment, and as, moreover, the stomach rejected everything, it was decided to try the effect of inhalation of oxygen. This was given in large doses and within twenty-four hours the vomiting and bleeding had ceased and the boy was able to take milk freely. The further progress does not need much comment. The inhalation of oxygen was continued for a week, during which time no medicine was given. Later the patient was put upon iron. The wound in the thigh healed without trouble. The boy made a complete recovery and is now well.

Remarks by Mr. BROWN.—In recording the above notes I desire to obtain the experience of others who may have tried the effects of oxygen in similar cases. I have had to treat several hæmophiliacs, but I have never seen one so near death recover. I am aware that by some it is held that hæmophiliacs bleed to a certain point and then stop. The family history in the present case does not support this view, for the patient's six brothers bled to death. I have always had the idea that hæmophilia and purpura were closely allied—i.e., that both conditions were due to a lack of oxygen in the blood and that hæmophilia was purpura in its worst form. Acting on this idea I determined in the above case to try the effect of giving large doses of oxygen to the apparently dying boy and I think the result is sufficiently good to warrant the further use of oxygen in like conditions. I am not prepared to discuss the physiological effect produced. I merely record clinical facts and on these facts I suggest that the remedy is worthy of use in cases where the ordinary means to arrest the bleeding have failed.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Discussion on the Value of Pressure in the Treatment of Wounds.

A MEETING of this society was held on Nov. 28th, the President, Mr. OWEN, being in the chair.

Mr. A. PEARCE GOULD opened a discussion on the Value of Pressure in the Treatment of Wounds. He remarked that the importance of securing asepsis had revolutionised surgical procedure and had shown the small part played by other measures in securing or in influencing the perfect repair of a wound. It was very easy for the surgeon to overvalue the part he played in the processes worked out in nature's human laboratory, when sometimes he was actually hindering them. Ambroise Paré was splendidly right when he insistently urged that it was the good God who healed wounds. There was a tendency to insist on details which were not of real importance and to drop unconsciously into a thoughtless routine. The maintenance of one position for days, for instance, so contrary to the wont of nature, was an exaggeration of a wise desire to secure rest and was greatly overdone. The unthinking routine prescription of alcohol for nearly every physiological and pathological state was another illustration of the tendency. In reconsidering his views with regard to the value of pressure Mr. Gould now held that it was largely ineffectual for the purposes for which it was employed, that it was sometimes mischievous, and that it could be well and safely dispensed with. Pressure was usually employed to secure apposition of the edges of the wound, to prevent oozing, to lessen serious exudation, to prevent bagging of fluid, to restrain muscular contraction, or to prevent the yielding of cicatrices. But for some time past he had abandoned the use of pressure for these purposes and the wounds had healed better and the comfort of the patients had been promoted. For pressure was not always harmless, and without due care might cause sloughing where there was a large flap, as after removal of the mamma. He had also been struck with its inutility in certain cases, as where the edges united but fluid collected beneath the flap. Pressure did not prevent its re-accumulation, but the insertion of a drainage-tube removed the difficulty at once. Similarly he referred to the inefficiency of pressure where there was bagging of pus, a condition for which counter-opening had to be resorted to. Where ill-effects were avoided he believed that the good results were independent of the employment of pressure, since he was able to obtain equally good results by means of a firm collodion dressing. Mr. Gould held that pressure need not be resorted to even after such operations as excision of the mamma. Again after laparotomy for removal of large ovarian cysts or for hysterectomy a simple collodion dressing over the wound was better than the mountains of cotton wool and firm bandage which were still largely used. What surgeons had been in the habit of attributing to their therapeutical measures had been the result of nature's kindly offices. The comfort of his patients had been greatly increased by his ceasing to apply pressure.

The PRESIDENT said that Mr. Pearce Gould's paper was novel and raised many important points. The disuse of pressure would certainly add to the comfort of patients, but he would like to be quite convinced that it would be safe to discard it. He had lately removed a large cystic kidney, afterwards applying firm pressure. Would Mr. Gould refrain from doing so in such a case as that, where there was a large actual cavity left and not a potential one? He would also like to hear from Mr. Gould whether he advocated the return to the use of the drainage-tube.

Mr. ALBAN DORAN said that four or five years ago he left off strapping the abdominal wall after ovariotomy and relied on slight pressure with a many-tailed bandage and later he scarcely used any pressure at all, but he had returned to the use of pressure as be believed that tolerably firm pressure favoured the expulsion of flatus and encouraged intestinal movement and so hindered the formation of adhesions. The bandage should be employed so as to compress the abdomen as high as the epigastrium or flatus was apt to be imprisoned in the transverse colon.

Mr. STANLEY BOYD said that he also had observed the failure of pressure to prevent the accumulation of fluid, and

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in certain places, as in operations on the thyroid gland and for the removal of glands from the neck, efficient pressure could not be maintained. With regard to the abdomen he thought that pressure was employed to prevent the intestine from becoming flaccid and distended. Probably, however, it was not necessary for the purpose of preventing dilatation of the abdominal veins. He also employed collodion, sometimes applying it on a piece of gauze a foot square. To prevent bagging he also employed the buried suture which had proved so useful in perineorrhaphy. It could not be used in some positions, as, for instance, near the deep vessels of the neck.

Mr. MARMADUKE SHEILD said that he did not think that any one method of dealing with wounds was of universal application, and though he agreed with much of the paper he still thought that there were many conditions, such as removal of the mamma and inguinal colotomy, where moderate pressure was called for, in the latter instance to prevent extrusion of viscera if there should be severe vomiting. As supporting Mr. Gould's contention he mentioned that he had seen in the practice of the late Sir George Humphry amputation wounds treated by the open method without any dressing whatever and had been struck with the ease with which they healed.

Mr. F. C. WALLIS was also inclined to take a middle course. No doubt the pressure employed was often excessive and in some positions it could not possibly exert much effect. He agreed with Mr. Boyd as to the value of buried sutures in preventing bagging, as, for instance, after operation for the radical cure of hernia.

Mr. PEYTON BEALE said that one object of pressure was to keep the dressing in position, and it was best effected by an elastic webbing bandage. The evil effects of excessive pressure were well seen in cases of excision of joints. He had repeatedly observed that those which were firmly bandaged did not do so well as those which were left loosely confined.

Mr. PEARCE GOULD, in reply, said that he had not taken up the wide ground of the treatment of wounds but had confined his remarks to the effects of pressure. He had gone back to the use of the drainage-tube in many cases, which should be left in for twenty-four or forty-eight hours and should then be removed. He often employed buried sutures for subcutaneous tissues but not often for deeper structures. He did not agree with Mr. Doran's views that pressure favoured the passage of flatus, and the cases which he had left with only a collodion dressing had had no more trouble in this respect than those former cases in which he had applied firm pressure. Even in the case of inguinal colotomy to which Mr. Sheild had referred pressure could not prevent expulsion of the viscera, as in the act of vomiting the abdominal muscles contracted and there was a space left between the bandage and the abdominal wall. He thought it possible that in some cases pressure might favour serous accumulation, as it would only act effectively on the veins and would probably not arrest the arterial flow.

The PRESIDENT announced that in connexion with the recent report of a case of recovery from sarcoma after the injection of Coley's fluid[1] one of the microscopists to whom the specimen had been entrusted had some doubts as to its sarcomatous nature. The question was referred to a subcommittee for examination and report to the society.

CLINICAL SOCIETY OF LONDON.

Green-coloured Urine.—Operative Treatment of Gumma of the Liver.—Laparotomy for Gastric Ulcer.

A MEETING of this society was held on Nov. 25th, the President, Mr. LANGTON, being in the chair.

Dr. H. M. FLETCHER read a paper on the Occurrence of Green-coloured Urine in a girl, aged twelve years. The source of the pigment was not discovered. The urine was acid and contained a large quantity of indican. On filtration blue pigment granules were obtained. The urine on standing deposited greenish-blue uric acid crystals. At first it was thought that this was an instance of an extremely rare condition—indigo in an acid urine. Spectroscopic examination showed, however, that the pigment was not indigo but methylene blue. Another almost precisely similar case occurring about the same time was also quoted, in which the pigment likewise proved to be methylene blue. Experiments made with methylene blue taken by the mouth proved conclusively the nature of the pigment. It was pointed out that the spectrum and reactions of methylene blue located in the urine differed markedly from those of an aqueous solution of the same body, some compound being probably formed in the urine.—Dr. A. E. GARROD thought that although no history could be obtained to account for its presence there was no doubt that the colouring matter present was methylene blue. In the very rare instances in which he had met with green urine the colouration had been caused by the spontaneous separation of indigo, which might sometimes occur as a dark or even black deposit.

Mr. W. G. SPENCER described three cases of Gumma of the Liver in which relief followed operative measures. The cases suitable for such treatment were exceptional, being those in which there was a single gumma of the surface or edge and where the liver was still unaffected by cirrhosis. An exposure of the tumour allowed a definite diagnosis to be made and so a course of anti-syphilitic remedies could be instituted. The first case was that of an unmarried woman admitted under the care of Dr. Allchin to the Westminster Hospital, in whom there slowly developed a tumour, apparently connected with the kidney. On exposure a gumma of the free edge of the liver was discovered which had become united by adhesions to the abdominal wall and which was overlapped by intestines. The mass was fixed in the wound, the interior was scooped out, and the cavity was filled with gauze. Healing rapidly occurred under anti-syphilitic treatment. The second case was that of a widow, thirty-three years of age, admitted under the care of Dr. de Havilland Hall, who had become ill a year before with enlargement of the liver, slight jaundice, ascites, and wasting. She was repeatedly tapped, but the fluid re-accumulated so quickly that she became exhausted. Drainage was resorted to and at the operation a digital exploration was made, which showed that there was no malignant disease but some cirrhosis of the liver and a small gumma on the free edge. Iodide of potassium and mercury were therefore freely administered and the patient improved greatly and left the hospital convalescent. But a complete restoration to health seemed impossible on account of the cirrhosis. The third case was that of a middle-aged woman seen ten years ago with Dr. Ferris of Uxbridge. She had a large tumour growing from the liver, which was about to ulcerate through the skin. In view of the fact that it would practically be impossible for a patient with cancer of the liver to survive until the growth had fungated through the skin the mass was cut into and gummatous sloughs were scooped out. The woman, being thus freed from the effects of septic absorption and being treated with anti-syphilitic remedies, rapidly regained good health and had remained so ever since. Mr. Spencer also referred to the removal of pedunculated gummata.—Mr. CLEMENT LUCAS related the case of a girl, twenty-one years of age, who had a mesial tumour in the epigastrium obviously connected with the liver. As on exploration this had the appearance of a gumma the wound was closed and the patient was treated with iodide of potassium and entirely recovered. In another case, that of a woman, thirty-eight years of age, the patient had an enlargement of the abdomen for over two years. In April, 1898, a large nodular tumour connected with the liver could be felt extending down to the umbilicus. On exploration the whole surface of the liver was cicatricial. There was no definite history of syphilis, but she improved greatly under iodide of potassium.—The PRESIDENT related a similar case, also in a woman, to whom, instead of operating, he gave iodide of potassium on the chance of the enlargement being syphilitic and the tumour disappeared.

Mr. F. C. WALLIS read notes of two cases which he had operated on for the effects of Gastric Ulcer. The first case was that of a young woman, aged twenty years, who was admitted to the Metropolitan Hospital on March 11th, 1898, for a perforated gastric ulcer. The patient was operated on ten and a half hours after perforation. On opening the abdomen the contents of the stomach were found extravasated chiefly in the gastro-hepatic area. The rent was in the posterior wall, close to the cardiac end, and nearly 1 in. in length, and was sewn up by two rows of Lembert sutures, and a piece of omentum was sewn over the line of suture. The abdomen was wiped out with sponges but no irrigation was employed and no drainage was used. The patient did well for eleven days and had no peritonitis. On the eleventh day she developed phlebitis. On the

[1] THE LANCET, Nov. 19th, 1898.

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seventeenth day basal pneumonia occurred, which continued until the twenty-ninth day, when the temperature came down and she began to improve. But on the thirty-first day she vomited suddenly 6 oz. of blood and died within an hour. Permission for a necropsy was refused. Mr. Wallis remarked on the cause of death by hæmorrhage thirty-one days after the operation as being unusual and unfortunate. He suggested that it might be advisable in many cases to enlarge the opening sufficiently so that an examination of the interior of the stomach might be made and that a small electric lamp would be of great service in such cases. The fact that, although the peritoneum was only wiped clean and not irrigated, there was no peritonitis was in keeping with the now well-known resisting powers of the peritoneum. Mr. Wallis had been led to adopt this method on account of the frequent occurrence of subphrenic abscesses after irrigation. The second case was that of a young woman, a patient under the care of Dr. Fincastle Clarke, who was seen first in July, 1896. The history dated from December, 1882, when she had an attack of gastro-enteritis which recurred repeatedly until November, 1895, when on getting out of bed she was suddenly seized with the typical signs of a perforated gastric ulcer. From this she recovered but from that time until the operation she was unable on account of pain to take any exercise and was only able to take fluid food in small quantities at a time. On examining the patient she was seen to be extremely emaciated and weak and the abdomen was tender when manipulated, especially above and to the right of the umbilicus, where there was a distinct sense of resistance. Dr. Abercrombie and Dr. Clarke saw the patient with Mr. Wallis and it was agreed that an exploratory laparotomy should be done. At the operation a strong band ¼ in. broad and 1¼ in. long was found issuing from the pyloric end of the stomach to the abdominal wall. This was removed. The patient made a complete recovery after a long convalescence and was now able to enjoy life after fourteen years of invalidism. The pain had never returned and she had put on flesh and was able to take exercise, and as it was now two years since the operation there were fair grounds for believing that the benefits would be permanent.—Dr. FRANCIS HAWKINS (Reading) related the case of a young woman suffering from gastric ulcer with masked symptoms. Signs of perforation suddenly developed and she was operated on and recovered. He did not feel certain that laparotomy should be performed at once in all cases as he recalled two cases in which the evidence appeared to show that perforation had occurred but in which spontaneous recovery took place.—Dr. KINGSTON FOWLER also thought that rarely patients might recover without operation and mentioned the case of an ex-soldier who had long been suffering from symptoms of gastric ulcer and one day became collapsed with symptoms of perforation. The next day he had abdominal distension with disappearance of liver dulness. Operation was proposed but he refused to submit, and to Dr. Fowler's surprise he recovered, the liver dulness gradually returning to normal. Notwithstanding the fortunate result in this instance, however, he thought that in such grave cases operation should be advised.—Dr. SIDNEY PHILLIPS had had a series of cases of gastric ulcers under his care during the last few months. In two he believed that perforation occurred and both recovered without operation. In a third case laparotomy was successfully performed. In the first case there were the usual symptoms of perforation and disappearance of the liver dulness. The patient was fed by the rectum for some time and improved, but as soon as food was given by the mouth the symptoms recurred and the liver dulness again disappeared, but ultimately she got well. The ulcer was probably in the posterior wall. In another case, occurring in a girl eighteen years of age, the pain was so acute at first that he thought that it could not be due to perforation, especially as the liver dulness was normal. Two days later there was evidence of local peritonitis and the liver dulness disappeared. As the pulse was good and there was no acute vomiting he had not advised operation and she was now recovering.—Mr. W. G. SPENCER suggested that in some cases the disappearance of liver dulness was due to distension of the colon, and mentioned a case in which there was marked distension of the colon, which was found after death to have been due to a kink caused by an adhesion connected with a duodenal ulcer. He had recently met with another instance during an operation for pyloric obstruction. A fibrous band extended from the pylorus to the colon and caused the distension. Unless the disappearance of hepatic dulness was accompanied by a very rapid pulse he did not think it was of much importance. In cases of perforation the pulse-rate was rarely below 120.—Dr. LUCAS BENHAM related the case of a middle-aged stout woman who was taken suddenly ill with diarrhœa and intense abdominal pain. She improved for a time but soon relapsed, the stools containing mucus and pus. She ultimately died and at the necropsy it was found that an ulcer of the size of a shilling on the posterior wall of the stomach had ruptured.—Dr. TOOGOOD mentioned a case in which disappearance of the liver dulness was noticed without perforation occurring. The patient was a blacksmith who had been under treatment for gastric ulcer. After dinner one day he was seized with acute abdominal pain and vomiting and was admitted into the Lewisham Infirmary in a state of collapse. As the liver dulness had entirely disappeared Dr. Toogood cut down on the stomach, but finding that its contents had not escaped he stitched up the wound. At the necropsy he found a very small aneurysm of the arch of the aorta which had ruptured. The pulse-rate was between 130 and 140. He could not give any explanation of the disappearance of the liver dulness.—Mr. CHARTERS SYMONDS narrated the case of a woman, sixty years of age, who had suffered for twenty-five years from symptoms suggestive of gall-stones, but there were also symptoms of obstruction at the pylorus with dilatation of the stomach. On exploration he found a very large stomach with a thick mass in the posterior wall narrowing the stomach into two parts. As this was taken to be malignant he united the cardiac portion to the small intestine by direct suture. On the fifth day she died suddenly, and at the necropsy the stomach was found to be filled with blood coming from an old gastric ulcer, of which the thick mass was the heaped-up border. On the posterior wall of the stomach there was an opening 5 in. wide leading into a large cavity. In a second case, that of a man forty-six years of age, there had been attacks of abdominal pain attributed to gall-stones for thirty years. On exploration the gall-bladder was found to be healthy, but there were many adhesions in the neighbourhood. Later there were symptoms of gastric dilatation and adhesions were found all round the pylorus and duodenum. In dilating it he ruptured it right through to the peritoneum. He sewed up the rent and closed the wound. In a third case, that of a girl, there was a history pointing to perforation of a gastric ulcer. There was a mesial swelling, and an incision gave vent to much foul-smelling pus from a cavity which reached up to the diaphragm. A large, thickened stomach was exposed, which he accidentally ruptured for a length of 3 in. This he sewed up and the patient recovered. With regard to the desirability of operating in every case it must be borne in mind that the diagnosis was not always perfectly clear. In one case the operation was postponed for a day, and the pain and vomiting were found to be connected with the onset of an attack of acute pneumonia, and in one which was operated on the stomach was found to be perfectly healthy, the vomiting being apparently hysterical. He did not quite agree with Mr. Spencer's views as to the pulse-rate. It was not necessarily rapid in perforation: in his first case it was 60, and cases had been recorded in which it was only 30.—Mr. WALLIS, in reply, observed that while it might possibly not be advisable to operate in every case there was no doubt that many patients died for want of timely operation, and the risk of the operation was slight as compared with that of an untreated perforated ulcer.

HARVEIAN SOCIETY OF LONDON.

Functional Dysphagia.

A MEETING of this society was held on Nov. 17th, the President, Dr. J. F. GOODHART, being in the chair.

Dr. STCLAIR THOMSON read a paper on Functional Dysphagia which will be found in full at p. 1463 of our present issue.

Dr. C. S. JAFFE remarked that dysphagia of neurotic origin and not associated with other symptoms of hysteria was as common in men as in women.

Dr. DUNDAS GRANT complimented Dr. StClair Thomson and stated that in his cases of functional dysphagia paralysis of the œsophagus was relatively more frequent than it appeared to have been in Dr. Thomson's. He (Dr. Grant)

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diagnosed it by the abnormal ease with which a very large indiarubber œsophageal tube could be passed. He referred also to cases of reflex spasm of the œsophagus simulating malignant disease and arising either from malignant disease in the abdominal organs or from defective dentition. In reference to electricity he had learnt from Dr. de Watteville how to bring about forced movements of swallowing by the continuous current, the positive pole being placed on the nape of the neck and the negative one being drawn gently down the side of the neck between the sterno-mastoid muscle and the trachea. Before introducing the bougie he made it a rule to assure himself that the cardiac apex beat was in its normal position. In the passage of a bougie in the middle line the cricoid cartilages sometimes acted as an obstruction, and in such cases the instrument could often be passed with ease if introduced to one side or other of the middle line. This was more readily done with a round than with a flat bougie, and he found in some cases a large bougie with a radish-shaped end preferable to a flat one.

Dr. CLIFFORD BEALE referred to three cases of functional dysphagia where the patients appeared to be almost unable to swallow in the presence of an onlooker but could take food without difficulty in solitude. The sensation of constriction of the gullet sometimes led to the suspicion and even to the diagnosis of cancer, but the passage of a large œsophageal bougie by demonstrating the absence of any stoppage not unfrequently caused the disappearance of the sensation. A very small inflammation of a follicle in the pharynx might produce a very considerable dysphagia, and he suggested the possibility that some cases of transient dysphagia might be due to a similar cause situated in the œsophagus itself.

The PRESIDENT alluded to the not uncommon inability of children to swallow solids. Sometimes this inability persisted up to the age of two or three years. In some cases it might be due to adenoids, but he believed that it was usually dependent on some functional neurosis. He mentioned a case in which dysphagia was caused by phlegmons of the œsophagus. He had met with an instance in which a man had been unable for many years to swallow except with great slowness and in small sips. Possibly congenital narrowing of the lower part of the œsophagus existed here, but he inclined to the view that the inability was functional. Functional dysphagia was occasionally mistaken for that caused by cancerous stricture, but the converse error had been known to occur. He regarded aneurysm as an extremely rare cause of dysphagia. He attached great value to auscultation as a means of diagnosing œsophageal stricture.

Dr. G. A. SUTHERLAND thought the passage of an œsophageal bougie was of value in some cases of functional dysphagia. He recalled one case in which a patient was unable to swallow owing to the presence, as he believed, of a pill in his throat. The passage of a bougie was immediately followed by the disappearance of the dysphagia. He agreed with Dr. StClair Thomson in the importance of making a thorough examination of the naso-pharynx and larynx both visually and digitally. In the case of a small foreign body such as a fish bone he had found by experience that after localising the part by the patient's sensations a careful examination of that region with a probe would probably reveal a point of extreme tenderness where the foreign body would be found.

After some remarks by Dr. H. J. MACEVOY,

Dr. STCLAIR THOMSON, in reply, said he was much gratified at the reception of his paper, for, as he mentioned in his introductory remarks, he had no new facts or ideas to submit. The paper had been the result of an effort in his own mind to get a clear conception of this affection. In doing this he feared he had talked all round the subject and had defined it chiefly by a process of exclusion. The debate had shown the protean features of hysteria. In his own experience the majority of patients had been females. A hollow bougie was doubtless much more comfortable for the patient and easier to pass, but the rigid tube for diagnostic purposes gave a good deal more information. If surrounded with every precaution doubtless the œsophageal bougie could be passed without danger, but there could be no doubt that dangerous accidents with it had happened in the hands of some of the most experienced and expert practitioners. The dysphagia associated with anæsthesia of the larynx, the pharyngismus associated with defective teeth, and the aphagia described by the President as occurring in infants and adenoid subjects, might, he thought, be classified under the heading of reflex dysphagia.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Grave Anæmia.—Effects of Frequent and Infrequent Feeding.

A MEETING of this society was held at the Royal Infirmary, Bradford, on Nov. 15th, the President, Dr. BERRY, being in the chair.

Dr. ROBSON gave a Microscopical Demonstration.

Dr. MAJOR showed a series of photographs of a Cretin under Treatment by Thyroid Extract.

Dr. CAMPBELL showed a Liver weighing 109 oz., a very marked instance of fatty and fibrous degeneration.

Dr. KERR showed (1) a specimen of Malignant Disease of the Larynx removed by Laryngectomy; and (2) a specimen from a case of Lateral Sinus Thrombosis.

Dr. GLADSTONE showed a patient and read notes on a case of Grave Anæmia which had been successfully treated with arsenic and general massage. The patient was a boy, thirteen years of age, a newspaper-seller, who had suffered much from privation and neglect. He was admitted to hospital on Oct. 6th, 1897, complaining of shortness of breath, cough, and abdominal pain. Examination of the chest showed that the heart's apex was displaced slightly outwards and there was a soft systolic murmur over the whole cardiac area. The lungs showed nothing abnormal. The urine contained a trace of albumin but no casts. The fundus oculi was normal. At the end of a fortnight the anæmia was extreme; hæmoglobin 30 per cent. Fourteen days later the patient was extremely weak and could hardly sit up in bed and his face was white and puffy. The blood was examined and was found to contain (Nov. 13th) 990,000 red discs per cubic millimetre and there were noticed numerous irregular-shaped discs. Neuro-retinitis was now discovered. During the preceding three weeks the patient had been taking iron with small doses of arsenic. This was now omitted and salol was given with a view to intestinal antiseptic treatment. After a slight improvement in the blood-count, he again became much worse and on Dec. 6th was apparently moribund. Blood discs, 624,000; hæmoglobin, 10 per cent. All food was returned. Rectal feeding was now begun. Ten minims of arsenical solution were given three times daily, together with general massage for twenty minutes daily. On Dec. 13th the patient was much better and was able to take food. Hæmoglobin, 20 per cent.; blood discs, 1,520,000. Retinal hæmorrhages were observed on Dec. 18th. On Dec. 22nd he had an attack of capillary bronchitis and he became very ill again. He steadily improved after. This complication had passed away and on March 5th, 1898, he was sent to a convalescent home. Hæmoglobin, 50 per cent.; blood discs, 3,090,000. By a mistake the patient walked all the way (about five miles) and was taken in much exhausted; he soon recovered however. When seen in June the boy had a good colour. Hæmoglobin, 80 per cent.; blood discs, 4,600,000, no irregular discs being seen. There was still a cloud of albumin in the urine. When shown to the medical society the patient was apparently quite well. The massage had been continued with some intermissions up to Feb. 21st, 1898, when it was no longer thought to be necessary. Dr. Gladstone remarked that after the massage the boy seemed to feel comfortable and to be refreshed. It appeared to induce sleep.

Dr. RABAGLIATI read a paper entitled "Some Effects of Frequent and Infrequent Feeding." He said that he had had a considerable amount of experience now in treating patients by recommending them to eat twice a day only in place of the three, four, five, or even six times frequently adopted. He believed that with a few exceptions, due to alcohol, syphilis, heredity, and the like, the main predisposing cause of nearly all the illnesses he had been in the habit of seeing for the last thirty years was too frequent and too abundant feeding. Death from starvation pure and simple no doubt could occur, and no doubt did occur, but he remembered only one case of it—in a neglected infant. He referred then to the exciting causes of disease, the ultimate difference between them and the predisposing causes consisting, he thought, in frequency, as distinguished from infrequency, of action. Next he referred to the proximate causes of disease which he would rather call "states" than "causes." There were two, and two only—shrinking and

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swelling—and there was the intermediate state when swelling was passing into shrinking and shrinking into swelling. He criticised the terminology of Cœlius Aurelianus, contending that the terms used by him to signalise the proximate causes ought to have been not "strictura" and "solutio," but "strictura" and "dilatatio"; and that the state named "stricturæ et solutionis complexio" ought to have been 'stricturæ et dilatationis alternatio," since shrinking and swelling could not be combined in the same part at the same time but might alternate with one another and, in fact, must do so, since the succession of the one state on the other must occur owing to the very constitution of organisation—or at least always tended to occur. He then referred to the terminology introduced by Asclepiades of Bithynia, and proposed, instead of the acute and chronic diseases of that author which, he said, were not logical opposites, a classification into the œdemic diseases and the izamic, and said further that diseases were eilemmatous and parenchymatous and that the former might be endeilemmatous or exeilemmatous. For instance, pneumonia was a parenchymatous disease, bronchitis endeilemmatous, and pleuritis exeilemmatous. The confused views, as he considered them, of Sydenham were also considered and criticised, but he noted that Sydenham believed that gout was a disease due to "drinking and feasting." The view of Dr. King Chambers that 3 lb. avoirdupois was a reasonable daily average weight of food to be taken was unfavourably criticised, Dr. Rabagliati thinking that it was far too much and that Ranke's estimate of 100 grammes proteids, 100 grammes fats, and 250 grammes carbohydrates, in all about 1 lb. avoirdupois of mixed food, was far nearer the proper quantity. 3 lb., he thought, might, and in fact did, frequently produce starvation due to over-repletion. Cornaro lived to about 100 years of age on the daily consumption for about sixty years of ¾ lb. of mixed food. As examples of starvation due to over-repletion Dr. Rabagliati instanced callous ulcer of the leg, rheumatism, and cancer, saying that probably his views on this subject might collide with those of other members of the society. He then quoted cases and among the rest one of chronic vomiting in a man, aged forty-seven years, who had suffered for seven and a half years. His disease had, it was said, been variously diagnosed as cancer of the stomach, malignant growth of the stomach, chronic atonic dyspepsia, and chronic gastritis (the last being Dr. Rabagliati's own diagnosis). Various methods of treatment had been adopted without benefit. All kinds of gastric sedatives and tonics and frequent washing out of the stomach had been used, but without benefit. He had himself four years ago treated the patient but without more than transient relief. In these circumstances and considering the great length of time during which the case had persisted he recommended a long fast in order to see if stopping food altogether for a time would be followed by any relief. The suggestion was not at first favourably received by the patient, but after a time when, as he afterwards said, he thought himself dying at any rate, he expressed himself as willing to submit to it. The temperature under the tongue was 96° F. and at the commencement of the fast the weight was 130½ lb. In the first week the patient had only water, about a pint a day. For the eighth and ninth days he had besides water the whey from a pint of milk, the curds being separated by means of rennet. After the ninth day he had a daily allowance of whey from two pints of milk, no restriction being put on him as to water, which he took either hot or cold as he fancied. The patient never vomited or felt as if he would vomit since beginning treatment on Sept. 1st till the fast ended on Oct. 6th, neither had he vomited since. At the end of the fast the pulse was 65, soft, steady, and regular, and the temperature was 98·4°. He was up and about the whole time, helping his wife with light domestic duties. The weight of the patient at the end of the fast was 117¼ lb.; the loss of weight therefore was 13¼ lb., or an average of 6 oz. daily during the fast. Since the fast the patient had been eating ordinary food twice daily, taking a total weight of from 12 oz. to 16 oz. daily. If whey contains, as it is said to contain, about 7 per cent. of solids, then the patient would have had about 2 oz. of sustenance daily during the last four weeks of the fast, which would make the average daily loss of weight about 8 oz. had he lived entirely on his own material during the time. The paper concluded with some comments on the case and some observations on the kind of reasoning which led to the suggestion that a fast might be beneficial. In particular Dr. Rabagliati said that a patient might be in a low state of health and vitality because he had not sufficient food but that he might also be in that state because he was crushed by the load which he was carrying—as appeared to be the case in the instance detailed.—Dr. HIME criticised the paper and pointed out that Dr. Rabagliati had produced very little evidence in support of his statements. He regretted that no modern authorities on pathology had been cited.

The time at the disposal of the meeting having now expired the President declared the meeting at an end. It was decided by a vote of the members not to hold an adjourned discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Specimens.

A PATHOLOGICAL meeting of this society was held on Nov. 18th, the President, Mr. EDWIN LEE, being in the chair.

Dr. ALLAN showed, among other specimens, a Foreign Body from the Peritoneal Cavity, a Syphilitic Tongue, and a Hypertrophied Tibia from a case of Chronic Ulcer of the Leg.

Dr. WARDROP GRIFFITH described and contrasted two specimens of Obstruction of the Inferior Vena Cava. In one the cause was aneurysm at the bifurcation of the aorta, with first pressure on, and then communication with, the cava. The superficial abdominal veins were greatly enlarged. In the second example, occurring in a man, aged fifty-five years, who died after an operation on the bladder, no symptoms were present during life. The obstruction was complete and just above the junction of the renal veins. In this instance the collateral circulation was carried on entirely without the assistance of the superficial veins of the abdomen, which was accounted for by the obstruction having occurred so early in development that the inferior cava had not fully taken on the duties of the cardinal veins which therefore remained as very large azygos veins.

Dr. EURICH showed: 1. Specimen and Microscopic Sections of a Tumour of the Kidney removed post mortem from a child, aged two years, and weighing 6¼ lb.; it was composed of small round-celled sarcomatous tissue, imbedded in which was embryonic gland-tissue. In its interior there was a hard nodule formed of embryonic striped muscle in different stages and a few well-defined clusters of cells, either epithelial or endothelial, probably the former. The growth was in parts angiomatous and contained many hæmorrhages. The tumour should be classed among the teratomata. 2. Sections from a "Perithelioma," a so-called "Psammoma," and a "Cylindroma" of the Brain. All three were really angio-sarcomata, the difference in their appearance being due to changes in their vessels, either in the direction of calcification or of hyaline degeneration. Both these changes may occur together. Calcification is preceded by an obliterative endarteritic process. 3. Specimen of Malignant Disease (? Sarcoma) affecting the Stomach, the Ascending and Transverse Colon and the Rectum, in a woman, aged twenty-nine years.

Dr. BRAITHWAITE showed a Cyst of the Great Omentum. This cyst occurred in a female child, four years of age. It occupied nearly the whole of the front of the abdomen. It was removed by operation in March of this year and was found to contain between 3 and 4 pints of clear, watery fluid. The cyst had walls about ⅛ in. in thickness when it was empty of fluid and its internal surface was speckled with patches having an iridescent colour like mother-of-pearl. These spots were more prominent than the rest of the surface. By keeping in spirit for eight months this appearance had been nearly lost, but it was still to some degree visible. In addition to this larger cyst there were several much smaller ones, none, however, larger that a walnut. The patient recovered and is now in good health. Two years previously the child's body was noticed to be very much bruised, but from what cause could not be ascertained. This may possibly have had some effect in originating the tumour. In support of this theory it may be remarked that billiard players are said to be liable to tumours of the omentum, at any rate, a paper was published a few years ago to point this out.

Mr. WHITE showed microscopic specimens of Lardaceous Disease of the Kidney, Liver, and Spleen.

Mr. LITTLEWOOD showed a series of Twelve Kidneys

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removed either by lumbar or abdominal nephrectomy. The specimens included 3 of neoplasms, 3 of tuberculous disease, 2 of calculus and one of septic pyelo-nephrosis.

Dr. BARRS showed a specimen of Typhoid Ulceration of the Large Intestine from the body of a young woman who died in the fifth week of the disease. The lesions showed the various stages from a mere swelling of the solitary glands up to a commencing separation of the slough. There had been no relapse and the patient had never been able to take solid food. A specimen of Typical Typhoidal Broncho-pneumonia was also shown from the same case.

Dr. CHURTON showed a specimen of Sarcoma of the Pancreas from a case in which there was glycosuria.

Mr. W. H. BROWN showed a piece of Gangrenous Intestine removed from a strangulated hernia.

Dr. NUNNELEY showed a specimen of Degeneration of an Eye resulting from a foreign body resting on the retina for thirty years.

Mr. SECKER WALKER showed an Eye affected with Secondary Glaucoma.

Dr. NUNNELEY and Mr. WALKER also each showed a specimen of Intra-ocular Sarcoma.

Dr. TREVELYAN showed Sections from Eczema of the Skin, death being due to other causes.

Mr. MOYNIHAN showed a series of Photographs and Lantern Slides illustrating the Anatomy of the Duodenal Fossæ and Duodenal Hernia.

An extensive series of Coloured Drawings was exhibited by Dr. BARRS and Dr. TREVELYAN.

The specimens, some 60 in number, added to the Leeds Medical School Museum during the last eight months were also shown.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Ligature of the Left Subclavian Artery.—Coxa Vara.

A MEETING of this section was held on Nov. 11th, Mr. R. L. SWAN, the President, being in the chair.

The proceedings commenced with the delivery of the President's Address.

Mr. R. BOLTON M'CAUSLAND read notes of a case of Stab Wounds of the Left Shoulder necessitating Ligature of the Left Subclavian Artery on the Twenty-seventh day for Secondary Hæmorrhages. A shoemaker, aged thirty-four years, was admitted to Steevens' Hospital on Feb. 16th, 1898, with four stabs about the shoulder, one of which entered the posterior fold of the axilla. He was very blanched, but the wounds were stitched up and dressed first on the fifth day. Slight bleedings occurred on the seventh, eighth, ninth, and tenth days necessitating plugging of the wound; these ceased till the eighteenth, nineteenth, and twenty-first days; then there was a profuse hæmorrhage on March 13th. Two days afterwards three courses seemed to present themselves: (1) amputation at the shoulder; (2) ligature of the subclavian artery; and (3) enlargement of the wound and search for the bleeding vessel. The latter procedure was first adopted, but profuse bleeding then came on; the wound was plugged with turpentine compresses and the subclavian artery was tied on the same side with silk. There was no bleeding from the date of operation; the subclavian wound healed at once under two dressings; the axillary wound was dressed on the second day and under a daily dressing granulated rapidly, healing on the thirty-eighth day. Wild, uncontrollable delirium came on in forty-eight hours after the operation and lasted nine hours; opium enemata and bromides seemed of use; it passed away as rapidly as it came on. The temperature remained normal from the second day, the man made a good recovery, and was out of bed on the twenty-fifth day. Morphine, arsenic, and quinine were used to combat pains in the shoulder, arm, forearm, and hand; massage was also of great benefit. At present the man is in good health and he has almost complete movement in the shoulder, but cannot hold his work in his left hand for more than two hours. The temperature in both hands is the same, though he complains of the left being colder. Radial pulsation appeared feebly on the thirty-fourth day after operation and has not increased. The wounds are all soundly healed.—The case was discussed by Mr. HENRY GRAY CROLY, Mr. T. MYLES, Mr. CHANCE, and Mr. LENTAIGNE.

Sir THORNLEY STOKER read a paper on Coxa Vara in which he referred to the history of the discovery of the complaint and to the fact that until 1889 it had been mistaken for morbus coxæ. The deformity was most commonly due to rickets. It was a condition of bending of the neck of the femur so that the head of the bone was depressed, and shortening of the limb was thus produced. The head was also bent backwards so as to render the neck convex in front, and thus cause eversion of the thigh, which, combined with shortening, was the chief physical evidence of the disorder. He said that until 1896 he had been teaching that many mild cases of morbus coxæ occurred in which recovery took place with no defect beyond a little shortening; these were now known to be, for the most part, examples of coxa vara. The diagnosis of coxa vara from morbus coxæ was of importance, as the former condition was free from danger to life and must be treated on different lines.

SECTION OF PATHOLOGY.

Enchondroma of the Thigh.—Tubercle of the Eye.—Bicuspid Aortic Opening.—Aortic Stenosis.—Hypertrophy of the Heart.—Septico-Pyæmia.—Various Lesions of the Ulna.

A MEETING of this section was held on Nov. 4th, Dr. J. M. PURSER, the President, being in the chair.

Mr. JOHN LENTAIGNE read a communication on Diffuse Enchondroma of the Thigh.—Dr. E. J. MCWEENEY had made a microscopic examination which showed the characters of hyaline enchondroma extremely well. The central portion was composed of cancellous bone.

Mr. J. B. STORY showed Two Eyeballs removed for Tuberculosis, and Mr. O'SULLIVAN exhibited and described the microscopic appearances. One was a case of tuberculosis of the iris and ciliary body in a boy, aged seventeen years, presenting the ordinary characters. The other was a case of localised tuberculosis of the intra-ocular end of the optic nerve, simulating papillitis with detached retina. It occurred in a girl aged twenty-one years.—Dr. E. J. MCWEENEY said that no method of staining brought out the structural details so well as Von Gieson's. He thought that the reason why tubercles were not found in the retina oftener was, perhaps, because they were not sought for. As a rule the lesions of tuberculous eyes were more or less evident in front.

Dr. H. C. DRURY exhibited the Heart of a man, aged about fifty-five years, showing the rare anomaly of only two valves at the aortic opening. The condition of the heart during life was unknown as the patient was admitted into hospital in a dying state and only lived a few hours. There was atheromatous thickening of the aortic valves which rendered them incompetent; there was also atheroma of the aorta above them. The other valves of the heart were normal, the pulmonary opening having three normal healthy valves. Though there was atheroma of the aorta and its valve he considered that the bivalved condition was a congenital one and not acquired by the adhesion of two cusps and subsequent absorption or ulceration of their attachment to the aorta, because (1) the cusps were approximately equal in size and very large and (2) there was no evidence in either cusp of a line of union. Their position was, one to the right and slightly posterior, the other to the left and slightly anterior—the slit between their free edges being directed from before and a little to the right back and a little to the left. The one to the right appeared to represent the normal right posterior with half of the anterior cusp, the one to the left representing the normal left posterior with the other half of the anterior cusp. There was an opening of the coronary arteries behind each, that of the right coronary being situated behind the anterior part (corresponding to half of the anterior cusp) of the right cusp and that of the left coronary artery behind the posterior part of the left cusp.

Dr. J. B. COLEMAN exhibited five Hearts showing various lesions. In one, removed from a female, aged fifty years, the left ventricle was hypertrophied without dilatation; the aortic valve was stenosed to a mere sinuous chink; the anterior and left posterior segments were fused, thus producing a bicuspid aortic valve; the segments were sclerosed and nodulated, and so closely adapted to each other that a fine probe could be introduced between them with difficulty; there was no regurgitation. Pure aortic stenosis was rare, and it was generally considered the least serious of valvular lesions; but in this case it caused sudden death. The patient was not examined during life. In another specimen, removed from a man, aged fifty years, the heart was enormously enlarged, weighing 32 oz. (*cor bovinum*); both left

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and right ventricles were hypertrophied and dilated and recent pericarditis was present, but all the valves were healthy.

Dr. MCWEENEY gave an account of a fatal case of Septico-Pyæmia associated with Acute Suppurative Arthritis in a boy, aged twelve years, after a slight blow on the right knee. The bacteriological examination revealed staphylococcus aureus in the fluid removed from the knee at the time of operation and also in the pericardial fluid, as well as in the foci in the lungs, myocardium, and kidneys. How it had obtained entrance was not clear. Dr. Mc Weeney also showed a preparation made from his own finger which had become infected at the necropsy without any wound, apparently along the shaft of a hair on the dorsal aspect of the second phalanx. In spite of active treatment a troublesome furuncle had resulted, the slough from which swarmed with the staphylococcus aureus. There was some lymphangitis, but he had fortunately escaped without glandular infection.

Dr. J. KNOTT exhibited 28 human ulnæ, showing united fractures in various positions, rachitic curves, arthritic deposits, and changes of various kinds.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on Thursday, Nov. 10th, the President, Dr. Alfred Robinson (Rotherham), being in the chair, Dr. Sorley showed a case of Lateral Sclerosis.—Mr. Lockwood gave particulars of a case of Foreign Body in the Cheek. The patient, a girl, aged twenty-nine years, was admitted into hospital with a suppurating sinus of the cheek. On examination under ether what was thought to be a piece of necrosed bone was found to be a piece of glass 2½ in. in length. It had perforated the malar bone and had passed through the antrum of Highmore along its orbital surface towards the posterior nares. The history was that twelve months previously the patient had fallen upon the fender and sustained a wound which had never healed.—Mr. Lockwood also showed a case of Myositis Ossificans Multiplex Progressiva and a Fœtus with Gastrochisis.—Mr. Herbert Hallam showed a case of Adeno-sarcoma commencing in the cervical glands seven years ago.—Mr. Connell showed (1) a patient who had been operated on for Purulent Peritonitis; (2) a specimen of Phagedæna of the Penis, and (3) microscopic slides of a case of Relapsing Appendicitis.—Dr. Burgess showed Two Children with Patent and Dilated Arterial Ducts.—Dr. Arthur Hall showed (1) a case of very large and numerous Gouty Tophi; (2) a case of Syphilitic Rosacea, and (3) a series of naked-eye and microscopical sections illustrating the Morbid Anatomy of Exophthalmic Goitre.—Mr. Godfrey Carter read a paper on the Etiology of Graves's Disease.—The discussion which followed was supported by the President, Mr. Archibald Cuff, Dr. Leonard Giles, Mr. Dale James, Mr. Garrard, Dr. Waddy, and Dr. G. Wilkinson.—At a meeting on Nov. 24th, the President being in the chair, Mr. Pye-Smith read a paper to introduce a discussion on Intestinal Obstruction with reference to Differential Diagnosis and Treatment. Commencing with a large and most markedly acute group when the bowel is strangulated by some internal band or other cause he insisted on the close similarity of such cases to cases of strangulated hernia and advocated equally prompt treatment by operation. The diagnosis and treatment of other acute and chronic groups were then discussed and the opinion was expressed that real differences in the symptoms are normally to be found between cases of intestinal obstruction owning widely different causes and that in spite of admitted difficulties the clinical problem may often be solved if there be a full, early, and correct history of the case, if a careful and thorough examination of the patients and an analysis of the symptoms be made, and if the probabilities suggested by age, sex, and statistics be allowed to have their full influence.—The President, Dr. Porter, Dr. Sinclair White, Dr. Gwynne, Dr. Kay, Mr. Archibald Cuff, Dr. Leonard Giles, Dr. G. Wilkinson, Dr. Burgess, and Mr. Keeling took part in the discussion.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held at 20, Hanover-square, on Nov. 23rd, Dr. Radcliffe Crocker, the President, being in the chair.—The President showed (1) a little boy, five years old, suffering from Lichen Scrofulosorum Pilaris; (2) a female, aged twenty years, with Leucodermic Patches on the Neck; and (3) a case of Mixed Scleroderma in a male, aged nineteen years.—Dr. J. F. Payne showed a case of Acne Keloid (? sycosis frambæsiformis) in a man, aged about fifty years; the growth was on the scalp.—Dr. A. Eddowes showed a case of Persistent Erythema with Lichenoid Affection of the Limbs in a woman, aged about forty-five years. It was generally regarded as a case of atypical lichen planus.—Dr. Eddowes also showed a case of Typical Lichen Planus.—Mr. Campbell Williams read a paper on Congenital Syphilis: a New Theory.—Dr. A. J. Hall (Sheffield) read notes of a case of Eczema produced by Phenyl-hydrazin-hydrochlorate.—The papers and cases were discussed by the President, by Dr. J. F. Payne, Dr. Mouillot (Harrogate), Dr. A. Eddowes, Dr. Shaw-Mackenzie, Dr. Ogilvie, Dr. T. D. Savill, and Dr. A. J. Hall.

Reviews and Notices of Books.

A Text-book of Physiology. Edited by E. A. SCHÄFER, LL.D., F.R.S. Vol. I. Pp. xxiv. and 1036. Edinburgh and London: Young J. Pentland. 1898. Price 31*s.* 6*d.*

LESS than two years ago we reviewed in these columns an American Text-book of Physiology written by a number of the leading physiologists in the United States under the editorship of Dr. W. H. Howell. This was, we believe, the first text-book on the subject in the English language in which a number of physiologists collaborated. It has been speedily followed in this country by a similar treatise of even more monumental proportions. Not since the publication of Hermann's celebrated "Handbuch der Physiologie" has so comprehensive and important a work on the subject been attempted nor, we may add, crowned with such conspicuous success. Professor Schäfer has been fortunate in securing the services of many of the best-known physiologists in Great Britain as contributors to the text-book. This will be evident from a list of those writers who have combined to produce the present volume. Dr. Halliburton undertakes the opening chapters on the Chemical Constituents of the Body and of Food, and on the Chemistry of the different Tissues and Organs. The editor himself writes on the Blood and later on the Secretion of Milk, on Metabolism in general, and on Internal Secretions. Dr. Arthur Gamgee deals with Hæmoglobin and its immediate derivatives. Professor Waymouth Reid contributes chapters on the Processes of Diffusion, Osmosis, and Filtration, and on Secretion and Absorption by the Skin. Dr. Starling is responsible for the chapters on the Production and Absorption of Lymph and the Mechanism of the Secretion on Urine. Mr. B. Moore writes on the Chemistry of the Digestive Processes. Salivary Secretion is the subject of a monograph by Dr. Langley, while Dr. Edkins discusses the Mechanism of Secretion of the Gastric, Pancreatic, and Intestinal Juices and Dr. Noel Paton that of the Bile. The Chemistry of the Urine is the subject of Dr. F. Gowland Hopkins's contribution and the sections on the Chemistry of Respiration and on Animal Heat are by Dr. Pembrey.

It is not too much to say that each of these articles is a complete monograph, thorough, laborious, and lucid, written by a physiologist well known for his particular knowledge of his own subject. To attempt adequate criticism of them would need a special knowledge of each subject at least equal to that of their authors. There are few who possess such knowledge, but it is nevertheless possible to form a fair opinion of the value of the work by comparison with existing treatises and by persistent use as a work of reference whenever information is required on any special subject. The Text-book stands these tests not merely well, but in such a manner as to distance all competitors. It is not a book for the ordinary student—it is too comprehensive, too bewildering in its detail; some of the chapters are almost too encyclopædic. But to the physiologist, the pathologist, or the

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physician in search of minute fact in support of any given opinion it will be found invaluable. Its main importance is, in fact, that of a comprehensive work of reference, sparing an enormous amount of trouble in the hunting up of original papers. It must remain for many years the standard work of reference on physiology in the English language, of value primarily to the physiologist but also to the worker in every branch of medical science.

Commercial Organic Analysis. By ALFRED H. ALLEN, F.I.C., F.C.S. Second edition, revised and enlarged. Volume IV. Proteids and Albuminous Principles. Proteoïds or Albuminoïds. London: J. & A. Churchill. 1898. Price 18*s*.

IN a review in THE LANCET of Oct. 3rd, 1896, of the third volume of this excellent book we remarked that when Mr. Allen's important work is finished he will have earned the gratitude of chemists, analysts, and others, for having added one of the most valuable books of reference on the subject with which it deals. The volume before us represents the end of the stupendous task which Mr. Allen undertook over fourteen years ago. It is the last volume of the second edition, the earlier volumes of which have been long out of print. We share in the author's regret that he finds it impossible to undertake the enormous labour of revising the earlier volumes, but a well-known authority on analytical practice has fortunately been found to continue this good work in the person of Dr. Henry Leffmann who has practically finished Volume I. and is now engaged upon Volume II. The time has come, therefore, when we can regard Mr. Allen's work as a whole, and we heartily congratulate him upon the result, and the chemical profession upon the possession of such a valuable and reliable source of reference on a very important and interesting branch of analysis. It is not difficult for the practising analyst to discover that the processes described throughout have in the majority of instances been tested in the laboratory by the author. Again and again he gives a review of the methods of analysis applied to a given substance and then relates his own experience as to the mode of procedure which he has found best and which introduces important modifications enabling the analyst to arrive more nearly at the truth. In proof of this the reader is constantly confronted with remarks in effect like the following (p. 294): "Numerous experiments made in the author's laboratory have shown the substantial accuracy of the process though various modifications were tried before this result was attained." The most interesting and valuable chapter in the present volume is, we venture to think, that dealing with Meat and Meat Products. Here we find all that is known up to the present time of the composition of meat preparations so far as analytical methods may be trusted. This portion of the subject obviously bears upon the comparative nutrient value of meat extracts, essences, &c., and a series of tables are included containing a great number of recent analyses in accordance with the results of improved methods, and the relative value of most of the commercial meat preparations on the market may thus to some extent be gauged. The subject, however, is still beset with difficulty owing to the want of physiological data as to the exact alimentary power of each constituent which analysis now identifies and separates. What, for instance, is the alimentary value of the gelatins, chondrin, gelatin-peptone, &c., and relatively of albumose and peptone? Until these questions are satisfactorily answered even the searching power of analysis to separate different constituents will avail little. In the same chapter is very properly contained a section on the Enzymes of the Gastric Juice with an excellent account of recent knowledge on the subject and a *résumé* of the methods of assaying pepsin. The method enjoined in the British Pharmacopœia of 1898 is described and in a footnote the author observes that "it is deplorable that those responsible for the production of the British Pharmacopœia should have adopted a process of pepsin-assay so unscientific in its principles and so defective in the details of its application." We are bound to admit the justice of this criticism. In the chapters dealing with the Analysis of Milk and Milk Products we again meet with evidence of the care which the author has taken to keep the history of all pertaining to the subject well up to the present time. We observe here for the first time in print a "Memorandum on the Analysis of Milk in the Government Laboratories." The author was favoured with an advance copy of this paper, which relates to the analysis of some milk by Dr. T. E. Thorpe, the principal of the Government laboratories. The process therein described seems complicated, and the simpler method first practised by Dr. Bell appears to give the same results according to Mr. Bannister, the late principal and deputy principal respectively at Somerset House. It is impossible that the analysis of sour milk can be as satisfactory as that of milk examined in the fresh state. On the question of food preservatives the author expresses no very pronounced opinion one way or the other, but refers to a footnote in which the opinions derived in response to our own inquiries upon the subject[1] from several medical authorites are conveniently epitomised. The volume concludes with 534 *addenda* which are short notes of reference to recent contributions bearing on the subjects treated in the body of the work. Amongst these references we observe a paragraph on the recent announcement of the alleged discovery of the synthesis of albumin. The author discredits the announcement as such but suggests that some fresh insight may have been gained into the composition and constitution of proteids.

"Allen's Commercial Organic Analysis" is undoubtedly a standard work upon the subject and the author must feel it no small reward for the great labour and deep thought which he has devoted to its preparation and completion that it is admitted to be the first work of its kind and one in which all those engaged in analytical work place confidence and trust.

The Sanitation of Domestic Buildings. By FRANK LATHAM, C.E. With Introduction by BALDWIN LATHAM, C.E. London: The Sanitary Publishing Company, Limited. 1898. Price 2*s*. 6*d*.

THIS little manual will be found most useful to all who desire an insight into the why and wherefore of the various pipes and appliances which ramify through, under, and about a modern dwelling. Having first dwelt upon the importance of efficient sanitary surroundings, Mr. Latham takes the sanitary work of the house in detail. Commencing with the drains he passes to the plumbing work and then considers the desirability or otherwise of the several internal fittings illustrated in the book. The work well exemplifies the best methods of the present day and the few trifling points upon which we may entertain any diversity of opinion are hardly worth discussion.

The author has endeavoured, so far as the subject will permit, to render it intelligible and useful to the uninitiated and with the aid of numerous illustrations has accomplished very much in this direction. Unfortunately for themselves and others the general reader and the householder are like Gallio who "cared for none of these things." We cannot deny a certain meed of sympathy to the general reader, for notwithstanding its vital importance the subject is both uninteresting and difficult and the general reader lacks the many years of industrious work and study which render the

[1] Vide THE LANCET, Jan. 2nd, 1897.

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various details and technicalities so easy of comprehension to the expert. Mr. Latham need not despair, however, on this account, for there is much in his book of an educational character suitable to a large class of readers capable of assimilating its contents. These will find it full of information and particularly handy for reference.

The American Year-book of Medicine and Surgery for 1898. Edited by GEORGE M. GOULD, M.D. London: The Rebman Publishing Company. 1898. Pp. 1077. Price 38*s.*

THIS colossal work continues to maintain the high standard of usefulness which has hitherto distinguished it. Dr. Gould has the services of an editorial staff now numbering no less than 27 members, each of whom appears to be well qualified to deal with his own subject. Large as this staff is it cannot be considered excessive for the laborious task of abstracting a year's literature on medicine, surgery, and kindred subjects in every important modern language. The various articles are not merely abstracted, but in most cases a short criticism is appended representing the views of the member of the staff who deals with it, and this criticism is usually apt and to the point. A considerable number of figures and a few excellent coloured plates are introduced into the volume. The book is clearly and beautifully printed and no attempt has been made to diminish its bulk by the use of small type. Its size and weight are, indeed, by no means inconsiderable and constitute the only drawback which we can discover. Its value as a work of reference in every department of medicine and surgery is very great and is rendered greater by the thorough index which brings the volume to a close.

A Treatise on Human Anatomy. By Various Authors. Edited by HENRY MORRIS, M.A., M.B. Lond. Second Edition, revised and enlarged. London: J. & A. Churchill. 1898. Price 36*s.*

THE first edition of this work was published in 1893 and was reviewed in our issue of July 8th of that year. This, the second edition, differs only slightly from the preceding one, the difference mainly consisting in certain additional matter, such as the chapter on the Skin by Mr. William Anderson and one on Vestigial and Abnormal Structures by Dr. Arthur Robinson. Another useful addition is the table which appears on page 819 of the present edition dealing with the relations of the lumbar and sacral nerves to the branches of the lumbar and sacral plexuses and the relations of the muscles of the lower extremity to the nerves of those plexuses. We notice that the illustration of the very intricate dissection of the right side of the neck which appeared on page 1128 of the first edition has disappeared from the second, an omission which we cannot but think a wise one. Altogether the second edition is in many ways an improvement upon its predecessor, excellent though that was.

LIBRARY TABLE.

Radiation, an Elementary Treatise on Electro-Magnetic Radiation and on Roentgen and Cathode Rays. By H. H. FRANCIS HYNDMAN, B.Sc. Lond. With a Preface by Professor SILVANUS P. THOMPSON, D.Sc., F.R.S. London: Swan Sonnenschein and Co., Ltd., New York. The Macmillan Company. 1898. Price 6*s.*—The author in the opening sentence of his preface lends a beautiful emphasis to the scientific importance of radiation, for "it is owing to radiation that there is any life upon this globe and that man as a sentient being is able to appreciate the beauties of the world in which he lives." No wonder, then, that the pursuit of the study of radiation is fascinating. And this well-written volume deals with the results of such study as far as they have appeared up to the present time. The subject has of course received enormous stimulation by the discovery of the x rays. Since that announcement other radiations ordinarily invisible to the eye have been discovered. The book is divided into three parts, Part I. dealing with material vibrations, Part II. with ethereal vibrations, and Part III. with other forms of radiation, as the x rays and so on. The book is obviously intended for the student who possesses a fair knowledge of physics. It is not popularly written and Professor Thompson says that it is much too good to be of use to one whose highest aim is to pass examinations. In a word, it is an excellent scientific dissertation, giving a clear, precise history of the development of the subject and of its trend in relation to the results of recent researches.

The Discharge of Electricity through Gases. By J. J. THOMPSON, D.Sc., F.R.S. Westminster: Archibald Constable and Co. 1898. Price 4*s.* 6*d.*—This little work had its origin in a course of four lectures on Discharge of Electricity through Gases which were delivered at the University of Princeton, New Jersey, by Professor Thompson in 1896. New matter has necessarily been added, since this field of study has recently attracted a large number of investigators. The chapters contain an account of a very interesting number of electrical phenomena connected with the discharge of electricity through gases, as in the production of photo-electric rays and of cathode rays. It is remarkable what an enormous subject has been opened up by the manifestations observed on the discharge of electricity through gas at different densities. The experiments first conducted by Sir William Crookes on radiant matter, when he dealt with the electric discharge through highly attenuated gases, must be regarded as largely the origin of so much fruitful work in the study of this branch of research. Professor J. J. Thompson is an ardent investigator in this field and an admitted exponent of the subject, so that the publication of his views will be welcomed by those pursuing this interesting line of inquiry.

From Messrs. Raphael Tuck and Sons we have received their usual Album of Christmas and New Year's Greeting Cards, together with several specimens of artistic productions of a more pretentious character. Among the cards those of the "Japanesque," the "Celluloid hand-painted," and the "Marble" series call for special mention. A design which will also doubtless attract much attention is that of "The Holy Child," depicting the Babe recumbent in His cradle, under a canopy, with adoring angels in the background, the whole being constructed to open out in elliptical form and presenting an excellent picture. In platino panels of various sizes there are several examples of really good work, and Turner's Masterpieces will appeal to many. The whole of Messrs. Tuck's productions are deservedly popular for excellence of design and for effective and at the same time artistic carrying out.

JOURNALS AND REVIEWS.

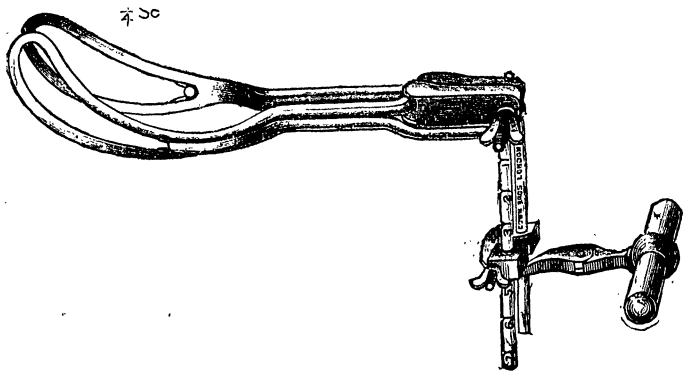
In the *Cornhill Magazine* for December the Rev. W. H. Fitchett continues his series of "Fights for the Flag." The fight in this paper, however, was not won on an ordinary battle-field where there is the lust of battle to excite the combatant, but in the horrors of the great hospital at Scutari, and the protagonist was no grim warrior but the gentle "lady with the lamp," known to all the world as Florence Nightingale. No words are needed from us to praise her and her devoted companions, but what the British army, nay, every army, owes to them may be seen by comparing military nursing before their advent with the nursing of our troops in the Soudan.

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New Inventions.

AN IMPROVED FORM OF AXIS-TRACTION MIDWIFERY FORCEPS.

THESE forceps are the result of twelve months' experiments. They have been used in from fifty to sixty forceps deliveries in normal and abnormal pelves, the position of the head varying from "above the brim" to "on the perineum." They have given every satisfaction to those who have used them. They are made entirely of metal and can be sterilised by boiling. The traction rods are detachable and easily cleaned. The weight, especially where undesirable, has been diminished as much as is consistent with perfect



rigidity, the diminution being most marked in the application handles, the latter thereby acting the more efficiently as true indicators of the change in the direction of the descending head. There are no screws or fixed joints excepting in those parts outside the vulva, and such screws as are present are few in number and not easily lost. When the head is delivered it is only necessary (without touching the traction apparatus) to give a few turns to the large screw on the handles, when the blades slip off the head.

The blades have a pelvic curve of a 7 in. radius. This enables a good grasp to be obtained on the correct plane of the head. The cephalic curve, too, is more abrupt than usual. The blades are rigid, enabling the operator to judge to a nicety the force being used; they are also less likely to cut the head. They are stout, but narrower than ordinary blades, rendering them easy of introduction and manipulation and of special service in those difficult cases of flattened pelvis when the head lies transversely at the brim. By being narrow they grasp only the occipital and frontal bones, avoiding the parietals and so enabling the latter to mould without hindrance in the diameter of greatest obstruction. This has been verified by delivering a stillborn child through a dummy pelvis artificially flattened. The lock is a close-fitting ordinary English lock; a model has also been made with reversed lock. The close-fitting lock ensures the blades when locked being properly adapted to the head. The application handles have been much shortened and lightened; once the blades are applied the handles are merely "indicators" and not designed for traction. Owing to their lightness they do not fall towards the lower thigh and the slightest movement of the head is communicated to them. Being so delicate a guide, to ensure proper axis traction throughout the operator has merely to pull, keeping the traction rods constantly parallel to and close to the application handles as the latter move forward with descent. Another great advantage of the short handles is that on locking the forceps the second traction rod falls into position without having to be carried far forward to clear a long application handle. A theoretical objection that the short handle would upset the balance of the blade, and make it difficult of introduction with the head high up, has been found to be purely theoretical even above the brim, for in introduction the traction rod and handle are grasped together and will be found to give a comfortable and convenient hold, the left blade being passed with its traction rod behind the handle, the right blade with its rod just in front of the handle. On locking the second traction rod slips backwards into position beside the first traction rod. The traction rods are the well-known rectangular ones of Dr. Milne Murray (used by his kind permission). The forceps are thus true for all pelves instead of being true only for a normal pelvis. By an ingenious contrivance, copied from Dr. Cullingworth's forceps, the rods are easily detachable by an aseptic joint, the old objectionable screws being done away with.

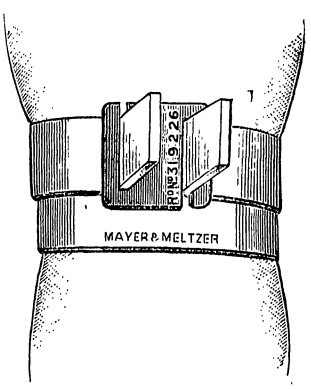
Much time and care have been expended by Messrs. Down Bros. of 21, St. Thomas's-street, S.E., in designing a new form of traction block which should be mathematically and mechanically correct and yet have the advantage of simplicity, lightness, ease and rapidity of application, and admit of being easily cleansed. The great difficulty has been to avoid screws which might be lost and make the instrument temporarily useless. I venture to think that the present block fulfils the necessary conditions. To ensure asepsis it can be boiled. One movement fixes the block and rods securely. The line of traction has been calculated by "shadow projection," the ray of light being kept perpendicular to the blade. Very accurate results are obtained by these means.

In conclusion, I must thank Dr. Milne Murray for many valuable suggestions and Messrs. Down Bros. for their care and attention to the mechanical details, which are of the utmost practical importance in ensuring success.

G. PORTER MATHEW, M.D. Cantab.

A NEW PATTERN OF TOURNIQUET.

VARIOUS forms of tourniquet are in use at the present day. Petit's tourniquet is still sometimes employed, but it has been in great part replaced by Esmarch's rubber tube. The tube is very useful but has several disadvantages, due probably to the constricting force being applied over a very small area. A more effective method has been adopted in a tourniquet just sent to us by Messrs. Mayer and Meltzer of 71, Great Portland-street. The tourniquet consists of two parts—a flat indiarubber band and a steel fastener. The advantage of the band over the rubber tube lies in the fact that it apparently does not constrict the deep tissues to the same extent, and it does not cause any abrasion of the skin. The band in Messrs. Mayer and Meltzer's



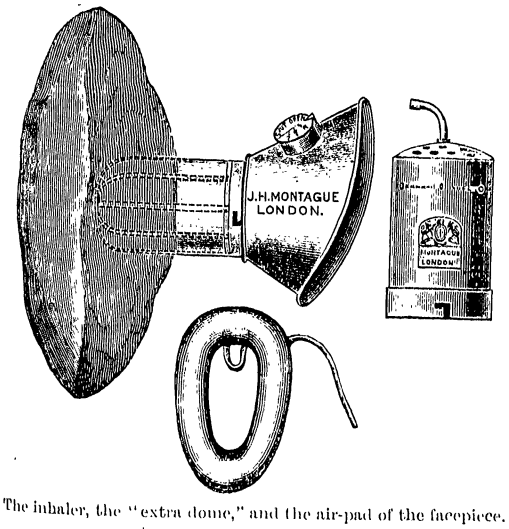


instrument is 31 in. long, 1 in. wide, and $\frac{1}{16}$ in. thick. The fastener consists merely of a thin metal plate 2 in. square, having two parallel slots 1¼ in. long, cut into opposite edges. One end of the band having been stretched a little is passed into one of the slots and firmly held there by its own expansion, the free end is wound tightly twice round the limb and similarly fixed in the other slot. The whole instrument is very simple and cannot get out of order. It can be quickly applied and removed and does not allow any slip.

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IMPROVED ORMSBY INHALER WITH ATTACHMENTS FOR THE ADMINISTRATION OF THE A.C.E. MIXTURE OR CHLOROFORM.

HAVING used Ormsby's inhaler almost entirely during the last ten years for the administration of ether I have become fully convinced of its many good points and also acquainted with its few defects. The principal defects are (1) the smallness of the air-valve; (2) the cage being composed of galvanised netting is compressible and so becomes more and more conical with use and hence obstructed, allowing less and less room for the sponge; and (3) it cannot be thoroughly cleansed with facility. With the object of overcoming these defects I have had the inhaler constructed as depicted in the woodcut and have been using it entirely for over twelve months with gratifying results. It is constructed throughout of metal nickel-plated, all parts are easily accessible, there is no place where saliva, mucus, or blood can lodge, and it can be rendered aseptic by boiling if necessary. The air-valve is a free one and is numbered with figures, as on Clover's inhaler, so that at a glance the relative patency of the valve can be seen. In passing, I may mention that it is my practice upon the addition of ether to the sponge to throw the valve wide open and then to gradually diminish the opening to three-quarters, one-half, one-quarter, and shut, thereby greatly reducing any chance of coughing or interfering with the rhythm of respiration when the fresh vapour is inhaled. In certain cases the valve can be kept at one-quarter throughout the administration with benefit. The cage being rigid and of very open work is incompressible, permits of free respiration, and cannot gradually become constricted with use. The respiratory bag is 12 in. in diameter, so that there is no need of netting to prevent its being blown off during expiration—the majority of bags sold with inhalers are much too small. The cage bearing the sponge and respiratory bag fixes on the facepiece with a bayonet catch, and is instantly detachable for cleansing purposes. An extra dome has been constructed of metal and freely perforated with air-holes, at its extremity, likewise fitting on to the facepiece with a bayonet catch and taking the place of the other dome. I have found this attachment very useful for the administration of the A.C.E. mixture or for ether when plenty of fresh air is necessary, as with young children and the very feeble. The administration can be begun with the A.C.E. mixture, and then the A.C.E. dome detached when required, the other dome applied in its place and the administration continued with ether; this method I have found very convenient. Should it be desirable to change the anæsthetic to chloroform, the tube from a Junker's inhaler can be applied to the projecting tube of the A.C.E. dome, and the chloroform apparatus is thus complete. Should the entry of air be too free then some of the holes at the extremity of the dome can be occluded with the hand—a good plan as the respirations can be felt—or these holes can be in part occluded by packing cottonwool in the dome beyond the retaining spikes intended for that purpose, care being taken not to plug the opening through which chloroform vapour is injected. With this inhaler, ether, the A.C.E. mixture, or chloroform can be administered either throughout or in succession, so that it is more or less of a universal type. In point of weight and initial expense it contrasts unfavourably with the Ormsby inhaler, but with the air-pad and bag occasionally renewed it is practically indestructible and will last a lifetime. I am indebted to Mr. J. H. Montague, of 101, New Bond-street, W., for the great pains he has taken in the construction of this inhaler.



The inhaler, the "extra dome," and the air-pad of the facepiece.

Wimpole-street, W. C. CARTER BRAINE, F.R.C.S. Eng.

Analytical Records FROM THE LANCET LABORATORY.

PURE MUTTON ESSENCE (HIPI BRAND).

(G. NELSON, DALE AND CO., LTD., 14, DOWGATE-HILL, E.C.)

ON examination this preparation proved to be a firm extract presenting the following proximate composition: moisture, 35·20 per cent.; organic matter, 56·38 per cent.; mineral matter, 8·42 per cent. According to our analysis the composition of the organic matters was as follows: total proteids, 38·22 per cent.; meat bases, 16·60 per cent.; fat, 1·56 per cent. The proteid matters insoluble in cold water amounted to 7·72 per cent., while the proteid matter thrown down on boiling and after the addition of a few drops of acetic acid was 1·21 per cent. It is well known that mutton is more digestible than beef on account of its fibre being smaller and more tender, but on the other hand the fat of mutton is harder and probably less digestible. Moreover, the proportion of fat in mutton is very often considerable. Practically all this fat, however, is separated during the preparation of the extract, the residue only amounting, as will be seen from our analysis, to 1·56 per cent. The composition of this extract, judging by the above analysis, establishes its nutrient value. Indeed, the ratio of nutritive substances to mere stimulating principles is very satisfactory. Further, the flavour is good. The preparation compares, from the dietetic point of view, very favourably with similar beef derivatives.

GUADRAC (SPANISH RED WINE).

(THE ALASCO WINE CO., 3, LINCOLN'S-INN-FIELDS, W.C.)

In spite of the low price (12s. per dozen) we believe this wine to be genuine. It was in sound condition, delicately fruity to the taste, free from excessive acidity, and containing only a minimum of sugar. Our analysis was as follows: total extractives, 2·35 per cent.; mineral matter, 0·23 per cent.; sugar, 0·67 per cent.; fixed acids calculated as tartaric acid, 0·49 per cent.; volatile acids calculated as acetic acid, 0·06 per cent.; alcohol, by weight 11·62 per cent., by volume 14·37 per cent., equal to proof spirit 25·18 per cent. The wine is pure, of a desirably light character, and therefore well suited for table purposes.

SULPHAQUA.

(THE SELTZOGENE PATENT CHARGES CO., ST. HELENS, LANCASHIRE.)

The packets for the production of "sulphaqua" are two in number, each consisting of a well-known salt the precise nature of which our analysis has determined. Both are soluble in water, and when the resulting solutions are mixed a double decomposition takes place, a yellowish opalescence forms which gradually intensifies into a very finely divided precipitate of sulphur, while at the same time a smell of sulphurous acid is evolved. For the purposes of a bath the mixture is thrown into from 10 to 20 gallons of warm water. This idea deserves the attention of all those interested in the application of sulphur in the treatment of affections of the skin or in

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gout and rheumatism, since by this method the sulphur should be in a very active condition—a condition, if sulphur is valuable at all, which should insure therapeutic effect. Indeed, the nature of the reaction is such as to produce partly a colloidal form of sulphur which appears to be soluble in water. The same thing occurs when sulphuretted hydrogen is passed through a solution of sulphurous acid. Sulphur charges are prepared suitable for use in the bath or of a smaller size for use in the washhand-basin. The bath prepared in this way is distinctly pleasant, culminating in a healthy reaction. The idea, we think, is well worth applying as a new and probably valuable recourse in balneological practice.

EUGOL TOOTH POWDER.

(BAYARD, SONS, AND BAYARD, LIMITED, NEW YORK, AND 26, BRIDLE-LANE, GOLDEN-SQUARE, W.)

The statements advanced in favour of this preparation are true according to the composition which our analysis assigns to it. Thus it contains agreeable ingredients, rendering it antacid, antiseptic, and mildly astringent, the latter property making it useful for hardening the gums. It is a smooth powder free from grit having an agreeable smell of a well-known antiseptic volatile oil. The absorbent is calcium carbonate in a finely comminuted form. This dentifrice is pleasant to use, imparting an agreeable sense of cleanliness to the mouth.

SCOTCH WHISKY.

(F. BAGGER, 3-4, GT. WINCHESTER-STREET, E.C.)

Smooth to the taste, somewhat light in colour, and of satisfactory alcoholic strength are the main features of this spirit according to our examination and analysis. It has the character of a spirit which has been matured, it contains a very small percentage of extractives, and it is practically free from saccharine matters. The analysis was as follows: alcohol, by weight 39·30 per cent., by volume 46·59 per cent., equal to proof spirit 81·64 per cent.; extractives, 0·23 per cent.; mineral matter, 0·02 per cent.; acidity reckoned as acetic acid, 0·039 per cent. From the last factor it will be seen that the whisky is practically neutral. These results indicate the genuineness of the spirit, which is therefore well adapted for dietetic purposes.

RHENS NATURAL MINERAL WATER.

(RUSTON AND SINCLAIR, 3, CROSS-LANE, ST. MARY-AT-HILL, E.C.)

Our analysis of this interesting water drawn from a spring on the banks of the Rhine is not appreciably different from that already published. Thus the total saline constituents amounted to 3·48 grammes per litre. The alkalinity was equal to 1·33 grammes of carbonate of soda, the common salt was found to be 1·34 grammes per litre, while the sulphate of soda amounted to 0·81 gramme per litre. The last item is a feature distinguishing this water from some other natural waters. On this account it probably acts very mildly as an aperient. It is satisfactorily charged with carbonic acid gas, is pleasant to the taste, and contains a distinct trace of lithium. It possesses the characters of a water containing no added ingredients either saline or gaseous and it clearly belongs to the alkaline carbonate class of waters which are useful in promoting a sedative action.

(1) BELLADONNA PLASTERS; AND (2) ASEPTIC LIGATURES.

(SEABURY AND JOHNSON, NEW YORK, AND FASSETT AND JOHNSON, 31 AND 32, SNOW-HILL, E.C.)

We have received specimens of belladonna plasters from the above firm which are not only satisfactory on account of the excellence of the rubber basis but—of more importance still — are standardised in regard to the constituents of belladonna, the yield of alkaloids on analysis being just slightly over ½ per cent. An interesting inquiry was undertaken in this connexion not very long ago, when it was found that of several plasters examined some contained no alkaloid, one of these being labeled "Poison." The British Pharmacopœia now requires 0·5 per cent. of the alkaloids of belladonna root in the plaster. It is obviously important that the belladonna plaster should be a standard preparation and proceedings can be instituted under the Food and Drugs Act if the preparations contain no alkaloid or are defective in strength. Messrs. Seabury and Johnson claim to have always provided a plaster yielding on analysis ½ per cent. of the belladonna alkaloids. However that may be, the specimens submitted to us, which were said to be taken at random out of a stock, gave a full and satisfactory yield of alkaloids in accordance with pharmacopœial requirements. These plasters, therefore, may be relied upon. We have also received a few specimens of aseptic ligatures. They are enclosed in tight capsules. The closed capsule is sterilised together with the ligature it contains. This method secures an aseptic cord, but of course the capsule should be opened under as strictly aseptic conditions as possible.

(1) CREOSOTAL; (2) DUOTAL; AND (3) HEROIN.

(THE ELBERFELD FARBEN FABRIKEN CO., LTD. LONDON AGENCY: 19, ST. DUNSTAN'S-HILL, E.C.)

These three comparatively new and interesting preparations call for notice. The first two are fairly well known as having been administered in the treatment of tuberculosis, the basis of the compounds being respectively creosote and guaiacol. Creosotal may be regarded as carbonate of creosote, but in reality it is a mixture of the phenol carbonates of creosote. It is a clear yellow, oily liquid with a slightly bitter taste but without odour, this latter property of course distinguishing it from pure creosote, and it has been administered in doses of from half a drachm increasing to five drachms in wine, brandy, or cod-liver oil. Duotal, on the other hand, is a white crystalline powder without taste or smell and is insoluble in water. It is the carbonate of guaiacol. It splits up in the alimentary canal into guaiacol and carbonic acid and is said to produce an increase of appetite and a favourable effect on nutrition whilst reducing the pathological conditions characteristic of phthisis. Heroïn is a morphine derivative, the "di-acetic ester." It is a white crystalline powder soluble in spirit but insoluble in water. It is said to be a favourable substitute for morphine by not altering the blood-pressure and thus to be well borne by persons of a weak heart and feeble arterial system. Heroïn is also said to be free from other disagreeable secondary effects of morphine, so that it may be administered in respiratory diseases and in phthisis in comparatively large doses with no effect but that of a sedative upon the air passages. These statements are so promising as to render desirable a careful clinical trial of this new derivative in this country.

WHITE'S ANGOSTURA BITTERS.

(MR. M. BETHENCOURT, CURAÇAO, WEST INDIES. EUROPEAN AGENT: MR. R. L. LEYBA, 16, GLOCKENGIESSER WALL, HAMBURG.)

On analysis this proved to be a very powerful spirituous extract of angostura bark (cusparia cortex). It is perfectly miscible with water, the solution developing a peculiarly pleasant aromatic smell. Angostura bark appears to contain two alkaloids—cusparine and galipine—which are possibly the active ingredients which make the bark of value in intermittent fever, dysentery, &c. The bitter principles are of the nature of a glucoside, since on boiling the above preparation with sulphuric acid a sugar-like substance was produced which reduced Fehling's solution. The preparation before us possesses a fine aromatic and bitter flavour and in proper quantity is well known to serve as an excellent and wholesome stomachic and tonic.

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THE LANCET.

LONDON: SATURDAY, DECEMBER 3, 1898.

OUR anticipation that the meeting of the General Medical Council would be a prolonged one has been fulfilled. The Council sat for nine days, and, even so, had to leave many items on the programme for consideration at the May meeting of next year. The penal cases occupied a large part of four days, and the lessons of them and of the way in which the Council dealt with them may perhaps engage our attention on a future occasion. Meantime it is not uninteresting to notice the discussion on the subject of the Penal Cases Committee. It is evident that the disciplinary function of the General Medical Council figures as largely in the eye of the medical profession as its educational work. It is not only that the qualifying bodies show a constantly increasing disposition to impose on the Council the burden of investigating and punishing medical misconduct, but that the general body of the profession, and even the public itself, look to the Council for the correction and punishment of such misconduct. If the qualifying bodies, and especially the universities, give their sanction to the proposals which the Council is making to the Government—to the effect that practitioners whose names have been taken off the Register, either after conviction in a court of law or for "infamous conduct in a professional respect," should be deprived of their degrees or diplomas for so long as their names are off the Register—they will do much to increase the importance of this function of the Council. Accordingly, it is not to be wondered at that everything concerning the Penal Cases Committee, the body which assists the President in considering cases which seem to call for the discipline of the Council, should be narrowly criticised. Its constitution, the mode and time of its election, and the number of its members have all been from time to time—and notably at the recent meeting and at the instance of Mr. HORSLEY—subjects of discussion. Mr. BROWN made a bold attempt to abolish the committee altogether and to refer all penal cases to the consideration of the Branch Council of the division of the kingdom in which they occur, with a view to their presentation to the General Medical Council. His main argument was that the Penal Cases Committee had not in all cases done its work well, and that such work would be better done by the Branch Councils. Other members in support of this view argued that the Penal Cases Committee was too small and too strictly limited to London members, and that the Branch Council of England was too little *en évidence* considering its great responsibilities and its great wealth. But only 6 votes were given for Mr. BROWN'S proposal. The cost of meetings of the Branch Council was one thing which weighed against the success of the motion. The recent case of EASTBURN, in Scotland, which to medical minds seems a most easy one, shows that a case may be prepared and put forward by a Branch Council and yet fail to carry the judgment of the court of law. One change, however, has been made in regard to this important committee which has the duty of preparing cases of alleged professional misconduct for the consideration of the Council. The Council has determined that it shall be subject to election annually, like all the other committees of the Council. It will be elected in May by ballot, as the Executive Committee of the Council is elected. Hitherto it alone of all the committees has had a continuous existence and it was argued that there were special reasons for such continuity. But this point may safely be left to the judgment of the Council, which shows no harsh disposition to depose its members from any committee unless they have failed to do their duty. The suggestions of the minor changes in the Standing Order of the Council with reference to the functions and election of the Penal Cases Committee are mainly to be credited to the initiation of Mr. HORSLEY.

The chief occupation of the Council on the days when it was not engaged in the consideration of penal cases was the discussion of the report of the Education Committee on the important subject of the examinations in preliminary education recognised by the Council. Some educational experts in and out of the profession, who will entirely approve of the action of the Council in removing from its list the examinations for a second-class certificate (of first or second division) of the College of Preceptors, will regret that it did not go further. But it was scarcely free to do so, even if it had felt justified. The Council by its own resolution at a previous meeting had committed itself to remove all examinations which were of a lower standard than that of the junior local examinations of Oxford and Cambridge, thus constituting these a test standard of efficiency. The able and elaborate inquiries of the Education Committee, the credit of which, according to its chairman, is largely due to Dr. DONALD MACALISTER, left no doubt that this particular examination of the College of Preceptors is inferior to the junior local examinations. At least, the consensus of head-masters on this point is almost complete, and the great majority of deficiencies in general education reported in the examinations for navy and army medical appointments are traced to this examination. It may be taken for granted, therefore, that in the step it has taken the Council will have the decided approval of all who believe that the best foundation for a good professional education is a sound general one. Many members of the Council and many more outside think, as we have said, that the Council should have proceeded to remove all the junior examinations from their list. Theoretically the whole Council seemed to approve of such a step. But the cautious members succeeded in postponing the taking of it for a time. Rightly or wrongly, the impression prevailed that it could not be taken with due consideration for teachers or the parents of students, and that, further, it was impracticable with reference to the supply of the profession. One speaker after another agreed that the schools would be depleted and that the public and the public services might be seriously starved,

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especially in the event of a great war, for the want of medical students and practitioners. We confess to few fears on this subject and to thinking that the profession is already so full that it could experience nothing but advantage and improvement from a much sharper rise in the standard of preliminary education than the Council has effected by its cautious action on Tuesday. But it is satisfactory to know that it has virtually committed itself to a further raising of the standard by calling on its Education Committee to say in May next when such a step may be safely taken. We trust that the Education Committee will display as much energy and efficiency in answering this question as in establishing the relative superiority of the university local examinations.

The only other important action of the Council which we need notice here is the adoption of the report of its Committee on the Midwives Bill. The discussion turned merely on details and especially on the importance of provisions for securing that the Council shall be indemnified for the cost of discharging any duties which may be imposed on it under any such Bill. There was no attempt in any quarter to revert to the general principles of such measures. On these the Council has practically said its last word. It proceeded, however, very wisely to reappoint its last committee with the addition of Mr. HORSLEY'S name to watch any actual measure which may be brought forward in the coming session.

ALL who were present at the recent meeting of the Fellows and Members of the Royal College of Surgeons of England must have been struck by the unusual air of urbanity which seemed to pervade the theatre, and, indeed, it was referred to by several of the speakers. It is a happy augury for the future, and we can only hope that those who take part in the meetings at the College will recognise that in College politics there is room for two reasonable opinions. The meeting was opened as usual by a short address by the President in which he referred to the chief events in the past Collegiate year. He showed that the Council had taken an important part in obtaining from the Government the reforms in the Army Medical Service resulting in the establishment of the Royal Army Medical Corps. Further, he pointed out that when an attempt was made last year by the authorities in Italy to require that the British medical men practising in Italy should be compelled, not only to take an Italian degree, but to go through the whole curriculum from the very beginning as if they were completely unqualified, the representations made by the Council to the Secretary for Foreign Affairs had the effect of eliciting from the Italian Government a statement that no change in the law was intended. The President also referred to the action taken by the Council with regard to the Midwives Bill, which they opposed, as it did not offer an adequate solution of the question of the registration of midwives. He also mentioned the great amount of work which was done in the Laboratories of the Conjoint Board on the Victoria-embankment, under Dr. SIMS WOODHEAD, especially alluding to the preparation of diphtheria antitoxic serum. This latter had, he said, been possible chiefly through the munificence of the Goldsmiths' Company's grant, and he expressed a hope that that company would see its way to make a further grant for the same purpose. In various other ways the President showed that the Council had been far from idle during the past year.

He had also to ask for the sympathy of the meeting. The claim of the College for exemption from corporation duty had practically failed and after careful consideration the Council had decided to appeal against this decision. Thus far nothing which had been said could have been objected to by any Member present, but one or two of the resolutions brought forward later displayed a little antagonism to the Council, yet neither the words of the resolutions nor the speeches of those who supported them showed anything of the bitter opposition which formerly characterised these annual meetings. The first resolution, introduced by Mr. GEORGE BROWN, congratulated the members of the Council on the success which had attended their efforts in the reform of the Army Medical Service, and invited them to turn their attention to the abuses existing in connexion with civil medical practice. Abuses there are without doubt, but it is not always clear how they may be remedied. The suggestion made by Dr. DANFORD THOMAS, who seconded the resolution, that an attempt should be made to obtain a new Medical Act was one of great value. As he pointed out, the present Act was inadequate and uncertain and was constantly being interpreted by magistrates and judges in different ways. Dr. DANFORD THOMAS said that the support of the Council was necessary and would of itself render almost certain the success of the measure. We regard this suggestion as well worthy of attention, though we are not so sanguine as Dr. DANFORD THOMAS as to the immediate result. It would, however, be a great step forward if this Council would coöperate heartily with the rank and file of the College in an endeavour to remedy present abuses.

When the Council some time ago claimed in rather enigmatic phrases to represent all the Members as well as all the Fellows it was obvious that such a claim would on many occasions be disputed, and therefore no surprise was felt on seeing it called in question in the second resolution. We have written so recently in favour of the reasonableness of the extension of the franchise to the Members that it is unnecessary here to say more than that the arguments brought forward by Mr. HUTCHINSON two years ago were quoted extensively by the mover of the resolution. Many Members supported it, and a Fellow—Mr. BELL of Rochester—suggested that if the Council were to obtain powers enabling them to coöpt Members to seats on the Council they would find them as good business men as the Fellows, and then there would be little opposition on the part of the Council to giving votes to Members. No dissentient vote was recorded when the motion was put to the meeting, and we hope that before long this ordinary act of justice will be performed. Mr. W. G. DICKINSON'S motion asked the Council to express its disapproval of Fellows or Members of the College acting as the paid officials of any association which advertises or touts for patients. He stated that the Royal College of Surgeons in Ireland had prevented its Members from holding such posts and he asked why the English College could not act in the same manner.

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Mr. STOCKER mentioned that he had brought before the Council a flagrant instance of advertising by a Member of the College and yet the Council had taken no notice; but Sir WILLIAM MAC CORMAC rose and stated that he was sure that Mr. STOCKER would learn with pleasure that the name of the Member in question had been removed from the roll of the College. This was a distinct score for the Council, and this opportune announcement was received with much applause by the meeting. The President, continuing, said that the Council had on many occasions considered with much care the difficult question of these advertising associations, but their powers were very limited and they could not go beyond them.

Many Fellows have accepted with pleasure the permission accorded to them by the Council to wear an academical gown, and it is only natural that Members should wish to have a like privilege accorded to them. The seconder of a motion to this effect attempted to give reasons why Members should be allowed to wear a gown, and so far as we could gather from his remarks he thought that it would look better in an operation if the operator and his assistants were clothed in flowing white garments with a purple hem instead of in the mackintosh aprons which are usually worn. He explained, to the great amusement of the meeting, that a higher character would be given to the operation under these circumstances and that the sight of the surgeon and his assistants would have a soothing effect on the patient if he were to become conscious before the conclusion of the operation. Although one Member opposed it, the resolution was carried. Two other motions were on the agenda paper in the name of Mr. R. B. ANDERSON, but as he did not attend they fell to the ground We are sure that Mr. ANDERSON'S intentions in putting down these motions on the paper were good, but we fear that their involved verbiage would have done much to imperil them if they had come to a vote and we advise him to use shorter sentences and simpler phrases if he would be "understanded of the people."

Altogether we consider the meeting the most satisfactory of any held at the College within recent years.

THE subject of tuberculosis, with respect both to its causes and its prevention, is one which now happily attracts an increasing degree of interest not only in our own profession but among the public generally. It is greatly to be desired that this interest shall not be allowed to flag, for in spite of the great reduction which has recently been observed in the ravages of tuberculosis, this malady, in one or other of its forms, still continues to inflict upon the community an appalling amount of sickness and suffering which frequently ends in untimely death and very much of which is now definitely known to be avoidable. Since the year 1894 two Royal Commissions have reported upon different aspects of this subject; and quite recently a large and representative association,[1] headed by the President of the Royal College of Physicians of London and the President of the Royal College of Surgeons of England, has been founded in London, with coöperating branches in the provinces, having for its object the study of tuberculosis in man as well as in the animals which provide him with food. This association, which fully deserves its assumed title of "National," is seeking to discover some practicable means of still further diminishing, if not altogether exterminating from amongst us, the terrible scourge of tuberculosis.

Under these circumstances we recognise a singular appropriateness in Sir RICHARD THORNE'S selection of the present time for the delivery of his Harben Lectures on the Administrative Control of Tuberculosis. Having studied them carefully since their completion we have formed the opinion not only that these lectures are admirably adapted to the important occasion which called them forth but that they are in every respect worthy of Sir RICHARD THORNE himself.

The Harben Lectures of 1898, three in number, full abstracts of which have appeared in recent issues of THE LANCET, possess exceptional value for those who desire reliable information on this question, inasmuch as they furnish an authoritative statement from one whose position as medical adviser to the Government gives him the best title to be heard, not only as to the amount of mischief which actually accrues from the ravages of tuberculosis but also as to the degree of success which may reasonably be looked for as the result of such preventive action as is now practicable or of such measures as are likely to be sanctioned by Parliament for the control of tuberculous disease not only among mankind but among the lower animals likewise.

Up to a comparatively recent period our national records concerning mortality from tuberculosis appear to have been obscure, but the statistical investigations which Dr. TATHAM conducted in 1896 for the guidance of the last Royal Commission on Tuberculosis provide as trustworthy a summary of such information on this subject as can legitimately be deduced from the records in the General Register Office. Concerning the early history of tuberculous disease in this country the data obtainable from the death registers are less precise than we could wish. Previously to 1837, in which year the first Registration Act was passed, no official records of a reliable character were available, and for several years subsequently the existing records are too indefinite for comparison with those of more recent times. In those early days not only was attestation of the cause of the deaths of their patients entirely optional on the part of medical practitioners, but the names by which many of the diseases were at that time known now appear to us vague and ambiguous. Added to which, in consequence of the imperfect state of medical knowledge, it is certain that diseases were less accurately diagnosed in the "thirties" and "forties" than they are at the present time. For these reasons amongst others Sir RICHARD THORNE adopts Dr. TATHAM'S limitation—namely, the year 1851—as the earliest period the records of which concerning tuberculous mortality ought to be employed for purposes of comparison.

The period of forty-five years ending with 1895 has been marked by a reduction of almost 40 per cent. in the aggregate mortality of tuberculous diseases. The reduction has been remarkably steady and continuous throughout that period,

[1] The National Association for the Prevention of Consumption and other forms of Tuberculosis. Offices: 20, Hanover-square, West.

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and has affected all the age-periods of both sexes into which the span of life is divided in the official tables; and what is especially encouraging is the fact that the chief part of the life-saving represented by this fall in the death-rate has been experienced at those age-periods when human life is economically the most valuable—namely, during adolescence and early maturity. In the mortality due to pulmonary phthisis, the most important member of this group, there has been since the decade ending with 1860 even greater reduction than in that resulting from tuberculous diseases generally; a fall has taken place in the death-rate at every stage of life, and in the several age groups comprised within the interval between the fifteenth and forty-fifth years the fall since that decade has ranged from 32 to not less than 58 per cent.

Among children of very tender years pulmonary phthisis is seldom fatal nowadays and among infants under five years old such mortality as still occurs averages only one-third of what it was forty-five years ago. But there is one member of the tuberculous group, tabes mesenterica, to which children are especially liable, and the mortality from this malady instead of falling has actually increased since 1860 by nearly 28 per cent. The question naturally suggests itself, why this particular form of tuberculous disease should still continue to increase very seriously amongst children whilst pulmonary phthisis, which is another form of the same group and is caused by the same parasite, is as steadily decreasing. Sir RICHARD THORNE is prepared with an explanation, which appears to us a reasonable one, of this apparent anomaly. He shows that whereas pulmonary phthisis is perhaps ordinarily caused by the inhalation into the lungs or air-passages of the dried and pulverised sputa of persons already suffering from that disease tabes mesenterica is mainly caused by the ingestion of food, especially of uncooked milk from diseased cows, which contains the tubercle bacillus in an actively infective state, the latter finding its way into the glands of the mesentery by way of the digestive tract. This theory at any rate explains the differing behaviour of the two principal forms of tuberculosis. For if phthisis is diffused through the community by the inhalation of dried tuberculous sputa, then it follows that the systematic removal of this with other kinds of filth from the dwellings of the poor, which has been in active progress under sanitary auspices in recent years, will tend to diminish *pro tanto* the number of fresh infections and therefore the resulting mortality. In the case of tabes mesenterica, however, no similar reduction has been effected in the opportunities for fresh infection. On the contrary, inasmuch as cow's milk is now consumed by the children of the poor in much greater quantities than ever before, and as we know that milk is seldom if ever boiled before use, this fact alone would explain the increase of tabes mesenterica—assuming, of course, the correctness of the theory in question.

With regard to preventive measures for the control of the various forms of tuberculosis, Sir RICHARD THORNE gives little encouragement to those who seek assistance from Parliament. In particular he condemns the proposal now sometimes made by even responsible sanitarians that powers should be sought to include phthisis among the dangerous infectious diseases which are compulsorily notifiable to sanitary authorities. He confidently expresses the opinion that compulsory notification of phthisis is impracticable and undesirable in the best interests of public health, and that it would cause infinitely more mischief than it could possibly avert or cure. In this opinion we cordially concur, and we trust that, acting on the advice of their able medical adviser, the Local Government Board will steadily refuse their consent to any proposal of the kind under any circumstances whatever. Sir RICHARD THORNE'S lectures, which we hope to see published in a form befitting their importance, contain thoughtful and sound advice for the preventive treatment of tuberculosis. We would therefore refer our readers to the original lectures for fuller information on a topic which is of supreme national concern.

Annotations.

"Ne quid nimis."

DIPHTHERIA AND ELEMENTARY SCHOOLS.

AT a meeting of the London County Council held on Tuesday last, Nov. 29th, a report of the Public Health Committee was presented to the Council dealing with the large prevalence of diphtheria in London and the connexion of this prevalence with the relatively increased mortality among children at the school age from diphtheria and concluding with a recommendation that the special attention of the Local Government Board and the Education Department should be called to the existing condition of things. Mr. Shirley Murphy's report to the Public Health Committee, on which this recommendation was based, now lies before us. It deals with the many sides of the question exhaustively and, to our mind, demonstrates that the school influence plays an enormously important part in the recent increase of diphtheria in London as well as counting for something in the mortality from whooping-cough and measles. This is a highly important matter to the community and particularly to the medical guardians of the public health and we shall take early occasion to refer to some of the many points of the first medical and statistical interest which are raised by Mr. Shirley Murphy's account of his investigations. One thing may be pointed out now. The medical officer of the London School Board has committed himself to the opinion that the figures relating to diphtheria incidence in other towns do not lend support to views founded upon London statistics. Mr. Shirley Murphy now shows that the same influence may be seen to be at work in a number of other towns in this country and in Berlin, and that London in no way stands alone. After an interesting debate, in which we are glad to note that the councillors taking part all deprecated any idea of acting in antagonism to the London School Board, the recommendation of the Public Health Committee was endorsed by the Council who resolved "that copies of the report of the Council medical officer of health on diphtheria should be sent to the Local Government Board, the Education Department, and the School Board for London, and that the School Board should be invited to appoint some of its members to confer with the Public Health Committee of the Council on the subject matter of the report." As readers of THE LANCET know, the connexion of the increased prevalence of diphtheria with compulsory attendance at school has received for some time the serious consideration of the London County Council.

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We thoroughly agree in the view which is now expressed by the recommendation of the Public Health Committee in unmistakeable language that the matter is one which urgently calls for the attention of the two government departments concerned—viz., the Local Government Board and the Education Department.

THE PRINCE OF WALES'S HOSPITAL FUND.

IN accordance with the plan set forth by H.R.H. the Prince of Wales, President of the Prince of Wales's Hospital Fund for London, last summer, a committee of gentlemen have visited and inspected carefully the various hospitals which applied, in answer to the advertisement, for a share in this Fund. The committee consisted of the following gentlemen:—Viscount Duncannon, Sir Trevor Lawrence, Bart., Sir Savile Crossley, Bart., Sir Henry Burdett, K.C.B., Mr. Charles Burt, Mr. J. G. Craggs, F.C.A., Dr. W. S. Church, Mr. John Croft, F.R.C.S. Eng., Mr. Frederick M. Fry, Mr. A. D. Fripp, F.R.C.S. Eng., Mr. J. Pierpoint Morgan, jun., Mr. James C. Marshall, Mr. N. C. Macnamara, F.R.C.S. Eng., Dr. E. C. Perry, Mr. T. Pickering Pick, F.R.C.S. Eng., Mr. H. Power, F.R.C.S. Eng., Mr. Albert G. Sandeman, Sir Thomas Smith, Bart., F.R.C.S. Eng., Mr. Julius Wernher, and Mr. Alfred Willett, F.R.C.S. Eng. The various hospitals were visited by two or more visitors, in every instance one of these being a professional man.

HOW TO RESTORE ANIMATION IN ETHERISED SUBJECTS.

A CASE of death which occurred when the patient was under, or had taken, ether, recently reported in the *Brisbane Telegraph*, offers, if the report is correct, food for much thought and for some comment. We cannot vouch for the accuracy of the accounts of the proceedings and we simply give them as they reached us. If the facts are misrepresented our strictures may be unnecessary and, indeed, we hope that such is the case. The scene of the occurrence was a dentist's rooms. The patient, a somewhat stout maiden lady, aged fifty years, required 13 or 14 teeth extracted. The patient had requested a qualified medical woman to give her ether. The evidence of the dentist is that the patient did not take the ether well, symptoms causing anxiety making their appearance early. The administrator states that the patient complained that she was choking. The sequence of events is now somewhat obscure. The administrator states that owing to the unsatisfactory way in which the ether was taken she gave a few whiffs of chloroform which relieved the urgency of the symptoms. She then resumed giving the ether. The dentist, on the other hand, ignores the chloroform, given, it would seem, to a fat patient seated in a chair, but says the patient's state was so unsatisfactory that the administrator removed the mask and *turned round to fill a syringe with ether to inject it*. The italics are ours. He suggested extracting two or three teeth *to rouse the nervous system*. He did extract the teeth, but unhappily the nervous system failed to respond, as might be supposed, to the stimulus of the forceps. Ether was subcutaneously injected and nitrite of amyl was used. The head was lowered, but it appeared almost as if the subcutaneous syringe replaced the all-essential inversion and prompt performance of artificial respiration. We hope the account as we read it is inaccurate for it is a fatal error to lose valuable time at such critical moments. In the first place, the patient should as soon as symptoms of an unsatisfactory nature showed themselves have been inverted, no chloroform should have been given in the sitting posture, and the further administration of ether if attempted at all should only have been done while the patient was reclining. The extraction of teeth in a patient who is on the verge of syncope or in semi-anæsthesia is a step which no experienced or cautious man would consider for a moment, much less practise. The hypodermic injection of ether is not a remedy at all likely to help in such a case. The patient was very nervous and it is possible that she died from fright caused by the suffocative feeling she complained of or from the shock of the teeth being drawn while she was imperfectly anæsthetised, or indeed the syncope may have had no direct connexion with the anæsthetic. Still, as the matter appears in the reported evidence of the magisterial inquiry an unpleasant feeling is left upon the mind that the patient would have had a better chance had other measures been resorted to and with greater promptness. We are not informed how the ether was given. If a cone was used it is probable that the feeling of suffocation was no figure of speech and that the enforced holding of the breath from spasm of the air-passages played no inconsiderable part in producing the fatal issue. Ether improperly given may prove as perilous to nervous and stout subjects as is chloroform. The case is further of interest and importance as death in this sudden way is almost unknown under ether except when due to an overpowering vapour causing spasmodic closure of the glottis.

THE SHEFFIELD SANITARY AUTHORITY AND THE LOCAL GOVERNMENT BOARD.

SHEFFIELD has recently been in communication with the Local Government Board under somewhat peculiar circumstances. We may add that these circumstances have been described in the press under the heading, "Shameful Action of the Local Government Board," which we do not consider to be an accurate description of the situation, though we could have wished that the Board had made its position in the matter clear from the first. This is the story. The two Sheffield fever hospitals were built to accommodate 198 beds, and about a month ago they were actually accommodating 250 patients or more. Under these circumstances the city hospitals committee were empowered by the city council to borrow the money necessary to enlarge the Lodge Moor Hospital. The Local Government Board refused, however, to sanction the loan, and at the same time said that the sewage outfall works of the city at Wincobank did not come up to the requirements of the Board. The case as presented in certain newspaper reports which have been sent to us was one of blackmail. The Local Government Board were represented as having said, "Unless you do this or that with your sewage we shall not give you the necessary facilities for hospital accommodation." This was a capital situation to describe in forcible language, but for the credit of the Local Government Board we hasten to say that no such situation arose. The affair was not so iniquitous and, by the way, not so simple. The Board, we are informed, made no direct refusal of any loan for the extension of hospital accommodation in Sheffield for cases of fever. They postponed further consideration of the matter pending the decision of the city council to make proper arrangements for the purification of the sewage of the city before it went into the River Don and for their apparent dilatoriness they offer a reason. Purification of sewage, if it is to be accomplished to the satisfaction of the Local Government Board, has hitherto meant the land treatment of sewage, while the Wincobank scheme is one for the bacteriological treatment of sewage. The Local Government Board were not prepared off-hand—and, be it remembered, with a Royal Commission actually sitting to decide upon the best method of sewage disposal—to regard the Wincobank scheme as satisfactory, at any rate until they had considered the matter. They are still considering the

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matter. In the meantime the somewhat sensational statement that the Local Government Board were blackmailing the city to alter its sewage arrangements by the immoral process of withholding permission from the city for a loan until this was done has been discredited by the sanction of the Board having been received to the borrowing by Sheffield of the sum of £24,000 for the much-needed extension of hospital accommodation.

THE TRAFFIC IN OLD HORSES.

WE are very glad to see that the Board of Agriculture has at last taken steps, if not altogether to put a stop to this infamous trade, at least to rob it of most of its horrors. The Board has issued an Order making it unlawful to convey from any port in the British Isles to any place outside the British Isles "any horse which, owing to age, infirmity, illness, fatigue, or any other reason cannot be so conveyed without cruelty during the intended passage and on landing." In dealing with horses which are fit for removal each one must be carried in a separate box of sufficient size and strength, the flooring must be such as to prevent slipping, and slings must be provided so as to be used if necessary. Adequate ventilation, food, and water must be provided and qualified attendants must be carried on every vessel engaged in such trade. The Order is to come into force on Jan. 1st, 1899, and offences under it are to be dealt with as under the Diseases of Animals Act of 1894. The trade as at present carried on is nothing short of a disgrace to this country, and although we would rather see it prohibited altogether the new Order is a great step in advance. It must be remembered that it is not only the gross cruelty to which we object but that these unfortunate animals are shipped to be used as food. The flesh of a diseased and tortured animal cannot be wholsesome, and although—at least we hope so—we do not consume the "delicacies" prepared in this manner in our own country it is neither dignified nor fitting that we should assist in the poisoning of other nations.

HOSPITAL ABUSE IN BRADFORD.

THE authorities responsible for the management of the various medical charities in Bradford have recently held a conference when the great question of ways and means was discussed. As is usually the case the one cry was "more money." Dr. Hime, in a letter published in the *Bradford Observer* of Nov. 26th—and let us give the editor of the *Bradford Observer* every credit for publishing this letter—pointed out that what was wanted was not so much more money as a right use of that which had been obtained already. "Is there," says Dr. Hime, "such a dearth of money when there is such an amount as could allow a share of it being lavished on a home patient who resides in an excellent house and who could afford to invite the poor doctor who attended on behalf of a medical charity to join his hospitable board on Christmas Day? Can there be urgent want of additional funds when there has been enough to spend on a gentleman retired from business and residing at the seaside who could afford to run over weekly to Bradford to receive medical charity?" Obviously we must answer both these questions in the negative. We have already published an exhaustive account of the phases of hospital abuses in Bradford in our issue of March 26th, 1898. There it will be seen that our Special Commissioner found a large amount of abuse to exist and that a great part of it was due to the reckless manner in which subscribers gave away their letters. We are glad to see that Dr. Hime insisted upon this point also in his letter, for it is one of the most important matters with regard to hospital abuse. Nothing apparently has as yet been done in Bradford to remedy these abuses and we fancy that those responsible for the management of the Bradford medical charities would find it well worth their while to set about making a beginning. Doubtless at first subscriptions would fall off, for, as we have said before in these columns, an increase of patients and a certain amount of debt are the means by which many a hospital lives. Hospital letters are an abomination and should be abolished, for the average subscriber is either too indolent or too unacquainted with the facts of the case to be able to say whether the recipient of hospital charity is a worthy object or not.

DELIRIUM FOLLOWING THE ADMINISTRATION OF SALICYLATE OF SODIUM.

AT the meeting of the Société Médicale des Hôpitaux of Oct. 28th M. Rendu reported the case of a woman, aged thirty years, admitted to hospital for rheumatic fever. Salicylate of sodium, 6 grammes a day in divided doses, was given, which quickly relieved the pain and brought down the temperature. In the evening of the following day the patient was suddenly seized with rigors followed by violent delirium with visual and auditory hallucinations. Next morning the patient was in a state of acute mania, with a temperature of 100·4° F. and with pupils unequal and contracted; the urine, which was scanty, was highly albuminous and was charged with indican. Cerebral rheumatism was excluded on account of the absence of high temperature and the tendency to myosis. M. Rendu hesitated between the diagnosis of uræmia and salicylic delirium. The patient had taken only 12 grammes of salicylate of sodium. It was stopped; from that time the delirium diminished and the urine gradually became normal. Simultaneously the articular pains reappeared. The remarkable points are the sudden onset of the delirium and the urinary symptoms. The patient had no neurotic history.

DEATH OF PROFESSOR G. J. ALLMAN.

ANOTHER of the fast diminishing band of old-time "naturalists" has just passed away in the person of Professor G. J. Allman, LL.D., F.R.S., at the ripe age of eighty-six years. The vast difference in the preparation for a career as Professor of Natural History in the first half of the century to that obtaining at the latter end of the same is made manifest by a superficial glance at Professor Allman's earlier life. Of Irish descent and born at Cork, on reaching manhood he first intended to become a lawyer and studied for the bar. An inherent love of nature, however, made law an uncongenial pursuit, and as at that time and indeed for long afterwards the only practical road to a more or less systematic study of the natural sciences in this country was through medicine, he adopted that profession and graduated in 1844. By some fortunate circumstance he did not have to wait long for an appointment, as he was made Professor of Botany at the University of Dublin very soon after taking his degree, and as showing that his medical studies were merely means to an end he does not appear to have at any time practised his profession. Although the chair of Botany is, as a rule, not a very lucrative post it affords the incumbent a good deal of leisure for other studies, and Professor Allman held it for eleven years, when he was offered and accepted the Regius Professorship of Natural History and Keeper of the Natural History Museum in the University of Edinburgh. Professor Allman was elected a Fellow of the Royal Society of London before resigning his chair in Dublin, and not long after taking up his Edinburgh professorship he was made a Commissioner of Scottish Fisheries which he held until that board was dissolved. He was for some years President of the Linnæan Society and President of the British Association for the

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Advancement of Science in 1879, and he served on the Councils of the Royal Societies of London and Edinburgh and the Royal Irish Academy of Medicine and was Examiner in Natural History for the University of London and many other institutions. His chief original work was done on the hydrozoa and polyzoa, and of this much still remains as authoritative. Perhaps his most important works, in book form at least, are "A Monograph of the Freshwater Polyzoa," 1856, and "A Monograph of the Gymnoblastic Hydroids," 1871–72, both published by the Ray Society. The beautiful figures in the first-named are still reproduced at the present day and are not likely to be superseded. A mere enumeration of his papers and contributions would occupy a very large space and they appeared in the Transactions of most of the well-known learned societies of England, Scotland, and Ireland, as well as in the form of Reports to the British Association, the Museum of Comparative Zoology of Harvard University, and the *Challenger* Commission, and in periodicals like the *Quarterly Journal of Microscopical Science*, *Annals and Magazine of Natural History*, &c. All this labour brought to Professor Allman such rewards as science has to bestow. In 1870 he was granted the honorary degree of LL.D. by the University of Edinburgh and in 1872 received the Brisbane Prize from the Royal Society of that city and in the following year a medal was awarded him by the Royal Society of London, and in 1878 he received the Cunningham Gold Medal from the Royal Irish Academy. Professor Allman's death occurred on Nov. 24th at his residence at Ardmore, Parkstone, Dorset.

ST. MARTIN'S VESTRY AND THE NOTIFICATION OF MEASLES.

A MEETING of the vestry of St. Martin's-in-the-Fields was held on Nov. 10th, when two important matters from a public health point of view were discussed. The London County Council had inquired of the vestry whether they were in favour of applying to "measles" all or any of the following sections of the Public Health (London) Act, 1891—viz., Sections 60 to 66 inclusive, and 69, 70, 72, 73, and 74 (Mins., May 12th, par. 4-iii), and the Public Health Committee recommended: "That the Council be informed the vestry do not think it necessary to place 'measles' in the category of notifiable diseases." However, on the motion being put to adopt this clause Mr. Matthews moved that the word "not" be deleted, which amendment was carried by 7 votes to 3 and becoming the substantive motion was carried also. The vestry of St. Martin's-in-the-Fields has thus definitely committed itself to the notification of measles. This is a step which may or may not be of great value, according to the manner in which the notification is carried out. We have not much faith in the advisability or practical use of notifying measles in the same way as, for instance, scarlet fever or typhoid fever is notified; but in THE LANCET of Oct. 1st we gave an account of an "unorthodox" system of notification as carried out at St. Helens which seemed to promise great things. Briefly the system is this. The head teachers of the borough schools are provided with post-cards on which they notify any suspected cases of measles to the medical officer of health. If the suspicion becomes certainty the teacher receives 3*d.* for every case. Children from infected houses are excluded from school, and Dr. Harris, the medical officer of health of St. Helens, has no doubt of the value of the system. We hope that the vestry of St. Martin's-in-the-Fields will proceed somewhat on these lines, though we are not sure whether they will be able to do so under the provisions of the Public Health Act, 1891. The vestry also decided that the London County Council should be informed that the vestry did not favour the establishment of a bacteriological laboratory specially under the council.

CERTIFICATES UNDER THE WORKMEN'S COMPENSATION ACT.

As will be seen by a letter which we publish in another column the Board of Management of the Norfolk and Norwich Hospital have come to a most praiseworthy decision—namely, that the fee for filling up certificates under the new Workmen's Compensation Act shall be half a guinea, and that for the present the hospital residents shall be responsible for the certificates and shall retain the fees. We hope that every hospital in the kingdom will follow this example and we would urge in addition that a fee, not necessarily half a guinea, should be charged by hospitals for filling up all club certificates and especially school board certificates. The nuisance and the waste of time caused to the resident medical officers in a large hospital by having to fill up club and school board certificates are inconceivable, and the trouble is not lessened by the habit which the educational bodies have of refusing to accept the said certificates or of causing them to be revised by a layman. The certificate question is a form of hospital abuse which it is perhaps more easy to do away with than any other, and we are glad to see that the old city of Sir Thomas Browne has made the first move towards so happy a consummation.

MEMORIAL TO THE LATE MISS MABEL WEBB, M.B. LOND.

ON Nov. 22nd a meeting was held at the Royal Free Hospital to consider the question of founding a memorial to the late Miss Mabel Webb, M.B.Lond., curator of the hospital museum. The Hon. Mr. Justice Bruce, chairman of the committee, presided, and there were present several members of both the committee and medical staff of the Royal Free Hospital and of the School of Medicine for Women, and many past and present students and other friends of the hospital. The chairman, in explaining the objects of the meeting, referred to the many valuable services which Miss Webb had rendered to the hospital. He then called upon Mr. James Berry to move the first resolution, which ran as follows: "That it is desirable there should be a memorial to Miss Mabel Webb, the late curator of the museum at the Royal Free Hospital." Mr. Berry pointed out with what exceptional zeal and energy Miss Webb had devoted herself to her work, and how she had won the regard and affection of all with whom she had come in contact. He suggested that the most suitable means of perpetuating her memory would be to carry out a scheme which she herself had much at heart—viz., the rebuilding and improvement of the museum. This was seconded by Mrs. Scharlieb, M.D. Lond., who paid a tribute to the lofty character and personal charm of the late curator whom she had long known and loved as pupil and friend. Dr. R. H. P. Crawfurd then proposed the following resolution: "That the memorial should take the form of some improvement in the pathological department of the hospital." He explained the details of the proposed scheme to rebuild the museum with the addition of adequate facilities for pathological work and stated that it was estimated that the cost would amount to about £1500. This being seconded by Miss Clapham on behalf of the students, Mr. C. W. Blackman, speaking for the family of the deceased, said that they appreciated very much the kind feeling shown by the proposed memorial, and that they warmly approved of the form which it was intended to take. He also announced the very generous offer on the part of Mrs. Webb to defray the main portion of the expense of the work. A committee was then appointed to carry out

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the details of the scheme, and it was announced that subscriptions to the amount of nearly £200 had already been promised. Further subscriptions, it was stated, would be gladly received by Mr. C. W. Thies, the secretary of the hospital.

CHLORIDE OF ZINC AS A CAUSE OF DERMATITIS.

EQUALLY interesting and important are cases in which an inflammation of the skin has been set up by the external application of an irritant substance. The list of the substances which may give rise to this artificial dermatitis is very long and it includes several plants, such as Rhus toxicodendron and Primula obconica, various aniline dyes, and numerous mineral matters. This form of dermatitis is important, because it is in many cases the result of the intentional employment of irritants by the patient himself or, more commonly, herself, and also by no means rarely it occurs as the effect of the wearing of particular garments. The commonest variety of this is due to the irritation of aniline dyes, especially the red ones, though in these cases some attribute the dermatitis to the accidental admixture of arsenic with the dye. Occasionally these apparel rashes are due to mineral substances employed as mordants for the dye and an extensive example of this is recorded in another column of THE LANCET. The workmen in a firm were all provided with new overcoats about the same time and they wore them on one particular day which was very wet. In a large number of the cases an inflammation of the skin appeared at the parts touched by the coats—namely, at the wrists and at the neck. The epidemic character and the situation of the rash pointed clearly to the coats as the exciting cause and an analysis of the liquid obtained after soaking a piece of the cloth gave abundant evidence of the presence of chloride of zinc. If only one case had occurred the diagnosis of the cause would have presented much greater difficulty.

THE READING ANTI-VACCINATIONISTS AND THE NEW VACCINATION ORDER.

THE Reading Board of Guardians have, at any rate for the moment, been carried by their anti-vaccination section into an altogether illogical and illegal position—namely, by a large majority, they have practically refused to carry out the terms of the New Vaccination Order. They appear more particularly to resent the statutory powers with which the Local Government Board is vested of fixing the scale of payments to public vaccinators and vaccination officers. It is clearly the feeling of the anti-vaccinationists that those who pay the piper should also call the tune, and, if we mistake not, this section of the Reading guardians has a distinct tendency towards dispensing entirely with the services of the piper, though they are perhaps too wary to verbally admit this. According to the local papers the leader of the dissentient guardians "in language of extreme vituperation condemned the whole system of vaccination which, he said, was most abominable and had proved a failure and exceedingly dangerous." In spite of these views the speaker was anxious to observe that the dissentients had no desire to prevent believers in vaccination from being vaccinated; they had no wish to act as oppressors. But it is perfectly clear to those who read between the lines that even if these be their views they are desirous of obtaining vaccination for the poor who believe in its protective value at as cheap a rate as possible. It is well that the poor throughout the country should realise to the full this attitude on the part of the anti-vaccinationists and that they should comprehend that, not content with having obtained a system by means of which every conscientious objector may procure relief from vaccination, they are bent on depriving the working man of the privilege he has enjoyed for many years of having his child and himself properly protected against small-pox. The public should appreciate what this action on the part of the agitator may mean. It may mean that when an outbreak of small-pox occurs the poor who cannot afford to pay will clamour in vain for protection, and then, perchance, the chickens will come home to roost.

THE EXPENDITURE OF THE METROPOLITAN ASYLUMS BOARD.

IF the system of expenditure, or rather the want of a system of supervision, in the case of the Brook Hospital is a specimen of the work of the Metropolitan Asylums Board it is a serious look-out for the ratepayers of London. The inspector of the Local Government Board, Mr. W. E. Knollys, as one result of his inquiry seems to be astonished at the helplessness of public bodies to control expenditure. He finds that of the large excess of expenditure over estimate in this hospital a liability of at least £25,000 was incurred by the architect without the knowledge or consent of his committee. Some of this, it is admitted, was necessitated by want of time and by defective foundations, but some of it was due to the architect desiring to have the best possible hospital attainable. The inspector also found that the supervision by the committee was defective. The Local Government Board have disallowed the sum due to the architect on account of work ordered on his own responsibility. The report of the inspector is referred to the committee for consideration and report. Dr. Farquharson has done a great service in procuring this inquiry, and it is obvious that a similar inquiry should be made in regard to the other institutions of the Board. It would not be fair to throw the whole blame on the architect. It is obvious that the evils arise out of the system which puts such enormous undertakings for the whole of London on the shoulders of a comparatively small body of men whose time and knowledge of details is limited and who necessarily cause the work to devolve upon their paid officials.

HENRY THOMAS SYLVESTER, M.D. ABERD., V.C.

DR. H. T. SYLVESTER is the possessor of that most valued of almost all decorations, the Victoria Cross. Since his retirement from the army he has lived and carried on his profession in Westminster, but he has recently felt compelled to give up active work. The occasion of his retirement it was felt by his friends should be observed as a fitting opportunity to mark their sense of his services to all who had benefited by his aid, and accordingly on Nov. 25th a large gathering assembled in the mission house of Holy Trinity, Westminster, when Dr. Sylvester was presented with the picture by Desanges, formerly in the Victoria Cross Gallery at the Crystal Palace, representing the act for which he and Corporal Shields received the Victoria Cross. The incident occurred after the assault on the Redan, on Sept. 8th, 1855, when Lieutenant Dynesley was lying severely wounded outside that fort. Sylvester and Shields volunteered to go and bring him in and to do so they had to pass under a very heavy fire, but they succeeded in performing their mission. In addition to the picture Dr. Sylvester was presented with a piece of plate and an album containing the names of the subscribers, among whom were many medical men as well as Mr. Burdett-Coutts, Member of Parliament for Westminster, and Colonel Robert Bruce, C.B., late of the Royal Welsh Fusiliers, Dr. Sylvester's old regiment. The presentation was made by Mr. Burdett-Coutts. Colonel Bruce also spoke and gave an account of the incident represented in the picture. Dr. Sylvester, in reply, gave his version of the affair of which he made very light, saying

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that though he had done what he could for Lieutenant Dynesley, yet that officer's wounds were such that his case terminated fatally. Our thanks are due in the name of the profession to all those who aided in carrying out this kindly presentation, the inception of which was due to Mrs. Wheeler, one of the guardians of the poor for Westminster.

MEDICAL WITNESSES.

AT a recent meeting of the Shropshire and Mid-Wales Branch of the British Medical Association. Dr Cureton of Shrewsbury, who has been for nearly twenty years a police surgeon, moved the following resolution, which was carried unanimously:—

That in the opinion of this meeting some special accommodation should be provided for medical witnesses in waiting before the grand jury and in courts of assize and quarter session upon the production by them of their subpœnas or other evidence of identity to those in authority; and that copies of this resolution be sent to the Chairman of Quarter Sessions, the Chairman of the Grand Joint Committee of the County Councils and the Clerks of the Peace and chief constables in the area of the branch.

In our opinion this is a much-to-be-desired reform, and not only for medical witnesses, but also for other expert witnesses. To take a prominent instance, the accommodation, or rather the lack of it, at the Old Bailey is disgraceful. There should be a witness-room, or possibly two such, the one for expert witnesses and the other for the ordinary witnesses. The giving of evidence is a duty imposed upon every citizen by law, and one, moreover, which it is only right that every citizen should fulfil apart from any legal obligation, but it is an ordeal which, trying as it always is, should not be made more trying by the lack of a few conveniences which might be easily arranged for. The law's delays are proverbial, but we hope that Dr. Cureton's resolution will in no very long time bear fruit.

THE STUDY OF TROPICAL DISEASES IN LIVERPOOL.

MR. CHAMBERLAIN'S scheme for the teaching of tropical diseases to colonial surgeons, wherever the school may be located, has already borne practical fruit. Mr. Alfred Jones of Liverpool has offered £350 annually to establish and maintain a laboratory in Liverpool for the study of tropical diseases and the scheme will be carried out by a joint committee of the Royal Southern Hospital and of University College. A laboratory for immediate investigation will be built opposite the hospital, whilst prolonged research will be carried on in the pathological laboratory of University College, under the direction of Professor Boyce. A large number of cases from the West Coast of Africa are taken into the wards of the Royal Southern Hospital, as Liverpool, being the centre of the African trade, is in constant communication with West Africa. We again have to congratulate Liverpool on the munificence of her citizens and would direct the attention of medical men about to practice in any capacity on the West Coast of Africa to the opportunity that is being afforded them for obtaining invaluable information.

LECTURES ON MEDICAL RELIEF.

THE fifth of the course of lectures on Medical Relief now being given on Fridays at 4.30 P.M. at the Portman Rooms, dealt with the lunatic asylum, the lecturer being Dr. H. Rayner. The most important stage of treatment in insanity was the incipient stage of the disease, and in Dr. Rayner's opinion insanity should to a large extent be considered a preventable disease; at present cases were not treated early enough. He strongly advocated the establishment of special out-patient departments in connexion with general hospitals and infirmaries; in this way facilities would exist for the treatment of diseases of special organs which helped to develop the mental disease and the association of mental with ordinary disease would tend to the more rapid destruction of the prejudice against insanity as something uncanny. A specially organised hospital ward should be set apart for temporary treatment of those needing special care. "Reception houses" should replace the present workhouse lunatic wards, the 30 such wards now existing in the metropolis being reduced to 5 or 6 reception houses, with a staff of specially qualified medical officers and a specially trained nursing staff, with facilities for calling in the aid of specialists of all kinds. In the cases where the disease was fully developed certified pauper lunatics should be divided at once into classes according to the specia kind of treatment required. The first class would comprise the cases of active mental disorder complicated by bodily disease and needing hospital treatment. The second division would comprise the cases where the mental disorder was acutely active and constant supervision was required. The third division would comprise a much larger number—viz., those sufficiently self-controlled to work at trades involving the use of tools and to be allowed a certain amount of liberty. The epileptic insane, who had also to be provided for separately, the lecturer thought should be aggregated in colonies, as had been done in the State of New York. Dr. Rayner advocated the establishment of the farm colony system as being efficient and economical both in initial expenditure and in maintenance, the need for increased supervision being met by increased productiveness.

LEPROSY IN NEW SOUTH WALES.

WE have just received Dr. J. Ashburton Thompson's report on leprosy in New South Wales for 1896. The report, which is dated Nov. 4th, 1897, states that on Jan. 1st, 1896, 37 persons remained under detention at the lazaret at Little Bay. During the year 9 persons were reported under the Leprosy Act, 1890, as being suspected lepers and 3 of them were eventually admitted to the lazaret under warrants issued by the Board of Health. Five patients died during the year, 4 being natives of Australia of European descent and 1 being a native of Ireland. On Aug. 14th there were 20 Chinese patients in the lazaret and on that day 19 of them were embarked on a cargo steamer to be taken to Hong-Kong, from which place they were removed on board a tug to Canton and there dismissed under supervision of the Consul. There were therefore 16 persons in the lazaret on Dec. 31st, 1896, including 7 natives of New South Wales, 2 English, 1 Fijian, 1 German, 2 Chinese, 1 Japanese, 1 an aboriginal of Tanna, and 1 a native of India. The total number of persons admitted since 1883, when patients first began to be received (though the notification of leprosy was first made compulsory and the detention of lepers provided for by law only towards the end of 1890) is 61. The three patients received during the year were all Chinese, this being the first year since 1890 in which no case in a white person has come to notice. An appendix to the report gives copious clinical and etiological notes of these three cases, together with four full-sized reproductions of radiographs of the hands of two patients suffering from the smooth form of leprosy; the absorption, either complete or partial, of the phalangeal bones is well shown.

FAMILY SPASTIC PARAPLEGIA.

IN a recent number of the *Neurologisches Centralblatt* a very interesting abstract appears of a most important paper on this subject by M. Lorraine of Paris. He first gives a short account of "family" diseases affecting the nervous system. He points out that the lesions are often

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diffuse, not always affecting definite systems of fibres in the cord, and that transition forms are very numerous. He then considers his special subject—viz., family spastic paraplegia—and his remarks are founded on the observation of cases and on a consideration of a now somewhat extensive literature. Nervous and mental diseases, syphilis, alcoholism, relationship between father and mother, all predispose to the disease. This is found to affect the sexes equally. Infectious disease and traumatism seem occasionally to precede the manifestations of lateral sclerosis. The typical symptoms are spastic gait with increased reflexes and ankle clonus without sensory impairment or interference with the sphincters. Occasionally optic atrophy is observed. Rarely intelligence is defective. The course is usually one of gradually increasing interference with working power and death is often the result of tuberculosis. The only necropsy has been reported by Strümpell, who found primary combined sclerosis of the pyramidal tracts, of the direct cerebellar tracts, and also of the columns of Goll. The former were affected chiefly in the dorsal, the latter chiefly in the cervical, region. Myelitis, compression myelitis, spinal syphilis, and multiple sclerosis, are all to be distinguished, the principal differentiating features being the absence of sensory and sphincter impairment in family spastic paralysis and the presence of a family history. Hereditary cerebellar ataxy presents some features of similarity, but is sufficiently distinguished by the ataxy of the gait. In regard to treatment, warm baths, massage, and rest are recommended, and in certain cases tenotomy, or even it is said neurotomy, may occasionally be useful.

THE NEW SCHOOL OF TROPICAL MEDICINE.

MR. CHAMBERLAIN'S scheme for the establishment of a School for Instruction in Tropical Medicine has naturally attracted a large amount of attention. We have already signified our approval of the proposal to afford opportunities to colonia medical officers and to other members of our profession who intend to practise in tropical districts for the study of the special diseases which they are likely to be called upon to treat. At the same time we have expressed the objections which are being and will be raised to the details of the scheme now under consideration. A judicious protest against certain of these details, over most authoritative and representative signatures, has already reached Mr. Chamberlain's eye and cannot be without its influence upon a Minister so clearly desirous of doing what is right and, above all, what is best for the country. We now publish the correspondence which has taken place between the honorary medical staff of the *Dreadnought* Hospital, Sir Henry Burdett, and Mr. Michelli, the secretary to the Seamen's Hospital Society. This correspondence fully bears out our statement that the medical staff in question have received rude treatment where they might have expected particular courtesy considering the long duration—eighteen, ten, and seventeen years respectively—of their services. Dr. Curnow and Dr. John Anderson, the physicians, and Mr. G. R. Turner, the surgeon to the hospital, naturally objected to the teaching staff of the new school being formed without their previous knowledge; but, as we stated last week, the first intimation they had of what was being done was derived from a letter to the *Times*. The answer given by Mr. Michelli on behalf of the committee to a request for an explanation is simply evasive. He writes that "the statement that 'the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school,' was manifestly intended to convey the meaning that the members of the senior medical staff of both hospitals would have the first option of undertaking the educational work of the staff." We entirely fail to see how a positive statement can "manifestly" be taken to mean a mere proposition, and while expecting to have more to say soon on this matter we content ourselves now by referring our readers to page 1499.

A REPORT from the Pharmacopœia Committee on the proposed Indian and Colonial Addendum to the British Pharmacopœia of 1898, with suggestions for consideration by the medical and pharmaceutical authorities in India and the colonies, was approved and adopted by the General Medical Council on Wednesday. The report contains some very interesting therapeutical information.

THE Plague Commissioners arrived on Saturday last, Nov. 26th, at Bombay by the *Sutlej*. They will hold a few preliminary sittings at Bombay and then in the following week they will proceed to Hyderabad, reaching Calcutta about Christmas. They will return to Bombay later.

THE annual dinner of the Royal Society was held on Wednesday evening last under the presidency of Lord Lister. Lord Curzon of Kedleston and Lord Kitchener of Khartoum were the guests of the society, and received an enthusiastic welcome.

MR. W. S. COLMAN, M.D., F.R.C.P. Lond., was on Nov. 30th elected an Assistant Physician to St. Thomas's Hospital.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE thirty-sixth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Nov. 22nd. The Commissioners present were Lord Llandaff (chairman), the Right Hon. John W. Mellor, Sir John Dorington, Sir George Barclay Bruce, Major-General Scott, Mr. de Bock Porter, and Mr. Robert Lewis.

Mr. R. E. MIDDLETON, in answer to the CHAIRMAN, said that he thought that if the undertakings of the metropolitan water companies were purchased it would entail a loss to the consumers and a still greater loss to the ratepayers if the conditions of revenue spoken of by a witness of the London County Council were carried out—that is to say, if the water rents were reduced to one level for all London, that level being the charge made by the West Middlesex Company.

In answer to Mr. MELLOR the witness said that if the companies were sold to a public authority he did not think that in estimating their value the question of the liability to injury by frost ought to be taken into account.

Mr. MELLOR suggested that if a water company were sold all accidents which might happen to the undertaking ought to be taken into account. The witness thought otherwise. Accidents which might happen were not the act of the company but the act of God. They were not the fault of the company. The witness admitted, however, that if the financial conditions of the company were investigated during a period of years in which a frost happened, and if the income of the company were thereby reduced, no doubt that loss ought to be taken into consideration.

In answer to Sir GEORGE BARCLAY BRUCE the witness said that the arbitrator in coming to a conclusion as to the just price would have to consider the past revenue, and inasmuch as droughts and frosts had affected the revenue in the past they should to that extent be taken into account.

Mr. LEWIS suggested that if the companies charged for water whether it was supplied or not drought would not affect their revenues. The witness said that a company's revenue was affected if they had to purchase water from another company and only in that case, and the CHAIRMAN pointed out that the Commissioners had heard that the East London Company had continued their charges for high services though all high cisterns were without water. The

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CHAIRMAN asked the witness whether in the case of purchase of the undertakings by one authority some saving would not be made in the cost of management and maintenance. The witness replied that in his opinion a board which had been in existence a great many years would be more likely to be economical than one of a fleeting character which was unlikely to effect economies. He thought, moreover, that municipal management did not as a rule effect economies. That argument he admitted would not apply to the case of purchase by a special board of experts created *ad hoc*. With regard to the compensation of directors and officials which it was suggested would become an expense to the purchasing authorities Mr. MELLOR pointed out that it would be necessary for the new board to keep their officials. If they still employed them there would be no occasion to pension them.

Sir GEORGE BARCLAY BRUCE suggested that as there would be fewer officials some at least would have to be pensioned off, but Mr. R. LEWIS pointed out that pensions so paid to officials who were not wanted would not lead to any increase of expenditure because in the case of such a retired official the vacancy would not be filled.

Mr. DE BOCK PORTER suggested that if all the undertakings were under one management fewer officials would be required. The witness replied that he thought otherwise and that he believed more officials would be required.

Mr. DE BOCK PORTER referred to the great expense incurred in the collection of water-rents under the present system, and the witness admitted that there were at present a large number of collectors, and that if the water-rents were collected with the municipal rates the cost of collection would be diminished.

Mr. LEWIS suggested that it would not be necessary that eight secretaries, eight accountants, and eight cashiers should be employed if the undertakings were under a single management.

In answer to the CHAIRMAN the witness said that he did not remember Mr. Banbury's scheme of purchase, but he thought that the shareholders of the present undertakings were entitled to compensation for prospective value.

Sir GEORGE BARCLAY BRUCE suggested that the purchaser would likewise be entitled to a consideration for prospective diminution of income should it be proved that the undertakings would probably produce less than they have in the past.

The question arose as to the effect which a rise in the rates would produce on the water companies' undertakings. The witness said he was utterly unable to answer definitely what the effect of this would be on the companies' profits.

Sir JOHN DORINGTON asked whether in the case of purchase a valuable ratepayer would be lost, but it was pointed out that the London County Council pays rates and the water companies also have at present to pay rates in the counties of Middlesex, Surrey, Essex, and Kent, where some of their property is situated.

Mr. R. LEWIS raised the question of the effect of the sinking fund clause on the future financial state of the companies, and Mr. DE BOCK PORTER pointed out that the operation of the fund in the future would be very large and said that it would be impossible in the case of arbitration to overlook that fact. He also pointed out that as a matter of fact the present method of collecting the water rents is a very expensive one and at the present time costs no less than £50,000 a year.

The CHAIRMAN examined the witness with regard to the effects of purchase on the outside authorities. The witness pointed out that the mains of the companies had not been laid with any idea of supplying water in bulk beyond the metropolitan area. They had been laid across the county boundary in all directions and in many cases there were a very large number of mains crossing the boundary. Some of these supplied from the outside inwards; others from the inside outwards; some crossed in both directions. If a supply were given in bulk from the inside outwards many of these mains would have to be relaid and meters would have to be placed on them. In the case of the East London Company the chief mains passed from Essex into the county of London, the county boundary being the River Lee and the company's chief pumping station at Lee Bridge being in the county of Essex. (Part of the Lee Bridge station is as a matter of fact in the county of Middlesex. A description of this station has already appeared in THE LANCET.) With regard to the New River Company the witness said that all the pumping stations were entirely outside the county of London (the pumping station at New River Head must have been forgotten by the witness). In the case of the West Middlesex Company about twenty main pipes cross the boundary in West Middlesex and there were some sixty-one smaller mains, about half of which were used for the supply inside the county of London and half of which supply the outside area and which necessarily cross the boundary to do so. In the case of the Chelsea Company the witness pointed out that the works are almost entirely outside the county of London and the whole supply is given within the county of London. In the case of the Southwark and Vauxhall Company the service reservoirs are situated at Nunhead and at Forest Hill in the county of London. There is no system of mains in existence by which water could be supplied in bulk from these reservoirs for the use of the county of Surrey. The mains at present passing through Surrey are used to supply mains both inside the metropolis and outside and they would have to be cut off and reconnected in order to make them useful for supplying Surrey. The length of boundary line between the metropolis and the county of Surrey in the case of the Southwark and Vauxhall Company is about three and a half miles. The Lambeth Company supplies a distance of about fourteen and a half miles on the boundary, about seventy streets cross the boundary, and some of these have two or more mains laid in them. The supplies of the Kent Company are drawn entirely from wells. The largest pumping station is at Deptford, and there are pumping stations at Plumstead, Shortlands, Crayford, Farnborough, and Wilmington in the county of Kent. Plumstead is situated in the county of London.

The CHAIRMAN asked the witness whether he could give an estimate of the expense of remodelling the distribution of water so as to enable the county of London if it were the purchaser of the metropolitan companies to supply all the outside authorities in bulk. The witness replied that he could not give an estimate, that the cost would be very large—it would at any rate amount to several hundreds of thousands of pounds, probably to nearly a million.

Major-General SCOTT asked whether it would not be possible for the companies to put in a statement giving the cost. The witness said that they could not do so without considerable trouble.

In answer to the CHAIRMAN the witness said that in his opinion a supply in bulk to the county of London would be practicable but it would be inconvenient and expensive. The witness went into considerable detail with regard to a scheme suggested by Sir Alexander Binnie for dividing the water-supply of the Lambeth Company in such a way that the county of London and the metropolitan authority could each have control of their own supply. In order to make matters clear he described the situation of the reservoirs, filter-beds, and pumping-stations of the Lambeth Company, which have been already described in THE LANCET. With regard to the Staines reservoir scheme the witness said, in answer to Mr. DE BOCK PORTER, that up to the present time 620 acres have been acquired. To complete the scheme 4500 acres would be required. The witness handed in a table giving his estimate of the cost of supplying 185½ millions of gallons daily from the Thames. This estimate was made for comparison with one given by Sir Alexander Binnie.

COMPARISON OF SIR A. BINNIE'S AND MR. MIDDLETON'S ESTIMATES OF COST OF SUPPLYING 185½ MILLION GALLONS PER DAY FROM THE THAMES.

To Supply 185½ Million Gallons per Day.

	SIR A. BINNIE'S ESTIMATE.				
	Million gallons.	Total.	Cleansing.	Bottom and evaporation.	Net.
Capacity	8000	— 8000	— 2000	— 1000	= 5000
Less existing capacity	866				
Total capacity	7134 at £380 per million gallons				£2,710,920
*Annual pumping into reservoirs (1893)	10,566 at 5s. per million gallons = £2639. Capitalised at 30 years				79,170
†Distributing 55½ million gallons per day	20,257½ at £2 10s. per million gallons = £50,644. Capitalised at 30 years				1,519,320
Total					£4,309,410
Pumping machinery for distribution					395,775
Total					£4,705,185

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Note by Sir A. Binnie.

The above estimate includes nothing for the capital cost of the engines and accessories to pump the 55,500,000 gallons for distribution, but, as will be seen from the estimate of Messrs. Hunter and Fraser (Royal Commission, appendix C 66, page 478, second column), they apparently include a capital sum of £1,212,300 as a total in 1941 for this purpose.

At this rate £395,775 should be added to the above.

Note by Mr. Middleton.

* The charges for pumping to store have been capitalised on the draft during the year of greatest drought, not on the average of years, as they should have been.

† This capitalisation has been made on the cost of pumping 55½ million gallons per day, which will not be reached until the year 1916. It should be on the average less than half that quantity. The sum so arrived at should be discounted for present value.

To Supply 185½ Million Gallons per Day.

MR. MIDDLETON'S ESTIMATE.

	Million gallons.	Total.	Cleansing.	Bottom and evaporation.	Net.
Capacity	5239	— 5239	— *Nil.*	— 476	= 4753
Less existing capacity	866				
Total capacity... ...	4373 at £300 per million gallons ...				£1,311,900
*Pumping into reservoirs	4431 million gallons, average for 16 years, at 7*s.* 6*d.* per million gallons = £1661 12*s.* For 16 years...				26,586
*Cost of pumping to supply a quantity increasing from *nil* to 55½ million gallons per day during 16 years, at £2 4*s.* per million gallons					320,178
Total					£1,658,664
Pumping machinery for distribution					181,980
Total					£1,840,644
*If the pumping charges be capitalised at 30 years' purchase a sum of £307,524 must be added. This has been done by Sir A. Binnie, but I do not concur					307,524
Total					£2,148,168

The thirty-seventh sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, Nov. 28th. The Commissioners present were Lord Llandaff (chairman), the Right Hon. J. W. Mellor, Sir John Dorrington, M.P., Sir George Barclay Bruce, Major General Scott, Mr. de Bock Porter, and Mr. Robert Lewis. The whole of the sitting was occupied by the examination of Mr. Middleton who put in an enormous number of tables relating to the cost of the storage reservoirs which would be necessary should the Thames coutinue to be used as a source of extra supply and a number of tables relating to the cost of Sir Alexander Binnie's scheme for bringing water from Wales.

In answer to the CHAIRMAN the witness said that in his opinion it would cost very much more to bring a supply from Wales than to obtain an equal amount from the Thames. He thought that the sources of the valleys of the Lee and of the Thames would afford an adequate supply of water for the next fifty years.

In answer to Mr. MELLOR the witness said that he thought that on an average 400,000,000 gallons could be taken daily from the Thames.

In answer to the CHAIRMAN the witness said that water from Wales would have to be filtered. The Chairman remarked that he had understood that the Welsh water was to be "pure nectar."

Mr. BALFOUR BROWNE pointed out that it was proposed to filter the water derived from Wales but the cost of doing so would be less than the cost of filtering Thames water.

In answer to the CHAIRMAN the witness gave an estimate of the amount of water which he thought could be obtained from the existing sources. It was briefly as follows:—

	Gallons.
From the Thames	400,000,000
From the Lee	52,500,000
From wells in the Lee Valley	40,000,000
From wells in the Kent Company's district...	27,500,000
From the Southwark and Vauxhall well at Streatham	2,000,000
From other wells in Kent	123,000,000
	645,000,000
In addition wells sunk in the chalk would yield a supply of	190,000,000
Total estimated supply... ...	835,000,000

The estimate given by Lord Balfour's Commission was 420,000,000 gallons daily.

The witness said that he would have seen no objection to taking water at the rate of 400,000,000 gallons daily from the Thames this year. (But for the space of three months the natural discharge of Teddington Weir was not 400,000,000 gallons.) There was statutory power now to take 185,000,000 gallons, and the witness did not think that the loss of another 130,000,000 gallons per day would be appreciable in the tidal part of the Thames.

In answer to Sir GEORGE BRUCE the witness said that the amount of the estimate given by the London County Council for a water-supply of 123,500,000 gallons per day was £21,000,000, whilst the cost of putting up storage reservoirs to supply a like amount from the Thames would not be much over £6,600,000.

With regard to the amount of water which could be obtained from the valley of the Lee the witness said in answer to the CHAIRMAN that he did not think that 52,500,000 gallons daily was an extravagant amount to estimate as the supply to be derived from the River Lee. He did not admit that the Lee had been reduced to a shocking state, but its condition during the present year had been exceptional.

In answer to the CHAIRMAN the witness admitted that there had been an insufficient amount of water to supply the East London Waterworks Company, but thought that more storage reservoirs should be put up in the Lee Valley. With regard to the Thames the witness gave it as his opinion that the flow over Teddington Weir could quite safely be reduced to an amount less than 200,000,000 gallons daily. If there was no flow of water down the Thames the sewage at the lower part of the river would oscillate backwards and forwards. With regard to the control of the water drawn from the sources of supply the witness suggested that it might be managed by an amalgamated board and the method of management might be left with the companies. His suggestion was that a board similar to that constituted for the management of the Staines reservoirs should be appointed and that this board should decide in what way the water should be distributed, from what source it should be derived, and how much each company should be empowered to get from the Thames or elsewhere. The witness thought that in future Parliamentary powers for the abstraction of water from the Thames should not be given to any one company but to the whole eight companies in such proportions as the board should determine. The companies should amalgamate for the purpose of obtaining water. This amalgamation would not interfere with the present financial arrangements of each separate company. This proposal the witness put forward as his own view of the best solution of the difficulties which might arise on application for powers for further abstraction of water from the Thames.

In answer to the CHAIRMAN the witness said that he attached little importance to the fact that during periods of flood much agricultural sewage came down the river and he saw no objection to pumping flood water into the reservoirs. The amount of pollution which existed in the flood water of the Thames would not, in his opinion, be injurious.

The witness described the present storage reservoirs belonging to the metropolitan water companies. The storage capacity belonging to the various companies for Thames water was stated to be as follows:—

	Gallons.
Southwark and Vauxhall	136,000,000
Lambeth	125,000,000
East London	5,000,000
West Middlesex	397,000,000
Grand Junction	64,500,000
Chelsea	140,000,000

(The New River and the Kent companies do not draw any water from the Thames at present.)

The above figures represent the existing storage capacity now at work, exclusive of the Staines scheme or the works now under construction at the Southwark and Vauxhall Company's station. The additional storage either in process of construction or authorised is 327,000,000 gallons for the Southwark and Vauxhall Company, 335,000,000 gallons for the Lambeth Company, and 3,300,000,000 gallons for the Staines reservoirs.

The Commissioners adjourned till Tuesday, Nov. 29th.

The thirty-eighth sitting was held on Tuesday, Nov. 29th, when Mr. Middleton was still under examination. The

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witness again put in many tables and was cross-examined by Lord R. Cecil on behalf of the Hertfordshire County Council. The next sitting will be on Monday next, Dec. 5th.

A TROPICAL SCHOOL OF MEDICINE.

WE have received for publication the following correspondence which has taken place between representatives of the committee of the Seamen's Hospital Society and the honorary visiting staff of the *Dreadnought* Seamen's Hospital, Greenwich. The bearing of these letters upon the scheme for a Tropical School of Medicine which we have recently discussed and are still discussing in our columns is obvious.

13th July, 1898.

DEAR SIR HENRY BURDETT,—In your letter in the *Times* of Monday last on the subject of a proposed School for Tropical Diseases in London, you say:—

"The teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich, as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school."

Will you be so kind as to inform me upon what authority you make this statement, in so far as it refers to the medical staff of the *Dreadnought* Hospital?

Apologising for troubling you, believe me, yours truly,

J. ANDERSON.

15th July, 1898.

DEAR DR. ANDERSON,—As my letter was written under instructions from the committee of the *Dreadnought* Hospital I have referred your letter of the 13th instant to them and will let you know in due course.

Believe me, yours very truly,

Dr. Anderson, 9, Harley-street. H. BURDETT.

The Lodge, Porchester-square, W.,
18th July, 1898.

DEAR DR. ANDERSON,—With further reference to your letter of the 13th inst., I am desired to say that it is the intention of the committee of the *Dreadnought* Hospital to give the opportunity to the senior medical staff of both their hospitals to take part, if they thought well, in the work of instruction at the School for Tropical Diseases about to be established at the Branch Hospital.

Believe me, yours very truly,

Dr. Anderson. HENRY C. BURDETT.

Dreadnought Seamen's Hospital,
Greenwich, S.E., 14th July, 1898.

DEAR SIR,—I am directed to inform you that upon the representation of the Colonial Office, the committee of management of the Seamen's Hospital Society have resolved to establish a school for the study of tropical diseases in connexion with their Branch Hospital in the Royal Victoria and Albert Docks. This will involve the erection of school buildings and the enlargement of the hospital to 45 beds.

I have been directed to ask you to coöperate in this movement and to confer with the other members of the society's honorary medical staff, with a view to suggest to the committee of management arrangements as to the educational staff and the general system of the school. The committee will propose as far as possible to concentrate cases of tropical disease at the teaching centre. Yours faithfully,

J. Curnow, Esq., M.D., F.R.C.P. P. MICHELLI, Secretary.

P.S.—I enclose a letter and a leader which appeared in the *Times* of July 11th in reference to the scheme.

9, Wimpole-street, Cavendish-square, W.,
16.7.98.

DEAR SIR,—I am in receipt of your letter of the 14th inst., with the cuttings from the *Times* of July 11th, which I had already seen in the *Times* of that date. Would you oblige me by informing me whether Sir Henry Burdett personally, or the hospital committee, are responsible for the statement that "the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich," &c.? The publication of such a statement without my being asked, in a scheme of which I knew nothing before I saw it in the *Times*, seems to me most discourteous to myself and intended to convey an unwarranted impression to the public.

I also wish to know if the committee seriously propose "to concentrate cases of tropical disease" at the Branch Hospital and thus deprive the parent hospital of its one distinctive feature.

Believe me to remain, faithfully yours,

JOHN CURNOW, M.D

P. Michelli, Esq., Secretary, Seamen's Hospital Society.

Dreadnought Seamen's Hospital,
Greenwich, S.E., 21st July, 1893.

DEAR SIR,—In reply to your letter of the 16th inst., I am directed to say that Sir Henry Burdett's letter was written upon information supplied to him by the committee of management, and the statement that "the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich, as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school"; was manifestly intended to convey the meaning that the members of the senior medical staff of both hospitals would have the first option of undertaking the educational work of the school.

Yours faithfully,

P. MICHELLI, Secretary.

J. Curnow, Esq., M.D., F.R.C.S.,
9, Wimpole-street, Cavendish-square, W.

Dreadnought Seamen's Hospital,
Greenwich, July 18th.

To the Editor of the Times.

PROPOSED SCHOOL FOR TROPICAL DISEASES.

SIR,—Sir H. Burdett in your issue of July 11th, writing of a proposed School for Tropical Medicine, states that "the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich, as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school." This was the first intimation of any kind that we had that such a scheme was on foot, and the statement was made without our authority or consent.—Yours faithfully,

JOHN CURNOW, M.D., F.R.C.P., } Visiting
JOHN ANDERSON, M.D., F.R.C.P., } Physicians.
G. R. TURNER, F.R.C.S., Visiting Surgeon.

9, Wimpole-street, W.,
25.7.98.

DEAR SIR,—I cannot accept your letter of the 21st inst. as a satisfactory explanation of the position. Sir Henry Burdett's statement that "the teaching staff will consist of the senior medical staff of the *Dreadnought* Hospital at Greenwich, &c.," is quite positive, and is an unauthorised statement. It will not convey to the readers of the *Times*, who I may point out are asked for subscriptions in aid of the committee's scheme, that it manifestly means "that the members of the senior medical staff of both hospitals would have the first option of undertaking the educational work of the school." Such an explanation should be publicly given in the *Times* by either Sir H. Burdett, who has apparently been misinformed, or by the committee.

As you have not answered my second question I must ask it again and I will put it in the following form. Has the committee decided to concentrate as far as possible the cases of tropical disease which alone give its distinctive character to the *Dreadnought* Seamen's Hospital at Greenwich, and has this course of action been determined on without consulting either Dr. Anderson or myself?

Faithfully yours,

JOHN CURNOW, M.D.

P. Michelli, Esq., Secretary, Seamen's Hospital Society.

Dreadnought Seamen's Hospital,
Greenwich, S.E., 28th July, 1898.

DEAR SIR,—In reply to your letter of the 25th inst., it appears that you and your colleagues have already taken the most efficient method of undeceiving the readers of the *Times* by your letter explaining that the senior staff of the *Dreadnought* were not consulted on the question of their joining the educational staff before Sir Henry Burdett's letter was written to the *Times*, and that the statements therein were made without their authority or consent. It does not, therefore, seem that any good purpose could be served by reiterating the fact, even if the *Times* would accept a second disclaimer.

Your question with regard to the tropical cases at Greenwich is rather one for the committee than for me to answer,

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and I will take care that your letter is laid before the Board at their next meeting.—Yours faithfully,

P. MICHELLI, Secretary.

J. Curnow, Esq., M.D., F.R.C.P., 9, Wimpole-street, W.

Oct. 10th, 1898.

DEAR SIR,—Referring to the proposed School for Tropical Medicine at the Victoria and Albert Docks and Mr. Michelli's letter of July 14th, we think our letter to the *Times* of July 20th was a plain statement of facts. We see nothing to regret on our part, and if there is any meaning in plain English, Sir Henry Burdett's words can have but one interpretation, i.e., that the senior staff of the *Dreadnought* were to be on the teaching staff of the proposed school.

On July 15th he wrote Dr. Anderson that his letter to the *Times* was written under instructions from the committee of the *Dreadnought;* a committee, we would remind you, who had not had the courtesy to let us know that such a scheme was on foot, still less to ask for our coöperation until some five days after the vice-president's letter appeared in the lay press and he had been asked for explanation by Dr. Anderson.

We beg to ask the committee, as Dr. Curnow has twice already asked the secretary, whether they have decided to concentrate the cases of tropical diseases at the Branch Hospital and have done this without consulting the visiting physicians of the parent *Dreadnought* Hospital.

It is impossible for us to give any answer to a request for coöperation until we have been put in full possession of the details of the proposed school.—Believe us, yours faithfully,

J. CURNOW.
J. ANDERSON.
G. R. TURNER.

The Chairman of the *Dreadnought* Hospital Committee.

Dreadnought Seamen's Hospital,
Greenwich, S.E., 17th Oct., 1898.

DEAR SIRS,—I am instructed to acknowledge the receipt of your letter of the 10th inst. which was laid before the general committee at their meeting on Friday last.

The committee regret that you still feel aggrieved by Sir Henry Burdett's letter which was published in the *Times* of July 11th.

They also much regret that you do not feel able to signify your wish to coöperate with them in carrying out the scheme of H.M. Secretary of State for the Colonies for the establishment in connexion with the society's Branch Hospital of a school for the study of tropical diseases.

The details of the scheme must necessarily remain open for consideration by the committee which will be appointed to manage the school.

I am, dear Sirs, yours faithfully,

P. MICHELLI, Secretary.

John Curnow, Esq., M.D., &c.
John Anderson, Esq., M.D., &c.
G. Robertson Turner, Esq., F.R.C.S., &c.

9, Wimpole-street, Cavendish-square, W.,
29th Oct., 1898.

DEAR SIR,—We beg to acknowledge the receipt of your letter of the 17th inst.

It is true we are aggrieved by the entirely unauthorised statement contained in Sir Henry Burdett's letter published in the *Times* of July 11th last; but we are still more so by the committee's want of courtesy in not asking the opinion of the senior medical staff of the *Dreadnought* Hospital at any time during the inception of their scheme before the letter was written, and for which lack of courtesy no apology has been offered or regret expressed.

The question as to the concentration of tropical cases at the Branch Hospital and consequent starvation of the parent hospital at Greenwich in its one distinctive feature has not yet been answered, although three times asked, and we press your committee for a definite reply upon this point, after the receipt of which we will not trouble them with further correspondence. We are, dear sir, yours faithfully,

JOHN CURNOW.
J. ANDERSON.
G. R. TURNER.

The Secretary, *Dreadnought* Seamen's Hospital,
Greenwich.

Dreadnought Seamen's Hospital,
Nov. 28th, 1898.

SIRS,—Not having received any reply to the question we pressed upon you in our letter of Oct. 29th last we are sending the correspondence that has taken place between us to the press for publication. In doing so we wish to remind you that we have performed the medical and surgical work of the *Dreadnought* Hospital for eighteen, ten, and seventeen years respectively. We are, Sirs, yours faithfully,

JOHN CURNOW.
J. ANDERSON.
G. R. TURNER.

To the Committee, *Dreadnought* Seamen's Hospital,
Greenwich.

THE USE OF THE ROENTGEN RAYS ON THE BATTLE-FIELD.

THERE was a large attendance at the Camera Club, Charing Cross-road, on the evening of Monday, Nov. 28th, when in simple language suited to a lay audience Major Beevor, R.A.M.C. (Surgeon-Major, Royal Scots Guards), demonstrated before the members of the club and their friends the result of x-ray work during the Afridi campaign. There never existed, he said, a braver set of men or more skilful artists with modern firearms than the Afridis, and consequently there was no lack of wounds for the surgeon's attention. It was not only bullets, however, that these men used as messengers of death, but, as Major Beevor pointed out in a previous lecture, all sorts of objects—pieces of telegraph wire, buttons, and, in fact, anything hard. The lecturer dwelt on the difficulty which attended the localisation and finding of foreign bodies in the animal organism, and remarked that though modern surgery had progressed greatly and chloroform had done a great deal towards the alleviation of human suffering he humbly maintained that of late years no invention had come to the fore in this respect so forcibly as that which was known as the x rays. To be able to localise, to find the size, and to operate directly upon a foreign body in the human organism by means of this invention was an incalculable benefit to both surgeon and patient.

The lecture took the form of a running commentary on a series of radiograms exhibited by means of the electric lantern, and without reproducing these pictures it is difficult to make the cases intelligible to our readers, but Surgeon-Major Beevor's remarks embodied some information of value to the medical profession and we pick out such items of interest as may have a useful bearing upon x-ray work and surgery.

In one case a bullet was shown embedded in the tissues of the popliteal space. This injury caused a great deal of swelling and irritation around the knee-joint. The bullet after striking the tibia lodged in the popliteal space a little above the condyles of the femur and could not be discovered by means of a probe. By the x rays it was found within an inch of the surface of the skin. Had not these rays been used it would probably have been necessary to amputate. The swelling was very marked and the radiogram showed to what an extent bones can be pushed apart and the supporting ligaments stretched by inflammation and irritation of a joint. The space between the femur and the tibia was greatly exaggerated and the patella was high up above the condyle of the femur, notwithstanding the fact that the leg was flexed. As showing the conditions under which operations have to be performed on the battlefield, the temperature at this time was about 110° F. in the shade, and there were about 400 men to look after and some 110 dead men to be buried. Another radiogram showed a bullet which had entered the inner side of the biceps. This could not be found by a probe, as it had slipped down into the sheath of the tendon and become embedded. So incorporated was it with the fibrous material that an hour and a half were occupied in dissecting it out. The superiority of the x rays over the probe in some cases was shown by the case of a man from whose instep four pieces of telegraph wire were removed. A small piece of flint was afterwards extracted and it was thought that the patient would recover. Three months later the man was about on crutches but he complained that he could not put his heel to the ground. On examination with the fluorescent screen it was found that a piece of bone was impacted in the periosteum beneath the heel. This could not possibly have been found with a probe. Another case shown was that of a sergeant of Sikhs, who was struck in the elbow while wearing a poshteen—a

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garment made of goat-skin. If the weather is fine this coat is worn with the hair next the body, but if the weather is damp it is turned inside out and the hair worn outside so as to protect the leather from the wet. In this case the bullet carried into the muscles a mass of leather and hair, blood poisoning supervened, and the joint swelled to such an extent (some 12 in. in circumference) that it was impossible to find a foreign body with a probe. By the use of the x rays, however, the foreign body was located and finally removed. The man made a good recovery. The radiogram of an officer's hand was shown to demonstrate the fact that small quantities of a compound of lead, such as that incorporated in the material used for lead plaster, offer resistance to the x rays. The radiogram was taken while the hand was bandaged and the strips showed as distinct rings around the fingers. A radiogram of the leg of General Woodhouse was shown to illustrate the fact that not only bone but fibrous material will break up a bullet. It is interesting to note that while the bullet in this case was being extracted thirteen bullets passed through the tent in which the operation was being performed.

An interesting discussion followed in which Mr. Cadett, Mr. H. H. Massey, M.R.C.S. Eng., Mr. Inwards (late president of the Meteorological Society), the chairman, Mr. Wilson Noble, Mr. A. A. Campbell Swinton, Mr. Godfrey (the secretary of the Camera Club), and others joined. In this discussion it was suggested that light dynamos to be worked by hand power should be constructed for use on the battle-field and in military operations, that in some cases electric power might be obtained from ships of war; that chemists should direct their attention to the manufacture of sensitive plates more suited to x-ray work than the ordinary photograph plates, that the Wimshurst machine might be used, and that the Government should be asked to facilitate in every possible way the use of the Roentgen rays in military campaigns.

In his reply Major Beevor spoke of the uselessness of photographic films in hot climates and the difficulties attending transport of the apparatus. He mentioned that a dynamo for use by hand had been used in the Soudan and had proved fairly satisfactory. The Government of India had afforded him every facility for carrying on the work.

Hearty votes of thanks to the lecturer and to the chairman terminated the proceedings. Credit is due to Mr. Godfrey for his success in organising this gathering which greatly exceeded in numbers the ordinary attendance at the lecture evenings of the Camera Club.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

A MEETING of the Council of this Fund was held at the Mansion House on Monday, Nov. 28th. In the unavoidable absence of the Lord Mayor, the Bishop of Southwark presided.

The report of the Council for the year ending Oct. 31st, 1898, stated that the twenty-sixth year of collecting this Fund had resulted, under the presidency of the Right Honourable Sir Horatio D. Davies, K.C.M.G., M.P., Lord Mayor, treasurer, in a total of £40,397 2*s.* 10*d.* The Rev. C. J. Ridgeway, M.A., of Christ Church, Lancaster Gate, headed the list of contributions with £1,367; the Rev. Canon Fleming, B.D., of St. Michael's, Chester-square, collected £1268; the Rev. J. Storrs, M.A., of St. Peter's, Eaton-square, £681; the Rev. Prebendary Eardley-Wilmot, M.A., of St. Jude's, South Kensington, £623; and the Rev. F. E. Ridgeway, D.D., of St. Peter's, Cranley Gardens, £501. Sir Saville Crossley, Bart., again most generously contributed £500, a like sum of £500 being sent by him to "The Prince of Wales's Hospital Fund"; £300 were received from A. G. P.; "Delta" sent his twentieth donation of £200; and Mr. George Herring sent £200.

On the motion of Sir HENRY BURDETT the following resolution passed in committee was added to the report.

Resolved unanimously:—

That before proceeding to business and having this day heard of the death of their much-esteemed colleague Sir Stuart Knill, Bart. the committee desire to record their regret and request the secretary to convey to Lady Knill and her family their sincere sympathy and condolence.

Alderman Sir H. D. DAVIES, the late Lord Mayor, was elected to fill a vacancy on the Council. June 11th was recommended as the date on which to hold Hospital Sunday in 1899. The annual general meeting of the constituents of the Fund was fixed for Monday, Dec. 12th.

PUBLIC VACCINATORS AND THE NEW VACCINATION ACT.

AN IMPORTANT MEETING OF PUBLIC VACCINATORS AT MALTON.

ON Wednesday afternoon last a meeting of public vaccinators was held at Malton to take into consideration the remuneration which should be granted in urban and rural districts. Dr. William Colby, J.P., of Malton, was voted to the chair and there were also present Mr. Malvin (Scarborough), Mr. Scott (Thornton Dale), Mr. Stuart (Great Ayton), Mr. J. T. R. Miller (Malton), Mr. W. S. Sprent (Slingsby), Mr. Comber (Pickering), Dr. Glen and Dr. Fulton (Middlesbrough), Mr. Norris (Sherburn), Dr. Gramshaw (Stillington), Mr. Hine (South Cave), Mr. Todd (Selby), Mr. Wetwan (Bridlington), Mr. Haworth (Filey), Dr. Hope (Hutton-Buscel), Dr. Dougall (Welburn), Dr. McCracken (Coxwold), and Dr. Adams (Rillington).

Mr. SPRENT, who had convened the meeting, said that the result of his communication had been to get replies from every union in the North and East Ridings, while of 127 public vaccinators in the two Ridings he had received replies from 118 entering into details on the points to be discussed at the meeting. In cases where there was no representation the unions were in perfect accord with the object of that meeting and gave him authority for their support in certain resolutions. 75 per cent. of the public vaccinators seemed to be very strongly in favour of a mileage fee and against the minimum fee laid down by the Local Government Board. The Aysgarth Union suggested that the 1*s.* fee should be 2*s.* 6*d.*, while they accepted the 5*s.* fee and suggested 1*s.* per mile after the first mile. At Helmsley and Pickering there was a feeling in favour of 1*s.* per mile. He had received private intimation that the committee of the Malton and Norton Boards were making an offer of 2*s.* instead of 1*s.* and 10*s.* instead of 5*s.*, to be inclusive of all claims and to cover what might be termed abortive visits. As far as he could gather this was the most generous offer made hitherto by any board of guardians in England. In the Marylebone Union the fees agreed upon were 2*s.* 6*d.* and 7*s.* 6*d.* In Leyburn the minimum fee was suggested with 1*s.* mileage; Middlesbrough was quite in accord with this meeting, as also was Easingwold.

A debate followed, in the course of which it was freely stated that the 5*s.* fee for successful vaccination at home was too small, that the 1*s.* fee for the statutory visit was ridiculous, and that some system of payment by mileage was the only fair one. Mr. SPRENT moved the following resolution:—

That the fees of public vaccinators should be 2*s.* 6*d.* and 5*s.* in urban districts and 2*s.* 6*d.* and 10*s.* 6*d.* in the rural districts, these fees to cover all duties.

He thought in this way a settlement could be arrived at. In rural districts the loss on long journeys would be equalised by the cases nearer home.

The motion was seconded by Dr. GRAMSHAW and carried unanimously.

PUBLIC VACCINATORS AT NANTWICH AND THEIR FEES.

At the last fortnightly meeting of the Nantwich Board of Guardians held on Saturday, Nov. 26th, a motion was brought forward to confirm certain minutes of the finance committee, which minutes stated that after hearing Mr. William Thomson and Mr. A. E. Vaughan as a deputation the board decided that the minimum fees under the new Act should be the scale of payment for the public vaccinators of the union.

Mr. THOMSON, who was present, regretted this decision but said that the matter could not be settled by the public vaccinators or by the guardians except by mutual agreement. The public vaccinators would not be satisfied with the report of the finance committee if it were adopted by the board and in that case they would be obliged to bring the matter before the Local Government Board to decide. Among the reasons why the public vaccinators thought that

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the minimum fees should be enlarged, Mr. Thomson enumerated the following. Public vaccinators, on receiving notice from the vaccination officers of any children who had not been vaccinated or whose parents had not received certificates of exemption from the magistrates, were required within fourteen days on the receipt of such notice to visit the homes of such children and to be prepared to vaccinate them where consent was given. The distance of the districts from the residence of the public vaccinators in the Nantwich Union averaged from four to six miles. His district extended on one side five miles and on the other side four miles. The public vaccinator, after at least twenty-four hours' notice to the parent, was required to visit the home of a child in order to vaccinate the child and the minimum fee for his visit would be 1*s.* according to the report of the finance committee; if sanctioned by the board of guardians and allowed to vaccinate a child he would receive a further fee of 5s. in the case of successful vaccination, but if unsuccessful he would receive nothing for his trouble except the visiting fee of 1*s.* Mr. Thomson then showed that the duties of the public vaccinators would be considerably altered under the new Act, so that it was reasonable to make fresh provision for their remuneration. The Act provided that a payment should be made of "not less" than 1*s.* for the visit and of "not less" than 5*s.* in respect of every primary successful vaccination or revaccination performed at the home of the person vaccinated. Only the minimum amount of each of the payments was fixed and, subject to this minimum, the precise sums to be paid might be settled by agreement between the guardians and the public vaccinators, to be approved by the Local Government Board. The inference was obvious, that whilst the minimum payments might be sufficient for small thickly populated districts they were not sufficient for large rural districts which were thinly inhabited. Hence the proposal that the payments should be increased according to distance.

A debate followed, in the course of which it was proposed to refer the question of the fees to be paid for public vaccination to the finance committee for further consideration. The motion to this effect was, however, lost, 15 votes being recorded against it and only 10 in its favour, the effect of which will be that the matter will now be brought before the Local Government Board by the public vaccinators.

PUBLIC VACCINATORS OF CARDIFF.

On Nov. 12th, it will be recollected, the Cardiff Board of Guardians passed a resolution by a majority of 14 to the following effect: "That the contracts with the present public vaccinators for town districts—viz., Messrs. T. G. Horder, Cardiff district; J. Treharne, Roath district; and John Evans, Canton district—be terminated by Jan. 1st and that a fresh contract be entered into for public vaccination in the town of Cardiff with one medical practitioner who shall devote the whole of his time to his duties under the contract." At a meeting of the board of guardians held on Nov. 26th the Rev. J. R. Buckley moved that this resolution be rescinded, a motion which after some discussion was carried by a majority of 23. Mr. Mildon then gave notice of a motion that the three public vaccinators be appointed for one year only under the new Act and that the whole matter should come up for reconsideration then, so that it is evident that the question has not reached a final settlement.

Without entering at present into the question as to whether it is better for a public vaccinator to be a practitioner who devotes the whole of his time to his vaccination duties or not it is quite evident that to dismiss three hard-working officials, some of whom have served the guardians for twenty years, at only six weeks' notice would have been monstrously unjust and we congratulate the Rev. Mr. Buckley on his success in carrying a motion which makes for fair play. We are glad to see also that a certain personal element in the discussion which at one time seemed likely to lead to unpleasantness was amicably set aside.

THE ROENTGEN SOCIETY.

A CONVERSAZIONE of the above society was held by invitation of the President and Mrs. Charles Mansell-Moullin on Nov. 21st at St Martin's Town-hall, London. There was a large collection of special apparatus and of Roentgen photographs, in the latter of which directions the chief medical interest naturally lay. Many varieties of Coils, Tubes, Localisers, Screens, Fluoroscopes, Stereoscopes, and Radiostereoscopes were to be seen, together with a Complete Hospital Outfit by Mr. Isenthal and an Apparatus for Testing the Grade of Rays by Professor Gladstone. The London Hospital was strongly represented by a complete Portable Outfit for Ward and General Purposes consisting of dark-room, operating-table, and all accessories, under the care of Dr. Hedley. Professor Silvanus Thompson demonstrated the action of the Tesla Oscillator upon Vacuum Tubes destitute of Electrodes. A rapidly alternating electric field was excited between two sheets of metal acting as poles of the oscillator, and any vacuum tube placed within that particular sphere of action exhibited luminous discharges. Professor Pepperdene lent a fine set of apparatus, including Rapid Mercury Breaks and Osmium and Osmium-iridium Tubes. Mr. Webster showed Mr. Herbert Jackson's Original Focus Tube and Mr. Wimshurst, F.R.S., one of his famous influence Machines. Mr. A. C. Swinton displayed a number of Experimental Tubes in which the size of the active point of generation of the rays could be accurately determined by a pin-hole Roentgen camera. Professor Gladstone, F.R.S., showed an apparatus for testing the grade of rays which attracted a good deal of attention. Among well-known makers who exhibited were Messrs. Apps, Watson Baker, Cox, Coxeter, Dean, Fuerst, Paxton, and Watson and Sons. A fine collection of Luminous Tubes was contributed by Messrs. J. F. Vezey, A. Cossar, and Gerard Smith. A feature of considerable attraction was the Wheatstone Stereoscope of Mr. Mackenzie Davidson, who showed thereby with wonderful exactness the position of bullets which had been embedded in bone at Dargai and other objects of interest.

A smaller hall was devoted to screen demonstrations with half-a-dozen large coils, and a side-room served as a screen room for demonstrations confined to medical visitors. The latter proved a great attraction. It was under the care of Mr. Frederick Fenton and Dr. Walsh, who showed several cases sent from the London Hospital, one a Wired Resection of the Elbow-joint and another a Congenital Absence of the Clavicles. On the whole it may be said that during the twelve months which have elapsed since the last conversazione of the society no great novelty has been introduced into the technique of Roentgen methods. At the same time the general standard of excellence has greatly advanced, especially in the definition of photographs—in other words, the conditions of exposure are becoming better known to individual workers. Of the many hundreds of photographs shown it will be possible to mention only a few of special excellence. Mr. J. H. Gardiner sent a collection of Radiographs of new and rare fishes from the interior of Africa showing the practical use of the rays in zoology. A good collection came from the London Hospital, taken by Mr. E. Harnack and Dr. Hedley. A number of surgical injuries were illustrated, as well as Thoracic Aneurysm, Charcot's Joint Disease, and other medical subjects. One photograph of a Pelvis showed the immensely magnified shadow of a Murphy's button, the large size whereof was due to the fact that when taken it was 6 in. from the sensitive plate and comparatively close to the focus tube. The photograph of Double Absence of Clavicles in a patient (shown in a screen room) was of great interest. Some remarkable Radiographs of Pelvic and other Bones from the Voltohm Company of Münich pointed to great future possibilities of the method. Mr. Ernest Payne contributed various fractures and diseases of bone, some of them displaying osseous texture with great clearness. Mr. Mackenzie Davidson sent some illustrations of his method of photographing renal calculus by fixing the abdomen. Mr. F. H Glew showed some excellent work, but in one case the close approach of the tube to a shoulder caused the record of the bones to have a magnified and somewhat distorted look. Mr. Poland exhibited a series of Injuries to Epiphyses, a good Ankylosed Knee, in which the direction of new cancellous lamellæ could be clearly traced, and a fine picture of a False Joint after Excision of the Hip. Dr. Hugh Walsham sent a number of Photographs of Pneumonia, Phthisis, Aneurysm, and other Morbid Conditions of the Chest. One of collapsed lung would repay careful study by the medical worker in the x rays. In another the lungs were shown to be clear and the diagnosis of phthisis suggested by the presence of a cough or by advanced disease in a brother was therefore dismissed. A great deal remains to be done in this field of medical diagnosis. Dr. Walsh showed a Hæmophilic Knee-joint in which the bones were enlarged and the whole joint was obscure when contrasted with the sound

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side. He also showed a Child's Thorax with Seven Ribs Fractured (healed), and Dr. G. Carpenter's case of Absent Clavicles in a child, aged eight years, a rare condition which happily compared with Dr. Schorstein's in the London Hospital exhibit. Dr. F. H. Low had some excellent examples, including one of the few cases of Renal Calculus located by a Radiograph. Mr. Frederick Fenton exhibited a fine collection for Mr. Montague. They included various plates of a Coin in its passage through the Alimentary Canal; Fractured Olecranon fixed by a Screw; two Renal Calculi (excellent); and a Patella the day before and the day after fracture. A most extensive set of Photographs illustrating almost every medical and surgical application of the rays came from Messrs. Allen and Hanburys. Mr. Noble Smith sent some good orthopædic subjects, including a full-length figure of Spinal Curvature built up in segments. Mr. Griffith Wilkin contributed a series showing how criminals might be identified by means of accurate measurements of bone made with the rays. Mr. Prosper Marsden had a good picture of a nine months Fœtus, and Mr. F. Glew one of another of five months. Other good pictures came from Dr. E. L. Mansel, Dr. G. M. Lowe (Lincoln), Mr. H. Coxeter, Dr. Wolfenden, Mr. Thomas Moore (hon. treasurer), Mr. Hall-Edwards, Mr. D. Boyd Keown, Dr. E. Greville, Dr. M. Barbour, and others. From the standpoint of pure artistic photography the honours were easily carried off by Messrs. Webster and Wilson Noble. The President may be congratulated on having brought together the finest collection of Roentgen photographs yet seen in this country.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 5632 births and 3748 deaths were registered during the week ending Nov. 26th. The annual rate of mortality in these towns, which had been 17·3 and 17·1 per 1000 in the two preceding weeks, rose again to 17·4 last week. In London the rate was 16·7 per 1000, while it averaged 17·9 in the thirty-two provincial towns. The lowest rates in these towns were 11·3 in Croydon, 12 2 in Huddersfield, 12·3 in Cardiff, and 12·6 in Plymouth; the highest rates were 21·6 in Gateshead, 22·3 in Liverpool, 24·9 in Derby, and 26·1 in Wolverhampton. The 3748 deaths included 364 which were referred to the principal zymotic diseases, against 412 and 371 in the two preceding weeks; of these 83 resulted from measles, 82 from "fever" (principally enteric), 81 from diphtheria, 51 from whooping-cough, 48 from diarrhœa, and 19 from scarlet fever. No death from any of these diseases was recorded last week in Birkenhead; in the other towns they caused the lowest death-rates in Croydon, Burnley, Huddersfield, and Bradford, and the highest rates in Manchester, Liverpool, Sheffield, Halifax, and Swansea. The greatest mortality from measles occurred in West Ham and Manchester; from whooping-cough in Cardiff, Derby, and Gateshead; and from "fever" in Halifax and Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 81 deaths from diphtheria included 38 in London, 10 in Leeds, 7 in Liverpool, 6 in Sheffield, 4 in Leicester, 3 in Portsmouth, and 3 in Swansea. No fatal case of small-pox was registered during the week under notice, either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 3162, against numbers increasing from 2178 to 3259 at the end of the thirteen preceding weeks; 234 new cases were admitted during the week, against 318, 340, and 319 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 248 and 285 in the two preceding weeks, declined again last week to 280, and were 145 below the corrected average. The causes of 55, or 1·5 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Manchester, Newcastle-upon-Tyne, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the three preceding weeks from 18·9 to 19·5 per 1000, further rose to 19·7 during the week ending Nov. 26th, and exceeded by 2·3 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 11·9 in Perth and 15·2 in Paisley to 21·3 in Edinburgh and 22·6 in Aberdeen. The 595 deaths in these towns included 25 which were referred to diarrhœa, 19 to whooping-cough, 11 to "fever" (principally enteric), 10 to measles, 5 to diphtheria, and 3 to scarlet fever. In all, 73 deaths resulted from these principal zymotic diseases, against 86 and 70 in the two preceding weeks. These 73 deaths were equal to an annual rate of 2·4 per 1000, which was 0·7 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 11 and 9 in the two preceding weeks, rose again to 19 last week, of which 12 occurred in Glasgow, 3 in Edinburgh, and 3 in Dundee. The deaths referred to different forms of "fever," which had declined from 18 to 14 in the three preceding weeks, further fell to 11 last week, of which 7 were recorded in Glasgow and 2 in Edinburgh. The 10 fatal cases of measles exceeded by 4 the number in the preceding week, and included 4 in Glasgow and 4 in Edinburgh. The deaths from diphtheria, which had been 11 in each of the two preceding weeks, declined to 5 last week, of which 3 occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 129 and 130 in the two preceding weeks, were 128 last week, and slightly exceeded the number in the corresponding period of last year. The causes of 39, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·0 and 27·7 per 1000 in the two preceding weeks, rose again to 31·0 during the week ending Nov. 26th. During the past four weeks the death-rate in the city has averaged 28·4 per 1000, the rate during the same period being 16·4 in London and 20·0 in Edinburgh. The 208 deaths registered in Dublin during the week under notice showed an increase of 22 upon the number in the preceding week, and included 17 which were referred to the principal zymotic diseases, against 22 and 9 in the two preceding weeks; of these, 6 resulted from diarrhœa, 5 from whooping-cough, 4 from scarlet fever, 2 from "fever," and not one either from small-pox, measles, or diphtheria. These 17 deaths were equal to an annual rate of 2·5 per 1000, the zymotic death-rate during the same period being 1·4 in London and 2·3 in Edinburgh. The deaths from whooping-cough, which had been 4 and 2 in the two preceding weeks, rose again to 5 last week. The 4 fatal cases of scarlet fever exceeded the number recorded in any week since April last. The deaths referred to different forms of "fever," which had been 5 and 4 in the two preceding weeks, further declined to 2 last week. The 208 deaths in Dublin last week included 29 of infants under one year of age and 62 of persons aged upwards of sixty years; the deaths of infants showed a marked further decline, while the deaths of elderly persons considerably exceeded those recorded in any recent week. Ten inquest cases and 7 deaths from violence were registered; and 76, or more than a third, of the deaths occurred in public institutions. The causes of 5, or more than 2 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON ALFRED HENRY MILLER has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet. The following qualified candidates for the Naval Medical Service have been appointed Surgeons in Her Majesty's Fleet:—John Boyan, William Henry Daw, Cyril Shepherd, Hugh Leigh Norris, Adrien Andrew Forrester, James Midleton Graham Swainson, John Stoddart, James Aquilon Forrest, Warren Guy Westcott, Francis John McKenna, Fairman Rackham Mann, William Wallace Keir, Edward Charles Sawdy, Percy Hooper Bannister, Richard Sidney

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Osborne, Mervyn Winfred Falkner, Edward Oliver Bamford Carbery, John Kimber Raymond, and Henry William Melville Lees.

The following appointments are announced:—Fleet-Surgeon Henry W. D. Walsh to the *Sans Pareil*. Staff-Surgeon Robert Hickson to the *Rupert*. Surgeons: Edward Haines to the *Camperdown;* Henry R. Gardner to the *Victory*, for Haslar Hospital; George A. S. Bell to the *Victory*, additional for the *Duke of Wellington;* Herbert H. Pearse to the *Defiance;* and Walter H. S. Stalkart to the *Vernon*. Surgeon and Agent: Charles J. Bernard at Skegness.

ROYAL ARMY MEDICAL CORPS.

Major Thompson embarks for Bombay. Major Hall takes over charge of the Station Hospital, Lydd. Lieutenants Mainprise and McCarthy are posted to Western Heights, Dover, for duty. Major Culling takes over charge of the Station Hospital, Western Heights, Dover, from Major Forman. Majors Woods and Matthias are proceeding to Malta in the transport *Jelunga*. Lieutenant Cowan is posted to the Station Hospital, Belfast, for duty. Major Dorman and Lieutenant Carter embark for service in India shortly.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Captain (temporary) Major Hardy, 2nd Infantry, Hyderabad Contingent, are placed temporarily at the disposal of the Government of Bombay for employment on plague duty. The services of Captain Lumann are placed temporarily at the disposal of the Foreign Department for employment on plague duty in Mysore. The services of Captain Close (Bengal) are replaced at the disposal of the North-Western Provinces and Oudh. The services of Major French (Bengal) are placed temporarily at the disposal of the Government of the North-Western Provinces and Oudh. Lieutenant-Colonel Murray (Bengal) is confirmed in the appointment of Professor of Surgery, Medical College, Calcutta, and *ex-officio* Surgeon to the College Hospital.

THE FEBRUARY COMPETITIVE EXAMINATION FOR THE ROYAL ARMY MEDICAL CORPS.

There will be 24 commissions to be competed for at the next examination for the Royal Army Medical Corps in February next, and we think that the young medical men who are physically fit for medical service, especially such of them as have a taste for travel and a military life, might do well to turn their attention to the advantages which that service offers. In the first place, the pay is regular and sufficient, with reasonable economy, to live upon; a medical officer has the society of officers and gentlemen, and if he is a cultured and agreeable man and fond of his profession he will be heartily welcomed and trusted and make many and lasting friendships; with ordinary care and attention he is sure of promotion and pension on retirement, and with energy, ability, and fair luck he will probably have opportunities for distinction and every chance of being selected for promotion to the upper ranks. As we have previously stated, it is only right and fair to say that Lord Lansdowne has done his best to put the Army Medical Service on a good footing and has, as far as is practicable and present circumstances admit, fulfilled the requirements of medical officers. Under these circumstances we are consequently of opinion that the newly instituted Royal Army Medical Corps merits the attention of young medical graduates and qualified men, and intending candidates would do well to make themselves acquainted beforehand with the regulations as to the physical and professional qualifications required.

THE ARMY MEDICAL RESERVE.

In the opinion of Surgeon-General J. B. Hamilton, the Army Medical Reserve "is a mere paper army, a mockery, a delusion, and a sham." This is plain speaking with a vengeance, but it is impossible to deny that there are grounds for the indictment. As at present constituted the Army Medical Reserve would not be of much use in a national emergency. Military medical work has to be learnt practically under good and experienced teachers. An untrained medical man would at first be more or less of an encumbrance in the field. Whilst he was engaged in learning his duty the force would suffer. No doubt the War Office authorities are perfectly well aware of what is required and will take the necessary steps to set matters right, but now that the needs of the Royal Army Medical Corps have been attended to it would be well if they were to exhibit a little extra energy in dealing with the Army Medical Reserve. It is not too much to say that under existing circumstances it would be impossible for the medical department of the Army to act efficiently in a considerable campaign such as lately seemed to be within a measurable distance.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

Lieutenant-General Sir George White, V.C., G.C.B., G.C.S.I., &c., Quartermaster-General to the Forces, will present the prizes to the members of the Volunteer Ambulance School of Instruction at St. Martin's Town Hall, Charing-cross, on Wednesday, Dec. 14th, when there will be the usual ladies' night. A large number of the ommanding officers of the Yeomanry and Volunteer Corps of the Home District have expressed their intention of being present. In addition to Sir George White, Lieutenant-General G. H. Moncrieff, Surgeon-General W. Taylor, C.B. (recently Principal Medical Officer to the Khartoum Expedition), Colonel V. Hatton, C.B., and the officers of the 1st Battalion the Grenadier Guards will be the guests of the school. Application for tickets for the Bohemian entertainment should be made to the Mess President, 8, Portman-street, W.

THE TITLES OF RETIRED MEDICAL OFFICERS.

There seems to be a general desire that the new titles conferred by the recent warrant for the constitution of the Royal Army Medical Corps should not be simply restricted to those retired medical officers who are liable to recall, but extended to all medical officers who retired when the compound titles were in force. With a view to the simplification of the titular nomenclature employed and to the inclusion, as far as practicable, of medical officers in one and the same corps—that of the Royal Army Medical Corps—the desire seems to be a reasonable one under the circumstances.

ARMY MEDICAL SERVICE VACANCIES IN DECEMBER.

Surgeon-General A. A. Gore vacates the appointment of Surgeon-General of Her Majesty's Forces and Principal Medical Officer in India. As already announced in THE LANCET Surgeon-General Gore will be succeeded in his appointment by Surgeon-General Taylor, C.B. Colonel F. B. Scott, R.A.M.C., M.D.Glasg., C.M.G., retires on Dec. 9th.

THE QUEEN AND THE WOUNDED SOLDIERS FROM THE SOUDAN.

It is stated that the Queen intends to visit Netley Hospital to-morrow (Saturday) to personally inquire into the cases of the wounded from the Soudan. The visit will be a private one and Her Majesty is expected to arrive at Netley by special train from Windsor at 3 P.M.

DEATHS IN THE SERVICES.

Surgeon-General A. Smith, C.B., honorary physician to the Queen, aged seventy-four years, at his residence, South Kensington, on Nov. 25th.

Correspondence.

"Audi alteram partem."

"FEES TO PUBLIC VACCINATORS."

To the Editors of THE LANCET.

SIRS,—I doubt whether it is fully realised yet what are the duties demanded from public vaccinators under the so-called birth registration fee which has been fixed at a minimum of 1*s.* by the Local Government Board. The wording of this provision is misleading at first sight. It is in no way analogous to the birth registration fee allowed to vaccination officers and is by the various exceptions reduced to such cases only as come under the care of the public vaccinator. For this fee let us see what will be required of us. It will entail at least three, and probably more, of the following duties. 1. Notice of visit and postage. 2. Visit by appointment offering vaccination. 3. Examination of child as to health, the presence of fever, disturbed bowels, and eruptions on any part of body being especially noticed. 4. Postponement certificate to vaccination officer and postage. 5. Inquiry regarding recent exposure to infectious diseases, or prevalence of erysipelas in neighbourhood. 6. Postponement

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certificate of such cases to vaccination officer and postage. 7. Notice to medical officer of health *re* existence of such and postage. 8. Examination of sanitary state of house, the complete duties of an inspector of nuisances thus devolving on us. 9. Postponement certificate to vaccination officer if insanitary state exists and postage. 10. Certificate (Form P.) to medical officer of health and postage. 11. Indefinite number of visits and certificates of postponement from any of above causes and postage thereof. [This is clearly intended by the title of the fee indicating that only one such fee is recoverable for each birth registered and by the wording of clause (2) in first schedule "Form of vaccination contract"—viz., "and if his offer is accepted the public vaccinator will thereupon *(or after such postponement if any as may in his opinion be necessary)* so vaccinate the child."] 12. Notice to vaccination officer of refusal of parents to allow vaccination and postage. 13. In case of insusceptibility 3 or 4 visits and 2 or 3 operations under aseptic precaution. 14. Certificate of insusceptibility to vaccination officer and postage. 15. Record in register of each unsuccessful operation.

Here, then, is what is involved in that innocent-looking item under birth registration fee, the minimum fee of which is 1*s*. I have also drawn out a list of possible duties required under the vaccination fee, but will not trouble you with the details. One which does not appear to be an improbable issue in these days is that of our having to meet an action lying against us for evil consequences resulting from real or supposed neglect in the performance of the operation or in the examination of the sanitary state of the house previously to our having vaccinated the child.

I am, Sirs, yours faithfully,

F. LORIMER HART,
Public Vaccinator for Lewisham.

Sydenham, S.E., Nov. 26th, 1898.

To the Editors of THE LANCET.

SIRS,—In reply to "Public Vaccinator's" letter in THE LANCET of Nov. 26th may I be allowed to say that the public vaccinators of the Bootle Union, Cumberland, met the guardians last Saturday. We had agreed beforehand to ask 1*s*. a mile over one mile and that this should be paid whether the child was vaccinated or not. I was called before the guardians first to put our wishes before them. After talking the question over for some time I was asked to leave the room and when called in again I was informed that they would only pay for successful vaccination and not mileage, as the Local Government Board would not allow any other arrangement, the clerk especially being very strong on the difficulty of checking the mileage and the disputes which it would cause. They then offered me 5*s*. per case for the urban portion of my district—size, 1311 acres; births, 1898, 356. For the rural portion—population, 1891, 2072, extending about five miles one way and eight miles the other, 11*s*.; for an outlying portion, about twelve to twenty miles from my house, population 279, 25*s*. I accepted this with the understanding that I might apply again in a year or two, and finding I could not get mileage from the urban district. Dr. Cass of Ravenglass, a small village, whose district runs about twelve miles—population in 1891, 2198—got 12*s*. 6*d*. per case; Dr. Hudson of Bootle, a similar village, with the workhouse, and extending about eight miles, with a population in 1891 of 1453, got 9*s*. 6*d*. per case, the registration fee of 1*s*. in all cases to be extra. I hope this information will be of some use to other public vaccinators, and if I can give them any further information I shall be glad to do so by letter or through THE LANCET, with your permission. I should like to have your opinion on the terms we obtained.

I am, Sirs, yours faithfully,

P. BUTLER STONEY,
Public Vaccinator, Millom District, Bootle Union, Cumberland.

Nov. 28th, 1898.

"A CASE OF DEATH FROM DIABETES MELLITUS, IN WHICH THAT DISEASE GAVE NO PREMONITORY SYMPTOMS."

To the Editors of THE LANCET.

SIRS,—A case is recorded in THE LANCET of Nov. 26th under the above heading which, I think, requires a passing word. As it stands it is calculated to give rise to disquietude of a somewhat grave nature. A woman, aged sixty-eight years, in a previously good state of health, suddenly fell down in a comatose condition, which persisted till death twenty-six hours afterwards. The urine and fæces were voided at the commencement of the attack and no urine was at first obtainable for examination. About twelve hours later urine was drawn off by catheter and found to be of specific gravity 1023 and to contain a slight trace of albumin and 16 per 1000 of sugar. From this it is concluded, notwithstanding the total absence of any symptom of diabetes previously, that the attack consisted, not of an apoplectic seizure, but of diabetic coma. The proposition to be confronted is that a person may go about without manifesting the slightest symptomatic indication of the existence of diabetes and then suddenly fall down in a state of profound coma rapidly passing on to a fatal termination. I venture to think that if urine had been obtainable at the commencement it would have been found to be free from sugar. The urine which was examined agreed with that of transient glycosuria instead of with that of true diabetes, and such glycosuria is a well-known accompaniment of an apoplectic seizure.

I am, Sirs, yours faithfully,

Grosvenor-street, W., Nov. 30th, 1898. F. W. PAVY.

THE "PRIVATE SURGEON."

To the Editors of THE LANCET.

SIRS,—Might I be allowed to suggest to the executives of the various "medical defence societies" that it is their duty when a person is charged with a criminal offence and describes himself as a medical man without a legal right to such a dignity to immediately correct these misstatements in the daily press? The frequency of such incidents is calculated to bring discredit on our profession.

I am, Sirs, yours faithfully,

HENRY DUTCH, M.D. BRUX., M.R.C.S. ENG.

Berkeley-street, W., Nov. 27th, 1898.

*** We have lately read the amusing details of a complicated case of roguery said by nearly all the lay accounts to have been committed by a "private surgeon." This is exactly a case in point.—ED. L.

"THE DIPLOMA IN SANITARY SCIENCE OF THE ROYAL UNIVERSITY OF IRELAND."

To the Editors of THE LANCET.

SIRS,—Every graduate or licentiate of the Irish universities or licensing bodies must sympathise with Dr. C. L. Birmingham and Dr. J. E. O'Connor in their objection to the style and title of the sanitary science diploma in the Royal University of Ireland. Surely by a "Diplomate in Sanitary Science" the general public would understand a sanitary inspector who was, perhaps, also a registered plumber or had got a certificate in—if I may use the expression—"hygienic first aid." A year ago the committee of the Conjoint Irish Colleges of Physicians and Surgeons changed the style and title of their "Diploma in State Medicine" to that of "Diploma in Public Health and State Medicine," and in the case of the Royal University of Ireland a similar step ought to be executed with equal facility. The examination for the Diploma in Public Health formerly held by the Royal College of Surgeons in Ireland is now replaced by that held by the Conjoint Colleges of Physicians and Surgeons and is certainly of an average standard with the majority of the Public Health examinations of the United Kingdom.

I am, Sirs, yours faithfully,

MAURICE MCELLIGOTT, L.R.C.P. & S. Irel.,
D.P.H. (Irish Conjoint).

Belper, Nov. 28th, 1898.

To the Editors of THE LANCET.

SIRS,—Dr. J. E. O'Connor is in error when he states in THE LANCET of Nov. 26th that "the Royal College of Surgeons is the only body in Ireland granting a D.P.H." For many years the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland have each granted such diplomas, and about eight years ago these two Colleges united in conferring a conjoint diploma in State medicine which appears to stand well in public estimation if we may judge

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by the number of applicants who present themselves, notwithstanding a very severe standard of examination. The University of Dublin also has for many years granted a similar diploma which has a very high reputation.

I am, Sirs, yours faithfully.

F. J. B. QUINLAN.

Lower Fitzwilliam-street, Dublin, Nov. 28th, 1898.

"THE STATE SERVICE IN ST. PAUL'S CATHEDRAL."

To the Editors of THE LANCET.

SIRS,—Your correspondent, Dr. Angus Campbell,[1] is troubled in his mind that he sees that bugbear of the medical profession "Advertisement" stalking at large at the yearly service of the Guild of St. Luke. Is it not time that someone asked the question, Why should medical men be so hypersensitive as to taboo any mention of their brethren in the public press? Can anything be more absurd to suppose that our profession is "lowered in the eyes of the intelligent" because a large number of medical men attend the service in state at St. Paul's? Where is the mysterious law written that is supposed to decree that medical men are to shun all publicity and live in seclusion, only to appear if accident discovers them? Why should not your correspondent also attack the guests at the Lord Mayor's banquet to the medical profession for "advertising," because their names appeared in the daily press? Is the Harveian lecturer guilty of "advertisement" because his name is quoted in the newspapers? Is the physician who speaks on some social subject at a public meeting "advertising" because the press report his remarks and do not ignore his name? The fact is there is a growing general interest in medical matters, and as a consequence in medical men. The public press therefore supplies any medical news that is likely to interest readers. I fail to see any cause for regret in this growing interest, but regard it rather as a subject for congratulation. If a surgeon performs successfully some new operation, why should not humanity be at once informed and the fortunate operator be publicly accorded the credit which is due to him? Why should acknowledgment be delayed as long as possible? Why should it be considered unfair to others that he should immediately gain thereby?

Not long ago we had the spectacle of a well-known politician accused of the infamy (?) of "advertising" because he mentioned in an interview that he was also a medical man and showed how hard he worked to do his double duty. Could anything be more preposterous than to accuse such a man of "advertising"? The question of signing bulletins is another point which has attracted adverse criticism. On what grounds does anyone object to the appended names? If the fact be an advertisement why should it be begrudged to those concerned by others less fortunate? Dr. Angus Campbell quotes the Scriptures against the Guild of St. Luke. Let its members retort with equal appropriateness from the gospel of their Patron Saint: "No man when he hath lighted a candle putteth it in a secret place, neither under a bushel, but on a candlestick, that they which come in may see the light."

I am, Sirs, yours faithfully,

Nov. 25th, 1898. FREDERIC VICARS, M.D. Brux.

"GOUT; ITS PATHOLOGY AND TREATMENT."

To the Editors of THE LANCET.

SIRS,—I should not ordinarily venture to make any comment on the extremely kind review of my book on "Gout; its Pathology and Treatment," published in your issue of Nov. 26th, were it not that in the interests of my professional brethren as well as of individuals suffering from gout I think it desirable to call attention to a sentence the context of which is not made quite clear in the review. In referring to the treatment of gout as dealt with in my book the reviewer states that "a mixture of 30 gr. of chloride of ammonium and 15 minims of dilute nitro-hydrochloric acid is also advisable." I think the inference drawn by a reader of the review would be that this is the treatment, or part of the treatment, of acute, subacute, or chronic gout as advised by me. Such, however, is not the case. The clause referred to is taken from p. 220 of the book and a reference to that page will show that such a medicine is specifically advised as part of the treatment of gouty glycosuria and gouty diabetes. I should not think of advising the use of such a mixture in the treatment of acute or subacute gout.

I am, Sirs, yours faithfully,

Weymouth-street, W., Nov. 28th, 1898. ARTHUR P. LUFF.

[1] THE LANCET, Nov. 12th, 1898, p. 1293.

"INJECTION OF SALINE SOLUTION IN SHOCK."

To the Editors of THE LANCET.

SIRS,—In my article on this subject published in THE LANCET of Nov. 26th, at the foot of the first column of page 1390 there occurs an error due to an oversight when correcting the proof. I appear as stating that "a teaspoonful of common salt to a pint of water makes 1 in 875"; it should have been 6 in 875, which is near enough to 6 in 1000 for all practical purposes.

I am, Sirs, yours faithfully,

Liverpool, Nov. 29th, 1898. W. THELWALL THOMAS.

THE CONSCIENTIOUS OBJECTOR.

To the Editors of THE LANCET.

SIRS,—May I suggest that magistrates should have some uniform tabulated list of questions for the above—something like the following, for instance: 1. How many cases and what authorities have you read on the subject? 2. How many cases of vaccination have you seen? 3. How many cases of small-pox have you seen? 4. On what ground have you formed your objections? 5. As you are such a conscientious man, have you any regard for the feelings of your neighbours who on good ground differ from you in opinion and have equally strong conscientious objections to small-pox? 6. Do you plead ignorance or obstinacy? The magistrates may thus possibly be able to satisfy themselves as to the conscience of the objector.

I am, Sirs, yours faithfully,

W. WOODWARD, M.D. St. And.,
Late Public Vaccinator to Worcester District.

Worcester, Nov. 11th, 1898.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—Dr. Beale says: "It would not be profitable just now to discuss what happened many millions of years ago," but as the question is, Can life proceed from non-living matter and forces? and as there was a time when this earth consisted of these only, one would like to know how Dr. Beale explains the first appearance of life upon it. Believers in abiogenesis give an explanation, whatever it may be worth; Dr. Beale gives none. One hopes that what at present is merely a belief may some day, by experiments similar to Dr. Bastian's, become a demonstrable truth; but until living things have been produced from non-living in the laboratory abiogenesis must remain a pure matter of *belief* and quite outside physiology—like belief in a resurrection of the body and a future life. All we can assert at present is that, however life and mind may have originated, we know them only as associated with matter and cannot conceive them as separate and independent.

Dr. Beale asserts that growth or increase in living things is always by addition to their centres, in non-living things to their superficies, so that the latest deposit is always innermost in the former and outermost in the latter, or, as we may say, growth is endogenous and exogenous respectively. But in such living things as trees we find one mode of growth or increase in endogens and the opposite in exogens. He also says: "There is no analogy between growth by aggregation or accretion and growth in living things." In the growth of Mount Vesuvius and that of an oak tree I see a great similarity; in the former the molten lava rises from base to apex, flows over the crater and down the mountain, giving it a new layer; in the oak tree the sap rises from base to apices and streams down its branches and stem, adding a new ring of wood every year to the outside of that of the previous year. Lastly, Dr. Beale

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says that the term evolution "must be restricted to the living world"; but would geologists, astronomers, and chemists admit this? could they not point to many evolutions of non-living things? and what is this earth of ours to-day but one vast evolution from chaos into cosmos?

I am, Sirs, yours faithfully,

D. HOOPER, M.B. Lond.

Trinity-square, S.E., Nov. 27th, 1898.

THE GENERAL MEDICAL COUNCIL: A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In your report in last week's issue of one of the inquiries heard before the General Medical Council it is stated that I said "that the practice [of the Council] had been ever to consider the neglect of patients, and neglect of patients came within Section 29 of the Medical Act." This is an error. My statement was to the contrary effect. What I stated to the General Council was that in my experience neglect of patients had *never* been considered by the Council as a subject matter of inquiry under the disciplinary jurisdiction established by Section 29 of the Medical Act, 1858. The point is an important one, and I venture therefore to ask you to insert this correction.

I am, Sirs, yours faithfully,

Temple, E.C., Nov. 28th, 1898. M. MUIR MACKENZIE.

THE WORKMEN'S COMPENSATION ACT AND CERTIFICATES FROM HOSPITALS.

To the Editors of THE LANCET.

SIRS,—The Board of Management of this hospital have desired me to inform you, as a matter of possible interest to your readers, that in reference to the new Workmen's Compensation Act they have, in accordance with the recommendation of the honorary medical staff, passed the following provisional resolution: "That a fee of 10*s.* 6*d.* be charged for filling up certificates in connexion with the new Act, and that for the present the hospital residents be responsible for the certificates and retain the fee."

I am, Sirs, yours faithfully,

POOLE GABBETT,

Nov. 26th, 1898. Secretary, Norfolk and Norwich Hospital.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

To the Editors of THE LANCET.

SIRS,—Will you allow me to draw the attention of all members of the profession to the advertisement relating to the College and Polyclinic in your issue of this week? The College will commence work towards the middle or end of January and the coöperation of all interested in making London the centre for post-graduate teaching of the empire is cordially invited. We have lagged too long behind other countries, but we now hope to make up for lost time.

I am, Sirs, yours faithfully,

c. 1st, 1898. J. FLETCHER LITTLE, M.B., Hon. Sec.

"THE REJECTIONS AT THE EXAMINATIONS FOR THE SERVICES."

To the Editors of THE LANCET.

SIRS,—May I ask why you include Aberdeen University in your list of the bodies whose candidates show a heavy percentage of failures at the above examinations when your own report of the proceedings of the General Medical Council shows that Aberdeen had three candidates and three commissions? I believe that my old *alma mater* has always had a fair amount of success at these examinations.

I am, Sirs, yours faithfully,

Nov. 26th, 1893. M.D. ABERD.

*** Peccavimus.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Commission.—A Pasteur Institute for Hyderabad.—The Decline in the Plague Epidemic.

THE composition of the Plague Commission as well as the objects for which it is said to have been appointed have given rise to considerable comment. A pertinent question was asked in one of the leading Indian papers, "How was it that in the estimation of the Secretary of State the whole body of the Indian Medical Service were disqualified from taking part into the inquiry into plague in India?" The explanation of this may be that an independent investigation for many reasons is most desirable. It is impossible that officers in the Indian Medical Service could approach the administrative side of the subject with anything like a free hand. Themselves officials, they might be calling in question the dicta of their superiors and advisers of the Government—a position impossible with any safety. What is to be wondered at is that the Indian Government has not long ere this appointed a commission or committee of investigation from the officers of the Indian Medical Service into the scientific aspects of the question. One may legitimately ask whether the appointment of this commission is the reply of the Government to a petition for a Plague Congress asked for by the Bombay Medical and Physical Society. It is known that the idea of the congress was very favourably received by the Government of Bombay, but of course such a congress would have no official weight and the Commission may to a certain extent take the place of it. The objects of the Commission have been previously reported, but the exact scope of the inquiry is not very clearly defined. If the purely scientific and medical aspects of plague are to be worked up then the two civilians are out of place, and there seems no reason why two officers in the Indian Medical Service should not have been appointed in their stead. It is remarkable that the services of the so-called Imperial bacteriologist should not have been utilised. For the post of secretary it might have been anticipated, that someone within the Bombay Presidency, where plague has almost exclusively raged, might have been selected. This officer, however, has been brought from Simla. If, on the other hand, the administrative work of the past is to be considered with a view to better order in the future, then bacteriologists are not required so much as men like Sir Richard Thorne, Dr. Parsons, and others, who are accustomed to deal with the investigation of outbreaks of infectious diseases. For experimental work pure and simple assistance could have been obtained from men in India. All the energies of the service seem to have been spent in disinfection, isolation, segregation, and quarantine, with little or no provision for original investigation. Even prophylactic inoculation has had very little encouragement, and although its value has been shown by late statistics the nature of the fluid used stands practically where it was nearly two years ago. If any spirit for investigation had been fostered we might have had by this time an attenuated culture instead of a mere dose of toxin, or we might perhaps have discovered a vaccine. It is not known how long the protection of prophylactic inoculation lasts and the fluid still remains very far from being properly standardised. Again, the incubation period of plague is still unknown and upon the duration of the infection there are very vague opinions and nothing has been definitely established. Towards the discovery of a curative serum, again, nothing apparently has been done.

The Nizam's Government has sanctioned the immediate construction of a complete and thoroughly equipped Pasteur Institute for Hyderabad. It will adjoin the hospital and medical school and will be available in about six months for patients.

The record of plague for the past week is 5907 cases and 4388 deaths. There has been a great increase at Satara but a decrease elsewhere. In Bombay the cases have declined to 92 and the reported deaths during the past week are only 66. In the Madras Presidency there were 22 seizures and 16 deaths and in the Mysore province 529 seizures and 332 deaths. Inoculation is still being carried on at Dharwar and Bangalore with great popularity and the results are reported to be striking.

Nov. 11th.

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MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Manchester Royal Infirmary.

DISCUSSION as to the future of the Manchester Royal Infirmary is now in full tide. A meeting of the trustees was held on Nov. 24th, under the presidency of Lord Derby, to consider the proposal of the board of management, set forth in a report dated June last, for rebuilding the infirmary on its present site. Mr. E. S. Heywood, chairman of the board, brought forward a motion which was seconded by Sir J. W. Maclure, approving the report and reaffirming the decision as to the rebuilding. An amendment was moved by Sir William Houldsworth referring the report back to the board with a request to them to reopen negotiations with the corporation with a view to the sale of the site on terms advantageous to the institution and ensuring the retention of an accident and out-patient department in the centre of the town. Arguments often heard before, sentiment and old associations—not to be esteemed too lightly—as well as convenience, were urged in favour of rebuilding the infirmary on the present site, although by many it is considered much too cramped even with the addition at great cost of some adjoining land which might possibly be obtained. For it must be remembered that practically the board are debarred from covering any more of the present ground although perhaps legally they might do so as the town insists on the unoccupied land being kept as an open space. In addition to want of room there is in the present position of the infirmary a disadvantage from the constant noise all day and almost all night from the surrounding streets. Sir William Houldsworth said that if it were decided to rebuild the infirmary on the present site the trustees would have to consider very carefully where the funds were to come from, whereas if the entire area were sold they would be provided with a fund for rebuilding elsewhere. Unhappily the trustees are in the Tantalus-like position of possessing a property valued twenty-three years ago at over £770,000 which cannot be utilised so long as the infirmary remains where it is. Some time ago it was proposed to sell part of the area to the corporation for £286,000, so that the streets around might be widened while the building was to be left much as it is at present; but that scheme, extravagant for the town and bad for the infirmary, was wisely abandoned. The idea was to retain the present building as a receiving house and out-patient department, but so large a building as the present one would not be required for that purpose. Putting aside sentiment, it seems to many that on the whole the interests of the infirmary—i.e., of the patients—would be best served by the sale of the whole area which would provide funds for an out-patients' department and a receiving house for emergencies of, say, 50 beds, in a convenient situation in the centre of the town but not on the present site, and also for a well-equipped hospital with a sufficient number of beds—say 500—in one of the suburbs. It would be fortunate for the town if it could obtain the infirmary area, as a site is badly wanted for a free library and art gallery, but the question of cost comes in. The corporation feel rather poor just now, having had to expend large sums of late which have not as yet begun to pay a sufficient return, so that if the infirmary square is to be bought some concession as to price may have to be made, provided only that the principle is maintained on which Sir Wm. Houldsworth thinks the sum ought to be assessed. He thinks it should be adequate to rebuild a larger and a complete infirmary; to provide an accident and out-patient department equipped in the best possible manner in the centre of the city but not on the present site, and to cover the maintenance of the two establishments. His amendment was carried, but a poll of the trustees was asked for by Dr. Renaud and it will be taken at a date not yet fixed, so the matter is still in abeyance. When the infirmary was first built, nearly 150 years ago, it was in the country and there would have been no objection on the part of anyone if it had occupied the whole of the present area. But the town grew up to and amœba-like surrounded it, and now vested rights are claimed for the citizens, which is a little hard on the infirmary. If they want the open space they ought to pay handsomely for it and not mulct the infirmary in costs for a state of things which they themselves have brought about. Should it be decided that negotiations with the corporation shall be renewed and a bargain should be arrived at the future site of the infirmary will become the subject of discussion.

The Danger of Flannelette.

The district coroner and the city coroner have frequently to hold inquests in and around Manchester on children who have died from burns sustained when wearing flannelette. The former held one at Levenshulme on Nov. 26th on the body of a child five years old whose nightdress caught fire. This was the third accident of the same kind investigated by him during the week, the child in each case wearing flannelette. It would perhaps be almost impossible to get the mothers in the humbler classes to adopt any of the modes of rendering flannelette fireproof, but there is no doubt that its widespread use has greatly increased the dangers of childhood.

Agricola on Milk.

A conference in connexion with the Macclesfield and District Chamber of Agriculture was held at Macclesfield on Nov. 26th to consider the clauses relating to the milk-supply and tuberculosis in the Additional Powers Bill of the Manchester Corporation. It was maintained by the chairman that tubercle in Manchester was due to insanitary conditions and not to milk. A resolution was passed unanimously expressing the opinion that the powers sought by the bill were unnecessary and unreasonable, and if put into effect would be harassing, vexatious, and ruinous to the farmer without being beneficial to the public. A second resolution urged that the Government should refuse to grant specific powers to individual corporations and that the subject, if dealt with at all, should be treated on a national basis. In the course of the discussion Dr. Niven's writings were subjected to some severe bucolic criticism which probably will not give that gentleman much uneasiness.

Nov. 29th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Finances of the Edinburgh Royal Infirmary.

AT the meeting of the board of the Edinburgh Royal Infirmary on Nov. 28th an interim report on the finances of the institution was laid on the table. It showed that the total ordinary income was £30,383, being a decrease of £236 on last year. The extraordinary income, which included donations and legacies of £100 and over, amounted to £21,237, while other extraordinary sums amounting to £59,727 were placed to the credit of the extension fund. The total ordinary expenditure for the year amounted to £41,835, being an increase of £800 over the preceding year. The average daily number of patients was 698. Dealing with extraordinary expenditure, the report stated that the sum amounted to £9185, as compared with £5528 in the previous year, the principal items being as follows: electric lighting, £5793; alterations on theatres, £747; new medical electrical department, £641; and interest to beneficiaries, &c., £734. The year's expenditure on the convalescent home amounted to £2228, as against £2184. The convener of the House Committee in explaining the accounts pointed out that the increase of £800 in expenditure over the previous year had been caused to a very large extent by the increase in wages which amounted to £625. They had expended a larger sum than usual in cleaning and putting the infirmary in order in view of the visit of the British Medical Association to Edinburgh. They had, however, to face the fact that the ordinary expenditure exceeded the ordinary income by £11,502, and this notwithstanding the fact that the infirmary had been carried on most economically. The extraordinary income for the year was £11,032 more than that of the previous year, but he impressed upon the board that this was a very fluctuating source of income. Referring to the total ordinary expenditure he held that the money had been well spent and that the infirmary had been conducted with great economy. During the year there had been on an average every night in the infirmary from 1000 to 1020 people, including patients, nurses, resident physicians and surgeons, and servants. If they compared the expenditure with the 1000 people in the house every night the cost for every person was 2*s.* 3½*d.* and that was not the cost merely of maintenance and feeding but it was the cost of the medical expenditure, which amounted to £4460, of all salaries and wages,

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of coal, lighting, taxes, and assessments, of outlay on building, furnishing, and of very many other expenses that they had to meet. If all that was taken into consideration the 2*s.* 3½*d.* was a very moderate sum indeed. In addition there were over 30,000 outdoor patients during the year and many of these attended two, three, or four times. He thought they would all agree with him that the infirmary had been economically and carefully managed and that they were indebted to their superintendent, Surgeon-Major-General Lithgow, for the care he had taken in making the money go as far as it possibly could.

Outbreak of Typhus Fever in Edinburgh.

Last week it was reported to the Public Health Committee of the Edinburgh Town Council that an outbreak of typhus fever had occurred in the Simon-square district and that upwards of 30 cases had been received into the City Hospital. It was stated that what had led to the spread of the disease had been the difficulty of recognising its earlier symptoms, the cases having been generally regarded as cases of typhoid fever, scarlet fever, rheumatic fever, and influenza. Six cases had been removed from the infirmary and one from the Deaconesses' Hospital. The exact origin of the outbreak had not been determined with certainty, but everything pointed to a "wake" having been the starting point.

Infectious Diseases in Edinburgh.

At this meeting of the Public Health Committee it was also reported that during the month of October 791 cases of infectious disease had been notified. These included 1 case of typhus fever, 29 of typhoid fever, 29 of diphtheria, 288 of scarlet fever, and 444 of measles. This was the highest number of cases of infectious disease in October for the past six years. There were 400 patients in the City Fever Hospital at the date of the report.

University of Edinburgh: Statistics of the October Examinations.

At the medical preliminary examination the results were as follows:—English, 51 passed, 45 failed; mathematics, 40 passed, 48 failed; Latin, 57 passed, 51 failed; Greek, 16 passed, 5 failed; French, 29 passed, 34 failed; German, 3 passed, 4 failed; Dutch, 1 failed; Armenian, 1 passed; Arabic, 1 passed; Russian, 1 passed. The following statistics show the number of first year students in the Faculty of Medicine: Passed preliminary at one university examination, 27; passed preliminary at two university examinations, 9; passed preliminary partly with outside exemptions, 10; passed preliminary entirely with outside exemptions, 64; exempted by degrees in arts or in science, 9; completed preliminary examination, 119, as against 129 in October, 1897; formerly completed preliminary or otherwise accounted for, 68; total first year students of medicine, 187. The number of female extra-academical graduation students of medicine was 67.

Dinner and Presentation to Dr. James B. Russell.

On the evening of Friday, Nov. 25th, the Society of Medical Officers of Health of Scotland entertained Dr. James B. Russell, the new medical member of the Local Government Board, to dinner in the Windsor Hotel, Glasgow. Dr. Campbell Munro, the President of the society, occupied the chair and Dr. J. C. McVail acted as croupier. After the usual loyal and patriotic toasts Dr. McVail proposed the health of the guest of the evening and spoke in high terms of Dr. Russell's signal services to public health, not merely in his own city of Glasgow but in Scotland generally, and not merely to his sanitary authority but to the public and the medical profession. The President then presented Dr. Russell with an address on parchment contained in a handsome silver casket suitably inscribed. Dr. Russell, in his reply, thanked the members for their good wishes and their beautiful gift, and expressed his great gratification in the knowledge that in entering on his new duties he possessed the friendship and confidence of his colleagues of the public health service.

Glasgow Western Infirmary.

The annual meeting of qualified contributors to the infirmary was held on Nov. 24th. The report referred to the recent improvements introduced in connexion with the infirmary, such as the installation of the electric light, a new dining-hall for the nurses, &c. The projected dispensary for out-patients which is expected to cost about £25,000 will be commenced shortly. A movement in favour of securing the presence of ladies on the board of management found expression at the meeting but was not pushed to a vote, the chairman undertaking on behalf of the managers to give the proposal full consideration.

Glasgow Health Department.

It is intimated that the official proposals for the new arrangements rendered necessary by the appointment of Dr. J. B. Russell to the Local Government Board include the nomination of Dr. A. K. Chalmers as medical officer of health at a salary of £700 per annum and the election of an assistant medical officer at £250 per annum. It is also proposed to confer on Dr. Russell an annuity of £250. The decision on all these points lies with the corporation and if rumour is correct will only be reached after some controversy. Dr. Russell's impending removal to Edinburgh has been utilised for the purpose of expressing appreciation of his work and influence in many quarters.

Curious Action against a Surgeon for Assault.

The medical officer of the prison of Glasgow, Mr. James Devon, is at present the defendant in a very unusual action. The pursuer is an engineer who during his compulsory residence in the prison was in the usual course vaccinated, or rather revaccinated, by the defendant. For this, which he claims was an assault, he now sues the medical officer and places the damage at the sum of £500. He also avers that no proper examination of the vaccine matter was made and that the instrument with which the operation was performed was not clean, having been previously used in the vaccination of other prisoners. The answer to these charges is that whilst revaccination was not compulsory the pursuer consented, or at least did not object, to the operation; that the vaccine matter was pure calf lymph; that there is no ground for the pursuer's statement of uncleanliness; and that the pursuer having suffered no injury is not entitled to compensation. The sheriff has heard witnesses in the case but has not yet given his decision.

The Case of Abraham Eastburn.

Abraham Eastburn who was convicted in the Glasgow Sheriff Court in July last and fined £20 for a contravention of the Medical Act has, as the result of his appeal to the Court of Session, secured the reversal of the conviction. The reasons for this judicial finding were that certain evidence in reference to the Medical Register had been improperly admitted and that the letters A.M.S. which the appellant placed after his name did not correspond to or suggest any registrable medical qualification.

Nov. 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin University Biological Association.

THE opening meeting of the Dublin University Biological Association which took place on Nov. 25th was attended by a large number of distinguished visitors who wished to hear the important communication of Dr. Haughton on the Present Position of the Roentgen Rays in Surgery and Medicine. He divided his subject into three portions, discussing, firstly, the cases in which a reasonable amount of success might be confidently expected; next, those in which the results must be judged with a due regard to the difficulties surrounding each; and, lastly, the influence of the Roentgen method of treatment on bacterial diseases and as a therapeutic agent useful in other directions. The lecture was fully illustrated with lantern slides and photographs, the pathological as well as the curative effects of the "rays" being fully dealt with. Mr. Mitchell Banks, of Liverpool, in proposing a vote of thanks to the lecturer mentioned that he had been permitted by the President of the association to exhibit some specimens of his own illustrative of the subject. He then gave a most interesting demonstration of views on the screen of skiagraphs showing various conditions of bone and the presence of different foreign bodies in the flesh, the last photograph shown being that of the hand of Lord Lister. Mr. Banks then gave a most valuable and careful criticism of what had really been done by the Roentgen rays in surgery and

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medicine and what might still be expected to be performed in the same direction and by improved means. The resolution was seconded by Sir William Stokes in an eloquent speech in which, abandoning all attempts at sceptical criticism, he described himself as a most enthusiastic believer in the good already done and likely still to be done for surgery and medicine by means of the "rays," concluding by the statement that he regarded the discovery as one of the most beneficent gifts that physical science had conferred upon them during his own time. Surgeon-General Preston and Major Battersby, recently the director of the Roentgen operations on the wounded in the Soudan, addressed the meeting.

Annual Dinner of the Ulster Medical Society.

The annual dinner of the Ulster Medical Society was held in Prince's Restaurant, Belfast, on Nov. 24th The President, Dr. Nelson, occupied the chair and over 60 gentlemen sat down to dinner. The following were the toasts:—"The Queen" and "The Prince and Princess of Wales and the other members of the Royal Family," proposed by the President; "The Lord Lieutenant and Prosperity to Ireland," proposed by Mr. Kerin and responded to by Brigade-Surgeon McFarland; "The Queen's College and Belfast Medical School," which was proposed by Dr. King Kerr and to which the President of the College (Dr. Hamilton), Professor Byers, and Dr. Calwell replied; "The British Medical Association," proposed by Dr. Lindsay and responded to by Dr. O'Neill, President of the North of Ireland Branch, and the Secretary, Dr. John Campbell; "The Army, Navy, and Reserve Forces," proposed by Professor Whitla and responded to by Colonel Moore, principal medical officer of the Belfast district. "The President of the Ulster Medical Society" was very happily proposed by his old friend Dr. Walton Browne, who spoke of their long and warm comradeship. Dr. Nelson (the President) having made a very feeling reply, in which he thanked the company for the warm way they had toasted his health, proposed "The Secretary" (Dr. Colville), to whom largely the success of the dinner was due. Dr. Colville made a humorous response. During the evening songs were given by Mr. W. G. Mackenzie and Dr. R. C. McCullagh, Dr. Mulholland playing the accompaniments; and Dr. Morrow recited an amusing piece, "The Motor Car." The dinner was in every way a success.

The Belfast Royal Hospital.

At the annual meeting of the subscribers of the Royal Hospital, held on Nov. 12th, it was reported that there had, during the year ended August 31st, been 2317 new intern cases, which, added to 142 remaining in the hospital from the previous year, make a total of 2459 intern patients treated during the twelve months. Of these, 976 were medical and 1483 surgical. There were 24,455 extern cases, and of these 19,185 were surgical and 3214 medical. The total number of cases (intern and extern) treated at the hospital was 26,914. There were 145 students during the winter and 119 during the summer session. It is interesting to note that though there is an increase of intern and extern cases the daily expenditure per head is not so high as last year, being 2*s.* 2½*d.* The sum of £350 15*s.* 10*d.* (including £10 10*s.* from the Lord Mayor) was received from the Hospital Saturday Committee, being an increase of £83 2*s.* 11*d.* over that of the preceding year. The church collections have been only £366 14*s.* 8*d.*, being £23 less than the preceding year. The working classes contributed £2534 1*s.* 11*d.*, which, with £50 given by the Tramway Company, makes a total of £2584 1*s.* 11*d.*, an increase of £69 0*s.* 10*d.* over last year. The receipts for the year from all sources amounted to £7891 10*s.* 1*d.* and the expenditure £8266 3*s.* 9*d.*, the expenditure thus exceeding the income by £374 13*s.* 8*d.* The year commenced with a debt of £349 1*s.* 11*d.* and ends with a deficit of £2104 12*s.* 11*d.* Special attention was drawn at the meeting to the falling off in the church collections, and it is hoped that the heads of the churches will in the future agree upon some particular day for a Hospital Sunday. A resolution was carried authorising the board of management to sell and dispose of securities representing the funded capital of the hospital, not exceeding £3000, toward meeting the present liabilities of the hospital.—At the quarterly meeting held on Nov. 28th, it having been stated in the report that the debt of the hospital on Oct. 31st was £3228 16*s.*, Mr. Pirrie (one of the partners of Harland and Wolff) made a suggestion, which was warmly received, for increasing the funds of the charity. He said that on Jan. 14th of the coming year the most important event in shipbuilding and marine engineering would take place—the launching from their premises in Queen's Island of the *Oceanic*, the largest and heaviest boat ever yet built or launched, a ship larger than the *Great Eastern* and twice the size of the Ark. This he looked upon as the most important event which had ever taken place in Belfast shipbuilding, and his proposal was that a considerable number of the tickets of admission to the Victoria Wharf (where a seated stand would be erected) should be given to the board of management of the Royal Hospital to dispose of at whatever price they could obtain for them to those who wished to witness the launch. Mr. Ismay, chairman of the White Star Line, had also given his consent to the proposal. A hearty vote of thanks was accorded to Mr. Ismay and Messrs. Harland and Wolff for their generous offer.

The Royal Victoria Hospital, Belfast.

It is understood that the Executive Committee will shortly appoint an architect for the new Royal Victoria Hospital, to be erected on the site given them in the Grosvenor-road, opposite the Dunville-park, by the city corporation.

The Belfast Maternity Hospital.

A sale of work in aid of this charity was opened on Nov. 22nd by the Marchioness of Dufferin and Ava. She hoped they would soon have a new hospital.

Nov. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Tuberculosis.

THE various methods of treatment suggested for tuberculosis formed the subject of discussion at the meeting of the Society of Biology held on Nov. 12th. MM. Richet and Héricourt communicated a report upon their researches into the action of various substances in tuberculosis. With regard to this matter they have made special researches into the action of turpentine. The drug was administered by inhalation, a method which they found better than injections, for by its use any operation is avoided and the drug is brought into direct contact with the microbes in the lungs and the dose can be carefully graduated until nearly a poisonous dose is reached. The animal experimented upon is placed in a box and made to inhale air charged with the vapour of turpentine in the proportion of 12 grammes of turpentine to 1200 litres of air, this being the quantity which passes through the box in one hour. The animals used underwent this treatment from March 7th to August 2nd for a space of one hour every four or five days. The drug was pushed so far as to sometimes bring on convulsions, but when this happened the animals were removed from the box. Three dogs previously inoculated with human tubercle were treated by this method and only 1 died, whilst out of 200 dogs which were inoculated during a period of eight years with human tubercle and which received no treatment not one lived more than seven months. At the same meeting of the society M. Sabrayés of Bordeaux communicated some results he had obtained as to the treatment of tuberculosis by tannin. Inoculation of a guinea-pig with an emulsion of Koch's bacillus and tannin produced virulent tuberculosis, the tannin having no action whatever when the mixture was injected at once, neither did it have any appreciable action when the emulsion was left *in vitro* for forty-six hours. The bacillus of tubercle is therefore resistant to tannin, and experiments go to show that it possesses equal powers of resistance to gallic acid. However, since it has been shown that tubercle bacilli after being submitted to the action of tannin lose the power of growing in artificial culture media, it is obvious that any experiments upon reputed remedies for tuberculosis ought to be substantiated by tests on a guinea-pig, or else the observer may consider that substances which in reality possess no antitoxic powers are of some service. M. Sabrayés, as the result of his experiments, considers that tannin has not the slightest effect in preventing the progress of tubercle in the guinea-pig, although it does not follow from this that it is equally inefficacious in the case of a human being.

The Fungus Parasite of Cancer.

At the same meeting of the Society of Biology M. Bra made known the results of his researches into the fungus parasite of cancer. For four years he has made cultures

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from 204 cases of new growth, such as carcinoma of the ovary, cancer of the rectum, carcinoma of the body of the uterus, epithelioma of the tongue, epithelioma of the cervix uteri, carcinoma of the parotid gland, sarcoma of the maxilla, and carcinoma of the breast. From all these cultures M. Bra has been able to isolate without fail a fungus bearing a strong resemblance to the family of the ascomycetes. It appears in the form of round cells which form spherules, which give rise to spores shaped like cylinders which in turn produce hyphæ. The spherules are yellow in colour, round or ovoid, possessing a hyaline membrane, and furnished with a pore through which the spores escape.

New Hospital Buildings.

A new block has been opened at the Hôpital St. Antoine. It is to be devoted to the *clinique médicale* of Professor Hayem. Dr. Brouardel, Dr. Napias, director of the Assistance Publique, and M. Liard, head of the Education Department, have officially taken over the buildings which they have handed over to Professor Hayem who gave an address on the occasion of his receiving them and who also drew up the plans for them. The new block looks on to the large gardens of the hospital. In it is realised the utmost perfection of modern hospital architecture and it possesses a theatre, examination halls, a large chemical laboratory, a laboratory for pathological anatomy, a bacteriological laboratory with three culture stoves and three autoclaves. There are also a lift, a room for electro-therapeutics, and rooms for gynæcology and other subjects. The building is admirably ventilated and lighted. The theatre may be darkened instantaneously for lantern shows and radiographic experiments, and galleries from the wards communicate directly with this theatre, so that patients may be at once transferred when necessary from the one to the other. —The town of Havre has just decided to build a new sanatorium for isolating and treating cases of tuberculosis, in accordance with the report of Dr. Sorel. The sanatorium will be in the form of a villa on the shore, and a committee composed of three members, in addition to M. Sorel, have gone to study the organisation and construction of the sanatoria on the banks of the Rhine.—A new hospital at Tunis has just been opened, and the head physician, Dr. Bari, has been awarded the Legion of Honour.

The late Dr. Grubi.

Dr. Grubi recently died in Paris at the age of eighty-nine years. Although a Hungarian by birth, he came very early in life to Paris, where he devoted himself to laboratory work. His microscopical researches led him amongst other discoveries to that of the special fungus of tinea tonsurans. He then gave up strictly scientific work and devoted himself entirely to his patients, among whom his success was brilliant. He had for patients many of the men of letters of the Second Empire, such as Alexandre Dumas and Heine. He was remarkable for his extraordinary prescriptions which made his *confrères* consider him as somewhat of a charlatan or else as a facile employer of suggestion. For instance, he would frequently prescribe to a patient to live in a room entirely green and to this end to have all the window-panes, the wall-paper, the curtains, and all the furniture entirely new. Sometimes, too, he would order his patients to wear nothing but clothes of a certain colour and a certain cut and only to walk in certain streets and on a certain side of the pavement; the position (*orientation*) of the bed was also rigidly laid down according to his ruling. As he suffered from morbus cordis he gave out a long time ago that he was perfectly determined to die alone and for many months he never quitted his room where he lived practically a prisoner, only being seen by one servant and locking the door whenever this man took his departure. Under these circumstances he died, and the police commissary, called by the servants, forced open the door and found that he had been dead for some days. Before he died he had taken care to blow out the candle.

Nov. 28th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A New Hypnotic.

A NEW hypnotic, to which the name of "heroïn" has been given, has been tried in the medical clinic of Professor Gerhardt in Berlin. According to a communication made by Dr. Strube to the *Berliner Klinische Wochenschrift* it is a product of the di-acetic ester of morphia, and it was discovered by Professor Dreser, chief of the chemical department of the Elberfeld Farben Fabriken. Large doses given to animals were followed by narcosis attended by disappearance of reflex movements and a diminished rate of respiration. In cats tetanic convulsions developed. Smaller doses reduced the number of respirations in a given time but caused an increase in the respiratory force. No paralysis of the respiratory centre was ever observed and the circulation was unaffected. The action of heroïn is very like that of codeia, but smaller doses of the former are required. It is especially useful in dyspnœa, where a decrease of the number of respirations is indicated. Heroïn is a fine white powder of slightly bitter taste; it is practically insoluble in water but its solubility is increased when a few drops of acetic acid are added. Dr. Strube administered it in cases of pulmonary affection and in tuberculosis in place of morphia and codeia, the dose being ½ centigramme (1/75 grain) given either in pills or in powder or even in the form of drops. The limits of 1 centigramme (⅓ grain) for a dose or 25 centigrammes (3¾ grains) in twenty-four hours were not exceeded. The effect was satisfactory in nearly every instance. The patients had no objection to the remedy; after taking ½ centigramme or 1 centigramme they fell asleep, their dyspnœa was relieved, and the cough was stopped. The action of the drug began in about half an hour and lasted from two to four hours, after which another dose was given the effect of which continued till next morning. In a few instances, however, heroïn proved useless and subcutaneous injections of morphine had to be resorted to. Dr. Strube also tried this substance for the relief of neuralgic pains. In two cases of brachial neuralgia and sciatica respectively a centigramme was injected subcutaneously but proved to be without any effect. No undesirable complications were observed and the respiration continued to be regular, the pulse was strong and full, and the temperature was not influenced.

Long Retention of a Pessary.

A remarkable case was lately under observation in the midwives training school in Strasburg. A woman, aged sixty-five years, came to the out-patients' department there to have a pessary removed which she had worn for five years. The pessary had not been withdrawn for the last two years and a midwife consulted by the patient before coming to the hospital had not been able to dislodge it. Dr. Frank, writing in the *Münchener Medicinische Wochenschrift*, stated that the woman could neither stand nor walk without severe pain. The pessary proved to be as it were imprisoned in the vagina, for it could be rotated but not moved to or fro. When it was pulled with some force there was profuse hæmorrhage from the cicatricial formations which retained it in its position. As these structures bled freely when incised and as the woman was rather weak Dr. Frank endeavoured to subdivide the pessary and remove it piecemeal. It was therefore cut up with a saw into portions which were withdrawn without difficulty and without any serious hæmorrhage. When the vagina was at last cleared it was ascertained that the prolapse for which the pessary had been applied was overcome by the extensive cicatrisation, so that the woman's self-neglect had turned out to her advantage.

The Prophylaxis of Puerperal Fever.

Professor Hofmeier of Würzburg has recommended the prophylactic disinfection of the vagina and cervix uteri at the beginning of labour in order to avoid puerperal complications. He uses for this purpose irrigations with solution of corrosive sublimate. To his already published list of 3000 cases treated in this way he now adds in the *Berliner Klinische Wochenschrift* a new series of 1000 cases treated in the obstetrical clinic of Würzburg. The results obtained by him were excellent. In the last series only 7 women died; there was no case of puerperal infection following normal delivery. In all the 4000 cases already published there were only 6 cases of puerperal infection, of which 4 may have arisen within the hospital. Among the last 1000 cases there were 106 in which the temperature rose to over 38° C. (100·4° F.) during the puerperium; in 50 of these 106 cases the elevation of temperature was not due to puerperal infection but to other causes—especially to mastitis. Among the remaining 56 cases there were 10 in which the temperature rose above 39° C. (102·2° F.) and in 2 cases a severe complication (septic

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endometritis and purulent phlebitis of the left thigh) developed. The sick-rate of all the 4000 women was 382 = 9·5 per cent.; 235 = 5·9 per cent. of the whole suffered from puerperal infection. Every case where there was a temperature of more than 38° C. during the puerperium, even when no other troubles developed, was registered as abnormal, and when it was more than 39° C. the case was regarded as being seriously complicated. Of the above 235 cases 138 = 3·4 per cent. belonged to the first and 97 = 2·4 per cent. to the second category. These results are, in Professor Hofmeier's opinion, due to the above-mentioned prophylactic disinfection of the genitals. The results are the more remarkable as the hygienic conditions of the Würzburg lying-in hospital are far from being satisfactory. The building is old, the wards are generally overcrowded, and instruction is given on a considerable scale both to students and to apprentice midwives. Other lying-in hospitals, that of Basle in Switzerland, for instance, show a much greater sick rate. Although the obstetrical clinic of that town is quite new and furnished according to modern requirements there were 170 cases of complications in 750 deliveries, being a sick rate of 22 per cent.

Nov. 28th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Organisation of the Army Medical Corps.

SURGEON-GENERAL STERNBERG makes the following statement:—"The number of medical officers allowed by law is inadequate in times of peace. The full number is 192 and there are at present 13 vacancies. The administration of the Surgeon-General's office and the Army Medical Museum requires 6; 11 are on duty at medical supply depôts and as chief surgeons of military departments; 1 is at the Soldiers' Home; 56 are at general hospitals, on hospital ships, and at garrisoned posts; 4 have been disabled since the commencement of the war by sickness; 5 are on duty as chief surgeons of army corps. This leaves 97 medical officers available for duty with troops on the field; 35 of these have been appointed brigade-surgeons of volunteers and are distributed among the various army corps. Since the declaration of war the loss by death has been 2; and 23 are now absent from duty on sick leave. This deficiency in regular medical officers has made it necessary to employ more than 650 contract surgeons. Besides these there have been appointed by the President 8 corps surgeons with the rank of lieutenant-colonel, 24 division surgeons with the rank of major, 86 brigade surgeons, also 3 medical officers for each of the regiments of the United States infantry, cavalry, and engineers. All voluntary regiments have 3 medical officers appointed by Governors of States." Referring to the alleged deficiency of medical officers with the Fifth Army Corps at Santiago he states that "this corps on leaving Tampa had with it 46 regular medical officers and 25 contract medical men, a total of 71, or over 4 per 1000 of the strength of the command, which was reported about 16,000. Additional medical assistance was sent by the hospital ship *Relief*, which arrived at Siboney on July 7th with 20 medical men on board. There was also some volunteer assistance by Dr. Lesser of the Red Cross Society, Dr. Rudberg of the Swedish navy, and several surgeons of the navy from ships in the vicinity." It was not the expectation of the medical department that every wounded man would receive the attention of a surgeon at once—no modern army makes such provision of medical assistance as this service would require—but attached to our army there is a corps of non-combatants known as the Hospital Corps, which is the organised and authorised Red Cross of the army. At the outbreak of the war we had 1800 hospital corps men in the service; at present there are more than 6000. These men wear a brassard upon the left arm bearing the red cross of the Geneva Convention.

Condemnation of Behring's Patent.

The Mississippi Valley Medical Association has set the seal of its condemnation upon the unethical conduct of Professor Behring and resolved that it is the duty of every member to renounce the use of the Behring serum; also, that the American manufacturers who purpose contesting the patent in the courts are entitled to the moral and substantial support of every American practitioner. It also resolved that an earnest appeal should be made to the members of the Commission on the Revision of our Trade Mark and Patent Laws, appointed by President McKinley, and their assistance invoked for the modification of existing laws and the suppression of prevailing abuses.

The Dry-Air Treatment of Tuberculosis.

The dry-air plan of treating pauper patients afflicted with tuberculosis of the lungs is to be given a trial at the new Charity Hospital, which was opened for the reception of patients at Dunning, near Chicago, on Nov. 1st. This institution is designed to put in practice the dry-air treatment for phthisis, and will accommodate 450 patients. The object is to reproduce as nearly as possible the climate of Arizona and New Mexico. The County Board of Commissioners appropriated $60,000 for this hospital and more recently $3000 more have been set aside to complete the work. Statistics show that one-eleventh of the deaths in Chicago is due to phthisis.

Statistics of Crime in the United States.

At the last meeting of the National Prison Association the President, Mr. Brockway, stated that present statistics show nothing of scientific value as to the increase or decrease of crime in the United States, and there are no accessible data by which a just international comparison of the amount of criminality can possibly be made. It is estimated that the number of convictions for crime of every grade annually in the United States is 720,000; the number of committals to prison is 260,000; and the number of prisoners in all gaols, including the juvenile prisons, is 85,000. A rough estimate is made of the cost of crime in the United States, which includes the expense of police and constabulary courts, trials, witnesses, &c., prison maintenance, and interest on investments for prison establishments, excluding from the calculation the amount of loss from the crimes themselves, and the footings exceed $50,000,000 of annual expenditures.

Nov. 18th.

Obituary.

ALEXANDER SMITH, C.B., M.D., L.R.C.S. EDIN.,

SURGEON-GENERAL ARMY (RETIRED); HONORARY PHYSICIAN TO THE QUEEN.

SURGEON-GENERAL ALEXANDER SMITH, who died on Nov. 25th at his residence in Alfred-place, South Kensington, was one of the numerous military medical officers whose record of service is long and distinguished. He was born about 1824, his parents being residents in Banffshire. Medicine having been selected as his profession he attended the usual classes and became qualified in 1846 as M.D. of Edinburgh University and Licentiate of the Royal College of Surgeons of Edinburgh. In the same year he entered the army as assistant surgeon and was promoted to be surgeon in January, 1855. His first war service was in the Crimea in 1855; he was present at the siege of Sebastopol, including the assault on the Redan on June 18th, and was awarded a medal with clasp and a Turkish medal. In 1866 he became surgeon-major and in April, 1876, he was promoted to be deputy-surgeon-general. In 1877-78 he accompanied the expedition against the Jowaki Afridis and received the medal. In the Afghan War of 1878-80 he was principal medical officer, being present in the engagements at Amed Kheyl and Urzu, near Ghazni. For his services in this campaign he was mentioned in despatches and received the C.B. as well as a medal and clasp. In 1881 he became surgeon-general and he retired in 1884. Surgeon-General Smith was married twice. His death was somewhat sudden. His daughter, however, was with him during his last moments, and at a coroner's inquest held on Nov. 29th the sad event was attributed to syncope.

WILLIAM AUGUSTUS BUCHAN, M.B., C.M. EDIN., L.S.A.

DR. W. A. BUCHAN died at his residence, 8, Crescent-place, Plymouth, on Nov. 26th, from pneumonia, after an illness of only a few days' duration. Dr. Buchan was the son of the late

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Captain D. A. Buchan, R.N. He received his medical education at Edinburgh University and the London Hospital and took the qualification of L.S.A. in 1881, graduating M.B., C.M. Edin., a year later. He then held the posts of house surgeon first at the Manchester Clinical Hospital for Women and Children and afterwards at the South Devon and East Cornwall Hospital, Plymouth. On resigning the latter appointment about twelve years ago he commenced private practice in Plymouth and soon became a well-known practitioner. He was appointed medical officer for the Provident Branch of the Plymouth Public Dispensary and certifying factory surgeon for the town. The deceased took a great interest in ambulance work and was an examiner for the St. John Ambulance Association. He also took much interest in Church work, being for some years churchwarden at St. Peter's Church and a member of the Guild of St. Luke. Dr. Buchan, who was only thirty-nine years of age at the time of his death, leaves a widow and two sons (one an infant). The news of his premature death has been received in Plymouth with much regret as he was very popular and was held in the highest esteem.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Louis Flatow, a well-known and greatly respected Berlin practitioner, from apoplexy at the age of sixty-four years. He was decorated with the Iron Cross during the Franco-German War, and since he settled in Berlin he had been indefatigable in his efforts to raise the position of the medical profession.—Dr. Turel, Professor of External Pathology in the Grenoble Medical School.—Dr. Karpinki, formerly Extraordinary Professor of Surgical Appliances in the Military Medical Academy, St. Petersburg.—Dr. A. Caselli, Professor of Clinical Surgery in the Genoa Medical School.—Dr. Lienhart, Professor of Medical Botany in Lille.

UNIVERSITY OF CAMBRIDGE.—Lord Kitchener of Khartoum received a warm ovation on his visit for the purpose of receiving the freedom of the borough and the honorary doctorate of the university on Nov. 24th. At the same congregation Mr. H. Smith, M.A., Trinity, Mr. E. Harrison, M.A., Clare, and Mr. J. W. W. Stephens, B.A., Caius, were admitted to the M.D. degree. Mr. S. V. Roe, B.A., Pembroke, was admitted to the degrees of M.B. and B.C.

THE MEDICAL, SURGICAL, AND HYGIENIC EXHIBITORS' ASSOCIATION.—The third annual dinner of this association was held at the Café Royal, Regent-street, on Saturday last, the President, Mr. F. Weiss, in the chair. The capital attendance and the encouraging tone of the speeches augur well for the future prosperity of this young association of those engaged in supplying the requirements of the medical profession. The last exhibition of the association was reported at length in THE LANCET of June 11th last.

PRESENTATION TO A MEDICAL MAN.—During a recent voyage of the steamer *Nineveh* from England to Australia a steerage passenger injured himself internally; an operation being immediately necessary Mr. E. M. Owens, L.R.C.P. Edin., M.R.C.S. Eng., surgeon to the steamer, operated in a gale with such success that the man walked off the ship three weeks later quite well. Chloroform was administered by the purser. At Messrs. Dalgety and Co.'s office, on Oct. 19th last, the captain of the steamer, on behalf of the owners, presented Mr. Owens with a travelling case and fittings as a memento of the voyage and of the single-handed operation in trying circumstances.

THE INSANITARY CONDITION OF MORRISTON.—On Nov. 22nd a deputation from Morriston appeared before the Water and Sewer Committee of the Swansea Town Council to complain of the insanitary condition of their neighbourhood. An extract from a sermon by the Vicar of Morriston bearing upon this matter was given in THE LANCET of Nov. 26th. The medical officer of health (Mr. E. Davies) reported that the whole district was in a lamentable condition and he recommended various improvements. A letter was read from the Local Government Board calling attention to the fact that there had been 96 fatal cases of diphtheria in the borough of Swansea and requesting a report from the medical officer of health upon the subject. It was decided to hold a special meeting to consider the report of the medical officer of health.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THURSDAY, NOV. 24TH.

THE proceedings of the first two days of the session of the Council were reported in last week's issue of THE LANCET. On the third day of the session there was again a full attendance of the members, Sir WILLIAM TURNER occupying the chair.

The Programme of Business.

Mr. HORSLEY said he desired to call attention to the fact that a friend of his, a registered medical practitioner, who attended the meeting of the Council as a member of the public in the public gallery, had asked to be supplied with a copy of the programme of business and had been refused. This was a novelty in practice, for hitherto persons in that capacity who attended the meetings of the Council had always been supplied with the programme. He had been so supplied himself before he was a member of the Council. He did not think the refusal was necessary, because the programme was more or less in the nature of a public document.

The PRESIDENT said that the programme of business was a confidential document and was marked with the word "confidential."

Mr. HORSLEY submitted that it ought not to be marked "confidential" and ought not to be so regarded.

The PRESIDENT assured Mr. Horsley that the matter had been considered repeatedly.

Mr. HORSLEY asked whether it had been discussed in the Council.

The PRESIDENT said he was not prepared to say that it had been actually discussed in the Council.

Mr. HORSLEY intimated that he would not pursue the matter further at present.

The Case of Frederic Mercer.

The Council then proceeded with the consideration of the case of Frederic Mercer, registered as of 141, Antill-road, E., Lic., Lic. Midwif. 1886, K. Q. Coll. Phys. Irel., who had been summoned to attend the Council to answer the following charge as formulated by the Council's solicitor:—

That, being a registered medical practitioner, he had in his employment an unqualified person named Bryden, whom he permitted and enabled to carry on medical practice and attend on and administer relief to patients as though he were duly qualified and whom he (Mercer) covered in the carrying on by him of a medical practice.

The name of the complainant is Mr. Alfred Henry Parker, of 142, Grove-road, Bethnal-green, registered as Lic. R. Coll. Phys. Edin. 1870, Lic. Soc. Apoth. Lond. 1870.

Mr. MERCER attended together with Mr. Bryden, his assistant, and Mr. Parker appeared to support his complaint.

Mr. MUIR MACKENZIE explained the circumstances of the case. Among other things he read the statutory declaration of Mr. Parker in which that gentleman said that on August 31st he received a message at his surgery to attend a midwifery case and when he went to the house he found Mr. Bryden in attendance on the patient. The child was born and Mr. Bryden was about to separate the cord. He said to the two women in attendance, "Oh, this is not my case," whereupon Mr. Bryden said, "No, this is Mr. Mercer's case." Mr. Parker afterwards met the husband who asked him, "Is it all right?" to which Mr. Parker replied, "Mr. Bryden was there." The husband said that he had called for Mr. Mercer and was told that he was engaged. Mr. Bryden offered to come to see his wife, but he (the husband) told him not to come as he knew it would be illegal. In a letter to the Registrar Mr. Mercer said that Mr. Bryden had attended the case under his personal supervision, he (Mr. Mercer) having visited the case three times on the day of the accouchement.

Mr. PARKER said he had no further legal proof to offer, but he would be glad to answer any questions addressed to him. In reply to members Mr. Parker said that Mr. Mercer and Mr. Bryden lived in the same house, the wife of the latter looking after the house. He had seen consultation papers issued by Mr. Mercer, on which the prices for midwifery and other matters were stated, and he asserted that the prices were cutting prices.

Dr. GLOVER: Do you understand the General Medical

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Council in its late resolution to have forbidden a registered practitioner to allow his unqualified assistant to attend to midwifery?

Mr. PARKER: Really, I don't know. I asked the question and I was told that I ought to understand the law and go away and obey it. In one of my letters I say that I was under the impression that the employment of an unqualified assistant in the conduct of midwifery or any capacity other than surgery attendance is illegal but I asked for information.

Dr. GLOVER: And your object in coming here is to get an answer to that question?

Mr. PARKER: Precisely.

Dr. GLOVER: Whether the employment of an unqualified assistant in midwifery cases is a contravention of the rule of the Council?

Mr. PARKER: Precisely. I have no animosity against Mr. Mercer; I only want to get at the truth.

Mr. MERCER then addressed the Council. He said that on the day in question he visited the patient three times. Between the second and the third visit the people sent round to his house for him and when he called he found that Mr. Bryden had got there before him by some three or five minutes. He never allowed Mr. Bryden to make a visit on his behalf in any case of illness and he could only regard this complaint as the result of jealousy. Mr. Bryden's duty was simply to mix up medicine for him and if he did anything else it was under his direct personal supervision. Mr. Bryden lived in the house with him and Mrs. Bryden acted as his housekeeper, receiving a regular salary for what she did. He had since seen the husband of the patient and he made no complaint whatever about Mr. Bryden. As to the papers Mr. Mercer had spoken about they were prescription papers given only to patients and of course retained by them in order that the medicine might be renewed if required. In reply to questions Mr. Mercer said that when Mr. Bryden went to the house he knew that he (Mr. Mercer) would be there in a very few minutes. He believed that although Mr. Bryden had not gone through any regular course of study he had during his lifetime attended between 4000 and 5000 cases of midwifery. He had often lost cases through Mr. Bryden not being able to attend them, and he might say that to meet his increasing business he had recently engaged a qualified assistant. Eight years ago he (Mr. Mercer) was assisted by the late Dr. Rich, and it was at that time that he made the acquaintance of Mr. Bryden, who was an unqualified assistant to Dr. Rich. When he first saw the case in question he told the people that it would be a natural labour and that he would just look in occasionally. He was the most successful man in the district and they did all sorts of things to him; he believed they would kill him if they could.

Mr. BRYDEN, examined by Mr. Mercer, said that he had never attended midwifery cases without him (Mr. Mercer) nor had he ever attended any case of illness except under his personal supervision. The husband knew perfectly well that he was unqualified, but he made no complaint about him going to see his wife. He certainly had no recollection of the husband objecting to him going. It was a first case and the husband was very nervous, and he told him that Mr. Mercer would not be long in appearing on the scene.

In reply to members of the Council Mr. BRYDEN said that 25 or 26 years ago he was a student at the South Hants Infirmary, Southampton. He had not passed any preliminary examination nor had he attended any lectures, but he went round the beds with the medical officer on duty, who used to put questions to the students, and he had read up certain works. He had been an unqualified assistant ever since leaving the hospital. He had never gone to a midwifery case before when Mr. Mercer was out and he should not have gone in this case unless he had known that Mr. Mercer was on the way. His duties with Mr. Mercer were simply to dispense and take messages. Prior to this new regulation of the General Medical Council he regularly attended midwifery cases.

The Council, after deliberating *in camerâ*, decided that the charge made against Mr. Mercer had not been proved to its satisfaction.

The Case of John Lloyd Whitmarsh.

In the case of John Lloyd Whitmarsh, registered as of 3, Alfred-place West, South Kensington, Lic. Soc. Apoth. Lond. 1871, Lic. R. Coll. Phys. Edin. 1872, who on Oct. 24th at the Central Criminal Court was convicted of the murder of Alice Bayly and sentenced to death, a sentence since reduced to a period of penal servitude, the Council directed the Registrar to remove the name from the Medical Register.

The Case of Frederick Alfred Fisher.

The Council then proceeded to the consideration of the case of Frederick Alfred Fisher, of 29, Colebrooke-row, Islington, registered as Mem. R. Coll. Surg. Eng. 1869, Lic. R. Coll. Phys. Edin. 1870, Lic. Soc. Apoth. Lond. 1871, who had been summoned to answer the following charge as formulated by the Council's solicitor:—

That, being a registered medical practitioner, he seeks to attract practice by public advertisements, containing invitations to persons to consult him professionally at an address named in the advertisements, which advertisements published by him or to the publication of which he was a party were themselves of a character grossly discreditable to a professional medical practitioner. The advertisements complained of were those of an institution called Nervous Debility Dispensary, City-road, E.C., and had been published in the advertisement columns of the *People* newspaper and elsewhere,

The complainants are the Incorporated Medical Practitioners' Association.

Mr. Fisher did not appear. The complainants were represented by Dr. Hugh Woods, President of the Incorporated Medical Practitioners' Association, with whom was Mr. R. R. More Madden.

Mr. MUIR MACKENZIE read the documents in the case, including a letter from Mr. Fisher stating that the writer was at a loss to understand why he should receive a summons from the General Medical Council, seeing that it was now twelve years ago since he had sent a letter to the Council requesting that his name should be taken off the Medical Register.

The PRESIDENT said that there was no record in the Council's office of the receipt or acknowledgment of any such letter. He directed the case to proceed.

Dr. WOODS thereupon said that "advertising" was becoming quite prevalent in the medical profession. Innumerable cases were being seen, to the disgrace of the profession. For example, they knew of a "doctor" who was going about carrying a black bag and pushing handbills advertising himself under the doors of all the houses in his locality. But the worst of it was that there was an increase in the practice of advertising in the newspapers, the announcements in these being almost always of an indecent character relating to private ailments and ailments of a delicate character. These tended to bring the medical profession into disrepute and the society to which he belonged was anxious to get the General Medical Council to follow the example of the Incorporated Law Society and the Stock Exchange, and declare that advertising by registered medical practitioners was infamous conduct in a professional respect. Advertising was no doubt profitable in a pecuniary sense, but as the respectable members of the profession considered it degrading to advertise and as the Council were opposed to it, those who got the profit were the less respectable members of the profession, and the Council should see that they should not have the opportunity to carry on their business unless on terms of equality.

Dr. MCVAIL asked if Dr. Woods was prepared to prove the identity of the Mr. Fisher of Colebrooke-row with the Mr. Fisher of the City-road.

Dr. WOODS thought the letter from Mr. Fisher contained the admission that the Mr. Fisher of Colebrooke-row was the Mr. Fisher of the City-road. He had made careful inquiries and found that the two addresses were those of the same man and he could bring a witness to prove it if it were necessary.

Mr. MUIR MACKENZIE said that in the absence of any dispute to the contrary the Council should consider that identity was proved.

The PRESIDENT thereupon invited Dr. Woods to proceed.

Dr. WOODS said it was high time that a definite understanding was come to as to whether advertising was to be allowed. If Mr. Fisher was not entitled to advertise, advertising as in his case should be declared infamous conduct.

The PRESIDENT said he did not think Dr. Woods need argue that matter, which was already settled so far as the General Medical Council and the Courts of Law were concerned.

Dr. WOODS said that there then could be no hardship in dealing with Mr. Fisher who, as shown by his letter, did not value the privilege of registration. In the circumstances he thought the Council need not hesitate in taking effective steps to stop the pernicious practice now complained of.

Some conversation followed and in the course of it

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Sir RICHARD THORNE again raised the question of identity He said there were at least two men of the name of Fisher on the Register and both of them had the same medical degrees.

Dr. LOMBE ATTHILL was not sure that identity had been established.

Dr. WOODS said that Dr. Cook, who had lived for many years at Islington, had informed him that the men of the two addresses were one and the same. Dr. Cook lived in the country and he (Dr. Woods) had thought it unnecessary to bring him to London to prove his statement to the Council direct. If, however, there was doubt of a serious nature he should ask that the case should be adjourned so that he might call evidence.

Dr. MCVAIL thought the Council could not go on without evidence of identity and he moved the adjournment of consideration of the case.

Dr. LOMBE ATTHILL seconded the motion, which after some further conversation was put to the vote and was declared to be lost on its being found that it was supported by only six of the members present.

The case thereupon proceeded on its merits.

In answer to Dr. MACALISTER Dr. WOODS explained that no communication whatever had been made by the complainants to the Mr. Fisher summoned previously to the proceedings being taken before the Council.

After the Council had deliberated in private for some time

The PRESIDENT announced that they judged Mr. Fisher guilty of infamous conduct in a professional respect and now directed the Registrar to erase his name from the Medical Register.

Mr. BROWN, as a member of the Incorporated Medical Practitioners' Association, took no part in the consideration of the case.

The Case of the late Mr. H. Kingsley Hunter.

Mr. BROWN said he rose as a matter of urgency to make a motion on this case, seeing that the Council's legal advisers were present. He and Mr. Horsley on the preceding night had had an opportunity of inspecting the papers in the case. The Hunter case——

The PRESIDENT asked whether the Council should not discuss this matter *in camerâ*.

Mr. BROWN thought that what he was going to say should be spoken in public as it was of great importance to the profession.

Sir CHRISTOPHER NIXON said that as the case was *sub judice* surely it should not be brought forward unless when the Council were *in camerâ*.

Dr. MACALISTER wanted to know whether Mr. Brown was to bring forward a motion.

Mr. BROWN replied that he was. The motion was on the programme of business.

Dr. MACALISTER said that the motion was on the programme for the following day.

The PRESIDENT said that in that case Mr. Brown would in the first instance have to get the permission of the Council to go on.

Mr. BROWN said he was not going into the merits of the case. He simply just now wished to know if Mr. Muir Mackenzie could inform the Council whether it was the fact that the Hunter case was to be taken within the next few days.

Mr. MUIR MACKENZIE replied that he had endeavoured to get the case brought forward before the present session of Council, but he had been unsuccessful, and it was now uncertain on what day the court would hear it. The appellant (Mr. Hunter) was dead, and some of the officers of the Court of Queen's Bench were of opinion—well, he hesitated to make the statement.

The PRESIDENT: We should hear it in private.

Mr. BROWN said he had now no objection that they should go *in camerâ*.

Strangers were thereupon ordered to withdraw and the Council discussed the matter in private during the remainder of the sitting.

FRIDAY, NOV. 25TH.

The Council resumed work to-day, Sir WILLIAM TURNER being in the chair.

The Case of James Havard Jones.

The entire sitting of the Council was occupied with the consideration of the case of James Havard Jones, registered as of Ogo, Llandyssil, Carmarthenshire, M.B., Mast. Surg. 1894, Univ. Edin., who had been summoned to answer the following charge as formulated by the Council's solicitor:—

That, being a registered medical practitioner, he covers an unqualified person named George Jenkins in the carrying on by such unqualified person of a medical practice, and permits and by his presence and assistance enables the said George Jenkins to carry on a medical practice and attend to administer relief to patients as though he were duly qualified.

The name of the complainant is Dr. John Jones, of Clydach, Swansea, registered as M.B., Bac. Surg. 1892, M.D. 1893, Univ. Lond., Mem. R. Coll. Surg. Eng. 1892, Lic. R. Coll. Phys. Lond. 1892.

Dr. Havard Jones attended with Mr. Lawson Walton, Q.C. instructed by Mr. David Randell, and Dr. John Jones attended without legal assistance.

Dr. JOHN JONES, presenting his case to the Council, said that Mr. Jenkins was a prominent man in the village of Clydach. He had resided there for nearly thirty years and as an unqualified assistant had been in the employment of successive medical men. He (Dr. John Jones) had employed him, but on Jan. 1st, 1898, in obedience to the new rule of the General Medical Council, he had dispensed with his services. On that day also he had forwarded to each of the works in the district a copy of the new rule along with a letter saying that owing to the rule he was not in a position to employ Mr. Jenkins any longer as an unqualified assistant. On receipt of his communication the employés at the various works met together and selected two of their number from each works to act as delegates. These delegates met together for the purpose of discussing the situation and deciding what steps should be taken, as there were a number of the men who had grown accustomed to the services of Mr. Jenkins and were not willing to see them dispensed with or Mr. Jenkins put on one side. Mr. Jenkins attended the meeting, but he (Dr. John Jones) declined to attend, though he agreed to meet representatives at his own house and discuss the situation with them there. He explained to these representatives that he had dispensed with the services of Mr. Jenkins because of the new rule of the General Medical Council, and in the end the meeting decided to offer the appointment of medical officer to Dr. Havard Jones on condition that he employed Mr. Jenkins. He (Dr. John Jones) resigned his appointment, but afterwards offered himself for reappointment. Dr. Havard Jones, a total stranger in the district, accepted the appointment, came to Clydach, and at once established himself in the house and surgery of Mr. Jenkins. Since then he had been constantly driving and walking about with Mr. Jenkins. Dr. John Jones proceeded to read to the Council a number of declarations. One made by himself referred to a visit he had seen Mr. Jenkins pay to a farmhouse where a woman had been confined two days before; another stated that Mr. Jenkins was almost every day to be seen in the company of Dr. Havard Jones; and a third dealt with a visit paid by Mr. Jenkins to the house of a man who was suffering from sore-throat.

Examined by Mr. LAWSON WALTON, Q.C., Dr. JOHN JONES said that Mr. Jenkins was in his employment from May, 1895, until Jan. 1st, 1898, and he had no other ground for dispensing with his services than the new resolution of the General Medical Council nor did he assign any other cause. He admitted that many of the miners considered Mr. Jenkins had been somewhat hardly used, but there was no capacity in which he (Dr. John Jones) could give him further employment.

Mr. RICHARD LLEWELYN DAVIES, chemist, Clydach, gave evidence as to seeing Mr. Jenkins walking and driving about with Dr. Havard Jones.

Mr. LAWSON WALTON, Q.C., then addressed the Council on behalf of Dr. Havard Jones. He submitted that Dr. John Jones had entirely failed to prove his charge of covering. He had brought no evidence to show that patients had been treated by Mr. Jenkins since the arrival of Dr. Havard Jones upon the scene. At the same time his client, jealous of his professional honour and reputation, desired to put his version of the case before the Council. Dr. Havard Jones was brought to the village knowing very little of the quarrel which had taken place. Practically all he knew was that there was a vacancy which either he or some other medical man would have to fill. Mr. Jenkins had been continuously employed in the village for thirty years by successive medical men. He was not concerned to defend his employment but it was the fact that Mr. Jenkins was a man of high character and he was greatly

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beloved by the people among whom he had worked during all these years. Suddenly and after Dr. John Jones had availed himself of Mr. Jenkins's services for over two years he discharged him. From the point of view of this Council it was a proper discharge, but from the point of view of these workmen it could easily be understood that Mr. Jenkins became an object of very great sympathy, and it was thought, rightly or wrongly, that Dr. John Jones had acted harshly in the matter. Mr. Jenkins had a house, the most important house in the village, and a surgery stocked with drugs; and he had also a horse and trap, and to be dismissed at once from his employment without any sort of compensation was a most serious matter for him. It was thought that Dr. John Jones might have attended the meeting of delegates and discussed the matter, because the men did not see why he should be unable to find some sort of legitimate employment for Mr. Jenkins. He did not, however, attend, and, further, he sent in his resignation. Various other medical men were approached and among them Dr. Havard Jones, who went to see the place. On his return home Dr. Havard Jones sent a telegram saying: "Cannot possibly accept appointment while Jenkins has anything to do with the practice," and he received a letter from Mr. Jenkins saying that he was ready to obey and respect the wish of the General Medical Council not to do anything as an assistant to any medical practitioner. Mr. Jenkins said further that he was in bad health and was going away to Scotland, but he would leave it to his daughter to arrange about the use of the house and surgery and the horse and trap. Dr. Havard Jones went to Mr. Jenkins's house and resided there because there was no other eligible house in the village, and for the use of it and the surgery and the horse and trap and his board he agreed with Mr. Jenkins's daughter to pay £15 per month. In accepting the appointment Dr. Havard Jones fettered himself in no way with regard to Mr. Jenkins, nor had he employed that gentleman in any capacity whatsoever. As to Dr. Havard Jones being seen walking and driving with Mr. Jenkins, there was no reason why the two men should not enjoy each other's company if they wished it. Mr. Jenkins certainly visited the farmhouse where there had been a confinement, but he did not visit as a medical man nor did he even see the patient. As to the sore-throat case, in that also he never saw the patient.

Dr. HAVARD JONES gave evidence to bear out the statement of his counsel. He insisted that he should never have accepted the appointment unless he had received the assurance that Mr. Jenkins would refrain from practice of any kind and he denied that he had entered into any agreement with the workmen to employ Mr. Jenkins. After his appointment he at once advertised for a qualified assistant, and though qualified assistants for such a village were ill to find he might say that he now had one.

Cross-examined by Dr. JOHN JONES witness said that he had never promised to find Mr. Jenkins a respectable livelihood.

In reply to members of the Council Dr. HAVARD JONES said that he had to pay the expenses of the stable-boy and the horse's food in addition to the £15 a month. When the workmen first approached him they asked whether he could do anything for Mr. Jenkins and he told them plainly that he could not employ him in any way. The value of the appointments, exclusive of private practice, was about £500 a year.

Mr. GEORGE JENKINS, examined by Mr. LAWSON WALTON, Q.C., denied that he had attended a single case since the appointment of Dr. Havard Jones or that he had made any agreement with that gentleman to assist him in any way with the practice.

Cross-examined by Dr. JOHN JONES witness said he informed the workmen that in consequence of the action of the General Medical Council he could no longer act as he had been doing.

In reply to members of the Council he said he was not sure about the valuation of his house, but he thought it was £12 10*s.*, and the horse and trap would be worth about £30. He had never attended any medical school, but he was apprenticed to a chemist in 1856. Under Dr. John Jones his income was about £200 a year, and he supposed the surgery and the horse and trap would cost him about £50 a year. The sum of £15 a month paid by Dr. Havard Jones went to his daughter, who looked after the house; he himself had never touched a penny of it. He denied that there was any truth in the suggestion that the workmen made it a condition with Dr. Havard Jones that he should employ him.

Mr. THOMAS EVANS, manager of one of the works, gave evidence to the effect that employment of Mr. Jenkins was not one of the conditions of the engagement of Dr. Havard Jones.

At this stage in the proceedings the Council adjourned.

SATURDAY, NOV. 26TH.

The Council met again to-day, Sir WILLIAM TURNER presiding.

The Case of James Havard Jones: Decision of the Council.

After approving the minutes of the previous sitting the Council proceeded *in camerâ* to consider its decision in the case of Dr. James Havard Jones. This matter occupied nearly an hour and a half, at the end of which time parties and strangers were readmitted and the President announced that the Council had come to the judgment that the charge against Dr. Havard Jones had not been proved to the satisfaction of the Council.

The Programme of Business.

Mr. HORSLEY asked leave as a matter of urgency to call attention to a breach of Standing Order, Chapter IV., Clause 7.

Sir JOHN BATTY TUKE protested against leave being given having regard to the important business which the Council had still to discuss.

Sir CHRISTOPHER NIXON said that while he regretted anything in the nature of waste of time they must be careful to see that their Standing Orders were not violated.

On a show of hands being taken 10 were held up for leave and 11 against it, but when the names and numbers were called for it was found that 12 members voted for leave and 11 voted against it.

Mr. HORSLEY accordingly proceeded with his notice. The Standing Order in question, he said, set forth that at the beginning of each session the Council should appoint a Business Committee whose duty it would be to prepare a daily programme of business containing subjects to be brought forward and notices of motion given by members and this programme would be printed and distributed from day to day as required. His only point was that he sent in to the Registrar a notice of motion for insertion in the programme, and while it was perfectly true that the subject to which the motion referred was brought up on an occasion when the Council was *in camerâ* he did not move that the Council go *in camerâ*, but, on the contrary, he desired that the subject should be discussed in public. He submitted that, in spite of what had occurred *in camerâ*, the motion should not be excluded from the programme of business but should have a place there.

Dr. MACALISTER, chairman of the Business Committee, said that the minutes of what was done *in camerâ* would be read when next they were *in camerâ*, and they would show that the motion had been adjourned without any action taken. In these circumstances he submitted it would have been most improper to put down the motion on the programme of business as if it had not been discussed.

After some slight discussion Mr. HORSLEY agreed not to press the matter.

Amendments in the Standing Orders.

The Council then went into committee to consider in detail a report prepared by the Executive Committee with regard to certain proposed alterations in the Standing Orders.

Sir DYCE DUCKWORTH said that the first recommendation in the report had reference to the work of committees and it proposed that the Standing Order on this subject should read:—

> Each committee shall once a year at least make a report upon the subject referred to it by the Council and each committee shall be convened at the discretion of its chairman.

He moved the adoption of this recommendation.

Mr. CARTER seconded the motion.

Mr. HORSLEY thought the summoning of a committee should not be left entirely in the hands of the chairman, but that it should be open to any two members to requisition a meeting.

Dr. MACALISTER expressed his preference for what the Executive Committee proposed.

Dr. BRUCE moved as an amendment to add the words "or upon the requisition of a majority of the committee," and Dr. LEECH seconded the amendment.

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Mr. HORSLEY said he was prepared to accept this amendment.

The amendment on being put to the committee was adopted by a large majority and the words accordingly were added to the Standing Order.

Sir DYCE DUCKWORTH said that the second recommendation of the Executive Committee had reference to the Penal Cases Committee. It had been proposed that this committee like the others should be appointed annually, but the Executive Committee had not seen their way to propose this, being of opinion that it was undesirable to make frequent changes in the composition of the Penal Cases Committee. What they recommended was that vacancies in this committee should be filled as they occurred and then on the nomination of the Branch Council to which the member retiring or ceasing to act had belonged, and he moved accordingly.

Mr. CARTER seconded the adoption of this recommendation.

Mr. HORSLEY suggested that this matter should be postponed by the committee until a decision had been come to on the following notice of motion which stood on the programme of business in the name of Mr. Brown, viz.:—

That Standing Order IX. as far as relates to the Penal Cases Committee be and is hereby repealed and that the duties hitherto discharged by the Penal Cases Committee be referred to the respective Branch Councils.

Dr. MACALISTER pointed out that postponement would not be necessary if Mr. Brown were allowed to move this now as an amendment to the recommendation of the Executive Committee.

The committee decided to adopt this course of procedure.

Mr. BROWN said that while he had not expected his motion to be reached to-day, and consequently was not prepared with all his material to support it, he would undertake to move it. He could not say that he was at all satisfied with the way penal cases were presented to the Council by the Penal Cases Committee. He felt sure that many cases were presented to the Council which ought never to have been presented. He had no need to go far back for an example, for the last case disposed of was a most typical example. They had spent nearly two days in examining a case which one of his colleagues said never ought to have been brought before the Council at all. It surely was a very serious thing that the Penal Cases Committee should have reported to the Council a case which, in the opinion of one of the members of the Council, ought never to have come before the Council in the shape in which it did. Let the Council bear in mind that in the matter of attendance fees this single case had cost about 250 guineas and he put it to the Council whether it was reasonable or in accordance with common sense that thirty gentlemen should sit there in judgment upon a case, first as jurymen and then as judges, when a much smaller and less expensive body could do it.

The PRESIDENT: Stop one moment. Are you really going to argue that all these penal cases should be disposed of by the respective Branch Councils?

Mr. BROWN said he was coming to that. The proposition he desired to put before them was that all penal cases should be referred to the Branch Councils in the respective divisions of the kingdom where they occurred, that the Branch Councils should have power to call evidence and examine witnesses, and having consulted with a legal assessor should recommend to the Council the course which should be taken. All the evidence upon which the recommendation was based would be printed and circulated amongst the members of the Council, and the result would be that instead of going into the whole case, and each member of the Council cross-examining the witnesses and so much time being taken up, he Council would be able to get through the whole of the penal work in one afternoon's sitting, even if there were a dozen cases. The economy of this arrangement would be appreciated when they considered the difference between a sitting of thirty members at 5 guineas each and one of fourteen members at 2 guineas each.

The PRESIDENT, interrupting Mr. Brown, said he thought he was bound to show that the Council would be fulfilling the statute by acting in the manner he proposed.

Mr. BROWN said that the proceedings of the Council showed that they could remit important duties to their committees, and with regard to the Branch Councils Section 6 of the Act of 1858 said that to these "shall be delegated such of the powers and duties vested in the Council as the Council may see fit other than the power to make representations to Her Majesty in Council as hereinafter mentioned." If members consulted the minutes of twenty-five or thirty years ago they would see that at that time most important work was done by the Branch Councils, whereas nowadays they did practically nothing, and he submitted that if what he now proposed were adopted the arrangements would prove beneficial to the Branch Councils and to the General Council and to all the other interests concerned.

Mr. HORSLEY, seconding the amendment, said that he had considered the whole situation and had come to the conclusion that it would be better if a number of these cases were disposed of by the Branch Councils. Any serious case would, of course, be passed on to the General Council.

The PRESIDENT: A Branch Council cannot come to a decision to put a man off the Register.

Mr. HORSLEY: Nor do I propose that it should. But I say "disposed of" certainly because cases are disposed of now by the Penal Cases Committee.

The PRESIDENT: Disposed of in the same sense of not being proceeded with.

Mr. HORSLEY said that if a complaint were made by a practitioner to this Council the complaint might only be discussed by a small committee and might not be proceeded with, and altogether he thought the work would be much better done by the Branch Councils than by this committee and for this reason he seconded the amendment.

The PRESIDENT said he desired to point out that Mr. Brown in his speech went very much beyond the terms of his amendment, which were that the existing Standing Order be repealed and that the duties hitherto discharged by the Penal Cases Committee be referred to the respective Branch Councils. An important point in Mr. Brown's speech was that the Branch Councils should be empowered to take evidence. Now the Penal Cases Committee took no evidence in the sense of summoning people, in that respect being unlike the Dental Committee. Supposing they had the power to do what Mr. Brown proposed he did not see how it would effect economy either of time or money, because the evidence must be heard by the General Council before it pronounced judgment.

Mr. BROWN submitted that under the section of the Act of 1858 to which he had referred the General Council had power to delegate its powers to the Branch Councils. He should be glad to hear the views of Mr. Muir Mackenzie on the subject.

Mr. MUIR MACKENZIE said that this question was very fully and exhaustively considered during the time the late Mr. Marshall was President of the Council. He had a large number of consultations with Mr. Marshall and he received his instructions to draw for submission to Parliament a Bill which would have carried out in effect the proposal which Mr. Brown now put forward. But an opinion given a very considerable number of years ago by the late Lord Chief Justice Coleridge when at the bar and Lord Justice Bowen when at the bar was to the effect that for the purpose of an inquiry under Section 29 of the Act of 1858 the whole of the evidence must be heard by the Council and no erasure of a name under that section would be valid unless all the evidence for and against was heard and judicially determined upon by the whole of the Council. By the whole of the Council of course he meant subject to any member being absent. There was, he believed, no power to delegate any part of the inquiry upon which the practitioner was standing his trial either to the Branch Councils or any committee. Of course, a preliminary sifting to see whether there was any case at all with which the Council should be troubled was quite a different thing, though that in itself was a matter to be dealt with with some care, because in two of the cases taken to courts of law in which the procedure of the Council was questioned one of the points in each case was that evidence of facts had been before members of the committee of the Council before the inquiry, and it was contended that this was contrary to natural justice. It was contended that all the evidence should be heard before one body, but of course when it was shown to the court that all that had happened was that there had been a preliminary sifting of the complaint to see whether it ought to go before the whole Council it was seen that that was quite a different thing. All he was speaking of was the question whether the Branch Councils could hear evidence and make a report upon which the General Council could act. That he was distinctly of opinion would render the inquiry invalid and the practitioner whose name was erased upon such an inquiry would be entitled to apply for a mandamus to have his name restored. He hoped that upon a question of this

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kind the Council would act with great caution, bearing in mind that when a practitioner's name was erased generally every kind of step in the procedure was vigilantly scrutinised to see if there had been any single false step by means of which the matter could be reviewed in a court of law, and it was a matter with which the Council might rest satisfied that all the attacks made upon the procedure had failed.

Mr. HORSLEY said he quite agreed that the whole evidence must be heard by the Council and all he contended was that this preliminary sifting would be more effectively and more economically done by the Branch Councils than by the Penal Cases Committee.

Dr. GLOVER believed that if Mr. Brown's proposal was adopted and the system of investigation by Branch Councils instituted it would tend to economy. Moreover, he thought it would be better if the facts submitted to the Penal Cases Committee were dealt with by men with local knowledge. For such reasons he was prepared to support the amendment.

Dr. BRUCE said he had all along been of opinion that the Branch Councils should have charge of penal cases arising in their respective districts. It was true that very few of these cases came from Ireland or from Scotland, but from whichever part of the United Kingdom they came it would be a great advantage to have them sifted by the Branch Councils.

Mr. BRUDENELL CARTER thought it was possible that some members of Council did not fully realise what it was that the Penal Cases Committee were called upon to do. That committee had no power to sift facts. All that was placed before them were statements of alleged misconduct on the part of practitioners, and all the committee could do was to see that these statements were substantiated by statutory declarations, and then if they disclosed an offence under the Medical Act to order the cases to go before the Council. As to whether an offence against the Medical Act was disclosed the committee were guided by the advice of Mr. Muir Mackenzie. If no offence was disclosed the committee, of course, would not be justified in carrying the case further. That outline of the committee's work showed that it was not the case that it had the sifting of facts. It seemed to him that it would be entirely inadvisable to call in the Branch Councils to do what two or three men in the exercise of common sense did very well. The Penal Cases Committee were valuable because of their knowledge of things which had come up in past years. They saved the Council a great deal of trouble and put it to no expense. He could not think that Mr. Brown had thought out the case he wished to make, and even if the suggested system were introduced he did not think it would lead in any instance to a result different from that which would be obtained under the present system.

Mr. BROWN, in replying on the discussion, explained that he had brought forward the proposal because he was not satisfied, as Mr. Carter was, that the Penal Cases Committee had done the work quite well. His impression was that the committee had failed to do the work quite well. According to his view they had blundered and thus had placed the Council in a position such as they must regret. From investigations which he had made it seemed to him that the committee did not know the facts of a case in which they had recommended prosecution.

Several members cried "No, no," and the PRESIDENT expressed the opinion that Mr. Brown was going beyond the limits of a reply.

Mr. BROWN reminded the Council that Mr. Carter had said "the committee did the work quite well." He (Mr. Brown) replied that they had blundered, that they had not sifted the facts. If he were not to be allowed to bring that point before the Council that day he certainly should take an opportunity of doing so on another day. He was not going to delegate his responsibility to a committee who had advised the Council in a way that they had not the courage to stand up and defend.

Dr. GLOVER rose to a point of order. He said that he was a member of the Penal Cases Committee and he was quite prepared to deal with the matter Mr. Brown was hinting at when it was raised in a proper form. He put it to Mr. Brown whether he thought it fair by innuendos and without giving names to say what he had said.

Mr. BROWN: Mr. Carter said the committee did the work quite well and I said they did not do so, and I gave the case alluded to as an instance that the committee had blundered.

Dr. GLOVER: I ask Mr. Brown if he thinks it fair by innuendo to make a charge against the Penal Cases Committee.

Mr. BROWN: You (Dr. Glover) know the case to which I refer. I do think it fair when a member of the Penal Cases Committee says that that committee has done its work quite well.

The amendment was then put to the vote. On a show of hands 5 voted for the amendment and 20 against it. The roll on Mr. Brown's demand was thereupon called, when 20 voted against it and 6 for it, 3 declining to vote. Mr. Brown's amendment accordingly was defeated.

The recommendation of the Executive Committee was then further discussed.

Mr. TOMES was of opinion that the recommendation was too drastic. There should, he said, be some means by which change in the membership should be secured other than that of filling vacancies when they occurred.

Mr. BROWN: Even the Executive Committee is elected every year.

Mr. HORSLEY: That is exactly the reason why I put my motion down on the paper. It does not follow that we do not reappoint them if they have done the work well. This suggestion of the Executive Committee assumes that there is going to be a wholesale change. That is not required or contemplated. All that is wanted is that the committee should be placed on the same footing as other committees of Council. There is no reason why the Penal Cases Committee should be a standing committee.

Mr. BRUDENELL CARTER moved the adjournment of the debate.

The Council resumed, and after an intimation by the PRESIDENT to the effect that many members had expressed the wish that the session should terminate on the Tuesday of the following week the Council adjourned.

MONDAY, NOV. 28TH.

The Council met again to-day, Sir WILLIAM TURNER being in the chair.

The Hunter Appeal Case.

Mr. HORSLEY asked that the first item on the programme be postponed in order that he might draw attention to the procedure of the Penal Cases Committee in relation to the Hunter appeal case now pending and move a resolution thereon.

On the question that leave be given to Mr. Horsley 6 members voted for leave and 21 against it. Leave was consequently refused.

Amendment of the Standing Orders.

The Council then went into committee and resumed the consideration of the report of the Executive Committee in regard to certain proposed amendments in the Standing Orders. When the consideration of the report was adjourned on Saturday Sir Dyce Duckworth had moved the adoption of the second recommendation of the committee, which was to this effect:—

That vacancies in the Penal Cases Committee should be filled as they occur and then on the nomination of the Branch Council to which the member retiring or ceasing to act has belonged.

Mr. BRUDENELL CARTER said that the Executive Committee in making this recommendation felt that the Penal Cases Committee differed in the nature of its functions from the other committees of the Council and that its constitution might therefore be different. It was a committee primarily formed to assist the President in his function of deciding whether a given complaint should or should not be submitted to the Council for its consideration. In the first instance the President merely invited a few of the members to confer with him upon questions of this kind and he finally asked the Council to appoint a small committee of members resident in London who could be easily brought together at any convenient time for this particular purpose. It seemed to him that the principle, undoubtedly sound, of changing the *personnel* of committees from time to time was not so applicable in this case.

Dr. BRUCE said he saw no reason why the principle should not apply to the Penal Cases Committee, and he felt certain that in working it out there would be no disposition on the part of the Council to make very frequent changes.

Sir RICHARD THORNE objected to the idea of appointing men for life to any committee.

Mr. TOMES said that if they passed this recommendation they would only be able to get a change upon the committee by indicting one or more of the members.

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Dr. GLOVER intimated that he did not see his way to support this recommendation.

Sir RICHARD THORNE said he would move as an amendment:

That the Penal Cases Committee be elected annually in May in the same manner as the Executive Committee.

Dr. ATTHILL seconded this amendment.

This amendment was at once adopted and became the resolution of the committee.

Sir DYCE DUCKWORTH moved the adoption of the third recommendation, which in effect was that the Penal Cases Committee should meet four times a year if necessary or oftener if, in the opinion of the President, the occasion arose.

This recommendation was agreed to after a short debate.

The fourth recommendation, which had reference to the preparation and approval of abstracts of complaints, was also agreed to.

Sir DYCE DUCKWORTH moved the adoption of the fifth recommendation, but after some debate it was agreed to refer the subject matter back to the committee for further consideration.

The sixth recommendation, dealing with the procedure with regard to the service of the notice upon the accused practitioner, was agreed to.

Sir DYCE DUCKWORTH said that the seventh recommendation referred to the proposal of Mr. Horsley that "when any answer, evidence, or statement is forwarded, or application made by the accused person between the date of the issue of the notice and the date named for the hearing of the charge, copies thereof shall be immediately sent by the Registrar to each member of the Penal Cases Committee." The Executive Committee recommended that it was unnecessary to adopt the proposal seeing that the Standing Order provided that all members of the Council should receive not less than three days before the meeting copies of the documents in the penal cases to be brought before the Council. He moved the adoption of this recommendation.

Mr. HORSLEY moved as an amendment the proposal which Sir Dyce Duckworth had read. He considered it of vital importance that the committee should be possessed of all the documents sent to the office before the case came on for trial.

Mr. BROWN seconded the amendment.

Dr. GLOVER supported the amendment, saying that he did not see why the Penal Cases Committee should be deprived of prompt delivery of any new documents.

Sir CHRISTOPHER NIXON said that the delivery of fresh documents might enable the committee to withdraw the charge and thus save the time of the Council.

Mr. CARTER doubted whether the committee possessed power to withdraw the charge.

Dr. MACALISTER said he objected to the idea of the committee behind the back of the Council withdrawing a charge.

The PRESIDENT said he doubted whether the Council would give the committee power to withdraw a charge after the summons had been issued.

On a vote being taken the amendment was rejected and the recommendation of the committee adopted. The Council also adopted the eighth recommendation, which referred to the same subject.

Sir DYCE DUCKWORTH asked the Council to adopt the ninth recommendation, the effect of which was to empower the President if he thought fit to instruct the Registrar to ask the accused person for any explanation he might have to offer.

The PRESIDENT explained that he had found in practice that it was very desirable he should be invested with this power. It might very well happen that the accused person had a perfectly valid explanation to offer.

The recommendation having been adopted the Council resumed and Dr. MACALISTER brought up a report of the proceedings in committee of the whole Council.

It was agreed that the alterations made in the Standing Orders be adopted by the Council provided that Mr. Muir Mackenzie, as legal adviser, raised no objection to them of a legal character.

The Direct Representatives.

Mr. BROWN said that for several days there had appeared against his name in the programme of business two notices of motion to the effect that the time had come for giving the Scotch and the Irish practitioners power to elect each an additional Direct Representative. It had been suggested to him that these motions would come better from Scotch and Irish members and therefore he desired to withdraw them.

The PRESIDENT asked Mr. Brown whether he also wished to withdraw his motion with regard to the English practitioners.

Mr. BROWN: Oh, no.

Preliminary Examinations: an Important Report.

The Council next, on the formal motion of Sir JOHN BATTY TUKE, seconded by Dr. MACALISTER, received a report by the Education Committee on the revision of the list of recognised preliminary examinations in general education.

The report contained the following passages:—

Under instructions from the Council the Education Committee have during the past year been engaged in the revision of the list of recognised preliminary examinations, with a view to removing from it on the 1st day of January, 1900, those examinations which are of a lower standard than that prescribed by the Council in its resolution of Nov. 29th, 1897. They have, in reply to their inquiries, received a large amount of information from bodies and persons concerned and have also had to consider a number of other communications referred to them by direction of the President. It will be convenient to deal with these in some detail before proceeding to state the final conclusions of the committee in regard to them and to the subject in general.

The more important of the communications are:—

1. A "statement respecting the standard of the College of Preceptors' Second-class Examinations as compared with that of the University Junior Local Examinations."
2. A letter on the "Conjoint Examinations in Ireland by the Royal College of Physicians and Royal College of Surgeons," with accompanying papers sent by the secretary.
3. Letters from Dr. Alexander Mackay sent with other papers on behalf of the Educational Institute of Scotland.
4. Communications from the Secretary of State for the Colonies in reference to the recognition of the examinations, &c., of the University of Malta.
5. Certain other communications from Indian and Colonial universities and educational bodies in reference to their examinations.

I.—The Council of the College of Preceptors has drawn up and circulated for the information of the General Medical Council an elaborate "statement respecting the standard of the College of Preceptors' Second-class Examinations as compared with that of the University Junior Local Examinations." The Education Committee have given the statement their best consideration and have had before them a large body of evidence on the questions which it raises.

The committee have already reported to the Council their conclusion that the examination in question is not of the standard desired by the Council, and that in their opinion it should be removed from the list as from Jan. 1st, 1900.

The considerations which have confirmed the committee in their conclusion are the following:—

1. During the years 1892-98 returns have been made to the Council, on behalf of the Examining Boards for the Navy, Army, and Indian Medical Services, respecting those candidates for appointments who showed deficiency in general education. In the case of ten of these candidates the particulars given were insufficient to enable the preliminary examination to be traced; in the case of 29 the examination passed by the candidate was one of those at present recognised by the Council. In no less than 14 instances the examination by which the candidate had gained admission to the Students' Register was that of the College of Preceptors, while the remaining 15 candidates had qualified by one or other of *nine* of the recognised examinations. There were, in addition, 16 candidates who had qualified for registration by means of the examinations of the Society of Apothecaries or the Royal College of Surgeons in Ireland, but the examinations have now for some years been discontinued.

It thus appears that of all the examinations now on the Council's list the College of Preceptors' is that which most frequently gives rise to animadversion on the part of the examining boards and that the college contributes to the returns of comparative failure almost as many instances as all the other educational bodies together. It is also worthy of note that the returns report no single instance of deficiency in general education on the part of a student registered by means of a university local examination.

2. The committee have had before them the results of a careful investigation of the regulations, the papers of questions, and the answers of candidates who obtained pass marks in the College of Preceptors' examination and the conditions under which such candidates failed or succeeded in obtaining qualifying certificates. All the points on which a conclusion regarding the actual standard and quality of the examination should be based were taken into account. The result was a conviction that on its merits the examination was not sufficient to ensure that all who passed it had reached the standard of general knowledge and intellectual training desired by the Council.

3. The committee on a previous occasion expressed their thanks to the authorities of the College of Preceptors for the facilities accorded them in making their inquiries. Similar acknowledgments are due to the English university bodies controlling the local examinations for granting the committee permission to inspect the answers of candidates who are certified as having satisfied the requirements of the Council. These bodies have, moreover, placed at the disposal of the committee for its information full details as to their standards, methods, and statistics, and these, which are communicated confidentially, together with the published reports, have enabled the committee to form an estimate of the relative efficiency of the examination with which the College of Preceptors desire theirs to be compared.

The facts thus laid before the committee leave them no room for doubt (*a*) that the pass-standards of the College of Preceptors are in many respects inferior to those of the other junior examinations in England; (*b*) that even when measured by the ratio of passes to rejections, *among candidates who offer the subjects required by the Council*, the tests of the college are not so stringent; (*c*) that the average age of

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the candidates for the college examinations is appreciably less than that of the candidates for the local examinations who offer the subjects required by the Council; (d) that the papers set by the college are in general of a more elementary character.

4. The committee have thought it desirable, in view of the contentions embodied in the statement of the college, to ascertain the views of experienced head-masters in various parts of England who appeared in the published lists as sending in pupils both to the college and to the university local examinations. The names of the head-masters were taken from the College of Preceptors' list in alphabetical order and the grammar and other secondary schools under their charge were so chosen as to be widely distributed throughout the country. A circular letter was issued inviting answers to the following questions:—

(1) In what order would you place the junior locals and the College of Preceptors' second class as regards standard of difficulty, comprehensiveness, time required for preparation, and facility of obtaining distinction?

(2) What is the average age and school-standing (form, class, or the like) of your candidates for the two classes of examinations respectively?

(3) Which do you consider the better and more satisfactory test of a good school education in mathematics, English, Latin, and modern languages?

Some fifty replies were received to about seventy circulars sent out. A few head-masters excused themselves from answering on the ground of insufficient experience of one or other examination; but forty-one sent more or less full answers. The great majority of the head-masters have no hesitation in pronouncing the College of Preceptors' second-class examination to be inferior in standard to the university locals; a small number regard the examinations as "on a par," with more or less of reservation; and only one or two declare it to be superior. As is natural, the answers differ as to details, but the general result is to the mind of the committee conclusive in regard to the point at issue.

5. The answers to the question regarding the age and school-standing of candidates for the respective examinations are less full and complete and contain particulars which might lead to the identification of the schools. But except in the case of "older and duller boys," who take the College of Preceptors' examination because they have failed in or are thought unlikely to pass the local examination, the replies show that in general the candidates for the latter are older and higher in school-standing. This result is in accordance with that deduced from the statistics furnished by the universities and by the college authorities.

6. The recognition for certain purposes of the College of Preceptors' second and third-class examinations by important public bodies is put forward in the statement as implying that these examinations are thereby declared equivalent for all purposes to the other recognised junior examinations. This inference appears to the committee to be untenable. The list published by the Medical Council itself includes a large number of examinations of various grades, from that for a degree in arts downwards, all of which are recognised for the purpose of students' registration. But it cannot be maintained that the Council thereby pronounces these examinations to be equal in standard or regards them as equivalent, except in so far that they all satisfy the *minimum* conditions which it imposes. The fact that the Head-masters' Association includes in its "junior list" all the various "professional preliminary examinations," without distinction, and that the London Technical Education Board and the Education Department include the third division of the College of Preceptors' examination in their recognition, shows that in like manner the lists of these bodies are not constructed on the principle of parity among the examinations referred to. The lists merely indicate that all fulfil certain *minimum* requirements, and, further, that these *minimum* requirements are less stringent than those insisted on by the Council. The inference as to equivalence which the statement suggests is therefore more than doubtful *a priori*. But the committee have thought it desirable to make direct inquiries on the subject and have ascertained definitely that no such inference is authorised or can be maintained. The committee are thus fully justified in affirming that their own view of the argument put forward by the College of Preceptors is that taken by the "independent and unbiassed authorities" concerned.

The committee are for these reasons unable to admit the conclusions of the statement of the College of Preceptors. They are convinced that the present standard of the second-class examination is not sufficiently high for the purposes of the Council and they propose accordingly that its recognition should be withdrawn. Should, however, the authorities of the college see fit to establish a preliminary examination of a standard equal or superior to that of the other junior examinations recognised by the Council, the committee would be prepared to include such an improved examination in the list. The minimum standard required would be intermediate between those of the existing first-class and second-class examinations of the college; and the committee assume that the necessary facilities for inspection granted by other examining bodies and hitherto granted by the college would be continued. Without these facilities the committee would be unable to assure themselves that the required standard was duly established and continuously maintained. The committee accordingly propose to make it a condition of recognition in the case of this and of the analogous examinations in Scotland and Ireland that specimens of the answers sent up by successful candidates should from time to time be submitted for inspection.

II.—The committee do not fail to recognise that the Royal Colleges of Ireland have made a serious effort to improve the character and standard of their preliminary examination. The Examining Board now consists of men of experience and standing in the educational world who are otherwise unconnected with the Colleges. The regulations have been revised so as somewhat to widen the scope of the examination. And it is proposed to raise materially the standard for passing "so as to approximate it to that of the Middle Grade Intermediate Examination." If the design thus outlined should be fully carried out some of the objections which have for long been taken to this examination would be fairly met and the committee would be prepared to assent to the recognition of the new examination, at least until the time arrives when it is possible to arrange in Ireland for a convenient public examination under the auspices of a competent educational authority independent of the licensing corporations. The Intermediate Educational Board of Ireland appears to fulfil this condition. It is in direct relation with the public and other schools and is conversant with the conditions of Irish primary and secondary education, of which it, to a great extent, controls the standards; by its constitution it is calculated to be independent in its judgments; and it possesses the machinery and the means for conducting its examinations with efficiency. The objections raised by the Colleges to the discontinuance of their own examination in favour of those of the Intermediate Education Board practically reduce themselves to two—(1) that the Intermediate examinations are limited to candidates of definite ages and (2) that they are held at a time of the year which is inconvenient to some intending students of medicine. These objections the Board has hitherto not seen its way to meet, apparently on the ground that it lacks the statutory powers to do so. The committee, however, understand that the powers and functions of the Board have been referred to a special commission for consideration and an opportunity is thus afforded for making representations on the subject to those in authority in Ireland. If the Board were prepared to hold in April and September a supplemental examination of a standard approximate to that for middle grade certificates and open to pass candidates without limitation of age, the difficulties put forward by the Royal Colleges would be removed. There would then remain no valid reason against the adoption of the reiterated recommendation of the Council that the Conjoint Preliminary Examination should be discontinued. The committee accordingly recommend that the Council should make a formal representation to the Commissioners on the subject.

III.—The Educational Institute of Scotland, like the Royal Colleges in Ireland, has frankly accepted the decision of the committee that the standard of its preliminary examination was insufficient for the purposes of the Council. Early in the year it announced its intention of issuing new regulations with the object of materially improving the examination and raising its standard. These have now been published. In the opinion of the committee the Preliminary Examination has been much improved by the changes now adopted, and the examination papers submitted are of a more advanced character. Samples of the answers of candidates who just succeeded in passing at the last examination have been submitted and show that an appreciable advance has been made in regard to the *minimum* requirements. There is thus every reason to expect that the method of marking and the pass-standard will prove, on inspection of the results during 1899, to be sufficiently stringent, and the new examination of the Educational Institute will accordingly be entitled to recognition as a junior examination.

IV.—In view of the fact that Malta is within Her Majesty's Dominions the committee are of opinion that it would be more appropriate to give explicit recognition to its University and they accordingly propose to place the University Matriculation Examination on the list with those of the other colonial universities.

V.—The communications from Indian and Colonial Universities have enabled the committee to revise the list with the aid of the latest information on the present character and standard of the examinations it includes. Another communication is from an American University in the Western States and asks that its matriculation examination may be recognised. The particular examination in question does not fulfil the conditions prescribed by the Council and is therefore ineligible for recognition. It has not been the practice of the Council to place any American examinations on its list, though individual students from the United States who were able to present clear evidence as to the character of the Arts Examination they had passed have been repeatedly admitted to registration. The committee propose to take into consideration the question whether a more general recognition might not be extended to certain of the American universities in view of the fact that in recent years a considerable advance has been made in regard to their curriculum and requirements for graduation in medicine. Until, however, the committee have been able to give fuller study to the question thus raised they do not propose to offer any definite recommendations thereon to the Council.

The list of the examinations which in the opinion of the committee fulfil the recently increased requirements of the Council, and which they accordingly think should be recognised for purposes of registration on and after Jan. 1st, 1900, is hereto appended. But in presenting it the committee desire it to be known that they contemplate the early introduction by the Council of a further increase in the stringency of the educational tests to be applied to intending students of medicine.

By the coöperation of the various educational authorities concerned much may be done to raise the standard even of the junior examinations, and a number of these authorities have, at the request of the Council, already undertaken to take measures in this direction. The Council, moreover, by its own action in henceforth requiring another language, in addition to Latin and English to be taken up by students, has materially enlarged the scope of its demands. In these two ways preparation is being made for the transition from the standard of the junior to that of the senior examinations. This transition the committee are desirous of effecting so soon as the educational conditions of the country will permit, but they believe that a gradual and continuous advance along their present lines will be more likely to bring about a substantial improvement in the general education of medical students than any sudden and revolutionary change in the formal requirements of the Council. By exercising steady pressure where necessary on the educational authorities in favour of the adoption of better and more searching methods, by withdrawing recognition from examinations which are proved to have become inefficient, and by careful supervision or inspection of all, the committee believe that they can give material aid in bringing about the desired improvement and they have every reason to expect that their efforts will be supported and confirmed by the Council at large.

LIST OF EXAMINATIONS IN GENERAL EDUCATION TO BE RECOGNISED AS FROM THE 1ST DAY OF JANUARY, 1900.

I.—University Examinations held in the United Kingdom.

University of Oxford.—Junior local examinations (certificate to include all the required subjects at one time). Senior local examinations (certificates to include the required subjects). Responsions (certificate to be supplemented by others showing that the required mathematical subjects have been passed in). Moderations (certificates to include the required subjects). Final examination for a degree in Arts.

University of Cambridge.—Junior local examinations (certificate to

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include all the required subjects at one time). Senior local examinations (certificates to include the required subjects). Higher local examinations (certificates to include the required subjects). Previous examination (certificates to include the required subjects). General examination (certificates to include the required subjects). Final examination for a degree in Arts.

University of Durham.—Examination for certificate of proficiency (certificate to include all the required subjects at one time). Preliminary examination in Arts for graduation in Medicine and Science (certificate to include the required subjects). Final examination for a degree in Arts.

University of London.—Matriculation examination (certificate to include the required subjects). Final examination for a degree in Arts or Science.

Victoria University.—Preliminary examination (certificate to include all the required subjects at one time). Final examination for a degree in Arts or Science.

University of Wales.—Matriculation examination (certificate to include all the required subjects at one time). Final examination for a degree in Arts.

University of Edinburgh.—Junior local examination (certificate to include all the required subjects at one time). Senior local examination (certificates to include the required subjects). Preliminary examination for graduation in Medicine and Surgery (certificate to include the required subjects). Preliminary examination for graduation in Arts or Science (certificate to include the required subjects). Final examination for a degree in Arts or Science.

University of Aberdeen.—Junior local examination (certificate to include all the required subjects at one time). Senior local examination (certificates to include the required subjects). Preliminary examination for graduation in Medicine and Surgery (certificate to include the required subjects). Preliminary examination for graduation in Arts or Science (certificate to include the required subjects). Final examination for a degree in Arts or Science.

University of Glasgow.—Preliminary examination for graduation in Medicine and Surgery (certificate to include the required subjects). Preliminary examination for graduation in Arts or Science (certificate to include the required subjects). Final examination for a degree in Arts or Science.

University of St. Andrews.—Preliminary examination for graduation in Medicine and Surgery (certificate to include the required subjects). Preliminary examination for graduation in Arts or Science (certificate to include the required subjects). Final examination for a degree in Arts or Science. Final examination for the diploma of L.L.A.

University of Dublin.—Public entrance examination (certificate to include the required subjects). Examination for the first, second, third, or fourth year in Arts (certificate to be signed in the approved form by the medical registrar of the University). Final examination for a degree in Arts.

Royal University of Ireland.—Matriculation examination (certificate to include the required subjects). Final examination for a degree in Arts or Science.

Oxford and Cambridge Schools Examination Board.—Lower certificate (to include all the required subjects at one time). Higher certificate (to include the required subjects).

II.—Government Examinations held in the United Kingdom.

Scotch Education Department.—Examination for lower grade leaving certificate (to include all the required subjects at one time). Examination for higher grade or honours leaving certificate (to include the required subjects).

Intermediate Education Board of Ireland.—Junior or middle grade examination (certificate to include all the required subjects at one time). Senior grade examination (certificates to include the required subjects).

III.—Examinations by Chartered Bodies held in the United Kingdom.

College of Preceptors.—Examination for a first-class certificate (to include all the required subjects at one time).

Educational Institute of Scotland.—Preliminary medical examination (certificate to include all the required subjects at one time).

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary examinations (certificate to include all the required subjects at one time).

(*** The Council has recommended that this examination be discontinued.)

IV.—Examinations held out of the United Kingdom.

University of Malta.—Matriculation examination.

University of Calcutta.—First examination in Arts.

University of Madras.—First examination in Arts.

University of Bombay.—Matriculation examination.

Panjab University.—Intermediate examination in Arts.

University of Allahabad.—Intermediate examination in Arts.

Ceylon Medical College.—Preliminary examination.

University of McGill College, Montreal.—Matriculation examination.

University of Bishop's College, Montreal.—Matriculation examination.

College of Physicians and Surgeons of the Province of Quebec.—Matriculation examination.

Universities and Colleges of the Province of Ontario.—Departmental Arts matriculation examination (conducted under the direction of the Provincial Education Department).

University of Manitoba.—Preliminary and previous examinations.

University of New Brunswick, Fredericton.—Matriculation examination.

University of Mount Allison College, New Brunswick.—Matriculation examination.

College of Physicians and Surgeons of New Brunswick.—Matriculation examination.

Dalhousie College and University, Halifax, Nova Scotia.—Matriculation examination.

Provincial Medical Board of Nova Scotia.—Preliminary examination.

Newfoundland Medical Board.—Preliminary or matriculation examination.

University of Melbourne.—Matriculation examination.

University of Sydney.—Matriculation examination. First year examination in Arts. Senior public examination. Entrance examination for Medicine and Science.

University of Adelaide.—Senior public examination.

University of Tasmania.—Senior public examination.

University of the Cape of Good Hope.—Matriculation examination.

University of Otago.—Preliminary medical examination.

University of New Zealand.—Preliminary examination for medical students.

Codrington College, Barbados.—Examinations qualifying for a degree in Arts at the University of Durham.

Foreign Universities in Europe.—The German Arbiturienten-Examen of the Gymnasia and Real-gymnasia; examinations entitling to the French diplomas of Bachelier ès Lettres and Bachelier ès Sciences; and other corresponding entrance examinations to foreign universities in Europe.

Egyptian Government.—Examinations for the secondary education certificate.

Sir JOHN BATTY TUKE, chairman of the Educational Committee, in moving the adoption of the report said that he did not intend to enter into detail with reference to its contents, as the report during his continued ill-health had been drafted by Dr. MacAlister, and Dr. MacAlister would make any necessary explanation. He, however, might say a few words as to the general principles which had actuated the Education Committee in drawing up the report. They had been actuated by the very strongest desire to raise the standard of preliminary education in connexion with the medical profession. But the question arose as to how this could be done. At one period of the committee's deliberations they thought that the simplest and best manner in which to place these preliminary examinations would be to cut out all junior examinations, but subsequently they came to the conclusion that any such drastic measure as that without full notice would be premature. Personally he was of opinion that it was to the direct interest of the public that the standard of medical education should be raised. He was also of opinion that the best way of raising the standard of medical education was the raising of the standard of preliminary examination in general knowledge, inasmuch as by establishing a higher standard of preliminary education they would get men sufficiently well trained to enter upon the study of the higher professional subjects. He was further of opinion that it was necessary to gradually approximate the meshes of the net and that they should not by any *per saltum* action complicate the situation so seriously as would have been done had the original proposition been carried out. There was no doubt in his mind that if the original proposition had been persevered in the supply of medical students would have fallen off to such a considerable extent that it would not have been beneficial to the country. As an indication of that they would find in the figures showing the results of examinations, as presented in their minutes for 1897, that the percentage of rejections of candidates for the medical profession was between 24 and 63 per cent. He had not calculated the average, but he felt certain that the percentage of rejections was nearer 50 than 40 per cent. The committee had to meet that. To a considerable extent they believed that they had been able to meet it, as they thought that by steady pressure on the educational bodies they would be able to further improve the preliminary examinations. They trusted that the time was not far off when they should be able to cut off the junior examinations. He did not think it would be a fair thing to cut off these junior examinations until at least five years after the promulgation of this new report by the committee, and until such times as they could see their way to accept none but senior examinations they would do all in their power to raise the standard of the junior examinations. He hoped the Council would support the committee in their effort.

Some conversation followed. Instead of proceeding with Sir John Batty Tuke's motion it was agreed, on the proposal of Dr. MCVAIL, that the Council should go into committee and consider the report. Thereupon it was moved by Sir JOHN BATTY TUKE that the report be approved.

Dr. MACALISTER, in seconding, went over most of the details brought out in the report. He showed that of the various examinations for candidates for the medical profession which were recognised by the Council only three had been called in question—the College of Preceptors' second-class examination in England; the examination of the Educational Institute of Scotland; and the examination of the Conjoint Board for Ireland. While the two latter had shown an appreciable readiness to meet the Council's requirements the College of Preceptors had challenged the finding of the Council that their second-class examination was inferior. But after a long and exhaustive inquiry, as the committee's report showed, the committee were forced to the conclusion that the examination in question was inferior to the lowest requirement of the Council—the University junior local

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examinations. The college endeavoured to show that their results were superior to those obtained in the local examinations, but in the attempt they selected a fallacious basis, and the fact really was that the results were the reverse of what the college authorities represented them to be. He proceeded to express satisfaction with the course adopted by the Educational Institute of Scotland and the Conjoint Board for Ireland and jocularly suggested that the time was opportune for drawing closer the bonds between this country and the United States in regard to American entrance examinations which the medical authorities of this country had never yet recognised. They might see whether examinations of some of the American universities were not up to the Council's standard, and the committee proposed to get information on the subject. As to the future he was one of those who thought that the Council should require a standard of preliminary examination considerably higher than the junior examination of the present day—an examination which might be effectively described as a senior rather than a junior examination. Junior examinations at present practically represented nine-tenths of the medical students. The Council certainly could not at once take the step of doing away with these junior examinations, but he hoped that it would be possible for them, within the five years referred to by Sir John Batty Tuke, to adopt the standard which was now known as "senior."

Sir RICHARD THORNE, who also favoured the view that candidates for the medical profession should be required to pass the "senior" examination, questioned whether the head-masters who had given their opinion as to the relative value of the examination and the College of Preceptors and the university "locals" had not been misled by the way in which the case had been stated to them. Supposing they had not, what he wished to contend was that the difference between 30 per cent. of passes or rejections in the "locals" with 33 in the College of Preceptors' examinations, or *vice versâ*, was practically *nil*, so far as the Council's idea went of securing a higher and uniform standard. The university junior examination ought to go with the examination of the College of Preceptors. The boys who passed these "locals" were in the majority of cases under fifteen years of age. It was not the intention of the Council that boys under sixteen years should be accepted as candidates for entrance to the medical profession, and these junior examinations did not produce youths of that age. The "senior" examinations did, for he believed he was absolutely correct in saying that the average age of candidates who passed the two senior examinations was sixteen and a half years. That was practically the age they were aiming at and these two senior examinations gave boys of the training and age that were wanted. They could not at once do away with the junior examinations they had agreed to accept as sufficient, but he should like the Council to agree with the view that after the expiration of the next five years they should not accept any of these junior examinations at all.

On the motion of Dr. LEECH the debate was adjourned and the Council resumed.

Commissions in the Navy.

A table of figures showing results of competitions held on Oct. 31st last for commissions in the medical department of the Royal Navy was received and entered on the minutes and thanks were given to the Director-General of the department for furnishing the information contained in it.

Registration Fees.

Dr. LITTLE, with the consent of the seconder, Dr. ATTHILL, obtained leave to withdraw from the programme of business a notice of motion to propose "That on and after Jan. 1st, 1899, a fee of 10*s.* be charged by the registrars of the Branch Councils to every person applying to be registered as a medical student."

The Council adjourned.

TUESDAY, NOV. 29TH.

The Council met again to-day and resumed work, Sir WILLIAM TURNER being in the chair.

The Preliminary Examinations.

The Council went into committee of the whole Council and proceeded with the consideration of the report of the Education Committee with regard to the revision of the list of recognised preliminary examinations.

Dr. LEECH said that the last paragraph of the report was not so satisfactory as he could wish. It seemed to him to be an incentive to those who conduct the junior examinations to raise the standard of those examinations and so keep them on the list. Now he thought it should be distinctly understood that within a certain time these examinations were to be removed from the list. He was sure all the members of that Council felt that it was impossible to raise them to a proper position. It had been suggested that by removing them from the list they might injure the public but he failed to see that the number of students would be limited. His impression was that they would get a better set of men, and that men who at present were only half educated would be properly educated. He suggested that the Education Committee should consider whether it might not be desirable to strike off all the junior examinations in five years.

Sir DYCE DUCKWORTH said he must express his personal disappointment with this report. He had hoped the committee would have seen its way to a much stronger report in which the entrance examinations to their profession were considerably tightened. It was little short of a scandal that these examinations should be so easy. He thought it would be for the benefit of the scholastic profession as well as for those who were going to enter upon the study of medicine that that Council should put down some decided time limit for these junior examinations. If a limit were fixed then the schools would work up their pupils to the required standard.

Sir CHRISTOPHER NIXON bore testimony to the great care and pains which the Education Committee had bestowed upon this work. He knew nothing about the College of Preceptors, not even where it was situated, but it seemed to him from the report that its junior examination was not up to the required standard. That was proved by the statistics and by the examination papers and by the independent and unbiased opinion of 35 of the head-masters of various public schools. On this last point he might say that he did not see the force of the objection raised by Sir Richard Thorne as to the reports of these head-masters. These gentlemen were made aware of the question at issue.

Sir RICHARD THORNE said that since speaking yesterday he had seen the covering letter sent with the inquiry and he was bound to admit that his inference was not justified.

Sir CHRISTOPHER NIXON said he was glad to hear this from Sir Richard Thorne. As to the conjoint examination of the Royal Colleges in Ireland he might say that it was the strong opinion of the Committee of Management that it would be desirable to have a preliminary examination conducted by a body not connected in any way with the professional colleges, and he hoped that the Council would take a very strong part in recommending the establishment of an examination by the Intermediate Education Board which would be suitable to the wants of medical students. Of one thing the Council might be sure and that was that so long as the conjoint examination continued it would be the endeavour of the Royal Colleges to maintain in it a high standard.

Mr. CARTER said he hoped that the Council would stiffen its back in connexion with this matter and that its resolution would strengthen the hands of the committee to the extent of enabling a definite time to be fixed, after which the junior examinations would not be recognised. By giving sufficient notice neither the teachers nor the students would be taken by surprise.

Mr. TICHBORNE said that the body he represented, the Apothecaries' Hall of Dublin, had given up its preliminary examination and he would like to get an assurance from the representatives of the Royal Colleges in Ireland that in the event of the Intermediate Education Board establishing an examination they would discontinue their conjoint examination.

Dr. ATTHILL replied that he had no hesitation in giving an assurance on behalf of the Royal College of Physicians of Ireland provided that the new examination met the requirements of the Council and was suitable as to age and dates and standard.

Sir PHILIP SMYLY gave a similar assurance on behalf of the Royal College of Surgeons in Ireland.

Mr. BROWN said he was disappointed that the report did not go further. He was sorry that the committee had not seen their way to strike off the list the junior examinations of Oxford and Cambridge, which appeared to him to be little superior to the junior examination of the College of Preceptors. On the previous day a medical practitioner of some standing told him that he passed the Cambridge examination at the age of thirteen years.

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Sir WILLIAM THOMSON suggested that three or at the most four years' notice should be given of the higher standard. As to the Royal Colleges in Ireland he assured the Council that both bodies were most anxious to see an examination established by an independent authority.

Dr. MCVAIL submitted that the Council was now in a position to fix a date and he would be prepared to move :—

That the transition from the standard of the junior to that of the senior examinations which the Education Committee in their report recommend shall take effect from Jan. 1st, 1905.

The PRESIDENT said that the following motion had been put into his hands by Dr. Leech, namely :—

That the Education Committee be requested to consider and report to the Council during the next session as to the earliest date at which, in their opinion, it will be practicable to raise the minimum requirements of the Council as regards preliminary examinations to the standard of the senior and higher grade examinations at present recognised.

Dr. PETTIGREW said he was quite convinced of the need for raising the standard, but he had some difficulty as to when and how it should be raised. Education must precede examination and in Scotland secondary education was not in a satisfactory state, and he held that time would require to be allowed in order that secondary education might be improved.

Dr. HERON WATSON thought this was clearly a case for reasonable warning being given.

Dr. MACALISTER read to the Council the covering letter sent to the head-masters which, he said, put the whole question at issue before them. With reference to the College of Preceptors it would be remembered that he said that the college made a certain claim with reference to the action of the Education Department. That claim was challenged. He had seen the Vice-President of the Council who had authorised him to read the following letter, viz. :—

Adverting to your letter dated the 27th inst. I am directed to state that you are right in supposing that the recognition by the Education Department of the second-class certificate examination of the College of Preceptors as practically equivalent to the third-year examination prescribed under the code for pupil teachers does not imply that the examination is of equal standard and range for all purposes with the Oxford and Cambridge junior local examinations which are similarly recognised for candidates desiring to be apprenticed for one year as pupil teachers.

In the list of recognised examinations there was a mistake under the heading of the Victoria University ; the entry should read : "Preliminary examinations (certificate to include the required subjects)."

Dr. LEECH then formally moved the adoption of the motion read by the President and Dr. LITTLE seconded the motion.

Sir J. BATTY TUKE and Dr. MACALISTER recommended the Council to accept the motion.

Dr. MCVAIL said that in view of the action of the chairman of the committee he would not press his motion but he would propose it again if within a reasonable time the committee did not bring forward a definite time limit.

The report was then adopted and the motion of Dr. Leech became the finding of the Council.

The Council went out of committee and approved the proceedings in committee of the whole Council.

The Examination of the Apothecaries' Hall of Dublin.

Sir DYCE DUCKWORTH brought up reports by the Examination Committee on two examinations held by the Apothecaries' Hall of Dublin.

Mr. TICHBORNE gave explanation with regard to certain criticisms passed by the committee in these reports.

Sir RICHARD THORNE commented on observations made by the inspector with regard to over-marking.

Both reports were approved by the Council.

Midwives Bill.

On the motion of Dr. MACALISTER the Council entered on the minutes a report by the committee appointed by the General Medical Council on May 25th last to confer with delegates from a committee of the promoters of the Midwives Bill, together with an appendix containing a report of the proceedings at the conference on June 25th last. The Council agreed to go into committee on the report, which contained the following :—

The sixth point set out by the delegates relates to the expenses of carrying out the Act. The delegates point out that since their Bill is a private members' Bill they cannot insert a clause providing for any payments out of the exchequer. This, doubtless, is so. But whatever the remedy may be it seems quite clear that the cost of carrying out the provisions of any such legislation, however desirable that legislation may be in the interests of certain portions of the community, ought not to be paid out of the funds of the General Medical Council. The advantages accruing from such legislation will primarily concern the public and the licensed midwives, whereas no one can suggest that it will pecuniarily benefit the medical and dental professions, who by payments on registering their diplomas provide the only funds which are at present at the disposal of the Council.

Your committee have reason to believe that the Lord President of the Council is desirous of receiving some expression of opinion from the Council as to how this matter may best be met ; and they would therefore make the following proposals to the Council :—

1. That the duty of fulfilling any duties that may be imposed upon the Council under an Act regulating the practice of midwives be delegated to a special committee after the precedent followed in the case of the Dental Committee.

2. That so long as any such Act is only made to apply to England and Wales the Special Committee consist of five members of the English Branch Council.

3. That, in the first instance, the Special Committee meet in London twice a year.

4. That the fees, &c., for attendance on this Special Committee be the same as those paid to the members of the Executive and Dental Committees.

Sir RICHARD THORNE, as chairman of the committee, asked that the report, which he said had been circulated two months ago, should be held as read. There was one point in connexion with it that he thought he must draw attention to—namely, the expense of carrying out any Act regulating the practice of midwives. He had received an intimation from the Government that if any expense was likely to be involved by the General Medical Council in carrying out such an Act they should state what they thought it would be before the Civil Service estimates were made up for the year from March next. In reply he had made it clear that the fees which were paid by dental and medical students to the General Medical Council could not be used for carrying out an Act relating to midwives and any expense incurred must be paid from a grant by the Government. He proceeded to show that the grant must not be less than £300 a year and concluded by moving the adoption of so much of the report as preceded the recommendations.

Dr. LOMBE ATTHILL, in seconding the proposal, said that if any Midwives Act applied to Ireland there should be at least one representative of that country on the committee.

Sir W. THOMSON and Mr. HORSLEY expressed the view that the estimate of the expenditure under such an Act as that in question was too low.

The PRESIDENT thought the Council should leave it to Sir Richard Thorne and himself to arrange about the matter.

Dr. LOMBE ATTHILL thought there might be appeals from the Midwives' Board against regulations of the Council, and if the Council had to spend, say, a day in debating any one of those they ought to be paid therefor.

Dr. GLOVER was of opinion that the expression of this view came too late, seeing that the Council without remuneration had been discussing the midwives question for the last ten or twelve years.

Sir W. GAIRDNER did not want to intervene in regard to this financial question. What he wished to say was that the result of reading the report before them made him very desirous that the special committee proposed would be a strong committee that would hold well to the principles which the Council had laid down. He could not read the report of the conference between their committee and the promoters' delegates without feeling that the Council were to be opposed tooth and nail. The delegates said they would accept in the abstract the licensing of midwives instead of their registration, but then would they not try to get the Council's licensing proposal defeated in Parliament, so that the resolution of the Council, which went towards the suppression of incompetent, ignorant, and bad characters, would come to naught? It seemed to him that there was a deliberate intention and attempt to keep up the "Gamp"—an attempt to protect the "Gamp." Although the delegates did not say that they were going to oppose the Council's proposal in Parliament he believed they would do it.

Mr. BROWN thought that Sir W. Gairdner had called attention to a point which was exceedingly important. Where should they be if they accepted this report? Having read twelve of the forty-eight pages of which it consisted he thought he was far in advance of other members of the Council on the subject.

The PRESIDENT : The report was circulated weeks ago.

Sir RICHARD THORNE : At least two months ago.

The PRESIDENT : Then, Mr. Brown, if you have not read the whole of the report it is not because the committee did not give you opportunity.

Mr. BROWN : There are members who have not read it at all.

The PRESIDENT : Speak for yourself.

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Mr. BROWN: Well, I prefer that the old committee—the committee on the subject that existed before this Conference Committee—should be reappointed with instructions to watch any legislation which may be proposed early next year and take any necessary action to bring the matter before the Council.

Sir RICHARD THORNE said that the Conference Committee ceased to exist when the conference was over. He should not stand in the way of the reappointment of the previous committee.

Dr. MACALISTER urged that they ought to deal with the four recommendations of the committee before they proceeded to consider the question of reappointment of the conference or other committee.

The motion to adopt the non-contentious part of the report was then agreed to.

Sir RICHARD THORNE thereupon moved a modification of recommendation 1—namely:—

That the duty of fulfilling any functions that may be imposed upon the Council under an Act regulating the practice of midwives be delegated to a special committee and that the committee report to the Council.

Dr. LOMBE ATTHILL seconded and the motion was agreed to.

Sir RICHARD THORNE next moved:—

That so long as any such Act is only made to apply to England and Wales the special committee consist of five members of the English Branch Council.

Dr. ATTHILL, in seconding, remarked that it might be as well to inform the Lord President of the Privy Council that the expenses required would be greater if the Act was extended to Ireland.

The PRESIDENT explained that that could be stated in a covering letter.

The motion was agreed to.

Sir RICHARD THORNE further moved:—

That in the first instance the special committee meet in London at least twice a year.

Dr. MACALISTER reminded the Council that what this committee would have to do would simply be to approve of the rules made by the Midwives Board. Their duties for the first year would be heaviest. After the first year there would be nothing to do for a long time.

The motion was agreed to.

Sir RICHARD THORNE, accepting a suggestion made by Mr. Horsley, next moved:—

That the sum allowed by the Treasury to the General Medical Council for the performance of any duties imposed upon it under an Act regulating the practice of midwives should, in the opinion of the Council, be adequate to cover both the general and special expenses of the Council and its special committee.

Mr. HORSLEY seconded and the motion was also agreed to.

The Council resumed and the report of proceedings in committee was adopted.

Mr. BROWN moved for a committee to watch proceedings on the midwives question in the forthcoming session of Parliament.

Discussion followed and ultimately, on the motion of Mr. BRYANT, seconded by Mr. TEALE, it was agreed to reappoint for the purpose just mentioned, the Conference Committee, consisting of Sir Richard Thorne, Dr. Glover, Dr. MacAlister, and Sir Christopher Nixon, with Mr. Horsley as an additional member.

In the course of the discussion Dr. MCVAIL had remarked that he did not want any Scotchman to be on the committee.

Thereupon the PRESIDENT pointed out that Dr. MacAlister, who was a Scotchman, had been named.

Dr. MCVAIL indicated that he did not object to the Cambridge Professor's appointment as, he said, all the Scotch was out of Dr. MacAlister long ago.

Registration of Medical, Surgical, and Dental Companies.

The Council next received a report from the committee on amendments to the Companies Acts which was in the following terms:—

At the meeting of the General Medical Council, May 30th, 1898, the following resolution, which had been arrived at *in camerâ* on May 28th, was placed upon the minutes:—

"That the President, Mr. Tomes, and Mr. Horsley be a committee to take such steps as they deem most effective to induce the Government to insert a clause in the Companies Act Amendment Bill, now before Parliament, with the object of preventing the registration of companies to carry on medical, surgical, and dental practice."

The committee was appointed in consequence of information brought before the Council by Mr. Tichborne that a drug company in Cork, registered under the Companies Act, had intimated that one of its objects was to carry on the business of physicians and surgeons. It was also pointed out to the Council that encroachments on the practice of other professions and businesses for the legal pursuance of which a personal qualification was necessary were being conducted under cover of the Companies Acts. The attention of a departmental committee of the Board of Trade, sitting under the presidency of Lord Davey, had been called some time previously by the British Medical Association, the British Dental Association, the Medical Defence Union, the Royal College of Veterinary Surgeons, and the Pharmaceutical Society, to the nature of these infringements of professional Acts, but that committee was of opinion that the matters complained of did not properly fall within the scope of the terms of the reference made to them by the Board of Trade. They expressed, however, in their report the hope that one of the clauses of the Bill which they had drafted might have some effect in providing a remedy.

The acknowledgment by a Government committee that a grievance existed was an important step gained and the bodies named approached Lord Herschell with the view of obtaining his assistance in introducing an amendment in the Companies Act Amendment Bill, which was then being brought by the Government before the House of Lords. There was reason to believe that the Board of Trade would not oppose Lord Herschell's amendment, but as the Government Bill was shelved for a time by being referred to a select committee of the House of Lords the matter has not been further proceeded with.

The committee of the General Medical Council attempted, in the first instance, to prevail upon the Board of Trade to take up the question in its relations to the medical profession. A deputation consisting of Sir Dyce Duckworth, the senior treasurer (in the absence of the President from town), Mr. Horsley, and Mr. Tomes, accompanied by Mr. Muir Mackenzie, waited upon the President of the Board of Trade, with whom was Mr. Smith, C.B., and submitted a memorial to him on the subject. Sir Wm. Priestley, M.P., was also present. Mr. Ritchie expressed himself in general terms as perfectly friendly to the objects of the deputation, but was of opinion that the remedy for the grievance complained of was to be found elsewhere than in the proposed Companies Bill, so that he was unwilling to take any steps in the matter.

Moreover, the chances of any Companies Act Amendment Bill becoming law within a reasonable length of time appeared uncertain, and it hence seemed to be expedient to make attempts in some other direction.

Accordingly, Sir Kenneth Muir Mackenzie, the private secretary to the Lord Chancellor, was waited upon and requested to lay a memorial in substance much the same as that which had been submitted to the Board of Trade before his Lordship.

Very shortly after this, on the occasion of a Pharmacy Bill, which had passed the House of Commons, coming before the House of Lords, the Lord Chancellor introduced an amendment which dealt with the question so far as pharmacy was concerned, and this amendment met with the support in principle at all events, of Lord Herschell. But this Pharmacy Bill had passed by agreement through the House of Commons as a practically unopposed measure, and for that, and possibly other reasons, the amendment was withdrawn by the Lord Chancellor, who, however, intimated in withdrawing it that the matter would be subsequently dealt with in another form. This committee were advised to have a draft of a Bill prepared, which in our opinion would meet the difficulty in the case of the Medical and the Dentists' Acts, and they accordingly requested the standing counsel to the General Medical Council, Mr. Muir Mackenzie, to do this in order that it might be submitted to the Lord Chancellor. This has now been done. The committee ask the Council to approve of their action.

Mr. TOMES, in moving the adoption of the report, said that it was brief in relation to the importance of the subject. There was a reason for that. A good deal of the work of the committee had fallen to be done in a conversational manner with officials of departments of the Government, and the members of Council must know that if they had interviews with officials of practically a private nature and then went and proclaimed the whole upon the housetops the officials involved would not afterwards speak so freely as they had done previously. There had been a good many more interviews than were mentioned in the report, and the chairman and the other two members of committee would be exceedingly pleased to give a good deal of information to any member of the Council who might ask them privately for it. The committee had very good hopes of accomplishing what they were appointed to do. They had made, he thought, very real progress in the matter. If they looked at the end of the report they would see that the committee were required to have a Bill on the subject drafted. It might possibly surprise some members of the Council that the draft Bill did not appear in the report, but there were a good many reasons for not producing this draft Bill. The Council were not promoting the Bill. The draft Bill was only a suggestion to be placed before the Lord Chancellor to let him see what the committee thought would be effective on the subject. The Lord Chancellor might not adopt that draft Bill or a single phrase of it. The committee did not produce it, for if they did it would give an opportunity to anyone who learned what its contents were to start opposition. A copy of the proposed measure lay in the offices of the Council and it could be inspected by any member of Council. He asked that all the members of Council should inspect it and assist the committee in getting it passed into law. The committee asked the Council to approve of their action because there was a little change of front in their attitude. They were appointed to get the Government to insert a clause in the

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Companies Bill, but they had taken it upon themselves to change their commission and had approached the Lord Chancellor instead with a new Bill. The committee must ask pardon of the Council for departing from what they were appointed to do. If reappointed they would endeavour to get a Bill that would be efficient. They had to deal with a class of people who were trying all they knew and employed all the legal acumen they could get to evade the law, and they must really endeavour to get a stringent Act. The evil complained of was not disappearing. No less than three cases had been heard of since they sent their memorial to the Lord Chancellor and they must use their best endeavour to check the evil.

Mr. TICHBORNE, as the initiator of the movement in the Council, endorsed everything which had been said, but he wanted to know if there would be any difficulty in considering this secret Bill in the Council so that all the members might know what it meant. It was so far good to say that they could see it in the office, but they ought to have an opportunity of discussing it and making suggestions.

Mr. TOMES said that the Council were not promoting the Bill. The draft which had been handed to the Lord Chancellor was simply a suggestion for a Bill.

Sir W. THOMSON said that the suggestion was that of three members of the Council. Was there any objection to the whole Council knowing what the suggestion was? Why should they not go *in camerâ* for ten minutes to learn what it was?

The PRESIDENT saw no objection to their so doing.

Strangers were thereupon asked to withdraw. On their readmission the PRESIDENT informed them that the committee's report had been approved by the Council.

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, it was then agreed that the committee should be reappointed and should be requested to continue its efforts for the improvement of the law on the subject of companies formed to carry on professional functions. At the suggestion of Dr. MCVAIL and Dr. BRUCE Mr. Tichborne was added to committee.

The Public Health Diploma.

The next business on the programme was the receipt of a report from the Public Health Committee in regard to Sir William Gairdner's motion as to apparent diversities of interpretation given at different places to the regulations of the General Medical Council as regards the course of study for a diploma in public health. This report was presented by Sir Richard Thorne, chairman of the Public Health Committee, and was as follows:—

Your committee beg leave to report that, in pursuance of the resolution of the Council of May 31st, 1898, to the effect that the question of the "interpretation given at different places to the regulations of the General Medical Council as regards the course of study for the diploma of public health," especially in the matter of "the study of the duties of outdoor sanitary work," be remitted to the Public Health Committee, they issued a circular letter on July 7th, 1898, to all the licensing bodies in the United Kingdom which grant degrees or diplomas in public health requesting information on the following points:—(1) The number of certificates as to outdoor sanitary work received during the two years ending June 30th, 1898; (2) the names of the certifying medical officers of health and the number of certificates given by each such officer; and (3) the existence of any rules as to the nature and duration of the tuition determining whether a certificate shall be accepted or not.

The first answers received were in a number of instances such as to involve further correspondence, and it was only during the course of this month that your committee were in possession of sufficient information to enable them to prepare a "summary of answers."

These answers disclose the fact that there exists an almost entire absence of uniformity as regards the interpretation which the different licensing bodies place upon the Regulation of the Council adopted on June 9th, 1896, to the effect that—"Every candidate shall have produced evidence that, during a period of six months after obtaining a registrable qualification, he has practically studied the duties of outdoor work" under a medical officer of health.

Indeed, on one point only do the requirements of the different licensing bodies appear to be alike—namely, in the circumstance that in none of them is it laid down as necessary that the whole of a period of six months shall be devoted to the study of outdoor sanitary work.

Incidentally these answers further disclose the fact that the six months' study of outdoor sanitary work is, in the case of nearly all, if not of all, the licensing bodies allowed more or less to overlap in point of time with the period of six months during which the candidate is further required, under the regulations of the Council, to submit evidence of having "attended during six months practical instruction in a laboratory or laboratories ..... in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught."

Several important questions are thus raised as to the interpretation which, in the opinion of the Council, should be placed on their Regulations as to these two six-months' periods of study, in connexion with the antecedent Regulation that "a period of not less than twelve months shall elapse between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate o any examination or any part thereof for a diploma in sanitary sc ence, public health, or State medicine"

Your committee are not aware how far it was the desire of the Council that they should report to the Council on all the matters which are involved in this question; but if such was the intention of the Council your committee beg leave to suggest that, having regard to the brief interval which has elapsed since the date when they received full information in answer to their circular letter, the matter be referred to them again for further consideration and report.

Sir RICHARD THORNE said that the real effect of this report was to ask whether the Council desired the committee to inquire into the whole question of what students were to do during the six months they were bound to give up laboratory work for outdoor work.

Sir W. GAIRDNER considered that the report of the committee amply justified him in raising the question on its merits.

On the suggestion of the PRESIDENT the report was received as an interim report and the committee was reappointed.

An American Doctoress.

Sir DYCE DUCKWORTH presented the usual report of the Students' Registration Committee on exceptional cases.

Mr. HORSLEY objected to the committee's recommendation that Mrs. Hester S. A. Davies, who had graduated in medicine at the University of Michigan, after passing in June, 1893, a preliminary examination in which all the General Medical Council's subjects were included, should be registered without further preliminary examination on the production of the medical diploma she had obtained from the University of Michigan.

After some conversation the objection was given effect to, and the report was adopted minus the paragraph relating to Mrs. Davies.

Slaughter of the Innocents.

The PRESIDENT, with the view of terminating the session on Wednesday, asked if anything in "the bulky volume of programme" still before them could be dropped.

Dr. GLOVER: Oh, we have come to the slaughter of the innocents.

The PRESIDENT thought that consideration of the memorandum on reciprocity and the statement of the position of foreign practitioners in the United Kingdom was one subject which might be deferred till next May.

Mr. HORSLEY was quite willing to withdraw his notice of motion to propose:—

That a committee be appointed to report upon means to secure identification of registered medical and dental practitioners and to prevent fraudulant personation of such practitioners.

Mr. BRYANT declined to give up his right to proceed this session with a motion for the creation of a sinking fund to enable the Council to repay to the English Branch Council the sum of £25,000 advanced for the purchase of the freehold and the erection of the Council's present offices.

As it seemed useless to try to further reduce the programme the Council adjourned.

WEDNESDAY, NOV. 30TH.

The Council met again to-day with some hope of being able to conclude the business of the session. In this, however, members were disappointed for when 6 o'clock arrived it was found that less than half the remaining business had been disposed of. The Council received and approved a report by the president and treasurers on the proposed alterations in the buildings, postponed until next session the consideration of the amended statement as to the position of foreign practitioners in the United Kingdom, adopted a new form of Standing Order with regard to procedure in the case of practitioners convicted of felony, misdemeanour, crime, or offence, discussed and approved the report of the Pharmacopœia Committee, and devoted some hours to the consideration *in camerâ* of certain legal questions. Our detailed report of the proceedings on this day and on the following day will be published in THE LANCET of next week.

WE have received the following communication from Mr. Victor Horsley, F.R.S., and MR. George Brown, for publication:—

Nov. 30th, 1898.

WE, the undersigned, hereby enter our protest against the legal advisers of the General Medical Council appearing on behalf of the Council in the appeal case now pending in support of the conviction of the late Mr. Herbert Kingsley Hunter for describing himself as a physician.

GEORGE BROWN.
VICTOR HORSLEY.

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Medical News.

UNIVERSITY OF LONDON.—At the M.B. examination in October the following candidates were successful:—

First Division.—Charles William Buckley, St. Mary's Hospital; H. Minnie Castledine, B.Sc., Royal Free Hospital; Frederick Fenn Elwes, Middlesex Hospital; Joseph George Emanuel, B.Sc., Mason College and Queen's and General Hospitals, Birmingham; Hugh Fitz-Neville Hine, Middlesex Hospital; Thomas Jeeves Horder, B.Sc., St. Bartholomew's Hospital; Hubert Innes, London Hospital; Henry Gwynne Lawrence and Francis Seymour Lloyd, St. Mary's Hospital; David Nunes Nabarro, B.Sc., University College; and William Bird Herapath Wood, Queen's and General Hospitals, Birmingham.

Second Division.—William Maurice Anderson, London Hospital; Joseph Ashton, St. Mary's Hospital; Henry Thompson Barron, Westminster Hospital; Sydney Henning Belfrage, St. Thomas's Hospital and University College; James William Huxtable Bendle, St. Mary's Hospital; Thomas Percival Berry, Guy's Hospital; George Playne Bletchly, Middlesex Hospital; Elizabeth Honor Bone, Royal Free Hospital; Gabrielle Ruth Slater Breeze, London School of Medicine and Royal Free Hospital; Frank Brickwell, St. Bartholomew's Hospital; Frank Butterfield, Owens College and Manchester Royal Infirmary; Victor Evelyn Collins, Guy's Hospital; Mabel Eliza Cousins, Royal Free Hospital; Harold Arthur Thomas Fairbank, Charing-cross Hospital; Lucinda Catherine E. Forster, Royal Free Hospital; Gerald Dudley Freer, Queen's and Mason Colleges and St. Bartholomew's Hospital; Arthur Brownfield Fry, London Hospital; Leonard Gilbert, St. Thomas's Hospital; John Abel Glover, Guy's Hospital; Arthur Stanley Green, Royal College of Surgeons of Ireland and Meath Hospital; William Layard Griffiths, B.Sc., University College; John Grimshaw, London Hospital; Solomon Gross, Yorkshire College and General Infirmary, Leeds; Joseph Percy Hall, Owens College and Manchester Royal Infirmary; Lionel Edwin Charles Handson, Guy's Hospital; Harry Edward Hewitt, St. Thomas's Hospital; John Howell, Guy's Hospital; Robert Craske Leaning, Frank Charles Lewis, and Colin Dunrod Lindsey, St. Mary's Hospital; John Preston Maxwell, St. Bartholomew's Hospital; Percy William Moore and Donald John Munro, Guy's Hospital; Henry Peet, Yorkshire College; Arthur George Grant Plumley, Medical School and University College, Bristol, and Guy's Hospital; Charles Stanford Read, University College; Francis Riley, Westminster Hospital; Adeline Mary Roberts, London School of Medicine and Royal Free Hospital; Penry William Rowland, St. Bartholomew's Hospital; Claude Rundle, St. Mary's Hospital; Harold Alfred Schölberg, St. Bartholomew's Hospital; Harold Douglas Singer, St. Thomas's Hospital; Cuthbert Allen Sprawson, King's College; Russell Henry Jocelyn Swan, Guy's Hospital; George Padgett Tayler, St. Bartholomew's Hospital; Walter Henry Maxwell Telling, Guy's Hospital; Charles Joseph Utley, Owens College; and Archibald Young, University College, Sheffield, and London.

FOREIGN UNIVERSITY INTELLIGENCE.—*Breslau:* Several of the restrictions to which female medical students have hitherto been subject are now being relaxed.—*Liége:* Dr. Henrijean has been appointed Professor of Pharmacology and General Therapeutics. Dr. Troisfontaines has been appointed to the chair of Special Surgical Pathology.—*Moscow:* Dr. Martinoff has been recognised as *privat-docent* of Surgical Diagnosis.—*Rostock:* Dr. O. Nasse, Director of the Pharmacological and Chemico-Physiological Institute, has been obliged to resign on account of ill-health.

THE SENTENCE ON JOHN LLOYD WHITMARSH.—The Press Association states that the Home Secretary has decided to treat the sentence of the convict Whitmarsh as one of twelve years' penal servitude.

HOSPITAL SUNDAY IN PLYMOUTH.—Oct. 30th was observed in Plymouth as Hospital Sunday and over £600 were collected in aid of the funds of the South Devon and East Cornwall Hospital.

ELECTRIC SHOCKS AT CARDIFF.—Several persons received electric shocks in Wood-street, Cardiff, on Nov. 24th. The explanation given by the electrical engineer was that there were leakages in one or two of the electric light connexions.

BARRY ACCIDENT HOSPITAL.—The hospital committee of the Barry District Council has decided to recommend the council to take over the management of the accident hospital which will be relinquished by the nursing association at the end of the present year.

DEVONPORT SCHOOL BOARD.—The members of the Devonport School Board on Nov. 21st elected Mr. John Rolston, M.D., L.R.C.S. Edin., to fill the first vacancy which has occurred since the present board has been in office. Dr. Rolston has now been for over twenty-five years associated with the Devonport School Board.

THE WATER-SUPPLY OF LLANELLY.—At the meeting of the Waterworks Committee of the Llanelly Borough Council held on Nov. 25th it was decided to erect a second storage reservoir. It will be constructed above the present one at Owmlliedi and will have a capacity of 180,000,000 gallons.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ACLAND, H. T. D., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

AMBROSE, W. C., B.A. Camb., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

ANGIVEN, S. L., M.B. Melb., has been appointed Medical Officer of Health for the St. Arnaud Borough, Victoria, Australia.

ARNOLD, G. J., F.R.C.S., L.R.C.P., has been appointed Clinical Assistant in the X Ray Department at St. Thomas's Hospital.

BARNES, J. A., L.R.C.P., M.R.C.S., has been re-appointed Assistant House Surgeon to St. Thomas's Hospital.

BELGRAVE, T. B., M.D. Edin., M.R.C.S., has been appointed Health Officer for Bulong, Western Australia, vice S. Herriott, resigned.

BELL, R. H., B.A., M.B., B.C. Camb., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

BENNETT, F. A., M.D. Aberd., Ch.M., has been appointed a Physician for Diseases of the Skin, Prince Alfred Hospital, Sydney, New South Wales.

BILL, J. F., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary of the Lewisham Union.

BINGHAM, S. O., L.R.C.P., M.R.C.S., has been re-appointed Assistant House Surgeon to St. Thomas's Hospital.

BOUSFIELD, EDWARD C., L.R.C.P. Lond., M.R.C.S., has been appointed Bacteriologist for the Parish of Camberwell.

BRINDLEY, A. E., M.D. Lond., B.Sc. Vict., has been appointed Medical Officer of Health for Bury, vice W. J. Howarth.

BUTLER, H. J., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Seventh Sanitary District of the Bradford (Yorks) Union.

BUZZARD, E. F., B.A., M.B., B.Ch. Oxon., has been re-appointed House Physician to St. Thomas's Hospital.

CAHILL, THOMAS, M.D., Ch.M. Irel., has been appointed a Member of the Dentistry Board of Examiners, Wellington, New Zealand.

CHARLES, J. R., B.A., M.B., B.C. Camb., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

COBB, E. H., L.R.C.P., M.R.C.S., has been re-appointed House Surgeon to St. Thomas's Hospital.

COLLINS, W. E., M.B. Lond., M.R.C.S., has been appointed a Member of the Dentistry Board of Examiners, Wellington, New Zealand.

CONNOR, S., M.D., Ch.B. Irel., has been appointed Officer of Health for the Wannon Shire, Nareen Riding, Victoria, Australia, vice W. D. K. Macgillivray, resigned.

CORNER, E. M., M.A., M.B., B.C. Camb., B.Sc. Lond., L.R.C.P., M.R.C.S., has been re-appointed Assistant House Surgeon to St. Thomas's Hospital.

DICKSON, J. D., M.D., M.Ch., L.R.C.S. Irel., has been re-appointed Medical Officer of Health by the Marlow Urban District Council.

FORTUNE, ERNEST G., M.B., C.M., F.R.C.S. Edin., has been appointed an Assistant Surgeon to the Glasgow Cancer Hospital.

GALT, W. J., B.A. Oxon., L.R.C.P., M.R.C.S., has been re-appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

GATES, E. A., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Electrical Department at St. Thomas's Hospital.

GOODE, H. N., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Electrical Department at St. Thomas's Hospital.

GREAVES, F. L. A., L.R.C.P., M.R.C.S., has been re-appointed House Surgeon to St. Thomas's Hospital.

GREG, A. H., B.A. Camb., L.R.C.P., M.R.C.S., has been re-appointed House Surgeon to St. Thomas's Hospital.

HANKINS, G. T., M.R.C.S., L.S.A. Lond., has been appointed a Surgeon for Diseases of the Nose, Ear, and Throat, Prince Alfred Hospital, Sydney, New South Wales.

HEARNE, W. W., M.B. Melb., has been appointed a Resident Surgeon for the Alfred Hospital, Melbourne, Victoria, Australia.

HERN, WILLIAM, M.R.C.S., L.D.S., has been appointed Lecturer in Dental Surgery and Pathology for the Dental Hospital of London, vice Storer Bennett, resigned.

HEWITT, H. E., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

HIGGINS, G. H., L.R.C.P. Edin., M.R.C.S., has been appointed a Medical Officer for the Third Sanitary District of the Bradford (Yorks) Union.

HOCKEN, J. P., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed a Government Medical Officer and Vaccinator for the District of West Wallsend, New South Wales.

HOGARTH, R. G., F.R.C.S. Eng., has been appointed Surgeon for the Samaritan Hospital for Women, Nottingham, vice G. Elder, resigned.

JOHNS, J. A., M.B., B.Ch. Dubl., has been appointed Apothecary for the South Dublin Dispensary.

KELYNACK, T. N., M.D., M.R.C.P., has been appointed Honorary Pathologist and Bacteriologist for the Manchester Ear Hospital.

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KENNARD, D. G., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Farringdon No. 1 Sanitary District and the Workhouse, vice C. Spackman, resigned.

KILVERT, J. E., L.R.C.P., M.R.C.S., has been re-appointed Assistant House Surgeon to St. Thomas's Hospital.

LAIDLAW, D. F., M.B., Ch.M. Edin., has been appointed Officer of Health for the Hamilton Borough, Victoria, Australia, vice L. Robinson, resigned.

MANLY, R. A. A., M.B. Melb., has been appointed Officer of Health for the Shire of Wyndham, Victoria, Australia, vice H. C. H. Giles, resigned.

MCCLIKAN, J. F., L.R.C.P., M.R.C.S., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

METCALFE, J., M.D. Brux., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Officer for the Ninth Sanitary District of Bradford (Yorks) Union.

MOORE, H. J., M.B., B.Ch. Irel., has been appointed Medical Officer for the Ardee Dispensary District, vice T. J. Moore, resigned.

NOBLE, H. PERCY, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Anæsthetist for the Metropolitan Hospital, Kingsland-road, N.E.

NOLAN, L. A., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Officer of Health for the Shire of Rosedale, Rosedale and Denison Ridings, Victoria, Australia, vice D. A. Campbell, resigned.

PEARCE, J. P., M.R.C.S., has been re-appointed Medical Officer for the Second and Third Sanitary Districts of the Newhaven Union.

POCHIN, F. L., M.B., C.M. Edin., has been appointed District Medical Officer and Public Vaccinator for the Raynham District of the Walsingham Union, vice Eland Shaw, resigned.

POLLEN, H., M.D. Dubl., Ch.M., L.K.Q.C.P., has been appointed a Member of the Dentistry Board of Examiners, Wellington, New Zealand.

PURSER, CECIL, M.B., Ch.M. Syd., has been appointed an Honorary Physician for the Prince Alfred Hospital, Sydney, New South Wales.

ROBIN, V. J. R., L.R.C.P. Lond., M.R.C.S., has been appointed Health and Medical Officer for Port Douglas, Queensland.

ROBINSON, A. C., L.R.C.P., M.R.C.S., has been re-appointed House Surgeon to St. Thomas's Hospital.

RUSSELL, R. U., L.R.C.P. Edin., L.R.C.S. Irel., has been appointed Port Health Officer for Newcastle, New South Wales.

SCAPING, H. M., B.A. Camb., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

SELLS, H. T., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health by the Northfleet Urban District Council.

SINGER, H. D., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

SMITH, P., M.D. Syd., has been appointed Superintendent of the Institution for Inebriates established on the premises of the Benevolent Asylum, Dunwich, Queensland.

STEVENS, A. E. M.B. Durh., L.R.C.P., M.R.C.S., has been re-appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

STEVENSON, LOUIS E., B.A., M.B., B.C. Cantab., has been elected a Fellow of the Geological Society of London.

TEBAY, M. K., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Workhouse and Infirmary of the parish of St. George-in-the-East.

THWAITES, G. B., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

VEALE, H. DE P. B., L.S.A., has been appointed a Medical Officer for the Fourth Sanitary District of the North Bierley Union.

VIRET, B. P., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed a Medical Officer for the Eighth Sanitary District of the Bradford Yorks) Union.

WOODFORDE, ROBERT E. H., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon for the County Hospital, Huntingdon.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COLLEGE, LONDON, FOR WOMEN, York-place, Baker-street, W.—Professorship of Hygiene.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-Inn-road, W.C.—Assistant Surgeon.

CITY ASYLUM, Gosforth, Newcastle-upon-Tyne. — Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c. Salary rising £10 per annum up to £150.

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary £100 a year, increasing to £250 by £25 successive increments, with apartments, board, attendance, and washing.

DERBY COUNTY ASYLUM, Derby.—Assistant Medical Officer, unmarried. Salary £120 per annum, rising to £150, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Physician. Board, residence, &c., provided, and an honorarium of £25 will be granted on the completion of six months' approved service.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Senior House Physician for six months. Salary at the rate of £60 per annum, with board and lodging in the hospital.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator for the Southern Division of Harris. Salary £30. Other emoluments. Apply to Mr. T. Wilson, Solicitor, Lochmaddy.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

JAMES MURRAY'S ROYAL ASYLUM, Perth.—Assistant Medical Officer. Apply to Dr. Urquhart, Physician Superintendent.

LONDON COUNTY ASYLUM, Hanwell, W.—Junior Assistant Medical Officer, Salary £150 per annum, with board, furnished apartments, and washing. Applications to the Clerk of the Asylums Committee, Asylums Committee Office, 21, Whitehall-place, S.W.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer for one year, unmarried. Salary £150 per annum, with board and residence.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, London, W.C.—Medical Superintendent. Salary £100 per annum, furnished apartments, fire, lights, and attendance, with certain fees.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (ALBANY MEMORIAL), Queen-square, Bloomsbury, London.—Assistant Physician.

PARISH OF LIVERPOOL.—Assistant Medical Officer for the Workhouse, Brownlow-hill. Salary £80 per annum, with rations, an additional sum of £20 being allowed for examining applicants for out-door relief. To reside in the workhouse in the apartments provided. Applications to the Vestry Clerk, Parish Offices, Brownlow-hill.

PARISH OF ST. GILES, Camberwell.—Medical Officer for the Dulwich District of the Parish. Salary £20 per annum,, with extra fees for Midwifery, &c. Applications to the Clerk to the Guardians, Guardians' Office, 29, Peckham-road, S.E.

RADCLIFFE INFIRMARY, OXFORD.—Surgeon.

ROYAL COLLEGE OF PHYSICIANS, London.—Milroy Lecturer for 1900.

ROYAL INFIRMARY, Hull.—House Surgeon, unmarried. Salary 100 guineas per annum, with board and furnished apartments.

SALOP INFIRMARY.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—House Surgeon. Salary £150 per annum, outdoor.

TOWNSHIP OF TOXTETH-PARK.—Junior Assistant Medical Officer for the Workhouse Infirmary. Salary £75 per annum, with board, washing, and apartments, subject to statutory deduction. Applications to the Clerk to the Guardians, 12, High Park-street, Liverpool.

UNIVERSITY OF GLASGOW.—Five Examinerships in Medicine for three years each. Salaries £30 and £50 respectively.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon, for six months.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Honorary Physician or Surgeon Accoucheur, and for Diseases of Women.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard-street, Soho, W.—Resident Medical Officer for one year.

WILLITON UNION, Somerset.—Medical Officer and Public Vaccinator for the Union Workhouse at Williton and the Williton District of the Union. Salary for the Workhouse £35, with extra fees. Salary for the District £79, with extra fees. Applications to the Clerk, Williton, Somerset.

WILTSHIRE COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum, with certain allowances. Aplications to the Clerk to the Council, County Offices, Arlington House, Trowbridge.

Births, Marriages, and Deaths.

BIRTHS.

BRODIE.—On Nov. 27th, at Fernhill, Wootton Bridge, Isle of Wight, the wife of C. Gordon Brodie, F.R.C.S., of a son.

RODGERS.—On Nov. 28th, at Clarence-road, Cardiff, the wife of J. H. Rodgers, L.R.C.P. &c. Edin., of a daughter.

MARRIAGES.

CAMPBELL—BOWLES.—On Nov. 23rd, at St. Mary's, Hayes, Middlesex, Surgeon-Lieutenant-Colonel W. Campbell, late Grenadier Guards, to Margaret Jessie, widow of the late Alfred Bowles.

CHAPLIN—SETON SMITH.—On Nov. 17th, at St. Mary's, North-end, Arnold Chaplin, M.D., of Finsbury-square, to Joan, widow of the late Bruce Seton Smith, of Richmond.

MCKENZIE—SCOTT.—On Nov. 24th, at the Trinity Presbyterian Church, Wimbledon, Harry Valentine McKenzie, M.D., of Torquay, to Ethel, second daughter of Robert Scott, M.R.C.V.S., Wimbledon.

DEATHS.

ALLMAN.—On Nov. 24th, at Parkstone, Dorset, George James Allman, M.D., LL.D., F.R.C.S. Irel., F.R.S., F.R.S.E., M.R.I.A., Cor. Member Z.S.L., in his 87th year.

BUCHAN.—On Nov. 26th, at Crescent-place, Plymouth, William Augustus Buchan, M.B., son of the late Captain D. A. Buchan, R.N., aged 39 years.

CLARKE.—On Nov. 24th, at 3, Chandos-street, Cavendish-square, Doris Litton, the infant daughter of Ernest and Kate Litton Clarke.

CLEVELAND.—On Nov. 24th, at Maida-vale, W., William Frederick Cleveland, M.D., aged 75 years.

SMITH.—On Nov. 25th, at Alfred-place, Thurloe-square, Surgeon-General Alexander Smith, M.D., C.B., Honorary Physician to the Queen, aged 74 years.

TILTON.—On Nov. 20th, at Parsonage-place, Dursley, John Edward Tilton, M.R.C.S., L.S.A., aged 63 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (10th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (5th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square).—7 P.M. Council Meeting. 8 P.M. Paper:—Mr. F. J. Bennett: Some Old and New Theories of Calcification. Casual Communications:—Mr. R. H. Woodhouse: On a Case of Regulation.—Mr. J. H. Badcock: On the Relation of the Third Molar to the Antrum of Highmore.—Mr. H. L. Williams: On a Modification of Hammond's Splint.

TUESDAY (6th).—ROENTGEN SOCIETY (11, Chandos-street, Cavendish-square, W.).—8 P.M. Discussion on Dermatitis in Relation to Roentgen Ray Work (introduced by Mr. E. Payne and Dr. Walsh.)

PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. C. Ogle: (1) Sarcoma of Pineal Body with Diffused Melanotic Sarcoma of Surface of Cerebrum; (2) Tumour of Pineal Body in a Boy.—Mr. T. W. P. Lawrence: Enlarged Pineal Body.—Prof. W. S. Greenfield: New Growth of Pineal Body.—Dr. A. E. Russell: Cyst of Pineal Body.—Dr. S. G. Shattock: Cyst of Pineal Body.—Dr. A. W. Campbell: Cyst of Pineal Body.—Dr. A. E. Garrod: Cyst of Pineal Body.

WEDNESDAY (7th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Clinical Evening. Cases will be shown by Dr. T. G. Lyon, Mr. H. Beevor, Mr. A. Davies, Mr. St. C. Shadwell, Mr. Targett, Dr. F. J. Smith, and other Fellows.

OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. W. Hunter (introduced by Dr. A. Routh), Dr. Lewers, Dr. Spencer, Dr. J. Phillips, and Mr. Targett. Papers:—Dr. Ponder: (1) The Action which will be Beneficial in Parturition; (2) The Actions which in Parturition are not Beneficial but only Injurious and tending to disaster; (3) The proper Time for Instrumental Interference.

THURSDAY (8th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Clinical Evening. Cases and Card Specimens. 8.30 P.M. Mr. Nettleship: Microscopical Drawing of Renal Retinitis.—Mr. H. Spicer: Case of Sympathetic Ophthalmitis commencing after Excision.—Mr. W. J. Cant: Pulsating Exophthalmos with Visible Tumour.—Mr. A. Critchett: Case of Sclerosing Keratitis.—Mr. J. Griffith and Dr. Blair: An Unusual Form of Marginal Keratitis (? pemphigus).—Mr. A. H. Thompson: Tumour of Iris.—Mr. G. Hartridge: Case of Choroiditis in an Early Stage.—Mr. W. Lang: Hæmorrhagic Retinitis with Degenerated Vessels.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Specimens will be shown by Dr. Bantock, Dr. G. Elder, Mr. Purcell, and Mr. C. Ryall. Discussion on Mr. S. Bishop's paper on the Combined Method in Pelvic Surgery.

FRIDAY (9th).—CHARITY ORGANISATION SOCIETY (Portman Rooms, Baker-street, W.).—4.30 P.M. Dr. J. B. Hurry: The Provident Dispensary and Provident Nursing. (Course of Lectures on Medical Relief.)

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Mr. C. Williams: Lingual Chancre from Indirect Contagion, which tends to show that Syphilitic Virus can remain Latent in the Dried State for over Two Months.—Mr. P. Gould: A Case of Pancreatic Calculus with Obstruction of the Common Bile Duct.—Mr. Fripp and Dr. Bryant: A Case of Acute Hæmorrhagic Pancreatitis with Microscopical and Bacteriological Specimens.—Dr. N. Pitt and Mr. W. H. A. Jacobson: A Case of Acute Hæmorrhagic Pancreatitis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (5th).—ROYAL INSTITUTION OF GREAT BRITAIN.—5 P.M. General Monthly Meeting.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. J. B. Ball: Methods of Examining the Throat and Nose.

TUESDAY (6th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-sq., W.C.).—3.30 P.M. Sir F. Semon: On the probably Cortical Origin of some Laryngeal Paralyses.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. F. Beach: Cases of Epilepsy and other Convulsive Disorders.

WEDNESDAY (7th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. T. Pickering Pick: The Union of Wounds. (Bradshaw Lecture.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Mr. Godlee: Pulmonary Abscess.

THURSDAY (8th).—THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Barlow.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Murray: Medical Cases. (Post-Graduate Class.)

FRIDAY (9th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. J. B. Ball: Methods of Examining the Throat and Nose.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

OYSTERS.

To the Editors of THE LANCET.

SIRS,—Will any of your correspondents kindly say what kind of oysters can now be recommended without fear of typhoid fever?

I am, Sirs, yours faithfully,

Nov. 25th, 1898. W. WOODWARD, M.D. St. And.

*** The best advice we can give our correspondent is that he should procure, or consult, a copy of the Local Government Board's report on "Oyster Culture in relation to Disease" (Eyre and Spottiswoode). He will there find a detailed description of practically all the oyster layings in England.—ED. L.

THE QUALIFICATION OF L.A.H. DUBLIN.

To the Editors of THE LANCET.

SIRS,—Will you kindly inform me through your columns whether the L.A.H. Dub., 1880, is a double qualification, and if the holder of it is legally qualified to hold Government, municipal, or surgical appointments?

I am, Sirs, yours faithfully,

PUZZLED.

Nov. 19th, 1898.

*** The Licence of the Apothecaries' Hall of Dublin in 1880 was, as it is now, a licence in *medicine* only.—ED. L.

THE TALE OF A THREEPENNY-BIT.

HIS Honour Judge Edge, recently translated from a county-court district in Devonshire to Clerkenwell, enjoys, we believe, a high reputation in the legal profession for knowledge of all things essential to his position. Among these seems to be included an acquaintance with the relations existing between the hospitals and the public. Having before him not long ago a defendant who though reported to be well off had recently been an inmate of a hospital and who gave this as an excuse for his inability to pay his creditor, the learned county-court judge asked him searching questions as to a donation which he had made to the hospital funds. He also told an anecdote of a

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gentleman in evening dress who after being attended to in a hospital, presumably for an accident, asked for the donation-box and ostentatiously put money into it, the end of the story being that on the box being opened the coin deposited in it turned out to be a threepenny-bit. The defendant before Judge Edge seems to have found himself neatly placed between the horns of a dilemma. If he named a large sum he proclaimed his means and if he named an infinitesimally small one he convicted himself of hypocrisy, for obviously no one is expected to requite a hospital for what it may do for him in a case of urgent need unless he can afford to give something more than, say, 6*d.* or 1*s.* That the defendant in question had not hit upon any suitable sum between the two extremes suggested is a fair inference from the fact that he did not state the amount he had in fact contributed, and the sum by which the hospital was benefited remains a matter of pure speculation. Leaving his case, however, out of the question his Honour Judge Edge showed by his remark "I really consider that the way our hospitals are abused by persons well able to pay is a gross scandal" that a county-court judge as well as a hospital secretary may recognise a frequent association between means and meanness that goes beyond a mere similarity of sound.

LECTURES TO NURSES.

To the Editors of THE LANCET.

SIRS,—It may interest your readers to know the questions which were recently set at an examination for ladies in "First Aid" at the Polytechnic. Very little was said during the five lectures on anatomy and physiology, but at the examination (written), duration two hours, the following were asked:—1. Describe the alimentary canal. 2. Enumerate the bones of the cranium and describe the brain. 3. Describe the lungs and the pulmonary circulation. 4. Describe a muscle. To what injuries is it liable? 5. What is shock? The lectures were said to have been practical and interesting and dealing with first aid, but they did not prepare candidates for such a sweeping examination. There is an element of absurdity in the examination which should amuse the profession. I am, Sirs, yours faithfully,

Nov. 21st, 1898. A. B. C.

A FOOT ROLLER.

WE have received from Mr. Alfred Bentzen of Westminster-road, Birmingham, an appliance for which a claim is made that it tends to prevent corns and chilblains and to relieve tenderness and some other painful conditions of the feet. It consists of a roller about 4½ in. long and 1¼ in. in diameter, thickly covered with felt and mounted on two very short supports on which it revolves freely. The felt having been saturated with an oily solution supplied by the maker the roller is placed on the floor and the foot is passed to and fro over it. This is no doubt a stimulating exercise for the plantar structures and will help to counteract the ill effects of wearing tight boots. It might perhaps be of use in certain conditions of cramp or liability to cramp in the legs.

"WANTED A HOME."

To the Editors of THE LANCET.

SIRS,—With reference to the letter of "G. H." in THE LANCET of Nov. 26th I think he can find an asylum to undertake the charge of his patient for the sum he mentions—viz., £50 per annum. Peckham House Asylum, Peckham, would, I believe, do so, and I think there are others. He would, of course, have to be under certificate.

I am, Sirs, yours faithfully,

M. O. WALSHE.

Male Nurses' (Temperance) Co-operation, Thayer-street, Manchester-square, W., Nov. 28th, 1898.

"ENDERMIC MEDICATION."

To the Editors of THE LANCET.

SIRS,—Permit me, for the information of your correspondent "Vienna" in THE LANCET of Nov. 26th, to say that I have for the past two years successfully carried on endermic medication at the address given below and that patients sent to me by consultants or general practitioners are treated in accordance with their own wishes under my personal supervision and that the institution is open to them from 10 A.M. to 6 P.M., when their respective patients can be seen and examined by them, such remaining always the patients of those practitioners who send them. The institution is being fed by the most eminent in the profession.

I am, Sirs, yours faithfully,

E. KING HOUCHIN.

8, Osborne-mansions, Northumberland-street, W., Nov. 28th, 1898.

"THE TITLE OF DR."

To the Editors of THE LANCET.

SIRS,—I beg to draw your notice to the list of successful candidates for the Royal Naval Medical Service, indicating, as it does, that non-university men when placed in competition with university graduates show a high standard of proficiency in medical science. For it will be seen that the first four successful candidates are diplomates. The natural inference is that it is a gross hardship that the latter should be excluded from competing for certain appointments in civil life, as seen by the various advertisements where graduates alone are eligible. It also seems harsh at the present day that these diplomates should be prohibited by the authorities and discountenanced by a certain class of graduates from using the title of "Dr.," by which designation members of the medical profession are known to the public as such and which title is conceded to diplomates by public custom. Hoping you will find space to insert this communication in your valuable journal. I am, Sirs, yours faithfully.

Nov. 26th, 1898. FREDERICK W. COLLINGWOOD.

*** With those affected by the injustice which is meted out to diplomates under existing conditions we have every sympathy which we have expressed many times in our columns. For the London student better times are at hand we confidently believe. But in the meantime we cannot approve of the usurpation by diplomates of an incorrect style.—ED. L.

"TREATMENT OF VARICOSE ULCER."

To the Editors of THE LANCET.

SIRS,—In reference to the inquiry of "Ulcer" in THE LANCET of Nov. 26th under the above heading I should like to ask whether he tried a lotion composed of 80 gr. of nitrate of silver (crystals) and distilled water to 8 oz. One or two layers of fine butter-cloth should be saturated with this lotion and placed over the ulcer, a bandage of butter-cloth should be applied over them, and then a Martin's rubber bandage should be put over all. This lotion should be applied once daily and the bandaging should be most carefully done. The irritation (in my own cases) subsides and after a few weeks complete healing takes place. I am, Sirs, yours faithfully,

ARTHUR H. W. AYLING.

Wellington, Shropshire, Nov. 28th, 1898.

To the Editors of THE LANCET.

SIRS,—In reply to the inquiry in THE LANCET of Nov. 26th signed "Ulcer" I have found that some cases of varicose ulcers which did not yield to careful bandaging or even complete rest in the horizontal position were quickly cured when this treatment was combined with the internal administration of iodide of potassium. Seven-grain doses three times daily have sufficed, and I have usually combined with it three minims of liquor arsenicalis with compound infusion of gentian to one ounce. These cases showed no signs of syphilis, still, of course, the taint may have been there.

I am, Sirs, yours faithfully,

F. TAYLOR SIMSON.

Northumberland-avenue, W.C., Nov. 29th, 1898.

D.P.H. (Yorkshire).—We should say no. Our correspondent will find the question fully dealt with on pages 24 and 25 of the current Medical Directory. To answer quite definitely we should require a little more information.

Pro Bono Publico.—We do not publish anonymous letters however inclusive their dedication for good.

M.O.H. (open-air treatment of consumption) has omitted to enclose his name and address.

Query.—Yes, he is correct in so styling himself.

Z.—Under ordinary circumstances, no.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 1st, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Nov. 25	28·79	S.W.	0·24	73	51	42	47	47	Raining
" 26	28·97	S.E.	0·76	51	48	44	44	45	Raining
" 27	29·17	W.	0·10	58	47	43	42	44	Cloudy
" 28	29·35	N.E.	0·12	46	43	36	35	37	Cloudy
" 29	29·54	N.	...	51	43	36	37	39	Overcast
" 30	29·81	S.E.	...	56	49	33	36	37	Overcast
Dec. 1	29·93	W.	0·07	68	55	37	48	50	Cloudy

During the week marked copies of the following newspapers have been received: *Dundee Advertiser, Liverpool Courier, Daily Mail, Leicester Post, Beverley Guardian, Dublin Express, Craven Herald, Manchester Guardian, Essex Telegraph, Glasgow Herald, Times of India, Pioneer Mail, Hereford Times, Wigan Observer, Kidderminster Shuttle, Leeds Mercury, Builder, Scotsman, Architect, Bridlington Free Press, Citizen, Cheltenham Mercury, Todmorden News, Brighton Gazette, Liverpool Daily Post, Clifton Chronicle, Boston Independent, Sussex Daily News, Lowestoft Standard, Bristol Mercury, Birmingham Post, Newcastle Journal, Western Morning News, Yorkshire Post, Sanitary Record, Mining Journal, City Press, Hertfordshire Mercury, Local Government Chronicle, Reading Mercury, Boston Evening Transcript, Dunfermline Press, Local Government Journal, Irish News, Surrey Advertiser, Australasian Medical Gazette, Weekly Free Press and Aberdeen Herald, Child's Guardian, Isle of Ely Advertiser, Banffshire Advertiser, Drogheda Conservative, Figaro, Nantwich Guardian, South Durham Mercury, &c., &c.*

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The Bradshaw Lecture

ON

THE UNION OF WOUNDS.

Delivered before the Royal College of Surgeons of England on Dec. 7th, 1898,

BY THOMAS PICKERING PICK, F.R.C.S. ENG.,

VICE-PRESIDENT; CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL; SENIOR SURGEON, VICTORIA HOSPITAL FOR CHILDREN.

MR. PRESIDENT AND GENTLEMEN,—It appears to me that there is considerable difference of opinion amongst surgeons and pathologists as to the way in which simple wounds unite, especially as to whether the process of healing is an inflammatory one or not. In selecting a subject for the Bradshaw Lecture this year I thought that I could not do better than discuss this question and see whether by a consideration of the subject we can arrive at some distinct conclusion. I have formed a very definite opinion myself and it remains to be seen whether I shall succeed in winning you round to the same view that I hold.

REPAIR WITH OR WITHOUT INFLAMMATION.

Many surgeons and pathologists, and amongst them some of the most eminent in this country and on the Continent, believe that the union of wounds takes place without inflammation and, indeed, assert that "repair in all its forms is effected without inflammation." These pathologists teach that "repair and inflammation are not only not identical but that they are incompatible; that repair is a constructive physiological process and resembles closely that of development and growth, but that inflammation is a destructive pathological process brought about entirely by micro-organisms introduced from without; and that when it attacks a wound in the process of repair it at first checks repair and later brings about disorganising changes; and when a part repairs after it has been the seat of inflammation it does so only when the inflammatory process has been arrested."[1] Other pathologists, again, hold the opinion that all wounds unite by a process which they regard as inflammation. And while admitting that inflammation is a destructive pathological process they believe nevertheless that the union of wounds takes place by it, and that there is a decrease in the vital activity of the affected tissues, and, as a result, a lower vitality in the product of this inflammatory process—I mean in the scar or connecting medium which binds the severed parts together. There can, I think, be little doubt that John Hunter believed that wounds may heal without inflammation. In fact, in one place he distinctly states in his lectures "that primary healing takes its course without inflammation and is painless." He did not, however, greatly emphasise the fact and appears to have believed that the bond of union in these cases was extravasated blood. He thus describes the process: "The blood"—that is, the blood extravasated into the wound—"being alive, this uniting medium becomes immediately a part of ourselves and the parts not being offended by it no irritation is produced. The red particles are absorbed and nothing but the coagulating lymph is retained, which, being the true living bond of union, afterwards becomes vascular." But John Hunter certainly did not believe that "repair in all its forms is effected without inflammation," for he states that "in many diseases it is the first step towards a cure." I do not propose, however, to weary you further with the opinion of the older pathologists; I prefer rather to limit myself to a consideration of the question as it exists at the present time as to whether wounds heal without inflammation; and I take as my text on which to base our discussion the words of Karl Roser of Marburg, a German pathologist of great repute. He says: "The clean, non-infected wound heals without inflammation by first intention; the infected wound, on the contrary, heals by second intention with the appearances of inflammation. In the first case healing follows immediately after the injury. In the other case inflammation intervenes between injury and healing as a disturbing complication."

Clearly the first point in considering this question is to have a clear and definite understanding of what inflammation is. As you are all aware, Dr. Burdon Sanderson has defined inflammation as the "succession of changes which occurs in a living tissue when it is injured, provided that the injury is not of such a degree as at once to destroy its structure and vitality." Or, more briefly and succinctly, that inflammation is the "response of living tissues to injury." Now, if we accept this definition the whole question falls to the ground at once. Clearly, if this is true, no wound can unite without inflammation—a wound is an injury; therefore, a response must take place, a succession of changes must occur which constitutes inflammation. Those, however, who believe that wounds heal by a strictly physiological and constructive process clearly do not accept this definition of the word and regard inflammation as something else. The older definition of inflammation was that it was that condition which was attended by certain so-called cardinal signs—pain, heat, redness, and swelling—and that we must regard these signs, to again quote the words of Dr. Burdon Sanderson, "as the characteristics of the thing of which the word 'inflammation' is the name." There is no question that these signs do attend or follow a wound, and so again we must admit that if the aggregate of these signs constitutes inflammation, then that there is inflammation during the process of healing of a wound.

The opponents of the theory that wounds heal by inflammation admit that the four cardinal signs of inflammation are present, but they do not admit that therefore there is inflammation. Let me quote to you what Mr. Bryant says in his "Practice of Surgery" on this point. Speaking of wounds he says: "Within an hour or an hour and a half the edges of the wound will be seen to be swollen and slightly red from increased vascularity, and if the connective tissue of the wounded part is loose, as in the eyelids or male genital organs, it will be puffed up and œdematous. To the patient the part will feel hot and stiff and it will be the seat of a dull, aching, or burning pain. The edges of the wound will also probably be more sensitive, the amount of pain depending much upon the tension of the parts and upon the treatment to which they have been subjected. If the edges of the wound have been stitched together and the parts are much swollen and œdematous there will be tension upon the wound and a disposition to separate and gape. In a healthy subject, however, where repair goes on well, all these local phenomena will subside and disappear in the course of two, three, or four days, according to the rapidity and perfection of the healing process, and a cure will then take place. But should the local phenomena above described be more persistent, increase in severity, spread beyond the margins of the wound and surrounding parts, or alter in character for the worse, what has been a physiological reparative process will pass into a pathological or diseased one and the parts will then be said to be inflamed." The opponents of the doctrine of the healing of wounds by inflammation do not therefore hold that the presence of these four signs necessarily constitute inflammation; and no doubt this, in fact, is quite true. They are present in that condition which indeed is the first stage of the inflammatory state, but which may also occur quite independently of it—a condition to which we apply the term "determination," and which is undoubtedly a physiological process and is an element in thousands of actions of daily life and occurs in those conditions where a sudden increase of blood is required for some physiological purpose. Thus, a morsel of food is introduced into the mouth requiring an increased quantity of saliva for its salivation; immediately a determination of blood to the salivary glands takes place, causing a more active secretion and an increased flow of saliva.

The first use of the word "determination" has been attributed to Paré. John Hunter called it the "incipient enlargement of the vessels," and in no part of his treatise on Inflammation does he use the word "determination." He says: "The very first act of the vessels when the stimulus which excites inflammation is applied is, I believe, exactly similar to a blush. It is, I believe, simply an increase of distension beyond their natural size. This effect we see takes place upon many occasions—gentle friction of the skin produces it—gentle stimulating medicines have the same effect." As a German equivalent to the word "determination" Virchow introduced the term "Wallung" (surging) which has been constantly used by his successors. This determination, which we admit is a physiological process, is attended with a sudden afflux of blood to a part and is characterised in consequence

[1] ant: Hunterian Oration, 1893.

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by certainly, at least, three of the four cardinal signs of inflammation—heat, redness, and swelling, and possibly also in many cases by the fourth also; for, at all events, if there is not actual pain there is an uneasy or abnormal sensation, such as a sensation of fulness about the part. It is evident, therefore, that we are not in a position to say that a part is inflamed because of the presence of these four symptoms. I have alluded somewhat at length to this question of determination because I think it is important, with a view to accuracy of statement, that the employment of the word "determination" should be strictly limited when used in connexion with the inflammatory process to the primary acceleration of the blood-stream in and about an injured part and should not be so extended as to comprise the subsequent stages of retardation resulting in stasis and exudation.

WHAT IS INFLAMMATION?

We have not yet arrived at our definition of inflammation; and, indeed, the difficulty is great in giving a clear and logical definition to this form of disease, although we easily recognise the condition and understand the combination of processes which are taking place in the tissues. I should regard inflammation as a modification of the normal physiological processes in the various tissues of the body resulting from the application of some irritant to the part, this process being attended or followed in most cases by the formation of a new material of a less highly organised nature than the original tissue in which the inflammation has taken place. And here I would draw your attention to a very important point, and one which it is very desirable that we should keep strictly in our minds, and that is, that these cases of what we may call "traumatic inflammation"—that is to say, inflammation produced by a wound in which no foreign body is allowed to remain—and which inflammation is, as I hold, necessary for the healing of the wound, are very different from those inflammatory processes which are due to the admission of septic organisms. And they differ especially in this marked peculiarity—that the irritation in the tissue does not extend beyond the immediate neighbourhood of the injury. The irritant which has produced the inflammation has been momentarily applied and therefore the inflammation which results has a tendency speedily to resolve itself as soon as it has brought about those changes which are necessary for repair. This is very different from those cases where a prolonged irritant is applied to a part, then the process of inflammation is also prolonged, and when this irritant is some septic organism which has the power of multiplying in the tissues and of producing ptomaines which poison the tissues, the inflammation is not only prolonged, but has a tendency to spread and diffuse itself rapidly by continuity of tissue.

It must be admitted on all hands, I think, that in the process of union of wounds there is the formation of a new tissue which forms the bond of union and the point which we have to discuss is whether this new tissue is the result of inflammation or whether it is merely a physiological process, a condition of ordinary development or growth which is constantly taking place in the body. If we regard the subject from a clinical aspect I admit that there is considerable difficulty in making any distinction between these two conditions; for, as I have endeavoured to show, we may have all, or almost all, the signs of inflammation as the direct outcome of a physiological process and, on the other hand, we often meet with cases of wounds which heal without any of the four cardinal signs being present in any marked degree at the margins of the wound, though I believe they are always present to a certain extent, though it may be this extent is not appreciable to the ordinary observation. And it must be borne in mind that the difference between slight redness, swelling, and heat of the edges of a wound and the most intense form of these conditions is only one of degree, the latter being patent at the merest glance to the most superficial observer, whilst the former is so slight as to be scarcely distinguishable to the most careful investigator. When, however, we come to consider the question from an histological standpoint it seems to me that we cannot separate it from an inflammatory process however slight its extent and intensity may occasionally be. Let us then examine the subject from an histological point of view and et us first consider the manner in which adhesion of the edges of a wound takes place, whether this process is regarded as inflammatory or not, and this we will do in the briefest possible manner by simply stating the most salient points which have been observed so that we may clearly carry them in our minds. And in order to do this we will take an example of the simplest kind of tissue in which an incision has been made and which unites by what is called adhesive union or the "first intention" of John Hunter. For I do not propose at present to say anything about the so-called "immediate union of wounds," which was first described by Macartney, as I do not believe that such a condition exists. I shall have something to say, however, about this at a later period of my lecture.

THE PROCESS OF HEALING.

Suppose, then, we make an incision through the skin into the subcutaneous tissue beneath. What happens? First it bleeds, then the bleeding ceases, and finally union takes place. The wound first bleeds because the capillaries contained in the tissue are divided; the bleeding stops because the blood coagulates in the capillaries as far as the nearest anastomosis—that is to say, to the next point of intersection of the capillary network. So that the first change is that all the cut vessels become filled with clots up to their first collateral branch, and this is undoubtedly simply a physiological process, the clotting being the result of the physiological conditions which bring about the formation of fibrin. Secondly, the capillary vessels in the neighbourhood, that is to say, beyond the point of clotting, will be noticed to be dilated. By some this would also be regarded as a physiological process and to merely arise from mechanical causes, from the increase of pressure to which the capillaries have been subjected in consequence of the coagulation which has taken place in their several extremities. About this I shall have to say a word or two in a moment; but let me first glance at the other changes which are to be observed in a wound before the process of union is effected. The third change to be noted is in the connective tissue in which the vessels ramify. This becomes infiltrated with cells and these cells multiply, so that we have the tissues at the edges of the wound infiltrated with a vast accumulation of cells which are for the most part simple nucleated cells resembling leucocytes. After a time other larger cells appear and some of these find their way to the surface of the wound and are to be seen covering it. Fourthly, the cells which cover the surface of the wound undergo a developmental process and first becoming spindle-shaped and then fibre-cells are eventually converted into fibrous or scar-tissue which forms the cicatrix or bond of union. Finally and lastly, the capillary network at the margins of the wound prolongs itself in the form of loops into this new tissue and becomes continuous with similar loops on the opposite side and thus the new tissue becomes an organised structure and unites the edges of the wound together. These, very briefly, are the changes which can be observed with the microscope as taking place in the edges of a wound whereby union is effected, and the question we have to consider is whether these changes are strictly physiological and akin to those of development or growth or whether they are the result of that pathological process which we know as inflammation—whether, in fact, these cells which are the essential elements in the process of union find their way between the edges of the wound in conformity with known physiological laws and, having found their way there, undergo changes similar to those which are witnessed in the embryo, when the blastodermic cells of the ovum grow, develop, and differentiate into the various structures of the human being; or whether these changes take place as the result of a pathological process altogether different and distinguishable from normal physiological action. In discussing this point we shall have to consider four questions:—1. Is the dilatation of the blood-vessels, which we described as the second change in our process of union, simply a mechanical one and due to the increased pressure exerted on the capillaries of the part? 2. Is this vast accumulation of cells in and around the wound the simple outcome of a physiological process? 3. Are the changes which take place in the cells exactly identical with the mode of growth and development in embryonic cells? 4. And, lastly, What is the nature of the newly-formed tissue?

The first point, then, which we have to consider is whether the dilatation of the blood-vessels, which undoubtedly occurs, is simply due to mechanical causes. We have seen that when a wound is made the blood-vessels at its margins become blocked, and it is perfectly clear that the blood will have to accommodate itself to this and find another channel by the existing and patent by-paths around the blocked vessels.

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The result of this is increased pressure in these parts and as a consequence distension and dilatation of the vessels. So there can be no question that in this simple mechanical explanation there is a way in which we may account for the dilatation of the blood-vessels, but unfortunately this mechanical explanation does not fully account for the subsequent changes which take place. It fully explains the first step in the process—the determination with increased motion—but it does not explain the determination with diminished motion in which the circulation becomes slower and slower until the retardation results in stasis, with consequent diapedesis. For this we must look to some other cause than a mechanical one, and hence, as it is certain that this slowing of the blood current does take place, we cannot accept the theory that the dilatation of the blood-vessels in inflammation is entirely due to a simple mechanical cause. To what then must we attribute this dilatation and this increased flow of blood? Numerous hypotheses have been advanced at different times as to the cause and it cannot be said that even at the present time any one of these hypotheses gives a really complete and absolute explanation of the phenomenon. In considering the question I would strongly emphasise and ask you to bear in mind the words of Sir John Simon who says that "a part does not inflame because it receives more blood; it receives more blood because it is inflamed." For if we do not admit this the whole argument falls to the ground. It is self-evident that the proximate cause of the dilatation must be change in the tonicity of the muscular coat of the vessels and the question we have to determine is how this change of tonicity is brought about. It at once suggests itself that this may be due to some irritation which disturbs the function of the nerves of the vessels. And this may to a certain extent be so, especially as it has been proved by direct experiment that irritation of a sensory nerve causes dilatation of the arteries in the whole area to which the nerve is distributed. Why this irritation of a nerve should produce this active, directly paralysing effect is not quite so clear, though I think it may be very fairly explained in the following way. We know that the vagus nerve possesses an inhibitory action upon the heart and that irritation of this nerve produces a diminution or obstruction in the action of this organ. We therefore assume that there is an inhibitory nervous system which arrests the contraction of muscles. And if this is true of the heart, why should it not also be true of the blood-vessels? and why should we not assume that the muscular elements of the blood-vessels, like the heart, are under the control of both the sympathetic and the cerebro-spinal system, the former of which causes the rhythmical contraction of the vessels, and the latter regulates and obstructs their contraction? If this is so it would explain the reason why irritation of the cerebro-spinal nerves would exert an inhibitory effect upon the muscular coat of the vessel and as a consequence vascular dilatation. But it is quite clear that this explanation of the cause of dilatation of the blood-vessel is not sufficient to explain the phenomenon. It is true that part of the dilatation may be due to this cause, but I am inclined to think it is only a very small part; for it is clear that if this was the cause, and the sole cause, the dilatation would not be confined to the injured area, but would embrace all those parts supplied by the nerve irritated. Moreover, experiment and clinical experience negative this view. The experiments are those of Cohnheim, who has shown that in the tongue of a frog after its nerves have been severed the process of inflammation can be excited by almost any irritant, and, indeed, that where the tongue has been severed from all its connexions, so long as the arteries and veins are allowed to remain intact an inflammation can be excited by similar causes. It is certain here that the dilatation is not dependent on any influence conveyed to the blood-vessels from the cerebro-spinal centre. Clinical experience also points in the same direction. I need only allude, in illustration, to the fact that it is a matter of every-day experience to see inflammation set up in paralysed parts, where the nerves clearly can have nothing to do with the primary condition of dilatation. We must look, therefore, to another cause to explain the dilatation which takes place in the inflamed area. I think it may be briefly stated to be due to the direct effect produced upon the vessels of the part by the injury which has caused the disturbance, or, in other words, that the irritation disturbs directly the function of the muscular coat of the arteries and veins and the living cell substance of the capillary walls. This is in strict accord with Cohnheim's so-called "alteration" theory of inflammation—namely, that the "alteration of the physiological condition of the walls of the vessels is the cause of those phenomena and processes the sum of which is designated by the term inflammation." The experiment on which Cohnheim based this proposition was by cutting off the circulation from a part for a certain length of time, say, twenty-four hours, by encircling it with a ligature, and then at the expiration of this time loosening the ligature and restoring the circulation. By this means he produced as typical and intense an inflammation as by subjecting the part to the direct action of an irritant. By thus depriving a part of blood he unquestionably altered the physiological conditions of the blood-vessels and other tissues and this changed or abnormal condition was the proximate cause of the dilatation of the blood-vessels as well as the other phenomena of the inflammation. If, then, this undoubted alteration in the walls of the blood-vessels—the part with which the blood first comes into contact in these experiments—causes them to act as if they were inflamed, may we not assume that a similar change takes place in the vessels when inflammation is set up by other causes and induces a similar result? If we accept this as true we have a strong argument in support of the view that inflammation is necessary for the repair of tissue and therefore for the union of wounds. For we have here in the vessels a deterioration of tissue, a retrograde metamorphosis, which certainly cannot be regarded as a healthy physiological action; a something which is quite different from the *afflluxus sanguinis*, the active congestion or determination of blood which is due entirely to nerve influence.

We pass on now to consider the second question which I set myself—namely, Is the vast accumulation of cells in and around a wound during the process of healing the simple outcome of a physiological process? In order to answer this question we have to ask ourselves another: Whence do they come? I suppose there is no one here present who would hesitate in answering that, at all events to a very considerable extent, they are emigrated leucocytes. And this is undoubtedly one source from which they are derived, though I think there is very little doubt that they are also in part derived from a second source. Into this point, however, it is foreign to my purpose at present to enter; and it is sufficient that we believe that the myriads of round cells which we see in and around a wound during the early stage of the healing process were originally derived in part from the leucocytes which have passed out of the circulation through the walls of the capillaries. We then ask ourselves another question, Why has this emigration taken place? It is a condition very different from what we observe in health. For though it cannot be denied that exudation of the plasma of the blood takes place as a physiological process and emigration of the leucocytes very probably does so, still it is a very different condition to what we see in a wounded part and we never find in healthy tissues the whole of the structure infiltrated with leucocytes to such an extent as almost, if not quite, to obscure the natural structure of the part. There is no doubt that the answer to this second question is that the emigration is due to stasis or that condition of arrested circulation which we know speedily follows the dilatation of the blood-vessels in an inflamed part. And then we ask ourselves a third and final question, What is the cause of this stasis?

Many theories have at different times been put forward to explain this phenomenon. It has been attributed to the dilatation of the blood-vessels, to changes in the corpuscles, and to changes in the tissues, especially the lining membrane of the walls of the vessels. It cannot be due to the dilatation of the walls of the vessels because we do not find a similar phenomenon attending the dilatation of vessels from other causes. Division of the sympathetic in the neck of an animal causes dilatation of all the vessels of the head and face from paralysis of the muscular coat of the blood-vessels, but there is no tendency to stasis or arrest of the circulation. Then, again, it cannot be due to changes in the corpuscles, for if we examine the mesentery of a frog under the microscope in which inflammation is slowly set up from exposure to air we may watch a leucocyte showing a tendency to stick to the wall of the vessel so long as it is contained in the inflamed area; it partially adheres, oscillates to and fro, but gradually makes progress onwards till it reaches the extreme limit of the inflamed area, when it at once loses this tendency to adhere and flows on rapidly in the normal course of the circulation. Another reason why it cannot be due to changes in the corpuscles is because if it were we must assume that not only

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the corpuscles in the inflamed area are changed but all the corpuscles throughout the body, and therefore this same adhesiveness must be observable in every vessel in the body, for only one small portion of the blood was acted upon by the irritant which set up the inflammation, and the blood in the area of stasis cannot be that which was thus acted upon. Stasis must therefore be due to changes in the walls of the vessels or the tissue with which the blood comes in contact, so that the corpuscles when they pass into the injured area acquire a tendency to adhere. The lining membrane of healthy vessels differs from every other solid in the fact that the corpuscles have no tendency to adhere to them and therefore no coagulation of the blood takes place; but when the corpuscles, and especially the leucocytes, come in contact with any foreign body—that is to say, anything else except the healthy wall of the vessel—they show an immediate tendency to adhere to it, to disintegrate and set free their fibrin ferment, and coagulation is the natural result. The same thing holds good if the lining membrane becomes altered in structure or diseased. It no longer possesses the power of repelling the corpuscles but on the other hand attracts them and causes them to adhere. It acts as a foreign body. Look, for example, at many cases of thrombosis where the coagulation is due to an altered state of the vessel wall which causes the leucocytes to adhere to it and as a consequence the vessel becomes occluded with clot. Or, again, look at the natural process of cure in an aneurysm. The lining membrane of the sac is an altered tissue from the ordinary lining membrane of an artery; it is a foreign body—a something other than the wall of a healthy vessel. In consequence of this the leucocytes adhere to it; they disintegrate, they set free their fibrin ferment, and thus fibrin, the active clot of Broca, is formed on the interior of the sac. In the fact then that in the union of wounds we have the tissues in and around the wound infiltrated with cells we have another strong argument in favour of the theory that the union of wounds is an inflammatory process. This infiltration with cells is the direct outcome of stasis in the vessels and this stasis is a necessary result of their deterioration or retrograde metamorphosis which can scarcely be regarded as a physiological process.

In connexion with the third question which we set ourselves to consider, whether the changes which take place in the cells, which are now believed to be in a great measure large mobile cells formed by proliferation of the original cells of the part which have replaced the emigrated leucocytes, are exactly identical in their mode of growth and development with embryonic cells, I am bound to say that I know no difference. It seems to me that we must acknowledge that these cells of granulation tissue are exactly identical with embryonic cells and behave in the same manner, undergoing the same form of development into higher tissues. It would appear that the recognition of this fact has caused objections to be raised against designating as inflammatory the purely regenerative processes which take place in the healing of a wound. But I would contend that it in no wise invalidates my argument that the new formation of tissue which leads to the adhesion of wounds is inflammatory. My contention is that this newly formed tissue, which is by a process of development eventually to form scar tissue, or the bond of union between the severed tissues, is the result of an inflammatory process, though the subsequent steps by which it undergoes development into scar tissue may be distinctly physiological, or at all events identical with processes which take place in the blastodermic membrane of the embryo where the primary nucleated masses of protoplasm of which it is composed undergo changes of growth, multiplication, and differentiation until they become converted into complete animal cells of many different types. It is the mode of origin of the cells and not their subsequent changes which marks off the process of union of wounds as an inflammatory one.

INFLAMMATION ALWAYS PRESENT.

Leaving this point we pass on to consider the fourth and last question which I stated it was my intention to bring under your notice in elucidating the point which we have under consideration. The question is as follows: What is the nature of the newly-formed tissue which acts as a bond of union and joins the two severed surfaces together? And in the answer to this question I think we shall find one of the strongest arguments in favour of the view for which I am contending—namely, that wounds always unite by a pathological process which we term inflammation.

The elucidation of this point will require a little careful consideration. So long as tissue elements retain their vitality they possess the power of undergoing nutritive and formative changes on the application of a physical or chemical stimulus. Up to comparatively recent times the knowledge of this fact caused pathologists to regard inflammation as a condition of increased, though perhaps perverted, activity of the process of nutrition. The converse of this is, however, the fact. Lord Lister was the first to initiate the doctrine that "inflammation consists not in increased but in diminished vitality of the tissues affected." The process of inflammation, whether showing itself by enlargement, multiplication, or formation of cells, is always a sign of lower vitality and results, as Dr. Burdon Sanderson expresses it, in "tissue spoiling and not in tissue stimulation." And the more rapid the rate of reproduction the less is the stability of the newly-formed tissue, and those tissues which are the result of the inflammatory process are always more lowly organised and of a lower vitality than the original tissue of the part before the process of inflammation took place. Inflammation must be regarded therefore as a destructive process. If we admit this—and who will gainsay it?—we have an extremely strong and potent argument in favour of the fact that the scar tissue or bond of union in a wound is a product of inflammation and not a new formation the result of a physiological process.

Let us briefly consider what scar tissue is. It is composed of dense white fibrous tissue which differs from the normal tissue which it has replaced in many important particulars. And as Rindfleisch says, "Cicatricial tissue is far from being a connective tissue of ideally high quality." It is more dense than ordinary areolar tissue and contains no yellow elastic fibres. It is smooth on the surface and presents no papillæ. It is devoid of sweat glands, sebaceous glands, or hair follicles. It contains no lymph spaces or lymphatics and nerve fibres are very few in number or altogether wanting. When first formed it is vascular, but its vessels soon disappear and it becomes dry, hard, and white and of lower organisation than the natural parts. Moreover, scar tissue is exceedingly prone to diseases of degeneration. How common a thing it is to find a scar breaking down and ulcerating and how slow these ulcers are to heal and how liable to recur. And, again, how frequently we find scar tissue becoming the seat of epithelioma, constituting what was first described by Mr. Cæsar Hawkins as the "warty tumour of cicatrices." And even keloid must be regarded as a disease of degeneration, for though there is an excess of growth this growth consists of a lowly organised fibrous tissue, intermingled with cells, which are arrested in their progress of development, and degenerate in their incomplete forms. If, then, this is the character of scar tissue it can scarcely be regarded as the product of a healthy physiological process and it becomes a powerful argument of the view that union of wounds is an inflammatory and therefore a pathological process and not a physiological one.

This, then, is the evidence which I have to bring forward in favour of the view I am upholding and it only remains now for me to endeavour to reconcile this view to the doctrine of the different forms of union of wounds.

In our text-books on surgery it is customary to describe five classical ways in which wounds unite: (1) by immediate union, primary adhesion, or direct growing together of the severed surfaces; (2) by first intention; (3) by scabbing; (4) by second intention; and (5) by secondary adhesion or growing of two granulating surfaces together. To these I think we ought to add another—namely, healing by blood-clot. It will be my endeavour to show that there are only two ways in which union of wounds takes place—namely, without suppuration and with suppuration; and, moreover, that the difference between these two conditions is very slight, being one more of degree than of kind, and that they are both the result of the same morbid process going on in the part—that is, inflammation.

DETAILS OF MODES OF UNION.

Let us consider these different modes of union a little more in detail. It is the first of these that I most desire to consider because it is a mode of union in which the essential principle was laid down by Macartney, of Dublin, who first described it, that there was no inflammation. He says: "Union takes place without any intervening substance such as blood or lymph." We are told that when the surfaces of a clean-cut wound are carefully adapted and

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supported they will probably be found to present no signs of inflammation appreciable to the senses and in the course of from twenty-four to forty-eight hours the wound will be so soundly united as to require no further attention, nothing being left except a linear mark which at first looks more or less red but gradually fades away and in the case of small cuts disappears altogether. This is hardly an intelligible account of what takes place. In what does the process of union consist? There must be some process by which the severed surfaces are caused to adhere together and to become united in such a way as to present no trace hereafter of where the union has taken place. And, again, what is the nature of this linear mark which at first looks red and then gradually fades away? And, finally, must we assume that there is no inflammation because there are no signs appreciable to the senses present? I confess that this theory of immediate union is beyond my comprehension and I have searched for an intelligible account of what takes place without being able to find it. Hear what another author says: "When wounds unite by immediate union no other changes than these"—namely, coagulation in the vessels up to the nearest anastomosis and dilatation of the capillaries in the neighbourhood—"take place beyond the gradual restoration of the capillary circulation through the parts that have been divided and under such somewhat rare circumstances no scar or cicatrix is left. The soft parts at first simply adhere together and subsequently become continuous." But why do they adhere? How do they become continuous? What becomes of the clots in the vessels and why do the neighbouring capillaries dilate? Another author says: "The divided blood-vessels and nerves are brought into perfect contact and reunion ensues by the opposed surfaces simply growing together." Very simple; but I confess that I should like to be told how they grow together. Does the author mean that when the parts are replaced that each minute filament of nerve and the open orifice of each capillary vessel is brought into "perfect contact" with its corresponding and severed half on the opposite side of the wound? The idea is of course absurd. It seems to me that we must acknowledge the presence of some connecting material which shall first cause the cut surfaces to stick together and through which they shall become continuous, just as much as in the case of two pieces of wood which we cannot make stick together without the intervention of some adhesive material.

I for one, therefore, must discard the doctrine of the first mode of union of wounds as untenable. I explain those cases in which it is said to occur—and I must confess that I have never been so fortunate as to observe the process in my own experience—as cases where the inflammatory process is reduced to a minimum and where, therefore, the adhesive material is correspondingly small. Direct experiment negatives the proposition. If a wound, however small and however carefully adapted immediately after its infliction, be made, it will be found upon killing the animal and making sections of the injured part that there is a greater or less amount of connecting substance between the edges of the wound. Even if a very small incision be made through the cornea of a rabbit with the sharpest knife and be prevented from gaping by at once closing the eye the resulting cicatrix will be invisible to the naked eye, but nevertheless the intermediary substance may be demonstrated on microscopic examination. It seems clear to me therefore that we must exclude this fancied method from our category of modes of union of wounds and arrive at the conclusion that where union takes place very rapidly and without the ordinary signs of inflammation being appreciable to the senses that the difference is merely due to degree and that the same changes take place here as in the so-called union by the first intention, though to a less extent. For who shall say how much hyperæmia, how much exudation, and what amount of new formation of tissue is necessary to agglutinate and unite the edges of a wound together?

We proceed, secondly, to allude to the second mode of union of wounds—viz., union by first intention or by, as I believe, adhesive inflammation. I shall not say more about this mode of union than to mention that this would correspond to my suggested first division, that is to say, union without suppuration. I have already discussed this process very fully and the changes which take place in the part up to the conditions of complete union and which changes are admitted by all whether they are believed to be due to an inflammatory process or not. We pass on therefore to union by scabbing. This I believe to be merely a modification of the process of union by first intention and not to be worthy of being placed in a distinct class by itself. When a wound heals by scabbing the separative material which is poured out undergoes similar changes to those which take place in the same material when the wound heals by first intention, the scab merely forming a protective film over the wound and preventing decomposition or putrefaction. Union by blood-clot is another mode of union which can only occur in an aseptic wound and has only recently been described. It is merely another modification of union by first intention or by adhesive inflammation when the edges of the wound are not in contact but are separated by blood-clot which acts as a mould or framework into which the leucocytes and the plasma cells, the result of the inflammatory process, penetrate and where identically the same changes go on as in those cases where the edges of the wound are in close contact and where there is nothing between them but inflammatory exudation. It is obvious that all these modes of union are merely modifications of one process and are identical as far as regards the changes which take place. They may therefore, I think, with propriety be classed together as modes of union of wounds without suppuration.

It remains for us now finally to consider the two other processes or modes of union of wounds—namely, union by second intention and union by secondary adhesion, or, as it is sometimes called, "third intention"—two modes of union which I would venture to class together in one group as cases of union with suppuration. With regard to this mode of union it will be seen, I think, that it is merely a modification of the mode of union we have already described; that in both the essential features are identical and that the difference in the two is one rather of degree than of kind. The difference in the two would appear to be due to some circumstance which produces a prolonged irritation and therefore the resulting inflammation is prolonged and the amount of inflammatory exudation is increased. If we examine the changes which take place in this mode of union we find that we have the same initial changes, the same blocking of the severed vessels, the same hyperæmia around and the subsequent stasis, and the same exudation of what Hunter termed "plastic lymph." But instead of this exudation being slight in amount and speedily ceasing it goes on and on until the surface of the wound becomes covered with a considerable layer too thick to be nourished by the vessels in the underlying tissues. From malnutrition, therefore, the cells in the superficial layers undergo degeneration and are converted into pus cells and thus suppuration takes place. At the same time the deeper layers become vascular and converted into granulations which undergo cicatrisation and so the wound is healed. There can be no question, I think, that the cause of the prolonged irritation is the presence of septic micro-organisms in the wound. Time will not permit me to describe the process in detail, but sufficient has been said for my purpose which is to point out the close analogy between the process of union by the first intention and union by second intention. In both there is inflammation; in both this is attended with exudation, though varying in amount; and in both this exuded material forms the bond of union. In union by secondary adhesion or "third" intention we have the same exudation of inflammatory material acting as the bond of union. We have inflammation, exudation, and the conversion of the exudation into granulations. If these granulations are now brought in contact they coalesce together, just in the same way as the exudation does in union by the first intention. The vessels grow through this coalesced material from side to side of the wound, the cells of which it is composed undergo developmental processes and are converted into scar tissue and the union is complete.

Such then, Mr. President and Gentlemen, are briefly my views with regard to this important question of inflammation in connexion with the union of wounds. The whole subject hinges on the one point of what we mean by inflammation. If we agree with Hueter and Kocher that no injury alone is competent to produce inflammation without the intervention of micro-organisms, then my whole argument falls to the ground. But if we believe, as I do believe, that inflammation may be induced without the concurrence of organisms—an inflammation, I admit, different from that excited by these bodies, for it neither tends to spread to contiguous parts beyond the area of injury nor to infect distant parts through

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the blood stream or otherwise—then I say I have brought forward conclusive evidence to prove that the union of wounds is an inflammatory process. At least, if it is not, I know not what it is.

The Purvis Oration

ON

SOME PRACTICAL POINTS IN THE TREATMENT OF THE CHRONIC FORMS OF HEART DISEASE DUE TO RHEUMATISM.

Delivered before the West Kent Medico-Chirurgical Society on Dec. 2nd, 1898,

BY A. ERNEST SANSOM, M.D., F.R.C.P. LOND.,

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MR. PRESIDENT AND GENTLEMEN,—Permit me to offer you my heartfelt thanks for the honour you have done me by inviting me to deliver the Purvis Oration. The invitation was as gratefully accepted as it was unexpectedly received. I have listened to many communications at the various London medical societies. Many such essays had been produced with much labour and reflected the earnest purpose of the writers, but yet only a small percentage of them has contributed definitely to the history of medicine and often the interest evoked has been fitful and unsustained. And yet how highly one ought to esteem these often self-denying labours. In a few instances one such communication has marked an epoch in medicine; in cases more numerous the student of a certain subject has found in the old records data of priceless value inciting him to the prosecution of new research. The value of the routine work of this society and of every such society in our midst cannot be doubted. A different set of conditions, however, obtains when one who has lived and worked among his brethren is asked to search among the stores of his own experience and present the conclusions of his thoughts to willing hearers. If I may be forgiven I will take a parallel from the experiences of my childhood. The boy who came into the family circle with the announcement, "I have a story to tell," was not always well listened to, while, "Uncle, tell us a story," was the signal for the assembling of hearers and the arrangement of serried ranks of chairs. I am grateful that you have asked me to tell a story.

THE SCOPE OF THE ORATION.

I will now come close to my subject. I have thought that it might serve some useful purpose if I gave you my own views as to the treatment of heart disease. The term "heart disease," however, is too wide in its significance. I had to narrow it down. I considered that on the whole it would be best to avoid definitions and to assume the hypothetical case of a patient, male or female, under the age of thirty-five years, coming to consult us for an indisposition which we have found by physical and other means of diagnosis to be caused by some structural cardiac disease. The limit of age, thirty-five years, makes the probability strong (in the highest degree) that the disease is of rheumatic origin. I say this dogmatically in the first instance. The conditions of disease are such that after the age of thirty-five years the factors of heart diseases are multiform and rheumatism plays but a small part in the causation. The "coming to consult us" is intended to imply that the patient is able to walk about. The disease is, or seems to be, not acute, but chronic.

I must now, at the risk of being thought prolix, explain what I mean by the term "practical." It has been said again and again, and lamented over, that the progress of therapeutics has not been commensurate with the advances in biology and pathology. I demur to this conclusion. It is only in the nature of things that the rate of progress should be slower in the one case than in the other. It is essential to us as scientific men that we should know what is the matter before we apply the remedies. We are all aware of the great difficulties which there are in our understanding and duly estimating the intricate processes of disease, but it is incumbent upon us to do all that we can to penetrate the gloom and to realise as in a picture before us the conditions, static and dynamic, not only of the portion of the organism diseased but of the organism in its entirety. We are thankful for the light afforded us by all methods of physical investigation. It is our duty to obtain knowledge as precisely as possible. Any rapid guess-work savours of charlatanry. The meaning of the word "practical" shifts with the epoch. In the time of Paracelsus it might have been considered practical to assert that a fit of the gout was due to a subsidiary demoniac messenger hurriedly sent to the great toe from the arch demon—the Archæus—within the body. In my own time, when I was a dresser, it was considered practical to amputate a limb without any of the antiseptic precautions now in vogue and to dress the wounds on principles which certainly were not Listerian. Very shortly before my student days it was practical (and inevitable) to do all surgical operations without anæsthetics. In the cases of amputations for diseases of bones and joints before the epoch of anæsthetics one patient in every three died; in the early days of anæsthesia (1854 to 1857) one in five died. To what extent this mortality is further reduced nowadays surgeons know better than I do, but at any rate it is receding to an almost insignificant figure.

ENDOCARDITIS IN THE FŒTUS AND IN EARLY CHILDHOOD.

I have said enough to indicate that by practical points in the treatment of chronic disease of the heart I mean practical therapeutics based upon as clear a knowledge as we can obtain of the morbid conditions. I now return to a consideration of the patient hypothetically before us who has a disease of the heart of, as I have asserted, rheumatic origin. I have already assumed such patient to be under the age of thirty-five years. But what is the limit of youthfulness? I must answer that disease of the heart of rheumatic form may be manifested during the very earliest years and even in intra-uterine life. In proof of this I feel that it will be of interest if I draw attention to a case in which disease of the heart was discovered in the fœtus during life and verified after death. A healthy girl, aged seventeen years, was admitted into the Hospital of La Pitié, Paris, in January, 1880. She was in the last month of pregnancy and came to the hospital only for her accouchement. The case was most completely observed by Professor Peter who found the uterine signs quite normal and there were evidences of a fœtus endowed with much muscular activity. Auscultation demonstrated the sounds of the fœtal heart, but instead of these being of the usual regular "tic-tac" characters there existed a loud, harsh murmur followed by a short, sharp noise just like the normal second sound. The rate of the fœtal heart-beats was 130 per minute. Parturition occurred in a perfectly regular manner and a male infant was born—pale, apparently ex-sanguine, and in a moribund state. The death of the infant soon followed. At the post-mortem examination the heart was found to be enormously dilated and hypertrophied in the right chambers, while the left auricle and ventricle presented normal characters. The tricuspid valve showed all the signs of endocarditis, vegetative and sclerous. There were numerous vegetations on the free border, and the tendinous cords, thickened and shortened, caused such retraction of the firm fibrous curtains of the valve toward the ventricular wall that tricuspid insufficiency was manifested in the most marked degree. The reporter of the case considered that the hypertrophy of the right chambers of the heart must have been rapidly produced for it was evident that the endocarditis had developed subsequently to the closure of the fœtal openings between the right and left chambers of the heart.[1]

I have quoted this case first to draw the attention of those who are in general practice or in obstetric practice in case their experience may tell of corroborative cases; secondly, to show that endocarditis with subsequent changes in the heart muscle and heart cavities, morbid phenomena identical with those of heart disease of the rheumatic form, may occur in the fœtus whilst the mother may be quite healthy and show no sign of rheumatism whatever.

Another case has been communicated to me by my friend

[1] Constantin Paul: Traité des Maladies du Cœur, Paris, 1887, p. 743.

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Dr. J. O. Tunstall of Sutton Coldfield. In an infant who died very shortly after birth all the valves were found to be thickened and presenting numerous vegetations near their free borders. The valves of the right side were more affected than those of the left. There was no history of rheumatic fever or tendency thereto on the part of the mother. Dr. Dreschfeld, writing in Professor Clifford Allbutt's "System of Medicine," says: "Fœtal endocarditis is by no means a rare affection." Dr. Rauchfuss of St. Petersburg concludes that where there is no congenital malformation of the heart the valvular apparatus of the left chambers in the case of endocarditis in the fœtus is as frequently affected as that of the right. According to my own observations endocarditis involving the tricuspid is more frequent in young children than in later life. I found vegetations on the tricuspid valves in six cases out of thirty-two post-mortem examinations in all forms of valvular disease in children. The involvement of the tricuspid in the ordinary rheumatic form of endocarditis is not so frequently demonstrated in cases of adults. The explanation given by Dr. Byrom Bramwell founded on his own personal observations is probably correct—that the tricuspid is involved in acute endocarditis more frequently than is generally supposed, but the disease often passes away without the manifestation of such fibrous thickenings and retraction of curtains, cords, and columns as are frequently observed in the case of the mitral valve and the mitral orifice.

In the cases of fœtal endocarditis we have to form our judgment as to the rheumatic nature of the heart disease from the evidence of morbid anatomy alone. According to my own observations the morbid changes in the valves and in the cords and columns, as well as the consecutive alterations in the walls of the heart, are identical with those known to be in direct association with rheumatism. In the period of early childhood the clinical associations with rheumatism are more manifest, though the articular inflammation may be very slight and in a very considerable number of cases no signs or symptoms of implication of the joints exist. But in childhood the whole heart is profoundly affected by the rheumatic process. I said in my "Lectures on Diseases of the Heart in Childhood," published in the *Medical Times and Gazette* nearly twenty years ago: "In the child heart disease may be the forerunner of an attack of acute rheumatism, may occur at any period of the manifestation of articular phenomena, may arise when these are scarcely appreciable, and may become evident at any period after the subsidence of rheumatism. ..... As with the joint symptoms so with the pyrexia, the relation with the development of heart disease is by no means intimate. Wunderlich remarks that pericarditis and endocarditis can run their course without any elevation of temperature. They sometimes occur without elevating the temperature even a tenth of a degree. The conclusions are identical with my own."[2] Subsequent experience has abundantly confirmed these observations. In childhood the whole heart—pericardium, myocardium, and endocardium—is involved in the morbid process. The late Dr. Sturges termed the affection *carditis*, to express in a word this involvement, and he added: "Strictly speaking, carditis—inflammation, that is to say, both exocardial and endocardial — is exclusively rheumatic."[3] When we come to consider the conditions of heart disease in adolescence and in adult life, in its earlier and later periods, the evidence of morbid anatomy is to show that the changes are more widely spread than would seem at first sight. I said in my Lettsomian Lectures delivered in 1883 that the structures in the neighbourhood of an inflamed valve in rheumatic endocarditis—the fibrous tissues and the interstices of the muscular fibrillæ—were found on microscopic examination to be infiltrated with inflammatory exudation cells. Dr. Sturges[4] gave convincing proofs of the widely-spread infiltration of the heart muscle and similar conclusions have been enforced by Dr. Byrom Bramwell and other observers. More recently in papers read before the Royal Medical and Chirurgical Society on June 28th, 1898, Dr. D. B. Lees and Dr. F. J. Poynton have drawn attention to acute dilatation of the heart in rheumatic fever and to rheumatic dilatation of the heart in the rheumatism and chorea of childhood. Dr. Lees concluded from precise observation that an acute dilatation of the heart was a common occurrence in a rheumatic attack even when arthritis and pyrexia were slight and when there was neither distinct pericarditis nor endocarditis. Or an acute dilatation of the heart might be superadded to pericarditis and endocarditis. In the rheumatic affections of children the enlargement of the heart was demonstrated in a large number of cases and this enlargement receded as improvement set in. The careful and precise observations of Dr. Lees and Dr. Poynton confirm my own conclusions. I wrote in *International Clinics*, vol i., in 1894: "I am convinced that the rapid increases of dulness over the heart in rheumatism are not at all due to pericardial inflammation and the effusion of fluid; the whole heart may become swollen and dilated—swollen with the products of inflammatory exudation, dilated because of the enfeeblement of the muscle of its right and left chambers. In some cases this condition of swollen heart disappears without any of the friction signs of pericarditis being manifested; in fact, the heart and its serous membranes may pass through changes like those occurring in a joint inflamed through rheumatism. These variations in the bulk of the heart may be observed in some cases to be considerable from day to day and there may be repeated enlargements at intervals of a few days just as there may be repeated swellings in the joints." It must be borne in mind, however, that the enlargements of the heart bear no relation in time or in degree to the articular symptoms.

THE PROS AND CONS OF DIGITALIS.

Let us, then, revert to our patient who presents himself to us after convalescence from an attack of rheumatism. We find that there is something wrong with the heart—either morbid enlargement without other signs or murmurs indicative of incompetence of the mitral or aortic valves. Let us realise as the first practical point that even though weeks and months may have elapsed since the obvious symptoms of rheumatism it is most probable that the rheumatic disease in and about the heart is not absolutely quiescent. Slowly and without betrayal by symptoms the changes go on in the endocardium and the fibrous structures of the valve and its neighbourhood. If things go well a mere thickening results, the valve curtains remaining competent; if adversely there is contraction of the firm and thick tissue, degenerative changes supervene, and the valve becomes incompetent. But this may not be all; there may be waves of retrogression alternating with improvement, successive storms of disease with enlargements and shrinkings of the heart.

The first practical point, therefore, I would urge in regard to treatment is that we should realise that the problem is not the simply statical one of restoring a lack of power in the heart muscle, but a dynamical one of overcoming the influences of various factors and varying phases of disease. Take, first, the medicinal treatment. There are signs of some cardiac failure; shall we prescribe digitalis in some form? Consider the *pros* and *cons*. Many of us have had most favourable experiences of the usefulness of the drug. Suppose that the patient who has come to us has given evidence of the difficulty of breathing of effort, of some pretibial pitting or more marked signs of œdema of the lower extremities have appeared, and possibly of basic œdema of the lungs. Digitalis is given in the form of tincture, infusion, or powder and after a few days, perhaps even though complete rest has not been enforced, there is vast improvement—the output from the kidneys has been increased, the diuresis has cleared away the dropsy, and after some days of further treatment the adverse symptoms vanish.

But the experience of a second case may be very different. Administration of the drug fairly in, say, increasing doses during five or six days is followed by no sign of amendment. Perhaps there is evidence of intolerance in vomiting, of diarrhœa, of signs of faintness, of irregularity of the rhythm of the heart; or that, without any such signs, the drug disagrees; it is simply inert. The pulse is not rendered slow, the tone of the artery does not improve, diuresis does not result, and the dropsy persists or increases. How are we to interpret the facts? I think they may be briefly elucidated thus. If there be no rheumatic febrile disturbance and if the heart tissues are not undergoing active inflammatory changes digitalis properly administered acts well. If there be waves of active inflammatory action, circumstances not always to be readily discovered, digitalis fails. Such has been my experience. In a paper

[2] Medical Times and Gazette, Sept. 20th, 1879, p. 335.
[3] Lettsomian Lectures. London: Churchill, 1886, p. 6.
[4] O. Sturges: Lumleian Lectures on Heart Inflammation in Children, THE LANCET, March 10th, 1894.

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founded on precise investigation by Dr. Lauder Brunton and Dr. Theodore Cash the authors thus express themselves: "The administration of digitalis or of drugs which act like it to patients in a febrile condition is likely to have much less effect on the pulse than at the normal temperature, and if the temperature be very high they may have no effect at all while this persists. When the temperature begins to fall the pulse naturally becomes slower and this slowness is increased if digitalis has been given at the height of the fever. It is therefore evident that digitalis and its congeners if they are given at all when the temperature is high should be given with great care, for otherwise the medical man may be induced by the apparent inaction of the remedy to push its administration too far during the fever, with the consequence of producing too great depression of the pulse during defervescence." I would supplement this by expressing my own opinion that not only during periods of rheumatic pyrexia but also when the heart structures are actively infiltrated during rheumatism, though it may be in the apparently chronic stages, digitalis is often inert or harmful.

REST AND TOPICAL APPLICATIONS: BEWARE OF MUSCULAR EXERCISES.

If two—or perhaps three—days have passed without improvement the drug should be omitted and the patient advised to take perfect rest in bed. Of course the withholding of the digitalis should be earlier if signs of intolerance arise. Now comes the question of counter-irritations or topical applications to the præcordia. Small blisters may be applied after the manner recommended by Dr. Caton[5] of Liverpool—one of the size of half-a-crown near the heart's apex and when the consequent irritation is subsiding a second blister of similar size close to it, and others following. Or these small blisters may be placed over the intercostal spaces. In France the thermo-cautery (*pointes de feu*) is more frequently employed. Though these methods may tend to relieve subjective symptoms I have not been convinced that they have had any decided therapeutic effect. I think that there has been much more decided evidence of amendment from the topical application of the ice-bag as recommended in pericarditis by Dr. D. B. Lees. An ice-bag suspended from a cradle should rest lightly over the heart-region, a thin layer of flannel intervening. The ice-bag may be applied for periods of half an hour and removed for like periods. Usually the patient is made comfortable by these means and the heart-tumult is allayed. A temporary dilatation of the heart may under such treatment subside in two or three days. A small hypodermic injection of morphia acetate or morphia hydrochlorate, from $\frac{1}{10}$ gr. to $\frac{1}{4}$ gr., is a great aid to the calming and comforting of the patient. I can thoroughly endorse Dr. Clifford Allbutt's commendation of this therapeutic plan which he himself introduced in heart cases. "By the mouth opium is behind other sedatives in value, its use being attended by grave drawbacks, but hypodermically in doses beginning at one-tenth of a grain and gradually ascending to a quarter of a grain if necessary it is a precious means of relief. The physicians who still protest against its use are unfamiliar with the practice. There is no remedy which calls forth so warm a tribute from the patient himself."[6] From these considerations the second practical point I would insist upon is that any sign of rheumatic storm in the heart—a state of things occurring in an apparently chronic phase and obscurely indicated by symptoms—should be treated by placing the patient at rest in bed.

I think it my duty to utter a warning note against the indiscriminate use by the non-medical public of methods of muscular exercise. In many cases of organic heart disease in their truly chronic stages these methods of increasing the physiological activity of the heart-muscle are of very high value, but there is much danger in the case of the rheumatic heart even though the disease may seem to be chronic. If there be the rheumatically swollen heart—a condition of which the patient himself may be unconscious—the use of muscular exercises should be prohibited. To advise these would be equivalent to a direction to a patient with inflamed joints to run. After a period of such absolute rest exercise should be commenced gradually, for too long inactivity is of course harmful, but the question of the duration of the period of complete repose should be left to the medical adviser.

Can medicines aid the absorption of the effusions in and about the heart in the seemingly chronic stages of rheumatism? I think it is generally agreed now that salicin and the salicylates have no directly favourable influence. Indirectly ministering as they undoubtedly do to comfort and well-being in the acute stages and when the joints are painful they are inert as regards any heart inflammation. I have some lingering affection for the old alkaline plan of treatment in the more chronic stages. I prescribe alkalies with no idea of neutralising any morbific acid, but simply because I think they soften membranes, increase osmosis, and thus facilitate the work of the lymphatics. Another plan of treatment which I believe to be of great value is the administration of small doses, $\frac{1}{2}$ gr. three times a day for periods of three or four days together, of calomel. In many cases I have seen what has seemed to me an extraordinary improvement under such plan of treatment.

After the systematic use of the ice-bag has been omitted it seems to be useful to apply iodine in some form over the integument of the præcordia. The painting the surface with liniment or tincture of iodine is a well-known procedure. The method which I adopt of inunction of an ointment of iodide of ammonium is, I think, much to be preferred. A drachm of iodide of ammonium is to be intimately mixed with an ounce of benzoated lard. This ointment is rubbed into the skin over the heart region by means of a piece of flannel or a pledget of cottonwool for two or three minutes night and morning. After the rubbing a piece of cottonwool, flannel, or light tissue is to be kept over the surface. This ointment does not stain the skin like the iodine preparations and it causes little or no irritation though it readily permeates. I think it much to be preferred to our old friend the belladonna plaster and certainly to the sticky, messy, dirty, perforated abominations which some of our patients delight to disfigure themselves with. Moreover, there is no interference with the daily ablutions or affusions with sea-water which are so generally beneficial.

SEPTIC ENDOCARDITIS.

Supposing that our patient with rheumatic antecedents, with the legacy of an old valvular affection which seems to be chronic, fails to respond to the treatment thus briefly sketched out and presents either signs of sinking with gradual failure or occasional crises of dangerous significance, what shall we infer and what shall we do? It is possible that an endocarditis of infective (septic) form has been set up in the areas of the old disease, for it is well known that infective endocarditis especially attacks the portions of endocardium already diseased. In the great majority of cases the advent and course of this almost invariably fatal affection are marked by signs which are acute and not chronic. There are sweatings and rigors with high risings and low fallings of the temperature figured on the chart by extremely acute peaks, and signs of embolism in spleen, kidney, cerebral arteries, arteries of the limbs or of the skin are noticed. Acute signs, however, are not invariable in septic endocarditis. I have observed and recorded cases in which the temperature has been for the most part subnormal, the maximum scarcely ever passing 101° F. and never showing any high peaks. The condition of the patient, however, is one of extreme debility not explained by the physical signs and the pulse is very feeble or dicrotic. I do not intend to enter upon any question of treatment when such a grave condition as this is diagnosed. The disease is almost invariably fatal and perhaps anything I could say might fairly be put down as not practical, and happily these very grave conditions are rare. A case may assume an aspect of extreme danger threatening death from other causes than the complication of infective endocarditis, and it is because I think that therapeutics may be an agency to avert the fatal tendency I shall quote an instance in point. A young American, aged fifteen years, had a severe attack of rheumatic fever. He recovered sufficiently to take a tour in Norway, but five months after the first attack he suffered from rheumatic fever of great severity a second time. Treatment by the salicylates was followed by improvement but there was a relapse after a fortnight. The heart became greatly enlarged, the systoles irregular and ineffectual, and the murmurs first of mitral regurgitation and afterwards of aortic regurgitation were manifested. With great care the

[5] R. Caton: Treatment of Acute Rheumatic Endocarditis. Vide THE LANCET, August 17th, 1895, p. 399.

[6] A System of Medicine by many Writers. Edited by Professor Clifford Allbutt. London, 1898. Vol. v., pp. 865 and 964. See also paper on the Use of Morphia in Cardiac Disease, by F. S. Toogood. THE LANCET, Nov. 26th, 1898, p. 1393.

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patient was brought from Bergen in charge of his physician to London. For many weeks the condition was one of extreme gravity. I observed the case on many occasions. There were successive enlargements of the heart. On many occasions it was noted that the enlargement was followed by recession almost to the normal in a brief period; on one occasion the area of dulness receded from a line considerably to the right of the sternum on the right side and a finger's breadth outside the nipple on the left to the mid-sternal line and a line just within the nipple in the space of twenty-four hours. Then there was for a time considerable improvement and for about five weeks comparative calm, but again the grave signs returned and on one occasion I was called to the patient when death seemed imminent; the area of the heart was much enlarged, the heart-beats were very feeble, the pulse was small and never under 100, the face was pallid, the breathing was short and hurried, and there was orthopnœa but no dropsy. I then determined to try in this acute case a plan which had seemed to me to be of much usefulness in some chronic cases—the continuous galvanic current in the course of the vagus. There was a temporary improvement and we continued the galvanism, administering the current for six minutes three times a day, the current being from eight bichromate cells (three or four milliampères). One electrode (the anode) well moistened with warm saline water was kept pressed over the nape of the neck, and the other (the cathode) was applied in the groove outside the larynx and trachea for six minutes on the right and left sides of the neck alternately. The pulse-rate progressively diminished to 88, 84, and 76 with few variations. The course of treatment was not interrupted for some months, but there was soon sufficient recovery to permit of the patient returning to America. I have seen him here since (in the summer of this year), a hearty, strong, well-developed young man. He has now no cardiac symptoms, though there is the warning note of the murmur of aortic regurgitation.

SPECIAL TREATMENT OF NERVOUS SYMPTOMS.

The third practical point which I would venture to suggest, therefore, is that special treatment of the nervous system in rheumatic diseases of the heart, even those which seem to be chronic is in many cases of very high importance. Of course I have hesitated before concluding that the galvanic current was directly of benefit by influencing the vagus itself. I had, however, observed many cases in which such treatment had given good evidence of success in the treatment of the rapid heart and in the various forms of Graves's disease. Cases in point are detailed in my oration on the Rapid Heart at the Medical Society of London and elsewhere. From observation since of a long series of cases of Graves's disease which have progressed to recovery in a much briefer time than was the case under my former experiences I cannot doubt that galvanism (the continuous not the interrupted current) has a directly favourable effect. I think there is good reason to believe that the involvement of the nervous elements which are the agencies of the cardiac reflexes as well as regulators of the trophic conditions of the heart is to be regarded as a very important consideration for diagnosis and treatment in rheumatic inflammations and dilatations of the myocardium. I am at a loss to explain why one case of pericarditis, of carditis, or of general temporary enlargement of the heart differs so widely in its symptoms from another without assuming that the involvement of the nerve elements plays an important part in the pathogeny. I have seen, as others have, a case in which the physical signs of pericarditis have been fully manifested and yet there has been no dyspnœa and scarcely any subjective discomfort; while in another case the face denotes anguish, the breathing is rapid and gasping, the suffering is intense, and the signs all show that the patient is at the point of death. Considering the marked and agonising dyspnœa of some cases of acute pericarditis Dr. D. B. Lees suggested the questions, "Is there a dextro-cardiac respiratory centre?" and as a consequence, "Is there a dextro-cardiac respiratory reflex?" When there is no disease in the lungs and little or no defect in the aeration of the blood how shall we explain the very obvious dyspnœa unless we conclude that there is an involvement of the nervous mechanism? The late Dr. Sturges pointed out in his Lumleian Lectures that in the cases mentioned it might be contended that there was not pericarditis alone but carditis with the result that the whole substance of the heart was so weakened that the symptoms in question might be explained by the muscle failure. "But," he added, "the extremity of the dyspnœa would seem better explained by Dr. Lees's view—viz., that there is an automatic reflex from the right ventricle to the respiratory centre, such reflex being called into action by the acute failure of the right ventricle resulting from the inflammatory disease. I consider the observations of Dr. Lees and the late Dr. Sturges of very high importance. It appears to me proved by a strong array of evidence that dilatation of the heart can occur as the direct result of disease of the nervous system. I have observed it when there have been signs of neuritis of the vagus. In the cases in which the heart becomes dilated in the course of Graves's disease the dilatation is probably due to nerve disturbance. In palpitations and the rapid heart it may be concluded that disorder of the vagus is the immediate cause of the symptoms. In many cases of rheumatic heart disease nervous disturbances of the heart become epiphenomena. So it can scarcely be doubted that a morbid irritation conveyed to the vagus centre whereby the control power and the other endowments of the nerve are weakened is in many cases a very important contributory factor to produce the ensemble of symptoms. It seems to me, therefore, that an attempt to influence the vagus by the continuous galvanic current is a very reasonable procedure. Moreover, it is one very easy to accomplish. It is, of course, best that the method should be put in train by an electro-therapeutic expert, but this is by no means essential. The practitioner in attendance can arrange every detail and a nurse or the patient can soon be trusted to do all that is necessary, for the regular employment of the method should be continued for many weeks or even months. I by no means wish it to be understood that this plan of using the galvanic current for increasing the tone of the pneumogastric nerve is the only plan to be adopted for favourably influencing the nervous system in these cases. Moral agencies—the inspiration of hope, the avoidance of depressing emotions, and the inculcation of cheerfulness—are of high value. And when muscular movements are permitted and tentative training has taken place changes of scene and climate and the use of baths and systematic exercises are potent agencies for good. I have said elsewhere[7] that allowance must be made for many fallacies when the estimation of the value of treatment by baths and exercises is attempted. I have given in this communication to-night my reason for believing that enlargements of the heart may occur and recede in a way which may be independent of treatment and I have cautioned against the danger of pursuing any plan of muscular exercises when rest is of paramount importance. Nevertheless, when all these logical deductions are made, I cannot but be convinced that in many cases systematic baths and exercises and the careful following out of a plan of treatment such as that of Dr. Blanc of Aix-les-Bains or that of Dr. Schott of Nauheim are of great therapeutic value. I feel it only right to state my opinion that there is not infrequently manifested nowadays an influence which works much for evil in disturbing the rational treatment of chronic heart disease. It is the influence of the irresponsible third person. I will explain what I mean in the forms of hypothesis and parable. A patient has experienced an attack of rheumatism with heart involvement and under the conscientious care of his medical attendant has entered into convalescence. He or she meets the irresponsible third person who says: "How very ill you are; have you tried the barium and gold treatment?" "No." "Then your doctor cannot know anything about your case. You must go to my doctor who knows all about the barium and gold treatment." Or it may be, "Has your doctor ordered you to Paradis-les-Bains or Weissnicht-wo? Oh! you must go to a doctor who will be sure to order you to go to Paradis-les-Bains or Weissnicht-wo." I am sure that those phenomena of interference are not merely visions of the mind but are distinct dangers to good progress in therapeutics. The lay public are apt to be captivated by fashion in matters medical. They hear of a remedy or a given plan of treatment and their enthusiasm gets the better of their discretion. Their knowledge is and must be superficial. They reason from the supposed remedy to the disease, not as the conscientious medical man does—from the disease to the remedy. It is the medical man's duty to keep himself abreast of therapeutic science. He has already in all probability duly

[7] THE LANCET, March 26th, 1898.

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estimated the prospective value of the means of treatment suggested by the irresponsible third person. If he has not suggested them it is because he thinks them unsuitable to the given case. To the irresponsible third person every case presenting symptoms of heart disturbance is a case of heart disease to be treated by some blatant method for the cure of heart disease. The intricacies of morbid processes involving the heart are of course unknown to the irresponsible third person. Even in the case of the rheumatic heart which I have attempted to sketch out to-night there is much that is intricate and perplexing and the conditions for treatment are multiform. In other cases in which not only the rheumatic changes but the influences of diseased vessels, of degenerations, of the diseases of maturity and more advanced age are to be considered the conditions are more complex still. A disturbance of the well merited confidence between patient and medical attendant works banefully for the former and very often the consultant who has thus been patronised by the irresponsible third person feels himself in an undesirable position, for the facts are withheld from him and the previous history of the patient as offered to him is vague or garbled.

Let me conclude by saying that it is the duty of any practitioner who observes a case of rheumatic heart disease, however chronic, to guard his patient against the subtle future dangers of his malady. It is incumbent on him to make himself acquainted with all the therapeutic means which the present state of science indicates. I think it was Sydenham who said to a lady patient—"Madam, you are entitled to my brains—to all my brains." The medical man must employ such means as are sanctioned by practical experience according to his own discretion without being led away by quasi-scientific will-o-the-wisps. The path is not always easy to find and light from many sources is to be sought for, but the rule is a good one: "Turn to the right and keep straight on."

FOUR CASES OF INSANITY AFTER INJURY TO THE HEAD, WITH OBSERVATIONS RELATIVE THERETO.

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THE value of statistics as to the frequency with which insanity follows upon injuries to the head is much impaired by the consideration that cases of injury to the head are mostly lost sight of after surgical treatment has ceased. Unless the mental disorder follows immediately upon the blow it may fail to be recorded. But cause and effect can in this instance be separated by a wide interval of time. With due regard to this limitation in value of statistics in the particular case in point reference may be made to the figures obtained from a German official report upon the war in 1870-71,[1] which are still probably the most instructive available, being based upon so great a material. Briefly, mental disturbance (insanity) occurred in 0·15 per cent. of the cases of head injury. A particularly instructive series of figures has of late been published by Stolper,[2] the patients being healthy men employed upon a large works, whose personal circumstances were to some extent known to the officials, whose injuries were sustained and treated at the works and whose subsequent history was known to an unusual degree. Out of 981 cases of head injury amongst these workmen 12 (or 1·22 per cent.) presented symptoms of mental disorder which could be attributed to the injury. The same writer has collected data upon the subject under consideration from various authors, from which some estimate may be made as to the percentage of cases of insanity in which the malady is referable to injury to the head. The sum total of the cases of insanity dealt with by the various writers is 18,606, and an injury to the head is set down as the cause in 480, or 2½ per cent., of these. The statement will no doubt be generally endorsed that cases of mental disorder arising in consequence of head injury in adults with no predisposition, as far as inquiry can ascertain, to such disorder are rare. I desire briefly to record 4 cases of insanity following upon blows on the head which were admitted to the Joint Counties Asylum, in 3 of which the personal and family history were negative as regards mental aberration and the disorders which are frequently associated therewith.

CASE 1.—The patient was a man, aged twenty-nine years. There was no family or personal history of insanity or allied disorders. No congenital mental deficiency was observed. He was temperate and quite well and working up to the date of the accident. Six weeks before admission he received a kick from a horse on the left mastoid process which rendered him unconscious. There were symptoms of severe concussion and bleeding from the left ear. He came round gradually, but a general dulling of faculties remained. Gradually symptoms of mental aberration became more pronounced; there were delusions of suspicion and then violence was exhibited. He became very restless, entirely "lost" and incoherent and unable to understand what was said to him. Ultimately he was quite unmanageable and was transferred to the asylum. Before this complete paralysis of the left facial nerve was noted by his medical attendant. On admission (August 26th, 1892) the patient was noted to be entirely incoherent with loss of memory and inability to orientate himself; he resisted everything done for him, was most restless, and unable to attend to his personal needs. He took no notice of remarks addressed to him but kept up a meaningless jargon—"acute confusional state." Physically the patient was pale and thin; there was a considerable scar over the left mastoid process, complete left facial paralysis, the tongue protruded notably to the right side (i.e., towards the healthy side of the face), and the right hypoglossal was apparently paralysed, the lesion affecting the left cortical centre (?). (Dr. Lord, Hanwell Asylum, confirmed the observation as to the tongue.) The hearing was very defective on the left side and sound was not conducted by the bone, the auditory nerve being involved. Later, when the patient came to himself, he complained of a difficulty in deglutition, for which possibly a lesion of the glosso-pharyngeal nerve or nerves may have been responsible. No other cranial or other nerve was found to be affected. There were no spinal symptoms. The patient remained in the same condition until Sept. 11th following. Marked delusions of suspicion then developed but were very transient and he began to brighten up. He subsequently described how he came to his senses about the 18th, and by the 25th he appeared to be quite rational. He could remember nothing whatever of events subsequently to the kick; from that date (July 12th) to Sept. 18th was a complete blank. He "woke up" to find himself paralysed over the left half of his face and with a difficulty in swallowing. The patient was discharged recovered on Oct. 12th, 1898, after from six to seven weeks' residence in the asylum. The condition of the face and tongue and of deglutition were unchanged. When last heard of, one month after discharge, he was well and at work.

CASE 2.—The patient was a man, aged thirty-five years. There was no family or personal history of insanity or allied disorders. There was no congenital mental defect. He was temperate. Ten days before admission he received a very severe blow on the left frontal region from a revolving crane handle. The outer table of the bone was felt to be fractured by the medical attendant. The patient was unconscious for a quarter of an hour after the blow and never spoke rationally again before removal to the asylum. There was slight bleeding from the left nostril. His medical attendant described him as being in a state of "cerebral irritation" for forty-eight hours after recovering consciousness. There were slight twitching of the right arm and leg, with some dilatation of the left pupil, and raised temperature. At the end of forty-eight hours he could be recalled to himself; he complained much of pain over the left frontal region. Symptoms of mania then developed and on June 30th, 1894, he was removed to the asylum. On admission there was great incoherence with repetition of words and much motor restlessness; his attention could not be gained and mistakes of identity were numerous, with failure to orientate himself in time or place—a state of subacute mania, with much mental confusion. Physically the patient was healthy. The left pupil was the larger, but reactions were normal in both. There was a recent scar over the left frontal eminence 1½ in. long. The mental condition persisted, with exacerbations of

[1] Deutsche Sanitätsbericht.
[2] Die Geistesstörungen infolge von Kopfverletzung, Vierteljahrschrift für gerichtliche Medicin und öffentliches Sanitätswesen, dritte Folge, Band xiii., Heft 1.

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acute excitement, until July 15th of the same year, when he became more maniacal — destructive, stripping himself naked; he was very talkative, with much repetition of phrases. After a few days he became quieter and on July 22nd was reported as much improved. He was sent out to work in the grounds, and convalesced rapidly. His memory was impaired. He was discharged recovered on August 30th, 1894, after two months in the asylum. He resumed his work. When last heard of, a year after the accident, he was quite well and working.

CASE 3.—The patient was a man, aged thirty-four years. There was no family or personal history of insanity or allied disorders. There was no congenital mental defect. He was temperate. Five weeks before admission a topmast fell and struck his head. His wife stated that he was unconscious for three days and "bled from the ears." Subsequently he complained much of pains in the head, suffered from insomnia, and became very restless and incoherent with indistinct utterance. The patient was admitted to the asylum on July 5th, 1897. Upon admission he was noisy, requiring a sedative at night, tearing, restless, unable to fix his attention, and his comprehension was very limited. In replying he often failed to find words, stopped short, and looked puzzled and confused and was much annoyed at his inability to express himself. He had hallucinations of hearing and probably of sight. He talked incoherently to himself for long periods. He made many mistakes in identity. He had no notion of time or place. There was marked intellectual disturbance—"an acute confusional state." Physically he was healthy. He continued in the condition described above during July, becoming, however, gradually more self-satisfied and elated. At the close of July he became hypochondriacal and remained so for most of August. Early in September he improved greatly and could be employed. He was discharged recovered on Oct. 16th, 1897, rather more than three months after admission. He visited the asylum about a month after discharge and appeared to be quite well; nothing has been heard of him since.

CASE 4.—The patient was a man, aged fifty-six years. There was no family history of insanity or allied disorders. There was no congenital mental defect. He was of doubtful temperance. He was in this asylum in 1866, admitted in May, apparently in a state of mania. He was discharged in September of the same year recovered. He has since been employed and earning his living. Eight weeks before admission he received a kick from a horse which rendered him unconscious for an hour. According to his medical attendant the frontal bone was fractured. He began to wander about, became threatening, refused food, and finally developed symptoms of mania with marked incoherence. He was admitted to the asylum on Feb. 1st, 1898 (nearly thirty-two years after the date of his previous discharge). The mental state on admission was one of mild mania—great incoherence and loss of attention-power. Physically he was healthy. There was a healing scar between the eyebrows, the seat of injury. Improvement began in March following admission and was progressive. He was discharged recovered on July 2nd, 1898—five months after admission.

The above four cases have certain features in common—namely, there was no heredity of insanity or allied disorders known of; no previous history of mental trouble in the individual except in the last case (thirty-two years before); the patients were healthy and temperate (excepting the last case, in which this was doubtful); the injury was a severe one and the skull was fractured in probably three of the cases; insanity in each case supervened practically immediately after the period of unconsciousness which followed the blow; the mental state was one of mania, fairly acute, with much incoherence and mental confusion; it was of short duration and all were discharged recovered and resumed work. The literature on the subject goes to show that when insanity follows forthwith upon a head injury the latter is usually of a decidedly severe kind. Most writers note a considerable similarity in the mental symptoms in different cases in adults. The condition is commonly one of mania in greater or less degree, or there is a confusional state, with great incoherence and less excitement. Rapid convalescence is often noted, though some intellectual defect may remain after the symptoms of insanity necessitating confinement have passed. On the other hand, it is well known that paralytic dementia may be occasioned by cranial injury.

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THE

INOCULATION THEORY OF MALARIAL INFECTION.

ACCOUNT OF A SUCCESSFUL EXPERIMENT WITH MOSQUITOES.

BY DR. AMICO BIGNAMI,

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(*Continued from p. 1463.*)

THE first experiment was made with G. N——, an epileptic patient in the wards of the Hospital of San Carlo, and with another epileptic patient of whom I have kept no record because he remained under observation only a very short time. G. N——, a robust young man who suffers from attacks of epilepsy at long intervals, has been for about two years in the Hospital of Santo Spirito, where he assists the nurses in attending to the other patients. He has never had fever nor has he ever resided in malarious places. This man and the other of whom I have spoken were exposed for three days to the bites of mosquitoes taken from Porto where they were caught in the adult state. But as in this first experiment I only succeeded in obtaining a small number of these diptera and the bites were very few I resolved to adopt another plan in my next experiments. I may note in passing that this experiment was commenced in precisely the same manner as that which later gave a positive result and that I stopped it solely on account of the impossibility of obtaining sufficient material.

In order to secure an abundant supply of mosquitoes I resolved to procure their larvæ which are found in immense numbers in the stagnant pools of the Campagna. These larvæ were brought to me in glass vessels which were opened in the mosquito-room. In a few days the production of mosquitoes was such that they might be counted by hundreds. The supply of water with its freight of larvæ was renewed every four or six days by the help of an employé from our Institute of Comparative Anatomy who collected the water either at Porto, near Fiumicino, a place, as I have said, of highly malarious character, or near Carroceto, an isolated station on the Anzio line infested by malaria of a bad type. I obtained in this way the means of maintaining a most abundant supply of mosquitoes for a long time in the conditions most favourable for ascertaining experimentally whether the bites of the variety or varieties of insects thus hatched out were capable of affecting man injuriously.

The experiment was begun in this manner only upon G. N——, who slept in the mosquito-room from August 8th to Sept. 22nd of this year under my constant supervision. He was very much bitten. On August 22nd he felt unwell with a sense of chilliness, and the temperature rose at 8 A.M. to 37·3° C. (99·1° F.), and at 1 P.M. to 37·4° C. (99·3° F.). At 3 P.M. it was 37·2° C. (99° F.), and on the following days it stood at 37° C. (98·6° F.) in the afternoons until the 29th, after which it remained constantly below 37° C. Except for this slight elevation of temperature, lasting, one might say, for only one day, and commencing with chilliness and headache, there was no further sign or symptom of illness, and up to this moment the man remains perfectly well. Naturally, on August 22nd and the following days examinations of the blood were made with great care and diligence, without its being possible, however, to discover any parasites. Some specimens of the hatched mosquitoes were preserved in order that the species might be identified afterwards.

The second experiment was commenced on August 24th on another subject, A—— S——, who had never had malarial fever and who had been for six years a patient in the hospital in the Santa Maria section which is directed by my colleague, Dr. G. Bastianelli. S—— had thus for a very long time been continuously under the observation of a physician who has for many years made a special study of malaria. I cannot but dwell upon this fact since it is of the utmost value in freeing the experiment from a source of serious error. In order likewise to be prepared for possible objections I obtained a complete history of S—— from his earliest years until he entered the Hospital of Santo Spirito and came under our observation there. From this it appears that he had never suffered from malarial fever at any period of his

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life. He was admitted to the Hospital of Santo Spirito in the beginning of October, 1892, and since then he has presented no other symptoms than hemianæsthesia, neuralgic pains in the joints, volitional tremor, and simple polyuria which at times was slight and at other times very severe. His case was thus a chronic nervous one the exact diagnosis of which it is not necessary here to discuss.

With this subject, then, the second experiment was begun on August 24th of this year and carried out in the same manner as the preceding one. S—— slept in the mosquito-room till Sept. 19th. During all this time the supply of mosquito larvæ obtained from the stagnant pools at Porto and brought to Rome in glass vessels was renewed from time to time at intervals of from four to six days. Only once was the supply obtained elsewhere—namely, from a place between Maccarese and Ladispoli. A very abundant provision of mosquitoes was thus secured and the patient was very much bitten. S—— remained well up to Sept. 10th, when he began to suffer from headache in the morning and malaise. On Sept. 10th the temperature rose to 37·2° C. (99° F.) and then until the 17th it remained normal, when it again rose to 37·3° C. (99·1° F.) and the patient felt ill, complained of severe headache, and had a sense of chilliness. On the succeeding days the temperature did not rise above normal, but the feeling of malaise continuing, with headache and a suffering aspect, the experiment was stopped on the 19th and the patient returned to sleep in the ordinary ward where he soon became perfectly well.

The examination of the blood for malarial parasites, made with every care, especially during the last few days, gave a negative result. Some specimens of the mosquitoes hatched rom the larvæ were preserved for identification.

The result of the experiments so far described being negative (except for the slight elevations of temperature which I shall deal with later) various speculations naturally arise in the mind. Supposing it to be true that malaria may be inoculated on man by mosquitoes the non-success of this experiment might have been due to want of susceptibility in the individual experimented upon. Nor is this an improbable explanation, for not only is it well known that there are certain persons who may remain for more than a month in a highly malarious locality without contracting malaria, but there are some individuals (as Celli's experiments have shown) who, even when inoculated hypodermically with blood containing æstivo-autumnal parasites, do not take the infection. Now, we know that there is held to be no surer way of producing malaria in healthy persons than by thus injecting malarial blood. On the other hand, we might suppose that the mosquitoes employed in the experiment although taken from malarious places did not happen to contain any malarial parasites or even that they did not belong to a variety or varieties adapted to act as hosts to the parasites. Such explanations appeared to me all the more likely in view of the important observations of Ross[1] who in the series of researches already referred to only found the developmental forms of his Proteosoma coccidia in one particular species of the mosquitoes which had bitten birds infected with proteosoma—to wit, in the grey mosquito.

But this last hypothesis was rendered more than likely in consequence of the observations of Grassi whose article appeared at the end of September when my experiments were already at an advanced stage. Grassi established the fact that in malarious districts certain species of mosquitoes exist which, according to his researches, are not found in healthy places. Now, if it be mosquitoes which inject the malarial parasites into man it is evident that they will in all probability be of those species which, according to Grassi, are peculiar to malarious places. Hence it was necessary to repeat the experiment, procuring for the purpose first of all those very species and, since it is difficult to obtain any considerable quantity of their larvæ, to collect from some malarious place in the Campagna the greatest possible number of adult mosquitoes—in fact, to repeat the experiment in the same manner as that in which I had gone to work in the first instance when for want of material I was not able to continue it for a sufficient length of time. The collecting was done at Maccarese, where by Grassi's instructions one of the employés at the laboratory of comparative anatomy was stationed who every day sent a supply of these diptera to the Hospital of Santo Spirito, where they were set at liberty in the mosquito-room as formerly.

[1] Report of the Cultivation of Proteosoma-Labbé in Grey Mosquitoes (Calcutta, 1898).

Thus was begun on Sept. 26th the third experiment. S——, who was by this time completely recovered from the indisposition following upon the preceding experiment, again consented to be the subject. I could not succeed in finding anyone else intelligent enough to understand the importance of the test and so self-denying as to submit to it. Along with S—— there slept in the mosquito-room another patient with nerve disease who, like S——, had never had malaria nor, as far as he was aware, had ever been exposed to the infection. And for a couple of nights a third patient, also a nerve case, slept in the room, but with this man the experiment was not continued. On Oct. 3rd I was obliged for want of new material to suspend the experiment. On the 10th it was again resumed, still with mosquitoes from Maccarese. From the 10th till the 14th there was an abundant supply of mosquitoes. On the 14th Sola complained of malaise and headache, on the evening of the 16th (at 6 P.M.) his temperature was 37·1° C., and on the following days he felt better. From the 17th to the 21st there were but few mosquitoes left in the room; nevertheless both patients showed evident signs of having been bitten. From the 19th to the 23rd no fresh mosquitoes were brought; on the 23rd there was a new but only a small supply. From this date onwards until the experiment came to an end there were but very few mosquitoes in the room; the patients were, however, certainly bitten. During the last days of October S—— complained of malaise and headache. On Oct. 31st his temperature showed a slight elevation to 37·2° C. (99° F.). On Nov. 1st at about 3 P.M. he was seized with severe shivering which lasted till 5 P.M., the temperature rising rapidly to 39° C. (102·2° F.); between 9 P.M. and 10 P M. he again experienced a sense of chilliness. The fever continued all night. On the next morning (Nov. 2nd) the temperature was somewhat lower (38·2° C.), but it rose again in the afternoon to 39 3° C. (102·7° F.). The patient was agitated; he complained of very severe headache but did not present any grave symptom. About 11 P.M. he again had the sense of chilliness but only for a short time. During the night of Nov. 2nd the temperature remained at 39° C. (102·2° F.) and on the morning of the 3rd it rose again to 40·4° C. (104 7° F.), the patient being in great agitation and suffering. During the afternoon the fever showed signs of abating and there was slight perspiration. At 5.15 P.M. a hypodermic injection of quinine was administered (15 gr.), and this was repeated (in the same dose) during the night. The fever subsided and at 8 o'clock on the following morning (Nov. 4th) the thermometer registered 36·7° C. (98·1° F.). During the next few days the administration of quinine was continued, the patient having a slight elevation of temperature which did not, however, reach 38° C. (100·4° F.), except on the 6th. From Nov. 7th onwards the patient was entirely without pyrexia and he rapidly recovered his appetite and went on regaining his strength.

A careful examination of the blood made on Nov. 2nd gave a negative result; in spite of the most diligent search not a parasite was to be found. On the morning of Nov. 3rd I found young amœboid parasites, few in number, mobile or discoid and without pigment, with the appearance characteristic of those of autumn fevers. These forms went on increasing in number during the course of the day and in the afternoon they were present in considerable quantity, some of them presenting pigmentation at the edges, the pigment being in very fine granules. Before the quinine was given dry preparations of the blood were made by fixing with absolute alcohol and staining by Romanowsky's method and with hæmatoxylin and eosin. In these preparations the parasites present the characteristic annular forms with the particle of chromatin stained in the typical way.

Thus there was produced experimentally in the case of S—— a grave form of malarial fever with the temperature curve which is often seen in a primary æstivo-autumnal attack. The fever having begun sharply continued with slight intermissions from Nov. 1st to the 3rd, when it showed signs of abating towards evening and the quinine was administered. The parasites found in the blood belonged to the æstivo-autumnal variety, so that, keeping this in mind and also the course of the temperature, we may conclude that the continuous curve of the latter would, but for its interruption by the quinine, have developed into that of an autumnal tertian fever.

It is perhaps the first time that in a primary æstivo-autumnal infection contracted in the natural way the examination of the blood has been made from the beginning of

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the fever. It is noticeable that the parasites were found after about forty hours, at first few, then rapidly becoming more numerous.

It seems to me and to all those who watched the experiment that it was conducted in such a manner as to meet all possible objections. Let me repeat that S—— is a man of robust constitution, despite his nervous malady, who, as a minute inquiry shows, had never in all his life suffered from malarial fever and had not for the last six years left the Hospital of San Spirito, where he had all that time been under the observation of Dr. G. Bastianelli. The room in which the experiment was carried out forms one of the annexes of the San Carlo ward, where none of the physicians have ever known an autochthonous case of malarial fever to occur nor has malaria ever been known to originate in any of the neighbouring houses.

The objection that the experiment cannot be considered as conclusive because it was made in Rome, where some persons imagine there is always danger of contracting malaria, can only have an appearance of value for those who do not know Rome and the distribution of malaria in our district, for all the local medical men are well aware that although there are some malarial foci at certain points of the outskirts the city itself is quite healthy and long experience has shown that no one at any season ever contracts the fever there. The Hospital of San Spirito is so situated as to preclude any suspicion of the kind. Now, in a room of this hospital a patient contracts malarial infection produced by æstivo-autumnal parasites with a continuous fever and symptoms of a nature to render necessary the prompt administration of quinine—one of those fevers, in fact, which are commonly contracted by the labourers in the Roman Campagna in the summer and autumn months and which, as we know, usually begin with the temperature curve described by Marchiafava and myself as typical of the summer tertian fever or even with a continuous curve. This fever, then, identical with those prevalent at Maccarese, was contracted by S—— in surroundings in which there was neither the water nor the air nor the soil of Maccarese, but *only its mosquitoes*. Hence we are forced to the conclusion that this fever was actually inoculated by these mosquitoes. In this manner I obtained an experimental production of malaria under conditions narrowly circumscribed, a healthy room being transformed into a malarious environment by introducing into it mosquitoes taken from a malarious locality. The conditions under which the experiment was conducted were, in short, such that I cannot conceive of any source of error which can have crept into it to vitiate the result, and it is clearly impossible to draw from it any other conclusion than that the fever contracted by S—— was inoculated by the mosquitoes. The result obtained constitutes, in my opinion, a positive proof which of itself and *per se* is sufficient to furnish a secure basis for the theory of inoculation.[2]

But by which species of mosquito was the fever inoculated? To this inquiry the experiment, from the way in which it was conducted, does not give an answer as conclusive and as free from objections as it gives to the fundamental question itself. I have said that some specimens of the mosquito with which the various experiments were carried on were preserved for identification and classification. Professor Grassi has found that some of the specimens hatched from larvæ with which the first experiments were made belonged to Culex pipiens. During the third experiment, Grassi being in Rome, some of the mosquitoes were sent to him every time a batch was received at the Hospital of Santo Spirito. Amongst these, captured in the adult state, Grassi identified the Culex penicillaris, the Culex malariæ (so-called), and Anopheles claviger; but of this last species only a few individuals were sent and only on one occasion during the course of the experiment. It follows therefore that S—— was bitten by the Culex pipiens from August 24th till Sept. 19th and by the other three species, especially by the two first, from Sept. 26th until the end of October.

According to Grassi it may be taken for granted that when the experiments were made with mosquitoes hatched from larvæ collected in the Campagna the insects obtained would be the Culex pipiens, because the larvæ of this species are found in great swarms and are in consequence easy to collect, while the larvæ of the other species named are found with more difficulty and not in swarms. I believe, however, that while the Culex pipiens no doubt predominated in the first experiments one cannot be quite as certain that there were not present in smaller quantity individuals of the other species which also frequent the malarious parts of the Campagna. Hence we cannot exclude with absolute certainty the possibility that in the second experiment there may have been along with the Culex pipiens also some individuals of the same species which were employed in the third experiment. On the other hand we cannot with certainty exclude the possibility that the infection may have come in the period between August 24th and Sept. 19th; indeed, cases are known (and I myself have several times met with such) of individuals in whom the fever began even more than a month after they had left the malarious locality. But it is certainly much more likely that the infection came in the last period of the experiment—that is to say, while the mosquitoes were being brought from the Campagna in the adult stage—and the prevailing species were those which Grassi has found only in malarious localities.

Grassi, in the study which he made during last summer of the distribution of mosquitoes in malarious and non-malarious localities, came to the conclusion that in malarious places in addition to the species which are found in non-malarious districts there are others which are absolutely unknown in these latter. In non-malarious districts the predominating species is the Culex pipiens; in malarious places, on the other hand, are found the Anopheles claviger (maculipennis), the Culex penicillaris, and other species, which therefore appear to have an intimate relation with malaria. One of these species, apparently not yet described, Grassi found at Maccarese and he named it "Culex malariæ."

The coincidence between the distribution of malaria and that of certain species of mosquitoes, especially the Anopheles claviger and the Culex penicillaris, is a fact of great importance which naturally lends itself to various interpretations. The opponents of the mosquito theory, for example, might hold that the same conditions which permit the development of certain species of mosquitoes in particular places which are malarious and not in others which are healthy likewise permit in the first-mentioned the development of the malarial parasites; hence the coincidence in their distribution. But when once it has been *demonstrated that malaria is inoculated by mosquitoes* then only can it be affirmed that between the species found by Grassi in malarious places and malaria there must exist an intimate causal relationship. The demonstration of the fundamental fact having now been given, as we have seen, everything points to the probability that in my experiments the mosquitoes which inoculated the malaria are to be found among the Culex penicillaris, the Culex malariæ, and the Anopheles claviger. This last species was represented by only very few individuals. It is thus probable that the greatest importance attaches to the Culex penicillaris or the Culex malariæ or perhaps to both of these species.

But on this aspect of the question I shall dwell no longer. My experiments were directed towards ascertaining whether malaria is inoculated by mosquitoes, and while they have yielded a decisive result as far as that fundamental problem is concerned they cannot have any other value in regard to the remaining questions than as guides towards their solution. But from this point of view they give an experimental support to the idea that the Culex pipiens is innocuous and appear to indicate the Culex penicillaris or the Culex malariæ as most probably the intermediate host of at least one species of malarial parasite.

Here it may be demanded why it was that fever did not develop in the other individuals who sojourned for so long in my "camera malarica"? The answer is obvious, that while instances of absolute immunity from malaria in our race is extremely rare one nevertheless meets very frequently with individuals who even in districts of a highly malarious character are seized with their first attack of fever only after a sojourn of some months' duration. This explanation will apply to the immunity enjoyed by the second subject who was placed under exactly the same conditions as S—— during the whole course of the third experiment. On the other hand, the negative result of the first two experiments made in August and September is to be explained in all likelihood by the fact that the subjects of them were exposed

[2] An investigation might also be made as to whether mosquitoes which have bitten malarious persons are capable after a certain time of inoculating a healthy individual with malaria. This is, however, a separate experiment. My idea was, on the other hand, to discover whether mosquitoes in the native state, so to say, in which they are procured from the Campagna, could convey infection to a healthy person.

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exclusively, or almost exclusively, to the bites of the Culex pipiens. From this point of view my two first experiments, carried out under conditions identical with those of the third, except in regard to the species of mosquito employed, served up to a certain point as controls to the last.[3]

It might also be asked what explanation can be given of the slight elevations of temperature with sense of chilliness, headache, and general malaise, noticed in the subjects of the first and second experiments towards the end of the periods over which they extended? I consider that they had probably nothing to do with malaria, since the clinical record as well as the minute examination of the blood tends to exclude the supposition. But it has been observed that some individuals are subject to slight and transient elevations of temperature when exposed to the bites of mosquitoes. Now, it must be remembered that these patients were very severely bitten on account of the enormous number of diptera developed from the large supplies of the collected larvæ.

Is the bite of certain species of mosquitoes the only means, it will next be asked, by which the malarial parasites penetrate into the human organism? In other words, is malaria only contracted by inoculation? So much is certain—viz., that *inoculation is up to the present the only means for which experimental demonstration has been obtained.* But to demonstrate experimentally that the fever cannot be contracted in other ways a long series of researches would be required, conducted in the manner indicated by me at the commencement of this paper. It would be necessary to observe how a large number of persons are affected by malaria when they are all maintained under the same conditions of life in some highly malarious centre, a portion of them being protected and another portion unprotected against the bites of mosquitoes. In this manner an experimental solution of this problem also may possibly be found.

In the meantime we are justified in considering malaria as exclusively a disease of inoculation. I had already arrived at the same conclusion as I have now reached in the direct way by a process of exclusion. By arguments derived from epidemiology and pathology I excluded the theories of air- and of water-conduction and further rested my contention upon certain facts of analogy. The arguments based upon analogy, as I pointed out in my first paper, are chiefly taken from what is known of the "cattle fever of Texas" which is inoculated into the animals by a tick (Boophilus bovis, Riley). The very important experiments of Smith and Kilborne demonstrate, in fact, not only that the young ticks artificially reared inoculate the infection when they are placed on susceptible animals, but also that the tick is *necessary* in order that the infection may be transmitted. I believe it may be safely affirmed that all the facts known up to the present regarding the biology of the parasites allied to those of malaria favour the idea that infection is conveyed by only one way and introduced by only one method.[4]

And now, having securely established a starting point for our researches, a long series of problems opens up for solution. Under what form are the malarial parasites present in the mosquito? Is it the same species of mosquito which inoculates man with various forms of malarial fever, or are there different species, as the investigations which have so far been made would lead us to believe? And from where do these diptera get the parasite? Do they perhaps take it from man, as might be supposed from analogy with what is known of the fever of Texas, and does the malarial parasite complete one life-cycle in the mosquito in the same way as it completes the other in man? Or, on the other hand, as Manson[5] supposes on the strength of Ross's researches with birds infected with proteosoma, must the parasites be regarded as, above all, parasites of certain species of mosquitoes by which they are only accidentally inoculated into man? Regarding these and other questions, investigations are now being prosecuted. For the present I shall content myself with observing that whatever may be the answer to these questions once the great fundamental problem of how the fever is taken has been solved the practical question of prophylaxis straightway emerges from the uncertainty which now surrounds it, and I do not doubt that it will be easier to find a means of defence against the enemy when we know by what way he comes and by what weapons he assails us.

To sum up, malaria is a disease which is contracted by inoculation—a fact of which we have now obtained the first experimental proof, since we have seen that an individual who has never had malarial fever by sleeping in a healthy place where no one had ever previously taken fever may sicken with malaria of a grave type if bitten by certain species of the mosquito brought in the adult state from some distant locality of highly malarious character. Further, everything points to the conclusion that inoculation is the only mode by which infection is acquired, since air and water as carriers of infection may be excluded and because arguments based on analogy all tend in the same direction. This much at any rate we can assert—namely, that inoculation is the only mechanism of infection which has been demonstrated experimentally.

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(To be continued.)

[3] I say this with reserve because one cannot yet exclude the possibility that even the Culex pipiens may be infective in some malarious places.

[4] I have not neglected to make other investigations with the object of finding fresh facts for or against the possibility of the *inhalation* theory. It has been objected against the air-conduction theory that the malarial parasites are so delicate that they cannot resist desiccation. But no one, as far as I am aware, has attempted to ascertain if this really be the fact. In a case of summer tertian fever with very many parasites I removed from a vein by means of a Pravaz syringe about 1 c.cm. of blood and left it to dry in several sterilised Petri's capsules in a very thin layer for about forty-eight hours at the temperature of the air (30° C.) I then mixed it with a normal solution of chloride of sodium at about 37° C. and injected it under the skin of an individual who had not had malaria. This was on August 15th of the present year and up to this time the patient remains perfectly well. Proceeding in the same manner I dried in sterilised Petri's capsules some drops of the splenic contents taken during life from a case of pernicious fever in which there were innumerable parasites in all stages of development, including that of fission. The desiccation this time lasted about one hour and three quarters. I injected the dried blood under the skin of another person who had never had malaria on August 31st. The result was again negative. I do not attach much value to these experiments. It would be desirable to repeat them, varying the conditions. They only show that the malarial parasites which are found in the human body do not resist desiccation even for a short period under the conditions which I have described. I also began other investigations, starting from the assumption, admitted by many, that the germs of malaria may find entrance along with dust by inhalation. In that case they ought to be found, one would suppose, in the peri-bronchial glands of individuals residing in highly malarious localities. I therefore examined, both in the fresh state and with various stains (especially with methylene blue), the contents of the peri-bronchial glands of individuals from malarious parts of the Campagna who died after a short residence in the Hospital of Santo Spirito. I saw nothing, however, to excite the least suspicion of the presence of parasites.

[5] Loc. cit.

DIPHTHERIA ANTITOXIN IN PRIVATE PRACTICE.

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IN view of the importance of the question I am led to offer a few observations upon this subject suggested by the able and comprehensive paper of Dr. Louis Cobbett in THE LANCET of Dec. 3rd, 1898. It must not be supposed that these observations constitute a claim upon my own part to be regarded as a specialist. My chief reason for offering them is that whilst many tables have been published showing the death-rate in hospitals the records of the use of antitoxin in private practice are few and far between.

My first experience of this remedy dates back to the time when Dr. Klein was investigating the matter early in 1894 on behalf of the Local Government Board. At that time I had a "return" case of diphtheria and Dr. Klein was good enough to furnish me with a quantity of the serum for use in this case. The result was nothing short of a revelation, the temperature fell within nine hours after the use of the remedy and the membrane had disappeared from the throat in twenty-four hours. Since that time I have used no other remedy in the initial stages of diphtheria and have employed it in 33 cases, with one death. This latter was a patient whom I saw for the first time on the fourth day of the disease and who was removed to hospital. Possibly a second injection might have saved this life too.

Of after-effects beyond urticaria I have nothing to relate, and my impression is that even the urticaria was due to the method of preparation of the antitoxin, since I have not observed this symptom for a long time now. Paralyses, never severe, have followed the disease in a certain number of cases, but there is no evidence to show that antitoxin has the power of undoing mischief already suffered by the nerves

[9] Loc. cit.

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before the use of the remedy. In no case has any local inflammation occurred at the seat of injection. I may remark in passing that I invariably choose the subcutaneous tissue of the abdominal parietes. The skin is loose here, so that the distension caused by the injection gives rise to very little pain, and should any slight local soreness remain for a few days it does not interfere with the patient's comfort in lying down, whilst the comparative thinness of the skin greatly facilitates the operation.

Whilst it is my habit to make a bacteriological examination of the cases of diphtheria which I attend I do not think of waiting for the result before operating. Experience shows that a considerable number of cases occur in which, whilst the clinical signs are somewhat doubtful, the disease responds to antitoxin, so that the latter must be looked upon as a diagnostic agent as well as a curative one. It seldom happens that a second injection is required. In only 2 of my 33 cases has this occurred. One was a case which did not come into my hands until another medical man had stated that nothing more could be done; the other was a very severe case following immediately on an attack of erysipelas not completely recovered from. In both these cases the first injection produced a considerable improvement, but this was not fully maintained, and a second injection was administered at the end of twenty-fours with perfect success.

There are several important points with reference to the use of antitoxin which have not received the attention which they deserve. The first is that the remedy should be used immediately the disease is discovered. The statistics of the Metropolitan Asylums Board show that whilst even with the delay occasioned by the removal of the patient to hospital cases injected on the first day show a 4 per cent. mortality, a delay of twenty-four hours causes a rise to 15 per cent., and that this increases at the rate of about 7 per cent. per diem. I contend, therefore, that it is the duty of every medical man to apply antitoxin immediately in every case of diphtheria or suspected diphtheria which he sees, without waiting for the patient's removal. The mere adoption of this plan would probably reduce the London death-rate to one-third of its present amount—indeed, probably much lower. The objection will naturally be made that in many of these cases the expense of providing the remedy would fall upon the medical man. This should be obviated by the action of local authorities. A supply of antitoxin should be kept at some point or points where it is constantly accessible and if necessary the services of a medical practitioner should be available for its administration. There can be no doubt that Dr. Cobbett is right when he asserts that medical men do not in many cases (I fear in the majority) recognise that the agent in question is one which is capable of robbing diphtheria of its terrors and that the evidence of its utility is such that those who do not use it incur a grave responsibility. I should go even further and assert that the responsibility is nothing short of criminal. Antitoxin is no longer upon its trial. Its utility has been proved, and since no other remedy is known to have the slightest direct influence upon this dire disease there is no possible excuse for a failure to try it.

As regards after-infection statistics are at present wanting to enable any direct assertion to be made, but since the membrane clears off the throat within at most forty-eight hours it seems clear that there can be no further growth of virulent diphtheria bacilli and that a week probably represents the outside time during which it is necessary to isolate the patient. In my early cases I endeavoured to persuade the attendants to allow themselves to receive a protective injection, but in view of the shortened period of infectivity I now content myself with ordering the nurse to gargle with Jeyes' fluid 1 in 1000 and to use the same agent 1 in 500 for general disinfection; in either of these strengths it can be readily borne by the skin or even mucous membranes.

In conclusion I appeal most earnestly to my fellow-practitioners to use antitoxin *immediately* in every clear or doubtful case of diphtheria, feeling assured that in no other way is it possible to seriously diminish the mortality and that, as I have said, even the delay of sending cases into hospital means a distinct and decided increase in the death-rate such as no self-respecting or humane practitioner would willingly be a party to. It seems desirable to add that I habitually use, and am entirely satisfied with, the antitoxin supplied by Messrs. Burroughs, Wellcome, and Co., of 1500 units.

Old Kent-road, S.E.

REACTIONS IN CASES OF WOUNDS AND ULCERS TREATED BY OXYGEN GAS.

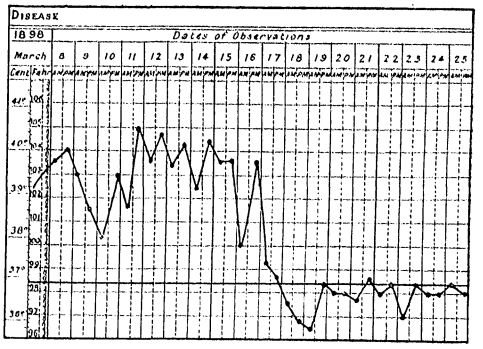
BY GEORGE STOKER, M.R.C.P. IREL.

IT has been observed in almost all the cases treated by oxygen gas that at some time during the treatment, varying from a few days to a few months, a distinct toxic reaction occurs and that from the time of such occurrence the wound or ulcer heals much more rapidly. Out of many such cases a few typical ones have been selected in order to illustrate their toxic reaction and their temperature charts and notes are given below. In considering these cases it must be remembered that in all of them the discharges were carefully examined from time to time and found to contain a pure growth of staphylococcus pyogenes albus, aureus, or citreus. The points of special interest which have been observed in reference to the above are:—1. That healing was not delayed but was accelerated during and after the time the temperature was highest. 2. That the wounds did not become inflamed or dry and the discharge continued healthy. 3. That there was a good deal of inflammation of the lymphatics and some swelling of the glands in the neighbourhood of the ulcer. 4. That in some cases—e.g., Cases 2, 6, and 7—small secondary areas of infection existed where small abscesses formed, burst, and healed rapidly. 5. That in all the cases observed the general malaise or disturbance was small in comparison to the height of the temperature. The tongue remained clean, there was little headache, and no sickness.

Taking the above facts into consideration it is not unreasonable to conclude, as already suggested, that oxygen acts by forming an antitoxin from the secretion of the micro-organisms present in the wound or ulcer. It is possible that the antitoxins which are made by injecting horses, &c., with toxins are formed by a somewhat similar process of oxidation taking place in the blood of the animal so injected. This would further suggest the necessity of preparing an antitoxin for each separate case from its own micro-organisms, especially in more malignant forms, it being presumed that an antitoxin must have a toxin present on which to act or react. Acting on this belief antitoxins have been prepared for many cases by passing a stream of oxygen from a broth culture of the micro-organisms from each case; the broth is then dropped on the wound where it is absorbed. The results of this method have been satisfactory not only in cases of a non-malignant character but also in cases of lupus and rodent ulcer. It is hoped and believed that working in this way and preparing antitoxin as above described that the satisfactory treatment of malignant disease may be ultimately reached.

CASE 1.—This patient had varicose ulcers of both legs of seventeen months' duration. He was treated for several months as an in-patient at a general hospital. Complete

FIG. 1. (CASE 1).



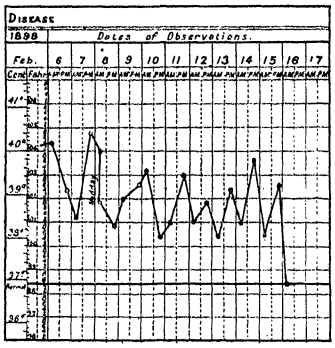
rest, grafting, &c., were tried, but without success. Under oxygen treatment the reaction did not appear till after eight months. He is now quite healed.

CASE 2.—The patient had chronic ulceration of the right leg of eight years' duration probably the result of hereditary

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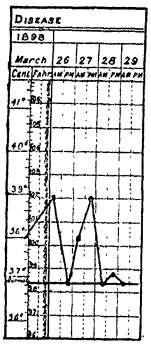
syphilis, he having lost his soft palate at four years of age. Ulceration was very extensive, reaching behind from the apex of the popliteal space to the lower border of the calf in front from above the patella to the front of the ankle. These ulcers are now healed. A secondary abscess formed which is now healing rapidly. Reaction occurred on the ninth day of oxygen treatment.

FIG. 2 (CASE 2).



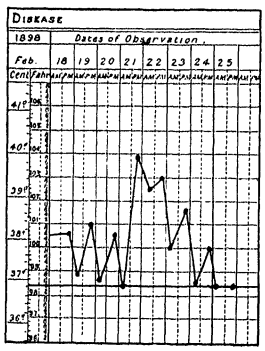
CASE 3.—The patient had an ulcer on the front of the shin of six weeks' duration the result of an accident. She was discharged cured in five weeks, the reaction occurring on the sixteenth day.

FIG. 3 (CASE 3).



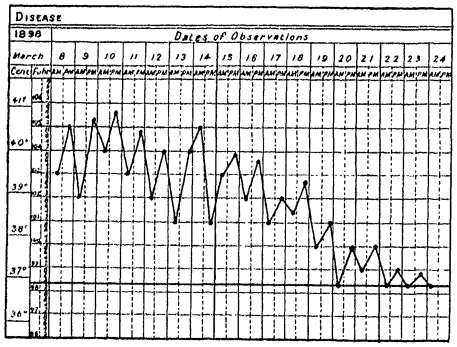
CASE 4.—The patient had two small ulcers on the outer side of the leg above the knee. He also had two long sinuses, one leading inwards and backwards to the apex of the popliteal space and the other upwards on the outer side of the leg. Oxygen was passed through the sinuses by means of a tube and the ulcers were exposed to oxygen in the usual way. The patient made an excellent recovery and now after many months there is no sign of recurrence. Reaction took place on the twenty-second day.

FIG. 4 (CASE 4).



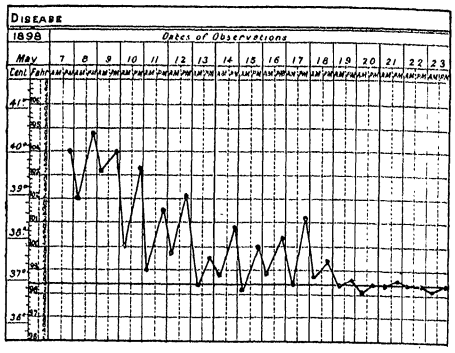
CASE 5.—The patient had chronic ulcers of each leg of eight years' duration the result of an accident. Both legs are now quite healed. The reaction occurred on the fifth day.

FIG. 5 (CASE 5).



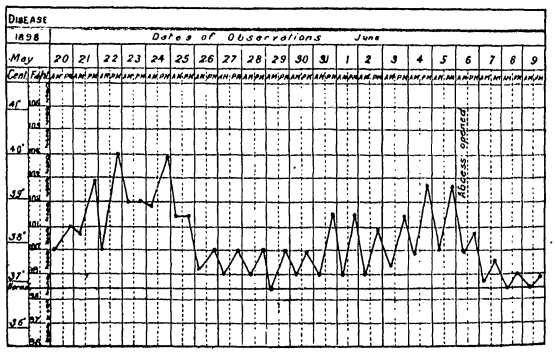
CASE 6.—The patient had a very large chronic ulcer of the right leg of eight years' duration. The patient had been treated in various ways, including prolonged rest, but without cure. The ulcer was the result of an accident. The patient is now almost well. The reaction began on the fifth day of oxygen treatment. In this case there was an area of secondary infection.

FIG. 6 (CASE 6).



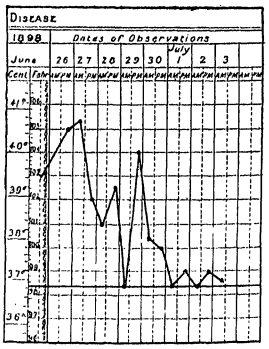
CASE 7.—The patient had a chronic ulcer on the shin of three years' duration. She had several areas of secondary infection where small abscesses formed but quickly healed again under oxygen. The reaction occurred on the seventh day.

FIG. 7 (CASE 7).



CASE 8.—This patient had two ulcers on the left leg the result of an accident. The ulcers had existed for four years. In this case the reaction took place on the thirteenth day. Both ulcers are now quite healed.

FIG. 8 (CASE 8).



Hertford-street, Mayfair, W.

LONDON WATER SCHEME.—At a special meeting of the Water Committee of the Glamorganshire County Council held on Nov. 29th it was decided to oppose the London Water Bill.

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TYPICAL AND SEVERE CASE OF SPORADIC CRETINISM IN WHICH THE PATIENT MENSTRUATED REGULARLY.

BY BYROM BRAMWELL, M.D., F.R.C.P., F.R.S. EDIN.,
PHYSICIAN TO THE ROYAL INFIRMARY, EDINBURGH; LECTURER ON THE PRINCIPLES AND PRACTICE OF MEDICINE AND ON CLINICAL MEDICINE IN THE SCHOOL OF MEDICINE, EDINBURGH, ETC.

THE chief point of interest in this extremely well-marked case of sporadic cretinism is that the patient who was thirty-six years of age and measured exactly 36 in. in height had since the age of twenty-five years menstruated regularly every month. This is quite peculiar. I am not acquainted with any other case of typical and severe sporadic cretinism in which menstruation has occurred. The notes of the case are as follows.

The patient, aged thirty-six years, was first seen on Jan. 26th, 1895, and was again seen on Nov. 15th in the same year. Her stepmother stated that she had known the patient from the age of three years. She then had a somewhat peculiar look and vacant expression of countenance. Her birth had been unattended with difficulty. During infancy she had several attacks of bronchitis which were supposed to have retarded her development. She did not begin to walk until she was three years old and she had hardly grown in height since that time but had become very much broader. When she was seven years old the patient had an abscess on the outer part of the left leg. She had also twice had a glandular abscess of the neck; the last abscess occurred when she was sixteen years of age. She had never had any of the diseases peculiar to childhood, though she had been exposed to some of them. She had slept, for example, in a room with one of her sisters who was suffering from scarlet fever during the whole course of the disease but did not take it.

The family history of the patient showed that her mother had died at the age of thirty-one years from consumption and that her father had died at the age of fifty-four years from gangrene of the foot following rheumatism. There were six children in the family: (1) a female, now aged forty years, unmarried, and quite well and normal in every respect; (2) a male who died from phthisis at the age of twenty-eight years, a fine, tall man, 6 ft. in height, who had been in the Cameron Highlanders; (3) a female, aged thirty-eight years, married, well formed and of average height but not very strong; (4) a female who died a few months after birth; (5) the patient; and (6) a male who died a few months after birth while teething. There were also six stepbrothers and sisters; all were well developed and strong. No other case of sporadic cretinism or myxœdema had, so far as was known, occurred in the families of either the father or the mother.

The patient's present condition is typical of a marked degree of sporadic cretinism. Her height is exactly 36 in. and her body is very broad; the back is markedly curved in the lumbar region and the abdomen is very large and prominent. There is no umbilical hernia. The facial expression is highly characteristic. The face is swollen and full; the skin of the eyelids is translucent; the nose is squat and broad, pug-shaped; the ears are rather large; the mouth is large; the lower lip is pouting but the lips are not much swollen; the tongue is not protruded between the teeth and, though large, is not proportionately so large as one might expect; the teeth in the upper jaw are all wanting; and the palate is very broad and flat. The head is covered with a profusion of dark-brown hair which is very coarse. Up to the age of twenty-five years it was kept short as her head was scurfy and scaly. Since the patient began to menstruate the scalp had become much cleaner and the hair has been allowed to grow long. The anterior fontanelle is closed; the patient's stepmother says it was very late in closing but she does not remember the exact date at which it closed. The neck is very broad. Enormous fatty swellings are present above the clavicles. I have never seen these supra-clavicular swellings proportionately so large in any other case. There is also some fatty swelling in the anterior fold of the left axilla. The forearms are colossal and the tibiæ are somewhat bent inwards. The hands are enormously broad and large. I have not seen the hands proportionately so large in any other case. The fingers are very broad and flat and the feet are very broad and short. The hands and the feet easily become blue and cold. In complexion the patient is somewhat earthy-coloured. The skin generally is dark, dingy, brownish-yellow in colour, very dry, coarse, and harsh. She never perspires. She is worse in cold weather and her stepmother states that no matter how near the fire the patient gets she is always cold. Her appetite is small and she does not like sweets. The bowels act regularly and medicine is never required. Urination is natural. The nipples and areolæ are somewhat developed and there is a fulness in the position of the breasts. Since the age of twenty-five years the patient has menstruated every month; on one occasion (a year and a half ago) the discharge stopped for three months. There are no pubic hairs. She is naturally of a very cheerful disposition, fond of fun and company, but her intellectual development is that of a child of five or six years. She understands a great deal that is said to her, but her vocabulary is limited and she does not speak much. Before I knew that she was able to understand what was said to her I remarked that she was a comical little person, whereupon she immediately began to laugh. She told me that she was going to a wedding and that she was going to wear a blue dress. She is, it seems, very vain and fond of dress. She sleeps well—in fact, too well.

The following are the exact measurements: height, 36 in.; circumference of the abdomen at the level of the umbilicus, 24 in.; of the chest at the level of the nipples, 22 in.; of the neck over the thickest part of the glandular swellings, 19 in.; of the neck higher up, 14 in.; of the upper arm at the middle, 6¾ in.; of the forearm at the thickest part, 7¾ in.; of the hand, 9⅛ in.; length of the hand from the wrist to the tip of the middle finger, 4 in.; circumference of foot at the thickest part, 8 in.; and length of foot, 6 in.

I did my best to persuade the stepmother to allow the patient to come into the infirmary but she would not consent to this. I then tried to induce her to have the thyroid treatment carried out at home. She consulted with the patient's sister on this point but they both refused to have the treatment carried out. They said that they had known the patient so long in her present condition and were so much attached to her that they would not like to have her changed even for the better.

Edinburgh.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF DOUBLE EMPYEMA OF THE FRONTAL SINUS WITH ONE INFUNDIBULUM.

BY W. R. H. STEWART, F.R.C.S. EDIN.,
SURGEON TO THE EAR, THROAT, AND NOSE DEPARTMENT OF THE GREAT NORTHERN CENTRAL HOSPITAL; CONSULTING SURGEON TO THE LONDON THROAT HOSPITAL.

A PATIENT, twenty-nine years of age, consulted me about two years ago for stuffiness of the left side of the nose, with a discharge of some duration, and occasional severe frontal headache. Examination showed polypi with an abundant milky-white discharge on the left side. The right side was apparently normal. There was no bulging or disfigurement of the face. The radical operation was explained to the patient, who, however, would not have it done, preferring the milder mode of treatment. The polypi were therefore removed together with the anterior ends of the middle turbinates. A free discharge remained but all sense of stuffiness and headache disappeared. About eight months ago, however, she wished for the major operation as the discharge continued so profuse. All the symptoms pointing to unilateral disease, I operated through the brow incision with a small trephine. The bony septum between the sinuses was found to be situated well over to the left side and was complete with the exception of a small hole posteriorly through which pus was oozing. The septum was removed, but there was so much granulation tissue in the right sinus that I continued my incision down the ridge, across the top of

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the nasal bones (taking care to avoid the spot where the spectacle frame might rest), and up the other ridge, and the flap was turned up. The bone was then chipped away with forceps until there was space enough to thoroughly clear out the right sinus. The reason why there was no discharge into the right side of the nose was then explained, for with the finest probe I could find no sign of an infundibulum on that side. The sinus discharged through the opening at the back of the septum into the left infundibulum. The usual funnel-shaped india-rubber tube was passed through this into the nose and the wound was closed. The patient did very well.

The points to be noticed in this case are—(1) the absence of the infundibulum on the right side which led me to believe that the right sinus was healthy and did not need interference, there being sufficient disease on the left side to cause all symptoms; and (2) the amount of room gained and the very small apparent scar left by the incision, which I have since employed with success in more than one case of double empyema.

Devonshire-street, W.

PHTHISIS WITH PECULIAR CARDIAC PHYSICAL SIGNS.

BY W. SOUTHWICK WILLMORE, M.R.C.S. ENG., L.R.C.P. LOND.

THE case of phthisis with peculiar cardiac physical signs reported by Dr. Hale White in THE LANCET of Nov. 19th, is of such interest that no apology is needed for recording an exactly similar case which came under my notice a few days ago.

The patient was a soldier and was under treatment in the Royal Victoria Hospital at Netley. He was twenty-seven years of age. When I first saw him a week before his death he was evidently in the last stage of phthisis, with extreme debility, emaciation, cough, and abundant expectoration. Examination showed that the right lung was extensively diseased from apex to base. There were evidences of considerable cavitation at the apex and of a moderate amount of fluid at the base. The left lung was also diseased but in much less degree, the apices only of both lobes giving morbid physical signs. On examination of the heart at first I could make out no impulse and, moreover, there was no cardiac dulness to the left of the sternum. In the usual situation of the apex the heart sounds were very faint, almost inaudible, but on tracing them to the right they became more audible and were of almost normal intensity in the fifth right intercostal space, 2¾ in. from the mid-sternal line; here also a feeble but perfectly distinct impulse could be felt. There was no visible pulsation in any part of the pericardium. The man's condition with distressing orthopnœa did not permit of a prolonged examination, but there was apparently an area of absolute cardiac dulness commencing above at the fourth intercostal space and extending to the right to within one inch of the vertical nipple line, although the pleural effusion and the consolidation of the lung made it very difficult to be sure of this.

My first impression was that the heart had been dragged over by fibrosis of the right lung and pleural adhesions but, considering that the duration of the disease had been only nine months, that there was no retraction of the chest-wall, and that the physical signs were in no way suggestive of pulmonary fibrosis, the case seemed impossible of explanation in this way, and my opinion was that it was a case of dextrocardia. I examined the patient's chest once again before his death and then noted no change in the physical signs. He died on Nov. 15th.

At the post-mortem examination it was found that the heart was of natural size and that it was in no way displaced from its normal position. The condition of the lungs was consistent with the physical signs elicited during life. There were several large cavities in the upper part of the right lung and the whole lung was diseased and partly consolidated, although not completely airless. There were about 15 oz. of fluid in the right chest. The anterior border of the left lung covered completely the anterior surface of the heart nearly to the mid-sternal line.

The intensity of the cardiac sounds in the fifth right interspace in this case, as in Dr. Hale White's case, can be readily explained by the fact that they were conducted through the consolidated lung and perhaps intensified by the proximity of large pneumonic cavities. The illusion was heightened by the absence of the normal left dulness. But why the abnormal impulse? There could be no doubt about it, and its presence was noted by several observers.

Netley.

NOTE ON A CASE OF QUARTAN AGUE IN NEW ZEALAND.

BY ROBERT H. BAKEWELL, M.D. ST. AND. & N. Z., LATE PHYSICIAN TO THE CHRISTCHURCH HOSPITAL, NEW ZEALAND.

THE patient was a woman, aged about forty-five years, who lived near a swamp, but with a hill between her residence and the swamp. For the last month she had been subject to frequent attacks of chills followed by heat and perspiration. From one of these attacks she was suffering when I was called in on August 19th at 8 P.M. The temperature was 101·6° F. and the pulse was about 100. It appeared on close questioning that these attacks occurred every four days—that is, one, say, on the Monday, the next on the Thursday, always with two clear days. The attacks commenced about 4 P.M. and lasted until the morning; they were accompanied by some headache, great lassitude, aching of the limbs, and the other symptoms of intermittent fever. I ordered 5 gr. of sulphate of quinia *statim*. The dose was to be repeated at 8 A.M. On calling the next morning at 10 I found that she had taken both doses; there had been no singing in the ears, the temperature had fallen to 96°, and she was ordered 10 gr. of quinine daily for two days more. In all she took 30 gr. This sufficed to stop the quartan, of which there was no recurrence, and produced no cinchonism—a sure sign that it was needed. The rarity of quartan ague must be great, as I have never seen a case for forty-seven years when I resided on the borders of the Essex marshes.

Auckland, New Zealand.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. THOMAS'S HOSPITAL.

A CASE OF RUPTURED INTESTINE WITHOUT ABDOMINAL WOUND; LAPAROTOMY; DEATH NEARLY A MONTH LATER.

(Under the care of Mr. W. H. BATTLE.)

RUPTURE of the intestine without any wound of the abdominal wall is probably not very rare yet the number of cases which have been recorded is by no means great. The amount of damage exhibited by the skin of the abdomen is no criterion of the severity of the injury inflicted on the subjacent viscera. The skin may show only a slight abrasion and yet rupture of the liver or the intestine may have occurred. In cases like these, where the wheel of a cart has passed over the abdomen or a severe kick from a horse has been received in the same region, the diagnosis is exceedingly difficult. If the bowel has been ruptured by what signs can it be known? Unfortunately no very definite answer is possible to this question. The great amount and persistence of the collapse may suggest that an injury greater than a mere contusion has been inflicted but it cannot be said that reliance can be placed on this. It was formerly maintained, and the view is still held by many, that absence of liver dulness always occurs in rupture of the stomach or intestine and that the presence of this physical sign is pathognomonic of this condition, but neither of these statements is absolutely true; it *usually* happens that a rupture of the intestine or of the stomach allows sufficient gas to escape

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to cause the liver to drop away from the abdominal parietes so that a resonant note is obtained, but it is not always so, and, on the other hand, a highly distended bowel may encroach on the liver dulness. Persistence of the vomiting is a sign of some value, but it cannot be relied on. The diagnosis being so difficult it is natural that the decision as to the treatment to be adopted should be difficult also. In deciding on the treatment in a case in which the abdomen has received a blow or some similar injury two points have to be considered; the first is, do the severity and persistence of the symptoms point to some lesion greater than mere contusion? and the second point which must be considered is the severity of the blow. If this has been really great, as the passage of a heavy waggon or the kick of a horse, the severity of the blow in itself may justify an exploratory laparotomy. It is, of course, possible to open the abdomen and then to find that it has been unnecessary, but if due care has been exercised this is better than to find at the post-mortem examination that a lesion was present which could have been readily remedied. It is difficult to obtain trustworthy statistics as to the relative mortality between cases operated on and those in which no operation was performed, but it has been said that when cases are treated by systematic exploration after all severe injuries the mortality is 66 per cent., but that with the expectant treatment a death-rate of 97 per cent. is obtained,[1] but these figures are of little value. The following case has many points of interest and so far as the wound of the intestine went the treatment adopted was successful, though death occurred nearly four weeks after the injury. Some interesting cases of ruptured bowel have been recorded by T. Bryant;[2] in several of these the signs were extremely slight. Hitchcock,[3] W. H. Battle,[4] and J. Croft[5] have all published cases. At the last reference will be found a table of fourteen cases which have been recorded.

A man, aged twenty-seven years, was admitted into St. Thomas's Hospital during the evening of April 4th, 1898, having been, while crossing Whitehall when intoxicated, knocked down by a two-wheeled van, one wheel passing over the abdomen apparently below the umbilicus to judge from the abrasions. He was taken first to a hospital where they did not admit him. On admission at St. Thomas's Hospital he could give no clear account of the accident, but complained of pain in the abdomen and he had a slight scalp wound. The urine was drawn off by a catheter and was found to be free from blood. The temperature was normal and the pulse was fairly good. At 12 midnight after admission he commenced to vomit a clear fluid which smelt strongly of alcohol; the vomiting continued until 9 A.M. on the 5th, when he began to complain of pain over the abdomen which appeared very sensitive to touch and very resistant. There was no loss of liver dulness and no increase of dulness was present anywhere over the abdomen. The temperature was 100·6° F. In the afternoon (about twenty hours after the accident) the patient was anæsthetised with ether and an incision 5 in. long was made in the middle line through the umbilicus, and a large quantity of semi-purulent fluid escaped. The small intestine was turned out and found to be covered with flakes of lymph which easily peeled off. About 12 in. from the ileo-cæcal valve the bowel wall was discovered to be torn through; the tear was longitudinal and about three-eighths of an inch in length and was complete, the mucous membrane protruding. The tear was closed by means of 8 Lembert sutures of silk. The peritoneum was irrigated with hot sterile water and an opening was then made through the abdominal wall just above the pubes and a glass drainage tube was inserted. The first abdominal incision was then closed with salmon-gut sutures and dressed with cyanide gauze. The next evening (the 6th) the wound was dressed and a little slightly turbid fluid was removed through the drainage-tube with a pipette. The vomiting had continued although the patient was under the influence of morphia. Feeding was carried out by nutrient enemata. On the 7th the pulse was better but the vomiting still continued. A drachm of magnesium sulphate every hour was ordered but it was returned almost immediately. His temperature had not been above 99° since the evening of the 6th. On the 8th the patient began to feel better, his pulse was 62 per minute, and the temperature was normal. The drainage-tube was removed and a plug was inserted. He had had a great deal of hiccough but the vomiting gradually ceased. No food was given by the mouth. By the 9th he had very much improved and all vomiting and hiccough had ceased. A soap-and-water enema acted well and the patient felt more comfortable. He was given some Benger's food by the mouth and also a little milk and brandy, and no vomiting ensued. On the 10th he complained of pain in his back, but it was considered to be due to lying in bed. The bowels acted well and he took milk diet readily. He continued to improve and on the 12th the stitches were removed, but on the 14th the wound gaped and some bowel protruded, so the intestine was carefully washed and returned and the wound was resutured. On the 19th the temperature rose to 101·6°, but it subsided when a boric fomentation was applied to the wound. On the 22nd the temperature began once more to be irregular, rising at night, and on the 25th it reached 102·4°. The patient complained of much pain on the right side of the chest and on examination dulness at the back was discovered downwards from the level of the spine of the scapula; the dulness was not absolute and there was loss of breath sounds and of vocal fremitus. On the 26th an aspirating needle was introduced into the right side of the thorax posteriorly but failed to find any fluid. On the 28th, as the physical signs had not improved and as the evening temperature on the 27th had reached 103·4°, the patient was anæsthetised with chloroform and Mr. Battle tried with a trocar and cannula to find fluid in the right side of the chest, but as none was obtained an incision was made midway between the ninth and tenth ribs starting from the line of the anterior axillary fold and going forwards for about 4 in. and the pleural cavity was opened and a finger was inserted but nothing except what appeared to be solid lung could be detected. The incision was therefore continued forward in the same line over the abdomen and the peritoneum was opened just beneath the edge of the liver. A finger was introduced and felt what seemed to be some very soft recent adhesions among the coils of intestines but nothing else could be detected although the right kidney was easily felt. Over the upper surface of the liver nothing was felt and the finger easily reached the right coronary ligament. When one finger was put into the pleura and another into the abdomen nothing but diaphragm intervened between them. The wounds were sewn up and dressed. The patient's condition did not improve; he vomited after taking any liquid, his breathing was at the rate of 40 per minute, and his pulse was 160. There was no distension of the abdomen. He continued to grow worse on the 29th and he gradually sank, dying at 7 A.M. on the 30th.

Necropsy.—At the post-mortem examination which was made by Dr. H. W. G. Mackenzie a small amount of serum was found in the right pleura. The lower lobe of the right lung was quite collapsed and portions of it sank in water. In the abdomen there were adhesions here and there between the intestinal coils, but these were readily broken down and there was no evidence of recent peritonitis beyond this. There was a collection of pus amounting to an ounce or so in the pocket of the peritoneal cavity behind the right lobe of the liver. This was very near the second incision made on the right side of the chest and the abdomen. It lay about an inch or so behind it. The site of the former rupture of the gut was in the small intestine about 12 in. from the ileo-cæcal valve. Several sutures were attached to the outer aspect of the gut and readily came away as if they simply adhered to the surface. The opening was quite closed. The other organs all appeared to be normal.

Remarks by Mr. BATTLE.—The result of treatment in this case of ruptured intestine was very disappointing to all concerned. The operation was performed as soon as it could be after I had seen the patient. The rent in the gut was found and satisfactorily closed, whilst the peritoneum was thoroughly washed and cleansed from adherent lymph. A mild infection of the abdominal wound probably took place at the time and although it appeared to be firmly healed when the stitches were removed some abrupt movement caused the union to give and prolapse of bowel followed as described. This in turn gave rise to a secondary infection of the peritoneum and to the subdiaphragmatic abscess for which exploration proved unsuccessful. The general state of the patient was very difficult to manage. The accident occurred when he was under the influence of alcohol and he was addicted to it; moreover, he

[1] Balladur: Thèse de Paris, 1895.
[2] THE LANCET, Dec. 7th, 1895.
[3] Medical and Surgical Reporter, Philadelphia, Dec. 8th, 1894.
[4] THE LANCET, May 5th, 1894.
[5] Transactions of the Clinical Society of London, vol. xxi., p. 254, and vol. xxiii., p. 141

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was of a headstrong disposition and impatient of control. On more than one occasion he got out of bed and it was only the skilful management of the house surgeon, Mr. John McClean, that carried him through the danger of the first four or five days. The difficulty attending the diagnosis of abdominal lesions directly after the infliction of the injury is again demonstrated by this case. All abdominal injuries should be admitted to hospital when they apply, and it cannot be too strongly emphasised that the most serious injury may be present without any apparent damage to the abdominal wall or any excessive shock. The diagnosis was very clear at the time I first saw the patient and I had no hesitation in preparing for immediate operation. In addition to the history of injury the abdominal pain was then very severe and the aspect of the patient indicated great anxiety. The vomiting which had been thought to have been possibly the result of drink continued and was frequent and distressing. Examination of the abdomen showed great rigidity of the abdominal wall and much tenderness. The percussion note was not impaired anywhere. As a rule there is, I should say, no dull area in cases of ruptured small intestine over the part affected by the injury unless there is associated with the ruptured gut a hæmorrhage from ruptured mesentery. If there were much contusion of the intestinal wall with hæmorrhage into it one could imagine some impairment of note, but it is not easy to understand how gut which has been paralysed by injury can produce a change in the percussion note sufficiently pronounced to be of use in the diagnosis of these lesions, though possibly this might be due to want of tone in the wall of the gut—compare the dull note obtained by slacking down a drum. French surgeons have expressed an opinion that it is little use operating for ruptured intestine if more than fifteen hours have passed since the injury, but it is to be hoped that this will not be accepted generally, otherwise we shall certainly lose cases which might have been saved. Dr. Wiggins successfully operated on a boy thirty-six hours after the injury.

ANCOATS HOSPITAL, MANCHESTER.

A CASE OF IRREDUCIBLE HERNIA; ADHESION OF INTESTINE, SEPARATION OF MESENTERY; RADICAL CURE; RECOVERY.

(Under the care of Mr. STANMORE BISHOP.)

THE special point of interest in the following case is the accidental separation of the mesentery from a portion of the small intestine. It is often stated that the bowel is liable to slough if this occurs and many instances of this serious result have been recorded,[1] but generally this happens only when the separation has been much more extensive than in the case recorded below.

A man, aged fifty-one years, was admitted into Ancoats Hospital on Jan. 10th, 1898. He was stout, flabby, and of rather coarse build; he had an irreducible scrotal hernia on the left side which he declared he had observed only for nine months; he had never worn a truss. After rest in bed for three days it became somewhat smaller but no attempt at reduction appeared to have any effect upon it. It was of about the size of a cricket ball and gave a clear note on percussion, apparently containing only intestine without any omentum. When the patient first noticed the swelling, about nine months before admission, it was of the size of a duck's egg, his attention being directed to it by some hypogastric pain. He had suffered from cough but he did not attribute the swelling to the coughing nor did he think it resulted from his employment, in which he had to lift heavy bags of coal. On Jan. 14th the operation for radical cure was performed. The veins of the spermatic cord were varicose, the cord itself being much thickened, elongated, and convoluted, but it was easily separable from the sac. On opening the latter a U-shaped coil of intestine was found; it was intimately adherent laterally; and while this adhesion was being separated by means of scissors it was found that the mesentery itself was being separated from the gut. The mistake was recognised almost immediately and the adhesions were then attacked nearer the neck of the sac and behind where a gap was found and from this point the work was easy. The bowel itself at the apex of the loop was shrunken and narrowed in calibre, looking indeed as though it had been compressed in the neck of the sac. At first resection of this portion was thought of, but the idea was rejected partly because the bowel retained its normal colour and gloss and partly because the patient showed signs of commencing collapse. The neck of the sac was divided upwards, the bowel was reduced, and the neck of the sac was tied, the remainder being cut away. The ring and canal were then sewn up by three mattress sutures, applied as Noble suggests, so as to draw the conjoined tendon behind Poupart's ligament, leaving only enough room for the passage of the cord. The wound was closed by horsehair sutures and sealed by celloidin. The patient was greatly collapsed on the same night and very sick, the vomiting lasting until the evening of the next day. The first motion was passed on the second day. Recovery was uneventful and the sutures were removed on the tenth day, the wound having healed by first intention. The patient was kept in bed for six weeks and left the hospital perfectly well on March 8th.

Remarks by Mr. STANMORE BISHOP.—This case indicates, I think, the amount of reliance which may be placed upon the anastomoses of vessels on the bowel wall, since in the process of separation several of the direct smaller supplying vessels were divided.

[1] Allingham: THE LANCET, May 5th, 1894.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Lesions of the Pineal Body.

A MEETING of this society was held on Dec. 6th, the President, Dr. PAYNE, being in the chair.

Dr. CYRIL OGLE exhibited two cases of Tumour of the Pineal Body. The first was a pigmented mixed-celled sarcoma about 1½ in. in diameter associated with melanotic sarcoma diffused all over the cortex of the cerebrum and invading brain substance along the fine vessels. The appearance of the brain was as if it had been painted with dark sepia or black lead. Dr. Ogle referred to instances of diffuse sarcoma in the pia mater described by Ziegler and to a similar appearance due to melanotic sarcoma depicted in Bramwell's book on "Intracranial Tumours." The other specimen was a mass about 1 in. in diameter, limited to the region of the pineal body but pressing on and causing atrophy of part of the optic thalami and corpora quadrigemina, the rest of the brain, including the pituitary body, being healthy. On microscopic examination it proved to be of complex character, partly composed of vascular tissue like hyperplasia of the normal pineal body, but also of collections of exceedingly large cells with vacuolated nuclei and of cystic spaces lined by cubical epithelium. The whole, perhaps, was to be regarded as alveolar sarcoma or endothelioma, with a tendency to revert to structures found in birds in the pineal body. The symptoms in this case included rapid blindness with dilated inactive pupils, no paralysis of the third nerve, but loss of the external movement of each eye. There was no other paralysis or loss of sensation, but there were staggering gait and stiffness of the muscles of the back, vomiting, and fits, great enlargement of the penis and almost continuous sleep for from five to six weeks or longer. Dr. Ogle referred to 8 other cases of pineal tumour, 2 being hyperplasia or glioma, the remainder each of a complex constitution, some containing hair, cartilage, and fat, others containing spaces lined by epithelium suggesting glandular tissue, most of them containing cysts and sarcoma tissue. Dr. Ogle pointed out that the pineal body developed as a hollow outgrowth of the fore brain, elaborated as in certain lizards, as shown by Baldwin Spencer, into a median eye of very perfect elements, but in mammalia remaining in a rudimentary or rather a degenerate condition as a solid body containing compartments filled with reticulum and cells, processes of which appear to form the reticulum. It had been suggested that the body might have nervous functions, its appearance being somewhat like that of the granular layer of certain parts of grey matter of cerebrum or cerebellum, but the appearance was more like that of masses of neuroglia. Dr. Ogle then considered whether the body had any metabolic function comparable to that of the pituitary or thyroid bodies, although not representing, as they do probably,

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glandular, secretory, or excretory structures in earlier types of animals. He considered that it was fair to conclude that the symptoms in the uncomplicated case of pineal growth could be well explained by pressure on the corpora quadrigemina, hence the rapid blindness without choked disc, stiffness, staggering gait, loss of conjugate movement of eyeballs. But possibly the precocious development of penis might have some relation to disease of the pineal in the same way as pituitary tumour appeared to cause enlargement of the extremities, although apparently this was not borne out by the scanty clinical details of other cases. In the same way the excessive sleepiness, with perfect intellect when aroused, might be an effect of pineal disease. This was found in several of the other cases collected and was not readily explained.

Mr. T. W. P. LAWRENCE exhibited a specimen of Glioma of the Pineal Body. The organ was slightly enlarged, circular in outline, and compressed from above downwards. It measured 14 mm. in diameter and 7 mm. in thickness, and showed slight signs of lobulation on its surface. Histologically the tumour consisted of a dense reticulum of delicate fibrils with scattered cells of small size, scanty protoplasm, and of round or triangular type. A large proportion of the tumour had undergone degeneration and consisted of granular material. The substance of the pineal body was disposed as a narrow zone at the periphery of the new growth and was divided up into distinct areas by the latter. The pineal body was free from adhesion to surrounding parts. The specimen was taken from a boy, aged sixteen years, who was under the care of Dr. Bradford at University College Hospital. The patient died from tuberculous meningitis of ten days' duration; his previous history was good and he had been free from illnesses, and there were no symptoms referable to the presence of the enlarged pineal body.

Mr. J. R. LUNN exhibited a specimen of Syphilitic Hypertrophy of the Pineal Body which was found post mortem in the brain of a demented female epileptic who had been in an asylum for ten years. She had had marked symptoms of acquired syphilis and ultimately died from tuberculosis. She had left hemiplegia and frequent fits, but owing to her mental condition accurate investigation of her symptoms was difficult. At the necropsy the pineal body was found greatly hypertrophied, it being affected with fibrosis evidently of a syphilitic nature. There were also two gummata in the brain, one in the tip of the left occipital lobe and the other in the right Rolandic region.

Dr. A. E. RUSSELL showed a Cyst of the Pineal Body found in the body of a man, aged twenty-three years, who was admitted into St. Thomas's Hospital comatose suffering from fracture of the base of the skull the result of an accident. The pineal body was found to be distended by a thin-walled cyst containing clear albuminous fluid. No other lesion was found. Careful inquiry from his friends failed to discover that he had shown any symptoms during life.

Mr. S. G. SHATTOCK showed an exactly similar cyst from the Museum of the Royal College of Surgeons of England. The history of the specimen was not known.

Dr. A. W. CAMPBELL (Rainhill) exhibited two specimens of Dilatation of the Central Canal of the Pineal Body. The first case was that of a female epileptic, aged thirty-three years, who died from phthisis. The only marked intracranial lesion was enlargement of the pineal body, 13 mm. in length, 10 mm. in width, and 8 mm. in depth, with a cyst-like dilatation of its central cavity, the contents being a glairy, brownish fluid. The wall of the cyst was composed of two layers; the outer was composed of normal pineal tissue, the inner stained indistinctly and contained several large, pale, or faintly granular cells, the nature of which was not evident. There were also scattered cells containing brown pigment. At the posterior part of the cyst these pigmented cells were arranged in a definite stratum. Possibly these might be hæmatoidin collections, but it was also possible that they were pigmented cells analogous to those found in the choroid and retina, and would confirm the view that the pineal body was a rudimentary organ of sight, and would also explain the origin of a primary melanotic sarcoma in that body. The second specimen was also taken from an epileptic female and was similar except that the dilatation was greater. Unfortunately no microscopic examination was made.

Dr. GARROD showed a specimen of Cyst of the Pineal Gland taken from the body of a boy, aged sixteen years, who died from diabetes. The necropsy was made thirty-five hours after death. The pineal body contained a small cyst cavity of the size of a pea with smooth walls. It contained no hæmatoidin crystals. The fourth ventricle appeared to be quite natural and no other cysts were found in the brain. The pancreas was small and was found on microscopic examination to be markedly fibrotic. The liver and kidneys were fatty. It was probable that the cyst was of the same nature as those shown by Dr. Russell and Dr. Campbell.

Dr. VOELCKER showed a specimen of a Pineal Body in which there was a calcareous deposit. There was a similar deposit in the choroid plexus on each side and extensive calcareous degeneration in the arterial walls. There were no symptoms during life pointing to an intracranial lesion.

The PRESIDENT remarked that the pathological importance of the organ was evidently small, as was to be expected from the fact that in the higher animals it seemed to be of a merely rudimentary character. As Dr. Ogle had pointed out, it was recognised as having been (far back in the scale) an eye, but that must date back to the time when the tissues were transparent. After opaque substances began to be deposited in the tissues a central eye would become useless unless brought up to the top of the head, as in certain reptiles. Cyst formation, such as had been illustrated, was characteristic of rudimentary bodies. The occurrence of pigment was interesting as in the early days of the organ there must normally have been pigment present. The cases quoted had shown that the symptoms were those of mechanical pressure on adjacent parts and did not at all suggest that the pineal body had any functions analogous to those of the pituitary body in forming sub stances which entered the blood.

ULSTER MEDICAL SOCIETY.

Ulceration following Scarlet Fever.—Laryngeal Diphtheria.—Classification of the Colon Group of Micro-organisms.

A MEETING of this society was held on Dec. 1st, Dr. NELSON, President, being in the chair.

Dr. T. S. KIRK showed a child with extensive Ulceration following Scarlet Fever and producing a curious deformity of one foot, the toes being covered by a fold of skin. A radiogram was exhibited of the deformity.

Dr. A. B. MITCHELL read a paper on the Influence of Antitoxin on the Mortality of Tracheotomy for Laryngeal Diphtheria, with special reference to the results of operation in Ulster. Attention was first drawn to the prevalence of diphtheria in the north of Ireland, this being illustrated by a mortality of 3402 from this disease in Ulster during the past twenty years, while during the same period in all the rest of Ireland the deaths from the same cause were only 3320. The annual death-rate per 100,000 in Belfast and the surrounding district was 14, while a similar rate for Dublin was only 7. The beneficial effect of antitoxin in the treatment of diphtheria and the consequent reduction in the mortality from this disease was referred to and it was then pointed out that the benefits to be derived from its use were still more striking in those cases where tracheotomy became necessary. The recovery rate after tracheotomy in the hospitals under the Metropolitan Asylums Board, which was 28 per cent. without antitoxin, had risen to 63 per cent. since the introduction of the serum. For years there had been a firm conviction in the minds of the profession in Ulster that tracheotomy in diphtheria offered no reasonable prospect of saving life and it was therefore only performed on rare occasions and, indeed, rarely recommended. Dr. Mitchell communicated with the leading surgeons throughout the province of Ulster and succeeded in collecting a series of 82 operations performed for this disease previously to the introduction of antitoxin. Of these only 6 recovered, equal to a recovery-rate of 7·3 per cent., a record sufficiently gloomy to justify the feeling of the profession in regard to it. A similar list since the introduction of antitoxin yielded a total of 20 operations with 15 recoveries, equal to a recovery-rate of 75 per cent. Though the number of cases was comparatively small it was contended that the figures were convincing and the attitude of the profession in the North of Ireland towards tracheotomy must be reconsidered. The value of artificial respiration after the trachea had been opened in those cases in which respiration had suddenly been suspended was particularly insisted upon, and records were

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given of cases in which this measure had resulted in a restoration of vitality in what appeared to be a death-sleep. The value of intubation as compared with tracheotomy was discussed and the former operation was condemned in diphtheria: (1) as being likely to force any pieces of loose membrane down into the trachea with the risk of instant suffocation; (2) as giving rise to great difficulty in feeding; (3) as liable to cause ulceration of the swollen vocal cords with permanent impairment of function; (4) because it did not afford such free exit for pieces of membrane, tracheal secretion, &c.; and (5) if coughed up the nurse was totally unable to replace the tube. Finally, the necessity for prompt administration of antitoxin in all suspicious cases was urged, this being calculated greatly to diminish the number of cases likely to require operation at all.—The discussion was carried on by Professor SINCLAIR who thoroughly agreed with Dr. Mitchell in his opinion of the improved prospects of operation, in the value of artificial respiration in special cases, and in condemning intubation as unsatisfactory in the disease under consideration.—Dr. DARLING (Lurgan), Dr. CALWELL, Dr. KIRK, Dr. DEMPSEY, Dr. KILLEN, Dr. ROBERT CAMPBELL, Dr. TENNANT, and the PRESIDENT also took part in the interesting discussion.

Dr. J. LORRAIN SMITH and Dr. TENNANT made a communication on the Classification of the Colon Group of Micro-organisms.

BOMBAY MEDICAL UNION.—Three meetings were held during the month of November, to consider the present position of the Plague Prophylactic Inoculation of Professor W. M. Haffkine, under the presidency of the Hon. Dr. Bhatchunder Krishna. About fifty local medical men took part in the discussion. The following propositions and amendments were put before the meeting.—Proposed by the Hon. Dr. Bhatchunder Krishna and seconded by Mr. D. S. Shroff: "1. That this meeting is of opinion that, considering the data now available and the satisfactory results of the observations collected regarding the protective effect of Professor Haffkine's plague prophylactic, the time has now arrived for the profession to make a definite pronouncement on the subject and to invite the public to resort freely to the protective treatment, a very reliable safeguard against plague. 2. The immunity derived from inoculation when done with a full dose appears to last for at least six months, but there is the possibility of its lasting much longer. 3. From the observations collected it appears that a second inoculation done ten days or so after the first further reduces the incidence of plague in those who resort to inoculation, and a third, if such be practicable, would increase the immunity still further. The public are therefore to be invited to resort to at least two inoculations and even to a third if practicable. The duration of protection is also likely to be enhanced by such a repetition. 4. This meeting of medical men, who have had a wide experience of inoculation on persons of all positions, ages, and conditions, declares emphatically that rumours of inoculation originating different diseases, such as leprosy, syphilis, &c., are devoid of any foundation; that considering the nature of the prophylactic which does not contain any living germs such an eventuality is absolutely impossible; and that there are no facts to show that inoculation aggravates any existing ailments despite of rare and isolated instances which may at first suggest such an idea."—The following amendments were proposed by Dr. M. G. Deshmukh and seconded by Dr. G. B. Kher: "1. That in the absence of any series of experiments showing (*a*) that the apparently dead organisms contained in the prophylactic serum are incapable of growth in the bodies of animals as well as in men and (*b*) that the introduction of living germs of the disease in the inoculated animals does not only fail to produce any symptoms of the disease but that the germs do not at all grow there but are speedily destroyed—i.e., the immunity conferred on the animals is not only of the antitoxic kind but is powerfully anti-microbic—it is not possible to say that the general adoption of Professor Haffkine's anti-plague inoculation as a measure to combat plague epidemic is free from evil events. 2. In the absence of statistics of plague mortality among the inoculated and uninoculated sections of communities, giving full details regarding the age, sex, race, social position, and such other factors as confer natural immunity on individuals against a disease, no opinion can be expressed as to what degree of immunity is obtainable from inoculation."—Proposed by Dr. Nadershaw H. E. Sukhia and seconded by Dr. Khaja Abdule: "That in giving due and fair consideration to both sides of the question of the prophylactic effect of Professor Haffkine's anti-plague preparation, this meeting is of opinion that it is premature to pronounce definitely at this stage as to its harmlessness and efficacy or otherwise."—At the last meeting, held on Nov. 8th, on a division being taken, the amendments were thrown out, only 4 votes being given in their favour, whilst the original proposition was carried, the proposers and seconders of the two amendments alone voting against it. It was also resolved that the resolution passed by the meeting in favour of inoculation should be communicated to the public, the municipality, and the Government.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held in the society's rooms at the West London Hospital on Dec. 2nd, Dr. S. D. Clippingdale, President being in the chair.—Dr. J. B. Ball showed:—1. A case of "Black Tongue" in a girl, aged four years. The dark surface occupied an area in front of the circumvallate papillæ measuring about ¾ in. across and 1½ in. from before backwards, the anterior part and edges of the tongue being free. The characteristic hypertrophy of the filiform papillæ was well marked. The condition had been present for two months and had caused no trouble. 2. A case of Rheumatoid Arthritis in a boy, aged ten years. The disease had followed influenza two years previously with pains in the arms and legs and since that time there had been repeated attacks of pain and swelling of the joints together with fever. Certain joints now remained persistently enlarged between the attacks. The glands of the axillæ and groins were enlarged; there was no splenic enlargement.—The cases were discussed by Mr. McAdam Eccles, Dr. Bennett, and the President.—Dr. P. Abraham showed:—1. A case of Psoriasis in a girl, aged five years. The thumb became painful and the nail was lost a year ago; recently most of the other terminal phalanges had become affected. 2. A case of Lichen Ruber Acuminatus. The disease first appeared a year previously on the thighs, back, and abdomen. When the case was first seen in July, 1898, the rash had the appearance of a very red papular eczema. Pruritus had been a marked feature of the case.—These cases were discussed by Dr. Whitfield.—Dr. Alderson showed a case of recovery following Cirrhosis of the Liver. The patient had been tapped several times for ascites. Since the last tapping, more than a year previously, there had been no return of the ascites and the patient was able to do his work.—The case was discussed by Dr. Travers, Dr. Chapman, Dr. Caley, Mr. Bidwell, and Mr. McAdam Eccles.—Mr. McAdam Eccles showed:—1. A case of Submaxillary Cyst in a woman, aged thirty-nine years. The patient first noticed a swelling of the left submaxillary region two years previously. There had been no pain and the swelling had apparently remained of the same size. 2. A case of Swelling in the Region of the Parotid which had lasted for two years. There were no other swellings in the neck; the patient had several bad teeth.—These cases were discussed by Mr. R. Lloyd and Mr. Bidwell.—Mr. Keetley showed a case of Comminuted Fracture of the Olecranon which had been treated by wiring. At the time of the operation a considerable fragment of bone was found loose and had to be removed. Nevertheless the result was excellent and movement of the joint was practically unimpaired.—Observations on this case were made by Mr. McAdam Eccles.—Dr. Whitfield showed a case of Pityriasis Rubra in a man, aged forty-eight years. The disease had lasted for ten years.—Remarks were made on this case by Dr. Abraham.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Dec. 2nd, the President, Mr. D. H. Goodsall, being in the chair. Mr. F. Hewitt Oliver showed:—1. A specimen of Extensive Necrosis of the Horizontal Rami of the Inferior Maxilla due to yellow phosphorus fumes from a man, aged twenty-eight years. The second bicuspid was absent and the third molar was carious on the left side. Suppuration extended from the cerebral base to the clavicle and was deeply burrowing. The spleen was large and soft and the other viscera were macroscopically healthy. 2. A specimen of Uterine Fibroids removed post mortem from a woman, aged eighty-seven years, of the size of three large fists, yet beyond their weight they produced no symptoms. Parts of the tumour were far advanced in calcareous degeneration.—Dr. Arthur Davies showed two cases of Myxœdema. One was a man who

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had been under treatment since December, 1891, by thyroid extract, of which he takes now 0·3 gramme twice weekly. His condition is good and the alteration is very great. The other was a woman who had previously had a two years' course of thyroid treatment, but having left that off for nineteen months she had relapsed. Dr. Davies made some observations on the disease and treatment.—Mr. Reginald Brown read notes of a case of Acute Relapsing Idiopathic Neuralgia in a woman, aged thirty-five years, of no occupation, who after years of domestic anxiety developed pain in the teeth of the right superior maxilla in October, 1896, which soon extended to both sides of both jaws. All the teeth were removed with some benefit after drugs had failed. In October, 1897, the pain returned and was unrelieved by drugs so a neurectomy of the right inferior dental nerve was performed with relief from pain till February, 1898, when there was return in the left lower jaw and again drugs failed so neurectomy of the left inferior dental nerve was done when pain ceased for three months. In July pain began insidiously in the depth of the superior maxilla. Voltaic and Faradaic electricity was then used, which increased the pain. Weir-Mitchell treatment for six weeks failed to relieve the pain and weight was lost. Bromide and chloral hydrate taken nightly induced sleep for two or three hours only. Subsequently about 5 cm. of the infraorbital nerve had been removed. The case is still under treatment.—Dr. G. Denton showed a specimen of a Gall-bladder full of Gall-stones from a man, aged sixty-eight years, which gave rise to no symptoms.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on Nov. 25th, Mr. E. H. Addenbrooke, President, being in the chair.—Mr. J. L. Stretton mentioned the case of a woman, aged forty years, upon whom he had performed Cæsarean Section. She was admitted in September with extensive malignant disease of the cervix and vagina and was at the time about six months pregnant. The operation was performed on Nov. 7th. She made an uneventful recovery and the infant, which weighed 4½ lb., is also doing well. It was remarkable that there was no suppuration in view of the extensive disease and the very fœtid vaginal discharge.—Mr. Stretton also showed a Rectum removed from a woman aged sixty-one years. She had suffered from symptoms for eight months and the operation was performed on July 12th. About 4 inches of bowel were removed and as the growth did not involve the sphincter the greater part of it was left and the bowel brought down and sutured to it. The bowels moved consciously on the eighth day. The stitches were removed on the twelfth day. On August 13th she was discharged cured. The bowels acted regularly and were under control. On Nov. 25th Mr. A. C. Oldham, who had charge of her, informed Mr. Stretton that she had full control of her motions. There was no contraction of the anus and no recurrence of the disease. This result demonstrates the advantage, in some cases at any rate, of suturing the bowel to the external sphincter.—Mr. Stretton also showed a man upon whom he had operated for Strangulated Hernia, read notes of a case of Strangulated Hernia in an aged female, and showed forty-two Gall-stones removed from a female patient. —Mr. Oliphant showed for Mr. Hodgson Moore a man from whose knee-joint a foreign body had been removed. It was a small piece of the articular surface, cartilage and bone, of the lower end of the femur which had been chipped off as the result of an accident. The man recovered without any bad symptoms and the joint is freely moveable.—Mr. W. Miles mentioned the case of a woman with a tumour in her side which resembled a moveable kidney, so much so that the surgeon who was consulted made an incision in the loin, but the tumour turned out to be a portion of the right lobe of the liver with a dilated gall-bladder attached.

ILFORD MEDICAL SOCIETY.—At a meeting of this society held on Dec. 1st Mr. P. J. Drought read a paper on the X Rays and gave several practical hints upon how to obtain the best results. He showed two excellent skiagrams which he had recently taken—one of a bullet in the wrist, the other of a bullet in the head. He was indebted to Mr. Stocker for having kindly placed these patients at his disposal and pointed out a difficulty encountered in producing the skiagram of the bullet in the head—viz., having seen a skiagram of this case in which the lead was not clearly defined, and which was also minus a nose, he brought his photographic knowledge into use and so placed the patient in a position which enabled him to view the bullet upon the screen; then moving the head slowly backwards and forwards in front of the focus tube he observed that the bullet which was lying beneath the malar bone became more sharply defined in some positions than in others, and, moreover, a fragment of lead which was embedded close to the temporo-maxillary articulation was at times visible and at times not, although the head had only been moved an inch at most backwards and forwards. In other words, he did exactly what the photographer does with his camera, he focussed the bullet and fragment upon the screen and having found the position which gave the results—i.e., showed both pieces of lead at the same time—he slipped the sensitised plate into the position previously held by the screen, fixed the patient's head, and so obtained an excellent skiagram, which in this particular case he could not have accomplished had he taken a haphazard skiagram of the head.—A vote of thanks, which was carried unanimously, terminated the meeting.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The third meeting of this society was held at the Royal Kent Dispensary, Greenwich-road, S.E., on Dec. 2nd, Dr. Morgan Dockrell, President, being in the chair. Several new members having been elected, Dr. A. E. Sansom delivered the Purvis Oration on "Some Practical Points in the Treatment of Heart Disease," which is printed in full on page 1536.—A vote of thanks to Dr. Sansom was proposed by the President, supported by Mr. Prior Purvis, and carried.—Afterwards a largely attended conversazione was held, over 70 members and guests being present.—Mr. Thomas Moore gave a practical demonstration on the working of the Roentgen rays, being assisted by Dr. Pepperdene and Mr. Ernest Payne, the former of whom also showed a Wydt-Rocheford coil.—Among the exhibits in the screen room were: Fracture of the Patella twenty-five years ago (upper fragment drawn up 8 inches; Fractured Arm; Rabbit in Bag; Bird in Cage; Ribs, Hands, Arms, Heart, Diaphragm, Legs, &c.—Mr. Cooper had charge of a room in which a number of beautiful Fluorescent Tubes, lent by Dr. Pepperdene, were exhibited. These included tubes showing many different fluorescing effects in varied vacua and others showing the spectra of the new gases helion and argon.—Mr. Leslie Miller lent an Apparatus for Demonstrating Wireless Telegraphy.—Over 200 Radiographs were exhibited by Mr. Moore, Mr. Poland, Mr. Payne, and Mr. Webster. — Mr. Ernest Clarke showed a number of interesting microscopic specimens and Messrs. Maw, Son, and Thompson gave an exhibition of Surgical Instruments and Appliances. — A feature of the decorations was a beautiful collection of Australian ferns, kindly lent for the occasion by Dr. Sansom.

Reviews and Notices of Books.

A Clinical Treatise on Diseases of the Breast. By A. MARMADUKE SHEILD, M.B. Cantab., F.R.C.S. Eng., Senior Assistant Surgeon and Lecturer on Practical Surgery to St. George's Hospital; late Assistant Surgeon, Aural Surgeon, and Lecturer on Operative Surgery to Charing-cross Hospital, &c. London: Macmillan and Co. 1898. 8vo. Pp. 510. Price 15*s.* net.

THERE are few parts of the body the diseases of which present more difficulties to the practitioner and the student than the breast and this is in great part due to the fact that the pathological aspect of many of the morbid conditions occurring in this organ has been allowed to overshadow the clinical, and therefore we welcome all the more gladly a work in which the clinical view of the diseases of the breast has been steadfastly kept to the fore, and though, as we shall see, the pathological problems which present themselves have not by any means been neglected, yet the diagnosis and treatment have been accorded distinctly the first place.

The material on which this work has been based has been drawn from Addenbrooke's Hospital, Cambridge, and other public institutions with which the author has been connected, but especially from a study of all the cases of disease of the breast which were admitted into

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St. George's Hospital in the thirty years between 1865 and 1895. A valuable feature, which, however, may easily be carried to excess, is the inclusion of the notes of many illustrative cases. This adds much to the interest of the volume and cannot fail to impress upon the reader important clinical facts. The author while recording the views of others never hesitates to express his own opinion, especially in regard to treatment. The description of the development of the breast with which the volume commences is in a clinical work of necessity brief, but the chief points are touched upon. Creighton's opinion that the mamma is mesoblastic in origin nowadays receives no support, but of course this only applies to the secretory epithelium, and it is going too far to say that anyone claims that the mesoblast has no share in the development of the breast, for the fat, the vessels, and the fibrous tissue of the organ are indisputably mesoblastic. The histology of the breast is well described and is illustrated by four microscopic sections showing the structure at various ages and under different conditions. In the description of the mode of formation of milk the author says: "As the milk contains volatile substances and salts it can hardly be entirely formed by cellular disintegration but rather after the manner of sweat from the flattened cells on the walls of the acini." We must confess that we cannot see why volatile substances and salts should not be formed by cellular disintegration. Mr. Sheild has carefully looked for the cavernous tissue which has been described as existing in the nipple but he has been unable to find any trace of it, even after examining many specimens, and he ascribes the erection of the nipple under cold and mechanical stimuli to the contraction of the unstriped muscle fibres which are present. An interesting account of hypertrophy of the breast is given and it is pointed out that it is decidedly rare and that mistakes in diagnosis are often made. A girl with a very large breast was shown at the Fellowship examination of the Royal College of Surgeons of England a few years ago as an example of hypertrophy, but when the removal of the breast was attempted the enlargement was found to be due to a huge lobulated fibro-adenoma. One great point in the diagnosis of these cases is that in true hypertrophy the enlargement is nearly always bilateral. Elephantiasis also of the breast occurs and simulates hypertrophy and the author refers to several cases which have been recorded. In the treatment of hypertrophy Mr. Sheild urges that the milder measures, such as the recumbent position, elevation, and pressure, a dry and spare diet, with the administration of the iodides of potassium and sodium, should be given a fair trial before the surgeon resorts to amputation, and he quotes a very interesting case in which much benefit resulted from treatment on these lines. If we except malignant growths it may be said with truth that there is no disease of the breast of more importance than abscess, and for the whole account of this condition in this book we have nothing but praise. The author holds firmly to the view which is daily being more widely accepted that infection from the nipple is the sole exciting cause of mammary abscess and he tells us that he has never seen a case of acute mammary abscess in a young woman without having been able to observe, by the aid of a lens, breaches of surface in the vicinity of the nipple by which organisms might readily enter the lymphatic channels. Many of the cracks are so minute that without the use of a hand lens they will easily escape notice. The statistics collected show that after parturition abscess of the breast is most common between the fourth and eighth weeks and again towards the fifth month. The author says that abscess of the breast in connexion with lactation is largely preventable, and he bases his opinion on the results obtained in lying-in hospitals where, as he shows, care is taken to cleanse the nipple and the child's mouth, and cracks and fissures of the nipple are treated antiseptically. In the treatment of mammary abscess after it has formed Mr. Sheild holds that the ordinary anterior incision is seldom sufficient to ensure proper drainage and he advises a more thorough and elaborate method. "As soon as elasticity and deep fluctuation are evident an incision is made radiating from the nipple just large enough to admit the index finger of the operator, and this is deepened until pus flows. The finger is now passed into the cavity and in the vast majority of cases it will be found that the end of the digit may be brought fairly near the surface in a dependent position, and this is generally at the thoraco-mammary junction. In this situation it may especially be noted that scars are afterwards hidden from view." The breast being well raised a free opening is made, and in this way dependent drainage and a hidden scar are obtained. The anterior incision is carefully sutured with fine horsehair and painted with collodion, so that it leaves a very slight scar. We heartily agree with the author that for hæmorrhage after opening a mammary abscess no styptic can be worse than the perchloride of iron; turpentine is cleanly and efficient.

Chronic mastitis has always presented great difficulties in diagnosis and the directions given will prove of assistance in this matter. As to the treatment of this condition Mr. Sheild advises the persevering application of anodynes locally, with the internal administration of iron, arsenic, quinine, and general tonic remedies in those under thirty years of age, but for elderly patients in whom the disease resists pressure and mercurials he recommends the removal of the whole breast. The author looks upon Paget's disease of the nipple as a malignant papillary dermatitis and considers that it should be carefully distinguished from epithelioma of the nipple. He thinks, and we agree with him, that those cases in which recovery from a so-called Paget's disease has resulted from simple local applications were probably not cases of this disease at all, but examples of an ordinary eczema affecting the nipple and its neighbourhood. He hesitates to pronounce the peculiar bodies which can be seen in this condition to be psorosperms, but acknowledges that their presence is a sure proof that the case is one of Paget's disease. As to treatment, he advises that in all cases as soon as the diagnosis is certain the breast should be completely removed.

The study of tumours of the breast has been burdened by a most needless and extensive nomenclature, so that it is difficult to know what conditions the several terms denote. Mr. Sheild has wisely endeavoured to steer clear of these ambiguities and his classification is simple but sufficient. Putting aside the unimportant growths such as lipoma, chondroma, and osteoma, he divides the remainder into the three large groups of fibro-adenoma, sarcoma, and carcinoma. He rightly insists that both the pure fibroma and the pure adenoma are rare and that of non-malignant new growths the fibro-adenoma is certainly the most common. Statistics are quoted which conclusively show that the fibro-adenoma is much more frequently met with before forty years of age than after. Of 63 cases 45 occurred before forty years of age and 18 after. Recurrence may occur after the removal of a fibro-adenoma but the fresh tumours are to be looked upon not as examples of true recurrence but rather as due to the enlargement of smaller tumours which were already there.

True sarcomata of the breast are so rare that we need hardly say anything concerning Mr. Sheild's account of this disease except that we are glad to see that he mentions the possibility of a rise of temperature in cases of sarcoma. This fact is only too often forgotten. With regard to the lymphatic glands Mr. Sheild shows that they are by no means rarely affected in cases of sarcoma.

Two hundred pages are devoted to the subject of carcinoma of the breast and this is only in accordance with the importance of the subject. With regard to the relative frequency

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of the disease in men and in women the statistics quoted show that it may fairly be said that 100 cases occur in females for every one that occurs in a male. The question of etiology is fully discussed and the author arrives at the conclusion that no certain statement can be made as to any connexion of carcinoma with parasitic microbes, but that there are certain indications in that direction. With regard to the results of modern treatment it is satisfactory to learn that there has been a distinct and steady decrease in the mortality after the operation of amputation of the breast. At St. George's Hospital in the "sixties" out of the first 100 cases 90 were operated on and 9 died from various septic causes; in the second 100, 88 were operated on and 4 died from septic diseases; in the third 100, 88 were operated on and 2 died, 1 from pneumonia and the other from erysipelas; and in the fourth 100, 97 cases were submitted to operation and 1 died from congestive pneumonia and another from sepsis.

We are pleased to see that Mr. Sheild advises that the operation of removal should not be performed with the knife which has been used to incise the tumour, for without laying too much stress on the evidence in favour of the parasitic origin of carcinoma, yet it is clearly undesirable to run any risk of infecting the healthy tissue through which the incisions for removal should pass. In all cases the author clears the axilla, and this is the usual modern practice even when no enlarged glands can be felt.

As to the final results it can hardly be said that cases are "cured," yet undoubtedly many patients survive the operation several years, and instances are quoted in which thirteen years have elapsed without recurrence. Mr. Sheild advises repeated operation in cases of recurrence unless secondary growths are manifest.

An appendix on diseases of the breast in the male concludes the volume.

The index is good and the employment of two varieties of type in it enables the reader to distinguish readily between the names of authors quoted and the diseases dealt with. The illustrations are excellent, both the coloured and the plain. The book may be confidently recommended to all who want a readable, trustworthy treatise on the diseases of the breast.

A Handbook of Hygiene and Sanitary Science. By GEORGE WILSON, M.A. Aberd., M.D., LL.D., F.R.S. Edin., D.P.H. Camb. Eighth edition. London: J. & A. Churchill. 1898. Price 12*s.* 6*d.*

THE fact that this work has reached an eighth edition is a sufficient indication of its popularity, and although since the book was first published numerous others, covering somewhat the same ground, have appeared, there has also developed amongst the profession and the public such a demand for books of this nature that a ready sale may safely be predicted for the eighth edition of "Wilson's Hygiene." The present edition has expanded considerably in bulk, much additional matter having been inserted and some sections entirely rewritten. For instance, in the chapter on Food a summary of milk-borne epidemics is given, and a discussion entered into as to bovine scarlet fever and diphtheria, while in relation to the filtration of water reference is made to the Massachusetts experiments and to Koch's work in the same direction. In the section on Sewage Treatment attention is devoted to recent biological methods without in any way encroaching on the description of the older systems of precipitation and filtration. The chapter on Infectious and Parasitic Diseases has been very materially expanded and the author's discussion of antirabic inoculation and serum therapy is calculated to make the readers of the work think out the whole matter for themselves. With the evidence as to the value of antirabic inoculation Dr. Wilson is far from satisfied, and although he seems to attach hardly sufficient importance to the value of control experiments in this connexion he furnishes some very plausible reasons for the views which he holds. The author is, too, by no means convinced as to the good effects of the antitoxin treatment of diphtheria; but we cannot say that we altogether follow his reasoning here, nor do we think that he attaches due importance to the remarkable results obtained in dealing by means of antitoxin with the extremely fatal form of this disease known as "post-scarlatinal diphtheria." Dr. Wilson is evidently inclined to the view that the deductions of the bacteriologists should be received with more scepticism by the profession, and he points to the enthusiasm with which the tuberculin treatment of phthisis was hailed as an illustration of what disappointment may follow from a too blind acceptance of the dicta of the bacteriologist. In the preface to the present edition the author observes: "From the point of view of practical sanitation I also venture to assert that the trend of microbial investigations has of late years threatened to ignore or minimise the influences of those conditions of environment without which many pathogenic organisms are powerless for mischief," and it is in this spirit that much of the chapter on micro-pathology is conceived. The section on Sanitary Laws and the Duties of Sanitary Officers is very comprehensive, including as it does the sanitary powers of county and parish councils, and the appendix contains useful memoranda and formulæ. Although the book is, by virtue of the multiplicity of subjects touched upon, of a somewhat impressionist character, a reader who peruses it with his critical faculty fully alive cannot fail to derive much useful information. But the student will do well to bear in mind that some of the views expressed in the chapter on Antirabic Vaccination and Serum-therapy are not those which find general acceptance amongst all pathologists at the present time. In some parts of the volume there is evidence of somewhat hasty revision, while in other parts it is not quite clear that the author has altogether assimilated some of the more modern reports to which he makes reference. The report made for the Royal Commission on Vaccination on small-pox in Gloucester is attributed not to Dr. Sidney Coupland, the author of it, but to Dr. Copeman, and the London Life Tables are put down to "Shirley," when obviously "Murphy" is intended. Other instances of hasty revision could easily be furnished, but in spite of this the book contains much valuable information and is a very readable and interesting production.

Diseases of the Heart and Aorta. By GEORGE ALEXANDER GIBSON, M.D., D.Sc., F.R.C.P., F.R.S. Edin., &c. Edinburgh and London: Young J. Pentland. 1898. Pp. 932. Price 24*s.*

IN the handsome volume before us the author has set himself the threefold task of presenting a faithful reflection of the science and art of medicine as bearing upon diseases of the heart and aorta at the close of the present century; while doing so, of making practical utility his chief aim; and, finally, of doing justice to authors whose name is Legion and a consultation of whose works has been necessary to the fulfilment of his purpose. It will be admitted that for the satisfactory accomplishment of so much special qualifications, qualities, and opportunities are necessary. The qualifications needed are a wide knowledge of the scientific principles underlying the physiology and pathology of disease and a practical instinct for applying these in diagnosis and treatment; the qualities required are inexhaustible patience, steadiness of purpose, and power of work; and the opportunities comprise direct access to extensive material, living, dead, and reported. Those who know the author's work and his position as a teacher in the Edinburgh School of Medicine can have little doubt of his fitness in these respects and we may at once state that

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Dr. Gibson has in this volume shown himself to be possessed in an eminent degree of all the essentials for his task which we have indicated and that his work is, in our opinion, at once one of the most comprehensive, readable, and useful text-books with which we are acquainted. We shall now endeavour to justify the opinion which we have expressed.

The book consists of sixteen chapters, of which the first five deal chiefly with the scientific principles involved in the study and treatment of heart disease. In these morphology, physiology, pathology, semeiology, and therapeutic principles are lucidly discussed, and to the knowledge of some important points in these fields Dr. Gibson has contributed valuable material from personal observation and work. His interesting remarks upon the cardiac movements in a case of deficient sternum, upon rigidity of the arteries, upon venous pulsation, and upon Cheyne-Stokes respiration are well worthy of perusal. His exhaustive monograph on the last of these subjects is well known. In treating this theme he does full justice to the observations and opinions of others and thus renders his work, as was his intention, a concise and reliable reflex of current expert opinion.

The remaining eleven chapters deal in detail with the nature and treatment of diseases of the pericardium, the heart, and the aorta. Coupled with the indication of the conditions dealt with there is usually an interesting explanatory commentary when this is possible, and the chapters close with fully detailed clinical histories of illustrative cases which ought to prove very helpful to the student. It would be impossible within the space at our disposal in reviewing so encyclopædic a work to refer at length to many points of great interest, but in all sections of the book Dr. Gibson appears not only as the scholar but also as the personal observer, and he states his conclusions and the reasons upon which they are based in a clear and interesting manner. The normal and important physiological leakage in the right heart and the physical signs in so-called "weak heart" are fully considered. On the latter point the author agrees in the main with Russell in regarding the pulsation in the second left intercostal space as due to the movements of the conus arteriosus, and he has the frankness to disavow his previous adhesion to the view of Balfour that that sign is due to the pulsation of a distended left auricle. He regards the associated bruit to be indicative of tricuspid incompetency. This may be so, but the explanation of the bruit in the pulmonary area by propagation from the tricuspid orifice does not appear to us altogether satisfactory. We rather incline to the view expressed by several, that some cause of increased vibration in the blood-stream exists nearer the manifest seat of the sound. We agree, however, with the author that there are important objections to be urged against the specific explanations hitherto given. Again, in the matter of the serum-therapy of acute endocarditis, and without losing our confidence in the future results likely to accrue to science in this as in other departments from the preparation and use of these remedies, we feel disposed to remark that the author's satisfaction with the attained results in the cases indicated may not be shared by many others. With another recent or resuscitated development of cardiac therapeutics which is somewhat fully treated—namely, the gymnastic and balneological—Dr. Gibson deals in a very judicious manner and with an entire freedom from that unregulated enthusiasm which has done so much to discredit measures useful enough in their own place. It is of interest to learn that he has found the physical effects of the natural and artificial baths to be identical. The chapter on Complex Sensory and Motor Affections of the Heart, including angina pectoris, is an able and succinct account of a difficult subject. His pages on angina pectoris, indeed, contain within a comparatively short space a very complete account historically and clinically of an affection which for various reasons has had a fascination for medical writers and remind us in some respects of that classic, the memorable essay by Sir William Gairdner on the same subject in Reynolds's System of Medicine.

The last chapter deals with Diseases of the Aorta and includes an instructive account of the causes and nature of aortic aneurysm together with a well-weighed judgment upon the various methods of treatment which have from time to time been employed with an encouraging measure of success in some cases.

In a short Appendix on Roentgen Radiography the author notes the value of this method in determining change of position in the heart and the presence or absence of obscure aneurysmal and other intra-thoracic tumours, giving at the same time a good radiograph of displaced viscera. Of the illustrations throughout the volume it may be said that they are excellent and numerous and from the printer's and publisher's point of view the work leaves little to be desired. A copious and accurate bibliography which will be of great service to original workers and a good index terminate what may be looked on as one of the most complete of recent textbooks on diseases of the heart and aorta.

Mastoid Abscesses and their Treatment. By A. BROCA, M.D., Chirurgien des Hôpitaux de Paris, Professeur Agrégé à la Faculté de Médecine; and F. LUBET-BARBON, M.D., Ancien Interne des Hôpitaux de Paris. Translated and edited from the French by HENRY J. CURTIS, M.D., B.S. Lond., F.R.C.S. Eng., Assistant to the Professor of Pathology, University College; Assistant to the Ear and Throat Department, University College Hospital, London. With 11 Coloured Illustrations. London: H. K. Lewis. 1897. Crown 8vo. Pp. x. and 268. Price 6s.

MR. CURTIS has done well in introducing to English surgeons the valuable memoir by Broca and Lubet-Barbon, a work too little known in this country. It is difficult to over-estimate the importance of disease of the middle-ear. Its complications are so far-reaching and so dangerous to life that it is well worthy of more attentive study than is even now bestowed on it. Operations on the mastoid were performed long ago by Petit but they soon fell into disrepute, and it is only in recent years that the operation of opening the mastoid process has again become fairly frequent.

The dangers of the disease are great, but so also are the dangers of the operation which is intended to relieve it, and only a good knowledge of the anatomy of the parts concerned will enable the surgeon to escape the many pitfalls in his path. A brief but useful account is given of the anatomy of the mastoid process and its relations to the lateral sinus, the facial nerve and the brain, and the translator has very wisely inserted in the volume eleven coloured plates illustrating the anatomy of this region which have been taken from a paper by Mr. Rickman Godlee. These portray the relative positions of the structures as seen in sections made in various directions through the temporal bone, and a much clearer idea is gained by the examination of these diagrams than would be possible in any other way.

The work is divided into four chapters, the first of which is devoted to Mastoid Abscesses, the second to Mastoid Fistulæ, the third to Chronic Suppurative Inflammation of the Middle-ear in which the inflammation of the mastoid is latent, and the fourth chapter is concerned with the results which have been obtained.

The authors do not consider that as yet any classification of cases of mastoid abscess can be founded on bacteriological data, although many different micro-organisms are met with. Mixed infection is the rule but in one case they obtained a pure culture of bacillus coli. For opening the mastoid process a narrow chisel 5 millimetres (⅕th in.) wide at the most is recommended. The skin incision commences at the

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apex of the mastoid, runs upwards to the level of the temporal line, and then turns backwards at a right angle and continues for about ¾ in. Thus is marked out a triangular flap which is raised from above downwards and backwards. The antrum is then opened by a square aperture corresponding fairly closely to the upper half of the mastoid process.

The statistics relating to the results after operations on the mastoid cannot fail to be of interest. 143 operations were performed on 128 patients for 133 diseased mastoid processes; 21 patients died, but in only 3 cases could the death reasonably be attributed to the operation; in 8 cases the fatal result was brought about by intercurrent maladies such as broncho-pneumonia and tuberculosis; 5 patients succumbed to intracranial complications which preceded the operation and 5 to sepsis which had manifested itself before any operative procedure was undertaken.

For the manner in which the translation has been performed we have nothing but praise; it is in clear, readable English and exhibits but slight traces of its French origin.

House Drainage Manual: a Guide to the Design and Construction of Systems of Drainage and Sewage Disposal from Houses. By W. M. SPINKS, C.E., President of the Institute of Sanitary Engineers, &c., Author of "Village Drainage," &c. London: Biggs and Co. 1898. Price 5*s*.

AMONG many good books written upon this important subject this book is one of the best. The author has succeeded in condensing with simplicity and clearness all the essential points to be observed in relation to the efficient drainage of a house, working upon the broad lines prescribed by the model by-laws issued by the Local Government Board. In only one or two places does he touch upon debatable ground—viz., where he advocates the entire disconnexion of the soil-pipes at their junction with the drain by means of a gully, the ends of the branch drains receiving these gullies having separate ventilating pipes. Whatever may be urged against this system it most certainly effectually cuts off all chance of sewer air entering the house through the soil-pipes and the pipes themselves have a better chance of being ventilated. On page 195, when dealing with country property he temporises with the cesspool, but inasmuch as he limits its capacity to the reception of one week's supply of sewage and provides that it is kept so far from the house as not to constitute a nuisance perhaps not much harm can accrue. Most of the well known defects common to badly constructed and badly planned systems of drainage are pointed out. Illustrations showing drain plans as suggested for various classes of property follow. In one or two instances we think a little additional ventilation should have been given to the branch drains to ensure the traps against syphonage. There is an excellent chapter upon Subsoil Drainage, a subject too much neglected. Then follows the consideration of the practical details, such as laying, inclination of, jointing, flushing, ventilating, and trapping drains, and a very detailed consideration of the many engines and appliances with which, unfortunately, our houses have to be surrounded. Their merits and defects are pointed out. Consideration is given to many of the methods in use for the ultimate disposal of sewage and a copy of the modern by-laws is added together with various Acts relating to public health. We can strongly recommend this manual to all who are interested in, or engaged upon, sanitary work.

CHRISTMAS BOOKS.

MESSRS. BLACKIE AND SON send us the following:—*Chips and Chops and Other Stories.* By R. Neish. Price 2*s*. This is a collection of pleasant little stories, the one giving its title to the book being about two dogs—a terrier and a bulldog. Some of the tales resemble those of Hans Andersen and are none the worse for that. The book will be an admirable present for children.—*A Mystery of the Pacific.* By Oliphant Smeaton. Price 5*s*. A story told by a Government inspector in the Polynesian labour trade. A "message from the sea" was picked up giving details of some castaways. When the Government schooner picked up this she started to find out the whereabouts of the castaways and finally discovered a mysterious island where dwelt the descendants of a colony of ancient Rome who had preserved all their forefathers' manners and customs. How the castaways were discovered and what adventures the rescuers met with must be sought in the pages of the book itself. A word of praise must be given to Mr. Wal Paget for his admirable illustrations.—*The Reign of the Princess Naska.* By Amelia Hutchinson Stirling. Price 2*s*. 6*d*. This is a very prettily written and pathetic little story about a child autocrat who ruled over a principality of apparently Russian nationality. The story is so well told and thought out that it was quite a shock to us to come to the following sentence uttered by the Princess's whipping boy, "Shucks! it would be as easy as—as crackers!" What the Tsarkovian vernacular for this would be we cannot say, but surely the author might have put the sentence in some other way. There is an error on page 114, where the Archbishop is spoken of as wearing a large "golden crucifix." This is something which no Oriental prelate ever does—i.e., if by crucifix is meant a sculptured figure. This error is reproduced in the illustration on page 131, but with this exception we have nothing but praise for Mr. Paul Hardy's drawings.—*At Aboukir and Acre: a Story of Napoleon's Invasion of Egypt.* By G. A. Henty. Price 5*s*. *Under Wellington's Command: a Tale of the Peninsular War.* By G. A. Henty. Price 6*s*. *Courage, True Hearts: the Story of Three Boys who sailed in search of Fortune.* By Gordon Stables, M.D., C.M. Edin., Surgeon R.N. Price 3*s*. 6*d*. Here are three Christmas volumes by two well-known authors which merit the attention of those who at the present season are pondering over the choice of a book or books for the amusement and edification of boys. The test which we apply to books of this kind is, we think, a practical and sound one—namely, to give them to some intelligent schoolboy for perusal and opinion. Judging from the avidity with which these volumes have been read they have certainly fulfilled their main purpose—that of interest and amusement. Self-respecting boys with wholesome instincts always have, and always will have, a keen appetite for deeds of daring and for stories of adventure and striking examples of prompt and decided action in safely getting out of "tight" places. These things set their imaginations aflame and later in life make them into soldiers, sailors, explorers, and colonists—not always to the entire satisfaction of their apprehensive mothers and staid fathers, but to the good of the nation notwithstanding. Two of the three volumes are from the prolific pen of Mr. G. A. Henty, who seems to possess an inexhaustible vein of good Christmas stories for boys. They deal with naval and military subjects. The first, "At Aboukir and Acre," is an opportune production at the present time when people's interest in Egypt has been keenly awakened by the exploits of Lord Kitchener of Khartoum and his expeditionary force in the Soudan and up the Nile. Napoleon's invasion of Egypt, the action in the Bay of Aboukir, and the defence of Acre by Sir Sidney Smith, make up a good and well-told narrative. "Under Wellington's Command," by the same author, is a tale of the Peninsular War, continued from Moore in Corunna up to the battle of Salamanca, and there is, as might be anticipated, no lack of incident. It is a sequel to one of Mr. Henty's books of last year and continues the adventures of a dashing Irishman, one Terence

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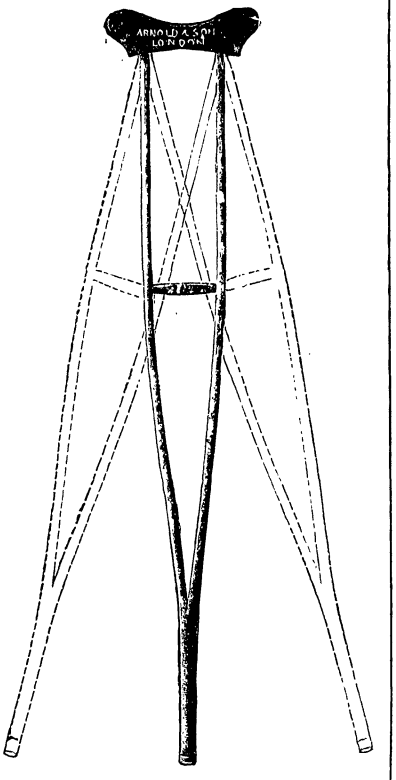
O'Connor, during the Peninsular war. Both books, it should be added, are capitally illustrated with plates and plans. Dr. Gordon Stables's volume, telling the story of three boys who sailed in search of fortune, is full of exciting situations and adventures and is likewise well illustrated. It is excellent reading for boys.

Messrs. C. ARTHUR PEARSON, Limited, have sent us the following:—*Strange Stories of the Hospitals.* By Frank Aubrey. Price 2*s.* 6*d.* This little book is published to be sold in aid of the metropolitan hospitals and medical charities. The author has presented it as a free gift to the Council of the Hospital Saturday Fund, who will receive all profits arising from the sale of the book and will apply them to the objects of the fund. This being so we will not attempt to criticise the stories further than to say that they are quite readable and will serve to enliven a spare half-hour. The expenses of publication have been borne by Lady Meux and Mr. Frank Isitt to whom as well as the author we offer our thanks for the assistance thus given to that form of charity in which we ourselves take a special interest.

New Inventions.

IMPROVEMENTS IN CRUTCHES.

WE have received from Messrs. Arnold and Sons, of West Smithfield, a pair of crutches of a new design, their distinguishing feature being that the padded leather-covered heads are not fixed immoveably to the uprights, but are capable of a limited rocking motion, so that as the person using them walks along the unavoidable to-and-fro movement of the crutch does not cause the head to shift its position in the armpits. A uniform pressure under the arm is thereby given and friction against the armpit is reduced to a very small amount, adding to the comfort of the user and diminishing the tendency to wear out the sleeve of the coat or dress. The crutches are strong and quite rigid in respect of affording support to the body, and at the same time the heads possess a certain amount of elasticity and "give" which will be appreciated by users. They have a well-finished appearance,



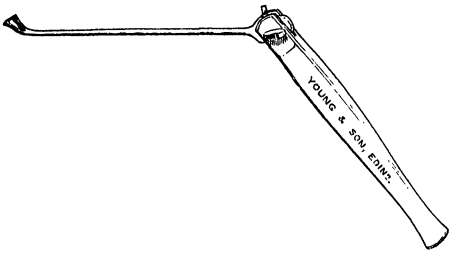
are light in weight, and are extremely simple in construction, having no springs or mechanism liable to become disordered. Messrs. Arnold and Sons state that a pair of these crutches have been recently tested by a cripple who walked 100 miles with them in one week without suffering from soreness or strain or otherwise distressing himself.

MILNE'S RIBBON GAUZE.

EVERY surgeon must have experienced great difficulty in using strips of gauze for plugging wounds; the gauze cannot be torn and must be cut to form a strip and then the edges are very prone to fray, so that particles of cotton can very easily be left in the wound. Mr. Charles Stonham has suggested the use of specially woven ribbon gauze with an edge which cannot fray, and the Galen Manufacturing Company, of Ladywell, London, S.E., have manufactured gauze of a uniform width of 2 in.; this is supplied either plain or medicated with the antiseptics in ordinary use, such as sal alembroth, carbolic acid, and iodoform. From a sample with which we have been supplied we are able to say that this ribbon gauze will prove useful for the purpose for which it is intended; it cannot fray as the threads of the woof do not terminate at the edge of the material. It is packed in bottles in convenient lengths of about 12 in.

NASAL CURETTES.

THESE instruments, of which an illustration is given, have been designed for the purpose of performing curettement of the nasal mucous membrane. Each curette consists of a handle and a blade jointed together in such a way as to permit of its being flexed to, and fixed at, any angle that

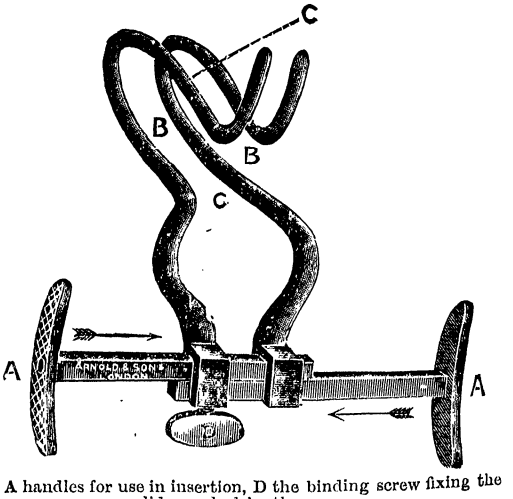


the operator may desire. The curettes, of which there are five in a set, vary according to the size, shape, and angle of their scraping points. They have been made for me by Messrs. Young and Son, Forrest-road, Edinburgh.

Edinburgh. G. HUNTER MACKENZIE, M.D. Edin.

A NEW PARALLEL EXPANDING RECTAL SPECULUM.

IT is said that the multiplicity of instruments for one use indicates that not one is perfect. If this be so no excuse is needed for invention or improvement. After a fair trial of the instrument represented below—which has been skilfully made by Messrs. Arnold and Sons at my suggestion—I can confidently recommend it. It is simple, effective, and self-retaining. Its open construction affords an extensive field, allowing



A A handles for use in insertion, D the binding screw fixing the slide marked by the arrows.

of many manipulations. Thus C C and B B are open spaces. To open the instrument the hand grasps and approximates A and A, or with obdurate sphincters the thumb may be placed in C, and C and A approximated. Thus the resistance of the sphincter is met by the intelligent hand and not by a lever or screw. The instrument is shown partly open. To withdraw see that D is not in action and press the blades together.

Finsbury-pavement, E.C. JAMES MACMUNN

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THE LANCET.

LONDON: SATURDAY, DECEMBER 10, 1898.

WE are disposed, upon consideration of the various penal cases decided upon by the General Medical Council at their recent sitting, to be very proud of our profession. A great deal is heard about any irregularity of conduct in a medical man when it occurs, but that is because the general standard of behaviour is so high that all departures from it excite comment and surprise. *Noblesse oblige:* the obligations of our high functions are recognised and they are fulfilled. Upon what other view can we explain the fact of the small list even of charges which are brought against members of the profession for professional misconduct and the comparatively light nature of the charges themselves? The public despite the strenuous attempts of a section of the lay press trust their medical men, and they may well be confirmed in their high estimate when they see that of 34,000 men only 5 have been brought under the disciplinary notice of the General Medical Council and that but 2 of these were found to have been unworthy to remain on the Medical Register. We are no apologists for any laxness of professional behaviour, for any falling away from the high standard of service which the best practitioners have set up for their own guidance and which the man whose work lies among the poorest of our inhabitants or in the remotest village of our land often best exemplifies. But the tribunal of the General Medical Council is not a lax one, and when we look at the penal cases recently heard before it we feel almost inclined boastfully to aver that the natural liability of human nature to error is in the medical profession reduced to a minimum. We recommend our readers occasionally to devote a few moments to the consideration of cases which come before the Council and which, of course, represent a larger number of similar cases which evade such publicity. The study of them will help practitioners to avoid those technical offences which are apt to involve a summons to appear before the General Medical Council.

In 2 only of the 5 cases brought under the judicial notice of the Council did the Council proceed to the use of its great and only weapon of punishment—the removal of the offending practitioner from the Medical Register. One of these was the case of JOHN LLOYD WHITMARSH. The Council in his case was spared the trouble and the pain of an investigation of the facts which do not need any repetition here. His conviction at the Central Criminal Court for the murder of ALICE BAYLY being duly reported to the Council its duty, under the 29th clause, was obvious. His removal from the Register purges the profession of one who had brought disgrace on it. The use of medical knowledge to commit illegal and immoral acts is the greatest prostitution of knowledge. The public has great reason to be pleased when this crime is brought to light and when condign punishment falls on the offender, but it cannot be more gratified by such exposure than are the members of the medical profession who feel that the preservation of human life in all its stages is their supreme function. The second and only other case of erasure was that of the name of Mr. FREDERICK ALFRED FISHER, M.R.C.S. Eng., L.S.A. This practitioner was charged with seeking to attract practice by public advertisements in newspapers of his dispensary for "nervous debility" in all the forms which that term suggests. We deeply regret that any registered practitioner should resort to such methods of attracting attention to himself and his remedies. The lesson to be drawn from Mr. FISHER'S fate is to avoid tampering with the weaknesses and ignorance of human nature and with all forms of practice which involve doing so. We desire to offer to Dr. HUGH WOODS our congratulations upon the effective way in which he conducted this very proper prosecution on behalf of the Incorporated Practitioners' Society.

The remaining cases which occupied much of the time of the Council are such as almost necessarily arise out of the system so lately prevalent of employing unqualified assistants and the resolutions of the Council restraining that practice. Three registered medical men found themselves on their defence before the Council for the alleged wrongful use of assistants in practice. They were all subjected to a long process of inquiry. In the end they were all told that the charge against them was not proved. In one case, that of Mr. CHARLES ALEXANDER DUCKET, the defendant was the qualified assistant of a registered practitioner and had been blamed at two inquests for sending an unqualified practitioner to help him in his principal's practice. In another case, Mr. FREDERIC MERCER was charged with sending an unqualified assistant in an emergency to a midwifery case, he himself having seen the case both before and after confinement. The third case, and in some sense the most interesting of the group, was that of Dr. JAMES HAVARD JONES, who stepped into the vacancy occasioned by the resignation of certain medical appointments at mines by Dr. JOHN JONES of Clydach, Swansea. Dr. JONES resigned after dismissing an unqualified assistant, Mr. GEORGE JENKINS, who had been for almost a generation a continuous element in the medical attendance on the miners of the district. Principals might change, but Mr. GEORGE JENKINS remained till the new rules of the General Medical Council came into force, when Dr. JOHN JONES, out of proper deference to the Council's authority, resolved absolutely to part company with him. But as a consequence he found himself forced to resign his appointments at the mines. Dr. HAVARD JONES, a stranger in the district of Clydach, found means at once of conciliating the miners and discontinuing the services of Mr. GEORGE JENKINS. He became Mr. JENKINS'S tenant, lived in his house, drove his trap, and paid his daughter for board. The evidence of "covering" was certainly weak, for there was no proof that Mr. JENKINS attended any cases with or for his tenant who was ably defended by Mr. LAWSON WALTON, Q.C.

The least pleasant but by no means the least useful part of the work of the General Medical Council is that which has reference to the penal cases. We are sure

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that most of the members would be thankful if the cases which come before them could be dealt with by the individual bodies whence the degrees and diplomas of the accused persons have been obtained. It is certain that many of the offences for which members of the profession are brought before the Council would never become matters for public discussion if the bodies, whether universities or corporations, displayed a little more interest in their past students and gave them now and again a word of remonstrance in regard to behaviour which tends to place the practitioner in a discreditable light before the public.

WE have seen a printed memorandum from the Seamen's Hospital Society purporting to answer "paragraphs and letters" which have appeared "in the newspapers both lay and medical." Certain objections which have been taken to the scheme as at present promulgated are instanced and dealt with. The first objection mentioned is "that the selection of the Branch Seamen's Hospital was not a wise one and that the *Dreadnought* at Greenwich and Netley offered superior advantages." We have argued that neither the parent hospital at Greenwich nor the Branch Hospital is suitable for the proposed school and have stated the reasons on which we base our opinion. One of the main objects of the new school is to afford opportunities for candidates for colonial appointments to study tropical diseases and we believe that Netley, with its staff of teachers who have practical experience of tropical diseases and its admirably equipped bacteriological laboratory, together with the number of patients recently returned from tropical countries, would afford every facility for the purpose. Building, equipping, and maintaining at an enormous cost a new school at the Royal Albert Dock would simply be to duplicate what already exists and if the public were duly informed of these circumstances we very much doubt if the necessary funds would be forthcoming. The memorandum goes on to say, "There is no reason to suppose that the War Office would allow medical men of every class [i.e., civilians, medical missionaries, &c.] to study at Netley." We may reply that "civilians, medical missionaries, &c.," can, if they so desire, obtain ample instruction at the various medical schools and laboratories already in existence, whilst we believe that an arrangement might well be made between the Colonial Office and the War Office whereby the colonial medical officers might undergo a course of instruction at Netley.

The policy of the committee of the London School of Tropical Medicine is certainly curious, for in reply to the objection "that the concentration of tropical cases at the Branch Hospital will operate to the detriment of the parent hospital—the *Dreadnought*," they simply remark, "Concentration of cases of tropical disease at the Branch Hospital is certainly desirable, but patients suffering from tropical diseases and applying for admission to the *Dreadnought* Hospital would still be admitted and treated there." This practically admits the intention to deplete the *Dreadnought* Hospital of cases of tropical disease. The third objection selected for answer is the all-important one—namely, "that the clinical material offered at the Branch Hospital is insufficient and that the hospital is difficult of access." We have already given statistics, derived from the printed report of the Seamen's Hospital Society, which conclusively prove that the material of both the parent and the branch hospitals is not sufficient to justify the proposal to expend large sums on new buildings for the purpose of establishing a school. The total number of beds is to be only 45, whilst at Netley there are 1000. The memorandum states that the number of cases of tropical diseases under treatment at the Branch Hospital during the year ended Nov. 30th last was 81 (our figures were taken from the report 1895–96), and that of this total 31 were suffering from malaria; and then come the words, "These cases alone are sufficient to justify the establishment of a school there." Are they? All connected with general hospitals know that numerous cases of malaria, amply sufficient for instruction and investigation, are treated every year in the wards of such hospitals without the incurring of any special public expenditure.

The fourth objection attacked by the memorandum is "that it is unnecessary to build laboratories as it is proposed, seeing that at many places in London there are now fully-equipped establishments." The only answer offered is, "Every teacher of clinical medicine must be fully aware that to separate the laboratory from the ward is highly prejudicial to successful work." We very much doubt whether "every teacher of clinical medicine" would agree with this. A microscope with a few simple reagents might be kept in a room near the ward, but the laboratory, every clinical teacher would think, is better some distance away. The most complete reply on this point, however, is contained in a letter which we publish from Professor CROOKSHANK whose prolonged experience in bacteriological research gives to his opinion an authority which it would be difficult to dispute. We would especially draw attention to the last three paragraphs of his letter where a scheme is formulated which well deserves the attention of the Home Office. Professor CROOKSHANK'S communication strongly supports our view that new bacteriological laboratories are unnecessary. Finally in the memorandum the personal element is introduced. For this portion of the controversy there can be no doubt that the committee of the Seamen's Hospital Society is to blame. The letters published last week as well as those in our present issue show that an apology from the committee to the honorary staff of the *Dreadnought* Hospital is the least amend which can be made.

It is much to be regretted that the Royal College of Physicians of London was not approached in the first instance and asked to advise as to the foundation of the school. Looking to the manner in which the scheme has been introduced we cannot but feel that if every portion of it is managed in the same way as the attempted formation of the teaching staff has been, the Managing Committee will at once lose the confidence of both the medical profession and the public.

THE report of the Pharmacopœia Committee to the General Medical Council is well worth the serious consideration of the medical profession, since it foreshadows very clearly some of the steps which are to be adopted in preparing for the next issue of the British Pharmacopœia. It used to be

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currently believed that in the intervals between the publication of the different issues the Pharmacopœia Committee sat with folded hands, placidly watching the sales of the volume, ordering new copies to be struck off as the supply showed signs of exhaustion, and waiting patiently until pressure of public opinion forced forward the preparations for a new Pharmacopœia. Whether this belief had any foundation in the past it is not our present purpose to inquire. The volume certainly occasionally became antiquated and its vitality was not completely restored even by the publication of an Addendum. This expedient could not be trusted to keep it abreast of the times, since though it was possible to give official recognition to new drugs and to give formulæ for new official preparations it was not possible to alter the existing Pharmacopœia without creating confusion and the only way to satisfactorily make any material change in the volume consisted in the publication of slips of corrigenda.

With the progress of knowledge, however, changes in the official standard are frequently necessitated and in the past the need of revision has found expression both from medical men and from pharmacists. The former have desired the recognition of newer remedies which, being found to be serviceable, should have their properties clearly defined so that the profession could rely upon obtaining a supply of definite composition and constant strength. Pharmacists, on the other hand, have been no less persistent in pointing out possible improvements in the modes of compounding the official preparations. It is obviously useless for any Pharmacopœia to retain instructions which have become obsolete, while it is equally futile for the volume to be overburdened with drugs which have fallen into disuse. Alterations, therefore, in any Pharmacopœia concern both pharmacists and members of the medical profession, and there has been a time-honoured dispute with regard to the legalised production of the Pharmacopœia under the auspices of the General Medical Council alone.

It is well known that in the preparation of the Pharmacopœia of 1898 very material assistance was afforded by the Committee of the Pharmaceutical Society of Great Britain, but, notwithstanding the value of the help which they afforded, the pharmacists of Ireland seem to have taken exception to their exclusion which was doubtless unintentional. It is interesting, therefore, to note the suggestion in the report of the Pharmacopœia Committee that the "Pharmaceutical Societies," a term which includes the Society of Great Britain and that of Ireland, should be invited by the Council to coöperate in the work connected with the publication of the next Pharmacopœia, and it will further perhaps tend to greater cordiality of work when it is realised that these societies may be invited to appoint representatives to confer with members of the Pharmacopœia Committee. In presenting the report Dr. LEECH said that instead of the Pharmacopœia Committee of the General Medical Council and the representatives appointed by the Pharmaceutical Societies working on independent lines, with Dr. ATTFIELD reporting from the one to the other, they would have in future a joint conference.

Another indication of the desire to improve the Pharmacopœia lies in the suggestion that, apart from the report on the criticisms passed on the Pharmacopœia to be prepared by Dr. ATTFIELD, some of these criticisms are in all probability to be investigated and reported on by experts in pharmacy and pharmaceutical chemistry. It will be remembered that the General Medical Council appointed referees who assisted in producing the Pharmacopœia of 1898, but it is now apparently the intention of the committee to be at work continuously accumulating information for the next publication of the Pharmacopœia. That the requirements of the medical profession are to be kept well in view is shown by the fact that Dr. TIRARD, who rendered such efficient service in connexion with the present Pharmacopœia, has been requested to act as reporter to the Pharmacopœia Committee on advances in pharmacology and therapeutics bearing on the Pharmacopœia. It is further to be noted that this committee has now been entrusted with the power to appoint experts in Pharmacy and Pharmaceutical Chemistry to report upon any matters which in the future may be deemed worthy of investigation.

Evidently, notwithstanding the amount of care which was expended in the production of the present Pharmacopœia, and notwithstanding its favourable reception and the notable absence of gross errors, the committee are clearly of opinion that some of the criticisms deserve notice which will involve further research before determining whether the criticisms are well founded. It is obviously the intention to proceed immediately with the accumulation of information and to leave no stone unturned that will enable those responsible for the next issue to produce an even more satisfactory result. As the law stands at present the Pharmacopœia must be issued under the authority of the General Medical Council, but this does not preclude a *rapprochement* which will permit the interchange of views between the pharmacists and the Pharmacopœia Committee.

THE question of the fees to be paid to public vaccinators for their work under the new Act naturally continues to be debated with interest by those who are primarily concerned. In particular, proposals as to fees for mileage have been largely discussed, as, for example, at the meeting of public vaccinators at Malton, of which a report appeared in THE LANCET of Dec. 3rd, and by the board of guardians of the Bootle Union, Cumberland, whose decisions were reported in a letter[1] by Mr. P. BUTLER STONEY, the public vaccinator of one of the districts of the union, while a short account of the meeting will be found at page 1574. At the Malton meeting, as reported, it was freely stated that some system of payment by mileage was the only fair one. In the end this opinion seems to have been to some extent departed from, as the unanimous resolution was "that the fees of public vaccinators should be 2*s*. 6*d*. and 5*s*. in urban districts and 2*s*. 6*d*. and 10*s*. 6*d*. in the rural districts, these fees to cover all duties." This would not be a system of mileage, though the terms of the resolution take general cognisance of distance. Mr. STONEY in his letter states that the public vaccinators of his union had, previously to their meeting with the guardians, determined to ask a travelling allowance of 1*s*. per mile for distances

[1] THE LANCET, Dec. 3rd, 1898, p. 1505.

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over one mile whether the child visited were vaccinated or not at the visit. The result, however, was an arrangement which in principle follows the lines ultimately approved of by the meeting of public vaccinators at Malton. The guardians concluded that they would not pay for mileage, but that in the urban part of the district (an area of 1311 acres) the minimum fees would be given, while in the rural part (extending about five miles in one direction and eight miles in another) the payment for successful vaccinations would be 11*s.*, and for a small outlying portion about from twelve to twenty miles from the vaccinator's house 25*s.* Another of the public vaccinators of this union, with a district of about twelve miles, has had his fees fixed at 12*s.* 6*d.* per successful case, and still another, with an eight mile district, is to receive 9*s.* 6*d.* per case, the initial fee of 1*s.* being extra in all cases.

The reasons given by the Bootle guardians for refusing a mileage rate were that the Local Government Board would not allow such an arrangement and that there would be much difficulty in checking mileages and that this difficulty would give rise to disputes. It does not appear from Mr. STONEY'S letter whether the guardians had actually ascertained from the Local Government Board that they would not sanction a mileage rate (and that is a point to which we have referred in previous articles), but we do think some weight attaches to the other objection raised by the clerk—namely, the difficulty in checking mileage and the possibility of disputes. Perhaps since the discussion began too much has been made of this particular method of regulating fees by mileage and the Malton meeting may have been well advised in arriving at a resolution in the more general terms above quoted. Medical men hold many offices where distance is a factor bound to be considered as regards remuneration, yet they do not always or often have an exact scale of payment per mile. In club practice, for example, a common rule is that the medical officer's work shall be limited to a three-mile radius and that within that area there shall be no variation in the payment per member. In mining districts similarly many appointments take no note of distance as between one contributor and another, all the employés paying the same fee. Of course, in some places, especially in the case of clubs, the fee may be too low, but the remedy is not usually found in distinguishing between one distance and another but rather in having the fee increased for all members independently of distance. There seems no good reason why, within proper limits, a similar system should not prevail for public vaccinatorships—such a system, for example, as Mr. STONEY describes, in which, within the bounds of specified areas, the fees are alike, though they vary as between one area and another. Mr. STONEY asks our opinion of the terms obtained in his union and the only criticism we would make is with regard not to the payment for successful vaccinations but to the initial payment, or, as he calls it, the registration fee. This fee his guardians seem to have refused to raise above the minimum of 1*s.*, no matter what the distance may be. Whether or not this will result in much hardship must depend to a great extent on local circumstances. Assuming that anti-vaccination has little sway in his neighbourhood the cases in which a visit will not result in a vaccination should be comparatively few, especially in the more sparsely populated areas where infectious disease is less likely to prevail or to be a reasonable cause of postponement of vaccination. Yet the Bootle guardians seem to have been hardly logical. For if in one part of their district it is reasonable to increase the fee for successful vaccinations from 5*s.* to 25*s.*, it is difficult to see why some addition ought not also to have been made to the minimum fee for statutory visits. It is no doubt possible, however, that in fixing the payments for successful vaccination consideration may have been given to the fact that only the minimum payment was to be made for the initial visit even though it should not result in a vaccination. The opinion of the public vaccinators at the Malton meeting appears to have been that under no circumstances should the initial fee be less than 2*s.* 6*d.*, though they do not object to the minimum of 5*s.* for successful vaccination in urban districts. At the same time they resolved that in rural districts the fee for successful vaccination should be 10*s.* 6*d.*, but they did not propose any addition to the 2*s.* 6*d.* fee as suggested by them for the statutory visits in urban districts. It is not quite clear why in this respect they make no difference between urban and rural districts.

The Local Government Board in fixing the minimum fees at 1*s.* and 5*s.* had probably in view the case of a thickly populated district of small area with the vaccinator living and practising in the midst of it and with anti-vaccination at a low ebb or with the conscience clause so used as to exclude practically all objectors from the lists submitted by the vaccination officer. Looking to the considerable increase in expenditure which will be involved even in the minimum fees and to the noisy opposition to vaccination which exists in so many parts of the country the central authority seem to us to deserve the thanks of the vaccination service for supplying its members with so good a foundation on which to base their negotiations with their local boards. The Birmingham guardians, it may be noted, think the minimum scale too high. To demand a silk gown in the hope of getting a sleeve is a good working principle in many mundane affairs, and the resolutions arrived at by meetings of public vaccinators do not necessarily mean any want of appreciation of the action of the Whitehall Board. The result of the Nantwich appeal to the Board [2] will be awaited with interest. Mr. THOMSON, one of the public vaccinators there, pointed out to the guardians that the distance of the districts from the residence of the vaccinators in the union averaged from four to six miles. This is surely a case in which the minimum payments are insufficient and yet by a majority of 15 to 10 it was determined to pay no more, the consequence being that the matter will now be brought before the Local Government Board; and the case will be of much importance as indicating the views of the Board with regard to the operation of their minimum scale. It is satisfactory that boards of guardians are in many places taking up a more reasonable attitude than at Nantwich. At Malton and Norton (Yorkshire), for example, the fees, inclusive of all claims, are likely to be not less than

2 THE LANCET, Dec. 3rd, 1898, p. 1501.

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2s. and 10s. instead of 1s. and 5s., and they are fixed at 2s. 6d. and 7s. 6d. in several metropolitan unions.

We learn, on inquiry, that a communication is about to be addressed from Whitehall to the boards of guardians in England and Wales on the matter of fees both to public vaccinators and vaccination officers, and that there is a greater inclination to raise the fee for procuring vaccination than for merely formal visits to record the refusal of a parent to have his child vaccinated. There is little disposition, we understand, to such an increase of the fee for the statutory visit as would so far pay an officer as to make him careless about getting the child vaccinated; hence there may be a desire even when mileage is considered not to disturb the ratio laid down between the minimum fees of 1s. and 5s.

Annotations.

"Ne quid nimis."

BACTERIOLOGICAL DIAGNOSIS.

A CORRESPONDENT draws our attention to the fact that the Camberwell Vestry has been the first vestry in London to appoint a bacteriologist to work at certain of the problems which occupy the attention of the medical officer of health. This is a new and in many ways a good departure and is certainly an experiment which is well worth careful attention, especially if the bacteriologist is to devote his whole time to the work of the vestry and to be correspondingly well paid. There can be little doubt that there is more than sufficient work to keep a bacteriologist fully employed, even though he should devote the whole of his time and energy to the appointment; whilst if he should give a part only of his time the appointment will be of value to the community. At the same time it must be evident that there may be some waste of energy and brain power if a thoroughly competent bacteriologist (however well paid) is to be expected to do a great deal of routine work which might equally well be done by skilled and unskilled assistants, and it certainly comes to be a question whether in the present state of affairs it might not be better, as we have already pointed out, to utilise to a greater extent existing facilities, and in a large community like that of London to centralise the work at two or three points. There can be little doubt that under different men very different results will be obtained, first as regards the efficiency of the work done and secondly as regards the amount of information which will be collected and made public and the value of the statistics so obtained. It is, however, well that some such experiment as that brought under our notice by our correspondent should be tried, especially as anything which is conducive to accuracy and rapidity of diagnosis will be heartily welcomed by all who are concerned in guarding the public health. It is even possible that it may be found necessary not only to have local laboratories but also to have special and consultation laboratories where work out of the ordinary routine, for which special and expensive apparatus is necessary, may be carried out. The need for bacteriological work is only just coming to be appreciated, but already there is such specialisation that it is difficult to see how any single man will be able to attack unaided (or even with the assistance to be obtained in a small laboratory) the multifarious problems with which the bacteriologist of to-day is faced. The diagnosis of diphtheria, of typhoid fever, of tuberculosis, of pneumonia, of anthrax, of cholera and the like form only a very small proportion of the work to be done. The examination of air, of soil, of water, of condemned food stuffs, and of milk will all have to be undertaken and it is quite within the bounds of possibility that laboratories will have to be founded and appointments made for the carrying on of these individual branches of work. This, however, may fairly be assumed, that whatever may be the initial cost of these laboratories and whatever it may cost to keep them well manned and equipped the direct and indirect saving to the community would be sufficient, first through the direct saving of life brought about by early diagnosis and secondly by the elimination of foci of infection and a consequent circumscription of the areas of infection and disease, during the first two or three years alone to found and endow these laboratories for a couple of score of years to come. We think that our correspondent is perfectly correct when he states that the reduction of the death-rate from diphtheria alone as brought out by the returns of the Metropolitan Asylums Board is ample justification for any vestry making arrangements to have bacteriological investigations carried on for them.

THE QUEEN'S VISIT TO NETLEY.

THE Queen's solicitude as to the condition of her sick and wounded soldiers was again shown on Saturday last, when for the third time this year she paid a visit to the Royal Victoria Hospital. A break in the bad weather lately experienced on the coast occurred, and during a portion of the time Her Majesty spent at Netley the sun shone brightly, the day being a warm one for the time of year. The portico by which the Queen was to enter the building was adorned with trophies of flags and shields and with a mass of palms, flowers, and ferns, while the corridor along which the Queen was to pass was carpeted with red cloth. Travelling from Windsor by way of Byfleet, Cosham, and Fareham, the Queen reached Netley station at 1.30 o'clock. Her Majesty was accompanied by Princess Beatrice and Princess Victoria of Schleswig-Holstein and was received at Netley station by General Sir Baker Russell, commanding the Southern district, and his staff. In attendance were the Countess of Lytton, the Hon. Mrs. Alaric Grant, and Lieutenant-Colonel Sir Arthur Bigge, while the two equerries were Major-General Sir John McNeill, V.C., and Lieutenant-Colonel Davidson. In an open carriage, a few minutes in advance of the Royal party, Lord Kitchener of Khartoum, who had joined the Royal train at Windsor, drove up to the hospital, and with him was Sir Henry Rawlinson, who was on his staff during the Soudan campaign. The Queen reached the hospital just before 2 o'clock, and was received by Surgeon-General Nash, principal medical officer, and the following officers of the Royal Army Medical Corps—Colonel Notter, Colonel MacLeod (of the Indian Medical Service), Colonel Stevenson, Lieutenant-Colonel Blennerhassett, Lieutenant-Colonel Webb, and Major Dick. Here, too, waiting to receive Her Majesty were Miss Norman, Lady Superintendent of the Army Nursing Service, and Colonel Creagh, A.A.G. at Netley. A bouquet was presented to the Queen by Miss Nellie Stevenson, daughter of Colonel W. F. Stevenson, R.A.M.C. Entering a wheeled hand-carriage which was propelled by an Indian servant the Queen passed along the corridor to the lift by which she was conveyed from corridor to corridor, inspecting the different wards both in the medical and surgical divisions of the hospital and speaking words of comfort to the wounded and stricken soldiers. In the corridor of the medical division of the hospital all the convalescent patients entitled to the Atbara and the Omdurman medal were drawn up in order of regiments, the men of the 21st Lancers being formed up on the right of the line, Royal Artillerymen of the 32nd

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Field Battery came next, with the Guards on their left, and after them the Seaforths, Camerons, Lincolns, Warwicks, Rifles, Northumberland Fusiliers, and Lancashire Fusiliers. The most interesting feature of the day was the personal presentation by the Queen of the medal "For distinguished conduct in the field" to two gallant men of the Royal Army Medical Corps—viz., to Staff-Sergeant G. A. Benson and to Private A. Davidson, both of whom served in the First Brigade Field Hospital during the late campaign. During the visit the Sirdar who followed in the wake of the Queen through the various corridors and wards decorated 180 men with the medal struck by the Khedive in honour of the campaign. On Saturday last the hospital contained 800 sick and wounded men and of these the Queen saw over 600. Among the patients, apart from the sick and wounded from the Soudan, are men from India, Crete, Mashonaland, and the West Indies. Before leaving Netley Her Majesty was conducted to the operating theatre where the Roentgen rays were demonstrated by Colonel Stevenson, Princess Beatrice having the shadow of the bones of her hand thrown on the fluoroscope. The Royal visit terminated shortly after three o'clock and Her Majesty returned to Windsor by the South-Western route, arriving at the Castle at six o'clock.

THE EXPENDITURE OF THE METROPOLITAN ASYLUMS BOARD.

IN a letter from the Local Government Board referring to the managers' application for an order authorising the borrowing of a further sum of £2413 4*s.* 6*d.* in respect of alterations and additions to the South-Western Hospital the Board state that they find similar irregularities to those which occurred in the erection of the Brook Hospital on the part of the architect, and omit from the order the amount which under ordinary circumstances would be due to him as commission—viz., £62. The architect, in a letter to the managers, has defended his conduct in the case of the Brook Hospital. We do not see much evidence of any motive of personal advantage in the architect's large orders, but such motives get blended dangerously with the love of grand schemes, for which neither the architect nor the managers have the trouble of finding the money. The system is obviously not in the public interest. Let anyone contrast the scale and system of this expenditure with those of voluntary hospitals or of private individuals and they will see to what length this system has been carried. It must be checked or it will demoralise both the public and the managers. Unfortunately, it is not a subject which the party politician cares for. We must look to the Local Government Board to do its duty.

THE LAST OF LUCCHENI.

THE appeal to the Court of Cassation in behalf of Luccheni was withdrawn by his counsel *per mancanza di motivi* (for lack of grounds) and on the night of the same day (Nov. 22nd) he was removed, heavily manacled, to the prison where he is to spend the next six months in solitude. Thereafter he will be "accommodated" in the penal *oubliette* where he will be put to hard labour for the rest of his life. He is, we read in the Italian journals, "completely changed; no more the petulant cynic he was on the day of trial, but wan, dejected, prostrate (*pallido, abbatuto, accasciato*). He deplores his abominable crime," adds the reporter, "the religious sentiment dominates him, and he is haunted by fear of the eternal punishment awaiting him after death." All this was foreseen by his medical examiners who made full allowance for the vanity which was his ruling principle and which sustained him in the arrogant, the revolting self-assertion he assumed in open court. Withdrawn from the public gaze and the gratification he drew from this position he collapses at once into the "hysterico-epileptoid imbecile" of the criminal anthropologist and comports himself accordingly. The fact is not without its significance for the legislator, explaining as it does the wretched creature's disappointment that he was not tried in a canton where capital punishment (as in Lucerne) is still in force. Steeped in the spurious rhetoric of anarchism he had looked forward to the guillotine for which he had qualified—the guillotine and the scaffold, that "tribune of the socialist martyr," as his French prototype Vaillant called it. But that opportunity of ventilating his *amour-propre* is denied him and he has to share the common and ignoble doom of the Italian homicide—a mere unit among many other compatriot malefactors. We hope that the International Congress for the Suppression of Anarchism now sitting in Rome will take practical note of this collapse of Luccheni. Arrested red-handed from their crime, anarchists should not be gratified with the public trial they count upon or even with the theatrical execution they court. Vanity being in most cases their guiding motive they should under every legal safeguard and formality be brought to justice in private and be visited with its severest penalty in private likewise. Legislating on such lines the Powers represented at the Congress will have introduced an effective deterrent for such assassins, and so far the criminal anthropologist will find that he has not preached in vain. Another deterrent not unworthy of consideration is the penalty of flogging in the case of would-be or unsuccessful "Lucchenis." We have already[1] treated of this form of punishment which certainly put down garotting and which by the humiliation it combines with physical suffering would appeal powerfully to the vainglorious as well as effeminate side of such "rhetorical" specimens of the *belva umana* as Vaillant and his latest disciple. But, as we have previously urged, a deeper policy than that of the restrictive or repressive legislator must be adopted in dealing *ab initio* with anarchism and its instruments, and for this we must look to reforms inspired not merely by the forensic but by the medical innovator. The Congress of Criminal Anthropology which by a strangely suggestive coincidence met at the scene of the late anarchist crime just three years previously to its commission was not without its lessons and its admonitions to the Governments of Europe. Had these latter, particularly that of Italy, paid due attention to what was put in evidence on that occasion measures would have been adopted which might have prevented the tragedy of the Quai du Mont Blanc. Let us hope that profiting by that and similar sad experiences European statecraft will take a more intelligent interest in the next Congress of Criminal Anthropology which in the August of 1899 will assemble at the Hague.

TWO MEDICAL HEROES.

THE latest name added to the roll of the Victoria Cross is that of Surgeon William Job Maillard, M.D. Lond., of the Royal Navy, upon whom the decoration has been conferred for conspicuous bravery during the outbreak at Candia on Sept. 6th, 1898. At that date, during the landing of seamen from Her Majesty's ship *Hazard*, Surgeon Maillard, who had disembarked and reached a place of safety, returned through a perfect deluge of bullets to the boat and endeavoured to bring into safety Arthur Stroud, ordinary seamen, who had fallen back wounded into the boat as the other men jumped ashore. Surgeon Maillard failed to bring Stroud in only through the boat being adrift and it being beyond his strength to lift the man (who was almost dead) out of so unstable a platform. Surgeon Maillard returned to his post with his clothes

[1] THE LANCET, Oct. 29th, 1898, p. 1146.

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riddled with bullets though he himself was unhurt. Our heartiest congratulations to Surgeon Maillard. By a curious coincidence we have to offer the same sort of congratulations to a French naval surgeon this week. In virtue of a decree dated Oct. 1st, 1898, the Cross of the Legion of Honour has been conferred upon Dr. Bartet, a young naval surgeon employed on active service in Upper Dahomey. The act of gallantry which it is designed to recognise is thus briefly described in the official record: "During the affairs of the 4th and 8th Nov., 1897, while serving with the Borgou column this officer, despising death, completed his difficult duty beside the wounded under a perfect rain of arrows."

GLYCERINATED LYMPH.

THE following minute has been issued by Mr. Henry Chaplin, President of the Local Government Board:—

Local Government Board, Nov. 16th, 1898.

I desire to place on record an expression of the value which I attach to the labours and researches of Dr. Sydney Monckton Copeman in connexion with the preparation, by the aid of an aqueous solution of glycerine, of a vaccine lymph which is free from harmful organisms. An indication of the value which is attached to Dr. Copeman's researches is to be found in the fact that Parliament has decided by Statute that this form of lymph shall for the future be used in this country. HENRY CHAPLIN.

We are glad to be able to offer our congratulations as well to Dr. Copeman with regard to his arduous researches into the question of glycinerated lymph, though of course the idea of using glycerine as a vehicle did not originate with him. But we think it is fair to say that he has raised what was formerly a mere hypothesis in this country into the region of ascertained fact. By the use of properly prepared and standardised glycerinated lymph the last shred of objection which any objector other than a pig-headed fanatic can possibly put forward to vaccination has been done away with, and we can only hope that the "tremendous experiment" upon which the Government has entered may not be attended with disaster. If an epidemic of small-pox should come it will fall hardest upon innocent children who will owe disfigurement and possibly death to the mistaken action of those whose first duty it should have been to guard them against such misfortunes.

MARGATE HOSPITAL.

WE are glad to learn that the Margate Sea-bathing Hospital is again open, having been closed by the remodelled committee of management to allow of a complete reconstruction of the drainage together with some minor but not unimportant building operations, one of the objects of which has been a much-needed improvement in the accommodation for nurses and servants. The opportunity has been taken advantage of to appropriate two small wards to the treatment of diseases not "scrofulous" in character but especially requiring sea air or sea-bathing. For many years the hospital or, as it used to be called, "the infirmary" was restricted to "scrofula," but this limitation was no part of the original design of the founders, who imposed no further limits to their charity than poverty and the probability of the patients deriving benefit from the special influences of the place. The establishment of these wards is therefore a reversion to the original design and will, it is hoped, be the means of relieving cases in more rapid succession than was done when only "scrofula" was received and that often in very chronic forms. Among other recent improvements is a new operating theatre which provides all the refinements of antiseptic surgery. The hospital is now being refilled as fast as arrangements can be made, but scarcely rapidly enough to keep pace with the public demand. The wards are pleasing and sanitary, especially those built by the late Sir Erasmus Wilson, and the chapel is no less attractive, while the situation, as close to the North Sea as it is possible for a building to be placed, ensures that no salubrious influence which sea and shore can supply will be wanting to the subjects of serious disease who go there for the ministry of nature as well as of art. We are informed that a very considerable proportion of the large sum which has been expended as indicated has been given by a member of the court of directors who is by virtue of his position well acquainted both with the necessities of the charity and with its utility.

INVESTIGATIONS AT ROME INTO THE ETIOLOGY OF MALARIA.

THE Italian observers, Grassi, Bastianelli, and Bignami, who are associated in carrying out a series of investigations at the Hospital of Santo Spirito, Rome, with the object of throwing light upon the etiology of malarial fever, have again met with success in their inoculation experiments with mosquitoes. The continuation of Dr. Bignami's original paper dealing with this line of research will be found at p. 1541 of our present issue. On this occasion only one species of these insects was employed in the experiment—namely, Anopheles claviger, captured, as before, in the adult stage in the malarious region about Maccarese. The subject of the experiment was a young man who had never suffered from malarial fever and who was received into the Hospital of Santo Spirito for hysteria about four years ago, during which time he has been constantly under observation and has had no kind of fever whatever. This man for nineteen days slept in a room in which were set at liberty from time to time numerous specimens of Anopheles claviger. On Dec. 2nd (the eighteenth day) he began to feel unwell and on the 3rd the blood on examination was found to contain the parasites of malarial fever exclusively of the common tertian type (the spring tertian of Italian writers). This form of fever is prevalent at Maccarese. Considerable difficulty is experienced in continuing these experiments on account of many of the mosquitoes dying and others refusing to feed. This is probably due to the lateness of the season.

PAUPER ATTENDANTS IN WORKHOUSE INFIRMARIES.

AT an inquest held on Nov. 28th by the coroner for Belfast in the union workhouse the circumstances of the death of Henry Savage, a weaver, aged thirty-six years, were inquired into. The coroner said that he had received information that the death of the deceased had been accelerated by improper treatment while he was in the workhouse. The wife of the deceased said that her husband suffered from paralysis and epileptic fits. Dr. MacFadden said that he had seen the deceased prior to his admission and found that he had several bedsores. He considered that the patient should be in an asylum, but on application being made to the asylum authorities they would not take him in. John Brennan said that he had attended deceased as a pauper attendant. He (witness) had said that he believed Savage was starved but he admitted in evidence that he always found plenty of food to give him. Miss Kate Megahy, a Poor-law guardian, said that she had received a letter of complaint signed "John Brennan" concerning the deceased. She had visited Savage and found his bed clean and dry. Dr. Stewart said that he had medical charge of Savage both by day and night. Savage died from degeneration of the brain and should have been in the asylum. Nurse Wright said that she was in charge of the ward in which the deceased was. There were 105 patients and she had to look after them all with the

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assistance of two probationers and some paupers. The sheets about the deceased were changed three or four times a day. The jury found that the cause of death was as Dr. Stewart had stated and that Savage had received due and proper care whilst in the workhouse. They also considered that qualified nurses should take the place of pauper attendants. We are glad to be able to think that this patient did not in any way have his life shortened by want of care, but it is nothing less than a scandal that in any institution for the care of the poor one unfortunate woman should have to look after 105 patients even with the assistance of two probationers and pauper attendants in addition. We have referred to this question again and again and shall continue to do so until the scandal of pauper attendants on the sick poor is done away with. Our English workhouses are not above reproach, nor are those in Scotland; but we cannot call to mind any modern instance of one unfortunate woman being responsible for the care and nursing of 105 patients. The Belfast authorities should see that such an abomination is done away with as soon as possible. While on the subject of Irish workhouses we may mention that at the meeting of the Kilrush Board of Guardians held on Dec. 3rd it was found that the school master, the clerk, the master of the local workhouse, and all the heads of the institution had gone off to Cork Assizes. No responsible person was left in charge of the inmates who roamed about as they pleased and one inmate of weak intellect "ran amuck." Besides this there were other irregularities. The guardians described this state of things as scandalous and directed an official to take charge of the establishment. We may well ask, *quis custodiet custodes?* and should be glad to know what course the guardians will take with their officials. The whole story sounds like a tale by Lever of the days at the beginning of the century.

ROAD-MAKING.

WE have received a letter from a town councillor which shows how the doctrine of contagium vivum is permeating the minds of our local governors. Our correspondent objects to have any of the old material previously scraped off the roads used for "grout" when the road is metalled. His objection is on the ground that this material contains putrescible organic matter and he asks us whether his "theory" is correct. But road-making is a practical matter, and whether or not the material used for making the road is foul and offensive can only be answered by an appeal to facts. A heap of road scrapings very soon sweetens and the organic matter is not long in mineralising. Even if the sweepings when used for road-making should contain a small quantity of humus it would be found that it would dry less quickly than pure mineral matter and would have less tendency to fly about in the form of dust. If our correspondent's council are really going to mend their roads with dung, as he seems to suggest, then they are, of course, wrong. But we hesitate to answer his question categorically because it is of great importance that sanitary authorities should study economy and try as much as possible to utilise the materials which it is their duty to collect. It is unfortunately not common to find thriftiness in our municipal management and we hesitate to check it without hearing both sides of the question. It seems to us that road-making is often carried out in too wholesale a fashion and even country places are not content without a steam-roller. This machine, we must suppose, is capable of making good roads under certain conditions but those conditions appear to be rarely met with near London. The pressure per square inch of a steam-roller is less than the pressure of the wheels of a heavily laden waggon and the result is that the steam-roller-made road is very liable to "pocket." For a few weeks, of course, the road is smooth enough, but very soon it "gives" for the reason stated and then the cyclist who traverses it goes along bumping and grunting and perhaps swearing. We inspected a by-road not long ago which after a neglect of about two years had been made up with a steam-roller. The metal was huge and had been merely "chucked" upon the surface of the road. Then came the steam-roller, jerking and roaring over it, with the result that it broke two gas-pipes and made a huge depression at one end. This was filled up and then came, after a lapse of a day or so, the steam-roller on a second visit. This time it broke two water-pipes and we only wonder whether it broke any drain-pipes. Would it not be better to copy the French and place our by-roads, at least, under the care of individuals who should work perpetually upon them—sweeping, watering, and mending. A "stitch in time" is a good old proverb and it is very doubtful economy to allow a road to get into a maximum state of disrepair. The man who had charge of a mile or two of by-road flanked by villas would, if he did his work well, be sure of a Christmas-box, and the work is of a kind which would keep many an elderly man out of "the house."

DEATH UNDER CHLOROFORM.

A DEATH under chloroform occurred recently in St. Bartholomew's Hospital. The patient, a butcher, aged forty-two years and weighing between 21 st. and 22 st., was admitted suffering from an old injury to his thigh. There was a large abscess pointing in the upper part of Scarpa's triangle and the thigh was in an erysipelatous condition. The temperature was 101·2° F., the heart-sounds were normal, but the lungs were emphysematous. There was some orthopnœa, partly due to the obesity of the patient and partly no doubt to the emphysema. Four hours after admission the anæsthetic was administered by a house physician. Nitrous oxide gas followed by ether was given in order to stimulate the circulation as fatty change in the myocardium was suspected and the heart's action was weak. The patient, however, breathed badly and became cyanosed. The induction of anæsthesia being complete the anæsthetic was changed for chloroform, which was given from lint. To relieve the diaphragm from the pressure of the abdominal viscera the man was turned upon his side and the head lowered. The breathing became less laboured, being regular and somewhat shallow, but the face remained congested. The patient was kept only lightly under the anæsthetic, slight movements of the arms and legs being made during the semi-anæsthesia. The operation was completed, a shallow inspiration was then taken, and subsequently respiration ceased. The tongue was drawn forwards, a ligature being passed through it, and ether was injected into the tissues of the cardiac area. One feeble inspiration was made, but no more. Artificial respiration was ineffectual in restoring vitality. The pulse stopped and the respiration ceased. The necropsy revealed advanced fatty degeneration of the heart and other organs. Death in this case appears to be due to failure of the diseased heart, possibly owing to shock, as it appears that the patient was but very slightly under the anæsthetic, and no doubt it was accelerated by the diseased condition of the man's lungs, his posture, and the fulness of the venous system as evidenced by the congested face and laboured breathing. The case was clearly one of extreme difficulty and even had the operation been performed under a local anæsthetic it is by no means certain that the mental shock might not have brought about the very result that occurred during the administration of the anæsthetic. The carefully prepared notes (for which we are indebted to Mr. Jameson) do not mention to which side the man was turned. Whether the diaphragm is helped by the lateral decubitus in such cases is, we believe,

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open to doubt, and there is always the danger of still further hampering respiration and circulation by compressing one or other lung in that posture when the patient is very heavy, especially when emphysema is present. The initial use of gas and ether in this case may be adversely criticised by some but it certainly possessed the advantage—an important one in the present instance—of avoiding the stage of excitement so common when chloroform is used in the induction of anæsthesia. Probably had the development of cyanosis been foreseen the brief operation would have been conducted under nitrous oxide gas mixed with oxygen, which answers well in short cases, although it must be admitted that it is not an ideal anæsthetic for such persons as the patient is described to have been in the case in question.

LARGE FAMILIES AMONG THE POOR.

AT an inquest held on Dec. 2nd by Dr. Wynn Westcott at Bethnal-green on the body of an infant found dead in bed the mother of the deceased mentioned that she had fifteen children. The coroner remarked that he could not understand how it was that the poor managed to keep such large families, whereupon a juror remarked: "One or two don't make no difference. Some grow up and help to keep the others." After all, there may be more sound sense in this argument than might at first sight be supposed. Everyone who has any experience of work among poor people knows how kind the poor are in taking in an extra child for nothing very often, and sometimes for a small weekly payment. We do not, of course, refer to baby farmers, but as a matter of fact the charity of the poor to one another is above all praise, and so perhaps the large family may not be so undesirable after all. The great difficulty in connexion with such is not so much clothing or feeding but proper house-room, and to find this with the exorbitant rents which are being daily demanded in London is almost impossible.

THE ANNUAL REPORT OF THE ARMY VETERINARY DEPARTMENT.

THE usual annual report of the Army Veterinary Department has recently been completed by the Director-General, Veterinary-Colonel Duck, C.B., F.R.C.V.S. It consists of a general summary of the diseases met with amongst the army horses and transport animals at home and abroad. In the Home Department the number of patients amounted to 65·12 per cent. of the average strength, being greatest in the Army Service Corps which has the Young Horse Depôt attached to it and lowest in the Military Police. It was noticed, as has been the case before, that the percentage of admissions to treatment was higher in horses about four or five years of age than in those of more mature years. It is a matter of great congratulation to know that glanders is still absent. One suspicious case occurred amongst the animals at Shorncliffe in November, 1897, but a careful post-mortem examination and the use of the mallein test amongst the in-contact horses demonstrated beyond dispute that the disease was not glanders. In Egypt, from which country the report is made by the senior veterinary officer, Veterinary Captain Blenkinsop, the absence of glanders is also noted, although 69 cases of this disease were reported by the Egyptian civil authorities. The Government stables, however, had a narrow escape from becoming a centre of contagion, as a private pony standing in one of them showed suspicious symptoms and after reacting to mallein was destroyed, the necropsy confirming the existence of the disease. All the animals in the same stable were promptly tested, but none reacted and the disease has not again reappeared. Veterinary-Captain Blenkinsop suggests that as remount horses and mules are largely obtained from Syria, where glanders exists to some considerable extent, all animals should be tested before being admitted to the troop stable. In South Africa outbreaks of glanders occurred at Etchowe or Pietermaritzburg. Mallein was employed and all animals which reacted were destroyed. Every precaution was adopted and the disease appears by the last reports to be stamped out. Mortality from "horse sickness" was very heavy and an unusually large number (no less than 119) of animals died from colic due to the ingestion of large quantities of sand. The latter cases occurred at Ladysmith, where the animals were picketted out in the open on a sandy soil which they continually licked, the sand accumulating in the intestine and causing complete obstruction. In the Army Veterinary School the usual classes were held for officers and farriers, examinations being held and certificates granted to those who were successful. From the Vaccine Institute lymph was issued for 71,103 people, the average yield from each calf being sufficient for 4345·25 persons, the total expenses for the year, including cost of calves, instruments, &c., being only £91 9*s.* 3*d.* Lymph is now supplied from here to the navy as well as to the army, a request to that effect having been received from the Admiralty.

BILATERAL ACUTE LABYRINTHITIS.

IN the *Intercolonial Medical Journal of Australasia* of Oct. 20th Dr. Percy Webster relates a case of this very rare disease. A healthy lad, aged ten years, one day looked pale and ill. He vomited, became delirious and complained of pain in the head; he had to be held down in the bed. The acute delirium lasted 11 hours, after which he was quiet but lay muttering. He called out with pain when touched; moving the limbs seemed to cause great suffering. At times he would lie with his back arched and his head retracted. He was ill for about two months and became very thin. He had giddiness and after his recovery staggered at times especially in the dark. Deafness was noticed before he recovered from the delirium and remained permanent; it was total both for bone and aerial conduction. He complained of pain and constant buzzing in his ears. The fundi were normal, the knee-jerks were active, and there was neither ankle clonus nor paralysis. As the history was only obtained from his friends it was impossible to say whether the labyrinthitis was primary, or associated with meningitis, pneumonia, typhoid fever, or one of the exanthems, or whether it was secondary to otitis media.

THE PURPURA OF CHILDHOOD.

AT the recent Congress on Gynæcology, Obstetrics, and Diseases of Children, held in Marseilles, Dr. Leon Perrin discussed the pathological significance of purpura in children. This term, he reminds us, no longer stands for the name of a disease but of a symptom. The condition of blood-stasis which it denotes, whether merely an intense congestion with capillaries unruptured or a true extravasation, is in the great majority of cases due to an infective process—a toxæmia. Even the rheumatic variety, he maintains, ought to be relegated to the same series as those of obviously septic origin as being also toxic, though by means of a different toxin. Purpuras associated with syphilis, with the eruptive and other infectious fevers, with septic pleurisies and pneumonias, are necessarily of this character. In the same connexion a reference to two cases in which the presence of staphylococci was demonstrated in the blood is interesting. Dr. Perrin also quotes the observations of de Boeck-Renher, Hutinel, Le Gendre, and others to prove the frequency with which the tonsil serves as the chief point of entrance for the germs of disease. But whether this gland, or the skin, or the gastro-intestinal canal provides the nidus, the later action of toxic products

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is essentially the same in all cases. They penetrate the tissues, alter the composition of the blood, and by attacking either directly the capillaries or indirectly the vaso-motor centres reveal their presence by the sign of purpura. Neither is the influence of the non-vital agents without significance in this connexion. Various drugs—mercury, iodoform, arsenic, and others—afford the same purpuric signs after a period of use and they doubtless act by means of the same physical mechanism. Cachectic and other allied morbid states also do this by developing a variety of auto-toxins. Purely physical and metaphysical forces—as cold, emotion, &c.—have, on the other hand, merely a predisposing effect. Not the least interesting details in this interesting paper are those relating to age. Purpura, as is well known, is very frequent in childhood, more so than in adult life. In this respect it resembles the eruptive fevers. From four to ten years is the most usual age-period for its appearance, though it is fairly common up to twenty. Dr. Perrin, however, quotes cases observed by Steffen some of which occurred at a much earlier stage of life—viz., 1 at thirty-six hours, 1 at eight days, 1 at a fortnight, 1 at six weeks, and 16 from three to nine months after birth.

ALLEGED ILL-TREATMENT OF A PATIENT AT THE LONDON HOSPITAL.

THE evidence given at an inquest held by Mr. W. E. Baxter at the Whitechapel Infirmary last week should certainly cause the governing body of the London Hospital to institute an inquiry in reference to a patient whom the evidence showed to have been turned out of the hospital into the street in a very unusual manner. Dr. Frazer stated that the man was admitted into the hospital on Thursday, Nov. 3rd, "but behaved so indecently that at last the nurses refused to go near his bed." The witness, however, at a later stage of the inquiry amended this statement by saying: "What I really meant was that I felt inclined to refuse to allow the nurses to attend the patient on account of his behaviour." Dr. Frazer also stated that the Whitechapel Infirmary and two other infirmaries had been applied to and in each case admission was refused to the deceased. As far as the first-named nstitution was concerned it was proved that that statement was incorrect. The patient was, in fact, led outside the gate of the hospital by a porter, when he sat down on the pavement until found by a policeman who removed him to the infirmary where he died from "softening of the brain." A porter from the London Hospital stated that he informed a constable on point duty outside Whitechapel railway station that the deceased was going to be put out of the hospital. The jury returned a verdict in accordance with the medical evidence, and added: "We desire to express our deep sorrow at the way the poor fellow was turned out of the hospital, and we are of opinion that the house governor of the hospital acted in a very high-handed manner in having the man expelled in such a casual way without seeing that he was properly attended to outside." With the evidence at present before us we are forced to agree with this reprimand, but we trust that further investigation will show that the action of the authorities was not so hard-hearted as it appears. All who have had experience in hospital management know how difficult it is to deal with such cases at a general hospital, and young house physicians and house surgeons acting with perfectly good intentions are occasionally apt to turn patients over to the police without due examination of their mental condition. It should have been remembered that indecent language and behaviour are very common symptoms of insanity, and the house governor should have ascertained whether the physician in charge of the case was of the same opinion as his junior before consenting to the man being turned out into the street. Such an event is likely to cast discredit upon the management of a most noble institution and a satisfactory explanation should be as widely spread as the report of the verdict of the jury has been.

THE WATER-SUPPLY OF EAST LONDON.

THE East London Waterworks Company resumed the constant supply in Poplar, Limehouse, Millwall, Ratcliff, Bromley, Loughton, Chingford, Chigwell, and Buckhurst Hill on Monday last and the directors have stated their confident expectation of returning to the constant supply in every part of their district by the end of the present week.

THE BERTILLON SYSTEM OF MORTALITY STATISTICS.

A DECISION the importance of which can hardly be estimated as yet was reached at the recent meeting of the American Public Health Association, held at Ottawa, Canada, in September last. The following resolutions, which had been submitted by the Committee on Vital Statistics at Philadelphia in 1897, were favourably reported by the Executive Committee and were then unanimously adopted by the association: The American Public Health Association recommends that the Bertillon classification of causes of death be adopted by all the registrars of vital statistics in the United States, Canada, and Mexico as soon as the change from the systems now in use can be conveniently made. The Committee on Nomenclature of Diseases and Forms of Statistics (now the Committee on Demography and Statistics in their Sanitary Relations) has been authorised to have printed and circulated amongst the registrars of the three countries a circular containing these resolutions, the report of the committee on which they are based, the three alternative forms of the Bertillon classification, with explanatory notes on inclusion of terms and practical rules for compilation, and a list of the registration offices adopting the same. A proposal will be made for an international alliance between the registrars of the three countries included in the association and the registrars of France and other countries now using, or which shall hereafter adopt, the Bertillon system, and definite plans for such an alliance are to be submitted for action to the next annual meeting of the association.

"TYPHOID PLEURISY."

THE *Semaine Médicale* of Oct. 19th contains a valuable paper by M. Achard on this subject. Pleurisy occurring in typhoid fever may result from the action of the typhoid bacillus or from some other infection. Typhoid pleurisy may assume several forms—sero-fibrinous, hæmorrhagic, or purulent. In some cases the pleurisy seems to have preceded the typhoid fever just as typhoid pneumonia may. The effusion may also show itself during the course of the disease. Thus a man, aged twenty-six years, with all the usual symptoms of typhoid fever, had dyspnœa and dulness at the base of the left lung. Puncture showed the presence of fluid a little cloudy and containing red and white corpuscles. On several occasions during a month serous fluid was obtained by puncture which always contained the typhoid bacillus in pure culture. The signs disappeared and he recovered. In another case, in a young woman, an empyema formed. At the end of the third week there was a friction sound at the left base; the temperature fell to normal and convalescence was apparently insured, but dulness was found at both bases and pyrexia again appeared. An empyema formed on the left side. A litre of pus was evacuated which contained the typhoid bacillus in pure culture. Resection of a rib and drainage were carried out and the patient recovered. Why does the typhoid bacillus

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produce pus in some cases and not in others? A categorical answer cannot be given, but analogous cases can be cited. The swellings of osteo-myelitis are sometimes abortive and resolve without suppuration. The spleen is constantly the seat of bacillary foci in typhoid fever, but abscess results only exceptionally. In experimental inoculation of the typhoid bacillus pus is sometimes produced, sometimes not. The same is true of the colon bacillus. Again, streptococci and staphylococci, microbes usually pyogenic, are sometimes present in non-suppurative lesions. Finally—a very complete analogy—the tubercle bacillus can induce fibrinous, serous, hæmorrhagic, or purulent pleurisy. As to the treatment of typhoid empyema M. Achard recommends postponing operation until the intestinal ulcers are healed and the patient has recovered strength. This course is possible as typhoid empyema as a rule does not run a rapid course and has not a tendency to invade other parts or to give rise to general infection—septicæmia, for example—as has empyema induced by streptococci.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

IN accordance with the plan set forth by His Royal Highness the Prince of Wales a Committee of Inquiry has visited the various hospitals which applied for a share in the Prince of Wales's Hospital Fund in the summer. The committee was composed of nearly equal numbers of medical men and laymen, if we exclude Sir Trevor Lawrence who may be reckoned as both, and its report will doubtless when issued be of great service to the Distribution Committee in allocating the Fund to those institutions which are not only needy but deserving. The Executive Committee of the Fund, of which Mr. Hugh C. Smith, the Governor of the Bank of England, is treasurer, has issued an appeal for funds, apparently based upon information received from the Committee of Inquiry. A sum of £30,000 is still wanted to meet the minimum necessities of the hospitals for the present year. Last year the Prince of Wales's Fund was the means of opening 180 beds which before had remained closed for want of money. We are glad to see that the appeal points out that it is wasted generosity to build new wards and hospitals when so many of the existing wards are perforce empty and useless. The Sirdar has within a very few days managed to collect the sum of upwards of £70,000 for the Gordon Memorial College in the Soudan. We congratulate his lordship most heartily on the success which his efforts have attained, but we would remind those who are blessed with this world's goods as well as those who are not rich that the needs of the sick poor are paramount. We cannot but also remind the authorities responsible for the management of our metropolitan hospitals that a great deal of their charity is expended not only upon unworthy objects, but also upon people from all parts of the country who could be just as well treated nearer their own homes.

THE INDIAN AND COLONIAL ADDENDUM TO THE BRITISH PHARMACOPŒIA OF 1898.

IT is not often that it is possible to criticise material for publication which has not yet reached a final stage. This opportunity has been afforded by the receipt of the report from the Pharmacopœia Committee on the proposed Indian and Colonial Addendum to the British Pharmacopœia of 1898. This report contains suggestions for consideration by the medical and pharmaceutical authorities in India and the colonies and these suggestions cover some twenty-two pages. These pages include a list with descriptions of drugs already proposed by Indian and colonial authorities for official recognition, but the most cursory consideration of the information indicates that many of the descriptions are avowedly imperfect, while in some places no description of any kind is given. It would appear, however, that these pages have to be transmitted to various medical and pharmaceutical bodies in India and the colonies with the aid of Her Majesty's Privy Council and it has therefore been deemed essential that this raw material should be passed and approved by the General Medical Council. The suggestions evidently are to be regarded only as a first rough sketch, which is to be finished with the coöperation of the Indian and colonial authorities who are requested to criticise and amend the descriptions and to give such other suggestions as may be deemed desirable to render the Pharmacopœia, with this addendum when complete, an authority which shall meet the requirements of the various colonies and dependencies. There is, however, even in this incomplete form abundant evidence that the drugs here mentioned are not intended as mere substitutes for drugs entering into preparations now official. They are intended only for local use and therefore possess very little interest for has practitioners in this country.

THE Peninsular and Oriental steamer *Caledonia* arrived at Plymouth on Dec. 7th, having come direct from Bombay without calling at any Mediterranean port. While in the Red Sea two Lascars developed symptoms of plague. They were landed at Suez and no further outbreak occurred. Dr. Bulstrode from the Local Government Board and Mr. F. M. Williams, the port medical officer, boarded the *Caledonia* immediately she arrived in the Sound. All the crew and passengers were inspected and 160 of the latter who landed at Plymouth had their names and addresses forwarded to the local authorities of their respective destinations. The ship then proceeded to London.

THE Church Society for the Promotion of Burial, Funeral, and Mourning Reform recently appealed to the Prime Minister to carry out the recommendations of the Select Committee on Death Certification. Lord Salisbury has promised to give the matter his attention.

THE Queen has given to Edward Divers, M.D., Professor in the Imperial University, Tokio, Japan, Her Royal licence to accept the Insignia of the Imperial Order of the Sacred Treasure of the Second Class, conferred upon him by the Emperor of Japan.

AT the Quarterly Court of Governors held on Dec. 7th, it was unanimously agreed to elect Mr. Frederick Treves a consulting surgeon to the London Hospital. Mr. Treves has been a surgeon to the hospital since Sept. 23rd, 1879.

THE annual general meeting of the constituents of the Metropolitan Hospital Sunday Fund will be held at the Mansion House, E.C., on Monday next, Dec. 12th, at 3 P.M.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL.—This hospital, the first portion of which has just been erected, was opened by his Grace the Duke of Norfolk on Nov. 29th. The building is from the designs of Mr. Cawthorn, architect, of North-street, Brighton, and the exterior is treated with red brick and terra-cotta. The site is upon the slope of a steep hill at the upper part of Church-street, Brighton, and the building consists of five floors. The out-patient department occupies the ground floor. The first floor has a ward for males with eight beds and the operating theatre is on this floor, the walls being tiled and the floor of marble terrazzo paving. The ward for females with eight beds is on the next floor and there are several detached rooms to be used as separate wards as well as nurses' rooms, &c., on each floor. On the top floor are the rooms of the servants and night nurses.

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QUACKS AND ABORTION:

A CRITICAL AND ANALYTICAL INQUIRY.

I.

IT has been for some time past a matter of comment that a large number of advertisements are published in newspapers in this country inviting women to purchase nostrums therein referred to for the purpose of removing what are usually described by the advertisers as "irregularities," "suppressions," and "obstructions," the irregularities, suppressions, and obstructions meant being clearly those of the menses. The advertisement as a rule claims to deal with obstructions, &c, arising from *all* causes and the impression left upon the medical reader is that many of these advertisements are thinly veiled invitations to purchase and to use the advertised articles for the purpose of procuring miscarriage, pregnancy being not only the most common but the only common cause of the cessation of the menstrual flow. We shall later discuss the question of the frequency of amenorrhœa from causes other than pregnancy and the desirability of treating the condition with a quack medicine regardless of the causes from which it may have arisen. The obvious aspect of these advertisements is the more important. To this we turn first.

Recent trials have drawn considerable attention to the subject of criminal abortion and the law affecting it, and it was evident even before the arrest of certain persons yet to be tried upon a charge of alleged blackmail that the procurement of miscarriage was not the only criminal practice which might be facilitated by the publication of the advertisements in question. In these circumstances their continued appearance with impunity and profit (for advertisements are not inserted gratis, even by the most needy periodicals or paid for year after year if they do not bear fruit) seemed remarkable, and we decided to inquire whether this could be accounted for by any defectiveness in the law or by some misconception of our own as to the facts. We may also say that we had not only resolved upon making the inquiry that now follows before the persons at present awaiting trial attracted the attention of the law, but we had actually commenced our inquiry, having obtained the materials for the greater part of the laboratory tasks which form part of this investigation.

With regard to the law, by 24 & 25 Vict. cap. 100, sect. 58, "Every woman being with child, who, with intent to procure her own miscarriage, shall unlawfully administer to herself any poison or other noxious thing ..... and whosoever, with intent to procure the miscarriage of any woman whether she be or be not with child shall unlawfully administer to her or cause to be taken by her any poison or other noxious thing ..... with the like intent shall be guilty of felony, and being convicted thereof shall be liable ..... to be kept in penal servitude for life," &c. By Section 59 of the same Act, whosoever shall unlawfully supply or procure any poison or other noxious thing ..... knowing that the same is intended to be unlawfully used or employed with intent to procure the miscarriage of any woman, whether she be or be not with child, shall be guilty of a misdemeanour, and being convicted thereof shall be liable to be kept in penal servitude for the term of three years, &c. By 24 and 25 Vict. cap. 94, sect. 1, accessories before the fact to a felony are punishable as if they were principal felons, or may by Section 2 be charged as substantive felons if they have "counselled, procured, or commanded" any other person to commit any felony. It seemed, therefore, fairly clear that the persons to whose advertisements we have referred, should they *in fact* carry on an unlawful trade, were tolerably well provided for by the law, while their customers shared their susceptibility to legal process. It became important, therefore, to ascertain with certainty whether the business of selling these nostrums was of the nature which in our view the advertisements suggested and were intended to suggest, or whether the business was correctly indicated by that to which we have referred as being rather a thin veil designed to protect it from too curious observation[1]

In order to make our meaning quite clear we give three advertisements.

Ladies, Consult Madame Wood, LADY SPECIALIST ON ALL FEMALE AILMENTS, IRREGULARITIES, AND OBSTRUCTIONS, however obstinate. Save Time, Trouble, and Expense by consulting an Experienced Specialist AT ONCE. My Remedies are the most powerful and strongest on earth, effectual after all others have failed. May be taken by the most delicate. A lady writes: "NONE HAVE EVER DONE ME ANY GOOD BUT YOURS, NOTWITHSTANDING THEIR SO-CALLED TESTIMONIALS." Madame Wood may be consulted daily, or by letter, enclosing stamped envelope. Price of Mixture 4s. 6d., extra strong 11s., secretly packed. By post 3d. extra. 20, GREAT AVENHAM-STREET, PRESTON, LANCASHIRE.

Ottey's Strong Female Pills quickly and certainly remove all OBSTRUCTIONS arising from any cause whatever, where Steel and Penny Royal fails. Invaluable for married women. By post, under cover, for 14 and 33 stamps, from THOMAS OTTEY, Chemist, 32, Hagley Road, Birmingham. Please mention the *Derbyshire Times*.

Apiol and Steel Pills for Ladies.—A French Remedy for all Irregularities. Obtainable only from Martin, Chemist, Southampton. Price 4s. 6d., post free.

Any one who cares to see more of this sort of stuff than we have space to print will find it in the files of some London daily papers and of country newspapers which have a large circulation among outwardly respectable people, but chiefly in certain Sunday or weekly papers, in small provincial sheets, and in other publications which from their nature are read by those female members of the community most likely to feel the need of the relief promised and least likely to hesitate in accepting the specious offers made to them. Since the commencement of the magisterial inquiry into the charges of alleged blackmailing these advertisements we notice have been omitted from some at least of the papers which usually devoted considerable space to them, and in others they are less conspicuous than formerly. They have not, however, wholly disappeared, nor does it seem to us likely that they will unless their character is fully brought home to the police whose duty it is to prevent crime, and to newspaper proprietors who are presumably not desirous of assisting the commission of crime even when they are content to make a profit and plead ignorance of the true nature of its sources. In any case the trade, though it may be considerably crippled if it cannot be advertised in the newspapers, will probably go on to some extent, and it is well that what the trade is should be thoroughly understood by all. It will be seen that no advertiser employs the word "miscarriage" or invites his customers to "try our pills for abortion," but we do not expect to be contradicted when we say that some at least hardly attempt to cloak their obvious meaning under any pretext, while others, no doubt, vaguely or in terms refer to irregularities of menstruation not necessarily arising from pregnancy. It will occur, however, to anyone reading with the most open and unprejudiced mind that whatever they are capable of effecting, and whatever effect their vendors, if pressed to be explicit, might claim for them the goods advertised are liable to be bought without inquiry by ignorant women anxious to rid themselves secretly of possible offspring.

The compounds therefore which we are discussing and of which we have purchased a selection (now before us) must fall under one of two heads, each having two subdivisions—except in so far as some may be sold indifferently for the two purposes. These heads and divisions are: I. Professed emmenagogues (*a*) efficient and (*b*) non-efficient. II. Professed abortefacients (*a*) efficient and (*b*) non-efficient. It is also clear that the question whether an individual nostrum falls under head I. or head II. is one of inference from the circumstances of sale and from the interpretation of the advertisement or of the documentary matter accompanying it when sold; while the question of the subdivision in which it is to be classed according to its efficiency or non-efficiency must depend upon analysis of the nostrum itself.

Believing the whole matter to be of importance to the public and to the medical profession we have purchased their pills or mixtures from a large number of the most prominent advertisers.[1] This has been done, as a rule, in the first instance by the writing of a letter in the character of a servant or woman of humble station enclosing payment and

[1] To prevent error we would point out that the remarks which follow refer to such advertisers as a body and not to the three persons whose advertisements we happen to have singled out for notice above.—ED. L.

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asking for the goods to be packed secure from observation; while in some cases the thing advertised has been simply ordered and paid for. Occasionally where a second letter has been written pregnancy has been avowed. We have made analyses of a considerable number of the pills and potions we have received and the results of our analyses we propose to submit in detail to our readers together with extracts from the printed or written matter which in all cases accompanied the goods sent. Before doing this, however, there are one or two points to which reference may conveniently be made now, because they are in the nature of criticism of features which occur frequently in the printed promises of the vendors, and because to treat of them at once will clear the ground and prevent repetition hereafter.

The printed matter accompanying the boxes and bottles sent out by these persons leaves little doubt as to what the vendors profess to sell, or are willing to be understood to sell, as long at least as buyers will send their orders without specifying too closely what they require. For example, where a box of pills is accompanied by a leaflet which announces others, "extra strong, 11*s.*," and others, "special strong, 22*s.*" and on the same paper is recommended a "Positive Preventive, a Compound Quinine Injection that Never Fails," no one can help drawing conclusions adverse to the advertiser, while the inference is not weakened by finding an "Invaluable Book for Women" recommended below with the title, "How to Limit Your Family, and Woman her Complaints." Whatever such an advertiser may sell actually, or whatever he may possibly declare the object of his sale to be if closely pressed, it is fairly obvious that many pregnant women would purchase his "special strong" pills at 22*s.* with one idea only in their minds. Another advertiser, however, a lady, leaves less room for doubt as to her interpretation of the word "irregularities."

Her catalogue concludes with a list of her "Infallible Safeguards for Preventing Irregularities." These we find to be—

"Soluble Pessaries (wife's use),
"Rubber Preventives (husband's use), and
"Preventive Pessaries (wife's use)."

This page, which contains further details of similar character, would not be legal evidence against any other person, but we cannot help believing that emanating from one in the trade it supplies the trade meaning of an ambiguous term.

Another point frequently observable in the literature of this trade is the recurrence of a warning to the effect that "this must not be taken by those expecting to become mothers." We find it, for instance, on the first leaflet referred to above, that of the author of "How to Limit your Family and Woman her Complaints." It is a notice which may be interpreted in two ways. It may be taken as a warning that what is sold as an emmenagogue should not be used by a pregnant woman because it is also an abortefacient. Or it may be in some cases an indication of the alleged character of what is sold which is purposely given to serve as an invitation to unlawful practices. In either case it is likely that a pregnant woman, ignorant and desperate, may purchase the "remedy" without further question in hopes that it may induce miscarriage.

The third general feature of the printed matter to which we have to allude is the character of the testimonials. These, as in the case of most patent medicines, occupy a considerable space in the various booklets and leaflets circulated by the vendors and as in the case of most patent medicines they show that if they are genuine the quack cannot complain of ingratitude on the part of his customers. Indeed, it is this particular point of gratitude to which we wish to call attention. Many of our readers have no doubt met with grateful patients; many, too, have attended women with success whose menses have from various causes (not including pregnancy) become scanty or altogether absent. Have any of them in the circumstances received such letters as these?

DEAR ——,—It gives me great pleasure to say that after taking the first bottle of your wonderful medicine all came about as I desired after eleven weeks of misery and anxiety.

DEAR ——,—I was delighted to find myself all right last night after finishing the "specific." My anxiety and suspense for nearly four months cannot be described. Such a friend as you would indeed be difficult to find. I had given up all hope. Many, many thanks for your noble letter and wonderful medicine.—Gratefully yours,
MRS. ——.

DEAR ——, I now take the pleasure in writing you these few lines and glad to say that the pills have done me good for now I am alright. I am sending now for Dr. ——'s pessary. With my best wishes for your pills. MRS. ——.

We have only to add to this last letter that Dr. ——'s pessary is described lower down as a "real preventative of conception."

It must not be supposed that we have made an exhaustive inquiry into the materials used by each and every advertiser whose wares are proclaimed in suspicious terms; they are too numerous. Some no doubt trade under many names, but still there are evidently scores of persons who seek to get a living by—to use their own term—curing irregularities in women. Some are not as bad as others. Some, no doubt, who advertise "female" pills do not even profess to deal with pregnancy at all and are not desirous of being thought to do so. They reiterate the maxim that "prevention is better than cure" and trade principally in what are known as Malthusian appliances—one of them including among these appliances an apparatus for irrigating what he terms the "virginia."

One incident struck us as material in its bearing on the promise of secresy made by so many of the advertisers. We received a pamphlet, while we were in communication with the more prominent advertisers, advocating certain pills, the sender being a person to whom we had not written at all and whose name was unknown to us. The explanation was apparently contained in a passage printed therein: "I am not connected with any other firm whatever. I only buy the names and addresses of others who profess to cure you and cannot." We are sorry for those who write in more genuine need than ourselves if this trade in names and addresses is largely practised. We did not write for any of the wares, and shall make no further reference to the pamphlet than to quote a passage from it which speaks volumes for the general culture and technical knowledge of its author: "Many long years of my life, full of travel and experience, has been devoted to the study of the best method of curing female obstructions and irregularities, suppressed courses, anæmia, amenorrhœa, catamenia, dysmenorrhœa, emmenagogue, chlorosis, epistaxis, systolic murmurs, &c.; and I am not egotistical when I say with all truth that I have been successful beyond my dreams."

In our next article we shall proceed to the analysis of certain pills and potions and the discussion of the professions of some of the vendors. In some instances, at all events, it will be found that the analysis and the words of those who for years have advertised their goods so openly in the press leave no question as to the qualities claimed for them.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary meeting of the Comitia was held on Dec. 1st, Sir SAMUEL WILKS, Bart., President, being in the chair.

A Licence to practise physic was granted to Mr. J. J. Urwin, Glasgow and Leeds.

The PRESIDENT announced that he had invited Dr. Poore to be the Harveian Orator for 1899 and Dr. Foxwell of Birmingham to be the Bradshaw Lecturer.

The following communications were received:—

1. From the Board of Trade, Nov. 11th, requesting the College to appoint two members of a committee for revising the Medical Scales of Passenger Ships. Dr. Tirard and Dr. Sidney Phillips were asked to represent the College.

2. From St. Bartholomew's Hospital Medical School, Oct. 28th, on the Effect of the New Regulation of the Conjoint Board with respect to the Period of Dissections. Dr. CALVERT and Dr. CURNOW made a few observations, but the PRESIDENT said he thought it was not the time to discuss the question in full. It had been before the Royal College of Surgeons of England and would come before the Committee of Management. The REGISTRAR moved that the letter be referred to the Committee of Management and that discussion should be postponed until their report was received. This was carried. A letter from Dr. Isambard Owen was also referred to the Committee of Management. The PRESIDENT hoped the deans or wardens of the other medical schools would also express an opinion on the subject and report to that committee.

3. From the Imperial Military Academy of Medicine

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St. Petersburg, Oct. 30th, inviting the College to send representatives to the celebration of the centenary of its foundation on Dec. 18th (30th N.S.), 1898. The President undertook to invite some one to represent the College.

4. From the London County Council, Nov. 11th, thanking the College for the report of the Special Committee on Infectious Puerperal Diseases.

5. From the Queen Victoria's Jubilee Institute for Nurses, Nov. 2nd, informing the College of Her Majesty's approval of Sir Dyce Duckworth as representative of the College.

6. From the Secretary of the Royal College of Surgeons of England, reporting certain proceedings of their Council on Nov. 10th.

7. From the Charity Commissioners, reporting the Scheme for the Management of the Chelsea Physic Garden. The scheme provides:—1. For the maintenance of the garden and laboratories. 2. For instruction in and investigation of pharmacology, &c. 3. For the appointment of administrators and trustees and a committee of management. As it at present stands the scheme provides that the College should send one representative alternately with the Society of Apothecaries of London; Dr. HENSLEY proposed, and Dr. LAUDER BRUNTON seconded, a resolution that a request should be sent to the Charity Commissioners that the College and the Society of Apothecaries of London should have the same representation as the Royal Society. This was carried.

A report was received from the Committee of Management containing the synopsis of practical pharmacy, and also a request that the committee should be empowered to consider the question of an examination in practical physiology, to take the opinions of the several medical schools, and to report to the Royal Colleges on a future occasion.

A report was received, dated Nov. 7th, from the Leprosy Committee appointed on Oct. 27th. The report was as follows:—

Your committee beg leave to report as follows:—

That the communicability of leprosy, by direct or indirect means, from lepers to the healthy, must now be accepted as an established fact, the evidence in support of this belief being conclusive; and that there is no evidence of the disease arising or spreading in any other way.

Your committee are therefore of opinion that the conclusions stated in a resolution unanimously adopted by the Conference on Leprosy held at Berlin in October, 1897, and set forth at p. 194 of the official report of the Conference, ought to be accepted in their entirety.

This resolution is in the following words:—

[*Translation.*]

1. In all countries in which leprosy occurs in *foci* or is widely distributed isolation is the best means of preventing the spread of the disease.

2. The system of compulsory notification, supervision, and isolation as carried out in Norway should be recommended to all nations possessing local self-government and an adequate number of physicians.

3. It must be left to the legally constituted authorities, after consultation with the sanitary authorities, to determine the special regulations which must be adapted to the special social conditions [of each country].

But your committee would dwell with especial emphasis upon the last paragraph of that resolution, recommending careful consideration of the social and political conditions of each particular country.

An animated discussion followed as to whether all forms of leprosy should be included and whether the recommendations should apply to this country. Several Fellows expressed their opinions or offered suggestions, including Sir William Broadbent, Dr. Radcliffe Crocker, Dr. Cullingworth, Sir R. Douglas-Powell, Sir William Gowers, Dr. Heron, Dr. Payne, and Dr. Poore. Finally Dr. RADCLIFFE CROCKER moved and Sir WILLIAM GOWERS seconded:—

That the report be referred back to the committee to make it clear that Clause 2 [in the "Translation"] only applies to countries mentioned in Clause 1.

This resolution was carried.

A report, dated Nov. 9th, was received from the Committee on the Notification of Infectious Puerperal Diseases under the Public Health (London) Act, 1891, appointed on Oct. 27th. The report was as follows:—

That this committee is of opinion that, with a view to the limitation of dangerous infectious diseases, the London County Council would be acting rightly in adopting the view that the expression "puerperal fever," as contained in Section 55 (8) of the Public Health (London) Act, 1891, should be taken to include septicæmia, pyæmia, septic peritonitis, septic metritis, and other acute septic inflammations in the pelvis occurring as the direct result of childbirth.

This report was embodied in a letter which was approved and signed by the President and forwarded to the London County Council.

The President then dissolved the Comitia.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE thirty-eighth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Nov. 29th. The Commissioners present were Lord Llandaff (chairman), the Right Hon. John William Mellor, Sir George Barclay Bruce, Mr. de Bock Porter, Major-General Scott, and Mr. Robert Lewis.

The examination of Mr. REGINALD MIDDLETON occupied the whole of the sitting and the witness put in a large number of tables referring to the cost of the water from Wales and the cost of reservoirs necessary for the scheme for taking an increased supply of water from the Thames. With regard to the cost of the Welsh scheme the witness gave an estimate founded on the cost of the Manchester, Liverpool, and Birmingham supplies.

In preparing the estimates the witness calculated the cost of head works, including dam, land, compensation, and 81 miles of conduit, at the rate of £91,611 per million gallons of supply; the remaining 81 miles of aqueduct, including land and easements, to deliver 215 million gallons daily, were calculated at £64,000 per mile. The mains between the several reservoirs were estimated at prices similar to those for similar works elsewhere. The pumping machinery was charged in the same proportion to the actual quantity of water pumped from the level at which it could be delivered by gravitation from Elstree to the higher zone as is used for the Thames reservoirs scheme. The charges for pumping from the level at which water can be delivered to the service reservoirs of the companies from Elstree are charged on the amount of water which may be pumped from these levels at 30*s.* per million gallons actually pumped.

The Manchester supply from Thirlmere, with an aqueduct about 96 miles in length, is designed to give a supply at the rate of 50 million gallons a day and will, when completed, cost £4,400,000. In the case of the Welsh supply the aqueduct is about 162 miles in length and its cost will be proportionately greater. To this again must be added the cost of the service reservoirs at Elstree, the mains and connexions between that point and the service reservoirs of the companies, pumping plant, and the cost of pumping to supply, as well as, under certain conditions, the cost of filter beds.

If the Liverpool waterworks be taken for comparison it is found that the cost of the works to supply 40 million gallons daily, with an aqueduct of about 67 miles in length, will be, when completed, £3,900,000.

The estimated cost of the Elan Valley works, to deliver 75 million gallons of water daily, with an aqueduct 80 miles in length, is £6,500,000. The cost per million gallons of supply is: Thirlmere, £88,000; Vyrnwy, £97,500; Elan Valley, £89,333; average cost per million gallons of supply, £91,611. The lengths of the several aqueducts are: Thirlmere, 96 miles; Vyrnwy, 67 miles; Elan Valley, 80 miles; average length of aqueducts, 81 miles.

The length of the proposed aqueduct from the Yrfon to Elstree is stated to be 162 miles. It is therefore 81 miles longer than the average length of the other three aqueducts.

A very large number of tables were handed in with reference to the cost of the Thames scheme and that of the Welsh scheme. For one comparing the cost of the Thames and Welsh supply we hope to find space at an early date.

Lord ROBERT CECIL cross-examined the witness on behalf of the Hertfordshire County Council. The examination had reference to the springs and wells in Hertfordshire.

The thirty-ninth sitting of the Royal Commission was held at the Guildhall, Westminster, on Dec. 5th.

Mr. BALFOUR BROWNE, on behalf of the London County Council, cross-examined Mr. Middleton. Mr. Balfour Browne contended that it would be more costly to carry out the Staines reservoirs scheme in its entirety than to go to Wales for an adequate supply of water for London.

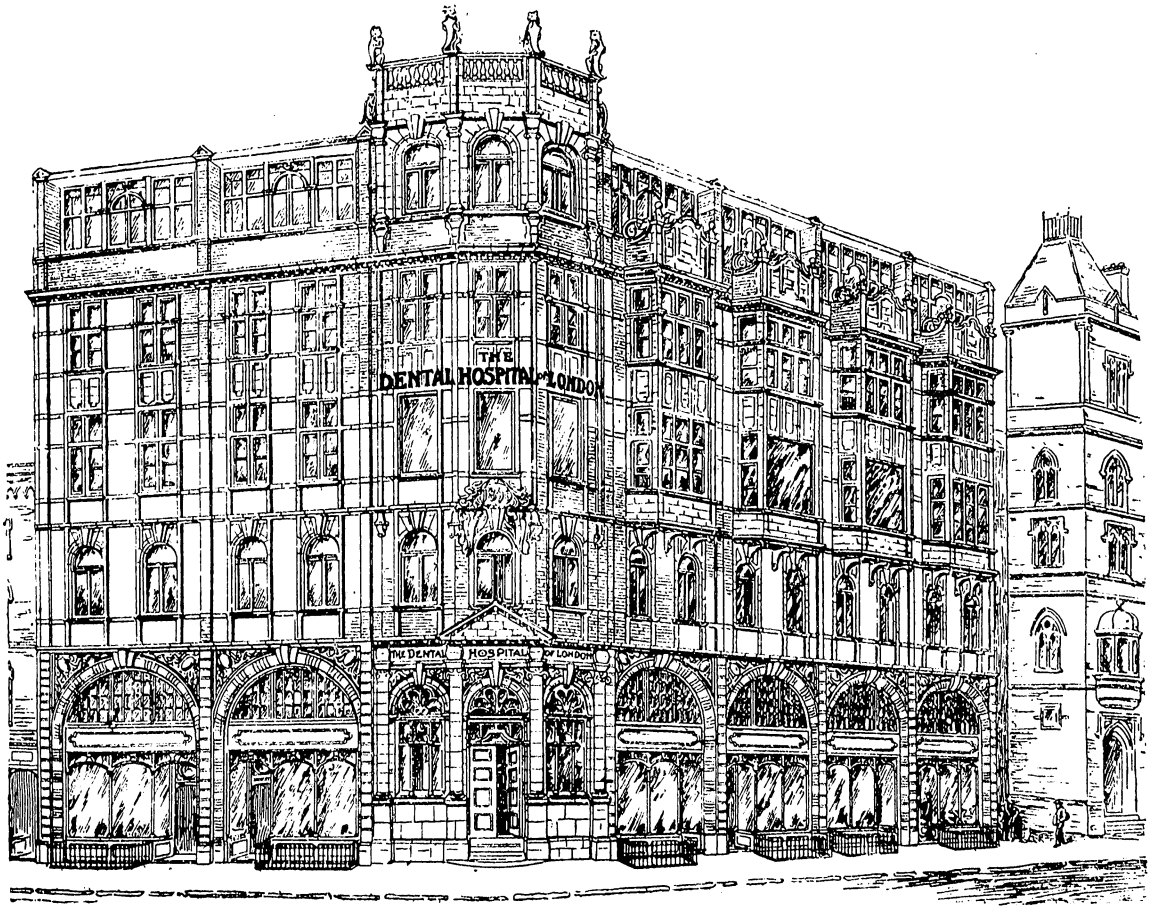
The next sitting of the Royal Commissioners will be held on Monday next, Dec. 12th.

A NEW infirmary to provide for the treatment of patients mentally afflicted was opened by Mr. John Penn, M.P., on Tuesday, Dec. 6th, at High-street, Lewisham, for the guardians of the poor of the Lewisham Union.

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THE DENTAL HOSPITAL OF LONDON.

THE committee of management of the Dental Hospital of London, Leicester-square, are at length in a position to state that the building of the new hospital on a site adjacent to the old and very inadequate building has actually been started. Some interesting particulars of the progress of the funds for the purpose afforded several speakers at the annual dinner of the staff and past and present students of the hospital, which was held last Saturday in the Whitehall-rooms of the Hôtel Métropole, an appropriate subject of discussion. The chairman, Mr. Storer Bennett, F.R.C.S.Eng., led the way and he was followed by Mr. Trimmer, Mr. Allen Stoneham, Mr. Lloyd-Williams, and others. There was an excellent attendance, amongst those present being representatives of the staffs of the London medical schools. It appears that the efforts of the committee to acquire the new site and to secure the commencement of building operations have been considerably hampered by the requirements of parochial authorities and of the London County Council. The vestry of St. Martin's-in-the-Fields, for example, in order to improve the access to Leicester-square purchased some of the houses adjacent to those possessed by the hospital and the demolition of these rendered the whole block unsafe and the entire site had to be cleared by order of the London County Council. This means a loss to the Hospital funds of £1200 per annum and it was therefore necessary either to mortgage or abandon the site. The committee decided in favour of the former expedient and the mortgage has to be repaid in annual instalments of £1700 with interest, so that this sum of money has to be raised in addition to the money required for ordinary maintenance. The plans of the new hospital have, however, been approved by the London County Council and the Charity Commissioners having given their consent the building has now been begun. It is hoped that it will be ready for occupation in about two years' time. We are able to reproduce from the architect's drawing a sketch of the finished building. The picture to some extent illustrates the urgent need for increased accommodation to carry out this most important and valuable philanthropic work, for, as will be seen, the old hospital (to the right) though possessing a large frontage has a very small depth indeed—only 12 ft. In spite of this it was stated by Mr. Allen Stoneham in his response to the toast of "The Hospital and School," that no less than 62,512 operations were carried out last year. The arrangements of the new buildings have been very carefully considered by the medical committee with an especial view to the peculiar requirements of the institution—educational as well as philanthropic—and they believe they have secured a hospital constructed for the comfort and efficient treatment of the patient and premises wherein the student should pursue his work with success because all the advantages of modern equipment and appliances will be gained. The contemplated cost of the new buildings is £30,000, towards which a considerable amount has been subscribed, the subscription list including donations from past and present students of a magnitude which can only mean a tribute to the excellent work being done and an evidence of their conviction of the real need for larger and more efficient premises wherein to carry it on. The committee are appealing for donations towards the large amount still required.



Elevation of the building as it will appear when completed.

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PUBLIC VACCINATORS AND THE NEW VACCINATION ACT.

THE PUBLIC VACCINATORS OF THE WYCOMBE UNION.

A MEETING of the public vaccinators of the Wycombe Union was held at High Wycombe on Dec. 2nd. The union is one in which there has been considerable default under the Vaccination Act for the past few years and those who were present at the meeting felt that it was important that the fee under paragraph (*a*), section 1, article 3, should be sufficient to recoup them for further domiciliary visits. The following resolutions were passed:—

1. That whereas it is to be expected that many visits will have to be paid, some of them at great distances, after due notice has been given, which, either on account of the bad health of the child or on account of its insanitary surroundings or by reason of the refusal of the parents, will not result in the performance of vaccination, it is hereby resolved that the fee under paragraph (*a*), section 1, article 3 should be 2*s.* 6*d.* instead of 1*s.*
2. That whereas the performance of vaccination under the new regulations will be a much more lengthy and troublesome operation than it was formerly, and in view of the fact that the population in the rural districts is very scattered, it is hereby resolved that the following scale of fees should be allowed under paragraph (*b*): For cases within one mile of the vaccinator's residence, 5*s.*; for cases over one mile and under three of the vaccinator's residence, 6*s.* 8*d.*; for cases three miles and over of the vaccinator's residence, 10*s.*
3. That the fee under paragraph *(c)* be accepted for vaccinations performed and inspected at the vaccinator's residence, but that vaccinations performed elsewhere, such as at a station in time of an epidemic of small-pox, should be allowed an extra fee of 2*s.* per case if more than one mile away from the vaccinator's residence.
4. That whereas the public vaccinators to the workhouse and union schools live several miles away it is hereby resolved that they should be allowed 5*s.* per case.
5. That the postage on all the forms required under the order should be paid by the guardians and that all lymph shall be supplied free of cost to public vaccinators.

It was also arranged that Mr. L. W. Reynolds, Dr. J. B. McKay, and Dr. H. J. Wheeler should act as a committee to confer with the board of guardians on these matters if required, and these three gentlemen were empowered by the meeting to arrange terms.

PUBLIC VACCINATORS AT BOOTLE (CUMBERLAND).

AT a meeting of the Bootle (Cumb.) Board of Guardians held on Nov. 26th the chief business under discussion was the consideration of the arrangements for vaccination under the new Act. The vaccination medical officers—Mr. Stoney, Mr. Hudson, and Dr. Cass—were in attendance.

The Clerk stated that in Millom district 1*s.* 6*d.* per case of vaccination was allowed, while in the Ulpha district 3*s.* per case was the fee. He would also say that the board of guardians and the medical officers were unable to agree that the fees would be fixed by the Local Government Board.

Mr. Stoney pointed out that though the minimum fee, 5*s.*, was a good fee for town work it was nothing like enough for work in the rural districts, where a practitioner might have to go twenty miles. Besides that, the vaccination medical officer had to send out notices and to pay the postage out of his own pocket. He considered that mileage should certainly be paid in addition. After a long discussion it was agreed on the motion of Mr. Lewthwaite that the fees in Mr. Stoney's district should be 5*s.* for the urban district, 11*s.* for Millom rural district, and 25*s.* for the Ulpha district, all per case.

Mr. Stoney having agreed to accept this as a temporary arrangement Dr. Cass was called before the board. He said that he wished to be paid at the mileage rate. It was, however, proposed that his fee should be 13*s.* 6*d.* for every successful case and with this arrangement Dr. Cass expressed himself satisfied. In Mr. Hudson's case it was agreed that his fee should be 10*s.* 6*d.* for every successful case and after some consideration Mr. Hudson agreed to this amount. We are glad to see that the proceedings, judging by the report in the *Whitehaven News*, were conducted without any of the acrimony and heat which unfortunately are only too common when vaccination matters are under discussion. A letter from Mr. Stoney dealing with the subject appeared in THE LANCET of Dec. 3rd and reference is also made to the matter in our leading columns of to-day.

PUBLIC VACCINATORS AT SCARBOROUGH.

At a meeting of the Scarborough Board of Guardians held on Dec. 1st letters were read from Mr. J. S. Vassalli (Scarborough), Mr. G. T. Wilkinson (Cloughton), Mr. O. Norris (Sherburn), Mr. J. T. Haworth (Filey), Dr. G. J. B. Hope (Hutton-Buscel), and Dr. M. Ranken Bow (Snainton). The writers declined to accept the minimum vaccination fees and asked the board to allow 2*s.* 6*d.* for each case under Article 3, section *a*, and 7*s.* 6*d.* for each case under sections *b* and *c*. The minimum fees allowed by the Vaccination Order, dated October, 1898, are 1*s.* under section *a*, 5*s.* under section *b*, and 7*s.* 6*d.* under section *c*. The matter was referred to the finance committee.

"A SCHOOL OF TROPICAL MEDICINE."

WE have not thought it necessary to print at length a memorandum which has been issued by the Seamen's Hospital Society with the idea of answering certain objections which exist to the projected School of Tropical Medicine, because the memorandum was not sent to us—for reasons best known to the committee of the society. We have seen a copy of it, however, and we give the gist of it in a leading article this week.

We publish below a letter which has been addressed to Mr. Michelli, the secretary of the Seamen's Hospital Society, by Sir William Broadbent in acknowledgment of the receipt of the memorandum:—

84, Brook-street, Grosvenor-square, W., Dec. 7th, 1898.

DEAR MR. MICHELLI,—You have done me the honour to send me a copy of the memorandum issued or to be issued by the committee of the Seamen's Hospital and I feel bound to make one or two observations upon it.

It is implied that because the first four of the contentions have been carefully considered by the Secretary of State for the Colonies they may be regarded as *choses jugées*. But the Secretary of State would be guided by the information laid before him, and if this information was imperfect or one-sided his approval was obtained under false pretences.

The personal matter of the injustice and discourtesy to the medical staff of the *Dreadnought* is said (par. 5) to have nothing whatever to do with the merits or demerits of the scheme. But this discourtesy entirely prevented certain aspects of the question from being brought to the notice of the Secretary of State and made the data on which he based his judgment imperfect and one-sided.

How little any conclusion formed by the committee is entitled to respect is made clear by the memorandum itself. "It may be mentioned," it says, "that the visiting staff of the *Dreadnought* have been invited to coöperate," leaving it to be understood that this invitation was part of the original scheme, whereas it was not sent till it had become an insult.

This *suggestio falsi* is aggravated by the circulation with the memorandum of a copy of Sir H. Burdett's letter from which the passage in which he states that the senior medical staff of the *Dreadnought* would form part of the teaching staff of the school is omitted. A committee capable of such a suppression of truth material to the issue and of such a suggestion of what is calculated to mislead is, in my opinion, totally unworthy of confidence.

Yours faithfully,
W. H. BROADBENT.

We have received from Mr. G. R. Turner, the surgeon to the *Dreadnought* Hospital, the following letters for publication. They complete the story told by the letters published last week and confirm our opinion that the honorary medical staff of the *Dreadnought* Hospital have been treated with marked discourtesy by the committee.

49, Green-street, Park-lane, W.,
July 19th, 1898.

DEAR SIR,—I have conferred with Drs. Curnow and Anderson on the subjects mentioned in Sir H Burdett's letter to the *Times* which by your direction was sent to me. I was astounded to hear from them that this letter was the first notice they had of the project for a school for tropical medicine in which their services and possibly mine were to be used as members of the teaching staff. Had I, a surgeon, been the only one of the visiting staff kept in ignorance of the matter I should not have supposed that any intentional discourtesy was meant, nor can I think even now that

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it has been more than a blunder on the part of the Managing Committee to direct the publication of their intentions in the *Times* newspaper before conference of any kind with those so closely interested as the honorary visiting staff of the *Dreadnought* Seamen's Hospital. As a member of that senior staff mentioned by Sir H. Burdett I should like much to know the constitution of the sub-committee which reported that 78 per cent. of the cases of tropical disease go to the Branch Hospital; by whom was it decided what cases were tropical and what not; and whether this report may be inspected and shown to be accurate and true (a very necessary proceeding before asking the public to subscribe to the erection of buildings and the attempted formation of a school in a very out-of-the-way and inaccessible situation); by whom were the already elaborate plans for this proposed school drawn up; and did their author or authors know that the visiting staff of the *Dreadnought* Hospital were in absolute ignorance that such a scheme was on foot?

I have written thus freely because as a surgeon these matters do not nearly concern me, and I cannot help feeling that my medical colleagues have been treated with a marked lack of the ordinary consideration to which all of us honorary officers are entitled, and I trust that the Managing Committee will be able to give us some explanation.

Believe me, yours faithfully,
(Signed) G. R. TURNER.

To the Chairman of the Committee,
Seamen's Hospital, Greenwich.

3, Crosby-square, Bishopsgate, E.C.,
July 20th, 1898.

SEAMEN'S HOSPITAL.

DEAR SIR,—I write a line to acknowledge the receipt of your letter of July 19th, 1898.

I am sorry to learn that the senior medical staff of the *Dreadnought* Hospital take exception to portions of Sir Henry Burdett's letter relating to the proposed establishment at the Branch Hospital of a school for the study of tropical diseases which was published in the *Times* of July 11th.

The questions asked by your letter are rather for the Committee of Management than for me personally as chairman to reply to. I will take care that your letter is brought before the committee at their next meeting.

I am, dear Sirs, yours faithfully,
(Signed) PERCEVAL A. NAIRNE.

G. R. Turner, Esq., F.R.C.S., 49, Green-street, Park-lane, W.

49, Green-street, Park-lane, W.,
July 21st, 1898.

DEAR SIR,—Thank you for your letter of July 20th. The senior medical staff of the *Dreadnought* Hospital—I believe I may speak for us all—take exception to the elaboration and publication of a scheme for a school in which it is stated they will teach before any of them had heard a word on the matter. It is not, I think you will agree with me, customary or considerate to make statements about the coöperation of honorary officers in work the existence of which they know nothing about. This Sir H. Burdett has done by the direction of the Managing Committee and it is against this that I most vigorously protest. It is not, I will only say, usual for managing committees to ignore the honorary staff as we have been ignored. It looks, although I can hardly believe it, that we have been purposely kept in the dark.—Believe me, yours faithfully,
(Signed) G. R. TURNER.

Perceval A. Nairne, Esq.

Dreadnought Seamen's Hospital, Greenwich, S.E.,
Sept. 15th, 1898.

DEAR SIR,—Your letters to the chairman of July 19th and 21st have been laid before my Board.

The committee feel that their relations with the medical staff in the past are a sufficient answer to the suggestion that any discourtesy or want of consideration towards them in connexion with the society's reply to the Secretary of State's proposal for the establishment by the society of a school for the study of tropical diseases was intended.

The committee regret that any expression in Sir Henry Burdett's letter published in the *Times* of July 11th should appear to you and to some of your colleagues to have represented that you and they had engaged to take part in the educational work of the school. Sir Henry Burdett (with the committee) probably felt no doubt that the educational work would in the main be taken charge of by the medical staff of the society's hospitals, but the committee do not read his letter as a pledge that each member of the staff would join in the educational work.

The committee have read with much regret the joint letter of Dr. Curnow, Dr. Anderson and yourself, published in the *Times* of July 20th, and in some of the medical papers a few days later, which they feel must tend to injure the success of the project into which the committee have entered at the invitation of the Secretary of State. They will be glad to know whether they are to infer from it that the writers have renounced all connexion with the proposed school and upon this point they ask for a definite reply at an early date. Yours faithfullly,

P. MICHELLI, Secretary.

G. Robertson Turner, Esq., F.R.C.S.,
49, Green-street, Park-lane, W.

A FIFTH REPORT TO THE REGISTERED PRACTITIONERS OF ENGLAND AND WALES.

SINCE my last report to the Registered Practitioner of England and Wales published in the medical journals of May 14th of this year another session of the Council has taken place. I am therefore in a position to report definitely concerning certain matters which were at issue on the date mentioned. These matters are as follows:—

I. The inspection of documents.
II. The case of the late Mr. Herbert K. Hunter, L.S.A.
III. The Midwives Bill question.
IV. The medical aid question.
V. The question of reciprocity in foreign practice.
VI. The amendment of the Medical Acts and the relation thereto of the Council's work in regard to unqualified practice by (*a*) individuals—i.e., quacks, and by (*b*) companies.
VII. The responsibility of the Council for the character of the higher registrable qualifications.

I. *The inspection of documents.*—It will be remembered that immediately upon his election on April 7th, 1898, the President gave orders that I should not be allowed to see any documents the property of the Council, although up to the date named I had enjoyed the customary rights of a member of the Council. Unfortunately for the furtherance of business this act of the President was supported by a motion carried in the Council at the May Session, 1898, by Dr. Glover and Dr. Bruce and the matter was further complicated by the Council accepting on the proposal of Dr. MacAlister Dr. Glover's motion as a Standing Order. With the view of restoring the rights of members of the Council and thereby defending your interests I took the advice of Mr. Hempson and the opinion of Mr. Henry Buckley, Q.C., on the matter. Mr. Buckley's opinion briefly stated amounted to the following propositions:—That the case of the King *v.* the Merchant Taylors' Company which had been cited to the Council did not apply, as indeed I had already shown, to the case of members of the Council and also, as Mr. Hempson had advised me, was directly negatived by the case of Byrne *v.* the South Wales Coal Company; that under these circumstances my position was clearly defined and good and supported by the dicta of the judges in the first case mentioned; that, however, the case was wholly prejudiced by the action of the Council in making Dr. Glover's motion into a Standing Order; that it was legally possible for the Council by such Order to hamper its work and the opportunities of its members in any way provided that no member could show damage or serious obstruction to his work to result from such hindrance; that it would be advisable to move at the next session for the production of documents and that if these were refused I could then apply to the High Courts for a remedy. I therefore moved at the recent session several motions for the production of various sets of papers. Although opposed as strongly as possible by Dr. MacAlister, the chairman of the Business Committee, and the President, the Council supported me by majorities amounting to over three-fourths of the Council. The discussions which preceded these votes created such an unfavourable impression that several members of the Council

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insisted that since every member had a prescriptive right to see the documents no delay should occur in the latter being produced for their inspection. More than this, later in the session a motion was proposed by Sir Richard Thorne and carried to the effect that, inasmuch as the operation of Dr. MacAlister's Standing Order of the previous session was "not altogether satisfactory" the Executive Committee were directed to report as to the best means of facilitating the examination of documents by members of the Council. This resolution of Sir Richard Thorne was carried *nem. con.*, and although such a vote was a very striking commentary on the events of the previous session the resolution contained one error of procedure which will require to be removed later—namely, that leave must be asked of someone or of the Council before documents can be produced by the Registrar. This, of course, conveys with it the assumption that some members of the Council have an authority over other members of the Council, but such a position is contradictory to the Medical Acts under which all the members of the Council have equal rights and no statutory authority can be delegated to any official whatsoever. The profession must clearly understand that it is not possible for the Direct Representatives to carry out their work properly until these illegal restrictions are fully removed, but at least it is very satisfactory to note that the proceedings of this last session have to a large extent neutralised the injury inflicted six months ago.

II. *The case of the late Mr. H. K. Hunter, L.S.A.*—The case of this gentleman who unfortunately died after his conviction for calling himself a physician is one of vital importance. It was one (in which a registered practitioner was prosecuted by the Council under Section 40 of the Medical Act for calling himself a physician) which excited much attention at the time—i.e., April, 1898—and I was especially attacked in the medical journals as having sanctioned this particular prosecution and as being, in fact, responsible for it as a member of the Council though a Direct Representative of the profession. The only constitutional course open to me was to raise the matter in the recent session of the Council, but discussion of it being refused me by a narrow majority I have no option now but to clear myself before the profession and show that not only was I not responsible but that also the Council itself was not responsible and that the prosecution in question was wholly unauthorised and conducted upon lines which have never been the subject of discussion in the Council at all. Mr. Hunter was an L.S.A. and a registered medical practitioner. He was complained of to the Council for using the title of M.D., he only possessing the M.D. of Philadelphia. On being warned that he was doing an illegal act he thereupon ceased to use the M.D. However, the Penal Cases Committee reported his case to the Council as one suitable for prosecution under Section 40 of the Medical Act and his conduct was described to the Council as that of an unregistered person practising under an American M.D. degree. The Council on this information ordered that a summons should be issued under Section 40 of the Medical Act to restrain, as they believed, an unregistered person from practising under the cover of an American diploma. This decision was come to at the November session, 1897. The profession will now readily understand with what feelings I read in the *Times* in April, 1898, the account of the hearing of the summons from which it appeared that Mr. Hunter was a *registered* practitioner holding an L.S.A. diploma and that he was prosecuted not for calling himself an M.D. but for putting upon his bill-heads the word "physician," that he was convicted and fined £5, and that he had lodged an appeal against the conviction. This was the first stage of this matter and it will be seen that Mr. Hunter was prosecuted on a charge which had never been discussed by the Council and had never been authorised by the Council. At the May session, 1898, soon after these proceedings were made public, Mr. Brown and myself raised the question to draw attention to the procedure of the Penal Cases Committee and of the law officers and to inquire by whose authority this prosecution had been initiated. The President appealed to Mr. Brown to withdraw his motion on the ground that the case was still *sub judice*. Unfortunately, Mr. Brown assented, though on the understanding that the matter would be brought forward at the next, the recently completed session. Not long after the May session Mr. Hunter died and the Apothecaries' Society determined to prosecute the appeal in his stead. It being impossible under the recent Standing Order of the Council forbidding inspection of documents to find out what steps were being taken in this matter in the name of the Council until the session began on Nov. 22nd, Mr. Brown and I on that date moved for the documents in the case to be produced and, as just stated, we carried that motion in the face of a strenuous opposition offered by the President, the chairman of the Penal Cases Committee, by Dr. MacAlister, by Dr. Heron Watson, and by Mr. Carter. Gathering from the perusal of the surrendered papers that the appeal was being resisted by someone using the authority of the Council I asked the Registrar who were the parties in the appeal case, but neither he nor the President nor the Penal Cases Committee nor any of the Members of the Council were in the possession of any such information. On my pressing the matter the President agreed to write and find out what was the position of the Council in the appeal case immediately pending. The legal assessor informed the President that the General Medical Council was resisting the appeal on the ground (as he had already told the High Court) that Mr. Hunter had no right to call himself a physician. It follows therefore that not only the original prosecution but also the resistance to the appeal have been instituted without the Council being afforded the slightest opportunity of discussing the merits of the case or authorising action upon it. This is the first issue in the Hunter case—namely, the utterly unconstitutional nature of the procedure—and this issue I endeavoured to raise on three separate occasions during the last session but was ultimately defeated though by a bare majority. The other issue which should be called the main issue—namely, whether Mr. Hunter as an L.S.A. registered under the Act of 1886 had the right to call himself a physician—is one about which I have no doubt whatever and which it is easy to show is not governed (as was alleged before the magistrates) by the case of Regina *versus* Baker. This question of the merits of the case I will discuss on a subsequent occasion.

III. *The Midwives Bill question.*—The matter of legislation for midwives came up before the recent session of the Council and a small committee was reappointed to watch the introduction of any further legislation as it seemed likely that such action might be taken by the Government. Further, a few additions were carried in the Council to the former principles which were laid down by the Council in the May session of the present year and which principles it will be remembered were fully adopted by the Duke of Devonshire, the Lord President of the Privy Council.

IV. *The medical aid question.*—As will be seen by the published reports of the Council's session the committee which has this matter in charge has only published an interim report because it has been arranged to hold a conference with the officials of the reputable friendly societies in order to satisfy themselves of the precise position of such associations in relation to the medical profession. Such conference cannot take place before early in 1899 and consequently the committee in question can only publish their full report at the next, the May, session of the Council. Greatly regretting as I do the delay in the Council taking up a definite attitude on this important matter there is no possibility of altering the procedure that has been entered upon.

V. *The question of reciprocity and foreign practice.*—In the May session I brought up this matter and showed that the document issued by the Council as an authoritative one on the question of reciprocity in foreign practice was not in accordance with the Medical Acts. After some discussion it was referred back to the Executive Committee for amendment and report. When, however, in the recent session their report was approached on the programme the President suggested that it was a matter which did not press and could be postponed for six months, with which of course I agreed and especially as in its amended form the document is still in my opinion misleading.

VI. *Amendment of the Medical Acts.*—The relation of the work of the Council in regard to unqualified practice received considerable attention this session and very distinct advance was made in more than one direction. The prevention of unqualified practice is necessarily to be considered under two headings, according as to whether (*a*) it is carried on by an individual or (*b*) by a company. As regards the individual the singularly gross case of misprision of justice in the magistrates' treatment of the case prosecuted at Norwich by the Medical Defence Union came before the Council which, however, unfortunately could not intervene inasmuch as the magistrates stated that they arrived at their decision on the point of fact and not of law. Upon this I drew the attention of the Council to the necessity of

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meeting such constructive evasion of the law by an amendment of the Medical Act and obtained from Mr. Muir Mackenzie a reconsideration of his former adverse opinion on this subject. The question of the infringement of the Medical Acts by companies is another point and is being dealt with by a special committee consisting of the President, Mr. Tomes, and myself. Proposals which were subsequently approved by the Council have been furnished to the Government whereby it is to be hoped that the companies constructed for the sole purpose of evading the clauses of the Medical Act will be extinguished.

VII. *The responsibility of the Council for the higher qualifications.*—In connexion with the matter of higher qualifications I gave notice at the recent session that I would draw attention to the fact that a memorial had been presented to the Council by certain members of a medical corporation complaining in specific terms of reprehensible insufficiency of the examination for the Fellowship of the corporation. As a matter of fact this memorial which had been addressed to the Council had never reached the Council because it was returned by the President to the complainants on the ground that the Council had nothing to do with any superintendence of, or was in any way responsible for, the status of examinations for higher qualifications. The matter being placed in my hands by the persons aggrieved in order that it should come before the Council I gave notice of the motion alluded to, but when it came on for discussion the President ruled it out of order on the same ground as that upon which he had returned the memorial—namely, that the question involved was not within the purview of the Council. There are two points included in this matter: the first is the act of the President in taking upon himself to reject a memorial addressed not to him but to the Council. The President has, I submit, no right to debar memorialists from approaching the Council, and, in fact, there is no restriction on memorials except that they must not relate to more than one subject. I did not bring up before the Council the question of the President's action because, it being the end of the session, I was anxious to obtain a hearing for the very important question raised by the memorial—namely, an alleged insufficiency of the examination which was that for the Fellowship of the Faculty of Physicians and Surgeons of Glasgow. In this, however, I was disappointed, because the President ruled the motion out of order and the whole matter was thus once more suppressed so far as the General Medical Council was concerned. This ruling of the President was evidently given without reference to the sections of the Medical Act of 1858 which deal with this subject and specifically with the examination for the Fellowship of the Faculty of Physicians and Surgeons of Glasgow. I therefore at once gave notice that I would raise the question at the next session—namely, in May, 1899.

VICTOR HORSLEY.

Dec. 5th, 1898.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6638 births and 4108 deaths were registered during the week ending Dec. 3rd. The annual rate of mortality in these towns, which had been 17·0 and 17·4 per 1000 in the two preceding weeks, further rose last week to 19·1. In London the rate was 18·2 per 1000, while it averaged 19·7 in the thirty-two provincial towns. The lowest rates in these towns were 12·4 in Burnley, 13·5 in Halifax, 15·3 in Cardiff, and 15·9 in Sunderland; the highest rates were 23·4 in Derby, 24·2 in Salford, 24·8 in Newcastle-upon-Tyne, and 27·8 in Wolverhampton. The 4108 deaths included 426 which were referred to the principal zymotic diseases, against 371 and 364 in the two preceding weeks; of these 108 resulted from diphtheria, 87 from measles, 71 from "fever" (principally enteric), 71 from whooping-cough, 49 from diarrhœa, and 40 from scarlet fever. The lowest death-rates from these diseases were recorded in Plymouth, Burnley, Halifax, and Gateshead, and the highest rates in Preston, Blackburn, Salford, and Swansea. The greatest mortality from measles occurred in West Ham, Portsmouth, Swansea, Bolton, and Newcastle-upon-Tyne; from whooping-cough in Swansea and Preston; and from "fever" in Wolverhampton, Blackburn, and Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 108 deaths from diphtheria included 43 in London, 15 in Leeds, 9 in Swansea, 7 in West Ham, 4 in Blackburn, and 4 in Sheffield. No fatal case of small-pox was registered during the week under notice, either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 3142, against 3188, 3259, and 3162 on the three preceding Saturdays; 264 new cases were admitted during the week, against 340, 319, and 234 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 285 and 280 in the two preceding weeks, rose again last week to 340, but were 71 below the corrected average. The causes of 62, or 1·5 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Oldham, Sunderland, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Cardiff, Birmingham, Liverpool, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the four preceding weeks from 18·9 to 19·7 per 1000, further rose to 21·0 during the week ending Dec. 3rd, and exceeded by 1·9 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·3 in Greenock, and 18·7 in Perth, to 21·5 in Edinburgh and 22·0 in Glasgow. The 632 deaths in these towns included 21 which were referred to whooping-cough, 19 to measles, 17 to diarrhœa, 11 to diphtheria, 10 to "fever," and 5 to scarlet fever. In all, 83 deaths resulted from these principal zymotic diseases, against 70 and 73 in the two preceding weeks. These 83 deaths were equal to an annual rate of 2·8 per 1000, which was 0·8 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 9 and 19 in the two preceding weeks, further rose to 21 last week, of which 15 occurred in Glasgow. The 19 deaths from measles also showed a further increase upon recent weekly numbers, and included 9 in Edinburgh, 6 in Glasgow, and 3 in Dundee. The fatal cases of diphtheria, which had been 11 and 5 in the two preceding weeks, rose again to 11 last week, of which 7 occurred in Glasgow and 2 in Paisley. The 10 deaths referred to different forms of "fever" were within one of the number recorded in the preceding week, and included 6 in Glasgow and 2 in Edinburgh. The deaths from diseases of the respiratory organs in these towns, which had been 130 and 128 in the two preceding weeks, rose again to 147 last week, and were 22 above the number in the corresponding period of last year. The causes of 51, or more than 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·7 and 31·0 per 1000 in the two preceding weeks, further rose to 31·6 during the week ending Dec. 3rd. During the past four weeks the death-rate in the city has averaged 30·1 per 1000, the rate during the same period being 17·0 in London and 20·6 in Edinburgh. The 212 deaths registered in Dublin during the week under notice showed an increase of 4 upon the number in the preceding week, and included 11 which resulted from the principal zymotic diseases, against 9 and 17 in the two preceding weeks; of these, 4 were referred to scarlet fever, 3 to whooping-cough, 2 to "fever," 1 to measles, 1 to diphtheria, and not one either to small-pox or diarrhœa. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·7 in London and 2·5 in Edinburgh. The 4 fatal cases of scarlet fever corresponded with the number recorded in the preceding week. The deaths from whooping-cough, which had been 2 and 5 in the two preceding weeks, declined to 3 last week. The 2 deaths referred to "fever" corresponded with the number in the preceding week. The 212 deaths in Dublin last week included 34 of infants under one year of age and 46 of persons aged upwards of sixty years; the deaths of infants showed an increase, while those of elderly persons were considerably below the number recorded in the preceding week. Six

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inquest cases and 2 deaths from violence were registered; and 78, or more than a third, of the deaths occurred in public institutions. The causes of 12, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE under-mentioned Staff Surgeons have been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet:—Alexander John James Johnston and James O'Brien Williams.

ARMY MEDICAL STAFF.

Surgeon-General Albert A. Gore is placed on retired pay.

ROYAL ARMY MEDICAL CORPS.

Colonel Fraser succeeds Colonel Scott as Principal Medical Officer, North-Western District, Chester. The employment of Major Brazier-Creagh with the Pekin Syndicate has been sanctioned. Lieutenant-Colonel Lloyd, V.C., has been appointed to the Medical Charge of the Burma-China Boundary Commission. Major Cusack is under orders to proceed to India. Major Russell and Major Stoney embark in the *Dunera* for Bombay.

VOLUNTEER CORPS.

Artillery: 1st Dorsetshire (Southern Division, Royal Artillery: Surgeon-Captain D. T. Key, from the 1st City of London Volunteer Artillery (Eastern Division, Royal Artillery), to be Surgeon-Captain. 1st Glamorganshire: Surgeon-Lieutenant-Colonel C. Pegge resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the corps on his retirement. *Rifle:* 8th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Captain R. Kirk to be Surgeon-Major. 2nd Volunteer Battalion the Northumberland Fusiliers: Surgeon-Lieutenant-Colonel H. F. Hurst resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the battalion on his retirement. 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers: Honorary Assistant Surgeon W. Kay resigns his commission and is permitted to continue to wear the uniform of the battalion on his retirement. 3rd Lanarkshire: Andrew Stewart Tindal to be Surgeon-Lieutenant. 1st (Oxford University) Volunteer Battalion the Oxfordshire Light Infantry: Walter Tyrrell Brooks to be Surgeon-Lieutenant. 1st Nottinghamshire (Robin Hood): Surgeon-Lieutenant Robert Plenderleith Shearer resigns his commission and is appointed Second Lieutenant (Supernumerary). 1st Wiltshire: Penrose John Barcroft to be Surgeon-Lieutenant. 3rd (The Blythswood) Volunteer Battalion the Highland Light Infantry: Surgeon-Captain J. S. McConville resigns his commission. 2nd Volunteer Battalion the Gordon Highlanders: Surgeon-Major Sir J. Reid, Bart., K.C.B., resigns his commission and is granted the rank of Surgeon-Lieutenant-Colonel, with permission to continue to wear the uniform of the battalion on his retirement. 26th Middlesex (Cyclist): Percy James Edmunds to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Aberdeen Company: Ashley Watson Mackintosh to be Surgeon-Lieutenant. The Woolwich Company: Surgeon-Captain P. O. Haynes resigns his commission.

THE HYGIENE OF BARRACK-ROOMS.

In his third and concluding Harben Lecture Sir Richard Thorne was able to say that administrative measures in this country have led to a saving of no less than 60 lives out of every 100 which at many age periods were formerly sacrificed to phthisis pulmonalis. This is truly the record of a magnificent achievement—a triumph of science over disease of which sanitarians may well be proud; but at the same time, although much has been accomplished, there still remains much to be done before the workers in this particular field can fold their hands and declare themselves satisfied with their labours. In the army, for instance, the victims of preventable disease are still unduly numerous. *A priori* it might be thought that a body of sound young men—picked lives, well fed, well lodged, well clothed, and by no means excessively worked—should be practically free from tuberculous disorders, but, unfortunately, such is far from being the case. It is, happily, true that of late years the mortality from phthisis pulmonalis and the other allied affections which, taken together, are included under the term "tuberculosis," has enormously diminished, but it is still too high, while the loss by invaliding under the same heading is also lamentably great. The causes which favour the onset of tuberculosis among soldiers may be complex, but enough is now known of the intimate nature of the infecting agent to warrant the belief that its virulence could be diminished by intelligently-applied prophylactic measures. Whatever may be the case as regards the civil population in general, the stamping out of tuberculosis in the army should be perfectly feasible, and surely the consummation is highly to be desired, were it merely for financial reasons. In France, where destructive lung disease is at least as deadly as it is with us, the whole subject of tuberculosis has recently been surveyed in a masterly manner by Professor Grancher, whose report embodies the views of the most advanced hygienists in the country. The condition of things prevalent in the French army is eloquently described. We do not go so far as to apply the Horatian maxim *mutato nomine de te fabula narratur*, but the following extract from M. Grancher's academic work is well worth the notice of our own army authorities, military as well as medical.

> Whatever may be the part played by infection in the dissemination of tuberculosis among soldiers, the fact remains that the disease exists and, what is more, that it exists to a considerable extent. This being universally admitted it is unnecessary to advance further proof. But what is there done by way of combating the evil? In a barrack-room the first half-hour after reveille is devoted to dressing, to perfunctory bed-making, to floor sweeping, and to breakfast. These operations go on simultaneously, so the men have to swallow their coffee and rolls in a dust-laden atmosphere. Spittoons are scarce or entirely deficient, and coughers, if there are any, spit where they choose. The medical officer does not, and cannot, interfere; the internal economy of the room, hygiene included, belongs to the commanding officer—that is, to the captain commanding the troop or company. But is the latter aware of the fact that bacilli-laden dust is dangerous? Or, if he should be aware of it, does he take the necessary steps? No, it must be admitted that he does nothing; and here it is that we find the weak link in the chain. The barrack-room is choked with dust, the dust contains the broken-up sputa; hence arises the infection. Of course all spitting outside spittoons should be sternly forbidden under pain of severe punishment. Spittoons should always be kept moist and should also be fixed breast-high. Their cleansing and thorough disinfection should be a daily task. Finally, sweeping of floors is a fault; floors should be treated with coal-tar or paraffin and cleansed by means of a damp cloth. Now, according to existing regulations the medical officer can do nothing, has no right to exercise supervision. The combatant officer alone—be he captain, colonel, or commandant—can see to the execution of sanitary hygiene. It is therefore necessary that combatant officers should be taught to appreciate the dangers to which their negligence exposes the health of the men for whose well-being they are responsible. The lessons in practical hygiene which are given at Saint-Cyr, at Saint-Maixent, and at Fontainebleau ought to be more complete and probably more accurate. But lessons of this description could alone never suffice, and I hereby appeal to all army medical officers to take advantage of their intimate associations with their combatant brethren, so that all officers and men alike may become imbued with the same sanitary convictions by which they themselves are animated. In propagating true sanitary notions far more good is likely to accrue from judicious hints dropped at the mess than from the most elaborate of official reports. The only way to ensure progress in hygiene is by awakening the consciences of those in authority to a recognition of the fact that they it is who are responsible for the health of their men. Thus alone is it possible to create new manners and customs amidst the combatant hierarchy—manners and customs which will be dominated by a wholesome dread of tuberculosis and of its active principle.

A FRENCH MILITARY SURGEON'S VIEW OF THE SEQUELÆ OF INFLUENZA.

Surgeon-Major J. Marty's short paper on the Cerebro-spinal Complications of Influenza which occupies the leading position in Duplay's *Archives Générales de Médecine* for November is chiefly remarkable for its wealth of reference, but although upwards of 50 authorities—French, German, and Swiss—are cited there is no mention made of the works of British or American writers. The greater part of the paper is occupied by the cases of 8 soldiers, which are related at length with a considerable amount of detail; 6 of these cases ended fatally, but in 2 only were necropsies permitted. Surgeon-Major Marty's chief contention seems to be that the occurrence of cerebro-spinal symptoms after influenza depends upon the intensity of the original "intoxication." His experience extends over three separate epidemics. In the first, the intoxication being mild, there were no cerebro-spinal sequelæ. In the second, the intoxication being graver, certain symptoms of "pseudo-meningitis" presented themselves subsequently. In the third the intoxication carried all before it and the ensuing "meningeal accidents" were invariably fatal. It may be interesting to note that the average stature of the men treated was 5 ft. 3 in. and their chest measurement 33·4 in. They all belonged to a line regiment.

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THE PRINCIPAL MEDICAL OFFICER OF HER MAJESTY'S FORCES IN INDIA.

It has been alleged that an attempt has been made to induce the home authorities to sanction an arrangement by which Surgeon-General Harvey would combine the duties of direction of the Indian Medical Service with those of Principal Medical Officer of Her Majesty's forces in India. As we have already announced, however, the successor to Surgeon-General Gore, who vacates his appointment this month, will be Surgeon-General Taylor, C.B., and we do not believe that any rumours to the contrary have any foundation in fact.

THE VICTORIA CROSS.

The Queen has been graciously pleased to signify her intention to confer the decoration of the Victoria Cross on Surgeon William Job Maillard, M.D. Lond., Royal Navy, whose claims have been submitted for Her Majesty's approval, for his conspicuous bravery during the outbreak at Candia on Sept. 6th, 1898. We refer in another column to the splendid circumstances in which Surgeon Maillard's cross was won.

COLONEL F. B. SCOTT, R.A.M.C.

Colonel F. B. Scott, C.M.G., who has been placed on the retired list and has consequently vacated his appointment at Chester, joined the Army in October, 1862, and reached his present rank in 1892. He served in the Zulu war, 1879, when he was mentioned in despatches, and in the Egyptian campaign of 1882.

DEATHS IN THE SERVICES.

Lieutenant-Colonel Thomas Mayne, I.M.S., at Melbourne, in his fiftieth year. He entered the Indian Army in 1872 and was subsequently in charge of the medical department of the 24th Madras Infantry. He died while he was on his way home for the benefit of his health, being landed at Melbourne.

Correspondence.

"Audi alteram partem."

INSTRUCTION IN TROPICAL MEDICINE.

To the Editors of THE LANCET.

SIRS,—In referring to the subject of a proposed School of Tropical Medicine in your issue of Nov. 26th you remark that laboratories already exist on the Victoria Embankment at Chelsea and at certain metropolitan schools. A "Colonial Physician," writing in the *Daily Chronicle* (Nov. 29th), supports the suggestion of a new laboratory by stating that the existing institutions exist for "a variety of quite different uses." I should esteem it a great favour if you would allow me to state the case on behalf of the bacteriological department of King's College, London. I wish also to make some suggestions which I venture to think may possibly have the effect of promoting the object which Mr. Chamberlain has in view.

As regards the laboratories at King's College let me say most emphatically that they differ very materially from those attached to some of our metropolitan medical schools. Twelve years ago these laboratories were founded and equipped for *teaching and research*. They were opened to all comers and special facilities were granted to colonial and foreign practitioners both for obtaining instruction and for carrying on original research. More than 1000 qualified medical practitioners, many of them holding high positions in the colonial, naval, Indian, and army medical services, have entered for instruction in the laboratory. The list of registered names includes those of practitioners and medical officers from Egypt, West Coast of Africa, Uganda, the Cape, British Guiana, Jamaica, Trinidad, Straits Settlements, India, Ceylon, China, Japan, Queensland, New South Wales, Canada, New York State, Michigan, Ohio, Missouri, Indiana, California, Florida, Chili, and Buenos Ayres. Several workers in the laboratory have been specially trained with a view to combating plague, cholera, yellow fever, madura disease, actinomycosis, cattle plague, pleuro-pneumonia, and other diseases prevalent in our colonies and in foreign countries. The Colonial and War Offices have recognised the laboratories by granting leave of absence in order that their officers might be trained in King's College.

The course of instruction consists of (1) lectures and practical instruction in all that relates to the knowledge which we at present possess of the causation and prevention of diseases of man and animals attributed to bacteria and other micro-parasites; (2) Advanced technical instruction in the methods of original research, thereby encouraging further researches in the colonies by competent observers. A thorough knowledge of these diseases cannot be imparted in a small clinical laboratory attached for convenience to the wards of a hospital. In the first place, there would be no opportunity for learning anything about the epidemic diseases of animals. It will at once be admitted that the services of colonial health officers and colonial practitioners would be of increased value if they were qualified (especially in the absence of any veterinary surgeon, or by coöperation with them) to advise upon the best means of stamping out tuberculosis, actinomycosis, cattle plague, pleuro-pneumonia, surra, Loodiana disease, &c., and also if they were competent to undertake original researches in connexion with diseases of animals, especially those communicable to man. In the second place, I would point out that cases of leprosy, yellow fever, cholera, plague, madura disease, and many other tropical diseases are very rarely imported to England, and therefore instruction at the bedside, supplemented by examination in a clinical laboratory would be very irregular and inadequate. For training students in these diseases reliance must be mainly placed upon the pathological and bacteriological investigation of morbid specimens and materials supplied from the colonies and the study of cultivations. To collect such material requires time, and to constantly carry on cultivations necessitates a large, well-equipped laboratory and a well-trained staff. The teachers should be ready at all times to give instruction and, indeed, willing to practically devote the whole of their time to teaching and research. Such a laboratory can only be provided and maintained at very great cost, and the establishment of a new laboratory on this scale would only provide for work for which provision has already been made at King's College and the Institute of Preventive Medicine. It would not supply any want, but it would enter into competition more especially with the teaching at King's College and thus undermine the work which has been carried on for twelve years. The effects of this would be severely felt.

Mr. Chamberlain's object being the advancement of the education of colonial practitioners and the control of tropical diseases, let me point out how such an admirable object can be made to receive, as it should receive, the support of all. I would venture to make suggestions which are based upon a long experience of the needs of colonial practitioners. These suggestions I will embody in the form of regulations for admission to the colonial service.

All candidates for colonial medical appointments should be required to attend and be "signed up" for the following: 1. A special course of clinical instruction in tropical medicine. This course might be given at the Seamen's Hospital and in coöperation with the metropolitan hospitals. An arrangement might be made with the metropolitan hospitals by which candidates for the colonial service were granted a circular ticket giving them the privilege of being shown in the wards any cases of interests to colonial practitioners. 2. A course of lectures on tropical medicine and hygiene, delivered at the proposed School of Tropical Medicine and the Seamen's Hospital or any other medical school recognised by the Colonial Office as providing adequate training in this subject. 3. Lectures and practical instruction for not less than six weeks in a bacteriological laboratory or institute which is recognised by the Colonial Office as fully equipped with the materials and teaching staff necessary for giving the instruction required.

I would like to add another suggestion. Those already holding appointments in the colonial service and those engaged in private practice in the colonies would derive very great benefit if they were to take advantage of these lectures and practical studies and thus keep themselves in touch with the most recent views and with current research. Encouragement might be given to those on leave from the colonies by the creation of colonial scholarships or studentships entitling the holders to free attendance on the same course of instruction demanded from candidates for the colonial service.

I am, Sirs, yours faithfully,

EDGAR M. CROOKSHANK, M.B. Lond

King's College, London, Dec. 5th, 1898.

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"THE 'OPEN-AIR' TREATMENT OF TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—As one who has for over forty years preached and practised the gospel of pure air and plenty of it night and day, summer and winter, for the treatment and prevention of respiratory maladies, especially pulmonary tuberculosis, I have felt great interest in the movement of professional opinion in this direction so marked of late and am tempted to ask you to grant me a little of your space to comment thereon.

It was about the middle of the fifties, at a time when the dismal doctrine of inheritance held sway in this country and infection was not accepted, that I first saw light and soon after found salvation by placing my faith on the *vis medicatrix naturæ* as exemplified in the uniformly successful result of the common treatment of a simple fracture. Many considerations led me to this attitude of mind, but among the chief of them was the occurrence of cases of recovery after practitioners had despaired and when patients had become reckless, such as the well-known duck-shooter mentioned by Stokes. Although for many years I recommended not only the various drugs but also many of the climates, the altitudes, and the latitudes which from time to time were advocated by persons who apparently had enjoyed some special experience, yet in the end it came about that I had to lose faith in drugs of all sorts and to conclude that as to climate, when taken into account together with other conditions of life, the people of these islands are as well off as those of any other land, and that only for those few who enjoyed travel and could afford to indulge themselves freely was there an advantage to be gained by so moving about as to secure in all parts of the year the best season. For the vast majority such life of the swallow is out of the question, and I will say no more on that subject. The principle upon which I had to rely, then, being to secure for the sick all the conditions which make for health in the healthy, and to protect against all the adverse ones, as a splint protects by securing rest, rich and varied foods within the limits of appetite and digestion were enjoined, and as much functional exercise as could be borne, as well as pure air in abundance, which, however essential, is not the whole matter.

The "open-air treatment," as it is called, I therefore hail with pleasure and am glad to note that it must when rightly apprehended finish off the remaining bogies about "draughts and chills." There are two lessons, as it seems to me, which may be learned from the perusal of the recent papers on this subject which are of equal or even greater importance than the establishment of sanatoria, valuable as I admit they may be for a certain proportion of cases and for certain classes.

The first of these to which I would call attention is the adoption of the best known modes of life as approved by the experience of special sanatoria by a person of moderate means in his own home. The number of persons who might adopt such a mode of life is, I think, much larger than of those who could or would go to a sanatorium in this country or abroad. I have noticed of late years a marked change in the mental attitude of patients affected with this malady. Whereas in the days when the doctrine of heredity held sway it was difficult to induce a patient to face the facts and almost as difficult for the medical man to be frank, now a very large proportion of them will bear being told the truth and like it. These may, if carefully instructed and moderately supervised, be trusted to carry out at home practicable measures for their "open-air treatment," and this on a balance of considerations with at least as much hope of recovery as at any sanatorium here or abroad.

The other lesson is that the measures upon which practically everyone now relies for the cure of the malady are just those which maintain health in the healthy—are, in fact, all contained in the word "sanitation," if we include in it genuine cleanliness of person, domicile, air, water, and foods.

The remarkable fall in the death-rate from all tuberculous diseases, but more especially from the pulmonary form which has taken place during the last thirty years, although I grant it has not received a full explanation, can scarcely have been uninfluenced by the widespread improvement in the sanitation of this country which the same period has witnessed. Without desiring to undervalue the effects in this direction which may have been due to measures which have diminished the number or virulence of infective microbes or the occasions for their gaining admission into the body, which measures must have had some share in the results attained, I am strongly of opinion that the generally improved vigour of the people which has resulted from the better and cleaner and more airy houses, with better food and more of it, has had a larger share in bringing about this result. Be that as it may, no one can doubt that our efforts in the future should be directed to the attainment of both objects—that is to say, to diminishing the number and virulence of the bacilli and the occasions for their infecting us as well as to the increase of the resisting powers of the people and, as it were, to the establishment of a more widespread immunity against the tubercle bacillus. That most people are now immune wholly or partially to the attacks of tubercle bacillus I feel reasonably sure, for seeing the ignorance that prevails still as to the infectiveness of the sputa and the prevalence of filthy habits in the public streets, seeing also the vast numbers of medical men and nurses and other attendants upon the phthisical sick who never suffer and also the very large proportion of married people who do not become infected by such intimacy, I think no one can doubt that almost every adult person has at least once in his life received into his breathing organs some of the bacilli and yet only a minority suffer. Also we must remember that although many have been so infected yet they have always resisted the bacilli with success, although in some instances there may have been a struggle to be undergone, such persons being as it were only imperfectly immune, as are, for example, vaccinated persons who have small-pox in the modified form. It is to the production of a more widespread immunity in the future that I look forward with greater hope than I can do to the complete eradication of the bacilli while heartily approving continued efforts in that direction also. To obtain this much-desired immunity I am convinced that the bolder, even the seemingly reckless, mode of life which cultivates hardihood as regards air and temperatures, &c., exerts all the faculties, and maintains the frame with ample foods, is more successful than the old coddling methods which under the euphemism "taking care" cultivated delicacy and made immunity difficult or impossible. If anyone doubts that such immunity does now exist let him consider that it is admitted on all sides that a state of susceptibility exists in some persons and that immunity for others is a natural correlative of this susceptibility and that the facts on which the belief of its existence rests are even more numerous and obvious.

I have not attempted to deal with the other possible, even probable, explanations of the reduction of the death-rate from pulmonary tuberculosis in recent years which, however important they may be as factors, are not so much under our control. I do not, however, doubt that some influence on our death-rate is now being exerted by the deaths in the past of the more susceptible people who were then the unfit. It behoves us now both in regard to private habits and usages and to public regulations to do what may be possible so to train up our children that they may not suffer the fate of the unfit. It will be said with no little force that I have been too optimistic in looking forward to the production by more perfect sanitation of such a large measure of immunity. However, after half a century of experience in practice I am not discouraged overmuch, for I see progress if slow. There remain, however, many giants to be slain and among them one against which I have before tried to do battle—viz., the fear of "catching cold" whenever the ventilation which is needful for perfect health is approached. This one, however, has been logically vanquished by the practice adopted in many sanatoria, for it will not, I think, be possible to maintain that currents of air which do good to a phthisical person do harm to a healthy one.

I am, Sirs, yours faithfully,

Nottingham, Nov. 28th, 1898. W. H. RANSOM.

To the Editors of THE LANCET.

SIRS,—Many of us, no doubt, have been seriously considering the proposals to establish in all parts of England open sheds for the residence of consumptives while undergoing the "open-air treatment." Probably many practitioners, though fully convinced of the great importance to health of a good supply of fresh air night and day, feel some

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doubt whether during the winter part of the year in our climate the system proposed will be found advantageous in many cases or at all stages of the disease.

Having been accustomed from early youth to be out in all weathers I have enjoyed for some years past the advantages of a large shed or verandah open to the west and south, but well protected towards the north and east, and have often wondered why so few houses in the country are provided with verandahs having glass roofs and large enough to be used as an extra room. Mine is about 36 ft. by 15 ft. The back is formed by the house wall, and the north end and the roof are glazed. It is entered from the short staircase of the cottage. The floor is of wood and is partly covered by carpet. There is ample space for tables, chairs, and other furniture. The soil around and in the neighbourhood consists of sand, peat, and gravel. Fir trees, rhododendrons, and other evergreen trees and shrubs abound and grow freely. An extensive fir wood surrounds three sides of the small wild garden and at the back is an open common. It would probably be difficult to find within easy distance of a large city a place more suitable for outdoor living as proposed, and I have often thought that if unfortunately my air-cells were invaded by a tubercle bacillus I would move my bed into the protected corner of my open-air apartment. In moderate weather it would no doubt be advantageous to do so, and perhaps it would be pleasant. But to attempt this all the year round would be to most of us, however healthy and strong and accustomed to fresh air in all weathers, anything but comfortable. Now this is the fourth day of rain and storm and morning and afternoon mist and fog. To spend even two or three hours and take one's breakfast and dinner in such a place in such weather would be very depressing and would make some people quite wretched. Even the most philosophic and placid of mankind would soon long to warm himself before a good roaring fire. To live under conditions so dreary week after week would, I should think, except to the very strong and thoroughly robust, be almost unendurable. Think of the turning out and dressing and breakfasting in the cold wet fog, and of the going to bed in the dismal drizzle, or when a cold wind was blowing hard. Surely the lot of the soldier exposed to the worst weather and all the hardships of an arduous campaign in winter would be preferable.

In advising a course of action supposed to be to the advantage of the bodily health ought we not also to think of the probable effect of the suggested treatment upon the patient's mind? For although many phthisical persons are hopeful and sanguine and often in good spirits even when seriously ill, I fear life in the contemplated sheds in many parts of England in such weather as we have lately enjoyed would not be happy. If the plan is to be acted upon here, it is to be hoped that only highly favoured localities, where there is natural protection from the north and east winds and where the shed may catch every possible ray of the sun at this time of the year, will be chosen. But under very exceptional advantages it would probably soon be found that something much more lasting and far more costly than sheds and shelters would have to be provided in the vicinity, for some of the cases placed under the open-air treatment.

I am, Sirs, yours faithfully,

Nov. 26th, 1898. LIONEL S. BEALE.

To the Editors of THE LANCET.

SIRS,—Staff Surgeon A. G. P. Gipps in an interesting letter in THE LANCET of Nov. 26th called attention to the danger of investing capital in providing homes for phthisical patients (or perhaps a better name is "kurhaus," the term I noticed used in the beautiful Austrian Tyrol) because our climate lacks the dry air and sunshine of Davos, Falkenstein and so on. If you will permit me I would like to point out that these defects which are grave and serious ones are capable of remedy to a great extent so that those who cannot leave England for these far-off places may still enjoy a climate in some respects better. Twenty years ago I read with interest that if you cannot afford to go to the Riviera then you should bring the Riviera to your own home by building glass houses. This I tried about twelve years since, building a large glass house opening from my drawing-room by a French window. The cost, with a saddle boiler which heated drawing-room and greenhouse, also the aviary if desired was £100, It has always acted well, providing any climate we wished, protected from rain, fog, wind, cold, and providing means for exercise and recreation for my children, friends, and visitors, &c, in a pure atmosphere at all times. I had better state that I live in Sherwood Forest on the new red sandstone at a height of 200 ft. above sea-level and the glass-house is glazed with rolled plate-glass excepting where we wish to look out; this affords a sufficient shade from the sun in summer without blinds or limewash, &c. The floor is of Minton tiles and waterproof. Not only have we a splendid climate, but if we wished we could make it pay its own cost by growing roses and other flowers, so that we could provide occupation, amusement, and recreation, in which our English watering-places are so very deficient.

One point I have forgotten—want of sun in winter, which is a great evil; but on our east coast, especially in such places as St. Andrews, Deeside, and Bridlington Quay there is a great deal of sunshine—that is, of course, because the rainfall and clouds are less; but there is another point. The electric light has proved useful in the growing of flowers and might serve to produce light in place of sunlight, though whether it would be as health-giving would require to be proved. The cost of an oil engine producing about forty lights of twenty and thirty average candle-power is £200 and then the cost of maintenance is equivalent to the cost of the same light by paraffin lamps, so that really the outlay would be £200 with cost of renewal of machinery when worn out.

I am, Sirs, yours faithfully,

Dec. 5th, 1898. M.O.H.

INTUSSUSCEPTION TREATED BY LAPAROTOMY.

To the Editors of THE LANCET.

SIRS,—May I add the notes of another case of intussusception to the series that appeared in THE LANCET of Nov. 12th, 1898?

On August 13th, 1898, a female infant, five months old, was admitted to the Leeds Infirmary, with a history of pain in the abdomen, vomiting, and of passing blood-stained motions and some mucus. The child had only been ill for four days. On admission a sausage-shaped swelling could be felt in the region of the cæcum and extending across the abdomen. On the afternoon of admission ether was administered and an incision about 2½ in. long was made in the middle line of the abdomen. On passing the hand into the abdomen an intussusception was felt and that part of the bowel was brought outside the abdomen. The intussuscepted part was found to be ileum into cæcum and ascending colon. The intussusception was easily reduced and was then returned within the abdomen. The abdominal wound was closed. The patient was discharged on Sept. 6th well.

I am, Sirs, yours faithfully,

W. H. BROWN,

Dec. 5th. Surgeon to the General Infirmary at Leeds.

"OBSERVATIONS ON AN INFECTIOUS DISEASE IN LASCARS HAVING CLOSE RELATIONS WITH VARIOLA AND VARICELLA."

To the Editors of THE LANCET.

SIRS,—We have read with great interest the letter in THE LANCET of Nov. 19th by Dr. Izett Anderson in which he refers to our paper on the above subject. His letter is of special importance as corroborating in certain respects some of our impressions of the disease referred to, as its comparatively slight infectivity, unless among communities closely confined, as on board ship or in penitentiaries. The fact that none of the patients who came under the care of Dr. Izett Anderson died likewise agrees with our own experience, though this was necessarily limited. It is obvious when we take this latter point into consideration that the disease is not to be regarded as of importance except in so far as it may be mistaken for variola, and we question whether it would not be an exceedingly difficult matter to recognise sporadic cases of this disease in a community in which small-pox is more or less endemic. In the outbreak recorded by Dr. Anderson as well as in that observed by ourselves the cases were very favourably placed for observation in so far as they were seen at a time when small-pox was absent, with which therefore they could not be confused. In a community where small-pox and this

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disease coexist it is clear that a certain amount of difficulty must present itself regarding the relation of the two diseases to vaccination. In Dr. Izett Anderson's letter it is stated that the disease occurred "in old and young, vaccinated as well as unvaccinated, and also in some who had had severe attacks and were deeply pitted by antecedent small-pox." Our own experience was precisely the same as this, but in addition, as stated in our paper, the patients were susceptible to vaccination during the course of the attack and were not protected from the disease by antecedent successful revaccination, while two unvaccinated individuals who mixed freely with the diseased lascars were not affected.

This unusual behaviour towards vaccination is entirely contrary to our experience of small-pox, as observed in Britain, and at once suggests the possibility of the existence of two diseases closely resembling each other in their more important clinical features but entirely different in their cause and in their influence on man. As stated in our paper we have invariably failed to vaccinate successfully persons who have just passed through an attack of small-pox, while the number of successfully revaccinated persons contracting small-pox is so small that out of upwards of "14,800 cases received into hospital [Metropolitan Asylums Board report] only 4 well-authenticated cases were treated in which revaccination had been properly performed." This corresponds with our own experience in Glasgow.

In addition to these considerations the differentiation of the disease from small-pox is suggested by various official reports which have appeared from time to time concerning India and other Eastern countries. The anomalous behaviour of vaccination and inoculation so frequently mentioned in these reports may be explained by assuming that many of the so-called inoculations have been performed with lymph derived, not from cases of true small-pox, but from patients suffering from the disease we are now discussing. In the Army Commission Report,[1] 1879–80, for the Central Provinces of India it is stated that in Sambulpur town, when small-pox broke out at that time, "it attacked those who had been inoculated, vaccinated, and had previously had small-pox....301 persons who had been inoculated took the disease out of a total of 1607 cases." This is so glaringly contrary to the generally accepted opinion with regard to the protective efficiency of inoculation that comment is needless.

In the sixth report of the Royal Commission on Vaccination, Appendix 15. Art. Japan, Table IV., is a report on the Tokio small-pox epidemic of 1891–92, in which 5215 cases of small-pox were observed, of whom 260 are stated to have had small-pox before. Of these, 80, or about 30 per cent., died. Here both the proportion of second attacks and the death-rate are so striking as to suggest either that the information derived from the patients regarding a previous attack of small-pox was erroneous or that the first attack of so-called small-pox was not small-pox at all but a disease resembling it in its clinical features though differing from it in respect of its protective influence against variola. Examples of this kind might readily be multiplied.

In conclusion, we would suggest that statistics with regard to the relationship between small-pox and vaccination, which indicate so marked a discrepancy from the opinion generally held, demand a most careful investigation by those who are in a position from their experience of small-pox in the east to carry on the work inaugurated by the publication of Dr. Izett Anderson's paper in 1867.

We are, Sirs, yours faithfully,
R. S. THOMSON, M.D. Glasg.
JOHN BROWNLEE, M.D. Glasg.

City of Glasgow Small-pox Hospital, Nov. 28th, 1898.

[1] Vaccination Commission Minority Report, par. 227.

DIPHTHERIA ANTITOXIN.

To the Editors of THE LANCET.

SIRS,—Having recently read before the Hunterian Society a paper which dealt amongst other things with the effect of the antitoxin treatment on the fatality of diphtheria in London I have perused with much interest Dr. Cobbett's paper which appeared in the last issue of your journal. With respect to London he has come to exactly the same conclusion as that to which I arrived when he states that "the new remedy has been more readily adopted by the hospital physicians than by general practitioners." Fig. 1 in Dr. Cobbett's paper shows that whereas formerly the fatality of cases of diphtheria admitted to the Metropolitan Asylums Board's hospitals was considerably higher than that of all the cases occurring in London (that is to say, for both those cases admitted to hospital and those not admitted), since 1894 the difference has been lessening and in 1897 the fatality of admitted cases was slightly less than the fatality of all the cases. But I think that Dr. Cobbett understates the case. Comparing the figures given in Table 3 of his paper with the figures given in the reports of the Statistical Committee of the Asylums Board I gather that (by "admissions" Dr. Cobbett means the admissions when corrected for errors of diagnosis and not the number of notified cases admitted. A considerable number of cases, for the most part mild in character, are not reckoned amongst the diphtheria admissions at all, and the figures Dr. Cobbett gives do not include these cases. On account of this correction it has always been impossible to accurately compare the fatality of the admitted cases with those not admitted, for it may be safely assumed that a considerable proportion of the latter are not cases of diphtheria. Hence curves B and C in Fig. 1 of Dr. Cobbett's paper cannot be accurately compared one with the other. It seems to me, however, that a more accurate comparison can be made. We know exactly the annual number of deaths from diphtheria in and outside the Asylums Board's hospitals. We also know exactly the yearly number of notifications. We can also obtain accurately enough the number of notified cases admitted to the Asylums Board's hospitals. In the Statistical Committee's report for 1897 the actual number of these cases for that year is given, but for previous years the percentage alone is stated, from which the number admitted can be calculated. From these data we can calculate the fatality of notified cases admitted and of notified cases not admitted and we can then compare the two rates. In my paper I drew up a table showing these rates since 1892 as follows:—

—	1892.	1893.	1894.	1895.	1896.	1897.
Fatality per cent. of all notified cases	23·8	24·6	24·7	21·2	19·4	17·4
Fatality per cent. of all notified cases admitted to M.A.B. hospitals	24·8	27·1	25·0	18·3	17·7	14·9
Fatality per cent. of all notified cases not admitted to M.A.B. hospitals	21·5	23·7	24·5	23·3	21·3	20·1
Percentage of notified cases admitted to M.A.B. hospitals	30·1	24·5	38·8	41·5	39·9	51·4

This table shows, but more emphatically than Dr. Cobbett's tables, that whereas the fatality of hospital-treated cases was up to 1894 greater than that for the whole of London, since that year the reverse has been the case. It also shows that the improvement in the fatality rate is more marked in the hospital cases than in those not admitted to hospital. It further shows that there has been some improvement in the fatality of the cases not admitted, a fact also pointed out by Dr. Cobbett. It is very uncertain that the improvement in these last cases is due to the use of antitoxin. Doubtless some cases are admitted to the general hospitals and are treated in them with serum. Possibly the improvement may be due to that fact, but if so it only emphasises Dr. Cobbett's statement quoted above to the effect that outside hospitals the antitoxin is little employed. I have no doubt myself that this statement is perfectly true. My experience at the Eastern Fever Hospital, where there have been for eighteen months past about 200 beds set aside for diphtheria, leads one to say most emphatically that in the East-end of London, at any rate, the employment of antitoxin in the treatment of diphtheria is the exception. It is very rarely that a patient is admitted who has been treated with antitoxin before admission, even when he has been ill for several days. And from what I know personally of the action of the remedy I have no hesitation in saying that there are hundreds of children who die every year in London for want of its timely employment. I say "timely" because although of recent years the Asylums Board have been admitting a large proportion of the notified cases, yet the proportion of cases admitted at an early stage of the disease seems to be diminishing.

I must apologise for the length of this letter, but the subject is important. We have a remedy for a very fatal

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disease which by consent of the majority of those medical men of all countries who are best qualified to pronounce an opinion is of the greatest value in the treatment of that disease. Yet of this disease the children of the poor are still allowed to die in their hundreds annually in this wealthy city of London, largely for want of the remedy. Why this should be is worthy of the most careful inquiry. Dr. Cobbett is to be thanked for drawing attention to the fact.

I am, Sirs, yours faithfully,

Homerton, Dec. 4th, 1898. E. W. GOODALL.

AN ENTERPRISING AGENT.

To the Editors of THE LANCET.

SIRS,—I have sent a copy of a printed letter to each of the practitioners here and am sending one now to each at Tewkesbury, Upton-on-Severn, Bromyard, Ledbury, and Kempsey, which contains the following passages:—

> Two practitioners here have informed me that the following offer has been made to them by a man representing himself as an agent of an insurance office. In return for placing the practitioner's name on a card as medical officer the agent would use his influence to obtain patients for such medical officer, offering 1*d.* per week for each male or female adult, and ½*d.* for each child, without any wage limit or other restriction. This offer has been absolutely declined. I send this circular to you that you may learn what has been done and confidently suggest that no self-respecting member of our profession would accept such terms.

Had the terms offered been accepted it would have followed that the practices of neighbouring practitioners would have been exploited for the good of the medical officer. I hope you will be able to expose such a nefarious scheme in the pages of THE LANCET.

I am, Sirs, yours faithfully,

St. Michael's, Malvern, Dec. 6th, 1898. STANLEY HAYNES.

*** We do not know that further exposure is required from us. Readers of THE LANCET know that this is a method of tactics which has been adopted by certain medical aid associations. We commend Dr. Haynes's prompt action. After receiving the circular letter no medical practitioner in the neighbourhood can accept the enterprising agent's proposals without knowing that he is defying the opinion of his professional brethren.—ED. L.

BRITISH MEDICAL BENEVOLENT FUND.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if you will kindly insert this appeal in your columns. For many years I have received and distributed articles of clothing for men, women, and children and am now practically without. I should be glad to have anything that can be spared, such as hats, jackets, dresses, or underclothing for women, or blankets, boots and shoes, old furs, overcoats, or anything, in fact, that has some wear in it and likely to be useful.—I am, Sirs, yours faithfully,

16, Upper Berkeley-street, W., Dec. 3rd, 1898. EDWARD EAST.

"THE CONSCIENTIOUS OBJECTOR."

To the Editors of THE LANCET.

SIRS,—I do not agree with Dr. Woodward's remarks on vaccination certificates in THE LANCET of Dec. 3rd.

Though strongly opposed myself to this new Act—one of the most mischievous, I think, which the present Government has passed—still I do not consider it is right for our profession to suggest to magistrates a series of questions which will make it even more difficult than it is now for conscientious applicants to obtain their certificates.

The very fact of many such applicants being so often willing to lose half a day's work plus the fee for certificate when they could have their children vaccinated entirely free of any expense should tend, I think, to make one believe in the earnestness of their convictions and so shield them from being unnecessarily heckled. Much as I should rejoice to see this Act repealed, yet so long as it is in force magistrates have only to administer the law (which was evidently meant to bear a liberal construction) without allowing their private opinions in any way to bias their judgments to the detriment of the petitioner.

I am, Sirs, yours faithfully,

Dec. 3rd, 1898. J.P., F R.C.P.

AN ACADEMIC GOWN FOR THE MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—I much regret that through the lateness of the hour my somewhat hurried sentences prevented clearness of expression and that you failed to grasp my reasons for the utility of a distinctive academic garment for the operating surgeon. I certainly did not say or do I think that a "flowing robe" would be desirable *per contra;* I said "*not* in the flowing gown of the learned Roman nor exactly in the surplice of the clergyman," but I thought some suitable white washable garb for the operating surgeon was both desirable and *needful* and would be a great improvement to the somewhat gruesome appearance of many of our operating surgeons in their private practice. I have seen very hideous coverings worn by operating surgeons and the "mackintosh apron" you speak of is quite the exception. One surgeon I know used to wear his old worn-out dressing-gown for hospital operations. A proper recognised operating costume would, too, be not only cleanly but of hygienic value. For State occasions some different and more scholastic gown would be appropriate, I opine, for I believe I have read of the toga prætexta with its purple border, the toga virilis, the toga picta of the classic Roman, sometimes embroidered with gold, and I think there was nothing unseemly in my suggestion that the Fellow should have a purple hem or some other distinction from the ordinary Member denoting his special rank. Better thus than that the line of demarcation should still further be widened and that the Fellow should be given collegiate dress to the *exclusion* of the more numerous and scarcely less worthy and intelligent Members.

The time will doubtless come when every physician or surgeon will as a matter of routine don his gown and his academic sash will be on his table when in his consulting-room. The utility of this will be even to you, Sirs, probably obvious, although you may not have felt, as I have felt, the inconvenience or experienced the unfriendly gaze of your patient who has consulted you when you have been clad in boating or cricket costume, to saying nothing of the hunting field or the familiar suit of the cyclist or even of our plain evening dress. These frivolities are not *contra bonos mores* or against professional skill and diligence; yet who has not at times felt he would have been glad to have hastily covered these signs of avoiding or trying to avoid dull care or gloomy thoughts by hastily donning the academic robe and assuming at once the naturally thoughtful expression and sagacious countenance of the successful and friendly medico which will so fittingly become the scholarly *rôle* of your future surgeon?

I am, Sirs, yours faithfully,

THE SECONDER OF THE RESOLUTION FOR THE ACADEMIC GOWN OF THE M.R.C.S.

Dec. 5th, 1898.

THE SICK AND WOUNDED AT OMDURMAN

To the Editors of THE LANCET.

SIRS,—As the medical officer in charge of one of the barges which left Omdurman on the morning of Sept. 4th and on which the wounded received attention from the 2nd, will you allow me to answer the letter of Major-General Russell which appears in the *Times* of to-day, and I will take the statements he puts forward *seriatim*. Firstly, the wounded were not packed like sardines but had ample space, the mere fact that the angarebes or native beds on which they were lying measured in some instances more than 3 ft. across making it an impossibility to accommodate more than a limited number on the deck. Secondly, native beds were at hand, and were in excess of the requirements, and were used in every case on my barge where I considered them necessary. Thirdly, the operations performed by myself and my junior officer (amounting in all to 12) whilst on the way down the river were performed on a special operating-table which I had with my field hospital during the entire march and subsequent action, and which was thought by us to be of so good a pattern that it was used subsequently for every operation that was performed at the Abadia Hospital. Fourthly, my operating space on the barge was in the stern and it was carefully screened off and enclosed on both sides

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and ends from observation, and patients were as comfortable in it as in a building and not a single operation was undertaken "on irregular piles of ammunition boxes" for two reasons—firstly, because we had an excellent operating table and, secondly, because there were no ammunition boxes on the barge. Fifthly, the chloroform was not blown away and, as we were working under the upper deck, the "piercing rays of a burning sun," described by the correspondent of the *British Medical Journal*, would have had to penetrate 4 in. of planking which made up the floor of the upper deck and the roof of the barge above this. In conclusion, I must state no operations, with the exception of a very urgent one, were performed on the barges until Sept. 3rd, on which date plenty of native beds were obtainable.—I am, Sirs, yours faithfully,

MEDICAL OFFICER IN CHARGE OF
Dec. 5th, 1898. NO. 1 FIELD HOSPITAL.

THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

SECOND YEAR.

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 1437.)

THOUGH both the private drains and the public sewers of Belfast are most defective and the subsoil is extensively contaminated there are still persons who persist in maintaining that the real fault lies with the water-supply. Personally I have been blamed for not going to inspect the catchment grounds and for not emphasising the risk that the water-supply incurred of being specifically contaminated. Nevertheless, in my report published in THE LANCET of Nov. 27th, 1897, I mentioned that a list of 16 farmhouses had been given to Dr. Frankland, who was then investigating the question of water-supply, where the drainage from stables, manure heaps, houses, &c., discharges either into the subsoil or the adjoining small water-courses which are all situated on the Stoneyford gathering ground supplying Belfast with drinking-water. Further, I added: "At the commencement of the year there were four cases of typhoid fever in one of these farmhouses, and it is urged that it was only after these four cases on the gathering ground that the fever became so general in Belfast." Such, briefly, was the contention brought forth last year and it was met by the fact that typhoid fever was endemic in Belfast and that the deaths from typhoid fever were much less numerous during the first than during the last three-quarters of the year. If the epidemic had been caused by contamination of the water at the date mentioned it should have occurred during the first three months of the year and should have been much more widespread. As a matter of fact it was just when the water was supposed to be contaminated that there were the fewest number of deaths from typhoid fever—namely, 58 deaths up to April 3rd, 1897. During the second quarter of the year there were 100 deaths, 81 deaths during the third quarter, and 97 during the fourth quarter. At the farm in question the cases occurred in February, 1897, and they were described as gastric fever. It was not till the following October or November that water samples were taken from the little brooklet into which this farm is likely to drain. The water taken above the farm was not so pure as that taken below the farm.

But all these details are of little or no importance. They mainly serve to divert the population from the chief points at issue. It is admitted, it must be admitted, the Water Commissioners themselves do not attempt to deny that contamination of the water catchment may occur. Where there are farms and manure this is inevitable; and at any moment cases of typhoid fever may take place among the farmers who live on the catchment area. How often have typhoid dejecta reached the Thames from the 1,250,000 people who live above the water intake of the London supply? The safety of the people of Belfast depends not on the condition of the catchment but on the filtration of their water-supply. As a rule this filtration removes from 97 to 98 per cent. of all the bacteria which the water contains. This, the result of Dr. Frankland's analyses, is confirmed by those of the Local Government Board analyst, Professor Hodges, and by Mr. Barclay, teacher of chemistry, analytical chemist, and member of the Belfast Corporation, therefore it may be considered very satisfactory. As for the catchment area it was selected at a time when the rapid growth of Belfast was not fully foreseen, and the farms have sprung up since that time. As a consequence, and at a cost of £610,000, new gathering grounds have been secured in the Mourne Mountains and works are now proceeding to bring this new supply down to Belfast. For this purpose a conduit 38 miles in length will have to be built and no one disputes the purity of the new supply. This vast undertaking was fully described last year, but it will require some time to carry out. In the interval the best must be made of existing circumstances. The position differs from that which prevails in England and it has its advantages and disadvantages. In England farms generally vary from 100 to 300 acres in size and have but one house. In Ireland they vary from 10 to 40 acres and each farm has its house. The Irish farmers are poorer and more dirty. Consequently they are individually more dangerous to the water-supply. On the other hand, these small farms are generally taken for grazing purposes—they are not tilled and manured as in England. But it is very difficult to move these small farmers. They farm according to tradition and are quite impervious to all claims of modern city life. They pay their rent and place their manure heap where most convenient to themselves. Belfast and its water-supply is no concern of theirs. The Water Commissioners have even tried to purchase some of these farms, but the farmers will not sell. Recently the former spent £30 in laying drain-pipes so that the water from a farm might be diverted from one of the town-supply conduits and made to pass under it. There are certainly legal powers which might be employed, but it is necessary to prove that there is pollution, and at present the sanitary officers do not seem willing to swear that a privy situated at a distance of 500 yards from a water reservoir is a nuisance. The Water Commissioners recently caused a concrete tank to be installed in the place of an ordinary privy at a school which was situated about a mile away from the Leathemtown reservoir. This hesitation seems to indicate weakness on the part of the sanitary authorities. The law should be strong enough to suppress all leaking privies, whether there be a water-supply conduit near to them or not. The precautions ought not to be taken only by the Water Commissioners. For instance, at the present moment the main gravitation conduit from the Woodbourn supply is being dug up and altered for a distance of three-quarters of a mile as it passes through the Antrim-road district. This conduit was completed in 1868 and is made of brick and cement. Now as this neighbourhood is being opened out for building purposes iron pipes are substituted for the brick conduit. On the other hand, any sewers or drains passing across the easement of the water conduit must be made of water-tight metal pipes laid under the supervision of the Water Commissioners. This is good so far as it goes, but no sewer should leak, whatever may be the material with which it is made and wherever it may be placed. Two years ago two-thirds of a mile of iron piping was substituted for the brick and cement water conduit which passed near to the Throne Hospital. The fear was then entertained that the water might get contaminated, but this cuts both ways, for if it shows lack of confidence in the water conduits it also indicates that the drainage was likely to be unreliable. It may, however, also be said that brick conduits cannot stand the heavy traction of a growing city, and big, heavy carts are less likely to break iron pipes. Of course, as the town extends the underground conduits must be of iron.

Having regard to all the circumstances Belfast seems to be in quite as favourable a position with respect to its water-supply as most towns and in a better one than many, and in 1901 a new and much better supply will be available. Then, as mentioned before, a water epidemic would produce a far greater number of cases occurring in a briefer space of time. Nor is Belfast the only place afflicted with typhoid epidemics when there is every reason to believe that the water-supply is not contaminated. Sir Charles A. Cameron, medical officer of health of the political capital of Ireland, at the recent Public Health Congress, insisted that the Dublin water-supply was of exceptional purity, yet with the exception of Belfast no town in Ireland had a higher death-rate from typhoid fever. Typhoid fever prevailed in Dublin because the subsoil was contaminated by

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leaking sewers, drains, and cesspools. As these were removed public health improved, but the micro-organisms of this disease could retain their vitality in the soil long after the cause of pollution had ceased. Sir Charles A. Cameron added that the "connexion between enteric fever and the soil is shown by the results of observations of the distribution of more then 4000 cases of the disease in Dublin. Where gravel forms the site of the streets there is far more typhoid fever than in the districts which rest upon the stiff boulder clay. This is clearly owing to the fact that the bacillus typhosus, which is aerobic—that is, requires oxygen—can get it more freely in the loose gravel than in the stiff clays. In the gravel, too, there is much greater space for the development and movement of the bacilli."

When Mr. Dunlop, speaking on behalf of a deputation opposed to sanitary reform, urged upon the Belfast Town Council that he owned many houses with privy closets where no case of typhoid fever had occurred, he forgot to mention that they were, for the most part, built on clay soil. The real problem for Belfast to solve is the purification of the subsoil in those extensive portions of the town where it is composed of sand or of rubbish. These are traversed by streams which have become sewers and sewers which have become cesspools. Then there are house drains which leak and privies which are not watertight. As Dr. Brouardel said of Toulon, the home of typhoid fever and of cholera, so may it be said of Belfast, "the town stands on a fæcal soil." Councillor Dr. O'Connell expressed at the Town Council his opinion that the Blackstaff stream, as it passes through Belfast, received the drainage from some 10,000 people and he thought that most of the sewers in the town would have to be relaid. There were heavy deposits in these sewers and till this state of affairs was rectified the typhoid fever epidemic would recur over and over again, especially after prolonged dry weather.

To remedy these most unsanitary conditions it is proposed to obtain special powers from Parliament so as to impose the water-closet system on all houses, to test all existing domestic drains, and to introduce back passages where these do not exist. This sounds well, but how are the water-closets to be drained. If they are to be led into the existing drains the second condition may become worse than the first. At present many houses drain into a private drain which passes through the back yards and only joins the public sewer where the row of houses is cut by a street running at right angles; thus a private drain behind the houses of a street running from north to south will fall into the public sewer of the first street it meets running from east to west. If there is a stoppage in this private drain the drainage from all the houses above the stoppage will be blocked. This is bad enough where, as at present, in houses with privies this private drain only receives the rain water, the scourings of the back yard, and the slop water, but it would be worse still if these drains also received the contents of water-closets. Again, as these are private drains, they must be repaired by the house-owners and are consequently very generally neglected. Rack-renters and speculators in poor property cannot be trusted to keep such drains in order. It stands to reason that these private drains should be converted into public sewers and placed under the supervision of the public authorities. Where at present there are two private drains running parallel in the yards of two rows of houses which stand back to back they should be replaced by one public sewer draining the houses from both sides. Where there is no back passage 2 ft. of space should be taken off the yards on either side. This would make a passage 4 ft. wide, under which a proper public sewer might be laid which could be constantly inspected by the sanitary authority and repaired at once when any accident occurred. As it is, if the private drain is out of order it may remain in that condition for weeks and months before the mischief is discovered and legal proceedings are successfully taken against the landlord. This back passage would also serve for the removal of the contents of the dust bins. If, however, the back yards are so small that there is absolutely no room for cutting a passage through them the whole property should be condemned and pulled down. Nor would this be an extravagant proceeding. On the contrary, a good deal of money could be made out of the transaction, for the houses which come under this catagory are of such a wretched description that it would pay to build in their stead a better class of property. This would have the further advantage of improving the appearance of the town—a phase of reform which, from the æsthetic point, is as urgently needed as is a better sanitation from the public health point of view. To demand power for the compulsory enforcement of the water-closet system without first securing powers to construct proper public sewers would be to place the cart before the horse. The private drains which exist are not fit for such a purpose nor can they be controlled with sufficient promptitude by the sanitary authorities.

Councillor Miller has made a proposal on these lines to the Public Health Committee; and, further, he explained to me that it might be worked financially in such a manner as in a great measure to cover the cost of some compensation to the owners. Councillor Miller calculates that the expenditure would be something like £7 10*s.* per house, of which sum the house-owners should pay £5 and the town £2 10*s.*; or, in all, about £50,000. But under the present conditions the cleaning of the privies, &c., costs the town about £4700 per annum. The borrowing of £50,000 would cost in interest and amortisation some £3400 a year, so that an economy of about £1000 a year might be realised. But there are strong objections made to the giving of any compensation to the owners. Certainly if the actual owners were alone guilty of creating the present unsanitary state of affairs they ought not only to be made to pay the entire cost but they would also merit some form of punishment. Unfortunately a great part of this bad property is now owned, not by those who built the unsanitary dwellings, but by innocent purchasers. The ratepayers of Belfast so far neglected their duty as to elect officials who sanctioned the erection of buildings which would obviously become unfit for habitation. The present owners in many cases trusted the town council and claim to be the victims of incompetency. The result is a high death-rate and permanency of typhoid fever in Belfast. If to rectify matters the purchaser must sacrifice 2 ft. of space in his backyard and pay £5, may not the ratepayer be called upon to pay £2 10*s.* as an atonement for his share in the bringing about of the present disastrous conditions? The elected were to blame—they sanctioned what they ought never to have allowed; but why did the electors vote as they did?

The Bill to be presented to Parliament as it now stands is vague. After numerous details about tramway lines and miscellaneous matters comes the following short clause: "To confer powers on the corporation to require the owners or occupiers of houses to provide water-closets and from time to time to lend to such persons money to assist them in this object." And in another clause: "To divert, alter, and remove sewers, drains, tubes, wires, pipes, and apparatus," as may be necessary in connexion with the various proposed works. This may be a sufficient description of what is supposed to be intended; but should not this be accompanied by a detailed plan? It is all very well to build water-closets, but where and how are these closets going to be drained? Surely not in the ineffective private drains which exist. And where are public sewers to be placed for those houses which have no back passages? Then the actual main sewers are not big enough to carry off the water when it rains heavily. Floods are of constant occurrence. What will be the condition of the public sewers when some 20,000 additional water-closets drain into them? If floods are to bring back the contents of the closets and deposit them on the floors of the houses the fewer closets which communicate with such sewers the better. Not that the present privy system is to be maintained for a day longer than necessary, for the flood waters also reach the privies, lift their contents, and carry them into the houses. But is it not evident that the Bill should comprise a scheme for the modification of main and branch sewers of the town?

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Pasteur Institute for Hyderabad.—The Plague Commission.—The Progress of the Epidemic.—The Native Chiefs' Health Institute.

THE following details have been published concerning the Pasteur Institute at Hyderabad. It is expected that His Highness the Nizam will lay the foundation-stone of the new laboratories next week. The idea of a properly-equipped Pasteur Institute for Hyderabad was originally conceived and

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is now taken in hand by Colonel E. Lawrie, I.M.S. It has been supposed that such an institute can only be worked satisfactorily in the cool climate of the hills, but it appears to the Nizam's Government that it will be more satisfactory to work it on the plains under conditions which obtain naturally as regards heat, moisture, and climate generally. The institute will aim solely at being of practical use to the Government and the Medical Department, to the numerous private practitioners in the Deccan, and to the public. It is said that the institute will be provided with the necessary laboratories, well stocked with all the latest scientific appliances, and it will adjoin a hospital which is maintained by the British and Nizam's Government jointly. It will therefore be available for the accommodation of patients of all classes of both Governments alike. The institute is not only meant to afford rapid help to all persons bitten by poisonous animals and thus save them from suspense and loss of time and money, but it is intended that the fullest possible bacteriological, chemical, and pathological investigations shall be undertaken in order to throw light on the common and widely fatal diseases of the climate of India. The educational side of the institute will be one of its principal features. The student of the local medical school will be trained in the most modern methods of observing, treating, and preventing disease, and by degrees all hakims and hospital assistants at present in the service of the Nizam's Government will undergo practical training in all that is necessary in these methods. One of the adjuncts of the institute which has proved of immense value in the recent investigations into the pathology of plague and malaria will be a photographic laboratory. The institute will be superintended by a Hyderabad medical officer who has recently undergone special training in Edinburgh, Paris, and Berlin. The whole scheme is entrusted exclusively to Colonel Lawrie. One cannot but admire the spirit and enterprise which has prompted such a scheme, and if from the above outline it seems somewhat ambitious yet it will doubtless be of great educational benefit. The programme is sufficiently exhaustive to satisfy the greatest enthusiast.

The Government resolution concerning the Plague Commission says: "A number of interesting facts have already been collected and embodied in different reports regarding the outbreak of this disease which has prevailed in India during the past two years, but there must be many valuable items of information to be ascertained from officers who have been employed on plague operations which have not been recorded in official reports, and there are also many circumstances connected with outbreaks in different places which require to be locally examined by persons who can collate facts and form conclusions." This expression of opinion only bears out what I wrote previously—that officers of the Local Government Board accustomed to investigate the outbreaks of infectious diseases are the men who are really wanted. The points for the Commission to investigate are: (*a*) the causes of the different outbreaks and the circumstances influencing their growth and decline; (*b*) the manner in which the disease is communicated; and (*c*) the effects of curative serum and of preventive inoculation.

The Presidency plague returns have not improved. There have been 6223 attacks and 4858 deaths recorded for the past week. In Bombay city there were only 59 deaths but there have been heavier totals in Broach, Thana, Dharwar, Bijapur, Baroda, and Kolhapur. In Dharwar district alone there were 2940 attacks and 2374 deaths.

At Bangalore there has been considerable trouble—riotous disturbances, a strike in the Conservancy department, high prices of food and materials, and concealment of cases. The disease is very rife, 627 cases and 522 deaths having occurred during the past week. From the date when the province of Mysore was first attacked up to the present time there have been 3292 cases and 2555 deaths. The epidemic is spreading in southern India. It has lately broken out in the goldfields of Mysore. Large numbers of coolies have become scared but inoculation is being pushed forward as rapidly as possible.

The Punjab after having been free for some months has suddenly developed a few cases at the town of Rahon in the Jullunder district. This town has a population of 11,000 and has hitherto marvellously escaped notwithstanding that it is situated on the margin of an area which has been infected during the past two years. It is an ancient and decayed town with few means of communication and it would be easy to temporarily suspend intercourse with neighbouring places. A few cases continue to manifest themselves every few days in Karachi city. Calcutta apparently remains free.

The Native Chiefs' Health Institute, the details in connexion with which have not yet been published, will have for its objects (1) the scientific study of bacteriology; (2) researches regarding the causation of disease; (3) the investigation of means for the prevention and cure of disease; and (4) the training of officers in bacteriology and to carry out investigations on the above lines. This seems very much like the programme of the Hyderabad Institute, more especially as it has been reported that the long-looked-for Pasteur Institute for India will be taken in hand and will form part of the Native Chiefs' Health Institute. Provided they are well supported there is doubtless plenty of work for both institutions, but it would be a great pity for the cause of science if one institution marred in any way the success of the other.

Nov. 19th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Sewage Difficulties.

THE Public Works Committee of the City Council have presented a report on the condition of the sewers in the Edgbaston and Harborne districts. In this inquiry it was found that the sewers were in a faulty and in places dilapidated condition necessitating entire reconstruction to ensure efficiency and safety. The area reported on by the city surveyor comprises some 3625 acres with a population of 21,000. The bulk of these sewers were constructed between the years 1863 and 1879, consequently they have been subjected to much wear and are now inconsistent with the more advanced principles of present-day knowledge. Small brick sewers, with the bricks at places perishing, joints most imperfectly made, and the jointing material when used being now decayed, have given rise to accumulations of filth and escape of foul emanations which have resulted in numerous complaints. The problem has therefore to be faced with as little delay as possible. The scheme of the city surveyor has been considered by Mr. Mansergh, C.E., and with some modification adopted. It has been resolved by the city council that the sum of £155,000 be borrowed in accordance with the estimate proposed—a resolution which was passed at a subsequent meeting of ratepayers.

Electric Lighting.

A public meeting of ratepayers of the city was held on Nov. 26th to authorise and empower the corporation to apply to Parliament for an Act to authorise the transfer of the Birmingham Electric Supply Company to the corporation. The Lord Mayor (Mr. Alderman Beale) stated that they had purchased the concern for £420,000, which was at the rate of 10 guineas a share. A clause is added to the Act empowering the corporation to build branch schools of art, to make improvements in the Rubery Hill Asylum, and to pay for music in the parks. Already the gas and water undertakings have been acquired, and as the tendency of the present time is to municipalisation of large concerns for the public benefit there seems to be nothing needed beyond a cheerful acquiescence and the payment of the necessary costs.

Adulteration of Food.

A batch of offenders were recently brought before the magistrates and fined in various amounts for wilful transgressions in the adulteration of food. A butcher for selling diseased meat was fined £5, while a man who had sold diseased fish got off with £2 and costs. Another was fined £9 for selling margarine as pure butter, while a margarine manufacturer trading as the Elbercraize Creamery Company for not having his manufactory registered was fined in all £43 4*s*. It is doubtful whether fining, even in substantial amounts, is the best plan of dealing with fraudulent purveyors of food. A term of imprisonment when such offences are repeated by the same person would be more likely to stamp out this pernicious evil.

St. John Ambulance Association.

The eighteenth annual report states that during the year the accounts show a surplus of £19 6*s*. 7*d*. Twenty classes have been held, but still the association appears to be but poorly supported, the subscriptions received from the members amounting only to £7 12*s*. Three more wheeled

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litters have been placed at the disposal of the city authorities at a cost of £36 to the local centre. It has been thought desirable that when on duty the members of the Birmingham corps should appear in some official clothing, and the question of uniform will be brought up at the annual meeting. Possibly some enthusiasm will be stimulated by an appropriate uniform.

Dec. 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Crematorium Company: Seventh Annual Report of the Council.

THE Liverpool Crematorium Company has now entered on its third year's working. The annual report of the Council states that 23 cremations have taken place during the year ending Sept. 30th, 1898, which compares favourably with 7 in the first year. The working account of the first year showed a loss of £239 4*s.* 2*d.* In the second year the loss has been £70 5*s.* 6*d.* Thus progress is evident, but so slow as to be disappointing and discouraging. Nevertheless, the evidence of belief in the system as manifested by its adoption in unexpected and most varied quarters and by persons of weighty character encourages the committee to recommend perseverance, many signs indicating that adverse sentiment is gradually though slowly yielding. They continue to believe that the maintenance of a well-conducted establishment must eventually lead to the wider adoption of a system against which none but sentimental objections can be brought. At every cremation the operation has been completely successful and the manager and his assistant have now become thoroughly familiar with the work. There is no present occasion to ask for contributions for maintenance on account of the loss on the year. The response to the committee's appeal last year was larger than was necessary to clear off the adverse balance then existing and the debt to the bank is only a little more than £10. The committee again urge the desirability of expending about £400 to complete the columbarium, which for want of funds has been left unfinished. The building, garden, and entire establishment are in perfect and pleasing order. The crematorium is a handsome Gothic structure and is considered to be the finest of its kind in this country. In the opinion of Dr. Hope, the medical officer of health of Liverpool, the crematoria at Milan and other places on the continent which he has visited are not so appropriately constructed as the one at Liverpool.

Proposed Small-pox Hospital at Fazakerley: Powers to Supervise Shippons.

The Port Sanitary and Hospitals Committee of the City Council have recommended the purchase of a site at Fazakerley containing 30,669 square yards for the purpose of erecting 2 pavilions, to contain 22 beds each, for the accommodation of small-pox patients, at a cost of £3500. The ground adjoins a site purchased by the corporation some time ago for hospital purposes. The cost of the pavilions and accessory buildings, including furnishing and drainage, is estimated at £20,000. The City Council, on the recommendation of the Health Committee, are about to apply to Parliament for powers to enable them to make provision for protecting the public against the spread of diseases by the sale within the city of the milk of cows with diseased or indurated udders and for taking samples of milk within the city for the purpose of bacteriological examination; also for the entry of the medical officer of health or a specially authorised inspector into any byres or cowsheds or other places within or beyond the city where cows are kept from which milk is sent for sale within the city; also, to examine the cows therein for the purpose of ascertaining whether such cows suffer from diseased or indurated udders and for preventing the milk of cows so affected being sent for sale within the city.

The new Northern Hospital: Completion of the Nurses' Home.

The Nurses' Home of the David Lewis Northern Hospital has now been completed. The home, which forms part of the scheme of the new hospital, is an imposing structure in red Ruabon brick. There are 3 floors, each with 20 bedrooms and a sitting-room, in addition to 2 smaller sitting-rooms. Each floor is supplied with bathrooms, lavatories, box-rooms, &c. In the basement are other box-rooms, kitchen, scullery, larder, and a room in which lessons will be given to the nurses in cookery for the sick. The building, which is light and lofty, is supplied with excellent heating and ventilating apparatus and the sanitary arrangements are admirable. The furnishing has been carried out in a tasteful manner.

The Liverpool Medical Institution and the Treatment of Tuberculosis.

Dr. T. R. Bradshaw proposed the following resolution at the last ordinary meeting of the above society:—

That a committee be appointed to consider what further steps can be taken for the prevention of tuberculosis in the city of Liverpool and for the treatment of the disease in the human subject.

Dr. Bradshaw suggested some of the subjects with which the committee might deal: (1) the dissemination of sound views as to the nature of phthisis, especially that it is communicable, preventable, and to a large extent curable; (2) the provision on an adequate scale of sanatoria in the country; (3) the more effectual control of the sources of infection; and (4) the desirability of adopting some form of notification. The resolution, in the unavoidable absence of Dr. E. W. Hope (the medical officer of health), was seconded by Dr. E. P. Manby (the assistant medical officer). The members who were selected to serve on the committee are: Dr. W. Macfie Campbell (the president), Dr. E. W. Hope, Dr. Thomas Clarke (chairman of the Hospitals Committee of the City Council), Dr. James Barr, Dr. William Carter, Dr. Caton, Dr. N. Raw, and Dr. T. R. Bradshaw who will act as secretary to the committee.

Annual Dinner of the North-Western Sanitary Inspectors' Association.

Mr. F. Vacher, medical officer of the Cheshire County Council, presided over the eleventh annual dinner of the North-Western and Midland Sanitary Inspectors' Association. The company was large and representative, including medical officers of health of important towns, the Mayors of Birkenhead, Wigan, and Crewe, Professor Boyce of University College, Liverpool, and others. Dr. William Carter, in proposing the toast of the "North-Western Centre," commented on the constitution of the newly formed board for the examination of sanitary inspectors in so far as there were no sanitary inspectors upon the board. He advocated incorporation on the part of the association so as to afford them a better opportunity of improving their position by such reforms as independence of tenure and more adequate remuneration. Mr. William Stansfield (chairman of the centre) and Mr. H. H. Spiers (the honorary secretary) replied. The latter mentioned that there were now 321 members on the roll of the association, being an increase of 72 over last year. The Mayor of Wigan alluded to the reforms which had of late years been effected in sanitary matters in Wigan. He referred more particularly to the destruction of insanitary property and the building of model dwellings. Stress was laid on strengthening the ties between medical officers of health and sanitary inspectors. Mr. T. E. Sampson, the coroner of Liverpool, in proposing "The Visitors" spoke of the marked improvement in the dwellings of the poorer classes in Liverpool, a change which had been greatly brought about by the work of the sanitary inspectors. Dr. Hope, the medical officer of health of Liverpool, remarked that the Liverpool Water Committee in their scheme for water wells were at present appointing qualified sanitary inspectors for the purpose of supervising the quality of the ground upon which their water fell. This was a very important opening for the sanitary inspector.

Presentation to the Ex-Mayor and Mayoress of Bootle.

Dr. J. McMurray, the late mayor of Bootle, was presented by a number of friends with his portrait painted in oils. The picture represents Dr. McMurray attired in academic costume and wearing his chain of office. Mrs. McMurray was at the same time presented with a star of large diamonds and a gold necklace set at intervals with pearls. Alderman Holding, the late Lord Mayor of Liverpool, presided over the proceedings.

Dec. 7th.

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SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The New President of the Royal College of Physicians of Edinburgh.

DR. JAMES ANDREW has been elected President of the Royal College of Physicians of Edinburgh for the ensuing year in succession to Sir John Batty Tuke whose term of office has expired. Dr. Andrew holds several of the minor medical appointments in the city and was formerly a physician to the Royal Hospital for Sick Children. He is a graduate of Edinburgh of 1866 and is actively engaged in general family practice.

The Outbreak of Typhus Fever in Edinburgh.

Since the report which appeared in THE LANCET last week seven additional cases have occurred and have been removed to the City Hospital. I regret to have to say that one of the nurses in attendance on the cases contracted fever and died. She had been for many years in the hospital and I understand was much valued and respected on account of her professional attainments, her high character, and her exemplary bearing.

The Princess Louise at the Queen Victoria Jubilee District Nursing Institution.

Her Royal Highness the Princess Louise visited the Edinburgh Branch of this institution last week and presented badges and medals to some of the nurses. Her Royal Highness always takes a warm and practical interest in the working of this institution.

Glasgow University.

Professor Adamson, LL.D., has been appointed by the Senate an assessor in the University Court for four years in succession to Professor Jack, LL.D., whose term of office has expired. The examinerships in chemistry, zoology, materia medica and therapeutics, and clinical medicine and clinical surgery are advertised as vacant.

"The Hospital Story of Glasgow."

A lecture on the above subject was delivered by Dr. Erskine to the Toynbee House Literary Society. The development of the hospital system was traced from the thirteenth century, at which date a hospital is known to have existed in the Polmadie district. An account of the Leper Hospital established in 1350 on the south of the Clyde was also given, and the lecturer referred to the death of Robert the Bruce as probably due to leprosy. Dr. Erskine further described the origin and progress of various existing institutions and concluded his lecture by urging the claims of the scheme of the Lord Provost for the rebuilding of the Royal Infirmary. A number of interesting maps, drawings, and photographs were exhibited.

Glasgow Victoria Infirmary.

The annual meeting of qualified contributors was held on Dec. 1st, Bailie James Dick in the chair. The report dealt with the progress of the hospital and with the more recent acquisition of a convalescent home. The vote of thanks to the medical and surgical staff was acknowledged by Dr. Alexander Napier, who referred to the value of the position of the hospital as an aid in the treatment of disease.

Faculty of Physicians and Surgeons, Glasgow.

The annual dinner of the Faculty was held on the evening of Dec. 2nd, the president, Dr. H. C. Cameron, being in the chair.—Mr. J. M. Cowan, B.A., M.B., B.C. Cantab., having passed the necessary examinations, has been elected a Fellow of the Faculty.—Mr. Ernest Thomson, M.D. Edin., has been appointed an Examiner in Physiology on the Scottish Conjoint Board.

Presentation to Dr. J. B. Russell.

Dr. J. B. Russell has been the recipient of a further testimonial in the shape of a silver tea service and reading desk presented to him by the staffs of the sanitary department and infectious diseases hospitals. In acknowledging the presentation Dr. Russell gave some amusing details of the difficulties encountered in the early days of the sanitary service and showed how gradually public confidence had been gained by the officials of the health department and hospitals.

Resignation of the Medical Health Officer of Paisley.

It has been known for some months that considerable friction has existed between the Paisley local authority and its medical officer and this has now culminated in the resignation of Dr. Donald. The dispute arose in connexion with an outbreak of enteric fever in the early summer which led Dr. Donald to recommend certain improvements in connexion with the distribution of the water-supply so as to prevent any possibility of contamination from the sewers. These recommendations were not adopted by the local authority. More recently a report on the bacteriological examination of the domestic water-supply has been made by Professor Frankland of Birmingham and though he has not detected the presence of the typhoid bacillus the presence of the colon bacillus was demonstrated in the majority of the samples. Professor Frankland denounces the arrangement condemned by Dr. Donald—the direct connexion of the water mains with the sewers by a valve which is opened for flushing purposes—as "an outrage on the principles of modern hygiene." It is in consequence of the unwarrantable opposition to the sanitary reforms which he has long advocated that Dr. Donald has intimated his determination to resign. The local authority has in the meantime postponed consideration of the question.

Poisoning by Ammonia Gas.

In the current number of the *Glasgow Medical Journal* Dr. T. K. Monro and Dr. Workman report two fatal cases following the inhalation of ammonia gas the result of the bursting of a pipe in connexion with a refrigerating apparatus. In each case the post-mortem examination revealed much congestion of the conjunctivæ and deeper tissues of the eyes, evidences of emphysema of the lungs, the bronchi and their sub-divisions being acutely inflamed and lined with a false membrane. The tongue and parts about the fauces presented a raw inflamed appearance, whilst the gullet was free from evidences of irritation, though some patches of congestion were present at the cardiac end of the stomach. The kidneys were acutely congested and the blood was dark and fluid.

St. Andrews University.

The University Court has issued a draft ordinance for (1) the foundation of a Berry chair of anatomy and (2) the foundation of a chair of physiology. The proposal has produced a somewhat angry discussion in the University Council, but in the end the Council decided to support the action of the Court. This decision is in harmony with the determination to provide at St. Andrews University a complete curriculum in the subjects of the first three years of medical study.

Aberdeen Hospitals.

In consequence of his appointment as gynæcologist at the Royal Infirmary Professor Stephenson (Professor of Midwifery in the University of Aberdeen) has resigned his position as surgeon at the Royal Hospital for Sick Children. The directors have accepted the resignation with regret.—The Town Council have made arrangements for giving on Dec. 20th a Christmas treat at the City Hospital (infectious diseases). There are at present about 170 patients in the hospital.

Extension of the Corporation Baths, Aberdeen.

The new wing at the Corporation Baths at the sea beach was opened this week. It contains a hot-room and Russian bath, with sitting- and lounge-room accommodation, sitz bath, and 12 plunge baths and lavatories. It also contains a boiler-room, with 2 steam-boilers and 4 copper water heaters, in connexion with which there is a chimney-stalk of ornamental brick. Like the rest of the buildings the new wing is composed of red compressed Welsh brick with white facings. The whole establishment was designed by Mr. John Rust, city architect, and Mr. John Ogilvie has acted throughout as inspector for the corporation. Altogether there are twenty-eight plunge baths and the total cost, including that of the large underground swimming pond recently opened, has been up to this date about £10,000. An esplanade is being formed out of the city refuse—to extend from the bath-house northward to the mouth of the River Don—and of this about a mile has already been constructed.

Aberdeen Medico-Chirurgical Society.

This society is now to obtain from the Town Council a disposition of the ground in King-street on which the

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society's hall, &c., stand. It is curious that although the ground was bought and the price paid in 1817 no title was then or since got. It is whispered that the society are to sell the present premises and move farther west. The late Sir James McGrigor (to whose memory the fine granite obelisk in Marischal College quadrangle was erected) had much to do with the society in its early days.

Dec. 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Medical Association.

THE Council of the Irish Medical Association held a meeting at the Royal College of Surgeons in Ireland on Nov. 29th, Sir Thornley Stoker, President of the association, being in the chair. Dr. Smyth of Naas gave an exposition of the grievances connected with the administration of the Irish Poor-law medical service, dividing his statement under the following heads: the mode of appointment, the want of promotion in the service, the issuing of dispensary tickets, the cost of travelling in dispensary districts, leave of absence for vacation, and superannuation. A special committee, which included Sir Thornley Stoker, was formed to consider and prepare a scheme tending towards the improvement of the Poor-law medical service.

Royal College of Surgeons in Ireland.

At the examinations for the Fellowship of the Royal College of Surgeons in Ireland which have just concluded no less than five candidates, including one lady, were admitted as Fellows.

Royal Hospital for Incurables, Dublin.

The Countess Cadogan opened the annual sale of work at the Royal Hospital for Incurables, Donnybrook, Dublin, on Dec. 1st, in the presence of a large number of visitors. Her Excellency was received by the authorities of the hospital and shown a sort of bazaar or fancy mart where a great variety of beautiful and useful articles produced by the patients of the institution were displayed. Her Excellency expressed much admiration for the patients' artistic work, especially the wood carvings.

The National Society for the Prevention of Cruelty to Children, Ireland.

The Registrar-General for Ireland, Dr. Grimshaw, presiding at a meeting in connexion with the National Society for the Prevention of Cruelty to Children, held on Dec. 4th, referred to the large extent to which gambling by means of insurance on the lives of children existed and emphasised the necessity for proper supervision by the authorities of places in which children were kept at nurse.

The Royal Victoria Hospital, Belfast.

At a meeting of the Executive Committee of the Royal Victoria Hospital on Dec. 2nd Mr. W. Henman, F.R.I.B.A., was appointed architect for the new hospital. He is the gentleman who designed the Birmingham Hospital. The balance-sheet presented by the accountants shows that, taking the sums paid or guaranteed to the building and endowment funds (with the outlay up to date), there remain £102,046 6*s.* 1*d.*

The Main Drainage System at Belfast.

A very influential deputation of residents and property owners on the two sides of Belfast Lough appeared before the City Corporation on Dec. 1st to solicit their consideration of some facts concerning the drainage system of Belfast and its deleterious effects upon their comfort, health, and property. They pointed out that before the present main drainage scheme was introduced the shores of the Belfast Lough were comparatively inodorous. Now during the summer months and on to October there is an appalling nauseating stench ever present in the nostrils of those who, unhappily, own property and reside in the vicinity of the Lough, and this stench, the deputation stated, is each year increasing in intensity and extending further down the Lough and is driving visitors and builders from the districts on each side. This disastrous state of affairs the deputation ascribed to the discharge of sewage into Belfast Lough without any attempt at filtration or chemical treatment and to the growth and decomposition by the sun and other factors of a certain class of seaweed which is generated and nourished by this deposit of sewage, and also owing to the tidal currents this sewage cannot be removed. The deputation recommended chemical treatment of the sewage and gave an interesting account of what is being done in this direction in London, Glasgow, Manchester, &c. Finally, the deputation urged the corporation to take immediate steps to abate such an appalling nuisance and preserve the residents of the city and those living upon the shores of the Lough from an inevitable recrudescence of the epidemic of typhoid fever which has so frequently been present in their midst. The Lord Bishop introduced the deputation and Mr. Andrews (chairman of the County Down Railway Company), and Dr. Letts (Professor of Chemistry, Queen's College, Belfast) having spoken the subject was referred to the Improvement and Public Health Committees for consideration.

The Health of Belfast.

At the monthly meeting of the corporation held on Dec. 1st it was reported that between Oct. 16th and Nov. 19th 600 cases of zymotic disease had been notified, 387 of typhoid fever, 98 simple continued fever, 94 scarlet fever, 44 diphtheria, 33 erysipelas, 9 membranous croup, and 2 puerperal fever. There were 118 deaths from zymotic diseases, 75 from phthisis, and 213 from diseases of the respiratory organs. The annual death-rate was 25·9. The number of cases of typhoid fever and the deaths therefrom have materially diminished, and the disease seems to be assuming its normal condition in the city, but, as the medical officer of health states, "it [typhoid fever] is rarely if ever absent from amongst us, and so long as this state of affairs remains a fresh outbreak may at any time occur; every care is being taken as far as possible to prevent this."

The Battle of the Clubs at Cork: the Present Position.

It is now very nearly three years since the battle of the clubs began at Cork and it is interesting to review some of the details of the fight up to date. It will be in the recollection of readers of THE LANCET that there were two grievances which the profession in Cork desired to have rectified. One was the small remuneration paid by the clubs; the other was that owing to the absence of a wage limit numbers of citizens who could well afford to pay ordinary fees joined the clubs and private practice was rapidly approaching the vanishing-point. Accordingly there was a meeting of the profession and it was decided that the medical men holding club appointments should resign and that the seniors of the profession should under no circumstances meet in consultation any medical man who might accept the vacated posts. On this decision being officially communicated to the various clubs nearly all of the latter joined together and determined if possible to defeat the combination of the profession. Advertisements were inserted inviting medical men to take up the appointments and it is regrettable to state that they found 4 members of the profession ready to come to their assistance. One of those had been practising in the city for a very short time and was not known to the majority of the local profession. The 3 others were imported from other districts. Club members filled nearly every post in the local newspaper offices and it is hardly to be wondered at that the editors of those papers espoused the cause of the clubs. The clubs met in solemn conclave and the combination of the medical men was denounced in all the moods and tenses. The newspapers were flooded with correspondence in which vituperation of the medical men was the prevailing note. But the latter calmly pursued the even tenour of their way. The mayor, Alderman Meade, who is also mayor for this year, was anxious to procure a compromise and at his instance a deputation from the profession met a deputation from the clubs. Negotiations proceeded smoothly till the club deputation announced as a *sine quâ non* that the medical men—the errant ones—should be taken into the fold of the local profession. The medical deputation at once replied that such a condition was entirely impossible, but at the urgent request of the mayor they decided on bringing the whole matter under the notice of their professional brethren. Accordingly they did so and the action of the deputation was unanimously and promptly endorsed. The fight was not long in progress when one of the imported men died and, later, another left the city. Meantime two or three of the clubs engaged their former

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medical officers on the terms fixed by the profession and the membership of others diminished by one-half, whilst many of the well-to-do members owing to the publicity given to their action became ashamed of their position and called in the assistance of the ordinary practitioners of the city. The two club medical officers met each other in consultation but club patients often realised the inconvenience of being unable to procure the advice of other practitioners and these two gentlemen were repeatedly obliged to submit to the indignity of resigning their cases into the hands of members of the local profession. So things went on till last week, when one of the two sent in his resignation of the clubs and announced his intention of leaving the city. The clubs state that his resignation is entirely due to family reasons, but for some time past it was freely stated that he found his position of isolation from his professional brethren very irksome. He was kept eternally on the move and no doubt time taught him what was the experience of the medical men who had resigned the clubs that club practice in Cork means "much cry and little wool." The clubs now are in a painfully perplexed condition. One of the newspapers which had been always a strenuous supporter of the clubs referring to the resignation says: "Like the case of the 'ten little nigger boys' they have dwindled down to one." But no one man can possibly cater for the medical wants of the clubs of Cork, neither can he hold a consultation with himself. All the newspapers have had leading articles holding out the flag of truce and suggesting that now is the time for compromise. Be it so. But only on the terms that a fair day's work is worth a fair day's wage.

Dec. 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Tetanus by Intracerebral Injections of Antitetanic Serum.

AT the meeting of the Society of Surgery held on Nov. 15th a discussion was opened upon the treatment of tetanus by intracerebral injections of antitetanic serum, a method of treatment which some two months ago seemed to promise such good results. Statistics brought forward by sundry surgeons, however, gave a most disappointing result. M. François Hue had treated a child, aged eleven years, who developed tetanus after a compound fracture of the forearm. Many injections were made but the child died, although the treatment was commenced immediately on the onset of the tetanic symptoms. M. Quénu had employed the method of MM. Roux and Barrel in 2 cases without success although in 1 case where the tetanic symptoms had only lasted two days the immediate results of the injections were good but the patient succumbed from pneumonia on the third day. M. Lucas Championnière had tried the treatment in 2 cases and had had 2 deaths. In one case of chronic tetanus the patient had recovered after one injection, but it must be remembered that patients do recover from the chronic form of tetanus. One surgeon stated that out of 7 cases he had seen 4 of the patients get well spontaneously. The results obtained by MM. Reclus, Chaput, Richelot, Hartmann, and Nélaton were all equally unsatisfactory. In all cases treated by them with antitetanic serum death supervened. M. Peyrot pointed out the difficulty of differentiating tetanus from cerebro-spinal meningitis and asked whether certain cases of tetanus reported as having been cured were not really cases of meningitis.

Unveiling of the Charcot Monument.

On Sunday morning, Dec. 4th, was unveiled the monument to Charcot on a site in front of the Salpêtrière. There were present M. Leygues (the Minister of Public Instruction), the President of the Academy of Sciences, the Director of the Assistance Publique, the President of the Municipal Council of Paris, the Prefect of the Seine, Dr. Jaccoud (the President of the Academy of Medicine), and Professor Brouardel (the Dean of the Faculty of Medicine and President of the monument committee). Many other scientific notabilities also attended the ceremony as well as the members of Charcot's family, of whom the son, Dr. Jean Charcot, married the granddaughter of Victor Hugo and is at present Professor of Clinical Medicine (*chef de clinique*) at the Faculty. The statue is by Falguières and shows Charcot standing upright with his left hand raised and touching with his right forefinger the head of a patient in front of him. The monument stands just to the left of the great gate leading into the hospital. It is in bronze and on the pedestal, which is perfectly plain, is this simple inscription: "A Charcot. Ses élèves, ses amis.—1898." Orations were delivered by Dr. Brouardel, by the President of the Municipal Council, by Professor Raymond (Charcot's successor at the Salpêtrière), and by Dr. Carnil. Dr. Gombaut, a fellow-worker with Charcot, has received the Legion of Honour.

Medical Qualifications in France and the Position of the Alien Medical Man.

In answer to your request for an explicit account of the position of the foreign medical man or foreign medical student I send you the following statement for the benefit of your readers:—Until quite recently there were two medical degrees in France—the *doctorat en médecine* and the *officiat de santé*. The possession of either of these conferred the right to practise, but there was a difference in the conditions under which this right was exercised. Before a student could begin to study for the *doctorat* he had to have gained the *baccalauréat ès lettres* and the *baccalauréat ès sciences*. After having graduated as a Doctor of Medicine he could practise his profession anywhere in France or in any French colony. For the *officiat de santé* the two *baccalauréats* were unnecessary. The medical studies, however, only differed very slightly, but they were less costly. But the *officier de santé* could only practise in one department, and if he wished to change from one department to another he had to pass another examination. This distinction has been done away with by a regulation passed in November, 1892, and the faculties of medicine no longer receive students for the degree of *officiat de santé*. Those who took this degree prior to 1893 are, however, still allowed to practise. The passing successfully through the course of study for the doctorate of medicine enables the student to take either of two forms of this degree, although there is but one course of study. The student can either take the *diplôme d'état*, giving the right to practise anywhere in France or her colonies, or else the *diplôme d'Université*, which has exactly the same scientific value but does not authorise the holder to practise outside France herself. This last diploma was inaugurated to remove certain abuses of privilege by which foreign students who had finished their studies in France under much easier conditions than natives were accustomed to set up in practice in their adopted country. Formerly it was much easier for a foreigner to practise medicine in France than for a native, for the French students had to break off in their medical studies for three years while going through the prescribed course of military service. The protest to which this state of matters gave rise resulted in a new regulation being made by which foreigners who wished to practise in France were allowed to do so as before under easy conditions, but they were only to receive the *diplôme d'Université*. To gain the *diplôme d'état* they have to submit to the same conditions as natives, that is to say, before commencing their medical studies they must pass for the degree of bachelor (*bachelier d'enseignement secondaire français*), then they have to pass a second examination in physics, chemistry, and natural sciences. This latter examination is a new one and without having passed it no one will in future be able to study medicine. To sum up, a foreigner who wishes to pursue his medical studies in France can choose either of two diplomas. If he desires the *diplôme d'état* giving him the right to practise in France he must undergo the same examinations as a native Frenchman, and before commencing his medical studies must pass the same preliminary examinations, the one for the degree of bachelor (*baccalauréat de l'examen secondaire classique*) and the examination in physics and chemistry. Nothing excuses him from these examinations even though he be the possessor of high degrees in his own country. Not even a doctor in medicine of the first-class English universities can practise in France unless he has passed the above-mentioned examinations. If he wishes to obtain the degree of doctor in medicine merely as an honour without wishing to practise in France he must undergo the same course of study as any other student, but there are certain exceptions. Students of foreign universities who can show testamurs from their university duly translated into French and properly authenticated are excused

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the preliminary examinations and sometimes even the first of their medical examinations, according to the point at which they have arrived in their studies in their own country. Those who have already graduated as doctors of medicine are let off still more easily. If they produce a copy of their testamur translated into French and duly authenticated they are excused the examination in anatomy, physiology, and histology. In fact, they commence their studies as a French third year's student. Being excused examinations, however, does not mean being excused fees. The expenses of foreigners and Frenchmen are exactly the same, however many examinations the former may be let off even when they only want an honorary degree. The total sum is 1385 francs, of which 760 francs are accounted for by entrance fee for four years' study. 385 francs by seven examinations at 55 francs each, and 240 francs by fees for a thesis.

Dec. 5th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Italian Precautions against Pestis Bubonica.

ON board the Peninsular and Oriental liner *Caledonia* proceeding from Bombay and timed to touch at Naples two cases of pestis bubonica were reported *en route*. The Neapolitan sanitary authorities on being advised to this effect made every arrangement for meeting the infected ship in blue water so as to arrest her course and have her conducted to the island-station of Asinara under escort of a war-vessel. The *Caledonia*, however, gave Naples a wide berth and on leaving Port Said steered direct to London.

Recrudescence of Psittacosis.

In the spring of last year I drew attention to the epidemic of infective pneumonia at Genoa, an outbreak which numbered 14 victims and which was traced by the Municipal Board of Hygiene to parrots kept as domestic pets. Cases of an identical form of pneumonia ascribed to the same source had also occurred in Florence and the Genoese Town Council, acting on the advice of its medical referee, issued a circular prohibiting the keeping of parrots in private houses. Since then there has been no recurrence of the epidemic in that quarter, but the traffic in these domestic pets—a considerable one between South America and the ports of the Mediterranean—continues and, diverted from Genoa by the municipal veto, has found markets farther inland. In the Julian Venetia, in the province of Udine, there has been a serious outbreak of infective pneumonia and in one house in Beano (commune of Rivolto) three inmates fell victims to the disease and two of them are dead. On investigation it was found that under the same roof two parrots harboured as domestic pets had died shortly before from the pulmonary disorder and that they had formed part of a consignment of these birds lately imported from South America. Dr. Rovere of the Sanitary Office on becoming aware of the facts had an inquiry instituted, and the provincial medical officer in his report fully confirmed the identity of the disease with that previously manifested at Genoa and Florence. Rigorous measures were accordingly enforced to prohibit the keeping of parrots by private individuals in the commune. The whole subject acquires a special significance in view of the growing conviction that mankind runs far more risks to health and life from contact with the lower animals than till lately was suspected. The cow as a source of tuberculous disease has long been notorious, but it was only the other day, so to speak, that the rat in pestis bubonica and the mosquito in malaria were discovered to enter so largely into the etiology of these disorders. And now we have proof positive of the parrot's agency in causing at least one form of infective pneumonia. The moral to be deduced from the above-indicated phenomena points to a still wider and deeper recognition of nature-study in the medical man's equipment—confirms, in fact, the Hippocratic doctrine that the study of disease belongs to natural history and drives it home with a relevance and a cogency of which the Father of Medicine never dreamed.

Dec. 3rd.

Obituary.

WILLIAM THOMAS WYATT, M.A., M.D. OXON.

DR. WILLIAM THOMAS WYATT, who died at Worthing on Nov. 7th, 1898, was the only son of Sir William Henry Wyatt, J.P. and D.L., and was born in London in 1854. He was educated at Lancing and at Exeter College, Oxford, graduated B.A. with first-class honours in Natural Science in 1876 and M.A. in 1880, when he also took the M.B. degree and proceeded to the M.D. in 1883. His graduation thesis, which was published, dealt with the Pathology and Treatment of Diabetes, the malady which prematurely caused his own death. He became a Member of the Royal College of Surgeons of England in 1879. His medical education was received at St. Bartholomew's Hospital, where his record as a student and after graduation speaks for itself. He was scholar in Anatomy and Physiology in 1877, first prizeman in 1878, and Kirkes' gold medalist. He also held the posts of house surgeon and house physician at the hospital, after which he started in general practice and for about twelve years conducted a large good-class private practice in Stoke Newington, to one of the well-known charities in which district, the Invalid Asylum for Women, Stamford-hill, he was consulting surgeon. During this period also he was an active member of the Æsculapian Society and one of its earliest and most able presidents. His death is a cause of sorrow to many of the members of that society and will recall a period of its existence fraught in the memory of the survivors with many pleasant recollections of the good work which Dr. Wyatt did for it. Some years ago the malady from which he suffered rendered it inexpedient for him to continue his life of activity and he left London to reside at Worthing, hoping he might there do some consulting work for which his abilities eminently qualified him. His health, however, continued to deteriorate and frustrated this desire. He has left a son, two daughters, and a widow to whose care he, humanly speaking, owed some prolongation of his all too short life.

WILLIAM FREDERICK CLEVELAND, M.D. ST. AND.

DR. CLEVELAND who died very suddenly at his residence in Maida Vale from fatty degeneration of the heart on Nov. 24th was one of the most prominent practitioners in that part of the metropolis. He was a native of Suffolk, having been born at Lowestoft in 1823. His medical education was received at Guy's Hospital and in 1846 he became qualified as M.R.C.S. Eng. and L.S.A. In 1862 he graduated as M.D. at St. Andrews University, and at the time of his death he was president of the St. Andrews Medical Graduates' Association, his membership dating from the establishment of the association in 1867. He gave much time to the work of the Obstetrical Society of London and the Harveian Society of London, the value of his services being indicated by his election to be vice-president of the former and president of the latter society. Dr. Cleveland filled several offices in connexion with the British Medical Association. In 1890 he was elected president of the Metropolitan Counties Branch; he was also president of the Ethical Section when the Association met in London in 1895 and his address on Medical Ethics delivered on that occasion was published in THE LANCET of August 3rd, 1895. Dr. Cleveland had practised in Maida Vale since about 1852 and was very popular both with his patients and his professional colleagues.

THE VACCINATION ACT, 1898.—At the meeting of the Honiton Board of Guardians, held on Nov. 26th, it was unanimously resolved, on the motion of Mr. H. Ford (the vice-chairman), to invite all other boards of guardians to join in a petition to both Houses of Parliament, the Local Government Board, and the County Council urging that the new Vaccination Act should be reconsidered with a view to being repealed without delay. Mr. H. Marker (the chairman), who seconded the resolution, spoke strongly against the Act and urged the guardians individually to do all they could to get people to have their children vaccinated.

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THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WEDNESDAY, NOV. 30TH.

THE Council met this day, Sir WILLIAM TURNER, President, being in the chair, and proceeded with the business of the session.

The Preliminary Examinations.

Dr. PETTIGREW said he wished to make an explanation with regard to what had taken place yesterday during the debate on the preliminary examinations. He had stated that in the Scottish universities double marks or double values were assigned to Latin, Greek, and mathematics in preference over other subjects and the statement had been challenged. Since making the statement he had telegraphed to the secretary of St. Andrews University asking, "Are double marks given in Latin, Greek, and mathematics in the Scottish universities? if so, quote ordinance;" and had received a reply to the effect that Latin, Greek, and mathematics and also English counted double under Ordinance 57, Section 12.

Dr. MCVAIL said it was perfectly true that a higher value was attached to these subjects than to a modern language. That might be right or it might be wrong, but it did not in the least degree affect the question which had been discussed by the Council. The facts, indeed, went to show that the Scottish Universities held a higher class examination than the other bodies.

Alterations in the Council Buildings.

The following report on this subject by the President and Treasurers was received and adopted, viz.:—

The President and Treasurers have to report that satisfactory plans for the addition of another storey to the Oxford-street building have been prepared and are now laid before the Council. They also report that estimates of cost have been obtained from two good firms of contractors — viz., from Messrs. Higgs and Hill, the builders of the Council chamber, for £2349, and from Messrs. Holloway Brothers for £2350, the difference between the two estimates being only £1. Under these circumstances the President and Treasurers suggest that the contract should be given to Messrs. Higgs and Hill. They also advise the Council to accept with thanks the offer of the English Branch Council to advance the capital required at 3 per cent. to the extent of £3000, if required, seeing that the expense of lighting and furnishing the new rooms has likewise to be met. They believe that the suggested alterations of the premises will satisfactorily supply the requirements of the Council. They wish to add that Mr. Rogers, the Council's tenant at 16, Hanover-square, has stated by letter that he will not raise any objection to the raising of the Council's premises, and accordingly the new work will commence at once and be completed by the next session.

Foreign Practitioners.

On the suggestion of the PRESIDENT the consideration of the amended statement prepared by the Executive Committee as to the position of foreign practitioners in the United Kingdom was postponed until the next session of the Council.

Amended Standing Order.

The following amended Standing Order was adopted on the motion of the PRESIDENT, viz.:—

Where it is reported to, or otherwise brought to the attention of, the President or the General Registrar that a registered medical practitioner has been convicted of a felony, misdemeanour, crime, or offence, the matter shall, under the direction of the President, be referred to the Penal Cases Committee for report to the Council, unless in any special instance the President shall deem it desirable to refer the matter to the consideration of a Branch Council, and the Penal Cases Committee or the Branch Council shall, if in their opinion the nature of the conviction renders such a course necessary, not only report the fact of the conviction to the Council, but also direct that the usual notice or summons be sent to the convicted practitioner under Clause 6 of the Standing Orders.

The New Pharmacopœia.

Dr. LEECH presented the following report, viz.:—

The Pharmacopœia Committee beg leave to report that of the first issue of the British Pharmacopœia of 1898, the distribution of which commenced on May 7th last, 18,500 copies were sold before the end of September. As it seemed certain that the remaining stock would be exhausted before the November session of the Council it was thought desirable to print 1500 additional copies, and this opportunity was taken to insert a short list of corrections of manifest errors and misprints. Up to the present time 20,500 copies have been sold, and as only 1000 copies now remain in stock the committee think it desirable that a further issue of 5000 should be ordered. The Pharmacopœia of 1898 seems to have proved acceptable to the medical profession generally and it has likewise been well received by pharmacists. The committee are of opinion that some of the criticisms of the Pharmacopœia should be investigated and reported on by experts and suggest that arrangements should be made for carrying out such investigations and also for accumulating information for the next publication of a Pharmacopœia. They recommend that Dr. Attfield be asked to report on the criticisms passed on the Pharmacopœia and on the progress of pharmacy and pharmaceutical chemistry during the years 1897 and 1898. They recommend also that the pharmaceutical societies be invited by the Council to coöperate in these inquiries and investigations. These societies might be invited by the Council to appoint representatives to confer with members of the Pharmacopœia Committee and the Pharmacopœia Committee should have the power to appoint experts in pharmacy and pharmaceutical chemistry to report upon matters deemed worthy of investigation. The committee further suggest that Dr. Tirard should be requested to act as reporter to the Pharmacopœia Committee on advances in pharmacology and therapeutics bearing on the Pharmacopœia. Some progress has been made with the Indian and Colonial Addendum. It will be remembered that twenty-eight bodies sent in recommendations and suggestions through the Privy Council relative to new remedies or to changes in descriptions and processes desired for recognition in India and the colonies. Many of the suggestions were adopted in the *British Pharmacopœia* of 1898. Others were dealt with in an appendix. The remainder, connected for the most part with recommendations concerning new drugs, were reserved to be dealt with in connexion with an addendum. The drugs recommended for introduction have been carefully examined and described under the direction of the Pharmacopœia Committee and suggestions have been drawn up with regard to preparations which may be required. It is proposed that these descriptions and suggestions, embodied in a report from the committee, shall be forwarded to the Indian and colonial medical authorities, through the Privy Council, and also to other medical and pharmaceutical experts in India and the colonies, with the view of obtaining further suggestions and criticisms prior to the production of the Indian and Colonial Addendum.

Dr. LEECH, in moving the adoption of the report, spoke of the favourable reception accorded to the new Pharmacopœia. In the first six months after its issue as many copies were sold as were sold in twelve months of the Pharmacopœia of 1885. It had been accepted in Canada as well as in the colony of Natal and in Victoria. Indeed, he might say that the new Pharmacopœia had proved specially acceptable in Australia. In the way of dealing with criticisms and accumulating matter for another Pharmacopœia the committee considered that something more should be done than was done after the issue of the 1885 volume; hence the suggestions now made. They proposed that the Pharmaceutical societies should be asked to coöperate from the first and that the Pharmaceutical Society of Ireland as well as that of Great Britain should be asked to give aid. Further they proposed that instead of proceeding independently the societies and the committee should confer together.

Mr. BRUDENELL CARTER seconded the motion.

The report and the suggestions contained in it were adopted by the Council.

Sitting in Camerâ.

The Council sat *in camerâ* for over three hours discussing various legal questions, assisted by Mr. Muir Mackenzie and Mr. Farrer.

The Programme of Business.

A motion proposed by Mr. HORSLEY and seconded by Mr. BROWN that members of the profession visiting the session of the Council should be furnished with a copy of the daily programme of business was negatived.

The Council then adjourned.

THURSDAY, DEC. 1ST.

The final meeting of the session was held to-day, Sir WILLIAM TURNER being in the chair.

Fraudulent Personation.

The PRESIDENT announced that the following motion, moved by Mr. HORSLEY and seconded by Mr. BROWN, was passed yesterday while the Council sat *in camerâ*—viz.: "That the Executive Committee be instructed to report upon means to secure the identification of registered medical and dental practitioners and to prevent fraudulent personation of such practitioners."

The Preliminary Examinations.

The PRESIDENT said that he had received two telegrams with reference to what took place in the Council in connexion with the mode in which the Scottish universities conducted their preliminary examinations. The first was from Professor Butcher of Edinburgh who was one of the Scottish Universities Commissioners and was as follows: "Question of double marks for English, classics, and mathematics has no relation to preliminary examination but only to award of bursaries which are competitive examinations for university distinctions. Yet in these awards modern languages count far more than in English universities." The other telegram

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was from Professor Stewart, Clerk of the Senate of the University of Glasgow, and was to this effect, viz.: "Amazed at yesterday's proceedings. Ordinance No. 57 applies to bursaries only and has nothing whatever to do with the joint board or with arts or medical preliminary. In the preliminary examinations there is no such differentiation of marks and each subject has 100 for its maximum. Modern and ancient languages stand on equal footing."

Dr. PETTIGREW said he had made his statement under a misapprehension and desired to withdraw it. The point, however, which he wished to make was that this double marking had the effect of keeping back secondary teaching in Scotland.

Later in the day Dr. PETTIGREW asked leave to make a further explanation. He asked the Council to bear with him because he felt he had not done justice to the subject, the telegrams having taken him by surprise.

The PRESIDENT said that the question could not now be reopened.

Dr. PETTIGREW submitted that what he had to say would come in very well at this stage. This marking no doubt applied only to bursary examinations, but these examinations attracted students to the universities.

The PRESIDENT insisted that the subject must be allowed to drop.

Dr. PETTIGREW resumed his seat, protesting that he ought to be allowed to make an explanation and that it was not fair to suppress it.

The Employment of Unqualified Assistants.

On the motion of Mr. TEALE (chairman) there was received and entered on the minutes the following report from the committee appointed on Nov. 22nd to consider certain communications referring to the employment of unqualified assistants:—

1. The committee have given their careful consideration to a letter from the Lord President of the Privy Council, dated August 4th, 1898, enclosing a complaint from Mr. F. A. Wild, and requesting that it might be dealt with by the Medical Council. Mr. Wild states that he was until recently employed as an unqualified assistant by a registered practitioner and alleges that in consequence of the Council's recent notice he was harshly treated in being dismissed at two days' notice from his employment after a service of sixteen years.

A number of other communications addressed to the Council by persons alleging similar grievances in consequence of the same notice have also been considered by the committee.

These cases appear to be all of the same nature as those dealt with in your committee's report to the Council of last session (Minutes, vol. xxxv., p. 128), and they raise the same points as those which were then replied to under the heading of Question iii. in that report.

In so far as they contain requests that the Council should intervene with the object of procuring the reinstatement or re-employment of such unqualified persons as assistants the answer must obviously be the same as that adopted by the Council last session—namely: "That it is not within the province of the Council to take any steps in this direction."

These and other communications which have come to the notice of the committee make it plain that the evils against which the recent action of the Council was directed were more widespread and deeply rooted than was probably realised either by the profession or the public. The removal of such evils must of necessity involve in some cases the disturbance of old-standing but illegitimate arrangements and a certain amount of temporary difficulty or even hardship to the individuals concerned. But notwithstanding this inevitable consequence the committee are convinced that the paramount duty of the Council in regard to the public in general rendered it urgently necessary that the law should be more strictly enforced.

The committee accordingly recommended that the President be requested to convey to the Lord President of the Privy Council and to the other persons who have addressed the Council on the subject herein dealt with the substance of the foregoing remarks.

2. The committee have had referred to them the following communication from the Gateshead Medical Association:—

Gateshead Medical Association, Cotfield House, Gateshead,
Oct. 19th, 1898.

SIR,—At a meeting on Oct. 4th, 1898, of twenty-two practitioners, members of the above association, which includes every practitioner in this town, the subject of the Council's notice *re* unqualified assistants came up for discussion. So much diversity of opinion was manifested as to the meaning of this notice, and the subject is of such great importance to us, that it was resolved to ask the direct opinion of the Council on the following points.

We would respectfully urge that it will be quite useless to refer us to the notice already mentioned. That document was before us at our meeting, but was of no use in settling the points we now lay before you. We would submit that distinct definitions by the Council of the terms particularly mentioned would not only be of great use to the profession, but are due to us in order that we may carry out the exact intentions of the Council.

1. What is meant by a *bonâ-fide* medical student?
(*a*) Is *any* man who has registered as a student, but has not yet passed his final examination, a *bonâ-fide* student? or, if not,
(*b*) How many years must elapse after registration as a student before a man ceases to be a *bonâ-fide* student?
2. What is exactly meant by proper training and instruction of students when applied to pupilage?
(*a*) How long may a student be a pupil?
(*b*) May he be paid any salary?
(*c*) Would board and lodgings be considered as salary?
(*d*) May a pupil be allowed in any case at all to see a case of sickness in the absence of his principal? or
(*e*) Must he in *all* cases be accompanied by his principal?
(*f*) Can the pupil attend a midwifery case alone? If not, what difference does the Council see between the medical schools which allow students to do so and a medical man in private practice who follows their example as regards his pupil?

These questions, Sir, are not asked in any carping spirit or with any intention of questioning the wisdom of the Council's action. We ask them because we find men honestly anxious to carry out the wishes of the Council with widely differing ideas of the Council's meaning.

One man believes that a pupil must only be allowed to attend a case along with his principal, another thinks that if the principal supervise the case the student may visit alone at the practitioner's discretion. Then, again, we are all at sea as to the exact meaning of "*bonâ-fide* student."

Trusting that the Council will see its way to a definite pronouncement on these points,

I am, Sir,
On behalf of the Gateshead Medical Association,
Yours obediently,
ALFRED COX, M.B., B.S. Durham.

The President of the General Medical Council.

This communication has reference to a portion of the final clause of the Council's notice of Nov. 2nd, 1897 (Minutes, vol. xxxiv., p. 122), which states that the notice does not apply "so as to restrict the proper training and instruction of *bonâ-fide* medical students as pupils ..... under the immediate personal supervision of registered medical practitioners."

It appears to the committee highly inexpedient for the Council to issue formal definitions of the terms used in this clause. These terms are obviously employed in their ordinary and natural sense. The students referred to are such as are honestly pursuing their medical studies with a view to obtaining a qualification in the regular course. The primary purpose of the clause is to facilitate the training and instruction of such students during their pupilage in the practice of medicine, surgery, and midwifery, and so to give effect to the recommendations issued by the Council with reference to the five years' course of medical study (Minutes, vol. xxx., p. 82). One of these recommendations is as follows: "The fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act, 1858, provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting practical knowledge as shall be satisfactory to the medical authorities."

The duty of a registered practitioner who, in pursuance of this recommendation, undertakes to train and instruct pupils in the practical parts of their profession is obviously two-fold. By his "immediate personal supervision" he must ensure, on the one hand, that his pupils are properly taught, and, on the other, that the welfare of his patients is in no way prejudiced. Supervision which fails to secure both these ends must be regarded as inadequate and the responsibility for such failure must rest with the registered practitioner.

With regard to the training of pupils in practical midwifery the Council has given a sufficient indication of its meaning in its resolution of June 9th, 1896 (Minutes, vol. xxxiii., p. 79). By this resolution it is laid down that every medical student (other than one who has attended the indoor practice of a lying-in hospital) shall, before admission to his final examination, produce a certificate to the following effect:—

"I hereby certify that.....
has personally attended [ ] cases of labour under my supervision, of which [ ] were conducted by him in my presence. Also that he attended under my supervision the women in question during the puerperal period.

".....
"*Registered Medical Practitioner.*"

The committee are therefore of opinion that enough information has already been given to guide any registered practitioner whose purpose is in good faith to afford proper training to his pupils in connexion with his own practice. To go beyond this, by formulating definitions on such matters as *bona fides* and the nature and extent of the supervision that should be exercised, would serve no good purpose in regard to the interests of sound medical training. On the other hand, definitions of the kind might do harm if they led practitioners to have regard to the letter only and not to the spirit of the Council's declarations. Questions of good faith and the like cannot be settled merely by reference to verbal definitions; and it is impossible so to frame general statements of this nature that they shall be applicable to all cases and circumstances. Each particular case as it comes before the Council must be dealt with on its merits and with due regard to all the evidence adduced.

Mr. TEALE, in moving the adoption of the report, said that the intention of the Council in connexion with this matter was to act justly both to the profession and the public, that it intended these to be laid down rather as general principles than as actual details, and that it would deal with any cases absolutely fairly and on principles of common sense. As he had said before there had been a kind of panic in the profession which had exaggerated the supposed effect of the Council's regulations and he thought if they loyally and carefully studied this report, which reaffirmed perhaps in a little more detail the principles in which the Council wished the profession to practise, no serious harm would come to anyone.

Mr. BRYANT, seconding the report, spoke of it as a remarkably good one and expressed the hope that the profession would accept it in the spirit in which it was offered.

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Dr. MACALISTER suggested that in the certificate they should insert within the brackets "not less than 20."

The suggestion was adopted and the report thus amended was agreed to by the Council.

New Colonial Medical Ordinance.

On the motion of Sir JOHN BATTY TUKE there was received and entered on the minutes the following report from the Education Committee on the Medical Ordinance, 1898, of the Colony of Trinidad, viz. :—

The Executive Committee has referred the following letter, and the Medical Ordinance, 1898, of the colony of Trinidad, to the Education Committee for consideration and report:—

Downing-street, Nov. 9th, 1898.

SIR,—With reference to your letter No. 2895 of the 5th of December, 1887, I am directed by Mr. Secretary Chamberlain to transmit to you, for the consideration of the General Council of Medical Education and Registration, a copy of the Medical Ordinance, 1898, of the colony of Trinidad, together with a copy of the Colonial Attorney-General's report thereon, and to inform you that he will be much obliged for any observations which your Council may be good enough to offer upon this ordinance, which is understood to be in accordance with the views of the medical profession in Trinidad.

I am, Sir, your obedient servant,

The Registrar of the General Council of Medical Education and Registration. C. P. LUCAS.

The committee has to report that the ordinance has no bearing on medical education; it provides for the regulation of the practice of medicine and surgery, dentistry and midwifery, the compounding and selling of drugs and medicines. Notwithstanding, in compliance with the request of the Executive Committee the Education Committee submits to the Council the following abstract of the ordinance. It provides—

(*a*) For the establishment of a Medical Board consisting of persons of good character holding "any medical diploma or licence in respect of which he may be entitled to be registered as a medical practitioner in Great Britain or Ireland."

(*b*) For the election of a Council, consisting of a president, vice-president, secretary, and treasurer, and three members of the Medical Board, "to which shall be delegated such of their powers and duties as are by this ordinance vested in the board as to the board may seem fit." It is lawful for the board *(inter alia)* to make and pass by-laws "for the good rule and government of the members, and the affairs of the board, for regulating the manner of applying and using the funds of the board, for regulating the appointment of examiners for the licensing of druggists and midwives," and "for the doing of such further matters and things not inconsistent with the provisions of the ordinance, as may be deemed expedient and necessary for carrying the same into effect. And thereby to appoint such fines, not exceeding in any case £5, as they deem necessary for the prevention and suppression of offences against any such by-laws."

(*c*) For the sale of drugs and poisons.

(*d*) That "any person, not being a member of the board, who shall after the passing of this ordinance practise medicine or surgery or perform any surgical operation, or give any medical opinion or advice, or prescribe any medical or surgical treatment within this island, in respect of which he shall demand or receive any fee or gratuity, or any remuneration, profit, or compensation under pretext of services rendered, loss of time, travelling or other expenses, under any pretext whatever," and that any person who shall wilfully and falsely pretend to be, or use any medical or surgical title, or "assumes any other step [? style], title, designation, or description implying that he is qualified to practise medicine, surgery, or midwifery," shall be liable to forfeit for the first offence £20, and in default to be imprisoned with or without hard labour for any term not exceeding three months, and for a second or subsequent offence £50, or imprisonment for not more than six months. A similar provision is made to protect dentists.

(*e*) That the Council shall have authority to grant licences as druggists or midwives to persons of good character and who shall give proofs, by examination, of study and training that they are fit and proper persons to act as druggists and midwives.

The ordinance comprises much that does not appertain to the medical profession.

The ordinance has been passed by the Governor and Legislative Council of Trinidad and Tobago and has been approved of by the Colonial Attorney-General.

The committee recommends the Council to intimate to the Right Honourable the Secretary of State for the Colonies that it fully approves of the provisions of the ordinance in so far as they apply to the good rule and government of the medical profession and of dentists in the colony of Trinidad and the protection of the public from the dangers of unqualified practice.

Sir JOHN BATTY TUKE moved the adoption of the report and of the recommendation contained in it.

Dr. MACALISTER, in seconding the motion, said that this was probably the most stringent medical ordinance or Act enforced in the empire. He could well imagine that many members of that Council at least would be glad of anything half so strong that could be introduced into the United Kingdom and he congratulated the enlightened administrators of Trinidad that they had seen that the protection of the public urgently called for something of this kind.

Mr. BROWN said he trusted that this ordinance might be made the basis of legislation in this country for the amendment of the Medical Acts.

Sir RICHARD THORNE said he hoped it would be noticed—and especially by the promoters of the Midwives Bill—that according to this ordinance licences were only to be given in the case of midwives to persons of good character and who gave proofs by examination of study and training that they were fit and proper persons to act as midwives. This was a precedent of the very greatest importance.

The motion was adopted by the Council.

Instruction on Vaccination.

Sir JOHN BATTY TUKE moved and Dr. MACALISTER seconded the motion that the following report by the Education Committee on the instruction of students in vaccination under the new Vaccination Act be received and entered on the minutes, viz. :—

The following communication from Mr. Teale has been referred to the Education Committee by the President for consideration and report:—

"38, Cookridge-street, Leeds,
"September 23, 1898.

"Dear Mr. Allen,—Mr. Scattergood, dean of our medical department, has just heard that the vaccination stations are likely to be abolished under the new Vaccination Act, and he asks me what will have to be done for the instruction of students in vaccination as required by the Medical Council.

"Have you any knowledge of this question?

"Yours truly,
"T. PRIDGIN TEALE."

The committee has had the advantage of an interview with Sir Richard Thorne, K.C.B., principal medical officer of the Local Government Board, at which the question involved was considered. The committee was informed that arrangements were under consideration by which the difficulties raised by recent legislation might be obviated and that the Council would be informed of their nature as soon as they were matured.

Sir RICHARD THORNE said the Council was probably aware that a certain number of public vaccinators in this country were chosen as teachers of vaccination and that all the licensing bodies had decided that they would only accept for the purposes of their licences a certificate which was received from one of the teachers whom the Local Government Board had appointed. Formerly they used to receive them from all the general practitioners in the country and then it was so perfectly obvious to the Local Government Board that many of these certificates were not worth the paper they were written upon that the Local Government Board were unable to accept these certificates for the purpose of public appointments. The consequence was that registered medical practitioners had, so to speak, to go to school again to learn vaccination. That had necessitated the appointment of stations where this could be done and under the new Vaccination Act these stations were practically abolished except under one special clause where they might be retained in the presence of an epidemic of small-pox or other exceptional circumstance. These stations were maintained almost exclusively at the cost of the rates and having already been abolished the Government felt it would not be right to require boards of guardians to maintain these stations at their cost simply for the purpose of teaching medical students. The consequence was that some other arrangement would have to be made. He need not tell the Council precisely what had been done, but he might say that Mr. Chaplin was fully aware of the responsibility which had been assumed by the Local Government Board now that they had tacitly assented, as to speak, to all the licensing bodies requiring a certificate from one of their teachers and he felt the need for such arrangements as would maintain these stations in a position in which they would be able to given these certificates. He (Sir Richard Thorne) hoped that this would shortly be finally settled and then he believed some communication would be made to the deans of all the medical schools in the country.

The PRESIDENT said that this difficulty in Leeds had also been experienced in Edinburgh; they wanted to know where the men would get the certificates.

Sir RICHARD THORNE said the Bill did not in the slightest degree alter the circumstances of Edinburgh. In Scotland they had a domiciliary system which had been lauded so much that England had been compelled to adopt it.

The PRESIDENT explained that they had 3 or 4 stations in Edinburgh.

Dr. REID said there was one in Aberdeen.

Dr. GLOVER moved as an amendment:—

That it be a representation of the Medical Council to the examining bodies that the Council is concerned to find that the recent alterations in the Vaccination Acts may involve changes in the administration of the Acts unfavourable to proper instruction in vaccination in England and would ask the special attention of the bodies to the adoption of means for meeting this state of matters and especially to the possibility of recognising under proper conditions and restrictions instruction in vaccination by private practitioners.

He said that they all regretted the wholesale breakdown in the arrangements for public vaccination in this country and looked with anxiety to the result of the recent remarkable

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legislation. One chief hope of the country in the matter was in the private influence of the medical profession. Their own regulations recognised that in his fifth year the student might take instruction from a registered practitioner. If there was one thing which a practitioner might be thought capable of teaching it was how to vaccinate an infant. He did not propose to ask the qualifying bodies to recognise the instruction of every practitioner but only the instruction of those practitioners who could satisfy the bodies that they had the means and material of teaching and who undertook to give such instruction carefully. He might say that in Ireland all dispensary officers were public vaccinators and could give certificates of instruction in vaccination which were recognised by the Royal University of Ireland.

The PRESIDENT said that what Dr. Glover proposed was scarcely an amendment but really an independent motion.

Dr. GLOVER said he was quite willing so to regard it.

The Council agreed to receive the report of the committee and enter it on the minutes.

Dr. GLOVER thereafter moved the adoption of his resolution which he insisted was a most reasonable proposition.

Dr. BRUCE seconded the resolution.

Mr. CARTER appealed to Dr. Glover to defer his resolution to the next session of the Council, saying it would be better to make no change until they knew precisely the arrangements proposed by the Local Government Board. If those arrangements were satisfactory and complete, well and good; if they left any opening for additional certification then would be the time for such a resolution.

Mr. BROWN said that Dr. Glover was doing a good thing in calling attention to this matter and he hoped that under the altered conditions the Local Government Board would see its way to recognise this tuition.

The PRESIDENT said that the point raised was a very important one. He recollected that many years ago when he was Dean of the Faculty of Medicine in the University of Edinburgh it had to be considered because they found that their graduates who were not provided with a certificate which was recognised by the Local Government Board had difficulty with regard to obtaining appointments—Poor-law appointments and so on. The matter was brought up and they passed a regulation under which every candidate must produce a certificate from a vaccine department in a hospital, dispensary, or other public institution recognised by the Local Government Board for instruction in vaccination. That was their rule at the present time. They had in Edinburgh three of these recognised vaccine departments, but of course they took certificates from other vaccine departments.

Dr. REID said it was the same in the University of Aberdeen.

Dr. MACALISTER said that Dr. Glover's resolution, if it was to have any effect whatever, ought to be addressed not to the licensing bodies but to the Local Government Board who had the key of the position. If the Board did not choose to recognise vaccination instruction given by a private practitioner the licensing body could say nothing to it. To ask the licensing bodies to intervene in this respect would only be to ask them to stultify themselves. They must approach the Local Government Board.

Dr. MCVAIL moved the previous question and Mr. CARTER seconded.

The PRESIDENT said that after the previous question had been moved there could be no further discussion.

The previous question was carried by a large majority.

Medical Aid Associations.

Dr. GLOVER presented the following report from the Medical Aid Associations Committee, viz.:—

Third Interim Report of the Medical Aid Associations Committee.

The Medical Aid Associations Committee of the Medical Council have to report that they are still in communication with the representatives of the great friendly societies with reference to evils generally admitted or complained of by the medical profession in connexion with medical aid associations. These gentlemen show a desire to ascertain the views of the medical profession and a strong disposition to entertain proposals made by this committee with a view to mitigate the friction now existing. They have represented to the chairman of the committee that at meetings to be held in the earlier part of 1899 they will submit to their constituents a report on this subject. The committee hope with some confidence that at the next meeting of the General Medical Council they may be able to give a favourable account of their negotiations with these representatives of the friendly societies.

The committee are constantly reminded by correspondents of the evils of existing systems by which medical men are placed at a disadvantage by huge institutions under one or two medical officers; sometimes by insurance and other companies purely commercial in their nature and objects, which destroy the respectability of medical practice by methods of touting and advertisement and by the indiscriminate admission to "benefit" of all classes at a rate of remuneration inconsistent with the welfare of the patients and the self-respect of the medical officers.

Dr. GLOVER, in moving that the report be received and entered on the minutes, said that perhaps members might think the committee were rather slow in bringing matters to a head, but it had been explained to them that at the beginning of the new year the meetings of the friendly societies would be held when the representatives of these societies would consult their colleagues as to the proposals made.

Dr. CHURCH seconded the motion.

Mr. HORSLEY said he could not help thinking that they were inflicting hardship upon the profession by not making up their minds upon this subject. He did not think they had any right to go on from year to year merely issuing interim reports which had no practical value. In this matter they were not concerned with the good friendly societies but with the bad medical aid associations, and so far as he gathered the latter did not attend the conference which had been held. He wished to advert to the condition of this question in Coventry. He was informed that a letter had been written to the Council and it obviously came under this heading and what he would propose in regard to the Coventry matter was that the Medical Aid Associations Committee be invited to take up this communication and report upon it during the next session of the Council.

Dr. BRUCE said that Mr. Horsley had scarcely done justice to the committee. They had fully considered this memorial, and they had resolved to make a report upon it at the proper time. Mr. Horsley appeared also to forget the amount of information the committee gave upon a previous occasion. The committee spent days and days over this question of the disreputable societies and he would point out that if they came to terms with the main and extensive societies the others would be, so to speak, nowhere. If the large friendly societies dealt with the committee in a proper way they all, the other medical aid associations, would have to follow suit. He would appeal to the Council that they should not at this particular moment intervene when the committee saw some hope of the question being settled, and settled, he might say, greatly to the benefit of the profession at large.

The PRESIDENT said he might tell Mr. Horsley that the paper he referred to had already been put into the hands of the chairman of the committee.

Dr. GLOVER said that not only had it been put into his hands, but it had been carefully considered by the committee. He would add that he considered it was of enormous consequence that they should come to an understanding with the friendly societies of England. They were a class by themselves, they represented people whom that Council ought to consider, and he was bound to admit that the leaders of these friendly societies had shown a great desire to understand the real needs of the case.

The PRESIDENT said that he was present at the conference and could confirm what Dr. Glover had said.

The motion was then agreed to.

Proposal for a Sinking Fund.

The next business on the programme was the receipt of a report from the Finance Committee on the establishment of a sinking fund.

Mr. BROWN said that as this was a matter on which there was much difference of opinion it should be delayed till next session.

The PRESIDENT thought that Mr. Bryant, one of the Treasurers of the Council, should be heard on the subject.

Mr. BRYANT said that the proposal in question was brought before the Council last year and was referred to the several Branch Councils for consideration and report. The report he had to present included the original suggestions and the resolutions of each of the three Branch Councils. The report of the English Branch Council was as follows:—

Moved by Mr. BRYANT, seconded by Mr. CARTER:—

"That a sinking fund be established by the General Council to repay to the English Branch Council the sum of £25,000 advanced to the General Council for the purchase of the present freehold and the erection of the building, the annual payment being £215 12s. 6d., and the capital sum returned £25,000 at the end of fifty years."

Amendment moved by Dr. MACALISTER, seconded by Mr. BROWN:—

"That, whilst the English Branch Council has no desire to have its mortgage on the building repaid, it raises no objection to the General

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Council forming a sinking fund for the purpose of repaying it at the end of a term of years."

The amendment was carried, and being put as a substantive motion was also carried.

The report of the Scottish Branch Council was as follows:—

The branch agreed unanimously to support the formation of a sinking fund for the object in question, but to suspend judgment as to further details of the plan, as it was apparent that these still required some consideration.

Sir WILLIAM GAIRDNER: I find that in this report there is a mistake of mine. The Branch Council was not unanimous, as Dr. BRUCE spoke against the proposal.

Mr. BRYANT: Strike out the word "unanimously."

This was done.

Mr. BRYANT said that the report of the Irish Branch Council was as follows:—

The Irish Branch Council have considered the proposal to establish a sinking fund to the amount of £215 12s. 6d. annually for fifty years for the purpose of paying off the debt due to the English Branch, and they are of opinion that such a proceeding is not needful and would, moreover, seriously embarrass the Irish Branch, on whose limited income the additional payment would prove most oppressive.

Proceeding, Mr. BRYANT said that the suggestion he had made was that a sum should be invested with an insurance company so as to carry out the scheme for the establishment of a sinking fund. It had been pointed out that a lump sum of money might be put into the Bank of England or they might make an annual payment to an insurance company. On inquiry at the Bank of England he was advised that it would probably be better to arrange with some one of the first-class insurance companies both on the ground of cheapness and simplicity. He mentioned in the notice of motion he had given only the Alliance Insurance Company. That was because it was a company that did business in this line and was safe and cheaper than any other of the companies from which he had information. Since this question came up he had put it to himself whether another method might not be possible.

Dr. BRUCE: Does Mr. Bryant adhere to the motion of which he has given notice? or does he propose to make another motion?

Mr. BRYANT: I stand by what is printed but I am going to present an alternative.

The PRESIDENT: One moment. The point is this: your report should be received and entered on the minutes. That should be done first.

Mr. BRYANT: Very good, then I move.

Sir DYCE DUCKWORTH seconded and the motion was agreed to.

Mr. BRYANT, proceeding, said if they established a sinking fund it would work out in this way. If they put the fund into the hands of the Government they would receive interest at the rate of only 2½ per cent. per annum and in fifty years that would come to only £20,958. That was less by £4000 than they would get from the Alliance Insurance Company for the same annual payments, because for £215 the Alliance Insurance Company at the end of 50 years would give them £25,000. He had examined the terms which they might get from the Rock Insurance Company and he found that they were not so favourable. There was a suggestion that the insurance might be effected by the payment of a lump sum. If they accepted that suggestion the English Branch Council would be prepared to advance the necessary money, £5700, and would ask on it interest at the rate of only 3 per cent., which meant that the Council would require to pay annually only £171 or £44 a year less than if they were to pay over the sum in fifty instalments of £215 each. He conceived that this annual payment of £171 would not be felt by the Council, and if at any time in the future the Council felt pinched they could get the money back from the insurance company at the rate of 3 per cent. simple interest. He moved that the president and treasurer should be authorised to start a sinking fund to repay the English Branch Council the sum of £25,000 at the end of fifty years, either by the payment of a lump sum or by annual payments.

Sir DYCE DUCKWORTH seconded the motion.

Mr. BROWN earnestly appealed to Mr. Bryant to postpone this question till May next. He maintained that there was no hurry. The scheme now brought before the Council was something novel and he must remind them that there was a great deal of difference in regard to this matter in all the Branch Councils.

Mr. TOMES suggested to Mr. Bryant that he might propose a motion establishing the principle and give the Council an opportunity of examining the details.

Mr. BRYANT thereupon proposed the establishment of a sinking fund by one payment of £5700.

Sir CHRISTOPHER NIXON opposed altogether the idea of the establishment of a sinking fund for the reason given in the report of the Irish Branch Council. In the forty years the Council had been in existence the English Branch Council had been able to accumulate no less than £40,000, while the Irish Branch Council had not a sixpence. That the latter was so poor did not much matter to the Council itself because the General Council was bound to provide for the expenses of the Irish Council. Perhaps it was a pity that the original arrangements should have permitted this, and if there was to be any legislation which would alter the conditions of the Medical Act, one thing he should ask for would be that there should be a common fund.

Dr. ATTHILL said that the General Medical Council had on loan from the English Branch Council between £20,000 and £30,000 at the rate of 2½ per cent. and they were no losers. Why they should wish to get this money repaid seemed to him to be an extraordinary thing. Apart from that, supposing they established the suggested sinking fund, what was the benefit to be to the Council in the future? Fifty years hence what would they do? If they got this money returned to them they would need to invest it. So far as the Irish Council was concerned he, as a member of it, would oppose this motion on business grounds. In 1895 the Irish Council had some £800 or £900 to the good, but in 1896 they entered upon the down grade, and if they were required to pay as much to the General Council as they had been called upon to do during the last few years he believed that next year the Irish Council would become bankrupt unless they got back some of the money derived from the sale of the new edition of the Pharmacopœia.

Mr. BROWN, rising again, said that the question was not in such a condition as to enable the Council to come to a decision that day and he therefore moved that the matter should be referred back to the Branch Councils for consideration and report.

Dr. BRUCE seconded this proposal.

Dr. MACVAIL said that the Scottish Branch Council approved of a scheme which would enable the buildings of the Council to become the property of the General Council itself and not of any Branch Council. He hoped that the Council would now approve of the principle of a sinking fund.

Dr. HERON WATSON felt sure that the Council would agree in general terms to the principle of a sinking fund, but it was evident that the schemes which had been mentioned had not been fully considered, and it seemed to him that before proceeding further they should have an actuarial report.

Dr. GLOVER agreed. They should get the report of an expert who was altogether independent of insurance offices.

Mr. BRYANT said that he had no objection to take the matter back in order to obtain an expert's report.

After some further discussion it was agreed, on the motion of Mr. BRYANT, seconded by Sir DYCE DUCKWORTH:—

That the Council approve of the proposal to form a sinking fund to repay the English Branch Council at the end of a term of years the sum of £25,000, and that the Finance Committee be authorised to obtain from an expert a report, to be laid before the Council, upon the methods of carrying the proposal into effect.

Inspector of Examinations.

Sir DYCE DUCKWORTH presented a report from the Executive Committee in regard to the resignation of Dr. Sidney Coupland, the inspector of examinations, and moved that Sir George Duffey be appointed in his stead.

Mr. BRYANT seconded.

Dr. BRUCE moved, as an amendment, that the question of the appointment of an examiner be referred back to the Executive Committee with power to make an appointment. Sir George Duffey was a friend of his, but he thought that the appointment it was proposed to give him would not be a wise one. Sir George Duffey had been an examiner under the old conditions of the Dublin Apothecaries' Company and it might be well that he should not be appointed under the arrangement which now existed.

Dr. REID seconded the amendment.

Dr. ATTHILL agreed that it might be as well they should get a new man. Sir George Duffey was certainly an able

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man but he had not sought this appointment and he did not know that he wanted it.

Dr. MACALISTER pointed out that they all had the fullest confidence in Sir George Duffey and even though the amendment were carried that must not be taken as casting any reflection whatever upon that gentleman.

Mr. TICHBORNE did not think the appointment of Sir George Duffey would be acceptable to the Dublin Apothecaries' Hall, because he was associated with a body which was competing with the Hall. He questioned very much if Sir George Duffey would accept the appointment if he got the opportunity of taking it up.

The amendment was agreed to, the PRESIDENT pointing out that the Executive Committee at the end of the Council's sitting could meet for the purpose of making an appointment. Thereafter the following resolutions were adopted—namely:—

That the inspector be appointed to inspect all the examinations of the Apothecaries' Hall, Dublin.

That the inspector also be appointed to inspect the Conjoint Examinations of the Royal College of Surgeons in Ireland and the Apothecaries' Hall, Dublin.

That the remuneration assigned to him be on the same scale as that to Dr. Coupland.

That the Council do authorise the President to nominate one or more members of the Council to act as visitors along with the inspector.

Irish Examinations.

Mr. TICHBORNE proposed:—

That the examinations of the Conjoint Board of the Royal College of Physicians and the Royal College of Surgeons, Ireland, be reported upon for the next year by the inspector and visitor appointed by the Medical Council.

He stated that the reason why he proposed this motion was that the examinations of the Conjoint Board were not only not up to the standard of the Conjoint Board for the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin, but were below the standard required by the Council.

Dr. BRUCE seconded the motion.

Sir CHRISTOPHER NIXON proposed as an amendment:—

That the examinations of the Royal College of Physicians and the Royal College of Surgeons of Ireland be reported upon only at the same time as the report of the examinations of the universities and licensing corporations in general are presented to the Council.

He supposed this motion by the representative of the Dublin Apothecaries' Hall had been inspired simply out of spite because of the frequency with which the inefficiency of the Hall had been brought before the notice of the Council. He thought the hands of the Dublin Hall authorities were at present full enough with their own affairs instead of interfering with those of other bodies. There was no evidence before the Council that the conjoint examination of the Irish Royal Colleges of Physicians and Surgeons was not up to the standard required by the Council and consequently it would be an ungracious act on the part of the Council to interfere with these examinations.

Sir WILLIAM THOMSON, who seconded the amendment, agreed that no case had been made out to justify the motion.

Dr. MACALISTER pointed out that if the motion were carried they would be proceeding contrary to the Standing Orders.

On a show of hands 17 voted for the amendment and 2 against.

The PRESIDENT thereupon proposed to put the amendment as a substantive motion.

Dr. MACALISTER said he could not vote for it. There was no need to adopt Sir Christopher Nixon's proposal and they should take care to keep in their own hands, unfettered by any such proposal, the times at which they should examine any of the licensing bodies.

On a division only 7 voted for the substantive motion, which accordingly was rejected by a majority.

Alleged Recognition of Grammar School Studies by the London Colleges.

Sir PHILIP SMYLY called attention to the following letter forwarded by the Royal College of Surgeons in Ireland in regard to a regulation of the Conjoint Board of the Royal Colleges of Physicians of London and Surgeons of England, which accepts time spent in institutes recognised by it for instruction in physics, chemistry, practical chemistry, and biology as the first of the five years of professional study:—

SIR,—The attention of the President and Council of this College has been called to the terms of a regulation promulgated by the Conjoint Examination Board of the Royal Colleges of Physicians and Surgeons of England on the 14th of July, 1898, which declares that "the first of the five years of professional study may be spent at an institute recognised by the board for instruction in chemistry, physics, and practical chemistry and biology, or six months may be spent in attendance at a similar institution in receiving instruction in chemistry, physics, and practical chemistry only." Four complete years of professional study must be attended at a recognised medical school and hospital after passing parts i. and iii. of the first professional examination.

It is furthermore observed that, as appears from the most recent list of "institutions" recognised by the London Conjoint Board, 54 non-medical schools are accepted as centres of study in these subjects, of which 35 are grammar schools and the remainder are departments of local technical schools, the teaching capacity of which may be open to question.

This College submits that the above quoted regulation of the London Conjoint Board, which declares that four years of medical study shall suffice for a grammar school boy or a student of a technical school, while five years are required from a student of a medical school, is at variance with the recommendation of the General Medical Council of June 9th, 1896 (Minutes, vol. xxxi., p. 163), which explicitly declares that "such course or courses shall not be held to constitute any part of the five years' course of professional study." When the General Medical Council adopted the requirement it declared that such course should only qualify for part of the first year's examination, but should not under any circumstances exempt the student from any part of his five years' course of professional study; yet the London Conjoint Board has granted exemption from the first year in respect of the courses and has thus reduced the necessary period in the cases of these students to four years.

This College observes that, so far as the General Medical Council has recognised studies in non-medical schools, it has done so under guarantees for the *bonâ-fides* of the instructions therein and has reserved to itself by implication the power to withhold recognition. In 1894 (Minutes of General Medical Council, p. 162) it resolved to require a list of institutions to be submitted by the licensing body which proposed to recognise them, and also required that a statement should be appended by such body "that after due inspection it is satisfied that the institution so recognised possesses sufficient laboratory accommodation and appliances for the efficient teaching of the required subjects." This College is unable to discover from the official records of the General Medical Council that the London Colleges have ever presented any statement as to the requisite inspection of such schools or as to their satisfaction with the teaching arrangements, or that if such statement were presented it was ever laid before the Council or received their approval. Notwithstanding this, it is observed that certain of these grammar schools and technical schools have been inscribed in the Students' Register as "institutions," the studies in which are accepted as the "commencement of medical study," and this College is desirous of being informed of the grounds on which such acceptance has been accorded, inasmuch as no permission is to be found in the records of the Council.

I am directed by the President and Council of this College to submit to the General Medical Council their most earnest protest against the recognition of grammar schools or other unguaranteed "institutions" as centres whose teaching exempts students from their first year of professional study, and to point out that their protest is supported by the emphatic judgment of the Education Committee of the General Medical Council (see Minutes, vol. xxx., Appendix 16, pages 8 *et seq.*). That judgment declares that the "interpretation of the phrase 'teaching institution' so as to include ordinary public schools was not contemplated by the Council," and was, in fact, rejected by the Council, and that "the intention of the Council was that the first years should, in general, be passed, if not at a university or other school of medicine, at a recognised school of science or technical college where the student could be brought under influences which are not operative in the school-room.

Under these circumstances the President and the Council of this College submit the requests:

1. That no centre of teaching shall be in future recognised as qualified to certify the "commencement of medical study" save a university or a recognised school of medicine, or a school of science in respect of which evidence of "inspection" and of "accommodation and appliances for the efficient teaching of the required subject" shall have been presented to the Council.
2. That all centres of teaching not included in this category be removed from the list in the Students' Register.
3. That except in the case of institutions thus indicated all students shall be required to fulfil the complete course of five years of professional study, exclusive of all studies pursued before the legitimate commencement of medical study. Or also
4. That for all students whomsoever the requisite course shall be in future reduced to four years.

I am, dear Sir, yours obediently,

JOHN BARTON, F.R.C.S.,

Secretary of Council, Royal College of Surgeons in Ireland.

The Registrar of the General Medical Council, Nov. 17th, 1898.

He (Sir Philip Smyly) had put on the programme notice to move the four requests of his College as four separate and distinct motions and Sir William Thomson proposed to second him. The Irish College of Surgeons had prepared their letter very carefully and they did not wish it to be taken as an attack upon either the English Conjoint Board or the English Royal Colleges. The Council had power to express an opinion and issue a recommendation and he could promise on the part of his College that any recommendation of theirs would be received with all due loyalty and respect.

The letter, which was read at length, was entered on the minutes. Thereupon

Sir PHILIP SMYLY proposed the first of the four resolutions standing in his name.

Sir WILLIAM THOMSON, in seconding the motion, contended that while the Council's recommendation was that there should be a five years' course of study in professional subjects subsequently to the passing of the preliminary

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examination the regulation of the English Conjoint Board reduced the period of professional study to four years. The English Conjoint Board had therefore departed from the Council's policy of a five years' *bona fide* medical curriculum, dating from registration in the Students' Register. He did not question the capability of grammar schools to give general education, but he questioned the power and capacity of grammar schools to give the first year's medical instruction, and it was impossible that they could take even from South Kensington an opinion that such and such a school was suitable to teach the subjects prescribed for the first year of medical study.

Mr. BRYANT admitted that the Royal College of Surgeons of England had in a measure, but only to a slight degree, deviated from the recommendations of the General Medical Council, but they believed that the deviation was in the direction of improvement rather than the reverse. Members knew that the Council for many years had sanctioned outside institutions as teaching institutions for the medical preliminary subjects. The College of Surgeons had now done the same and the success which had attended their action had not been a bad one, for statistics showed that of the successful candidates 67 per cent. came from the outside institutions, as compared with 61 per cent. from the medical schools. Therefore the Conjoint Board scheme had not been to the detriment of the medical schools. It had been the experience of all—teachers and examiners alike—that the preliminary subjects often ran over into the second year, sometimes into the third. So that they said to those students who had not been able to qualify in parts i. and iii., if their study required to extend into the second year, "You have still to pass full four years of professional work before you are admitted to the profession of medicine and surgery." Although his College had not followed quite in the lines which the General Medical Council had recommended they had recognised the principle involved in the recommendation. He was willing to admit that perhaps they had been too liberal in recognising the institutions recognised by South Kensington. At the same time he had to say that during the past year or two they had visited those institutions of which they had any doubt. They had always had good visitors to inspect these places and where there had been the shadow of a doubt the institutions had not been accepted. He moved that the communication from the Irish College of Surgeons and the motions based thereupon standing in the names of Sir Philip Smyly and Sir William Thomson should be referred to the Education Committee for consideration and report.

Sir CHRISTOPHER NIXON, in seconding this proposal, congratulated Mr. Bryant on the frank acknowledgment he had made on the part of the College of Surgeons that they had deviated from the recommendations of the General Council. The body he represented—the Royal University of Ireland—received intimation of the English Conjoint Board's action with consternation, and it was felt that the English Board had by that action rather stolen a march upon the universities. If the Council allowed all the licensing bodies to recognise the grammar schools of the country they were putting the universities to a disadvantage. There was no doubt that advantage accrued from having medical students trained in medical schools which had always been inspected and contained proper appliances for the necessary tuition.

Sir DYCE DUCKWORTH said that the English Conjoint Board was very well satisfied with the results attained under their new regulation. It had been the experience of teachers and examiners that a large proportion of the failures in examinations resulted from the mixing up of tuition in general and professional subjects. The new arrangement enabled an ordinary intelligent student to begin his professional studies during school life, and the Royal College of Physicians of London saw no harm in that. The University of London was perfectly satisfied with the arrangement. The Scottish universities, he believed, had a similar arrangement.

The PRESIDENT said that that was a mistake. A candidate for the medical profession must study in the university or in a recognised medical school. Repeatedly application had been made to the University of Edinburgh for the recognition of institutions in the rank of grammar schools, but they had always been declined. It was as well to mention that fact, for in the debate in the Royal College of Physicians of London the Scottish universities had been placed in an entirely wrong position by one of the speakers and he was desirous to correct the erroneous impression.

Sir DYCE DUCKWORTH remarked that some of the technical schools were really equivalent only to grammar schools and it came to be a question of the relative value of the teaching. It was quite certain that some grammar schools and some other institutions recognised by the Conjoint Board were distinctly better teaching institutions than many of the medical schools, the teachers and the standard of the teaching being distinctly higher in these outside institutions than in the medical schools. Therefore it could not be supposed that students trained in these outside institutions were losing ground. The Conjoint Board allowed no student to pass into the profession who had not undergone five years of professional study. The arrangement which they had made they considered was the best way of meeting requirements.

Mr. BROWN said that as a Direct Representative for England he owed a debt of gratitude to the Irish members for calling attention to this matter. They had been told by Sir Dyce Duckworth that many grammar schools and other teaching institutions recognised by the Conjoint Board could give a professional education better than many of the medical schools. That was an important statement which he hoped would receive attention in the proper quarter. He did not dispute that it was so but there were members of this Council who thought that the recognition of grammar schools by the Conjoint Board was an attempt to get behind the regulations of the General Medical Council. To some extent it had been successful, for it supplied not what the London medical schools supplied but what the Irish and Scotch schools did supply. He objected to the acknowledgment of grammar schools in the neighbourhood of London and he hoped they would be able to thrash the whole subject out next session. The grievance was by no means a bogey one but a real grievance.

Dr. BENNETT held that the regulation in question really instituted a four instead of a five years' professional curriculum.

Dr. HERON WATSON contended that the action questioned was in accordance with the action of the Royal College of Surgeons of England with reference to dental education. It evaded the spirit if not the letter of the General Medical Council's recommendation. Their answer in this instance was precisely of the same character and bore the same interpretation as on dental education. The Council had better keep their eyes open as to what the Royal College of Surgeons of England was inclined to do.

Sir JOHN BATTY TUKE, as chairman of the Education Committee, said that he and he had no doubt his colleagues also on the committee would undertake with pleasure the duty of reporting on the subject if the Council cared to pass the amendment, but he must tell them that he could not see that the committee could do other than reaffirm their decision that the curriculum should be a full five years' one.

The amendment proposed by Mr. BRYANT was then carried by a large majority and became the finding of the Council.

Inspection of Documents.

Sir RICHARD THORNE moved:—

That in view of the fact that the operation of the Standing Orders as to the inspection of documents passed by the Council on May 31st, 1898, is not altogether satisfactory the Executive Committee be instructed to consider and report to the Council at the next session: What arrangements can be best made to facilitate that examination by members of the Council of all documents which are the property of the Council, subject to leave being obtained for such examination, and to the legal rights of the Council in regard to such documents, as also to their proper safeguard.

Dr. MACALISTER seconded the motion.

Mr. HORSLEY moved to leave out the words providing that inspection should be subject to leave being obtained. He said he had legal advice that it was not necessary to obtain leave, the rights of all members of the Council in respect to Council documents being equal.

Mr. TOMES seconded Mr. Horsley's proposal.

Dr. MACALISTER said that the Executive Committee had legal advice that leave was necessary and he could not accept the motion unless the words objected to were retained.

On a division the amendment was rejected by 13 votes to 9 and Sir Richard Thorne's motion was adopted by 16 votes to 2.

Police Fines under Medical Acts.

On the proposal of Dr. GLOVER, seconded by Mr. HORSLEY, the Council adopted the following interim report from the Committee on Fines under the Medical Acts:—

The committee have to report that they have endeavoured unsuccessfully to obtain an interview with the Commissioner of Police of the

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Metropolis who suggests that the committee should communicate directly with the Secretary of State on the subject. The committee will be glad to have from the Council a direction to take this action as opportunity may offer before the meeting in May.

Direct Representation.

The next business on the programme was the following notice standing in the name of Mr. Brown:—

That, in the opinion of the Council, the time has come when it is expedient to confer on the registered medical practitioners resident in England the power of returning an additional member to the General Medical Council as provided for in the Medical Act of 1886.

On this being reached Mr. BROWN explained that in the last twenty minutes of the last day of the session he could not do justice to the subject and therefore wished for leave to withdraw the proposal in the meantime.

Leave was granted.

Unauthorised Medical Examinations.

Dr. MACALISTER called attention to memorials on the subject of illegal certificates of proficiency in departments of medicine, surgery, or midwifery received (1) from the Corporate and Medical Reform Association, Limited, and (2) from 237 registered practitioners and laymen.

Mr. BROWN, in connexion with this subject, proposed:—

That a special committee be appointed to consider and report at the next session of the Council cases of alleged infringement of the Medical Acts by persons who profess to examine candidates in medicine, surgery, or allied subjects and to grant certificates or diplomas testifying as to proficiency in any branch of medical or surgical science.

He stated that they had evidence in the memorials just referred to that there were persons who professed to examine others for proficiency with reference to diseases of the eye. This, he contended, was the thin edge of the wedge of infringement of the Medical Acts, and he thought it was indeed very desirable that any examination not authorised by the Acts of Parliament which purported to be an examination in any branch of surgery should be at once taken notice of with a view to its suppression. They had had experience in more than one case of the danger of allowing things to slide and he hoped the Council would not object to take action on these memorials in the way which he proposed.

Mr. HORSLEY seconded the motion, contending that the question involved was even more important than was represented in the memorials.

Dr. MACALISTER proposed that instead of assenting to Mr. Brown's motion the Council should refer the memorials to the Executive Committee.

After some conversation the motion of Dr. MacAlister was agreed to by a majority.

University Degrees Bill.

Dr. MACALISTER put before the Council a resolution passed by the Incorporated Medical Practitioners' Association in regard to the University Degrees Bill. The Bill, he said, was before Parliament last session and it proposed that anyone who used a degree not obtained in the United Kingdom should put after it the source of the degree. The resolution was as follows, viz.:—

The Central Council of the Incorporated Medical Practitioners' Association desires to draw the attention of the General Medical Council to the Universities Degrees Bill and trusts that no support will be given to the measure, which in the opinion of the Council of the Incorporated Medical Practitioners' Association if it becomes law will only tend to be a source of annoyance to registered medical practitioners and is quite useless to prevent the practising of quacks and medical impostors generally. It is further of opinion that if foreign graduates be compelled when using their academic letters to state the university conferring them the same duty ought to be put on English graduates, seeing that many English practitioners at the present time have their foreign degrees registered in the same way as the holders of English degrees. The council, however, is strongly of opinion that with regard to this purely honorary matter it would be better to leave matters as they are and that legislation on the matter is uncalled for.

He (Dr. MACALISTER) said that as the Council has not proposed to support the University Degrees Bill he simply proposed that they pass to the next item on the programme.

Mr. HORSLEY: I intend next session to ask the Council to support this Bill, because I think it is a most important one.

The subject dropped.

Claiming Medical Status.

Mr. BROWN moved:—

That in all cases where a person whose name is not on the Medical or Dentists' Register is charged with an offence before a public tribunal in England and Wales, and it is reported that the accused claims to be a medical practitioner or dentist, it be an instruction to the General Registrar, or in the case of Scotland and Ireland the Branch Registrars, to write to the presiding official of that tribunal stating that the accused person is not a registered medical practitioner or dentist.

The proposal was seconded by Mr. HORSLEY, but as it was objected that in its present shape it was unworkable Mr. BROWN consented to withdraw it in order to bring it up in an amended form next session.

Dental Business.

Mr. TOMES presented a report from the Dental Committee in regard to certain cases referred to it under Section 15 of the Dentists Act (1878) to ascertain the facts. There were three cases in all reported on. In the first case the committee reported that it had not been proved to the satisfaction of the committee that the practitioner did the acts complained of. In the second case it was explained that the practitioner had given up dentistry altogether and the Council resolved to take no further action. In the third case, in which the practitioner concerned was complained of for giving a certificate of death, the Council decided to adjourn the further consideration of the case until next session.

Mr. TOMES also presented a report by a special committee consisting of the members of the Dental Committee which contained the following recommendations, viz.:—

(*a*) In regard to a communication from the British Dental Association as to the issue of a notice to dentists in regard to the employment of unqualified assistants they adopted the following resolution:

That the members of the Dental Committee recommend the General Council to reissue to all persons on the Dentists Register the notice of Nov. 24th, 1892, in regard to the practice of covering unqualified persons (Minutes, vol. xxix., p. 142).

(*b*) In regard to a communication from the Dundee and District Branch of the British Medical Association as to the administration of anæsthetics by registered medical practitioners for unregistered dental practitioners, a practice which the Executive Committee has already characterised as in its opinion reprehensible, they adopted the following resolution:—

"That the members of the Dental Committee agree with the opinion expressed by the Executive Committee that the practice referred to in Dr. Buist's letter is most reprehensible, and recommend that if a charge of covering in connexion with such administration of anæsthetics were brought before the General Council it should be entertained and investigated."

In moving the adoption of recommendation (*a*) Mr. TOMES explained that the warning issued in 1892 was very similar to the covering notice issued to those on the Medical Register and said that the issue in 1892 undoubtedly did some good in the way of frightening people out of the employment of unqualified persons.

The recommendation having been seconded by Mr. CARTER was adopted by the Council.

Mr. TOMES moved the adoption of the second recommendation (*b*). He explained that the Dundee and District Branch of the British Medical Association passed a resolution to the effect that action ought to be taken in the matter of registered medical men favouring unregistered practitioners by administering anæsthetics for them. This had relation as it was worded to dentists only. He might say that he took means to inquire whether the practice was at all general and he combined with the inquiry, for his own purposes, an inquiry whether registered practitioners acted in this way for bone-setters. He received a large number of answers which proved that the practice was exceedingly prevalent in the Midlands. He obtained answers from 25 towns that medical practitioners were in the habit of giving anæsthetics for unregistered dentists. He found that in some instances the name of the registered medical practitioner was actually put up in the window of the unregistered dentist as giving anæsthetics for him. He also learned incidentally that in a few of these cases they also gave anæsthetics for bone-setters. He had got confidentially the names of twenty-three registered medical men who were in the habit, according to his informants' statements—and some of them offered to get positive evidence if it were needed—who were in the steady habit of administering anæsthetics for unregistered dental practitioners. He thought, therefore, there was very good cause for the Council adopting this recommendation. He had also talked to a number of the leading anæsthetists and he found that the Society of Anæsthetists had avoided this subject as being rather dangerous ground, but among those to whom he had spoken there was the opinion that the thing was extremely wrong and should be stigmatised and dealt with.

Dr. MACALISTER moved:—

That the reissue of the notice of Nov. 24th, 1892, be delayed until it could be accompanied by a supplementary notice to be framed by the legal adviser of the Council in the sense of the foregoing resolutions.

That was the resolution pertaining to the administration of anæsthetics.

Mr. HORSLEY, seconding the motion, said that of course

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while this was sufficient as regards the dentists it was not sufficient as regards the medical practitioners.

The motion was put to the Council and adopted.

Mr. HORSLEY: Should we not have a resolution to send to the medical practitioners?

The PRESIDENT: Perhaps we had better see this draft first.

Mr. CARTER presented a report from the Executive Committee as to dental business other than matters pertaining to the Dental Committee transacted since the last session of the Council. This report dealt with four items of business. The first had reference to restorations to the Dentists Register. The second set forth a resolution of the Irish Branch Council instructing the local registrar to keep a Dentists Register and in this connexion Mr. Carter explained that the legal advisers gave the opinion that the Irish Branch Council were exceeding their powers. The third item was a letter from the Royal College of Surgeons of England saying that the recommendations of the Council in regard to dental education and examination had been referred by the Council of the College to the Board of Examiners in Dental Surgery for consideration. The last item was an application from a dentist in Ballarat, Victoria, to be registered as a colonial dentist under Section 10 of the Dentists Act on the ground that he had passed the qualifying examination of the Dental Board of Victoria in accordance with the provisions of the (Colonial) Dentists Act (1897). The Executive Committee recommended that the application be granted.

This recommendation was adopted by the Council.

Dr. MACALISTER reminded members that the granting of this application meant the opening of the Colonial list.

Close of the Session.

The PRESIDENT announced that this closed the programme of the session.

Dr. GLOVER moved a vote of thanks to Sir William Turner for his conduct in the chair. He did not remember any session when the work had been more prolonged or more trying to the President than on this occasion and he was quite sure that all the members must admire the good temper shown by him and the grasp he had taken of the business of the session.

The motion was carried by acclamation.

The PRESIDENT said he was greatly obliged to his colleagues for this vote of thanks. He admitted that the session had been prolonged and at times trying, but he would like to say this, that his colleagues had loyally supported him and he begged to thank them.

To the Editors of THE LANCET.

SIRS,—In your otherwise excellent report of the meeting of the General Medical Council on p. 1525, *re* myself you say that I was willing to withdraw my notice of motion concerning personation of registered practitioners. Permit me to point out that I did not offer to withdraw this motion and that it was subsequently carried.

I am, Sirs, yours faithfully,

Cavendish-square, W., Dec. 3rd, 1898. VICTOR HORSLEY.

Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND—FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College:—

Mr. R. Allen, Belfast, M.B., B.Ch., &c., Royal University; Mr. W. J. Corrigan, Cardiff, L.R.C.P.I., L.R.C.S.I., &c.; Mr. A. Cuffe, Essex, L.R.C.S.I., L.A.H., &c.; Miss J. G. Horwood, Aylesbury, L.R.C.P. Edin., L.R.C.S. Edin., &c.; and Mr. J. O'Callaghan, Pallas-green, L.R.C.S.I., L.R.C.P. Edin., &c.

The following candidates passed the primary part of the Fellowship Examination:—

Mr. M. O'Sullivan, Dublin, M.B., B.Ch., &c., Royal University; and Mr. L. J. Whelan, L.R.C.P.I., L.R.C.S.I., &c.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the monthly meeting of the President and Fellows of the College held on Dec. 2nd Mr. John Joule, L.S.A., was admitted a Licentiate in Medicine of the College.

SIR SQUIRE BANCROFT will read his arrangement of Dickens's "Christmas Carol" at St. Martin's Town Hall, Charing-cross-road, on Thursday afternoon, Jan. 12th, 1899, on behalf of the Royal London Ophthalmic Hospital, Moorfields.

SANITATION AND RELIGION.—At the Plympton (Devon) Ruridecanal Conference, held on Dec. 1st, Mr. S. Noy Scott, L.R.C.P. Lond., read a paper on Sanitation and Religion in which he contended that the promotion of santation was distinctly a religious duty.

MEDICAL MISSIONS.—At a large meeting held in Plymouth on Nov. 30th the Bishop of Crediton and Dr. Lankester, medical secretary of the Church Missionary Society, strongly advocated the claims of the proposed medical mission for the Khartoum and Nile Valley.

LITERARY INTELLIGENCE.—Mr. Henry Frowde, Oxford University Press, is publishing a monograph on the Micro-organism of Faulty Rum, by Professor V. H. Veley, F.R.S., and Lilian J. Veley. We are informed that the micro-organism has hitherto escaped observation because it was supposed that no organism whatever could live in liquid of such alcoholic strength as rum.

THE GENERAL MEDICAL COUNCIL AND UNQUALIFIED ASSISTANTS.—At Landore (Glamorganshire) station on Nov. 28th a deputation met Dr. J. Havard Jones on his return from London, where he had appeared before the General Medical Council on a charge of employing an unqualified assistant, the case being dismissed. A brass band and about 4000 colliers, &c., escorted Dr. Jones to his residence. The whole village was illuminated.

NEW HOSPITAL AT NEWTON ABBOT.—A new hospital given to Newton Abbot, Devon, by the late Mrs. Fisher in memory of her late husband and built on a site of land presented by Mr. Scratton was formally opened by Mrs. Scratton on Nov. 29th. The building will contain accommodation for 27 in-patients and has been erected at a cost of £6000. The residents of Newton Abbot subscribed £1044 in commemoration of the Queen's Diamond Jubilee and this will be used towards the endowment of the hospital. A glass air-tight instrument case has been placed in the operation theatre by Mrs. H. S. Gaye in memory of her late husband, Dr. Gaye, who was the founder of the old Newton Abbot Cottage Hospital.

UNIVERSITY OF CAMBRIDGE.—The following elections of medical graduates as members of boards and syndicates are announced:—Dr. D. MacAlister to the Agricultural Syndicate and the Medical Board; Dr. F. Darwin to the Museums and Lecture-room Syndicate; Dr. Guillemard to the Antiquarian Committee; Dr. Laurence Humphry and Dr. Collingridge to the State Medicine Syndicate; Dr. Barclay-Smith to the Biology and Geology Board; Mr. E. G. Browne to the Board for Indian Civil Service Studies; Dr. Bayley Balfour to the Board of Electors for the Chair of Botany. The examiners in sanitary science for the ensuing year are Dr. Anningson, Professor Kanthack, Dr. Collingridge, Dr. Lane Notter, and Dr. John Stevenson. Mr. Stabb, university lecturer in midwifery, is appointed to examine in the third M.B. examination instead of Dr. Barbour who is indisposed. The John Walker Studentship for Pathological Research, value £200 a year for three years, will be vacant this month. Candidates are requested to communicate with Professor Kanthack before Jan. 19th, 1899.

CORPORATE AND MEDICAL REFORM ASSOCIATION, LIMITED.—At a meeting of the Executive Committee of this association, held at the residence of Dr. Tom R. Taylor, Guilford-street, Russell-square, W.C., on Dec. 6th, Mr. A. S. Morton in the chair, after election of eight members resident in Oldham, Leeds, Croydon, and Gravesend, on the secretarial report of proceedings on the memorial presented by the association to the General Medical Council, a resolution was unanimously adopted thanking Sir Christopher Nixon, Sir William Thomson, Dr. Glover, Mr. George Brown, Mr. Victor Horsley, Dr. William Bruce, Dr. Bennett, and Mr. Tichborne for proposing, seconding, and supporting a motion "That a special committee be appointed to consider and report at the next session of the

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Council all cases of alleged infringement of the Medical Acts by persons who profess to examine candidates in medicine, surgery, or allied subjects, and to grant certificates or diplomas testifying as to the proficiency of any branch of medical or surgical science."

ROYAL INSTITUTION.—A general monthly meeting of the members of the Royal Institution was held on the afternoon of Dec. 5th, Sir James Crichton Browne, M.D. Edin., F.R.S., treasurer and vice-president, presiding. Among others Dr. C. T. Williams and Mr. H. W. Allingham were elected members. The special thanks of the members were returned to Dr. George Wyld for his present of a portrait of Dr. Thomas Garnett, first professor in the Royal Institution.

THE PLAGUE COMMISSION.—According to the *Times of India* the Governor-General of India has published a resolution with reference to the Plague Commission that "there must be many valuable items of information to be ascertained from officers who have been employed on plague operations that have not been recorded in official reports, and there are also many circumstances connected with outbreaks in different places which require to be locally examined by persons who can collate facts and form conclusions which will be accepted by the public as well as scientific opinion in respect of them." The resolution adds that the Government of India "regard it as very desirable that authoritative scientific opinion be obtained as to the value of prophylactic and therapeutic serums in dealing with the plague."

BOOKS, ETC., RECEIVED.

ARNOLD, F., Bedford-street, Strand, London.
Physical Chemistry for Beginners. By Ch. M. Van Deventer. With a Preface by J. H. Van T. Hoff. Translated by R. A. Lehfeldt, D.Sc. Price 2s. 6d.

BAILLIERE, J. B., ET FILS, Paris.
Radioscopie et Radiographie Cliniques. Par Dr. L. R. Regnier. 1899.
Maladies du Larynx, du Nez, et des Oreilles. Par A. Castex. 1899.

BAUERMEISTER, F., Glasgow.
Neubauer und Vogel: Anleitung zur Analyse des Harns: Analytischer Theil, zehnte Auflage. Von Dr. H. Huppert. 1898.

BLACKIE & SON, London.
The Principles and Practice of Modern House Construction. Edited by G. Lister Sutcliffe. Illustrated. Vol. III.

CHURCHILL, J. & A., Great Marlborough-street, London.
The Pharmaceutical Formulary. Edited by J. O. Braithwaite. Twelfth Edition. 1899. Price 6s. 6d.
Transactions of the Ophthalmological Society of the United Kingdom. Vol. XVIII. Session 1897-98. With List of Officers, Members, &c. 1898. Price 12s. 6d.
Year-book of Pharmacy and Transactions of the British Pharmaceutical Conference. 1898.
A Treatise on Human Anatomy. By various Authors. Edited by Henry Morris, M.A., M.B. Lond. Second Edition. Illustrated. 1898. Price 36s.

DIGBY LONG AND CO., Bouverie-street, Fleet-street, London.
The Latest Fruit is the Ripest, or Women's Work. By F. T. Gant, F.R.C.S. Second Edition. 1898. Price 1s. 6d.

ENKE, F., Stuttgart.
Handbuch der Schulhygiene. Von Dr. A. Baginsky. Dritte Auflage. Erster Band. 1898.

FANNIN AND CO., Grafton-street, Dublin.
Transactions of the Royal Academy of Medicine in Ireland. Vol. XVI. Edited by J. B. Story, M.B., F.R.C.S. 1898.

FISCHER, G., Jena.
Handbuch der Therapie innerer Krankheiten. Von Dr. F. Penzoldt und Dr. R. Stintzing. Parts XVIII., XIX., and XX. 1898.

GARDNER, ALEX., Paternoster-square, London, and Paisley.
Robert Burns and the Medical Profession. By William Findlay, M.D. With 13 portraits. 1898. Price 6s. net.

HIRSCHWALD, A., Berlin.
Fango-Behandlung. Von Dr. H. Davidsohn. 1898.

KIMPTON, HENRY, High Holborn, London.
Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. By H. A. Hare, M.D., B.Sc. Third Edition. Illustrated. Price 21s. net.
A Text-book of Practical Therapeutics. By H. A. Hare. Seventh Edition. Illustrated. 1899. Price 21s. net.

LEWIS, H. K., Gower-street, London.
A Treatise on "Unripe" Cataract. By Wm. A. McKeown, M.D., M.Ch. Illustrated. 1898. Price 12s. 6d. net.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
My Inner Life, being a Chapter in Personal Evolution and Autobiography. By J. B. Crozier. 1898. Price 14s.
Doctor Therne. By H. Rider Haggard. 1898. Price 3s. 6d.
The Harveian Oration, October, 1898. By Sir Dyce Duckworth, M.D., LL.D. Price 2s. 6d.
On Varix and Thrombosis. By W. H. Bennett, F.R.C.S. Eng. Reprint. 1898. Price 3s. 6d.

NEWNES, GEORGE, Southampton-street, Strand, London.
Flashlights on Nature. By Grant Allen. Illustrated. 189 Price 6s.

NEW SYDENHAM SOCIETY, London.
The New Sydenham Society's Lexicon of Medicine and the Allied Sciences. Twenty-fourth Part. Scap—Tape. 1898.

NOSTRAND, D. VAN, COMPANY, New York.
Report on the Purification of the Ohio River Water at Louisville, Kentucky. By George W. Fuller. 1898.

PEARSON, C. A., Henrietta-street, Covent-garden, London.
Strange Stories of the Hospitals. By Frank Aubrey. 1898. Price 1s. and 1s. 6d.
Mad Humanity: its Forms Apparent and Obscure. By L. F. Winslow, D.C.L. Oxon., M.B., LL.M. Camb. 1898. Price 7s. 6d.

PENTLAND, YOUNG J., Edinburgh and London.
The Radical Cure of Hernia, Hydrocele, and Varicocele. By C. B. Lockwood, F.R.C.S. Illustrated. 1898.

PILLING, G. P. AND SON, Philadelphia, U.S.A.
On the Phonendoscope and its Practical Application. By Aurelio Bianchi, M.D. Parma. Illustrated. 1898.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London.
Quæro: Some Questions in Matter, Energy, Intelligence, and Evolution. By Jas. H. Keeling, M.D., F.R.C.S. With diagrams. 1898.

UNWIN, T. F., Paternoster-square, London.
The Century Invalid Cookery Book. By Mary A. Boland, edited by Mrs. Humphry. 1898. Price 3s. 6d.
My Horse, My Love. By Sara Buckman-Linard. Illustrated. 1898. Price 3s. 6d.

WYSS, K. J., Bern.
Illustrirte Rundschau der Medicinisch-Chirurgischen Technik. Herausgegeben von Dr. G. Beck. Jahrgang 1898.

Nine Medical Songs. Words by J. Blumfeld, G. H. Ransome, and F. H. The music by C. N. Chadborn. To be obtained of the Librarian, St. George's Hospital, London, S.W. Price 2s. 6d.—Transactions of the Iowa State Medical Society. Vol. XVI. Forty-seventh Annual Session, 1898. (The Keehn-Hafner Mfg. Co., Burlington, Iowa, 1898.)—Letts's Office Diary and Almanac for 1899, No. 1. Letts's Office Diary and Almanac for 1899, No. 8. Letts's Pocket Diary and Almanac for 1899. Letts's One-day Pocket Diary and Almanac for 1899. (Cassell and Co., London.)—Magazines, &c., for December; Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian, St. Peter's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ARBUCKLE, H. W., M.D. Aberd., L.R.C.P. Edin., L.F.P.S. &c. D.P.H. Camb., has been re-appointed Medical Officer of Health to the Thorne District Council.

ARMOUR, DONALD, B.A., M.B. Tor., M.R.C.P. Lond., M.R.C.S., has been appointed a Senior Demonstrator of Anatomy for the University College, London.

BAILEY, FRANCIS WILLIAM, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist for the Liverpool Dental Hospital.

BATE, J. BRABANT, has been appointed a Resident Medical Officer for the Mogden Isolation Hospital by the Borough of Richmond (Surrey) and the Heston and Isleworth Urban District Joint Isolation Hospital Committee.

BETHELL, A., M.R.C.S., has been re-appointed a Medical Officer by the Bridgenorth Rural District Council.

BOLLANS, R. W., M.B., Ch.B. Vict., has been appointed a Medical Officer for the Hadfield Sanitary District of the Glossop Union.

BURT, W. C., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Torrington Workhouse.

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COLLIER, HORACE STANSFIELD, F.R.C.S., has been appointed Assistant Surgeon for the Hospital for Sick Children, Great Ormond-street, London, W.C.

DAVIES, W. N., M.D., M.Ch. Irel., has been re-appointed Medical Officer of Health by the Llantrisant and Llantwit Vardre Rural District Council.

DICKSON, GRAEME, L.R.C.P. Eng., &c., has been re-appointed Medical Officer of Health by the Hay Urban District Council.

EARNSHAW, A., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed a House Physician for the Bradford Royal Infirmary.

EVANS, LANCING, M.A., M.B., B.C. Cantab., has been appointed a House Surgeon for the Royal Orthopædic Hospital, 297, Oxford-street, and 14, Hanover-square, London, W., vice Percy W. Kent, resigned.

FAIRBANK, F. R., M.D. Heidelb., F.R.C.P. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Western Sanitary District of the Dorking Union.

GARDNER, THOS. HUDSON, M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer to the Royal Hospital for Diseases of the Chest, City-road, E.C., vice J. B. Maxwell.

GREENWOOD, A. C., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Corby Sanitary District of the Bourne Union, vice F. T. Fletcher, resigned.

HARNESS, H. NELSON, M.R.C.S., L.R.C.P. Lond. has been appointed a Third Assistant Medical Officer for the Kent County Asylum, Chartham, near Canterbury, Kent.

HARVEY, FRANK, M.R.C.S. Eng., L.S.A., has been re-appointed Medical Officer of Health by the Padstow (Cornwall) Urban District Council.

HICKS, H. T., M.R.C.S., L.R.C.P., has been appointed Junior Resident Medical Officer and Registrar for the Evelina Hospital for Sick Children, Southwark-bridge-road, London.

JACOB, E. L., M.R.C.S., has been re-appointed Medical Officer of Health by the Walton Urban District Council.

JONES, R. R., L.R.C.P. Edin., M.R.C.S., has been appointed Superintendent for the Bangor Infectious Diseases Hospital, vice L. Jones.

LOW, J. SPENCER, M.B., B.Ch., B.Sc. Edin., has been appointed by the India Office a Medical Officer for special plague duty in India.

LYLE, W., M.B., B.Ch. Irel., has been appointed a Medical Officer for the Newtonstewart Dispensary District, vice R. J. Roulston, resigned.

MILNE, J. A., M.B., C.M. Aberd., has been appointed an Assistant Medical Officer for the Workhouse of the Leeds Union, vice J. Johnstone, resigned.

MOORE, H. C., M.R.C.S., has been appointed, *pro tem.*, a Deputy Medical Officer for the City of Hereford.

RICE, DAVID, L.R.C.P. Lond., M.R.C.S., has been appointed House Physician for the Bethlem Royal Hospital, London.

STEVENS, A. E., M.B. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician for the Bethlem Hoyal Hospital, London.

SUTCLIFF, E. H., M.B. Durh, L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Torrington Sanitary District.

TAYLOR, E. C., M.D. Lond., B.S., F.R.C.S., has been appointed a Medical Officer for the Hampstead Workhouse.

UNDERWOOD, F. L., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Third Sanitary District of the Daventry Union.

WILLIAMS, J. D., M.D. Edin., B.Sc., has been appointed a Gynæcologist for the Cardiff Infirmary.

WILLIAMS, W. T., M.R.C.S., has been appointed a Medical Officer for the Chorlton and Manchester Joint Workhouse.

WOOD, R.M., L.R.C.P. Lond.. M.R.C.S., has been appointed House Surgeon for the Tiverton Infirmary, vice H. England, resigned.

WRIGHT, F. W., M.R.C.S., has been appointed a Medical Officer and Public Vaccinator for the Southern Sanitary Districts of the Godstone Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary £100 a year, increasing to £250 by successive increments of £25, with apartments, board, attendance, and washing.

COUNTY HOSPITAL, Ryde.—House Surgeon. Salary £50 per annum, with board, lodging, &c.

DERBY COUNTY ASYLUM, Derby.—Assistant Medical Officer, unmarried. Salary £120 per annum, rising to £150, with board, lodging, and washing.

EDMONTON UNION.—District Medical Officer for the Edmonton District. Salary £60 per annum and 20 per cent. thereon in lieu of payment for expensive medicines, with certain extra fees. The district medical officer will also be appointed Public Vaccinator. Applications to the Solicitor and Clerk, Lower Tottenham.

FOREST HILL PROVIDENT DISPENSARY.—Medical Officer. Applications to Hon. Secretary, Yale Cottage, Inglemere-road, Forest-hill, S.E.

GENERAL INFIRMARY AT GLOUCESTER, AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Board, residence, and washing provided.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator for the Southern Division of Harris. Salary £30. Other emoluments. Apply to Mr. T. Wilson, Solicitor, Lochmaddy.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HULME DISPENSARY, Manchester.—House Surgeon. Salary £130 per annum, with apartments, attendance, coal, and gas.

LAMBETH INFIRMARY, London.—Resident Clinical Assistant and Second Assistant to the Medical Superintendent for six months. Salary at the rate of £50 per annum. Applications to the Medical Superintendent, Brook-street, Kennington-road, S.E.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the House.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70, with board, lodging, and washing.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer for one year, unmarried. Salary £150 per annum, with board and residence.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, London, W.C.—Medical Superintendent. Salary £100 per annum, furnished apartments, fire, light, and attendance, with certain fees.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (ALBANY MEMORIAL), Queen-square, Bloomsbury, London.—Assistant Physician.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—Surgeon to Out-patients.

PARISH OF ST. PANCRAS, London.—Second Assistant Medical Superintendent for the Infirmary, Dartmouth-park-hill, N., for one year. Salary £75 per annum and residential allowances. Applications to the Clerk to the Guardians, Vestry Hall, Pancras-road, N.W.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, Wigan.—Junior House Surgeon for twelve months. Salary £80 per year, with apartments and rations, exclusive of wines, spirits, and washing.

ROYAL HANTS COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £75 per annum, with board, residence, &c. Applications to the Secretary, Winchester.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Applications to the Secretary, R. S. B. Hospital Offices, 30, Charing-cross, London, S.W.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—House Surgeon. Salary £150 per annum, outdoor.

UNIVERSITY OF EDINBURGH.—An additional Examiner in Zoology.

WATERFORD DISTRICT ASYLUM.—Temporary Assistant Medical Officer for at least three months. Unmarried. Salary £3 3*s.* per week, with furnished apartments, attendance, rations, &c.

WEST BROMWICH DISTRICT HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

WILTSHIRE COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum, with certain allowances. Aplications to the Clerk to the Council, County Offices, Arlington House, Trowbridge.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

FIDO.—On Nov. 29th, at "Raleigh," Arodene-road, Brixton-hill, S.W. the wife of H. Adamson Fido, M.R.C.S., L.R.C.P., of a son.

LAWS.—On Dec. 2nd, at East Circus-street, Nottingham, the wife of W. G. Laws, M.B., of a daughter.

TEBB.—On Dec. 3rd, at Beverley-road, Anerley, the wife of W. Scott Tebb, M.A., M.D. Cantab., of a son.

THOMSON.—On Dec. 2nd, at The Avenue, Ealing, W., the wife of George Thomson, M.B., of a daughter.

MARRIAGES.

BERNSTEIN—BERNSTEIN.—On Dec. 6th, at the St. John's-wood Synagogue, M. Bernstein, M.R.C.S., L.R.C.P., to Sara, daughter of Mrs. Rose Bernstein, Cromer Lodge, West-end-lane, N.W.

FORDE—SANGSTER.—On Nov. 30th, at St. Peter's, Cranley-gardens, S.W., Robert Michael Forde, Colonial Medical Service, to Alice Maude, youngest daughter of Major Sangster, late 97th Regiment.

MCNAB—FORDHAM.—On Nov. 30th, at St. Mark's, Hamilton-terrace, N.W., by the Rev. R. Duckworth, D.D., Sub-Dean of Westminster, Alexander Anderson McNab, M.B., C.M., son of William McNab, Banker, Bothwell, to Mary, youngest daughter of John Fordham, Esq., Brondesbury, London. No cards. At home Dec. 13th, 14th, and 15th, 15, Wesley-road, Armley, Leeds.

DEATHS.

BOND.—On Nov. 28th, at Waterloo House, Brill, Bucks, William James Bond, M.B., L.R.C.S. and L.M. Edin., aged 45 years.

LAWRENCE.—On Dec. 2nd, James Eli Lawrence, M.R.C.S., of Dorking, aged 65 years.

MACFARLANE.—On Dec. 4th, at the Hospital for Consumption, Bromption, S.W., James J. L. Macfarlane, M.B., C.M. Edin., aged 28 years.

WALFORD.—On Dec. 5th, at Oxford-road, Reading, T. L. Walford, M.R.C.S., in his 87th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (17th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (12th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. B. Pitts: The Transperitoneal Ligation of the Iliac Arteries.—Mr. C. S. Wallace: Acute Suppurative Peritonitis.

SOCIETY OF ARTS.—8 P.M. Prof. V. B. Lewes: Acetylene. (Cantor Lecture.)

TUESDAY (13th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. J. Hutchinson, jun., and Mr. H. L. Barnard: On an Improved Method of Treatment of Separation of the Lower Epiphysis of the Femur (with lantern demonstration).

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Paper:—Mr. W. M. Holmes: Deep Sea Deposits (illustrated by lantern slides).

WEDNESDAY (14th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Clinical Cases.

SOUTH-WEST LONDON MEDICAL SOCIETY (Stanley's, 235, Lavender-hill, S.W.).—8.30 P.M. Mr. H. T. Mursell: Some Points in the Diagnosis and Treatment of Urethral Stricture.

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8.30 P.M. Demonstration of Clinical Cases.

SOCIETY OF ARTS.—3 P.M. Sir A. Rollit: Commercial Education.

THURSDAY (15th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchbourne-street, Edgware-road).—8.30 P.M. Dr. W. Ewart: Disease, its Treatment and the Profession of Medicine in 1899. (Harvelan Lecture.)

NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, W.).—8.30 P.M. Pathological Meeting. Communications:—Dr. F. W. Mott: Changes in the Brain, Muscles, and other Organs found in Persons having Died with prolonged Epileptiform Convulsions.—Dr. F. E. Batten: Congenital Abnormalities in the Nervous Systems of Three Children—(1) Non-development of Left Cerebral Hemisphere, &c.; (2) Hydromyelia and Congenital Defect of the Cerebellum; (3) Heterotopia in Association with Spina Bifida.—Dr. H. H. Tooth and Dr. R. Russell: Acute Myelitis with Bacteriological Examination.

FRIDAY (16th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. A. Ransome: The Prospect of Abolishing Tuberculosis.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Discussion on Selection of an Anæsthetic (opened by Mr. E. F. White).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (13th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-sq., W.C.).—3.30 P.M. Mr. Victor Horsley: Surgery of the Nervous System.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. D. Grant: Cases of Nervous Disorder of the Pharynx, Larynx, and Œsophagus.

WEDNESDAY (14th).—THE LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—4 P.M. Dr. Shuldham: The Erythemata.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Schorstein: Hæmoptysis.

THE SANITARY INSTITUTE, (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on Some Prevalent Fallacies in Vital Statistics (opened by Dr. E. F. Willoughby).

THURSDAY (15th).—THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M Mr. Kellock: Demonstration of Selected Cases.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Demonstration of Surgical Cases. (Post-Graduate Class.)

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

THE CONSUMPTION OF ALCOHOL IN FRANCE.

IN 1874, according to *La Tribune Médicale*, the number of drinking establishments in France was 342,980 without counting Paris, the capital being responsible for about 40,000. Since then, although the population has remained comparatively stationary, the liquor shops have increased to an alarming extent, the total number in 1896 amounting to 432,047, which represents an augmentation of 25 per cent. With respect to the quantity of wine consumed by individuals Boulogne-sur-Seine heads the list with the enormous allowance of 58½ gallons per head. Next in order come Nice, Saint-Etienne, Grenoble, Troyes, Toulouse, and finally Paris, where the annual amount per head is 44·6 gallons. As regards alcohol in the form of brandy and other spirituous compounds Rouen stands first with nearly 4 gallons per head per annum. Havre and Cherbourg are not far behind, and the next in succession are Boulogne-sur-Mer, Brest, and Lorient, all being seaports. In Paris the individual consumption of alcohol is about 2 gallons each year. Considering that women and children are included in the statistics and that male abstainers exist these amounts can only be styled excessive.

"THE QUALIFICATION OF L.A.H. DUBLIN."

To the Editors of THE LANCET

SIRS,—Under the above heading in THE LANCET of Dec. 3rd, 1898, it is stated: "The Licence of the Apothecaries' Hall of Dublin in 1880 was, as it is now, a Licence in Medicine only." I have to inform you that the diploma of this Hall now entitles the holder to be registered in medicine, surgery, and midwifery, as well as to act as a pharmacist for compounding prescriptions. Your kindly correcting the error will greatly oblige the Governor and Court.

I am, Sirs, faithfully yours,

ROBERT MONTGOMERY, M.R.C.S. Eng.,
Mary-street, Dublin, Dec. 5th, 1898. Secretary.

*** Our statement was based upon information obtained for us from the representative of the Apothecaries' Hall of Dublin upon the General Medical Council.—ED. L.

BAD STEAKS.

THE case of Frost *v.* North heard a short time ago in the Shoreditch County Court in which His Honour Judge French has since refused to give leave to appeal is one apparently of considerable hardship to the plaintiff. An omnibus-driver entered an eating-house where he was accustomed to dine and ordered a beefsteak, poured some sauce over it, and proceeded to eat it. The first mouthful struck him as tasting unpleasantly; thinking the sauce was bad he scraped it off, and having eaten one or two more mouthfuls declared the meat bad, ate no more, and went out. He subsequently suffered more or less severely from ptomaine poisoning and in consequence sought to recover damages from the person who sold him the steak. In these circumstances one might have thought that if the plaintiff was to be defeated it would be owing to some principle of law whic

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absolved the eating-house keeper from the necessity of supplying wholesome food to his customers. The ground, however, of Judge French's decision in the defendant's favour was, to quote his words as reported in giving his final decision, "If a man is such a fool as to eat bad steak then he must take the consequences." One can only wonder on what evidence such a decision was based, as legal decisions are usually supposed to be based on sworn testimony which in this case would have been that of an expert witness. No one surely can have informed the court that in cases of unwholesome food the taste is so convincingly obvious that no one but a fool would eat or drink it. If this were the case typhoid fever and various other diseases would be confined to persons of defective mental capacity. We should have thought no one would blame an omnibus-driver for not knowing that two or three mouthfuls of high meat might make him ill. He ate no more, apparently, than enough to satisfy himself that the food was nasty, but the learned judge seems to have arrived at the conclusion that it was so nasty that it ought to have warned him before he ate so much. How his honour could come to so decided an opinion as to the precise pitch of nastiness to which the steak had attained is the most puzzling point of all. The degree of nastiness could hardly be established by evidence.

THE MEDICAL PROFESSION AND SECRET REMEDIES.

To the Editors of THE LANCET.

SIRS,—Will you be so good as to give me your opinion on the following. Can a member of the profession dispense a secret remedy (the composition of which is known only to himself) and with which his name is associated more or less) without laying himself open to a charge of "unprofessional conduct"?—I am, Sirs, yours faithfully,

Dec. 5th, 1898. M.B.

*** A member of the medical profession should under no circumstances dispense a secret remedy.—Ed. L.

QUACKERY.

UNDER the heading "A Herbalist in Trouble" we noted in THE LANCET of August 27th the fact that Mr. Samuel Matthews, a former member of the Norwich Town Council, had been fined £1 for illegally using the title of "Surgeon" and £20 at the suit of the Society of Apothecaries of London for illegally acting as an apothecary. From a cutting from a Lowestoft paper of recent date we see that "Dr." Matthews and his son still carry on their trade of quackery. We do not know whether they are still acting as "apothecaries"—that is to say, in the sense in which they would come under the arm of the law—but, as we have so often said, if it be necessary to have a licence to sell buttons and string in the street or from door to door we cannot understand why it should not equally be necessary to have a licence to be a quack practitioner.

"THE TITLE OF 'DR.'"

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 3rd Mr. Collingwood considers it harsh that non-graduate diplomates should not be permitted to use the title of "Dr." Did it ever strike your correspondent that the harshness is on the other side? I held the two diplomas (not the double but by separate examinations) of Edinburgh and after being in practice a considerable number of years went to much trouble and expense in reading for the degree at St. Andrews. During the spare time of about two years I denied myself the recreation that my daily work justified me in taking for pleasure and rest in reading for the examination and, I may observe, had I not done this I should have returned, as one gentleman did in my year, without the degree. The examination was a thoroughly searching one and covered pretty well the whole field of medicine and surgery, notwithstanding the notion which appears to exist in the minds of some who have never crossed the border in their lives that the ten degrees granted each year are given away. Twelve candidates were summoned and if less than ten were found to satisfy the examiners others were telegraphed for from the reserve list of candidates in waiting each year. I had to wait three years. I therefore fail to see the harshness meted out to diplomates who as students knew perfectly well that if they expected the title of "Dr." they must take two (only) of their years at a university and that if they went for the College diplomas only they would remain only "Misters." I for one knew this, and though I could not afford it as a student I determined at the first opportunity to obtain a university degree. St. Andrews now only grants the degree by graduation, but Durham is still available to qualified men over a certain age and Brussels is always available. I am, Sirs, yours faithfully,

Dec. 4th, 1898. M.D. ST. ANDREWS.

THE CHORLTON GUARDIANS AND LADY MEDICAL OFFICERS.

QUITE a warm discussion took place at the meeting of the Chorlton Board of Guardians on Nov. 24th *re* lady medical officers showing that even yet their advent does not always herald peace. One of the guardians objected to a minute in the report of the house committee "recommending the appointment of a lady doctor temporarily to fill the place of Dr. Higginson" who was not well at the time. It seems that there was a difficulty in obtaining the services of the creature called by a lady guardian a "man-doctor" for so short a period as eleven days. One lady medical officer is at the workhouse already, but the work is heavy and no doubt help was required, but some of the guardians objected to a friend of the lady resident medical officer being appointed and one "could not understand why there should be all this wire-pulling to get women doctors where they were not wanted—at any rate by the workhouse people. If it were intended to fill the institution with women doctors it would be as well for them to know at once." It is curious and no doubt speaks well for the chivalry of some of the "man-doctors" that the chief defence of the action of the house committee was by a (male) medical guardian. One of the lay guardians drew a melancholy picture of the condition of the profession when he stated that "there were scores of medical men in the neighbourhood unemployed"—let us hope he is mistaken—"and yet the board had to telegraph to London in order to get a woman to look after the workhouse! It was a disgrace to ask women to undertake such a work." There is no question that in the poor districts of our large towns there is frequently overcrowding of young medical men who hope to rise on the professional ladder by beginning at the lowest rungs, and it is difficult to imagine that the house committee sought very diligently for a temporary substitute for Dr. Higginson among the local men before recommending the appointment of another lady medical officer from London.

"OYSTERS."

To the Editors of THE LANCET.

SIRS,—In reply to Dr. Woodward's query in THE LANCET of Dec. 3rd, allow me to say that at Helford, Cornwall, natives may be obtained absolutely free from contamination of drainage, there being no town up the estuary. I am, Sirs, yours faithfully,

East Molesey, Dec. 3rd, 1898.] W. W. HARDWICKE, M.D. St. And.

"FIST, KNIFE, AND REVOLVER."

MR. FRED GALE, writing in the *Globe* under this heading, gives vent to an aspiration the ferocity of which is justifiable, nay laudable. "Let us hope," he writes, "that we may hear yet of a knife or revolver ruffian being torn to pieces by the populace." Mr. Gale believes that fifty years ago, if times were rougher they were in some respects more humanly minded, and he is certain that any man in a street row who had kicked his enemy or drawn knife or revolver upon him would have been lynched. Now such actions by Hooligans seem in accord with the feelings of the mob.

IMPROPER ADVERTISING.

A CORRESPONDENT sends us a card which he assures us is being distributed by post to "nearly everyone whose name is in the local directory." We append the wording on one side of the card; on the other is a statement to the effect that the card entitles the holder to one week's medical attendance with medicine at home or at surgery according to fee paid.

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The one saving clause in the transaction is that there is no name of a practitioner on the card. If the practitioner who distributes these is qualified he must know that he is not acting in accordance with the recognised canons of professional behaviour. Of course he may be unqualified, in which case the Apothecaries' Society of London might look into the matter.

MEDICAL PRACTITIONERS AND CHARITY MIDWIVES.

To the Editors of THE LANCET.

SIRS,—Without reference to any particular institution by name I would like the opinions of readers of THE LANCET on the following point—viz., how is it that numerous maternity charities are able to carry out their work in the face of the existing resolution of the General Medical Council with regard to the employment of unqualified persons as assistants or otherwise without rendering the medical staffs of these places liable to be judged as guilty of infamous conduct in a professional respect?

Without travelling beyond the town where I reside and which also shall be unmentioned the following existence of affairs here has raised the question in my mind. The local lying-in hospital has at varying distances of from half a mile to a mile or more several establishments. All these are each manned, if I may use the word, by one or more midwives with probationers. The parent institute has, in addition, a resident qualified and registered house surgeon and a visiting medical staff. I should mention, perhaps, that the branches

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are only accommodation residences for the midwives to dwell at for the convenience of the poor of the district who are attended at their homes by the former. From the parent institute midwives also go out to attend labour cases in the same way as the midwives from the branches do. The work of these establishments is carried out as follows. When a call comes a midwife, accompanied generally by a probationer, goes out to the case. They carry through the confinement, and unless something abnormal arises neither the house surgeon nor any one of the visiting staff is summoned. True, the house surgeon is expected to see the patient once during the lying-in period if she goes on all right; only if wrong does he give any further attendance. The midwife during the all-right term attends and treats the patient until well without any supervision except that which I have mentioned as fulfilled by the house surgeon. Taking these facts as they stand I would inquire whether the employment of midwives as here depicted, where the immediate personal supervision of a registered medical practitioner is dispensed with, is legitimate or not? In my opinion it is illegal, but rather than depend on my own judgment I wish to learn from others if they think the registered medical practitioners who are privy to and sanction the substitution of their services to unqualified persons and who knowingly countenance, assist, and coöperate in the employment of unqualified persons to attend and "treat patients in respect of matters requiring professional discretion and skill" in the manner I have pointed out are, or are not, guilty of "covering" or of employing unqualified assistants, or are in any way liable to censure by the General Medical Council?

I am, Sirs, yours faithfully,

Nov. 29th, 1898. MEDICAL PRACTITIONER.

"THE COLOUR OF NEWLY-BORN NEGRO CHILDREN."

To the Editors of THE LANCET.

SIRS,—Since for some reason or other there appears to be a divergence of opinion as to the colour of newly-born negro children an exceedingly limited experience of my own may serve to throw a ray of light upon what at present seems an open question. Several years ago when attending midwifery for the charity of the London Hospital I attended a fair, buxom Englishwoman and to my astonishment at the time I found a strong and healthy baby upon the bed which was in every way perfect but looking as if just out of walnut pickle. Upon interrogating the mother she informed me that her husband was a man of colour and also that I probably might know him, as he was a vendor of "the perfumes of Araby" and India which he sold about the East-end of London. I was then able to call the husband to my memory and well remembered him as a man of similar colour to the baby although he was not a negro. Now if a walnut-coloured baby can be born having a walnut-coloured father and a fair-coloured English mother, I think it fair to assume that a baby born whose parents are both negroes will in all probability be even darker than the walnut baby it was my good fortune to bring into the world.

I am, Sirs, yours faithfully,

London, S.W., Nov. 29th, 1898. ALBERT S. MORTON, M.D.

To the Editors of THE LANCET.

SIRS,—I see from an annotation in THE LANCET of Nov. 26th that there is some difference of opinion on the colour of newly-born children of African parentage and this is not very surprising to those who have any extensive experience in the matter. The fact is they are not, like Joseph's coat, of many colours, but of many shades of one colour. They are not white and they are not pink. You have often seen a newly cleaned calf's head in a window in the Strand. This is about the ground colour, but I have never seen them as white as this; rather this colour with a light splash of black ink on it. Or if you can imagine a new chamois leather in the hands of a groom which has almost all its yellow colour washed out and which has been once or twice washed in dirty water; this is the lightest shade. The colours may be from this to the colour of the same chamois leather after a month's constant use, the darker shades of grey hiding the yellow. The grey being dark the other dark parts of the body referred to in your article are a degree darker to a dark *black*; not blue and not lead colour. This is the condition I have seen in healthy, strong children. Where the child is unhealthy, where there is not good action of the lungs, and where there is some admixture of white blood this colour has always added to it various shades of black magenta or a black red. I have attended the same woman many times and the infants have never been of the same shade. This is my experience of sixteen years on the north coast of South America.

I am, Sirs, yours faithfully,

Nov. 28th, 1898. GUIANA.

*** We fancy that the various shades of pigmentation in the young of animals which when adult are black or almost black are to be found throughout the animal kingdom and are not confined to human beings. Take, for instance, the hippopotamus which when full grown is of a very dark mahogany colour or almost black. Its young when newly born is of a greyish pink colour. According to Buckland, Mr. Petherick, the African explorer, captured a young hippopotamus about two days old near Khartoum. He was brought to England, being on his arrival there about eight weeks old. Not having been able to have a bath on the way home his skin was like the bark of an old tree, but after a course of warm baths in the Zoological Gardens "his skin soon began to get soft, slimy, and of a black pinkish colour" ("Curiosities of Natural History," Third Series).—ED. L.

RIVAL QUACKS.

IN the Queen's Bench Division on Dec. 2nd there was heard, before Mr. Justice Wills and a special jury, an action brought by Henry Doveton, a quack medicine vendor, against other quacks known as Dr. Williams of Pink Pills notoriety. The action was for false imprisonment and malicious prosecution. Doveton, it appears, had been charged by the defendants with selling pills as Dr. Williams's Pink Pills which were really his own. At Lincoln Assizes the grand jury ignored the bill as no witnesses appeared for the prosecution. Counsel for the defendants in the present trial said that this was owing to a mistake on the part of the witnesses as to when the trial came on, and the judge who had presided at these assizes was now unkind enough to say that he had thought at the time that the whole thing was an advertisement. Plaintiff, in giving evidence, said that he never said that his pills were those of Dr. Williams. As a matter of fact he carefully explained that they were not, but were much better. Mr. Justice Wills gave judgment against the plaintiff. So possibly, according to the old saw, honest men will come by their own.

MESSRS. ADAMS AND PARKES, medical accountants, &c., 8, John-street, Adelphi, have sent us a specimen of a pocket celluloid almanac which forms also a useful memorandum tablet. It is enclosed in a paper case stamped in imitation of crocodile skin.

E. C. will find references to the subject in our columns. The companies cannot be the willing agents of the homicidal parents, for it would not pay the companies if the majority of the infants insured with them died. Our correspondent is, we think, a little carried away by the tragedy of the subject.

M.D. Dunelm.—The Royal College of Surgeons of England might take notice of the matter in the first medical man's case if the publication is brought to their attention. The second author obtained his degree from Edinburgh and the university might be communicated with.

R. L. B.—The analysis does not present any unsatisfactory features, but under the circumstances mentioned it is desirable that further examination should be made at intervals so that periodical liability to contamination may be discovered or variation in composition detected.

Mr. Joseph Ward will find complete information concerning the regulations of both departments in the current Medical Directory, page 1843.

Mr. William Dalton.—We do not know any financiers and do not appreciate the merits of the invention from the description forwarded to us.

L.M. should write to the chief constable of the county, giving evidence and substantiating the accusation of favouritism.

X. (Birmingham).—We do not know the book to which our correspondent refers.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 8th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 2	29·71	WSW	...	61	57	49	50	53	Cloudy
,, 3	29·81	S.W.	0·05	70	56	50	51	52	Raining
,, 4	29·91	S.W.	...	79	59	52	53	55	Fine
,, 5	30·03	S.W.	...	59	57	54	54	55	Raining
,, 6	30·02	S.W.	...	67	58	54	54	56	Overcast
,, 7	29·69	N.W.	0·96	51	49	48	48	48	Raining
,, 8	30·01	N.W.	0·63	57	48	43	44	46	Overcast

During the week marked copies of the following newspapers have been received: *Croydon Guardian, Western Mercury, Glasgow Herald, Times of India, Durham Advertiser, Pioneer Mail, Builder, Eastern Morning News, Architect, East Essex Advertiser, Scotsman, Citizen, Leicester Post, Liverpool Daily Post, Scarborough Evening News, Yorkshire Post, Derby Telegraph, Irish News and Belfast Morning News, Leeds Mercury, Manchester Guardian, South Wales Daily News, Rugby Advertiser, Bristol Mercury, Brighton Gazette, Cheltenham Free Press, Westmorland Gazette, Sheffield Times, Keene's Bath Journal, Cambridge Express, Birmingham Gazette, Sussex Daily News, Midland Counties Express, Wigan Examiner, Grantham Journal, High Peak News, Bridlington Free Press, Dundee Advertiser, Whitehaven News, Sell's Commercial Intelligence, Sanitary Record, Liverpool Courier, Western Daily Press, Local Government Chronicle, Reading Mercury, City Press, Hertfordshire Mercury, Local Government Journal, Surrey Advertiser, Kentish Mercury, Toronto Mail, New Century Review, Gloucester Standard, St. Helens Advertiser, Pontefract Express, &c., &c.*

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Communications, Letters, &c., have been received from—

A.—Dr. J. Attfield, Watford; Dr. F. H. Alderson, Lond.; Dr. J. H. Austin, Kansas City, U.S.A.; A. M.; A. T. L.; A. D. La T.; Mr. C. Allen, Ilford; Alasco Wine Co., Lond.; Messrs. Armour and Co., Lond.; Mons. J. Astier, Paris.

B.—Mr. A. Bentzen, Birmingham; Mr. A. A. Bradburne; *British and Colonial Druggist*, Lond.; Brighton and South Coast Nurses' Association, Secretary of; Mr. E. C. Bousfield, Lond.; Berkefeld Filter Co., Lond.; Mr. P. W. Bassett-Smith, H.M.S. *Ganges*, Falmouth; Mr. W. H. Battle, Lond.; Dr. L. Beale, Lond.; Dr. S. Brock, Rome; Dr. P. M. Braidwood, Aylesbury; Dr. F. L. Benham, Lond.; Dr. Campbell Black, Glasgow; Messrs. C. Barker and Son, Lond.; Dr. Mitchell Bird, Lond.; Mr. E. W. Battle, Warrington; Mr. A. Benthall, Lond.

C.—Mr. T. Culleton, Lond.; Mr. J. Carter, Lond.; Messrs. J. and A. Churchill, Lond.; Mr. F. W. Collingwood, Lond.; Dr. N. Cullinan, Pontymister; *Clinical Journal*, Lond., Editor of; Mr. T. Cawthorn, Brighton; Mr. W. Clarke, Manchester.

D.—Mr. E. F. L. De Jersey, Walsingham; Dr. Henry Dutch, Lond.; Major A. Duncan, Lond.; Messrs. S. Deacon and Co., Lond.; Messrs. J. Defries and Son, Lond.; Mr. A. Duke, Cheltenham; C. Dewynter, Ltd., Lond.; Mons. E. Ducretet, Paris; Dr. E. Diver, Lond.

E.—Mr. E. East, Lond.; Dr. W. Ewart, Lond.; Dr. W. A. Evelyn, York; Elberfeld Farben Fabriken Co., Lond.; Esmond Cycle Saddle Co., Lond., Secretary of; Mr. A. E. Edwards, Aberdeen; Mr. H. W. Eve, Lond.

F.—Sir J. Fayrer, Lond.; Dr. Fitz-Gerald, Folkestone; Captain H. C. French, Lond.; Messrs. Fairchild Bros. and Foster, Lond.; Messrs. A. and G. W. Fox, Manchester; Mr. D. D. Farquharson, Ashton-under-Lyne.

G.—Mr. J. Gilmore-Cox, Hillhead; General Medical Council, Lond., Registrar of; Gloucester General Infirmary, Secretary of; Galignani Library, Paris; General Apothecaries' Co., Lond., Secretary of.

H.—Mr. A. L. Horne, Kingsbury; Dr. Hurry, Reading; Mr. J. E. Hancock, Hurst Green; Mr. M. Houghton, Lond.; Dr. H.; Mr. T. Harper, Lond.; Mr. J. J. Hemming, Margate; Messrs. Haasenstein and Vogler, Geneva; Hulme Dispensary, Manchester, Hon. Secretary of; Messrs. Harker, Stagg, and Morgan, Lond.; Messrs. T. W. Holmes and Co., Gateshead-on-Tyne; Mr. J. Heywood, Manchester; Dr. W. W. Hardwicke, East Moulsey; Dr. W. A. Hollis, Brighton; Messrs. Hazell, Watson, and Viney, Lond.

J.—Dr. L. Jenner, Lond.; Dr. J. Jones, Prudhoe-on-Tyne; Jenner Institute for Calf Lymph, Lond.; J. B. R.; J. E.

K.—Dr. E. Kingscote, Lond.; Messrs. R. A. Knight and Co., Lond.; Messrs. Krohne and Sesemann, Lond.

L.—Mr. H. Lawrence, Lond.; Liverpool Stanley Hospital, Secretary of; Mrs. F. E. Lemon, Lond.; Messrs. Lee and Nightingale, Liverpool; Dr. J. F. Little, Lond.; Liverpool Northern Hospital, Secretary of; Messrs. Longmans and Co., Lond.; *La Reforma Medica*, Palermo, Editor of; Mr. H. K. Lewis, Lond.; L. FitzP.; Dr. S. Lodge, jun., Bradford.

M.—Mr. J. MacMunn, Lond.; Dr. A. Morison, Lond.; Mr. E. H. G. Morris, Lond.; Dr. P. MacLulich, Carmarthen; Mr. E. P. Mead, Whitby; Messrs. J. MacLehose and Sons, Glasgow; Messrs. Maw, Son, and Thompson, Lond.; Mr. E. W. Marshall, Mitcham; Mr. J. Muir, Paisley; Dr. H. J. May, Southamptom; Maltine Manufacturing Co., Lond.; Messrs. G. Mason and Co., Lond.; Messrs. Mayne and Boyd, Belfast; Messrs. Morrison, Ingram, and Co., Lond.; Mr. J. M'Laughlan, Coleraine; Dr. W. J. McCardie, Birmingham.

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The Harveian Lectures

ON

DISEASE, ITS TREATMENT AND THE PROFESSION OF MEDICINE IN 1899.

Delivered before the Harveian Society on Dec. 1st, 8th, and 15th, 1898,

BY WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,

SENIOR PHYSICIAN TO ST. GEORGE'S HOSPITAL AND JOINT LECTURER ON MEDICINE TO THE MEDICAL SCHOOL; SENIOR PHYSICIAN TO THE BELGRAVE HOSPITAL FOR CHILDREN.

LECTURE I.

Delivered on Dec. 1st.

THE PRESENT ASPECTS OF DISEASE.

GENTLEMEN,—In addressing you to-day at the bidding of the President and Council I feel that the responsibility of the choice is theirs, not mine, and I need say little of my inadequacy to an honour which is alike difficult to accept, to refuse, or worthily to fulfil. Disease, treatment, and the profession of medicine are topics vast and varied yet capable of being brought into harmony; but in connexion with them your attention will be invited only for those changes which are special to our times. The more I have thought the closer has seemed to me to be the mutual influence at work between the circumstances of the medical profession and those of disease and of treatment. Their joint consideration might perhaps lead to a better understanding of some of our medical anomalies. It would be difficult to find facts possessing any novelty for a learned audience such as this. But in opinions there is endless variety and in variety there may be an escape from tedium. Controversial questions will be avoided; but from delicate questions there is no escape; and I may best conform to your wish by giving you my own opinions without reservation in the welcome expectation of your criticisms at some early date.

THE NINETEENTH CENTURY AND THE "FIN DE SIÈCLE."

From the year 1899 we shall soon be looking back upon the greatest century medicine has ever known, a century of labour and of results. But our recent vicissitudes, our changes, and our prospects will be sufficiently illustrated by a review of a shorter period, that which is included within the memory of our own generation. It may be asked whether there is anything special in this date to justify a retrospect. "Eadem sunt omnia semper." Dates have for us their significance and in this case the significance lies partly in the expectancy with which the centennial turning-point is looked for by us all. But there is also in our contemporary conditions a special intrinsic excuse for retrospection. Never probably was the future questioned more keenly as to its probable event, for, great as are the wonders we have watched, greater wonders are in reserve. It may be said of this as well as of the last century, that the end seems to be the most exciting part. In the closing days of that century the *dramatis personæ* of medicine were the great physician with his gold-headed cane, the surgeon, great, but of inferior grade to that august person, and the humble apothecary, who would not have ventured to sit down in the presence of these great beings. Gradually, as time went on, the class distinctions became less marked, and now, in the closing years of this century, the physician has lost his cane and his pomp and is only distinguished from his fellow workers in more general subjects in that he is credited with a more ample knowledge of the matters to which he restricts his attention, while the humble apothecary of the early days of the century, who was not paid for his professional advice, but solely for the medicines which he supplied, has given place to the highly accomplished practitioner of medicine and of surgery. He is to be found everywhere through the land, well taught, with a great knowledge of his profession, careful and judicial, wanting but little outside assistance in his work and then only to help to solve some of the difficult or insolvable problems which present themselves in the practice of the profession.

"Fin de siècle" is not an idle term. The whole world is conscious of changes, profound and rapid, and to these none are more keenly alive than ourselves who stand by and watch. They may not have been so stormy as those of a hundred years ago, yet radical, and some of them in a quiet way even subversive. Satirists have described our "fin de siècle" degeneracies. Fortunately degeneracies, like disease itself, which ever renascent life ultimately wears out, are mere passing evils. In the long run change makes for good. Moreover, all the changes have not been revolutionary. There have been evolutionary changes as well. Were I asked to name those of our changes which are most momentous my answer would be—the control of disease and the emancipation of women; the one affecting the entire human race, the other one half of mankind directly and indirectly also the other half. Their influence is already manifest, but they are fraught with expanding results.

One aspect of the emancipation of women belongs strictly to hygiene and under the heading of "physical education" will be dealt with later. The wide subject of their participation in the work of the world since weaving and spinning, once laborious and useful avocations, have been abandoned may detain us for a few minutes. But between the disappearance of the spinning-wheel and the opening up of higher work for women there is a mysterious interruption in the record of their occupation and one begins to wonder what became of the energy which for that interval of years is imperfectly accounted for and how so little mischief to health seems to have arisen from it. A great change has now set in. Higher education is extended even to the lower middle class and, through the Board schools, to the lower class itself. The natural aptitude and pliability of the sex are thus given their opportunity and this has been seized with eagerness. The secret of the wealth of France is that nearly every man and woman contributes to production. Until recent years in this country a large section of our female population had been unemployed; much may therefore be expected from the mobilisation of so great a reserve. Quiet and peaceful studies for the gentler sex; the forum, with its struggles and excitement, for man. This division of labour would apply, with modifications, throughout the scale of professions and employments. In all sciences if their labours are to be divided, and particularly in botany and biology, the domain of fine and patient observations seems to be specially indicated for women. In literature there is in the place of the aimless reading of novels a tempting field now vacant, since in our profession and in others also philology has been discouraged on the plea of over-pressure and one of the richest and most useful of our educational studies is therefore neglected. Molière ridiculed the ladies who took an interest in the study of Greek, but we should now hail their assistance whilst envying their opportunities of combining one of the highest personal pleasures with public advantage.

The accession of women to the ranks of the profession is for us the most important part of this large question. A need has been supplied and a vacancy filled in lines of work for which neither aptitude nor opportunity fit the medical man. A providential coincidence may be traced in this development at a time when the responsibilities of civilising new worlds are, as it were, suddenly cast upon us. Civilisation in its commercial aspect is now carried on at racing speed by steam and electricity. True civilisation of the human beings themselves could be carried out with like rapidity only by the influence and example of women, and who among them can compare in influence and general fitness with the members of our profession under whose enlightened guidance other workers might carry out the beneficent scheme? How different this scheme of civilisation from the former methods which relied upon ardent spirits and the rifle as their chief weapons. India, China, and Africa are the vast fields which will be open to this, the highest of civilising agencies next to that of the missionaries whose labours it would assist. But the number of those fitted and willing to embark upon such arduous enterprises must remain limited. Within our own boundaries, however, plenty of scope may be found for a majority of the workers. The same civilising influence has to be carried into the heart of our cities and into the homes of the people. The enormous wealth of this country is in strong contrast with our pauperism which a long period of State relief has failed to remedy. It is becoming more and more evident that individualism in charity is the only hope for a cure and that the best way to raise the level and provide for the comfort of the lower classes is the

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education of the women by women. This is the kind of work which would throw usefulness and interest into thousands of lives imperfectly satisfied by the mere vanities of the hour and could achieve, if organised, incalculable good.

THE CONTRACTION OF THE FIELD OF MEDICAL PRACTICE.

The other great fact around which my remarks will centre is the increasing limitation of disease and the contraction of the field of medical practice. It will be seen that in many cases ailments which hitherto had belonged to the exclusive care of the general practitioner have had a tendency to escape from his undivided control. The causes of this change are various, its ultimate consequences of considerable importance, and to them some attention will be devoted in due course. Other changes no less remarkable have occurred affecting the status, the practice, and the prospects of the profession. They have taken place at the two extremes of the professional ladder and it is significant of the completeness of our representative character of the entire human family that these changes should have been in opposite directions. The same period which has witnessed the undue influence of democratic ruling on some of our members has also thrown lustre upon the entire body by the conferment upon one of us of the highest honour in the state. Changes in the latter direction belong to those which I have termed "evolutionary." The other change we must regard as a "revolutionary" one and therefore subject to revision. It is one which might be regarded as not concerning us, yet there is good ground for our discussing it. Whilst the difficulties of some of our *confrères* have been at their worst, what notice have we taken of them, you and I? Neither the consultant nor the affluent general practitioner has any personal share in these troubles. Nevertheless, they affect the vital interests of the profession by affecting individually its members, those least likely to have the necessary opportunities and power for grappling with the question. Is it not part of our duty at least to take cognisance of their troubles, and when these are realised to help them to find a remedy?

THE GRADUAL DIMINUTION IN THE PREVALENCE OF DISEASE AND ITS CAUSES.

The prevalence of disease has considerably diminished within the memory of the present generation and if its characters have altered in any degree the change has been rather in the direction of attenuation. The origin of this improvement is not far to seek; it is to be found in our improved knowledge of the causes and of the natural history of disease and in the system of repression based upon it, which includes direct methods applicable to some of the infectious diseases and indirect methods for other forms of disease. These two groups will claim our separate consideration.

The parasitic nature of infective disease.—The notion of the parasitic origin of disease dates back to a remote antiquity, but the full proof of its correctness has been delayed until our own times and with it the idea that their spread can be controlled and even arrested. Contagion was a powerful argument for the theory of a living and continuously multiplying *ens morbi*. But where, as in the endemic diseases, a direct transmission failed to be traced the elements were made to bear the blame. The mysterious cropping up of epidemics led support to the theory of spontaneous generation, and, strange to say, even within our own time, spontaneous generation was for a while the burning question until all doubts were finally set at rest by Pasteur. We are now aware that whatever may be the individual channel of communication the cause of each of the infective diseases is a living thing, capable of being destroyed in its nidus, if only we knew how, and of being stopped in its transit.

This result due to modern science and research.—The progressive diminution in the prevalence of some of our most fatal diseases is not merely fortuitous but the direct result of our successful interference. Each of the great victories over disease has been the reward of a long and systematic siege planned in each detail by scientific knowledge. This plan of campaign is in some respects analogous to that of the astronomer in quest of a missing planet. His early calculations seem to have no reference to the object which he seeks, but with fatal precision they ultimately guide the axis of the telescope. It is not for me to depreciate the value of imagination. We owe much to it in science, for without its help some of the most fruitful facts might remain unproductive. This is, indeed, the history of many of our greatest discoveries. They have been rediscovered long after the premature spark of genius had flashed in vain for a world too obtuse and unimaginative.

Specialism in research; bacteriology.—Progress nowadays is subservient to the trained use of instruments of precision and to the faultless accuracy of scientific experiment. Specialism has been much decried. It is a necessary evil of the day, or rather it is the first essential for good work. Nowhere is this more apparent than in the progress of pathology. Without bacteriology, that most specialised of all our branches of study, none of our latest discoveries could have been made and it is through the concentration of labour upon special lines that its greatest results have been attained. All honour is due to Koch who opened up the road to trustworthy experimentation by his careful elaboration of the technique and his broad generalisations on the principles of bacteriology as a science to be placed within the reach of the ordinary pathologist and within the capabilities of a properly-equipped laboratory. It would be a pleasant task to dwell upon the now extensive list of those diseases which have been traced back to their real causes. Relapsing fever, tuberculosis, leprosy, diphtheria, cholera, tetanus, malaria, actinomycosis, glanders, dysentery, typhoid fever, pyogenic infections, and the plague are no longer mysteries, and they by no means complete the list. Each one of these discoveries has cost the long and assiduous labour of men who had had a complete training in each of the ancillary sciences before starting upon their special investigation. It has been our privilege to live within the day of Pasteur, Lister, Virchow, Cohnheim, Koch, and many others to whom humanity is immediately indebted for our present immunities and to whom was first given the power to make and to unmake disease. We cannot forget, however, that the foundation was laid long ago by such men as John Hunter, Jenner, Baillie, Laennec, Cruveilhier, and Rokitansky; and to these immortal names others too numerous to bring up form an honourable escort.

Diagnosis more scientific.—Etiology loses its use unless disease be recognised. In diagnosis also the most brilliant advances have been worked out in the laboratory. Bacteriology has given us tests for some of the most virulent affections and the other sciences have been drawn into the service of the physician. Diagnosis must always be an art, but it is becoming more and more a science, needing technical knowledge and skill and an increasing supply of instruments of precision. One of our most striking innovations is the employment of scientific aid by the practitioner and the adequate means which have come into existence to supply his requirements. At hospitals all this is provided by the clinical laboratory which is therefore an essential part of their equipment irrespective of any educational object.

The suppression of disease.—It is to Jenner we owe the great idea that a disease may be practically stamped out by a thorough application of some universal protection. I need not weary you with figures, but you are aware that wheresoever efficient vaccination and revaccination are performed the mortality from small-pox is almost *nil* and its incidence is restricted both in numbers and degree. In our own country it survives only by the will of the people. The reduction in the prevalence of the fatal zymotics can be traced to the study of the germs of disease and ultimately to that biological study of the ferments which led the genius of Pasteur to his vast inductions. Preventive inoculation has been practised for cholera, plague, enteric fever, and diphtheria; these diseases, however, are not so prevalent as to warrant universal prophylactic treatment. Vaccination still stands alone as a universally applicable prophylactic and it stands almost exactly where Jenner left it with the single additional improvement of asepsis. It is also to these guiding studies that we owe those immense practical realisations of Lister which have made surgery and which have influenced medicine to its foundation, and it is to them that we are indebted for the fertile teachings of Parkes on hygiene.

The share of hygiene in the prevention of disease.—To hygiene, inspired of bacteriology, are due most of our practical measures of prevention. The suppression of cholera, of relapsing fever, and of typhus fever, the limitation in the spread of the common exanthems, the successful though still fractional results in the limitation of phthisis, and, not least, the improved health and strength of the rising generation,—all this has been the direct fruit of a faithful application of its principles and these results must raise the

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subject of public health to the highest place in the service of the State and in the opinion of the profession. The methods of cure and of prophylaxis are of two kinds—direct and indirect. Bacteriology which has done so much in the etiology of disease has also in some instances provided us with its direct cure. But in the line of prevention we have chiefly utilised the indirect methods of hygiene. Hygiene is likewise, in a modified sense, a curative agent, for when associated with medication it lies at the root of some of our methods of cure, as in the case of malaria and syphilis. Again, we are indebted to it for the suppression of the epidemics of puerperal fever and septic peritonitis. This great progress was initiated by Semmelweiss, but the modern life-saving reforms did not become part of practical gynæcology until Lister's great work had shown how the previously unchecked spread of septic infection could be absolutely prevented.

Pyæmia and septicæmia which claimed so many victims are now almost unheard of. Moreover, suppuration itself, with its long delays, its risks and sequelæ, has now ceased to be regarded as part of the process of healing. This simplification in the tale of surgical sufferings is not limited to the traumatic group. I need merely mention abdominal surgery and the rapid relief which it often affords to chronic affections of the stomach, of the bowel, of the kidney, of the liver, and of the ovary.

The share of bacteriology in the cure and prevention of disease.—Bacteriology has in some diseases supplied us both with the prevention and the cure. But in this country the preventive methods have not had the opportunity which unfortunately obtains in the East. The treatment of diphtheria is the most brilliant example of the curative value of the serum of immune animals in which we must admit the existence of some principle, biological or chemical, endowed with the power of neutralising the toxins generated by the bacillus; the immune serum, although it is itself unable to check the growth of the bacillus, still leads in some mysterious way, perhaps by setting free the full contingent of phagocytes previously paralysed by the toxins, to the arrest of that growth. Less successful but not wanting in promise are other forms of serum treatment. The streptococcus serum, the pneumococcus serum, the antitubercle serum, and the antitoxin treatment for tetanus and for plague are instances in point. Within quite recent years the immunisation of those likely to be exposed abroad to the infection of such virulent diseases as cholera, plague, and typhoid fever has been systematically practised; but since diphtheria has become amenable to treatment in this country there is less necessity for any protection of this kind.

The respective share of medicine and surgery in the repression of disease.—The contemporary advances of surgery have been the evolution of an art which had previously desired its opportunity now given to surgeons by anæsthesia and antisepsis. As the opportunity was afforded a new surgery grew up under their hands, characterised by skilful manipulation and by infinite ingenuity of device. A tribute is also due to dental surgery, the improved methods of which are of incalculable service in the rational treatment of some lingering ailments. The prime honour in these surgical triumphs is, however, due to that science which elaborated antisepsis, the science which led Jenner to his great results, which subsequently guided Pasteur and, as a crowning benefaction to humanity, inspired Lister and his work. The principles of antisepsis have been worked out on those lines of research which are identical with the laboratory methods carried on in the service of medical questions. In all that preliminary research and experimentation there was very little of surgery in a strict sense, but a great deal of biology and chemistry.

Medicine vindicated.—Whilst the brilliant record of surgery has tended to eclipse everything else the achievements of medicine have been unnoticed or minimised. To place things in their true light the province of surgery would seem to be essentially curative. It may save life or limb, but this is a gain to the individual only. Medicine has done more in prevention. Its dealings with the individual are not always brilliant and its attempts at the cure of disease are too often absolute failures; but it has succeeded in protecting not the individual alone but the community against decimating diseases. The suppression of a single disease, such as typhus fever, small-pox, or cholera, would alone outnumber the surgical total of lives saved. The same opportunity is not afforded by surgical affections, few of which are in any degree communicable. Again, the problems of medicine are slowly worked out. But the fruit of this silent and unremitting work will not suffer in the end through the delay. In reviewing the whole subject we may classify the infectious diseases in three groups: (1) the extinct diseases; (2) the diseases known to be preventable and which might be extinguished by present methods if carried out more stringently; and (3) the diseases of which the spread has been considerably limited, but which we cannot hope to completely suppress. The first group is a small one, but its mortality was great. It comprises in this country only malaria, typhus fever, relapsing fever, cholera, and leprosy. In the second group we can only mention small-pox and hydrophobia. Their suppression might be brought about if the proper means were adopted. The third is the larger group, made up of typhoid fever, diphtheria, scarlet fever, and the minor exanthems, whooping-cough, mumps, and the septic infections. Its record is less brilliant. Persevering efforts at segregation and disinfection may ultimately succeed, but the practical difficulties are great. In the vast field which remains outside the acute infections two of our national diseases, rheumatism and phthisis, stand out prominently, both of them now well in hand, the one thanks to treatment, the other thanks to prevention.

The diminution in the prevalence of phthisis and the measures of prevention.—In phthisis the combination of two infections, the specific bacillus and the organisms of suppuration, explains the need for the perfection of ventilation. There seems to be at last in this country, after a long and regrettable delay, an earnest resolve to provide this remedy. The first advance was made on the strength of general hygiene and in this direction the Factory Act led the way. The Royal Commission on Tuberculosis has reported a diminution of 27·9 per cent. in the period 1891–1895 as compared with that of 1851–1860 for the age-period 0 to 5 years. Great as this reduction is, it represents little more than half the reduction for the age-periods 15 to 20 years and 20 to 25 years. But under the special heading "Tabes Mesenterica" there has been a reduction of only 3·0 per cent. during the interval stated. The report points out that this result, which contrasts with the great diminution of tuberculosis at other ages, has coincided in point of time with the large increase in the consumption of milk. But we are now dealing more and more closely with the agent of the disease in its various modes of dissemination, in the sputum, in food, and in milk. The importance of the purity of the milk-supply has been revealed by the researches of Professor Delépine which are now leading to practical legislation. Since the tuberculin test enables us to detect disease in the cow before it has become otherwise obvious there is no reason why the spread of tubercle by milk should not be efficiently prevented. It should not be forgotten that it was Parkes who first authoritatively brought forward the treatment of the disease by hygienic and preventive methods. The essential of his views as to the management of phthisical patients was that they should be made to breathe an air as pure as the outer air without the danger of catching cold. But, as we are reminded by Dr. Tucker Wise,[1] another Englishman, Dr. George Bodington, in his essay on the Cure of Pulmonary Consumption on Principles Natural, Rational, and Successful (1839) was the pioneer of doctrines which have only gradually attained recognition.

The diminishing prevalence of the minor ailments and of trade diseases.—The increasing healthiness of the community is a notorious feature of the day and we need not review the long list of the general affections. More important are some of the "trade diseases" which modern hygiene has taken into its care and in which a distinct reduction has been brought about, as, for instance, in the destructive lung diseases from inhalation of dust and in the affections due to intoxication by lead, mercury, and phosphorus.

The prospect as regards the further limitation of disease.—With fewer diseases left to suppress are we likely ever to witness again a wholesale reduction similar to that which was the immediate result of the great advances in hygiene and pathology? The answer can hardly be doubtful. The material for future improvement is not likely to be soon exhausted; neither have we yet fully reaped the fruits of hygiene in the direction of prophylaxis and of an increased vital resistance to disease. Moreover, our weapons of attack are steadily improving. Discovery has almost become an

[1] THE LANCET, Nov. 26th, 1898.

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organised function and its return of new facts may be expected with the same regularity as the output from a mine. One after another our parasitic diseases must yield to this never halting progress until sporadic instances of our more trivial zymotics come to be regarded with the same eager curiosity which draws a crowd of students round a stray case of typhus fever or of small-pox. Much disease of a non-infectious kind will also be prevented. If this is not too sanguine a forecast there can be but one conclusion—the ratio of instances of disease to the number of the healthy population must steadily diminish.

DISEASE CANNOT ENTIRELY DISAPPEAR.

There is, however, a finality in this encouraging prospect. Although we may in the distant future live healthier lives and die from old age some diseases must remain always. The most virulent diseases are those most easily prevented. But others are incapable of being suppressed and they are apt to be perpetuated by our success in saving the weaker lives.

The periods of life and their medical needs.—Though the decay of old age and the growth of the infant ought to be physiological processes this is almost the exception rather than the rule, and at both extremes of life a variety of affections call for medical assistance. Childhood and youth will remain obnoxious to various infective diseases but also to the ailments incidental to growth and development. The two dentitions, and particularly the onset of puberty, are times when medical advice must always remain essential. Among the minor zymotics which are not segregated measles is still prevalent and too often fatal and our inability to check the progress and the fatal results of whooping-cough is an opprobrium.

The affections of women.—Again, in women the climacteric periods, pregnancy, and child-birth, which should be purely physiological, need watching with special care and gynæcological practice must continue to flourish as it has done in the past.

The degeneracies of middle and of advancing life.—In middle and advancing life the later developments of syphilis will continue to prevail so long as neither the state nor science can cope with this scourge. Many visceral degeneracies are also traceable to infective disease, to wear and tear, to unevenly apportioned labour, and to the thousand risks of life, but most of them to human perversity in turning food and drink into poison. The dietetic diseases of the alimentary, the renal, the cardio-vascular, the nervous, the skeletal, and the cutaneous systems are likely to remain, like gout itself, more prevalent in this than in any other country in proportion with its growing prosperity and in spite of the wiser counsels now prevailing. Cancer abounds; how long will it refuse to yield up its secret and to respond to treatment? As to its alleged increase, some scepticism prevails amongst those best able to judge. But weighty arguments have been adduced in favour of its transmissibility.

Nervous diseases.—Abetted by syphilis and by the marriage of epileptics, these are not unlikely to become more prevalent; at any rate, their diagnosis is now more frequently made. We may distinguish three degrees in nervous disorders. Among the so-called *functional* affections we have hitherto recognised a purely functional group, including hysteria. But there is also a group of "neurastheniæ with degeneration" in which most of the symptoms are functional but in which either syphilitic or simple malnutrition overtakes the nervous substance. I need not dwell upon the remaining group, that of the common forms of central or peripheral *structural* disease. It is evident that the study of the neuron and of its many sufferings will long offer an ample field for pathologists and physicians.

Insanity prevails. Is its frequency increasing? This is not improbable. But, as with cancer, the statistics in the past have not been of a kind such as to enable us to compare the data with scientific accuracy. Insanity is more universally segregated than ever before, and the practitioner is on the whole little troubled with its treatment.

Nerve over-stimulation by drugs; drug diseases.—There is a source of nervous ailments entirely special to this age and the unexpected outcome of our nineteenth-century chemistry and advertising. Intemperance in drugs is becoming more common and it may possibly outstrip the abuse of alcohol and its evil results. The manufacture of new chemical products is supplying the public with endless carbon derivatives of high molecular power and of imperfectly known physiological action. Fortunately many advertised medicines are harmless, but their prolonged use is detrimental if only by delaying the treatment required by the original affection. Others are most dangerous, and their continued indulgence leads to confirmed neuroses or hopeless neurasthenia. Of this we all witness the daily demonstration. It thus comes to pass that as the therapeutic activity of the profession tends to abolish disease that of the public is manufacturing it.

Food diseases and infants' foods.—Whilst the increasing purity of natural foods has reduced our mortality modern ingenuity has been the unintended means of occasionally supplying poison in food. Fortunately ptomaine poisoning is an unusual accident. A much more serious and widespread evil has been the undiscriminating substitution by mothers of condensed milk and manufactured foods for the fresh supply of milk. This neglect of fresh milk and the untutored administration of artificial foods, even of the best kind, without due regard to proportion and to suitability, have been disastrous. To this cause may be attributed the fact that, in spite of modern hygiene, infantile mortality from diarrhœa and marasmus has shown no adequate decrease and sometimes an increase over that noted before these modern inventions.

The danger from the tropics.—Our chief danger in these times of rapid travel and traffic between the Old and the New Worlds is the importation of epidemics of virulent diseases as in the case of cholera of old and recently of influenza with its peculiarly lasting effects; and the plague is our present nightmare. But short of so calamitous an invasion we may expect a growing number of patients returning from the tropics with impaired health. The study of the tropical diseases is therefore most opportune, for not only must they call for a considerable staff of medical advisers in the newly developed centres, but their sequelæ cannot fail to require considerable treatment in this country. Short of the creation of a large and central hospital readily accessible from all the medical schools for the treatment and the study of these affections nothing would seem to be adequate for the fulfilment of our long-neglected imperial responsibilities, for the needs which coming years will multiply, and for the requirements of this vast metropolis viewed as the centre of an immense tropical empire. In conclusion, we may hope that our list of diseases is already complete and even though we might in future generations react differently to microbes which are now innocuous, our position, thanks to hygiene, will be safer than it ever was before.

THE PROFESSION AS IT IS AFFECTED BY THE LIMITATION OF DISEASE.

Although these remnants of disease keep up an excuse for our numbers there is no escape from a conclusion that the extinction of disease which has already occurred has perceptibly lessened our occupation. Those among us of maturer experience may be able to look back upon the field of practice such as they once knew it. Phthisis was enormously more prevalent than now. The zymotics flourished unsegregated, readily gaining entrance into houses and sometimes, like puerperal fever, dogging the medical man's footsteps, but once in possession were difficult to expel till all susceptible material had been used up; even small-pox was not uncommon because less segregated and less guarded against by revaccination; diphtheria and typhoid fever were unchecked in their spread; and the work of destruction by typhus fever was still active among the poor. But in addition those ailments were then rife with which we are still familiar; there certainly was not less of pneumonia or of bronchitis than at the present time, and diarrhœa and English cholera were assuredly more prevalent. Were the same progressive elimination of disease to continue at the same rate a time might be foretold when our ministrations would have become restricted to those two solemn episodes in the existence of our fellow creatures at which it is a wholesome tradition that the profession should be represented—the general practitioner being called in at the birth, the physician at the death; whilst most matters of health were prearranged from head-quarters by the man of hygiene in his laboratory. After its long and faithful stewardship is the profession to become in the distant future a parasite, a superfluous, purely ornamental profession—once active, now defunct? It may be safely predicted that this Utopian change will never be fulfilled.

OUR SCOPE OF USEFULNESS AND OUR OPPORTUNITIES IN THE FUTURE.

It cannot be gainsaid that this limitation of disease is an increasing factor in the pressure which is felt in the ranks of

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the profession. Yet we need only look around to see that the medical men are neither fewer than they were nor unemployed. Habit rules supreme over us. In our social life, so persistently conservative, the set relations between employers and employed have a vitality of their own; there is a tendency to utilise agencies which the social system provides for use and the medical man continues to be consulted.

The anxieties of the educated classes.—Two modern developments tend to render him indispensable; both of these are the reflected results of the modern work and progress of science. I refer to the dread of disease and to the desire of prevention.

Leaving aside epidemics of virulent type, such as cholera, typhus fever, and small-pox, which struck terror in the land, the other zymotics, such as scarlet fever, measles, and whooping-cough, were regarded with an indifference bred of familiarity and of an imperfect knowledge of their possible results. But our labours in the suppression of disease have struck a new key. A wholesome dread, in some cases almost amounting to a panic, has seized upon the educated classes. The fear raised by the mention of scarlet fever might be thought immoderate but that it serves an excellent purpose both for the public and for the profession. As a result of this apprehension the medical man's advice is anxiously expected at a stage when formerly homely remedies were thought to be sufficient. The educated classes have also learnt another valuable lesson. They have now been roused to the idea of the preventability of disease and the medical man is often welcomed to conjure away its mere ghost. All round the wise doctrine is gaining ground that advice should be sought before harm has accrued. Although the attitude of the Eastern tribes in face of Kismet never existed among us too much was often left to chance. Nowadays we are approaching more closely to the type of that thoughtfulness for possible evils which prevails in transatlantic England where medical men are so largely consulted. Nor is this limited to the case of the zymotics, which isolation tends to remove from the sphere of private practice. The medical man is largely consulted for discomforts rather than for disease, for alarms rather than for ailments, most of them traceable to the too full enjoyment of the privileges of health and of the good things of this life. Thus, his attention is now drawn by the patient to a different clinical condition and this enlarging display of minor suffering may be one reason why nervous disorders are supposed to be more prevalent. Much of this might be regarded by sterner observers as due to imagination or to exaggerated sensibility. Yet there is a useful side to this minor form of practice. The medical attendant is afforded an opportunity for warning, and by his attention not only to the arrest and prevention of disease but to the improvement of the life and efficiency of the growing generation he does yeoman's service to the individual and to the State. A change, analogous in some respects, has come over the practice among the uneducated, although with results sometimes adverse to the interests of the profession. But the question of the provident system must be reserved for another lecture.

Our widening opportunities.—Enough has been said to show that our occupation is not gone but has shifted only and that our usefulness is as great in preventing as ever it was in treating disease. But in other directions also, including that of public health, important work awaits our highly trained students. A system of almost universal life assurance under State supervision analogous to that which has been largely introduced into Germany does not exist in this country, but if it were to become established among us it would make a considerable addition to professional work in connexion with the examination of candidates. Certificates of sound health and of freedom from contagious diseases and in particular from any tuberculous taint will be more and more in request as the public becomes more educated in matters of hygiene and more sensitive as to the risks of the dissemination of phthisis. For the selection of careers the profession is already largely consulted and the State exacts qualifying medical examinations for the services, but in this direction there is room for much more work than is at present done. The soundness of future generations and the exclusion of heritable disease are duties which may not be mentioned yet lie dormant near the conscience of the profession. The profession is not anxious to invite any responsibility of this sort, even if a tyrannically radical constitution, such as that of a Utopian republic, were wishful to exact it. Self-sacrificing and alert for the public weal in other directions it has on this point remained silent, and we may doubt whether the difficult question as to the discouragement of the marriage of the unfit and the yet more difficult question of the selection of the fittest are likely to be ever submitted to the profession for a practical solution, although there are those who would urge our being more outspoken and attempting even to create a public feeling on the matter. On the important subject of practical Malthusianism which is probably opposed by the conscience of the profession as a false notion politically, socially, and morally, its attitude has also been one of reserve. I believe it has always been in favour of the principles which are consonant with the best interests of humanity and with the greatest sum of happiness and power. Love of offspring is the healthiest sign of a race, and the national strength which is its reward stands revealed in connexion with armaments and now more than ever in connexion with colonising power. More advice will be needed by the State than has been hitherto taken, or at any rate acknowledged by it, in regard to ethnological and colonising questions—a mere sample of the large department of state work in which the profession is destined to take a share.

Compulsory education viewed in its medical aspects not an unmixed boon.—The medical supervision of education is another important question which affords considerable scope for professional activity. Where so many children are congregated and where parents are deprived of all means of selecting their associates a serious onus is incurred by the State and nothing short of the greatest care can cover its responsibilities.

The fatal transmission of scarlet fever and of diphtheria is the worst evil and the question arises whether everything has been done which might have been done to prevent their spread. Are all children who are allowed to return to their schools after an attack of diphtheria sufficiently disinfected in one of the most likely directions? The nasal cavities which are nearest to the seat of affection and in themselves often affected by the disease are too often forgotten as a persistent nidus.

The "head-evil" at schools.—But there is another evil, less serious in the eyes of the lay observer, yet fraught with most serious danger to health and even to life, which for many transforms compulsion into direct injury. It is since the children of the poorest have been forced into the Board Schools in the company of children of respectable and cleanly artisans that vermin have invaded homes carefully kept and the health, or even the life, of many a delicate child has been sacrificed. All this is preventable by insisting that the hair of all children under a certain age attending these schools shall be kept short. To the unthinking this may appear an unpardonable interference with the liberty of the subject, but I need not point out where really lie the crying injustice and the loss of freedom. Thus in matters of bodily health and in connexion with the danger of infection a great deal remains to be done which ought to be regarded as of urgent necessity. The examination of children as to their mental adequacy for the work of the school board schools is at last receiving attention and competent medical observers are now appointed to inquire into this question.

The medical attendance upon the healthy.—Princes have always had their body physicians and men of wealth have imitated the princes and given a social position often with little employment to members of our profession. In the days when Alexander received the ministrations of his faithful physician the rudimental knowledge then current must have provided little occupation for Philip during the conqueror's progress. How great and varied nowadays in personal matters and above all in matters of public health are the responsibilities of the physician to a potentate on his travels; and how much greater the forethought and provision in the case of armies—witness the recent expedition up the Nile—a campaign of hygiene, where one of the most important factors was the bringing on to the field of action, remote, difficult of access, and unhealthy, a large body of men in so efficient a condition that they could fight and conquer. This health-preserving function of the profession, of vital importance in the case of families, is becoming more widely utilised by the intelligent public and the same principle enters as an undeveloped idea into the scheme of the provident system where its further elaboration might perhaps help to correct one of the worst troubles of the profession.

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Public health and sanitation.—A large field yet remains to be occupied in connexion with public health. From time to time some catastrophe directs public attention to the work which has silently been carried on. Meanwhile, from all parts of the country we have heard the same report as to the treatment meted out to the most useful man in the district. Finding this want of appreciation on the part of the constituted authorities can we wonder that there should be imperfect knowledge and appreciation elsewhere? Can it be said of every house that it is now medically inspected even once a year? Yet is any responsibility greater? Are all our public institutions adequately and frequently inspected? The Factory Act was the first attempt to deal with a frightful evil, but the same evil in less glaring proportions is still among us and it can hardly be said that the health and lives of thousands of city workers are protected in the way which any physician might indicate. This trenches upon matters which are semi-private and yet where many are employed there is a public duty to perform. Schools are generally provided with their own physicians and with them rests the ability to call in at proper times sanitary assistance. But turning to hospitals, do all of our hospitals possess a regular visiting health officer? It is now proposed at one of our children's hospitals to provide a staff appointment for a medical officer of public health and it is hoped that this example may find imitations. Lastly, even in the official work of local administration what do we find? Disaster and loss of life from the refusal to use the services which were offered as necessary for, or at any rate conducive to, safety. I need not remind you of what occurred at Maidstone.

THE CHANGES WHICH HAVE OCCURRED IN THE CONDITIONS OF PRACTICE.

Although, as I have endeavoured to show, there has been no falling off in the supply of work for the profession as a whole changes have occurred in its distribution, changes also in the conditions of practice, which have led to pressure upon the practitioner. This claims our notice all the more as it may be fairly said that never has labourer been more worthy of his hire. Whilst disease has greatly diminished treatment has grown and is on the increase and the labour of treatment is greater than at any previous time. This is true both from the point of view of the general practitioner and also of the hospital physician or surgeon. The details of treatment are amplified and require more minute care. There is in many cases not only a patient but a nurse to direct, her attendance and skill rendering many measures possible which without her could not be applied, and thus a great deal more is attempted and achieved. The sick room is a busier field and the medical man's call is not a mere formality or wasted in conversation. Hospital physicians and surgeons realise in a special degree this change. A quarter of a century ago it was not considered necessary for them to attend more than two or three times a week and they could then perform their ward duties within a moderate time. During their visit there seemed to be ample leisure for clinical discourse and this doubtless was a charm attaching to conditions of greater ease than now prevail. But the work is now, both for the physician and for the surgeon, so anxious as to render their daily attendance almost indispensable in the interests of the sick.

I am informed by those of mature experience that the conditions of general practice have considerably altered within the memory of living man and particularly within recent years. In the first place the attendances upon invalids are less protracted owing to modern methods and in this the patient is greatly the gainer. But this curtailment is sometimes due to the action of the patient.

The restlessness of patients and specialism.—It is undoubtedly one of the characteristics of the age that there is among us less inclination to bow to authority and on the part of patients or their friends to accept without question or reservation the *dicta* of their once trusted adviser. In the behaviour of those who are compelled to consult us there is to be noticed a restlessness in their desire for the advice of various authorities and a corresponding instability in the relationship between the patient and his medical adviser which is much to the disadvantage of both. There is an old saying that "it is much easier to treat the patient than to treat the patient's friends" who often speak with an assurance about medical matters which is generally proportionate to their ignorance of the subject and which it is particularly difficult to overcome. Friends have been known in their misdirected zeal to interrupt satisfactory progress by suggesting new methods and new advisers, both probably imperfectly suited to benefit the patient. Formerly the family attendant felt secure and from his knowledge of antecedents and of circumstances reaching back for a generation or more was in a position to act with more certainty than a practitioner casually called in. Sad, and in our experience not infrequent, are the cases where a patient who needed only to trust and persevere on the well-considered lines which had been laid down is passed from hand to hand with little chance of benefit and without any chance of carrying out the systematic treatment which is necessary. Much better had he desired his own faithful adviser, as difficulties arose, to seek the help that in his opinion was most likely to be of service. In this way the field of practice has been lessened for the family attendant, often to the detriment of the patients. But other causes have also led to a diminution of his opportunities. The concentration of study upon definite departments of practice has been peculiar to the last decades of this century. It has been an essential condition for progress and has worked beneficially for the profession and the public. But in this matter there is one essential element, that the specialist should continue at the same time to have competent general knowledge. Medical education as it is now understood tends to that happy result. Too often the patient is misled as to his own troubles; and his most obvious symptom, that which attracts his attention, may be but a small part of the case. Nothing will satisfy him till he has had the opinion of someone who has a reputation in reference to the particular symptom which has caught his attention, and this is a process apt to be repeated indefinitely. By the concentration of the specialist's observation upon this prominent symptom the important and essential elements of the case may pass unnoticed—a risk capable of avoidance had his adviser familiar with his conditions been at hand to reveal the less obvious essentials to a complete diagnosis. The patient's advantage lies in a coöperation between his regular medical attendant and his occasional adviser and this also works for their advantage and comfort. The cultivation of this mutual professional intercourse tends to strengthen the bond of professional brotherhood and well might we say, in the words of a great physician, "When doctors differ who shall decide? but when doctors agree who shall venture to differ?" This reminds us that combination is that which we must look to to ease many of our difficulties and it is a remedy which brings with it pleasure as well as strength.

ABSTRACT OF

The Morison Lectures

ON

THE RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDER IN THE VISCERA.

Delivered before the Royal College of Physicians of Edinburgh on Nov. 7th, 9th, and 11th, 1898,

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LECTURE I.

Delivered on Nov. 7th.

THE PATHOLOGY OF VISCERAL INNERVATION.

SIR JOHN TUKE AND FELLOWS,—In selecting so large a subject as the relation of the nervous system to visceral disease and disorder I need scarcely state that I had not the presumption, in view of the audience I should have the honour of addressing, to entertain any intention of an exhaustive treatment of material concerning which many of my hearers would be in a position to be, as some of them possibly have already been, my teachers, but rather to indicate so far as I could guiding points in a subject of

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increasing interest and importance; to endeavour, in short, to discover principles—*principia*—those light rays of the dawn, the first perception of which in obscure surroundings is one of the most exalted pleasures of which the human mind is capable. In considering some features in the anatomy and physiology of the visceral nervous system in this place last year the method pursued was centripetal. We examined the subject from the so-called peripheral nerve-endings in organs to their known or surmised origin in the intermediate or central portions of the nervous system. In referring to some points in the pathology or pathological physiology of the same structures I propose following the same course. The pathology of the visceral nerve-ending may be frankly stated to be non-existent, although it may legitimately be assumed to participate in the disintegrative changes which may affect visceral nerve trunks and to which I shall presently refer. We have seen how difficult it is in many cases and under the most favourable circumstances as to freshness of tissue to detect the nerve endings in the viscera anatomically, and when we remember that some of our best histological methods such as the chrome-silver methods are not at present well adapted for pathological work, and that such investigations themselves require an amount of time which is not at the disposal of many general pathologists, it need not surprise us that the pathological changes in the nervous periphery are still in great measure a *terra incognita*. The recent tendency of physiological thought, moreover, to rob the peripheral visceral nervous system of the very modest amount of subordinate automatism claimed for it is calculated to delay active research in this direction.

The disintegrative changes in the visceral nerve trunks may be broadly regarded as of an active and passive kind, the former being due to organic or inorganic poisons and the latter to slow or rapid solutions of continuity by pressure or grosser traumatism. The organic poison playing the part of a morbific agent may be introduced or of home growth—it may be heter-intoxicant or aut-intoxicant. The heter-intoxicant organic poisons most frequently operative are alcohol and the infectious or contagious fevers, especially diphtheria; the aut-intoxicant some form of cacometabolism such as diabetes or gout. The most common inorganic poisons which are of necessity introduced and heter-intoxicant are lead, phosphorus, arsenic, and mercury. The specific effect which these poisons have upon the peripheral nervous system is to cause a proliferation of the connective tissue of the sheaths and of the nerves themselves and thus apparently by the accumulation of adventitious products to disturb the nutrition, impede the conductivity, excite in sensory nerves the sensibility, and ultimately to destroy the continuity of the axis cylinders of the affected structures. This process produces in short an acute tumour which rapidly invades the structure, eliciting in some cases its responsive properties and finally abolishing the latter. Fortunately the cessation or withdrawal of the morbific agent and the reparative power of nerve tissue drawing its life from a higher source serve on the removal of the proliferant and disintegrative blockage to restore the nerve in many cases to its pristine activity or to a state of sufficient functional power.

These well-known features of peripheral neuritis in general have also been found to apply to the visceral nerves, although having to deal in this case with structures differing largely in important anatomical particulars from the somatic series there would appear to be some modification of the process in the internal organs and the whole subject still constitutes one of the fruitful fields of future pathological research. Paul Meyer[1] in his account of one of the most carefully examined cases of diphtheritic paralysis with which I am acquainted found the degenerative changes referred to well marked only in the coronary of all the visceral plexuses. The pulmonary and gastric plexuses were doubtfully implicated and the semilunar ganglion and sympathetic system generally showed no distinctly pathological alterations. He concluded that the fibres involved in the coronary plexus were probably of vagal origin. The clinical visceral phenomena of diphtheritic poisoning, although in their most tragic form frequently associated with cardiac failure, are not, however, as we know, restricted to that organ and it is probable that like changes occur especially in the medullated nerves of other viscera. The severe pain of lead colic which Ross[2] considers neuralgic, as well as the agonising enteralgia associated with specific and old malarial poisoning in some cases, point to an irritative neuritis of sensory visceral fibres. The difficulty of detecting changes in the sympathetic system as a whole is doubtless due, as some have remarked, to the preponderantly non-medullated character of the nerves in question. The sensory nerves in the distant periphery are, however, according to Kölliker, usually medullated,[3] and in these the alterations attendant upon degeneration ought to be capable of detection.

The more gradual pressure exerted upon nerves by morbid growths, while it is conceivable that in some cases it may induce neuritic changes similar to those already referred to, may by the slow obliteration of nerve paths produce a disintegration more allied to the well-known consequences of nerve section in which the disintegration of the medullary sheath is more general and is associated with a minimum of thecal proliferation. Martius in his monograph on tachycardia[4] refers to a case under Hayem's care in which pressure by a sarcomatous tumour in the mediastinum induced atrophy with fatty-granular degeneration of the myelin sheath in both vagi and likewise mentions a case (p. 68) under Billroth's care, published by Kappler,[5] in which that distinguished surgeon excised a portion of the right vagus nerve in a man without permanent effect upon his heart's action, but with persistent paralysis of the laryngeal muscles innervated by the cut nerve, which doubtless exhibited the sectional disintegration of which mention has been made, although this is not expressly stated by Martius. Such processes destroy the activity of visceral nerves and are distinctly destructive, death-dealing, or pathological. The increased demand made upon the functional activity of an organ from breakdown in a system of which it is part, such as the demand made upon the muscular power of the heart when the circulation is from any cause rendered more difficult of maintenance, may, however, be regarded as constructive, life-giving, and physiological, although the organ manifesting compensatory power cannot be regarded as a typically normal one.

It has appeared to me to be permissible and a matter of sufficient interest to again examine a question which has already occupied the attention of some whose names will ever be held in honour by us. I refer to the relation of an hypertrophied organ to its nerve supply. A study of affections of the heart has impressed upon me the importance of this subject and I have chosen the uterus, as the organ manifesting greatest variation in physical bulk, as that best calculated to furnish data for the determination of the question, although, as I shall remark later, both this organ and the heart have intrinsic peculiaritiee not altogether shared by organs which do not possess the same range of rhythmical variation in capacity. William Hunter appears to have been the first to "suspect"[6] that the nerves of the gravid uterus were enlarged in proportion to the vessels. John Hunter[7] disputed this assertion and declared himself an unfaltering Hallerist so far as the nerves were concerned. The matter seems to have been regarded as more or less debateable until the acceptance by a considerable number of leading men of the published results of Robert Lee's work.[8] In more recent gynæcological literature the matter is not referred to very frequently, but Galabin's position may probably be regarded as that of the majority of authorities in that department of medicine. "It is now established," he writes, "that, as might have been expected, growth does take place in the nerves, including the so-called 'ganglion cervicale uteri,' to fit the uterus for the process of labour, in which both reflex action and periodic centric discharge of nervous energy play important parts."[9] The question, it will be gathered, was one not easy of determination and also eminently calculated to be embarrassed by the influence of preconceived notions. Lee asserts that William Hunter never dissected the non-gravid uterus and could not, therefore, have been in a position to institute a comparison. That great man, however, merely expressed a suspicion. The method of Lee, moreover, was open to fallacy. The ganglion cervicale uteri is not an unyielding structure and a good deal of adventitious tissue surrounds

[1] Virchow's Archives, vol. lxxxv., p. 181, et seq.
[2] Diseases of the Nervous System, vol. i., p. 738.
[3] Gewebelehre, Band ii.
[4] Tachycardie, eine Klinische Studie, p. 68, 1895.
[5] Archiv für Heilkunde, 1864, p. 271.
[6] Anatomical Description of the Humid Gravid Uterus, London, 1794, p. 21.
[7] Works, Palmer's Edition, vol. iii., p. 117.
[8] Philosophical Transactions, Part ii., 1842.
[9] A Manual of Midwifery, 1886, p. 97.

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extra organic nerve-trunks. Nerves and ganglia may be flattened without notable intrinsic overgrowth.

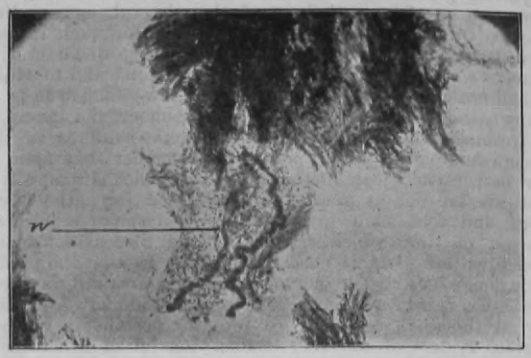
To avoid these sources of fallacy I resolved to examine the nerves of the uterus at various stages of pregnancy by transverse sections of the lower segment where the nerves are largest and by longitudinal section and other means the body of the organ where the nerves naturally are diminished in size and less easy of detection and comparative measurement on transverse section. Sections of the lower segment were stained with hæmatoxylin in the usual way, while the nerves of the upper portion were examined by Sihler's method which I described last year. The animal used was the cat, and as I altogether failed to discover an adult animal which was not more or less pregnant one was kept for twenty-two days after parturition to allow of the uterus regaining its non-pregnant size and was accepted as the type of that condition. The animals were killed before examination by chloroform, hydrocyanic acid, and by drowning after having been anæsthetised. In gauging the size of the nerves at a given level the largest nerve visible was sought as that most easy of detection and least liable to erroneous observation. A large number of sections were made and examined more or less carefully. The general impression conveyed by these to my mind is reproduced in the following micromillimetric measurements actually made:—

—	Cervix.	Level of bicornu.	Body.
	Micromillimetres.	Micromillimetres.	Micromillimetres.
Advanced pregnancy: fœtus nearly fully grown	8 to 10	5 to 10	6
Early pregnancy: fœtus measured 1·5 millimetres	8 to 12	10 to 12	3 to 4
Twenty-two days post partum	7 to 10	5 to 7	5

As I have stated only the largest measurements were taken. Below these every size of nerve down to the terminal fibrils and penultimate plexuses were observed and to peculiarities of the latter I shall have to return when discussing visceral pain in the next lecture. The present observations on the relation of size of nerve to hypertrophied organ were indeed made *en passant*, the research being directed more to the elucidation of the local causes of visceral pain with a view to the discussion of the etiology of angina pectoris. In estimating the value of the measurements given three questions have to be answered: (1) were the animals the same size? (2) were all the measurements taken from uterine nerves proper? and (3) do the comparative sizes given in the three animals represent corresponding levels? The first and second of these questions I answer in the affirmative. The third requires some explanation as to the diameter of the nerve from the body of the uterus post partum. The body of the uterus in this condition being smaller than in early pregnancy and much smaller than in advanced pregnancy the whole of it was sliced with Cathcart's freezing microtome prior to staining, and it is possible that the nerve of comparatively large diameter noted as the largest seen in this case may have been obtained from the body of the uterus at rather a lower level than the mid-body—the portion examined in the other cases—and thus be somewhat of an over-estimate for the non-pregnant state. An examination, however, of the diameter of nerves in the cervical portion of the uterus leads to the conclusion that while there is practically no difference between the size of the uterine nerves in advanced and early pregnancy there is a certain increase of size to be noted in these conditions as compared with those in the quiescent uterus twenty-two days post partum, and it may therefore be validly assumed that what is true of one part of the organ is true also of the whole and that some increase in the *apparent* size of the nerves in the gravid as compared with the non-gravid uterus may be conceded. The increase is, however, I believe, apparent rather than real, for a closer examination of the individual fibres constituting the nerve trunks reveals no increase in them either in size or numbers. What may, however, be observed is a somewhat greater pliability and looseness or succulence of texture, the bearing of which upon the remarkable condition I shall presently refer to will be apparent. It may therefore be safely asserted that if any increase takes place in the size of the nerve of the gravid uterus it is in no sense proportionate to that which is by common consent met with in the case of the vessels, muscular fibre, and connective tissue constituting the organ.

Lee states that John Hunter left no preparations of the uterine nerves in support of his assertion that there is no increase in the size of the nerves of the gravid uterus. That matchless observer, however, left a positive assertion of an

FIG. 1.



N marks nerve-loop from the body of the uterus of a cat in early pregnancy.

observable condition and it requires some boldness to call in question the accuracy of his observation. Personally, I respectfully tender my adhesion with the qualifications already stated to John Hunter's statement as regards the condition of these nerves in pregnancy. But the difference between a statement of facts in an observable condition and the expression of an opinion, however positively made, which is not covered by those facts is very considerable. Science knows no *ex cathedrâ* utterances and the humblest who can draw from the bosom of

FIG. 2.



N marks nerve from the body of the uterus of a cat in advanced pregnancy.

nature an indisputable fact which contravenes the opinion of the most exalted not based upon such adduces a more mighty argument for his position than volumes of hypotheses backed by the sign manual of sacrosanct authority. John Hunter said that the uterus might be fifty times as large in pregnancy as in non-pregnancy; that all the textures of the organ are increased in size except the nerves; and that therefore the nerves have nothing to do with the action of the enormously overgrown organ. Hunter was not much of a casuist or he might have been more careful on this occasion. If, however,

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the uterus be fifty times as large when gravid as when not gravid, and the muscular fibres of the organ can be shown to be innervated like all other muscular tissue somatic and splanchnic, what becomes of the innervation of the uterine muscle most distant from the point of entrance of the nerves at the cervix if these nerves do not enlarge? Do they snap in the stretching? To ask the question is to insult nature. Is there, then, any provision for the adequate innervation of the gravid uterus without an anatomical increase in the size of the nerves in that state? There is, and a provision which to my mind is one of the most remarkable as it is one of the most simple conceivable. The simple and sufficient expedient adopted by nature under the conditions discussed is one which was unknown to me when I undertook this investigation and I am not aware that it has been described before. Tortuosity in the blood-vessels of the uterus from their notable increase in size is more apparent in the gravid than in the non-gravid organ. Tortuosity of the uterine nerves is, I believe, inversely as the size of the organ. Tortuosity of nerve-trunks may indeed be seen in the fully gravid uterus, but in none of the sections of the organ at term which I have examined have I observed by any means the same degree of tortuosity and coiling as in the nerves of the uterus in early pregnancy or post partum. This coiling may, indeed, be such (as in one specimen which I show) as to suggest the figurative parallel of paying out a coil of rope to an object which is increasing its distance from a point of attachment. In the facts I have mentioned and the specimens I show I believe I have grounds for maintaining that it is by this grandly simple expedient that the nerve supply of an organ intended to vary in size is adapted to these varying circumstances. The apparent increase in the size of the nerves, their more open texture, their more succulent appearance, are but adjuvant conditions which promote the paying-out of the nerve-rope to the lengthening organ. When we come to examine the relation of the cardiac nerves to angina pectoris in the next lecture the bearing of these facts upon a wider range of physical conditions will be more apparent. The nerve-coil is, however, but an emphasising of that wavy elasticity which the longitudinal section of any nerve with a considerable range of extensibility—such, for example, as the pneumogastric—will show.

The conclusions, therefore, to be drawn from the facts I have stated as regards the anatomical relation of the nervous system in a physiologically hypertrophied organ possessing a considerable range of normal variation is that there is no essential increase in the proportions of such nerves to such organ, but that anatomical and physiological changes occur in the nerves which enable them to adapt themselves to the organ they supply and in a measure control. As Galabin states in the passage I have quoted "both reflex action and periodic centric discharge of nervous energy play important parts" in the process of labour. With essentially centric conditions I am not at present concerned. My present purpose is to suggest that one of the factors in evoking reflex action at term and in inducing those contractions associated with pain referred to the active viscus, under these circumstances, is the fact of the enlarged organ having reached at a certain period the full tether of its intrinsic nervous system. The rope has been paid out to its full convenient stretch and the note is sounded for a return of the organ to more moderate dimensions. There is a crudeness about this suggestion, I admit, which at first repels one, but having carefully thought the matter over, and without wishing to impute an unduly prominent *rôle* to this factor in the production of labour I can come to no other conclusion. The predisposition to centric discharge, as Galabin calls it, is doubtless induced *pari passu* with the changes I have indicated, but I do not think that the factor named can be eliminated.

Robert Lee[10] maintained the same thesis in connexion with the nerves of the heart when that organ is hypertrophied which he did in the case of the gravid uterus. His words are: "That the ganglia and nerves of the heart enlarge like those of the gravid uterus when the walls of the ventricles are affected with hypertrophy." Cloetta, quoted by Walshe,[11] partly agreed with Lee, but could not decide whether the apparent increase in the size of the nerves was due to an increase in the connective tissue sheath or to actual increase in the nerve fibres. These assertions have not so far as I know stood the test of time, although I am unaware of any systematic examination of the question. In view of the facts I have stated in connexion with the innervation of the gravid uterus and which are opposed in great measure to Lee's conclusions I should, *a priori*, dispute the correctness of his views as regards the innervation of the enlarged heart. There is, as I shall endeavour to point out in my next lecture, a special provision in the nervous anatomy of the heart, the same in principle as that met with in the uterus and to which I have referred, for allowing the nerves of that organ, which varies so much in size during action, to adapt themselves to such variation. This provision is less marked in organs such as the spleen and the kidney with a smaller range of normal variation in size.

Leaving nerve trunks I pass now to some mention of the pathology of the ganglion and the ganglion cell in the visceral nervous system. Death, that universal law which organised matter must obey and which has been suitably defined in scientific language on the tomb of Bacon at St. Albans as the command "Let compounds be dissolved," induces changes in such compounds, changes observable and yet not truly pathological, as we usually understand the term, but which may be mistaken for such. The criteria for their satisfactory discrimination from pathological changes cannot yet be said to have been determined. To grow old is in a manner partially to die; to be enfeebled is likewise a retrograde change. Advance in life, however, is not pathological; enfeeblement is, and yet changes may be met with post mortem in the cells of old and young alike which are at times difficult to distinguish the one from the other. This confusion between dead young and old tissue is not, however, I think frequently possible. Collateral conditions serve to distinguish the one infallibly from the other. The features of senile degeneration in ganglion cells mentioned in one of the most recent and reliable works on diseases of the nervous system[12] are a certain diminution in size and number of cells and well-marked pigmentation, such pigmentation not being associated with notable disorder of function. When changes normal to senility are found in youthful cells it is highly probable that the latter have been rendered functionally old by disease and that the change must be regarded as pathological.

In writing of the changes met with in the cardiac ganglia Ott[13] states that two kinds of pathological change occur in these—the one progressive and consisting of hyperplasia of connective tissue and the other retrogressive and consisting of parenchymatous degeneration of new cells. The former he met with in congestion and hypertrophy of the heart; the latter he found associated with qualitative blood changes such as uræmia and pyæmia. The proliferation of connective tissue in a visceral sympathetic ganglion may, however, be of a more active type, as was shown by Lancereaux's case[14] which so long reigned alone as an instance of cardiac neural pathology. In this case the cardiac plexus participated in an extremely rich abnormal vascularisation at the root of the aorta and showed microscopically a round-celled infiltration between the nerve fibres of the ganglion which compressed the former. These conditions were associated with angina pectoris. But the progressive and retrogressive changes may be met with in the same case. A ganglionic structure may participate in a general interstitial proliferation such as that met with in granular kidney. Although it may be difficult to decide whether the parenchymatous change in the nerve cell be due to such interstitial hyperplasia, or both it and the latter be the expression of a blood dyscrasia causal of each, the influence of interstitial cirrhosis in interfering with the due nutrition of a nerve centre cannot, I think, be altogether excluded and may even be causal in some measure of the changes in question. Such changes need not, however, place the cell out of action, although it is highly probable that the functional activity of such a cell is subnormal. This combination was well shown in a posterior root ganglion which I examined last year and which I obtained from Dr. Risien Russell, pathologist to the National Hospital for the Paralysed and Epileptic, Queen-square. The case had been under the care of Dr. Hughlings Jackson, to whom I am

[10] History of the Discoveries of the Circulation of the Blood and of the Ganglia and Nerves and of the Action of the Heart, 1865, p. 28.
[11] Diseases of the Heart, fourth edition, p. 281.
[12] Leyden and Goldscheider's Erkrangungen des Rückenmarks, Wien, 1897, p. 102.
[13] Prager Zeitschrift für Heilkunde, vol. ix., No. 45, and quoted by Balint, Deutsche Medicinische Wochenschrift, No. 1, 1892, p. 2.
[14] Gazette Médicale de Paris, 1864, p. 432.

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indebted for permission to refer to it on this occasion. The necropsy on this patient, a male, sixty-five years of age, took place six hours after death. The nervous system revealed nothing abnormal beyond an atrophic state of the convolutions of the hemispheres generally and the central vessels were atheromatous. The kidneys presented the typical contracted granular appearance associated with the changes of interstitial nephritis and the heart the corresponding condition of concentric hypertrophy. A posterior root ganglion which I examined by various methods showed well-marked interstitial hyperplasia like that characteristic of the general state in which the body was, and parenchymatous change in a large number of the nerve cells. This change would, I presume, be termed pigmentary, but as the degenerated portion stained very darkly after exposure to bichromate of potash, osmic acid, and nitrate of silver, which had no effect upon the rest of the cell substance, a fatty degenerative change would appear to have been present. I show lantern slides from the preparations in illustration of these points. To compare with these atrophic and proliferant conditions I also show the state of a posterior root ganglion from the body of a female, eighteen years of age, who died in Queen-square Hospital from double pneumonia due to mastoid disease without central nervous complications. The case was under the care of Sir William Gowers and the ganglion examined was given to me by Dr. Risien Russell. The differences between the old degenerate ganglion associated with arterio-sclerosis and general interstitial hyperplasia and the normal organ of a young person who practically died an accidental death are very striking. The large, better differentiated cells with little parenchymatous and no interstitial change in the young and normal ganglion are easily distinguishable from the ganglionic cirrhosis and degenerated cells of the decrepit old man.

It is only necessary to refer to two other conditions of the posterior root ganglion, those, namely, associated with herpes zoster and dorsal tabes. Atrophy and induration have been found in the posterior root ganglia related to territories of skin affected by herpes zoster, the agonising pain in many cases of which affection is so well recognised a clinical fact, while in dorsal tabes an inflammatory process, chiefly affecting the proximal and central portions of the posterior root ganglion and the posterior root itself, has of recent years attracted growing interest and attention. These changes are described by Leyden and Goldscheider as atrophic[15] and affecting the nerve fibres. The connective tissue is also said to be increased, but the question of a change in the nerve cells is left undecided. The admitted alterations are, however, of interest in connexion with the sensory disorders of the viscera with which we shall be engaged in the next lecture, and particularly with the visceral crises of tabes which have so pernicious an effect upon the course of the disease. Our knowledge of the course of visceral fibres in the central nervous system is still so limited that a discussion of the pathological lesions associated with general trophic degradation would not at present be useful. It is a very remarkable fact how little most central lesions outside the bulbar area are accompanied by such general atrophy. The two factors in chronic diseases of the central nervous system which appear to bring about malnutrition most rapidly are pain and mental anxiety, and the latter may be regarded as pain in the intellectorium just as the condition we conventionally call pain is a reaction in the sensorium—to use old terms largely and perhaps prematurely discarded. Inasmuch as physical degeneration will be brought about by these conditions in the absence of central lesion we cannot well gauge the influence of the latter, but it is rational to think that their presence hastens and emphasises the malign influence of pain and mental distress.

It will thus be observed how rudimentary our knowledge of the pathology of the visceral nervous system still is. There are, however, already hopeful evidences of light-giving work in this obscure field and I cannot close this lecture without a passing reference to those histo-physiological investigations which have brought to light interesting facts as regards the behaviour of nerve cells cut adrift from peripheral organs with which they are normally associated. The changes, although purely physiological, appear to point to a method of research which may lead to knowledge of pathological change in cells whose touch of the organs they innervate may be loosened by disease general and local. Although I have myself undertaken some work on these lines my work is still incomplete and for the information on which my few present remarks are based I am indebted in great measure to Van Gehuchten's exhaustive paper on the Fine Anatomy of the Nerve-cell in "La Cellule,"[16] in which also full references to the very interesting literature of the subject will be found. It would seem to be essential to the maintenance of healthy structure in the nerve cell not only that it should itself be undamaged but that the organ its axis cylinder more or less directly innervates should also be in a condition healthily to exercise its function. This is surely a very suggestive fact as regards the relation of body and mind, the subjective recognition of which is at least as old as Juvenal who associated the sound mind with the healthy body. The functional unit, in short, as we shall argue again, is not one but triune—peripheral organic cell, central nerve cell, blood. Our knowledge of the general effect upon the central nervous system of the severance of the periphery from the centre is as old as the researches of Bérard, Vulpian, and Dickenson (1829–66), quoted by Leyden and Goldscheider,[17] who studied the effect upon the cord of the amputation of limbs; but our more exact knowledge of details in the process is much more recent and due in great measure to the method of staining nerve cells introduced by Nissl and which has already been fruitfully applied to the examination of normal and abnormal conditions of cells in the central cortex. Van Gehuchten's observations were made upon the hypoglossal and pneumogastric nerves of the rabbit, the latter nerve being divided below the plexiform ganglion. The changes noted in the medullary nuclei of both nerves were—(1) a chromatolysis during which the chromatic granules in the cell protoplasm were dispersed towards the periphery of the cell, the protoplasm staining soon afterwards a uniform blue; (2) an eccentric displacement of the nucleus which might proceed to extrusion and the consequent sacrifice of the cell; (3) in the case of motor cells a gradual recovery at least for the time to their original chromatic or "pyknomorphic" condition was noted, while the sensory cells in great numbers disappeared absolutely. More recently Goldscheider and Flatau[18] have studied changes induced in cells by various poisons of an organic and inorganic nature. Their results with the use of tetanus toxin are particularly interesting, as also the effects they have observed to follow from the exposure of animals to high temperatures. There appears to be a very noticeable enlargement of the cell nucleus in tetanus and a complete chromatolysis seems to be induced by excessive temperatures. This sketch of the changes, pathological and experimental, met with in the visceral innervation shows how little is as yet positively known of the alterations which underlie neuro-visceral disorders; but it likewise declares plainly that the night is past and that daylight more or less clear cannot be very long delayed.

[15] Op. cit., p. 512.

[16] Tome xiii., 2nd fascicule, p. 315, et seq.

[17] Op. cit., p. 89.

[18] Normale und Pathologische Anatomie der Nervenzellen auf Grund der neueren Forschungen. Berlin, 1898.

THE SPECIFIC ORGANISM OF VACCINIA.

BY A. F. STANLEY KENT, M.A. OXON.

IN a former issue of THE LANCET[1] I gave some account of certain experiments upon the nature and cultivation of the virus of vaccinia. It is the object of the present paper to give a further account of these experiments and to describe the results subsequently obtained.

To recapitulate very shortly the main points of the former researches, it will perhaps be remembered that the starting point[2] was the histological examination of sections of the vaccine vesicle at various stages of its development, the significant fact elicited from such examination being the presence in the tissues of an organism differing in morphological characters, in staining reactions, and in distribution from the organisms of the surface and from the foreign organisms ordinarily associated with vaccinia. It is of course a by no means difficult task to isolate from a material like vaccine lymph—which swarms with micro-organisms of various species—and to cultivate, some one or other of the

[1] THE LANCET, May 21st, 1898.

[2] Brit. Med. Jour., Sept. 22nd, 1894.

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non-essential germs; indeed in this way much labour has been expended and much time wasted. And yet not entirely wasted, for though failing to accomplish the primary object of determining the nature of the actual contagium such researches have cleared the ground and have facilitated the work of subsequent investigators.

It is nevertheless somewhat remarkable that claims to be the specific virus of vaccinia should have been put forward in the case of several organisms whose sole title to the honour appears to be that they occur in vaccine lymph. How little this latter fact is in their favour will be appreciated when the long list of bacteria having similar claims is called to mind. It is by no means impossible that there may have been some justice in the contention put forward that certain of these organisms played an important *rôle* in the processes of vaccinia; nevertheless, it was impossible that the real virus of the disease—the organism in whose absence vaccinia could not occur—should be discovered and its identity put beyond question until the actual direct proof by cultivation and inoculation could be brought forward, and in every case until recently the direct proof has been wanting. There appeared, however, to be some facts in favour of the organism which I discovered in the tissues of the vaccine vesicle in 1894[3] being regarded as possessing claims perhaps somewhat higher than those of the bacteria previously described to at all events a tentative recognition. The new bacillus was, in the first place, exceedingly minute, measuring a bare micron in length; it appeared to occur, as a rule, in pairs joined so as to form dumb-bells, not true diplococci, the individuals being distinctly, though only slightly, greater in length than in breadth. Further, the staining reactions were not such as are usually found in the case of ordinary saprophytic bacteria. Most important of all, however, was the fact that these minute bacilli occurred not on the surface or, so far as could be ascertained, amongst the crowds of foreign organisms in the most superficial parts of the vesicle, but deeply seated, in large numbers, and in practically pure culture in their special habitat beneath the line of incision. It is natural to expect to find the organism upon which a disease depends in the tissues of the affected animal, and the fact that this special organism not only conformed to this requirement, but was, in addition, apparently the only one of which this was true, rendered a thorough investigation of its nature desirable.

Regarding its occurrence in the tissues it will perhaps be recollected that in 1894[4] I showed microscopical specimens in which by a special method of staining its presence had been demonstrated. It was also pointed out that it closely resembled a certain organism which by following special methods had been demonstrated in vaccine lymph by Dr. Copeman and myself.[5] But the bacillus in the lymph appeared to occur especially in early lymph and, in fact, its presence in lymph taken from mature vesicles seemed doubtful. In the sections of the vesicles, on the other hand, the special organisms could always be shown to occur even up to quite a late stage of the disease, and their numbers were very great. To explain their apparent disappearance from mature lymph which nevertheless maintained its power as vaccine it was suggested that as time went on spores were formed and it was further suggested that these spores formed the material which conveyed the disease when the lymph was preserved dry on points. That this may occur is, I think, probable. Indeed, the appearances presented by the organism when stained in certain ways strongly suggests such an explanation. At the same time it is not improbable that the bacilli themselves occur in the lymph up to quite a late stage in the maturation of the vesicle. For if instead of collecting lymph in the usual manner by applying pressure forceps, removing the crust, and allowing clear liquid to exude a slightly different method is adopted and the pressure forceps being dispensed with the crust together with as much of the underlying tissue as possible is removed by means of a Volkmann's spoon, the lymph which exudes from the base of the vesicle will be found even in late stages to contain the specific organsm in large numbers. I believe the explanation to be that the bacilli occur in the lymph and in the superficial parts of the vesicle early in the disease but that later their distribution is altered and they lie more deeply in the tissues.

As regards the existence of spores in the diplo-bacillus it may be noted that a very large number of preparations has been made and new methods have been devised in the hope of demonstrating their presence, since the general behaviour of the lymph seems to be best explained on the assumption that they do actually exist. Up to the present, however, I have only occasionally been able to show certain spherical exceedingly minute bodies which so far as it has been possible to investigate them appear to be of the nature of spores, but whose minute size renders any certain knowledge of their nature exceedingly difficult to obtain, at all events with the instruments which I have at my disposal.

Regarding the bacilli themselves some additional information has been obtained. As is well known the foreign organisms which occur in vaccine lymph as ordinarily collected, and which have nothing to do with the specific properties of the lymph, exist for the most part on the surface, in the crust, and in the superficial parts of the vesicle. *The foreign organisms do not occur in the deeper parts of the vesicle.* Indeed, it is possible to obtain a very nearly pure culture of the specific organism by removing by means of sterilised instruments the superficial parts and subsequently taking material from the base of the vesicle. Many of the organisms so obtained will be found to be contained in cells and to correspond to those more deeply-lying individuals which I have described in sections. So completely have they taken possession of these deeper regions that it is no unusual thing in examining a series of preparations made in the manner which I have indicated to find cover after cover showing no organisms whatever except the diplobacillus vacciniæ, whilst that occurs in large numbers.

So far, then, as its distribution in the tissues has been investigated, the results would seem to indicate that the organism which I have described deserves to be placed upon a somewhat different footing from those which have been previously isolated from vaccine-lymph. With regard to its specific nature, however, it was of course impossible to come to any definite conclusion in the absence of any method of preparing pure cultures, and my efforts were in consequence directed towards elaborating such a method. How at last I attained success in my endeavours has been described in a former paper,[6] and since that paper was published a series of experiments has been carried out with the object of finding some new culture medium or some modification of the old which would allow a more rapid growth to take place than was the case with the mixtures at first employed. In my original culture medium of albumin and glycerine it was found that the best proportion of glycerine lay somewhere between 15 per cent. and 20 per cent. Considerable care has to be exercised in the adjustment of the proportion of this constituent, as on the one hand if the quantity present is insufficient the growth of foreign organisms is not checked, whilst on the other the presence of an excess of glycerine appears to exert a prejudicial effect upon the development of the vaccine virus.

The proportion of albumin in the mixture is also not without importance, for unless it is present in fair amount the glycerine appears to exert more than its usual power and so prevents a satisfactory growth being obtained. The exact proportions which I am at present employing are: albumin, 34 per cent.; glycerine, 16 per cent.; and sterilised water, 50 per cent. As regards this last ingredient I at first used distilled water, but subsequent experience proved that somewhat better results appeared to follow the employment of ordinary tap water. The exact nature of the salts present in this and their quantity I have not determined, but they seem to be rather beneficial than the reverse.

Another material which I have used as a culture medium with some success is milk—either whole milk or the liquid obtained by the filtration of whole milk through a Berkefeld filter—either mixed with a suitable proportion of glycerine or alone. The best proportion of glycerine to use appears to be about 33 per cent., and in such a medium I have obtained an active culture in somewhat less time than is required in the case of the glycerine and albumin medium. The milk media offer the further advantage that they can be sterilised by heat in the ordinary way without destroying their power of supporting the growth of the diplo-bacillus. I am at present making experiments with various other media, notably with the blood-serum of various animals, both mixed with glycerine and unmixed; and a material which has been provisionally tested with encouraging results consists of vaccine vesicle pulp freed from all organisms by the prolonged

[3] Loc. cit. [4] Loc. cit. [5] Loc. cit.

[6] THE LANCET, May 21st, 1898.

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action of strong glycerine at a suitable temperature until plate cultivations show it to be free from foreign organisms and inoculation upon susceptible animals shows it to be free from the specific virus of vaccinia. This material when absolutely free from all organic life is diluted with sterile water to the required percentage of glycerine and used as a culture medium in the ordinary manner.

Another factor of great importance in obtaining pure cultures of the diplobacillus is the temperature at which the tubes are kept. In my earlier experiments the culture tubes were allowed to lie in the incubator at 37° C., but it was soon found that better results were obtained if a somewhat lower temperature were employed. It appears that even at 37° C. the glycerine when present in so low a percentage as 15 per cent. or 20 per cent. exerts an injurious action upon the virus and better results can be obtained by keeping the tubes at a temperature of 15° to 21° C., though a longer period of time will be found to elapse before distinct traces of growth appear.

The staining of the diplo-bacillus is a somewhat difficult matter and very slight causes seem to be sufficient to determine in any given instance whether the organisms will stain by a special process or will not. More especially any overheating in the flaming of the cover-glass preparations seems to be fatal to a good result, and often in such slides the diplobacillus may be seen to be quite unstained, whilst other bacteria if they happen to be present may have taken the stain strongly. Löffler's alkaline methylene blue has in many instances given me satisfactory results, but it must be allowed to act for a long time. Curiously enough in preparations stained with this dye the organisms are sometimes stained red—not a faint pink that might be attributed to the effect of contrast, but a brilliant saffranin red which is obviously due to some special reaction between the organism and the dye. I have seen similar phenomena before—some years ago in the case of an entirely different organism—but there a special part of the bacillus, possibly a spore, was stained brilliantly red, whilst the rest of its body was stained blue. At the time I attributed the difference in colouration to some difference in chemical constitution between the main mass of the bacillus and the spore-like body. In a different category must be placed the instances in which in Gram-stained preparations a difference in tint is discovered. Here we are dealing in the first place not with a pure blue but with a violet and in addition the decolourisation process may be held responsible for some variation in the result. Yet it is curious even under such conditions to observe that occasionally one member of a diplococcus may be violet whilst the other is pure red. In the case of methylene blue the change from blue to red is due to a process of oxidation and oxidising agents when added to a solution of the dye turn it at once to a brilliant red. Some such process would seem to take place also in the instance under consideration.

For staining sections I have found a modification of Gram's method the most satisfactory, used after the tissue has been hardened in absolute alcohol or in a mixture of Müller's fluid and a saturated solution of mercuric chloride in 1 per cent. acetic acid. Either of these hardening agents gives good results and the distribution of the specific organism, especially in the deeper layers, is well shown. For cover-glass films of lymph and cultures better results have recently been obtained by the employment of carbol fuchsin after the ground has been cleared in 20 per cent. acetic acid in the usual manner. If the fuchsin be allowed to act for from 15 to 20 minutes and the covers be then subjected to a somewhat prolonged washing in water preparations may be obtained which, though somewhat dirty in appearance and by no means "pretty" specimens, yet show the diplobacillus intensely stained and in parts quite free from granular material or stained ground. Even a short sojourn in alcohol removes the dye very completely from the organism.

Appearances presented by the cultures.—If, then, a culture medium is to be prepared it should contain about 34 per cent. of albumin and 16 per cent. of pure glycerine and the precautions taken in its preparation should be sufficient to ensure the absence of all, or nearly all, foreign organisms; or in lieu of such stringent precautions the albumin and glycerine may be mixed together in a pure state and kept until such time as plate cultivations show that all organisms have been killed out, being subsequently diluted with sterile water to the required strength. The inoculation of the culture medium should be effected by the employment of vaccine lymph (preferably taken from the base of a vesicle after the superficial parts have been removed by sterile instruments) which has been kept in contact with glycerine until on testing in plate cultivations foreign organisms are shown to be absent and on testing by inoculation upon susceptible animals the lymph is proved to be active. The quantity of seeding material used in my experiments has varied. In some recent experiments the proportion of lymph to culture medium has been 1 in 820,000, and the cultures, after having been established for little more than a week, have given positive results when inoculated upon animals. Usually, however, in cultures so prepared no visible change occurs during the first few days, especially if the tubes be kept at a low temperature. Afterwards the fluid is observed to lose its brightness and gradually a faint opalescence will develop until in a week or ten days the whole liquid will be distinctly turbid. At the same time a certain amount of a flocculent material will be separated and will fall to the bottom of the tube. In addition, examination will reveal the presence of a delicate white film on the sides of the tube and closely adherent to it. In this connexion it is interesting to note the fact, often observed in practice, that vaccine lymph when taken from the calf and sealed up in capillary tubes in the usual manner is by no means certain in its action if used for the vaccination of children within a short time of its collection, whilst if it be kept for some time its virulence is restored and if then used it is found to give perfect and uniform results. This fact has been explained by the assumed adherence of the particulate carriers of the disease to the sides of the tube and their later separation from it.

In the case of cultures made upon the whole milk media described the presence of the fat would of course interfere with the observation of the above changes. It will, however, be noticed that in such cultures the milk tends to lose its opacity and to become yellower, changes best seen when the fluid is examined in thin layers and by transmitted light. In addition a certain small amount of a chalky-looking deposit falls to the bottom of the tube. Plate cultivations upon agar and gelatin established from such culture-tubes as those described yield negative results—that is to say, after incubation at 37° C. and 21° C. respectively for a week the plates will show no points of growth and thus the presence of foreign organisms is excluded.

Inoculation of the cultures upon animals.—If, however, the material be used for the inoculation of susceptible animals such inoculation will in successful cases result in the production of vesicles indistinguishable from those produced in the ordinary course by vaccination with current lymph. Moreover, having once obtained a growth of the diplobacillus it is by no means difficult, though on account of the slowness of its growth it is a somewhat lengthy process, to establish from it subcultures which when used in their turn for the inoculation of animals give similar results. One difference in the action of current lymph on the one hand and of these early (ten day old) cultures on the other which has been commonly observed is that whilst with the former 100 insertions will, as a rule, produce 100 vesicles, with the latter a like number of insertions will produce perhaps only half as many. As time goes on, however, the insertion success improves considerably, and with cultures of three weeks old which in the early days failed to produce any result when used for inoculation I have frequently obtained exceedingly satisfactory results, the success ratio sometimes rising as high as 100 per cent. Further keeping for a period of from eight to ten weeks often results in a gradual decline in activity and sometimes at the end of this time formerly active cultures are found to be inert. This decline in activity seems to depend very much upon the temperature at which the tubes have been kept and it may be possible to preserve virulent cultures for considerable periods by adopting suitable precautions to protect them from excessive heat. The failure to obtain a higher insertion success in the case of early cultures I attribute principally to the difficulty which exists in so proportioning the constituents of the culture medium that on the one hand foreign germs may be prevented from growing and yet that the diplobacillus may thrive, for it is undoubtedly the case that glycerine, whilst exerting a less deleterious effect upon the vaccine virus than upon other organisms, yet when present in the higher percentages does exert such an effect upon it to an appreciable degree and exerts it very markedly at temperatures only slightly raised above that of the air. I hope to go more

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fully into this subject on a future occasion. At present I wish merely to point out that it is a matter which has to be taken into account in the elaboration of a method of cultivation.

In the experimental inoculation of animals with the cultures of the vaccine virus described above the results produced have been sometimes quite typical and, indeed, indistinguishable from vesicles produced by current lymph. In others the vesicles, though typical and well formed where present, have not appeared along the whole of the line of incision, thus leading one to the conclusion that the culture, though active, was somewhat weak. It may perhaps be well, in order to convey some idea of the results ordinarily obtained, to give the record of a recent experiment as entered in my note-book.

Experiment.—Vaccine culture established in medium of—water 50 per cent., glycerine 16·5 per cent., albumin 33·5 per cent., inoculated with a vaccine lymph which had been preserved in glycerine until all foreign organisms had been killed out. The proportion of seeding material used was about 1 in 105,000. Two days later a calf was inoculated on the abdomen in a number of incisions. All the insertions failed. Five days later (the seventh day) it was examined microscopically. Groups of the diplobacillus were found. Four days later (the eleventh day) a calf was inoculated upon the abdomen. The incisions took and they produced typical vesicles in the proportion of 37·5 per cent. Lymph taken from these vesicles was used in the vaccination of a child. All five insertions took perfectly and presented typical appearances of vaccinia. Seven days later (on the eighteenth day) the culture was used for the vaccination of a calf. The incisions took perfectly and produced typical vesicles = 100 per cent. Lymph from the above vesicles was used for the vaccination of a child and produced good results. On the forty-ninth day the culture was used for the inoculation of a calf. When examined on the fifth day the animal presented no typical vesicles, but in the course of the lines of inoculation were certain shotty thickenings which seemed to indicate that some reaction had taken place. Upon revaccination with current lymph the animal proved to be insusceptible.

In examining the above record several points of interest present themselves. In the first place, it will be observed that the culture was a primary one—i.e., not a subculture—and it may be objected that such an experiment is valueless as the material used for seeding might conceivably give rise to the results obtained. I have, however, selected the experiment for that very reason as the facts appear to me to be sufficient to entirely exclude such an explanation. In the first place, although, as is well known, vaccine material may be diluted to a very large extent without entirely losing its power of giving rise to typical vesicles, yet when the dilution reaches 1000 times those vesicles are very few and far between, and when, as in the present instance, the dilution reaches more than 100,000 times the appearance of such vesicles is a very exceptional occurrence. Indeed a somewhat extensive series of experiments with lymph diluted in varying degrees has in my hands altogether failed to show any vesicle produced by a dilution at all approaching the above. Moreover, it will be observed that the culture in question when used for the inoculation of animals in the first few days of its existence *entirely failed to produce any trace of a vesicle.* Had there been any weight in the objection I have raised it would undoubtedly have been the case that the diluted lymph would have shown at least as great activity immediately after dilution as subsequently. That such was not the case is I think a strong argument in favour of a multiplication of the specific virus having subsequently taken place, and when it is recollected that the activity as shown by inoculation experiments increased from zero to 100 per cent., the evidence is almost conclusive. This gradual increase of activity is most significant, and I fail to see how it can be explained except upon the assumption that a multiplication had taken place. But the proof by no means rests altogether or even chiefly upon such evidence as the above. As mentioned before, subcultures are not specially difficult to prepare, and they show results in all essential particulars quite similar to those given by the primary culture.

Another very interesting point is in connexion with the behaviour of the culture in the later stages. It will be noticed that after its power of producing typical vesicles had become exhausted its use for inoculation upon an animal still gave rise to some local effect and, which is far more important, was able to protect against a subsequent inoculation with a virulent virus. By following up the indications given by such experiments as this it is not improbable that one may be eventually led to results which will render possible the immunisation of animals and human beings without the at present unavoidable concomitants of painful local reaction and unpleasant constitutional symptoms. I am at present following up these indications and I hope shortly to publish the results of my further experiments.

In estimating the success of the inoculation experiments I have not trusted altogether to my own judgment. Dr. Cory and Mr. Stott, Directors of the National Vaccine Establishment, have been kind enough to examine several animals for me and I have their assurance that the vesicles produced by my cultures could not be distinguished from those produced by current lymph in the ordinary working of their station, and it will be recollected that lymph taken from such vesicles has produced in children results in every way similar to those given by current lymph. Moreover, additional proof is afforded by the fact observed in every case where the experiment has been made that animals which have been inoculated with an active culture and have shown the characteristic reaction have proved on subsequent inoculation with vaccine lymph to be immune to the disease.

Sources of fallacy.—With reference to possible sources of fallacy it may be noted that doubt has often been cast upon experimental work on vaccinia carried out in a laboratory where vaccinated animals have been previously kept. Personally I believe that no fallacy is likely to arise from such a cause, and I base my opinion upon the following facts. In my early experiments, for the purpose of putting this question to the test, animals have frequently been inoculated over the greater part of the abdomen with ordinary current vaccine lymph and over a small area with a culture which was known to be sterile. In no single instance have the experimental incisions become contaminated with the vaccine virus. It is therefore, although doubtless within the bounds of possibility, yet at all events excessively unlikely that all, or a large proportion, of similar incisions made under similar circumstances and used for the testing of an active culture should become contaminated. In other cases there have been made over a limited area a number of experimental incisions some of which have been inoculated with an active culture whilst others have remained uninoculated. The rest of the abdomen has been covered with incisions inoculated with ordinary vaccine lymph. In no single instance in which such an experiment has been made were the uninoculated incisions found to show any trace of infection. It is, of course, possible, and indeed perhaps not improbable, that in the hands of a careless experimenter contamination might occur, and it is by no means unlikely that in a long series of experiments some few might be vitiated by untoward circumstances. In any case it appeared desirable to exclude every possibility of error from such a source and consequently, in every instance where an experiment had been carried out under circumstances which seemed to admit of any doubt being cast upon the result from the above or any other cause it has been repeated under conditions admitting of no such doubt and the first result checked. In this way the inoculation experiments have been repeated upon a vaccine-free farm and the results obtained have been quite as successful as those first arrived at.

The specific organism in the tissues of animals inoculated with the cultures.—As soon as it was discovered that inoculation of the pure cultures upon susceptible animals was followed by the development of typical vaccine vesicles, an examination of these vesicles was undertaken with the object of determining in them the presence of the specific organism. For this purpose vesicles as typical as possible were selected and were excised at periods of their development which previous experience had indicated as being most favourable. The pieces of tissue so obtained were hardened sometimes in absolute alcohol and sometimes in a mixture of equal parts of Müller's fluid and a saturated solution of mercuric chloride in a 1 per cent. aqueous solution of acetic acid. They were subsequently sectioned and were stained by the modified Gram's method or by Löffler's methylene blue. It is unnecessary to enter minutely into the appearances observed. Suffice it to say that examination revealed the presence of the diplobacillus, and that in morphological characters, in staining reactions, and in distribution it corresponded closely with similar bacilli observed in the sections of vesicles originally examined which had been produced by ordinary vaccine lymph.

Thus in the organism which I have described as the diplobacillus vaccinia is found a virus which occurs in

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the vesicles (and tissues surrounding them) of ordinary vaccinia, exhibiting special morphological characters and staining reactions and having a special distribution in the tissues. By special methods which have been indicated pure cultures of this organism may be prepared, and such cultures when used for the inoculation of susceptible animals give rise to vesicles which are described by experts as being indistinguishable from those produced by current vaccine lymph. Moreover the animals which have been so inoculated are found subsequently to give no reaction when revaccinated with active lymph. Finally, sections through the vesicles so produced are found upon examination to contain the organism in large numbers and exhibiting the same morphological characters, staining reactions, and distribution as the organisms originally found in the vesicles of typical vaccinia.

James-street, Hyde Park, W.

ON THE STRUCTURE OF THE SEMI-LUNAR AND FLAGELLATE BODIES OF MALARIAL FEVER:

AN APPENDIX TO "THE INOCULATION THEORY OF MALARIAL INFECTION."[1]

BY DR. AMICO BIGNAMI,

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AND

DR. G. BASTIANELLI.

AMONG the objections made by one of us (Bignami) to the hypothesis of Manson one had reference to the significance of the so-called flagellate bodies.[2] The following notes deal chiefly with the structure of the flagellate bodies. These bodies which, as we know, only form after the blood has been withdrawn from the circulation represent, according to Manson, parasites in sporulation the spores of which, "in the interests of the extra-corporeal life of the plasmodium," take on this special form of mobile and flagellated filaments. These forms therefore constitute the first phases of the malarial parasite outside of man. To this view one of us (Bignami) opposed the opinion of Grassi and Feletti, according to whom the flagellates are nothing but the dying forms of the parasite, and also pointed out that no one had hitherto demonstrated in these filaments the structure which ought to be found in spores, more especially the presence in them of chromatin. Subsequently various observers—as Marshall, Ross, and Manson himself—sought to determine experimentally the conditions under which flagellation occurs and they have thus shown the importance of moisture and of exposure to the air as affecting the process, and Manson, by staining preparations of blood containing the semi-lunar and round bodies (which had first been kept for a certain time in a kind of moist chamber and then dried) with a weak solution of carbol-fuchsin, attempted to demonstrate that the mobile filaments exist pre-formed in the interior of the round bodies from which they subsequently emerge.

In spite of these researches which have brought to light some interesting facts it may be affirmed that the structure of the flagellates of *human* malaria had not hitherto been studied by methods which permitted of a minute morphological analysis. Accordingly in the present year in following up our inquiries into the life of the parasite outside the human body we also studied afresh the formation of these bodies.

Regarding the internal structure of the flagellates we do not possess any information that we know of beyond that given by Sacharoff who, describing the structure of flagellates in crows taken from the nest, the blood of which contained innumerable parasites, considers the flagella as chromosomes originating in the nuclei of the body of the parasite and flagellation as a process of perverted karyokinetic division accomplished in a violent manner.

The researches conducted by us during the past summer had for their object the elucidation of the structure of the semilunar bodies, the flagellate bodies originating from these, and the flagellate bodies derived from the large rounded pigmented bodies belonging to the tertian parasite. For this purpose we employed a great many specimens of blood prepared after the method of Romanowsky. The staining was done on cover-glasses on which the blood was spread in the usual way and which were kept in a moist chamber for a length of time varying from ten to twenty minutes or even longer and then rapidly dried and fixed with absolute alcohol. We may say at once that in the majority of the flagellates the flagella or mobile filaments are thus seen to consist essentially of a filament of chromatin which is displayed with great distinctness by the method described. And we may add further that Professor Koch who worked during the summer in the Hospital of Santo Spirito at the subject of malaria succeeded in demonstrating by the same or an analogous method the presence of chromatin in the flagella of the flagellate bodies derived from crescents and showed one of us a specimen in which this was displayed.

The following are the main results of our researches. The flagellates originating from crescents, as well as those from the pigmented bodies of tertian fever, do not all present the same details of structure. Some—and they are not numerous—present the appearance of a protoplasmic body containing in its mass some filaments or blocks of chromatin. From the protoplasmic body project the flagella, generally four in number, made up entirely of a homogeneous substance stained pale blue like the protoplasm. It cannot be objected that in these cases the chromatin fails to be placed in evidence on account of deficient staining, because the chromatin contained in the body of the parasite is stained in the typical way. Other flagellate bodies—and they are more numerous—present a pigmented protoplasmic body of a spheroidal form in which the particles of chromatin have, so to say, emigrated to the periphery. From these peripheral chromosomes issue filaments of chromatin which constitute the principal part of the flagella. The latter in this case also usually number four. Finally there are a few flagellates some flagella of which contain chromatin, while one perhaps consists of nothing but protoplasm.

The structure of these mobile filaments is thus complex. According to our observations they consist of a thread of chromatin substance surrounded by a thin layer of protoplasm prolonged to both extremities. In the rare instances in which one succeeds in finding an isolated filament it would seem as if the chromatin substance tends to occupy the centre, while the two extremities consist of protoplasm. That there exists a continuous peripheral stratum of protoplasm cannot always be made out, but we have reason to think that this is a constant arrangement since even in those filaments which appear to be made up entirely of chromatin it is readily seen that at the points where, perhaps in consequence of the method of preparation, interruptions in the chromatin occur there is a substance faintly stained blue which maintains the continuity of the filament.

As regards the origin of these so-called flagella it can be shown, especially in the flagellates of tertian fever, that they arise from the nucleus. In fact, the large pigmented bodies of tertian fever when the process of flagellation is complete are seen to be divided into two masses. Of these, one mass consists of protoplasm strongly pigmented with granules of melanin; the other is a hyaline sphere with a few granules of black pigment round it from which the flagella issue. This hyaline sphere evidently represents the nucleus which has separated from the protoplasm during the interval in the moist chamber, the chromatin of the nucleus having in its turn emerged from the nuclear membrane to constitute the principal part of the flagella. This is the interpretation which the microscopic appearances seem to us to render most reasonable.

In the preparations made in this way and kept in the moist chamber it can also be clearly seen that all the crescents as well as all the ovoid and rounded bodies derived from them contain chromatin, for the most part in the form of small rods, filaments, and granules. In a former article,[3] in describing the structure of the crescents, we noted that in the greater number of cases their nuclear chromatin was not demonstrable; and, indeed, by the method we used—that of staining with hæmatoxylin and eosin preparations dried and fixed with equal parts of absolute alcohol and ether—it cannot well be seen.

Subsequently to this, Ziemann upheld the view very

[1] THE LANCET Dec. 3rd and 10th, 1898.
[2] THE LANCET, March 14th, 21st, and 28th, 1896.
[3] Studi sulla Infezione Malarica. Bullettino della Reale Accademia Medica di Roma, Anno XX., 1893-94.

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energetically that the crescents have no chromatin substance, and on this ground he advanced the idea that they are sterile forms. It is not easy to understand how this observer could have arrived at such a conclusion, seeing that he used a method of examination practically identical with that employed by us and which has given exactly contrary results in our hands. Perhaps the reason lies in this—that Ziemann, working with preparations dried immediately after they were taken, failed to see the chromatin, concealed, as it probably was, in the midst of the rods and granules of black pigment surrounding it. On the other hand, in our preparations which were kept in the moist chamber the nucleus of the crescents as also the body itself being swollen up and the rods of pigment separated from one another the chromatin is rendered evident, becomes more or less swollen, and is stained by the method of Romanowsky in a typical way.

We shall not now enter upon a discussion of the significance which these structural characters permit us plausibly to attach to the crescents and mobile filaments.[4] It will be easily understood that those observers who, like Manson, look upon the flagellates as the first phase in the extra-corporeal life of the malarial parasite will find in these new facts fresh argument in support of their opinion. But we hold at the same time that they must not be considered as necessarily irreconcilable with Bignami's own hypothesis as to the significance of the semilunar bodies, especially when that hypothesis is studied in the more complete form in which it is presented in the last article written by us upon this subject.

Bignami's first hypothesis has been misunderstood by many, as Thayer and Hewetson justly observe.[5] We have indeed favoured the idea that the semilunar bodies are sterile on the grounds that one never sees in them any form of multiplication and that they have no relation to relapses; and these assertions, even in the light of these new observations, we still hold by as in accordance with the truth. In other words, we contended that the crescents are sterile bodies *in man* and *as far as man is concerned*. In fact, we put forward the additional hypothesis[6] that these bodies represent those phases of the life of the malarial parasite which in other parasites are continued and completed outside of the host. Should such migration from the host fail to occur, then that phase of life which cannot be completed except in the outside world or in a new host will be carried out in an abortive way and will terminate in forms of degeneration.

Certainly these new researches render probable the hypothesis that the cycle commenced in the blood of man is completed in some species of mosquito,[7] but they nevertheless do not negative the truth of the fact alluded to in our first hypothesis in those cases where the passage from man to the new host fails to take place.

Rome.

[4] A complete account of the results of these researches, not only in regard to crescents and flagellates but also to the structure in general of malarial parasites, will shortly be published in the Bullettino della Reale Accademia Medica di Roma.

[5] W. S. Thayer and J. Hewetson: The Malarial Fevers of Baltimore. The Johns Hopkins Hospital Reports, 1895, p. 215.

[6] Loc. cit., p. 37 of the extract, et seq.

[7] Since the above was written we, along with Grassi, have succeeded in demonstrating that the semilunar bodies do actually develop in the middle intestine of a mosquito (Anopheles claviger). It is probable that this is the same species as Ross's "dappled-winged" mosquito, in two of which he observed a similar development. These facts allow us to accept the above inferences with less reserve.

OPENING OF VICTORIA HOSPITAL, KINGSTON-ON-THAMES.—On Monday, Dec. 12th, the Duke of Cambridge opened the Victoria Hospital, Kingston-on-Thames, erected by the inhabitants as a memorial of the Queen's long reign. The site for the new building was presented by his Royal Highness. The freedom of the borough was conferred upon his Royal Highness who was subsequently entertained by the mayor at luncheon.

DIPHTHERIA IN SWANSEA.—The epidemic of diphtheria shows no signs of diminution and is exciting considerable anxiety in the town. Last week 37 cases were reported, against 39 in the previous week. The *Herald of Wales* complains that the medical officer of health, Mr. Ebenezer Davies, has directed that no particulars as to cases of disease notified shall be given to the press on the ground that notifications are private information.

ON THE ADMINISTRATION OF A CERTAIN MIXTURE OF CHLOROFORM AND ETHER IN GYNÆCOLOGICAL OPERATIONS BY MEANS OF A CLOVER'S INHALER WITHOUT THE BAG.[1]

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IN view of the great increase of the records of death during the administration of anæsthetics, methods and statistics, especially when obtained from large numbers of cases and classes of patients, have exceedingly great value, and I propose, with ap logies for some reiteration in what follows, to give the results partly of my own experience and partly of the experience of others in regard to a particular anæsthetic mixture and the special method of using it. Mixtures containing chloroform and ether, although viewed with disfavour by many administrators as be'ng neither the one thing nor the other, have certain undeniable advantages, more especially when they contain ether in an effective proportion. In the German statistics now to be quoted the fact that the mixture shows a smaller death-rate than either ether or chloroform given separately points, in my mind, to the inference among others that an efficient quantity of ether had been added to the chloroform. Before describing and considering the method mentioned at the head of this paper I will first touch on several points in connexion with anæsthetic mixtures containing ether and chloroform.

German statistics of anæsthetics from 1890 to 1897, collected from scores of thousands of cases, give the death-rate in the following proportions according to Haenkel[2]: chloroform, 1 in 2039; ether, 1 in 5090; ether + chloroform, 1 in 7594. The Austrian mixture of ether one part, chloroform three parts, and alcohol one part is not included in the above statistics, for it contains only a small and probably ineffective proportion of ether.

Statistics of fatalities during the administration of anæsthetics notoriously vary greatly, and though the figures given may not be absolutely correct, yet if all unrecorded cases were published and added to the above figures I believe that probably the number of deaths would be found to be double those indicated by the above figures. In any case probably the proportion of deaths under chloroform to those under ether and the mixture is about right, and we may conclude that a mixture of ether and chloroform in which a sufficient quantity of ether is included forms probably the safest anæsthetic in common use for ordinary surgical work, for on the one hand the very real after-perils of ether are much diminished and the present dangers of chloroform are by its dilution and the addition of the stimulating ether in great measure obviated. It will be said that the administration of ether in suitable cases by men accustomed to its use has practically very little of danger and no doubt to a very large extent this is so, but much practice is needed to give ether with any great degree of comparative perfection and in such a way as to minimise the possible and real danger of after-bronchitis and pneumonia, more especially in abdominal cases. We therefore have not to consider the administration of anæsthetics by the specialist but as forming a part of the everyday work of the surgeon, house surgeon, or practitioner. Statistics of the Germans and practical experience go far to show that a mixture in all cases freshly prepared, such as the A.C.E. or a mixture containing ether and chloroform in which the ether is present in rather greater proportion than in the A.C.E. mixture—say in the proportion of 2 to 1 or 2½ to 1—is reasonably safe and probably the safest anæsthetic for routine use. Several cogent reasons are: (1) both ether and chloroform are diluted; (2) are given with plenty of air; (3) there is less chilling and irritation of the air-passages than when ether is given alone; (4) the breathing is more obvious than when chloroform alone is given; (5) the pulse and respiration are rather stimulated than depressed; and (6) the

[1] A paper read before the Birmingham Branch of the British Medical Association on Nov. 10th, 1898.

[2] Handbuch der Inhalations-Anästhetica, second edition, p. 61.

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dangers of over-depression by chloroform or of over-stimulation by ether, the latter being a factor not always realised by the administrator, are to a certain and sometimes large extent avoided. We should strive as far as possible so to proportion the quantities of ether and chloroform in a mixture that the depressing effect of the chloroform (which is so markedly shown by the fall in blood-pressure) will be wholly or almost wholly counteracted by a proper amount of ether; indeed, it would be safer for the patient that there should be in the mixture a little more ether than would be sufficient to neutralise the general depressant effect of the chloroform—just enough, in fact, to slightly increase the fulness, strength, and rapidity of the pulse and the number and depth of the respirations and perhaps to make the breathing a little mucous in character. Thus the effect of the shock during operation will be lessened.

An advantage (first pointed out by Schleich of Berlin but not yet properly appreciated) of certain mixtures of about the above strength is that their boiling point—that is, point of maximum evaporation—more nearly approximates the temperature of the body than does the boiling point of ether or chloroform alone. Ether, e.g., boils at about from 34° to 35° C. and chloroform at about from 60° to 62° C., while the boiling point of the A.C.E. mixture is about 48° C. It is to be noted that the boiling point of ether prepared from methylated spirit is lower than that of ether prepared from rectified spirit, and if the former be used in such mixtures the resultant more nearly has its point of maximum evaporation at the body temperature than if the rectified ether be used. I can in practice detect very little difference, during administration or after it, between the two preparations of ether and nearly always use that prepared from methylated spirit. Practically, then, to a large extent the advantages of both ether and chloroform can be combined and the disadvantages mitigated by giving ether and chloroform in the proportion of 2 or 2½ or 3 parts of ether to 1 part of chloroform. If such a mixture be given openly in the case of children or by a Silk's celluloid or metal inhaler to adults one can, of course, increase the proportion of either constituent at will and conveniently.

I now give a description and a few statistics of a method of administering a certain mixture of chloroform and ether which is, so far as I know, nowhere else practised than in the Midlands, though here it has been in use for more than fifteen years and almost exclusively by gynæcologists, Mr. Lawson Tait being, I believe, its originator. This mixture is the routine anæsthetic here in Birmingham for most operations performed by the majority of gynæcological surgeons. The lengthened satisfactory experience of many operators, confirmed by favourable statistics which comprise thousands of cases, justifies to a large extent the great confidence reposed in the mixture and in its system of administration. The method to which I wish especially to draw attention consists briefly in the use of a mixture of ether and chloroform in the proportion of 2 parts of ether to 1 of chloroform by volume administered by means of a Clover's portable regulating inhaler without the rubber bag. The ether generally used in the mixture is the methylated variety, and of specific gravity of 0·720, while by some administrators rectified and by others methylated chloroform forms the other ingredient. I will first give the statistics:—

Hospital ...	4431	operations to the end of July, 1898, with	2 deaths.
Private (about)	9750	" " " "	1 death.
Total ...	14,181		3 deaths.

To show the proportion of operations performed in the Birmingham and Midland Hospital for Women under the influence of this mixture I looked through the record of operations for several months, and among them the month of May, 1898, and found that there were 32 operations for which the anæsthetics respectively were: In 27 the mixture of ether two parts and chloroform one part; in 2 chloroform; in 1 chloroform followed by the mixture; in 1 the mixture with the addition of more chloroform; and in 1 no anæsthetic. Thus the percentage of cases in which the mixture was used was 87·5. Again, taking other months at random for the sake of illustration, in another shorter month of this year 26 operations were all performed under the influence of this mixture = 100 per cent. In January, 1887, there were 22 operations, in every one of which this anæsthetic was used. In January, 1898, there were 32 operations in 30 of which this anæsthetic was used = 93·75 per cent. In July, 1898, there were 26 operations, in 25 of which the anæsthetic was used = 96 per cent. Thus on an average more than 90 per cent., really about 95 per cent., of the operations in the Birmingham and Midland Hospital for Women (and I believe the same assertion may be made regarding the operations in the Wolverhampton and District Hospital for Women) have of late years been performed under the influence of this mixture given by the method described, and nearly all the operations done in private by the staff of the above-mentioned hospitals have in recent years also been performed under its influence.

These statistics have especial value because they apply only to patients of the female sex and in perhaps 99 cases or more out of every 100 to adult women. Gynæcological operations are, taking them as a whole, longer and more severe in their nature than the usual run of general surgical procedures and as so many cases complicated by abdominal distension or pregnancy have to be dealt with and often at length the dangers of anæsthetisation are rather greater in proportion than those incurred in general surgery. As regards the deaths which have taken place during the administration of this anæsthetic one occurred in a patient who was extremely ill from chronic double pleurisy of an extensive nature and who also had an enormous ovarian tumour pressing upwards and embarrassing the heart and lungs. Operation was urgent in this instance. In another case, also the subject of a huge ovarian tumour which practically when the patient was in a horizontal position allowed very little movement to the heart or lungs, death occurred. Both of these cases would in all probability have ended fatally whatever anæsthetic had been used and operation was the only chance of life, for the patients were *in extremis*. In the third case[3] the mixture was administered to a very healthy middle-aged woman, nothing being found on physical examination to contraindicate an anæsthetic. Before she was fully anæsthetised, the patient suddenly became rigid, blue and pulseless and the breathing spasmodic, and death ensued in spite of the usual means for resuscitation. It was evident that for at least ten minutes after cardiac movements had completely ceased she was making efforts to breathe. About 3 drachms of the mixture had been used. At the necropsy no particular abnormality was noted except congestion of the brain. Death seems to have occurred from syncope. One of the deaths occurred in private and 2 in hospital practice. If we omit the first 2 fatal cases which would have so ended in any case it will be seen that practically there was only 1 death directly due to the anæsthetic in over 14,000 cases—a statement which I think could rarely be applied to the administration of chloroform alone by whomsoever and however given, and seldom to a similar number of ether administrations and which points to the comparative safety of this anæsthetic in the class of cases in which it has been used. About 50 per cent. of the operations have been laparotomies and speaking generally I think, as I said before, that gynæcological operations are in their nature at least as severe as, if not more severe than, the ordinary run of surgical procedures.

The boiling point or point of maximum evaporation of the mixture of two parts of the methylated ether and one part of the purest rectified chloroform is about 102° F., which is practically = 39° C. or a temperature slightly above that of the body. The advantage of such a boiling point has before been alluded to. Chloroform and ether forming together but a mechanical mixture, not a chemical compound, it might be thought that ether would come off more rapidly and leave in the end pure chloroform to be inhaled to the detriment of the patient and discomfiture of the administrator; but for the practical purpose of inhalation this difficulty does not occur, for so far as can be judged in practice by the smell of the mixture and the pulse and respiration of the patient there is no difference ascribable to the anæsthetic between the condition of the patient at the beginning and at the end of a dose poured into the receiver of the Clover's inhaler. As Dr. Hewitt in his book on "Anæsthetics" remarks of the A.C.E. mixture so in this case, "the ether present in the mixture certainly does not show that inclination to rapid escape which it has been supposed to possess." Probably because ether mixes freely with chloroform and alcohol it does not evaporate quite so rapidly as if given by itself, being held back by the chloroform and alcohol.

Practical points in administration.—1. The mixture must be freshly prepared, and so far as I can judge the pure

[3] Death under Mr. Lawson Tait's Anæsthetic Mixture: THE LANCET, July 14th, 1894.

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methylated ether may be used with as good results as the rectified preparation. 2. The quantity is to be measured and used in exactly the same way as pure ether, except of course that the bag is not utilised and that the face-piece is not removed for air supply. 3. The body of the inhaler should be previously warmed unless the room be hot or the patient weak. 4. The face-piece must fit accurately and be kept in exact apposition to the face during the whole of the anæsthesia. 5. During induction of narcosis the indicator must be moved on much more rapidly than if ether were being given until it reaches "full," and be kept there till anæsthesia occurs. 6. When this happens the indicator in many cases can be brought back to "3," or even to "2," and kept there throughout narcosis. In some cases it has to be kept at "full," and in others even thus the patient cannot be kept fully anæsthetised unless artificial heat—e.g., a hot towel—be applied to the body of the inhaler to increase evaporation. The anæsthesia obtained is very like that following the use of the A.C.E. mixture, the pulse and respiration being stronger and more rapid than in the case of chloroform narcosis, and the colour as a rule is excellent throughout.

Advantages of the mixture.—1. It is very pleasant to the smell and taste and non-irritating to inhale in ordinary doses. 2. Induction of anæsthesia, in women at any rate, is rarely accompanied by excitement, rigidity, or struggling. The mixture compares favourably in these respects with the A.C.E. mixture, and whether the absence of those untoward symptoms is solely due to the absence of alcohol or is owing to this fact acting together with another—viz., that the musculature of women is generally weaker and far less used than that of men, is doubtful to my mind. 3. A quiet anæsthesia is obtained, very suitable for most operations, including laparotomies and perineal procedures, for there is no rapid heaving abdominal respiration as is the case with ether, and yet there is a distinctly stimulating effect as compared with chloroform. 4. In my experience patients suffering from most forms of heart trouble or from slight respiratory lesions, or even from bronchitis of moderate degree, take the mixture very well. Indeed, in most cases in which ether or the A.C.E. mixture is generally given this mixture acts admirably. I personally see no objection to its use in marked cases of renal disease. 5. After-effects of any kind are very rare, and I really cannot hear of any serious or even comparatively severe sequelæ attributable to administration; even if these happen in slight degree they are neither as persistent as those following the use of chloroform nor as troublesome as those after ether, considering that after-effects of serious character, especially in the form of respiratory troubles, are more likely to follow laparotomies than other operations and that about 50 per cent. of the cases quoted were operations of this nature, it is an important advantage to be able to predicate this point. 6. Owing to the fact that comparatively little chloroform is used noxious fumes of carbonyl chloride and hydrochloric acid are not so abundantly given off as when chloroform alone is given—say in a small, badly ventilated, and gas-lighted room. Again, there is less danger of ether vapour from the mixture catching fire in the presence of a fire or light than if it were being administered in the pure state.

Advantages of the method.—1. It is more convenient than any other way of giving the mixture; the apparatus can be managed with one hand and it needs very seldom to be removed for replenishment. 2. The quantity of the anæsthetic given can be accurately graduated and kept constant and is strictly limited to a certain moderate amount in the majority of cases; these I regard as most important points. 3. The utmost limit of quantity is in most cases little above that needed to maintain anæsthesia—i.e., the safety point can be only in small degree exceeded—and in very many instances that limit is practically the full quantity necessary for the purpose of anæsthetisation or even slightly below it, so that heat has to be applied to the apparatus to increase the rate of evaporation. 4. Thus it is generally difficult to give too much or a sudden overdose of the anæsthetic, and supposing that the operator has an inexperienced administrator or is operating without skilled assistance he can well induce anæsthesia himself and, putting the indicator to, say, "3," tell the anæsthetist or attendant to keep it there. If imperfect narcosis happens one can tell him to put the indicator at "full." 5. Anæsthesia is as easily and rather more quickly produced than by giving the A.C.E. mixture in the ordinary way—viz., by means of a Skinner's mask and Silk's inhaler.

Disadvantages of the mixture.—These are as a rule very few and slight in practice, as the difference in rate of evaporation of chloroform and ether does not seem to come into play to any extent. In very marked bronchitis or other pulmonary affection or in very old people or very marked cases of abdominal disease—e.g., large ovarian tumours or cases complicated by abdominal distension—the mixture is as safe as the A.C.E. mixture. Mild bronchitis is the chief sequela and is rare. I have not heard of pneumonia as a sequela. This lesion, on the other hand, is comparatively frequent after long laparotomies performed under the influence of ether. In a very few cases, especially in alcoholics, anæsthesia is imperfect and one must either increase the proportion of chloroform or adopt some other anæsthetic.

Disadvantages of the method.—These are likewise few. 1. In a cold room or with very strong or rather alcoholic women one has sometimes to warm the reservoir before use or afterwards to apply a hot towel to it. 2. It is not much good for strong or alcoholic men. I have not used it at all for children. There is no apparent danger in breathing the mixture, into which chloroform enters so largely, through the comparatively narrow air channels of a Clover's apparatus; as elsewhere remarked, the bag is even as a routine practice used by one skilled administrator until full anæsthesia has been induced, thus for a few minutes cutting off the air-supply altogether. Such a proceeding is the result of experience, not of following strictly the ordinary canons of anæsthetisation. The conditions generally held to contraindicate the use of the mixture are those in which by the majority of practitioners the administration of ether is contraindicated. This tends to show indirectly the distinct influence and efficacy of the proportion of ether present. Briefly, the mixture is not given in cases of marked pulmonary or renal disease or to old people or children. In all these conditions chloroform is to be preferred. Ether is practically never used by those who incline to this method of anæsthetisation, chloroform being the alternative anæsthetic. As during the administration of all anæsthetics untoward events may and do occur, so with this mixture. There have been times when there has been great anxiety for the patient, when artificial respiration and other means of resuscitation have had to be resorted to, and when another anæsthetic has had to be substituted for the mixture, but so far as I can learn causes for uneasiness do not arise so frequently as during the ordinary administration of ether or chloroform alone, and the general opinion of the surgeons who operate during narcosis produced by this method is most favourable—indeed, they have more confidence in it than in any other anæsthetic and their experience, individual and collective, of other agents as well as of this mixture has been large.

Mr. Lawson Tait's large experience of chloroform, ether, bichloride of methylene, and this mixture induced him to write to me as follows: "Then [i.e., about the year 1882] we found a mixture do well—2 ether and 1 chloroform—and that I believe is the best of all anæsthetics, save in old age and damaged kidneys, for all kinds of work. I think if introduced by nitrous oxide it would be an ideal anæsthetic." The opinion and experience of the many other gynæcologists in the Midlands who use the mixture coincides with that of Mr. Lawson Tait. Personally I have used the mixture in a good many cases of operations on women and very occasionally have administered it to men, and have formed a high opinion of its merits for gynæcological operations as given by the method described. In only one case, that of a very alcoholic woman, have I not been successful in inducing anæsthesia, but was obliged to resort to chloroform. Its chief demerit is to my mind the trouble of applying heat to the apparatus if the room be cold or the patient strong or rather alcoholic. One skilled administrator often uses the bag until the patient is anæsthetised, affirming the safety and humanity of rapid induction of anæsthesia. Equal parts of chloroform and ether have been given by this method and more than once, I believe, even pure chloroform, without untoward result. Finally, the procedure described seems to fulfil its object admirably in a certain class of patients—viz., women subjected to more or less the same kind of operation (i.e., abdominal or gynæcological)—and that much-to-be-desired end, that of making it difficult to give too much of the anæsthetic, is in many cases partially and in some cases wholly attained without the use of novel or cumbrous apparatus or the adoption of inhalers which require constant watching and draw the attention of the administrator from the condition of the patient.

I must now express my indebtedness and thanks to Mr. Lawson Tait, Dr. Thomas Savage, Dr. A. E. Clark, Mr. J. W. Taylor, Mr. Christopher Martin, Mr. J. Furneaux Jordan,

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Dr. Frederick Edge, and to the committee of the Birmingham and Midland Hospital for Women for kindly allowing me to make use of their records in order to compile the statistics and also for giving me much information on the subject of this article.

Birmingham.

ON THE PREVENTION AND CORRECTION OF SHORT LEG IN HIP DISEASE.

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No matter what care may be taken in the early treatment of hip-disease a certain amount of subsequent deformity seems inseparable from a large number of the cases. The percentage is variously stated by different authors at between 70 and 80. Doubtless certain factors tend to lessen this estimate, prominently amongst which may be placed an early diagnosis and treatment and the efficient mechanical control of the limb. I am obliged to admit that in my own practice until lately in a proportion of cases (certainly a small one) even where a patient has been presented to me without appreciable deformity I have been powerless to prevent

FIG. 1.



A. B., aged twenty four years. Practical shortening 4 in.

shortening. That my experience is not unique is proved by the literature of the subject and by the continued efforts made by surgeons at home and abroad to devise methods for the prevention of short leg. Of one thing we may rest assured that however effectually we may by mechanical means modify deformity in active arthritis much more radical measures are required where the joint is sound but ankylosis and deformity remain. It is with the view of endeavouring to simplify the methods of preventing adduction and to facilitate its correction once it has occurred that I submit this statement for consideration. The deformities which constitute short leg comprise all or most of the following conditions—viz.: flexion, adduction, internal rotation, tilting of pelvis, and arrest of growth. The first four of these conditions—viz., flexion, adduction, internal rotation, and tilting of pelvis—I venture to think may in the future be

FIG. 2.



Same case as Fig. 1. After transtrochanteric osteotomy. No practical shortening.

avoided where we have an early case to deal with. Obviously we can only modify the shortening caused by arrest of growth by deflecting the pelvis sufficiently to ensure apparent equality of the limbs. Without entering into a discussion as

FIG. 3.



A boy, aged ten years. 4 in. practical shortening.

to the causes of short leg I would state that, contrary to the teaching of surgeons, it often occurs without the complication

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of abscess, that it often occurs very suddenly, and that in quite a number of cases it happens in robust children and is absent in the weakly and emaciated. I would further add that though abduction is usual in the so-called first stage of hip disease I have frequently noted in cases with what may be called a strongly deforming tendency that adduction

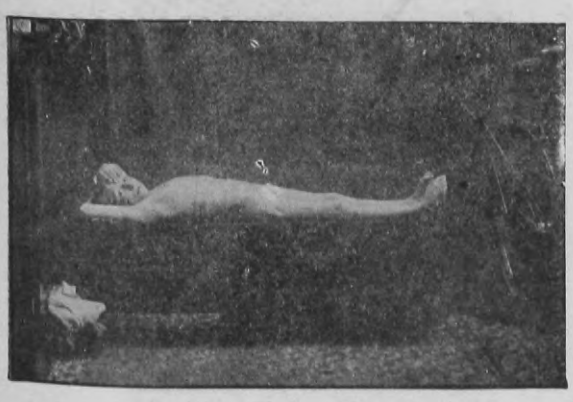
FIG. 4



Same case as Fig. 3. After osteotomy and abduction. Pelvis has been lowered on diseased side and shortening obliterated.

is present almost from the first and that abduction has not once been noted in the so-called first stage. Again, it must be recollected that adduction may occur without tilting of the pelvis and without displacement of the femoral head. In proof of the fact that body weight is not the all-

FIG. 5.

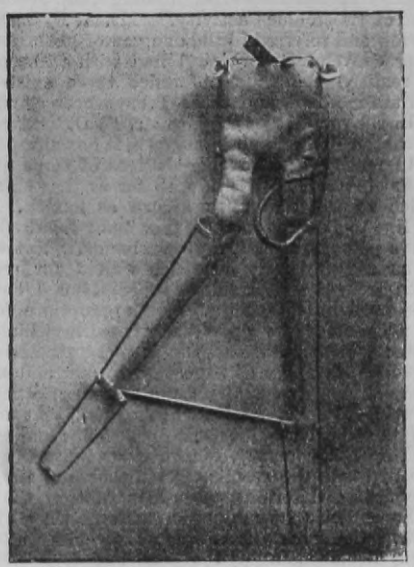


Same case as Figs. 3 and 4. Shows the apparent lengthening by pelvic depression of leg which was 4 in. short.

important factor in the production of deformity, as many authors would have us believe, one has only to adduce the fact that the whole series of elements which make for short leg may appear while the patient is lying in bed.

The best routine appliance for hip disease is undoubtedly the Thomas splint and I always use it in those cases where it is sufficiently effective to control deformity. For this purpose the abduction body wing should generally be employed and the not easily or generally acquired art of its application should be thoroughly mastered. In some cases, however,

FIG. 6.



Abduction splint.

where the structures about the joint seem to thicken early and glide backwards I am using a special abduction splint (Figs. 6 and 7). The new splint is so designed as to keep the diseased limb fixed in an abducted position and it effectively prevents any elevation of the anterior superior spine on the sound side; it governs rotation, flexion, and abduction

FIG. 7.



Abduction splint applied.

and in my belief solves the problem of the prevention of short leg, for by its help I can with confidence predict in every early case that recovery will take place without shortening provided we have not to deal with arrested growth. The importance of this assurance will be appreciated when we note that while shortening occurs in, say, 70 per cent. of the cases arrest of growth in any but a barely recognisable extent

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occurs in not quite 15 per cent. This arrest I find is usually not confined to the femur but is shared by the other bones of the limb.

In a discussion held lately at the Clinical Society of London, at which I was present, Mr. Watson Cheyne, in order to emphasise an argument, stated that "no one would ever think of immediately straightening a hip or knee during any stage of tuberculous activity." Mr. A. E. Barker took a similar view and referred to the dangers of general infection. In a later conversation which I had with these gentlemen I fully realised the wide difference there exists between metropolitan methods and those I have been accustomed to follow. In the practice of the late Mr. H. O. Thomas, in that of Mr. Rushton Parker, and in my own, it has always been the custom to rectify with varying degrees of force any tuberculous joint in a wrong position, so far as that phrase might be applied to the deformity known as flexion. I should scarcely like to attempt to guess how many hundreds of such cases have passed through my own hands. Not only have I never as a preliminary condition waited for recovery to take place from the tuberculous process, but I have looked upon the active stage as that most appropriate for reduction on account of the great facility with which it may be effected. In the case of the knee particularly I commonly reduce an angle of from 30° to 40° and allow the patient to travel home the same morning, sometimes a considerable distance. I am not aware that my statistics are in the least harmed by such seemingly rude methods; on the contrary, I have every reason to be more than satisfied with the results. In the case of the hip even extensive flexion deformity does not shorten the limb to nearly the extent that adduction with pelvic tilting does, and I have for some time directed my chief attention to preventing displacement of the head and to keeping under control the level of the right and left anterior pelvic spines. My practice now in all cases of displacement of the head is to endeavour to at once reduce shortening by force sufficient to effect this purpose. If this be attempted while disease is active and before ankylosis, either fibrous or bony, has had time to take place scarcely any difficulty is experienced and pulleys have rarely to be used. This, of course, refers to the case of children. The force that governs the displacement generally suffices to rectify pelvic obliquity, while the flexion can be overcome at the same time by ordinary methods. If the case be of long standing and the structures around the hip-joint are much thickened two or three applications of the pulley may be required at intervals of about a week. In cases where the tuberculous process has subsided and ankylosis remains certain further procedures are necessary and will be described later. Having restored as far as possible the displacement of the hip and the length of the limbs the patient is placed in the new abduction apparatus, where, as I have stated, the parts are so combined as to effectively prevent the slightest tilting of the pelvis in any but in the direction of advantage to the diseased side. The patient is maintained in this apparatus until the phase of disease productive of deformity has passed. When the disease admits of it he may be transferred to an ordinary walking splint, the abducted limb meanwhile being brought into its proper position, but practically during the whole of treatment he should live in the open air. I am quite convinced from my own practical experience that this abduction splint is an effective preventive of adduction, but if further argument were needed it is supplied by the fact that without recourse to force one can by its use gradually overcome any moderate amount of shortening which may be found to have occurred in a recent case. If it can correct deformity it can much more easily prevent it.

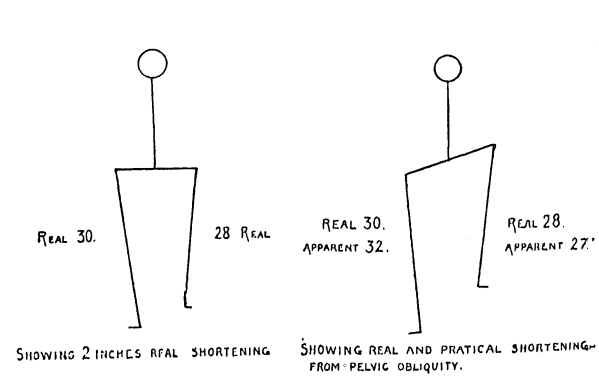
I would now deal with another important class of cases. I allude to those cured of their hip disease, some of whom are children and some adults, and who may have shortening varying from 2 in. to 6 in. or 7 in. due to femoral displacement and oblique pelvis. I have operated already upon about 50 such cases and can speak most hopefully of the results. And here it may be well to mention that if we are to keep anything like an accurate record of these deformities we should employ a simple method of measurement for fixing the degree of adduction and estimating practical and real shortening. (Diagrams A and B.) Osteotomy, as we know, has been practised for years to overcome the deformity of flexion. Rhea Barton performed it in 1826 and he was soon followed by Clemmot, Rodder, Maisonneuve, and others. Adams first performed the operation subcutaneously by dividing the neck of the femur. The other operators worked lower down but only Gant divided below the lesser trochanter. Probably Gant's operation is the most popular to-day, but personally I prefer that of Adams if we only have to deal with the deformity of flexion. Although something must be said in favour of a section which cannot be interfered with by a shortened psoas and iliacus, yet I have found that in cases of right-angled deformity of the hip the upper part of the femur left fixed after Gant's incision has an ugly way of encroaching upon Scarpa's triangle. Of this I am also certain, that even if an osteotomy incision be made through inflamed tissue, as must sometimes occur in Adams's operation, union is not in the least hampered. Personally, with a view of not merely rectifying a flexion angle which has been the general object of a femoral osteotomy but with the intention of lessening or obliterating adduction with pelvic tilting, I make my incision obliquely through the great trochanter (Diagram F). This often involves hard work because of the thickness and the sclerosed condition of

FIG. 8.



Modification of Adams's saw.

the bone. The work is much facilitated by having a small knob on the end of the saw, such as one which Weiss has made for me (Fig. 8). One can saw with much more energy when there is no danger of either transfixion or of losing one's place. It is better where practicable to saw completely through the bone rather than a certain distance and I prefer going through the trochanter because of extra callous exudation, as an ununited fracture will frustrate the object of the operation. The adductors are next subcutaneously divided and in the case of a youth or adult traction is applied by means of pulleys. Very often an inch or an inch and a half may be



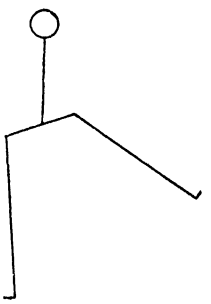
gained by this traction (Diagram F) and in this way some of the shortening of actual displacement may be combated. The leg, still fully extended, is placed in a position of abduction (Diagrams C and G), which varies with the degree of pelvic tilting. The greater the tilting the greater should be the abduction. The pelvis on the sound side is fixed and the abduction splint is applied and extension and abduction are maintained (Fig. 7). Seven or eight weeks are allowed to elapse—until, in fact, bony union is completed with the limb in abduction and at an angle with the body.

It is now to be noted that the length of the limbs may be equalised in one of two ways or by a combination of both

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ways—either by lessening the practical length of the sound limb or increasing that of the short one. By osteotomy and extension the leg is actually lengthened (Diagram E), and by the osseous union of the femur in abduction with the pelvis the elevation of the pelvis on the opposite side is

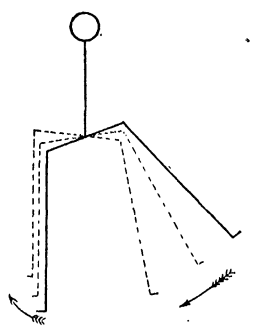
DIAGRAM C



POSITION OF LEG AFTER TRANS TROCHANTERIC OSTEOTOMY.

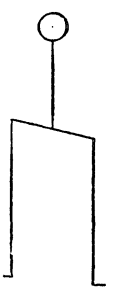
effected. With an outstretched thigh in one piece with the trunk it is clear that the limb can only be adducted at the cost of elevating the pelvis on the sound side, and in this way several inches of shortening may be remedied (Diagram D).

DIAGRAM D



SHOWING ELEVATION OF PELVIS ON SOUND SIDE BY BRINGING ABDUCTED LEG INTO POSITION.

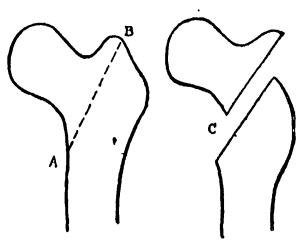
DIAGRAM E.



SHOWING FINAL RESULT WITH ADDUCTION OF LEG AND ELEVATION OF PELVIS OF SOUND SIDE

A more difficult class of case to deal with is that where short and firm fibrous union obtains. In such cases I am accustomed to divide the adductors and extend and forcibly abduct and if attempt at lateral movement threatens fracture I perform an osteotomy as if for bony ankylosis; indeed, it is better in such cases to proceed forthwith with osteotomy

DIAGRAM F.

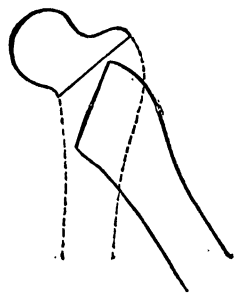


A.B. LINE OF SECTION THROUGH TROCHANTER.

C. LENGTHENING AFTER TRACTION.

rather than complicate the issue by forcing the fibrous bands. Such cases require to be kept much longer in a splint than do those where the fixation is bony and in two or three instances, from a want of experience in this matter, the early removal of restraint has resulted in some return of deformity. It might be supposed that this fibrous union would still allow the adductors to act, no matter how long the restraint and stretching, but this is not so provided sufficient abduction is obtained to counteract any subsequent slight fibrous contraction. If the limb be abducted for a sufficient length of time further contraction is not likely to occur and this accords with what may be assumed to be a surgical axiom that a deformed limb due to arthritis retains the same degree of movement after correction as it possessed before and that if ankylosed at the moment of rectification it is equally ankylosed when reduction is completed. When the splint has been removed the patient should be confined to

DIAGRAM G.



POSITION OF FRAGMENTS WHEN LIMB IS ABDUCTED.

bed for some time until the abducted limb is gradually brought into position and exercises should be prescribed designed to elevate the pelvis on the sound side and depress it on the diseased side. These exercises are very necessary adjuncts and in the case of adults especially because they materially improve the character of the walk.

I do not now enter into the question of pseudo-arthrosis except to state that its results in my hands are most uncertain and that by its attainment the rectification of deformity is not at all complete. I now almost exclusively employ it for the relief of double ankylosis. Of the 50 cases of bony ankylosis upon which I have operated by the trans-trochanteric osteotomy with abduction I will merely briefly state that in most of the cases the practical shortening has been obliterated and that in the rest it has been lessened almost to the point of disappearance. Suppuration has not occurred nor have there been any symptoms of gravity. The pain, which in my earlier cases was marked, can be avoided by a careful adjustment of the groin strap. In 2 cases tuberculous abscess has presented itself, but in both the operation was performed and the disease recovered from. The general health, as evidenced notably by sleep and appetite, has been well maintained.

In conclusion, for the prevention of short leg I suggest: (1) that abduction of the diseased limb should be maintained; (2) that the apparatus to attain this should also govern flexion and adverse pelvic tilting; (3) that where arrest of growth threatens pelvic obliquity should be summoned to assist; and (4) that where displacement of the head has occufred immediate reduction should be attempted. For the correction of short leg with bony ankylosis I suggest: (1) that oblique transtrochanteric osteotomy should be performed; (2) that the adductors should be subcutaneously divided; (3) that the limb should be placed in the position of abduction and extension and kept there until firm union occurs; (4) that after union the splint should be removed and the limb allowed to slowly leave the abducted position; (5) that exercises should be systematically performed in order to depress the pelvis towards the affected side; (6) that in case of fibrous ankylosis where no osteotomy has been performed in order to avoid recurrence the abduction should be maintained for considerably longer; and (7) that this treatment should as much as possible be carried out in the open air.

Liverpool.

BORIC ACID IN MILK.—At the Pontypridd Police-court on Dec. 7th a milk vendor was ordered to pay £1 1s. 6d. for selling milk which the public analyst stated contained 13½ grains of boric acid to the gallon.

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Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ASTHMA DUE APPARENTLY TO ARTERIAL SPASM.

BY JOHN C. THOROWGOOD, M.D., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO THE VICTORIA PARK HOSPITAL FOR DISEASES OF THE CHEST.

THE commonly accepted belief that spasmodic asthma is due to a contraction of those muscles which encircle the smaller bronchial tubes is undoubtedly correct in the majority of cases. It appears to me, however, that there are some cases where the real essence of the seizure lies in a spasmodic contraction of the blood-vessels rather than of the bronchial muscles. If this be so we can readily understand how it is that many competent observers, such as Hyde Salter and Trousseau, have likened an attack of asthma to an epileptic seizure.

Early in 1897 a young married woman was sent to me by Mr. Nichol Cox of Galloway. In her case I believed arterial spasm had much to do with causing the very severe fits of dyspnœa which from time to time assailed her. The patient was of spare build and of nervous temperament and for some years she had been subject to seizures of asthma. She had a quick pulse, weak cardiac sounds, and prolonged expiration, but very little true wheezing sound was heard in the lungs. She told me that all cigarettes and fuming inhalations made her worse. Shortly after her visit to me I saw her in a very severe paroxysm of asthma. Her appearance then reminded me much of that of a person suffering from angina pectoris. Her pulse was 120 and small, and her chest movements were up and down with no true expansion. The wheezing sounds were not so marked as one would have expected from her appearance. The intense pallor and anxious face of the patient made me think of arterial spasm, and the remedy which ought to succeed in such a case should be one which would dilate the vessels. Drop doses of liquor trinitrini did good, but they did not seem to me so efficacious as repeated doses of chloral hydrate (10 gr.). Under this last medicine the relief was unmistakeable and when I called the next day all the asthma was gone and the patient to all appearance had become well. Two months later I heard that she had been to Aix-les-Bains and had returned with a gain of flesh and much general benefit.

This case may not seem a very extraordinary one, for there is plenty of evidence to show the value of chloral hydrate in relieving spasmodic asthma. It is worth while, however, to consider how far arterial spasm may be concerned in the production of some forms of sudden dyspnœa. The failure of ordinary fuming inhalations to give any relief was a prominent feature in this case, while vaso-dilator medicines acted speedily in relaxing the spasm. Dr. Lauder Brunton has recorded an interesting experiment in which he injected a little muscarin into the jugular vein of a narcotised animal with the effect of at once producing a blanched and anæmic condition of lungs with empty left heart and gorged right ventricle and vena cava. Atropin afterwards injected restored the balance in the circulation. In the case narrated I expect the lungs were during the paroxysm of dyspnœa blanched and anæmic from arterial spasm. Belladonna was not tried, it appears, as a remedy during the time the patient was under my observation as the action of chloral hydrate and subsequently of small doses of Fowler's solution with valerian effected all that was desired.

Welbeck-street, W.

POST-PARTUM HÆMORRHAGE TREATED BY SALINE INJECTION.

BY F. DE JERSEY, M.B., CH.B. GLASG., L.R.C.P. EDIN.,
ASSISTANT MEDICAL OFFICER, WALSINGHAM UNION.

HAVING read the very interesting article on the Injection of Saline Solution in Shock by Mr. Thelwall Thomas in THE LANCET of Nov. 26th I record the following note on a case which came into my hands and which corroborates very markedly what Mr. Thelwall Thomas says—namely, that saline solution acts as a very powerful stimulant to the circulatory system by repleting the circulation and by stimulating the heart.

I was on August 5th, 1898, called to attend a woman, about forty years of age, who was in her thirteenth confinement. On my arrival I found her utterly collapsed, the radial pulse was imperceptible, and she could only be momentarily aroused by shouting at her. She was lying on her back seemingly dead, like a corpse being perfectly blanched, in a mass of liquid and coagulated blood. She must have lost all the blood she possibly could. The child had been born an hour and a half. The delay in my arrival was due to the fact that the patient lived 4 miles away and that the husband had not sent for me soon enough, the child being born shortly after he left home. The after-birth had not come away and seeing the imminent danger that the woman was in and taking into consideration the circumstance that the placenta was not in the vagina and could not be removed by compression of the uterus I concluded that it was adherent, so I at once rapidly prepared some saline solution (1 drachm to the pint of hot water) and injected about 2 pints into the rectum, having previously administered a dose of ergot to arrest further hæmorrhage after the injection. In a very few minutes the radial pulse returned and in about ten minutes the patient opened her eyes and wanted to turn over on her side. Mr. C. E. Gooderson Bateman, the medical officer of the district, being away Dr. Fisher of Fakenham was called in, as I found that the placenta was so adherent that chloroform anæsthesia was necessary whilst its removal was effected. On his speedy arrival chloroform was administered and the after-birth was completely removed. Before leaving the patient the pulse was 125 and very thready. She felt very comfortable and asked for nourishment. In the evening of the same day the pulse was 120 and the temperature was 100·2° F. For a week or more the pulse was rapid and the temperature was about 100°. The woman was a heavy drinker, which was unfavourable to a rapid recovery, but after a somewhat troublesome time she to all appearance completely recovered, leaving the district three months after her confinement.

The hæmorrhage in the above case was undoubtedly due to carelessness. A woman was called in just before the child was born to attend to the patient and in trying to remove the placenta by traction on the cord must have produced a bleeding surface by partially removing it. Seeing that she was doing no good but only producing hæmorrhage she fortunately desisted from making further attempts, but unfortunately lost her head apparently and did not try in any way to stop the bleeding. What could one expect from one of these so-called midwives or women who kindly offer their services on such occasions?

The case is of interest as showing with what great rapidity saline solution acts even if it be injected into the rectum, thence passing up into the bowel by gravitation, where owing to the large absorbing surface the fluid quickly gets into the circulation. It must act like a sponge where a large quantity of blood has been lost.

Walsingham, Norfolk.

PERFORATED GASTRIC ULCER.

BY T. JENNER VERRALL, L.R.C.P. LOND., M.R C.S. ENG.,
SURGEON TO THE SUSSEX COUNTY HOSPITAL.

TWO points of detail in laparotomy for cases of perforated gastric ulcer are worthy, I think, of more stress than is generally laid upon them. Some time ago I lost a patient in whom it was found post mortem that, though the ulcer on the anterior surface of the stomach remained soundly closed as at the operation, another ulcer on the posterior surface exactly opposite the first had given way and hence there had been a fresh outbreak of peritonitis. The interval between the attacks being quite short the ulcer at the back would probably have been discovered if a thorough examination of the stomach had been made at the time of operation. In commenting on this case I suggested that a systematic examination should be made in all cases, approach being

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obtained through the great omentum. My colleague, Mr. Furner, in a paper on complications arising in this condition, pointed out that subphrenic abscess often followed a focus of infection in the lesser peritoneal cavity. He alluded to my suggestion of opening this cavity as a matter of routine and urged that the liability to subphrenic abscess was an additional argument in favour of adopting this rule. It should be done at the end of the operation, for if flushing has been the mode chosen for cleansing the abdominal cavity portions of septic matter may have been carried through the foramen of Winslow and so have fouled the lesser cavity which was perhaps fairly clean. I hold that flushing with hot saline solution aided by gentle but careful exploration with the fingers of all peritoneal recesses forms the best method of cleansing. Before flushing is begun I insert a glass tube into the pelvis through a separate opening above the pubes. I then cleanse the lower two-thirds of the abdominal cavity and remove portions of food, shreds of lymph, &c., which will have run down largely into the pelvis. After a while the fluid will run out clear as it went in. Turning then to the upper part of the cavity we shall open in succession various recesses with fresh collections, all of which will be swept down and out through the glass tube. By doing this systematically we shall escape much risk of leaving some part uncleansed. When, finally, no fresh clouding of the saline solution is seen we shall know that the peritoneum is clean. I know well that there are cases in which nothing short of sponging will remove adherent lymph, but, as a rule, I believe that the washing and gentle use of soft finger-tips will do as well.

Brighton.

EXFOLIATION OF THE COCHLEA.

BY F. FAULDER WHITE, F.R.C.S. ENG.

HONORARY SURGEON TO THE COVENTRY AND WARWICKSHIRE HOSPITAL.

THE patient was a woman, aged twenty-eight years. She had suffered from a discharge from the right ear from childhood. In September, 1897, she had a severe illness, her account of which is as follows: "It began with severe pain in the ear and right side of the head. I had constant vomiting for twenty-four hours. I became delirious and did not know where I was for several days. The doctors applied ice to the head and poulticed the ear. I was in bed for six weeks." She gradually got better but has been in poor health ever since. The discharge continued to be profuse and was very offensive. She says that her medical attendant told her that it would be very dangerous to check the discharge. She came under my care in October. I found the middle ear full of an offensive discharge and she was quite deaf on the right side. Having admitted her into the hospital I ordered frequent syringing with a hot solution of silico-fluoride. The patient rapidly improved but there were two or three polypi which required removal, and while extracting these my forceps brought away a small piece of bone which was loose in the middle ear. This proved to be the modiolus of the cochlea with part of the osseus spiral lamina. The patient made a rapid and perfect recovery. The ear is now dry and sweet, the inner wall presenting a regular surface, and there is nothing in its appearance to reveal the somewhat unusual deficiency.

Such a case as this shows what nature can sometimes effect without operative interference and every month furnishes me with fresh proof of the reparative powers of the tissues in the middle ear and the adjoining cavities. The vitality of the tissues is lowered by septic organisms, but even after half a lifetime of neglected otorrhœa the middle ear may be restored to health by proper treatment. Yet half the patients who come to me have been under treatment elsewhere without relief or have been professionally advised that it was dangerous to meddle with the ear. Even in works on otology one fails to find any adequate protest against the everyday neglect of this disease. Some aural surgeons, indeed, write as if nothing could be more dangerous, but the hope held out is through operative interference. In uncomplicated cases this is, to say the least, unnecessary.

Coventry

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

UNIVERSITY COLLEGE HOSPITAL.

A CASE OF GUMMATOUS ULCERATION OF THE SCALP BECOMING EPITHELIOMATOUS; TREATMENT BY SCRAPING.

(Under the care of Mr. A. E. J. BARKER).

THE chief interest in this case is connected with the occurrence of an epitheliomatous ulcer on the scalp in a patient thirty years of age. The history of the case and the characters of the ulcer when first seen were definitely in favour of a gummatous origin, but the failure of the anti-syphilitic treatment and the histological examination of a portion of the margin of the ulcer proved fairly conclusively that it was epitheliomatous in nature. The phenomenon of a gummatous ulcer developing into a squamous carcinoma is not rarely to be seen in the tongue and occasionally on the lower limbs, but so far as we are aware it has not hitherto been described as occurring on the scalp in a patient of this age.

A woman, aged thirty years, was admitted into University College Hospital on Dec. 2nd, 1896. Four years previously she had had a somewhat prominent pimple on the vertex of her head; this was accidentally pricked with a hat pin and a scab formed; when the scab came off a small ulcer was left. A little later a blind fell on to it and made it bleed. It had been operated on on two occasions at another hospital and she had been treated medicinally, but no real improvement had resulted and the ulcerated area had steadily grown larger. There was nothing in the family history of importance except that an aunt was said to have died from cancer. On admission the patient appeared to be in fairly good health and nothing abnormal was found in any thoracic or abdominal organ. On the vertex of the scalp, rather to the right of the middle line, was a large irregular ulcerated surface measuring about 2 in. in diameter. The margin of the ulcer was crenated and the edge was fairly sharply cut except on the right where it was raised and slightly everted. The depth of the ulcer varied, but towards the right side it was nearly ¾ in. deep. The floor was covered with slough and discharge and at one part there was an evident pulsation. The ulcer was thought to be probably gummatous, though the edge in parts looked epitheliomatous. On admission 5 grains of iodide of potassium were prescribed with tonics and cod-liver oil, and the sore was dressed with sal alembroth gauze. The amount of iodide of potassium was doubled on the 7th and the ulcer was dressed with lotio rubra. The patient was much troubled with constipation which, however, soon yielded to treatment. On the 19th the iodide of potassium was increased to 30 grains three times a day. On Jan. 1st lotio nigra was used to the ulcer, but it appeared to cause a good deal of sloughing, so it was discontinued and lotio rubra was used once more on the 3rd. The ulcer did not make any definite progress, neither did it get any worse. On the 5th the patient complained of severe headache, and caffeine citrate and phenacetin were ordered at night to relieve it. On the 7th the iodide of potassium mixture was ordered to be given in the morning only, and mercurial ointment was ordered to be rubbed into the thighs once a day. The ulcer began to clear up and some of the sloughs separated, and lead lotion was substituted for the lotio rubra, but by Feb. 1st it was evident that very little real improvement had taken place and some fresh small outlying ulcers were noticed. A week later a nitrate of silver lotion (four grains to the ounce) was used. On the 20th, as the ulcer showed no signs of healing, nitrous oxide gas was administered and Mr. Barker removed a small piece of the thickened edge of the ulcer for diagnostic purposes. When this piece was examined microscopically it

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was found that there were numerous down-growths of the epithelial cells arranged in columns and irregular groups; the cells were squamous in type and a few small cell nests were seen. The anti-syphilitic treatment was persevered in but without any beneficial result and on March 30th, 1897, the patient left the hospital. She was re-admitted on April 20th, 1897, and it was seen that the ulcer had hardly changed in appearance. The surface was covered with pink granulations and at one part there was a small yellowish slough. To the right of the main ulceration there was a small ulcer. Around the larger ulcer the skin was much thickened and the base of the ulcer could not be moved over the bone beneath. At one part the raised margin was nearly a third of an inch above the surrounding scalp. On April 25th, the patient being under ether, the whole mass was thoroughly scraped with a Volkmann's spoon. It was found to be firmly attached to the bone which was in parts eroded and at one spot it was completely perforated, the dura mater being exposed over a space ½ in. in diameter. The skin and tissues around the margin of the ulcer were also removed. The wound was washed with perchloride of mercury lotion, iodoform was dusted over it, and it was dressed with iodoform gauze and wool. Iodide of potassium was given internally at first, on admission 7 grains and later 15 grains three times a day. To this were added 10 grains of iodide of sodium on April 29th. The wound was dressed every other day and healthy granulations soon appeared. On May 7th the wound had diminished in size, was granulating well, and looked healthy, and on the 13th she left the hospital with a small healing ulcer.

ROYAL ALBERT HOSPITAL, DEVONPORT.

A CASE OF DISLOCATION OF THE KNEE.

(Under the care of Mr. F. E. ROW.)

DISLOCATIONS of the knee are by no means frequently seen, for although there is nothing in the shape of the osseous surfaces to keep the bones in apposition the ligaments of the joint are numerous and strong. Of all the traumatic dislocations which may occur at this articulation the lateral is by far the most common. In the case which is recorded below the displacement was partial and it is very rare indeed that complete lateral dislocation is met with and if it does occur the dislocation is almost certain to be compound. The flexion and eversion, which were well seen in this case, are generally present and reduction was effected, as is usual, with great ease, for to permit of displacement both the internal and the external lateral ligaments and the two crucial ligaments must have been torn; there is nothing, therefore, to resist reduction. Persistent weakness of the joint is very liable to occur. For the notes of this case we are indebted to Dr. Daniel Brough, resident medical officer.

The patient, a strong, healthy youth, aged nineteen years, was working a winch at the time of the accident. A heavy weight was being lifted and the rope broke. The handle of the winch flew back and struck him on the outer side of the lower part of the left thigh. On his admission to the Royal Albert Hospital, Devonport, it was at once observed, even before the clothes were removed, that the patient had sustained some unusual form of injury to his knee. On undressing him the following condition of the parts was found. The tibia was displaced outwards and slightly backwards. The external and the greater part of the internal articular surfaces of the head could be defined through the skin. The patella was displaced outwards along with the tibia. The leg lay in a semi-everted position and was slightly flexed and abducted. The lower end of the femur formed a large prominent projection on the inner side of the limb. The internal condylar surface, the intercondyloid notch, and the greater part of the external condylar surface could easily be defined through the skin. The edge of the external condyle rested on the edge of the inner articular surface of the head of the tibia. The skin over the internal condyle of the femur was pale and tightly stretched. A slight abrasion of the skin on the outer side of the thigh marked the spot where the blow had been received. The handle of the winch had evidently struck the femur on the external condyle and driven it inwards. No fracture could be detected and there was no swelling or bruising. The dislocation was reduced under an anæsthetic. The head of the tibia returned to its normal position with a double click, the external condyle of the femur first slipping on to the internal articular surface of the tibia and finally on to the external. The patient has since done well and it is remarkable that very little swelling has ever occurred and no bruising.

Remarks by Dr. BROUGH.—Dislocations of the knee are of comparatively rare occurrence. Great violence is necessary to produce the condition owing to the strength of the joint. The above case is of interest because of the simplicity with which the dislocation was brought about and from the further fact that the bones were separated to a greater degree than is generally the case.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Treatment of Separation of the Lower Epiphysis of the Femur.

A MEETING of this society was held on Dec. 13th, Mr. BRYANT, the President, being in the chair.

The PRESIDENT referred to the loss which the society had sustained by the death of Sir William Jenner who was formerly Vice-President and intimated that the council would send a letter of condolence to the members of his family.

Mr. JONATHAN HUTCHINSON, jun., and Mr. H. L. BARNARD communicated a paper on an Improved Method of Treatment of Separation of the Lower Epiphysis of the Femur. They advocated that in all cases of separation of the lower epiphysis of the femur with displacement the treatment with extension of the knee should be given up and they showed by a considerable number of cases with skiagraphic records that it was easy both to obtain reduction and to maintain it by flexing the knee so that the heel touched the buttock. This position was readily tolerated by the patient and after ten days or a fortnight the limb could be put up on a Macintyre splint and subsequently gradually straightened. It was argued that weight extension in the treatment of this injury was quite useless and that the adoption of the full flexion method would not only greatly simplify the treatment, but would lessen the risk of shortening, would secure a better knee-joint, and in some cases might result in saving the limb. Attention was drawn to the disastrous results of compound separation of this epiphysis. Out of 30 collected cases only 6 recovered with a useful limb. The full flexion method was perfectly adapted to compound cases. It was a further development of the plan of treatment on a Macintyre splint flexed to about a right angle and had distinct advantages. It was further maintained that the character of the displacement when the epiphysis was separated was more constant than was generally supposed. The accident occurring when the knee was hyper-extended it was the epiphysis which was nearly always drawn forwards and the diaphysis which projected backwards into the popliteal space. At the same time some rotation or twisting of the leg and corresponding projection of the diaphyseal end was not infrequent. Cases were related in detail illustrating the difficulty of diagnosis and of making certain whether reduction had been properly effected by the old methods and skiagrams were exhibited on the screen proving the persistent tilting forwards of the epiphysis. It was, however, shown that a remarkable moulding and production of new bone occurred in the course of time, so that a much better ultimate result was obtained than might have been expected. Evidence was given that even when some displacement persisted the bone continued to grow in a normal manner. Probably nothing was so likely to damage the epiphyseal disc as prolonged forcible efforts at reduction such as had been recorded in many cases, and Mr. Hutchinson and Mr. Barnard maintained that this risk would be removed by the adoption of the full flexion treatment.

Mr. HUTCHINSON, sen., observed that the paper contained records of a remarkable number of cases of an injury so rare that in twenty-five years' service he himself had never had to treat a single case. The fact that the cases had been drawn from the practice of many surgeons of various hospitals was most gratifying testimony to the harmonious good feeling on such matters which was general at the

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present day. The method appeared to be one which would facilitate the treatment of a condition which was admitted by all to be a most difficult one to reduce. But he had some misgiving as to whether it would be equally effective in cases where the separation was complete and the ends of the epiphysis and diaphysis were overlapping. When these surfaces were once brought into good position he thought that the straight position would be sufficient to prevent recurrence of the displacement. The method was an application of that used in reduction of vertical displacement of the patella by acute flexion of the limb. He did not think that the displacement of the lower epiphysis of the humerus was altogether similar as the line of bone involved there was narrow, so that to effect reduction was easy but to maintain the bone in place was difficult. He preferred to put such injuries up in a rectangular splint, holding the diaphysis of the humerus back. If the arm were put up in a position of acute flexion the fragment would be likely to be brought too far forward.

The PRESIDENT said that he had seen a few instances of this rare accident, one as far back as his student days, when injuries of the epiphyses were little known. The older writers entirely dwelt on reduction by extension, but extension alone was often less effective for reduction than manipulation, although it maintained the bones in position when once replaced. Reduction by extension would be impossible in some cases probably because the fragment had slipped through a rent in the periosteum. He thought that the suggestion contained in the paper would prove of the greatest value.

Mr. PEARCE GOULD said that the paper showed the value of skiagraphy which enabled Mr. Hutchinson, jun., and Mr. Barnard to give a convincing demonstration of the accuracy of their contentions and therefore left little room for discussion. The merit of the method lay in its making the fragment retrace its steps just as the head of the femur did in the reduction of dislocations of the hip. He agreed with Mr. Hutchinson, sen., that once the reduction was effected there would be little need to maintain the position of acute flexion.

Mr. A. E. BARKER asked if there was any knowledge as to how long the epiphysis took to unite and if any ill effects had resulted from the maintenance of the position of full flexion for long periods.

Mr. BARNARD, in reply, said that in three of the cases separation had been complete, in one the diaphysis being displaced back into the popliteal space and so low as to be on a level with the head of the fibula. As to the necessity of maintaining the flexed position he quoted a case in which relapse of the displacement occurred when the limb was put up on a Liston's splint, and he thought the method of treating it by simply bandaging it in the position of full flexion with a dometto bandage was the simplest, easiest, and most effective. The position caused no discomfort. It should be maintained for a fortnight. Nitrous oxide gas was then administered and the leg was brought down to a right angle and fixed on a Macintyre's splint and extended little by little and finally put up in a plaster case.

MEDICAL SOCIETY OF LONDON.

Transperitoneal Ligature of the Iliac Arteries.

A MEETING of this society was held on Dec. 12th, the President, Mr. EDMUND OWEN, being in the chair.

Mr. BERNARD PITTS read an account of two cases in which he performed Transperitoneal Ligature of the Iliac Arteries. Case 1. Ligature of the Internal Iliac Artery for a Pulsating Sarcoma of the Buttock.—The patient was a man, forty-one years of age, who came under observation in January, 1894, for a pulsating swelling in the right buttock which had first been noticed many months before and had been attributed to a fall. For thirteen months there had been pain down the right leg and latterly numbness as well. When admitted there were signs of pressure on the pelvic nerves, pain along the penis, and incontinence of urine and fæces. The pulsation in the swelling could be diminished by pressure along the iliac crest. The diagnosis lay between pulsating sarcoma and aneurysm and as the signs of pelvic pressure were increasing ligature of the internal iliac artery was decided on. The abdomen was opened in the middle line, the intestine held aside with hot sponges, and an incision made through the peritoneum in the middle line posteriorly. There was some difficulty in reaching the artery as it took an abnormal course. He ligatured it with a gold-beater's skin ligature. There was some diminution in the pulsation of the tumour after ligature which was thought to indicate that it was aneurysmal. On the sixtieth day spontaneous fracture of the right femur occurred and a tumour could be felt in connexion with the liver which left no doubt that it was a sarcoma. Five months after the ligature the right lower limb was amputated and the femur was found to be affected with a small-celled sarcoma invading the medullary cavity. Six months later he was seen very much improved in his general health and able to give some attention to his business. The gluteal tumour and that connected with the liver, however, were larger. A year later he died, the death being attributed to "congestion of the lungs." Mr. Pitts remarked that the ligation of the artery certainly appeared to check the rapidity of the growth. In operating he recommended that the surgeon should first find the common iliac artery and then trace the internal iliac artery. Case 2. Ligature of the Common Iliac Artery for Recurrent Hæmorrhage from a Pelvic Abscess.—The patient was a young man who had had good health till the age of fourteen years when he had a severe boil of the neck, followed by pleurisy and the formation of an abscess (in 1887) in the right lumbar region. He apparently got well and then had an abscess near the insertion of the right deltoid muscle. He remained well for some years except for obstinate constipation. In 1894 he began to complain of pain down the leg and some months later of tenderness in the groin. In July, 1896, the symptoms pointed to trouble round the appendix and there was definite discharge of pus from the rectum which gave great relief for a time, but the symptoms recurred and Mr. Pitts made an incision above the right loin, liberating a small quantity of pus, which was thought to be due to bone trouble. The appendix was found to be healthy. There was a long sinus, but no bone could be felt. In October, 1896, there was swinging pyrexia which disappeared when the sinus was efficiently drained. A short time later there was profuse hæmorrhage from the sinus and as this recurred several times to a dangerous extent Mr. Pitts decided to ligature the internal iliac artery. He operated as in the former case, but the internal iliac artery was surrounded by so much inflammatory matting that he tied the common iliac, using a floss silk ligature. The incision healed well and circulation soon became re-established. The wall of the abscess necrosed and then healed with great rapidity. In December, 1897, an abscess pointed at the lower part of the incision and after a few days the silk ligature was discharged. At the present time the patient was in robust health. Mr. Pitts thought that the original mischief must have been tuberculous disease connected with the lumbar vertebræ. As regards the mode of tying the ligature he believed that the "stay knot" suggested by Mr. Ballance and Mr. Edmunds was the best.

The PRESIDENT congratulated Mr. Pitts both on his paper and on his conduct of the cases. He wondered whether the second case might not have been one of latent septic disease. He asked why gold-beaters' skin had been used in the first case. He himself did not see that it had any advantage over silk which could always be obtained. He asked whether the medullary growth in the femur was supposed to be secondary to the pelvic growth. The case would encourage the surgeon not to wait unduly till the diagnosis between sarcoma and aneurysm was made with certainty as the sarcoma seemed to have been checked by the ligation of the artery.

Mr. HARRISON CRIPPS remarked that a transverse incision of the abdominal wall should be avoided wherever possible as it was almost impossible to avoid the occurrence of a hernia when it was adopted. As to the kind of ligature he preferred to use a smaller size than Mr. Pitts had employed, such as a No. 2 silk ligature. In ligaturing the stump of an ovarian tumour he used fine silk. He did not think that if the tumour were known to be a sarcoma it would be prudent to ligature the large arteries. In operating in one case, that of a stout man, sixty years of age, for the relief of an aneurysm of the size of a cocoanut in the groin he opened the abdomen along the left border of the left rectus muscle. He attempted to reach the artery through an incision on the inner side of the descending colon. Owing to the amount of fat on the abdominal wall he was not able to reach it, but did so with ease by making his incision through the peritoneum on the outer side of the gut.

Mr. MARMADUKE SHEILD thought that the second case

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was most likely one of chronic pyæmia such as had been described by Sir James Paget. If it had been tuberculous he thought it unlikely that his general condition would have improved so much after the operation. Possibly the infection was from the boil in the neck. He mentioned the case of a man who had antral disease supposed to be due to influenza in whom a year later there was suppuration in the glands and other structures in the neck. No tubercle bacilli could be found, but there was abundant growth of staphylococcus aureus. The latency of organisms in the tissue was remarkable and was often well seen in the case of deep-seated mammary abscess. He had long ago advocated reaching the iliac vessels in the way successfully carried out by Mr. Pitts. As regards the material of the ligature he preferred a soft ligature and thought that silk was more satisfactory than catgut or kangaroo tendon.

Mr. BALLANCE observed that in 1890 he and Mr. Edmunds had fully described this mode of operating. He asked why Mr. Pitts incised the peritoneum in the middle line behind instead of along the line of the artery. He thought that on the whole soft silk was the best material for ligature, which should not be too fine or it cut through the coats. He found gold-beaters' skin which was prepared from the peritoneum of the ox another excellent material for ligatures. It could be obtained from Messrs. Macfarlane made up as ligatures in a round and supple form. A ligature of the same size as No. 4 silk would last 150 days in the body. In the Museum of St. Thomas's Hospital there were two specimens of ovarian pedicles. In the first, eighteen months after operation, all the ligature except the knot had been absorbed, and in one three years after the whole ligature had disappeared.

Dr. JOHN BRUNTON observed that silk ligatures were often adulterated with jute which could be distinguished by its woody odour when burned and by its microscopical appearances.

Dr. LYNDON said that the second patient had been under his care for the last eighteen months. He thought that the case was one of tuberculosis, although when there was discharge of pus at the time of the extrusion of the ligature he failed to discover tubercle bacilli.

Mr. PITTS, in reply, said that he was strongly in favour of the view that the case was tuberculous. He did not know of cases where septic material remained dormant for so many years with only short periods of activity. He thought that the patient's present robust condition was quite compatible with his having recovered from a tuberculous affection. He did not find any objection to the use of silk ligatures and preferred not to have them too fine in order to avoid injuring the coats of the artery. He still thought that a median incision was best for reaching the vessels if they were in their normal position. He had no doubt that the tumour in the femur was a secondary deposit.

CLINICAL SOCIETY OF LONDON.

Chancre.—Pancreatic Calculi.—Acute Hæmorrhagic Pancreatitis.

A MEETING of this society was held on Dec. 9th, Mr. LANGTON, President, being in the chair.

Mr. CAMPBELL WILLIAMS read a paper on a case of Lingual Chancre from Indirect Contagion which tended to show that the virus of syphilis could remain active in the dried state for over two months. The vehicle for the dried virus was the mouthpiece of a set of bagpipes which had been played upon by a syphilitic subject and then put away for two months, when the owner used them and developed a hard sore of the tongue and the usual secondary syphilitic sequelæ, the chancre appearing either twenty or thirty days after the presumptive infection. The only other solution of more recent exposure to some other source of infection was strenuously denied. The history of the case was in favour of the patient's statements and condition.—Mr. CLEMENT LUCAS said that the details appeared to be too exact to allow of doubt as to the correctness of the explanation. There was no more improbability in the preservation of dried syphilitic virus than of dry vaccine virus on the old ivory points. He mentioned the case of a man, nearly sixty years of age, in whom a chancre occurred on an abrasion of the tongue caused by a dental plate and in which he believed the infection to have been accidental through a tumbler or pipe contaminated by some syphilitic person.—Mr. CAMPBELL WILLIAMS, in reply, mentioned another case in which a patient had a chancre on a pimple over the trochanter almost certainly caused by infection from the seat of a closet.

Mr. A. PEARCE GOULD read a paper on a case of Pancreatic Calculi one of which obstructed the bile-duct. The patient was a man, forty-six years of age, whose only previous illness was influenza four years before. In September, 1895, he noticed some failure in health and in November he suffered for a few days from severe pain referred to the umbilicus, chiefly felt on walking up hill. He became jaundiced and this persisted until February, 1896, when he came under observation. The liver was then enlarged nearly down to the umbilicus and the gall-bladder could be felt distended as a cylindrical swelling in the right lumbar region. There was no ascites. The motions were of a clay colour. On Feb. 14th Mr. Gould explored the abdomen through a vertical incision to the right of the rectus muscle. Half a pint of fluid was drawn off from the gall-bladder by aspiration. A lump was felt at the back of the small omentum which proved to be a coral-like stone in the dilated duct of Wirsung and other smaller calculi were found and removed. The operation did not relieve the obstruction to the flow of bile and on March 3rd the patient had an attack of agonising pain in the right hypochondrium. Mr. Gould re-opened the abdomen and with some difficulty was able to feel a stone in the head of the pancreas close to the duodenum which he removed by incising the pancreas from the front, and he was then able to pass a probe through the duct into the duodenum. Soon after the operation the patient vomited bile, the stools became coloured, and bile ceased to flow from the incision in the gall-bladder. Notwithstanding vomiting persisted and he died from exhaustion the twelfth day after the second operation. Post mortem a little pus was found underneath the gall-bladder and also behind the ascending colon. The pancreatic duct was found to be dilated and ulcerated. There was a hydatid cyst at the back of the liver. The calculus was composed of phosphate and carbonate of lime.—Mr. T. H. KELLOCK mentioned a case which was under the care of Dr. Ord at St. Thomas's Hospital some years ago. A man, aged fifty-six years, was seized with acute abdominal pain followed at once by jaundice. Two weeks later there was a second attack. When admitted he was extremely jaundiced and the liver reached from the third rib to below the costal margin. On the tenth day he had a rigor followed by severe pain in the right hypochondrium and three days later he passed a small concretion. The jaundice became less marked after the passage of the calculus but he became exhausted and gradually sank. Post mortem the liver was found to be enlarged and the gall-bladder was dilated. Embedded in the head of the pancreas in a dilated portion of the duct was another calculus of the size of a cherry-stone.—The PRESIDENT remarked that jaundice was one of the most patent features in Mr. Gould's case and asked how close the calculus was to the opening of the duct.—Mr. GOULD, in reply, said the stone lay in a cavity half an inch before the union of the ducts and would press on both. That it caused the jaundice was shown by the passage of bile at once after its removal and the disappearance of the jaundice.

Mr. A. D. FRIPP and Dr. J. H. BRYANT related a case of Acute Hæmorrhagic Pancreatitis. The patient was a man, aged forty-two years, admitted to Guy's Hospital on Sept. 18th, 1898. He was seized with pain two days before and was admitted in a state of collapse. The pain was chiefly above the umbilicus. An exploratory laparotomy was performed at once. No obstruction was found. There was a good deal of blood-stained peritoneal fluid; the omentum had a shotty feel, but no necrotic nodules were found. There was extreme contraction of the small intestine in places. The abdomen was closed and the patient died forty-eight hours later. The necropsy was performed eleven and a half hours after death. The abdominal wall was very thick owing to the great increase of subperitoneal and subcutaneous fat. The omentum was large and thick. Extensive fat necrosis was found in the omentum, mesocolon, fat around the pancreas, and the subperitoneal fat both visceral and parietal. There was extensive hæmorrhage into the fatty tissue around the pancreas in the gastro-splenic omentum. The pancreas was of about twice its normal size; it was of a dull, dark, purplish colour, and on section appeared to be infiltrated with blood. Patches of fat necrosis were also visible in the interlobular tissue of this organ. The stomach, duodenum, and the rest of the intestine presented a normal appearance except for a little ecchymosis around the cardiac orifice of the stomach. The heart weighed 13 oz.; the valves and

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blood-vessels were normal in appearance. On microscopic examination the most striking changes noticed in all the sections was the enormous amount of blood present, which could be seen in large quantity beneath the capsule of the pancreas, in the interstitial tissue between the lobules, between the acini themselves around the ducts, and in the fat cells and intercellular spaces of the peri-glandular connective tissues. A good many patches of fat necrosis were seen in the interlobular and peri-glandular tissues. The glandular acini immediately adjacent to these areas were in various stages of necrosis and beyond these again the cells of the acini showed cloudy swelling and their nuclei were faintly stained and indistinct. Apart from these areas there was very little evidence of any parenchymatous inflammation, the nuclei and protoplasm of the cells staining well with the various reagents. The pancreatic ducts were not obstructed; the cells presented a normal appearance. In the fibrous tissue of, and around the, ducts a good deal of blood was seen. The fat necrosis presented the usual features characteristic of that condition. Sections stained with methylene blue showed a few rod-shaped bacilli in the blood throughout the organ. There were no bacilli in the pancreatic ducts. Sections of the nerves and ganglia from the pancreatic duodenal plexus were examined, but nothing abnormal was found. Cultivations were taken from the centre of the body of the pancreas with strict precautions to prevent the possibility of any accidental contamination and a pure culture of the bacillus coli communis resulted. The pathological process in this case appeared to be a primary acute interstitial inflammation associated with the presence of the bacillus coli communis and characterised by extensive hæmorrhage as stated above and by secondary necrosis and inflammation of the parenchyma in the immediate vicinity of areas of fat necrosis. The distribution of the bacilli suggested the blood-vessels as the probable channel of infection. Two other cases were mentioned in which bacteriological examinations were made by Mr. Pakes, demonstrator of bacteriology at Guy's Hospital, the bacillus coli communis being obtained in pure culture from the pancreas in both instances. A similar fully reported case by Dr. Moore[1] was referred to in which a pure culture of the bacillus coli communis was also obtained and in which the channel of infection was thought to be the lymphatic spaces. (Microscopical specimens were shown demonstrating the above-mentioned observations.)

Dr. NEWTON PITT and Mr. JACOBSON communicated a paper on Five Cases of Acute Pancreatitis. Case 1. Acute Hæmorrhagic Pancreatitis.—A man, aged forty-two years, temperate, had three attacks of severe abdominal pain with vomiting, each lasting about an hour, in August and September, 1898. On Nov. 12th he had another attack of intense pain with vomiting and constipation. The pulse was 120 and the abdomen was rigid. On the 14th he had severe diarrhœa, his temperature was 100° F., and there was a swelling in the upper part of the abdomen. He was seen by Dr. John Young of Stamford Hill who took him to Guy's Hospital. The man was extremely ill and difficult to examine. A retro-peritoneal tumour with impaired resonance was found above the umbilicus, the motions were normal in colour, but the man was so ill that it was thought better to defer any operative interference. On examination the urine was found to contain albumose; there was marked leucocytosis (22,500 per cubic mm.), and the tumour lay behind the stomach pushing forward the duodenum and greatly distending the former. The evidence pointed to a pancreatic cyst or an abscess in connexion with either pancreas, gall-bladder, or gastric ulcer, or a rapidly growing sarcoma. As the tumour was increasing in size Mr. Jacobson decided to open the abdomen and found extensive fat necrosis and a tumour with the lesser omentum, intestines, and stomach matted to it. The oozing from every part when disturbed was excessive and the firm feel of the mass prevented any radical treatment. The abdomen was closed and the patient died next day. Post mortem there was found an abscess cavity some 4 in. across, in front of which was the stomach and lesser omentum and behind lay the sloughy pancreas. Case 2. A Retro-gastric Pancreatic Abscess.—A middle-aged woman was seen by Dr. Pitt some years ago for intense abdominal pain and vomiting. She was found to have a large abscess behind the peritoneum pointing in the right loin where it was opened. Most of the pancreas had disappeared; the abscess occupied its site. It was now clear this was a case of acute pancreatitis. Case 3. Acute Hæmorrhagic Pancreatitis.—A woman, aged seventy years, was seen by Mr. Fuller of Streatham on Oct. 16th, 1898, for intense epigastric pain with sickness and collapse occurring after an unusually good breakfast. The pain was not relieved by the vomiting. There was a constant desire to defecate, which was not relieved by an enema which brought away a constipated motion containing particles of fat. There was slight tympanites which steadily increased until death, forty-eight hours later. The patient was said to have had a similar attack eighteen months previously. At the necropsy acute hæmorrhagic pancreatitis was found, with fat necrosis of the omentum. Case 4. Acute Suppurative Pancreatitis.—The patient was a man, aged fifty-three years. He was an alcoholic. On Nov. 12th, 1863, at 2 A.M. he took a draught of cold water; at 3 A.M. he was seized with intense epigastric pain with vomiting. The symptoms subsided on the 17th. On the 24th a pulsating tumour imperfectly resonant on percussion was noticed above the umbilicus; this became less distinct in the knee-elbow position and the pain ceased. The vomiting returned at the end of January and he died on February 8th from exhaustion. At the necropsy it was found that the omentum formed a black puckered mass; the stomach was greatly distended; the lesser sac of the omentum contained a well-defined abscess above and behind the stomach. The greater part of the pancreas was healthy, but some distended ducts communicated with the abscess. Case 5. Acute Necrotic Pancreatitis.—A man, aged sixty years, had had severe abdominal pain and vomiting for three months, the attacks recurring every three or four days. For four years he had had attacks of gastric pain from time to time. On admission under the care of Dr. Habershon there was a tender pulsating tumour in the upper part of the abdomen. The patient vomited frequently and died from exhaustion. At the necropsy some early peritonitis was found; a minute opening was also found in the meso-colon leading to an abscess cavity behind the stomach and filled with a brown fluid. At the posterior part of the abscess 2½ in. of necrotic pancreas was found. There were numerous nodules of yellow concrete matter in the wall of the cyst (probably fat necrosis).—The PRESIDENT related a case in which the symptoms might have been due to a milder form of the same disease. A man, fifty years of age, was seized with umbilical pain and afterwards a tumour formed extending from the ensiform cartilage to the umbilicus. Vomiting and diarrhœa were present and the patient wasted rapidly. Ascites was present but after the fluid was removed by aspiration it did not return. The tumour could be felt much more distinctly after aspiration and three weeks later the abdomen was explored. A cystic tumour was found behind the stomach which Mr. Langton aspirated and five pints of blood-stained fluid were drawn off. The cyst evidently involved the pancreas. The patient made a fair recovery but died suddenly from intestinal hæmorrhage two years later. Post mortem the pancreas was found to be nearly entirely destroyed and then it was also found that the cicatrix of the contracted cyst had involved the portal vein, thus accounting for the hæmorrhage.—Mr. BOWLBY said that several causes of this condition were recognised—injury, infective inflammation, and he thought probably embolism. The sudden onset and the necrotic state of the pancreas would be explained by such a causation. He asked if the condition of the pancreatic artery in this case had been investigated. He mentioned a case in which a woman, aged forty-one years, was suddenly seized with symptoms pointing to intestinal obstruction. He opened the abdomen 48 hours later but found no obstruction. The omentum, however, was dotted over with areas of fat necrosis. The pain was relieved by laparotomy but on the third day she suddenly became delirious and died comatose. Although there was no necropsy he had little doubt that she suffered from acute pancreatitis.

[1] Medical Chronicle, August, 1898.

OBSTETRICAL SOCIETY OF LONDON.

The Development of the Graafian Follicle.—Uterine Fibroids.—Congenital Tumour at the Internal Os causing Hydrometra.—Incarcerated Ovarian Dermoid Tumours during Pregnancy,—Placenta Prævia and Fibroids.—The Actions and Use of Forceps.

A MEETING of this society was held on Dec. 7th, Dr. C. J. CULLINGWORTH, President, being in the chair.

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Dr. HUNTER gave a demonstration of specimens illustrating the Development of the Graafian Follicle and exhibited a series of ovaries preserved in formalin in which the colours were well maintained.

Dr. LEWERS showed (1) a large Solitary Subperitoneal Fibroid Tumour of the Uterus (9½ lb.) successfully removed by laparotomy with intra-peritoneal treatment of the stump; (2) a Uterus with Multiple Fibroids (8 lb.) successfully removed by supravaginal hysterectomy with intraperitoneal treatment of the stump. He said that as regards the history, symptoms, and signs cases of large solitary subperitoneal fibroids differed remarkably from the common cases where the uterus was the seat of multiple fibroids. In the first case the patient, married ten years, had had five children and two miscarriages, the last ten months prior to operation. Menstruation had never lasted more than two days and for ten months prior to operation there had been complete amenorrhœa. The uterus was in no way deformed except at the place where the tumour was attached and the cavity was of normal length. In the second case the patient, married five years, had not been pregnant. Menstruation was profuse and there had been constant metrorrhagia for three months before operation. The uterus was deformed and the sound passed 7 in. or 8 in.

Dr. HERBERT SPENCER read a short communication on three cases of Congenital Tumour at the Internal Os Uteri causing Hydrometra in Newly-born Children. Two of the specimens had been briefly described in the catalogue of the gynæcological specimens in University College Museum published in 1891 and were, as far as he was aware, the first recorded instances of the occurrence of this tumour. The tumour was a small sessile, pea-like body situated at the summit of the anterior median column of the cervical arbor vitæ and gave rise to dilatation of the cavity of the body by obstructing the outflow of mucus. Dr. Spencer thought the tumour might later in life produce pain at menstrual or at other times and might perhaps explain the occurrence of certain polypi at the internal os uteri which were furnished with glands lined with several layers of epithelium—a condition which he had met with in this situation in newly-born children. He directed attention to a recent publication by Dr. Friedländer[1] on a similar condition in young girls.

Dr. HERBERT SPENCER showed a small Multilocular Dermoid Tumour of the Right Ovary which being incarcerated in the pelvis he had removed by laparotomy at the fourth month of pregnancy. Pain which had been present before the operation at once ceased on removal of the tumour and the patient had five months later been successfully delivered of a living child at full term.

Dr. HERBERT SPENCER also showed for another practitioner a small Ovarian Dermoid Tumour which had been incarcerated in the pelvis at the time of labour. Forceps and afterwards version had been employed with the result that the tumour was ruptured and the patient died from septic peritonitis three days after delivery.—Dr. JOHN PHILLIPS said that he had met with a case in which the cyst had obstructed labour and necessitated its incision and suturing to the vaginal walls before delivery could be effected. A year later the patient was seized with a rigor and abdominal pain and at the operation a large suppurating dermoid cyst was found with a coil of hair adherent to the old scar in the vagina. The patient made a good recovery. Dr. Phillips had recently had an impacted dermoid complicating early pregnancy which had been successfully removed.—Dr. GILES mentioned a case of an ovarian dermoid removed during pregnancy. He first saw the patient when she was three months pregnant and decided to wait and see whether with the progress of pregnancy the cyst would rise out of the pelvis; as this did not happen the cyst was removed by abdominal section and the patient was expecting her confinement shortly.

Dr. BOXALL showed a Uterus with Interstitial Fibroids from a case of placenta prævia centralis. The patient died forty minutes after delivery from acute and post-partum hæmorrhage. In her previous confinement three years ago a large fibroid was noticed in the lower pole of the uterus on the left side and an abscess formed and burst into the vagina, the sinus in which still remained. The fibroid had shrunk considerably since the previous labour.

A paper by Dr. PONDER on the Actions and Use of Forceps gave rise to some discussion.

[1] Archiv für Gynäkologie, 1898.

OPHTHALMOLOGICAL SOCIETY.

Renal Retinitis.—Sympathetic Ophthalmia beginning fourteen days after Excision of the Injured Eye.—An Unusual Form of Marginal Keratitis.—Pulsating Exophthalmos with Visible Tumour.—Symmetrical Choroiditis in the Early Stage.—Atrophy of the Choroid with Sclerosis of the Choroidal Vessels.—Myxo-sarcoma of the Orbit.—Congenital Absence of the Choroid.—Tumour of the Iris.—Injury to the Cornea.

A CLINICAL meeting of this society was held on Dec. 8th, Mr. H. R. SWANZY being in the chair.

Mr. NETTLESHIP showed a microscopical drawing of Renal Retinitis. Pigmentation of the retina was known to occur in cases of renal retinitis where the disease was either severe or of long standing; it was generally seen near the periphery, but if the case lasted long enough it was also found near the disc. The case from which the drawing was taken had been observed during life and the pigmentation had been noted. After death the eyes had been examined. A number of oval or round cells, with amorphous débris the remains of an inflammatory exudation, were found in the retina between the bacillary layer and the hexagonal pigment layer in different places; these foci contained pigmented cells derived from the pigment epithelium, probably by proliferation.

Mr. HOLMES SPICER showed a case of Sympathetic Ophthalmia beginning Fourteen Days after Excision of the Injured Eye in a boy, aged ten years, who was struck in the left eye on July 4th by a piece of sardine tin; there was a jagged wound of the cornea not involving the ciliary region; the anterior chamber was filled with blood and the deeper parts could not be seen. A week later, July 12th, a piece of entangled iris was removed from the wound by iridectomy; the lens was found to be wounded. The eye remained painful and much congested and iritis set in and it was excised on July 25th, three weeks after the injury. The patient remained in hospital till August 6th. Two days later there was slight ciliary injection of the right eye. Fourteen days after excision he was taken into hospital again. Tension was − 2, and the vision equalled $\frac{6}{36}$; the pupil was well dilated; there was no deposit on the back of the cornea; there was much floating matter in the anterior part of the vitreous; there was no optic neuritis. He was treated with atropine and mercurial inunction. The tension had now become normal and the vision was $\frac{6}{9}$.

Mr. JOHN GRIFFITH and Dr. C. S. BLAIR showed a case exhibiting an Unusual Form of Marginal Keratitis. The condition had existed for several years and was associated with eczema of the face; the keratitis was symmetrical, attacking the inner and outer margins of each cornea close to the limbus. The lesions were slightly raised, vascular, and in three out of four limited by a curved line of opacity. It bore some resemblance to phlyctenular keratitis, but its persistence, absence of ulceration, and want of symptoms excluded this disease. It resembled spring catarrh, but the palpebral conjunctivæ were quite healthy.

Mr. W. J. CANT showed a man, aged thirty-six years, having Pulsating Exophthalmos with Visible Tumour who was kicked on the outer part of the left eyebrow eight years ago. Eighteen months ago he had pain over the right eyebrow with vomiting; the sight became dim and he had diplopia. Gradually a swelling appeared at the upper inner angle of the right orbit and he was conscious of a loud whistling sound in the head; as the swelling increased the sight returned and the diplopia ceased. The vision of the right eye equalled $\frac{6}{9}$ and Jaeger 1, and there was proptosis to the extent of 8 mm. There were large tortuous veins on the ocular conjunctiva and a pulsating moveable tumour diminished by pressure on the carotid; a loud bruit could be heard over the region of the tumour. There was no diplopia; the pupil acted normally; the retinal veins were enlarged, tortuous, and pulsating. He had been treated with rest, low diet, iodide of potassium, and digital compression with considerable benefit.

Mr. HARTRIDGE showed a man, aged twenty-three years, with Symmetrical Choroiditis in the Early Stage who first had dimness of sight five months ago; the sight had been progressively failing since. The family history and the personal health were good and there was no history of syphilis. The vision of the right eye equalled $\frac{6}{9}$ and of the left $\frac{6}{12}$. Both optic discs were swollen and blurred; there was a large choroidal hæmorrhage on the outer side of each

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disc and œdema of the retina over the whole central region, with a number of small circular exudations in the superficial layers of the choroid; the urine was normal.

Mr. ERNEST CLARKE showed a man, aged fifty-three years, exhibiting Atrophy of the Choroid with Sclerosis of the Choroidal Vessels who first attended the Central London Ophthalmic Hospital four years ago with the history that his sight had been gradually failing for a year. He had been a heavy drinker and had had syphilis. He had well-marked optic neuritis in both eyes and vision was reduced to perception of fingers at a metre in both eyes; there was no history of night blindness. The following changes had been gradually coming on since then and the present condition of the eyes was as follows: atrophy of the optic nerve and retina, atrophy of the epithelial pigment and of the chorio-capillaris, which allowed the vessels in the tunica vasculosa to be well seen; sclerosis of many of the choroidal vessels, especially on the temporal side of the posterior pole of each eye. The periphery of the retina showed pigmentation like that of retinitis pigmentosa. There were large flocculent vitreous opacities. Vision was reduced to perception of light.

Mr. JULER showed a case of Myxo-sarcoma of the Left Orbit in a woman, aged twenty years, with microscopic sections and photograph. The patient had always been healthy till May, 1897, when diplopia set in. In February, 1898, the left upper lid began to droop and the eyeball seemed to be turned downwards and pushed forwards. Since then the globe had been gradually displaced downwards, forwards, and outwards. At the time of admission to the hospital (June 15th, 1898) there were marked ptosis and proptosis, the globe protruding about 2 cm. forwards and 3 cm. downwards and slightly outwards. The movements of the globe were greatly limited. The tumour caused bulging of the upper lid; it was softish and semi-fluctuant; about the centre could be felt a rather hard nodule and another towards the inner portion. The cornea was hazy, but the fundus appeared to be normal. The conjunctiva was congested. Vision was reduced to perception of fingers. The skin of the face was sprinkled with brown and blue pigmented spots. These the patient asserted had always existed. The tumour was removed on June 25th with the whole contents of the orbit. Before removal a trocar and cannula were inserted into the depths of the tumour and gave exit to several drachms of clear, gelatinous-looking fluid. Incision into the tumour discovered a cyst in its midst. After removal of the orbital contents the bone at its roof was found to be corroded and an aperture extended to the dura mater. Hæmorrhage was stopped by thermo-cautery and plugging with antiseptic gauze. The patient made a good recovery without constitutional disturbance and was discharged on July 29th. She progressed favourably and without pain until November when she noticed a slight swelling beneath the upper lid. This increased in size and she came back on Dec. 8th presenting a hard, nodular, thickened growth beneath the upper lid which was evidently fixed to the roof of the orbit and blocking up the whole orbital cavity. The tumour had been examined microscopically by Mr. John Griffith and Mr. Juler who considered that it presented the characteristics of a benign myxoma, being composed of stellate cells branching and anastomosing in all directions, round cells, and blood-vessels. Within the stroma mucin was held as water within a sponge. The lacrymal gland was enlarged and infiltrated in places with round cells, either inflammatory or sarcomatous. The muscular fibres were swollen and split transversely, as in Zenker's degeneration. A piece of skin containing one of the blue spots showed only collections of pigmented cells clustered around the hair follicles in the true skin. The microscopic examination of the tumour alone would have led to the hope of perfect recovery after its complete removal. The fact, however, of the frontal bone being corroded and even perforated prevented more active operative interference and rendered recurrence more than probable. With regard to the future treatment of the recurrent growth Mr. Juler could not speak favourably as the frontal bone was certainly infiltrated and the sarcoma had probably already invaded the dura mater and frontal lobe of the brain.

Dr. TATHAM THOMPSON showed a man, aged eighteen years, exhibiting Congenital Absence of the Choroid. The vision equalled $\frac{20}{200}$. Examination by the ophthalmoscope showed a dazzling white sclera all over the fundus except at the macula; there were a few isolated choroidal vessels only.

Mr. A. H. THOMPSON showed a small Tumour, probably a Sarcoma, projecting from the anterior surface of the iris.

Mr. W. H. JESSOP showed a case of Injury to the Cornea. A large flap turned back from the upper margin of the cornea had become re-applied and united.

BRITISH GYNÆCOLOGICAL SOCIETY.

Pelvic Surgery.—Exhibition of Specimens.

A MEETING of this society was held on Dec. 8th, Dr. H. MACNAUGHTON-JONES, President, being in the chair.

Mr. E. STANMORE BISHOP (Manchester) read a paper on the Combined Abdominal and Vaginal Section in certain cases of Pelvic Surgery. The first case was that of a woman, aged twenty-eight years. With her second child she had a premature labour due to fright followed by severe hæmorrhage. She had a miscarriage two years ago, followed by persistent bleeding. Two months ago she had smart bleeding with excessive pain on the left side which was becoming more acute. There was a small firm mass in the ovarian region which was very tender. It was removed by combined operation, it being too firmly fixed to be brought down per vaginam. It adhered by omentum to the pelvic brim. The patient recovered. The second case was that of a woman, aged forty-six years. Her second child was born twenty-two years ago. Menstruation since then had been irregular and profuse, the quantity increasing. Sacral and hypogastric pain was also increasing. She had been bedridden for fourteen months. There was double pyosalpinx. It was removed by combined operation because even after complete division of the uterus per vaginam the parts were too rigid to allow of their being drawn down. On abdominal section two large pus sacs were found with adherent intestine. The patient recovered. The third case was that of a woman, aged twenty-nine years. She had had no pregnancies. There was a history of scarlet fever. She caught a chill during menstruation. She had had no period for fifteen months, had had loss of flesh for twelve months, had been bedridden for ten months, and had had night sweats for nine months. Her left leg was fixed in flexion. It was œdematous. There was double pyosalpinx. It was removed by combined operation because the parts were too fixed, even after total section of the uterus, to allow of their being drawn downwards. On abdominal section the small intestine was found to be adherent to the tube, bladder, and iliac fossa. The right ovary was found —a thick-walled abscess—separate from the rest and embedded in adhesions in the right iliac fossa. The patient died. The fourth case was that of a woman, aged thirty-nine years. She had had several miscarriages and no full-time pregnancies. She had increasing menorrhagia and metrorrhagia. There was much pain. The uterus was enlarged to the size of six months pregnancy; it was partly soft and partly intensely hard. The uterine canal was elongated and a fibroid tumour was found. It was removed by combined operation because the patient being very anæmic it seemed advisable to render the operation as bloodless as possible by tying the uterine arteries at the earliest possible moment and by doing most of the work from below to shorten the time during which the peritoneum should be open. When this was done abdominal section was performed so as to shorten as much as possible the entire duration of the operation. These cases were selected because each illustrated some points in the question under discussion. Thus the first case showed the difficulty which sometimes arose in the removal of even a small tumour through the vagina when it was adherent above and there was no justification for removal of the uterus. The second case showed that even when the uterus could be removed with the tubes there might still be great risk in doing this through the vagina alone when intestinal adhesions were present. The third case showed the impossibility in some cases of removing all foci of suppuration without the double attack, whilst the fourth case illustrated the advantage gained in an operation intended to be finished by abdominal cœliotomy by performing the earlier steps per vaginam—advantages in time and in minimisation of shock. Mr. Stanmore Bishop proceeded to review the advantages of abdominal and vaginal cœliotomy and their several disadvantages. He pointed out that many of the disadvantages originally present in the abdominal operation had now been eliminated by improvements in position, technique, &c., whilst the vaginal

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operation, which at first appeared to avoid all these, was unsuitable in certain cases and had certain dangers of its own. He emphasised, however, certain marked advantages which it undoubtedly possessed. He advocated the combination of both methods in some cases in which it was impossible or inadvisable to finish the operation from below and deprecated the "morcellation" recommended by Landau. This manœuvre, he suggested, should not bear the same name as that of the older operation, devised by Péan and designed for the removal of single fibroids per vaginam, through the dilated os, which left the uterus intact and useful. He advised it also in cases which must be finished through the abdomen in order to diminish the amount of shock. He invited the society to define the limit beyond which the vaginal attack should not be carried.

Dr. HERBERT SNOW observed that in only one of Mr. Bishop's cases was the combined method deliberately adopted; in the other 3 it was done as a matter of necessity and he thought most of the Fellows would feel that in these 3 cases it would have been better to begin by the abdomen. He did not agree with Mr. Bishop that mere laparotomy meant much shock; most of the cases originally described as shock were really cases either of concealed hæmorrhage or of septic peritonitis. He doubted if any advantage of the combined method would compensate for the drawback of proceeding to laparotomy after the hands had become soiled with pus and mucus in the vagina.

Mr. MAYO ROBSON (Leeds) thought it was best to make up one's mind beforehand which route to adopt; at the same time every operator ought to be prepared to follow up one route by the other. His experience was that it was only rarely necessary to complete by the abdomen an operation begun by the vagina. As a rule, in a case of hysterectomy if he found that he could not bring the uterus down he would prefer not to operate at all, for in such cases life was probably not prolonged. For most cases he preferred the abdominal route.

Mr. BOWREMAN JESSETT agreed with the previous speakers that it was better to determine beforehand which route to adopt, but this was not always possible except under anæsthesia. If such an examination showed that there was much fixation, he thought it better to proceed at once to laparotomy.

Mr. J. W. TAYLOR (Birmingham) pointed out that there were two distinct questions in the paper: (1) the combined method in the treatment of myoma; and (2) the same in the treatment of inflammatory conditions. For myomata the operation was a valuable one because it was often safer to secure the uterine arteries through the vagina as the first step, and also the duration of the operation was thereby shortened. In inflammatory conditions they did not yet know how much could be done by the vagina but were still learners.

Mr. J. FURNEAUX JORDAN (Birmingham) approved of the combined method for hysterectomy for the reasons given by Mr. Taylor and also because the work done by the vagina was extra-peritoneal. Most other cases could be dealt with by one or the other route and he agreed that in such cases it was better to decide beforehand which to adopt. He had done about 10 vaginal cœliotomies; in 1 he had to open the abdomen after all, but in most cases a careful diagnosis beforehand would obviate this necessity. For inflammatory conditions the abdominal route was usually the best, but pyosalpinx operated on by laparotomy had such a high mortality that some palliative vaginal procedure was often better.

Dr. MACPHERSON LAWRIE (Weymouth) thought the cases requiring the combined method must be few and far between.

Dr. HEYWOOD SMITH questioned whether Mr. Bishop's contention that the combined method was quicker would be found generally true.

Dr. PURCELL stated that the double method originated with Martin who was, however, so unfortunate in his early cases that he gave it up.

Dr. ARTHUR GILES remarked that the *raison d'être* of the vaginal operations was to obviate the necessity of opening the abdomen. There was nothing which was done by the combined method that could not be done by the abdominal alone.

The PRESIDENT said that Mr. Bishop was forced to the consideration of the combined method by cases in which operation had been too long delayed. He should have felt inclined to operate through the abdomen in the first instance in these cases. The society was much indebted to Mr. Bishop for his paper which dealt with some of the most recent work in gynæcology.

Mr. STANMORE BISHOP briefly replied.

The following specimens were shown:—

Mr. CHARLES RYALL: (1) Myoma Uteri complicated with distended tube and broad ligament cyst; and (2) a Large Fallopian Tube.

Dr. MACPHERSON LAWRIE (Weymouth): (1) Fibroid Uterus removed by Subperitoneal Hysterectomy; and (2) Fibroid Uterus undergoing malignant degeneration.

Mr. J. W. TAYLOR (Birmingham): (1) Small Myoma removed from the fundus after anterior colpotomy and division of the uterus; (2) two small Ovarian Cysts, each removed by posterior colpotomy; and (3) Tubal Mole with right Fallopian Tube removed by posterior colpotomy.

Dr. F. A. PURCELL: Uterine Carcinoma removed by Vaginal Hysterectomy.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Treatment of Shock.—Paralysis of Laryngeal Abductors.—Abdominal Section.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Dec. 2nd, the President, Mr. EDWIN LEE, being in the chair.

Mr. BASIL HALL (Bradford) read a paper on the Treatment of Shock by large Doses of Strychnine. He related briefly a case of air embolism occurring during operation and also a case of apparently hopeless shock after the removal of an abdominal tumour. In both these cases when death on the table seemed certain, recovery took place after the hypodermic injection of one-third of a grain of strychnine. He also referred to eleven other instances of severe surgical shock where doses varying from one-fifth to one-third of a grain had been injected with satisfactory results and drew attention to the report of a case of snake-poisoning where recovery followed the administration of large doses. In discussing the remarkable tolerance of the drug in conditions of profound shock he compared with it a similar action in the case of alcohol. He urged that strychnine given boldly in such doses as he had indicated was a valuable remedy in surgical shock in its severer forms.

Dr. S. LODGE (Bradford) read notes of a case of Bilateral Paralysis of the Laryngeal Abductors successfully Treated by Removal of the Isthmus of a Bronchocele.

Mr. LITTLEWOOD brought before the society a series of 7 cases of Volvulus treated by Abdominal Section (3 recoveries) on which he had operated during the past three years. Case 1.—The patient, a man, aged sixty-two years, had volvulus of the large intestine involving part of the transverse colon and descending colon and part of the sigmoid flexure. The volvulus was 10 in. in diameter and displaced the heart upwards into the third intercostal space. Operation was performed 5 days after the onset of acute symptoms. Death occurred 30 hours later. Case 2.—A man, aged sixty one years, with volvulus of the cæcum, part of the ascending colon, and part of the ileum. The volvulus was about 5 in. in diameter. Operation was performed 5 days after the acute onset and recovery ensued. Case 3.—A woman, aged fifty-seven years, with volvulus of the sigmoid flexure. Operation was performed 6 days after the acute onset and death took place 40 hours later. Case 4.—A girl, aged eleven years, with volvulus of the sigmoid. Operation was performed about 36 hours after the acute onset. She had general distension with peritonitis and ultimately recovered. Case 5.—A woman, aged thirty-two years, with volvulus of the small intestine about 10 in. in length. Acute symptoms started about 3 weeks after confinement and the operation was performed six days after their onset. There was general peritonitis with stinking blood-stained fluid in the peritoneal cavity. The volvulous portion of the bowel was deeply congested and adherent by soft adhesions to the surrounding intestines. The pelvis was drained, the lower part of the wound was not closed, and the twisted portion of the bowel was brought near the opening. Thirteen days later the volvulus, which had become gangrenous, separated and was removed. Two months later the intestinal fistulæ were closed by separating the parts from the adhesions and suturing the upper and lower portions of the bowel together. The patient made a good recovery and is now quite well, having since the operation been delivered of

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twins. Case 6.—A man, aged fifty-three years, with volvulus of the small intestine involving several feet. Operation was performed five days after the onset of the disease. Death occurred six days later. Case 7.—A man, aged twenty years, with volvulus of the small intestine about 2 ft. in length. There were tuberculous mesenteric glands and adhesion. Three days after onset operation was performed. Death occurred four days later.

Dr. WARDROP GRIFFITH showed a case of Painless Enlargement of the Liver occurring in a man, aged twenty-one years. The enlargement, which was very marked, came on after an attack of acute pneumonia and was unaccompanied by jaundice or loss of flesh. There was very slight ascites, but no other sign of portal obstruction, and there was no alcoholic history. He was improving under iodide of potassium. There was no syphilis.

Mr. LITTLEWOOD showed the following:—1. A man, aged forty-six years, whose Rectum he had removed eight weeks previously and had succeeded in getting primary union between the divided ends of the gut. 2. A man, aged forty-five years, with Carcinoma of the Breast. 3. Abdominal Gestation (fourth year). The thorax of the fœtus was opened immediately after its removal from the body. The fœtal heart continued beating one and a half hours.

The following card specimens were exhibited:—

Dr. WARDROP GRIFFITH: (*a*) A case of Primary Muscular Dystrophy; and (*b*) Specimens from the Post-mortem Room.

Dr. BRONNER (Bradford): (*a*) Microscopic specimen of Carcinoma of the Vocal Cords in a man, aged twenty-eight years, simulating papilloma; and (*b*) Angio-fibroma of the Vocal Cord in a man, aged seventy years, simulating carcinoma.

Dr. CHURTON: (*a*) Syphilitic Pachymeningitis, &c., causing complete aphasia and partial right hemiplegia; (*b*) Post-Influenzal Paraplegia; (*c*) Tuberculous Cerebral Tumour with left Hemiplegia and Complete Blindness; (*d*) Chorea of Two Years' Duration in a man aged sixty years; (*e*) Crossed Paralysis; and (*f*) Displaced (congenital) and Fixed Right Kidney with Pyonephrosis.

Mr. MOYNIHAN: Tuberculosis of the Tunica Vaginalis.

Dr. TREVELYAN: (*a*) A specimen of Polypus removed from the Larynx; and (*b*) a specimen of Rupture of the Lung.

Dr. HELLIER: Scoop for Puerperal Uterus.

Mr. SECKER WALKER: Skiagram showing a piece of Brass in an Eye. Attempts were made to remove the metal but as these failed Mules's operation was performed.

LIVERPOOL MEDICAL INSTITUTION.

The Pathology of Ovarian Tumours.—Exhibition of Specimens.

A MEETING of the pathological and microscopical section of this society was held on Dec. 8th, Mr. F. T. PAUL being in the chair.

Dr. ALEXANDER read a paper on the Pathology of Ovarian Tumours. It was chiefly based upon an accurate examination of all the cases he had operated on during the last two years. He gave a careful description of the naked-eye and microscopical anatomy of all his specimens and illustrated his paper by numerous lantern photographs and microscopic specimens. He had had several cases of ruptured cysts and discussed the causes of rupture. He also showed an excellent specimen of confluent ovarian cyst, one large cyst with two pedicles, one going to each side. He gave a good deal of attention to dermoid cysts and described a unique case in which the fatty and hairy contents of the cyst had become agglutinated and rolled into little pellets, so that when the cyst was opened its cavity was filled with little masses having a striking resemblance to green peas.—Dr. E. T. DAVIES discussed the question of the malignancy of ovarian papillomata.—Mr. PAUL and Dr. GRIMSDALE also discussed the paper and Dr. ALEXANDER replied.

Mr. LARKIN showed, for Dr. NATHAN RAW, a specimen of Double Vagina and Septate Uterus obtained from a woman, aged forty-five years, who died from sarcoma of the lumbar spine. She had had three natural labours, but in none of them did the abnormality seem to have been detected. Nor did it cause her inconvenience in any way. The vaginal septum was thick and fleshy and the two vaginas were of about equal size. There was an os uteri on each side. The uterus was not bicornate but was divided by a thick septum.

Mr. HAWKINS-AMBLER showed a Uterus removed by Vaginal Hysterectomy for Cancer confined to the cervix. The patient was fifty-two years of age and was the subject of diabetes, passing 5 per cent. of sugar. Two days after the operation she had symptoms of diabetic coma which passed off on treatment by alkalies. The sugar disappeared from the urine after the operation and had not since returned. Otherwise recovery was uneventful.

Dr. GRIMSDALE showed a well-marked specimen of Tubercle of the Fallopian Tubes. The microscope showed well-marked tubercles with large giant cells in the mucosa. The patient was a single woman, aged twenty-six years, who attributed her symptoms to taking cold. She had a large swelling in the left lower abdomen which disappeared after seven weeks' treatment in hospital. Three months later a similar swelling appeared on the right side. Abdominal section was performed, the fluid escaped, and the tuberculous tubes were removed. She recovered and reported herself well two years later.

Mr. R. A. BICKERSTETH showed a Squamous-celled Epithelioma of the Upper Jaw which undoubtedly commenced in the antrum.

Mr. THELWALL THOMAS showed an Adenoma of the Testis from a man, aged twenty-seven years. It was really extra-testicular and probably arose in the paradidymis.

Dr. LESLIE ROBERTS showed specimens of Giant Bacilli (horn-cell organisms). They were flask-shaped and of no pathogenic significance, growing saprophytically in the horny epidermis.

Mr. R. W. MURRAY showed an exceedingly interesting and rare specimen of Solitary Sacral Kidney. It was obtained from a boy, aged eight years. There was no trace of kidney in the normal position on either side. The single kidney was large and situated below the bifurcation of the aorta on the promontory and in the hollow of the sacrum and more to the left than to the right of the median line. There was a single—left—ureter which was only 2 in. long. The vascular supply was derived from the aorta by two vessels given off at the point of bifurcation and after a short course entering the top of the kidney. Clinically the case was also of great interest. The boy had been passing calculi for three years. On two occasions impacted calculi had been removed from the urethra. Twelve months before death a calculus became impacted in what was thought to be the left ureter, close to the bladder. This Mr. Murray with his finger in the rectum succeeded in forcing into the bladder. A similar impaction occurred some months later which could not be relieved and the region of the left kidney was explored but no kidney could be found. The abdomen was opened and no kidney could be found on either side, but a mass was felt in the pelvis behind the bladder. There was never complete suppression of urine, but the boy died some time later and at the necropsy the true state of the parts was made out. The pelvis of the single kidney was much dilated and the ureter contained numerous calculi.

Mr. DOUGLAS CRAWFORD showed a case of Encysted Hydrocele of the Epididymis. It had formed acutely. The globus major was converted into a large thick-walled cyst containing straw-coloured fluid and having lymph on the walls.

Mr. ROBERT J. HAMILTON showed: 1. A Metastatic Carcinoma of the Eyeball from a woman, aged thirty-five years, who had been operated on six years ago for mammary cancer and again six months ago for recurrence in the axilla. She had had great pain in the eye and gradual loss of vision. The ophthalmoscope showed what appeared to be complete detachment of the retina. 2. A Melanotic Sarcoma of the Choroid from a woman, aged twenty-five years.—A discussion followed in which Mr. PAUL, Dr. ALEXANDER, Mr. RUSHTON PARKER, Mr. HAWKINS-AMBLER, Dr. GRIMSDALE, and Mr. R. A. BICKERSTETH took part.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Pulmonary Regurgitation.—Sulphonal Poisoning.

THE second ordinary meeting of this society was held on Dec. 7th, Sir JOHN BATTY TUKE being in the chair.

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Dr. RAINY showed a patient who suffered from Probable Muscular Dystrophy. The affection first showed itself nine months previously, beginning with stiffness and pain in the muscles and joints of the right arm. The arm became thinner and now he was unable to straighten it at the elbow. Certain of the muscles of the upper arm were markedly atrophied. This atrophy showed itself to a much less degree in the forearm. The triceps, deltoid, and spinatus muscles were greatly wasted. There was, however, no increase in the muscular irritability and electrical reaction was normal; there was no trace of degenerative reaction. The case was one of either primary myopathy or a degeneration in the muscles secondary to joint affection.

Mr. STILES exhibited a Child six months after Reduction of a Congenital Dislocation of the Hip by the method of Lorenz. The patient, aged four years, was shown to the society six months previously and Mr. Stiles thought it would be a suitable case for trying this method of reduction which was largely practised on the continent. Lorenz had performed reduction in upwards of 100 cases successfully and another observer had done the same operation 104 times with 97 successes. Mr. Stiles failed in his first attempt to reduce the dislocation in this patient as he did not employ sufficient force. It was essential to pull down the trochanter until it assumed its normal level. After this attempt the child was kept in bed for six weeks with a 12 lb. extension weight applied to the limb. Under chloroform the second manipulation was successful. The child was placed on a mattress on the floor and chloroform narcosis produced. Extension was made by pulling on the limb above the knee-joint and counter extension by means of a perineal band. The force required was considerable and it must be exercised slowly and gradually increased. When the trochanter regained its normal level the thigh was flexed at right angles to the trunk still keeping the limb extended. It was then rotated slightly inwards; when the limb was in this position it was slowly abducted until the limb was at right angles to the trunk, when a sudden sound of reduction was audible and the limb now retained that peculiar abducted position. The limb was now put up in plaster extending above the pelvis and as low as the knee and kept so for six weeks or two months. The bandages were then removed and the amount of abduction having been slightly reduced they were re-applied. The child was now encouraged to walk and so pressure was applied to the rudimentary acetabulum by putting in a high heel on the sound limb. Six weeks later the bandages were removed and the abduction was still further reduced, and again the plaster was renewed. After the third change the child was sent home. Now six months after the reduction there is no deformity, the gluteal folds are symmetrical, there is no shortening of the limb, and the trochanter occupies its normal level. Reduction should be practised early in life—probably about the third year was the best period. It was seldom that the deformity could be removed if the child was above five years of age.

Mr. CATHCART showed a patient in whom symptoms of Myxœdema were subsiding after the left half of an enlarged thyroid had been removed. The patient was a woman who twenty years previously had suffered from somewhat similar symptoms. These disappeared, however, to return eight years ago. There was great alteration in her features; she became heavy and dull; there was swelling of the face, the skin was dry, the tongue was large, the nails were brittle, the hands broadened, and hair fell out. Altogether the symptoms and signs resembled those of myxœdema. The left half of the thyroid was removed three weeks ago by Kocher's method on account of dyspnœa and dysphagia. Since then she had made a remarkable improvement; within a week of the operation she could speak distinctly. Evidently the removal of the left lobe had stimulated the right lobe to a better action. The microscopical sections of the thyroid showed simply a colloid degeneration.

Dr. WILLIAM RUSSELL described the Clinical Symptoms of a case and showed the Brain from which a tumour which caused a breach between the visual word centre and the motor speech centres was removed three times in succession. He indicated the steps by which he had determined that the tumour came to or near the surface in the lower part of the ascending parietal convolution. The tumour was a glioma.—Mr. COTTERILL described the operation as he performed it in this case. The trephine opening exactly localised the tumour which was at first of the size of a walnut. It was removed and the relief to pain was very great. Thirteen weeks later the tumour which had regrown was again removed by means of a periosteal scraper. At this second operation the tumour was of the size of a small Tangerine orange. Again the pain was greatly improved. The third operation was performed when the patient's case was hopeless and was done only to ameliorate her condition.

Mr. STILES exhibited several bones from the body of a rickety child showing Multiple Fractures and skiagraphic representations of the body. The child when admitted to the hospital was in a neglected and emaciated condition with several bed-sores and deformities in the extremities.

Dr. SCOT SKIRVING showed: 1. Extreme Enlargement of the Ischial bursa which occurred in a middle-aged man. 2. The Peculiar Contents of the same—large, rounded, melon-seed-like bodies. The sac contained about 4 oz. of fluid and the cavity was so large that the fist could easily be introduced. Six years previously the patient had suffered from a similar swelling on the opposite side. 3. Ruptured Kidney. The peculiarity in the case was the enormous amount of blood extravasated and the length of time which the man survived—about 12 hours—after receipt of the injury. The patient, a carter, was attempting to climb on to his cart when he fell and was pushed along by the wheel which did not pass over him. He was greatly collapsed but never lost consciousness. The eighth to the eleventh ribs were fractured on the right side and the kidney was entirely broken across on that side, the lower fragment being entirely separated by blood-clot from the upper. Several pints of blood were effused behind the peritoneum. There was also a rupture of the liver, a piece 4 in. long and 1 in. deep being entirely detached.

Mr. CATHCART showed: 1. Microscopic specimens from the Enlarged Left Lobe of the Thyroid removed from the patient whom he exhibited. 2. A piece of Intestine Six Months after Excision and Suture for Gangrene from Strangulated Hernia.

Dr. F. D. BOYD read a paper on Pulmonary Regurgitation. He remarked on the rarity of the affection and described two cases which had come under his observation. One of the cases was evidently due to subacute endocarditis and was treated with benefit by injections of anti-streptococcic serum. Six months later, however, the heart was found to have undergone greater dilatation, the diastolic murmur in the pulmonary area was louder, and the patient gradually sank. The bacteriological examination of the blood proved negative but the injections certainly did good. As regards the causes of this affection it might arise, when not congenital, from secondary dilatation due to increased pressure or from inflammation of the valves. As a rule the mitral valve was the one first affected. Age seemed to be of little importance, and though it was usual in the young one case was described as occurring in a patient aged forty-eight years. The prognosis was grave when once the disease was established, there being a rapid loss of compensation, the right ventricle and the tricuspid valve being both feeble. The diagnosis was not easy. In the two cases described there was no increased loudness in the murmur during expiration as had been said to occur. The murmur might be heard at the back at the angle of the left scapula, but no great importance could be placed in this sign. There was nothing characteristic in the pulse, which was generally rapid, weak, and probably irregular. It was of importance to locate its maximum intensity area and to note its conduction down the left side of the sternum and towards the left.—Dr. GIBSON, Dr. RUSSELL, Dr. RITCHIE, Dr. RONALDSON and Dr. WATSON took part in the discussion and Dr. BOYD replied.

Dr. LOVELL GULLAND contributed a paper on Sulphonal Poisoning. He related the case of a man, aged thirty-nine years, of alcoholic temperament, whose case had come under his personal observation. Owing to insomnia this patient had been in the habit of taking 30 gr. of sulphonal nightly. In all he had taken above 1200 gr. A week before his death his gait was observed to be staggering and his speech was thick, but this was put down to alcoholism. When seen by Dr. Gulland for the first time he was stupid and sleepy though easy to rouse and intelligent when spoken to. His motor power was greatly enfeebled and he could not articulate properly. The urine was deep claret coloured. He died suddenly and the post-mortem examination showed that the liver was chocolate coloured, the kidneys were not cirrhotic but congested, the spleen was diffluent, the walls of the heart were very fatty, the blood was chocolate-coloured, and the brain was congested. Microscopically the liver showed no great change but fatty infiltration at the periphery of the lobules and hyaline degeneration of the

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walls of the portal vein. In the kidneys the secreting epithelium was only affected, the cells being shrunken into masses of granular protoplasm; the spleen was full of "shadow corpuscles" and the suprarenal capsules showed some columns in which the cells were small and shrivelled. The blood showed poikilocytosis. As regards the clinical symptoms coördination might be affected for weeks by the administration of a single dose. In chronic poisoning gastro-intestinal symptoms generally first appeared, nervous symptoms then appeared, ataxia, paralysis of the facial muscles, general convulsions, coma, &c. The urine contained hæmato-porphyrin as well as unchanged sulphonal. The case usually ended by heart failure. In acute cases the symptoms might come on suddenly; the sleep might be for days; hæmato-porphyrinuria seldom occured in such cases. The prognosis was, as a rule, good in acute but not so in chronic cases. Sulphonal was not readily soluble and so might remain in the intestinal canal or in the blood for long, as it was not easily excreted by the kidneys. The constipation which was usually present would assist in this accumulation. Sulphonal might cause death without producing hæmato-porphyrinuria. This pigment might be present in the urine in cases of lead poisoning or in hæmorrhage from the intestine. The cause of death was probably due to uræmia (using the term in its widest sense). In acute cases as the poison was slowly absorbed the stomach should be emptied at once and a purgative given. The kidneys should be encouraged to act freely. Large enemata of warm water had been found useful. In chronic cases the same remedies might be employed as well as large doses of alkalies to render the urine alkaline and so stop the formation of hæmato-porphyrin. Dr. Gulland has found that more sulphonal was used than any other drug. He pointed out the cases suitable and unsuitable for its administration. The maximum daily dose for a man should be from 15 to 30 grains. It ought never to be given in tabloid form. Hot alcohol (as whisky toddy) was the best vehicle for it. Patients ought to be kept under observation during the whole time the drug was being taken. Sulphonal should be used with much greater caution than was usual at present.—Sir JOHN BATTY TUKE, Dr. CRAIG, and Dr. RUSSELL made remarks on the use of the drug.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The usual monthly meeting of this society was held at 40, Leicester-square, W.C., on Dec. 5th, the President, Mr. J. Fairbank, being in the chair.—Mr. Storer Bennett, the curator, showed a Denture of a somewhat primitive character which had been made in Naples in 1850. The plate was lined with wash-leather and was tolerated by the patient for nearly twenty years.—Mr. J. F. Colyer showed for Mr. Carter of Leeds a Suture Case for use in the treatment of fractured mandibles.—Mr. R. H. Woodhouse and Mr. Clayton Woodhouse exhibited Models of Cases in which Irregularities in the Position of the Teeth had been corrected by extraction.—Mr. W. A. Hunt brought under the notice of the members a patient in whom the mandibular teeth had been removed and the alveolar ridge had almost disappeared so as to have practically a flat surface. He asked for suggestions as to the mode by which a satisfactory denture could be made.—Mr. F. J. Bennett read an interesting paper on "Some Old and New Views of Calcification of the Teeth." The researches of Rainey and Harting which have so largely influenced ideas on the calcification of teeth and bone were referred to. Their experiments, it will be remembered, consisted in causing salts of lime to be formed in the presence of a viscid medium. The substances employed by Harting were either calcium chloride, calcium nitrate, or calcium acetate, uniting in the solution with either sodium carbonate, sodium phosphate, or ammonium phosphate. The colloid fluid employed was albumin or gelatin. The experiments of Rainey were made with gum arabic in solution which was allowed to mix slowly with another solution of gum containing potassium carbonate, the calcium in the gum arabic combining with the carbonate from the potash to form calcium carbonate which after a lapse of some weeks was found not to exist in crystal form but in the shape of globules. The union of these globules exactly resembled the youngest layers of the shell of crustaceans and he assumed that these globules also explained the nature of interglobular dentine. Mr. Bennett considered that a theory of calcification of bone and dentine based on these experiments was open to grave objections. Calcium phosphate formed from calcium chloride and sodium or ammonium phosphate in the presence of albumin or gelatin appears in the form of crystals. If calcium carbonate is produced at the same time the precipitate consists of the organic matter plus two calcareous salts. If calcium phosphate exists in large quantity the precipitate remains, even after several weeks, in the amorphous or colloid state, but if the calcium phosphate is present in small quantity then the precipitate is in the form of calcospherites. In 100 parts of enamel there are 89·82 per cent. of calcium phosphate and 4·38 per cent. of calcium carbonate, while in dentine the calcium phosphate amounts to 56·7 per cent. and the carbonate to 3·36 per cent.; it is therefore difficult with this overwhelming proportion of calcium phosphate to assume that calcospherites occur in connexion with tooth calcification. Experiments of Dr. Ord confirm this view and it is therefore evident, if the idea be entertained that interglobular dentine is allied to Rainey's calcospherites, it can only be so on the assumption that the defective area consists principally of carbonate and not phosphate of lime and on this point there is no evidence. The spherical forms met with in the various stages of tooth formation are not easy to account for and it is by inference only that they are connected with the globules or calcospherites of Rainey and Harting. A reference was made to Dr. Sims Woodhead's views on bone formation which tend rather to the idea that the salts are deposited in the fibrous matrix simply as granular particles in no chemical relation with the bases whatever and Mr. Bennett considered that in the theory of Dr. Woodhead there may be found a clearer understanding of tooth formation.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 1st at 20, Hanover-square. The President, Dr. R. Fortescue Fox was in the chair.—Dr. William Bruce read a paper on Separate Rôles played in Rheumatic Affections by (1) the Joints; (2) the Muscles; and (3) the Nerves; and the Consequent Indications for Treatment by (1) Rest; (2) Baths and Massage; and (3) by Electricity. With regard to the nerves he stated that particular regions are chosen, as it were, for the expression of pain and those regions in a general way correspond with reflections in particular sensory tracts of the brain and spinal cord. He regarded acute rheumatism as a distinct "zymotic" disease. After an experience of nearly thirty years in the treatment of rheumatic affections of hip, ankle, and thumb, and the corresponding joints of the lower limb, he held that the diseases are really articular and that neuritis is the result and not the cause of the mischief.—The President pointed out the present disadvantage in discussing rheumatism inseparable from the want of clear definition in the terms used. It was difficult to believe that all rheumatic pains in the muscles and nerves were due to primary affections of the joints.—Dr. Geo. Oliver said he had long entertained the view that in chronic rheumatism and chronic goutiness the state of the nerve centres played an important rôle in causation. But there were difficulties in accepting the nerve origin as the sole one. For some years he had been studying the blood-pressure and the blood in these cases and he had come to the conclusion that viewed from these standpoints there was no line of demarcation between chronic rheumatism and goutiness. He therefore regarded these conditions as clinically indistinguishable.—Dr. Bruce replied.—Dr. R. W. Felkin read a paper on the Climate of the Egyptian Soudan. He began by mentioning the size of the country and explained that in such a vast area various climates must be obtained. Roughly speaking, the ninth degree of N. latitude divided the country into two parts. To the north of it are deserts, rocks, an Arab population, a high mean annual temperature (over 85° F.), a dry atmosphere, and slight rainfall (under 5 in. north of Dongola, under 10 in. north of the Sobat). South of 9° N. the country was very fertile, it had a high mean temperature of about 75° F., the range of temperature was slight (about 10° F.) and the humidity was over 70 per cent. This area is inhabited by negroes. He concluded by referring to the prevalent diseases—malaria, dysentery, diarrhœa, Guinea-worm, &c. He said that it was noteworthy that malaria and phthisis did not occur together in Central Africa and he mentioned some interesting results which he had obtained with tuberculin in malaria. Dr. Felkin urged the importance of the right men being sent to open up the country and gave his opinion as to the kind of men best fitted for life in tropical Africa.—The President said

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that it behoved the British Balneological and Climatological Society to consider not only the curative or medical value attaching to particular climates but also in what manner different climates affected healthy populations. This latter view applied especially to our colonies and dependencies and became of great importance in times of national expansion like the present.—After various remarks and questions from members present Dr. Felkin replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society on Dec. 7th, Mr. T. D. Pryce, President, being in the chair, Mr. Laws read a paper on Pseudo-renal Retinitis, giving notes of cases illustrated by drawings showing that all the appearances of renal retinitis might be present where there was no evidence of renal disease. In all these cases the retinal arteries were of the "silver wire" type of Mr. Gunn, and it was suggested that there was in these patients a similar condition of the renal arterioles, causing interference with excretion and an augmented proportion of waste products in the blood. This increase was not more than might be tolerated, for many of these patients lived in good health for years. But when there was added to it a circulatory difficulty such as that due to the pressure of the thickened retinal arteries on the veins the tissues succumbed to the poison and a renal retinitis was produced.—Mr. Anderson showed a woman after Choledolithotrity performed on Oct. 17th. The patient had suffered for a lengthened period from frequent attacks of slight jaundice, with severe pain radiating over a wide area in the thorax and abdomen and terminating in vomiting which at once relieved the pain. There was marked cachexia and emaciation. The single soft stone, ½ in. in diameter, lay in the diverticulum of Vater and when discovered was easily crushed between the fingers. The patient has since been quite well and has gained 16 lb. in weight.—Mr. Willis referred to a precisely similar case under his own observation, which was operated upon in the same manner thirteen months previously with complete relief up to the present time.—Mr. Mackay showed a Dermoid Cyst removed from the broad ligament of a girl aged eleven years.

ERRATUM.—Pathological Society.—In the report of the meeting of this society published in our issue of Dec. 10th the name of Mr. J. R. Lord was by an error printed as Mr. J. R. Lunn.

Reviews and Notices of Books.

Atlas der Syphilis und Syphilisähnlichen Hautkrankheiten. Für Studirende und Aerzte. Von Dr. MARTIN CHOTZEN. (*Atlas of Syphilis and Diseases of the Skin resembling Syphilis.* For Students and Practitioners. By Dr. MARTIN CHOTZEN.) Hamburg and Leipzig: Leopold Voss. 1898. Price, bound in morocco, 40 marks.

WE have received the seventh and eighth and the eleventh and twelfth parts of this atlas. The other numbers are not to hand. There are in all seventy-three plates, coloured and uncoloured, representing not only syphilitic lesions but skin diseases supposed to resemble them. Of these latter, counting from the index, there appear to be fully one-half. These, while perhaps adding to the value of the atlas to the general practitioner, detract from it as a work of reference for syphilitic affections, with which we should have thought there would be no difficulty in filling the entire book, the more so as they are not confined to surface lesions. Moreover, we do not think that the author has been always wise in the selection of the non-syphilitic affections, as in many instances they are not those most likely to be confused with syphilis. Confining our attention to the parts before us we find in Part VII. a papulo-squamous syphilide, two of leucoderma colli, a papulo-circinate eruption of the neck not very well drawn, a papulo-pustular eruption of the forehead, and two small figures, a framboesiform syphilide of the cheek, nose, and penis, and a bromide acne of the thorax which is not a characteristic eruption. The syphilides, except the one mentioned, are good representations. In Part VIII. there is a poor plate of acne vulgaris of the back, a worse one of extensive impetigo contagiosa of the face, a well-drawn tubero-serpiginous syphilide of the back, a very peculiar-looking serpiginous tubero-ulcerous syphilide, a good tuberculo-serpiginous lupus vulgaris of the buttock, and an unrecognisable psoriasis vulgaris of the scalp.

The plates in Part XI. give in colour good representations of stomatitis mercurialis and paronychia and onychia exulcerans, defluvium capillitii from a papulo-squamous syphilide, alopecia areata—not the most typical form—and periostitis of the leg bones. The uncoloured are five figures representing perforation of the hard and soft palate, suppurative periostitis of the bones of the nose, and two figures of defective septum. Part XII. represents in colour serpiginous ulceration of the head and forehead with a node—not a very good example. A plate with six figures of lesions of the larynx and eye is well executed; a hand labelled "lues hereditaria, pemphigus syphiliticus" is, although a well represented, not a well-selected, example of the affection. Among the uncoloured there are again two examples of the "lost chord" in the bridge of the nose, a very good reproduction of cicatrices periorales in hereditary syphilis, another of the Hutchinsonian teeth, and a skiagraph of nodes in the leg bones.

Although the size of the atlas is quarto the plates themselves are about 7 in. × 5 in. and the lesions therefore are only life size when a small portion is represented. The reproduction is apparently by a photo-lithographic process, and though not of the highest class of coloured plates is sufficiently effective. The defects appear to be due rather to the artist and the author's selection of cases than to the publisher's portion of the task. As a whole, the ordinary skin lesions are not very successful and some of the syphilitic lesions might have been taken from better selected cases. Still, considering the moderate price of the work and the large number of plates, the practitioner will receive an adequate return for his outlay.

Doctor Therne. By H. RIDER HAGGARD. London: Longmans, Green, and Co. 1898. Price 3*s.* 6*d.*

THE youngsters who are popularly supposed to devour each new novel by Mr. Rider Haggard will hardly accept "Doctor Therne" as a welcome addition to the school library. This grim story is intended to stimulate the unintelligent and to enlighten the uneducated parents who are ready to gamble with the lives of their children and neighbours by taking advantage of the "conscientious objection" clause of the new Vaccination Act. Since a Norwegian dramatist converted his critics by proving that a stirring and romantic play can be woven round the defective drainage of a provincial town we have come to realise that no subject is common or unclean to the artist any more than to the man of science. Still it must be admitted that vaccination does not sound a tempting theme for those who seek oblivion in the perusal of stories. But here is where Mr. Haggard's skill is most markedly shown. His didactic treatise is also an excellent novel.

There are many who think Mr. Haggard's transpontine taste for bloodshed does more credit to the heart of an Imperial Federationist than to the head of a talented novelist, and with these it has been a subject of lament that the author of "Jess"—a keen observer and a penetrating critic of modern life—should have directed his skill towards the delineation of the operatic parts and unconvincing thaumaturgy so dear to his younger admirers. But if in the earlier pages of "Doctor Therne" there is some of the old leaven—a needless adventure with Mexican brigands, a precipice, and those scenic properties which suggest an

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Alhambra ballet—we are soon carried into a more realistic atmosphere. A certain Dr. Therne sets up a practice in the city of Durnchester, and by his skilful treatment of both surgical and medical cases has the misfortune to collide with the long-vested interests of the distinguished local physician, Sir John Bell. Honourable rivalry soon degenerates into open enmity when Dr. Therne has the misfortune to correct the wrong diagnosis of the older and more experienced man. When Dr. Therne's wife falls ill, in order to smooth matters over he calls in his enemy for the accouchment. The wife, partly owing to Bell's clumsiness, develops puerperal fever—a fact concealed from Dr. Therne, who is permitted to carry to his own patients the infection from his wife's sick-room. Both the wife and a distinguished patient of the unfortunate Dr. Therne succumb to the malady thus unhappily disseminated. A verdict of "manslaughter" at a coroner's inquest, though followed by subsequent acquittal at the assizes, entirely ruins Dr. Therne, and Sir John Bell's practice is triumphantly re-established—a sufficiently revolting (and we hasten to add highly improbable) picture of the amenities of medical men towards each other. A new character a real creation or, let us say, a real portrait of which Mr. Haggard may be proud now appears—one Stephen Strong, an honest, stupid, rich, wrong-headed tradesman, faddist and anti-vaccinationist. The sketch of this man's home; of the wife suffering from lupus attributed to infected vaccine lymph; of the idiotic conversation of the couple who, by a peculiarly happy touch to our thinking, are shown as firm believers in Anglo-Israelism—all this is done in a slight but masterly fashion. Strong espouses the cause of Dr. Therne as a persecuted man.

By a cleverly imagined series of fortuitous circumstances, by offers of money and by the prospect of regaining a practice Dr. Therne is now tempted to lend his name and the weight of his experience to the cause of anti-vaccination in the face of his knowledge and deep-rooted convictions as to the efficacy of vaccine lymph as a prophylactic against small-pox. In rapid narrative an election to Parliament, the ravages of a small-pox epidemic at Durnchester and the moral and psychological decadence of Dr. Therne are crowded into what might have been a much larger book. Few sensational scenes in all fiction—we say this quite deliberately—have been better told than where the daughter of the miserable hero discovers her father vaccinating himself at midnight after a long meeting in favour of the "conscientious objector" clause. The final exposure of Dr. Therne on a public platform by a young medical man who makes him show his arm to a crowded meeting is also a thoroughly well-described episode, and was probably prompted by an occurrence which recently took place in London in connexion with the adventures of a gentleman whose career would have had the deepest interest for Mr. Haggard a few years ago.

Mr. Rider Haggard has now entered into an honourable competition with Ibsen and Zola who have not disdained to lend their eloquence to curing the deafness and blindness of the stupid, the ignorant, and the mischievous for whom blue-books and statistics are vain things fondly invented. Dr. Therne will certainly challenge comparison with Dr. Stockmann, in the "Enemy of the People." In the former we find a man sacrificing honour and character and morals, posing as the friend of society for material advantage, a course which is only palliated by the cruel conspiracy and the more cruel temptations which beset him. In Dr. Stockmann we see an attractive and heroic instance of a man sacrificing all worldly wealth, his family, his home, and his reputation in the cause of truth and honesty, and deliberately choosing to be regarded as the enemy of society by his fellow citizens while discharging what he conceives to be his duty. To our mind Mr. Haggard would have shown subtler art had he decided to present not a weak man whose wrongs excuse him so much, but a man who from deliberate fraud at last came to believe in his own perversion, and who would deceive others being himself deceived. Dr. Therne is just a trifle too romantic for his sordid sin. His antithesis, Dr. Stockmann, was none the less sympathetic for being rather ridiculous, rather irritating, and therefore more probable. However, we do not want to wear the appearance of teaching Mr. Haggard to write a story.

In conclusion we must commend Mr. Haggard's courage in thus entering the lists against the anti-vaccination party. As a novelist and a politician alike it is evidently to his advantage to take no step that would be likely to alienate from him any large body of possible supporters. Yet he has risked losing many readers and creating a fanatical opposition to whatever he may do in public or private capacity for the sake of telling the truth.

Jahresbericht über die Fortschritte auf dem Gebiete der Chirurgie. Redigirt und herausgegeben von Professor Dr. HILDEBRAND in Berlin. II. Jahrgang: Bericht über das Jahr 1896. (*Year-book of Surgery.* Edited by Professor HILDEBRAND of Berlin. Second Year: Report of the Year 1896.) Wiesbaden: J. F. Bergmann. 1897. Pp. 1341.

THIS enormous volume represents without doubt an immense amount of work. Professor Hildebrand has been assisted by a large number of surgeons, chiefly in Germany, but also in other countries, and they have collected here references to all books and papers on surgical subjects which appeared during 1896; but there are more than references in many cases: whenever a paper has appeared to be of much importance an abstract of it is given, of a length quite sufficient to enable the reader to appreciate the value of the paper. A very convenient system of classification has been adopted. In the first section is given a list of articles referring to the history of surgery, and then are catalogued all the general treatises on surgery which were published during the year. Next comes a list of hospital reports, followed by the papers connected with topographical anatomy. In each case a summary is given of those papers which are considered to deserve it. For instance, a whole page is devoted to a *précis* of an article by Dr. Plummer on the Surgical Anatomy of the Middle Meningeal Artery which appeared in the "Annals of Surgery." General Surgery comes next and then the several parts of the body are dealt with in turn. An Index of Authors is given and it occupies nineteen pages and there is also an Index of Subjects of equal length. We have not been able to detect any omissions, though of course there may be some, and many English names are misspelt; but taking the work all in all it would be unreasonable to expect a more complete or more usefully arranged book. Such works of reference as this are imperatively demanded nowadays by all who have to work in any department of science, for it is not possible for anyone to keep *au courant* with all the numerous papers and articles which pour out from the scientific publishing houses. We can only hope that this "Jahresbericht" will continue to appear regularly.

On Deafness, Giddiness, and Noises in the Head. By EDWARD WOAKES, M.D. Lond., Senior Aural Surgeon, London Hospital, Lecturer on Diseases of the Ear, London Hospital Medical College; assisted by CLAUD WOAKES, M.R.C.S. Eng., L.R.C.P. Lond., Assistant Surgeon to the London Throat Hospital. Fourth edition. London: H. K. Lewis. 1896. Pp. 224, 8vo. Price 10*s.* 6*d.*

TWELVE years have elapsed since the publication of the third edition of this book and it has been found necessary to rewrite the work almost entirely. The main idea is the

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ame as that which pervaded the book when it first appeared. It is that in the body there are "correlated tissue areas"; between any two areas thus correlated an intimate relation exists, so that any departure of one of them from its ordinary state is immediately appreciated by a corresponding set of nutritive changes in the other. These regions may be often widely separated, and the explanation of their mutual interdependence is to be found in the association of their afferent and efferent nerves with a sympathetic ganglion. This volume deals, as its title states, with several important aural symptoms, and endeavours to show that in great part they are explicable as reflex phenomena from the irritation of areas which are "correlated" with portions of the auditory apparatus. The treatment to be followed in patients suffering from these symptoms is very fully discussed. Chapters on Foreign Bodies in the Ear, on Ear Affections in Infancy and Childhood, and on Post-nasal Growths are also given. Without assenting to all the propositions advanced by the authors we may say that many parts of the book are very suggestive and well worthy of perusal by those who have to deal with the morbid phenomena associated with the auditory apparatus.

LIBRARY TABLE.

The New Sydenham Society's Lexicon of Medicine and the Allied Sciences. Part XXIV. Scap–Tape. London: H. K. Lewis. 1898.—We have just received Part XXIV. of this valuable lexicon which is now carried as far as "Tape-grass." The society's annual report states that it is confidently hoped that the lexicon may be completed within twelve months and that considerable progress has been made with a Supplement which will follow the completion of the main work. The editors, Mr. Henry Power and Dr. Sedgwick, may be congratulated on this approaching termination of their labours, and many of our readers will no doubt be glad to have in their hands the final number of an excellent work of reference, Part I. of which appeared in 1878

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. HALE WHITE, M.D., F.R.C.P. Lond. Third edition. London: J. & A. Churchill. 1898. Price 7*s.* 6*d.*—The third edition of this well-known text-book scarcely calls for detailed consideration. The chief features of the book are retained while the author has brought the information up to date, more particularly by bringing it into harmony with the new British Pharmacopœia. He includes a list of the additions, together with a list of the omissions. The author has contrived to pack a large amount of information into a very small space and it is presented in a form which can be readily assimilated. He includes in this edition a consideration of diphtheria antitoxin, streptococcus antitoxin, and tetanus antitoxin, the last being dismissed in four lines. These are followed by five lines on anti-venomous serum and by short descriptions of hydrophobia antidote and of piperazin which seem rather misplaced after the description of serums and antitoxins. To the short list of *errata* should be added "aconita" (p. 11) for "aconitina."

Catechism Series. Surgery: Part II., pp. 63; Part III., pp. 64; Part IV., pp. 64; Part V., pp. 64. Anatomy: Part II., Head and Neck. Second edition, with Plates. Pp. 72. Edinburgh: E. and S. Livingstone. Price 1*s.* each net.—There is a natural tendency amongst students as the day of examination draws unpleasantly nigh to seek the aid of "cram" books of one kind or another, and provided that they have done their work well they may derive no little benefit from studying a *résumé* of the subject and from having the facts put before them in a new way, but if a student who has utterly neglected his work expects to gain the required knowledge in a week or two by reading a small volume he will utterly and deservedly fail. These volumes are, as "cram" books go, very fair and if used intelligently may be found of much value. A number of diagrams are given, most of them borrowed from M'Lachlan's "Applied Anatomy," and they are likely to prove helpful.

Nine Medical Songs. Words by J. BLUMFIELD, G. H. RANSOME, and F. H. Music by C. N. CHADBORNE. The Librarian, St. George's Hospital. Price 2*s.* 6*d.*—Most of these songs, though primarily written for St. George's men, would be welcome at any medical smoking concert, for the only two purely local ones are "Back to the Corner Again" and "A Song of St. George's." One of the best, though possibly not the most taking, in the sense that it would not be yelled in full chorus at the end of an evening with so much zest as the "Song of St. George's" is "The Lament of the Large White Kidney." The dignified pathos of this is most touching and Mr. Chadborne's music is in every way worthy of the words. If he were to orchestrate it the piece would produce a most striking effect at a hospital concert. The introduction given out by three trombones, except bars four, five, and eight which should be allotted to that impassive yet sorrowful instrument the bass clarionet, would bring tears to the eyes of even the most hardened pathologist. The first number, "Oh, would I were a surgeon," is an admirable example of F. H.'s skill in writing incisive lyrics, and the music has an unmistakeable and possibly intentional flavour of a passage from "Honour and Arms." Altogether we congratulate St. George's and must in addition praise the designer of the cover.

Health in the Nursery. By HENRY ASHBY, M.D., F.R.C.P. Lond. London: Longmans, Green and Co. 1898. Pp. 227. Price 3*s.* 6*d.*—This is a very well-intentioned little book, written by one fully equipped by his experience to deal satisfactorily with the subject. While dealing chiefly with the prevention of disease the author does not hesitate to indicate the serious results which may follow when Nature's laws are broken. It is essentially a book of health in infancy and early childhood. The author wages warfare against ignorant customs and prejudices which have become sacred through long descent. Nothing connected with the surroundings of infancy appears to escape him. He deals with early training, with the furniture of the nursery, with the hygiene of infancy and childhood, under which term he includes a consideration of the care of infants prematurely born; then he passes on to deal with the clothing appropriate for the various ages, and in subsequent chapters he treats of dentition, of the early signs of disease, of the mental development of the infant, and of backward and exceptional children. As in all other books of this type much space is devoted to a consideration of the dietary of the infant. Concerning the artificial feeding of infants the information given will be most helpful to mothers since it is both simple and practical and it is commendably free from the advertisements of patent foods or of patent forms of milk which are so frequently to be found under such a heading. Greater emphasis might perhaps have been laid on the dangers of a dietary rich in farinaceous food during the early life of the infant. It would also perhaps have been more in accordance with custom to use the term anterior fontanelle in contradistinction to posterior fontanelle instead of employing the term superior fontanelle. The chapter on the early signs of disease is likely to be extremely serviceable and, in fact, the directions throughout the book are calculated to encourage habits of observation and common sense rather than to induce those entrusted with the care of a child to think that they can, unaided by the medical profession, safely tide over all dangers. The book is brightly written and the illustrations, although scarcely artistic, are sufficient to serve their purpose. One of the problems which remains unanswered after the perusal of this book is: Why do

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authors of popular works concerning babies so constantly drop into poetry?

JOURNALS AND REVIEWS.

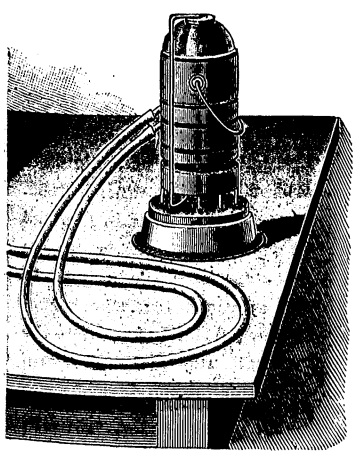
The Practitioner.—The opening editorial paragraphs of the December number announce that in future this periodical will be enlarged and the subscription will be increased to one guinea per annum. The editor refers in feeling terms to the retirement of Dr. J. F. Goodhart and Mr. Treves from hospital work and advocates the inauguration of a state of things in England comparable to that of the German clinics, where the seniors have a staff of well-trained assistants to take routine work off their hands. Mr. Alfred Willett reports a case of Axillary Traumatic Aneurysm which underwent spontaneous cure; among other papers there is one describing that rare condition Primary Sarcoma of the Vagina; the growth was removed and there has been no recurrence for two and a half years. Mr. James Cantlie writes upon Sprue, and Dr. Sydney Short recounts a case of Aneurysm of the Aorta in which pressure symptoms were limited to the trachea. A story by Philip Lafargue, Reviews of Books, the Periscope, Hospital Notes, Notes on Public Health, and the usual pages of Practical Notes make up a good number.

The Phonographic Record. December, 1898. London: Sir I. Pitman and Sons.—This forms the last number of Vol. IV. and is issued with the index to this volume. The opening paper gives an account of an interesting case which came under the observation of Sir William Gowers and which he diagnosed as a case of polyneuritis of obscure toxic origin. The patient did not immediately improve under Sir William Gowers's treatment, but subsequently it was discovered by her medical attendant that she was in the habit of using a hair stimulant containing lead and powdered sulphur. On the lotion being discontinued the patient recovered. Mr. Norman Porritt concludes his Two Instructive Examples of Abdominal Surgery and Dr. Thomas Wilson gives an account of Transient Spasmodic Torticollis in a case of Intraperitoneal hæmorrhage due to tubal abortion.

New Inventions.

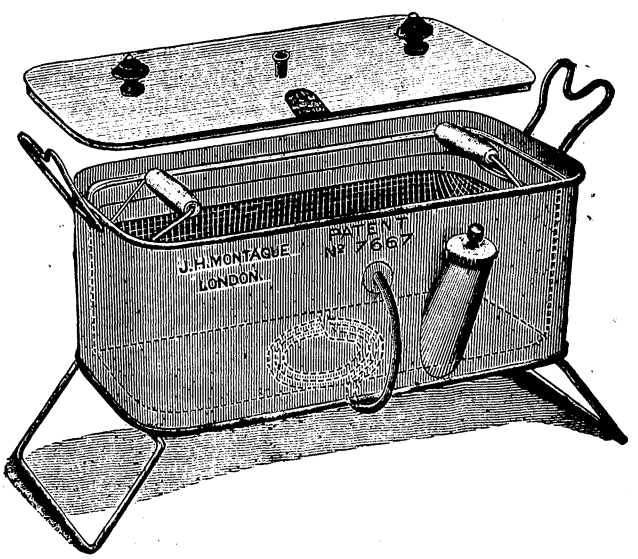
THE "PERFECT" HOT APPLIANCE.

BY means of this apparatus the continuous application of heat, either moist or dry, to various parts of the body, and for numerous purposes, may be conveniently and successfully accomplished. Its essential principle is that water heated in metal cylinders by an automatically regulated alcohol lamp is conveyed by an india-rubber tube to accessory attachments differing in construction according to the purpose for which they are required, and the water after circulating in them returns to the cylinders, where it is heated once more. One of these attachments is a curved metal disc measuring 6 in. by 8 in., to be placed in contact with the abdomen; if wet flannel be interposed between the disc and the skin the effect of a poultice or hot fomentation is obtained without the necessity of disturbing the patient at frequent intervals to renew it, a drawback inseparable from the ordinary poultice. The regulation of the lamp is effected by means of a wire attached to the top of the heating cylinder. We have tested its action and find that it is quite satisfactory. Moreover, it acts perfectly even if the circulation through the tube be stopped. The "Appliance" is 3 in. in diameter by 9 in. high and together with its case it weighs 3 lb. The price is £1 1*s.* and it may be obtained from the "Perfect" Automatic Hot Appliance Co., 303 and 304, Dashwood House, New Broad-street, E.C.



ATMO-THERME STERILISER.

SURGEONS who prefer to use sterile rather than antiseptic dressings will doubtless welcome a steriliser for use in the operating room. The instrument consists of an inner chamber intended for the materials to be sterilised, surrounded by a water jacket heated by a flame placed below. The steam generated in this jacket is conducted through a coil of copper tubing (the super-heater) placed in contact with the flame immediately below the body of the instrument, and is thereby raised to such a temperature as renders it not only quite dry but capable of drying that with which it comes in contact. This dry super-heated steam is then admitted to the inner chamber, where it rapidly penetrates and sterilises any dressings, &c., which may be within. Some preliminary experiments which I made with an instrument placed in my hands by the inventor for the purpose of testing its efficiency, and which was constructed on principles similar to those of the steriliser shown below, were very satisfactory. Non-sporogenous micro-



organisms — viz., bacillus prodigiosus, bacillus typhosus, bacillus diphtheriæ, spirillum choleræ, bacillus coli communis, and staphylococcus pyogenes aureus—were destroyed in ten minutes though they were enclosed within a considerable quantity of rather tightly packed cotton-wool. Dust-covered cotton-wool similarly enclosed was also sterilised in ten minutes. Spores of bacillus subtilis contained on thread, enclosed within a tightly rolled bandage which was itself surrounded by half a pound of cotton-wool, required an exposure of fifteen minutes to effect sterilisation. These results appear at first sight to differ from those of von Esmarch and others as to the disinfecting value of dry super heated steam, but in the apparatus in question it is probable that the material to be sterilised is first exposed to saturated steam and afterwards dried as the temperature rises above 100° C. The instrument used by myself had several minor defects, but I believe these have been remedied in the present instrument. The maker is Mr. J. H. Montague, of 101, New Bond-street, London.

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Cambridge.

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THE LANCET.

LONDON: SATURDAY, DECEMBER 17, 1898.

A SUPPLEMENT to the twenty-seventh annual report of the Local Government Board consisting of the report of the medical officer for the year 1897–98 was issued on Wednesday last, and as usual contains information of the first importance to medical men and practical sanitarians. It is on this occasion, as we have found it on previous occasions, useless to attempt to review exhaustively in one or two editorial articles a stout volume packed with information presented in the most concentrated form, so that we must content ourselves with selecting one or two of the topics dealt with for some extended notice, while with regard to the others we must refer our readers to the report[1] itself. In particular these remarks apply to the auxiliary scientific investigations which constitute an interesting group of appendices. Among these a communication from Dr. KLEIN on the morphology and biology of bacillus enteritidis sporogenes dealing with the association of this microbe with infantile diarrhœa and cholera nostras, as well as its relations with milk, sewage, and various kinds of manure, is sure to attract special attention. Sir RICHARD THORNE in a previous report to the Local Government Board has pointed out that microbes of the anaërobic class have not received from bacteriologists and epidemiologists adequate attention, so that Dr. KLEIN'S appendix is opportune. One story in this appendix—that of a severe outbreak of diarrhœa in St. Bartholomew's Hospital in March last, presents interesting facts in support of the view that a close connexion exists between the bacillus enteritidis sporogenes and diarrhœa. Such evidence is of course only presumptive, but it is none the less forcible, while it supplies excellent reason for perseverance in similar research.

An interesting *communiqué*, in view of previous work by the Local Government Board in the same direction, is a report by Dr. G. S. BUCHANAN on the occurrence of certain cases of enteric fever in the following sanitary districts of Suffolk and Essex—Clacton, Walton-on-the-Naze, Haverhill, Braintree, Lexden and Winstree, and Tendring, and the relations of oyster infection to these cases. Dr. BUCHANAN'S summary of facts shows that in a population of some 16,000 persons distributed among places so far apart as Braintree in the centre of Essex, Clacton on the east coast of this county, and Haverhill in Suffolk about eighteen miles from Cambridge, a total of 29 persons only were heard of as having been attacked by enteric fever between the beginning of June and the end of October, 1897, while of these 29 persons no less than 26 had consumed oysters about a fortnight before the date of their attack — "about a fortnight" being regarded as a fair definition of the incubation period of enteric fever. Stating these facts alternatively Dr. BUCHANAN finds that among the inhabitants of, and visitors to, the more limited area comprising the towns of Clacton-on-Sea, Walton-on-the-Naze, and the parish of St. Osyth (this is a small town in the rural sanitary district of Tendring) the total of persons heard of as having been attacked by enteric fever during the month in question was 26, and all these 26 sufferers had consumed oysters about a fortnight before the onset of illness. To quote Dr. BUCHANAN'S own words, "The improbability that a series of coincidences such as this should have happened by mere accident is obviously very great." The next step in the investigation was to trace the suspected oysters, and here Dr. BUCHANAN supplies evidence with full detail and corroboration to show that the particular molluscs by which the 26 persons came by their infection could in each instance but one be affirmed "almost with certainty" to have come from layings at Brightlingsea. Now, in 1895 Dr. H. T. BULSTRODE, medical inspector to the Local Government Board, visited Brightlingsea in the course of an official investigation into the conditions under which oysters are cultivated and stored along the coast of England and Wales, and in his report[2] gave due warning that Brightlingsea was a rapidly growing town and that the danger of contamination to oysters laid down there must tend to materially increase with the addition of new houses unless steps were taken for the proper disposal of sewage. Later Dr. BULSTRODE drew attention to certain layings as being particularly liable to pollution. Dr. BUCHANAN now shows that of the 25 cases where the implicated oysters could be referred "almost with certainty" to layings in Brightlingsea Creek, in 20 cases the oysters had been taken from one or other of two particular layings situated on the foreshore which had been pointed out by Dr. BULSTRODE as conspicuously exposed to sewage pollution. From all these facts it is obvious to our mind that until the sewage of Brightlingsea is dealt with properly a grave risk attends the consumption of oysters obtained from layings there.

Of the most important sections of Sir RICHARD THORNE'S report, important not only from a topical point of view but on account of their bearing on the public health of the future—we refer to those dealing with the question of vaccination—we say nothing now, for we shall later take opportunities to refer to the various points touched upon in the report in some detail. We quote only Sir RICHARD THORNE'S grave words in announcing the publication of a digest of the vaccination officers' returns for births during 1895. "The number of children," he says, "now born in England and Wales who in one way or another escape vaccination is probably not much less than one-third of the whole. In this way the country is being prepared for wide-spread epidemics of small-pox such as have been unknown to the present generation — unless, indeed, the invariable rush and clamour for immediate vaccination on the part of those who have neglected or declaimed against the operation

[1] Twenty-seventh Annual Report of the Local Government Board, 1897-1898. Supplement containing the report of the medical officer. Messrs. Eyre and Spottiswoode, East Harding-street, E.C. 4s. 11½d.

[2] Supplement to the Twenty-fourth Annual Report of the Medical Officer of the Local Government Board, 1894-95, on Oyster Culture in Relation to Disease.

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during times of freedom from small-pox should be capable of being so far met in the moment of emergency as largely to mitigate the impending disaster."

AT the annual meeting of the constituents of the Hospital Sunday Fund held at the Mansion House on Dec. 12th and presided over by the Lord Mayor several subjects of considerable interest were discussed in a way which promises well for the success of the Fund in the coming year. It is now somewhat trite to say that this institution is the most effective of all means for uniting religious men of all creeds. But this argument in favour of the Metropolitan Hospital Sunday Fund was never more happily or effectually used than on Monday by the Bishop of STEPNEY, the Rev. W. H. HARWOOD, and other speakers. The slight falling off in the amount of the Fund for the present year has evidently in no serious degree discouraged the members of the Council. It is recognised that the financial disturbance occasioned by the claims of the Jubilee year could scarcely cease all at once and that those claims sufficiently explain the diminished collection. The Bishop of STEPNEY in his excellent speech made a happy suggestion which we trust will be responded to liberally by the public. He pointed out that the collections of the Fund since its commencement in 1873 have amounted to £952,525 and that the sum necessary to make this into a million is £47,475, only a few thousands more than the ordinary collection. Next year would, he hoped, see the total sum made up to the round £1,000,000. There is nothing unreasonable in believing that the ministers of religion will be able to found on this speech an appeal which will raise the sum of the Fund to the amount desired and suggested by the Bishop of STEPNEY. The tone of the meeting and the hearty interest displayed in the Fund by the new Lord Mayor confirm us in this hopeful view.

Another feature of the meeting of Monday was the strong expression of feeling in favour of the voluntary principle as applied to the hospital system. Canon FLEMING gave very effective utterance to this sentiment. He said he hoped the day would never come when voluntary liberality in support of the sick and wounded would be supplanted by State aid. Canon GRAHAM, representing the Roman Catholics, spoke with equal heartiness in the same sense and said that the voluntary maintenance of hospitals in this country was the envy of all foreigners. It is gratifying to find that there is no abatement amongst us of the belief in the superiority of hospitals maintained by the sympathy and humanity of the people as compared with those of foreign countries supported by the State. It may be difficult to say what are all the grounds for so strong a preference. But some of them are clear enough. It is believed that the voluntary principle implies a more personal interest in the institutions and a more humane treatment of the patients. Moreover, it cannot be doubted that on the score of economy the voluntary are to be preferred to the State- or rate-aided institutions. Another and perhaps the most fundamental ground for the preference is to be found in the view that hospitals are essentially charitable institutions for the use of poor persons, in exceptional straits from sickness or accident, needing help and appealing to the good Samaritan of all creeds.

It is not perhaps more than a coincidence that these strong expressions of preference for the voluntary hospitals coincide very much in point of time with a speech by the Duke of DEVONSHIRE on the occasion of the opening of two wards in the new wing of the West London Hospital in which his Grace seemed to associate the subject of the contemplated municipalisation of the vestries of London with that of a better hospital accommodation. We should be much concerned if we thought that the Duke of DEVONSHIRE intended to hint that it is the intention of the Government to include in their impending legislation any scheme for including the care of hospitals as one duty of the projected municipal bodies. Such an important proposal is not likely to reach us in any such casual way. But the friends of the voluntary system of hospital support cannot be too diligent in the use of such means as will increase this support and will deprive the advocates of a different system of any excuse for altering the existing one which is the glory of England and the admiration of foreigners. One means of doing this is in the careful restriction of hospital help to the class for whom it was originally intended and it is gratifying to us to notice that at Monday's meeting Mr. R. B. MARTIN, M.P., made pointed reference to the honest efforts of hospitals to ascertain the fitness of patients to receive attendance in accordance with the recent resolution of the Council making such efforts a merit in hospital administration.

IT would be difficult to imagine worse impeachments, professionally and morally, than those brought against Dr. DAVID WALLACE, a medical man practising at Beckenham, who was indicted at the recent Kent Assizes for having feloniously procured abortion on a young unmarried woman named WARRILOW. A second charge which was not proceeded with but for which Dr. WALLACE was committed by the magistrates was that of having by criminal assault been the author of the prosecutrix's condition, a condition which rendered the first-named crime possible.

The facts were as follows. In 1897 Miss WARRILOW suffered from retroflexion of the uterus. She consulted a medical man at Eastbourne who inserted a pessary. The treatment gave marked relief, but on discontinuing the use of the instrument the misplacement recurred, whereupon Dr. WALLACE, who was called in, re-inserted the support. As alleged by the prosecution Miss WARRILOW on March 11th of this year went unattended to the house of Dr. WALLACE to have the pessary removed. It was upon thi occasion that misconduct was stated to have taken place without the consent and without the knowledge of the patient. It was not suggested that force was used or that the passive agent was hypnotised; the theory put forward was that she fainted from the pain incidental to the removal of the pessary and whilst unconscious was ravished. In the face of Miss WARRILOW'S evidence that she remembered nothing unusual having happened, that she walked home after her visit to Dr. WALLACE, and that there was no circumstantial proof of molestation, we fail to see a *primâ facie* case

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against the accused. Moreover, a person does not recover immediately and completely from an attack of syncope and nothing was elicited as to any "coming to"; indeed, it was mere surmise that there was any fainting at all. As the menstrual periods did not occur on three occasions Dr. WALLACE testified that he considered the case one of amenorrhœa consequent on retroflexion and to induce menstruation he introduced a sound into the uterus on May 26th and May 27th. On the second date free hæmorrhage occurred and to check this a mixture containing ergot was prescribed, but this was not taken. Shortly afterwards products of conception were expelled and it was this fact that led to a conversation between Mrs. WARRILOW, the girl's mother, and Dr. WALLACE. The former asserted that Dr. WALLACE, when interrogated as to his knowledge of the patient's recent condition, replied that "he was very sorry; he knew he was the cause of what had happened, and hoped he would be forgiven." This was clearly open to an innocent interpretation, but Mrs. WARRILOW averred that the following significant remark also fell from the accused: "I could not resist the temptation." If the jury could have unconditionally accepted Mrs. WARRILOW'S testimony as to this they would have been logically bound to convict Dr. WALLACE of more than one odious crime. But we quite agree with Mr. Justice HAWKINS who tried the case that counsel for the prosecution went too far when he said that the jury must come to the conclusion that perjury on one or other side had been committed. The late Mr. Justice STEPHEN once said in court that a jury should accept with hesitancy mere hearsay evidence of a conversation as probably no two persons would exactly reproduce from memory what had been said in the hearing of each. When Mrs. WARRILOW became acquainted with the fact that her daughter had been *enceinte* her mental condition must have been considerably perturbed and she may easily have assumed that Dr. WALLACE'S words "I am to blame for this" were a confession of guilt although the conclusion was utterly unwarranted by the premisses. With this belief it was easy to wander from the actual truth and to pick up words suggested by such belief and consistent with it but which may never have been spoken. This in our opinion is the explanation of Mrs. WARRILOW'S most significant piece of evidence which we should hesitate to classify as deliberate perjury.

That cessation of the periods, enlargement of the uterus, and general disturbance of the system might have led Dr. WALLACE to hold his hand was conceded by his counsel who rightly urged that a young practitioner ought not to be judged by the highest standard of attainment such as would be expected of an older physician or of one specially experienced in obstetric medicine. We would go further and say that in a question so argumentative a very considerable margin should be allowed to every medical man for errors of observation and judgment. We remember an instance in which a distinguished gynæcologist diagnosed a condition of pregnancy of three months' duration as a case of anteversion of the womb and unintentionally induced abortion by the very treatment adopted by Dr. WALLACE. From these considerations it was with feelings of relief and satisfaction that we learned the decision of the Maidstone jury to acquit Dr. WALLACE.

Annotations.

"Ne quid nimis."

THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

WE have already written on the scheme for founding a medical graduates' college and we see no great reason to alter the opinions which we guardedly expressed in June.[1] It is impossible to deny that there is much that is interesting in the scheme. It is equally impossible to deny that there are aspects of it as elaborated in the circular before us to excite criticism and even anxiety. The objects of the scheme are shortly, firstly, to assist medical practitioners in their desire to keep themselves up to the best knowledge and practice of the day and, secondly, to make it easier for the sick poor to have their diseases considered in consultation with reference to diagnosis and treatment. The objects are good. The only question is whether they cannot be attained by the use of existing hospitals and societies and whether the new institution, either by its success or its failure, may not prove a source of disappointment and regret to the profession and even to those who promote it. If the objects can be accomplished with existing institutions it is clearly undesirable to create a new one. As we read the laws and constitution of the college it does not appear to us that it will differ very much in its objects from one of our existing medical societies and the proceedings at one of its meetings will very much resemble those of a clinical night at the Clinical Society or the Medical Society where cases are shown and a discussion on the nature and treatment of them takes place. Similarly we see no advantage to the sick poor in the way of consultation that is not either accessible to them now or that might not easily be arranged at any of our hospitals. A central office is proposed to be erected for giving information relating to educational opportunities, operating days at hospitals, and other information which is constantly supplied in the Students' Number of THE LANCET, and in our weekly issue and those of our contemporaries. We are not without fear that the provision for hospital accommodation and for consultations will involve a serious extension of the existing abuses of hospitals by other classes of society than those which now abuse them, to the injury alike of consultants and general practitioners. We recognise the precautions that are to be taken in theory to prevent such abuses, but in practice and in an institution like that which is pictured in the circular such evils will be apt to assert themselves. Finally, the undertaking seems bold in a financial respect. A very considerable income would be necessary to support such an establishment and to pay the officers who are to carry on the work. We should rejoice in any improvement in the methods at present in vogue at hospitals and societies for making them more useful to medical practitioners, but we scarcely see the justification of a brand new college and polyclinic the success of which would imply new risks of hospital abuse and the abstraction of much energy and support from existing institutions.

VOLUNTARY HOSPITALS.

CHRISTMAS is very near us and the usual flood of appeals for money pours in. No form of charity is more worthy of support than that which provides medical aid for the sick poor. There may be differences of operation but the wolf of poverty stands at the door of nearly every metropolitan

[1] THE LANCET, June 4th, 1898, p. 1545.

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hospital; they do what they can and yet there is an enormous mass of poverty and sickness still unrelieved. Despite the efforts of the religious bodies and of the thousands of brave men and women who go out to help the poor, despite the millions spent by the Poor-law bodies, the School Board, and the London County Council, ignorance, crime, poverty, and sickness still abound. And though but little impression seems to be made by all these agencies we must think of what the state of matters would be if for one year the fountain of relief, both voluntary and involuntary, were dried up. But as concerning the hospitals it is noteworthy that the London hospitals are badly off mainly because they are in London. True, they are at the fountain head of wealth and knowledge, but it must also be remembered that the agglomeration of cities called London draws to itself the poor, the sick, and the failures from all parts of the United Kingdom. The metropolitan hospitals are not merely metropolitan, they are national, and the time seems to be approaching when they will have to be assisted not only by dwellers in the metropolis but by provincial aid as well. An appeal now before us says: "The hospital is close to the termini of three railways serving the northern suburbs and is consequently most conveniently situated for patients arriving in London by these lines, and from all parts of the country poor patients are sent by their medical advisers for special treatment by our staff." Now here we have one great reason why the hospitals of London are always in debt. They serve not only their own immediate neighbourhood but practically the whole country. In some cases of course this is necessary, but anyone who has ever worked in a big hospital must have seen hundreds of patients who came for relief because in the first instance they had something the matter with them, and also because their complaint afforded an excuse for a trip to London. We can quite sympathise with the needs of many a hospital, but the present state of chronic impecuniosity cannot go on. Either the London hospitals must find some means of confining their ministrations to London people or else the provinces, if the provinces use the charitable institutions of the metropolis, must assist in supporting them.

NAVAL PHARMACIES.

THE problem of the storage of drugs and medical appliances on board men-of-war is one of considerable magnitude and importance, not only from the point of view of the officers and sick-bay attendants whose efficiency and reputations are to a great extent concerned, but also from that of their gallant patients who are clearly entitled to the best possible treatment while suffering from sickness or wounds during their term of service afloat. It has been recently asserted that even with regard to elementary matters the medical equipment of the British Navy leaves much to be desired and possibly in some few of Her Majesty's ships there may be grounds for the charge, but we cannot for a moment believe that in a department so intelligently administered as our Naval Medical Service the remediable blots and lacunæ can be either numerous or extensive. Hitherto in the French Navy it has been the custom to keep the whole of the medical stores in cupboards no two of which are alike as to size or shape, the receptacle in each case having been constructed according to the exigencies of a space grudgingly allotted and all too narrow for the requirements. In order to remedy the confusion, waste, and inefficiency thus inevitably arising, Dr. Rouvier, principal medical officer at Cherbourg, has devised a series of portable *coffres*, or chests, and Ministerial approval having been accorded to them these appliances are to be taken into general use throughout the fleet on and after the 1st of January next. In the *Archives de Médecine Navale* for November Dr. Rouvier gives a brief description of his coffers which are five in number, two for medicine marked respectively *Ma* and *Mb*, two for dressings marked *Pa* and *Pb*, and one for use during an action marked *Fa*. The coffers *Ma* and *Pa* contain all that is necessary for treating 100 men during six months—all, that is, except a few cumbrous articles as well as some bulky non-perishable material for which accommodation has to be provided elsewhere. Each *a* coffer is divided by a horizontal diaphragm. The lower division contains only substances in constant use; the upper division contains a certain number of imperishable articles and also substances less constantly in use, such as silk, catgut, atropine, emetine, refills for ambulance satchels, &c. Coffers *Mb* and *Pb* are simply duplicates of the lower divisions in *Ma* and *Pa*, being intended as a reserve for re-stocking purposes. In addition to their horizontal diaphragms all the coffers are likewise subdivided vertically in order to facilitate access to the contents. When two or more coffers of the same kind are on board a vessel they can be superimposed in such a way that the contents of each face of a combined pair are equal to those of an entire coffer. When only a single coffer is available it can be made to revolve by means of an ingenious mechanical device. The greatest care has naturally been devoted to the stocking of the various coffers, but, as Dr. Rouvier points out, nothing on earth or ocean is stable and sooner or later modifications of the existing arrangements will be introduced. In order so far as possible to provide for this inevitable contingency the internal fittings have been reduced to a minimum and where it was practicable have been made moveable. The partitions between the several phials, pots, &c. (each of which shows the date of its filling), consist of galvanised iron wire so as to provide for a certain amount of elasticity and here and there a few compartments have been left empty for individual preferences. In conclusion Dr. Rouvier informs his readers that he has drawn up a memorandum to accompany his coffers, embracing a system of account keeping, directions for re-stocking, and sundry other matters; but that as ministerial sanction has not yet been notified and his proposals may consequently be altered or even rejected altogether he deems it best to withhold the document for the present.

PROGRESSIVE BONY ANKYLOSIS: "ARTHRITIS OSSIFICANS."

A CONDITION which though not very uncommon in man and the lower animals has not received much attention is bony ankylosis of the vertebræ converting the column in extreme cases into one solid piece—spondylitis deformans. In horses it is not uncommon and is a predisposing cause of fracture. Specimens exist in most museums. Often accompanying this spinal disease is ankylosis of other joints, sometimes of almost all in the body. In an annotation in THE LANCET of Nov. 5th we called attention to a form described by Dr. Pierre Marie and termed by him "spondylose rhizomélique" because the ankylosis affects the spine and the roots of the limbs. That distinguished clinician appears to regard it as a special disease ("une entité clinique très spéciale"); but we fail to see how it can be regarded as anything more than a form, and perhaps only a temporary form, of this previously recognised general ankylosis. No doubt, his clinical acumen has seized one of the types of the disease and very possibly the shoulder and hip-joints are more prone to be attacked or are attacked earlier than other joints. But even according to his description the term "rhizomélique" is not comprehensive, for he mentions limitation of flexion of the knees as a feature of the disease, and swelling of the sterno-clavicular joint as present in one case. The *Journal of Pathology and Bacteriology* (December 1896, and March and June, 1897) contains valuable papers by

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Dr. Joseph Griffiths on bony ankylosis in general and on this form, which he terms "universal bony ankylosis or arthritis ossificans," in particular. He gives an analytical table of 20 published cases; in none were all the joints affected; in about half nearly all were. The term "universal" cannot therefore be justified: "general" or "progressive" bony ankylosis would be more accurate. The joints become obliterated and the articular ends of the bones grow together. The disease usually begins in early adult life. The age of onset was from twenty-two months to thirty-four years, in the majority between twenty and thirty years. It is more common in males than in females—14 cases to 4. This should be compared with Dr. Marie's statement of his 7 cases: "All occurred in adult males." The progress of the disease is slow—subacute or chronic; it takes months and even years to involve and fix the greater number of joints in the body. The joints are attacked in succession. In the subacute form there are swelling, fixation, and pain in the joint which subside after weeks or months, leaving the joint fixed but not deformed. In the chronic form there is no swelling, but pain and stiffness occur leading to fixation. There are cases in which almost the whole skeleton is thus joined into one rigid piece of bone; in others the spinal column is the chief, if not the only, seat of disease; in others the limbs alone are involved. From the examination of museum specimens Dr. Griffiths concludes that ossifying arthritis probably commences by the formation of spiculated growths at the articular margins of the bones which bridge over the joint cavity and fuse. These marginal growths differ from the "lippings" of rheumatoid arthritis; they arise independently of the articular surface and are not covered by articular cartilage, whereas the latter are, as it were, a direct extension of the articular end of the bone. Indeed, in ossifying arthritis the marginal growth takes place into the surrounding connective tissue—ligaments especially—and the joints are obliterated centripetally. When fusion has occurred the external ridges of bone tend to disappear, leaving the external surfaces of the bones smooth and even. In this description Dr. Griffiths does not apparently refer to the changes found in the spine; here buttresses of bone are formed connecting the vertebræ and remain permanent. The anterior common ligament may be replaced by a splint of bone. As to etiology, the following exciting causes have been noticed: (1) exposure to cold, wet, and fatigue; (2) worry; (3) gonorrhœa; and (4) injury. In one instance the disease was of congenital origin. The pathology is obscure. Whilst showing differences from rheumatoid arthritis the view that it is allied to, or a form of, that disease has some evidence in its favour. On the other hand, an alliance with an equally obscure disease—myositis ossificans—seems to be feasible. Both diseases consist in abnormal ossification of mesoblastic tissues and both may be of congenital origin. As bone normally develops from connective tissue, may not these changes be regarded as a physiological process becoming pathological by extension?

A HISTORICAL DRAMA BY AN EDINBURGH PHYSICIAN.

THE addition of another name to the list of eminent medical men who have ventured into the highways of general literature is always an event worthy of note and one which cannot fail to arouse much interest in medical circles. It will not only interest *alumni* of Edinburgh to know that a former teacher who is still a Professor is shortly to appear in this *rôle*, but it will interest the profession at large wherever Sir Thomas Grainger Stewart's name is known. The secret has been well kept, for it only begins to be known now when some of the advance copies of his book have been seen. The work in some aspects is ambitious, for it takes the form of a Chronicle Play in blank verse. The theme is a historical one of the time of Mary Stuart and the leading personage is the Regent Moray. Sir Thomas Stewart has entitled his work *The Good Regent* which in itself sufficiently indicates the estimate he has formed of his hero. In the preparatory note he says that he threw the story into its present form by way of recreation during an autumn holiday and he craves indulgence for the "apparently ambitious form in which it appears." We do not for a moment suppose that Sir Thomas Stewart has any ambition to be regarded as a poet but we wish all poets wrote as readable verse as his is, judging from a rather rapid survey of the pages of his work. That Sir Thomas Stewart should have chosen a historical theme and found it in one of the most important and momentous times in the history of Scotland is only what might be expected from a man with the historical tastes and literary faculty which he is known to possess. We meanwhile only give this preliminary notice of a work which will not fail to attract attention on account of its historical representations, on its writer's account, and on account of the form in which it appears. We welcome it, for it is always pleasant to know what a man is beyond what he is as a physician, and the writer of this drama does not fail to show the direction in which he leans and the considerations which appeal to him.

INFANTILE SCURVY AND ARTIFICIAL FOODS.

A DISCUSSION on Infantile Scurvy took place at a recent meeting of the Société Médicale des Hôpitaux, Paris, and is recorded in the *Journal de Clinique et de Thérapeutique Infantiles* of Nov. 17th and 24th. According to M. Netter, who showed a typical case of this disease, its causation has to do not merely with the use of artificial infant foods which has of late years become so general but even with certain modern methods of sterilising ordinary cow's milk. In his own case the child had been brought up on milk which was "maternised," that is, sterilised by heat and deprived of a part of its caseine. He suggests that milk is impoverished by this process and consequently loses its anti-scorbutic properties. M. Comby also showed an example of the disease in a child three months old, and here also the diet had been "maternised" milk. In the absence of any other probable cause in the form of dietetic errors and in view of a very marked improvement followed by a rapid recovery when fresh milk was adopted as the staple food the appearance of scurvy was not unnaturally attributed by both of these observers to the changes produced in the milk by "maternisation." They likewise drew attention to the fact that infantile scurvy though rare in France is much more frequently met with in Great Britain and in the United States of America. The cause assigned for this international disparity is doubtless the true one—namely, that in default of the maternal breast French custom prefers a wet-nurse, while in this country and in America recourse is commonly had to some one of a multitude of infant "foods." M. Variot who also spoke on this subject, while admitting the connexion between infantile scurvy and an artificial diet, stated that he had not found that this connexion existed where the child's nourishment consisted simply of sterilised cow's milk. At the Bellville Dispensary 500 infants were thus fed while under his care and no case of scurvy occurred among them. On the other hand, he had found milk thus prepared to be invaluable as a nutrient in infantile atrophy. Notwithstanding some difference of opinion which is evidently the effect of mutual misunderstanding and more apparent than real, we may therefore conside the views of these various observers as agreed on the essential point in this discussion. For each the occurrence of scurv

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in the infant has only one explanation—a faulty, because too artificial, diet. There is indeed no other possible theory of its causation and this is a fact which the practitioner must always bear in mind. At the present time the market is inundated with every conceivable form of milk and milk food, peptonised and non-peptonised, and with meat extracts in addition, all professedly most suitable for the nutrition of infants. There is unquestionably a serious danger that among so many elaborated feeding contrivances a child may miss that simpler chemical product of nature's laboratory for the digestion of which the alimentary canal was particularly intended. It is also noteworthy that in cases where the choice of milk is left to the direction of a medical adviser, where sterilisation is practised in its simplest form, and peptonisation if needed, as it sometimes may be, is carried out under medical direction, scurvy-rickets, atrophy, and most of the other digestive troubles of infancy are conspicuously absent. It should always be remembered that over-refinement in the diet of infants is an error which usually defeats its intended purpose and results in their starvation.

DEATH UNDER CHLOROFORM.

A PATIENT died from the effects of chloroform at the Salisbury Infirmary on Nov. 14th. We are indebted to Dr. F. F. Lee for kindly sending us corrected notes of the fatality. The patient, an alcoholic subject, aged sixty years, was admitted into the infirmary seeking relief for fixation of the hip and other joints the result of chronic rheumatism. He was placed under chloroform and the joints were forcibly moved. He struggled, but no further trouble appears to have arisen on this occasion. He desired after this to have other modes of treatment tried but eventually allowed himself to be again given chloroform with a view to further forcible movements being used. This was four months after admission. On the second occasion of the administration of chloroform the junior house surgeon gave the anæsthetic, but by what method is not mentioned. The patient struggled very violently and eventually passed under the influence of the anæsthetic. The forcible movements were then easily performed. The administrator at the end of the manipulation called attention to the man's condition which was so bad that he appeared as if dead. No doubt this was so as no means adopted to effect resuscitation produced any result. The amount of chloroform given is reported as being 1½ drachms. The post-mortem appearances showed opacity and thickening of the dura mater with adhesion to the skull. The organs were healthy save for adhesion of the capsules to the kidneys. There had been no albuminuria during life. Although the death is attributed to sudden failure of the heart the phenomena recorded seem far more consonant with that form of sudden death in which both the circulation and the respiration fail simultaneously and with extreme rapidity—a mode of death which results from the patient receiving a lethal dose through taking in a too concentrated vapour during struggling. The struggles of a patient commonly arise from "pushing" the anæsthetic—a common mistake even among experienced chloroformists and the bane of less proficient anæsthetists. It is a common error to suppose that a drachm or even less cannot produce chloroform poisoning. It is simply a question as to how dilute the vapour is. Even a few minims volatilised suddenly and inspired in a few deep gasps such as accompany struggling are quite able to be rapidly conveyed to the vital centres and to cause paralysis of the medullary centres and death. Even at the risk of much loss of time it is best to give a low percentage of chloroform vapour and adhere to it. The ease with which the rigid joints were moved was probably the result of the extreme muscular flaccidity following the profound narcosis.

THE CASE OF THE LATE MR. HERBERT KINGSLEY HUNTER.

WE understand that the appeal in this case will be heard at 10.30 A.M on Saturday next in the Lord Chief Justice's Court. The case has excited much interest in the profession on several grounds apart from the point of law to be determined by this appeal—viz., the right of a licentiate of a society of apothecaries to use the title of "Physician and Surgeon." Our readers are aware that the appellant has unfortunately recently died—an event which, in the absence of legal knowledge, we should have expected to end the appeal. But this does not appear to be the case.

A HERO'S DEATH.

INFORMATION has been received of the death of a ship's medical officer owing to a very noble act. The medical officer in question, whose name was Murphy, was serving in a steamer plying between Canton and Hong-Kong. On the voyage a Chinese child fell out of his mother's arms into the sea which was running very heavily at the time. Dr. Murphy immediately plunged in after the child, but the sea was so heavy that it was two hours before he was picked up and he never recovered from his exertions. His death was deeply deplored by all on board. We are far from thinking that there were not many others on board the steamer who would have been perfectly ready to do the same noble act, but Dr. Murphy was the one to whom the opportunity came and we are proud to think he was a member of the medical profession. From accounts to hand we do not know whether the child was saved or not.

THE PENNSYLVANIA SOCIETY FOR THE PREVENTION OF TUBERCULOSIS.

WE have received the report of the above society for the year ending April 13th, 1898. The society has worked quietly with but one end in view—namely, the education of the community in a knowledge of the true nature of phthisis and of the means now considered necessary to control or conquer this disease. The means by which this end is sought to be obtained are: (1) by the publication and distribution of pamphlets; (2) by constant endeavour to induce those in influential positions to use their earnest efforts to prevent the spread of the disease; and (3) by striving to obtain the requisite conditions whereby those early afflicted may be restored to usefulness, or for those far advanced the safeguarding which will prevent the communication of infection to others. We cordially applaud these objects and would draw attention more especially to the last-named clause—namely, the safeguarding of those phthisical patients far advanced in the disease in order to prevent them becoming dangerous to their fellow-creatures. The problem is a most difficult one. The sputum in such cases is often almost a pure culture of tubercle bacilli. Patients of the poorer classes are in a most deplorable condition; they must either remain at home in ill-ventilated abodes, perhaps with many people living and sleeping in the same room, or go to the workhouse infirmary, which they often refuse to do, although these institutions are most excellently managed and in them every attention is given to the comforts of the patients. Owing to want of space the general hospitals are adverse to admitting them and the special hospitals for diseases of the chest refuse "advanced cases," for they consider that more good can be done by attending to the early cases. The workhouse infirmaries, then, are their only resource. The "homes for the

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dying" are so few that necessarily but few phthisical patients can gain admission. It is therefore of the utmost importance that the friends of the patients should be made acquainted with the infectious nature of the disease and it behoves every medical man attending such cases to see that due precautionary measures against the spread of the malady are taken, the most important of which are the reception and disposal of the sputa and the treatment of linen which may become soiled by them. These are too well known to our readers to need further explanation.

ATAXY OF THE RIGHT ARM.

DR. OLMSTED gives an account in a recent number of the American *Journal of Nervous and Mental Diseases* of the case of a man, twenty-seven years of age, who suddenly developed diplopia associated later with slight failure of vision. There was apparently weakness of the right external rectus but no change in the fundi. About three months after the onset of diplopia he experienced numbness in the thumb and in the index and middle fingers of the right hand, and a pricking sensation in the right lip and side of the face. There was difficulty in writing. There was nothing significant in his family or personal history. He was a well-developed man with normal gait and appearance and with no evidence of disease of abdominal or thoracic viscera. There was slight lateral nystagmus on deviation; the pupils were equal and reacted normally. The right arm became, several months after he was first seen, distinctly ataxic and there was much impairment of muscular sense and later also of sensation to pain, although tactile sensibility remained unimpaired. The left knee-jerk was active, the right very sluggish, and it was also noticed that on rising suddenly from a sitting to a standing posture there was a tendency to go forward and a little to the right. The fields of vision were markedly contracted for both white and red, the contraction being greater in each temporal field. The fundi appeared to be normal. Dr. Olmsted does not venture on a diagnosis but promises to watch the case and report its future progress.

DIPHTHERIA AT GREAT YARMOUTH.

AN action was heard on Dec. 7th and 8th in the Queen's Bench Division, before Mr. Justice Lawrence and a common jury, in which a tailor named Alexander sued a town councillor and a member of the Sanitary Committee of Great Yarmouth, by name Foulsham, for breach of contract in neglecting to supply a sanitary water-closet to a house which plaintiff rented from defendant. It was alleged that in consequence of this neglect two of the plaintiff's children contracted diphtheria and died. In March, 1894, the plaintiff and defendant entered into a verbal agreement whereby the plaintiff agreed to take the house in question and the defendant agreed to provide a water-closet and to fix it properly. The plaintiff entered into possession of the house and the closet was fixed, but according to the plaintiff the work was improperly done. All the Alexander children were attacked by sore throat and two of them died from diphtheria. The defendant denied the allegations and said that if the drains were defective they were rendered so by the carelessness of the plaintiff. The two children who died had attended the Wesleyan school. The plaintiff said that the drain had been constantly flushed with water. Dr. Dudfield expressed the opinion from what he had heard in evidence that the children had caught diphtheria from bad drains. Mr. Hassall, the sanitary inspector, said that until diphtheria broke out no complaint had been made as to the state of the plaintiff's premises. When he examined the place the drain was blocked owing to want of flushing and the house and yard were very dirty. The fall was quite enough. Dr. Bately, the medical officer of health of Great Yarmouth, and Sir Hugh Beevor, M.D. Lond., gave it as their opinion that the two children had contracted diphtheria from school infection. A bricklayer said that he had found the drain upon one occasion stopped with a house-flannel. The jury found for the plaintiff, damages £250. Counsel for defendant asked for a stay of execution on the ground that the amount of damage proved could not amount in the circumstances to the sum awarded by the jury. A stay was accordingly granted.

A MEDICAL ALDERMAN OF THE CITY OF LONDON.

ON Dec. 8th the ratepayers of the Langbourn Ward met to elect a new alderman in the place of Sir Joseph Savory who has succeeded to the position of Alderman of Bridge Without vacant by the death of Sir Stuart Knill. Sir John Lubbock nominated Dr. Thomas Boor Crosby who had been a member of the Court of Common Council for twenty-one years. Mr. Fortescue Flannery, M.P., seconded the nomination, and there being no further nominations Dr. Crosby was declared duly elected, the election being unanimous. On Dr. Crosby rising to accept the position he was received with hearty applause. It is with the greatest pleasure that we join our congratulations to those of Dr. Crosby's brother citizens, for it is no small pleasure to us to be able to chronicle the election of a member of our own profession to the ancient and honourable office of an alderman of the City of London. Thomas Boor Crosby received his medical education at St. Thomas's Hospital and qualified as L.S.A. and M.R.C.S. Eng. in 1852. In 1860 he became F.R.C.S. Eng. by examination and in 1862 graduated as M.D. at the University of St. Andrews. He has been President of the Hunterian Society and chose for his presidential oration in 1871 the subject of "Modern Medicine." He is a Lieutenant for the County of London and is in practice, together with his son, at Fenchurch-street. We have lately seen a medical man Chairman of the County Council and we now look forward to the possibility of a member of the same noble profession reaching an even higher post—namely, that of Lord Mayor of London.

MEDICAL RELIEF.

THE last of the course of eight lectures given at the Portman Rooms by various well-known medical men and others interested in charitable work was delivered by Dr. J. B. Hurry on Dec. 9th, the subject being "The Self-supporting Dispensary and District Nursing Association." Dr. Hurry argued that the average working man cannot afford to pay for the expenses of a long illness out of his ordinary wages. Hospitals and Poor-law relief do not entirely meet the want and besides they tend to pauperise those who should possess self-reliance and the wish to do all for themselves that they can. Medical attendance has, it is well known, been for years organised on a provident basis and in Dr. Hurry's opinion the time has now come for nursing to be provided on the same system. Dr. Hurry's model scheme is shortly as follows. The benefits of the institution can be enjoyed under three conditions. Firstly, those members who were desirous of laying by something against a rainy day could pay in small sums, weekly, we suppose, as an insurance premium in the same way in which ordinary friendly societies are managed. Secondly, persons who have not insured beforehand can become members by paying an entrance fee which should be high enough to make the applicant consider whether it would not be wise in future to become an insuring member by paying in beforehand. Thirdly, cases of emergency can obtain benefit by obtaining a subscriber's letter which should represent a sum equal to

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the fee paid by the second class. Dr. Hurry considers that a sum of from 2*d.* to 3*d.* per week would suffice to keep the institution when once fairly started in a satisfactory condition. We think there is a good deal to be said for Dr. Hurry's scheme with the exception of the clause concerning subscribers' tickets, but we are glad to see that he himself says that this should be omitted if possible. One district nurse in a town at any rate is considered able to look after the nursing required for some 4000 persons. The idea, as we have said, is a good one, and if only pains are taken to prevent abuses creeping in it is one well worth a trial. Of course, all profits after payment of necessary expenses must be divided *pro ratâ* between the medical officers and the nurses, and also there should be some arrangement whereby any medical practitioner in the town or district could be on the staff of the institution if he so wished. With these safeguards we think the organisation of such a scheme would be of great value.

LUIGI GALVANI, the great anatomist of the Bolognese school and better known for his discovery of animal electricity, received on Sunday, Dec. 4th, at Bologna the honour of a centenary celebration—that of his death which took place on Dec. 4th, 1798. The occasion evoked the presence of the leaders of the local medical school and its orator was Signor Erminio Vitta, representing the committee of Italian telegraphists now organising a similar commemoration of Alessandro Volta. The proceedings were highly successful.

AT a meeting of the Childhood Society held at the Parke Museum, Margaret-street, on Dec. 8th Dr. Henry Rayner delivered a lecture on the Early Recognition and Treatment of Mental Condition, in the course of which he dwelt on the many signs of mental disorder in children and advocated the establishment of centres where young imbecile children could be received for a short time under efficient nurses who would be able to demonstrate to their parents how much good might be done by proper care.

A PRIVATE meeting of the National Association for the Prevention of Consumption and other Forms of Tuberculosis will be held at Marlborough House on Dec. 20th, under the presidency of His Royal Highness the Prince of Wales, to further the objects of this association. Lord Salisbury and Lord Rosebery are expected to be present.

THE case of Thomas George Senior, one of the "Peculiar People" who was found guilty in November last of manslaughter, came before the Lord Chief Justice and other learned judges in the Court for the Consideration of Crown Cases Reserved on Saturday last when the conviction was affirmed.

LIEUTENANT WARK, who was convicted last Saturday in Liverpool of procuring a criminal abortion, was sentenced to death, but as all our readers know, has since been reprieved. We defer comments upon the case until we know what sentence the convict is to receive.

MR. VICTOR HORSLEY will address the Manchester Medico-Ethical Association on the business done at the recent meetings of the General Medical Council this afternoon (Friday, Dec. 16th) at 4 P.M. in the Memorial Hall, Albert-square.

PRINCESS LOUISE on Dec. 7th opened two new wards in a wing which at a cost of £18,000 has been added to the West London Hospital.

QUACKS AND ABORTION:

A CRITICAL AND ANALYTICAL INQUIRY.

II.

WITH regard to the scope of our articles upon this subject we wish it to be understood that it does not include questions of what are known as Malthusian doctrines and the limitation of families, and that we do not touch upon these except to point out that the strong temptation to avoid maternity, if possible, does not only affect unmarried women who have to face the shame attaching to unchastity, and is not confined among married women to those who merely regard the bearing of children as irksome and painful and possibly expensive. There are large numbers of married people among the "domestic" class, a class not likely to reason or hesitate in such matters, who hold situations dependent upon their having no families, or "no encumbrances," as their employers term it in advertising for them. It would be out of place here to protest at length against this practice. We allude to it in order to emphasise the point that the incentive to purchase what seems an easy way out of hopeless trouble is very strong with a class not well able to resist it and we repeat what we have already said, that in our opinion quack medicines sold as curing "obstructions, irregularities, and suppressions" and advocated upon the same page as rubber preventives, check pessaries, vaginal injections, and the like must be bought frequently by women who believe that they are buying abortifacients and nothing else.

The men referred to in our first article on this topic as charged with blackmailing women and other offences are at the time of writing awaiting their trial at the Old Bailey; we cannot, therefore, comment on their case except to say that the evidence already given at the police-court serves to illustrate many of the evils which result from a traffic that has long gone on. That these evils must result seemed so probable to us that we undertook this inquiry in order that there might if possible be no question in the matter, while the arrest of these particular persons has rather delayed the publication of our articles than otherwise. In case we may be thought to labour our points and in case it may be suggested that neither the advertisements nor the trade will now continue, we must point out, firstly, that both advertisements and trade have flourished for many years, although most people would have thought that their character was obvious and that the meaning of an invitation sufficiently plain to attract the attention of ignorant young women would equally have arrested that of newspaper proprietors and of the police. Secondly, since the trial of the case of Owen *v.* Greenberg, to which we shall refer later, no important diminution in the number of these advertisements has been noticeable in spite of the attention then called to their character.

We now proceed to give the analysis of certain of the pills and potions which we have purchased in response, primarily or secondarily, to advertisements appearing in the public press. At the same time where they seem germane to this inquiry we print extracts of the correspondence which has taken place with the advertisers. For purposes of convenience in summing up our results and comments we place different letters of the alphabet at the head of each case as we consider it.

A.

The following advertisement has been given already in full last week:—

Ottey's Strong Female Pills quickly and certainly remove all OBSTRUCTIONS arising from any cause whatever, where Steel and Penny Royal fails. Invaluable for married women. By post, under cover, for 14 and 33 stamps, from THOMAS OTTEY, Chemist, 32, Hagley Road, Birmingham.

We have good reason to believe that this particular advertisement has been very widely distributed. Our first letter to the advertiser simply enclosed 1*s.* 2*d.* in payment and asked for a box of strong female pills as advertised, requesting that they might be so packed as to be safe from observation, the purchaser being represented as a servant and unmarried. In reply to this we received the box

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of pills the analysis of which we give below. It was accompanied by two or three printed sheets extolling various specifics of an innocent character as well as the "female pills." A separate sheet is entitled a "check circular" and recommends taking the pills before and after sexual intercourse with a view to preventing conception, while another leaflet deals with them in considerable detail, giving directions for their general use as emmenagogues and for other purposes as well. These directions precede a paragraph, headed in large capitals "For married women," in which the dosage and diet for these patients are more or less elaborately laid down. Then follows the following sentence heavily underlined, "After success the pills should be taken regularly, exactly same as check circular," and attention is called to "Extra Strong pills" for very obstinate cases at 5*s*. 3*d*. and to "The Strongest" at 10*s*. Further quotation or comment, however, on the objects for which the pills are sold is rendered unnecessary by a slip of paper which was wrapped round the box. On this we find in manuscript the following recommendation:—

If these don't do all you wish send for the Extra Strong Pills at 5*s*. 3*d*., or The Strongest at 10*s*. per box, and say how far over. If these don't do it the Strongest will shift anything.

Wishing to test this advertiser's "Strongest" pills and in order that there might be no question in his mind as to the purpose for which they were required, a second letter was written enclosing 10*s*. and stating that the sender believed herself to be four months advanced in pregnancy. If anyone should find in our conduct here matter for unfavourable comment on the ground that we have tempted Mr. Thomas Ottey to sin we have to say that we found in him so willing an accomplice that we can hardly have been his seducers and, secondly, that it is useless to fight a certain sort of stink with rose-water. The pills sent in reply to our second letter were accompanied by similar printed matter to that sent with the first instalment of pills, by printed directions for taking this "Extra Strong" and "Strongest" pills and by another slip of written matter in the same handwriting as the first. We quote without comment a passage from the printed sheet and the whole of the written slip:—

Print: "..... continuing the treatment until the usual signs of success (slime, jelly stuff, streaks of blood either *front* or *with the motions back way*, with strong forcing pains, backache, pains in the limbs, etc.) have been present six or eight days running, when a foot-bath and a dose of Composition Tea or Holland's Gin may sometimes be found useful, though they are not necessary. When the Pills have effected the desired relief, the periods usually commence again, from five to eight weeks afterwards, sometimes earlier. The Pills are certain if taken long enough, and after success should be used regularly by all patients *exactly* same as Check Circular to prevent future trouble, prevention being much better than cure.

Written: "You are at a most difficult time, still the pills will do it if the internal organs are right.

"We don't expect it as courses so try to get heavy forcing also streaks, clots, strings, bits of skin-flesh, all back way 14 days running, then you will be safe."

The following is an analysis of the pills:—

(*a*) Pills sent in response to our first communication and presumably

OTTEY'S STRONG FEMALE PILLS.

Moisture, 17·24 per cent.
Mineral matter, 24·73 per cent., consisting chiefly of iron.
Organic substances, 58·03 per cent.

An aqueous extract of these pills was exceedingly bitter to the taste and of a light yellow colour. From this extract chloroform dissolved out an intensely bitter principle which yielded in a very satisfactory way colour reactions which were absolutely identical with a pure colocynth residue.

There was no evidence of aloes or of any volatile oil.

The directions sent with these pills were as follows:—

For married women. Take three or four Pills for a dose three times a day, using a foot-bath and taking a dose of Composition Tea once or twice a week.

(*b*) Pills sent in response to our second communication and presumably

OTTEY'S "THE STRONGEST" PILLS.

Moisture, 16·60 per cent.
Mineral matter, chiefly iron, 22·16 per cent.
Organic matter, 61·24 per cent.

These pills are substantially the same as (*a*) with the very important difference that they were found to contain savin oil. The quantity of savin oil amounted to not less and probably more than 34 minims per 100 pills. Thus 12 pills contain slightly more than the maximum dose of this irritant oil as laid down in the 1885 Pharmacopœia.

The directions for taking these pills and also the Extra Strong Pills were as follows:—

Commence after breakfast or that part of the day which is found most convenient and least likely to cause purging in the night and take four pills three or four times a day between meals (some can take the doses best between tea time and very late at night), gradually increasing the dose until twenty-four pills are taken daily.

* * * * * * *

Patients who are not able to undergo the proper full treatment should take only twelve or what number they can bear (very many even win by only taking from four to six of the best pills every night at bed-time) of the strongest pills daily until successful, taking three or four pills for a dose every three or four hours.

We conclude our present notice of Mr. Thomas Ottey's wares by quoting from Squire's Companion to the British Pharmacopœia (sixteenth edition) certain references to savin, a scheduled poison which may only be sold under the well-known conditions that the vendor be a pharmaceutical chemist or a medical man and that the purchaser sign a book with his name. Under the head of "medicinal properties" we find there, "A powerful local and general irritant ..... a powerful emmenagogue." Under the head of "Savin Oil" we find the dose set down as one to four minims. In the therapeutical classification of remedies at the end of this well-known book of reference we find "savin" described as one of the substances "which promote the contraction of the uterus and facilitate the expulsion of the contents." Savin is not included in the British Pharmacopœia any longer, but in the edition published in 1885 the maximum dose of the oil is given as four minims.

B.

The advertisement in this case was as follows:—

Married and Single Ladies should send at once for FREE ADVICE and information of Priceless Value. Address in confidence:—PROFESSOR LESLIE, 34, George-street, Chester.

Our first letter simply invited the "free advice and priceless information."

In reply we received sundry printed documents and a letter which we reproduce in full:—

34, George-street,
Chester.

DEAR MADAM,—Yours to Hand in reply I Enclose you my Price Lists etc. should you Require my Remedies I should strongly advice you to try my 10*s*. 6*d*. Mixture although the 4*s*. 6*d*. Packages is very good in slight causes Will you kindly favour me with a few Particulars I should then be Better able to advice you Which Whould be Held in strict Confidence. Awaiting your Reply

Yours Respectfully
J. LESLIE.

To this person we wrote again, enclosing 10*s*. 6*d*. and asking for a bottle of remedy, the writer being represented as probably about three months gone with child. Instead of the bottle ordered we received in reply the following letter which again needs no comment from us:—

George-street,
Chester.

DEAR MADAM,—Yours to Hand with 10*s*. 6*d*. Enclosed I am sorry things are so far gorn I am afraid this wont do it But why not try a Larger Case You know things are far gorn But still not to Late I should recomend you a Larger Cace it Whould Be More Certain that is I could send you four Large Bottles for 30/1/6 thirty-one Shillings and Six Pence it Whould be certain and Cheaper as by Having the four you Whould Be saving the 10/6 Now Just consider this Over as you cannot Let things go much further it Whould be to Late if you Deside to Place your Case in my Hands send the Postal for £1 1*s*. 6*d*. one pound one and sixpence I will then send You four Large Bottles that whould Be More Certain to act Of course if you only wish the 10*s*. 6*d*. Bottle I can send it On at Once But I should strongly recomend the Larger Case Will you at the Same time Kindly imform me when Writing if you are married or single and what age are you etc. so that I can Better understand your Case

I may mention that all Letters sent to me are strictly confedental

Awaiting your Reply
Yours faithfully
J. LESLIE.

P.S. Do you think you could Pay me a visit if so kindly say as I take an interest in all my clients and will endover to Do my Best for you My 10*s*. 6*d*. bottle is very strong But I am afraid the one wont Be enough But four will be certain in any case.

Our reply to this was to the effect that the person requiring the "remedy" was thirty years of age and married. The sum of £1 11*s*. 6*d*. was enclosed and we note that the fact that we inadvertently sent 10*s*. too much is not remarked upon in "Professor" Leslie's reply. Three bottles duly arrived at intervals of a day or two, the first bottle being preceded by another letter, which we reproduce:—

George-street,
Chester.

Dear Madam,—Yours to Hand With Postal Order Enclosed, By Return I am forwarding you a Package of My remedies I Have Made

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the two Bottles into One the remainder of the remedy I shall send you On Tuesday, I am sending them this way so that it will arrive safe to you through the Post and not Look to Bulky as I think it will Be Best Kindly Let me Know when you are well again

Yours Faithfully
J. LESLIE.

P.S. Parcel Tuesday with further Directions.

The last bottle of the "case" was accompanied by a further communication which we reproduce:—

Chester.

DEAR MADAM,—I am sending you the Last of the Case You Should Be Well again By the time you finish this Bottle Will you kindly Let me know How you are So that I can advice you, Can you Write By Return and Just state How you feel, &c.

& Oblige
yours truly
J. LESLIE.

Kindly take Enclosed as Before

Analysis of the FLUID contained in the three Bottles sent by "PROFESSOR" LESLIE.

This is an opalescent, slightly yellow fluid, in appearance not unlike weak tea. It is safe to say that it contains more than 98 per cent. of water. On boiling a strong smell of senna was evolved, and satisfactory evidence of senna was obtained on applying certain chemical tests. Ether extracted a trifling quantity of material which had a characteristic smell unmistakeably like rue. The results of the examination in short suggest that this liquid is senna and rue tea.

The specific gravity of the fluid was 1004, the amount of extractives was 0·31 per cent., of which 0·07 per cent. was due to alkaline carbonate and 0·21 per cent. to organic substances.

On burning the extractive matters a smell exactly like the fumes of a leaf extract when smouldering was evolved.

The liquid after a few days developed a mould after the manner of infusions of the kind indicated by the analysis.

It apparently contained no aloes.

Extracts with chloroform yielded no specific substance—i.e., of the nature of an alkaloid or bitter.

No difference could be traced in the composition of all three specimens except that the third one sent contained peppermint oil. This specimen was therefore more stable than the rest owing to the antiseptic action of the peppermint.

We shall continue next week an analysis of various pills and potions received in the course of this inquiry.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE fortieth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Dec. 12th. The Commissioners present were Lord Llandaff, Sir John Dorington, Sir George Barclay Bruce, Major-General Scott, Mr. de Bock Porter, and Mr. Robert Lewis. Mr. Cripps, Q.C., was also present for a short time. The first part of the sitting was occupied by the cross-examination of Mr. Middleton which was concluded. The only other witness examined was Mr. Walter Hunter who put in a large number of tables giving his estimates of the comparative cost of an increased supply of water from Wales and from the Thames. Mr. Hunter's tables were not prepared on actually the same lines as those of Mr. Middleton. The witness's chief contention was that 100 million gallons a day was a sufficient amount of water to flow over Teddington weir and he gave it as his opinion that no harm would be done if the metropolitan water companies were allowed to take all in excess of that amount.

In answer to the CHAIRMAN Mr. HUNTER said that he was a member of the Institute of Civil Engineers and of the Institute of Mechanical Engineers; that he was the engineering director of the Grand Junction Waterworks Company and joint engineer of the Staines Reservoirs Joint Committee; that he was in practice as a civil engineer in Westminster and was formerly a member of the London County Council when he represented that body on the Lee Conservancy Board. In conjunction with Mr. Alexander Fraser he was the author of a memorandum which was laid before Lord Balfour's Commission. This memorandum recommended the Staines reservoir scheme and received the approval of Sir Frederick Bramwell and of Mr. Thomas Hawkesley. The principle of the scheme which he had recommended was that water from the Thames should be taken when there was an abundant flow and used as occasion required. The witness said that in his opinion it would be less costly to increase the amount of storage capacity and take the water from the Thames than it would be to bring up a new supply from Wales. The question of the relative cost of these two schemes would naturally not be affected whether the undertakings were purchased and put in the hands of a single authority or whether they remained as they are at present in the hands of the water companies. The witness said that in his opinion it was not necessary to allow flood water to run to waste for so long a period as fifteen days; he believed that the suggestion that no water should be taken after a flood for this lengthened period was due to a communication received from the Local Government Board. He did not know whether the communication was made by Major-General Scott or by some other authority on the Local Government Board. The communication was not an official one but was given in a private letter to his colleague Mr. Fraser. In his own opinion the witness said it would be sufficient to avoid taking flood water for a period of two days, but in deference to the general opinion that a longer period was necessary he had taken six days as the basis for his calculations. Sir William Crookes and Professor Dewar (who are employed by the metropolitan water companies) said in their report for November, 1898, that the bacteriological quality of the London water does not depend upon the rejection or the use of flood water but upon the efficiency of filtration. The witness contended that as much water as possible should be taken during periods of flood so that the flow of the river might be equalised. In his opinion water of dark colour like that supplied to Manchester would not be popular in London and he thought that if it were supplied it would give rise to a popular outcry. The CHAIRMAN suggested that the peaty colour of the water caused no harm and Sir JOHN DORINGTON suggested that the colour of water might be a matter of taste. The witness contended that a flow of 200 million gallons of water daily over Teddington weir was not required.

In answer to Major-General SCOTT he declined to give an opinion as to the result a lessened flow would have with regard to the growth of weeds in the bed of the upper river.

Sir JOHN DORINGTON suggested that the river as a pleasure resort would be less pleasant if the river were sluggish, although he admitted that it would be easier in that case to row up stream. The witness contended that a reduction of the flow of the river from 200 million gallons to 100 million gallons daily would make no practical difference with regard to the scour produced by the passage of water in the lower reaches. Since the early part of the present century the scour of the river had been greatly increased, first by the removal of Old London Bridge and of late years by the Thames Embankment. During last summer the flow over Teddington weir had been reduced to 42 million gallons daily but he had not heard of any complaints.

Mr. DE BOCK PORTER asked the witness whether the companies should in his opinion forego the right they had of taking water when by doing so they reduced the flow to a less amount than 100 million gallons daily. The witness replied that he did not think the companies would forego anything.

With regard to the diminished flow of water this summer the CHAIRMAN said that they had it in evidence that penny steamers had gone aground and he gave it as his opinion that that must have been inconvenient for them.

At this point a number of tables were put in although the CHAIRMAN remarked that he thought that they had already enough tables for an ordinary mind.

In answer to the CHAIRMAN the witness said that the estimates which he gave in his tables with regard to the cost of the Welsh scheme were made from analogy and not as the result of a survey. The witness admitted that he had not seen the country and the CHAIRMAN asked him if he were not tendering unreliable material to replace "good material" which had been supplied as the result of actual surveys.

The forty-first sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Dec. 13th. The Commissioners present were Lord Llandaff, Sir John Dorington, Sir George Barclay Bruce, Major-General Scott, Mr. de Bock Porter, and Mr. Robert Lewis. The first part of the sitting was occupied by the cross-examination of Mr. Hunter and the latter part of the evidence of Sir Frederick Bramwell.

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Sir FREDERICK BRAMWELL, in answer to the CHAIRMAN, said that in his opinion neither the London County Council nor a body of experts would manage the London water-supply better than the present companies. He was opposed to compulsory purchase of the water companies' undertakings. In the purchase price an allowance would have to be made for progressive increase of dividends. In the case of the West Middlesex Company the witness admitted that of course there could be no increase as the company was already paying at the full maximum amount allowed by Parliament. He did not think that the values of the undertakings could be properly determined on the basis of the present dividends in those cases in which companies were not paying the full amount allowed.

In answer to the CHAIRMAN he admitted that in the case of a company such, for example, as the East London in which it would be necessary to increase the amount of storage reservoirs and in which therefore an unremunerative outlay must necessarily be incurred—such a fact would depreciate the value of the undertaking. The witness, however, contended that if it appeared that a company would in course of time extend its business he thought that the possible future dividends should be taken into account.

The CHAIRMAN suggested that surely in the case, for example, of a railway which was purchased it would not be fair for the company to say that they might be able to extend the line in different directions and that this would bring in a large increase of dividends and that the present undertaking was worth more on that account. The witness thought that an arbitrator would have to listen to such a suggestion, but he was not prepared to say what importance he would attach to it.

The CHAIRMAN suggested that there appeared to be an opinion that the East London Company had not displayed due foresight in providing a sufficient storage amount of reservoirs. The witness pointed out that Professor Stuart in the House of Commons had violently opposed the scheme for the increase of the storage reservoirs and that he had in making that speech represented himself as speaking the voice of the London County Council. One learned counsel proposed to read the speech but the Commissioners did not wish to hear it. The witness thought that the provisions of the sinking clause first introduced by Lord Claud Hamilton and which was now always introduced into Bills for raising capital became rather unfair to the companies when the money was raised rather for the improvement of the undertakings than for the benefit of the shareholders of the company.

Towards the end of the sitting some questions were asked with regard to control and the witness said that in his opinion the water examiner, Major-General Scott, ought to be allowed to visit the companies' works as a matter of right and not simply as a matter of courtesy. The witness, however, thought that officials of the County Council, with the exception possibly of their medical officer of health, ought not to be allowed to overrun the private works of the companies. In support of this opinion he related a case of a very filthy representative of a local authority in the country who was sent to take a specimen of the water and he thought that such a person would not be likely to have the necessary skill to take a sample of water. This incident, the witness appeared to think, bore on the question of visitations of the companies' works by county councillors. The witness said that in his opinion the Acts of 1847, 1852, 1871, and 1897 afforded ample protection to the water consumers of London.

The CHAIRMAN remarked that it had unfortunately been strongly borne in upon them that no one apparently paid any attention to ensure the protection which these various enactments were intended to supply to the water consumers of London.

The next sitting of the Royal Commissioners will take place on Monday next, Dec. 19th, and the CHAIRMAN intimated that another sitting would take place on the following day if they could ensure a continuous supply of witnesses.

ELECTRIC LIGHTING AT CARDIFF.—The arc lamps in St. Mary-street and also the incandescent lights in the town-hall went out recently at a time when the stipendiary magistrate was trying a case, the coroner's court was sitting, and the municipal offices were busy. The police-court case was adjourned, but the coroner and jury resorted to candles until the electric light was again available.

THE PROPOSED SCHOOL OF TROPICAL MEDICINE.

THE following letter has been addressed to the *Times* and should go far to instruct the general public, as we have taken pains to inform the medical profession, upon the merits of the scheme which has been put forward for the foundation of a school of tropical medicine:—

To the Editor of the TIMES.

SIR,—The proposed scheme for affording additional instruction in tropical medicine has attracted attention to a subject with which the medical profession entirely sympathise. That physicians and surgeons who propose to practise in hot climates should have an opportunity afforded them for the special study of tropical diseases is no doubt most desirable not only on the ground of humanity, but also as a duty to British subjects resident in the tropics. Having regard, however, to the scheme as detailed in the Colonial Office circular, dated the 9th ult., there are several points bearing on its practicability and prospect of success which require careful consideration before it is finally adopted.

The scheme is very costly. It is estimated that the initial outlay will be £16,460 and that the annual cost of maintenance will be £3000. Towards the first item the Colonial Office contributes £3500, and it is estimated that the Colonial Medical Service candidates will contribute £1000 to the latter. This leaves a capital sum of £12,960 and £2000 per annum to be raised from the public. Fees from students would partly defray the yearly expenditure, but it is doubtful whether such sums can be procured from either or both sources.

A memorandum and circular are now being circulated by the Seamen's Hospital Society which state that the school is intended for medical graduates only. Of these candidates for the Colonial Medical Service will form a part and it is anticipated that missionary societies, trading corporations, and private practitioners connected with the tropics will avail themselves of the opportunities offered by the proposed school. The number of students expected to be forthcoming is not stated, and it is well to consider whether additional facilities to those already existing are required before incurring the contemplated heavy expenditure.

The candidates for the Colonial Medical Service could be instructed at Netley where the Royal Victoria Hospital affords more material for clinical instruction than can be obtained anywhere else and has a staff of teachers practically acquainted with tropical diseases as well as an excellent bacteriological laboratory. There seems to be no reason why these candidates should not go through a four months' residential course at Netley and obtain the advantages which its hospital and school now afford to candidates for the Army and Indian Medical Services. It appears to us that candidates for the Colonial Medical Service might fairly be required to pass through this course as a qualification for appointment.

Medical men connected with missionary societies and trading corporations, along with those who in a private capacity propose to practice in the tropics, have open to them for the special study of these diseases the London and provincial schools of medicine where the subject is already taught. Many of these are provided with bacteriological laboratories and all that is required for academic teaching. For clinical work the material afforded by the *Dreadnought* and its Branch (the former is much more accessible) is available for those residing in London, while those resident in the provinces have valuable opportunities in this respect at such ports as Liverpool, Newcastle, Bristol, and other places. It must not be overlooked that the diseases of hot climates are included in the lectures on the practice of medicine given at every medical college and school in the kingdom. It appears therefore that sufficient means of instruction already exist and the large initial outlay and costly maintenance of the proposed school and hospital are consequently uncalled for.

In the published correspondence between the honorary medical staff and the committee of management of the *Dreadnought* Hospital it is stated in Mr. Michelli's letter, dated July 14th, that "the committee will propose, as far as possible to concentrate cases of tropical disease at the teaching centre." We are informed that

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this has been already done to some extent, for the Albert Docks branch has detained patients who were originally intended to be passed on to Greenwich and the parent institution has therefore been depleted in order to feed its branch. This seems to be very undesirable in the case of the *Dreadnought* with its past traditions, and the more so because the cases of tropical disease in that hospital have been used already for teaching purposes in connexion with one of the London schools.

It is, we think, unfortunate that the Secretary of State for the Colonies did not consult such an authority as the Royal College of Physicians as to the best method of giving effect to the scheme before it was made public, and it is much to be regretted that the Committee of Management of the Seamen's Hospital Society neglected to consult their senior visiting medical staff on a matter so seriously affecting themselves and the usefulness of the hospital at Greenwich.

We are, Sir, your obedient servants,

WM. ROBERTS, M.D., F.R.S.
DYCE DUCKWORTH, M.D., LL.D.,
Physician and Lecturer on Medicine, St. Bartholomew's Hospital.
J. FAYRER, M.D., F.R.S.,
Consulting Physician, Charing-cross Hospital.
WILLIAM M. ORD., M.D. Lond., F.R.C.P.,
Consulting Physician to St. Thomas's Hospital.
W. S. CHURCH, M.D., F.R.C.P.,
Senior Physician, St. Bartholomew's Hospital.
W. R. GOWERS, M.D., F.R.S.,
Consulting Physician, University College Hospital.
I. BURNEY YEO, M.D., F.R.C.P.,
Senior Physician to King's College Hospital and Professor of Medicine in King's College.
FREDK. T. ROBERTS, M.D., F.R.C.P.,
Professor of Medicine at University College; Physician to University Hospital.
A. ERNEST SANSOM, M.D., F.R.C.P.,
Physician to the London Hospital and Lecturer on Clinical Medicine to the London Hospital.
THOMAS BUZZARD, M.D., F.R.C.P.,
Physician to the National Hospital for the Paralysed and Epileptic.
W. B. CHEADLE, M.D., F.R.C.P.,
Senior Physician to St. Mary's Hospital and Lecturer on Clinical Medicine.
THOS. WHIPHAM, M.D., F.R.C.P.,
Physician to St. George's Hospital.
W. CAYLEY, M.D., F.R.C.P.,
Physician to the Middlesex Hospital.
G. FIELD BLANDFORD, M.D., F.R.C.P.,
Lecturer on Psychological Medicine, St. George's Hospital.
F. DE HAVILLAND HALL, M.D., F.R.C.P.,
Physician to the Westminster Hospital.

Dec. 14th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Dec. 8th, the President, Sir WILLIAM MACCORMAC, Bart., being in the chair.

A report was read from the Board of Examiners in Dental Surgery recommending the Council to express their approval of the recommendations of the General Medical Council as to the course of study and examination for Licences in Dental Surgery, as the recommendations appeared to be in all important particulars similar to the regulations of the College. The Board did not advise the issue of schedules defining the range of examination in anatomy and surgery, as in their opinion it would probably lead to a system of cramming. The report was adopted.

The Council also adopted a report from the Committee of Management. It contained the synopsis of practical pharmacy based on the new Pharmacopœia and intended to come into force on May 1st, 1899, it recommended that the examination in materia medica and pharmacy applicable only to candidates under the old regulations should be conducted in future in *viva voce* only on account of the small number of candidates now eligible under those regulations; and the committee requested that in consequence of a desire expressed by the teachers and examiners in physiology that there should be an examination in practical physiology they might be empowered to consider the question, to take the opinions of the several medical schools, and to report to the College on a future occasion.

The Council having been informed that the name of a Member of the College had been erased from the Medical Register called upon the Member to show cause why he should not be removed from being a Member of the College.

A letter was read from Sir William Turner, President of the General Medical Council, enclosing a copy of two clauses drafted with the object of amending the Medical Acts so as to prevent persons whose names have been erased from the Medical Register for a criminal offence or for professional misconduct from using any title, diploma, or degree so long as the erasure remains in force, and inquiring whether such clauses are approved by the Council of the College. The matter was referred to the Discipline Committee.

The PRESIDENT reported the proceedings at the annual meeting of Fellows and Members and stated that in addition to 15 members of the Council there were present 17 Fellows and 75 Members.

The first resolution which was carried at that meeting and which requested the Council to attempt to remedy the notorious abuses existing in connexion with medical practice, was referred to the Discipline Committee.

The second resolution which requested that the Members should be allowed to have some share in the election of the governing body was considered and it was resolved that "The Council do not consider it either necessary or desirable to reopen the question of the representation of Members on the Council after the large share of attention which the Council have of late given to the matter and after the result of the recent canvass of the Fellows."

The third resolution which requested the Council to express its disapproval of Fellows and Members of the College acting as the paid officials of any association which employs professional advertisements was referred to the Discipline Committee.

The fourth resolution which referred to the granting to the Members permission to wear a gown was referred to the Committee for General Purposes.

A letter was read from the Board of Trade stating that owing to the recent revision of the British Pharmacopœia the medical scales issued by them for merchant and passenger ships will require to be amended, and asking the Council to nominate two representatives, as they did in 1888, to serve on a committee to be appointed for the purpose of revising the scales.

Mr. Alfred Willett and Mr. Richardson Cross were nominated as representatives.

The SECRETARY laid before the Council an invitation from the Imperial Military School of Medicine at St. Petersburg asking the College to send representatives to the celebration of its centenary at St. Petersburg on Dec. 18th, 1898. Two members were nominated.

The PRESIDENT reported the delivery of the Bradshaw Lecture by Mr. T. Pickering Pick on Dec. 7th, the subject being "The Union of Wounds." The best thanks of the Council were given to Mr. Pick for his lecture and he was requested to publish it.

A letter was read from Mr. THOMAS BRYANT reporting the proceedings of the General Medical Council and he received the thanks of the Council for his services as the representative of the College.

Mr. HENRY MORRIS moved:—

That a committee be appointed to consider and report whether any change, and if so what change, should be made (to the advantage both of the College and of the candidates) in the conditions under which candidates are admitted to the examinations for the Fellowship of the College.

A committee for this purpose was appointed.

PUBLIC VACCINATORS AND THE NEW VACCINATION ACT.

PUBLIC VACCINATORS AT UPPINGHAM.

THE public vaccinators of the Uppingham Union held a meeting at the house of the senior practitioner on Dec. 7th, and having agreed upon the terms which they considered satisfactory under the provisions of the new Vaccination Act

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met the guardians and obtained the following fees:—General Order Vaccination Acts 1867–1898, Amended Regulations: Page 14, Section 1, 2*s.* 6*d.*; Page 15, Section 2, 10*s.*; Section 3, 5*s.*; and in the event of any child having been successfully vaccinated and requiring, as the result of such vaccination, further attendance after the visit of inspection a fee of 2*s.* 6*d.* for each visit, to include medicine. The public vaccinators to pay all postage. The guardians met their officials in a business-like manner and gave a very courteous hearing to their side of the case.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE annual general meeting of constituents was held on Monday, Dec. 12th, at the Mansion House, when the Right Hon. Sir JOHN VOCE MOORE, Lord Mayor, President and Treasurer of the Fund, presided.

The Bishop of STEPNEY proposed the adoption of the annual report (details of which will be found in THE LANCET of Dec. 3rd, p. 1501). In doing so he said that everyone felt that this Fund was one of the most business-like funds that we have in London. From his experience it was also the one which appealed most to the working men of London. Over £40,000 had been collected this year but he hoped that everyone would strive to do their best to increase that sum next year.

The Rev. W. H. HARWOOD, in seconding the motion, said that in making his appeal to his congregation he had followed the example of Canon Fleming and had called attention to the collection previously to its being actually made.

The report having been adopted, Mr. RICHARD B. MARTIN, M.P., moved that the Laws of the Constitution be continued, and took occasion to appeal to ministers of all denominations not to allow any part of the collections made on Hospital Sunday to be put aside for other purposes.

Sir EDMUND HAY CURRIE seconded the motion which was subsequently adopted. Some discussion, however, took place, Mr. FREDERICK NORTON asking that the proportion of the collection given to dispensaries should be increased. The Prince of Wales's Fund did not include dispensaries in its distribution, and consequently the hospitals received awards from both funds and the dispensaries from only one.

The Earl of STAMFORD, referring to the appointment of an inquiry officer in the out-patient department of hospitals, suggested that the inquiry officer should not only weed out those applicants who were not entitled to hospital charity but should, he said, be qualified to see that patients if they required treatment got it elsewhere.

Dr. GLOVER expressed his sympathy with the remarks of Mr. Norton. He had himself noticed the very attenuated amount given to dispensaries, and although he did not think it desirable to propose an amendment he thought the matter should be taken notice of by the Council.

Ex-Sheriff COOPER and the Rev. Prebendary WHITTINGTON respectively proposed and seconded a motion to the effect—

That the Council for the year 1898 be re-elected for the year 1899 with the Right Honourable the Earl of Aberdeen, Lord Lister, Sir Horatio D. Davies, K.C.M.G., M.P., and the Rev. Walford Green to fill vacancies.

This was carried and

Canon FLEMING proposed:—

That June 11th be fixed for Hospital Sunday of 1899 and that the cordial coöperation of all ministers of religion within the metropolitan area be again invited in the usual way.

He said he thought the Fund was educating more and more the public of all classes to see the necessity for and the needs of hospitals. He hoped that the day was far off when voluntary philanthropy would be superseded by State aid.

The Rev. Canon GRAHAM seconded the proposal which was carried.

Mr. COHEN suggested that much good might result if the Lord Mayor sent a letter to the proprietors of large hotels some time before Hospital Sunday asking them to inform their patrons of the date of Hospital Sunday and to make arrangements if possible for collections in such hotels.

The Rev. Dr. HODSON said that the collection would greatly benefit if ministers sent out post-cards to their congregations before the actual day of collection.

The Right Hon. W. LIDDERDALE proposed a vote of thanks to the Lord Mayor, which was seconded by the Rev. Prebendary KITTO and carried with acclamation.

In his reply the LORD MAYOR said he trusted that the highest hopes of the well-wishers of the Metropolitan Hospital Sunday Fund would be realised in his year of office and that he would do his utmost for the good of the Fund.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Sanitary Administration in the County Borough of West Bromwich, by Dr. G. S. BUCHANAN.[1]—This report might be fittingly entitled "West Bromwich revisited," since it relates to a second inspection of the district made by Dr. Buchanan with a view to ascertain what steps have been taken to carry out the recommendations accompanying his first report in February, 1896, relative to the condition of the borough and the prevalence of enteric fever therein. As is not unusual in the case of insanitary districts, such as West Bromwich, the town council, in response to communications addressed to them by the Local Government Board as to what action they were taking in reference to the inspector's report, appear to have written evasive and unsatisfactory letters. The Board therefore directed Dr. Buchanan to revisit West Bromwich and to report as to the action of the town council. The district in question is one of those in which the inhabitants have a custom of storing up their excrement and house refuse in capacious covered privy-middens sunk below the ground level and so constructed as to allow the escape of their liquid contents. These middens are often dangerously situated near doors and windows and it is hardly to be wondered that enteric fever should from time to time prevail. The action of the town council prior to 1896 had been half-hearted and unsatisfactory and Dr. Buchanan found it necessary to insist that more attention should be bestowed on almost every sanitary subject other than water-supply and main sewerage. It cannot be said that in the period of nearly three years which has elapsed between the inspector's two visits that the town council have made astounding progress, but they have paid attention to insanitary premises and have taken some action as to houses unfit for habitation. So, too, in yard-paving and drainage advance has been made, though makeshift work seems to have been well to the front in this particular; and in respect to middens and privies the town council do not seem to have received much encouragement from the stipendiary magistrate whose decisions are apparently somewhat retrograde in tendency. It is unsatisfactory to learn that the cowsheds are neglected and that certain of the milkshops are in a far from desirable condition. Dr. Buchanan has certainly not dealt hardly with the very obvious shortcomings of the West Bromwich Town Council and it is to be hoped that they will show their appreciation of his consideration by carrying out his recommendations and by proving themselves more worthy of the dignity of a county borough.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6691 births and 3835 deaths were registered during the week ending Dec. 10th. The annual rate of mortality in these towns, which had increased in the three preceding weeks from 17·0 to 19·1 per 1000, declined again last week to 17·8. In London the rate was 16·7 per 1000, while it averaged 18·5 in the thirty-two provincial towns. The lowest death-rates in these towns were 12·4 in Derby, 12·6 in Croydon, 13·2 in Huddersfield, and 13·6 in West Ham; the highest rates were 22·0 in

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 1*d.*

[2] THE LANCET, May 30th, 1896.

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Liverpool, 23·0 in Swansea, 23·2 in Sunderland and 27·2 in Bolton. The 3835 deaths in these towns included 399 which were referred to the principal zymotic diseases, against 365 and 426 in the two preceding weeks; of these 32 resulted from diphtheria, 84 from measles, 75 from "fever" (principally enteric), 59 from whooping-cough, 56 from diarrhœa, 32 from scarlet fever, and 1 from small-pox. No death from any of these diseases were recorded last week in Plymouth or in Wolverhampton; in the other towns they caused the lowest death-rates in Croydon, Bradford, and Derby, and the highest rates in Portsmouth, Swansea, Nottingham, Bolton, and Preston. The greatest mortality from measles occurred in West Ham, Nottingham, Manchester, and Bolton; from whooping-cough in Bristol, Swansea and Preston; and from "fever" in Bolton and Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 92 deaths from diphtheria included 43 in London, 9 in Leeds, 7 in West Ham, 5 in Swansea, 5 in Sheffield, 4 in Portsmouth, and 4 in Liverpool. One fatal case of small-pox was registered in Liverpool, but not one in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 3090, against 3259, 3162, and 3142 on the three preceding Saturdays; 276 new cases were admitted during the week, against 319, 234, and 264 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 280 and 340 in the two preceding weeks, declined again last week to 295, and were 139 below the corrected average. The causes of 33, or 0·7 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Salford, Bradford, Leeds, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·7 and 21·0 per 1000 in the two preceding weeks, was again 21·0 during the week ending Dec. 10th, and was 3·2 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Leith, and 14·5 in Paisley, to 23·0 in Aberdeen and in Greenock, and 24·5 in Edinburgh. The 633 deaths in these towns included 18 which were referred to diarrhœa, 16 to whooping-cough, 12 to measles, 11 to "fever," 10 to scarlet fever, and 4 to diphtheria. In all, 71 deaths resulted from these principal zymotic diseases, against 73 and 83 in the two preceding weeks. These 71 deaths were equal to an annual rate of 2·4 per 1000, which was 0·5 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had increased from 9 to 21 in the three preceding weeks, declined again to 16 last week, of which 8 occurred in Glasgow and 3 in Edinburgh. The 12 deaths from measles showed a decline of 7 from the number in the preceding week, and included 5 in Glasgow and 3 in Edinburgh. The deaths referred to different forms of "fever," which had declined from 16 to 10 in the four preceding weeks, were 11 last week, of which 6 occurred in Glasgow, 2 in Edinburgh, and 2 in Paisley. The 10 fatal cases of scarlet fever showed a further increase upon recent weekly numbers, and included 3 in Glasgow, 3 in Greenock, and 2 in Edinburgh. Of the 4 deaths from diphtheria 2 were registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 128 and 147 in the two preceding weeks, further rose to 163 last week, and were 34 above the number in the corresponding period of last year. The causes of 30, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the three preceding weeks from 27·7 to 31·6 per 1000, declined again to 25·4 during the week ending Dec. 10th. During the past four weeks the rate of mortality in the city has averaged 28·9 per 1000, the rate during the same period being 17·1 in London and 22·3 in Edinburgh. The 170 deaths registered in Dublin during the week under notice showed a decline of 42 from the number in the preceding week, and included 8 which were referred to the principal zymotic diseases, against 17 and 11 in the two preceding weeks; of these, 4 resulted from "fever," 3 from whooping-cough, and 1 from diarrhœa, but not one either from small-pox, measles, scarlet fever, or diphtheria. These 8 deaths were equal to an annual rate of 1·2 per 1000, the zymotic death-rate during the same period being 1·7 in London and 2·6 in Edinburgh. The deaths referred to different forms of "fever," which had been two in each of the two preceding weeks, rose to 4 last week. The fatal cases of whooping-cough, which had been 5 and 3 in the two preceding weeks, were again 3 last week. The 170 deaths in Dublin last week included 40 of infants under one year of age and 39 of persons aged upwards of sixty years; the deaths of infants showed a further increase, while those of elderly persons showed a further decline from recent weekly numbers. Seven inquest cases and 8 deaths from violence were registered; and 68, or more than a third, of the deaths occurred in public institutions. The causes of 16, or nearly 4 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1898.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during November in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 10·8 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 6·5, 8·9, and 11·5 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Kensington, St. George Hanover-square, St. James Westminster, St. Martin-in-the-Fields, Strand, and St. Olave Southwark; while they showed the largest excess in Fulham, St. Luke, St. Saviour Southwark, Bermondsey, Woolwich, and Plumstead. Only one case of small-pox was notified in London during November (in Battersea sanitary area), and no small-pox patients were under treatment last month in any of the Metropolitan Asylum Hospitals. The prevalence of scarlet fever in London showed a decline from that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Hammersmith, Fulham, St. Pancras, Islington, Stoke Newington, St. Luke, Greenwich, and Plumstead. The Metropolitan Asylum Hospitals contained 3090 scarlet fever patients at the end of November, against 2207, 2425, and 2977 at the end of the three preceding months; the weekly admissions averaged 288, against 202, 270, and 350 in the three preceding months. The prevalence of diphtheria in London during November almost corresponded with that recorded in the preceding month; this disease was proportionally most prevalent in Holborn, St. Luke, St. Saviour Southwark, Newington, Bermondsey, Battersea, Lewisham, and Woolwich sanitary areas. There were 1269 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of November, against 865, 1024, and 1182 at the end of the three preceding months; the weekly admissions averaged 172, against 107, 163, and 172 in the three preceding months. The prevalence of enteric fever in London showed a further increase upon that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in Marylebone, St. Pancras, St. Giles, City of London, Shoreditch, and St. George-in-the-East. The Metropolitan Asylum Hospitals contained 286 enteric fever patients at the end of November, against 118, 155, and 223 at the end of the three preceding months; the weekly admissions averaged 45, against 21, 28, and 41 in the three preceding months. Erysipelas was proportionally most prevalent in St. Giles, St. Luke, Bethnal Green, Whitechapel, St-George-in-the-East, and Mile End Old Town sanitary areas. The 40 cases of puerperal fever notified in London during November considerably exceeded the number recorded in any recent month, and included 4 in Camberwell, 3 in Hackney, 3 in Lambeth, and 3 in Greenwich sanitary areas.

The mortality statistics in the table relate to the deaths of

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ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1898.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1898.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	1	1944	1392	4	647	5	40	636	—	4669	10·8	—	110	58	182	81	—	126	—	90	647	1·5	7049	16·3	133
West Districts.																										
Paddington	127,480	—	31	27	—	16	1	—	14	—	89	7·3	—	—	—	5	3	—	6	—	2	16	1·3	185	15·1	144
Kensington	172,174	—	39	16	2	26	1	—	19	—	103	6·2	—	1	2	1	3	—	3	—	2	12	0·7	215	13·0	114
Hammersmith	107,370	—	63	20	—	17	—	—	11	—	111	10·8	—	1	6	4	2	—	4	—	1	18	1·7	162	15·7	147
Fulham	125,275	—	116	44	—	19	—	2	15	—	196	16·3	—	—	7	3	2	—	7	—	5	24	2·0	180	15·0	138
Chelsea	96,713	—	34	24	—	14	—	—	10	—	82	8·8	—	3	3	2	—	—	2	—	3	13	1·4	142	15·3	158
St. George Hanover-square	80,608	—	13	13	—	6	—	—	2	—	34	4·4	—	—	—	1	—	—	—	—	2	3	0·4	101	13·1	106
Westminster	52,574	—	5	15	—	9	—	1	11	—	41	8·1	—	—	1	—	—	—	1	—	1	3	0·6	93	18·5	118
St. James Westminster	22,200	—	2	4	—	2	—	—	4	—	12	5·6	—	—	—	1	—	—	—	—	—	1	0·5	43	20·2	266
North Districts.																										
Marylebone	140,483	—	28	22	—	27	—	2	17	—	96	7·1	—	—	—	4	1	—	5	—	5	15	1·1	222	16·5	107
Hampstead	78,755	—	18	12	—	15	—	—	3	—	48	6·4	—	—	—	—	—	—	1	—	2	3	0·4	69	9·1	89
St. Pancras	243,416	—	173	79	—	48	—	2	45	—	347	14·9	—	7	5	19	—	—	10	—	8	49	2·1	403	17·3	146
Islington	344,616	—	196	25	1	44	1	2	28	—	297	9·0	—	8	2	2	13	—	6	—	2	33	1·0	482	14·6	134
Stoke Newington	34,660	—	22	12	—	6	—	1	6	—	47	14·1	—	—	—	1	—	—	—	—	1	2	0·6	40	12·0	66
Hackney	219,630	—	97	76	—	37	1	3	33	—	247	11·7	—	3	1	7	2	—	11	—	2	26	1·2	305	14·5	125
Central Districts.																										
St. Giles	37,519	—	16	3	—	7	—	—	9	—	35	9·7	—	—	—	1	—	—	2	—	—	3	0·8	61	17·0	69
St. Martin-in-the-Fields	12,424	—	1	1	—	1	—	—	—	—	3	2·5	—	—	—	—	—	—	—	—	1	1	0·8	26	21·8	333
Strand	23,284	—	8	3	—	2	—	—	—	—	13	5·8	—	—	—	—	—	—	1	—	—	1	0·4	42	18·8	167
Holborn	30,056	—	15	21	—	1	—	1	5	—	43	14·9	—	—	—	2	3	—	—	—	2	7	2·4	58	20·1	184
Clerkenwell	66,120	—	31	18	—	7	—	2	8	—	66	10·4	—	12	1	—	—	—	2	—	2	17	2·7	140	22·1	173
St. Luke	41,076	—	29	27	—	7	—	1	13	—	77	19·6	—	7	6	5	—	—	1	—	—	19	4·8	107	27·2	116
City of London	29,088	—	7	10	—	6	—	—	2	—	25	9·0	—	—	—	5	—	—	3	—	—	8	2·9	68	24·4	161
East Districts.																										
Shoreditch	121,485	—	41	42	—	24	—	2	17	—	126	10·8	—	15	1	6	—	—	3	—	4	29	2·5	216	18·5	138
Bethnal Green	129,027	—	52	44	—	18	—	1	39	—	154	12·5	—	17	2	10	—	—	5	—	7	41	3·3	261	21·1	165
Whitechapel	80,559	—	29	19	—	5	—	1	28	—	82	10·6	—	9	1	—	1	—	1	—	2	14	1·8	160	20·7	149
St. George-in-the-East	48,241	—	14	8	—	12	—	—	11	—	45	9·7	—	3	—	2	4	—	2	—	—	11	2·4	89	19·2	151
Limehouse	58,661	—	15	15	—	11	—	—	11	—	52	9·2	—	4	1	1	2	—	4	—	2	14	2·5	109	19·4	99
Mile End Old Town	112,528	—	36	25	—	16	—	2	24	—	103	9·5	—	5	1	9	—	—	2	—	4	21	1·9	218	20·2	105
Poplar	170,220	—	50	37	—	29	—	—	32	—	148	9·1	—	3	2	3	—	—	8	—	5	21	1·3	298	18·3	151
South Districts.																										
St. Saviour Southwark	24,562	—	7	28	—	3	—	—	4	—	42	17·8	—	3	—	3	—	—	2	—	—	8	3·4	43	18·3	200
St. George Southwark	60,466	—	27	26	1	8	—	—	9	—	71	12·2	—	—	1	2	2	—	—	—	3	8	1·4	139	24·0	186
Newington	123,183	—	59	72	—	18	—	2	19	—	170	14·4	—	4	—	9	10	—	2	—	3	28	2·4	242	20·5	133
St. Olave Southwark	11,288	—	2	—	—	2	—	—	—	—	4	3·7	—	—	—	—	1	—	—	—	—	1	0·9	21	19·4	179
Bermondsey	85,738	—	44	61	—	13	—	—	14	—	132	16·1	—	1	1	10	4	—	2	—	2	20	2·4	173	21·0	173
Rotherhithe	40,849	—	9	4	—	4	—	1	8	—	26	6·6	—	—	—	1	1	—	1	—	—	3	0·8	71	18·1	202
Lambeth	304,073	—	114	119	—	41	—	3	42	—	319	10·9	—	—	4	19	5	—	6	—	6	40	1·4	443	15·2	112
Battersea	171,921	1	58	103	—	19	—	1	25	—	207	12·6	—	—	1	12	2	—	3	—	1	19	1·2	232	14·1	119
Wandsworth	202,526	—	84	71	—	23	1	2	25	—	206	10·6	—	1	1	7	11	—	2	—	2	24	1·2	223	11·5	95
Camberwell	261,189	—	133	75	—	25	—	4	30	—	267	10·7	—	—	3	10	4	—	7	—	5	29	1·2	372	14·9	136
Greenwich	180,441	—	117	65	—	26	—	3	24	—	235	13·6	—	1	3	4	2	—	4	—	2	16	0·9	308	17·8	148
Lewisham (excluding Penge)	88,562	—	10	42	—	11	—	1	6	—	70	8·2	—	1	—	2	—	—	2	—	—	5	0·6	104	12·2	89
Woolwich...	41,478	—	15	35	—	8	—	—	3	—	61	15·3	—	1	1	7	2	—	4	—	—	15	3·8	71	17·8	90
Lee	39,717	—	17	17	—	5	—	—	4	—	43	11·3	—	—	1	2	—	—	—	—	—	3	0·8	44	11·6	76
Plumstead	62,531	—	67	10	—	7	—	—	6	—	90	15·0	—	—	—	—	1	—	1	—	1	3	0·5	68	11·3	139
Port of London	—	—	—	2	—	2	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 38 cases of membranous croup.

† Including deaths from membranous croup.

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persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, Dec. 3rd, the deaths of 7049 persons belonging to London were registered, equal to an annual rate of 16·3 per 1000, against 20·7, 21·0, and 17·3 in the three preceding months. The lowest death-rates in the various sanitary areas were 9·1 in Hampstead, 11·3 in Plumstead, 11·5 in Wandsworth, 11·6 in Lee, 12·0 in Stoke Newington, and 12·2 in Lewisham; the highest rates were 21·0 in Bermondsey, 21·1 in Bethnal Green, 21·8 in St. Martin-in-the-Fields, 22·1 in Clerkenwell, 24·0 in St. George Southwark, 24·4 in London City, and 27·2 in St. Luke. During the five weeks of November 647 deaths were referred to the principal zymotic diseases in London; of these, 110 resulted from measles, 58 from scarlet fever, 182 from diphtheria, 81 from whooping-cough, 126 from enteric fever, and 90 from diarrhœa. These 647 deaths were equal to an annual rate of 1·5 per 1000; among the various sanitary areas the lowest zymotic death-rates were recorded in St. George Hanover-square, Westminster, St. James Westminster, Hampstead, Stoke Newington, Strand, Lewisham, and Plumstead; and the highest rates in Clerkenwell, St. Luke, City of London, Bethnal Green, St. Saviour Southwark, and Woolwich. The 110 fatal cases of measles were as many as 182 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Clerkenwell, St. Luke, Shoreditch, Bethnal Green, Whitechapel, and St. Saviour Southwark sanitary areas. The 58 deaths referred to scarlet fever were only half the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Hammersmith, Fulham, and St. Luke. The 182 fatal cases of diphtheria were 73 below the corrected average number; this disease showed the highest proportional fatality in St. Pancras, St. Luke, City of London, Bethnal-green, Mile End Old Town, St. Saviour Southwark, Bermondsey, and Woolwich sanitary areas. The 81 deaths from whooping-cough were 56 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Holborn, St. George-in-the East, Newington, and Wandsworth. The 126 deaths referred to enteric fever were 41 above the corrected average number; this disease showed the highest proportional fatality in Fulham, City of London, Limehouse, St. Saviour Southwark, and Woolwich sanitary areas. The 90 fatal cases of diarrhœa were slightly below the corrected average number. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was more than 33 per cent. below the average.

Infant mortality in London during November, measured by the proportion of deaths of children under one year of age to registered births, was equal to 133 per 1000. Among the various sanitary areas the lowest rates of infant mortality were recorded in Hampstead, Stoke Newington, St. Giles, Lewisham, Woolwich, and Lee; and the highest rates in St. James Westminster, St. Martin-in-the-Fields, Holborn, St. Saviour Southwark, St. Olave Southwark, St. George Southwark, and Rotherhithe.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEONS Edward G. Swan and John Otley have been placed on the Retired List.

The following appointments are announced:—Fleet-Surgeon Standish T. O'Grady to Yarmouth Hospital. Staff-Surgeon Herbert P. Shuttleworth to the *Cambridge* temporary. Surgeons: William H. Pope to the *Thunderer* and William J. Colborne to the *Victory* for disposal.

ARMY MEDICAL STAFF.

Colonel William S. M. Price, R.A.M.C., to be Surgeon-General, vice A. A. Gore, retired.

ROYAL ARMY MEDICAL CORPS.

Colonel Frederick B. Scott, C.M.G., is placed on retired pay. The under-mentioned Lieutenant-Colonels to be Colonels:—Alexander W. Duke, vice W. S. M. Price and James M. Beamish, vice F. B. Scott, C.M.G.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the retirement from the Service of the under-mentioned officers:—Major-General Alfred Anderson, Madras Infantry; Lieutenant-Colonel Walter Conroy, Bengal Establishment; and Lieutenant-Colonel Malachi O'Dwyer, Bengal Establishment.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant E. P. A. Mariette resigns his commission.

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion the Northumberland Fusiliers: David Kidd Muir to be Surgeon-Lieutenant. 1st Middlesex (Victoria and St. George's): Surgeon-Captain F. E. Fenton to be Surgeon-Major. 2nd Volunteer Battalion Highland Light Infantry: Surgeon-Lieutenant W. F. Macdonald resigns his commission.

MENTIONED IN DISPATCHES.

In a dispatch from Major-General Lord Kitchener of Khartoum, G.C.B., K.C.M.G., Sirdar of the Egyptian Army, the names of the following medical officers who have distinguished themselves during the recent operations in the Soudan are mentioned:—Lieutenant-Colonel J. A. Clery, R.A.M.C.; Lieutenant-Colonel N. Leader, late R.A.M.C.; Major G. D. Hunter, D.S.O., R.A.M.C.; and Captain C. C. Flemming, R.A.M.C.

SURGEON MAILLARD, V.C.

Surgeon W. J. Maillard, of the *Hazard*, who, as we announced last week, has received the Victoria Cross, is the only naval medical officer in possession of the much-coveted distinction. The other officers of the Royal Navy and Royal Marines upon whom this decoration has been conferred and whose names appear in Lean's Royal Navy List are as follows:—Rear-Admiral Charles Davis Lucas, June 21st, 1854; Rear-Admiral John Bythesea, C.B., C.I.E., August 9th, 1854; Rear-Admiral Henry James Raby, C.B., June 18th, 1855; Lieutenant-Colonel George Dare Dowell, R.M.A., July 13th, 1855; Admiral of the Fleet Sir John Edmund Commerell, G.C.B., F.R.G.S., October 11th, 1855; Admiral Sir Nowell Salmon, G.C.B., A.D.C., November 16th, 1857; Israel Harding (Chief Gunner), July 11th, 1862; and Rear-Admiral Arthur Knyvet Wilson, C.B., February 29th, 1884.

RECRUITS FOR THE ARMY.

What with the growth of the empire, the rumours of war from time to time, and the unsettled state of political affairs generally the demands for the maintenance of a strong navy and army are increasing instead of diminishing. As regards the navy, it annually takes in a large number of boys who grow up on shipboard and develop into thoroughly trained and able-bodied sailors, but the army has never yet tapped the various sources of supply in the country. Several years ago we pointed out that the army might advantageously have recourse to some method for an increased enlistment of boys and the establishment of training camps for them. We are consequently glad to notice an article in our contemporary the *Army and Navy Gazette* of Dec. 10th, dealing with the subject of extending the machinery of existing State schools so that boys might be passed into the ranks of the army. We believe that a time will come when the State will recognise that it has claims in this respect in regard to youths to whom it has stood *in loco parentis* and that some system will be adopted by which the State may render their services more readily available for State purposes than at present. The subject is altogether too large to be circumscribed within the limits of a paragraph, but we think that a scheme might be devised and formulated which would prove of mutual benefit to the youths themselves as well as to the army. From a sanitary and hygienic standpoint and for improving the physique, conduct, and discipline of the boys, good would result we have little doubt.

SURGEON-GENERAL GORE.

This officer must have had long and arduous work as Principal Medical Officer of Her Majesty's Forces in India during the late tribal wars on the North-west frontier. The medical administration and arrangements for a large army in the field under such circumstances was a very responsible undertaking and our readers have been already made acquainted with the scale upon which these had to be provided. So far as we can learn they successfully withstood the severe test to which they were put during the

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time General Sir W. Lockhart's forces were in the field and we therefore hope that Surgeon-General Gore's services in this respect will be recognised.

SURGEON-GENERAL W. TAYLOR, C.B.

We are glad to notice the name of Surgeon-General Taylor, C.B., of the Army Medical Service, in the list of those who have recently dined with the Queen and the Royal Family. The officer in question is a representative of a large and important branch of the army which has always done good service in the field and is still doing excellent work wherever there are British troops in various parts of the empire. It is scarcely necessary to add therefore that recognitions on Her Majesty's part of the services rendered by members of this branch of the service are very welcome and will have a good effect upon the Royal Army Medical Corps.

THE MEDICAL RESERVE OF THE FRENCH ARMY.

During the past few months upwards of 700 medical officers belonging either to the Reserve or to the Territorial Army have been put through a course of practical instruction at various centres under the supervision of experienced officers of the active army. As far as possible the convenience of individuals was consulted, the reservists being attached to corps or hospitals in the vicinity of their own residences, and during the time that they were employed they received the pay of their several grades together with certain travelling and other allowances.

PORTABLE HOSPITALS FOR THE UNITED STATES ARMY.

Sixty portable hospitals are being constructed in America for the use of the army—most of them for the troops at Porto Rico and Cuba. Each hospital—to be constructed in sections—will accommodate 40 patients; they will be raised on posts 18 in. from the ground and be made of pine and furnished with painted canvas roofs. Those intended for use in the north will have double floors and felt lining.

Major M. A. T. Collie, M.B. Aberd., of the Indian Medical Service, has been appointed to act as superintendent of Matheran. Major R. J. Baker, M.D. Dub., I.M.S., acts as superintendent to the lunatic asylum at Colaba. Major A. V. Anderson, M.B. Aberd., I.M.S., has been appointed on special plague duty in the Dharwar district.

Surgeon-General Townsend of the Umballa district has, it is believed, taken over the duties of Principal Medical Officer of Her Majesty's Forces in India from Surgeon-General Gore, pending the arrival of Surgeon-General W. Taylor, C.B.

The Queen has appointed Staff-Surgeon James Lawrence Smith, R.N., to be a Member of the Fourth Class of the Royal Victorian Order.

The following officer has qualified as interpreter in the French language:—Major J. H. Branningan, R.A.M.C.

Correspondence.

"Audi alteram partem."

THE PROPOSED SCHOOL OF TROPICAL MEDICINE.

To the Editors of THE LANCET.

SIRS,—In your issue of last week you referred to the memorandum issued by the Seamen's Hospital Society in support of the scheme proposed for the New School of Tropical Medicine as a question of general policy. I wish to examine it from another standpoint. I would incidentally remark that the memorandum and the appeal for subscriptions have not been sent to either Dr. Anderson, Mr. G. R. Turner or myself.

I am writing as the senior visiting physician of the *Dreadnought* Seamen's Hospital, whose experience of its medical work goes back more than twenty years, to the time when Sir Henry Burdett was the secretary, and is probably more complete than that of anyone living except Mr. Johnson Smith, the principal medical officer. I have continued my associations with the hospital for this long period partly from a desire to see tropical cases, partly from the old traditions of the *Dreadnought*, and partly from the opportunities it afforded me to show students and medical men specimens of tropical disease. The scheme of the committee of management of the Seamen's Hospital Society will, if carried out, effectually destroy all these.

I think that the scheme promulgated by the Committee of Management is unnecessary, most unwise, and extravagant. £13,000 in July has expanded into £16,000 in December. I shall also show that the arguments urged in its support are misleading. The scheme in the appeal of the society merely mentions a bacteriological laboratory, pathological laboratory, lectures, &c.; but the details are clearly stated in Sir Henry Burdett's letter to the *Times* of July 11th.

> Provision will be made for from twenty to twenty-five students with sleeping accommodation for about ten. There will be a fully equipped laboratory, pathological room, museum, and every other accessory calculated to make the school efficient.

Before the bacteriology of tropical medicine can be studied a general knowledge of bacteriological methods and of ordinary bacteriological diseases must first be learnt, and this can easily be obtained in the many bacteriological laboratories which now exist in London and elsewhere. The bacteriology of tropical diseases is fully taught at King's College and at Netley, and also, I suppose, at the British Institute of Preventive Medicine, and has long been so taught. A new, fully-equipped bacteriological laboratory is obviously unnecessary, and the sum for furniture, fittings, &c., for a new school of from 20 to 25 students—viz., £400—if this is to include a bacteriological laboratory and its equipments, is almost too ridiculously inadequate to be referred to.

I have carefully looked over the list of the names of the gentlemen forming the Advisory Committee, and I can only find two (excluding the chairman and deputy chairman) who can be in the slightest degree conversant with the medical work of the *Dreadnought* Seamen's Hospital. Dr. Robert Barnes was its physician in its best old days and Mr. Johnston Smith is the principal medical officer (resident). It will be news to all the others that there exists at present in the Seamen's Hospital an excellent little museum, rich in pathological material, started in the days of Busk and George Budd, and which only needs a curator for its further development. I may venture to say that with the exceptions above named no one on that Advisory Committee has ever crossed the threshold of that museum.

For the teaching of tropical medicine in London the essentials which are needed are a working laboratory for the examination of blood, sputa, excreta, &c., and an electrical room such as are in existence at every properly equipped general hospital and such as are evidently contemplated at Liverpool. These should be established at both the parent hospital and the Branch Hospital and would probably come much nearer to the modest expenditure (£350) annually required at Liverpool than to that asked for in the proposed scheme. The calculation that £1000 will be contributed annually in fees by students sent by Government is too absurd for serious attention unless the boarding and lodging of the ten students are included. But that these rooms will be constantly filled seems doubtful if the new school is so easy of access as is urged by the committee.

From these remarks on the general scheme I now pass on to a consideration of the reasons put forward in the memorandum sent out by the Seamen's Hospital Society.

1. The small number and but little variety of the cases of tropical disease treated in the society's hospitals have been clearly pointed out. We are told that the "building called the 'Dreadnought' at Greenwich which formerly was the infirmary of Greenwich Hospital is not the property of the Seamen's Hospital Society but is held by them from the Lords Commissioners of the Admiralty subject to six months' notice." This of course would obviously be a fatal objection to such a scheme as that indicated in Sir H. Burdett's letter, but considering that the society has been in possession for twenty-eight years the establishment and proper fitting up of a working laboratory and electrical room would not seriously embarrass the society's architect. Indeed, I find on page 16 of its latest report, published only this year, that since the society has occupied the premises it has much improved the building at Greenwich, a chapel has been added, and the entire drainage of the hospital has been renewed. The building of the chapel necessitated a very extensive alteration of the Somerset ward of the hospital. I think, therefore, that even on the insecure tenure put forward by the committee the necessary alterations for its proper conduct as a hospital might be carried out without incurring the displeasure of the Lords Commissioners of the Admiralty. I venture, however,

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to ask, Is the whole truth disclosed, in the statement that it is held from the Lords Commissioners of the Admiralty at six months' notice? for I find the following statement in "An Account of the Origin and Progress of the Seamen's Hospital Society," published at p. 12 in the same report: "After four years' endeavours on the part of the committee to effect so desirable an object the Lords Commissioners of the Admiralty in the year 1870, under the powers afforded them by the 'Greenwich Hospital Act' of the previous session, granted the society a lease for 99 years of the infirmary, (and adjoining Somerset ward) at Greenwich Hospital at a nominal rental in view of the loan of the ship, with the attendant expense of the external repairs, fittings, and ship's stores." I leave it to the Committee of Management to reconcile the two statements.

2 and 3. These can be taken together. The relations of the Branch Hospital to the parent institution at Greenwich are sufficiently clear from a paragraph in page 11 of the committee's report for the year 1889.

> It is intended that the branch shall be in telephonic communication with the hospital at Greenwich and that the beds shall be used for the retention of urgent or special cases, all others being transferred by ambulance to Greenwich.

There is a special ambulance and a room for it at the Branch Hospital which was opened in 1890.

The manner in which this intention has been carried out since the present honorary physician was appointed in 1892 is clearly shown by the following figures. In 1892 the number of cases of malaria and dysentery—typical tropical diseases—treated at the Greenwich Hospital were respectively 65 and 36. In the past year, 1897, they have fallen to 32 and 25. If this is not a depletion and starving of the parent institution I should like to know what is. It is, moreover, admitted in the memorandum that 31 cases of malaria were treated at the Branch Hospital during the year ending Nov. 30th last. Does anyone conversant with malaria believe that the bulk of these cases could not have been taken safely and without harm across the river to the parent institution in accordance with the expressed intention of the founders who publicly appealed for subscriptions on the lines quoted above? If this policy had been honestly adhered to by the visiting physician and the present Committee of Management no such enlargement of the hospital as is now proposed would have been necessary. The ambulance does not now carry across any tropical cases except it be someone who is expected to undergo a protracted convalescence. This starving of the parent hospital of tropical diseases is rapidly bearing fruit on its medical side, for this is being more and more turned into an asylum or infirmary for chronically-diseased and incurable sailors. A census of my wards at the end of last month showed that in my 33 beds there were patients who had been there for 671, 444, 408, 266, 212, 193, 163, and 139 days, and for whom no benefit can be expected.

I would submit that it is very unfortunate that Mr. Chamberlain's most excellent wishes should not have been placed before a representative body like the Royal College of Physicians of London who would probably have nominated a committee to report on the subject. Such a committee would have carefully considered the question in its whole bearing and a comprehensive scheme would have been laid before the Right Honourable the Secretary of State for the Colonies. It must necessarily have included the work of the existing bacteriological laboratories, of the parent hospital at Greenwich as well as of its branch, and of any other medical institutions with sufficient tropical cases of disease, such as Liverpool, Leith, &c., to afford facilities for such clinical teaching. All tropical cases do not come into the Albert Docks, and other institutions should be recognised partially or entirely as teaching centres for colonial surgeons as well as the proposed new school. It would seem that Mr. Chamberlain has only had the opportunity during the inception of the scheme of obtaining the somewhat one-sided views of the medical adviser to the Colonial Office and of the Committee of Management of the Seamen's Hospital Society. The result is that he is recommended to enlarge and extend the work of the Branch Hospital, to which the colonial medical adviser is the sole physician, to build a new school there, and to make a two months' course at that school compulsory on every aspirant to the Colonial Medical Service. The injurious effects of the carrying out of the scheme on the parent hospital and other institutions have apparently but little troubled its framers.

I presume that my remembrances of these past years and my knowledge of these unpalatable facts were considered sufficient reasons why I and my colleagues were deliberately excluded from the conferences of the committee.

Another instance of disingenuousness is shown in the appeal for funds and should be mentioned. In the face of our published correspondence they actually circulate this paragraph:—

> The educational body of the school will include not only members of the staff of the Seamen's Hospital Society, on which are to be found men who have themselves practised in the tropics, but.....

Two members only of the medical staff—Dr. Manson and Dr. John Anderson—have practised in the tropics. Dr. Manson may be the educational staff. I have yet to learn that Dr. Anderson has signified his willingness to join. Can any statement be more misleading? Apologising for the length of this letter which, I hope, clearly explains the situation,—I am, Sirs, yours faithfully,

JOHN CURNOW, M.D., F.R.C.P. Lond.,
Senior Visiting Physician to the Seamen's *Dreadnought* Hospital.
Wimpole-street, W., Dec. 12th, 1898.

We have received from the Secretary of the Seamen's Hospital Society a copy of a letter addressed by him to Sir William Broadbent which we print below.

Dreadnought Seamen's Hospital, Greenwich, S.E.,
Dec. 14th, 1898.

DEAR SIR WILLIAM BROADBENT,—I have to acknowledge the receipt of your letter of Dec. 7th. I understood it to have been written as an official communication and therefore brought it before the Committee of the Seamen's Hospital Society at their meeting on Dec. 9th.

You state that the action of the Committee "prevented certain aspects of the question from being brought to the notice of the Secretary of State and made the data on which he based his judgment imperfect and one-sided" and that thus "his approval was obtained under false pretences." This statement the Committee maintain has no foundation. There has certainly been no false pretence and the use of such a term is indefensible. The Committee believe that all aspects of the question have been put before the Secretary of State and fully considered by him. If in your view this is not so the Committee cannot doubt that Mr. Chamberlain is still open to consider the matter from any fresh aspect in which it can be put before him. You further state broadly that the Committee have made a suggestion falsely in saying that the visiting staff have been invited to coöperate. The Committee much regret that you should have permitted yourself to make such a statement and they protest not only against the language but against so strained an interpretation of the memorandum. The correspondence which the *Dreadnought* visiting staff have published shows clearly at what stage they were asked to coöperate and nothing has been written in the memorandum to lead to the conclusion that they were invited to coöperate at an earlier date than is disclosed by the correspondence. Whether the invitation when sent was an insult or not is a question on which the public will form their own opinion. It was not so intended by the Committee and they do not gather that the visiting staff have so viewed it.

The Committee observe that you object to the omission from Sir Henry Burdett's letter, as issued with the memorandum, of the passage against which the *Dreadnought* visiting staff so strenuously protested. The letter was reprinted in such a form as to show that a passage had been omitted. The Committee recognised that after the protest of the visiting staff the paragraph objected to must not be republished, but they saw no occasion to abstain from publishing the rest of the letter. We can hardly suppose that the visiting staff will join in your protest against the omission of the paragraph in question.

The Committee cannot but feel astonishment at a charge of such dishonourable acts as "suppression of truth material to the issue and suggestion of what is calculated to mislead" being made against them by a leading physician. Such charges as these are most regrettable and unfounded and, the Committee fear, will not tend to the amicable adjustment of the difficulty which has arisen and which the Committee greatly regret and are anxious to do everything in their power to remove.

Believe me to be, yours faithfully,

P. MICHELLI, Secretary.
Sir Wm. Broadbent, Bart., M.D., F.R.C.P., F.R.S., &c.,
84, Brook-street, Grosvenor-square, W.

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WHAT IS TABES MESENTERICA IN INFANTS?

To the Editors of THE LANCET.

SIRS,—The subject of tuberculosis, especially its prevention, is just now being brought prominently before the profession and the public; it is therefore of the utmost importance that the figures on which are based the arguments for preventive measures should be as accurate as possible. As you observe in your leading article of Dec. 3rd Sir Richard Thorne in the recent Harben Lectures has brought forward some remarkable statistics to prove that whilst pulmonary phthisis is steadily decreasing, tabes mesenterica in children under one year—*not, be it noted, in older children*—is decidedly increasing, and from these figures he draws some important deductions.

It seems, however, desirable first to inquire what the term "tabes mesenterica" really means when applied to children under one year. Broadly, and yet strictly, it may be taken, I imagine, to signify one or more of the following conditions: tuberculous peritonitis, tuberculous enteritis, and caseation of the mesenteric glands. How frequently do these conditions occur in children under one year and to what extent are they diagnosable? 1. Tuberculous peritonitis, I take it all authorities are agreed, is rare in children under two years—almost unknown in those under one year. I have only met with one example—viz., in a child aged one year and nine months—in a series of 300 consecutive post-mortem examinations upon children under two years which I have myself performed at the Victoria Hospital, Chelsea, and in the post-mortem records of the hospital for the last ten years I can only find one other case and that was in a patient of exactly the same age. 2. Tuberculous ulceration of the bowel and caseation of the mesenteric glands may best be considered together, for when either one is at all advanced the other is rarely absent. That they occur with considerable frequency in young children is undoubted. In the series of 300 necropsies just referred to tuberculous mischief was present in the intestines or mesenteric glands, usually in both, in 36 cases (18 under one year and 18 between one and two years).

At first this comparatively large number seems to coincide with the recorded frequency of tabes mesenterica in the national death statistics, but on further examining the clinical and pathological records of these cases it was found that in nearly all the abdominal lesion was merely a part, usually quite a subsidiary part, of a more general tuberculosis. 12 were ordinary examples of tuberculous meningitis and certainly could never be regarded as cases of tabes mesenterica; in most of the others pulmonary mischief was predominant during life and was found post mortem to be far more extensive and advanced than the abdominal lesions; in fact, in only 3 of the cases (1 being the case of tuberculous peritonitis already mentioned and the other 2 being by no means typical) was there any probability of tabes mesenterica being diagnosed with reasonable confidence during life. Moreover, on what is a diagnosis of caseation of the mesenteric glands to be based? If they can be felt well and good, but probably everyone will admit that they are rarely palpable, whilst if the diagnosis be made from such symptoms as wasting, fever, &c., the possibilities of error are enormous. But it may be said that at any rate tuberculous enteritis gives rise to more definite and characteristic symptoms. What symptoms?—pain, diarrhœa, wasting, a big abdomen, fever. Are there not plenty of other causes for these in infants? What justification have we, without confirmatory evidence elsewhere, for assuming them to have a tuberculous origin, especially if the records of pathological experience give no support to such a view? In children over two years of age the matter is of course different.

I fully agree therefore with the statement in Ashby and Wright's "Diseases of Children" that "mesenteric disease is much more frequently diagnosed than discovered post mortem"; but, if so, what is the real nature of the thousands of fatal cases of so-called tabes mesenterica in young children? Simply, I believe, marasmus the result of chronic gastro-intestinal catarrh. An infant is brought up by hand; its food disagrees, it gets gastro-intestinal catarrh which leads to distension of the abdomen, griping pains, chronic and very intractable diarrhœa, and occasional vomiting. Of course the child wastes steadily; it has perhaps irregular pyrexia (though I suspect that the temperature is not as a rule very systematically taken in these cases). The mother suggests that the child has "consumptive bowels," the medical practitioner agrees; it is the simplest way out of the difficulty and saves the necessity of taking much further trouble in treatment, and after death he writes "tabes mesenterica" on the certificate; it is an attractively impressive term and no doubt conveys much consolation to the afflicted parents. These cases are to be seen, of course, by the hundred at any children's hospital, but they are not tuberculous—the necropsy proves that. I have notes of nearly 100 post-mortem examinations on such cases, all children under two years of age In only one was any abdominal tuberculous lesion present and that was merely early caseation in the mesenteric glands and one nodule in the intestine, yet in very many "tabes mesenterica" might have been diagnosed with much confidence but for the wholesome corrective of pathological experience. We need to know definitely how we stand in this matter and I hope to elicit expressions of opinion from other hospitals for children. If tabes mesenterica be common in infants by all means let us deal with it, but if, as I firmly believe, it is comparatively rare, let us try to diffuse a knowledge of the fact throughout the profession and so put an end to much erroneous certification.

Do not let me be misunderstood. I fully believe that milk may and frequently does convey tuberculosis and that if the supply were pure the mortality from genuine tuberculous diseases would be materially diminished, though I maintain that so-called tabes mesenterica in infants would be almost unaffected, except in so far as any improvement in the milk-supply would diminish the dangers of gastro-intestinal catarrh. But if we persuaded the public to adopt the precautions with regard to cows and to milk which we recommend and afterwards found that the chief disease we had attributed to infective milk was as rampant as ever, assuredly a very harmful reaction would follow; the public would look to us for an explanation, and what satisfactory one could we give compatible with our professional self-respect?

Another point arises in Sir R. Thorne's lectures. He states that tuberculous meningitis has increased and that this disease, like tabes mesenterica, is essentially due to the reception of the tuberculous infection into the alimentary tract. This statement raises two questions. First, has tuberculous meningitis really increased, or is the increase more apparent than real and due to increased correctness in diagnosis? for many cases now properly described as tuberculous meningitis would no doubt in former years have been included under "hydrocephalus," "convulsions," &c. Secondly, is it, as a matter of fact, usually due to infection through the alimentary canal? It is, of course, as a rule merely part of a general miliary tuberculosis, and to produce this an infective centre must exist somewhere, if in the abdomen in caseous mesenteric glands or possibly in old tuberculous ulcers of the bowel. This raises questions too wide to be brought within the limits of a letter, and it is the less necessary inasmuch as I have discussed them in a paper read before the Medical Society of London and published in THE LANCET of May 12th, 1894. In that paper I tried to prove on post-mortem evidence that tuberculous disease in children started much more frequently in the thoracic than in the mesenteric glands, and that presumably therefore (though this does not necessarily follow) the infection is derived more frequently from the respiratory than from the alimentary tract. Statistics published by Dr. Colman from the records of the Hospital for Sick Children, Great Ormond-street,[1] coincide closely with mine. I know that Dr. Sims Woodhead, from post-mortem results in Edinburgh, attaches much greater relative importance to the mesenteric glands and it seems very desirable that the whole subject should be further investigated.

So far, however, as Sir R. Thorne's statement about tuberculous meningitis is concerned, I have gone through my notes of 44 necropsies on cases of that disease in children specially examined with a view to determining the primary focus of infection, and in 31 the infective centre was almost certainly in the chest, usually in the bronchial or tracheal glands; in only 2 was it certainly in the abdomen; in 6 it might have been either in the chest or in the abdomen; and in 5 it was in other parts of the body or was not found. In 14 of the cases there was not even any sign of tuberculous mischief in either the mesenteric glands or intestine, whilst in nearly every case there were caseous and softening glands in

[1] Brit. Med Jour., vol. ii. 1893.

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the thorax. Certainly, so far as they go, these figures do not support the idea that tuberculous meningitis is mainly due to the reception of tuberculous infection into the alimentary tract—unless, indeed, as is possible, the bacilli obtained access through the alimentary canal but without necessarily giving rise to any local lesion either there or in the mesenteric glands.

I am, Sirs, yours faithfully,

Cavendish-place, W., Dec. 6th, 1898. J. WALTER CARR.

THE ANTI-TUBERCLE CRUSADE.

To the Editors of THE LANCET.

SIRS,—In a book written by Gideon Harvey, M.D., about 1660, consumption is described as an endemic and epidemic disease and the following passage gives some idea of the then prevalent belief in its infective nature: "And considering with all its malignity and contagious nature, it may be numbered among the worst Epidemicks or popular diseases, since next to the Plague, Pox, and Leprosie, it yields to none in point of contagion; for it's no rare observation here in England, to see a fresh coloured lusty young man yoake to a consumptive female, and him soon after attending her to the grave. Moreover nothing we find taints sound lungs sooner, than inspiring or drawing in the breath of putrid ulcered consumptive lungs; many having fallen into consumptions, only by smelling the breath or spittle of Consumptives, others by drinking after them; and what is more, by wearing the Cloaths of Consumptives, though two years after they were left off."

With the exception of the last sentence this opinion so nearly accords with the views of to-day that it is difficult to understand why it remained in abeyance for so many years. Of course it was not founded upon a scientific basis and, I suppose, as we became more exact we were unable to accept the clinical facts unless supported by experimental proof. Thanks to the discovery of Koch we are now emerging from the path of error into which we had temporarily strayed and in doing so I think we must admit that we should have been wiser, or at any rate conferred more benefit on mankind, if we had accepted the teachings of our predecessors who, if they had not the advantage of so much scientific knowledge to assist them, evidently possessed considerable clinical acumen and were able to make accurate deductions therefrom. There are, of course, errors in Gideon Harvey's book, but who can say that some of the statements are not in advance of even our boasted knowledge of to-day? As an instance we may take the reference to cancer as infective. Although we are still disinclined to accept it the disease affords us indications which support the view that it is to some extent communicable. The great factor which upsets all our calculations is the individual peculiarity which favours the development of a disease, and it is because we are unable to solve this problem that we must use every means in our power to prevent the products of infection being brought into contact with any member of the community.

A society has been established for this purpose the members of which intend to propagate information which will enable the laity in some measure to assist in the endeavour to control the disease. An eminent member of the profession has delivered a discourse on this subject wherein he chiefly lays stress on the danger of drinking milk and indicates the necessary means of avoiding this danger. He also recommends asses' milk as superior because less likely to be infected with tubercle. In this connexion it is interesting to note that Gideon Harvey had noticed this although he did not know the reason. Writing on the subject he says, "Asses' milk is universally preferred," and he goes on to give directions as to the diet of the ass—a matter which may or may not be of importance. In speaking of the treatment he is also very strong on the question of fresh air and change of air and also advocates change of food. "Neither it's only the change of air that proves so soveraing to Consumptives, but the change of Bread, Beer, Flesh, Company, and other circumstances do very much conduce thereunto." It is necessary to consider this question not only in the treatment, but also as a preventive, and although we are often met with the remark, "Oh! if I listen to you it is not safe to eat anything," it is nevertheless our duty to warn the public and teach them how to avoid disease. All authorities seem to be agreed upon the importance of safeguarding our food supplies, but although most elaborate precautions are taken for this purpose one of the prime sources of danger, at any rate as regards tubercle, is ignored.

Take, for instance, the inspection of bakehouses which is carried out in a fairly thorough fashion. The drains, the structure, &c., and all the appliances must be kept in a sanitary condition—i.e., in such a condition that germs will not be likely to flourish about them—but no notice is taken of the attendants, one or more of whom may be and often is suffering from phthisis, his body full of dangerous germs which are constantly fouling the atmosphere; the expectoration finds a rapid drying-ground and a temperature favourable to the life of bacilli, while the crevices in the already baked bread and other foodstuffs form a ready nidus for their reception and propagation. In these days, when hardly any bread is made in the homes, it is a question whether there is not even more danger from bread than from milk, for it is well known that phthisis is a prevalent disease amongst bakers. True, I have not got the scientific proof of my assertion and I might examine many loaves before I found tubercle bacilli. Many samples of milk might be examined with a negative result, but given the presence of tubercle bacilli in a bakehouse—and I suppose few would deny their existence there if the baker was suffering from phthisis—I do not think it is necessary to resort to scientific experiment to prove the danger. When phthisical subjects are being solemnly enjoined to carry receptacles for their sputum in order to avoid the danger of infecting the atmosphere of our towns surely there is no difficulty in realising the far greater risks in a bakehouse. Again, if it is necessary to rigidly supervise the sanitary conditions in order to ensure an atmosphere where food may be produced without fear of its being infected, surely it is approaching well nigh the ridiculous to permit an infected individual to be there present, to prepare the food, to handle it when prepared, to foul it with his exhalations and to deposit the products of his disease in and about the building. In the flour mill too phthisical workmen will often be found, and though the process of baking will perhaps sterilise the flour it is used for many other culinary purposes which may not.

Although I give the first place to bread my remarks apply to all consumable stores. If it is necessary to inspect the slaughter-house and to examine the meat, why except the butcher? Cooking should kill tubercle bacilli, but so should it destroy the eggs of the tapeworm, and yet in spite of this we annually extract many yards of this disagreeable denizen from the intestines which no doubt have been introduced in the same way as much of the tuberculous mischief finds entrance to our bodies. If ham, cheese, and butter require examination, why allow them to be retailed by a phthisical shopman? In like manner I might pass in review all articles of diet. I might even enter the sacred precincts of the domestic household and question the bodily condition of the cook and those who carry the food to the ultimate consumers. The position of safeguarding the food-supply and ignoring the condition of those who handle it seems to me a very untenable one and demands the immediate attention of those who are constituted the guardians of the public health. Will it take us as long to insist on the remedy as it has taken us to accept the fact of the infectious nature of tuberculous disease? Without expressing any disbelief in the views of Sir Richard Thorne and yourselves as expressed in your leading article of Dec. 3rd I venture to assert that the question I now raise is a point in favour of including phthisis among the dangerous infectious diseases which are compulsorily notifiable to sanitary authorities. I do not say that it proves the necessity of such an inclusion, but it does make for the necessity of investing all sanitary authorities with the power of inspecting not only the premises and the food, but also the bodies of those persons who are occupied with the food. This inspection should be no superficial formality but a rigid and thorough examination carried out at regular intervals.

In the meantime at the expense of being called an alarmist I would commend to the serious consideration of all thoughtful men the question of their food-supply. Do not be satisfied with boiling your milk; try to secure servants free from tuberculous disease and be particularly careful about your bread.

I am, Sirs, yours faithfully,

Kidderminster, Dec. 5th, 1898. J. LIONEL STRETTON.

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THE COLLEGE OF PRECEPTORS.

To the Editors of THE LANCET.

SIRS,—I trust you will permit me to point out a serious inaccuracy in the first paragraph of the report of the Education Committee of the General Medical Council as printed in THE LANCET of Dec. 3rd (p. 1519), to which paragraph much importance appears to be attached in your first leading article. In the paragraph it is stated that—

During the years 1892-98 returns have been made to the Council on behalf of the Examining Boards for the Navy, Army, and Indian Medical Services, respecting those candidates for appointments who showed deficiency in general education. In the case of 10 of these candidates the particulars given were insufficient to enable the preliminary examination to be traced; in the case 29 the examination passed by the candidate was one of those at present recognised by the Council. In no less than 14 instances the examination by which the candidate had gained admission to the Student's Register was that of the College of Preceptors, while the remaining 15 candidates had qualified by one or other of *nine* of the recognised examinations. There were, in addition, 16 candidates who had qualified for registration by means of the examinations of the Society of Apothecaries or the Royal College of Surgeons in Ireland, but the examinations have now for some years been discontinued.

It thus appears that of all the examinations now on the Council's list the College of Preceptors' is that which most frequently gives rise to animadversion on the part of the examining boards and that the college contributes to the returns of comparative failure almost as many instances as all the other educational bodies together. It is also worthy of note that the returns report no single instance of deficiency in general education on the part of a student registered by means of a university local examination.

It cannot be doubted that the above statement, coming as it does in the forefront of the report, must have had great weight in determining the decision of the Council, and it might reasonably have been expected that scrupulous care would be taken to test its accuracy before making it public. A careful examination, however, of the published minutes of the General Medical Council, in which all such cases are recorded, shows the real figures to be as stated in the following table:—

Preliminary examining body.	Navy.	Army.	Indian.
College of Preceptors	1	1	—
Royal University of Ireland...	—	1	—
Royal College of Surgeons in Ireland	—	3	—
Royal Colleges of Physicians and Surgeons in Ireland	1	—	—
Apothecaries' Society	1	—	—
Apothecaries' Society and Edinburgh University	—	1	—
Aberdeen University	1	—	—
Trinity College, Dublin...	1	1	—
University of Edinburgh and Colleges of Physicians and Surgeons, Edinburgh	—	1	—
Not traced	8	2	7
Totals	13	10	7

It will be seen that the total number of cases is 30 and that of these only 2 are those of candidates who are reported to have obtained their qualifying certificates from the College of Preceptors. Both these cases, it may be added, are cases of deficiency in *spelling*, which is not quite the same thing as "general education."

I am, Sirs, yours faithfully,

H. W. EVE,
Dean of the College of Preceptors.

Bloomsbury-square, London, W.C., Dec. 7th, 1898.

"DIPHTHERIA ANTITOXIN IN PRIVATE PRACTICE."

To the Editors of THE LANCET.

SIRS,—You have done great public service in publishing several recent communications on the use of, and the neglect in using, the antitoxin of diphtheria. The admirably short and practical article by Mr. E. C. Bousfield in THE LANCET of Dec. 10th following upon those of Dr. Cobbett and Dr. Goodall can scarcely fail to correct the difference between the success of cases treated in private and in hospitals—a difference which used to be in favour of the private practitioner but which is now in favour of the Metropolitan Asylums Board hospitals. The correction, as Mr. Bousfield's experience shows, would be very quick, very obvious, and very satisfactory to private practitioners. My own experience, though very limited compared with his—for until of late years diphtheria used to be almost unknown in Highbury—is quite to the same effect. My object in writing is to say so and to encourge private practitioners in the use of the antitoxin. One great reason for the non-use of the antitoxin is the want of arrangements for getting it easily when wanted. The sanitary authorities of this parish have been most exemplary of late in supplying means for expediting and facilitating the diagnosis of typhoid fever and diphtheria. They would do great further good by having on hand a supply of antitoxin, on sale, but to be readily got by practitioners on any day and at any time of night or day.

It is sad to think what an amount of preventable mortality takes place in London and the country for want of such ready means of getting antitoxin. In regard to large sections of the population it is a question of money, and this is clearly a case where the remedy should be available at the public expense where the patient is too poor to command it.

One thing in this connexion must be gratifying to you—that in your editorial capacity you have repeatedly pointed out the grievous defect which has now been shown by your correspondents in a light which must throw a great responsibility alike on sanitary authorities and private practitioners. As private practitioners we are all anxious to show the advantage of private as compared with hospital treatment. Here is a case where we have an exceptional chance of doing so. I am, Sirs, yours faithtully,

Highbury-place, N., Dec. 13th, 1898. JAMES GREY GLOVER.

To the Editors of THE LANCET.

SIRS,—It is with great pleasure that I have seen that the question of the early administration of antitoxic serum in cases of diphtheria has been again referred to in THE LANCET.

As an assistant medical officer in one of the Metropolitan Asylums Board hospitals I can confirm Dr. Goodall's statement that it is quite unusual for a patient to have been injected before admission and this in spite of the now well-known fact that early treatment is all important. Doubtless in many cases the patient's friends neglect to call in a medical man until the symptoms are severe and of some duration, hence, however prompt the notification and removal, such patients come into hospital late. If, however, we are to believe the statements of some patients' friends I am afraid that sometimes the fault lies with the medical attendant in not recognising either the nature or the gravity of the case. It is most disappointing and disheartening to residents in hospital to admit cases which they recognise at first sight to be almost certain to die and to find out that the patients have been under medical treatment for some days before being notified and that they have not been treated with serum. It seems to me that it is the absolute duty of a medical man to inject every child whom he *suspects* may be suffering from diphtheria as soon as possible after he sees such child. If this were the common instead of the, alas, uncommon practice I firmly believe that scores of lives would be saved every year in London. I hope that there is no difficulty in the way of obtaining the remedy and a suitable syringe seems to me to be a necessary part of a medical man's outfit in this city where the disease is so prevalent. The value of the remedy is now so universally recognised that it is no longer a question to be doubted.

My object in writing is to express a hope that THE LANCET will strongly take up the question of educating public opinion as to the necessity of seeking immediate medical advice in cases of "sore throat" in children and also to point out to medical men that it is in their hands often whether recovery or death shall ensue not only in cases remaining under their care but also in those admitted to a hospital. I am convinced that several of our patients would have recovered if they had been injected even only twenty-four hours before admission and many more if they had been injected two days before.

I am, Sirs, yours faithfully,

Dec. 12th, 1898. AN ASSISTANT MEDICAL OFFICER.

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"THE 'OPEN-AIR' TREATMENT OF TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—Dr. Lionel Beale is apparently under a serious misapprehension in regard to the practice of the open-air treatment. He seems to imagine that an "open shed" constitutes the whole provision made for the consumptive's residence, and that in this the patient has to sleep, dress, and take his meals. So far from this being the case it is well known to most practitioners that the treatment is usually conducted in well-appointed houses, that the bed-rooms are carefully warmed while the patients dress and undress, and that meals are taken in comfortable dining-rooms. The daytime only is spent in the sheds which are merely adjuncts to the main building and afford shelter from wind and rain while the patient lies out of doors. Under these circumstances I will not say that the patient's mind does not to some extent reflect the state of the skies, but as a matter of experience I think that the sense of well-being engendered by the open-air life together with a certain feeling of expansiveness that these patients enjoy have a greater effect upon their spirits.

I am, Sirs, yours faithfully,

Norwich, Dec. 13th, 1898. F. W. BURTON-FANNING.

THE FEES OF PUBLIC VACCINATORS IN THE WYCOMBE UNION.

To the Editors of THE LANCET.

SIRS,—The committee appointed by the meeting of public vaccinators of this union met the Finance Committee of the board of guardians to-day and agreed to the scale of fees subjoined. It shows in nearly every case an increase on that proposed by the board, the fixed amount being agreed upon owing to the difficulty in computing mileage:—

	Scale proposed.	Scale agreed to.
(*a*)	For the whole Union 1*s.* 0*d.*	2*s.* 0*d.*
(*b*)	District 1 5*s.* 0*d.* Urban.	5*s.* 0*d.*
	,, 2 6*s.* 0*d.* Rural.	7*s.* 6*d.*
	,, 3 6*s.* 0*d.* ,,	7*s.* 6*d.*
	,, 4 5*s.* 6*d.* Urban and rural.	6*s.* 0*d.*
	,, 5 5*s.* 6*d.* Chiefly rural.	7*s.* 6*d.*
	,, 6 6*s.* 0*d.* Urban and rural.	6*s.* 6*d.*
	,, 7 5*s.* 6*d.* ,, ,,	6*s.* 6*d.*
	,, 8 5*s.* 6*d.* ,, ,,	5*s.* 6*d.*
	,, 10 and 11 6*s.* 0*d.* Rural.	7*s.* 6*d.*
	,, 12 6*s.* 0*d.* ,,	6*s.* 0*d.*
(*c*)	2*s.* 6*d.*	2*s.* 6*d.**
	Union and schools 2*s.* 6*d.*	5*s.* 0*d.*

* With fresh arrangement if stational vaccination should be resorted to.

This was accepted by the board.

I am, Sirs, yours faithfully,

HUMPHRY J. WHEELER.

High Wycombe, Bucks, Dec. 13th, 1898.

THE PRESENTATION TO MR. E. M. OWENS.

To the Editors of THE LANCET.

SIRS,—Every surgeon in the mercantile marine will peruse with pleasure the note in THE LANCET telling of the presentation to Mr. E. M. Owens of the s.s. *Nineveh* and will congratulate that gentleman, while at the same time they will compliment the captain and owners on the recognition of the "single-handed" ability of their surgeon. It is rarely such an appreciation is given of work well done at sea, hence the more reason it should be emphasised. The time has gone by when a surgeoncy at sea was regarded as the "refugium peccatorum." Nor does one read in the papers "that this ship carries a doctor and a cow." Nowadays the position of medical officer on board one of the great liners is very eagerly sought after, while to get a return trip to some favourite port is so coveted that men of the best reputations are willing to pay a fee of two guineas and do the work for nothing, much to the detriment of many young men who require to be paid for the service. I hold that no man in a professional capacity has more responsibility on his shoulders than the surgeon of the modern steamer, whether it be an Atlantic liner with sometimes 2000 people to look after or one of the numerous vessels going to South America, Africa, or Australia; and by the way, these ships do not come as a rule under the surveillance of the medical department of the Board of Trade. Medical men at sea cannot send round the corner for advice or assistance; whether it be "a clinker in the eye" or a "strangulated hernia" they must be ready and able to operate at a moment's notice; therefore the surgeon at sea must be self-contained, self-controlled, and capable of coping with any emergency. There are no V.C.'s for the surgeons of the Mercantile Marine, although I know men who have done deeds worthy even of that high prize. It would be interesting if Mr. Owens would publish his case in THE LANCET, as, apart from the interest of the paper, many a man who through carelessness or modesty has neglected to register his experience would now perhaps contribute something of the medical, surgical, or hygienic conditions of sea life which I have no doubt would be full of interest and instruction.

I am, Sirs, yours faithfully,

Henrietta-street, W., Dec. 12th, 1898. R. A. CALDWELL.

A FERTILE ALTHOUGH UNSUSPECTED SOURCE OF BACILLARY INFECTION.

To the Editors of THE LANCET.

SIRS,—From cases of pulmonary tuberculosis which have come under my own observation I am of opinion that in many instances diseased cage-birds, such as canaries, linnets, &c., communicate tuberculosis to a serious extent amongst human beings. As about 400,000 canaries are reputed to be sold every year in the United Kingdom the distribution of tubercle by this bird alone, when disease attacks it, must be considerable. In a recent work by Friedberger and Fröhner[1] it is stated that tuberculosis is one of the most common diseases of birds. I hope in a short time to send you evidence from cases which I have investigated in support of my assertion.

I am, Sirs, your obedient servant,

Montreux, Switzerland. TUCKER WISE.

"A CASE OF DEATH FROM DIABETES MELLITUS IN WHICH THAT DISEASE GAVE NO PREMONITORY SYMPTOMS."

To the Editors of THE LANCET.

SIRS,—In reply to Dr. Pavy's letter in THE LANCET of Dec. 3rd in reference to the case published under the above title on Nov. 26th I should like to make one or two remarks.

On reference to the case in question it will be seen that I never for one moment lost sight of the fact that the attack might have been one of an apoplectic seizure but was driven to the diagnosis I adopted from the following succinct reasons:—1. There were none of those signs present which one would have expected to have found if the attack had been one of apoplexy. (*a*) The arteries were in excellent condition for a woman of her age. There was no sign of atheroma in the peripheral arteries and no sign or history of syphilis to account for an arterial degeneration of that description. The pulse, too, was free from tension. (*b*) The heart was normal in every respect. There was no hypertrophy, no murmurs of any description, and no accentuation of second sound. 2. The presence in the urine of a somewhat large amount of glucose (16 grammes per 1000), which I ventured to think was greater than would have been the case if it had merely been a temporary glycosuria accompanying an apoplectic stroke. 3. Of the "air-hunger" symptom I will only say that this, in conjunction with the afore-mentioned signs, assisted me, but only in an indirect manner, in confirming the diagnosis I arrived at.

I do not see that there should be any more "disquietude" in connexion with a case of this kind than there is with an apoplectic seizure itself. In fact, I think that the latter—which, as is well known, may occur with little or no premonitory symptoms—is of a more alarming nature than a case of diabetes mellitus which ends in a similar manner; for surely if such a case be diagnosed early its

[1] Friedberger and Fröhner's Veterinary Pathology. Translated by M. H. Hayes, F.R.C.V.S. 1898.

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conditions might be ameliorated by prescribed diet, &c., and thus banish or postpone for an indefinite time a coma which otherwise might prove shortly inevitable.

I am, Sirs, yours faithfully,

Dec. 6th, 1898. T. WILSON PARRY.

"BILATERAL ACUTE LABYRINTHITIS."

To the Editors of THE LANCET.

SIRS,—In your last issue you describe the case related by Dr. Percy Webster in the *Intercolonial Medical Journal* as a very rare one. As a *primary* acute labyrinthitis it certainly would be so, but after reading the notes one cannot help thinking that the case was one of cerebro-spinal meningitis with *secondary* implication of the labyrinth, a by no means rare complication of the disease and one which aural surgeons fully recognise as being a cause of deaf-mutism in children.—I am, Sirs, yours faithfully,

Harley-street, W., Dec. 12th, 1898. ARTHUR H. CHEATLE.

THE INFLUENCE OF THE NERVOUS SYSTEM IN HEART DISEASE.

To the Editors of THE LANCET.

SIRS,—In his Purvis Oration on Some Points in the Treatment of the Chronic Forms of Heart Disease due to Rheumatism, published in THE LANCET of Dec. 10th, Dr. Sansom described a case of cardiac dilatation in which remarkable benefit followed the use of galvanism in the course of the vagus, and suggested that "special treatment of the nervous system in rheumatic diseases of the heart is in many cases of very high importance." In this connexion the researches of Balint, published in the *Deutsche Medicinische Wochenschrift*, Jan. 6th and 13th, 1898, appear to me to be worthy of notice. By Rosenbach's method and also by a hooked sound Balint produced aortic incompetence in dogs, cats, and rabbits. In certain cases two of the aortic cusps were torn off. The animals were kept under observation till death. Hypertrophy of the heart was the invariable result, but there was no failure of compensation even when two of the valve cusps had been removed. The maximum period of observation was 293 days. Balint then injected phosphorus oil after ablation of the valves as in the previous experiments. Fatty degeneration of the heart muscle was thus produced, but there was no failure of compensation. This, of course, bears out clinical experience. The fatty degeneration of the myocardium in pernicious anæmia, &c., is not attended with the phenomena of broken compensation. In his next experiments Balint cut one or both vagi after the removal of the valves. In dogs and cats loss of compensation occurred, even when one vagus was divided long after the destruction of the valves. In rabbits no such effect was produced. No change was found in the myocardium in these cases. Balint concludes that the nervous mechanism of the heart plays a very important part in the disturbance of compensation. These experiments have so great a bearing upon Dr. Sansom's clinical observations that further work appears to be demanded upon the same lines.

I am, Sirs, faithfully,

JAMES H. SEQUEIRA, M.D., M.R.C.P. Lond.,
Medical Registrar, London Hospital; Physician to the North-Eastern Hospital for Children.

West-street, Finsbury-circus, E.C.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND "TRADE."

To the Editors of THE LANCET.

SIRS,—What is truth? said jesting Pilate. What is trade? might be seriously and anxiously asked by many a medical man, especially by those familiar with by-law 176 of the Royal College of Physicians of London, which ordains that "no Fellow or Member of the College shall be engaged in trade, or dispense medicines, or make any engagement with a chemist or any other person for the supply of medicines, or practise medicine or surgery in partnership, by deed or otherwise; or be party to the transfer of patients or of the goodwill of a Practice to or from himself for a pecuniary consideration."

If, for example, the President or any of the Censors or anyone else were to establish a grocer's shop, write his name over the front and devote the intervals of time unoccupied by his public and private professional duties to weighing out and selling tea and sugar over the counter, there would be no need to ask the question in such a case, for he would be indubitably engaged in trade. But if, instead of selling tea and sugar (or anything else) in a shop of which he is the sole proprietor, he becomes a shareholder in Lipton's or any other public limited company, is he not equally engaged in trade? He might perhaps purchase and hold shares in one of the numerous "stores" which sell, among other promiscuous things, "patent" or quack medicines, and thereby derive profit from this pernicious class of goods. He may, moreover, be not merely a shareholder, but a director of the company, and thus take an active and responsible part in its management. If so, is he not still further engaged and immersed in trade?

Everyone knows (through the advertisements which are so liberally distributed) that several Fellows of the College sit on the board of the Clerical, Medical, and General Life Assurance Company. Others are to be found on the managing committee of a Coöperative Wine Society, Limited, which, if not an association trading for direct and immediate dividends, at least trades judiciously so as to obtain the best results and strives to avoid pecuniary loss. I do not find fault with such gentlemen for being thus connected with honourable and useful commercial undertakings and I do not think such employment to be "derogatory to the position of a physician" necessarily. The possession of business capabilities is a credit to their owner even if he be a statesman and the talent should not be hidden away in a napkin and buried. But is its exercise consistent with the College by-law and is the by-law itself unexceptionably reasonable? Or perhaps—

"That in a captain's but a choleric word
Which in a soldier is flat blasphemy."

I am, Sirs, your faithfully,

Dec. 6th, 1898. PUZZLED

"AN ACADEMIC GOWN FOR THE MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND."

To the Editors of THE LANCET.

SIRS,—Please oblige by the following correction. In the second paragraph and third line of my letter the word "sash" should have been "cap."

I am, Sirs, yours faithfully,

THE SECONDER OF THE RESOLUTION FOR THE
Dec. 12th, 1898. MEMBERS' ACADEMIC GOWN.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Spread of Plague.—Anticipations of further Outbreaks.—The Disturbances in Mysore.—Nursing under Difficulties.—The New Agreement with the English Plague Medical Officers.

THE gradual spread of plague in the southern portions of the Bombay Presidency, in the Mysore territory, and in the Madras Presidency still continues. Other parts are at present free with the exception of a few cases at Karachi, in the Punjab, in Cutch, and in the city of Bombay. Plague has broken out in the Central Provinces at a place called Hinganghaut, about 40 miles from Nagpore. The so-called necessary precautionary measures towards staying the spread of the disease are reported to have been instituted. These consist apparently of segregation camps and hospitals with disinfection on an extensive scale. The already condemned quarantine is once more applied. Notwithstanding that the weather conditions are just now admittedly favourable nothing is heard of clearing out the people *en masse*—the only remedy which has hitherto proved of any material value. If this were done the annoyance of all other measures might be avoided. With reference to the outbreak at Rahon in the Punjab it appears on further inquiry that the disease has long been concealed by the inhabitants from fear of the regulations adopted for dealing with plague in the country around. The connivance of the native police at this concealment has been proved and there are probably many more cases than those which have been brought to light.

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A report has been spread that plague had broken out in Delagoa Bay, but it has not been officially confirmed. Some time ago it was said that certain forms of a bubonic disease had been observed in Uganda, but its identity with plague was never definitely established. Little or nothing has been heard about it since.

There have been serious disturbances at Seringapatam. Thousands of persons with all sorts of improvised arms attacked the police and endeavoured to rescue the prisoners, but very prompt measures seem to have been adopted and 13 rioters were killed and large numbers were wounded.

It is anticipated, apparently, by the plague authorities in Bombay that another recrudescence may occur at no very distant date. For this reason camps are being maintained and the services of the English Plague Sisters are being renewed for a further period. Against the early development of another recrudescence is the fact that Bombay has only just passed through an abortive third outbreak which attained its maximum the first week in October. An interval of quiescence at any rate may first be hoped for. Plague has by no means left the city, but only 33 deaths from it were recorded for the past week.

The Presidency plague mortality for the past week shows a considerable improvement, although in the southern parts it is still raging with severity. In the Satara district there were 370 deaths, in the Belgaum district 915 deaths, in the Dharwar district 1873 deaths, and in the political agency of Kolhapur 466 deaths. The total mortality from plague for the week was 3990, being 868 fewer deaths than during the previous week.

Madras city records only 2 seizures and 2 deaths. In the districts there were 32 seizures and 30 deaths. More medical men have been requisitioned to supplement the medical service in this Presidency.

It is reported that at Bangalore, where the outbreak is very severe, some 35 closed-up and deserted private dwellings, warehouses, and shops were forced open. Dead rats were found in nearly every building. The buildings were subsequently disinfected and ventilated. It is also reported that bullock carts which had been used to convey dead bodies (three and four at a time) to the cemeteries and which had not been disinfected have been used by people fleeing from the town by the ordinary road routes. The military are now being used in Bangalore and are doing excellent work in the congested low caste localities, detecting large numbers of concealed cases every day. As yet no serious opposition has been shown to their employment. They proved of great value in Poona, but in Bombay the people rebelled against their employment.

At a village called Khed in the Poona district it is stated that there has been a severe mortality from plague amongst pigs. Now that the monsoon is over and the weather is favourable evacuation of infected villages is being enforced in many of the outlying districts of the Bombay Presidency.

The following figures are supplied to show the protection afforded by inoculation in the town of Dharwar:—

	Present population.	Total attacks.	Total deaths.
Once inoculated	3074	106	37
Twice inoculated	3557	17	4
Uninoculated	3089	1118	879

Plague has now almost disappeared from this town. To illustrate some of the difficulties of plague nursing in the remote districts may be mentioned the contrivance adopted at one place which was rapidly and severely attacked of utilising old kerosene oil tins for the construction of bed-pans so hard pressed was the staff for medical and nursing conveniences.

Many of the medical men sent out to India from England have been asked to continue their services under a new agreement. Although this offers a slight increase in salary it does not provide for leave, or for carriage allowance, or for exchange compensation. It binds the medical man for service for twelve months, whereas the Government can terminate the service in six months. It makes no provision for payment of money in lieu of a return passage if the medical man does not wish to return home direct. It definitely excludes any private practice and compels all the time to be devoted to plague duties. While admitting that the salary is fairly reasonable the other conditions are very unsatisfactory. The work is very rough and the medical experience is of little value. The time spent in India means "rusting" in other studies.

Nov. 26th.

THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

SECOND YEAR.

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 1585.)

ANY occurrence tending to delay the application of energetic sanitary reforms in Belfast cannot be considered otherwise than as disastrous, yet it must be confessed that the measures proposed are entirely lacking in comprehensiveness. There is no attempt to face the problem boldly in all its aspects. The fact that the whole of the sanitary services and arrangements of the town are fundamentally wrong has not yet been fully realised. The tendency is therefore towards patchwork remedies and a little tinkering here and there. To begin with there should have been a system of main sewers for both sides of the river instead of bringing the sewage from the south side over to the north side by means of a syphon under the river. On the Antrim side the main collecting sewer could have been prolonged to the deep sea. On the County Down side it should also have been conducted to the sea. This was proposed at the time that the sewers were built but rejected on account of the cost. Now sooner or later the town will be compelled to incur much greater cost, for there is nothing more extravagant than short-sighted economy. The extension of the borough boundaries so that they now include all the surrounding suburbs renders it even more urgent to reconsider the whole drainage scheme. In some of these added districts, such as Ligoniel, the fall is ample, and here notices are being served on householders to connect with the main drainage system. But what is going to be done in the Lower Sydenham and Green Castle districts where the ground is below the level of the high tide? This part is only protected by an embankment and may be flooded at any moment if an accident occurs to this slender barrier. At Lower Sydenham the owners of land are told by the municipality to raise the level of their ground artificially before they begin to build upon it, otherwise it will be impossible to drain their houses. The owners of the property declare, however, that this would so increase the cost of building that the houses could no longer be let at a remunerative rent. But why do people buy land for building which is obviously not suited for that purpose? Such blundering is not a sufficient reason for imposing extra high rents on tenants, or else for allowing them to live in houses which by reason of the unwholesome ground on which they stand will engender disease and shorten life. It is time that the voice of the tenants should be heard—they are the vast majority; and even from the financial point of view it would pay to attend to their interests. Councillor Jaffe pointed this out to me in a very business-like manner. He argued that even among the poorer sections of the community a death might be estimated as involving, in the cost of the funeral, the medical attendance, &c., a clear loss of on an average £10 per person. There is no reason to doubt but that with proper sanitation the death-rate of Belfast might be reduced 4 per 1000 per annum. This would mean the saving in twelve months of something like 1200 lives. This is something to go upon in arguing from the humanitarian point of view and those who now actively resist sanitary reform should be made to understand that they are actively helping to kill more than 1000 of their fellow citizens per annum. But Councillor Jaffe did not discuss this point of view, his mind was, for the time being, wholly concentrated on figures and he urged that 1200 preventable deaths meant a needless loss of £12,000 to the community. For this annual sum at 4 per cent., which was enough to include amortisation, £300,000 could be borrowed. This would go a long way to remedy the sanitary defects of Belfast. But if this were done a much larger saving would be realised than the loss involved by deaths, for a still greater and more expensive amount of sickness would also be prevented. For instance, last year there were 336 deaths from typhoid fever, but there were 3269 cases of this disease notified. What applies to typhoid fever applies also to other diseases. Thus the cases which were not fatal, being so much more numerous, must have occasioned a far greater financial loss than that represented by the deaths alone. If on the latter an

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economy can be realised that would suffice to defray a loan of £300,000, then an expenditure of £1,000,000 could be covered by the saving to be realised on the prevention of both deaths and sickness. Nor is there anything extravagant in such an anticipation, for the reduction of the Belfast death-rate by 4 per 1000 would still leave Belfast with a death-rate slightly in excess of that of London. But for every 100,000 inhabitants in Belfast there are more than 1,000,000 inhabitants in London. Belfast also is a new town built after the truth of the modern principles of sanitation had been proved and were generally known. Nor should there be as much poverty and overcrowding in Belfast as in London. Then Belfast has the advantage of proximity to the sea, for the broad salt waters of the Lough are within two miles of the town and constitute an arm of the sea. Finally, if Belfast is as pious as it professes there should be less vice and drunkenness than in London. The death-rate should therefore be below and not above that of London.

There are few towns where so much religious fanaticism is displayed as in Belfast and yet the sense of public duty has been constantly obliterated by the desire to make money. For the sake of money the law has been set at defiance and this by the very persons who are entrusted with the duty of applying the law. This is very clearly set forth and chapter and verse are given in what is known as the Harrison Report which I fully analysed last year.[1] The Public Health Act of 1878 stipulates that ashpits shall be properly covered, that there shall be back passages, that houses shall not be built on ground impregnated with fæcal, animal, or vegetable matter, yet these rules in many instances were not applied. The result of such negligence is that typhoid fever is endemic when it does not assume the epidemic form, and Belfast has a much higher death-rate than London, though, with the advantages it possesses, it should have a much lower death-rate. Yet even at this hour and in spite of the clear evidence of undeniable facts the chief transgressors are ever seeking to mask their own shortcomings by accusing others. Thus, for instance, I have met owners of bad property who lay all the blame on the water-supply and on the factory system. It has never been proved that the water-supply was contaminated before it reached the houses, but the pollution of the subsoil and the insanitary condition of the houses, the privies, and the drains have been demonstrated over and over again. Nevertheless, the owners of this insanitary property try to show that if it is not the water then it is the factory system which causes the epidemics. The house-owners object to spend money to put their property in order, but they do think that the manufacturers should pay higher wages. The women workers at Belfast are not organised as in Lancashire, they consequently cannot maintain the Lancashire rate of wages and earn much less. While at work they neglect their children, and the latter go to work too soon as half-timers. The wretched pay which they obtain means that they must live on insufficient food. Also they have contracted the fatal habit of spending a large portion of their slender earnings on tea which they boil for a long time, thus extracting all the injurious properties of the leaf. Tea and bread-and-butter too often constitute the staple food. So clear is it that the workers suffer from insufficient food that some of the better and more generous employers have established soup-kitchens in their manufactories. This is notably the case at the Jenimount Mill where soup is provided for the workpeople at a charge below the cost price. Doubtless there is some truth in the complaints, but two blacks do not make one white. The wages undoubtedly are very low, but there are opportunities of obtaining employment in Belfast not so easily found in most other towns. There are many light trades in which women and girls can earn some money; thus all except the young children are often able to earn something. Though the individual earnings are small the collective incomes of the entire family often amount to a fair sum. Also the large number of workmen employed in the ship-building yards earn much higher wages and yet typhoid fever has been rife in their families as well as among other sections of the community. Undoubtedly the fact that the mother is at work in a mill renders it almost impossible to maintain a healthy and cleanly home. This objection, however, applies to other manufacturing towns where typhoid fever is not so constantly and disastrously prevalent. Of course, it is very difficult to maintain good sanitation in the midst of poverty; but that difficulty is increased to an incalculable extent when the houses inhabited by these poor people are deliberately built on infected soil and are devoid of the most essential necessities for the preservation of health. Then, again, if poverty is so very prevalent in Belfast, how is it that working people from all parts of not only Ireland but even of England crowd to that town in the belief that they will be able to earn better wages? Intemperance, combined with the want of orderly, cleanly, and economical habits is undoubtedly a great factor in the spread of disease; but these predisposing causes are not special to Belfast; they are great evils, but they exist elsewhere. It would be difficult, however, to find elsewhere so complete a disregard of the elementary principles of sanitation as that which has been displayed in the building of workmen's cottages in Belfast.

For many hours each day young children are left alone in these cottages. They play in a back-yard which is badly paved and drained. Close by is a privy and ashpit, it leaks or overflows in the yard, there are pools of stagnant water, and the children's hands and clothes are soon soiled with filth which contains organic material in decomposition. Some of this is carried with the fingers to the mouth. Where there is a little door to empty the ashpit this door is often not securely closed. The children force it open and amuse themselves pulling out some of the soiled contents of the ashpit. There is no one in charge to prevent them indulging in such a dirty and dangerous pastime. This, doubtless, has often been the cause of disease among children; and it may well be said that if better wages were paid there would be no need for thus leaving the children alone. But, on the other hand, if, instead of a filthy, open, leaking privy, there was a properly-constructed water-closet, if the receptacle for household refuse and ash was securely covered and closed, if the yard was efficaciously drained and well paved, these children, though neglected and left to their own devices, would not run so great a risk of contracting some disease. Where the back-yards are paved small tiles are very generally used. These are easily broken; the children can lift them up and soon gain access to the foul earth underneath. Holes and indentures are formed in which dirty water remains stagnant. In a short time the children are left to play all day long on what is little better than a dung-heap. Such yards should be paved with heavy flagstones or in some other way rendered secure against the wear and tear to which they must be exposed. It does not seem, however, as if anything really effective had been attempted. A rule has certainly been enacted to the effect that where pigs are kept in a back-yard the pigsties must be built at a distance of at least 15 ft. from the walls of the house. This is a very small step in the right direction. The keeping of pigs in a town should not be allowed under any conditions. Then the distance of 15 ft. will be but a poor protection if the yard is not properly paved and drained and if the filth from the pigs can soak in the soil or flow towards the walls of the house—a condition of affairs which very generally prevails. Nor is it at all certain that the rule about the distance of 15 ft. is strictly applied. Even dispensary medical officers who act in the capacity of medical officers of health in their districts are, I was assured, not always disposed to testify before a court that a pig constitutes a nuisance. It would be incurring the risk of great unpopularity to enforce sanitary measures against pigs in Ireland, yet this must be done if the Irish wish to live healthy lives in large towns.

(To be continued.)

[1] THE LANCET, Dec. 11th, 1897.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Royal Infirmary.

THE poll of the trustees of the Manchester Royal Infirmary asked for by Dr. Renaud on Nov. 21st was announced on Dec. 8th. 1284 voting papers were issued and 779 were returned, 12 being spoiled, with the result that the amendment was carried by a majority of 341. It may be remembered that the resolution was in favour of rebuilding on the present site, while the amendment asked the infirmary board to re-open negotiations with the corporation with a view to the sale of the whole of the infirmary area, necessitating, therefore, the removal of the hospital to another site, but with the

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proviso that there should be an accident and out-patients' department in the centre of the town. The amendment having now become the substantive resolution will have to be voted on at another meeting of the trustees. If it should be adopted the way will be open for negotiation with the corporation for the sale of the infirmary site. Assuming that these negotiations are successful the corporation can no doubt provide a considerable amount of the purchase money by the sale of the old town-hall in King-street, now used as the free reference library, and of the art gallery, formerly known as the Royal Institution, in Mosley-street. In the opinion of one of the weekly papers the latter would be "an admirable building for the reception of accidents, emergency cases, and a dispensary for out-patients." It would have one qualification, publicity, as it is in one of the best known and most frequented streets in Manchester; but it would therefore command a very high price and the interior of the building would require complete re-arrangement, while it is doubtful if there is sufficient ground space. There would not be much difficulty in finding a suitable and not extravagantly costly site for this central building. As to the position of the infirmary itself there will be much discussion and great differences of opinion. Some members of the staff favour the Stanley Grove site in Oxford-road, not very far from Owens College, and with the Whitworth Park, a picturesque and extensive open space, on the opposite side of the road. A great deal may be said for this site in addition to the fact that it was offered in 1896 by the Whitworth trustees practically as a free gift and it is believed that the offer is still open. If this site is passed over the reasons for doing so ought to be of extreme cogency.

Oldham and the New Vaccination Act.

Even those who most regretted the passing of the new Vaccination Act could have little anticipated the scenes—which might be called farcical if not fraught with evil presage for the future—which have followed that well-intentioned but weak and disastrous measure. Two special sittings of the Oldham justices were held on the evening of Dec. 8th beginning at six o'clock to grant certificates of exemption. Two courts were held to speed on the work, one for women and one for men. Four magistrates were in the men's court and two in that for the women, but they were unable to cope with the crowds that crushed into the corridors and every passage available. They sat from 6 P.M. on the Thursday to 1 A.M. on Friday morning, but before that time the applicants lost patience, "expressed their feelings in vehement language"—which phrase used with reference to the Oldhamese tongue means something exceedingly strong—"turned on water-taps in the neighbourhood and generally turned the town-hall into a pandemonium." The six unhappy magistrates are said to have signed at least 7000 certificates in the seven hours, having no doubt weighed carefully each objection to make sure that it was "conscientious." The total number granted up to that time was 17,000 and since then further sittings have been held to provide pabulum for the next visitation of small-pox. It is said that there are 40,000 anti-vaccinationists in the borough, "and as printed forms of the certificates can be obtained up and down the borough further scenes may be expected." The ignorance of these naturally quick and, in a narrow way, shrewd and clever people is something extraordinary and their proceedings under the recent Act inclines one to doubt their fitness for this measure of home rule. Somewhat similar scenes are reported from Ashton-under-Lyne, Stalybridge, and other places in the north. "Several hundred exemption certificates were granted at Keighley yesterday." When Nemesis appears will Parliament or the people be held responsible?

Salford Sanatorium.

It is proposed to enlarge the Salford Sanatorium by the addition of two convalescent pavilions for scarlet fever and typhoid fever patients, with accommodation for nurses and a resident medical officer. At present two large pavilions are always occupied, leaving only one for other diseases, and convalescent and acute cases have to be mixed up in one ward, while lately there has been increased difficulty through a small epidemic of typhus fever. Application is to be made to the Local Government Board for sanction to borrow £19,550, the estimated cost of the additions.

Proposed Sanatorium for Phthisical Patients.

A deputation from the Manchester and Salford Sanitary Association was received by the Health Committee of the Salford Corporation on Dec. 8th. Its object was to suggest to the corporation the desirableness of providing a sanatorium for phthisical patients. Dr. Leech and Dr. Williamson put before the committee cogent arguments in favour of their suggestion and the rector of St. Stephen's, Salford, stated from his knowledge of the people in the neighbourhood of the town-hall that he could confirm all that Dr. Leech had said as to the existence of conditions favourable to the spread of phthisis. The deputation was received with sympathy but was reminded of various difficulties (including cost) in dealing with the matter and the chairman invited the Sanitary Association to provide lecturers on the subject of the prevention of phthisis and said they would find audiences. Dr. Leech promptly agreed to this and also to a suggestion that the association should organise a conference of all corporate, Poor-law, and hospital authorities in the district to discuss the subject. The association intends to interview various other authorities.

Dec. 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Reception at the Royal College of Surgeons of Edinburgh.

THE reception given by the President of the College and Mrs. Chiene, reference to which was made in THE LANCET of Dec. 10th, passed off with great *éclat* and was largely attended by the members of the profession in the city and its neighbourhood and their wives.

Edinburgh University Total Abstinence Society.

This society is to be addressed on Thursday, Dec. 15th, by Dr. G. Sims Woodhead of London, who takes such a prominent place in the temperance movement.

The Christmas Vacation in Edinburgh.

The medical classes will rise for the Christmas vacation on Wednesday, Dec. 21st, and will resume work on Wednesday, Jan. 4th, 1899.

The Scottish Cremation Society.

The annual meeting of this society was held in Glasgow on Dec. 7th, the chair being taken by Sir Chas. Cameron, Bart., M.P. In moving the adoption of the report the chairman alluded to the relatively slow progress of the movement but considered that this was to be expected in the very nature of things. The number of cremations during the last year was 10, but at the Woking crematorium similar slow progress had been experienced at first. He detailed the safeguards insisted upon by the directors with a view to guard against cremation in any case of foul play and contended that these regulations were a far more complete protection to society than the present rules governing the registration of deaths which latter he described as scandalous. The meeting was also addressed by Professor Sir Henry Littlejohn and by Dr. Ebenezer Duncan.

Sanitary Matters in Paisley.

A further contribution to the conflict between the Paisley local authorities and their medical officer of health is furnished by a report from Professor R. M. Buchanan of Anderson's College Medical School who has made an elaborate bacteriological examination of samples of the domestic water-supply collected during the recent outbreak of enteric fever. This examination failed to detect the typhoid bacillus, but the report submits reasons why this negative result is not to be considered conclusive, and moreover, affirms that as the samples contained pseudo-typhoid and coliform bacilli in large numbers there is abundant evidence of sewage pollution.

The Greenock Fever Hospital.

The local health authorities have received from Mr. R. Murray, inspector under the Local Government Board, who some time ago paid a surprise visit to the hospital, an intimation that the Board is of opinion that the accommodation in the fever hospital is insufficient for the needs of the district. The health committee has therefore to face the prospect of building a new hospital.

Committee on Reformatories for Inebriates.

Among the witnesses recently examined by this committee

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appointed by the Secretary for Scotland are Dr. J. F. Sutherland, deputy commissioner in lunacy for Scotland, and Dr. John Wyllie, consulting physician to the Edinburgh Royal Infirmary.

Dec. 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Richmond (Dublin) Lunatic Asylum.

AT the meeting of the governors of the Richmond District Lunatic Asylum held on Dec. 9th the medical superintendent (Mr. Conolly Norman) reported that a patient in one of the female wards was recently found to be suffering from fracture of one of her ribs and that no explanation of the injury could be elicited from the nurses in charge of the patient. He strongly urged that they should be all dismissed.

Cork-street Fever Hospital and House of Recovery, Dublin.

At the meeting of the Managing Committee of this institution on Dec. 8th the registrar reported that scarlet fever cases showed a marked decline in numbers but an increase in the severity of the type of disease prevailing. A few cases of typhus fever were admitted, one from outside and the others from inside the municipal boundary. Enteric fever cases maintained the usual average. Several cases of pneumonia which proved rapidly fatal were admitted during the latter part of the month. Several cases of measles were admitted from institutions and a few patients suffering from diphtheria. The last-named disease has never been severely prevalent in Ireland.

Death of Dr. James Hamilton of Bray, co. Wicklow.

Dr. James Hamilton whose death took place at his residence in Bray on Dec. 9th was a graduate of the University of Dublin having obtained the degree of M.B. in 1872. Dr. Hamilton was a comparatively young man in considerable private practice and his untimely death is much deplored in the district.

The Water-supply of Belfast.

Two very important letters have been published in the Belfast papers in reference to the chemical analysis of the water supplied to the city. One is from Dr. Letts, Professor of Chemistry in Queen's College, and states that he has repeatedly expressed the view that the water is not of good quality, basing his opinion on the results of frequent examinations which show that the "albuminoid ammonia" has often risen above 0·02—"the oxygen absorbed" amounts to from 0·3 to 0·4 and the "organic nitrogen" exceeds 0·02—and on the fact that the sources of the water were liable to dangerous pollution. In conclusion he advises that "the less the town supply is used by its inhabitants for drinking purposes the safer it will be for them." The second letter is from the demonstrator in chemistry in Queen's College, Mr. R. F. Blake, F.I.C., F.C.S., who gives an analysis made on Dec. 3rd of water drawn from a tap connected with the main in the chemical laboratory of Queen's College. He states that his figures condemn the water as utterly unfit for drinking purposes owing to its pollution by an excessive amount of organic matter of vegetable origin. He found 0·0185 part of albuminoid ammonia per 100,000. Having given the results of his own analysis he proceeds to criticise those of Messrs. Barklie and Hodges who were asked by the Water Commissioners to examine and report. He shows first that their results differ considerably, as, for instance, the one finding 0·026 part of organic nitrogen per 100,000, while the other only obtains traces of organic ammonia; while there is every reason to believe that 0·026 part of organic nitrogen would yield 0·019 part of organic ammonia which is not a trace but more than sufficient in itself to condemn the water. Mr. Barklie says that his chemical examination of the water was satisfactory and that the water-supply of Belfast is at present purer than at any other period. But Mr. Blake asks, Is a water with 0·026 part of organic nitrogen satisfactory? Dr. Percy Frankland in 1892 found this amount in an analysis of Belfast water and he suggested filtration, but there is the same amount in the "filtered" water analysed by Mr. Barklie. The filtration at Stoneyford, Mr. Blake therefore concludes, has done no good. Again, Mr. Blake asks, Why has Mr. Barklie omitted to determine the albuminoid ammonia? Dr. Percy Frankland did so in 1892 and found 0·019 part per 100,000, corresponding to 0·026 organic nitrogen. How then, asks Mr. Blake, can Mr. Barklie state that the Belfast water is purer than at any other period when according to Dr. Percy Frankland we know that 0·026 part of organic nitrogen corresponds to 0·019 part of albuminoid ammonia (as far as this water is concerned) and Mr. Barklie himself found in 1887 as little as 0·014 part per 100,000? Mr. Hodges from his figures says he does not consider the water polluted with animal matter, though it does contain organic matters of vegetable origin somewhat in excess of the quantity found in a previous examination. Mr. Hodges says in his analysis that there are only traces of albuminoid ammonia which means that the water is practically free from organic matter of vegetable origin; but Mr. Blake rejoins that this is not consistent with the report or with the fact that the water was said to be of a greenish-yellow colour due probably to the peaty matter it contained. Further, the water is said to contain as much as 0·004 part of free ammonia per 100,000. Mr. Blake says he knows of no case nor has he seen mentioned in any text-book an example of an "upland surface" water of a greenish-yellow colour yielding so much free ammonia with only traces of albuminoid ammonia. Mr. Hodges's figures give for the "ammonia" from the Woodburn supply only traces, which Mr. Blake says indicates that the water is practically organically pure and of the very first class. Such waters are, however, not usually yellowish-green in colour. I append the analyses of Messrs. Barklie, Hodges, and Blake in parts per 100,000 in a table.

—	Stoneyford.		Woodburn.		Town main.
	Hodges.	Barklie.	Hodges.	Barklie.	Blake.
Total solids	14·3	12·5	13·7	16·93	16·7
(*a*) Volatile...	—	—	—	—	5·0
(*b*) Fixed	—	—	—	—	11·7
Total hardness	7·85	–	9·3	—	10·0
(*a*) Temporary	—	—	—	—	3·3
(*b*) Permanent	6·43	—	7·85	—	6·7
Chlorine	1·14	1·11	1·57	1·8	1·55
Free (or saline) ammonia ...	0·004	0·000	Traces.	0·000	0·000
Albuminoid (or organic) ammonia	Traces.	—	Traces.	—	0·0185
Organic carbon	—	0·4	—	0·36	—
Organic nitrogen	—	0·026	—	0·02	—
Nitrogen as nitrates and nitrites	Traces.	0·009	Traces.	0·01	0·000
Total combined nitrogen ...	—	0·035	—	0·03	—
Oxygen absorbed in four hours at 80° F.	0·243	—	0·157	—	0·3396
Oxygen absorbed in two hours at 80° F.	—	—	—	—	0·3064

Refuse Disposal and Sewage Purification.

At the Belfast Natural History and Philosophical Society a paper was read on this subject by Mr. W. Chambers, C.E., in which he dealt broadly with those methods which would be serviceable to a city like Belfast situated on a tidal estuary of the sea. An interesting discussion followed and among other matters a communication was read from Dr. Letts, Professor of Chemistry, Queen's College, Belfast, in which he said there were three alternative methods for the disposal of the Belfast sewage: (1) irrigation; (2) the construction of a main sewer to some spot on Belfast Lough where the sewage would be swept out to sea by the turn of the tide; and (3) chemical treatment. Of these three the conditions for the first are unsuitable, the cost of the second would be too great, so that the third alone was really practicable.

Dispensary Medical Officers and the County Councils.

The question as to whether dispensary medical officers are disqualified by virtue of their office from being elected and acting as county councillors has been referred to the Local Government Board who in reply stated "that the Order

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in Council dealing with the matter has not yet been made, but the Board consider that serious inconvenience might be caused to the sick poor if the dispensary medical officer undertook public duties of this nature outside his district."

Dec. 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Use of Oxygenated Water in Surgery.

AT the meeting of the Academy of Medicine which was held on Dec. 5th sundry speakers gave the results of researches which they had made upon the use of oxygenated water in surgery. M. Lucas Championnière said that during the space of one year he had made clinical trial of this agent and had found that oxygenated water was an antiseptic of remarkable power, and of special value in cases of suppuration or septic infection. Solutions of 10 or 12 parts by volume seemed to act best and were very superior to solutions of perchloride of mercury. A solution of oxygen is not only capable of checking putrefaction but will also prevent its occurrence. In vaginal hysterectomy a preliminary douching of the canal with this solution gives better results than any other antiseptic fluid. In cases of septic infection after abortion washing out the uterus with oxygenated water is just as satisfactory a method of treatment as curettage. In addition to the properties already mentioned oxygenated water is a hæmostatic. On the other side M. Charpentier argued that the liquid would not keep and moreover was an admirable culture medium for the streptococcus. M. Ferrand also spoke against it, saying that peroxide of hydrogen was not only an irritant but actually a caustic. M. Monod said that in his opinion nothing was better than a carbolic spray and M. Labbé agreed with him. M. Laborde spoke in his turn in defence of the oxygen solution, saying that it was absolutely harmless and could be used as an intravenous injection. In reply M. Lucas Championnière, while quite allowing that the solution in question was very unstable, argued that it could be obtained from the manufacturers in a state of great purity and was certainly far superior to phenol.

Thyro-iodine in Delayed Union of Fractures.

The Society of Surgery held a meeting on Nov. 30th, when M. Quénu read a paper upon the Use of Thyro-iodine in the Treatment of Fractures where Union is Delayed. M. Quénu brought forward two cases. The first was that of a young woman, aged twenty-four years, who owing to a fall sustained a compound fracture of the lower third of the femur. After reduction of the fragment suppuration occurred and a false joint formed. Three months after the accident—that is to say, in July, 1898—M. Quénu saw the patient who was then suffering from a suppurating false joint. Thyro-iodine was administered in capsules and by the fifth day the patient could walk aided by the support of a silicate splint. At present consolidation is practically complete. In this case, then, the administration of thyro-iodine was followed by a very marked growth of bone. In the second case consolidation took place satisfactorily, and although the patient had no thyroid gland, yet she absorbed the thyro-iodine with ease. The patient was a woman who was suffering from post operative myœdema following a thyroidectomy. Ordinary thyroid treatment relieved this condition but two months afterwards the patient fractured her leg. The fracture united in the ordinary space of time but she was treated with thyro-iodine during the whole time of healing of the fracture. M. Reclus brought forward a case occurring in one of his patients who had sustained a fracture of the thigh. Consolidation was very slow and in addition an enormous callus formed. Not knowing very well what to do for this condition it occurred to M. Reclus to give thyro-iodine. The effect of this was immediate, the callus disappeared with remarkable rapidity, and firm union was obtained. M. Reclus confessed, however, that in two or three other cases in which he had employed the same treatment the drug had no influence—a fact which he was quite unable to explain.

Statistics of Medical Students.

M. Brouardel, the Dean of the Faculty of Medicine, laid before the Council of the Academy at its last sitting some interesting figures dealing with the students and the subjects of study at the Faculty of Medicine. The number of students enrolled is 4495; the Faculty includes 351 male foreign students, of whom 16 are Swiss, 15 Germans, 60 Roumanians, 67 Ottomans, and 66 Russsans; there are also 87 female foreign students, of whom 83 are Russians. The 4495 students are studying the following subjects: for the degree of M.D., old regulations, 3261; for the degree of M.D., new regulations, 877; for the *officiat de santé*, 146; as midwives, 94; and as surgeon dentists, 117.

Obituary.

The death of Professor Laboulbene at the age of seventy-three years is announced. He had held the chair of Historical Medicine at the Faculty of Paris since April, 1879; was physician to the hospitals and a member of the Academy of Medicine. His clinical knowledge was unrivalled and he was also an expert naturalist, so much so that he would have held a chair of Entomology or Parasitology with as much distinction as he did that of History of Medicine.

Dec. 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

German Practitioners Abroad.

THE joint committees of the Berlin Practitioners' Associations (Geschäftsausschuss der ärztlichen Standes-Vereine) have asked the Imperial Chancellor that the German consuls may be instructed to supply the said committees with information as to places abroad where there may be openings for German practitioners. The Berlin Practitioners' Associations several years ago formed a medical agency of their own, conducted *honoris causâ* by members of the associations. This agency undertakes to procure locum-tenents for practitioners, both in Berlin and in the country, and to inform young medical men of available vacancies. As the medical profession is overcrowded and as the candidates are always more numerous than the places to be filled the task of this agency has become more and more difficult. The managers have therefore decided to provide facilities for German medical men who may desire to practise in foreign countries. In the petition addressed to the Imperial Chancellor it is requested that the consuls should supply particulars as to the conditions under which German medical men are allowed to practise in the countries in question, as to the capital required, and as to the time which is likely to elapse before practice becomes remunerative.

Improper Treatment by an Unqualified Practitioner.

At a recent meeting of the Berlin Medical Society Dr. Kutner showed a patient who had suffered considerably as the result of treatment by an unqualified person. The man having observed a "blister" on his penis, consulted an individual named Falbe and was informed that the complaint would last about ten weeks. Falbe then poured a corrosive fluid upon the penis, covered it with cotton-wool, and instructed the patient to apply bandages moistened with the same fluid, a bottle of which was given to him. The penis and the skin of the scrotum and the lower part of the abdomen became exceedingly swollen and the patient felt very ill, but was informed by the quack on several occasions that he was on the way to recovery. At last he consulted Dr. Kutner who found that the skin of the penis, the scrotum, and the abdomen was burnt and partly gangrenous, that the "blister" was a chancre, and that an indolent swelling of the inguinal glands and a syphilitic exanthem had developed. Dr. Kutner remarked that if medical men would more frequently bring forward instances in which actual harm had resulted from treatment by unqualified persons the effect might probably be that even those medical men who were opposed to anti-quackery legislation would become convinced of the necessity for repressing unqualified practice.

Diarrhœa in Strangulated Hernia.

A case of strangulated hernia without obstruction of the bowels is reported by Dr. Baron in the *Deutsche Medicinische Wochenschrift*. A woman, forty-three years of age, suddenly complained of severe pain in the right inguinal region, together with gastralgia, copious vomiting, and diarrhœa. A medical man consulted by the patient believed the symptoms to be due to acute gastro-intestinal catarrh and administered

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ice by the mouth and morphia. When Dr. Baron saw the woman late in the evening she was vomiting bilious matter which had no fæcal odour; there were also profuse diarrhœa and a swelling in the right inguinal region of the size of a walnut. The skin over the swelling was normal, and there was no inflammation of the surrounding tissue. After injection of morphia the pain and the diarrhœa stopped. On the following morning an operation was performed and although there had been no symptoms of occlusion the above-mentioned swelling proved to be a strangulated hernia. After reduction of the intestine the pain and the other symptoms at once disappeared and the patient very soon recovered. Diarrhœa in strangulated hernia is a very rare occurrence; Malgaigne termed it "choléra herniaire" and believed that the prognosis was fatal. Dr. Baron is of opinion that in his case an acute enteritis preceded the strangulation and that the diarrhœal stools came from the portion of the intestine beyond the strangulated tract.

Affections of the Bladder in Workers with Aniline.

At the German Surgical Congress, Professor Rehn of Frankfort described some cases of growths of the bladder occurring in workmen employed in chemical factories, especially those where fuchsin is made. He expressed his opinion that the vapours developed in the manufacture of fuchsin produced an irritation of the uropoëtic system which finally led to the formation of malignant growths. Dr. Leichtenstern, chief physician to the Cologne General Hospital, writing in the *Deutsche Medicinische Wochenschrift*, states that long ago he also observed urinary troubles in these workmen, especially in the form of strangury and hæmaturia. He refers to similar observations made by Dr. Grandhomme of Hoechst, Dr. Stark of Cologne, and Dr. Bachfeld. Aniline and toluidin are especially liable to produce irritation of the bladder. The patients in question were employed in the so-called reduction department of the factory where nitro-benzol is converted into aniline, amidotoluol converted into toluidin, and fuchsin produced from those two compounds. In this department, therefore, the workmen run great risks and prophylactic measures should be taken. Free ventilation is essential in order that they may not be exposed to the influence of concentrated vapours of the above substances, they should be instructed to give immediate notice to the medical officers whenever any urinary troubles occur, and men suffering from a disease of the uropoëtic system ought not to be employed in aniline works. Dr. Leichtenstern in conclusion described 2 cases of tumours of the bladder lately observed by him in workmen from a well-known Rhenish chemical factory. The first patient was a man, thirty-one years of age, suffering from symptoms of chronic aniline poisoning—yellow-green colour of the hair and nails together with anæmia. He had also for several weeks complained of anorexia and strangury. By rectal palpation a globular and very painful tumour was recognised in the bladder. The bladder itself was so small that only 70 c.c. (2½ oz.) of fluid could be injected by irrigation. The daily quantity of urine was from 500 c.c. to 750 c.c. (17 fl. oz. to 27 fl. oz.); it was of a dark-green colour and contained a small quantity of blood. Casts were never present and the reaction was acid. In course of time other tumours formed in the bladder and could be felt on both sides of the symphysis, whilst the capacity of the bladder decreased so much that it would hold only 40 c.c. (1½ oz.) of fluid. The treatment consisted of hot poulticing, hot baths, opium suppositories, and subcutaneous injections of morphia, the effect of which was that the patient gradually improved, the capacity of the bladder increased, the urine became normal, and the tumours disappeared. After six weeks the man was able to leave the hospital with only a slight degree of anorexia and strangury. From this rapid recovery it was evident that the growths were not malignant but that they were due to acute submucous proliferating cystitis. The second patient unfortunately died. He was fifty-one years of age, had been employed for many years in the factory and went to the hospital with nearly the same symptoms as those in the preceding case, but the tumours were much larger and were perceptible above the symphysis. Cystoscopy was impossible, for the cavity of the bladder was practically obliterated, and the catheter could not make its way amidst the large tumours. Notwithstanding treatment as above described the growths increased and cystotomy was therefore performed. The bladder appeared to be changed into a great mass of growths and was completely removed, the ureters being brought out into the wound. The patient died two days afterwards. The necropsy showed that the tumours were reticular polymorphous sarcomata and had grown through the submucous tissue. The cause of the disease was evidently a chronic irritation of the bladder caused by the vapour of aniline, its pathogenesis being comparable to that of the sarcoma affecting chimney-sweeps and workers with paraffin.

Dec. 13th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The English-Speaking Practitioner in Italy.

WITH a persistence which will not be thrown away upon the English-speaking part of the profession Dr. Santini in the Chamber of Deputies on Dec. 12th once more interpellated the Government as to whether it intended to take cognisance of what he calls "l'esercizio abusivo sanitario per parte dei stranieri" (the irregular practice of the healing art by non-Italian medical men). He took his stand this time on the "national dignity" which was compromised by the non-recognition of Italian diplomas abroad while foreign diplomas are recognised in Italy. In other words, he wanted to make the possession of an Italian qualification obligatory on the foreign (particularly on the English-speaking) practitioners. The Prime Minister (General Pelloux) reminded him of the circular disseminated some weeks ago among the prefects of the kingdom advising them to take note of such foreign practitioners as courted an Italian *clientèle* and to check such practices wherever found, advising them, moreover, that where such practitioners confined themselves to their compatriots the prefectoral interference was not warranted. Before sitting down His Excellency called Dr. Santini's attention to the fact that there are only 108 foreign medical men practising in Italy, of whom, I may add, the English-speaking contingent may be reckoned by units rather than by tens. Admiral Canevaro (Minister of Marine) asked Dr. Santini if he was aware that the Italian practitioners in foreign countries were more numerous than the foreign practitioners in Italy. So it seems that the reciprocity Dr. Santini desiderates already exists and is of so one-sided a character that it is distinctly to the advantage of his compatriots. Dr. Santini in truth seems to have been as far from "scoring" on this as on any previous occasion of the kind.

The Spread of Pestis Bubonica.

The Italian Government, in view of disquieting information from the Madras Presidency and from the island of Madagascar, has, by an ordinance bearing date Dec. 4th, put in force against all vessels sailing to Italy from those parts the regulations embodied in the law on maritime sanitation of May 8th and July 15th, 1897.

Dec. 13th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Inoculation for "Cattle Tick Fever."

DR. TIDSWELL, the assistant medical officer to the Government of New South Wales, has for the last three months been investigating the effects of protective inoculation of cattle against the cattle tick fever. He has just furnished the Minister of Agriculture with a preliminary report in which he gives a minute description of the disease and the results of his experiments. He observes that these are defective in point of numbers and the time given to the investigation has been too short for the settlement of many of the problems to be elucidated, but sufficient has been done to warrant the following conclusions being accepted as a closely approximate indication of what may be expected from protective inoculation: (1) the inoculation will protect cattle against the serious effects of "cattle tick fever"; (2) provided the animal whose blood is to be used be properly selected the inoculation will not seriously interfere with the milk yield of dairy cows; and (3) in certain cases the inoculation will produce an unhealthy condition which may last for a few months

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at least and during which the meat will be of an inferior quality. He adds: "The experiments have shown that protective inoculation has its defects as well as its advantages; it is well for those who may practice it to know the exact conditions and be prepared for some disappointments. At the worst estimate it is better than the natural tick fever and it is the best known means of minimising the disastrous effects of the latter disease. What is required is some method of securing immunity which does not involve infection."

Legislation for Inebriates.

On Oct. 13th Mr. Creed moved the second reading of the Inebriates Bill in the Legislative Council of New South Wales. Eleven years ago a committee had reported as to the necessity for legislation of the kind proposed and further experience only accentuated that necessity and the Comptroller-General of Prisons had pressed upon the Government the necessity of treating habitual drunkards as victims of disease and not as ordinary offenders against law. He thought provisions had been made in the Bill to guard against abuse. The first clause authorised a judge of the supreme court or district court, the master in lunacy, or any stipendiary or police magistrate on the application of the inebriate or any person authorised in writing in that behalf by an inebriate, while sober, to make an order placing the inebriate under the care and control of some person or persons, in the house of the inebriate or of a friend, or in a public or private hospital, or in some gaol or receiving-house, for any period not exceeding twenty-eight days, or in some hospital for the insane or licensed inebriate institution for such period not exceeding twelve months, as might be mentioned in the order. The inebriate might also be placed for a period not exceeding twelve months under the care or charge of an attendant or attendants to be named in the order. As to the orders the Bill provided that they might be applied for by the husband, wife, parent, brother, sister, son, or daughter of full age, or partner in business of an inebriate, or an officer of police of or above the rank of a sub-inspector, acting on the request of a duly qualified medical practitioner in professional attendance on the inebriate, or on the request of the relative of an inebriate or at the instance of a justice of the peace. The clause also allowed the inebriate if mentally fit an opportunity of being heard in objection to the order. The second and third clauses provided that the judge or magistrate might make an order as to the property and treatment of the inebriate. The next clause provided that the order should authorise the attendant to prevent the supply of intoxicants to an inebriate and provision was also made that the inebriate should not leave the colony during the existence of the order unless permitted to do so by some variation or amendment of the order. There were provisions in the Bill which to a certain extent related to the property of an inebriate and the question of supplying liquor to inebriates. Clause 9 provided that the Governor might license institutions for inebriates and make regulations and that provision would, he thought, be less likely to lead to oppression than if the regulations were embodied in the Bill.

The Milk-supply of Melbourne.

At the last meeting of the Melbourne Medical Association Mr. Millard Johnson, Ph.L., one of the lecturers at the Veterinary College, and formerly an inspector of milk at San Francisco, gave a very interesting lecture, illustrated by limelight views and experiments, on the chemistry and handling of milk. He gave a detailed account of the many processes adopted in America to secure purity of milk and contrasted them with the laxity and culpable carelessness which characterised the production, handling, and distribution of milk in Melbourne and its suburbs. It was shown that under present circumstances it was extremely difficult to prevent decomposition of milk in Melbourne and that these difficulties were much intensified by the restrictions imposed by the Factories Act upon the distribution of milk prohibiting the delivery of milk on two afternoons in the week. An animated discussion followed and it was unanimously decided that the medical societies should take immediate steps to try to alter the existing state of affairs. In consequence delegates from the various societies met and drafted a letter on the subject to the public press and also arranged for a deputation to the Chief Secretary.

The Board of Health and Tuberculosis in Victoria.

The President of the Board of Public Health in Victoria, Dr. D. A. Gresswell, has prepared a circular on the subject of the prevalence of tuberculosis in the colony and its prevention. In the ten years from 1888 to 1897 19,137 persons have died from tuberculosis in Victoria. It is recommended that milk be not taken from milkmen who cannot show a certificate from a veterinary practitioner that the dairy herd is free from disease and from a medical practitioner that the dairying operations are properly conducted. Meat must not be taken from a butcher who cannot give satisfactory evidence that the meat is wholesome and that in slaughtering and dressing scrupulous cleanliness has been observed. No house or room which has been occupied by a tuberculous patient should be taken unless satisfactory evidence be given that it has been thoroughly disinfected. Tuberculosis amongst cattle must be eradicated—a matter which has been shown to be practicable.

The Meat Bill, Victoria.

Three years ago a conference of delegates from the metropolitan municipalities was held to consider the necessity of improving the conditions of the meat-supply of the colony. The chairman of the Board of Public Health submitted a draft of a Bill which served as a basis for discussion. After several conferences a measure has been finally drafted and is now coming before Parliament. The main object aimed at is to secure that stock of all kinds intended for sale as food shall, as far as possible, be slaughtered under proper supervision. The Bill proposes that after the expiration of six months no person shall slaughter or dress carcasses except at a public abattoir or a duly-registered private abattoir. The municipal councils are to appoint meat inspectors who must prove their competence to the satisfaction of the Board of Health. To secure independence these inspectors are to be removable only by the Governor in Council. The inspector is to have power to enter abattoirs at any time and is enjoined to examine all animals intended to be slaughtered and all carcasses after slaughter. Further clauses prohibit the sale of meat unless branded by the inspector as fit for consumption.

The Battle of the Clubs.

In Launceston, Tasmania, seven of the medical men engaged in lodge practice have signed a circular sent to the various friendly societies in that city refusing to continue their attendance unless some reform is made with regard to fees and a wage limit for members. The friendly societies in retaliation threaten to import two medical men to do all the lodge practice at a definite salary and without the right of private practice. The friendly societies in Hobart tried this system some years ago, but it was a failure.

Presentations to the Matron of the Sydney Hospital.

Miss Gould, prior to her resignation of the position of matron of the Sydney Hospital, received a number of presentations. The honorary medical staff gave a piece of plate and the resident staff an afternoon tea-service. The nursing staff presented a travelling-bag and other articles and the executive staff a clock. All the spokesmen for the various departments referred in the highest terms to Miss Gould's services and the harmonious relations existing throughout the hospital. In acknowledging the gifts Miss Gould referred to the fact that the present nursing staff, including her successor, consisted entirely of colonial women trained at the hospital.

Appointments.

At the Prince Alfred Hospital, Sydney, Mr. F. A. Bennet, M.A., M.D., C.M. Aberd., has been appointed honorary physician for diseases of the skin; Mr. G. T. Hankins, M.R.C.S. Eng., honorary surgeon for diseases of the ear, throat, and nose; Mr. Cecil Purser, B.A., M.B., Ch.B., honorary physician; and Mr. E. M. Pain, medical superintendent. At the Melbourne University the council has made the following appointments of examiners for the year 1898-99 in the Medical School: Anatomy, Mr. G. A. Syme, M.B., M.S., F.R.C.S.; Materia Medica, Mr. P. B. Bennie, M.A., M.D.; Therapeutics, Mr. D. A. Gresswell, M.A., M.D. Oxon.; Medicine, Mr. John Williams, M.D. Edin.; Surgery, Mr. Charles Ryan, M.B., Ch.M. Edin.; Obstetrics, Mr. Rothwell Adam, M.B., Ch.M. Edin.; Forensic Medicine, Mr. C. H. Mollison, M.B., B.S.; Pathology, Mr. T. Cherry, M.D., M.S. For the M.D. examinations: Physiology of the Nervous System, Mr. H. Maudsley, M.D., M.R.C.P. Lond.; Mental Pathology, Mr. J. Y. Fishbourne, M.B. Dub., and Mr. J. V. McCreery, L.R.C.S. Irel.

Nov. 2nd.

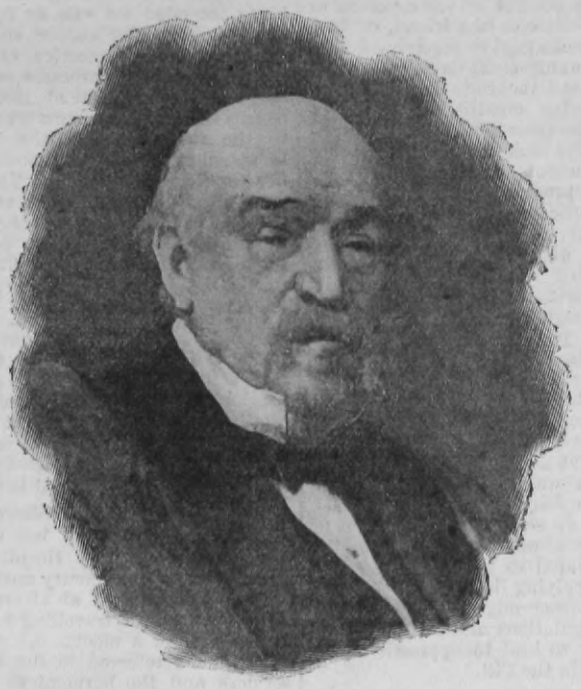
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Obituary.

SIR WILLIAM JENNER, BART., M.D., F.R.C.P. LOND., F.R.S., &c.

EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; LATE PHYSICIAN-IN-ORDINARY TO HER MAJESTY THE QUEEN AND H.R.H. THE PRINCE OF WALES; CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

WE regret to announce the death of Sir William Jenner which occurred on Dec. 11th, at Greenwood, Bishop's Waltham, Hampshire, a country seat which he had occupied for many years. In him the English medical profession has lost one of its brightest ornaments and foremost representatives, one who had the good fortune to attain to the highest degree of eminence both as a scientific man and a practitioner, and who has now passed away in the fulness of age and universally esteemed. Her Majesty's appreciation of his services to the Royal Family is expressed in the *Court Circular* of Dec. 12th in the following terms:—"The Queen received yesterday with much regret the news of the death of Sir William Jenner who had been Her Majesty's physician for upwards of thirty years and who only retired from the Queen's service in 1893 owing to failing health. He was not only a most able physician but a true and devoted friend of Her Majesty's who deeply mourns his loss."



SIR WILLIAM JENNER, BART., M.D., F.R.C.P. LOND., F.R.S.

William Jenner was born at Chatham in the year 1815, where his father, Mr. John Jenner, resided at the time, although his usual home was at St. Margaret's, Rochester. Of Jenner's early life we know but little, but it seems probable that he received his schooling at the old dockyard town, whither in 1816 Charles Dickens, then a weakly child of four years, had lately come with his parents from Portsmouth. Dickens is described as having loved to watch the games of other boys in which sports his puny physique prohibited his taking part, and it is not too vain an imagining to picture him envying the activity and prowess of the sturdy lad, William Jenner. Jenner's further education was pursued at the University of London (now University College), then in its infancy, his natural bent towards science as a calling there showing itself, and at the age of sixteen years he became apprenticed to an apothecary who conducted a general practice in Marylebone. Having become qualified as a licentiate of the Society of Apothecaries in 1837 he immediately started practice on his own account in Marylebone and with some success. His work was the miscellaneous labour of a middle-class London general practice, but his habits being studious and his energy and ambition well-nigh unlimited it was not long before he aspired to a wider field of effort. For some two years he had been surgeon-accoucheur to the Royal Maternity Charity, when in 1844 he graduated as Doctor of Medicine at the University of London and relinquished general practice. For the next four years he devoted his attention chiefly to the study of pathology at University College where Sir Robert Carswell was lecturing, and in 1848 began, as a Member, his long and distinguished connexion with the Royal College of Physicians of London. At the same time he received the appointment of professorship of Pathological Anatomy at University College and was elected assistant physician to University College Hospital. His active connexion with both these bodies was continued until within a few years of his death, when a dangerous illness caused him to retire from his labours to enjoy a well-earned period of repose.

His connexion with the Royal College of Physicians, commencing, as has been said above, by his becoming a Member in 1848, was as notable as it was long. In 1852 he was elected a Fellow and in the same year he had the honour of delivering the Goulstonian Lectures before the College. In 1881 he was elected to the distinguished position of President, which office he held for seven years—the longest period during which it had been occupied by any physician since the days of Dr. John Ayrton Paris, who presided for thirteen years—from 1844 until 1857. On Sir William Jenner's retirement in 1888 his active part in the management of the affairs of the College ceased, although his influence has since that date been often manifested. As a President he perhaps distinguished himself more than in any of the other numerous honourable capacities in which it was his lot to figure. He worthily upheld the dignity and traditions of the chair occupied by Linacre and Harvey and, with a combination of modesty and thorough commonsense which were ever his notable characteristics, he directed the conduct of the great body of which he was the head during times when the medical profession was undergoing many changes and was decidedly in an unrestful condition.

The Hospital for Sick Children was established in 1852 in Great Ormond-street and Jenner was appointed as its first physician. This appointment he held for ten years, during the greater part of which time Russell Reynolds was his junior colleague. Here it was that Dr. Jenner acquired that intimate knowledge of the pathology and treatment of diphtheria for which his name will long be famous, a subject with regard to which his published works are still reckoned masterpieces of clinical research.

His connexion with the London Fever Hospital began in 1853 when he was elected assistant-physician, and continued until his appointment as Physician-Extraordinary to the Queen in 1861. His appointment at the Fever Hospital accorded well with his other work at Great Ormond-street and at University College Hospital, and although the duties and responsibilities of these three active positions would have been little short of overwhelming to a man of less vigorous determination, Jenner contrived not only to do his share of the work with apparent ease, but at the same time was not forgetful of his social duties.

His "full" physicianship of University College Hospital was announced in 1854, so that between that time and 1861 his days must indeed have been more than sufficiently

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occupied by official duties, putting aside the considerable private practice which his success had brought him. At University College Hospital in the "fifties"—an institution and period with which the name of William Jenner will always be preeminently associated—among his colleagues were Dr. Walshe, Dr. Russell Reynolds, Dr. Garrod, Mr. Erichsen, Mr. Quain, and Mr. Henry Thompson. Of these, four subsequently received titular distinction.

As physician to University College Hospital and as Professor of the Principles and Practice of Medicine at University College he earned from all who had the privilege of being either his patients or pupils, a regard amounting even to reverence. His style of lecturing was essentially logical, without embellishment, so that in his teachings all that he said was worth hearing not only as a pleasure but as a really valuable help to students in acquiring a knowledge of their profession—a virtue not too often to be found in lectures which are unfortunately so commonly relegated to the category of "necessary functions," dissertations to be listened to or not according to the mood of the hearer for the sole purpose of "getting signed up." Jenner's lectures were certainly not of this latter kind. They commanded the attention of the listeners by the lucid and interesting manner in which their component facts were presented. He was essentially a lecturer who dealt with facts and with facts verified by his own diverse experience. He was in all matters concerning his art an agnostic in the true sense of the word, if we may use an expression so liable to misconstruction—that is, he never asserted anything as a fact until he in his own ripe experience had proved it to be true or had gathered from an absolutely trustworthy source that it was capable of entire verification. His straightforward manner of presenting his ideas in an accurate—nay, almost tabular—sequence can be well compared to the statistical method of his old friend and colleague Dr. Walter Hayle Walshe, to whose friendship and advice many of the great leaders of our profession have owed so much. A veritable galaxy of brilliant men at this period—an era indeed in the history of the science of medicine—formed the staff of University College Hospital—Sharpey, Walshe, Parkes, Jenner, Russell Reynolds, and Garrod, and on the surgical side Richard Quain, Erichsen, Marshall, and Henry Thompson were doing their best work. To the friendship of, and to association with, these men, though several of them were considerably his juniors, Sir William Jenner owed much, not only in the matter of technical assistance, but of brotherly sympathy, for it can safely be said that no man who has ever had the privilege of personal association with Sir William Jenner can fail to regard with affectionate reverence not only his professional greatness but his private and personal worth.

It must be nearly thirty years since Sir William Jenner ceased to take an active part in clinical teaching, so that even his latest pupils are now past middle age, whilst many of the earlier ones have preceded their master to the grave. But to those who do survive the news of his death will recall to their minds his unique personality and the impressive lessons which he imparted to them. Many a maxim which he uttered by the bedside has been treasured by his hearers and has stood them in good stead in times of difficulty. For nothing seemed to escape his observation; and that no sign was too trivial, no detail too slight, to be discarded by the real physician was the gist of his teaching to his assistants. It was an education in itself to be Jenner's house-physician or clinical clerk, for he demanded precision and exactitude and did not hesitate to severely criticise the style and substance of the notes as they were read out to him on his rounds. Nothing slipshod or slovenly was possible in Jenner's wards. It was scarcely possible, however, to please him absolutely and he seemed to instinctively pounce upon the trifle which had been neglected. His remarks were often so direct and so matter-of-fact that in the circumstances under which they were made they appeared to be humorous though whether the utterer intended that this should so appear was often doubtful. These criticisms, freely passed upon house physician, clinical clerk, and nurses alike, formed most instructive and valuable teaching to all concerned and when Jenner perceived that his subordinate received them sensibly and good-naturedly the fact would very generally form the foundation of a friendship which might have an educational and professional value scarcely to be over-estimated. He knew how to teach and what to teach, and he spoke with fearless dogmatism and in an emphatic, terse manner which carried conviction. As an illustration of this and also of his prompt sagacity we repeat the following anecdote upon the evidence of a friend of the late physician who was present. One day Jenner was enlarging upon a possible case of typhoid fever and dwelling upon the differential diagnosis between it and other diseases when he mentioned a sign (we forget what) which, he said, "you never get in typhoid." Upon its being suggested that he spoke too peremptorily on the point, he turned on the speaker and asked, "How often have you seen it in the course of your life? Possibly in one per cent. of the whole number of cases treated? Well, sir, if I succeed in making my pupils 99 times right out of 100 I've done very well."

He never neglected the sanitary side of medicine and always taught his pupils that to prevent was of more importance than to cure. In sanitary matters as in medicine he always made for the essentials, and once when a question of ventilation was being discussed and the value of different methods being canvassed Jenner merely listened to the *pros* and *cons* and then, when everybody had finished, contented himself by saying, "If you want to ventilate the place efficiently you must have the holes big enough." This is a fair sample of his methods and it was marvellous to hear him at a society after listening to the last fine-spun notion upon this or that quietly rise and say a few emphatic sentences which put the whole matter in a nutshell. There was nothing foggy in his mind. He never spoke merely for the sake of speaking and after he had spoken there was no mistaking what he meant or what his line of action would be. When he had made up his mind as to the course of action to be pursued he was not to be turned aside. Sometimes he showed himself scarcely amenable to argument and if pressed was not seldom restive but his opposition was always honest, sincere, and straightforward. It can be believed that University College men were thoroughly proud of their great master. Every medical student of the College felt something akin to reverent awe in his presence. "We were all proud of him," writes one who from his pupil became his colleague and friend; "nay, we worshipped him, although he may not have known it. The pressure of private practice gradually led to his hospital visits being curtailed in number and duration, whilst the clinical lectures which were so full of instruction and wisdom had to be abandoned, and at last the time came when he ceased to visit the hospital at all. Still opportunities did occur in the Pathological and Clinical Societies during his presidency of these bodies, as well as in other medical gatherings, for us to be again under the master's spell, as in his old familiar aphoristic style he spoke of tubercle or cancer or rickets or typhoid fever to an older generation, it is true, but still to those who sat at his feet. But those occasions were few and far between. The world claimed him, and while he filled so well the presidential chair at the Royal College of Physicians the demands on his time left him no leisure to appear at scientific meetings—a veritable loss to the attendants."

On the death of Dr. Baly in 1861 Dr. Jenner was appointed Physician-Extraordinary to Her Majesty the Queen, and in the following year he was gazetted as Physician-in-Ordinary which honourable position he held until 1893, when his health compelled him to resign. From 1863 he likewise acted in the same capacity to the Prince of Wales, and in 1864 he was elected a Fellow of the Royal Society. He assiduously attended the Prince Consort in his last illness — that sad event which deprived the English people of one who had endeared himself to all. In 1868 Her Majesty conferred on Dr. Jenner the honour of a Baronetcy of the United Kingdom, a distinction which was hailed by the whole profession as an honour to the medical calling as well as a well-deserved reward of conscientious and unremitting labour. A very large number of his friends and pupils met together on June 11th, 1868, to celebrate the honour thus conferred. Dr. Parkes took the chair and the dinner which was served at Willis's rooms was a notable event of the medical year. The honour of a baronetcy had been earned by sheer hard work, untiring energy, unblemished honesty and scientific attainments, and in that it rested on no basis of political expediency or private feeling this tribute to the art of medicine was doubly grateful. Jenner was in the prime of life and in the zenith of his success, so that in the speeches delivered on this happy occasion there was no need for panegyrics on his past work. His life's labour was fresh in the minds of all. His contributions to science were part and parcel of the

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medical knowledge of the day, and among those who were present at the dinner—probably one of the most important meetings of members of the profession for convivial purposes ever held—were an almost unprecedented number of men who owed their success and position to the teachings of the man in whose honour the entertainment was given. Some 200 friends, colleagues, and pupils sat down, including *alumni* of University College drawn from all parts of the United Kingdom. An illuminated address of congratulation was presented to Sir William Jenner by G. V. Poore, on behalf of the students and the health of the new baronet was proposed in the most fitting terms by Dr. Edmund Parkes, when the enthusiastic admiration of a friend was combined with the dignified periods of an orator. Other toasts were given and replied to by Dr. Sharpey, Mr. Richard Quain, and Mr. Malden.

The Prince of Wales's dangerous illness occurred in 1871 and in 1872 Sir William Jenner, who had been in attendance on His Royal Highness during that long and most anxious period and was in great measure instrumental in bringing about the happy issue, was gazetted as a Knight Companion of the Bath. On May 24th, 1889, on his retirement from active work, Her Majesty promoted him to be a Grand Commander of that distinguished Order.

Towards the end of the year 1888 Sir William Jenner became seriously ill and for several weeks his condition was most critical. On Jan. 5th, 1889, however, THE LANCET had the gratification of announcing that during the past week he had steadily improved and it was hoped that he would soon be able to leave London for the country which he was strong enough to do at the end of the month. Throughout his illness he was attended with the closest assiduity by his attached friend and colleague Dr. Russell Reynolds. His health, however, and his age—he had passed the limit assigned by the Psalmist—three score and ten—as well as the advice of his friends, induced him to take a well-earned rest and no further to tax the powers of a physique reduced by his recent illness. He therefore retired from the active pursuit of his profession. But when his years and failing health confined him to his charming country seat he loved to recall the memories of his early struggles, his daily and arduous labours in the wards and post-mortem rooms of the Fever and Small-pox Hospitals, where he worked with an enthusiasm undaunted by the tax it made on his health and comfort. Twice he was attacked by typhus fever and once narrowly escaped with his life. But he was laying then the foundations of his future fame and the same qualities that made him persevere in his researches then were just those which he afterwards carried into every sphere of his labour.

Sir William Jenner's literary works are more notable by their entire originality of thought and great value to the profession than for their bulk and quantity. The most striking points in the studies and experiences of a long life he has recorded, but he has left in the less permanent form of papers to societies and journals much which will be very acceptable to the profession at large for many years to come. His treatise on Diphtheria was published in 1861 and it presented to the profession many observations and details which had previously not received their due meed of attention. Previously to this his Goulstonian lectures had met with recognition as the result of earnest and careful labour as well as expressions of long and useful experience. The memoirs which will always be pre-eminently associated with his name are, "The Identity or Non-identity of Typhus and Typhoid Fevers," "Diseases Commonly Confounded under the term Continued Fevers," and "Acute Specific Diseases"; of these, the first especially aroused marked interest among the leaders of medical science. His opportunities for observing the line of demarcation between these previously confused maladies were exceptional, and he made use of them in a way that few men could have done, but his writings on this subject evoked no little controversy as to priority of discovery—a question which this is not the place to discuss; it will be sufficient to refer to the obituary of Dr. Alexander Patrick Stewart of the Middlesex Hospital, published in THE LANCET of July 28th, 1883. No detail was too trivial to attract Jenner's attention and no symptom went unnoticed or unrecorded. To Holmes's "System of Surgery," Reynolds's "System of Medicine," and Quain's "Dictionary of Medicine" he contributed articles of the highest importance, which indeed rank among the best sections of those admirable works. In 1893 he republished in one volume his "Lectures and Essays on Fevers and Diphtheria, 1849–1879." This volume contains perhaps the best of Jenner's work. In it are included his essays on Typhus, Typhoid Fever, and Diphtheria, to which reference has already been made, and several other valuable contributions which had previously been printed among the Transactions of the Royal Medical and Chirurgical Society. "Clinical Lectures and Essays on Rickets, Tuberculosis Abdominal Tumours, and Other Subjects," was a considerable volume published in 1895. Included in this volume are the two courses of masterly lectures on Rickets which he delivered at the Hospital for Sick Children in Great Ormond street, and although more than a generation has passed since their delivery they are still full of instruction, for they were the product of a keenly observant mind and are stamped with the individuality of their distinguished and lamented author. With regard to rickets to Sir William Jenner must be accorded the great merit of seeing the truth that this disease is, as he put it, "no more of a disease of the bones than is typhoid fever a disease of the intestines." He established it as one of the four diatheses to which infantile life is prone and at the outset of his lectures clearly contrasted the features of these four—tuberculosis, scrofulosis, rickets, and syphilis. His observations concerning the habits of children in later pages are a veritable masterpiece of word painting.

The last of his communications to our pages was entitled "A Brief Analysis of the Appearances observed in the Bodies of Seventeen Persons 'Burnt to Death'" It was dated from Bishop's Waltham, was upwards of seven columns in length, and appeared in THE LANCET of August 22nd 1891. In it he introduces the reminiscence—naturally of much interest to us—that the Founder of THE LANCET (at that time coroner for West Middlesex) was the means of enabling him "to examine the bodies of three people destroyed in a public-house burnt down in Great Portland street."

Sir William Jenner was honoured with, in addition to the many degrees and titles already mentioned, the degrees of Doctor of Laws of Cambridge University and Edinburgh University, and in 1863 had conferred upon him the honorary degree of Doctor of Civil Law by the University of Oxford. He was also a Commander of the Order of Leopold of Belgium, an honorary member of the Academy of Belgium and Fellow or Member of a very large number of learned societies in many of which he has held office as president and vice-president.

Sir William Jenner was married in 1858 to Adele Lucy daughter of the late Mr. Stephen Adey, of Gloucester-place Portman-square, who survives him.

He is succeeded in the baronetcy by his eldest son Captain Walter Kentish William Jenner, of the 9th Lancers of the four younger sons two are in the army, one is in the Consular service, and one is in his father's profession.

The funeral took place this (Friday) morning.

ERNEST DENMAN MINTER, M.B. LOND., M.R.C.S. ENG. L.R.C.P. EDIN., R.N.

STAFF SURGEON ERNEST DENMAN MINTER, R.N., died at the Royal Naval Hospital, Stonehouse, on Dec. 9th, after a short illness. He was the youngest son of the late Dr. J. M. Minter, inspector-general of hospitals and fleets, honorary physician to the Queen, and surgeon-extraordinary to H.R.H. the Prince of Wales. The deceased received his medical education at Guy's Hosptal, London, and graduated M.B. Lond. in 1884; he also took the qualification of M.R.C.S. Eng. and L.R.C.P. Edin. the same year. Dr. Minter entered the Royal Navy as a surgeon in February 1885, and was promoted to the rank of staff surgeon in February, 1897. He was appointed to the *Rupert*, the port guardship at Gibraltar, in December, 1895, and only quite recently returned to England owing to the state of his health.

ROYAL METEOROLOGICAL SOCIETY. — We are informed by Mr. William Marriott, assistant secretary to the society, that on Jan. 2nd, 1899, the offices of the society will be removed from 22, Great George-street, Westminster to Princes Mansions, 70, Victoria-street, Westminster, S.W. to which address all communications on and after that date should be forwarded.

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Medical News.

UNIVERSITY OF CAMBRIDGE.—On Dec. 8th Edward Sydney St. Barbe Sladen, M.B., B.C., of Gonville and Caius College, was admitted to the degree of M.D.; H. Williamson, B.A., of St. John's, and H. B. Roderick, B.A., of Emmanuel, were admitted to the degrees of M.B. and B.C.; and Dr. G. N. Pitt has been appointed an additional examiner in Medicine for the M.B. degree.

FREEMASONRY.—*The Rahere Lodge, No. 2546.*—A meeting of the Rahere Lodge was held at Frascati's Restaurant on Dec. 13th, Bro. T. G. A. Burns, W.M., being in the chair. A vote of condolence with the family of the late Earl of Lathom was passed unanimously, Lord Lathom having been an honorary member of the lodge. Bros. Marshall, Heath, Burrows, and Brewerton were admitted to the third degree; Bros. Coventon, Griffiths, Gay, and Tucker were admitted to the second degree; and Dr. C. H. Roberts was initiated into freemasonry. The deputy master for the time being of the Sancta Maria Lodge, No. 2682, was elected an honorary member of the lodge and 20 guineas were voted from the lodge funds in aid of the Royal Medical Benevolent College at Epsom. The members and their guests afterwards dined together.

LEWISHAM UNION INFIRMARY.—Since the opening of this infirmary in 1894 there have been 768 patients of unsound mind under treatment, and a separate building containing three wards and two padded rooms has been erected for the reception and temporary accommodation of such cases. On the occasion of the opening of this building Dr. F. S. Toogood, the medical superintendent of the infirmary, said that it did not inaugurate any new policy because recent Lunacy Acts have made provision for the temporary care of mental cases by giving a justice of peace or magistrate power to order their detention for a short period in a workhouse or infirmary. As showing the connexion between mental and bodily disorder Dr. Toogood said that an elderly female who was admitted suffering from melancholia with suicidal tendencies was found to have a large abdominal tumour, which he removed, and the patient thereupon made so good a recovery that she returned home sound in mind and body and has remained so. Continuing his address Dr. Toogood said: "I feel a certain amount of modesty in speaking of the medical staff and of the treatment of mental cases. The specialist who confines his attention solely to, and whose horizon is bounded entirely by, lunacy is the very worst man to have the care of mental cases in their early stages. What is wanted is great general experience, both medical, surgical, and mental, and I must firmly insist that the medical officers of large institutions such as this are the very men who pre-eminently possess these qualifications. In addition to this they have but a few mental patients under their care at any one time and so are enabled to thoroughly investigate each case. The magistrates and guardians have power to call in any assistance they may deem requisite. Our attendants are trained nurses, male and female, and I have the utmost confidence in them. Dr. Rayner recently delivered a lecture under the auspices of the Charity Organisation Society in which he advocated the formation of 5 or 6 reception houses in the metropolis, these being designed to replace buildings such as this. A similar proposal has also been formulated by the Asylums Committee of the London County Council. The objections to these schemes are many:—1. The total absence of any reason for the change; the present method works well and there have been no complaints of any kind. 2. The great expense; 1000 beds at least would be needed and even the London County Council would find it difficult to erect five buildings of 200 beds each for less than £250 per bed; that means £250,000 for bricks and mortar besides furniture and a host of officers. 3. The impossibility of the medical officers becoming thoroughly acquainted with the cases when dealing with so large a number in such a limited time. 4. The hardship of dragging the patients' friends half across London to attend magisterial examinations. 5. The stigma of lunacy, for by whatever fancy names the reception houses may be called they will inevitably be lunatic asylums to the general public and a working man or woman branded as a lunatic has little chance of obtaining employment in these days of keen competition. After everything has been said systems must be judged by their results and a method such as ours which absolutely cures over half its cases in a fortnight and which only sends one-third to the dreaded lunatic asylum must, to use a colloquial phrase, 'take a lot of beating.'"

MR. J. J. MACKAY, of 154A, Wandsworth-road, has been arrested for perjury on the order of Mr. A. Braxton Hicks, the alleged offence having been committed at the Battersea coroner's court in the course of giving medical evidence at an inquest. He has been released on bail.

INCREASE OF SALARY.—At the meeting of the Bristol Health Committee held on Dec. 6th it was decided to recommend the Town Council to increase the salary of Dr. D. S. Davies, the medical officer of health, by £50 in 1899, and a further sum of £50 in 1900.

MR. W. G. GRACE.—Under the presidency of the Duke of Beaufort a farewell dinner organised by members of the Clifton Beagles and attended by a representative gathering of gentlemen interested in various branches of sport was given to Mr. W. G. Grace, M.R.C.S. Eng., L.R.C.P. Edin., on the occasion of his departure from Bristol.

SOUTH SHIELDS MEDICAL PRACTITIONERS' ASSOCIATION.—At a meeting of this association held on Dec. 8th a resolution was adopted supporting the memorial signed by 309 registered practitioners and laymen and recently presented by the Corporate and Medical Reform Association, Limited, to the General Medical Council against "illegal certificates of proficiency in departments of medicine, surgery, or midwifery." The resolution also thanks the Direct Representatives on the Council and Sir Christopher Nixon, Dr. Bennett, and Mr. Tichborne for their support in the Council of the motion moved by Mr. Brown and seconded by Mr. Horsley—

That a special committee be appointed to consider and report at the next session of the Council all cases of alleged infringement of the Medical Acts by persons who profess to examine candidates in medicine, surgery, or allied subjects and to grant certificates or diplomas testifying as to proficiency in any branch of medical or surgical science.

Resolutions to the same effect have since been adopted by the East Suburban Medical, Ethical, and Medical Protection Society, Limited, and the Beckenham and Penge Medical Society.

THE VICTORIA HOSPITAL FOR CHILDREN.—By permission of the Duke of Westminster a meeting in support of the scheme for erecting a new building for the Victoria Hospital for Children, Chelsea, was held at Grosvenor House on Dec. 12th. It is estimated that the cost of the new building will be £25,000. It is proposed that there shall be 6 self-contained wards on three floors, each with 16 beds. Ample accommodation for isolation of suspicious and infectious cases is to be provided. The operation and anæsthetic rooms are to be on the level of the first floor and the arrangements in the basement are to include a better dining-room for the nurses and store rooms. The Duke of Westminster occupied the chair and was supported by Princess Louise and the Marquis of Lorne. The Chairman explained that the Victoria Hospital was at present housed in a building which was never intended for a hospital. The new hospital would be devoted exclusively to the reception of suffering children, while the present building would be utilised for the purposes of the staff. Mr. Pickering Pick dwelt on the continually increasing demands upon the hospital and said that thirty-three years ago when the hospital was opened there were 39 in-patients and 5147 out-patients, while last year there were nearly 900 in-patients with the same accommodation as in the first year and over 56,000 out-patients. Canon Fleming, in supporting the appeal, said he hoped that the day was far distant when the voluntary system of hospital support would be superseded by State-aid. The Duke of Westminster said the continued growth of the population in London must give them all great anxiety on the score of hospital accommodation. Whether voluntary effort would be sufficient to cope with their requirements in this respect he did not know but he hoped it would. The Marquis of Lorne desired to join with Canon Fleming in the hope that the day was far distant when their hospitals would be supported out of the rates. If the hospitals were rate-aided they would find that those institutions would be called upon

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to support very many who ought not properly to be supported in them. This was largely the case in British North America.

THE NEW HOSPITAL AT NEWTON ABBOT, DEVONSHIRE.—The old cottage hospital at Newton Abbot being inadequate the late Mrs. Emmeline Fisher gave the munificent sum of £5000 towards the erection of a new building and to perpetuate the memory of her husband, Mr. Edward Fisher of Abbotsbury. Mrs. Fisher also bequeathed a further sum of £2000. The building which was recently opened stands upon a site which is about a quarter of an acre in extent and is situated on elevated ground. The hospital is about 200 ft. in length and 28 ft. in width exclusive of offices. The administrative block is situated in the centre of the building. On the first floor there are 4 bedrooms, nurses' sitting room, &c., and the attic contains 3 bedrooms. There are verandahs on which patients can sit in fine weather. The west wing has a large ward with twelve beds, 48 ft. by 24 ft., a nurses' room, &c., with a board room and convalescent room. The east wing has similar accommodation with the addition of an operating room, with the medical officers' room adjoining. Within the entrance doorway on the right hand side has been placed a marble slab bearing the following inscription: "In commemoration of the Diamond Jubilee of Her Majesty Victoria, Queen and Empress, and in gratitude for the blessings enjoyed under her reign, the people of Newton Abbot, Highweek, and neighbourhood have endowed this Hospital with £1044, to be called the Queen Victoria Fund." On the left-hand side on a stone slab are the words: "This Hospital was erected by Mrs. Emmeline Fisher in memory of Edward Fisher of Abbotsbury."

PRESENTATIONS TO MEDICAL MEN.—At the Townhall, South Bank, Yorks, on Nov. 17th, Mr. John Steele, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., a well-known medical practitioner in the town, was presented by friends and well-wishers in the neighbourhood with a testimonial consisting of a gold English lever watch and chain.—On Dec. 2nd, at the Bradford Infirmary, Mr. H. C. Major, M.D. Edin., who is retiring from the post of honorary physician at that institution, was presented by the Mayor of the city with an illuminated address in recognition of his services for many years.—Mr. A. J. Pollard, L.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., of Armley, has been presented with a silver cigarette case in recognition of his services as instructor on First Aid to the Injured by the members of the Holbeck Division of the St. John Ambulance Association, North-Eastern Railway Company, Leeds.—On Dec. 1st, at the Bristol Council Chamber, the Mayor (Sir R. Symes), in the presence of a number of ladies and gentlemen, presented Mr. and Mrs. Richardson Cross with a silver cradle in recognition of the fact that a daughter had been born to them during the term of Mr. Cross's office of High Sheriff of Bristol. The cradle was engraved with the city arms and also those of the recipient. Accompanying it was a silver kettle.—At the annual meeting of the Swindon branch of the St. John Ambulance Association, after the distribution of certificates and medallions, the president, on behalf of the class, presented Mr. G. Rodway Swinhoe, L.R.C.P. Lond., M.R.C.S. Eng., with a liqueur case in appreciation of his services as honorary lecturer.—Last week Mr. Alan Eskrigge Carruthers, M.A., M.B., B.C. Cantab., &c., of Batheaston, Bath, was presented with a clock subscribed for by 50 parishioners as a mark of esteem on the occasion of his marriage.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BERKELEY, COMYNS, M.B., B.C. Cantab., M.R.C.P., has been appointed Physician Accoucheur for the Western General Dispensary, Marylebone-road, London.

BRICKWELL, J., M.R.C.S., has been re-appointed a Medical Officer for the Stoke Pogis Sanitary District of the Eton Union.

COLLINS, J. A., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed a Medical Officer for the Castor Sanitary District of the Peterborough Union.

CULMER, JOHN J., M.R.C.S., L.R.C.P. Lond., has been appointed an Assistant Surgeon for the New Providence Asylum at Nassau, Bahamas.

DIBBS, W. S., L.R.C.P. Lond., M.R.C.S., has been re-appointed a Medical Officer for the Farnham Royal Sanitary District of the Eton Union.

DOBSON, J. F., M.B. Lond., has been appointed Resident Casualty Officer for the General Infirmary, Leeds.

FENWICK, S. C. C., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the No. 10 Sanitary District of the Parish of St. Mary, Lambeth.

FERGUS, J., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Officer for the Appleton Wiske Sanitary District of the Northallerton Union.

GAMAN, F. R. S., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer of Health by the Caistor Rural District Council.

GERMAN, A. W., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the First Sanitary District of the West Derby Union.

GOUGH, H. E., L.R.C.P. Lond., M.R.C.S., has been appointed a District Medical Officer by the Northwich Rural Council.

GRAHAM, W., M.B., Ch.M. Glasg., has been appointed an Assistant Medical Officer for the Walton Workhouse of the West Derby Union.

GRIFFITHS, J. C., B.Sc. Lond., M.B., L.R.C.P., M.R.C.S., has been appointed a Medical Officer for the Tealby Sanitary District of the Caistor Union.

HILLS, W. C. D., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Twelfth Sanitary District of the Wisbech Union.

LISTER, W. T., B.A., M.B., B.C., F.R.C.S., has been appointed an Assistant Surgeon to the Central London Ophthalmic Hospital, Gray's-inn-road, W.C.

O'GORMAN, M. C., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Arklow District.

PEET, HENRY, M.B. Lond., has been appointed Resident Medical Officer for the Brownlow Hill Workhouse Infirmary, Liverpool.

ROBERTS, E. A., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer of Health for District No. 20, which includes the Parish of Clapham and a portion of Lambeth.

RUSSELL, J. RISIEN, M.D., F.R.C.P. Lond., has been appointed Assistant Physician to the National Hospital for the Paralysed and Epileptic (Albany Memorial), Queen-square, Bloomsbury, London, vice W. S. Colman, resigned.

SHARPE, C. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Second Oldbury Sanitary District of the West Bromwich Union.

SIMPSON, G. W., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Lamberhurst Sanitary District of the Ticehurst Union.

SOUTHEY, A. J., M.R.C.S., has been re-appointed a Medical Officer by the Eton Guardians and Rural District Council.

STEWART, J. PURVES, M.A., M.D., M.R.C.P., has been appointed an Assistant Physician to the Westminster Hospital, S.W.

STURROCK, A. C., M.B., C.M. Edin., has been appointed a House Surgeon for the Grimsby and District Hospital, vice H. S. Beadles, resigned.

SUTTON, W. L., has been appointed an Analyst for the Borough of Bury St. Edmunds.

TUNNICLIFFE, F. W., M.D., M.R.C.P., has been appointed an Assistant Physician for Out-patients to the Victoria Hospital for Children, Chelsea.

WALKER, D. E., M.B., C.M. Edin., has been appointed a Medical Officer for the Second Sanitary District of the Brixworth Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident House Surgeon. Salary £50, with board and washing.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN, Birmingham.—Resident Surgical Officer. Salary £50, with board, washing, and attendance at the institution.

BOROUGH OF WEYMOUTH AND MELCOMBE REGIS, Dorset.—Analyst. Salary £20 a year. Applications to the Town Clerk, Municipal Offices, Weymouth.

BURY INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence and attendance.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £100 per annum, with prospect of increase to £250, with furnished apartments, board, attendance, and washing provided.

COUNTY HOSPITAL, Ryde.—House Surgeon. Salary £50 per annum, with board, lodging, &c.

GENERAL INFIRMARY AT GLOUCESTER, AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Board, residence, and washing provided.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with residence, board, and washing.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £60 per annum, with board and lodging.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physician.

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KINGTON UNION.—Medical Officer for the Kinsham District. Salary £30, with the additional payments authorised by the Order of the Poor-law Commissioners. The appointment is subject to statutory deductions. Applications to the Clerk to the Guardians, Kington, Herefordshire.

LEICESTER INFIRMARY.—Honorary Assistant Physician.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

LONDON LOCK HOSPITAL, 91, Dean-street, W.—House Surgeon for the Male Hospital. Salary £50 per annum with board, lodging, and washing. Applications to the Secretary at Harrow-road.

MIDDLESEX HOSPITAL, W.—Bacteriologist to the Hospital and Medical School. Salary £100 and fees for special classes.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London. — Three Assistant Physicians in the Out-patient Department, for two years.

NORFOLK AND NORWICH HOSPITAL.—Honorary Dental Surgeon.

NORTHERN DIVISION OF SOUTH UIST PARISH.—Medical Officer and Public Vaccinator. Salary £77 10s., and private practice. Applications to Mr. T. Wilson, Solicitor, Lochmaddy, Clerk.

NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Fitzroy-square, W.—Clinical Assistant for the Central Out-patients' Department, Fitzroy-square, W., for six months. Honorarium at the rate of £35 per annum. Applications to the Secretary, Offices, 41, Fitzroy-square.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—Surgeon to Out-patients.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, Wigan.—Junior House Surgeon for twelve months. Salary £80 per year, with apartments and rations, exclusive of wines, spirits, and washing.

ROYAL BUCKINGHAMSHIRE HOSPITAL, Aylesbury.—Resident Surgeon and Apothecary, unmarried. Salary £80 the first year, with an advance of £10 per annum until it amounts to £100, with board, lodging, washing, coals, and lights, and furnished apartments.

ROYAL COLLEGE OF PHYSICIANS, London.—Milroy Lecturer for 1900.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Surgeon, unmarried. Salary £75 per annum, with board, residence, &c.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Applications to the Secretary, R. S. B. Hospital Offices, 30, Charing-cross, London, S.W.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone-road, London, N.W.—Anæsthetist. Honorarium £25 per annum.

ST. SAVIOUR'S UNION, Surrey.—Second Assistant Medical Officer at the Infirmary, East Dulwich-grove, S.E. Salary £80 per annum, with furnished apartments, board, and washing, subject to statutory deductions. Applications to the Clerk, Union Offices, John-street West, Blackfriars-road, S.E.

UNIVERSITY OF EDINBURGH.—An additional Examiner in Zoology.

UNIVERSITY OF GLASGOW.—Assistant Examiners.

WEST BROMWICH DISTRICT HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Assistant Medical Officer. Salary commencing at £100 a year, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

CHEESMAN.—On Dec. 11th, at Shohola, Swanage, Dorset, the wife of Edward R. R. Cheesman, L.S.A., of a daughter.

EWART.—On Dec. 8th, at 58, Queen's Gate-terrace, the wife of Dr. Chas. Ewart, of a son.

HUDSON.—On Dec. 8th, at Vine House, Cobham, Surrey, the wife of Arthur B. Hudson, M.R.C.S., L.R.C.P., of a son.

LANGFORD.—On Dec. 8th, at Weston-park, Crouch-end, N., the wife of C. Harris Langford, M.B. Lond., of a daughter.

MARRIAGES.

DURHAM—MAX GETZ.—On Dec. 15th, at the German Reformed Church, by Pfarrer Ehlers, at Frankfort-on-the-Maine, Frank Rogers Durham, youngest son of the late A. E. Durham, F.R.C.S., to Elisabeth Ottilie, youngest daughter of the late Geheimer Sanitätsrath Dr. Max Getz, of 43, Savignystrasse, Frankfort-on-the Maine.

MICHAEL—HARVEY.—On Dec. 7th, at St. Paul's, Upper Norwood, Cyril Eden Michael, M.A., M.B., B.C., M.R.C.S., L.R.C.P., to Ada Helen, widow of the late Henry N. Harvey, of Hayle, Cornwall.

DEATHS.

MINTER.—On Dec. 9th, at the Royal Naval Hospital, Plymouth, Ernest Denman Minter, Staff Surgeon, R.N., late of H.M.S. *Rupert*.

MYERS.—On Dec. 10th, 1898, at 31, St. Augustine's-road, Camden-square, N.W., Elizabeth Beaufoy Myers, widow of the late Robert Short Myers, Surgeon, whom she survived upwards of 39 years, in the 87th year of her age. No flowers, by request.

ROGERS.—On Dec. 11th, at Old-street, Finsbury, E.C., J. F. Rogers, L.R.C.P. Edin., M.R.C.S., aged 63 years.

WOOD.—On Dec. 7th, at Cranbrook, Kent, Henry Benjamin Wood, M.D., aged 69.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 15th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 9	29·63	S.W.	0·10	70	54	45	50	51	Overcast
" 10	30·16	W.	...	69	57	45	49	51	Cloudy
" 11	30·37	W.	...	62	57	51	52	54	Cloudy
" 12	30·27	S.W.	...	61	57	52	51	53	Overcast
" 13	30·35	N.E.	...	51	50	45	44	46	Cloudy
" 14	30·25	S.W.	...	60	54	39	40	42	Cloudy
" 15	30·12	W.	...	60	51	42	43	46	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St, Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.) Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.) London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (24th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (20th). — PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. E. F. Trevelyan: (1) A Cyst on the Third Ventricle; (2) A Cyst on the Fourth Ventricle; (3) An Anomalous Tumour of the Brain.—Dr. H. M. Fletcher: Peculiar Condition of the Colon in Pernicious Anæmia.—Mr. Crosse and Mr. Pakes: Black Water Parasite Alive.—Mr. Pakes and Mr. Howard: The Technique of Blood Films.—Mr. H. B. Robinson: Multilocular Tumour from the Inguinal Canal of a Female.—Dr. C. D. Green: Extensive Sarcoma of Mediastinum. Card Specimens:—Dr. Trevelyan: (1) Renal Tumour; (2) Heart with Extensive Calcification of Mitral Valve; (3) Suppurative Typhoidal Cholecystitis; (4) Foreign Body from Peritoneum.

CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, S.W.).—8.30 P.M. Dr. C. C. Gibbes: Early Diagnosis of Mitral Stenosis, with cases.—Mr. J. D. E. Mortimer: A Case of Delirium Tremens treated by Inhalation of Chloroform.—Mr. C. A. Morris: Intestinal Obstruction due to Gall-stones.

WEDNESDAY (21st).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—7.30 P.M. Exhibition of Binocular Microscopes.

ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Papers:—Capt. A. Carpenter: The West Indian Hurricane, September, 1898.—Mr. W. H. Dines: The Connexion between the Winter Temperature and the Height of the Barometer in North Western Europe.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (20th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-sq., W.C.).—3.30 P.M. Dr. Colman: Syringomyelia.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. H. Campbell: Cases of Paraplegia and Remarks on Treatment.

THURSDAY (22nd).—LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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THE DIRT OF THE FARMER AND ITS DANGER TO MILK-SUPPLY.

A COUNTRY correspondent sends us the following disagreeable picture of the circumstances in which the milk-supply is obtained in the district where she resides:—"Cowsheds are dark, damp, and crowded; the ventilation is poor; the stench thick, hot, and heavy; the bedding of cows is scanty and hardly ever renewed; the drainage bad. The animals lie on moist bedding and get caked with manure both sides of their bodies; their udders are also caked with it. During winter they are shut up for months at a time, only walking to a trough (once or twice a day) in their yard to drink. They have no exercise all these months. Being thickly clothed in hair and naturally out-door creatures the imprisonment debilitates them, causes disease, and many die during calving in the spring; their milk becomes thin. Cowsheds should be better drained and ventilated; there should be windows that will open on the south side of every one of them in such a position that the sunlight will stream in upon each cow and upon its bedding. Stables are hardly ever built without windows, and yet horses, in my opinion, are not as valuable creatures to mankind as cows. If there are not windows in fowl-houses poultry suffer from disease. Cows should be made to walk along a road for a mile every day during all the worst days of their winter imprisonment. Milk is defiled by the hands of milkers and the extraneous matter found in it comes from the hands of the men who milk the cows. Cow-boys and farmers have the dirtiest employments possible. They attend to cows calving and to sheep and pigs and horses, and constantly cart manure about. All their implement-handles are caked with filth of every sort, but they never wash their hands before going to milk. Their hands are quite a loathsome sight, so caked and brown and hard are they with dirt. They have to soften them when milking by rubbing them together with milk and then they continue to milk, their hands dripping with blackened milk. I have been told this by several observers. These men also go out to milk from homes where members of their families have fevers of all sorts, though I am aware of the order that they are not to do so. Fathers, mothers, and brothers of children suffering from infectious diseases go to milk cows. They also suffer from all sorts of terrible things themselves and their filthy hands convey the diseases not only to the udders of cows and infect them, but to the milk, and yet the bodies of milkers are never inspected! These men never wash, such a thing as a bath is never taken by any farmer, any member of his family, or any labourer, they only wash their faces on rising in the morning. Farmers ought to be made to provide soap at the farmyard trough or pump, and to see that milkers wash their hands before they go to milk twice a day. The employers should be made to provide a bath in some shed and to see that each labourer has a bath every Saturday night. A farmer should be fined (under the Adulteration Act) if any extraneous matter is found at the bottom of his milk-cans. There is a very great fuss made about drains and quite rightly so, but ninety-nine-hundredths of the milk consumed never enters any dairy whatever. It is first of all milked into a tin pail (in winter in a cowshed and in the summer in the field) and it is on the spot poured into a tall milk-can which has a cover to it and the contents of which are never meddled with at all till it arrives either by cart or train at the shop or station where the milkman who buys it of the farmer empties it into his own large cans and it is taken round to customers at once."

THE HOUSE SURGEON'S FEES UNDER THE EMPLOYERS' LIABILITY ACT.

To the Editors of THE LANCET.

SIRS,—Will you kindly give me your opinion upon the following? A man was admitted to this institution suffering from an injury sustained while at work. Some time after a medical man called to find out the nature of the injury and probable date of discharge, stating that his inquiry was in connexion with "The Workmen's Compensation Act." I declined to give any information and said I was quite prepared to furnish a report. Would you kindly state if I was acting correctly? I should be very sorry to do anything which would give a brother practitioner just cause to complain of my conduct towards him, but it seems to me that it is *ultra vires* to expect me to supply information gratis for which formerly I should have received a fee. If, however, you think that such information should not be withheld I shall be very pleased to apologise to the gentleman in question and tell him all he wants to know.

I am, Sirs, yours faithfully,

Dec. 7th, 1898. HOUSE SURGEON.

*** Our correspondent is under no legal obligation, so far as we know, to give information.—ED. L.

A "BLOWER" FOR CAPILLARY TUBES.

A CORRESPONDENT asks us what is the best apparatus to expel vaccine lymph from the tube. A sample of artificial blower for expelling lymph from capillary tubes has been submitted to us by the Jenner Institute for Calf Lymph, 73, Church-road, Battersea, S.W. The institute gives these blowers to any practitioner who cares to apply for one. The glass tube is packed with carbolised wool to arrest any suspended dust in the air passing through it. We have tested the sample sent to us and find it efficient.

ALLEGED ILLEGAL OPERATION BY A NURSE.

ON Dec. 7th Jane White, described as a nurse, was charged at the North London police-court with causing the death of a woman named Angelinetta. Inspector Drew gave evidence of the arrest on a charge of having performed an illegal operation. The prisoner was cautioned but said that she had done nothing illegal. She acknowledged that she knew Angelinetta and that she had had some pills from her (White). Inspector Drew searched the room and found two catheters, one wet with blood. This White admitted having used upon another woman. He also found pills, two more catheters and some forceps. Angelinetta died on Nov. 25th, the certificate stating that she had died from peritonitis following a natural miscarriage. The body is to be exhumed and the prisoner was remanded in custody.

A CHEMICAL IOTA.

To the Editors of THE LANCET.

SIRS,—In experimenting upon oil of eucalyptus lately I noted a few tiny facts. Of these the following may prove useful here and there if you think them worth printing in THE LANCET:—1. A section of india-rubber tubing put into the oil expands in less than 24 hours to about double its size. Upon withdrawal reduction commences and the original size is reached in 2 or 3 days. But if steeped in methylated spirits to extract the oil reduction becomes far advanced in about half an hour. If it be desired to pass a bit of tubing over anything having a diameter as great as or greater than its own, dip the tube-end in the oil for a minute or more and it can then with far less difficulty be made

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to cover the object. This fact may be of use in the laboratory and elsewhere for a variety of purposes. Expansion also occurs if the rubber be placed in oil of turpentine or in paraffin lamp oil 2. Eucalyptus oil dissolves iodine in all proportions; thus liquor iodi fortis can be readily produced. So made it paints on the skin less evenly than when the oil and methylated spirits are used in equal quantity. The oil does little to remove recent iodine stains from the skin; but if, after using it, methylated spirits be rubbed on a distinct lessening of the stain results. 3. A little sublimed sulphur heated in the oil in a test tube becomes a pretty fluid globule bright yellow and mobile. On boiling for a second or two the globule dissolves and then the smell of H_2S is swiftly given off. I have not tried the solvent powers of this fluid, but I may add that as it cools the sulphur therein returns to the state of powder. I kept specimens of healthy and of albuminous urine in test tubes for several weeks last summer without decomposition by covering each specimen with a layer of eucalyptus oil as thick as a shilling. I am, Sirs, yours faithfully,

Devonshire-street, Portland-place, W., Nov. 30th, 1898. E. DIVER.

JUDICIAL WIT.

HIS HONOUR JUDGE BACON has a reputation not altogether undeserved of being the "funny man" among county-court judges. This being so we are sorry to see him deliver himself in such a manner as is credited to him in the *Daily News* during the progress of a case tried before him on Dec. 8th. The plaintiff, a widow, brought an action against a baker for damages received by falling through the baker's coalhole, the covering parts of which had been left unfastened. Mr. Frederick J. Oxley said, according to the report in the daily press, that plaintiff had suffered from an attack of bronchitis induced by the shock. The lung was really a continuation of the bronchial tubes. Judge Bacon: "Oh! is it? Well, as a member of the College of Physicians you ought to know better than I do." We quite agree with Judge Bacon here, but as he holds such sound views why did he go on to say that "he could not accept without further evidence the statement of the doctor that bronchitis—which was something outside the system—could be induced by shock as gout might be. Gout was undoubtedly something within the system." What does his honour mean by "system" and why is bronchitis outside it, whatever "it" may be?

THE USE OF THE CAT.

AT Warwick on Dec. 8th the grand jury made the following presentment before Mr. Justice Mathew: "To the Hon. Sir James Charles Mathew. Warwick, Dec. 8th, 1898. The grand jury unanimously make presentment that, in view of the great and increasing number of cases at the assizes of criminal assaults on women and children, it is desirable and in their opinion necessary that Her Majesty's judges should be empowered by law to order corporal punishment in addition to any other that they may inflict in all cases in which in their opinion the evidence justifies it." His lordship said that he would forward the presentment to the Home Secretary but that it would not obtain his (the judge's) support.

"THE COLOUR OF NEWLY-BORN NEGRO CHILDREN."

To the Editors of THE LANCET.

SIRS,—With reference to the correspondence which has appeared in THE LANCET of Dec. 10th as to the colour of newly-born negro children I wish to endorse the statement of "Guiana." During four years' service in West Africa I delivered seven or eight negro women and in all cases the colour was that of a light quadroon. In two cases the children looked remarkably white but after a week the colour gradually changed and it would appear that atmospheric conditions were requisite to produce the full black colour of the negro. In three or four months the children were of copper tint and after a few years the change to black was complete. I further observed that the hair was somewhat straight, rather like that of the Hindoo, but its "woolly" character became evident in a few weeks.

I am, Sirs, yours faithfully,

D. J. MACCARTHY, late Gold Coast Medical Staff.

Dec. 13th, 1898.

PAY WARDS.

To the Editors of THE LANCET.

SIRS,—I shall feel very grateful if any of your readers will kindly favour me with information respecting the methods by which charity hospitals with "pay wards" in England are remunerated for medical or surgical services. Here, in the United States, I believe such institutions (and they are quite numerous) exact a certain sum for board, room, and nursing, allowing the honorary physician or surgeon to fix his own fee which, of course, is pocketed by him. This system is extremely advantageous to the honorary staff but very unfair, illiberal, and undemocratic to those practitioners in the neighbourhood who do not hold hospital appointments. Less fault might be found with the system if any reputable physician in the vicinity were accorded similar privileges, but there are few managers so charitably disposed. At best, however, it is a crude anomaly to witness two classes of patients under the same roof—one for sweet charity, the other for sordid gain. Pay-patients should be relegated to private hospitals and none but the poor should be admitted to those institutions which owe their origin and existence to the charity of the public.

I am, Sirs, yours faithfully,

J. HARRIS JONES, M.D. Brux., &c.

Wilkes-Barre, Pennsylvania, Nov. 23rd, 1898.

SENTENCE FOR ASSAULTING A DRESSER.

AT Southwark police-court on Dec. 9th Charles Pilford, a stall-keeper, was sentenced to two months' hard labour for assaulting his wife and to fourteen days' hard labour for assaulting Mr. E. Goble, a dresser at Guy's Hospital. The prisoner had beaten his wife so severely that she had to be taken to the hospital to have her injuries attended to. He accompanied her and behaved in an outrageous manner in the surgery. Mr. Goble requested him to leave whereupon Pilford struck him twice in the face. We must say for the credit of the class that generally frequents public hospitals that it is very rare for either a patient or the friends of a patient to behave otherwise than well. When, however, they do offend it is an offence which cannot be lightly passed over.

"IL FAUT SOUFFRIR POUR ÊTRE BELLE."

THE London correspondent of the *Sheffield Daily Telegraph* states, according to an editorial paragraph in the issue of Dec. 9th, that a well-known society beauty has just had the "outer skin of her face removed with a view of renewing her complexion." The operation is not only "painful but tedious, because it is done by pin-prick, as one may say. The whole of the outer skin is removed in this way, and if the operation is successful the patient emerges with a face of bewitching brilliance. That is the result of the present case. ..... Few people know, but anyone can see that her complexion has been remade. ....." We must congratulate the editor of the *Sheffield Daily Telegraph* upon possessing a correspondent who exhibits such enterprise. The story is as pretty as the new face.

WANTED A HOME FOR A RESIDENT LUNATIC.

To the Editors of THE LANCET.

SIRS,—I should feel obliged by you or any of your readers informing me where in this district an insane patient can be received. The patient's husband is prepared to pay to the amount of two guineas a week. I am, Sirs, yours faithfully,

Boston, Lincs., Dec. 13th, 1898. J. WELSH, L.S.A. Lond.

A MISLEADING ADVERTISEMENT.

A CORRESPONDENT sends us the following cutting from the *Queen* of Dec. 3rd, p. 979:—

> "A graceful figure can be achieved by using the Amiral Soap for reducing corpulency by external local application. Recommended by the medical profession and the 'Lancet.' No diet. No discomfort. To be obtained through all chemists, or direct from the Amiral Soap Syndicate, 28A, Basinghall-street, E.C., on receipt of 8s. for box of two tablets. Pamphlet and copy of testimonials on application. West End depôt, 20, Brook-street, W.—[Advt.]"

"Surely it can't be true" is his comment. He is right. We have not recommended "Amiral" Soap. What we did say will be found in THE LANCET of July 30th, 1898, p. 266.

Floating Kidney.—In a few cases a pad and abdominal belt will give decided relief in floating kidney, but in most of the cases very little benefit is felt; unfortunately it is not possible to say beforehand whether this pad and belt will do good, so in any case in which an operation is undesirable it is well worth while to try a belt. In applying the belt it requires to be of a particular degree of tightness to give the most comfort.

Memo.—There are so many books upon the subject that our correspondent had better consult the list given in THE LANCET of Sept. 3rd, 1898. Perhaps we might recommend as an elementary work "Elementary Practical Bacteriology," by Kanthack and Drysdale; Macmillan and Co., price 4s. 6d. Another good book is "The Principles of Bacteriology," by Dr. A. C. Abbott.

Treatment.—We do not give medical advice. If, as we understand, our correspondent is a medical student he should have no difficulty in finding a qualified man to enlighten him.

Mr. Furner's communication was duly received.

During the week marked copies of the following newspapers have been received: *Manchester Courier, East Anglian Daily Times, Bradford Observer, Croydon Guardian, Rochdale Observer, Rangoon Times, Penrith Observer, Rugby Advertiser, Lichfield Mercury, Pioneer Mail, Architect, Times of India, Ayr Advertiser, Eastern Morning News, Yarmouth Advertiser, Builder, Citizen, East Sussex News, Scotsman, Liverpool Daily Post, Warwick Advertiser, Western Morning News, Kenilworth Advertiser, Auckland Chronicle, Blackpool Gazette, Scarborough Mercury, Birmingham Gazette, Ossett Observer, Cambs Times, Portsmouth Times, Yorkshire Post, Irish Times, Leeds Mercury, Brighton Gazette, Derby Mercury, Duffield Observer, Cheltenham Examiner, Hastings Times, Bristol Mercury, Abingdon Herald, Norwich Journal, Dereham Times, Echo, Daily Chronicle, Sanitary Record, Mining Journal, City Press, Reading Mercury, Local Government Chronicle, Hertfordshire Mercury, Weekly Times and Echo, Bulawayo Chronicle, Surrey Advertiser, Local Government Journal, Public Health, Kentish Express, Public Opinion, Friendly Societies' Recorder, Lincoln Leader, South-Western Comet, Bridport News, Barrow Herald, Doncaster Gazette, Maidstone Journal, Berkshire Chronicle, Louth and North Lincolnshire Advertiser, &c., &c.*

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Communications, Letters, &c., have been received from—

A.—Dr. J. Adam, West Malling; Messrs. Arnold and Son, Lond.; Mr. W. C. M. Armson, Newcastle-on-Tyne; A. W. H.; Dr. F. H. Alderson, Lond.; Mr. H. Athill-Cruttwell, Uppingham; Ancoats Hospital, Manchester, Secretary of.

B.—Sir Wm. Broadbent, Lond.; Mr. C. Birchall, Liverpool; Messrs. J. Bale, Sons, and Danielsson, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Bowden and Bowden, Morley; Dr. F. L. Benham, Lond.; Dr. C. H. Bryant, Brighton; Bury Dispensary Hospital, Secretary of; Dr. F. W. Burton-Fanning, Norwich; Dr. J. Burnet, Edinburgh; Mr. B., Bayswater; T. B. Browne, Ltd., Lond.; Messrs. J. H. Bower and Co., Lond.

C.—Mr. F. Collins, Lond.; Dr. F. Collie, Lond.; Charles, Lond.; Messrs. A. H. Cox and Co., Brighton; Cambridge Scientific Instrument Co., Secretary of; Dr. C. Coles, Cambridge; Chelsea Clinical Society, Lond., Hon. Secretary of; Mr. F. W. Collingwood, Lond.; Dr. W. J. C. Coulthard, Aspatria; Messrs. E. Cook and Co., Lond.; Dr. L. Cobbett, Cambridge; Mr. P. R. Cresswell, Dowlais; Cantab., Lond.; Mr. R. J. F. Crosby, Great Grimsby; Mr. B. Cooper, Lond.; Mr. W. P. Cox, Leicester; Children's Hospital, &c., Birmingham, Secretary of; Cortland Wagon Co., Lond.; Mr. F. W. Clarke, Manchester; Mr. T. H. Cosser, New Deveral; Messrs. S. Clark and Co., Lond.; Messrs. S. B. Clark and Son, Lond.

D.—Dr. E. Diver, St. Margaret's-on-Thames; Mr. G. T. De Frain, Aylesbury; Durrant's Press Cuttings, Lond.; Messrs. Davids and Maxwell, Banbury; Messrs. Duncan, Flockhart, and Co., Edinburgh; Mr. T. Dixon, Lond.

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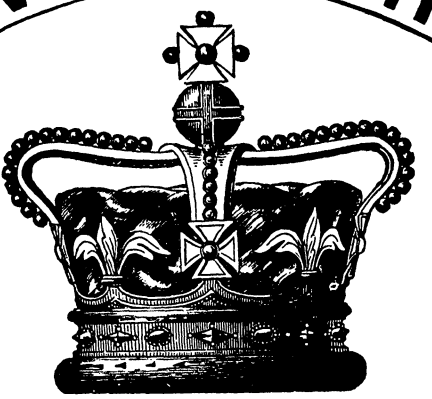
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The Harveian Lectures

ON

DISEASE, ITS TREATMENT AND THE PROFESSION OF MEDICINE IN 1899.

Delivered before the Harveian Society of London on Dec. 1st, 8th, and 15th, 1898,

BY WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,

SENIOR PHYSICIAN TO ST. GEORGE'S HOSPITAL AND JOINT LECTURER ON MEDICINE TO THE MEDICAL SCHOOL; SENIOR PHYSICIAN TO THE BELGRAVE HOSPITAL FOR CHILDREN.

LECTURE II.[1]

Delivered on Dec. 8th.

THE MODERN ADVANCES IN TREATMENT AS THEY AFFECT THE PUBLIC AND THE PROFESSION.

Introduction.—Surgery and its Influence on Therapeutics.

GENTLEMEN,—I propose to-day to place before you: (1) the progress of therapeutics; (2) the means which they employ, including the supply of drugs and their use and the facilities for the treatment of the sick; (3) the general principles underlying our modern treatment; and (4) the attitude of the public and of the profession in relation to matters of treatment. The changes which have occurred in the treatment of disease are not inferior to the advances in pathology and one of the greatest is the extension of the clinical domain of surgery. Thus conservative surgery and visceral surgery, the diagnosis of disease by exploration, and its surgical treatment by direct manipulation, must occupy the foreground of any review of our recent progress. Surgical art may be said to have attained its ideal when the mechanical cure of disease becomes possible. Abdominal exploration is the most important of all the additions to our surgical resources, which also include the exploration of joints and the illumination of various internal cavities and their local treatment. Not many years ago lives were sacrificed daily to the impossibility of establishing the diagnosis of actual suppuration in the abdominal cavity. To operate on an abdomen where an extensive abscess had not yet formed did not enter the professional mind in those days and the idea of laparotomy for the sake of ascertaining that no abscess existed there was to it as foreign as are to us the thoughts of dwellers in distant planets. The whole anxiety was lest an operation should be attempted whilst pus had not been proved to exist. Most of the cases operated upon died because gangrene and suppuration had proceeded too far before they were revealed by physical signs. These fatalities are now the exception. Physicians have a further debt to acknowledge in the influence which surgical methods have exercised over medical therapeutics in the direction of definiteness in diagnosis and of thoroughness in treatment.

The medico-chirurgical idea in therapeutics.—The relation between the work of the physician and that of the surgeon is one of ever-increasing harmony. There can be no better surgeon than he who is also a physician, and the best physician is one with a practical knowledge of surgery. The division of labour between medical and surgical practice is therefore a necessity of the artist rather than of the art. The spirit of our treatment is becoming more and more identical to our mutual advantage. Hospital physicians find themselves day by day bestowing more time and thought upon the study of cases which it is given to others to cure and upon the discussion of methods which the surgeon may carry out. Some of this work and thought may perhaps not be wasted from a surgical standpoint, since in many cases our aim is to reduce the treatment to a surgical question. All specialists are also guided by the same medico-chirurgical idea, and it is given to some of them to carry it out in its entirety. The limitation of their field of work facilitates its cultivation in every direction, surgical as well as medical. Gynæcology, as it is now practised, is a microcosm of surgical and medical practice combined.

[1] Lecture I. was published in THE LANCET of Dec. 17th, 1898.

MEDICAL QUESTIONS OF TREATMENT; OUR THERAPEUTICS, PAST, PRESENT, AND FUTURE.

Turning to medicine we find a progress equally important though not so fully recognised and to this two opposite tendencies have contributed: scepticism, which led to the temporary adoption of the expectant treatment, to the gradual and permanent abandonment of irrational prescriptions, and to the recognition of *vis medicatrix naturæ;* and the experimental method applied to therapeutics, now a science in itself, that of pharmacology.

Scepticism in therapeutics.—For a blind belief in drugs and in systematic polypharmacy we must look back for more than 100 years. Scepticism had existed from earliest antiquity but it had never prevailed. Early in this century, however, there came a wave of scepticism stronger than any before. Strangely, homœopathy, while it shattered the old belief, made claims upon our credulity greater than any superstition. It failed to build up any lasting medicinal system though it called attention to some unutilised drugs and modified our opinion of the mode of action of some of the older ones; but the practical service which it did render was to direct attention to the importance of studying the resources of nature and of adapting diet to her requirements. Owing partly to this influence and chiefly to the scientific search for strict evidence of the alleged action of drugs expectant treatment became for a time the last word of medical art. Drugs were discredited and it was thought that the only safety lay in allowing nature free scope.

Rational treatment.—This paralysing form of scepticism is now dead. The advances in etiology and in diagnosis rapidly revived the hopefulness of the physician by directing his aims towards definite objects, whilst the doctrine of discouragement was soon forgotten by the patients with whom scepticism has never found much favour. Treatment having learnt to strike at the cause was henceforth to be styled rational. The action of the more potent remedies was recognised and studied, and the advantages originally due to empirical treatment were utilised once more and turned to better account. Physiology, as it threw more light upon the mechanism of the healthy functions, tended to explain their deviations and to suggest how these might be rectified. In this relation physiology is another word for preventive medicine and for hygiene and public health, subjects which ultimately found their place as specialities in our therapeutics, and to it is also due the elaboration of the physiological principles of treatment and of prevention. In presence of these definite results the scepticism of to-day is a very different one from any which had preceded. The efficacy of agents such as quinine, mercury, or iodide of potassium appeals to the common sense even of the believer in infinitesimals and the medical sceptics as to vaccination are an extinct race. Since the physiological effect of individual drugs has become matter of demonstration it is no longer the power of medicinal agents which is doubted by some, but the wisdom of utilising that power lest it prove to be a double-edged weapon, as in the case of the narcotics and of other drugs.

Symptomatic treatment.—But the majority, whilst recognising as paramount the rational treatment of the cause, feel no scruple in dealing with its manifestations. Favoured by closer clinical observation this tendency is now a leading feature in practical therapeutics. Each symptom becomes a fresh opening for treatment. Greater than any perhaps has been the influence of clinical thermometry which we owe to Wunderlich. The suppression of pyrexia, apart from its cause, has been pursued as a definite object. To name but a few other symptoms among the most important, insomnia, the neuralgiæ, increased pulse-tension, cardiac depression and excitement have been singled out for treatment by special drugs. Symptomatic treatment, however, could hardly have grown to its present importance but for the extraordinary supply of new remedies each possessed of some prominent virtue and therefore put forward as special remedies for separate symptoms. Chief among these groups of "symptomatic" drugs are the antipyretics, the hypnotics, the analgesics, the anti-spasmodics, the cardio-vascular depressants, and the cardiac stimulants. Whilst therapeutics themselves are becoming more rational an exclusively symptomatic treatment is increasingly patronised, often independently of the physician, by the public and by the pharmaceutist, and in this there is a danger.

Polypharmacy and monopharmacy.—Polypharmacy in its extreme form has had its day and monopharmacy is now gaining in favour. The combination of drugs—skilful, efficient,

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and artistic—had been regarded as the highest fulfilment in practical therapeutics. Was this a fundamental mistake? The view that drugs may be of use severally in their different ways, although administered simultaneously, is countenanced by the beneficial results of a mixed diet, but this analogy illustrates also the detrimental effect of any excessive complication. Clinical observation also supports the belief that drugs may act beneficially even when combined and some of these combinations have received the practical sanction of experience—as, for instance, the combination of digitalis and strychnine or of digitalis and iron.

Monopharmacy, now in the ascendant, has lately been reduced to its simplest expression, the use of a single principle taking action upon a single morbid factor. But in a less exclusive degree of monopharmacy, that of the separate administration of any one vegetable drug, there is almost always something of polypharmacy since the various principles contained in each drug are often dissimilar in their action. This is shown in cases of idiosyncrasy by an intolerance for the drug, although some of its chemical constituents may be severally well borne. The isolation of the active principles of each drug and their separate administration represents a much more advanced stage of monopharmacy, the rapid development of which we owe to modern chemistry. This is from the standpoint of treatment by no means a final stage. Even when administered singly the isolated principles of drugs have multiple organs to act upon the organic functions of which may react differently to them; and as in the familiar instance of morphia the therapeutic dilemma is often how to help one of the functions without harming the others. It is now possible in some cases to single out the morbific agent as well as the remedial principle. This fulfilment is the fruit of bacteriology which has provided us with toxins and antitoxins addressing themselves directly to the cause of the disease.

Both methods are still prevalent.—Great as was this advance its sphere of operation remains limited and generally we have to employ less elemental agents. Not infrequently we are obliged to mix our principles after isolating them, as in the case of morphia and atropine and of iodide of potassium and arsenic, and some of us are guilty of even worse polypharmacy. Both tendencies are represented in our contemporary practice and in the growing supply of two opposite sets of pharmaceutical preparations. Pharmaceutical ingenuity has favoured the administration of separate drugs by wrapping up or compressing those which are unpalatable without the addition of any flavouring excipients. To such an extent has this facility been carried that the prescribing function of the physician and the dispensing function of the chemist have been appreciably restricted. On the other hand we are provided with compound medicines of great complexity which doubtless owe their popularity with the patients as well as with their advisers to the excellence of their form. This is a tribute to the usefulness of a well-planned polypharmacy and to its recognition by a large section of the profession.

The art of prescribing and its modern neglect.—The changes which these advances have wrought in professional practice are great and obvious. One of them—the growing neglect of individual prescribing—may be regarded as unfortunate. This neglect is at its origin traceable to the schools and the need for reform in this direction is urgent. If imperfectly trained in prescribing the young practitioner would the more easily take to the use of ready-made preparations. Push this tendency to an extreme and it would result that the art of prescribing would pass into other hands. Without sacrificing the convenience afforded by an improved supply of suitable compounds an effort might perhaps be made to educate the future practitioner to greater independence in selecting for himself his therapeutic agents. One of the advantages of personal prescribing is the opportunity afforded for adapting the remedies to the individual case and for constantly readjusting them to its changing needs. The worst form of polypharmacy is that which excludes variety. Change is the essence of symptomatic treatment and the art is to save fatigue and disgust for the patient whilst avoiding the cumulative action of drugs and their gradual loss of effect. The systematic rotation of drugs instead of their continuous administration may be suggested as a means of combining grateful variety with the maximum effect from the remedies prescribed. Opinion is divided as to the desirability of prescribing in the vernacular instead of in the old-fashioned Latin formulæ. This is one of our modern questions which deserves serious consideration. There are facts to guide us in the matter, but upon them I will not dwell.

Wholesale pharmacy and the question of dispensing.—The modern innovations in pharmacy have affected both the practising surgeon and the pharmaceutists. To those engaged in country practice there is a saving of time, of responsibility, and of extraneous assistance. The dispensing chemist is better trained now than he was, but his work is simplified and the skill of his craft less often required. There is also less of the practical handling of the crude drugs, and this affects the question of apprenticeship. The wholesale manufacture of simple drugs, such as tinctures, infusions, and others, was but the first step to the wholesale manufacture of compounds. The dispensing chemist's occupation is curtailed; but this is not all. Wholesale manufacture means cheapness of production and the coöperative supply has further reduced his opportunities. The operation of these causes is a factor in a troubled question which lies beyond the scope of our present subject.

The old drugs and the new.—New remedies of undoubted efficacy have been added in the later editions of the British Pharmacopœia and outside the Pharmacopœia there is a yet larger supply; most of them, however, are palliative rather than curative agents and not free from the dangers of habit and of overdosing. I can only allude in passing to the large and important subject of organ-therapy, the idea of which we owe to Brown-Séquard and the merits of which are still awaiting the verdict of experience. Some brilliant results have been achieved, in particular in the thyroid treatment of myxœdema, but there has been much disappointment in other directions. The supply of toxins and antitoxins is still in the safe keeping of experts. The germs of disease have not yet been let loose, but the recent experience in Vienna teaches a lesson not easily forgotten. The bulk of our recent remedies are coal-tar derivatives and their number is constantly growing. Most of them are administered for the sake of the sleep which they promote or of the pain which they subdue; but we are not sufficiently informed as to the effect which they may take upon the tissues and functions. Freely advertised and prescribed they have become known to the public and their unauthorised and irresponsible use by the laity is one of the peculiarities of our time which has variously told upon the public, the profession, and the pharmaceutical branch. Alcohol has long stood at the head of the list of poisonous drugs to which the public has unlimited access. Its value is undeniable, but more than any other it is prone to establish a habit which lessens its effect and brings into play its destructive properties. Happily it is falling into discredit as a therapeutic agent. In the most acute forms of disease such as pneumonia, endocarditis, and in all conditions leading to exhaustion its free administration is indicated, but where the affection is subacute or chronic its continued use has rightly lost favour except as an addition to meals. The endeavour has been made from the side of total abstinence to show results equally good, if not better, from withholding alcohol even in the acute affections, but the suggestion based upon these observations has not so far obtained any general recognition.

Drug diseases.—Ether, morphine, cocaine, and the various hypnotics, anti-spasmodics, and anti-neuralgics, including antipyrin, antifebrin, and phenacetin, are the chief representatives of a dangerous group of drugs to which much injury to health is often due. Sudden seizures from an accidental overdose produce much alarm, though they may leave no permanent mischief. A greater evil is the gradual depression in health which may be induced by the daily use of some of these drugs. The weaker the patient the greater is his dependence upon the comfort which they confer; but their tendency is to confirm the neurotic habit, and the relief given to the pain is often the means of disguising its cause and of leading to delay in its being rationally treated.

THE CARE OF THE SICK.

Nursing.—The most important part of the physician's treatment is often that which is managed by proxy through his trained and efficient delegate and without her faithful coöperation the surgeon's operative skill might be in vain. From time immemorial the tending of the sick as a work of pure charity had been carried on by religious communities—by some of them as a special and sole object of their association—whilst the housing of the sick was provided by some of them and still continues to be—none better known to us than the sisters of charity who include within their ranks

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women of high birth and education. But in this country it is within our own times that the science and art of nursing have risen to their high standard, combining the highest motives with the highest efficiency, thanks to the completeness and the discipline of hospital training and to the advanced teaching of the physician and the surgeon. But to Florence Nightingale our chief debt is due.

Hospitals and institutions.—A recognition of the advantages of hospital treatment not to be secured elsewhere except by the wealthy has led to the multiplication of hospitals for the relief of the poor who in this are better off than others, and also of paying institutions, where treatment is organised instead of having to be improvised and where professional services are not unrequited. For a large number of members of the middle-class who lead a solitary life or lack the necessary comfort nursing-homes of this sort are a necessity.

Isolation hospitals; notification and isolation.—The growing number of isolation hospitals and the strict notification of the acute infections are, from the standpoint of public health, improvements of unmixed advantage, but they tend to restrict the sphere of practice. For phthisis also a modified plan of isolation is being practically discussed. This is specially needed for the lower classes in our great towns and it is for them that suitable hospitals are mainly required. Private sanatoria for phthisis have long existed abroad in which the successful treatment of patients is assisted by constant care and supervision, but hitherto we had only had hospitals in the heart of towns where the modern treatment by open air is not provided. We are now to imitate the example of Germany and to provide homes for the less affluent among the middle class where modern methods can be applied, including the discipline which is necessary, though it may be felt to be more irksome in this country where every man is a king. Our greater task, however, concerns the masses whose aggregate of mortality from phthisis runs to very high figures. The only efficient way to protect the families of the poor is to remove the dangerous patients from their midst to sanatoria where the risk of infection can be fully controlled. The time may soon come when each large city is provided with suitable country isolation hospitals for phthisis. Our climate is proverbially unstable, but I believe that the tempering of the bleak winds is a problem which is not insolvable if the advantages of suitable site and soil and of adequate protection can be secured. Action of this sort which is now contemplated in Liverpool and elsewhere will lead the educated to greater carefulness in the limitation of the infection without any resort to notification or segregation.

The hospital question.—Are the really poor to be the only privileged ones in obtaining hospital treatment and nursing? Are these privileges to be denied to a much larger class who, whilst able humbly to contribute towards the hospital funds, cannot purchase the analogous facilities offered in private homes? To deny to some of those who are quite unable to secure it elsewhere by payment the attendance which is desired and to offer it free of all charge to a lower stratum of poverty would seem to be an uneven dispensation of charity. These difficulties are better known to those who administer than to those who support our hospitals. So long as there are no nursing homes for the poorer middle class where payments can be adapted to the means of each, patients possessing no social or financial claim to gratuitous treatment will occasionally be sent to our hospitals by their own medical attendants.

GENERAL THERAPEUTICS.

As a slight contribution to practical therapeutics I propose to consider briefly some of the broad principles which guide our treatment. A clearer insight into the mechanism of disease has infused greater directness into our methods. Modern physiology has taught us even more than pathology. But we have learnt most, perhaps, from watching in animals and in man the process of spontaneous recovery. These lessons are bearing their fruit. We do not despise the welcome aid of drugs and the opportune placebo, but we have turned to the cultivation of those forces which Nature herself supplies. How different this conception from the old idea that disease was a thing to be starved out of existence, strangled by violent remedies, or made to escape with profuse discharges of serum or of blood. No longer do we see the bleeding of the old days when, because it was spring or autumn, rich and poor flocked to the apothecary to be bled to the point of fainting. There was occasional good in bloodletting and in certain conditions of disease it is now being revived. It was its immoderate use which was so baneful. Our method differs entirely from that of the expectant treatment. Nature cannot always be safely left to herself. Interference, to use the word in an invidious sense, is to be avoided; but our intervention is often indispensable—as, for instance, when chronic obstructions finally lead to a deadlock. This deadlock is the climax of a long continuance of faulty or imperfect function. Long before the crisis the need for intervention existed and the height of our art consists in its timely recognition.

The physiological principles of treatment.—Among the therapeutic agencies suggested by physiology some of the most important are: rest and sleep, activity and energy, habit and change, and physiological rest.

Rest and sleep.—No amount of simple rest of the body can do duty for sleep. Though mere repose may partly satisfy the needs of our vegetative life, sleep alone, that profound sleep which the poet has likened to death, can make good the wear and tear of the higher nervous centres. The difference between individuals in all that relates to sleep is remarkable and would well repay systematic study. Whilst a minimum of sleep is requisite for all there are great varieties as regards the duration and the quality of sleep, and in all of us these are greatly influenced by habit and education. It is the privilege of some to command sleep at any moment, but it is probably exceptional to combine this facility with that of remaining awake at will—a dangerous power when it is abused. Some possess the opposite peculiarity and are subject to the invincible desire for sleep after a definite expenditure of nerve energy. By this they are protected against exhaustion. Interesting physiological speculations, and some practical notions also, are suggested by the remarkable relief and freshness which they derive from even a very short period of sleep. Much tissue repair cannot have taken place during those few minutes of profound sleep which will restore a jaded man to full activity. The energy which he subsequently develops must have been there when he fell asleep, yet it was unavailable. It is therefore clear that these brief and irresistible slumbers are essentially different from the long sleep of the night and that we might turn both the short and the long sleep to separate therapeutic account.

The therapeutic value of sleep and of hypnotics.—Hypnotism, in the sense of a systematic method of animal fascination, does not form part of the present subject. Although it has been given an extensive trial by French neurologists it has never found much favour with us. In some of its applications, though not in all of them, it is one of those extra-physiological, not to say anti-physiological, methods which seek delusive results by fostering a weakness which it should be our duty to combat. Legitimate sleep which strengthens volition together with the rest of our faculties has not yet received the full amount of study which it deserves. Our practical knowledge of the relative value of our many hypnotics is also in a rudimentary stage. In the waking state the effect taken by our various drugs upon the nervous system is manifestly different. Similar differences may obtain during sleep between the actions of the various hypnotics. The sleep which they severally procure is probably not, as we may have assumed, an identical quantity. Differences in its duration and in the varying delay of its onset must have struck the least observant; but its quality must vary quite as much as we find it varying in the absence of any drugs.

The various degrees of sleep as they range from coma, where both the nerve cells and the conducting fibres are absolutely impervious, to the light sleep of those whose irritable and quick nerve protoplasm is immediately thrown by the touch of a feather or by the slightest sound into that state which means open conduction and full consciousness, there is every shade of quality. The disordered cerebration of delirium and of dreams almost suggest a possibility that orderly communications may pass between local groups of cells, and this might perhaps explain the good counsel which is bred of the night. But these incubations would be merely local settlings of the balance of the day between cells disciplined to collaboration and would be during sound sleep incapable of a wide diffusion throughout the mental sphere.

Long sleeps and short sleeps.—Sleep then would seem to have two offices, both fulfilled in the long sleep of the night which it is our usual endeavour to secure for our patients—

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viz., that of favouring the slow anabolic changes of repair and that of interrupting consciousness by uncoupling the chain of neurons or conceivably by relaxing protoplasmic tension or tone. This relief of tension is it would seem the only office performed by the shorter spells of sleep and therefore the two forms of sleep suggest two therapeutic objects.

The night's sleep may come without any drugs, but it might need even then to be bettered, and in improving the quality of spontaneous sleep our help is often of value. It might also need to be prolonged.

The systematic prolongation of sleep for the cure of disease is one of our opportunities hitherto little used. In chorea sleep entirely subdues the muscular agitation and this observation has led to the attempt to arrest the disease by prolonging the sleep for considerable periods. A complication arises in connexion with alimentation which in this disease, as in most other nervous troubles, is of primary importance. Partly for this reason, and because more than rest may be needed for a cure, the results hitherto reported have not sufficiently recommended the method. Prolonged narcosis has also been suggested on the principle of physiological rest in excessive wear and tear of the nervous system. In various nervous affections, including the mental, its renewed trial, combined with suitable methods of feeding, might lead to encouraging results. Better suited perhaps to our every-day needs is a systematic resort to the *shorter sleep*. Like the light instalments of food which restore the lost function of appetite and digestion, short sleep in the day may be essential to the cure of nocturnal insomnia. Our growing wealth in hypnotics warrants a hope that a suitable agent may yet be found which in that direction would minister to the health of the invalid and might command the luxury of sleep at any opportune time for the convenience of the worker.

Body rest as a systematic therapeutic agent has long found its place in our modern treatment for patients whom weakness alone, in the absence of medical advice, would not have compelled to take to their bed. To that class belong the frail women in whom the debility of anæmia, of dyspepsia, and of over-fatigue develops symptoms often mistaken for hysteria. Rest in bed is their first need. In the treatment of chlorosis this is now recognised as the essential element for a rapid recovery. Again, its methodical employment forms an essential part of the Weir-Mitchell plan, but its most striking instance is that of the open-air rest cure for phthisis which within quite recent years has largely replaced at foreign sanatoria the previous method by muscular exercise. The pendulum of medical opinion has swung towards the principle of physiological rest and it is claimed with much reason for this plan, which is combined with liberal alimentation, that rest is essential to the cure of the pulmonary lesions and does good by allaying the characteristic irritability so well displayed in the pyrexia occasioned by exercise or excitement. The prolongation of rest for the muscles over extensive periods cannot fail to occasion some atrophy of the muscular system and of the heart itself. This consideration has led to the mitigation of the rest cure both as regards its duration and its absolute character, and in suitable cases graduated exercise both passive and active and other hygienic methods have been adopted as part of this treatment in its most recent developments.

PHYSIOLOGICAL REST TO THE ORGANS—ABSOLUTE AND RELATIVE.

The efficacy of rest, so ably set forth from a surgical standpoint by John Hilton in his lectures on Rest and Pain (1861-62) as part of our natural therapeutics, has now obtained full recognition in connexion with the organic functions. Its principles are applicable to them. Rest which in the vegetable kingdom is a condition of growth and of repair is a still more prominent factor in the daily visceral life of animals.

Absolute physiological rest to organs is sometimes provided by modern surgery, as in the case of the larynx in tracheotomy, of the rectum in colotomy, of the œsophagus in gastrostomy, and of the pylorus in gastro-jejunostomy. In medical treatment the same principle has received free acceptance, but there has been little scope for its use which has remained almost restricted to the nervous, the muscular, and the alimentary systems.

Rest to the stomach.—Absolute physiological rest of one of our organs can only be secured by deeply interfering with another, sometimes to the extent of reversing its functions. The most striking instance in point is that of the complete suspension of gastric alimentation with the help of rectal feeding. So far as it secures physiological rest to the stomach the result is satisfactory, but at first sight the method is unphysiological. We turn the rectum, an excretory organ, into a channel for absorption. A similar readjustment and reversal of functions is sometimes seen in disease as in the case of the lymphatic system. When the kidney refuses service the function of absorption peculiar to the lymphatics is apt to be reversed. The lymphatic system may then become a reservoir and ultimately, if ulceration of the skin should occur, a channel of excretion for superfluous fluid and for the solids dissolved in it. These facts carry suggestions which some day may be more widely utilised.

Partial physiological rest is much more easily applied in medical treatment and we spend our lives preaching the lesson of moderation, but specially in the direction of the nervous and of the alimentary system. It is perhaps a redeeming feature of illness in general, but more particularly of enteric fever, when it strikes down the middle-aged man that it affords his overworked nervous system a prolonged and timely rest. If the renovation of tissues which is one of the results of a consuming fever were an unqualified advantage, then the Lenten fast and the more extraordinary fasts of certain professionals might claim some foundation in science. More probably, however, the favourable result which is often observed in the convalescent from typhoid fever is the effect of the prolonged rest of many functions, including those of the stomach and of the liver, but more especially of the nervous system. When convalescence is happily conducted the sufferer may find himself a new man, disencumbered and refreshed, with a more active stream of nutrition which reminds him of younger days. But we need no lesson from illness. Our treatment of the nervous system by rest is sufficiently confirmed by its results. Again, in connexion with the alimentary system the advantages of partial rest are evident as in that wholesome cure for the prevalent results of abuse of food as a mere stimulant—an exclusive milk diet combined with rest in bed. Who has not been struck with the singular contrast between the frugal diet, often small in bulk, of hard-working labourers and the weight and superfluous richness of that of the unemployed? With the latter the labour is visceral and the penalty as well, and their life is mainly shortened by this organic overwork of stomach, liver, and kidney. In vain has modern fashion endeavoured to lengthen the intervals between meals by deferring the midday feast and throwing back the late dinner nearly to the hour which summoned our forefathers to bed. An additional afternoon meal has crept in between them and the early cup of tea before rising also belongs nowadays to elementary hospitality. The least the stomach can claim is that its digestions should not overlap. Unfortunately even its single opportunity, the long rest of the night, is too often encroached upon and a meal of indigestibles thrown in at 12 or 1. Half this amount of food would keep a man in strong work; the idle, even if they be strong, must break down under its weight. Alone the dyspeptic is safe whose constitutional weakness acts as a merciful protection. Physiological rest in this direction is much needed.

HABIT AND CHANGE.

The same principle lies at the root of these opposite agencies. Habit and change are both conservative and their influence in saving energy is most marked in connexion with the nervous and the alimentary system.

Change of scene, change of rest, and change of occupation are all beneficial for the nervous; but it is neither the scene nor the rest nor the work, but the change that does most good. Most often the machine is suffering rather than the energy and it suffers in those parts which have long borne the same recurring strain. Let other cerebral districts be laid under contribution and the overworked areas will obtain their physiological rest. Work in this way becomes productive of rest. Greater still is the relief when mental occupation is exchanged for that which is purely mechanical, and this is part of the secret of the relief to brain fatigue conferred by muscular exercise, which also alters the rate and quality of the metabolism. In the alimentary system analogous benefits are derived from change and the same is also true of our medicines, which it may be wise to alter for the sake of variety and in the hope that a return to the original prescription may be followed by a renewal of its original benefits.

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Habit differs from change in the field of its usefulness, but is not far behind it in economising fatigue and in sparing effort. The value of habit lies in the easier performance of those things which are in themselves healthful, whilst change is sovereign in breaking a deleterious succession. Regularity of life and much abused routine will long resist the wearing effect of time and to the well-rooted habit of living many a veteran has owed his ample years.

The cultivation of habit as influencing nutrition.—Habit is intimately connected with rhythm and with the establishment of paths of lessened resistance by constant repetition. It has been alleged that since function is after all the concerted action of many individual cells the education of habit might be regarded as the education of the cells themselves and that we might thus trace its existence and development down the scale of functions, of organs and of tissues, to the cells as a determining influence in their growth and characters. Without holding opinions so advanced we perceive in the vaso-motor system and in its reactions endless instances of the influence of habit upon functions and of the reaction of rhythmic functions upon cells. Leaving aside all theory we may award a place among our modern principles of treatment to the cultivation of habit as a means of influencing intimate nutrition. To put the matter in a more concrete form a life without effort or excitement would do little towards educating any higher habit but would tend towards disuse of function and degeneracy of cells, whilst sufficient training both of the mental and of the muscular activities, to say nothing of the visceral, would be capable of educating certain attitudes of the vessels and of the tissues which they feed and of keeping up above all the habit of muscular and elastic response. This question verges dangerously upon the vexed limits between physiology and pathology. Atheroma has been generally attributed to overwork and overstrain. I have never been able to satisfy myself that this is in every point a rational explanation; at any rate, relative defect or stagnation of nutrition and abeyance of function appear to be dangers not less real which may threaten the vitality of the vessel wall.

FUNCTIONAL ACTIVITY AS A PHYSIOLOGICAL PRINCIPLE OF TREATMENT.

Atony, delayed nutrition, and atrophy are the dangers of rest. Activity and function are the chief stimulants of nutrition. The tendency of properly regulated activity is to strengthen function just as it tends to hypertrophy the tissues. Both muscle and nerve and the body at large are "toned up" by activity and their nutrition is increased. In this total effect there is a reciprocity between the periphery and the centre. Powerful innervation favours the peripheral mechanisms, but we cannot doubt that the nerve centres derive assistance from the work and the tone at the periphery. Upon this principle may be founded a systematic education of the brain by the education of the peripheral mechanisms and particularly of the hand. This principle has considerable application in the treatment of backward children and in many others whose aptitude is at first rather mechanical than towards the abstract. Conversely, we have abundant instances of a central education of muscle in the marvellous dexterity attained in various arts. Concentration of thought and mental effort upon the contracting muscles, as in the modern training of athletes, is also an instance in point. The bringing into play of the function which has been rested is the most important part of the treatment by rest. Passive and active movement and graduated muscular effort are now resorted to in the treatment of a variety of conditions. Many sufferers, particularly those affected with chronic disease, are treated largely out of bed who were formerly confined to absolute inertia. The healthy heart itself is our best exponent of the great principles of rest and activity. In health cardiac rest is actually apportioned to cardiac work. In the treatment of cardiac disease the share of rest is a very large one and until recent times it was almost an exclusive share, but our principles have undergone considerable alteration. Whilst in phthisis the latest endeavour has been to keep the lungs at rest the prevailing tendency of cardiac treatment is now to gradually train the heart for action. The modern methods identified with the names of Oertel and of Schott are so well known to you that their mention will suffice.

THE RESERVES OF FUNCTION AND THE PRODUCTION OF ENERGY.

Towards the fatal termination of chronic disease our remedies are in vain. For a long time waste has been in excess of repair until at last the function of the higher organs ceases from want of a sufficient supply of force from the exhausted cells whence it should arise. In acute disease the issue of the struggle for life depends upon the amount of work still to be got from the vital organs in spite of the exhaustion which their cells may already have suffered. Organs which prior to its onset were only just equal to the demands of healthy life would break down for want of any available reserve of power. Energy in a general sense is the relative organic capacity for supplying force, and this supply may, as suggested, be inferior, equal, or superior to any special requirement. It may now be stated with less risk of misunderstanding that our first therapeutic desideratum in resisting disease is a margin or reserve of energy. Much energy is latent and may require some extraordinary stimulus to bring it into action. We are all familiar with the surprising amount of muscular work obtained in excess of that which ordinary volition will command under the influence of anger, alarm, or suggestion, even in those who are habitually torpid. In the "energetic" the capacity for work and its actual amount are manifest and this brings out the particular meaning of the word "energy" as used in current language. It is the capacity for work of the nervous system in its office of animating the entire assemblage of functions, organs, and cells. Inasmuch as it raises the energy and calls forth the work of the several organs, energy, understood in this limited sense, is itself a function and as such capable of education. That which is true of this central and ubiquitous function is equally true of the organs, each of which can be trained by special attention and acquires thereby that structural increase which is the basis of energy and the storehouse of force. Likewise we cannot doubt that hypertrophy and strength of the nervous elements must be the result of their constant use.

The question "Can energy be manufactured?" is therefore perhaps not so absurd as it may sound at first. The feeble primordial cell contains little more than the vitality of the future Cæsar—all the rest is imported. Food will bring the stuff upon which energy will grow, and yet how easily under unsuitable circumstances may food itself extinguish it. The growth of energy during the development of the organism may be raised or depressed in the measure as function is promoted or prevented. Its originally rich promise will avail nothing if its development be arrested by disuse. And its neglect or cultivation will react upon vitality itself and longevity. The growth of effective energy might be regarded as proportionate to the abundance and to the degree of the various organic activities set up between functions—in other words, their mutual stimulations. And if this be correct a judicious training of organs is essential. Active workers, whether with muscle or brain, are aware of the vitalising effect of habitual activity. In conclusion, it would appear that whilst the energy of the organs and of the organism may be suppressed it may be systematically raised, and this is our practical function against the chances of future disease, when the reserve of organic energy is to be the deciding point. Considerable inequalities under similar environment are observed between individuals even as regards the facility for production of the energising stimulations to which reference has been made. In some, apparently deficient in energy, a suitable change in the circumstances or environment may bring into play the increased scale of stimulation which the ordinary environment in the case of that individual had failed to afford. Instances of this apparent manufacture of energy by function is afforded by the special education of imperfect intellects, as at Earlswood—by the gradual vitalising process applied to torpid subjects—and by the more difficult treatment of neurasthenia.

PHYSICAL EDUCATION FOR MEN AND WOMEN.

A great outcry has arisen of late against the excessive importance attached to athletics at schools, at the universities, and at our medical schools, and in the columns of the daily press. The facts may partially justify the criticism. Perhaps a less severe view might be taken of the matter. In this age of unrest and of nervous strain there is little prospect of any slackening of the speed. Some of the consequences of this excessive nervous expenditure have already been noted—neurasthenic affections, insanity, general paralysis, premature senility, and a diminished birth-rate are partly attributable to this cause. The best corrective is probably a more general adoption of muscular exercise as part of our daily life. Muscular exercise, it is alleged, delays the

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passing of examinations, not only by consuming time, but by dulling the brain. For my part I would not discourage athleticism in our pupils, for we are all familiar with the excellent results arising from a happy combination of sport and study.

Men in this country have always been athletes and sportsmen. There is, however, something new and to be watched with interest in the spreading cultivation of physical exercise by women. The female world has perhaps never been so much addicted to athletics as in the present day. It has been reserved for our own time to extend to a larger circle sports and games which are the more healthy because enjoyed in the open air. Croquet, lawn tennis, golf, and the bicycle have been the progressive stages through which this development has passed. Among these pursuits the bicycle has done more than any other to revolutionise the formerly so carefully measured tenor of feminine existence, and coming into favour in the declining years of the century it has by some been held responsible for some of its many changes. So considerable a revolution cannot be left unnoticed in its medical aspects. The first outcry against its alleged detriments is already subsiding and even specialists have not condemned it. Muscular exercise is a cure for nerve overstrain and irritation and we can point to its favourable results. Young women are growing up to a greater stature and weight, with better complexions and healthier nerves, than had been witnessed before. These considerations open a wide subject. The health of the people is of no less moment and for them little has hitherto been done. If the improvement to which I have referred is not an imaginary one it should be shared by the millions. One of our most urgent duties will be the provision for the poorer girls of adequate means of healthy exercise. Hard work they get in our great towns, but exhilarating exercise is unknown to them. A praiseworthy movement has been set on foot under the presidency of the Earl of Meath and a British college of physical education was founded in 1891 and incorporated in 1897. This may become the nucleus of a widespread movement which might end in branches being attached to every school in the country.

THE PUBLIC AND THE PROFESSION.

I have anticipated in my first lecture some of the remarks which belong to this part of my subject and I have hinted at the increasing curiosity of the public in matters medical. In some ways the public is more exacting than it was. This is largely due to the increased publicity of information which was formerly regarded as strictly professional. One result is that an opinion is demanded in many cases where it would be wise to keep the diagnosis from the patient. But there is a growing difficulty arising from the modern facilities for communication by the post, by the telegraph, and by the telephone. Although so much versed in medical affairs, in one particular the laity are not sufficiently informed as to their working. Patients do not always realise that letters can kill. Advice and explanation are easily asked for. It does not strike the inquirer that for two minutes spent over such a message he expects the sacrifice of much time and labour from an overworked man who, let alone any much-needed relaxation, has not time for some of the most urgent requirements and the assumption by him of the anxious responsibility of hurried writings which nothing would tempt him voluntarily to undertake. It were well if the public were enlightened in this matter.

Treatment without advice and advice without treatment.—I need not refer to the number of periodicals addressed to the public, and particularly to the masses, in which professional matters are discussed and professional advice is offered by the editor or his correspondents. In this way many to their detriment resort to treatment without professional advice and the various consequences to which this leads are well known. They affect the practice of medicine and the practitioner. His opinion is not always regarded as the last word on the subject but the patient's and friends' first impulse is often to question it and to seek further advice. And thus the patient is becoming an unstable entity, more owing to our *fin-de-siècle* restlessness than to any blame attached to the medical attendant. The medical attendant himself is much discussed, but the criticism of treatment is a more serious matter because it affects the patient's interest. Some patients discuss it with their friends. Others are more inclined to read the most recent books on the subject and frequently are depressed and made worse by their efforts. Systematic serial consultations are one of the results based upon the deep-rooted conviction that medical men differ. This leads to much practice and is the chief column of support for the consulting fraternity. The consequence of this is that many go from one authority to another getting excellent advice; but the treatment cannot be established on any firm or consistent basis and but few of the things recommended are ultimately carried out. This is the other evil—that of advice without treatment.

ABSTRACT OF

The Morison Lectures

ON

THE RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDER IN THE VISCERA.

Delivered before the Royal College of Physicians of Edinburgh on Nov. 7th, 9th, and 11th, 1898,

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LECTURE II.[1]

Delivered on Nov. 9th.

DISORDERS OF VISCERAL SENSIBILITY.

SIR JOHN TUKE AND FELLOWS,—It may be remembered that when discussing some points in the physiology of the visceral nervous system last year I drew a parallel between viscero-motor actions in general and cardio-motor action in particular, arguing that while the products of such motions differed with the organs which were the seat of motion the mechanism of such action, whether anabolic or katabolic, was essentially the same. It is possible in Protean nature to push a parallel too far and I have no desire to become too general in discussion. But it appears to me that it will be convenient in considering the relation of the nervous system to disease and disorder in the viscera to divide these into two large categories—namely, into disorders of sensibility or sensation and into disorders of motility or motion. The brain could no doubt be thus considered collectively with the other viscera, but there is a certain difference between the former and the latter which, together with the special character of this lectureship, renders it desirable that that viscus should receive separate treatment. There is, indeed, throughout the body, as there is in every organ, a functional unity which might be more accurately termed a tri-unity due to the consentaneous operation for the production of a common result of the peripheral organic cell, whether in brain or muscle, a central regulating cell and its nerve channels, and the bond of union between the two—namely, the blood with its stimulating and life-giving properties. Recent physiological thought appears rather to have dissociated this essential unity and much ingenuity has been exerted to show how very well the organs can get on without the nervous system. The question of non-neural cardiac rhythmicality was touched upon last year and I traced the controversy from the now untenable assertion of an absence of nerves in general in the cardiac apex to that of an absence of ganglion cells in particular in that portion of the organ. Personally, I endorse Henry J. Berkley's physiological standpoint, although I cannot agree with his description of the cardiac ganglion. His words are, "Cajal in portraying the Auerbach plexus by the vital blue method gives a picture that is not entirely dissimilar to our cardiac nerve plexus with the neural enlargements and nerve-cells, though in the cardiac plexus the nerve cells are vastly inferior in number, different in appearance, and do not occur in clusters; yet the general likeness is sufficient to allow of some comparison being drawn between the two."[2] This is fairly correct as regards

[1] Lecture I. was published in THE LANCET of Dec. 17th, 1898.

[2] The Johns Hopkins Hospital Reports, 1894, p. 89.

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the lower third of the heart which Berkley examined and I shall show some of those ganglia of the apex which agree in great measure with this description. But in applying his words to cardiac ganglia generally Berkley's description does not apply. As I demonstrated last year the cardiac ganglia of the vagal system, as I take them to be, may consist of very large clusters of cells such as the fine specimen I now show on the screen and which was figured in THE LANCET and *Edinburgh Medical Journal* for 1898. My reason for regarding such ganglia as pertaining to the vagal system is that they bear much the same relation to the peripheral distribution of the nerve that the plexiform ganglion does to it at its origin and they are to be met with in many of the organs to which the vagus is distributed. The important point, however, is that, character apart, the apex of the heart although not profusely is nevertheless sufficiently ganglionated and the Hallerist must look for some other support than his anatomical argument. Physiology affords more scope to the imagination. But we saw that the presence or absence of ganglionic cells was after all a matter of small moment to the Hallerist. They were nutrient or something else. In any case they had little to do with motion in any organ. You cut a vagus and the heart does not feel it long. You detach an organ and stimulate it and the functional result is there. It has been shown, however, that if you cut both vagi the staying power of the heart is seriously compromised. Balint has shown that if aortic regurgitation be artificially established and one vagus cut the action of the heart is not materially interfered with—the compensated organ continues to act efficiently—but that if both vagi be divided the heart, even although it has undergone compensatory hypertrophy, soon gives out and the animal dies in about a week with well-marked evidences of retrograde stasis. Survival after the division of one nerve is probably the result of what may be termed incomplete peripheral decussation in the organic plexus—a subject, as it appears to me, of much practical interest and one which I have examined somewhat, but my results are still too rudimentary for publication. The nerve from one side probably sends fibres to both sides in such unified organs as the heart, while division of both nerves naturally destroys such a nerve-supply and saps the fountains of persistent rhythmicality.

Inasmuch, however, as anatomy lies at the foundation of our knowledge of all forms of organic activity it would have been a difficult matter for the adherents of a neural theory of sustained motion to have defended their position had it been possible to point indubitably to mobile structure which continued efficiently to act for a lifetime without such endowment. The conception of such a condition would *a priori* seem unreasonable, but as the unexpected does occasionally happen it was just possible that such a fact might conveniently come to the aid of the distressed Hallerist. This was supposed to be so in the case of the intracranial vessels. Some of the peculiarities of the intracranial circulation certainly appear at first blush to lend probability to the occurrence of an exceptional condition in this sphere. The resistant skull-cap, Alexander Monro the second's suggestion of the full bottle held upside down without spilling its contents, Kellie's well-known experiments, and much argument founded thereon suggested that vasomotor nerves had little to do with the intracranial circulation. Some, like Hill and Bayliss,[3] argued that nerves were absent because they had not been found and for the purposes of their theory it was necessary to assume such absence. In my ignorance I had assumed that these vessels were innervated until Sir John Tuke informed me last year that they were supposed not to be. Were this so, I felt that I was standing upon somewhat thin ice in much that I had to say and I found it advisable to walk somewhat a-tiptoe until I felt more secure. I therefore determined to investigate the point at an early stage of animal life when the tissues appear to be, as a rule, most amenable to staining methods. As I have related in the *Edinburgh Medical Journal* for November of this year, I selected the fully grown fœtus of a cat for the purpose and was fortunate enough to find not only that the pial vessels were fully innervated by an ample plexus, but also that branches of nerve might be found in close relation to blood-vessels which bore fully developed and permanent ganglion cells. Thus, then, another non-neural persistent rhythmicality has found its way to the limbo of many an ingenious hypothesis. The preparations under the microscope and their reproductions on the screen show these structures the relation of which to sleep and cerebral activity must be a very important one. Assuming, therefore, that the nervous system bears an important relation to splanchnic as well as somatic motion in health, I assume also that that relation is quite as important in the case of disordered visceral sensibility and motion. Having argued that motion, whether sensory or mobile, to use a convenient although tautological expression, is one in kind in all organs although modified by the functional nature of the organ manifesting it, I shall take as the type of disordered sensibility and motion abnormal conditions of the heart for fuller discussion, as those with which circumstances have rendered me most familiar and shall apply the lessons which they seem to point as rationally as I can to disordered sensibility and motion in other organs.

On the threshold of such a discussion it seems necessary to inquire what the local elements in visceral or referred pain are? It occurred to me that the uterus might be taken as the best physiological type of visceral pain and that an examination of the finer innervation of that organ might throw some light upon the general question. This I have accordingly done and should I in the course of my anatomical remarks relate facts known to others and discovered by others without due acknowledgment I must plead ignorance of such previous work and can therefore disavow any intentional plagiarism. A lateral branch from a large nerve in the uterus is given off so that the portions chiefly constituting it appear to run in opposite directions in the outer strands of the parent nerve and within its adventitious sheath. Fibres may also cross over the trunk from the opposite side to join the branch. As the branch increases its distance from the main stem its division for distribution takes place as one would expect by gradual subdivisions which naturally diminish the size of the parent branch. On examining the mode of distribution of a small branch or twig and noting its relation to blood-vessels we find that some of the smaller sub-divisions tend to follow the course of the vessel and others cross it for final distribution to individual muscle fibres. The branches following the vessels form a plexus around them, a sort of plexal tube or sheath through which the vessel runs, and by twigs from which it is innervated. Before distribution to the organic muscle triradiate nuclear points of dispersion may be observed as in other structures, such as the pial membrane and the pelvis of the kidney. Nuclei strengthening fine fibrils may be observed in the uterus as elsewhere, but I have also noticed a peculiar relation of some neural swellings or nuclear points on the uterine fibrils which I have not seen elsewhere but which may nevertheless quite possibly occur. A rounded nucleus may be placed quite laterally to the fibril so as to constitute a rounded knot or excrescence upon it, and which is so rounded and displaced laterally as to convey at first sight the idea of a small ganglionic cell but which on examination by high power ($\frac{1}{12}$ immersion) reveals nothing more than an irregularly stained nuclear body somewhat resembling a small Paccinian corpuscle but without the characteristic striation of the latter. The local causes of pain in the parturient organ which may for convenience be termed visceral pain are uterine and extra uterine. By extra-uterine pain I mean such as is caused by pressure upon surrounding textures, including those innervated by purely somatic nerves as the uterine contents are extruded. With such pain I am not at present concerned, although it perhaps constitutes a great, if not the greater, portion of the pain incidental to labour taken as a whole. The total pain is, however, undoubtedly commensurate with the degree of uterine contraction and some of it appears to be localisable in the uterus itself, for pain is present before extra-uterine pressure is a considerable factor in the situation and also after labour is over, when coagulated blood or other residuum has to be extruded. Such essentially uterine or visceral referred pain must, it appears to me, be caused by intramural pressure upon sensory nerve structures distributed to the muscle. The absence, however, of visceral pain under circumstances in which we might *a priori* expect it to be present is a striking clinical fact. As we saw last year the visceral nerves in the absence of inflammatory states are so little sensitive that organs may be freely manipulated and even injured without the evident production of painful sensation. Nodules of malignant disease may also stud a viscus and cause little pain. Cysts may rupture into the pericardium and elsewhere, causing death, of the presence of which there was no sensory or other evidence during life. On the

[3] Journal of Physiology, 1895.

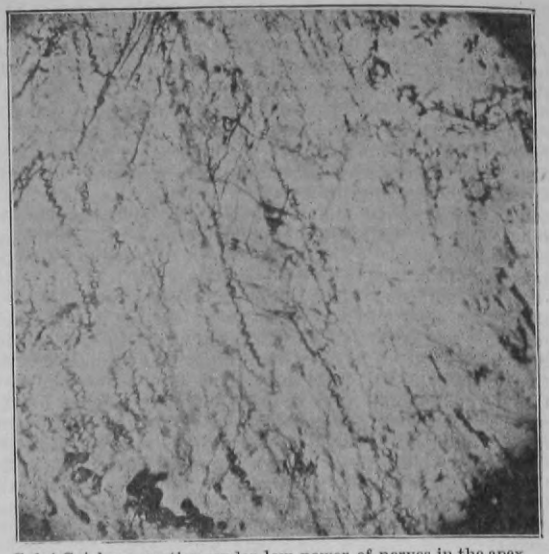
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other hand, it is commonly observed that in certain situations and without inflammatory lesion visceral pain may be as well marked in the splanchnic as in the somatic nervous system. Large calculi may lie in a gall-bladder for a lifetime without causing pain, but even a small one under the peristaltic grip of the bile-duct may cause an agony which from its very intensity may prove fatal. The same is true of renal calculus. The stone once engaged in the ureter may jeopardise life and even cause death from collapse due to the severity of pain, while very little and it may be no pain may attend its presence in the pelvis of the kidney which we have seen is richly endowed with nerves having the anatomical character of peripheral sensory nerves. Slight causes may, moreover, provoke great visceral pain, such as the colic which is due to very moderately irritating material in the alimentary canal.

It would appear, therefore, that visceral pain in the absence of inflammatory conditions may be of direct and indirect origin and that it has some relation to the degree of pressure exercised upon sensory nerve endings either directly by such action as the passage of a calculus through a narrow peristaltic tube or the indirect spasm induced, it may be, by slight causes in the visceral muscle. It is, therefore, the implication in disease of orifices having contractile cavities behind them which is most calculated to make pain a prominent feature in clinical histories. Thus the strictly local ravages of disease in a viscus may be painless, but the provocation by it of tetanic muscular action or cumulative peripheral pressure may cause much suffering. Finally, visceral pain may be the peripheral expression of a central lesion. That pain should be referred to a locality where the original stimulus is situated, as it must of necessity be somewhere, does not seem in any way remarkable. It is but a form of touch, a painful touch, and the whole utility of touch, whether painful or otherwise, is to indicate locality and the character of the circumstances surrounding a sentient being. Pain may, indeed, in some measure be regarded as a beneficial provision for the preservation of the individual. But the experience of pain not at the site of its cause is somewhat remarkable. The surgeon is familiar with the pain of vesical calculus referred to the end of the penis and with the knee pain of hip-joint disease. In like manner do the visceral crises of tabes appear to be caused by a peripheral projection of sensory irritation from structures in process of sclerosis.

With this introduction I pass to the consideration of cardiac pain as a type of disordered visceral sensibility. The natural provision made for safeguarding from undue mechanical stimulation the nerves entering and permeating an organ is nowhere better seen than in the heart. If the heart of an animal be taken which has died in systole and be fixed in that tetanic state forthwith by being placed in alcohol, microscopic sections show well the means adopted by nature to protect both vessels and nerves from undue squeezing by the close-grained organ. The specimen I throw upon the screen is from the apex of a sheep's heart prepared in the manner stated. The largest nerves may be seen to be situated nearer the vein than the artery, as they enter the organ at its surface, while the neuro-vascular atrium is also well padded with fat. The whole constitutes a perfect contrivance for obviating undue pressure from the surrounding muscle which may be observed to be in a state of systolic contraction. The same perfect adaptation to circumstances which we see at the surface obtains as we follow the nerve trunks into the organ, the vessels and nerves coursing largely together and being protected in more open situations by associated fat cells. The heart being like the uterus, an organ having a wide range of contractile variability, if the suggestion I have made in explanation of the tortuosity of the uterine nerves hold good we should expect a somewhat similar provision to exist in the heart also, and we find that it is so. Coils such as are met with in the uterus are not found for sufficient reasons which need not be discussed further than by pointing out that the return of the organ to smaller size is but momentary in the case of the heart and the difference between its maximum and minimum less than in the case of the uterus. Berkley[4] refers to the "wavy" nature of the nerves passing through the cardiac muscle. My preparations like his were made from the lower third of the ventricle and include of course the absolute apex. The rich innervation of the part is well seen in the specimens I place under the microscope which I stained by the quick Golgi-Cajal method and also from their reproductions on the screen. It will be observed that waviness is a very mild term to express the almost corkscrew tortuosity of some of the nerve trunks depicted. One can readily conceive the perfect

FIG. 1.



Golgi-Cajal preparation under low power of nerves in the apex of a cat's heart showing their tortuosity.

adaptation of such a contrivance for suiting the altering state of the organ in systole and diastole. In the systolic organ as in the non-gravid uterus the threads of the screw, so to speak, are approximated, while in the diastolic organ as in the gravid uterus they are extended. Now, dilatation of

FIG. 2.



Golgi-Cajal preparation of nerves in the cardiac apex of a cat. G marks a ganglion.

the heart is in a sense a partial and persistent diastole, a condition in which the threads of the neural screw must be somewhat extended and it is conceivable that such extension may be associated with a degree of sensory stimulation having in its train various degrees of motor consequence to which reference will be made in their proper place. At present we are concerned with sensory phenomena and we know that the sensory incentive to motion—a reflex—need not be experienced as a sensation unless the resultant motion be of a type to induce sufficient peripheral stimulation to cause pain. This, I believe, it may do. Then one of the forms, the indirect form, of angina pectoris is the result. Stimulation of the cardiac nerves on this principle, which is

[4] Loc. cit.

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not provocative of visceral spasm may cause various irregularities of rhythm to which also I shall refer later, as well as various degrees of sensory discomfort not amounting to angina which cardiac patients frequently experience.

We have seen that the cardiac nerves in penetrating this organ are more or less intimately associated with blood-vessels and in the case of the larger vessels this association may be seen very distinctly in some of the specimens I show under the microscope and on the screen. The nerves in fact on transverse section may be seen to crown the arteries as the arteries themselves crown the heart. On longitudinal section they may be seen to course with and around the vessels. We can understand, under the circumstances, in the event of a hardening and irregularity of the arteries such as we meet with in advanced stages of arterio-sclerosis with calcareous degeneration, when associated, as it frequently is, with a cognate change in the interstitial tissues of the organ and in the interspaces along which the vessels and nerves find their way, how actual frictional contact with irritation of nerve trunks may induce frequent and ultimately fatal attacks of cardiac pain. Angina pectoris thus originated may be regarded as the direct type of angina or visceral pain, like the pain caused by the passage of a calculus along the bile or urinary ducts. It has been cogently objected to this theory of angina pectoris, that were it true, angina should be more constantly associated with the conditions mentioned than it is found to be. Atheromatous arteries are frequently met with after death which do not appear during life to have caused cardiac pain. I trust I may not be thought to assume too dogmatic a tone in the presence of some whom I regard as the chief authorities upon the subject which I am discussing when I express my belief that the association of angina with calcareous degeneration of the coronary arteries and hyperplasia of interstitial cardiac tissue is dependent in a great measure upon the degree of change in the vessels and in the channels in which they run, associated it may be in some cases with a certain amount of visceral neuritis which as we know would be calculated greatly to increase the sensibility of the nerves involved.

There are those who have described an anatomical sensitisation of the endocardium, and if they be correct, it is conceivable that the incentive to angina from increased blood-pressure within the chambers of the heart may be due to stimulation of such endocardial innervation. Professor Clifford Allbutt also ascribes great influence to intra-aortic tension as an etiological factor in angina pectoris. For myself, however, I am more disposed to regard intramural and intra-aortic stimulation of nerves as the cause of those reflex muscular changes which induce visceral pain, just as I attribute to similar causes the essentially visceral pains associated with a uterus in rhythmical action of a certain intensity. Such conditions as favour adynamic dilatability of the chambers of the heart, whether from local disease or general debility, are calculated to induce such stimulation and reaction as I have referred to and are most calculated to result in angina when to the indirect influences I have mentioned there are added local causes of intramural stimulation of the cardiac nerves.

Painful affections of the heart may as is well known be associated with somatic points, areas, and radiations of pain, and Walshe has described the opposite process of peripheral aura resulting in central cardiac distress.[5] In the case which Walshe refers to the pain began in the hand and spread up the arm to the chest. This must, of course, merely be regarded as the peripheral projection of a central stimulation, such as the shoulder pain associated with some hepatic conditions and other well-known somatic manifestations of visceral stimulation. For the local origin of angina is to my mind indubitable, and this conclusion has been impressed upon me by the situation in the right arm of anginoid pain in a rare case of dextral valvular disease of the heart which I published in the Transactions of the Pathological Society of London in 1876.

It does not follow, however, that cardiac pain may not have a truly extra-cardiac origin. Less frequently than in the case of some of the other viscera the painful crises of dorsal tabes may affect the region of the heart, as is stated by von Leyden and Goldscheider,[6] who quote other authorities for the same fact. The attacks may have the severity of *angina vera* and even threaten life. Whether the sensory phenomena of such crises may originate as some have supposed in the pneumogastric system may be left an open question. That the pneumogastric does not play the important part in the painful symptoms of visceral crises which was at one time assigned to it is fairly certain in view of our present knowledge of the pathology of the disease. In some cases, however, there appear to be grounds for associating such cases with central pneumogastric irritation, for although the nerve has a largely trophic influence its spinal sensory fibres, coming as they do from the far-reaching solitary fascicular strand, may be regarded as quite as efficient channels for sensibility as the lower spinal nerves and posterior root ganglion. All the phenomena of sensory localisation and radiation, however, in cases of visceral angina, whether cardiac, hepatic, or renal, indicate the spinal rather than the cranial nerve-supply as the chief territory of objective pain. This point would appear to have been first emphasised by Dr. Allen Sturge.[7] Ross[8] appears to have come to the same conclusion independently. Professor Clifford Allbutt made a similar suggestion in his Goulstonian Lectures in 1884 and, while laying more emphasis than Sturge did on peripheral excitation, essentially the same conclusion impressed itself on me before I was aware of his valuable paper on the subject.

It is considered by some physiologists that tactile and muscle sense sensations travel up the cord to the brain by way of the vesicular column and the gracile and cuneate nuclei, while sensations of heat and cold pass up through the grey matter to the optic thalamus. If this be so it may explain the alterations in the temperature sense in lesions of the cord involving the grey matter such as syringomyelia, but the degree to which such lesions influence the temperature sense in the viscera is for many reasons difficult to determine. It is difficult, indeed, to test the temperature sense in syringomyelia even of the stomach much beyond its cardiac end and even here we have the complicating condition of nerve-supply from another source above the seat of lesion. The temperature of hot and cold drinks may be appreciated in the stomach, but beyond it the warmth of the body in the case of cold drinks, natural loss of temperature in the case of hot drinks, and the comparative and normal insensibility of viscera generally soon seem to render the temperature indifferent and its perception impossible. It may be shown, however, in syringomyelia that while the surface exhibits abnormalities and loss of temperature sensation the temperature of imbibed material is still felt by the stomach and this retention of sensibility is probably due in some cases to the pneumogastric innervation of the viscera.

The association of cephalic parræsthesia with visceral disorders is a subject of interest. The situation and characters of such sensitiveness have been carefully studied by Dr. Head,[9] who has been the most recent observer to point out the situation of hyperæsthesia in the surface of the head in connexion with visceral disorder and has given anatomical reasons for the concurrent implication of the sensory nerves of the scalp. Such sensory points in connexion with visceral disorder undoubtedly occur as also do hyperæsthetic points on the thorax and trunk in connexion with cardiac and other visceral disease and disorder, but in a large proportion of headaches, chestaches, and trunkaches pain with little or no tactile hyperæsthesia or hyperæsthesia difficult to detect and delimit is, so far as my experience goes, the rule. This association of visceral disorder with cephalic pain has long been known and some forms of it have been carefully described. Pain in a certain proportion of these cases is probably meningeal, not cutaneous, and from its intracranial situation not accessible to tactile investigation and therefore not objectively hyperæsthetic. While searching for the innervation of the pial vessels I likewise investigated the innervation of the pia mater and found that the nerves which have long been known to course through it end in it by plexus, as I have stated in the *Edinburgh Medical Journal* for November, 1898. Some headaches, therefore, and the pain of meningitis are explicable by the copious innervation of the membranes of the brain and the neural pathology of the investment of that organ is thus brought into line with painful affections of the pleura and peritoneum. The severe headache of tertiary specific disease may in some cases be meningeal, but as the brain differs from other organs in being the seat of perception and the focus

[5] Diseases of the Heart and Aorta, fourth edition, p. 198.
[6] Op. cit., p. 544.
[7] Brain, vol. v., January, 1883, p. 492.
[8] Ibid., vol. x., p. 354.
[9] Ibid., 1893-94.

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for the sensory channels of the body it is probable that in the case of this viscus disease implicating the structure of its centres and nerves may cause pain in a manner in which a similar lesion would not do in the case of other viscera. The determining factor for local pain in the latter I have argued is a simultaneous tension which increases the force or degree of impression, and in the case of visceral muscle a reflex cramp which squeezes nervous end-organs.

In speaking of the general trophic influence of disease of the central nervous system it was pointed out that pain and mental anxiety were the chief determining factors under these circumstances and that mental anxiety might be regarded as having the same relation to the intellectorium that pain had to the sensorium; that they were in short both painful emotions. Laycock, indeed, called mental anxiety *phrenalgia*, and considered depression of spirits and hypochondriasis varieties of that species of pain.[10] As the brain, moreover, is compact of many organs or, as I shall term them later, organules which concur to produce that multi-unity, the mind, which can distinguish the effects of the exercise or want of exercise of one organ or centre from those of another such as the different effect of the various special sense centres, so it is probable that the direct effect of the disorder of one viscus may impress the mind differently from the disorder of another, the harmonious and painless operation of all being necessary for that unconsciousness of the existence of a particular viscus which is characteristic of vigour and health. Some organs, moreover, like the liver and kidney, the functional activity of which influences the character of the nutrient fluid for the whole body, have when diseased a more depressant general influence than disorders or diseases in those organs which are chiefly mechanical or more specialised in function and effect. The attitude of the patient to disease is also no doubt modified in a measure by the condition of the mental organ itself. The naturally blunt and stupid who fail to appreciate the general gravity of their situation have also probably a minor power for the appreciation of discomfort and may exhibit a callousness in physical distress only attained in the more sensitive and gifted after a philosophic estimate of their general relation to things and time. But putting aside stupidity and philosophy the hope to live or desire to die as influenced by disease or disorder of particular organs is largely dependent upon the circumstances whether such disease or disorder saps energy or produces pain beyond a certain point which is open to individual variation. A pronounced and protracted sense of feebleness is little, if at all, more endurable than actual pain, and disease which engenders such induces a mental depression and despair of vigorous life more certainly than many more serious diseases which have not that specific effect. The suicide of the so-called convalescent from influenza—not an uncommon event—is an instance of this, and prolonged enfeeblement in general from any cause, with its concomitant discomforts and disillusionments, is productive of a misery which the serious disorder of a particular organ which does not rapidly and profoundly enfeeble or cause pain to a certain degree does not induce. Thus the cardiac sufferer whose natural vigour is good and whose diseased heart is well developed and has at times been well compensated, may evince much less and experience less distress than the patient who has experienced angina vera for the first time. Nothing has struck me as being more pathognomonic than the expression and general attitude of some patients on their first experiencing that form of cardiac anguish. It is like a "bolt from the blue" in their lives; they have never experienced anything similar before; the cloud-curtains of the unknown seem suddenly about to be raised and it fills them with an anxious astonishment which frequently on a repetition of the phenomenon plunges them into an acute despair, until the innate bravery of man at his best enables them to face that as any other contingency with indifference and with such aid as it is the privilege of the physician to be able to render. Chronic dyspeptics, again, with their minor but constant dysæsthesiæ with periodical exacerbations and imperfect hæmopoiesis, frequently develop a mental habit which renders them, like one of the most distinguished of them to whom we can forgive much, "gey ill to live wi'."

On the other hand, chronic disease which attacks youth is not associated with much pain and only deteriorates vigour in such a manner that the perceptive power of the individual does not appreciate great differences in this respect, may be coupled with all the sanguineness and natural expectation of life and usefulness which is proper to that period. The expectation of recovery of the phthisical, even in the last stages of the disease, is so well-known and common a phenomenon as to have become stereotyped in clinical language. There is no doubt under all these circumstances, except in the case of the stupid, a so-called metaphysical element in the manner in which the mind is affected by organic disease, but it may I think be regarded as based upon clinical facts that the mind appreciates the necessity for the exercise of philosophy least readily, as is most reasonable, when visceral pain and rapid enfeeblement are not dominant characteristics of the type of disease from which a given patient is suffering.

[10] Medical Observation and Research, second edition, p. 352.

ABSTRACT OF AN

Address

ON

THE WORK OF THE GENERAL MEDICAL COUNCIL.

Delivered before the Manchester Medico-Ethical Association at the Memorial Hall, Manchester, on Dec. 16th, 1898,

BY VICTOR HORSLEY, F.R.S.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—I had the greatest pleasure in accepting the invitation of this association remembering as I did the numerous pleasant occasions on which I have visited Manchester, especially in relation to the question of medical politics. To begin with I will just sketch out to you the lines on which I propose to occupy some of your time this afternoon. In the first place I wish to draw your attention to numerous defects in the procedure of the General Medical Council in the hope that by the publication of a few of these we may secure further reform. Then I wish to proceed from that to dwell on the way in which this publicity of these defects may be secured, and then to pass on from that to discuss some of the criticisms of my views on the General Medical Council and its work and, lastly, to pass to the large question of the amendment of the Medical Acts. I find that that would practically fill up the time that I can justifiably occupy. I know there are other matters of vital interest, but it seemed to me that if you would raise them by asking me questions we might expedite business.

The General Medical Council is an extremely curious body; it is unlike any other public body of men collected for public business I have ever come into contact with. Its duties, according to some persons, are those of superintending the education of medical men and registering them when educated, and for a long time these were regarded as the only objects of the General Medical Council. I think the members of the General Medical Council when they sit in the Council chamber collectively forgot their duty towards their neighbour; they forgot that by having entrusted to them the control of the Register that duty carried with it the necessity of observing the difficulties and dangers which affect the medical profession as a whole. For a long time they took no notice of these difficulties and did not seek to ameliorate the condition of the medical profession. For the last four years a change has occurred. There is a growing feeling, which is stronger at each session, that the responsibilities of the Council towards the profession are very real and require a larger proportion of the Council's time and attention. As regards, however, the procedure of the Council in its work it is unlike that of any other public body. It would astonish you to hear, for instance, that there is no record kept of the statements made in the Council chamber; there is no shorthand note of public meetings or private meetings; the only record that exists is what is published in the medical journals. In regard to the delicate work of the Council—namely, the penal matters—there are some standing orders in regard to these cases, but apart from these there are no regulations and the action of the Penal Cases Committee is uncontrolled. It used to be declared by

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some members of the Council that the Penal Cases Committee was a kind of grand jury and every member of the profession consequently felt that if there was a grievance lodged against him it went before such a grand jury of his compeers for consideration. As a matter of fact it is authorised to act in this way, but the conduct of its business is wholly without rules. I succeeded last session in carrying a resolution whereby the Penal Cases Committee should report at the next session of the Council as to what procedure they do adopt. Upon that report I intend to bring forward such reforms as have occurred to me and which I know are occurring to other members of the Council in regard to this serious division of our work. There is another matter of congratulation in relation to penal cases procedure which I may refer to. Hitherto for some unexplained reason the Penal Cases Committee has not been elected annually and therefore has never been practically altered since it was constituted except by the death of one President and the election of the present President. I proposed at the last session that this should no longer be the case and that the committee should be renewed annually, and no one advanced any sound reason why this should not be done. It is hardly necessary to say, however, that when I first put forward this resolution it was temporarily shelved for six months and that the Executive Committee to whom it was referred did not think it advisable to make any alteration in the mode of election, but despite opposition I am glad to say that my proposal which was adopted by Sir Richard Thorne and moved by him as an amendment was carried by a large majority. Now the Council will have the opportunity of electing the members of the Penal Cases Committee every year or of not electing them as may be thought fit. This is a distinct step forward. Now to return to the question of characteristics of the procedure of the Council, I must of course allude to a prominent and disagreeable feature—namely, secrecy. You will have seen from the reports of the last session that very definite steps are being taken by certain members of the Council to introduce more and more difficulty in the way of anyone getting to know what is going on in the Council or of anyone (who has a right to know, such as registered practitioners) knowing what is about to go on which is of importance, because if a man has an interest in any matter before the Council he may naturally wish to go to the Council chamber to hear it discussed. This applies to us specially as registered practitioners, but it applies also to the public, and it is commonly forgotten by many members of the Council that they are a statutory body commissioned by Parliament to deal with *public* moneys, which moneys are not primarily the moneys of the Council; they are national funds, subscribed by members of the profession and paid by them as earnest-money when they register their names; therefore any discussion with a prospective or current concern in the spending of these moneys should be open to the general public, and the general public for the same reason have a right to know when a financial question is to be discussed. What was the arrangement in this particular up to the last session? Up to this session anybody who went to the public gallery of that Council and wishing to know what was going on asked in a courteous way in the office for a programme of the public business was handed a programme of the business. I am sorry to say that at this session under the recently established *régime* we discovered on the second day that members of the profession who came to the public gallery were refused programmes by the officials. I brought the matter up and I was informed by the President that programmes were never given away at all and that they had never been given away. I promptly refuted the denial, but in spite of what I said the statement was reiterated by the Registrar, chiefly in consequence of whose inaccuracy I lost my motion, though the President stated as an argument against me that the programme was a confidential document because the word "confidential" was written across it. I therefore there and then asked the legal assessor of the Council whether the printing of the word "confidential" across it made it confidential and he said of course it did not, though he conveyed the idea put forward by the official party that it would be just as well perhaps if the people in the gallery did not have the document. But the fact remains that public moneys are expended and public business is transacted and yet not only the public but registered practitioners are not permitted to see the programmes which are no more confidential than an ordinary newspaper. I dare say in a year or two we shall have this put right, but it is one of the attempts to conceal the Council's actions which is temporarily successful. The actual conduct of some of the proceedings *in camerâ* is of course obligatory in regard to penal cases, but there are many subjects discussed *in camerâ* which are on the borderland and ought not to be discussed *in camerâ*, but such is the alarm of certain members of publicity that they move the Council to go into camera, and the majority of the Council are so easily terrified by questions of law which are common knowledge to most people that they support the motion and the matter is smothered for a time. There are many signs which indicate that there is a strong wish to introduce what may be called Dreyfusian tactical proceedings into the Council. The President asked this session that he should be given more discretionary powers and he ruled out of order a resolution of mine which being perfectly in order will require discussion next session. The Executive Committee which was originally appointed to shorten the Council's work now by the nature of its reports lengthens the work. I moved last session sundry reforming resolutions which the Executive Committee reported upon in an obstructive and destructive sense which only caused a discussion of some hours with the result that we gained about 70 per cent. of the points and in the teeth of the Executive Committee's hostile recommendations. Among these, for instance, I proposed that the members of any committee should have an opportunity of calling their committee together if several of them thought fit. Whereupon the Executive Committee sought to again centralise the power to the chairman by proposing that he alone should have authority to convene a meeting. This somewhat comic act of obstruction was defeated as it deserved.

Another curiosity with regard to the procedure of the Council is the document question, but I am not going to weary you with all the details, for I have reported how the present state of affairs stands in my Report to the Registered Practitioners, but will pass to the question of delay of business in the procedure of the Council which is very serious. It is due to several factors. In the first place the members of the Council are not informed between the sessions of what is going on—they come to each session as it were like boys coming to school for the first time, excepting of course those members of any special committee to whom some small piece of business happens to have been referred. The papers are in the hands of the Registrar, who is a paid servant of the Council, and he enjoys the privilege of studying the papers which privilege by the action of the Standing Order of last session is refused to the members of the Council. That is the condition of affairs. On this latter point I was much amused to note the wording of the resolution which was carried by Sir Richard Thorne—namely, that the working of the Standing Order inhibiting and obstructing the inspection of documents was not *altogether satisfactory* and that it was desirable to facilitate the inspection. That is now to be done by a report of the Executive Committee next session. The reports will probably result, as before they have resulted, in putting the brake on, but at any rate we must be thankful for small mercies. This is the first official step down from the unwarrantable position assumed by the President last session.

[Here Mr. Horsley criticised the reports of the meetings of the General Medical Council which appeared in the *British Medical Journal*, finding them "very meagre" but adding that "not a word can be said against the accuracy."]

That brings me to the all-important question—namely, the question of the amendment of the Medical Acts—because I was agreeably surprised and pleased to think that I could detect in the Council at the last session a distinct glimmering of light on this subject. Of course, you have no time to read the minutes of the Council, but if you had you would have found that the legal assessor stated three years ago that in his opinion there was no necessity to amend the Medical Act. This statement was made in answer to a document from the Medical Defence Union pointing out a failure in the prosecution of an American quack and of a person struck off the Register for practising under a foreign degree who was not registered and that the Act had been seriously injured by the remarkable finding of the stipendiary magistrate of Cardiff. Three years ago the Council did not care anything at all about the matter and the legal assessor gave the opinion I have referred to. I am very glad to say, however, that in the last session I succeeded in getting him to withdraw from that absolute position. It was another instance

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of giving way to stress of political weather. The Council had had laid before them the important case of the prosecution of an unqualified man at Norwich who was successfully prosecuted under the Apothecaries' Act and fined the full penalty, but as regards the Medical Act though he called himself both "doctor" and "surgeon" the magistrates held for some unexplained reason that he had no right to call himself a "surgeon" but that he had a perfect right to call himself a "doctor." I will say at once that this case brought home to the Council the point which has been the point of battledore and shuttlecock judgment in the courts for years—namely, the act of a person being "wilful and false" and the difficulties which are caused by the absolute decisions of magistrates deciding in cases. If a magistrate decides on a question of fact then there is no more to be said; if you appeal to the High Court all that is said is that the magistrate decided on fact and there is no help or hope for anyone and that is what happened in this case. The magistrates apparently were extremely friendly towards the defendant and they refused to state a case in the form I have told you. Such decisions are nothing less than driving a coach and horses through the Act of Parliament. This case unquestionably impressed the Council and especially because it was pre-eminently a matter of "title" and I think that the first step we must take if we want to obtain an amendment of the Medical Act is to first convert the General Medical Council to the necessity of the case and with this glimmering of light that I have mentioned we may see our way to advance a little further. There is another reason for first converting the Council. The Council is continually brought into communication with the Privy Council and under these circumstances the Privy Council naturally refers to the General Medical Council when it wants to know anything concerning medical legislation. It is obvious, therefore, that if the British Medical Association brings out an Amendment Bill, as I hope it shortly will, and sends it to the Privy Council it would be referred by that body to the General Medical Council. Moreover, to obtain our object we must bring influence to bear on the Government and the Council certainly has some influence with the Government; unless therefore we persuade the Council first we have little chance of the Government taking the Bill up as a Government measure and without that there is hardly any other way to pass a Bill. Therefore we must work to convert the Council to accepting the view of an Amendment Bill. I have already told you how the Council was in years gone by hostile to interfering with the Act at all, but that was chiefly because in those years the General Medical Council objected to safeguarding the rights and privileges of the practitioner. Now there is a change and I should say probably the large majority of the Council are sincerely anxious to protect the privileges of the practitioner. Now what ought an Amendment Bill to contain? Years ago among the various Bills that were proposed in the British Medical Association and out of it there were three points always prominent which points also appeared in the addresses of candidates for the direct representation of the Council and were as follows: the first was the question of representation in the Council, the second was the one-portal system, and the third was the safeguarding of registration.

As regards the representative or rather non-representative character of the Council Mr. Brown has put forward at different sessions of the Council a resolution that the Council should act under the powers under the Act of 1886 and appoint three more representatives, but that motion has never yet received a hearing; it has always been shelved. Towards the end of the session the President has usually made pathetic appeals to Mr. Brown to withdraw the notice on the ground that the time is too short. Though Mr. Brown, I believe, now quite intends to press the matter at the next session I am afraid it will be defeated so that we cannot reasonably look for help in that direction. But a new Bill might abolish all the representatives of the corporations and make the whole body of the Council truly elective and thus we should have representation in the highest degree. A second way would be that Section 4 of the Medical Act, 1858, which affects the constitution of the Council in regard to the representatives of the different bodies, should be amended so as to carry out its original intention. That Section states that a representative shall be chosen by each of the following bodies and that word "bodies" most of us hold to mean the whole body politic of each corporation. However, as you know well, the central councils of these corporations have, so to speak, grabbed the position and have refused in any way to consult the members of their corporations in the election of their representative. There is of course the remedy of going to the High Court, but that, I think, would be simply throwing away good money. It would be necessary therefore that an Amendment Bill should contain such wording as would make Section 4 of the Act of 1858 clear beyond dispute and that the election should be placed in the hands of all members of such bodies. This matter of representation rather hangs with the next question—namely, the one-portal system—because if the one-portal system were carried the Government would doubtless see that there was no reason for the representatives of the corporations being directly elected at all. I am bound to remind you that these gentlemen have constantly denied that they are representatives of such and such a corporation ever since Sir Dominic Corrigan once said that their discussions were nothing but battles of the shops. Nevertheless, we have occasionally at each session this shoppy character coming up. Last May session we had a strenuous dispute between the College of Surgeons of Edinburgh and that of England and at this last session also we saw the Crown representative of Scotland who spoke in the name of the Scotch schools as though the Scotch schools had been unfairly treated in relation to the examination for entrance into the services. These were instances of this shop feeling and so long as any representatives are elected by a small body such as councils of these corporations are they must inevitably have a relatively narrow view of things tinged by the colour with which their college happens to paint them.

In regard to the one-portal system for many reasons we must have an equalisation of the qualifying examination. The present system is wholly unjust and the practical question is what attitude does the Council bear towards it? I think the attitude at the present moment is rather favourable, though there is no doubt that the present Council will have nothing to do directly with any preliminary examinations, but though they dismissed a motion by Sir Christopher Nixon and myself a few sessions ago dealing with that point they rejected it in such a way as to show that the feeling existed that perhaps the one-portal system might be tried with advantage in the final or qualifying examination. If we pursue that line perhaps we shall find that the Council may be converted to a one-portal system. The President some years ago said to me at Liverpool that he would shed his last drop of blood against the proposal—and that is doubtless the feeling of the Scotch schools—but the equalisation of the character of the qualifying examination is so desirable a thing that the unreasoning opposition of any school need not be feared.

Next, as to the protection of our hard-earned privileges I must say that even now it seems to be thought by some leaders of the profession that there is something degrading in endeavouring to protect our privileges. If we have privileges we ought to protect them, is the view I take up, and I certainly object to a medical man being considered to be fairer game for exploitation than any other professional man. Still, it is the fact that there are leaders of the profession who hold the pessimistic view, and I mention the existence of this idea because I think it is our duty to endeavour to remove that idea wherever it exists, and here I think private influence on the part of the profession can do a great deal. The men we wish to influence come into contact with the people connected with the Government offices and they can exert a notable personal influence in some cases. This is a factor that is not to be disregarded from a political point of view, if we are to push forward the attainment of the amendment of the Medical Act, and undoubtedly this plan of privately influencing the leaders of our own profession would have much success and should be actively pursued. The chief privilege that has to be protected is of course practice and our first thought should be how that is to be safeguarded. Evidently in view of the conduct of the magistrates I have quoted above we must secure a re-drafting of Section 40, for if it be possible for a magistrate to state as a judgment that which is patently absurd, then it is clear that the Act on which he bases that judgment is capable of misinterpretation, and if so it must be corrected. I do not admit, and I never shall admit, that the reading of Section 40 could lead to misinterpretation by any ordinary person who reads it carefully. However, we have to take things as we find them, and as the Norwich case is the second occasion on which a magistrate has misinterpreted it it is clear that it

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must be amended so as to make it clear to the magisterial mind. How we are to get forward and how we are to convert the Council is another matter. I think the Council should be approached in this sort of way. The branches of the British Medical Association ought to hold medico-political meetings as well as scientific meetings and at these medico-political meetings they ought to pass resolutions and not merely send them to the council of the association, but also send them to the members of the General Medical Council. Undoubtedly such communications gradually make some impression and turn the attention of the minds of the Council to the fact that the profession is feeling keenly on the matter. The worst argument that we have to deal with is that the profession does not care, and this statement is a peculiarly difficult one to put aside in a public debate unless we have distinct resolutions before us which have been framed at meetings and sent to the Council. I have already alluded to private influence brought to bear on the members of the profession who are not members of the Council—I should like to apply exactly the same line of argument towards those members of the Council with whom professional men are personally acquainted. Lastly, much good can be done by the members of any given corporation meeting together and passing resolutions to be sent to the council of their corporation to be sent on to the General Medical Council. Many of these representatives of the corporations in the General Medical Council say they never hear anything from the members of their corporations and therefore they can only assume that the members of the corporations are perfectly satisfied with what the Council does. I have repeatedly had this said to me at the Council and of course it cannot be completely answered except by the votes of the members of such corporations. My last word I have to say this afternoon is that if such meetings and such resolutions are passed relative to any given matter as I hope will be done in the Hunter case when the full facts are laid before the profession and if these resolutions are published in the papers, that will influence the Council and by such means you will support your direct representatives in the Council. They are in a minority and they feel in the minority occasionally, but they do not regard it as a hopeless minority if they have the support of their constituents.

INTERSTITIAL HERNIÆ AND THEIR TREATMENT.[1]

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I HAVE to thank you for the honour you have done me in allowing me to read a paper before this ancient medical society, one of the oldest in the kingdom, founded as it was in the year 1794. The subject which I have chosen is one that I hope will prove of interest, for so far as I know it is not often dealt with and yet it is of considerable importance. Herniæ are sadly too common, inguinal herniæ form a large proportion of these protrusions, and inguinal herniæ assume an immense number of variations. It is to one class of these that I would direct attention in this paper—interstitial inguinal herniæ.

By the term "interstitial" is meant an inguinal hernia, a part or the whole of the sac of which lies in the planes of the abdominal wall. Normally—if one may use such an expression for a lesion—the parietal peritoneum which in an inguinal hernia is stretched and displaced until it traverses the inguinal canal remains either confined to that passage or transgressing the outlet, the superficial ring, reaches the scrotum or labium. Here is the well-known complete inguinal hernia. But suppose that for some reason—and what these reasons are will be observed later—this peritoneal pouch instead of making its exit from the canal dissects up one or other of the planes of the anterior abdominal wall; it is then justly spoken of as an interstitial sac. Such an abnormal position of the sac of an inguinal hernia is not so very rare and it is because its presence may lead to very grave consequences that I venture to bring forward the subject. Interstitial herniæ are usually classified under three varieties: (1) where the adventitious sac lies in the plane between the internal and the external oblique muscles of the abdominal wall; (2) where the sac is placed between the external oblique muscle and the superficial fascia and skin; and (3) where the peritoneum forms a pouch in the extra-peritoneal tissue and therefore between the peritoneum and the fascia transversalis. Of these three forms the first is undoubtedly the most frequent and the last that which is the least often recognised.

CAUSATION.

As to the causation of interstitial herniæ much speculation still exists. Congenital inguinal herniæ occur in large numbers and in the male infant they are generally associated with some want of proper development. This defect not infrequently shows itself in the arrest of a testis, sometimes in the inguinal canal, sometimes just external to the superficial ring, and occasionally within the abdomen. Now interstitial herniæ in the male sex are so commonly accompanied by an abnormal position of the testis that it would seem that there is a causal relationship between the two conditions. But interstitial herniæ occur also in women and, comparatively speaking, more frequently in this sex than in the opposite one. If 1000 cases of inguinal herniæ in females be taken—and perhaps I may remark here in passing that inguinal herniæ in the female subject are more frequent, if all ages be taken into account, than are femoral herniæ,—if 1000 cases therefore are examined in the female it will be found that about 6 are of the interstitial variety. But if a similar number of inguinal herniæ in the male sex be observed it will be only one that is of the interstitial form. The occurrence of interstitial herniæ in the female sex obviously disposes of the fact that partial or complete rentention of the testis is the sole cause of an interstitial hernia being formed. But the question that will at once present itself is, Are these cases of interstitial herniæ in women associated with a congenital herniation of the ovary? As far as I know this has not been demonstrated to be the case.

What, then, is a common factor which can be found in both sexes and one which may be taken as a cause? It will, I think, be found in the circumstance that in almost every instance of interstitial hernia, at any rate of the first or second varieties, there is a patent processus vaginalis or canal of Nuck. The case may therefore be stated thus: given a male infant who has a fully descended and properly developed testis, even if he has a processus vaginalis, yet he is very unlikely to be the subject of an interstitial hernia, though he is likely enough to acquire an ordinary variety of such a protrusion. On the other hand, take a male child, particularly of a few years of age, who has still an open process and an only partially descended testis, then will be present just the conditions which tend towards the formation of an interstitial hernia. The unclosed process of peritoneum allows the descent of viscera, the abnormally situated testis prevents the passage of the same into the scrotum. As an instance of this I may allude to the case of a young man, aged twenty-six years, whom I recently saw with an interstitial hernia of the first variety. As long as he could remember he had had a swelling in the right groin and at the age of ten years he commenced to wear a truss for the same. He was also confident that up to the age of sixteen years he had never been able to feel the right testis in the scrotum, not even at its upper part. When I saw him at the age of twenty-six years he had a well-marked interstitial hernia and the right testis, although smaller than the left, was well into the scrotum, at a position where the patient averred that he had only been able to feel it since he came of age. In this case probably the sequence of events was as follows. He was born with his right testis just within the superficial ring, together with a patent processus vaginalis reaching to the end of the canal. Into this there protruded at an early age some of the viscera of the abdomen. Then seeing that the testis blocked the way at the exit of the canal and that the intra-abdominal pressure was ever at work above the peritoneum was gradually stretched in the line of least resistance—namely, into the plane of the abdominal wall between the internal and the external oblique muscles. Still later the force of the protruding contents of the sac led to the testis, although tethered by its cord, being forced through the ring into the upper part

[1] A paper read before the Plymouth Medical Society on Nov. 9th, 1898.

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of the scrotum, with the formation of a short scrotal portion of sac.

But I have now to consider what is the second cause at work in the female sex in the production of an interstitial hernia. It has already been seen that in this sex, as in the male, there is usually present a patent process of peritoneum, but there is no herniated ovary to take the place of the partially descended testis. In the female, and especially in the female infant, the superficial ring is less of a real opening than it is in the male. In this fact, then, probably lies the cause that we are in search of, for as in the male the testis blocks the way, so in the female the narrow aperture bars the exit of the hernia and the peritoneal pouch is forced again in the line of the least resistance. In females interstitial herniæ rarely assume any large proportions till adult life has been reached.

There are two other possible causes of interstitial herniæ and these may both of them act in either sex, but perhaps only in adult age. The first of these is the action of an ill-fitting or improperly adjusted inguinal truss. If, as is so frequently the case, it happens that a measure is taken for the truss which is of too great a length it will necessarily follow that the pad of the instrument will come to lie over the superficial ring. The effect of this in an oblique inguinal hernia may be to effectually prevent the descent of the viscera through the exit of the canal, but to offer no protection against their prolapse into the canal itself through the deep ring. Thus the intra-abdominal pressure may gradually provoke the formation of a secondary pouch from that part which lies in the canal. Again, supposing that a truss, properly formed and accurately measured for, is adjusted too low down so as to lie once more over the superficial ring, and not over the deep ring and the canal, exactly the same circumstances may occur. The second cause that should be mentioned is *réduction en masse*. If this is produced by forcible taxis, so that the original sac is dislocated from below into the tissues constituting the abdominal wall, doubtless a rare form of this not frequent accident, it will follow that in reality an interstitial hernia is formed and one which may be termed a traumatic interstitial hernia. Interstitial herniæ are more common on the right side of the body than on the left, probably for the reason that the right testis is more frequently arrested than the left.

SIGNS, SYMPTOMS, AND DIAGNOSIS OF INTERSTITIAL HERNIÆ.

1. The first variety of this form of inguinal hernia has a ventral swelling, but one that is not so apparent as that which occurs in the second form. The swelling that is so distinct in the adult will in the infant be but slight and it is this fact that leads to this class of hernia being overlooked in its early stages. But if the conditions which are favourable to its production are present it may be surmised that it is probable that the hernia may be developing. The projection in its more advanced stage presents itself as a flattened oval tumour, which lies above and parallel to Poupart's ligament and extends upwards and outwards towards the anterior superior spine of the ilium. Occasionally the direction is towards the umbilicus or nearly vertically upwards. The reason of the passage of the sac outwards is probably that it is the line of least resistance, since the muscles are less closely applied to one another in that region than towards the linea semilunaris. If a patient who is the subject of this form of hernia be requested to assume the horizontal posture most if not all of the swelling will disappear, but if then he be asked to cough a characteristic sign will present itself. As the expulsive efforts are made the viscera descend and then gradually, as it were, dissect up the plane of the abdominal wall towards the anterior superior spine. I have seen one instance where this dissection was very slow, but in the end reached almost to the level of the umbilicus. Sometimes in addition to the portion of the sac that is seen on the abdominal wall there is a part that reaches into the scrotum or labium. If such is present often a very distinct groove marks the limit between the two. The muscles which lie in front and behind the sac in the ventral region are not infrequently much atrophied, so that when they are put into action no very great amount of hardening is felt over the swelling. This first variety of interstitial hernia is usually completely reducible, for the mouth of the sac is generally of some considerable size. Strangulation, however, does occur and when present it may be very severe. There are but few conditions which are likely to be mistaken for this form of inguinal hernia. Indeed, the characteristic shape of the tumour, its evident connexion with the abdominal cavity, and the way in which it appears when the patient coughs, all go to make its recognition a matter of ease. An abscess of the abdominal wall, a collection of pus which has had its origin within the abdomen, a large hydrocele of a patent processus vaginalis of a partially descended testis and a hæmatoma are all swellings which may occur in the same region, and although it is unlikely that any one of them should be taken for the hernia yet it is not so uncommon for the hernia to be thought to be one of them. Obviously an error in diagnosis of this kind might lead to very serious consequences.

2. The second variety of interstitial hernia has also an external swelling and one that is usually, at any rate in its later stages, very well marked. The projection has, moreover, the appearance of being more superficial and can be traced to the superficial ring, which is often of considerable size. Like that of the first form it has a tendency to progress towards the anterior superior spine of the ilium, but the reason why it should take this course is not so clear as in the former case. It may be that the superficial fascia is less firmly fixed to the aponeurosis of the external oblique than elsewhere. The swelling is not so flattened and there is no hardening of muscle over it as in the first form. There is much more usually a part of the sac in the scrotum in the second variety. It is probable, because adhesions have formed at the upper portion of the scrotum or labium, that the secondary sac has been added to the original one. Occasionally the swelling may be so large and pendulous as to hang over, that is in front of, Poupart's ligament and thus to simulate a femoral hernia. This peculiarity may lead to a vertical incision being made for the relief of strangulation, especially in the case of women. The second variety of interstitial hernia is rather more liable to strangulation than is that which has been above described, but the contents of the adventitious portion of the sac are usually reducible. The differential diagnosis of this form of inguinal hernia is analogous to that of the preceding save for the fact that it may have to be distinguished from a femoral hernia. This may be readily done by observing that the bulk of the swelling has its site well above Poupart's ligament and that the base of the tumour is in the same region. In the male subject it is generally easy to slip the forefinger into the inguinal canal and thus prove that it is empty and that a femoral hernia exists, but in the female this is not so readily accomplished.

3. The third variety of interstitial hernia, in which the additional sac lies in the extra-peritoneal tissue, has no external or ventral swelling, and, as has been indicated, it is rare for this to be recognised except as the result of operation or after death. The secondary pouch in these cases is most usually found in the loose tissue of the iliac fossa, but sometimes it passes between the bladder and the body of the os pubis. In most of these instances of pro-peritoneal herniæ, as they have been termed, there is a sac in the scrotum or the labium. It is difficult to decide in many cases which is in reality the first part of the bilocular sac to be formed. There is the original process of peritoneum in the inguinal canal and probably in most instances this is prolonged into the scrotum or labium, and then possibly as the outcome of adhesions and irreducible contents the secondary sac is gradually formed in the lax tissue of the sub-serous layer of the abdominal wall. One of the chief interests of this third form of interstitial hernia is the fact that this hidden portion of the sac may give rise to the production of one of the varieties of *réduction en masse*. If a scrotal hernia is not reducible spontaneously and taxis is applied the contents of the lowest part of the sac may be reduced, not into the abdominal cavity, but into that part of the sac which lies above in the iliac fossa. Naturally in the case of a strangulated hernia this result is of very grave import, for the surgeon may conclude that satisfactory reduction has been accomplished, whereas what has really occurred is that the contents have indeed changed their location, but they are still strangulated at the neck of the sac. This circumstance which may arise in almost any case of complete inguinal hernia, though undoubtedly it is infrequent, is one of the arguments for the performance of herniotomy in all cases of strangulation in preference to taxis if not otherwise contra-indicated. In a few rare instances a secondary pouch from a femoral hernia has been found lying in the subperitoneal tissue between the os pubis and the bladder. In the matter

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of diagnosis of the third form of interstitial hernia, seeing that the secondary sac is hidden and unknown, there cannot be any condition from which to distinguish it, unless strangulation is in evidence. Then the case becomes one of intestinal obstruction associated with a hernia which itself may not show many, if any, of the signs of strangulation. I shall allude to this again.

THE TREATMENT OF INTERSTITIAL HERNIÆ.

The treatment of interstitial herniæ may conveniently be divided into two sections: (1) one where the contents of the hernial sac are reducible; and (2) the other where they are strangulated and therefore irreducible.

1. *The treatment of reducible interstitial inguinal herniæ.*—As in the case of any reducible hernia its treatment may be either mechanical or operative. An interstitial hernia is not by any means an easy one to control thoroughly by a truss, particularly if from neglect or otherwise it has assumed somewhat large proportions. There is a tendency for the viscera to "ooze" as it were down into the sac in spite of the pressure of the instrument. In an adult where from any cause an operation is not expedient an interstitial hernia of the first or second variety will have to be treated by the application of a suitable truss. If the ventral swelling is but slight it may be that an ordinary inguinal truss with the usual-sized pad will be sufficient to retain the viscera within the abdominal cavity. As, however, in adults the sac has reached such dimensions that this form of truss is not very efficient it is generally necessary to employ a variety of instrument fashioned after the model of the inguinal pattern with the pad in the form of an interstitial plate. This extends upwards and outwards from the limits of an ordinary inguinal pad. When such a truss is adjusted to the body the plate will lie over the inguinal canal and cover in addition the area which lies directly above and external to it. A like pattern of truss is often a useful one in those cases of traumatic ventral herniæ after some operations for suppurative appendicitis. It may also if made in vulcanite be employed with great advantage after inguinal colotomy. In some instances of the second variety of the interstitial form of hernia a rat-tail truss may be of very good service, especially where there is some considerable scrotal or labial protrusion. The slightly modified shape of the rat-tail, known as the forked-tongue truss, is more satisfactory in other cases. Passing to the operative treatment of these herniæ, it must be said that they are some of those in which operation is not only justifiable but strongly to be recommended, provided that there are no contra-indications. In young male children the subjects of commencing interstitial herniæ, particularly if they have an arrested testis, have a lesion which can be most satisfactorily treated by operation. In dealing with these there are two important points to be discussed. The first is, what should be done with the secondary sac?, and the second, in a male subject what is the line to be adopted with regard to the arrested testis? When a radical operation is performed for an ordinary scrotal hernia it is not usual at the present day to disturb the portion of the sac which lies outside the superficial ring but to make the incision at once over the line of the canal and then to cut off the sac right up at the deep ring. The same principle may be followed in the case of the interstitial hernia. A free incision exposes the ventral portion of the sac but only that part of it which occupies the place where the inguinal canal should be. The region of the deep ring is then laid bare, the peritoneal pouch at its narrow part is removed flush with the anterior parietal peritoneum, but the greater part of the adventitious sac is left *in situ*. There is much less risk in doing thus than in widely dissecting up the planes of the abdominal wall. When the secondary sac lies in front of the external oblique one has to deal with a case which is quite similar to an ordinary oblique inguinal hernia. The neck of the sac is still within the canal and this is freed and cut through, while that portion of the sac which is external is untouched. In the instances of young males it is but seldom necessary to introduce many or even any sutures into the muscles, for when once the stretching force has been removed these structures naturally contract and fall into their proper relations. There has been a congenital opening in the parietal peritoneum; this has been closed and there is no further tendency to the production of an acquired hernia. The second point that ought to be considered is what is the proper line to be taken with regard to the arrested testis. In many cases in children it would be almost impossible to determine accurately whether the testis is normally developed for the period of life. In the adult this is an easier question to answer, but even then it is difficult to say whether a small ill-developed testis may not have the power of secreting spermatozoa. In dealing with cases of arrested testis in radical operations for hernia my usual plan is, if the patient is a child, to always replace the testis in the subserous tissue, while in adults, if the gland is very small, to remove it altogether, provided that the patient consents. By this plan of removal, only of course if the opposite testis is well formed, a very thorough operation on the hernia can be carried out, for the inguinal canal need not in any way be preserved. I do not think that there is much or any benefit, even in infants or young males, to attempt to bring the ill-developed testis down into the scrotum. It is seldom that this can be done perfectly and my own experience is that but little good accrues to the testis which has been so manipulated. Further, I do not think that there is any danger from returning the testis to the extra-peritoneal tissue, where it will lie in comfort and certainly not be more liable to malignant infection than one that is normally placed.

2. *The treatment of strangulated interstitial inguinal hernia.*—Like any other form of hernia, it is when strangulation occurs that the chief danger arises in interstitial herniæ, but there is even greater gravity in the strangulation of these special herniæ than there is in those of the more ordinary varieties of protrusions. Here there are often sacs, part of which may lie hidden and part of which may contain bowel which is nipped while other portions are free from the constricting force. For the two former forms of interstitial hernia the treatment when strangulated differs but little from that which would be followed in the case of an inguinal hernia which presented no peculiarities. Taxis is not to be recommended, I venture to believe, in the majority of strangulated herniæ, but it is particularly to be avoided if possible in these interstitial ones. Operation should be undertaken at the earliest opportunity and an attempt made after relieving the constriction and returning the contents of the sac to radically obliterate its neck. Great care has to be exercised if taxis is employed not to mistake the reduction of the contents of one part of the sac into another portion as complete return of the viscera into the abdomen. Again, the same caution must be taken when operating to be fully satisfied that all secondary parts of the sac have been thoroughly explored so that no imprisoned bowel may remain unobserved. In instances where there is a true pro-peritoneal sac in addition to a scrotal, or labial, one, the condition which occurs when strangulation takes place in the hidden part is a difficult one to diagnose with certainty. Generally speaking there will be all the signs of intestinal obstruction, but without the local ones of strangulation in the visible sac, which, however, may present some signs of inflammation. These cases should always be explored in the inguinal region without delay and if no secondary sac containing intestine is found then the case resolves itself into one of intestinal obstruction, the cause of which must lie within the general abdominal cavity, and an immediate laparotomy is called for. The actual strangulation in the third variety of interstitial hernia is usually at the common neck of the sac, but occasionally it is to be found at the entrance to the secondary hidden sac. In cases where *réduction en masse* has occurred and is evidenced by the continuance of symptoms of strangulation it is necessary to perform an operation and that without any delay. Thus the strangulation of an interstitial hernia is to be regarded with extreme suspicion and the prognosis which is given to be one of a guarded nature.

In conclusion, I hope that even if this paper has in it not much that is new, yet that there may be something of practical interest to each one of us, for we may be any day called upon to treat such a form of protrusion as that known as an interstitial inguinal hernia.

BARRY ACCIDENT HOSPITAL.—At a meeting of the Barry District Council held on Dec. 9th it was decided to send a deputation to the Local Government Board with regard to the erection of a small-pox hospital for the town and also in reference to the proposal that the accident hospital at present maintained by voluntary subscriptions should in future be carried on out of the public rates.

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AN INQUIRY INTO THE PRODUCTION OF BLOOD PLASMA—ITS VITAL PROPERTIES AND MODE OF NOURISHING THE TISSUE.[1]

BY THOMAS GLOVER LYON, M.A., M.D. CANTAB.,
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IN former days the blood with its humours, fluxions, serosities, and viscosities was regarded as the seat of life, health, and disease. Prince Henry, speaking of his dying father King John, says: "It is too late; the life of all his blood is touch'd corruptible." The discovery of the circulation of the blood added other factors—a pumping apparatus and tubes with the necessary adjustments. It has only lately been proved that the parts in general performing the functions of the body are microscopic elements placed in definite arrangements and held together by connective tissue. This conception of active organs has now so completely seized on the scientific mind that it seems an unwarrantable presumption to claim for a fluid definite vital properties. There is, however, a half-way house in the matter. Red blood corpuscles are recognised as unnucleated vital bodies budded off from nucleated cells, and I hope to show that masses of protoplasma, minute compared with the blood corpuscles, moving freely over one another and thus forming a fluid, may possess vitality and perform vital functions. I shall for the sake of discussion, as far as possible, divide this paper into statements and arguments and for the sake of clearness assume living matter to consist of bioplasm holding in its meshes formed material. It is not intended here to enter into the abstract question of vitality. The word "vital" is used in relation to certain properties of what is called "living matter" which seem not to be possessed by the same matter after a quick change called "death" has occurred.

General statement.—I. Blood plasma consists of minute particles (plasmacules) varying in composition within very small limits which consist of bioplasm in vital relation with formed material, water, and salt. These plasmacules glide freely over one another forming a fluid. II. They possess definite vital properties—viz., vital molecular inertia, vital contact-attraction, and the power of zoosmosis. III. They are formed by a budding off from or liquefaction of the outer part of the cells of the retiform tissue of the intestines which have assimilated a part of the digested food-stuffs. IV. They are renewed by the cells of the lymphatic glands and the white corpuscles. V. The formed material is passed from the plasma in contact with the vessel walls by a vital molecular force (zoosmosis) into the tissues. VI. It is possible that platelets are aggregations of the bioplasm of blood plasma.

Argument.—Before reviewing in detail the points involved in this statement I will point out that *a priori* it seems unreasonable with our present knowledge of the bacterial cause of disease to suppose that we have permeating our tissues a helpless dead nutrient material liable at any moment to come into contact with antagonistic organisms.

I. The mere size of plasmacules presents no difficulties. Professor Michael Foster points out that protoplasma must be divided ultimately into very small particles (somacules) possessing all the properties of the whole except that of reproduction. In accordance with this plasmacular theory we find that plasma is treated with the greatest delicacy; it is enclosed in tubes of exquisite smoothness and the slightest rough handling, even contact with any solid except the vessel walls, brings about its disintegration. Again, the composition of plasma varies between definite narrow limits. Whatever food be ingested the blood plasma even in the portal vein remains of nearly constant composition. Water injected into the veins soon leaves the blood and remains in the areolar tissues until the blood can get rid of its own water and re-absorb that in the areolar tissue. In starvation though most of the tissues dwindle away the blood remains normal in composition. These facts strongly point to the view that the essential elements of the plasma are capable of maintaining their own integrity and that the plasma is not merely a solution of nutrient material.

II. There is a property of living matter which although in view of the microbic theory of disease must stand in the very first rank has not yet, I believe, received a name. It is indicated by the fact that arrangements of matter when alive remain nearly unchanged but after death go through definite changes and then disintegrate, becoming a prey to living organisms which were powerless against them when alive. I propose to call this property "vital molecular inertia." For our purpose the most important point to dwell upon is the definite change which takes place in bodies just after death before actual disintegration takes place. In muscles this is illustrated by the process of death stiffening.

Everyone reading an account of coagulation must be struck by the analogy between coagulation and death stiffening, each seems due to the death of a living substance. At every turn also we feel the want of some additional factor to explain coagulation. This factor I maintain is vitality of the plasma. According to this view, coagulation due to the action of ferment upon blood plasma happens only when the vitality of the ferment is in excess of that of plasma. I shall not go through the various intricate facts recorded as to the coagulation but only point out that upon this supposition an explanation is found for the following facts as yet not accounted for. Ferment injected into healthy blood does not cause coagulation. The injection of various substances into the blood in some cases causes coagulation and in others prevents it.

Assuming plasma to possess vital properties, these substances will have their effect in favouring or retarding coagulation according to their relative actions upon the vitality of the plasma and the ferment. The fact that blood can be kept indefinitely in tubes formed of blood-vessels is quite in accordance with the retention of vitality by blood plasma. The products of coagulation, fibrin, globulin, &c., should not be regarded as constituents of blood plasma, but merely the débris left after coagulation has been effected. "Absorption" as carried on by living tissue includes a process analogous to physical absorption and diffusion; living things suck in matter from other bodies and pass it on through their own substance. I propose to call the vital process in question "zoosmosis"; it is independent of diffusion and acts indifferently upon colloids and crystalloids. In general the process tends to equalise the distribution of the materials it acts upon, but sometimes it has the opposite effect, heaping them up in particular parts. This power is hinted at by Professor Michael Foster when he says: "The passage of material through the pores of a living cell takes place according to laws quite different from those of ordinary diffusion." It is the cause of the never-ceasing interstitial currents of fluid through every part of living matter alluded to by Dr. Lionel Beale. This well-known function of living matter has, I think, not been sufficiently invoked to explain physiological and pathological phenomena. The remarkable power of absorption shown by lymph and blood points to the possession of the power of zoosmosis by these fluids, though it is difficult actually to prove this.

Another property of living matter not much studied might be called "vital contact-attraction." It has its analogies in the physical properties called "capillary attraction" and "cohesion." It is indicated by the facts that when bodies are in contact with certain others a force is necessary to separate them and if parts of these bodies be in contact there is a tendency for them to increase the contact as much as possible. So far as our subject is concerned the important fact in relation to vitality is that living bodies vary in this respect according to their condition. To this force is due the separation of the red corpuscles in the normal blood. Normally there is an attraction between the plasma and the corpuscles maintaining the greatest amount of contact between them—that is, the separation of the corpuscles from one another. The force ceases as the blood dies and so the corpuscles fall into rouleaux. Again, there is a contact-attraction between the healthy plasma and the healthy vessel wall shown by the way in which the plasma clings to the latter. This contact-attraction enables the plasma to permeate the vessel wall but still keeps in contact with it even against pressure. In parenthesis the pressure in the capillaries cannot be very great. This attraction diminishes as the vitality of the plasma fails and deteriorated plasma leaves the vessels and flows into the lymphatic. This view is in accordance with the fact that albumose which injected

[1] A paper read before the Hunterian Society on Nov. 23rd, 1898.

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into the veins causes increased flow of lymph also causes coagulation of plasma in the blood-vessels.

III. *Statement.*—Peptones, sugar, and emulsified fat are passed from the intestines by zoosmosis to the cells of the retiform tissue. These assimilate the peptones and a proportionate amount of the sugar and fat. The outer part of the cells is shed, forming plasma which passes into the blood-vessels. The excess of sugar is carried away by the portal vein. The excess of fat is divided up into minute particles forming the molecular basis of the chyle and is taken up by the lacteals. This act of metabolism is accompanied by production of waste products which give rise to an increase of urea in the urine.

Argument.—The distribution and structure of the recticular tissue of the mucous membrane of the intestines is exactly adapted to carry out the process described above. Professor Michael Foster gives the following description of a solitary gland in his Physiology, part ii., p. 516: "A solitary follicle, then, may be considered, in the first place, of a rounded capillary network fed and drained by small arteries and veins, all supported by a minimum amount of ordinary connective tissue. In the second place, the interstices of this vascular network are filled up with adenoid tissue the fine meshes of which are crowded with leucocytes of variable, but on the whole small, size. Lastly, the rounded mass thus constituted is surrounded by a lymph-sinus the fluid of which on the one hand bathes the mass and on the other hand is free to pass away into the neighbouring lymphatic canals." Furthermore, the adenoid cells are described as pushing processes between the epithelioid cells. In accordance with this view the adenoid cells show signs of great activity during digestion; some are found to be larger than others, as if the cells increase up to a certain size and then shed the outer part. Again, we have the fact that all the peptones disappear and a large part of the fats cannot be accounted for by what is found to pass by the lacteals. What is the most natural conclusion to come to? Surely it is that the missing food-stuffs have been assimilated by cells of some description. How otherwise are we to account for the disappearance of the peptones and a part of the fat and their transformation into plasma? I do not think the word "absorption" expresses the process in question; it is one of assimilation rather. If my view is correct surely the cells most likely to carry out such a process are the adenoid cells, for we know that this type of cell possesses the power of assimilation in a marked degree; they are placed in exactly the spot to effect this end and display great activity during digestion. Even if we look upon plasma as a secretion assimilation of the food-stuffs must precede the secretion. It does seem strange that it has never been suggested that the assimilative power of the recticular cells takes a part in transforming digested food-stuffs into plasma. Professor Michael Foster comes very near to this view in the following passage: "At the same time, bearing in mind that leucocytes or cells resembling leucocytes, many of them possessing in the number and nature of their granules or in other respects marked features, are found in the reticulum of the villi, we may be prepared to admit when fuller knowledge comes to us that these cells play some important part in the process of 'absorption' on which we have been dwelling." Both Professor Michael Foster's book and Professor Schäfer's agree that a profound change takes place in digested food-stuffs as they pass through the mucous membrane, but both are inclined to regard the epithelioid cells as the active agent and the vessel walls to a less extent. According to my theory there is no difficulty in explaining the large increase of urea found in the urine during digestion.

IV. Although difficult to prove many things point to the opinion that the lymphatic glands exercise a restorative action upon the lymph flowing through them. Lymph as it enters the lymphatic is, there is little doubt, plasma deteriorated in some way or other. These glands are so constructed that the lymph comes into contact with the adenoid cells analogous with those in the recticular tissue of the intestines and displaying a like activity. The renewal of lymph by the former and the production of plasma by the latter must I think be accepted or rejected together.

Statement.—The lymphocyte white corpuscles are as it were outposts of the lymphatic glands ready to assimilate deteriorated plasma.

Argument.—The presence of these omnivorous bodies scattered through the plasma is, I think, one of the best reasons for believing that plasma is alive. If it is only a nutrient fluid why do not the white corpuscles multiply indefinitely by assimilating the plasma? If now we regard plasma as budded off from the adenoid cells it would in the healthy states have the same vital molecular inertia as the corpuscles and so be able to hold its own against them. When, however, its vitality is impaired it becomes a prey to the corpuscles which first assimilate it and then perhaps shed off healthy plasma. Professor Michael Foster says: "The former (white corpuscles) probably exert a considerable influence on the blood plasma itself and help to maintain it in proper condition."

V. The question of the passage of nutrient material from the blood-vessels to the tissues is of the utmost importance and has lately been brought into prominence by Sir William Broadbent at Edinburgh when he expressed an opinion that grave disturbances of nutrition such as occurs in epilepsy and insanity may be accounted for by alteration in blood-pressure causing starvation of the tissues of the brain. In Professor Schäfer's book a complete explanation is claimed in the action of osmosis and infiltration. In it points of osmosis and infiltration are strained to the utmost if actual fallacies do not appear. Osmosis in relation to colloids sounds very much like a physical paradox. When we have to do with living tissues why should we not seek the cause of processes occurring in them amongst the vital functions which they are known to possess. The absorption of nutrient stuffs from the bowel has been clearly proved to be unexplainable by physical forces; then why should we confine our attention to these forces in studying the other end of the question—the entry into the tissues from the blood of nutrient material? When a function so important as the nourishment of the tissues is concerned we should expect it to be carried on by a process which cannot, except in extreme circumstances, be disturbed. We find this, I believe, in what I have ventured to call zoosmosis.

Statement.—When a deficit of nutrient material occurs in the tissues formed material from the plasma in the blood-vessels is immediately passed into the tissues by zoosmosis, the plasma deficient in formed material passes on giving way to normal plasma, and the process is repeated. The more quickly the deficit in the tissues is produced—that is, the greater the activity of the tissue—the greater will be the need of normal plasma to supply the want; in other words, a dilatation of the capillaries and quicker flow of plasma will be necessary. The normal formed material mentioned includes a due amount of oxygen.

Argument.—I think all observed phenomena agree with this view. It is proved that activity of the tissues is independent of the flow of lymph into the lymphatics—indeed, to get lymph experimentally from the lymphatics of a muscle put into movement it is necessary to knead the muscle. Then again, a large range of blood-pressure is compatible with good functional activity of the tissues. The possession by the capillary wall, the tissues, and the plasma of the power of zoosmosis at once explains the absorption by the blood of foreign substances and waste products against pressure.

VI. It is natural to ask what microscopic evidence have we of the presence of living substance in the plasma. It seems likely that blood platelets supply this. They take staining materials which usually stain living parts of the tissues. If the blood is removed and then an attempt is made to stain it the platelets do not appear, but if the blood is received directly into the staining fluid—that is, before the blood has had time to disintegrate—they are obtained in abundance.

In conclusion, I must apologise for having gone over so much ground, most of it rather difficult travelling; my justification lies in the fact that the questions here discussed hang together in a way which makes it impossible to consider them separately.

Victoria-square, S.W.

MANCHESTER EAR HOSPITAL.—The annual meeting was held on Dec. 6th in the town-hall under the presidency of the Lord Mayor. The total number of attendances on patients had been 10,708, as against 9507 last year. There had been 2289 new patients, as against 1990 last year, and the in-patients were 173, as against 128. Careful inquiries were made by the District Provident Society into the circumstances of the patients in order to prevent abuse of the charity.

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A CASE OF SPINA BIFIDA OCCULTA.

BY P. MACLULICH, M.B. DUB.

I VENTURE to publish the following case as I believe that it will be of interest as illustrating a somewhat rare condition of spina bifida—namely, spina bifida occulta—and at the same time presenting some special features of its own. Cases of spina bifida occulta have been described by Virchow, Bland Sutton, and others, the essential feature of this deformity being the presence of all the conditions necessary to spina bifida, with the exception that the site is marked by a depression instead of a tumour, in which the skin, membranes, and cord are blended together. On looking up the records of the different cases which come under the common title of "spina bifida" I find that it is stated that over 50 per cent. occur in the lumbo-sacral region and 17 per cent. in the sacral region, while the remainder are found in the cervical and dorsal regions, the latter being the position of least occurrence. The following are brief notes of the case.

On Nov. 5th, 1898, I attended a big, healthy country-woman, thirty-five years of age, in her eighth confinement. I found the right foot presenting and delivered the child, a full-time female weighing slightly over 7 lb., with little difficulty. The mother stated that her previous labours had all been normal and were all head presentations. On subsequently examining the child's back the following conditions were found. Extending from the fourth dorsal vertebra downwards to the second lumbar was a depression covered by a thin, glistening, bluish membrane and having at its upper angle a fistulous opening about 4 mm. in diameter which passed upwards and slightly forward. There was no growth of hair over the depression or around its borders which is the usual occurrence in these cases, neither was there any hydrocephalus present, but, on the contrary, the different bones forming the cranial vault overlapped one another considerably, nor was there any deformity of the feet such as equino-varus which is frequently a concomitant of spina bifida. After birth the child made feeble attempts to suck and she soon developed cervical opisthotonos, tonic contractions of the arms, and paralysis of the legs, gradually sinking until she died on the fifth day after birth.

At the post-mortem examination, in which I was kindly assisted by Dr. Hinnell and Dr. H. Moorhead, the following interesting conditions were found. There was arrest of development of all the laminæ of the vertebral column, except that of the axis, this defect being most marked in the lumbar region, due I should think to the fact that the laminæ unite in order from above downwards. Also from the fourth dorsal vertebra upwards the neural arches posteriorly were replaced by a dense fibrous band; this was entirely absent over the region of the external visible spina bifida, but on further dissection was found to reappear at the level of the second lumbar vertebra and to be continued downwards from this point. The fistulous tract previously mentioned ran in an upward and forward direction and a bristle could be passed up this into the central canal of the cord. On examining the cranium it was seen that there was no posterior fontanelle and only a very small anterior one; this was caused by the various bones overriding one another considerably and being very firmly united so by dense fibrous tissue. The following were the relative positions of the bones of the cranium. The occipital overlapped the two parietals; the right parietal the left; the left portion of the frontal the left parietal, while the right half of the former was overlapped by the right parietal; also the metopic suture was well marked owing to the fact that the left half of the frontal was overridden by the right half. The vertebral column, as a whole, was rigid and it presented well developed curves the exact opposite to those seen in an adult—i.e., the dorsal curvature was convex forwards while the cervical and lumbar curves were convex backwards. Nothing else abnormal could be detected, except that the eyes were very deeply sunken in the orbital sockets.

The points of interest in the case are: (1) the non-union of the laminæ of practically the whole vertebral column; (2) the discrepancy between the extent of the apparent spina bifida and that which the necropsy revealed; (3) the presence of a fistulous opening leading into the central canal of the cord; and (4) the absence of other deformities and the tuft of hair which are usually described as occurring in these cases. I may mention as further points of interest that the patient's seventh child, who only lived a few days, had double hare-lip and a cleft palate and that her only relative who has ever had any congenital deformity is a nephew, three years old, who suffers from double talipes equino-varus.

Bury St. Edmunds.

A CASE OF TUMOUR OF THE ŒSOPHAGUS; TRACHEOTOMY; NECROPSY.

BY E. WHARMBY BATTLE, M.R.C.S. ENG., L.R.C.P. LOND.,

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I AM indebted to the kindness of Dr. E. A. Fox for permission to record the following case.

The patient was a man, aged thirty-nine years. His wife stated that at the end of March, 1897, he began to experience difficulty in swallowing. He continued well, however, until the middle of August when complaints were made of epigastric pain and "tightness of the chest." At this time a little solid food could be taken and though evidently ill he continued to work until August 29th. On this day he was seized with urgent dyspnœa and remained in bed until his admission to the Warrington Infirmary on Sept. 4th. In spite of increasing dysphagia no loss of weight had been noticed. The patient corroborated the above statement, adding that he felt perfectly well except for the difficulty in swallowing and the shortness of breath. He gave a history of alcoholism but not of syphilis. When seen a few minutes after admission the patient was sitting up in bed leaning forward. The respirations were extremely laboured and 28 per minute. There was loud inspiratory and expiratory stridor of equal intensity and duration. He explained the difficulty to be "breathing out," this pointing to the larynx as the seat of obstruction. The voice, quite clear and distinct, in no way, he said, differed from the usual. There was a troublesome short dry cough. On hearing the patient speak one got the impression of the voice being delayed, or rather of its succeeding the apparent effort to articulate. Speaking was painless but necessitated an increased expiratory effort. The face and hands were slightly cyanosed. The pupils were normal. There was no laryngeal movement during respiration and except for slight puffiness above the left clavicle the neck was normal. The chest was emphysematous and yielded no information beyond the fact that there was an equally free entrance of air to both lungs. There was granular pharyngitis, but laryngoscopically nothing abnormal was noted, both cords moving well. The pulse was 120 per minute and the temperature was 99° F. The dysphagia was extreme. On Sept. 5th the larynx was again examined and both cords were seen to move well. There was a suspicion of "brassiness" about the cough. During the morning there was an attack of severe dyspnœa lasting a few minutes. In the afternoon several such attacks occurred, becoming more prolonged and causing much distress and anxiety to the patient. During the attacks breathing was very rapid and cyanosis was more marked, but once they were over the patient lapsed into his previous condition of laboured respiration. Towards evening the cough became troublesome and morphia (¼ gr.) was given to relieve this symptom. Rectal feeding had been commenced in the morning, nothing but a little ice-water being taken by the mouth. The temperature was normal and the pulse and respirations were 130 and 27 respectively. On the 6th the patient had passed a comfortable night, sleeping four hours. Towards noon the respiration became more laboured and the cough more "brassy." Laryngoscopy was impossible. Tracheotomy was decided on with the idea of relieving the laryngeal symptoms which were now distressingly frequent. Under chloroform the operation was performed at 4 P.M. by Mr. E. E. Bowden. No difficulty was experienced in getting into the trachea and the effects of the operation were rapidly recovered from. The laryngeal spasms were relieved; respiration still continued laboured, rising by midnight to 45. The patient lived twenty hours after the operation, dying apparently from cardiac failure.

At the necropsy the heart was found to be enlarged and

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flabby; the cavities, especially the right, were dilated. On the anterior wall of the œsophagus opposite the bifurcation of the trachea was an oval-shaped ulcer of the size of a florin. The centre was depressed and ulcerated; the margin was raised, indurated, and nodular. This proved to be epitheliomatous. Growing from the anterior wall above this and separated by an inch of healthy mucous membrane was a whitish globular tumour of the size and shape of a hen's egg. Over this protrusion into its lumen the œsophagus was tightly stretched, the bulging at this spot appearing before the tube was opened as if some body—as an egg, say—had lodged there. The mucous membrane of the anterior wall passed without interruption over the growth. It seemed almost impossible for even liquids to have passed this obstruction. The growth also involved the posterior wall of the trachea, projecting into its lumen as a nodular mass 1 in. above the bifurcation. The obstruction here was considerable, equal to two-thirds the calibre of the tube. The egg-shaped growth when cut into showed patches of softening. Microscopically the cells were identical with those of the ulcer. There was a large amount of small cell infiltration around the vessels. This growth also spread laterally, involving the apex of the right lung. This had the microscopical features of the tumour in the œsophagus. The left recurrent laryngeal nerve lost itself about the middle of the neck in an enlarged and probably infected gland. Unfortunately this escaped examination. The right nerve was quite normal.

Warrington.

SYMPTOMS OF POISONING FROM A SMALL DOSE OF TINCTURE OF CANNABIS INDICA.

BY ANTONY ROCHE, M.R.C.P. IREL.,
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IT is well known that different samples of the tincture of Indian hemp vary much in strength and also that many people are unduly susceptible to the action of the drug. In the following case the amount ordered was 12 minims every fourth hour till the pain complained of was relieved. The symptoms of poisoning showed themselves shortly after the second dose had been taken. The druggist who compounded the mixture assured me that no mistake had occurred and I took a dose of the mixture myself without any results—not a prudent course to follow, as has been more than once demonstrated.

In June, 1897, I saw a patient, aged thirty-three years, who complained much of an attack of migraine. She had at different times tried various methods of treatment without much benefit in alleviating the attack. I ordered her a mixture containing 10 gr. of strontium bromide and 12 minims of the tincture of Indian hemp in each dose, one to be taken every fourth hour till the pain was relieved or until four doses had been taken. After the first dose she felt much better and went out to make some purchases. On returning, about four hours after taking the first dose she took a second dose; within a few minutes she felt a strange feeling and an inclination to jump down the stairs. This she knew was absurd, so she clung to the bannister; she then went into her room and to bed, when I was sent for. I found her in bed in an excited, joyous state, quite conscious but, as she said herself, unable to control herself; she talked incessantly and assured me that she had such a good story to tell me, &c. Her eyes were brilliant and the pupils were slightly dilated but they reacted to light; her pulse was full and soft. She mentioned that she had a creeping sensation in her arms and legs. As it was more than an hour since she had swallowed the medicine and the symptoms were not urgent I did not administer an emetic but gave her some strong black coffee and assured her that she would be quite well in a short time. In about half an hour she became quiet and she then slept for an hour, on awaking being quite herself.

The case is perhaps worth recording. I find that Taylor mentions a case recorded by Mr. J. Roche Lynch[1] where the symptoms of poisoning were marked after a dose of 7 minims and Dr. John Attlee[2] has reported a case in a boy, aged twelve years, from a dose of 10 minims.

Dublin.

[1] THE LANCET, Sept. 30th, 1871, p. 493.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE RÔLE OF SYPHILIS IN THE ETIOLOGY OF SIMPLE ULCER OF THE STOMACH.

BY W. A. MACKAY, M.D., F.R.C.S. EDIN.

IN English medical literature syphilis is not given a very prominent place as a factor in gastric ulcer. Yet ulceration occurring anywhere else is looked upon with so much suspicion that specific remedies are almost invariably tried in doubtful or rebellious cases. Why not also in gastric ulcer? It would almost appear as if the ancient demon still presided at the cardiac orifice. Fournier cites the following cases. Case 1. About thirty years ago a young girl, a public singer, was treated for syphilitic rupia and was rapidly cured. Ten years later Fournier found this patient nearly moribund and at her side a basin well filled with blood. For more than three months she had been vomiting blood at intervals notwithstanding the administration of the usual remedies. Fournier prescribed iodide of potassium. He remarks that the cure was so rapid as to be quite theatrical in effect. Six years later this patient again presented herself in a critical condition suffering from hæmatemesis. She stated that she had returned from Italy, where on the onset of symptoms she had asked for the iodide, but her medical man refused it as being a dangerous drug in hæmatemesis. Fournier again prescribed the iodide and describes the effect as being little short of a resurrection. Case 2. A Russian suffered severely from syphilis, later he was attacked by hæmatemesis which gave way to specific treatment. Leaving off treatment this man suffered from rupia and hæmatemesis alternating, both of which readily yielded to treatment. It may be objected that these cases were markedly syphilitic and diagnosis and treatment appear easy and rational. I shall, however, now give an account of two more cases in which the history was not so clear and yet the treatment was equally satisfactory.

CASE 1.—A youth, aged fifteen years, was seized with pain and swelling of the ankle. Tuberculous disease was suspected and for this the patient was treated for some weeks. I then saw him and, recollecting that I had treated successfully his mother some time before for specific disease of the nose (the only manifestation she ever showed), I put the youth on blue pill and iodide. The joint recovered rapidly and completely. Ten years later this youth began to vomit blood and got steadily worse, although dieted carefully and given the usual remedies. Recollecting his former illness mercury and iodide were given with immediate good effect. I lost sight of this patient for three years. Meanwhile he married. His wife had an abortion at the third month and now he himself is under treatment for general paralysis of the insane which is temporarily benefited by the iodide.

CASE 2.—A man, aged twenty-four years, in a condition of complete collapse from loss of blood and fear of further vomiting, was put on mercury and iodide of potassium as a last resort although there was no history obtainable of syphilis. Within forty-eight hours improvement was marked. The treatment was continued and the patient completely regained his health.

It appears to me to be an extremely interesting fact in this connexion that bichromate of potash, introduced some years ago by Professor Frazer of Edinburgh and found so useful in cases of indigestion accompanied by pain, should prove to be the very drug which a century before in Spain and France was considered almost equal to mercury in the treatment of syphilis.

Huelva, Spain.

[2] Brit. Med. Jour., Oct. 3rd, 1896.

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NOTE ON A CASE OF ACUTE INVERSION OF THE UTERUS.

BY C. HASLEWOOD, M.B., C.M. ABERD.

SUCH a case as the following is fortunately seldom seen in general practice and as the facts point to undue interference by a midwife it may be of interest to bring it to the notice of the readers of THE LANCET.

On Sept. 25th, 1898, I was called by a man to see his wife, a delicate, anæmic woman, aged twenty-four years, who had been attended in her third confinement by a midwife. But the midwife "could not manage" as "the afterbirth was fast." On my arrival about an hour after the birth of a female child I was met by the midwife who remarked that she had, "after several unsuccessful attempts, managed to get it away." Finding the patient in an alarming state of collapse I turned down the bedclothes and found the uterus inverted and prolapsed, lying between the patient's legs, with the placenta still partially adherent to the fundus. There had evidently been very considerable hæmorrhage and the radial pulse was almost imperceptible. After douching the part with a weak solution of biniodide of mercury I tried to reduce the inverted uterus and failing at the first attempt to do so I detached the placenta and tried again but without success. Not caring to administer an anæsthetic alone I was content with returning the inverted uterus within the vulva and after sending for assistance I proceeded to revive the patient who was well-nigh moribund. Mr. Hawkins-Ambler arrived later and with the patient under an anæsthetic reduced the inverted uterus, but not without considerable difficulty. Ether was the anæsthetic employed and the patient not only bore it well but seemed to be greatly benefited by it. The subsequent history is unimportant as the patient made an uninterrupted recovery and early in November was going about as usual.

Prescot.

TWO CASES OF WHOOPING-COUGH TREATED BY AURAL MEDICATION.

BY S. GLANVILLE MORRIS, M.D. EDIN.

THE following two cases were treated according to the method recently advanced by Dr. G. A. Stephens in the columns of THE LANCET.[1]

CASE 1.—The patient was a boy, aged five years. He had been suffering from whooping-cough for one week. There was a discharge from both ears, very considerable from the left one. The face was puffy. He vomited with the cough and passed very bad nights. I syringed his ears with warm boric lotion and painted the meatus and membrana tympani in accordance with Dr. Arbour Stephens's method. The first night of the treatment the child slept well; the vomiting ceased and the child has not whooped since. Pharyngitis, however, still was present, which caused cough, but on the fourth day the pharyngitis had greatly improved and the cough ceased. By the fifth day the child appeared to be well.

CASE 2.—The patient was a boy, aged six years. He had suffered from whooping-cough for one week. The appetite was poor, there was vomiting with the cough, but no pain or discharge from the ears. The ears were syringed and painted. On the next day there was no improvement. The treatment was continued. On the third night the child slept much better and whooped less, while the appetite improved. By the fifth day the child was well.

Nantgaredig, Carmarthen.

[1] THE LANCET, Dec. 3rd, 1898.

ROYAL ALBERT HOSPITAL, DEVONPORT.—The thirty-fifth annual meeting of this hospital was held on Dec. 16th under the presidency of Sir John Jackson. The report showed that during the year 581 in-patients had been admitted, as against 588 in the preceding twelve months. There were 1950 cases treated in the casualty department and there were 2826 members belonging to the Provident Dispensary. The financial statement showed that the expenditure for the year had been £4248 and that the balance had been increased from £305 to £487.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. MARY'S HOSPITAL FOR CHILDREN, PLAISTOW, E.

A CASE OF PANCREATIC CYST TREATED BY INCISION AND DRAINAGE; RECOVERY.

(Under the care of Dr. ERNEST B. RANDALL.)

IT is impossible to be perfectly certain that the cyst described in the following case was derived from the pancreas, but that is the most probable origin which can be assigned to it. The history of traumatism in this case is not very exact, but injury is a fairly common cause of cysts of this organ. Leith[1] has collected 17 instances and it is probable that they commence as hæmatomata. The sudden onset of acute symptoms no doubt points to the time when the contents of the cyst became septic. The operation was much simplified by the adhesions which had formed between the wall of the cyst and the anterior abdominal wall. Lately there has been a tendency to open pancreatic cysts by a posterior incision at the outer border of the left erector spinæ muscle and much is to be said in favour of this operation; but, of course, it is not advisable in a case where extensive adhesions have formed anteriorly.

A boy, aged fourteen years, was admitted to St. Mary's Hospital, Plaistow, on August 15th, 1898, suffering from abdominal pain. The patient had never in his life been ill until three months previously when he suffered for a fortnight from abdominal pain, feverishness, and sickness and was kept in bed and poulticed; since then he had been fairly well until his present illness, but his friends said that he had been getting thinner. On close questioning a history of a kick by a horse in the back a year previously was elicited, but the boy was not much injured and did not stay in bed. On August 13th he was taken ill with pain in the abdomen, sickness, and slight diarrhœa; on the 14th these symptoms continued, whilst on the 15th (the day of admission) the sickness and diarrhœa ceased, but the abdominal pain continued. On admission the temperature was 100°F., the pulse was 108, and the respirations were 28. The patient was a thin child looking younger than his age; he complained of general abdominal pain. On examination of the abdomen it was found that it did not move well on respiration. A well-marked prominence occupied the epigastric and upper part of the umbilical region; this prominence appeared to be almost median, the inclination being to the left. The abdomen was slightly tender all over. A well-marked tumour was felt corresponding to the prominence seen and gave the impression of being situated immediately behind the abdominal wall; it was tense, elastic, and fluctuating and was not moveable. A well-marked thrill could be obtained and in addition it was felt to pulsate synchronously with the cardiac impulse, but the pulsation was not expansile in character. The outline as felt extended from the ensiform cartilage and costal margin to a point 1 in. below the umbilicus, a distance of 6 in., and transversely 4 in. to the left and 3¼ in. to the right of the median line, giving a transverse diameter of 7¼ in. The surface of the abdomen was dull on percussion from the ensiform cartilage to a point ½ in. below the umbilicus, a vertical dulness of 5½ in., the transverse dulness being 6 in. An area of resonance a finger's breadth in width was present immediately below the left costal margin. The spleen was not palpable and the liver dulness was not increased. The chest was normal. The pupils were median in size and equal.

On August 16th the patient had passed a restless night; the highest temperature was 101°. No urine had been passed since his admission. A soft catheter was passed and

[1] Edinburgh Medical Journal, November, 1895.

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18 oz. of urine were withdrawn; it was of specific gravity 1015 and acid and contained albumin (1 per 1000) but no sugar, blood, or bile. On the 17th no further retention of urine or albuminuria had occurred. The tumour was unchanged; it was explored with a needle, ½ oz. of chocolate-coloured pus being withdrawn which showed under the microscope leucocytes with a few red blood corpuscles and crystals resembling tyrosin; no hooklets were seen. On the 24th the patient had steadily become worse, wasting rapidly; the abdominal pain was less but the tenderness continued to be present. The temperature had been raised each night, the highest recorded being 103° on the 19th, with a morning remission to 98°. There had been no further albuminuria and the stools were normal in colour. The characters of the tumour were unchanged. The boy's weight was 3 st. 3¾ lb.

An operation having been decided on A.C.E mixture was administered on a celluloid mask. An incision 2½ in. long, commencing 1½ in. below the ensiform cartilage, was made in the median line. The peritoneum was divided and the cyst wall was immediately exposed; it was found to be adherent all round to the anterior abdominal wall. Owing to adhesions it was impossible to make out how many layers of peritoneum covered the cyst but two large vessels were seen running vertically and were thought to be of omental origin. A trocar and a cannula were thrust in and fluid was withdrawn into a sterile vessel for examination; the wall was then incised and 16 oz. of chocolate-coloured pus were evacuated. The cavity was then explored with the finger and was found to extend in the direction of both loins and back over the aorta and spine in the region of the pancreas; neither diverticula nor bands were discovered. The cyst wall was about ¼ in. thick at the point of incision; a portion was excised for examination. The cyst wall was then sutured to the abdominal wall as a precautionary measure and the cavity was drained with four strips of bicyanide gauze.

On August 25th the temperature was 97°. The patient had passed a good night. No vomiting or bad symptom had occurred. The wound was dressed; there had been some penning up of discharge. The gauze was replaced by two rubber tubes. The subsequent history was uneventful, the temperature not rising above 99° and the discharge presenting no features differing from that of an abscess cavity in process of healing elsewhere. The patient was discharged from the hospital on Oct. 2nd quite healed. His weight was 4 st. 5 lb. On no occasion since August 16th was any abnormality of the urine discovered. On Dec. 1st the patient was examined. He looked fat and well. The abdominal wall showed a slight tendency to bulge over an area of about 2 in. on each side of the scar. Neither thickening nor tenderness was discovered on deep palpation.

Examination of fluid and cyst wall.—The fluid was found to consist of blood-stained pus with a few crystals resembling tyrosin. No hooklets were seen. It did not turn starch into sugar or emulsify fat. Inoculations on gelatin and agar proved sterile. Microscopical sections of the cyst wall were stained with hæmatoxylin. The sections consisted partly of fibrous tissue in several stages of growth and partly of a glandular tissue, showing tubular alveoli lined with cubical epithelium and a scanty amount of interalveolar tissue.

Remarks by Dr. RANDALL.—The term "pancreatic cyst" is perhaps open to criticism, for the deep relations of the tumour were only ascertained as far as was possible by two examining fingers inside its cavity, and although the deeper and upper part of the cyst lay just over the region of the pancreas I am not able to say whether there was structural connexion. The microscopical sections made by Mr. W. W. Farnfield showed fairly abundant acini of glandular tissue, which glandular tissue certainly strongly resembled that of the pancreas. The absence of amylolytic or emulsifying action in the fluid may well be accounted for by the free suppuration. I have to thank my colleague, Mr. Ernest A. T. Steele, for lending me his aid at the operation.

LEEDS GENERAL INFIRMARY.

A CASE OF OBSTRUCTED LABOUR; PORRO'S OPERATION; RECOVERY.

(Under the care of Mr. LAWFORD KNAGGS.)

IT would be difficult to magine a case in which Porro's operation could be more urgently required than in the one under consideration. The extreme contraction of the conjugate at the brim by itself made the prevention of future pregnancies extremely desirable; the presence of the two fibroids tended to point in the same direction; and in addition there was the intensely septic condition of the uterine contents. It can hardly be disputed that had the uterus been left septic infection would have almost certainly followed. The complete removal, therefore, of so large an absorbing surface by the same operation that fulfilled other important indications must be considered highly satisfactory. For the notes of the case we are indebted to Dr. C. H. Moorhouse, resident obstetric officer.

A woman, aged thirty-six years, was admitted to the Leeds General Infirmary on May 7th, 1898, and in the absence of Dr. Braithwaite came under the care of Mr. Lawford Knaggs. Her friends gave the following information. She had been in labour with her first child for five days and delivery had not been effected. She had first been under the care of a midwife, but subsequently two medical men, finding delivery impossible, had sent her to the infirmary. A leg had come away in the attempt at extraction. On vaginal examination the os could be reached high up in front of and above a hard rounded mass which occupied the hollow of the sacrum. A shaggy surface presented, in the centre of which the small cup-shaped acetabulum could be felt. The antero-posterior diameter at the brim was only 1½ in. There were large sloughing sores near the orifice of the vagina and the odour left on the finger was horribly offensive. On first entering the rectum the finger impinged upon the tumour which lay apparently behind the bowel, but as the upper part of the rectum was reached it passed to the left side of it. The tumour was smooth, rounded, and hard, and immoveably fixed. After emptying the bladder two smooth swellings could be felt in the abdomen. One was the pregnant uterus and the other in the right hypochondrium was solid and so freely moveable that it slipped about on the least manipulation. The patient's condition was poor, the pulse was 120, and uterine pains had been last felt as she was being driven to the infirmary. A diagnosis of impacted fibroid was made and it was clear that with a putrid fœtus the only operation that offered any prospects of saving the patient's life was the removal of the uterus with its contents. Mr. Littlewood who saw the case concurred and without delay the patient was put under ether and the abdominal surface rapidly and carefully prepared for operation.

The abdomen was opened by a median incision 12 in. long and the tissues were so thinned that with the first stroke of the knife the peritoneal cavity was opened and the uterus was slightly wounded. The uterus, together with the freely moveable tumour which proved to be a pedunculated fibroid, was lifted out of the abdomen until its progress was checked by a pedicle passing from it to a mass firmly wedged in the pelvis. With the application of greater force this mass—also a pedunculated fibroid—came away with a jerk. A large sponge was placed over the bowels and in the pouch of Douglas and a third assistant kept the lax parietes closely approximated and drawn firmly round the neck of the uterus. This viscus with its attached fibroids was held well forwards so that any escaping discharge would fall over the thighs and not over the abdomen. It was entered on its anterior surface, in part by the knife, but chiefly by the fingers, and the opening was enlarged downwards for 5 in. with scissors. The fœtus was grasped by the neck and extracted and the placenta, which was lying loose, came out with it. The uterus contracted. The hæmorrhage was trivial and there was no occasion to tighten the elastic tourniquet which had been placed in readiness round the pedicle. A serre-nœud was now applied just above the bladder which was somewhat displaced but fortunately conspicuous. The neck of the uterus was cut through 1½ in. above the wire, a pin was passed through the stump, and the exposed uterine mucous membrane was mopped with chloride of zinc solution (40 gr. to 1 oz.). The pedicle was fixed at the lower angle of the wound, the three parietal layers—viz., peritoneum, muscle, and skin—being separately attached by a few suitably placed sutures to the peritoneal covering of the cervix well below the serre-nœud. The object was to obtain a broad, firm adhesion between the abdominal wall and the pedicle and so securely protect the peritoneal cavity from contamination by discharges which would result from the sloughing of the stump. This done the sponge was removed from the abdomen and the incision was closed in the usual way in layers. Dressings were applied and the vagina was washed out with carbolic lotion. The pulse was 150 at the

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close of the operation and ergotin, strychnia, and brandy had been injected during its progress.

The subsequent course was not uneventful. On May 10th, 11th, and 12th paralytic distension of the intestines and vomiting had to be energetically combated. When this was overcome the patient became troublesome and difficult to keep in bed and had delusions of a sexual character. This lasted through the 13th and 14th and then disappeared, and on the 15th a large slough came from the vagina and from that time the vaginal discharge lost its fœtor. The stump was cut away on the 25th and the next month was spent in the healing of the cavity left. By July 9th the wound had been soundly healed for a week and she left the Ida Hospital quite well.

The specimen.—The fœtus and the placenta were in a most offensive condition and much decomposed. The left lower limb was missing. The interior of the uterus was very foul and its mucous membrane was apparently gangrenous. The two fibroids were as large as cocoanuts and were attached to the body by short narrow pedicles.

Remarks by Mr. KNAGGS.—If there are various opinions as to the best way of dealing with cases of pregnancy in which delivery is rendered impossible by the presence of a removeable tumour, or with that other group in which the obstruction is permanent and the question of future pregnancies calls for consideration, there must be a general agreement as to the necessity for the removal of the uterus and its contents when the fœtus is known to be decomposing and delivery by the natural passages to be impossible. In Cæsarean section in these circumstances the fouling of the lips of the incision during extraction of the child and the immediate proximity of a highly septic surface can hardly fail to result in non-union of the uterine wound and in the establishment of a path of infection which must end in a rapidly fatal peritonitis. The case described above is a good illustration of the value of the more radical operation.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Cysts in the Ventricles of the Brain.—Blackwater Fever.—Technique of Blood Films.—Pernicious Anæmia.—Exhibition of Specimens.

A MEETING of this society was held on Dec. 20th, the President, Dr. PAYNE, being in the chair.

The PRESIDENT referred to the loss which the society had sustained by the death of Sir William Jenner who was President in 1873 and it was agreed that a letter of condolence should be sent to the members of his family.

Dr. E. F. TREVELYAN (Leeds) showed two Brains containing Cysts, the one in the third and the other in the fourth ventricle. In the first specimen the cyst, a little less than an inch in length and pear-shaped, had adapted itself to the anterior part of the third ventricle and was attached to the choroid plexus. It was of a greyish white colour and its contents were distinctly gelatinous. The symptoms had extended over six years with intermissions. In the second specimen there was a cyst in the fourth ventricle of about the size of a filbert. It lay free in the cavity of the ventricle. Death occurred suddenly after twenty-four hours of coma. Both these specimens were looked upon as examples of hydatid disease, but the examination of the first-named had not yet been completed. No evidence of parasitic disease was found elsewhere in the body in either case. Cysts in the ventricles of the brain might be parasitic in origin or be simple cysts of the choroid plexus. Parasitic cysts whether due to the echinococcus or cysticercus cellulosæ might lie free in the cavity of the ventricles or be attached. A single cyst of the choroid plexus, especially if of large size, should always be carefully examined as to its nature to see that it was not parasitic. Dr. Trevelyan also showed a Brain with Two Tumours at the Base; the one lay just below the velum interpositum and above the corpora quadrigemina which it had flattened out and the other in the floor of the third ventricle just above the optic commissure. He called it provisionally an angio-myxo-sarcoma.

Mr. W. H. CROSSE and Mr. W. C. C. PAKES communicated a paper on Blackwater Fever. A young officer who had served for fourteen months in Nigeria had several attacks of malaria whilst out there and came home suffering from his third attack of dysentery. He never had blackwater fever in Nigeria, but was attacked for the first time in England. The attack began apparently as an ordinary one of malaria, but after two days the symptoms of blackwater fever supervened. He had considerable pyrexia, was jaundiced, vomited green matter, and passed porter-like urine. The urine contained a fair quantity of albumin but only a few red discs. He had no quinine until six hours after the onset of the hæmoglobinuria. In spite of his improving under quinine he had a slight relapse of the hæmoglobinuria which disappeared whilst he was having still larger doses of quinine. The urine three days after the onset of hæmoglobinuria was pink in colour, gave a band of hæmoglobin, but not of urobilin. Sugar and bile pigments were both absent. Albumin was present to the extent of rather more than 1 part in 1000. There was an increase in the leucocytes and a considerable number of granular casts and renal cells. Only a very few red discs were present. Hæmatozoa were found in the peripheral blood; these, Mr. Crosse and Mr. Pakes thought, resembled the æstivo-autumnal parasite and not the ordinary quartan or tertian parasites. After the relapse the blood and urine were both again examined. No hæmatozoa could be found; there was a definite leucocytosis; and nucleated red discs were seen. The urine was similar to the previous specimen, but the casts and renal cells were much fewer. They thought this case had an important bearing upon the causation of the disease. Three alternatives appeared to be open. Firstly, that blackwater fever was unconnected with malaria or quinine; secondly, that it was caused by quinine; and thirdly, that it was connected with malaria. If the first alternative were true it would follow that the disease could be acquired in England or must have a latent period of over a month, since the patient had left Africa more than a month previously. Neither of these, they thought, was borne out in fact. That this case could not have been caused by quinine they were satisfied because, as had been stated, the blackwater preceded the administration of quinine by six hours. That the disease was connected with malaria was supported by the fact that hæmatozoa were found by them and had been found by other observers, notably by Plehn who considered that those found in blackwater fever differed in nothing from those found in the ordinary tropical African malaria. Further, the disease was only found to attack those resident in, or having resided in, tropical countries. Blackwater fever did not attack people who had not previously suffered from malaria. There appeared to them to be two alternatives as to the causation. In the first place there might be a special hæmatozoon which was responsible for the disease. Texas cattle fever was caused by a hæmatozoon and severe cases were marked by hæmoglobinuria. On the other hand Plehn's statement contradicted this idea. They thought that the most probable theory was that the hæmoglobinuric fever was really a complication of tropical African malaria, having similar relation to that disease which hyperpyrexia had to rheumatic fever. As in rheumatic fever, the hyperpyrexia was an added symptom which was unaffected by salicylates or alkalies, so the blackwater complication was superimposed upon malaria and required additional treatment. They referred to the notes on a case of blackwater fever published in THE LANCET of Dec. 3rd by Mr. F. P. Mackie. They did not consider the notes at all satisfactory. He had found parasites in stained films but had been unable to demonstrate them in fresh specimens. He noted the presence of an increase in the extra-corpuscular flagellated bodies in a mixture of blood and normal saline after two days and although he was unable to obtain permanent specimens of them was convinced that they could not be bacilli; Mr. Crosse and Mr. Pakes did not think that he had proved this. They pointed out that blastomycetes which were not saccharomycetes were quite common in the urine after exposure to the air. They pointed out the uniqueness of Mr. Mackie's case in that he demonstrated granular casts in a urine containing no albumin.—Dr. WASHBOURN said that the characteristic feature of blackwater fever seemed to be the presence of hæmoglobin in the urine, but the fact that there were also blood-cells present suggested that there was in this disease some further change in the kidney which allowed blood-cells to pass. He was of opinion that the disease was due to malaria and not to a different hæmatozoon, since the disease only occurred

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in subjects who had previously suffered from malaria, and as in the pernicious form of malaria the parasites may fix on certain organs—for instance, the capillaries of the brain—and give rise to a condition simulating apoplexy, or the capillaries of the intestine may be attacked giving rise to a condition similar to cholera, so it was possible that the parasite might in this form of fever fix on the kidney and red marrow and produce the hæmoglobinuria. The fact that only a few parasites were found rather pointed to the fact that they were situated in one part of the body and did not become generalised.—Dr. ROLLESTON suggested that there was possibly some relationship between hæmoglobinuric fever associated with jaundice and the hæmoglobinuria occurring in malaria.

Mr. W. C. C. PAKES and Dr. R. HOWARD brought forward a short communication on the Technique of Blood Films. They pointed out the unsatisfactoriness of the "two cover-slip" method and showed how Dr. Manson's suggestion to make blood films with tissue paper could be adapted to cover-slips which were much more convenient than slides. They showed a special needle with which to prick the ear or finger for the collection of the blood and a clip with which to hold the cover-slips conveniently while making the films on them. They pointed out that carbol thionin blue which was recommended by Muir and Ritchie as a bacterial stain was an excellent double stain for blood, especially for the diagnosis of malaria and leucocytosis, and in tissue. They also showed a small case containing Ross's diagnostic microscope, but specially adapted without increasing its size to contain in addition all the requisites for examination of blood.

Dr. H. M. FLETCHER described an Unusual Form of Intestinal Lesion occurring in Pernicious Anæmia. The patient, a man, aged thirty-four years, was under the care of Dr. Hensley at St. Bartholomew's Hospital and presented all the clinical features of an extremely severe case of this disease. After temporary improvement he died and the appearances characteristic of the disease were found at the necropsy. Specimens of various organs were shown by Dr. Fletcher. The most interesting lesion was that found in the intestines, the whole of the colon and a small portion of the ileum being thickened, tough, and leathery and of a yellowish-brown colour. The mucous membrane showed a remarkable roughening and was covered with warty excrescences arranged in patches. Such changes in the colon have not hitherto been described as occurring in pernicious anæmia. During life there had been no symptom which bore any relation to the lesion. Microscopically there was a recent partial necrosis of the mucosa and an older fibrotic condition of the submucosa. There were intense hyperæmia and a few scattered hæmorrhages. No definite cause for these changes could be assigned. It was suggested that the older changes were probably of the same nature as those described by Hunter, Fenwick, and others as occurring in the stomach in pernicious anæmia. He negatived the idea that the condition was due to arsenic which had been taken, since the stomach and duodenum showed no change.—The PRESIDENT said that the fact that the duodenum and stomach were not affected did not negative the fact that the condition might be due to arsenic, since in antimony poisoning the effect falls altogether on the colon.—Dr. WASHBOURN instanced the action of mercury on the colon in the same connexion.

Dr. C. D. GREEN showed a specimen of Sarcoma of the Left Lung and Mediastinum from a girl, aged fourteen years, who three months before her death complained of general weakness and dyspnœa. There were physical signs over the left lung which Dr. Green associated with consolidation and contraction of the left lung consequent upon antecedent pleural effusion. Glands appeared above the right clavicle and the child emaciated with remarkable rapidity during the last days of life. At the necropsy a large malignant growth was seen to extend from the sternum to the vertebræ and from the xiphoid to the upper opening of the thorax. The arch of the aorta and great vessels was completely embedded in the growth. The left pleura was universally adherent and the left lung was seen to have been converted into a malignant mass which appeared to have grown from the hilum outwards. The growth on section proved to be a sarcoma and Dr. Green thought that it had probably originated in the glands at the hilum of the left lung.

Dr. E. F. TREVELYAN showed the following specimens:—(1) Encapsulated Growth in the Kidney; (2) Cholecystitis from a case of Typhoid Fever; (3) Calcareous Mass on the Mitral Valve; and (4) a Fibrous Tumour free in the Peritoneal Cavity.

MANCHESTER MEDICAL SOCIETY.

Renal Tuberculosis.—Tumour of the Pons.—Malignant Jaundice.—Development of Movements of the Hand in Infancy.—Peripheral Neuritis.

A MEETING of this society was held on Dec. 7th, Mr. G. A. WRIGHT, President, being in the chair.

Mr. T. JONES mentioned two cases of Renal Tuberculosis in each of which the kidney had been removed, both ending in recovery. The first case was that of a man, aged forty-three years. He had a tumour filling the left side of the abdomen. Its contour was distinct; notching of its lower margin, together with absence of anything abnormal in the urine, led to the diagnosis of a splenic tumour. Exploration by an anterior incision showed its renal origin. Removal was followed by complete recovery. The second case was that of a man, aged twenty-one years, who was admitted with a large right lumbar abscess which was opened and drained. Five weeks later, after some improvement in the patient's general condition, the diseased kidney was removed through the loin. Besides the disease in the kidney there was a large and hard tuberculous nodule in the right epididymis. The corresponding vesiculæ seminales and prostate were also diseased. The patient was shown to the meeting in the enjoyment of excellent health.

Dr. DIXON MANN described a case of Tumour of the Pons of which a minute pathological investigation had been made by Professor Delépine. The earliest symptom was a humming noise in the left ear; this continued until death which took place two and a half years afterwards. Ptosis occurred early and then disappeared; it subsequently recurred and persisted. During the later stage the patient had repeated attacks of tonic spasms and on one or two occasions epileptiform seizures. The right arm and right leg were spastically contracted and devoid of motive power. Professor Delépine found that the tumour was a round-cell sarcoma situated in the left crus; it involved all the cranial nerves excepting the first and the ninth, but the third was the only one which showed marked indications of physical changes; it was atrophied, its diameter being only two-thirds that of the corresponding nerve on the right side.

Dr. HARRIS related a case of Malignant Jaundice (Typhoid Icterus) and showed preparations from the liver of a man, aged fifty-seven years, who had died from jaundice associated with nervous symptoms and the typhoid state. The patient had been ill seven weeks before admission to the hospital and died six days after he had come under Dr. Harris's observation. The chief symptoms during the six weeks previously to his admission to hospital had been pains in the limbs and pains in the abdomen and vomiting. The jaundice had been present about eight days before admission and was extremely intense when the patient was admitted to the infirmary. Shortly after admission low muttering delirium with picking at the bed-clothes came on; the tongue was dry and brown and there were sordes on the teeth; the stools were clay-coloured; the urine contained bile and a few sheaves of tyrosin were obtained from several specimens but no leucin could be obtained. The liver dulness was slightly increased in size; there was no enlargement of the spleen. The urine contained a doubtful trace of albumin. The patient became comatose, urine and fæces were passed unconsciously, and he died about six days after admission or about eight weeks after the onset of his illness. At the post-mortem examination the body was found to be intensely jaundiced. There was no lesion in the intestinal canal, there was no obstruction at any part of the bile-ducts, and the gall-bladder contained a little dark reddish-brown bile. The liver weighed 3lb. 10 oz., was slightly more friable than usual, but showed no sign of yellow or red atrophy, and with the exception of being bile-stained presented no unusual features to the naked eye. Microscopically the liver cells were of somewhat peculiar shape, slightly cloudy, but the most obvious change was that the nuclei showed marked evidence of active proliferation and stained unusually well with logwood. The other organs of the body presented nothing unusual with the exception of being bile-stained.

Dr. ALFRED MUMFORD read a paper on Development of Movements of the Hand in Infancy. He said that limb movements might be classified as those of locomotion; of prehension, where the thumb was inactive or acted with the fingers; and of manipulation, in which the thumb acted apart from the fingers and the hand could be supinated.

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Infantile movements were mainly involuntary and inherited and with these inherited movements were those of reflex action, instinctive and so-called spontaneous movements. Movements of manipulation were mainly acquired and voluntary. Independent use of the thumb with the power of supination so characteristic of manipulation began about the fifth month and was fully developed by the twelfth month. There were, however, still many inherited and instinctive movements which did not appear till later—e.g., walking. Swimming movements seemed natural to the human being and were partly at least inherited and not purely acquired movements since the human infant could be, and was, taught to swim in the very early months of life in many of the Pacific Islands, the Sandwich Isles, and in Siam. Photographs and drawings of the several movements described were shown to the meeting.

Dr. EDGE mentioned some cases of Peripheral Neuritis. Two of them were due to the use of alcohol and one to diphtheria; these were compared with three others which were caused by the toxin of beri-beri.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Exhibition of Cases and Specimens.

THE third meeting of the session of this society was held in the library of the Royal Infirmary, Newcastle-on-Tyne, on Dec. 8th, Mr. RUTHERFORD MORISON, Vice-President, being in the chair.

Dr. A. E. MORISON showed:—1. A patient, aged twenty-two years, who had noticed a Lump at the Root of the Neck for the past two years. A skiagram proved this to be due to a cervical rib over which the subclavian artery ran. On the opposite side the transverse process was elongated. 2. A New Method of Preparing Catgut. After immersing in ether for twelve hours the catgut is wrapped upon glass and placed in a 5 per cent. solution of formalin for twenty-four hours, then under running water for twelve hours, and lastly dried. It may be kept in this condition and immediately before use boiled, or it may be kept permanently in a 1 in 2000 solution of corrosive sublimate in methylated spirit. The advantages claimed were absolute sterility and maintenance of the strength of the catgut.

Dr. G. R. MURRAY brought forward:—1. A case of Friedreich's Ataxia in a male, aged eighteen years, whose sister, aged twenty-two years, also suffering from this disease, was in the hospital under the care of Dr. Oliver. The case presented decided mental deficiency; nystagmus was very evident; the pupils, however, readily reacted to light; the usual irregular muscular contractions were present and most marked in the muscles of the face and neck; the gait was extravagantly ataxic but the knee-jerks were not absent. Dr. Oliver's case, presenting similar symptoms, was also shown to the meeting. 2. A case which Dr. Murray considered illustrated the relationship between General Paralysis and Locomotor Ataxia. This patient twelve years ago suffered from plumbism and two years ago from rheumatoid arthritis; twelve months ago he had a left-sided hemiplegia. He now presented some loss of power in the left side; speech was somewhat indistinct, and the pupils were unequal. The marked incoördination, however, was more evident on the right side. The right hip and great toe-joints showed extensive Charcot's disease.—Dr. GORDON BLACK and Mr. RUTHERFORD MORISON discussed the joint changes.

Dr. H. P. BENNETT exhibited a patient with Optic Atrophy following injury. This man, after being unconscious for one hour from a severe accident due to a fall of stone, vomited a large quantity of blood and presented marked swelling of the right eyelids. On the subsidence of the swelling there was absolute blindness of the right eye with optic atrophy and anæsthesia of the skin below the orbital margin. The explanation offered was a fractured base extending into the optic foramen and sphenoidal fissure.

Dr. PAGE reported the case of a man upon whom he had recently operated by extirpation for Arterio-venous Aneurysm in Hunter's canal. The patient eight years ago had stabbed himself by accident in the right thigh causing profuse bleeding which was arrested by a pad and elastic bandage. In a few days the wound had healed, but pulsation was at once noticed and together with swelling gradually increased. Lately increased pulsation and thrill had caused loss of sleep. On examination a pulsating and expansile swelling as large as a fist was found in the site of Hunter's canal. The thrill and bruit characteristic of arterio-venous communication were heard over the sac and along the course of the femoral vessels. There was no enlargement of the superficial veins or œdema of the foot. On Nov. 16th the sac, together with portions of both artery and vein involved, was completely removed, catgut ligatures being used. The patient made an uninterrupted recovery and at no time was there cause for anxiety as to the safety of the limb.

Mr. RUTHERFORD MORISON described his Method of Treating Fractures of the Tibia and Fibula as follows: without attempting to set, the fractured leg was put up for ten days with plenty of packing in Gooch splinting. This temporary splint was then removed and the bones and callus were moulded into shape and position. The limb was then put up in plaster-of-Paris. Two patients having been so treated showed excellent results.

Mr. ANGUS showed a patient four years after Removal of the Penis and Infected Glands which on microscopic examination had been proved to be epithelioma. There was no recurrence.—Mr. RUTHERFORD MORISON, Mr. MARTIN, and Mr. LYON SMITH commented on the improved statistics for malignant disease after radical operations.

The following specimens were exhibited:—

Dr. MODLIN: Suppurating Dermoid Cyst.

Dr. G. R. MURRAY and Mr. HARDCASTLE: (1) Stained Slides illustrating the stages of Widal's reaction for enteric fever; and (2) Case with Tubes for sending specimens for bacteriological diagnosis.

Dr. G. R. MURRAY: New Pillow Sling.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Tuberculous Tabes.—Abdominal Section.

A MEETING of this section was held on Nov. 25th, Dr. E. H. BENNETT, the President, being in the chair.

A discussion took place on Dr. Macan's case of Tuberculous Tabes.—The PRESIDENT said that although the pus extravasated into the cavity of the peritoneum may not have had any pathogenic organisms in it, yet if it escaped from ovaries which were masses of tuberculous degeneration it was hardly to be desired that it should be left in the cavity of the peritoneum, and he therefore thought that drainage was advisable in this case.—Dr. JELLETT said it was a mistake to think that because pus was sterile there was no necessity for drainage, as pus, though sterile, might cause subsequent suppuration owing to saprophytic changes. The degree of virulence might sometimes be such as to establish suppuration without bringing on peritonitis which would kill the patient. He thought that drainage was advisable in all cases except where the patient's condition was absolutely hopeless.—Dr. H. C. TWEEDY said this case exhibited the immunity that patients who are suffering from suppurating tumours have to sepsis; in his experience, when the tumour bursts into the abdominal cavity the patient seldom gets sepsis and the fact that the pus is fœtid does not make the prognosis worse. Of course he supposed that the germs had died, but the fact that the pus was fœtid showed that germs had been there and that therefore there were dangerous toxins in the pus. He therefore thought that not to drain the abdomen would have been to run a great risk of leaving toxic pus in it.—Dr. MACAN, in replying, said that he could not understand how a piece of gauze stuffed through the posterior cul-de-sac of the vagina could drain between the intestines. He knew that pus sometimes was sterile, but investigation showed that it took about eighteen months for a tube case to become sterile.

Dr. ALFRED J. SMITH described a second series of 100 Cases of Abdominal Section, including operations performed under circumstances as follows: 39 times for ovarian tumours; 4 times for the separation of adhesions; 9 times for exploratory purposes; 21 times for the cure of fibro-myomata; once to enucleate a broad ligament fibro-myoma; 4 times for tubal pregnancies; 4 times for the radical cure of ventral herniæ; 4 times for double pyosalpinx; once for appendicitis; once for double hæmatosalpinx; once for enucleation of mesenteric cyst; once for Porro's operation; twice for salpingo-ovaritis; twice for hydrosalpinx; and once for the enucleation of a broad ligament cyst. The peritoneal

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cavity was opened twice in performing anterior colpotomy and 3 times in performing posterior colpotomy. As to the treatment of fibro-myomata he was not in a position to dogmatise, but he felt it his duty not to accept the simple fact of the presence of a tumour as a sufficient indication for operation; he must be satisfied that its continued presence was in some way or other a menace to life or that its presence was incompatible with a comfortable existence. Enucleation was performed twice, myomectomy 6 times, panhysterectomy twice, retro-peritoneal hysterectomy 8 times, and double oöphorectomy 3 times, making in all 21 operations without a death. Dr. Smith also read notes of the *technique* which he employs in performing retro-peritoneal hysterectomy, and notes on the after-treatment of cases of abdominal section. Taking the first series of 50 cases and the present one of 100 he performed 150 abdominal sections with only 2 deaths, or a percentage of only 1·3 per cent. nearly.—Mr. TOBIN described how the surgeons of St. Vincent's Hospital had all arranged to operate in the same way and if a change was to be made in any details the surgical staff met together and rejected or adopted the proposed change. He thought that this was an admirable arrangement for all concerned.—The PRESIDENT and Dr. MACAN also discussed the paper and Dr. SMITH replied.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Dec. 15th, the President, Dr. Macfie Campbell, being in the chair.—Dr. J. E. Gemmell related a case of Sudden Death from Complete Thrombosis of the Basilar Artery occurring on the twelfth day after a normal parturition. The patient was in the Lying-in Hospital, was aged forty years, primipara, and the perineum was torn at the labour; this was repaired at once and healed by first intention. She suffered from insomnia for the first four days and the temperature reached 100° F. on the third, fifth, and seventh days; the pulse was 76. On the seventh day the nurse reported a "short fit," twitching of the muscles of the face and limbs, followed by a short period of unconsciousness. On the twelfth day the patient died suddenly whilst taking a cup of tea. Post mortem all organs were found to be healthy, but the basilar artery was completely thrombosed. There was nothing to suggest septic mischief. The uterus was 6 in. long from the cervix to the fundus. Many cases of sudden death were recorded from ten to fourteen days after labour and there being no post-mortem examination were generally put down as pulmonary thrombosis.—Mr. G. G. Hamilton showed a male child, aged three months, on whom he had operated twenty-four hours after birth for Atresia of the Rectum. Neither urine nor fæces had been passed. There were atresia of the rectum, no trace of an anus, some hypospadias, and an imperfectly developed urethra. The rectum was found high up and some days later a urethra was made. Through the urethra fæces at first came, but now the child passed urine and fæces in a natural manner.—Dr. T. R. Glynn read notes of a case of Infective Heart Disease.—Mr. Hawkins-Ambler traced the history of the procedure and the methods of using Saline Irrigation in Abdominal Operations as a hæmostatic and for the purposes of lavage. He discussed the indications for its use and avoidance. He pointed out the advantages of saline irrigation in minimising inflammatory exudations after operation and relieving that inspissation of the blood shown in its increased specific gravity which caused increased peripheral resistance and more or less circulatory embarrassment. The absorptive capacity of the peritoneum was discussed and it was contended that irrigation lessened shock by protecting the peritoneum and assisted its efforts to combat septic influences. Post-operative uses of irrigation were mentioned as a treatment in commencing peritonitis, in pseudo-ileus, and in relieving intestinal obstruction in early stages when caused by slight adhesion. A case illustrating this use was mentioned. An analysis of the use of irrigation in 30 cases of abdominal operations was presented.—Mr. Alexander used irrigation only in special cases and always used sterilised water. For hæmorrhage he would be afraid to use water hotter than 100° F. and certainly would not use water at 120° in the abdominal cavity. He preferred perchloride of iron as a hæmostatic for oozing. For shock he thought it better and safer to use saline solution injected per rectum or in extreme cases into the cellular tissue of the axilla.—Dr. Briggs considered that simple irrigation and drainage conducted with care were harmless. Lord Lister had shown in wounds the vast differences between gross and mild infection and between organisms without and within the tissues. It was not necessary to go beyond those differences in estimating the value and use of irrigation and drainage.—Professor Sherrington and Mr. E. T. Davies also spoke.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held in the University College, Dundee, on Dec. 2nd, Dr. J. Mackie Whyte, Vice-President, being in the chair.—Dr. Whyte showed a boy, aged twelve years, who was admitted in June, 1896, to the Dundee Infirmary for ascites. He had been a delicate child and had suffered from a chronic otorrhœa—otherwise there was nothing marked till the onset of this illness six weeks previously. There was evidence of lardaceous disease in the liver, spleen, kidneys, and intestines. In the liver too there seemed to be deep fibrous constrictions. The abdomen was tapped repeatedly till October, 1897; the amount of fluid drawn off latterly was 324 oz. in nine days. The urine up to that time was very scanty, but after the tapping in October it suddenly increased in quantity and the fluid ceased to gather in the peritoneum. The cause of the disease was apparently the otorrhœa, syphilis being excluded with a fair degree of certainty.—Dr. Whyte also showed a Brain from a case of Purpura with Hæmorrhage into the Base which seemed to have begun at the optic thalamus. The patient had numerous hæmorrhages all over the body. There were no symptoms localising the cerebral hæmorrhage from which she died.—Mr. D. M. Greig showed part of a Catheter removed by Suprapubic Cystotomy from the Bladder of a man, aged sixty-three years, suffering from an enlarged prostate.—Dr. J. A. Kynoch showed a specimen of Gonorrhœal Salpingitis and Abscess of the Ovary removed by cœliotomy.—Dr. Kynoch also read a paper on the Recent Improvements in the Treatment of Vesical Fistulæ. In this paper he described the various operations suggested and performed during the last fifty years for the treatment of small, medium, and large fistulæ where there was destruction of tissue. He gave notes of a case under his own care in which he had obtained a successful result by paring and suturing the edges of the fistula. Lastly he dealt with vesico-uterine fistulæ, in the treatment of which he thought that when closure of the os uteri was the only available treatment the ovaries might be removed at a subsequent operation.—Professor MacEwan, Mr. D. M. Greig, Dr. Buist, and the Vice-President all spoke on the paper.—Dr. Kynoch briefly replied on the discussion.—Dr. MacGillivray communicated a short paper on the Treatment of Iritis in which he emphasised the importance of the early and energetic use of atropine combined with cocaine in the form of an ointment. This ointment he recommended should be applied every hour or oftener till all synechiæ were broken down. He also advocated the internal administration of mercury, hot fomentations, and leeches to the temples to allay severe pain.—Dr. A. J. Duncan spoke on the internal treatment which he did not think was sufficiently emphasised in the paper.—The Vice-President also spoke.—Dr. MacGillivray, in reply, said the paper did not aim at, though approving of, etiological treatment.

BRITISH ORTHOPÆDIC SOCIETY.—The annual general meeting of this society was held at the Westminster Hospital, S.W., on Dec. 9th.—Dr. Wohlmann, Dr. Bennett, and Dr. Melsome were elected members of the society. Mr. Freer, Mr. Robert Jones, and Mr. William Thomas were elected members of council. A vote of thanks to Mr. E. Luke Freer for his services as provincial secretary was carried unanimously.—An ordinary meeting followed at which Mr. Horrocks Openshaw's paper on Tendon Re-implantation, adjourned from the last meeting, was read. He defined the proceeding as the transference of the tendon of a healthy muscle from its normal situation and its attachment, implantation, or grafting upon the tendon of a muscle more or less completely paralysed. He gave a history of the subject and a *résumé* of cases recorded which showed that almost every tendon near the ankle had been utilised to strengthen every other muscle when paralysed, and that the sartorius had successfully been employed by Goldthwait as a substitute for the quadriceps. He had found the results of grafting the peronei into the tendo Achillis for talipes calcaneus excellent. In several cases of paralysis of the tibialis posticus he had grafted the peroneus longus or brevis into it with satisfactory results. As a general rule in tendon grafting

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a muscle should be selected the action of which nearly resembled that of the paralysed one, but this was not always possible. In some cases it was advantageous to take an antagonist that was causing distortion, but care must be taken that too much was not done and an opposite deformity produced. Distortion ought previously to be removed by operation and instrumental treatment. Strict asepsis was a *sine quâ non*. The tendons should be disturbed as little as possible and as large surfaces of tendon applied to one another as possible, and they should be very firmly united by sutures that would not rapidly be absorbed. Stout catgut he considered the best material. Kangaroo tendon could hardly be sterilised by ordinary methods and silk often gave rise to stitch abscesses and troublesome sinuses.—The meeting terminated with a vote of thanks to the committee of the hospital for the use of their board-room.

BIRKENHEAD MEDICAL SOCIETY.—A meeting of this society was held on Dec. 9th, Mr. H. Nazeby Harrington, President, being in the chair.—Dr. Temple showed two children with Congenital Defects of the Forearms and Hands.—Dr. R. Owen Morris showed a woman with Abdominal Tumour (for diagnosis).—Mr. Herbert Butcher opened a discussion by reading a paper on the Causation, Differential Diagnosis, and Treatment of Torticollis, first dealing in a thorough manner with the action of the muscles which would be involved in certain deformities and the necessity of differentiating which muscles were actually at fault in any special case, so that, a correct diagnosis having been arrived at, manipulation of the head might be employed in the proper direction and massage of the faulty muscles employed. In obstinate cases when milder measures had failed the minor operation of tenotomy was advocated and the operation recommended by Mr. Butcher was the open method in preference to the subcutaneous and in girls the high operation on the sterno-mastoid—viz., the incision being made round the auricle and the muscle divided at its insertion into the mastoid process. After tenotomy of this muscle the head should at once be placed in the correct position and retained there by a retentive apparatus and if it was found impossible to replace the head it should be forced into position during anæsthesia. In the spasmodic variety Mr. Butcher insisted that nothing seemed to avail but operation and recommended an early resection of the spinal accessory nerve at the anterior border of the sterno-mastoid muscle and even if retro-collic spasm existed no further operation should be undertaken for at least a couple of months, as in these cases the simple resection of the spinal accessory nerve had been known to result in cure. If this should not occur then the sub-occipital triangle should be exposed and the great occipital nerve with the first, second, third, and fourth nerves would come into view and one or more of them might be dealt with if necessary. Mr. Butcher quoted cases where one or more of these posterior cervical nerves had been resected with brilliant success.—The following took part in the discussion: Mr. Vacher, Mr. Laird Pearson, Mr. Dixon, Mr. Ellis Pearson, and the President.—Mr. Butcher replied.

BRISTOL MEDICO-CHIRURGICAL SOCIETY. — A meeting of this society was held in the Medical Library of University College, Bristol, on Dec. 14th, Dr. Roxburgh being in the chair.—Dr. C. Elliott showed a patient with Lichen Ruber Planus. Dr. Waldo and Dr. A. J. Harrison spoke on the subject.—Dr. Michell Clarke showed a case of Acromegaly.—Dr. E. C. Williams showed the following patients: (*a*) cases treated by the localised application of superheated dry air; (1) a case of Stiff knee; (2) a case of Rheumatoid Arthritis; and (*b*) a case of Alopecia Areata treated by the oxygen cap.—Dr. Rogers, the President, Dr. J. Swain, Mr. Paul Bush, Dr. Carey, Dr. Elliott, and Dr. Waldo remarked on the cases.—Mr. C. A. Morton showed a large Sarcoma of the Kidney successfully removed from a young child.—Mr. R. Williams and Dr. Carwardine discussed the specimen.—Dr. J. O. Symes showed a microscopic specimen of Tetanus Bacilli in Pus and a lantern slide of the same specimen.—Dr. Michell Clarke showed a microscopic specimen of the Malaria Parasite and illustrated his remarks by some carefully prepared lantern slides.—Dr. J. Swain showed a specimen of Double Pyosalpinx.—Dr. W. C. Swayne read a paper on Symphysiotomy with notes of a case.—Dr. J. G. Swayne and Mr. Morton commented on the paper.—Mr. Munro Smith showed a large number of lantern slides illustrating the pathology of Rodent Ulcer, explaining each slide as it was thrown on the screen by the oxy-hydrogen light; his interesting remarks on the subject raised a long discussion in which Mr. Morton, Mr. Williams, Dr. Edgeworth, and Dr. Michell Clarke took part.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Dec. 16th, the President, Mr. D. H. Goodsall, being in the chair.—Dr. B. G. Morison read notes of a case of Appendicitis in a man, aged twenty-six years, whose symptoms were of sudden onset. At the end of the acute attack—the seventh week—Mr. A. Quarry Silcock did a lateral laparotomy when he removed the appendix containing hard, light, black concretions and stitched a peritoneal flap over the stump. Recovery was complete.—A general discussion followed.—Mr. Reginald Brown read notes of a case of Recurrent Clonic Spasm of the Abdominal Muscles in a man, aged thirty-three years, convalescent from pneumonia. In the first attack morphine checked the spasm completely in 2 days. A relapse took place in 10 days when the extensors of the thigh were involved.—Mr. Brown also showed a Larynx from a man, aged forty-five years, an alcoholic, who was suddenly affected with cough, alteration of voice, and dyspnœa, which rapidly increased as did the submaxillary swelling. Tracheotomy was done. Five hours later his pulse was 140 per minute and a few hours later he died on the beginning of the third day.—Mr. F. Hewitt Oliver showed a specimen of Red Hepatisation of the Lower Part of the Upper Lobe of the Right Lung from a boy at work on Monday, ailing on Tuesday, and dead on Wednesday.

Reviews and Notices of Books.

Orthopædic Surgery. By JAMES E. MOORE, M.D., Professor of Orthopædia and of Clinical Surgery in the College of Medicine of the University of Minnesota, &c. With 177 Illustrations. London: The Rebman Publishing Co. Philadelphia, U.S.A.: W. B. Saunders. 1898. Pp. 354. Price 14*s*.

ORTHOPÆDIC surgery is of modern origin. Attempts had been made from time to time to remedy some of the more marked deformities, but as they were made without any exact knowledge of the true pathology of the conditions which were to be remedied the attempts were nearly always utter failures. Then followed the era of the instrument-maker and the complexity of the machines which were devised to remedy deformities was only equalled by their uselessness. In more recent times a more hopeful practice has prevailed, for it has been recognised that orthopædics are only a part of general surgery, yet a part for the successful practice of which a special knowledge and a special training are required. Orthopædic departments and lectures now exist at many general hospitals and these are likely to be more beneficial than special orthopædic hospitals for students are more likely to profit by their teaching. Even nowadays too many surgeons think that they have done all that is required of them when they send an orthopædic case to an instrument maker. They themselves should provide the measurements and the details of the instrument which is to be made, and unless they can do so they should not attempt to treat these cases. We extend a cordial welcome to Dr. Moore's treatise which is before us, for it is evidently written by one who is well acquainted with the subject with which he deals. The book is written by a general surgeon who has charge of a special department, and therefore we obtain, as we might expect, a satisfactory mean between too much and too little operating in orthopædic cases. The work is clearly written, amply illustrated and excellently printed.

The exact bounds of orthopædics have never been traced and as time goes on its borders will certainly extend, but at the present time the subject may be said to include all deformities of bones and joints, and that is practically what we find in Dr. Moore's book.

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The author is an enthusiastic advocate of plaster-of-Paris, and his cautions as to its quality and use are worthy of attention in this country where there appears to be a tendency to discontinue its use for spinal jackets as being not satisfactory. He advises that the very best plaster should always be employed for it sets more quickly and more firmly than the cheaper kinds; the ordinary commercial plaster, he tells us, is utterly unfit for use as it will not set within a reasonable time and is heavy and unmanageable. He does not consider a "dinner pad" necessary, but we are not informed why, for variations in the size of the abdomen of no small extent do occur in connexion with food. In severe cases in which the deformity is increasing the author recommends complete rest in bed, and he has seen pale, emaciated little patients, apparently on the verge of the grave, changed in a few weeks into well-nourished, healthy-looking children merely by perfect rest. The best results are to be obtained by keeping the patient completely in bed. Dr. Moore mentions that the form of spinal support which is most frequently sold by instrument-makers is one which depends for its usefulness upon crutches making pressure in the axilla; this form of instrument is worthless, for light pressure under the ever-moving shoulders does not afford support and heavy pressure cannot be borne.

A very good account is given of the treatment of talipes, but we were a little surprised to find the statement that some English surgeons after performing tenotomy still put up the foot in the deformed position and gradually overcome the deformity later. We are not aware of this practice being followed by any English surgeons at the present time. We fully concur in the author's views as to the shape for a tenotome; the ordinary knife has a blade much too long, for its cutting edge is very liable to damage the skin while the tendon is being cut.

Osteoclasis is nowadays very little employed in the treatment of genu varum; Dr. Moore, however, speaks of it as "perfectly safe and very satisfactory." He employs Rizzoli's osteoclast and claims that with ordinary care abrasions of the skin do not occur. He does not recommend it for genu valgum, for he considers it is neither so safe nor so satisfactory as osteotomy owing to the proximity of the joint.

Coxa vara is fairly well described, but it deserves more attention than the three pages devoted to it, for it is probably much commoner than it is usually thought to be. In the treatment of congenital dislocation of the hip the author is inclined to advise first a trial of Lorenze's bloodless method and then should that fail an attempt may be made by a cutting operation to replace the head of the bone in the acetabulum artificially deepened.

The Housing of the Working Classes Act, 1890, and Amending Acts. By CHARLES E. ALLAN, M.A., LL.B., of the Inner Temple and Western Circuit, Barrister-at-Law, assisted as to Practice by FRANCIS J. ALLAN, M.D. Edin., D.P.H. Cantab., Medical Officer of Health to the Strand District Board of Works. London: Butterworth and Co. 1898. Price 7*s.* 6*d.*

ALTHOUGH the Housing of the Working Classes Acts were enormously simplified by their consolidation in the Act of 1890, this latter is in itself sufficiently voluminous and, withal, complicated as to justify the production of a separate volume dealing with its enactments and with the decisions already delivered in regard to them. Mr. Allan has endeavoured to present us with such a work and it must be conceded that his efforts have been for the most part a success, the present volume being convenient both in size and shape and its contents being well arranged. The text of the principal Act and of the four short amending Acts is given, of course, in full, and it is interpolated with clearly expressed explanatory notes. There is, too, a table of cases which cannot fail to be of material assistance to those who have officially to advise local authorities and who have to interpret the exact meaning of certain sections in the light of decisions given in relation to them. The introduction forms a capital summary of the provisions of the several parts of the Act, and this in spite of the fact that the revision of this part of the work has not been altogether perfect; for instance we read on page xxxv. that the ratepayers may appeal to the "Local Government" when obviously the Local Government Board is meant. The appendix contains the several prescribed forms and also the circular of the Local Goverment Board as to provisional orders and as to instructions as to applications for such orders. The index is concise and useful.

LIBRARY TABLE.

Who's Who? 1899. Edited by DOUGLAS SLADEN. London: Adam and Charles Black. Price 3*s.* 6*d.*—*Who's Who?* is improving and this is much to say of any book of reference, although books of this class must improve if they desire to keep their place. There are a great many new features of interest, such as a table of American ladies bearing English titles. Among the addenda are some particulars of the Right Hon. Cecil Rhodes, Mr. F. R. Harris, and Dr. Leyds. There is information of all sorts and kinds and altogether the book will prove exceedingly useful.

A Manual for Students of Massage. By M. A. ELLISON. London: Baillière, Tindall, and Cox. 1898.—Massage properly used is undoubtedly a valuable therapeutic agent. Like electricity, however, it has been so abused by quacks and swindlers that it is still looked upon with a certain amount of suspicion, and any book dealing with the subject not written by a medical man is somewhat discounted. The manual under review, however, seems to us to be a clear account of the various manipulations employed in massage and Miss Ellison has been careful to lay stress upon the fact that no case should be undertaken without medical permission at least, if not medical supervision. This of course is an essential, for the neglect of this canon has perhaps done more than anything else to bring massage into disrepute. The book is illustrated by clear and simple anatomical diagrams indicating the position of the chief muscles. It should prove useful for the class of persons for whom it is intended. Mr. H. H. Hulbert, M.R.C.S., L.R.C.P., supplies a preface in which the medical points of the book are shortly dealt with.

Flash Lights on Nature. By GRANT ALLEN. London: Geo. Newnes, Ltd. 1899. Price 6*s.*—These are a series of papers upon sundry subjects in natural history. Many, if not all, of the essays have already appeared in the *Strand Magazine* but they are quite worthy of being reprinted. We like Mr. Grant Allen far better as a natural historian than as a hilltop novelist, for in these papers we find the observation and fancy which gave us "The Revd. John Creedy" and "Palinghurst Barrow." Insects, plants, birds, and spiders form the groundwork of Mr. Allen's pictures. He tells us all about aphides and their relations to ants and he takes us through the life-history of a spider. Has any one by the way ever considered what an appalling monster a spider would be if it were of the same relative size to a human being as it is to a fly? A creature with eight legs all armed with claws, eight eyes, a mouth provided with two great fangs secreting a deadly venom, and the power of spinning a snare all smeared with a sticky substance. Imagine a wretched man struggling in one of these death-traps. We are glad to see that Mr. Allen has a word of praise for the earwig. It is a not altogether undeservedly maligned creature but withal a most interesting one. Its

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life history and the method by which its wings are folded up go far to redeem its bad character—which we own with sorrow it deserves—of damaging flowers. Mr. Enock's admirable illustrations help to make his collaborator's text plain at a glance; not that we mean by this that Mr. Grant Allen writes unintelligibly, but "things seen are mightier than things heard." The book will make an admirable gift for any person who cares for country life, and even for the town dweller it will be useful, for he can see many of the subjects dealt with in the parks and open spaces.

Traité Pratique de Radiographie et de Radioscopie: Technique et Applications Médicales. (A Practical Treatise on Radiography, Radioscopy, and their Medical Applications.) Par A. LONDE. Paris: Gauthier-Villars. 1898. Pp. xii. and 244. Price 7 francs.—In this comprehensive work M. Londe, who is at the head of the photographic and radiographic department of the Salpêtrière, gives many fine reproductions of radiographs of bones not only in normal subjects but in malformations and also when presenting lesions due either to injury or disease. In undeveloped persons the progress of ossification may be observed and two interesting examples of this kind are illustrated, one of them being the hand of an Egyptian mummy which from the state of the ossification was inferred to be that of a child eight years of age. The other case was that of a male patient, nineteen years of age and 41 in. high, admitted to the Salpêtrière with myxœdema. Ossification was hardly more advanced than in a child of two or three years, but after five months' thyroid treatment he was 1¾ in. taller and the radiographs taken then showed the bones of the hands and feet to be much better ossified than on the former occasion. In the chapter on foreign bodies embedded or swallowed, in addition to the ordinary method of passing the rays through the part in directions at right angles to each other, M. Londe describes four special contrivances for assisting the observer. One is a device of his own, a boxwood triangle with metallic pins projecting from it, which are photographed at the same time as the foreign body. Two of the other methods require the simultaneous use of two vacuum tubes; they have been suggested by M. Brunel and Dr. Foveau de Courmelles and by Dr. Mergier. Various contrivances for use with fluorescent screens are shown and there is an illustration of Dr. de Bourgade's clinical table on which an infirm patient may be laid; being hinged it can be inclined to a considerable extent and the observer can sit on a low chair underneath it when either using the fluorescent screen or placing photographic plates in position. The chapters on sources of electricity, various kinds of vacuum tubes, screens, &c., are tolerably full and altogether the book is one which can be recommended.

JOURNALS AND REVIEWS.

IN the December number of the *British Journal of Dermatology* the original part is entirely taken up with the report of an interesting debate on general exfoliative dermatitis, introduced by Dr. Walter Smith at the Dermatological Society of London. It is valuable as giving the views upon this serious disease of the skin held by some of the leading British dermatologists. The quarterly survey of dermatological literature and the report of the Dermatological Society of Great Britain and Ireland complete the number.

Archiv für Dermatologie und Syphilis. Band xlvi., Heft 3. (*Archives of Dermatology and Syphilis.* Vol. xlvi., No. 3.)—This number contains an article by E. Doctor on the Relationship of Darier's Disease to Ichthyosis, in which he concludes—(1) that Darier's disease is connected with the hair follicles and sweat gland ducts with hyperkeratosis; (2) that it is generally but not always associated with hyperkeratosis, and that the so-called Darier's bodies are partly evidence of the parakeratosis but do not form a feature peculiar to the disease, as they may occur in other kinds of cell degeneration; and (3) that Darier's disease is a variety of ichthyosis from which clinically it may be distinguished by its localisation and by the presence of Darier's papules and histologically by the proliferation of the papillæ and of the rete Malpighii. J. Schutz writes on the occurrence of leucoplakia oris in psoriasis and other dermatoses and gives the evidence contained in dermatological literature that psoriasis may attack mucous membranes. H. Apolant has a long paper on Antipyrin Eruptions, the literature of which is sufficiently formidable, amounting to four closely-printed pages of references. H. Napp and C. Grouven conclude the original articles with the results of the TR. Tuberculin treatment in the Dermatological Klinik at Bonn. Their experience, like that of others, is that while it exercises a beneficial influence on the tuberculous processes, too often the good effect does not last and the disease returns. At the same time whatever benefit accrues is not accompanied by injury to the rest of the organism. The remainder of the number contains the usual reports of German dermatological societies and abstracts from recent literature.

Scottish Medical and Surgical Journal.—In the December number Dr. Alexander James (Edinburgh) gives clinical details regarding 4 cases of Tuberculous Neuritis, the parts affected being both legs and feet in two cases, the left arm in 1 case, and the right arm, right leg, and right side of the face in the remaining patient. In connexion with this subject Dr. James discusses the so-called "causeless hemiplegia" which may occur in tuberculous persons and he describes an instance which he considers to be of this kind. Dr. T. McHardy (Cullen) gives an account of a patient who had suffered from chronic gastric ulcer for twenty years, but found complete relief from all symptoms after taking $\frac{1}{10}$th or $\frac{1}{12}$th of a grain of bichromate of potassium every six hours for twenty-two days. Dr. W. Stewart McDougall describes a case of Ascites in which paracentesis was performed over 100 times. The patient is a female pauper in Sutherlandshire; in five years over 4000 pints of fluid have been removed from her abdomen.

Dublin Journal of Medical Science.—The original articles in the December number are by Dr. T. W. Grimshaw on the Relations between Preventive Medicine and Vital Statistics; by Dr. R. H. Kennan on "Relapse" in Scarlet Fever; and by Dr. J. W. Moore on Clinical Experiences of Septicæmia and Enteric Fever.

Manchester Royal Infirmary Students' Gazette.—An article in the November number entitled the English Student in Vienna and written by Mr. F. H. Westmacott contains a good deal of miscellaneous information which can hardly fail to be useful to English visitors arriving in the Austrian capital for the first time. It seems that hospital work there begins at 7.0, 7.30, or 8 A.M. and goes on till 7 P.M. The Pathological Institute is "open day and night."

DIARIES.

LETTS'S well-known diaries (Cassell and Co.), in their 1899 editions, are as comprehensive as usual, ably supplying the needs of the office, the home, and the individual, whilst the "Medical Diary" continues to provide members of the profession with a handy note-book, conveniently carried in the pocket, in which may be recorded the names of patients visited each day, lists of nurses with their residences, midwifery, vaccination, and Factory Act engagements, things wanted and lent, and accounts rendered, &c. There is also given much useful information which is sure to be needed at some time.

Wright's Improved Physicians', Surgeons', and Consultants' Visiting List (John Wright and Co., Bristol) is presented in three different forms. Forms A and C are the usual

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annual editions, and form B, designed for perpetual use, is not restricted to any particular month or year. No doubt this latter feature has its advantages in not a few cases, and particularly so in very small or very extensive practices. The compiler of all three is Mr. Robert Simpson, L.R.C.P., L.R.C.S. Edin. The usual provision is made for recording in a convenient form the details of visits made and of engagements entered into, nurses' addresses, cash accounts, &c. Form C also supplies the needs of practitioners who are certifying surgeons under the Factory and Workshops Act.

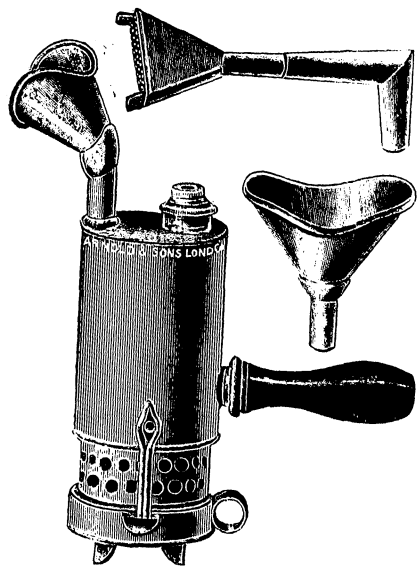
Smith's Physicians' and Surgeons' Visiting List, Diary, &c., for 1899 (Hazell, Watson, and Viney, 52, Long-acre, W.C.) is the successor of fifty-two previous issues, and is therefore well advanced in the good opinions of the profession. Provision is made for jotting down the usual visits, engagements, &c., in a form convenient to the busy practitioner, and the varied information at the beginning of the diary adds materially to its value.

From Messrs. Bemrose, 23, Old Bailey, E.C., comes a *Monthly Diary* which provides twelve handy little notebooks, one for each month in the year, suitable for carrying in the waistcoat pocket, and useful for jotting down those many little items which, when once thought of or come across, the busy man finds it absolutely necessary to "make a note of" if they are to be rescued from oblivion.—A similar idea is carried out in *My Month's Engagements, Diary, and Memoranda* (R. Bridges and Co., 92, Chancery-lane, W.C.), the twelve monthly parts being provided with a neat leather case, with pockets, which has the merit of being thin and therefore not cumbersome.

New Inventions.

A NEW FORM OF WARM DRY AIR INHALER.

THE indiscriminate use of steam inhalation in bronchitis and other respiratory affections I hold to be a mistake, and I am quite satisfied that better results can be had (in some cases, at least, of chronic or acute bronchitis) by the use of hot-air inhalation. The illustration represents a form of portable inhaler made at my suggestion by Messrs. Arnold and Sons, Smithfield, which so far as I can discover is the only inhaler of this kind that can be held in the hand of the patient. One mouthpiece acts as a funnel for filling the receptacle with boiling water, a constant temperature being maintained by a spirit-lamp underneath. There is another mouthpiece enclosing a piece of felt or spongiopiline, into which any medicament which may be selected can be dropped and the hot air drawn through, thus medicating the air inhaler.



The inhaler consists of a cylinder containing a spiral tube like the worm of a still; one end forms the core of the handle through which the outer air enters, the other end communicating with the mouthpiece.

Cheltenham. ALEXANDER DUKE, F.R.C.P. Irel.

PUBLIC VACCINATORS IN THE WEST OF ENGLAND.

THE "tremendous experiment" continues to give rise to a crop of arguments and discussions in many parts of the country. The matter came up before the Okehampton Board of guardians on Dec. 10th and it was stated that, taking last year as a basis when the fees paid for vaccination amounted to £31, the minimum offer made by the committee would be £81, but that on the scale demanded by the medical men the sum would be £118. One of the committee said that if every union adopted the terms which the medical men asked in that union the cost to the whole country would be half a million instead of as in last year £89,000. The committee understood that "all the vaccination medical men in the country held a conference and that the fees to be accepted were fixed at that conference." Eventually it was decided that the fees demanded could not be paid. The matter now rests with the Local Government Board.

At Camelford on Dec. 9th Mr. Jerome and Mr. Wade appeared before the board of guardians with regard to fees. The minimum was 5*s.*, but they asked 8*s.* 6*d.* Mr. J. Taylor of Trevalga proposed giving 6*s.* 6*d.* Mr. Venning of St. Cleather proposed to give the minimum and this was carried by 14 votes to 12. The medical officers refused to accept this and the matter was adjourned for a fortnight.

At Bodmin on Dec. 10th a long discussion took place without any definite decision being arrived at.

At Helston, on Dec. 10th, the vaccination committee recommended in connexion with the new Act that a fixed fee be paid in all cases, to include mileage; that the district for vaccinating purposes be rearranged; and that the vaccination officers be paid 3*d.* for every birth registered, 1*s.* for every registration of successful primary vaccination, and 9*d.* for transmitting a certificate to another district. The committee had also considered the replies from the several public vaccinators, all of whom, except Mr. Leverton-Spry of St. Keverne, asked for a registration fee of 2*s.* 6*d.* instead of 1*s.* offered by the board, but otherwise accepted the scale of fees offered. Mr. Leverton-Spry was now willing to accept 1*s.* registration fee. The committee decided to adhere to their original offer of 1*s.* It was proposed that if the medical men did not accept the 1*s.* registration fee to apply to the Local Government Board to elect one medical officer for the whole union. The present holders had been served with twenty-eight days' notice to terminate their present contracts so as to give the board of guardians a free hand. The resolutions were carried. We do not quite understand by what right the Helston Board of Guardians have given their public vaccinators twenty-eight days' notice so as to have a free hand, unless, indeed, there was some clause in the original contract bearing on such a notice. The Vaccination Memorandum of Oct. 18th, 1898, says (Art. I., par. 1.): "Provided that nothing in this article shall affect the validity of any contract for public vaccination made under any Order hereby rescinded."

At Barnstaple the vaccination committee having met the public vaccinators of the union recommended to the Barnstaple Board of Guardians the following scale of fees:—Art. 3 (*a*) 2*s.* 6*d.* instead of 1*s.*, as the committee considered the latter fee too small for the amount of work; and (*b*) 5*s.* for each successful case of vaccination and also a fee of 1*s.* per mile for each visit after the second mile, but in no case is the total fee to exceed 2 guineas except by a special order of the board. The guardians adopted this resolution.

DIPHTHERIA IN CARDIFF.—The medical officer of health of Cardiff (Dr. Walford) in his report to the Health Committee on Dec. 13th stated that for the four weeks ended Dec. 3rd 78 cases of diphtheria had been notified, compared with 32 in the preceding four weeks. Dr. Walford added that the whole of the surrounding districts of Glamorganshire were suffering from an increase in the number of cases of diphtheria.

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THE LANCET.

LONDON: SATURDAY, DECEMBER 24, 1898.

RECENT proceedings regarding the Vaccination Acts by magistrates, boards of guardians, and anti-vaccinationists furnish much food for reflection. They indicate, indeed, that the year 1899 may witness a serious struggle between law and order on the one hand and the forces of anarchy on the other. The purpose of the conscience clause was to distinguish between genuine and deep-seated objection to vaccination and parental carelessness and neglect of duty. The clause was to make this distinction by imposing on those who chose to take advantage of it a considerable expenditure of time and trouble. That was the purpose of the clause, but unfortunately it was so drafted that such an interpretation is not at all obvious and in various parts of England magistrates are administering it in such a way as to afford no indication whatever of the reality and seriousness of alleged objection. This fact has become specially prominent with reference to the tens of thousands of children who have within the last fourteen years remained unvaccinated notwithstanding the requirements of the Acts of 1867 and 1871. Under the new Act a period of four months from the date of the coming into operation of the conscience clause was allowed to the parents of all such children either to get them vaccinated or to obtain relief certificates. The four months ended on Dec. 12th and within a week or two previous to that date various communities in which vaccination had been neglected seemed to waken up to the knowledge that the period of grace (if so reputable a word as *grace* can be used in such a connexion) was about to expire. The result was that various benches of magistrates arranged for special and repeated sittings, in some places for several hours night after night, and that at such sittings all attempt to ascertain the existence of conscientious objection was practically abandoned and the whole proceedings were reduced to a mere scramble for entrance into, and exit from, a crowded court-house, with the formality of obtaining in the course of crushing through the court-house a couple of hurried signatures to a printed document which had previously perhaps been purchased for a copper or two at the counter of some neighbouring bookseller. Such proceedings, of course, have not actually increased the amount of non-vaccination in such places. They have, indeed, provided in a rough and incomplete fashion a register of the unvaccinated juvenile population. It is, however, a matter of grave public concern that this line of action should have been followed, for it may have prevented the protection against small-pox of many thousands of children whose careless parents in the absence of so absurdly easy an alternative would have given their offspring the benefit of the Jennerian preventive rather than face prosecution and fine under the new Act. At Oldham, for instance, some time before Dec. 12th, the Mayor, who evidently sympathises with anti-vaccination, wrote to the local papers as follows: "Very few applications have hitherto been made, the reasons, in my opinion, being the inconvenient hour at which the courts sit (10 o'clock in the morning) and the charge which is made for the certificate. Conscientious anti-vaccinators regard this charge as a sort of penalty for their convictions. These two objections ought to be removed." And they were removed with a vengeance by the Mayor who with his colleagues sat night after night and hour after hour granting certificates to objectors whose conscientiousness (or the want of it) he had no possible time to consider. The result is said to be that some 30,000 certificates have been granted in Oldham, and but for the action of the Mayor many of the children so certified might have been submitted to vaccination by their parents. It is also a matter of concern as to whether in future with regard to children approaching the age of four months the same farcical interpretation of the Act will guide magistrates, or whether they will endeavour to carry out the spirit and purpose of the conscience clause by making it something else than a sham.

Certain other things, however, are being said and done with reference to the new Act which may turn out to be of even greater importance than these and which may raise questions going far beyond the scope of anything closely related to vaccination. Various boards of guardians influenced by various prominent anti-vaccinationists seem to have deliberately decided to defy Parliament and the nation with regard to this matter. Evidence of this was furnished at a Congress of the National Anti-Vaccination League recently held at Lincoln. Looking to the magisterial proceedings above referred to and to the fact that such proceedings could not have taken place if the Government had properly drafted its conscience clause so as to say definitely what was to be done under it, we can with difficulty dissent from the opinion expressed by one member of the League that "the conscience clause was a mockery and a sham" and that it makes "a bigger muddle of the Vaccination Acts than ever"; or by another, that the recent Act is "one of the most ridiculous known in the English law." That, however, is not the point of greatest interest in the deliberations of the League. Though as a body they did not venture to pass any resolution advising wholesale refusal of the conscience clause it was freely stated that certificates ought to be applied for only where anti-vaccinationists were in evil case but that where they were strong there should be no such compromise. Councillor BIGGS of Leicester is reported as having said that "the Leicester Board had simply acknowledged the receipt of the Local Government Board's communication and laid it on the table. They had defied the Local Government Board in the past and that would be their attitude in the future." As to the conscience clause anti-vaccinationists "ought to have nothing to do with it whatever." A Halifax representative declared that "he knew this—if a town was against a certain thing and the body representing the town was against it the Local Government Board would let them severely alone." In the Market-place at Leicester a public meeting was recently held at which it

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was decided neither to submit to vaccination nor to apply for certificates of exemption. It is such proceedings as these that we look on as indicating the possibility, or even the probability, of an early struggle between the civil power and the forces of anarchy. The previous Vaccination Acts, though usually spoken of as compulsory, were not so in any real sense of the term. Even when faithfully administered by local boards all that the Acts did was to offer the two alternatives of payment of penalties and submission to vaccination, and when boards neglected their duty parents were left entirely free to do as they chose in the matter. This experience of license to set aside the law in the past is now bearing its fruits in the expressed determination of men like Mr. BIGGS and of the Leicester Board of Guardians to defy the law in the future. The national Legislature has gone a very long way in its anxiety to make it easy for anti-vaccinationists to obey the law of the country. Though Parliament and the Ministry and the Royal Commission on Vaccination agree with the medical profession in believing that vaccination is essential to the prevention of small-pox they yet, as a matter of expediency, determined to allow parents alleging them selves to be conscientious objectors to neglect the protection of their children against the scourge of small-pox. All that the country, as represented by Parliament, determined to ask was that every parent so objecting should take the time and trouble to make known his objection in a manner provided by the law. We have seen how in various parts of the country magistrates have gone much further than Parliament intended and much further than they ought to have gone in making it easy for parents to procure exemption from the operation of the Acts. Yet in the face of all this we find boards of guardians and responsible individuals deliberately deciding to disobey even the provisions of the new Act and to flout and defy the national will as expressed by Parliament. We find also that throughout the country, under the influence of the League or of its branches or of local agitators, probably thousands of parents of unvaccinated children under fourteen years of age have refrained alike from procuring their vaccination and from obtaining certificates under the conscience clause. The conciliatory offer has been ostentatiously rejected and the Government and Parliament are openly defied. The Local Government Board is told that past experience shows that, so far as it is concerned, it will yield to such defiance. In view of all this we have no hesitation in saying that great as is the importance of the prevention of small-pox epidemics in this country what is now at stake is infinitely greater. The question simply is whether the executive Government will cease to govern, whether Parliament will cease to care for the enforcement of its own enactments, and whether the national will as expressed by law shall be disobeyed with impunity. Never in the history of this country has more been done to make easy the obedience to the law. In the case of many foolish persons the effect has been to inflame their self-conceit, to increase their unreasoning obstinacy, and to confirm them in their opinion that the law can with safety be defied. That is the state of things with which the Government has now to grapple, and we repeat that the year 1899 is likely to see on this subject a constitutional struggle the results of which will have effects reaching far beyond the question of vaccination to which the struggle will have owed its origin.

WHEN the claims of public health come into conflict with those of fine art and history which of the two must be recognised as the stronger? Such is the question raised perennially in modern life when centres of population have to adjust or remodel themselves to the growing wants of the many—a question familiar to us in the British Isles but still more urgent in the lands washed by the Mediterranean, in which a remoter and fuller past is daily feeling the demands of a more exacting, because more imperfectly furnished, present. Our lay contemporaries have been giving prominence to the question chiefly as it affects Italy, whose political resurrection has brought and is bringing with it much disturbance, if not actual effacement, of monuments ancient and mediæval and whose centres of art treasure and historic association, like Florence and Rome, are being shaken to their deepest and innermost recesses by the architectural and sanitary rehabilitation imposed by the "new order." There is no doubt that by the building operations following on the necessary demolitions indicated much that is interesting, even precious, must disappear, but, on the other hand, much undeniable improvement and indispensable convenience is being effected; and so the question stands as we put it at the outset—which of the two exigencies, social and sanitary or artistic, is to have the preference? The old answer "salus populi suprema lex" seems the only possible one, even if it take the uncompromising version given to it by Italy's patriotic surgeon and author of her "Codice Sanitario," AGOSTINO BERTANI, who "per la salute di un solo individuo avrebbe distrutto il distruggibile" (would, for the health of one single individual have destroyed the destructible). But while insisting on the imperative claims of humanity to the normal conditions of life—fresh air, pure water, sound food, and commodious house-room—do we thereby ignore the interests of art with its creations or history with its monuments? Not so. It is possible to meet both demands, as, indeed, it is only by concurrently satisfying their respective claims that either interest can be enjoyed at its best. Art without health is even a worse condition than health without art. The world has never seen such a repertory of *chefs d'œuvres* in architecture, sculpture, and painting as Athens presented just before the Peloponnesian war. But the plague which early in that contest reduced the "City of the Violet Crown" to a lazaretto or charnel-house would have made PERICLES view the triumphs of PHIDIAS and ZEUXIS as so many eyesores could he have known that half the treasure which they cost would have obviated the overcrowding and the neglect of all sanitary law which incurred deadly Nemesis and brought himself, his family, and thousands of the fellow-citizens whom he loved to a premature and loathsome end.

This "lesson of history" was present to the mind of the Marchese TORRIGIANI, Mayor of Florence, when in the Chamber of Deputies the other day he thanked the company of British artists and men of letters

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for their solicitude about the monuments of his city threatened as they were supposed to be by its necessary expansion and readjustment, but reminded them that humanity also had its claims and that to lead a healthy and normal life is man's first condition, without which art and literature are, at best, but "vain deluding joys." In further indication of his position he appealed to the Minister of Public Instruction, Dr. BACCELLI, himself a jealous conservator of historic and artistic treasure (witness his excavations in the Forum, on the Sacra Via, and on the Palatine), and drew from him an eloquent outburst on the claims of "la vita moderna" as not irreconcilable with those of history and fine art, followed by an expression of the fullest confidence in the Florentine committee appointed to safeguard the traditional attractions of the city. Moreover, as Dr. BACCELLI himself has put in evidence, the demolitions so dreaded by the foreign dilettanti have resulted in the unearthing of treasure-trove far more interesting and far more precious than the structures which they removed, till it has really come to be a question: Is it only mediæval monuments that are to be respected, and are there not records of a yet auguster past to be disclosed from beneath those pre-Renaissance edifices? The excavations of the "Centro" of Florence have resulted in a "true conquest for Etruscan art," and for that of the Roman epoch, as a visit to the Museo della Crocetta will demonstrate, and yet further relics are doubtless in store for the art student and the historian as the result of the demolitions so peremptorily "vetoed in advance." The late Dr. KING CHAMBERS, in his brilliant paper on the Climate of Italy (in great part reprinted from THE LANCET), described mediæval Florence as a series of "Hanway-passages bordered by Newgate prisons." He was no "Philistine"—on the contrary, he was a scholarly and artistically cultured physician; but his vote would certainly have supported the Marchese TORRIGIANI in his preference for light to gloom, for fresh air to foul, for the conditions of health to those of disease, all the more when he had the Marchese's assurance that artistic treasure and historic tradition would be duly respected, or, if subordinated to the *salus populi*, would in process of removal bring to light even yet more precious monuments, to the enrichment of the museums and to the increase of the attractions of the Tuscan "Modern Athens."

SOME amateurs are about to try a bold but very questionable experiment in Birmingham, one deeply affecting the interests of the medical profession and of the public. We say "some," but as far as our information goes at present we should speak only in the singular number. It is an experiment in a branch of medical practice which has hitherto been considered somewhat sacred. Mr. ARTHUR CHAMBERLAIN of Birmingham proposes to establish a consulting department in some central part of the city, to be served by young consultants and specialists who will be guaranteed a minimum salary—"a salary," according to the account of a representative of the *Birmingham Daily Post* who has had an interview with Mr. CHAMBERLAIN, "which would be worthy the acceptance even of the most skilled men among the rising members of the profession." The consulting department is to be for the benefit of, and is expected to be appreciated by, working men, foremen, school teachers, clerks, assistants in shops and persons of the lower middle class. There is to be no hard-and-fast line, we gather, for the exclusion of persons from the benefits of this new departure. "We want a place where a self-respecting, thoughtful, reasonable man or woman who is neither a pauper, an object of charity, nor a millionaire, can obtain the real truth about his or her particular illness and the treatment required for it for a reasonable sum in a reasonable time," &c. There is a wide gap here between the "object of charity" and the millionaire which may include half the patients now resorting to consultants at the minimum traditional fee of one guinea. The fee to be paid under the new *régime* is the modest sum of 10*s*. 6*d* per visit; we presume the fee is to be the same whether the patient comes to the "consulting department" or the consultant goes to the patient.

There is one expression in the above description of what Mr. ARTHUR CHAMBERLAIN wishes to achieve to which we take much exception. He says the object is that the self-respecting man, &c., may obtain the real truth about his illness, &c. Does Mr. CHAMBERLAIN really believe that medical practitioners are divided into two sets, one which gives "the real truth" and another giving a false account of facts? or that among the different grades of the profession there are different methods of detecting and treating and representing disease? We are sure he intends no disrespect to the body of the profession, but we think that he has been unfortunate here in his choice of words and that a little deeper acquaintance with the facts of practice will lead him to know that there is no essential difference in intelligence, in methods, or in candour between the general practitioner and his consulting brother and that they may fairly be trusted to work out the problem of consultation for needful cases between themselves. The fact that a layman should undertake to solve such a problem in a way inconsistent with all the notions of the profession is one to be observed. It suggests that, busy place as Birmingham is, there must still be much unoccupied energy there, but it does not prove anything more. And we cannot say that we are so much enamoured of the results of Birmingham experiments in medical practice and in the support of medical charities that we can afford to hail a brand-new experiment in a branch of practice which has hitherto, as we have said, been free from interference. We are of course glad that Mr. CHAMBERLAIN does not design to create another "great out-patient department where everybody will be seen in an hour and all have to herd together under discipline and pass the doctor at the rate of one a minute," and we note certain but very inadequate precautions against abuse. We cannot forget that in Birmingham very dangerous doctrines of claims to free medical attendance at hospitals have been based on the strength of contributions by workmen—contributions originally designed as charitable doles to institutions for the benefit of those labouring under exceptional ailments or accidents for the treatment of which neither the homes nor the means of working men were adequate.

Most sensible people will ask the question put to Mr.

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ARTHUR CHAMBERLAIN by his interviewer in the *Birmingham Daily Post*, "Is there any need for such an institution?" and they will answer with a decided negative. If any young and able members of the profession walk into this trap they will do so on their own responsibility and they will lay themselves open to the charge of dealing another heavy blow at the dignity of medical practice in Birmingham. No one acquainted with the facts can maintain that there is any serious difficulty in procuring for the classes named consultation on reasonable terms. As a rule they can well afford to pay the modest guinea fee now regarded as the minimum fee of all self-respecting consultants. For Mr. CHAMBERLAIN must remember that self-respect is not the monopoly of humble patients, but a quality of men who by years of study and most exacting work attain to the grade of consultants and naturally expect their reward. We would urge him to reconsider this proposal and to leave the profession alone to make its own terms with classes whose providence and respectability make them unfit for such experiments as he contemplates. We are glad to see from the account in the *Birmingham Daily Post* that Dr. SAUNDBY and others make forcible objections to this project—a scheme which cannot fail still further to lower the estimate of medical science and the dignity of medical practice.

THE movement to establish a National Association for the Prevention of Consumption and Other Forms of Tuberculosis received a great impetus on Tuesday last, when His Royal Highness the PRINCE of WALES presided at a meeting held at Marlborough House to further the objects of the Association. In so graciously acceding to the desires of the organising committee His Royal Highness has again, as often before, evinced his sympathy with an effort to promote the cause of public health; and it is further significant of his wide interest in this sphere that no sooner was this meeting over than he proceeded to preside at the Council of the Hospital Fund which is linked with his name.

The gathering in support of the National Association for the Prevention of Tuberculosis was a notable one and the promoters of the "new crusade" are to be congratulated upon the inauguration of their work under such auspices as well as upon the moderation with which their aims were unfolded in the "statement" by Sir W. BROADBENT which opened the proceedings. No one can read this statement without being impressed by the need for such an organisation for the enlightenment of the people and the establishment of measures, simple in themselves but founded on scientific facts, calculated to diminish the ravages of tuberculous disease and to promote the recovery of those who are its victims. Indeed, we venture to think that the subject could hardly have been more effectively treated than it was in this statement which may be said to constitute the charter of the Association. For in the first place the extent of the plague which the Association is pledged to combat was clearly set forth in the striking statistics of mortality from tuberculosis in this country; and although it is admitted that from various reasons there has happily been a steady decline in that mortality during the past thirty years, yet the numbers of victims from what is now recognised as a preventable disease are still alarmingly large. Then came the declaration which barely a decade since would perhaps have been received with scepticism in many quarters that tuberculosis is invariably acquired by contagion. It is here that the public will especially need instruction. We should be loth to see in this country the adoption of some of the stringent measures to which Lord SALISBURY alluded as having been in vogue in Italy. The doctrine of the contagiousness of consumption has been held in that country almost since mediæval times and we fear that in consequence much unnecessary harshness has been shown towards, and many hardships inflicted upon, the unfortunate subjects of pulmonary phthisis. But, as Sir WILLIAM BROADBENT plainly averred, mere contact with, or the inhalation of the breath of, the sufferer does not suffice to transmit the contagion. The great risk lies in the lack of cleanliness, in the desiccation of the bacillus-laden sputa, in the absence of ventilation, and, as Sir SAMUEL WILKS wisely insisted, in the exclusion of that powerful bacillicidal agent, sunshine. What is needed is, then, *not* the segregation of the sick or their treatment as lepers, deprived of the care and companionship of those dearest to them, but the intelligent appreciation on the part of the patient and his kindred of the conditions under which the germs of the disease are cultivated and disseminated. Here the question of protection from the transmission of tubercle by the milk and flesh of diseased cattle comes in for debate. The value of the tuberculin test in the early recognition of the disease in cattle, and, as was pointed out by some speakers, the enlightenment of the farming and dairy industries with regard to the necessity of maintaining healthy stock open up fresh fields for the work of the Association. The hygienic principles which lie at the root of the question as regards man may well be kept in mind in the case of cattle, while many will share with Lord SALISBURY the satisfaction which he expressed that nothing in the shape of legislative enactments is to be sought by the Association. The definite pronouncement against the application of the Notification Act to tuberculosis is to be commended, for it was clearly shown that the preventive methods are of such a character as not to require the adoption of a measure which though of proved utility in the more acutely specific fevers might be fraught with many difficulties in such a disease as tuberculosis. The Association has as its main object the enlightenment of the public, and the agencies at its disposal for the dissemination of the comparatively simple and concise rules of conduct and cleanliness are many.

Lastly the novel but highly rational measure of treatment by means of open-air sanatoria will be encouraged by the Association; and in this connexion we may especially commend the munificent offer of the London partners of Messrs. WERNHER, BEIT, and Co. to set aside £20,000 to establish such a sanatorium in this country for a class of invalids who are unable to take advantage of the benefits of foreign sojourn which are only open to the rich. There is no doubt that this example will be followed and that we may expect as the benefit of the open-air treatment becomes appreciated the erection of such sanatoria

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will be indispensable in lieu of hospitals and infirmaries where so many subjects of pulmonary phthisis are now retained. The experiences in Scotland related by Sir THOMAS GRAINGER STEWART and in Ireland by Dr. J. W. MOORE afford satisfactory proof of the practicability of treatment in such sanatoria even under this variable climate of ours. Many aspects of this question were touched upon at the Marlborough House meeting and it may not be out of place to recall that at the Epidemiological Society last week a paper was read by Dr. A. RANSOME upon this very subject in which he was sanguine enough to predict that in another thirty years but little would be left for us to do against tuberculosis as the disease would be then banished from the land just as leprosy has been. We would fain share this optimism, but we fear that such a consummation will not be attained in so brief a space. Nevertheless, we do believe that the task taken in hand by the newly-formed association which has received so gratifying a recognition from the highest quarters is one which, rightly conducted, may go a long way to secure this desirable end. The arousing of public interest in the question may further contribute to strengthen the hands of the sanitary reformer by insisting upon a diminution of the evils of overcrowding and over-building, the twin curses of modern civilisation.

Annotations.

"Ne quid nimis."

THE ALIEN CRIMINAL.

THE trial which ended last week by the conviction of a man named Schneider for murder once more presses on public attention the fact that London is inundated with foreigners of the poorest kind. This class swells our pauper population. A point, however, which has not been generally heeded is the amount of crime and the number of other offences attributable to people of alien blood. Whether we look at the names which appear at the county courts, the police courts, or the Old Bailey, it is impossible to avoid the conclusion that a disproportionate number of litigants and prisoners are aliens. This is not surprising when it is remembered how much of the scum of foreign countries is emptied on our willing land. From a medico-legal point of view the trial was interesting inasmuch as the plea of insanity was raised by counsel for the defence. The facts were admitted, therefore no other defence was available. The question of insanity in its relation to crime is perhaps the most difficult of all the subjects treated in our courts by medical men and lawyers. That Schneider was condemned to death was probably just. He was not judged by the jury to be of unsound mind when he committed the deed. At the same time, looking at the evidence, can it be said that it was proved that the accused was in full possession of the power of controlling his will at the time? The symptoms of insanity are so deeply hidden that it is often only by accident that they are seen. Therefore in questions of such difficulty it would be as well that the legal maxim should not be driven home too hard that a criminal is presumed to be sane until the contrary is proved—for that is the effect of it. The familiar legal test of insanity is whether the mind of the accused person is so diseased that he cannot know the nature and quality of the act he is committing or, if he knows it, that he does not recognise its wrongfulness. Probably if this test were applied to the acts of lunatics in our asylums the great majority of them would be liable at some time or other to punishment. Yet it is unlikely any one of them would ever suffer the death penalty for murder. As suggested above, a more satisfactory test would be the condition of the criminal's will-power, the power of self-control; and to settle so knotty a point either the judge should have assessors consisting of medical experts and specialists or the jury should consist of these to assist in arriving at a verdict. In the Admiralty Court the judge is assisted by assessors. Surely insanity is as important and difficult a subject as navigation.

MEDICAL AID AND THE LAW.

WE recorded in a note last week that the Court for the Consideration of Crown Cases Reserved had affirmed the conviction of a man named Senior, one of the Peculiar People, who was tried at the Old Bailey before Mr. Justice Wills in November for the manslaughter of one of his children. Seven out of twelve of them have died at different times without medical aid being obtained for them, and the sentence of four months' imprisonment which has now been passed by Mr. Justice Wills seems but a light one. It may, however, act in some measure as a deterrent to those who otherwise might join the sect and it may be increased in future cases. As has, we believe, been pointed out, the perfectly genuine religious beliefs which led to suttee in India or to human sacrifices in other countries now under our rule have not prevented our forbidding such customs and imposing heavy penalties on their observance. The case of Senior is interesting as illustrating the danger of brevity leading to obscurity when statutes are drawn. It is admitted to be doubtful whether there is at common law such an obligation upon a parent to call in medical aid for his child as will render him liable to be convicted of manslaughter should he neglect to do so and should the child die in consequence. An Act, however, was passed in 1868, dealing chiefly with poor relief, which incidentally made it an offence punishable on summary conviction "when any parent shall wilfully neglect to provide adequate food, clothing, *medical aid*, or lodging for his child, being in his custody, under the age of fourteen years, whereby the health of such child shall have been or shall be likely to be seriously injured." It was held in the case of one of the Peculiar People named Downes in 1875 that this Act imposed an absolute duty on parents, whatever their conscientious scruples might be, and that death having resulted from an intentional disobedience of the law the verdict of "Manslaughter" was right. In 1889, however, the Prevention of Cruelty to Children Act repealed the section of the Poor-law Amendment Act of 1868 above referred to and as a substitute made it an indictable offence for a person having the custody of a child to "wilfully assault, ill-treat, *neglect*, abandon, or expose" such child in a manner likely to cause unnecessary suffering or injury to the health of such child. The same expression to "wilfully neglect" is used in the Cruelty to Children Act of 1894 which has superseded that of 1889 and it was on the question suggested by the deliberate omission of all direct reference to medical aid that Mr. Justice Wills reserved the case of Senior for the consideration of his learned brethren. They held unanimously that neglect meant "the absence of such reasonable care as an ordinary parent would reasonably use for the care and protection of his child," in which, of course, the supplying of medical aid was included. That they should so hold and should confirm the conviction of Senior seems only natural; it must not, however, be thought that Mr. Justice Wills reserved the question unnecessarily. It seems that more or less

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recently Mr. Justice Hawkins directed the jury to acquit one of the Peculiar People on the grounds indicated above. Apparently the consideration did not weigh with his lordship as it did with Lord Russell of Killowen, that it was unlikely that the Legislature intended to take a retrograde step in a matter of humanity. In addition to the light thrown on the evolution of laws by the case which we have commented upon it will be seen how different is the position of a child from that of a grown person where the summoning of medical aid by others is concerned—a difference marked recently by the withdrawal of the charge against the Christian Scientists in connexion with the death of Mr. Harold Frederic.

BICYCLING.

THERE can be hardly a doubt, we think, among those who have considered the subject at all, that bicycling, whether as an exercise or merely as an easy means of transit from one place to another, is likely to increase rather than to diminish among us. Its convenience is too obvious to admit of its falling into disuse, at least among a considerable class of the community. As an amusement no doubt it must, like other amusements, be more or less at the mercy of fashion and increase or diminish in popularity according to the whim of the moment. But as a mode of getting away from towns into the surrounding country, or of going from one part of the country to another, with all the excellent results to the health of the community which that implies, it is evidently destined to remain among us. Since this is so it is perhaps worth while to consider seriously a point with regard to this particular exercise which might be dismissed as relatively unimportant in the case of a mere pastime soon to be superseded by some new invention. Now that bicycling is becoming almost universal among the younger generation of both sexes in the middle and upper classes it is eminently desirable that everything that science can do should be done to make it a wholesome and rational recreation. Some steps have already been taken in this direction. Medical men have pointed out the dangers which lurk in this even more than in other physical exercises when indulged in to excess. They have indicated, both in individual cases and more generally, the ill-effects which even moderate cycle riding may have in the case of persons suffering, for example, from certain affections of the heart. And in addition to this we may confidently believe that individual practitioners have given the matter a certain amount of attention and in the case of individual patients or their children have spoken words of warning where warning was needed. For it is quite certain that while with some persons bicycling as an exercise has proved exceedingly beneficial to the general state of health there are other cases in which through some constitutional weakness either acquired or inherited it is not merely undesirable but even dangerous. Something, then, has already been accomplished by the medical profession in this matter, but something, we think, remains to be done. It is only necessary to watch the troops of riders who are to be met with on country roads or even in London itself to see that through carelessness or ignorance what may be both a graceful and a beneficial exercise is often turned into a harmful and pernicious one. There may be seen men and women mounted on machines which are so ill-adjusted to their requirements that they are quite unable to get the physical benefit from riding which should come from it. The handles are too low, the saddles are set too far back or too low or too high, and the result is that the riders have to adopt an ungainly and from the hygienic point of view undesirable attitude from which they may quite possibly feel serious consequences in the future. It is no uncommon thing, for instance, to see young girls mounted upon machines the saddles of which are placed far too high for them. Their parents naturally in many cases know little or nothing about bicycling. They know still less of the possible ill-effects which riding in a strained or unnatural position may produce, and the question arises how far their medical advisers are capable of helping them. A medical man will of course have no difficulty in pointing out that a bicycle which puts an undue strain upon certain muscles of a child or girl may produce serious consequences. But can he, if he is not an expert in cycling or has not especially studied cycle construction, point out what is wrong with any particular machine and how it should be adjusted to give the maximum of benefit to its rider with the minimum risk of physical injury? In most cases we imagine he could not, and it is not altogether reasonable to expect him to do so. What, then, are the parents or the riders themselves to do? They cannot in most cases trust the agents or dealers from whom they buy their machines. These men very often do not even know the possible dangers which lurk in a machine which does not fit its rider. Moreover, their business is to sell their machines, preferably the machines that chance to be in stock, and they can hardly be expected to point out to a purchaser that they have nothing on the premises that exactly fits him. To do so in nine cases out of ten would merely be to send the purchaser elsewhere for his machine. We confess we do not see any very clear road out of this difficulty. The only hope is that with the spread of bicycling, knowledge of the proper adjustment of a machine and the proper position of handles, saddle, pedals, and the rest relative to the rider and to each other will be so widely diffused that most riders will be able to see after these matters for themselves. There will then be not only fewer cases of actual injury from riding, but the positive good effects of a useful and pleasant form of exercise will be enhanced.

THE DANGERS OF ANÆSTHETICS IN CASES OF INTESTINAL OBSTRUCTION.

A FATALITY under an anæsthetic which occurred at the Sussex County Hospital illustrates the extreme difficulty and danger of giving anæsthetics to patients in whom, owing to intestinal obstruction, the contents of the bowels regurgitate into the stomach. The patient in this case was a man, aged thirty-eight years, whose abdomen was greatly distended as a result of three days' complete stoppage. The lungs were compressed and at the time of admission to the hospital his condition was described as moribund. Frequent vomiting had occurred during the day. The A.C.E. mixture was given from lint by the house surgeon and the head was kept lateralised. As soon as the patient was completely under the anæsthetic "brown fluid" came in a continuous stream from the mouth unaccompanied by retching. The operation proceeded as far as opening the peritoneum when the pulse and respiration failed almost simultaneously. 3 minims of liquor strychninæ and two hypodermic injections of brandy had been given before the anæsthetic. It is not stated whether any of the stercoraceous material had entered the lungs, but in the face of no mention being made of it it is presumable that such was not the case. As has been already pointed out in our columns death in these cases frequently results from the disease itself and the anæsthetic practically is an anodyne to the death struggle. It is the contraction of the diaphragm accompanying the general muscular contraction associated with dissolution which compresses the intestines, causing their contents to enter the stomach. The cardiac orifice, no longer in a condition of tonus, allows the steady flow of the gastric contents along the œsophagus into the buccal cavity. During the death struggle there is often a gasping inspiration which

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is liable to aspirate the gastric contents from the mouth into the air-passages. In many cases of supposed suffocation by stercoraceous vomitus the entrance of the material into the trachea is not the cause but the consequence of the death struggle. On the other hand, in patients whose condition is less grave there is undoubtedly great danger of aspirating vomitus into the lungs and such a danger is increased in semi-anæsthesia. When the patient's condition allows of lavage by continuous syphon action that proceeding should be adopted; when the asthenia is too pronounced for it the choice of procedure lies between local anæsthesia for the incision in the skin with rapid puncture of the distended gut and general anæsthesia. The great risk of local anæsthesia in these cases is lest fear or shock should give the *coup de grâce*. Probably those who advise this or even the giving of no anæsthetic at all, whether general or local, forget the frequency of death under operation in the pre-anæsthetic period—deaths due solely to "shock." Valuable as are the methods of Schleich and Reclus there is no doubt that they have their limits and the spectre of sudden death haunts such procedures just as it claims a percentage, although happily but a small percentage, of victims when general anæsthetics are employed.

THE GENERAL MEDICAL COUNCIL AND UNQUALIFIED PRACTITIONERS.

ON Dec. 15th at Houghton-le-Spring Joseph Steel was charged with practising as a qualified medical man. Mr. Meynell prosecuted on behalf of the General Medical Council. Mr. Clark who defended said that the prosecution had failed to show that defendant had more than declared himself to be a botanist. In examination the defendant admitted that he had a medical club of 400 members paying from 6*d*. to 9*d*. a fortnight. Defendant was discharged. Mr. Joseph Steel will now be looked upon as a martyr and we make no doubt that his "practice" will increase. He probably knows perfectly well that his patients do not care two straws whether he is or is not qualified. To the ordinary miner a medical man is not one who has passed certain examinations and been put upon a roll known as the "Register": he is simply one who gives sick people a "bottle" when they ask for it. Probably it is dawning upon the north-countryman that there are two classes of medical men—namely, those who can sign certificates under the Workmen's Compensation Acts and those who cannot, but of any other difference the industrial population is to a large extent unaware.

THE "MEDIATE TREATMENT" OF A SYPHILITIC FŒTUS.

AN important lecture on this subject, delivered at the St. Louis Hospital by Professor Fournier, is published in the *Semaine Médicale* of Nov. 30th. Supposing the mother to be healthy but the father infected, is it possible to protect the fœtus? M. Fournier finds that it is—by the administration of mercury to the mother—which he calls the "mediate treatment" of the fœtus. This treatment produces no ill-effects on the mother. If during the first pregnancy of a healthy mother specific treatment is begun early a healthy child will usually be born at term. But the value of the treatment is better proved by cases where a number of abortions have occurred or where several syphilitic infants have been born. When this treatment is adopted a healthy child is born. For example, a young man contracted syphilis in 1881 and was treated for five months. He married in 1883. The first child died on the ninth day from "congenital feebleness." The second child was covered with syphilides and after the fifth week passed into a condition of marasmus and died. The mother underwent a course of specific treatment during the third pregnancy and was delivered at term of a healthy child which at the age of four years was still immune. M. Fournier said that many such cases could be cited. Moreover, under this treatment many complications of previous pregnancies—hydramnios, placental lesions, fœtal dystrophies, hydrocephalus—have been avoided. Treatment of the mother should be commenced as early as possible in the pregnancy and continued through the whole period. Mercury is the important agent but iodine may be advantageously combined with it. After trying a number of preparations M. Fournier has come to the conclusion that the protiodide of mercury in pills is the best. He recommends small doses. "As it is not an adult but a fœtus who is being treated a fœtal dose should be sufficient." But surely this is not convincing. The dose received by the fœtus is not the same as that administered to the mother. However, M. Fournier's observations that successful results may be obtained with daily doses of ¼ gr. and even ⅛ gr. of the protiodide of mercury will receive due weight. There is an obvious source of fallacy—the curative effects of time alone. He adds that it is useless to give large doses to the mothers in cases where they are syphilitic. He recommends an intermittent treatment—twenty days of administration of the drug a month and ten days suspension "to allow the stomach to rest." But others, for example Professor Pinard, recommend continuous treatment.

FOREIGN BODIES IN THE NOSE.

THERE is perhaps no commonplace of medical practice which gives rise to more perplexity and misunderstanding than the diagnosis and treatment of foreign bodies in the noses of children. A short article on this subject in the *Journal de Clinique et de Thérapeutique Infantiles* of Dec. 1st by M. Felizet is therefore of some practical interest, His observations are founded on an experience of 31 cases. The bodies dislodged were of great variety, including dried peas and beans, cherry-stones, slate-pencil, pellets of paper and wool, &c. In all the cases the removal was effected by means of douching the free nasal meatus, either by the hydrostatic method or with a syringe, the injected fluid (tepid water) returning by the opposite nostril and driving the foreign body before it. The pressure of fluid employed in this proceeding is regulated by the resistance encountered or expected, but in all cases it is, at the outset, gentle and applied slowly in order to avoid interference with the action of the velum palati or sudden injection into the Eustachian tube and tympanum. In 26 of the cases noted this method alone sufficed; in 5 the impediment had to be further helped out of the nostril with a forceps or curette. This use of the douche is by no means new. It is noteworthy, nevertheless, both as an aid in the diagnosis and as by far the gentlest mode of treatment in this class of cases. The facts which we have quoted should go far to prove its general efficiency and to obviate at all events in the first instance those more direct instrumental measures commonly advised in surgical text-books.

THE PAY OF SURGEONS TO MINES AND MINING WORKS.

IN our issue of Nov. 12th we commented upon the pay and position of the surgeons attached to collieries throughout the Durham coalfield. The medical practitioners of the Eastern Valleys, Pontypool, Monmouthshire, have now issued a circular in which they point out that the basis on which amounts of payment to medical men are calculated has remained the same for the last twenty-five years, while the working expenses of a practice have practically doubled within the last few years. The necessity of bacteriological research, the increased cost of drugs, and especially of the materials requisite for antiseptic dressings and the like, have

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all combined to bring about a rise in expenses, while the recent action of the General Medical Council in absolutely forbidding the employment of unqualified men has practically doubled the salaries of assistants. An assistant is of course a necessity, for no man however willing and able can possibly undertake the medical charge of a colliery or large works of any kind single-handed. The memorialists point out that the medical practitioners of the Western Valleys have been for some time paid upon a much higher basis than their medical brethren of the Eastern Valleys and the latter feel sure that such an inequality has only to be pointed out to be instantly remedied. They add that they are quite ready to discuss the matter with their employers, and not only ready but desirous of so doing. We are sure that if such a conference is held the workers of the Eastern Valleys will accede to the prayers of their medical men. This is no question of a club where prosperous tradesmen and town councillors fatten on the charity—for medical attendance at 3*s.* 6*d.* a year is charity—of men who work a great deal harder than they do themselves; it is a question of one set of toilers acting fairly by another set. Within the last twenty-five years or so the position of the average working man has improved wonderfully. Wages have risen, tea is cheaper, tobacco is cheaper, his children get their schooling at other people's expense, while free libraries, washhouses, and baths are found in most places. The collier and the ironworker are sensible men and will, we are sure, see the force of the arguments adduced by their medical men.

CEREBRO-SPINAL FEVER.

WE have received the abstract of a report on the recent appearance of cerebro-spinal fever (epidemic cerebro-spinal meningitis of Stillé) in Chicago in this year (1898) by Dr. W. J. Class. Notes are given of 38 cases, all uncertain and doubtful cases having been eliminated. A summary of the symptomatology of the cases is there given which will well repay perusal. Special attention is drawn to one symptom which the writer believes has not been dwelt upon to any extent in previous reports—namely, difficulty in swallowing. It was noticed in 6 cases, each of which ended fatally. It must therefore be considered as a grave omen in prognosis. As a rule it was found late in the disease when the patient had become semi-comatose, but in one instance it occurred several weeks before death while the patient was still perfectly conscious. Its causation is not clear but Dr. Class deems the opinion plausible that it is due to an accumulation of fluid in the fourth ventricle exerting pressure on the nerve centres in its immediate vicinity which control deglutition. From a consideration of our present knowledge of epidemic meningitis Dr. Class arrives at the following conclusions: (1) that epidemic cerebro-spinal meningitis is to be classed among the contagious diseases belonging to the same category as phthisis pulmonalis; (2) that insanitary conditions exert great influence in affording a proper nidus for the growth of the germs of this disease; (3) that health authorities should receive notice of the occurrence of a case of this disease in order that sanitary defects may be remedied; and (4) persons afflicted with this disease should whenever possible be isolated and all evacuations should be rendered innocuous by the use of antiseptics.

A DEATH FROM ANTHRAX AT BRADFORD.

AN inquest concluded on Dec. 14th at Bradford brought out very clearly the fact that though the Government may make regulations for dangerous trades it is by no means certain that they will be obeyed either by employers or by workmen. The inquest was held upon the body of a wool-sorter named Whalley employed by Messrs. Ickringill and Company. He had been employed in sorting Persian wool and, according to the medical evidence, died from anthrax poisoning, the point of infection being apparently a scratch on the arm. He had slept in the flannel shirt which he wore when at work. The most interesting part of the inquiry was, however, the evidence of the foreman. This official admitted that he knew of the existence of the "Special Rules" as to wool-sorting, No. 2 of which set forth that "all alpaca, Pelitan, Cashmere, Persian, and camel-hair shall be opened over a fan with a downward draught." His answer was: "Yes, I have seen that, but it was not done in this case." In answer to the deputy coroner witness made the remarkable admission that they did not insist on the regulations being carried out—"it was left at the option of the men." He was only a servant and had to follow the instructions of his master. He knew that all Persian wool was to be disinfected as far as possible before opening but that was not done in this case and no disinfectants were used until the deceased went off work. The jury returned a verdict of "Death from anthrax," adding a rider that they were of opinion that such anthrax was caused by non-observance of the regulations prescribed by law for the prevention of wool-sorters' disease. Mr. Wilson, solicitor for Messrs. Ickringill, asked, "By whom?" but the deputy coroner replied, "We don't say." We do not suppose the matter will be allowed to rest here, but in our opinion if employers wilfully neglect to enforce the rules laid down by the Government they should be severely punished, and workmen if they refuse to obey regulations should be at once dismissed.

THE AUSTRIAN PLAGUE COMMISSION.

IN January, 1897, the Austrian Government despatched a Medical Commission to Bombay to investigate and report upon the bubonic plague. That Commission succeeded in collecting a considerable amount of valuable scientific material by establishing itself in one of the most important epidemic hospitals of Bombay, so that before the arrival of the German and Russian Commissions it had already made marked progress in the study of the disease. On Nov. 24th, 1898, the Imperial Academy of Sciences in Vienna issued an exhaustive quarto volume composed of two parts, the first giving a broad general account of the scope and work of the Commission by Dr. Albrecht and the second, or purely scientific division, having a pathetic interest in the mournful fact that its gifted author, Dr. Hermann Müller, fell a victim to the dire disease in Vienna. The Commission commenced its labours on Feb. 24th, 1897, working assiduously until the decline of the epidemic in April deprived its members of "cases" for further study. From a general survey of the report of the Commission we infer that its chief aim was to study the disease from the standpoints of (*a*) etiology, (*b*) pathology, and (*c*) in its purely clinical aspect, the bacteriological and pathological investigations being chiefly conducted by Dr. Rudolf Pöch, Dr. Anton Ghow, and Dr. Heinrich Albrecht. Dr. Müller's clinical observations on the pulse, respiration, and temperature are of the highest practical value. The Commission no doubt encountered serious difficulties dependent largely on the unique system of religious caste in India, on the ignorant suspicion of the friends and relatives of sufferers, and in no small degree on the lack of that proper support which such a noble effort deserved. We are, however, pleased to note that the assistance of medical officers of health and local municipal authorities was willingly extended to the Commission, while the services of an English trained nurse conversant with the vernacular were highly appreciated in many clinical investigations. Dr. Müller very wisely confined his attention to carefully following the development and course of a few

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individual cases as closely as he could under the circumstances in preference to a superficial examination and hasty judgment on all that passed before his eyes. There is a specially interesting chapter on the Diagnosis of Plague Pneumonia in the Initial Stage. Barisch, the attendant who had charge of the animals in the pathological laboratory of the Vienna Institute, contracted the disease and was at first thought to be suffering from "influenza," a fact which was soon clearly disproved by bacteriological examination, Dr. Müller remarking at the time "that it was a very difficult point to differentiate between an existent pneumonia and the characteristic plague pneumonia." Dr. Müller's conclusions led him to believe (*a*) that the development of the bubo was one of the earliest symptoms of the disease, preceding the profound disturbance of the nervous system; (*b*) that the disease originates in an "infection" through the skin remaining localised for a time; and (*c*) that the systemic or general infection develops from a local centre or focus of origin. He is of opinion that the disease can be divided into main varieties, one affecting the lymphatic glands and the other the lungs. We are struck by the thoroughness of the Commission's work as shown by the fact that clinical and anatomical investigations were always conducted *pari passu*. Separate sections of the report treat of the effects of the bacillus on the nervous system, on the organs of digestion, on the kidneys and bladder, and on the blood, while others touch upon the influence of age, race, sex, and occupation, the period of incubation, the manner of infection, of prophylaxis, and of the whole question of natural immunity. One important conclusion is drawn by Dr. Müller—that is, that because the infection has remained localised or has become constitutional it is impossible to accurately determine the future course and prognosis of the disease, a bacteriological examination being alone a decisive test. The volume closes with an appendix on the fatal illness of Dr. Müller written by his colleague Dr. Rudolf Pöck. In a future issue we hope to give a more extended notice of this report.

FIRES IN LUNATIC ASYLUMS.

FIRE in the wrong place is always more or less of a tragedy, but in a lunatic asylum the occurrence of a fire has special features which excite the concern of the public. An inquest was recently held on the body of Mr. William Cade, aged sixty years, who was suffocated on Dec. 15th at a private asylum, Beckenham-lane, Catford, the property of Dr. Charles Arthur Mercier, a gentleman of large experience and much authority in all questions of insanity and touching the organisation of asylums. After being assistant medical officer in various asylums Dr. Mercier became proprietor of the present establishment twelve years ago. The patient whose death was the subject of the inquest was aroused at the time of the occurrence of the fire, at 3 A.M., but it was considered that he was capable thereafter of attending to himself. At 3.51 A.M. station-officer S. Norris (called at 3.42 A.M.) in charge of the Catford fire station at Rushey-green (1½ miles and 100 yards from the asylum), arrived with engine and escape—the escape run by hand. The fire was extinguished in from 15 to 20 minutes. On the arrival of Mr. David Wall, the officer in charge of the fire station at Greenwich, just after 4 P.M., the patient was found to be missing and was searched for. With a handkerchief over his nose and mouth Mr. Wall crawled into several rooms and finally discovered Mr. Cade on the floor. Although overcome by the smoke Mr. Wall brought him out, but in spite of Dr. Mercier's efforts life was found to be extinct. On the alarm being given Dr. Mercier rang up the Telephone Exchange, but got an answer after some delay that they could not call the fire brigade but would continue to try. The telephone inspector at the Bromley Exchange essayed to call up the Volunteer Bromley Fire Brigade but could get no answer. Superintendent Dowell said that if the Bromley Exchange inspector had rung up the London Exchange they would have communicated with the headquarter staff at Southwark who would instantly have ordered on the Catford and Greenwich engines by telephone. The jury adopted this view and expressed it in the following rider: "That much valuable time might have been saved if the operator of the National Telephone Company at Bromley had been instructed to communicate direct to the London Fire Brigade." The obvious lesson of the event is to perfect the coördination of the telephone companies and the different local fire brigades and to make much clearer and simpler the instructions for getting immediate communication. There should also be on the premises of every asylum a means of dealing at once with fire and the officials should be drilled in the use of all appliances and means of rescue.

THE CASE OF BLACKMAIL.

MR. JUSTICE HAWKINS on Tuesday last sentenced the two elder brothers Chrimes, Richard and Edward, to twelve years' penal servitude and the younger brother, Leonard, to seven years' penal servitude for blackmail—the punishments being righteous retribution for vilely cruel and cowardly offences. The circumstances of the case form a terrible illustration of the evils which are done by such advertisements as we are now dealing with in a series of articles entitled "Quacks and Abortion: A Critical and Analytical Inquiry," and we note with pleasure that the jury in finding the prisoners guilty added the following rider to their verdict:—

"The jury feel that such a vile plot, even with all the ingenuity displayed in it, could only have been possible by the acceptance of such immoral advertisements by a section of the Press—religious and secular—well knowing their nature. The jury further express their earnest conviction that means should be found to suppress such advertisements and the institutions from which they emanate, as they consider them direct incentives to ignorant and evil-minded women to commit crime."

THE EDUCATION DEPARTMENT AND BILLROTH'S "CARE OF THE SICK."

WE have received from Mr. J. Bentall Endean, of Casatrio, Cockington, Devon, printed copies of letters which have passed between him and the Education Department, Whitehall, the correspondence extending from last June to November. Mr. Endean is the author of the English translation of Dr. Th. Billroth's "Care of the Sick at Home and in the Hospital." From a review of this book in the *School Board Chronicle* of May 21st he learned that "Ambulance" and "Sick Nursing" had become "special subjects" in the New Code for evening schools and, to quote his own words, he found "on comparing the syllabi of these subjects on pp. 12 and 13 of the New Code with 'The Care of the Sick' that these syllabi are based upon and are mainly drawn from J. Bentall Endean's English edition of 'The Care of the Sick,' for it is impossible to place the said syllabi side by side with the book without realising that the former are abstracted and constituted almost wholly from the latter." Mr. Endean thereupon asked Sir John Gorst, Vice-President of the Committee of Council on Education, "if compatible with the arrangements of your Department, if it would not be well that the teachers throughout the kingdom should be made aware that the principal text-book on these two 'special subjects' is 'The Care of the Sick,' by Dr. Th. Billroth"? The letters from the Education Department did not dispute the coincidences between the wording of the syllabus and that of Mr. Endean's translation, but stated that "it is the established practice of this Department not to recommend

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the use of any particular books in public elementary schools." Mr. Endean complains bitterly that the course taken by the Education Department is in fact plagiarism and infringement of his copyright without acknowledgment, and his grievance appears to be a real one but it is difficult to suggest how it can be remedied.

JENNER INSTITUTE OF PREVENTIVE MEDICINE.

THE Jenner Memorial Committee having decided some time ago to transfer any funds which it might obtain to the British Institute of Preventive Medicine the council decided to alter the name "British Institute" to that of "Jenner Institute of Preventive Medicine" and in this way to commemorate permanently the memory of Jenner and his work. The legal formalities have now been completed and the institute will in future continue its work as the "Jenner Institute of Preventive Medicine." The syllabus for 1899 which has just been issued gives a full account of the departments which have been organised at Chelsea.

AN ACTION FOR MALPRAXIS.

A CASE was recently tried by Mr. Justice Darling in the Nisi Prius Court in which John Cole Baxter, aged sixteen years, through his father sued Dr. Adam Macvie, a medical practitioner of Baildon, for £500 as damage for alleged negligence. In the summer of 1896 the plaintiff's father took a house at Baildon Moor and on August 14th of that year the plaintiff while attempting to jump a stream fell and cut his knee on a broken glass bottle. Dr. Macvie was sent for and according to the plaintiff's case was shown some broken glass which had been found adhering to the boy's clothes. The defendant looked at the wound and without washing or probing it stitched it up On the third day there was a good deal of swelling and the defendant ordered poultices. Suppuration apparently occurred and the defendant removed two pieces of glass. On Aug. 26th Dr. T. C. Denby of Bradford examined the wound and the boy was removed to the Bradford Infirmary, where sundry incisions were made to let out matter. The boy remained in the infirmary until Nov. 25th. He had since suffered from a stiff joint. Various medical witnesses, such as Mr. Herbert White of Bradford, Mr. W. Whitehead of the Manchester Royal Infirmary, and others, gave evidence that in their opinion the wound was properly and prudently treated on the whole, although Mr. Whitehead said that he should not have put in stitches without a thorough examination and cleansing. Eventually the jury returned a verdict for the defendant. We congratulate Dr. Macvie upon the result of the action, but to our minds the most interesting feature in this case is the fact that a boy whose parents are presumably in a good position—the father is described as being a partner in the firm of Jabez Cole and Co., Bradford, and he apparently could afford to take a house for the summer—is allowed to lie for three months in a charitable institution. This fact, we consider, wants an explanation.

GENERALISED PNEUMOCOCCIC INFECTION IN PNEUMONIA.

AT the meeting of the Société des Hôpitaux of Paris held on Nov. 25th M. Duplocq and M. Lejonne related a case of pneumonia remarkable for the multiplicity of the complications. The patient was a robust man, aged fifty-nine years. The course was peculiar; there were consolidation in the left axillary region and generalised bronchitis in the right lung. On the ninth day a second focus of consolidation appeared at the left base and he expectorated for the first time two thick, viscid, greyish masses containing numerous pneumococci. On the thirteenth day a third focus manifested itself by fine crepitations at the right base and there was a well-marked swelling occupying the left subclavicular region and shoulder. Next day the œdema had disappeared but there were two communicating abscesses in the neighbourhood of the shoulder; the pus contained pneumococci. Arthrotomy was performed, a tumblerful of pus was evacuated, and the joint was drained. On the sixteenth day a fourth focus of consolidation showed itself by fine crepitations and there was tubular breathing in the left supra-scapular and subscapular regions. The patient improved and the discharge of pus from the shoulder diminished. But on the twentieth day a fifth focus appeared in the right supraspinous region, and on the twenty-second a sixth in the left axillary. On the twenty-third day the pulmonary lesions were resolving, but there was solid œdema occupying Scarpa's triangle on the right side and the right thigh and leg were very œdematous but soft. On the twenty-fifth day the œdema had diminished and the inguinal lymphatic glands were enlarged and painful. On the twenty-sixth day a seventh focus appeared at the left base and on the twenty-eighth day an eighth in the left subspinous region. On the thirty-second day the condition was grave; a line made on the skin with the nail was followed by a persistent red streak. A præ-laryngeal abscess containing pneumococci appeared. The inguinal glands were still enlarged. The blood contained pneumococci. In the evening a ninth focus was found at the left base. The respiration was difficult and the patient died on the following morning. The necropsy showed the left lung adherent to the thorax and extensively consolidated. The right lung was congested and œdematous. There was meningitis and the exudation contained pneumococci. The shoulder-joint was healed. Suppurative inflammation of the right psoas muscle was found. The presence of the pneumococcus in several of the lesions was verified by the fatal effects of injecting mice.

THE SANITARY STATE OF GERMAN EAST AFRICA.

FROM a report by Surgeon-Colonel Gartner of the German colonial army, which has been published in the *Archiv für Schiffs- und Tropen-Hygiene*, we learn that Bukoba on the Victoria Nyanza is the healthiest of the seventeen German stations in East Africa, whilst the least salubrious is Ulanga. As was to be expected, malaria was extremely prevalent during the period under report, the admissions to hospital due to this cause having amounted to 3360 per 1000 of strength among the white soldiers whose actual number was 122. In many of the cases the disease assumed a pernicious form and several of them proved fatal. Among the more numerous black troops, out of every 1000 admissions 887·9 were owing to ague, but the type was invariably mild. 21 cases of bilious hæmaturic fever occurred among the Europeans, 4 ending fatally. Quinine is said to have been the only drug which did any good in this disease. Arsenic was tried but its action was not satisfactory. As a palliative in the troublesome vomiting which usually accompanies the fever the tincture of iodine in from one- to four-drop doses sometimes acted like a charm. Dysentery and diarrhœa were comparatively innocuous; 23 Europeans and 174 natives were treated in the hospitals, chiefly for the last-named complaint. 14 white soldiers were admitted on account of acute rheumatism. This affection is common in Eastern Africa and often assumes a severe form with a tendency to cardiac complication and relapse. According to Surgeon-Colonel Gartner the sanitary condition of the colony, especially with regard to food, drinking-water, and habitations, leaves much to be desired, but some attempt has been made to dry up marshy places by planting palm trees. There are two chief hospitals in German East Africa, both of them being situated on the sea coast, at

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Dar-es-Salaam and Lindi respectively. The report refers to the years 1894–95.

WORKING COLONY FOR INSANE EPILEPTICS.

THE Asylums Committee of the London County Council have decided on the formation of a working colony to accommodate 300 male insane epileptics. There are about 800 epileptic patients under treatment in the asylums under the control of the Council, and of these many are affected by a form of insanity which is remittent and during the intervals they are quite fit to undertake active employment. For such cases as these the colony will be a great boon. There are to be a medical officer and an assistant medical officer and an infirmary for the reception of patients during the periods when fits are severe or when mental alienation or excitement occurs. The colony is to be located on part of the estate of 1050 acres purchased for the erection of a new asylum at Horton, near Epsom, and the colonists are to be housed in detached buildings, each containing thirty-six inmates and three attendants. The arrangements have been planned on a liberal basis and appear to have been the result of wise consideration. We have no doubt that the colony will prove to be most helpful to the class which it is intended to receive, as the colonisation of sane epileptics has been at Chalfont and elsewhere. The work at the Chalfont colony appears to be seriously hampered for want of financial support, the committee not being able to provide the colony with a resident medical officer. It would seem to be an even wiser use of public money than that suggested by the London County Council if some were laid out on institutions similar to the one at Chalfont, where sane epileptics are taken with some hope that they may thus be saved from drifting into the class of insane epileptics.

FATAL SEWER-AIR POISONING.

ON Dec. 7th the Manchester City Coroner opened an inquest on the body of a corporation labourer who, together with a fellow workman whose body was not then but has since been recovered, was killed in one of the sewers by being "overcome by gas." The coroner said that the corporation had power to prevent anyone putting matter into the sewers which was likely to give off poisonous effluvia, that inquiries were being made as to the contents of this sewer in the City-road, and that a sample of the matter which was in the sewer where the men died was being analysed. Evidence of identification was taken and of the facts observed at the time. The foreman of the men said that he followed the two men into the sewer. There was a strong smell of gas which felt hot to the nostrils. It was stronger than coal gas and unlike it. In April last he smelt something like it in the same sewer but had not noticed it elsewhere. The two men went along the sewer, lighting their candles which burned brightly as they went. Witness called them back, saying, "It's too strong," and they answered, "All right, we're coming." He got out of the manhole and went to the next one to warn the man there. It was only after a long and dangerous search that the first body was recovered and on Dec. 7th the body of the second victim was found on the grid at the outfall of the sewage works at Davyhulme. The inquest was adjourned. These accidents being preventable ought not to occur and therefore seem the more deplorable. No doubt they will receive as they deserve the most serious attention of the corporation. Regulations might surely be made, and carried out, which would put a stop to them. The statement by the foreman implies that the smell was not familiar to him, so that it is probable the poisonous gas was derived from an unusual source, some industrial refuse or chemical residues.

ONE action of Lord Vernon whose death at the early age of forty-four years is announced from Bournemouth, has a particular interest not only for medical men but for all the country at the present moment. Lord Vernon spared no expense in his attempt to free the cattle on his farms from tuberculosis and last summer he invited a representative group of medical and scientific men to inspect the system of precautions which he had adopted at Sudbury Hall. The address delivered on that occasion to the assembled company by Professor Delépine will be found published in full in THE LANCET of Sept. 17th, 1898.

DR. H. D. ROLLESTON has been appointed physician to St. George's Hospital. Dr. Arthur Latham has been appointed assistant physician to the hospital in his place. Dr. Latham is assistant physician to the Victoria Hospital for Children, has held the offices of curator of the museum and medical registrar at St. George's Hospital, and was lately Radcliffe Travelling Fellow in the University of Oxford.

BARON FERDINAND DE ROTHSCHILD, the founder and supporter of the Evelina Hospital for Children, Southwark Bridge-road, built in memory of his wife, died suddenly on Saturday last at Waddesdon Manor. Like other members of his family the deceased Baron was a warm supporter of charities and especially of those which minister to the needs of the sick poor.

WE regret to announce the death of Dr. William Munk, Harveian Librarian of the Royal College of Physicians of London, from diabetes, at the advanced age of eighty-two years, on Tuesday last, Dec. 20.—Professor Alfredo Antunes Kanthack, Professor of Pathology in the University of Cambridge, died on Wednesday at the early age of thirty-five years. We shall publish obituary notices later of both gentlemen.

DR. ALFRED MILNE GOSSAGE has been elected Assistant Physician to the East London Hospital for Children and Dispensary for Women at Shadwell.

MR. CHAMBERLAIN has promised to preside at the dinner of the London School of Tropical Medicine to be held at the Hotel Cecil on May 10th, 1899.

BRISTOL HOSPITAL SUNDAY FUND.—The Mayor of Bristol, Mr. Herbert Ashman, presided at a meeting on Dec. 13th at the Guildhall in furtherance of this object. In moving the adoption of the report he stated that the sum received last year was only £1128 3*s.* 5*d.*, this being no doubt partly due to its being the first collection made by the Hospital Sunday Committee in places of worship, while only half the congregations joined in the combined effort. He hoped that in future the collection would be larger and more thoroughly taken up. The Rev. Urijah Thomas seconded the adoption of the report and it was carried. The Bishop of Bristol moved a resolution constituting the committee and spoke strongly in favour of the movement, personally undertaking to write to all clergymen of the Church of England who did not take part in last year's collection. Mr. F. R. Cross seconded the resolution and showed how uncertain the amount received from church and chapel collections had been in former years. The committee was then formed, the mayor being chairman, Mr. E. J. Swann honorary treasurer, and Dr. Bertram Rogers honorary secretary, with 23 other members, amongst whom were the High Sheriff, the Lord Bishop of Bristol, the Bishop of Clifton, the Dean of Bristol, Canon Cornish, the Rev. U. Thomas, the Rev. A. Thomas, the Rev. Dr. Glover, the Rev. A. Blatchford, Mr. F. J. Fry, and Mr. S. D. Wills.

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QUACKS AND ABORTION:

A CRITICAL AND ANALYTICAL INQUIRY.

III.[1]

As the great majority of the people whose advertisements we have answered state or imply in their multicoloured pamphlets and circulars that amenorrhœa is a condition common to womanhood and that it is this condition of amenorrhœa so dangerous and so far-reaching in its evil effects that their different nostrums have been prepared to combat, it will be well, before going farther, to give the results of an inquiry into the causes which led 1000 women consecutively to present themselves at the out-patient department for obstetric cases of one of the large London hospitals.

Of 1000 cases seen at this out-patient department 183 patients had amenorrhœa. Of these 156 were pregnant and 12 were young girls at puberty in whom the condition of pregnancy was out of the question, so that of the 171 who might have been pregnant 156, or 96·5 per cent., were so. Of the remaining 15 cases 1 patient, aged twenty-seven years, single, had primary amenorrhœa; 7 patients (4 married and 3 single) had definite anæmia; 1 patient, single, had had pelvic peritonitis two years before and had seen nothing since; 1 patient, married, ? had approaching menopause; 1 patient, married, had fits and had seen nothing for seven years; and 1 patient, married, had seen nothing since before marriage some years ago. This leaves 3 patients, 2 who were married and 1 who was single, in whom there was no definite cause for the amenorrhœa.

It comes to this then. Of 183 cases 156 patients were pregnant, which accounts for their state of amenorrhœa. In 24 cases there was some definite condition in the age or history of the patient to render it unlikely that she was pregnant and in all these 24 cases such turned out to be the fact, while the amenorrhœa was dependent upon some easily ascertainable cause. It was no disease, but only the symptom of a physiological or pathological state; in some cases no medicine could have affected it and in none would the administration of emmenagogues have been right. In 3 cases only was there no definite cause present to explain the amenorrhœa.

It may be concluded: (1) amenorrhœa or irregularity of periods is common about puberty and at approaching menopause; (2) in otherwise healthy married or single women amenorrhœa in the great majority of cases is undoubtedly due to pregnancy; (3) where this is not the case with very few exceptions, only 3 out of the 183 cases of amenorrhœa met with in these 1000 cases, the condition of the patient or the circumstances under which the periods fail to appear are such as to render unlikely the possibility of pregnancy being the cause. At the hospital it would seem that the sufferer from amenorrhœa is either pregnant and knows it or is not pregnant and knows that she cannot be.

The fact that cases of amenorrhœa in healthy women where there is any doubt about the presence of pregnancy are so rarely seen in hospital practice indicates that such women do not seek hospital advice. The reason for this is probably twofold: (1) they guess that they are pregnant and know that a visit to the hospital will entail an examination which in the case of an unmarried woman might result in awkward revelations; and (2) they know that if the examination proves nothing yet that a missed period will be taken as an extremely likely symptom of pregnancy, while no such treatment as they often desire—viz., medicine to bring on the periods again—will be accorded them.

Seeing that the majority of instances in which healthy married women miss a period are cases of commencing pregnancy it is obvious that such a condition cannot be and is not as a rule productive of the ills ascribed to it by the vendors of quack nostrums; while, equally as a rule, to attempt to bring on menstruation in such cases is to attempt a criminal abortion.

The occurrence of amenorrhœa in cases of anæmia or other debilitating diseases such as phthisis is beneficial to the patient by avoiding any loss of blood and is a provision of nature to assist in arresting the progress of the diseases causing the condition. In these cases amenorrhœa, far from being an ill, is in fact an advantage to the patient.

We continue now an analysis of various pills and potions received in the course of this inquiry, with extracts of correspondence that has taken place with the vendors.

C.

We select two examples from a large number of recent advertisements bearing the same address which are now before us:—

Important to Ladies.—Especially to those who require an ABSOLUTELY CERTAIN and speedy remedy; a remedy which in thousands of cases has never failed to afford COMPLETE RELIEF, generally in a few hours, as Mrs. W. writes:—

"By adopting your treatment, my anxiety and misery was over WITHIN TWENTY-FOUR HOURS, although for three months I had been daily taking pills and other things in vain. HALF THE QUANTITY YOU SENT ME PROVED EFFECTIVE."

Full particulars will be forwarded to any lady on receipt of addressed envelope. The medicine is not expensive, as one bottle at 4s. 6d. is generally amply sufficient. By post 4s. 9d. A SWORN GUARANTEE accompanies all Testimonials. WRITE AT ONCE TO Mrs. B. B. F. ALLEN, 145, STOCKWELL-ROAD, LONDON, S.W.

To Ladies.—Especially to those who require a Safe and Speedy Remedy for all Irregularities, a Remedy which in thousands of cases has afforded COMPLETE RELIEF, generally in a few hours. No lady need despair, as the most obstinate and hopeless cases have been immediately relieved.

Mrs. J. states:—"I write to let you know I consider your medicine is fully worth £20 a bottle. I ONLY TOOK THREE DOSES before all was well. It has given me every satisfaction, particularly so because for over three months I had daily taken pills and other so-called remedies in vain."

The medicine is not expensive, as one bottle at 4s. 6d. is generally sufficient. By post 4s. 9d.

IMPORTANT WARNING.—This marvellous preparation HAS THE LARGEST SALE OF ANY FEMALE MEDICINE IN THE WORLD, a success achieved by MERIT ALONE. It is pleasant to take, perfectly harmless, but CERTAIN IN ITS ACTION, and readers are CAUTIONED against worthless and injurious imitations. Conclusive proof gladly forwarded to any lady on receipt of addressed envelope gratis and post free. It will cost you nothing, and SUCCESS BEING GUARANTEED, it may save you from a life of misery and bitter disappointment.

A SWORN GUARANTEE accompanies all testimonials and medicine. Write at once to Mrs. M., 145, Stockwell-road, London, S.W.

This is the firm which drew attention to itself last spring by an action which it brought against a newspaper called *Pick-me-up*, a report of which will be found in the *Times* of March 10th, 1898, under the title of Owen *v.* Greenberg. The newspaper had changed hands and the new proprietors found themselves saddled with a contract to insert Owen's advertisements, a series of which had been paid for in advance. This they declined to do and the nostrum vendor sought to recover the money he had paid in respect of the time during which his advertisements should have appeared and also damages for their non-insertion. The defendants paid money into court, denying liability and pleading that the advertisements were of an illegal and immoral nature. Mr. Justice Darling put the question so raised to the jury thus: "It was said that the advertisements were of an illegal and immoral nature and if the contract to insert them was of that nature the money the plaintiff had paid could not be recovered back. The question was, Was it intended by the advertisements to convey that the medicine would procure miscarriage or abortion? To procure abortion or to attempt, or counsel, or assist to procure it was a criminal offence and therefore you would expect any advertisement relating to it to be in very guarded terms. If the advertisement advised the taking of something for the purpose of procuring abortion it was undoubtedly forbidden by law." The jury found upon this question that the contracts for the insertion of the advertisements were immoral and judgment was given for the defendants.

In the evidence reported as having been given at the trial we note two or three points. Firstly, it was stated that the advertisements of the plaintiff were scattered broadcast through the press and appeared in any number of respectable papers: we regret to add to this that they have continued to appear in some papers ever since and that in spite of the jury's verdict in Owen *v.* Greenberg they were more numerous at the time when we commenced this inquiry than those of any rival firm. Various names and initials are used by the vendor but the address

[1] Articles I. and II. were published in THE LANCET of Dec. 10th and 7th, 1898, respectively.

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in Stockwell-road as well as the wording of the advertisements establishes the identity. Secondly, Dr. D. H. Attfield, called on behalf of the defendants, informed the jury that he had analysed the compound sold by the plaintiff at 4*s.* 6*d.*, the alleged stronger mixture at 10*s.* 6*d.*, and the alleged strongest of all at 21*s.*, and that there was no difference between them on analysis. We may assume that Dr. Attfield's observation was perfectly accurate, for it remained unchallenged. We have ourselves analysed the stuff sold at 4*s.* 6*d.* and we append the analysis. Thirdly, we are unable to extract from the report of Owen *v.* Greenberg the plaintiff's testimony as to his trade, for he did not go into the witness-box in support of his case.

Our letter to the Irristum Company, for that seems to be the name principally used by Mr. Owen, or Allen when once his customers get into communication with him, enclosed 4*s.* 9*d.* for a bottle of mixture and postage, requesting that it might be packed so as to be safe from observation, the sender being represented as a maid-servant. In reply we received a bottle of the Irristum medicine, a large bundle of printed matter, chiefly consisting of testimonials of the usual description, and also a lengthy dissertation on the merits of Irristum containing the following passage: "*Irristum gives rise to no nausea*, its beneficial effects are *almost at once apparent* and the lady who has the confidence to employ it as an agent finds that her domestic associations and the pleasures of social life are not interfered with but distinctly enhanced."

We have referred already to the probability of women buying compounds advertised in such terms as those of the Irristum Company without further question for the purpose of procuring abortion. In our dealings with the Irristum Company they denied treating pregnancy when pressed upon the subject and recommended the writer who asked in terms for an abortifacient to "consult a medical man," which seemed to us a fairly impudent suggestion. But surely any question of "Mrs. W.'s" grateful testimonial (see the first of the two advertisements printed above) or of the similar testimonials quoted by the Irristum Company having reference to amenorrhœa and dysmenorrhœa apart from pregnancy is practically disposed of by the figures we have given as to the frequency of these conditions. The inevitable dilemma is that either Irristum medicines, in spite of the virtuous intent of their proprietor, are swallowed by pregnant women or that the testimonials are bogus.

Analysis of ALLEN'S MIXTURE (KNOWN AS "IRRISTUM").

Specific gravity, 1066.
Water, 82·67 per cent.
Chloroform, 1·66 per cent.
Organic substances, 14·94 per cent.
Mineral matters, 0·73 per cent.

As will be seen, this preparation contains an odd constituent in the shape of chloroform. The relatively high density of the fluid was due to sugar. The colouring matter was cochineal, the fluid turning a brilliant cochineal colour when ammonia was added. The liquid exhibited a marked acid reaction and was acrid to the taste. Chloroform extracted an extremely bitter yellow substance which with chemical reagents behaved exactly like extract of colocynth. The mineral matter, which is small in amount, contained an unimportant quantity of iron. A search for arsenic and mercury was followed by negative results.

D.

The advertisement in this case was as follows:—

EVERY WOMAN

Should send two stamps for our 32 page Illustrated Book, containing valuable information how all Irregularities and Obstructions may be entirely avoided or removed by simple means. Recommended by eminent Physicians as the only Safe, Sure, and Genuine Remedy, Never Fails. Thousands of Testimonials. Mr. P. BLANCHARD, Forest-road, Dalston, London.—Advt.

We wrote asking for the work advertised and received a bundle of pamphlets and leaflets, two being in book form. Of these two one was filled chiefly with testimonials lauding the medicines which we afterwards ordered; the other was an elaborately illustrated catalogue of rubber preventives and similar appliances. The book of testimonials was illustrated also with pictures of husbands and wives delighted with the results of Mr. Blanchard's remedies and the testimonials themselves were of the usual kind; one, for instance, ran as follows:—

DEAR SIR,—I had the greatest trouble in persuading my wife to try your remedy, because she had tried so many without avail when at last I induced her to *and the fourth dose* proved effective; you can imagine her joy and surprise. 7*s.* 6*d.* is cheap; it is worth 20 times that amount. —— DURHAM.

The medicine advertised consisted of "No. 1 Mixture and Pills" and "Special Mixture and Pills," termed also "P.B. Mixture and Pills," the latter stated in large capitals to "Act Like Magic." On an order form sent among other papers we find the following notice or intimation:—

The powerful and certain action of our Medicine necessitates the Warning that it should not be taken by those expecting to become Mothers, as it is sure to produce a miscarriage.
This Order is accepted on the basis that the purchaser is not *enceinte*.

We can only say with regard to this that without using any order form we wrote a letter asking for "a bottle of Mixture and Extra Strong Pills," these being the words of one of the circulars, enclosing at the same time 7*s.* 6*d.* This letter distinctly stated that the writer believed herself to be pregnant and the mixture and pills of which we now give the analysis were sent in response.

Analysis of MR. P. BLANCHARD'S MIXTURE.

The analysis of this fluid was as follows:—
Water, 98·13 per cent.
Organic matters, 1·25 per cent.
Mineral matter, 0·62 per cent.
The mineral matter consisted almost exclusively of iron.
The fluid on evaporation evolved a very marked smell of nutmegs. No satisfactory results were obtained on applying the tests for aloes and rhubarb. The specific gravity of the fluid was 1011, a result which is in accordance with the small amount of dissolved substances present. The analysis in brief indicates that the mixture is simply a feeble solution of nutmegs and iron. Arsenic or mercury could not be found.

Analysis of MR. P. BLANCHARD'S PILLS.

These pills were pink coated, the coating consisting of a talc-like substance.
Moisture, 13·00 per cent.
Organic substances, 48·28 per cent.
Mineral matter, 38·72 per cent.
The mineral matter was nearly pure oxide of iron.
Alcohol extracted a dark resinous compound possessing a bitter taste and yielding reactions characteristic of commercial Socotra aloes. The pills contained no arsenic or mercury.

E.

We took this advertisement as an example in our first article:—

Ladies, Consult Madame Wood, LADY SPECIALIST ON ALL FEMALE AILMENTS, IRREGULARITIES, AND OBSTRUCTIONS, however obstinate. Save Time, Trouble, and Expense by consulting an Experienced Specialist AT ONCE. My Remedies are the most powerful and strongest on earth, effectual after all others have failed. May be taken by the most delicate. A lady writes: "NONE HAVE EVER DONE ME ANY GOOD BUT YOURS, NOTWITHSTANDING THEIR SO-CALLED TESTIMONIALS." Madame Wood may be consulted daily, or by letter, enclosing stamped envelope. Price of Mixture 4*s.* 6*d.*, extra strong 11*s.*, secretly packed. By post 3*d.* extra. 20, GREAT AVENHAM-STREET, PRESTON, LANCASHIRE.

Our letter ordered a bottle of the extra strong mixture, enclosed 11*s.* 3*d.*, described the sender as a servant in a situation, and asked for the bottle to be secretly packed as advertised. We received a bottle from Preston and we note that the desire for secrecy extended to the sender, for the letter which accompanied it bore neither date nor signature, while the bottle also had nothing on it that would in any way identify the person responsible for its contents. It was labelled, "The mixture, a teaspoonful three times a day." The letter was as follows:—

DEAR MADAM,—Yours to hand enclosed find Mixture, take before meals. I shall be pleased to hear if the mixture effects a cure, *if not* you better send full particulars & I shall be pleased to advise you further, in most cases it is just a matter of a little perseverance, some people require more medicine than others, when you write again mention what paper you have seen it in.

A subsequent letter stating, in reply to the request for particulars, that the sender had been *enceinte* for four months was not replied to by Madame Wood and we did not press the matter. We append the analysis of her 11*s.* medicine. It bore no Revenue stamp.

Analysis of MADAME WOOD'S MIXTURE.

Specific gravity, 1015.
Water, 98·83 per cent.
Organic substances, 0·69 per cent.
Mineral matters, 0·48 per cent.

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This preparation did not appear to contain any iron, the mineral matter consisting of alkaline carbonate. The original fluid was distinctly alkaline and in appearance precisely like a boiled alkaline solution of rhubarb.

Subsequent extraction with ether gave a brilliant yellow residue responding satisfactorily to the reactions of rhubarb. Our examination indicates, therefore, that this mixture is a weak alkaline infusion of rhubarb. On testing for aloes the results gave no certain positive indications. There were no poisonous metals present.

F.

This person does not require much comment; the advertisement was a follows:—

Dean's Female Mixture. Is positively the only reliable, and strongest on earth. It will not harm the most delicate. It will cure the most obstinate cases within twelve hours. Success guaranteed in every case however long standing. THOUSANDS OF GENUINE TESTIMONIALS. Price 2s. 9d., post free 3d. extra. To be had only of C. DEAN, MEDICAL HERBALIST, 113, GRAY'S INN-ROAD, LONDON, W.C.

It will be noted that there is no phrase that can be construed as a reference to menstrual troubles excluding those arising from pregnancy. In fact there is no direct reference to anything at all. It is "a female mixture": "the strongest on earth": "success guaranteed in every case." The nature of the case and of the success guaranteed is left entirely to the reader to determine. Our letter to C. Dean asked for a bottle of the mixture at 2s. 9d. and was practically the same as that sent to Madame Wood and others. We received a bottle in reply with the following printed letter:—

C. Dean, Medical Herbalist, 113, Gray's-inn-road, Holborn, W.C.

MADAM,—Enclosed you find the Female Mixture. Take the contents of the bottle in two doses: one half at night, and the other half on the next morning. If no relief you will have to take six doses of a Stronger Mixture, of which the price is Five Shillings and Sixpence. Relief is certain. Do not lose time.

Yours truly, C. DEAN.

We did not try the stronger mixture. The analysis of that at 2s. 9d. is as follows:—

Analysis of MR. C. DEAN'S MIXTURE.

Specific gravity, 1050.
Water, 94·13 per cent.
Organic substances, 0·35 per cent.
Mineral matter, 5·52 per cent.

The mineral matters consisted entirely of sulphate of soda and of iron and we infer that the mixture consists in the main of a solution of Glauber's salt and iron. Poisonous metals could not be traced.

G.

The advertisement in this case was as follows:—

FREE! — MARRIED LADIES! — INFORMATION and ADVICE of PRICELESS VALUE. Send stamped envelope. Mention this paper.—Mrs. LAWRENCE, 2, South John-street, Liverpool.

In reply to our stamped envelope we received various advertisements and eventually wrote again enclosing money with a definite statement that the sender believed herself *enceinte* and asked for a "bottle of Special Strong Mixture at 12s. 6d. and a box of Special Corrective Pills at 2s. 9d.," for which were enclosed a postal order for 15s. and 3 stamps. The goods arrived accompanied by a memorandum or invoice which we reproduce, while we append the results of our analysis below:—

From Mrs. LAWRENCE, the Ladies' Specialist and Confidante, Inventress of Domestic and Surgical Specialities, Malthusian Appliances, &c., 2, South John Street, Liverpool, and 3, St. Elmo Rd., Egremont, Liverpool.

DEAR MADAM,—Thanking you very much for your kind order, Mrs. Lawrence now has pleasure in handing you, herewith, her WORLD FAMOUS OBSTRUCTION REMEDY, to the value of your remittance, and she trusts that it will Prove Successful as speedily in your case as it has Done Generally. Assuring you that in no event will your name be published without your permission. Mrs. L—— hopes that you will be good enough to let her know the result, at your earliest convenience, and would strongly advise you to have plenty of out-door exercise, (keeping yourself free from colds), and a Hot Foot-Bath at night, whilst taking her remedy.

Analysis of MRS. LAWRENCE'S MIXTURE.

Water and oil of peppermint, 93·59 per cent.[2]
Organic substances, 4·60 per cent.
Mineral matter, 1·81 per cent.

[2] Equals loss on evaporation.

The mineral matter consisted chiefly of iron, sulphate of soda, and some alkaline carbonate.

The specific gravity was 1030.

This proved to be a very complex mixture. It was a treacly, dirty brown fluid with a strong taste of peppermint. On distilling away the peppermint oil the residual fluid possessed a bitter taste and at the same time a flavour strongly suggestive of liquorice. Alcohol extracted a substance tasting exactly like liquorice. Ether dissolved a yellowish green substance closely resembling apiol as regards appearance and smell. The odour of myrrh in this residue was unmistakable. Feeble reactions were obtained corresponding with those yielded by Socotra aloes. The preparation is compounded of apparently a hybrid of the mistura ferri co. and the decoctum aloes co. of the Pharmacopœia. There was no evidence of mercury or arsenic.

We shall next week continue and possibly conclude our analyses of the various pills and potions for which we applied.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

THE SUPPORT OF THE PRINCE OF WALES.

A PRIVATE meeting was held at Marlborough House on Dec. 20th, under the presidency of the PRINCE of WALES, to further the objects of the National Association for the Prevention of Consumption.

At the invitation of His Royal Highness there were present: The Marquis of Salisbury, Lord Rosebery, the Earl of Derby, Lord James of Hereford, Sir Samuel Wilks (President of the Royal College of Physicians of London), Sir T. Grainger Stewart (President of the British Medical Association), Mr. T. McKinnon Wood (Chairman of the London County Council), Lord Loch, Mr. Wernher (of the firm of Messrs. Beit and Wernher), Dr. J. W. Moore (President of the Royal College of Physicians of Ireland), Dr. J. Andrew (President of the Royal College of Physicians of Edinburgh), the Chief Rabbi, Sir James Blyth, Sir Richard Thorne, Mr. Walter Long (President of the Board of Agriculture), Dr. Thomas Barlow (physician to Her Majesty's Household), the Lord Provost of Edinburgh, the Director-General of the Medical Department of the Navy, the Director-General of the Army Medical Service, Mr. Shirley Murphy (medical officer to the London County Council), Dr. Grimshaw, Dr. Clement Godson, Sir William Priestley, M.P., Dr. Howship Dickinson, Dr. Playfair, Dr. Hermann Weber, Dr. J. E. Pollock, Dr. Woods, Sir John Brunner, Dr. Sidney Coupland, Sir James Sawyer, Mr. S. Neumann, Canon Rawnsley, Mr. James Knowles, Mr. E. Hulse, Mr. T. Mark Hovell, Sir Donald Currie, Mr. Bischoffsheim, and the members of the Organising Committee as follows: Sir William Broadbent, M.D. Lond., F.R.S. (chairman), Mr. Malcolm Morris (hon. treasurer), Dr. StClair Thomson (hon. secretary), Sir George C. W. Brown, Sir James Crichton Browne, M.D. Edin., F.R.S., Sir Ernest Clarke, Professor Corfield, M.D. Oxon., Dr. F. W. Burton-Fanning, Dr. Alfred P. Hillier, Dr. Constantine Holman, Professor John McFadyean, M.B., C.M. Edin., Dr. Isambard Owen, Dr. Vivian Poore, Mr. A. W. Mason (the President of the Royal College of Veterinary Surgeons), Dr. Arthur Ransome, F.R.S., Mr. C. Rube, Professor Burdon Sanderson, M.D. Edin., F.R.S., Mr. Frederick Treves, Dr. Dawson Williams, and Dr. Theodore Williams.

The PRINCE of WALES opened the proceedings by calling on Sir WILLIAM BROADBENT, chairman of the organisation, to deliver a statement on the work of the association.

Sir WILLIAM BROADBENT said:—May it please your Royal Highness, I have the honour to lay before your Royal Highness on behalf of the Organising Committee of the National Association for the Prevention of Consumption a brief statement of their objects and methods.

We learn from the returns of the Registrar-General that nearly 60,000 deaths are every year registered as due to tuberculosis in England and Wales alone, and to this number may be added a considerable percentage of the deaths set down to acute affections of the lungs in which tubercle has played an unrecognised part. Of these over 40,000 are from consumption, 6000 from tuberculous disease of the intestines and mesenteric glands, and 6500 from tuberculous meningitis. The destructive work of tubercle does not end here; 5500

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deaths are attributed to other forms of tuberculosis, among which are diseases of the bones. Hump-back, hip-joint disease, disease of the knee, ankle, elbow, wrist, and other joints which cripple or disable so many children are the sign manual of tubercle.

This terrible waste of life with all the protracted suffering attending it and the distress, moral and material, which it involves is in great measure preventable. Already by the effects of subsoil drainage, by improved hygiene, by the higher general standard of comfort and cleanliness, by greater attention to ventilation and to the construction of dwellings, the number of deaths from consumption and other forms of tuberculosis has been reduced by more than 50 per cent. in fifty years. The single sad exception to this statement is that tabes mesenterica, the disease of the bowels in children traceable to tubercle conveyed by milk, has increased.

But while sanitary improvements have so far reduced the mortality from tuberculous diseases science has pointed out the way by which these ravages may not only be indirectly mitigated but directly prevented. It is now definitely known that consumption is a contagious disease, that it is communicated from person to person and from animals to man, and that it arises in no other way. It is not an inherited vice in the constitution which declares itself in course of time, but while some constitutions are more prone to it than others and while an unhealthy mode of life and unwholesome surroundings predispose to its attacks, every case of consumption is derived from some pre-existing case.

Phthisis with all the various forms of tuberculous disease is the work of a microbe—the tubercle bacillus discovered by Koch. This living organism is present in countless millions in the diseased lungs or intestines or bones. By its multiplication it blocks the minute blood-vessels, chokes the air vesicles, and destroys structures and by a poison or toxin which it forms it gives rise to febrile disturbance, nocturnal perspirations, and wasting. It is by transmission of these bacilli that tuberculous diseases of all kinds are spread.

The principal way in which they are conveyed from a diseased to a healthy person is by means of the expectoration which contains them in enormous numbers and which when dried is suspended in the atmosphere, especially of ill-ventilated rooms, in the form of dust and inhaled. Happily they are not present in the breath of the consumptive patient so that consumption is not contracted merely by breathing the same air or living in the same house with a sufferer.

Another way in which the bacilli are disseminated is in milk. Cows, unfortunately, are very subject to tuberculosis and sooner or later the bacilli find their way into the milk. Through milk so contaminated infants and young children become affected with tabes mesenterica, tuberculous meningitis, and diseases of the bones.

The flesh of diseased animals also may contain the bacilli.

If we could ensure the destruction of all the sputa of the sufferers from phthisis and secure a supply of milk and meat absolutely free from tubercle bacilli all the diseases due to tuberculosis which now cause one-seventh or one-eighth of the total number of deaths would cease from the land.

These facts are generally known throughout the medical profession and the precautions based upon them will be inculcated by the medical attendant. But the adoption of the nceessary measures would, as we know from abundant experience, be very slow and would require many years, and if 70,000 persons die every year from tuberculous disease, which for Great Britain and Ireland is a very moderate computation, at least 200 new persons must catch the disease every day. It is the realisation of this fact which has called into existence the National Association for the Prevention of Consumption and Other Forms of Tuberculosis. The mission of the Association is to carry into every dwelling in the land an elementary knowledge of the modes in which consumption is propagated and of the means by which its spread may be prevented and thus to strengthen the hands of medical men throughout the country who are dealing with individual cases of this disease. To this end the public attention must be captured, the public imagination must be impressed, the defensive instincts of the general public must be aroused, and we do not hesitate to express our belief that your Royal Highness will by the single gracious act of calling together and presiding over this meeting save thousands of lives.

The objects of the Association can be stated in a few words. They are (1) to educate the public as to the means of preventing the spread of consumption from those already suffering from the disease; (2) to extinguish tuberculosis in cattle; and (3) to promote the erection of sanatoria for the open-air treatment of tuberculous disease.

It is only necessary here to indicate the spirit in which the operations of the society will be conducted. While making known the contagious character of consumption it will endeavour to allay the panic which arises in some minds when it is known that consumption is catching. It does not advocate the compulsory notification of consumption but it will urge upon sanitary authorities the desirability of insisting on the disinfection of rooms in which consumptive persons have died when notification of the fact is made through the certificate of death. Its method is instruction and persuasion, not compulsion. In particular it will seek to enlist the coöperation of the sufferers themselves, and when the victim of consumption understands that by observing the precautions recommended by the association he or she is protecting family and friends from the disease he or she will be careful to carry them out. On the other hand, the friends and relatives of sufferers and the public generally will in self-defence discourage and repress the filthy and unnecessary habit of expectoration in public vehicles and places of public resort, and we may expect railway companies and others to follow the example set in America of putting up notices pointing out the danger of the practice.

So again with regard to milk. The society recognises the fact that it is impracticable to stamp out tuberculosis in cattle by the immediate slaughter of all diseased animals, but it will insist that the public has a right to a milk-supply which shall be absolutely free from tubercle bacilli and shall not scatter death among the children of all classes of the community. It will earnestly advocate the testing of herds by tuberculin and the isolation of animals found to be affected, a method which has been attended with conspicuous success in Denmark, and it will urge upon district and county councils and all rural and urban authorities the supervision of cattle-sheds and of dairy farms and of all the agencies for the distribution of milk.

Another important matter upon which it has already memorialised the London County Council is the provision of public slaughter-houses where the inspection of carcasses can be carried out before the evidences of diseases have been removed.

Until tuberculosis is eradicated from among our cattle an indispensable precaution is to boil or sterilise all milk, especially that given to children. The sterilisation of milk is an easy and simple process and it ought to be done at home. Sterilisation on a large scale at the dairy is open to abuse and it may be so carried out as to impair the nutritive qualities of the milk.

The third great object of the association is the promotion of the erection of sanatoria for the open-air treatment of consumption and tuberculous disease generally. It aims not only at prevention but cure. The isolation and cure of those suffering is, however, the very best and most efficient preventive measure, since a consumptive patient once lodged in a sanatorium ceases to be a focus from which the disease spreads.

Your Royal Highness has visited Falkenstein and can bear witness to the provision there made for the open-air treatment of phthisis and of the success which attends it. Your Royal Highness may therefore well reproach us for lagging behind Germany in a matter of such importance. America also is in advance of this country, but it is only lately that the medical profession here has been convinced that the open-air treatment of consumption could be successfully carried out in this country. We have thought it necessary to send out patients on long voyages or to the South of France or to the germ-free atmosphere of the high Alps originally recommended by Dr. Hermann Weber, one of the pioneers in the hygienic treatment of consumption, who is here as a guest of your Royal Highness to-day. Now, however, experience gained in such diverse parts of the country as Edinburgh, Norfolk, and Ireland, to say nothing of the different winter resorts on the south coast, has demonstrated that most satisfactory results can be obtained at home. The chance of recovery, formerly the privilege of the favoured few, is thus open to all classes of the community. The Association, therefore, will advocate the erection of sanatoria for every large centre of population. The Poor-law authorities will sooner or later find that it is more economical to provide sanatoria where tuberculous paupers may recover than to send them to infirmaries to die. Municipalities will consider it their duty to defend the populations over whose interests

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they watch from consumption as they now do from fever by the erection of sanatoria. And above and before all the charitable public generally and those whose sympathies are drawn towards sufferers from consumption by having lost parents, or children, or brothers, or sisters, or friends from this disease, will seize the opportunity of doing more for them than merely to smooth their passage to the tomb.

Meanwhile a beginning is to be made in London by a self-supporting sanatorium which will minister to the needs of the class which lies between the rich and the poor. The London partners of Messrs. Wernher and Beit have undertaken to erect and equip such a sanatorium at an estimated expense of £20,000, the construction and management of which will be under the guidance of the Association. As at Falkenstein any excess of income over expenditure will be devoted in the first instance to the payment of a small interest (2½ per cent.) on the capital and the balance to such purposes in connexion with the objects of the Association as may be determined by the committee.

This offer has been a great encouragement to the Organising Committee and we know that many benevolent persons are ready and waiting to come forward to supplement it by making provision for the poor.

The idea which animates the Association is that the prevention of consumption is a national duty in which the medical profession and the public can coöperate, the medical profession leading and guiding the movement. The Organising Committee have every reason to congratulate themselves on the interest which has been excited in all parts of the country. Branches are being formed in York, Norwich, Ipswich, Huddersfield, and other towns, and at York a considerable sum of money has already been raised for the erection of a sanatorium.

The impetus given to the work of the Association by the meeting here to-day under the presidency of your Royal Highness will greatly expedite the success of the Association in dealing with the gigantic task which it has undertaken.

Sir T. GRAINGER STEWART said: Your Royal Highness, I owe the honour of being asked to join this meeting to the fact that I am President of the British Medical Association and also occupy the chair of medicine in the University of Edinburgh. I speak in the name of the profession as represented by the Association and the Edinburgh School of Medicine also. I should congratulate the profession chiefly upon the fact that you, Sir, have been graciously pleased to summon this meeting. I congratulate the National Association for the Prevention of Consumption and also the profession upon the effective and luminous statement made by Sir William Broadbent in opening the discussion. I venture to say with regard to Scottish experience that there are two or three points worthy of notice. In the first place statistics show that Scotland is very much in the same position as England and Wales as described by Sir William Broadbent. I find on looking at the returns for 1896 that about 173 out of every 100,000 of the whole community died from pulmonary consumption; in Edinburgh about 170 per 100,000 died; in Glasgow the numbers are 192; and in Scotland generally 166. Thus in Scotland we are deeply interested in the question and have already had a good deal of attention directed to it. As a matter of fact evidence given before the Royal Commission shows that some of the dairy farmers in the neighbourhood of Edinburgh have made costly experiments. One who found on testing his herd of 34 milch cows that 64·4 per cent. of them were tuberculous set aside these in a separate place and did not use them for milk for supplying his customers. He replaced the animals and now he is able from an absolutely sound and safe herd to supply a milk which may be safely used without being sterilised or boiled and which is more pleasant to take and more safe for the community. He finds he gets a higher price for his product. We shall soon have many dairies absolutely safe in these respects. Another point with regard to Scottish experience which may interest your Royal Highness is that experiment with the open-air system has been fairly tested and carried out near Edinburgh. You, Sir, have visited Falkenstein—I do not pretend that the slopes on which the Victoria Hospital for Consumption stands compare with the splendid slopes of Falkenstein, but they have brought out results which have been astonishing. It is proved that in that hospital both night and day the windows can be kept widely open not only without injury but with positive advantage. I have seen patients leave my own wards in the Royal Infirmary to be treated there by the open-air treatment in a climate not famous for its clemency and these patients have improved rapidly and splendid results have been attained. Not only has this work demonstrated the success of the open-air treatment, but it has sufficed to diffuse a great deal of information.

Dr. MOORE (President of the Royal College of Physicians of Ireland) said: I wish to express my acknowledgment of the compliment which is paid to my College in asking me to address a few words to this meeting. For my facts about the prevalence of consumption in Ireland I have to thank the Registrar-General for Ireland, Dr. Grimshaw. In the twenty years ending 1890 there were registered 1,800,000 deaths and of this in round numbers 200,000 were caused by consumption of the lungs alone. If we add to that terrible list of deaths the forms of consumption which kill in other ways than through the disastrous effects upon the lungs we find that tuberculosis was responsible for 11·2 per cent. of all the deaths. It is a remarkable fact that all the so-called zymotic diseases put together have not killed as many in Ireland as this one fell scourge of the human race, tuberculosis. It must be admitted by all hospital physicians that tuberculosis is a disease which is not best treated in our general hospitals. The surroundings are not the best for the consumptives themselves; there is a pathos about a hospital ward injurious to anyone seriously ill. Further, the consumptive patients have an injurious effect upon the others. In Ireland we have made a good start at treatment in special sanatoria. There is a magnificent hospital in Belfast—the Royal Hospital. We have also built a series of hospitals—one a convalescent hospital, one for children, and the third for consumptives—but funds unfortunately only admit up to the present of opening ten beds. Through the generosity of Earl Fitzwilliam some years ago a plot of ground in the county of Wicklow extending over nineteen acres was given free of rent for the purpose of the construction of a consumption hospital. It started into existence under the loving patronage of the Marchioness of Zetland. It was opened on March 19th, 1896, for the reception of 24 consumptive patients, 12 male and 12 female. The treatment adopted is the open-air treatment; the place lies midway between the sea and the mountains and its climate has been tested by observations taken for the last year and a half. Since opening the patients treated have been 200 in number. Of 164 patients who were discharged 2 died. The remaining 162 made an average gain of half a stone in weight. Many of the early patients have been at work since they left and some appear to be perfectly well according to their friends. That last statement I have personally corroborated. There is a point on which I have not yet made up my mind and that is the question of notification. If consumption is made notifiable it will be necessary to establish some machinery properly supervised by medical officers, and I am sorry to say that from some oversight the Local Government Bill for Ireland contains no provision for the establishment of county medical officers. A magnificent machinery exists in the country for teaching the people the danger of tubercle, and we owe it to Her Majesty the Queen who, with the womanly instinct for which she is loved, eleven years ago devoted a large sum of money for the purpose of providing nurses for the sick poor in their own homes. These nurses know all about the danger of tuberculosis and as they go to the homes of the sick poor in the cities and in the country can tell the people how dangerous contaminated expectoration is and how necessary it is to test the milk.

Sir JAMES SAWYER pointed out that in the arrest of other infectious diseases which have been successfully prevented the chief motive power has not been legislation but popular knowledge.

Dr. J. ANDREW (President of the Royal College of Physicians of Edinburgh) said that he supported all that Sir Grainger Stewart had put forward.

Professor MCFADYEAN said: In every animal that has the scourge of tuberculosis there are certain parts that contain the living germs of the disease and no fact is more firmly established than that any human being who takes such parts of an animal as food runs the risk of contracting the disease unless cooking or some other process can be relied upon to kill the germs. A very few years ago a more alarming estimate than is indicated by what I have just said was widely entertained because it was held by many that in the majority of tuberculous animals the germs were found in the whole body and no tuberculous carcass was fit for food. This is not borne out by recent investigations. We know now that in the tuberculous animal there are some parts containing the tubercle, but the greater part does not contain

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germs and is not dangerous. That was the finding of both the Royal Commissions which have sat on the subject. But while recent investigation has thus shown that the danger is not so great as it was at one time supposed to be, the knowledge that we have recently acquired tends in quite the opposite direction. Speaking generally the individual animal is less dangerous, but there are far more animals dangerous to a certain degree than was suspected a few years ago. It is probably true of this country and all over the continent that not less than 20 per cent. of cattle sold for food are tuberculous. Tuberculosis, as Sir William Broadbent has remarked, is a common disease in milch cows and in a considerable proportion of milch animals affected by tuberculosis the disease attacks the udder and the milk is thus affected. There may be nothing about the milk to warn the individual who sells it, or the more unfortunate individual who drinks it, of its dangerous character. It is impossible to doubt, indeed we know as a matter of fact, that there is scarcely any legal obstacle to the selling of such milk. It is being sold every day and some human beings are being infected daily. When measures are devised for the safety of human beings the question of tuberculosis among animals must be taken into consideration. This Association may render great service by diffusing the knowledge that until tuberculosis can be eradicated from our domestic animals everyone can protect himself by thoroughly cooking meat and milk.

The Marquis of SALISBURY said: Your Royal Highness, Lords, and Gentlemen,—Sir William Broadbent has placed in my hands a resolution which he has desired me—nay, he has almost prescribed it to me—to move, and in these days of advancing democracy the only authority left is the authority of your doctor; otherwise I should have demurred to his request because I am unfit to comment upon this most important subject, the object of the present meeting, and I feel very unworthy to do so after the distinguished authorities who have given us the benefit of their opinion. I believe that it is true, as Sir William Broadbent says, that we are very much behind the world in these matters. We are behind the world in practical efforts. We are even behind the world in theories of the matter, for I believe it is quite a recent event that the contagious character of consumption has been fully acknowledged in this country. It is the public only who can effect a change and it is only by public knowledge that any real good will be done. Nothing has seemed to me more striking in the luminous statement of Sir William Broadbent or in the discussion following than the absence of all desire that the powers of the law should be brought into operation to carry out the objects of the Association. It is a snare which they should carefully avoid. They must be content with preaching the salutary doctrine which they hold and must not think of applying to the secular arm. Without alluding to any vexed questions we know that there are some difficulties which are attached to the carrying out of the decrees of medical science by the action of the law and the danger of any similar result would be very great in the present case. I see my right honourable colleague the Minister for Agriculture here and I speak, so to say, under his eye, but he will join me in saying that it would considerably prejudice the spread of sound opinion upon this subject if any attempt were made to procure or ensure sanitary conditions by any action of central or local authority. It must be taught; it cannot be enforced. I am afraid if you attempted to enforce the use of tuberculin, which has been referred to, you would find among the farmers many conscientious objectors who would object to the operation of your law. Let us be warned by past mishaps and I have no doubt that under the patronage of His Royal Highness, with the unequalled facilities which the medical profession has for spreading sound ideas on scientific matters among the population all over the country (through the machinery of nursing associations, by literature, by the action of the scientific missionaries who now spread themselves all over the country), you will be able to produce a sufficient recognition. The dangers of which science now warns us must be guarded against and in some years hence, and I have no doubt at an early period, when you have generated such a movement as this, the extinction to a very great extent of this terrible disease will come about. Great progress has already been made. There is, however, still much to be done. Whether it is done rapidly or slowly or whether it is done effectively or imperfectly will depend on the energy with which this Association labours at the work and especially on the assistance received from the medical profession. I will now propose the resolution which is as follows:—

This meeting desires to express its approval of the effort which is being made by the National Association for the Prevention of Consumption and other Forms of Tuberculosis to check the spread of the diseases due to tubercle and to promote the recovery of those suffering from consumption and tuberculous disease generally. It also commends the method adopted by the Association of instructing public opinion and stimulating public interest rather than the advocacy of measures of compulsion.

Sir SAMUEL WILKS said: I beg leave to second the resolution. The subject of tuberculosis in the form of consumption has received so much attention during the last few years with reference to its spread and its dangers that we think now we ought to receive the coöperation of the public in order to endeavour if not to suppress, at any rate to withstand, its ravages. As Lord Salisbury has just said it is only as recently as the past generation that this was looked upon as a kind of scourge hanging over the country. It is only of late years—I should think it was first due to increased means of locomotion when people could easily get out of this country, especially in winter time—that we were able to get air and sunshine for our patients, but they were only the richer people in the land. Some went to the Riviera, to the Engadine, to the Cape for the sea voyage and they came back cured. Not only is this so in my own medical experience, but in friends and gentlemen in my own profession I could count dozens of cases of men who have passed through life after being thus cured of consumption. This opinion has been strengthened from experiments made on the tubercle bacilli. It is found that if these are cultivated artificially in damp places they grow but that in sunshine they die. This is all corroborative of what I have said. I am told there is a remarkable illustration of this in the Zoological Gardens. There the idea used to be to keep up a high temperature in the houses of certain animals from the tropics; now they let these animals go out in the winter time into the fresh air and the mortality is considerably less. It might be said if all this is known that the patient could go to the doctor and he could get his prescription; but the prescription is a dear one, an expensive one. A poor clerk comes to you and you order him six months or twelve months abroad; he cannot afford it and he cannot do it. We want these sanatoria to place persons under the best conditions for what they specially require and these are sunlight and air. When I was at school I used to read about Diogenes in his tub who, when visited by Alexander the Great said, "Get out of my sunshine." I thought that was rude and ill-mannered until five years ago when after I had had influenza I went to the seaside for air and sunshine and as I sat there in front of the sea a friend came before me and I said, without thinking of Diogenes, "Get out of my sunshine," and then for the first time I saw what a great philosopher that man was. I look upon this movement, Sir, as a national object and the proof of it is in the meeting here under your auspices, because with your discrimination you would not have undertaken this unless you had considered it a national object.

H.R.H. the PRINCE of WALES said: As chairman I have to read to you the resolution so ably moved by Lord Salisbury and seconded by the President of the Royal College of Physicians; it is as follows:—

This meeting desires to express its approval of the effort which is being made by the National Association for the Prevention of Consumption and other forms of Tuberculosis to check the spread of the diseases due to tubercle and to promote the recovery of those suffering from consumption and tuberculous disease generally. It also commends the method adopted by the Association of instructing public opinion and stimulating public interest rather than the advocacy of measures of compulsion.

The resolution was carried unanimously.

The Earl of ROSEBERY, in moving a vote of thanks, said: My Lords and Gentlemen,—I have the lightest and briefest task which has fallen to any of the speakers because it is to convey your thanks to His Royal Highness for promoting this meeting and presiding over it which he has done with his characteristic urbanity and dignity. I have come here entirely as an auditor and a learner to-day and I am not competent to speak of the high subjects which have been treated in so interesting a fashion, but I express the views of all, whether they come as teachers or learners, in saying how pleased we are to see the Prince of Wales restored once more. The first act after his recovery from his illness is to be once more foremost in good works and taking part in this Association which we all hope will do so much to prevent a terrible disease.

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Mr. WALTER LONG, M.P., seconded the resolution which was cordially carried.

The PRINCE of WALES, replying to the vote of thanks, said: I beg to tender my thanks to the speakers for the very kind way in which they have moved this vote of thanks to me for occupying the chair. I assure you it has been a great privilege to preside at so interesting and so important a gathering. When my friend Sir William Broadbent asked me to take the chair I gladly assented because I felt that notwithstanding my want of knowledge of this particular subject, and possibly of medical subjects generally, and feeling that a more competent person than myself should have occupied the chair, still in doing so I take the chair to prove to you the deep interest I take in this very important subject. We have all listened to the able and clear statement which has been made by Sir William Broadbent which has proved to you all the great importance of the National Association for the Prevention of Consumption which has been organised. We have all listened with interest to the able speakers who are thoroughly masters of the subject under discussion and I am glad to think that in Scotland and Ireland their attention has been called to this subject so deeply and that good work is being done. Lord Salisbury alluded to our being backward in this country in making such efforts as might prove advantageous for stamping out this fell disease. I am inclined to think so too. I believe in Germany, Sweden, Switzerland, and America they have gone ahead of us and we should follow their good example. The three points which Sir William Broadbent alluded to were, first, educating the public to prevent the spread of consumption from those already suffering. Now it is obvious to all that this is important and the way in which much can be done is to extinguish tubercle in cattle. I agree with Lord Salisbury that to try to pass a law which would force farmers to perform operations on their cattle would possibly be unpopular; but still if people would sometimes sacrifice their cattle which are suffering from tuberculosis they would do more by good example in stamping out this complaint. I mention the matter because I have been informed that Her Majesty the Queen gave authority that thirty-six of her dairy cows at her Home Farm which on being tested by tuberculin were found to be tuberculous were to be destroyed. In regard to sanatoria, I have just alluded to how this disease should be stamped out, but when it exists the great object is to cure it. No doubt these sanatoria, one of which I visited at Falkenstein, and which impressed me greatly, are very useful. Our climate has been against our having them before. In Germany and Sweden and Switzerland the climate lends itself to this mode of life more than we find here. Though, I think, on the whole our climate is the best in the world, unfortunately we do suffer from vicissitudes of temperature and dampness which everyone knows is bad for consumption. I was much struck at Falkenstein at the sanatorium under Dr. Dettweiler which is a sanatorium that everyone would wish to follow in England. I was told that in the village at Falkenstein there was no case known of consumption the arrangements were so good, and there was no means of the villagers becoming contaminated. I do not know that there is any more for me to say. I can only repeat that not only do I take the deepest interest in this important subject, but if anything lies in my power to further this great object I shall only be too proud to do it and to give my assistance to this Association. I thank you for listening to me and for the remarks about my health the improvement in which has given me the opportunity of standing before you to-day.

Before leaving the Prince took the opportunity of thanking the London partners of Messrs. Werner, Beit, and Co. for their gift of £20,000 to the new sanatorium.

FREEMASONRY.—A meeting of the Æsculapius Lodge, No. 2410, was held at the Café Royal, Regent-street, on Dec. 14th, the Master, Bro. Surgeon-Lieutenant-Colonel H. W. Kiallmark, G.J.D., presiding. Bros. Pakes and Eaton were admitted to the third degree. Mr. Ridley Herschell and Mr. J. C. Earls were initiated into freemasonry. Bro. Dutton gave notice that at the next meeting he would propose that the Masters of the Cavendish and Sancta Maria Lodges for the time being be elected honorary members of the Æsculapius Lodge. After the business of the lodge was concluded the members dined together, some distinguished visitors being present.

THE AMERICAN ARMY MEDICAL DEPARTMENT IN THE SPANISH-AMERICAN WAR AND THE REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES ARMY.

THE investigation undertaken at the unanimous wish of the people of the United States for the purpose of inquiring into alleged mismanagement during the Spanish-American war and to endeavour to place the blame on the proper shoulders has now been proceeding for some weeks. A principal if not the chief charge brought against the authorities is that the medical attention given to wounded and sick soldiers was altogether inadequate and in many instances completely lacking; that some of the ships used for transporting invalid soldiers from Cuba were in a dirty and insanitary condition besides not being properly fitted for the purpose; and, lastly, that the health of the soldiers who remained in the country was menaced and often injured by the injudicious choice of camp sites and by the want of ordinary care in keeping these camps in a sanitary condition. The committee of investigation is still at its labours, so that until the final result of the inquiry is made public it is unfair to pass an opinion on the matter. In the meantime, however, the report of Surgeon-General Sternberg on the work of the American Medical Department during the war has been published. In this report General Sternberg freely admits that there were many defects in the organisation of the Army Medical Service, but claims that under the conditions existing at the time of the outbreak of war this inefficiency was unavoidable. Surgeon-General Sternberg says that the very small proportion of medical officers having experience of a military character impaired the efficiency of the department at the outset; that inadequate provision having been made for Hospital Corps men for the volunteer troops, in order to provide this corps with the necessary number of men recruiting officers were urged to secure suitable men and medical officers to effect the transfer of men from the line of the army; that 1700 female nurses were enrolled and employed at first at the general hospitals and later at the field division hospitals; and finally that ample supplies for six months were ordered immediately. With regard to the health of the troops Surgeon-General Sternberg says: "In my opinion the reduction of the age limit from twenty-one to eighteen years and the haste with which the volunteer regiments were organised and mustered into the service were responsible for much of the sickness which was reported in the early days of their camp life. ..... Soon after the newly raised levies were aggregated in large camps sickness began to increase progressively from causes that were so general in their operation that scarcely a regiment escaped from their harmful influence. These causes may largely be referred to ignorance on the part of officers of the principles of camp sanitation and of their duties and responsibilities as regards the welfare of the enlisted men in their commands. Medical officers, as a rule, were also without experience in the sanitation of camps and the prevention of disease among troops. The few who knew what should be done were insufficient to control the sanitary situation in the large aggregations of men hastily gathered together." Concerning the medical statistics of the war the report says: "My report presents tabulations compiled from monthly reports of sick and wounded received from May to September inclusive and representing a strength present of 167,168 men. These give full particulars of 1715 deaths, of which 640 were occasioned by typhoid fever, 97 by malarial fevers, and 393 by diarrhœa and dysentery. The death-rates for May and June, 46 and 70, were not in excess of those of the army in time of peace. In July the rate became somewhat higher than that of most well-cared-for cities, 2·15 for the month, or the equivalent of an annual rate of 25·80 per thousand living. In August it became excessive, 4·08 for the month, equal to an annual rate of 48·96 per thousand. In September the influence of the energetic measures taken in July and August to improve the health of the army becomes manifest in the falling of the death-rate to 2·45, or the equivalent of an annual rate of 29·40."

The lay papers in all parts of the United States, together

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with some of the medical journals, have criticised adversely the management by the Army Medical Department during the war. Among the medical journals the *New York Medical Record* was foremost in raising a protest against some of the methods of conducting matters medical in the Cuban campaign and in an able and temperate article in its issue of Dec. 3rd commenting on Surgeon-General Sternberg's reports continues to discuss the question and says: "While the shortcomings charged against the medical department of the army are still fresh in the minds of the nation it is becoming and proper to view the statements set forth in that spirit of justice and impartiality which seeks only the truth and the lessons which it may be capable of teaching. Although the general impression created by the calm analysis of the situation is one scarcely favourable to the present organisation of the medical corps as to its capacity or resources, there is a general conviction that the best was done for the sick and wounded that was possible under the circumstances of conflicting authority, inadequate preparation, and the culpable want of forethought of the line officers." The article ends thus: "Our experience in the late war, dearly bought as it has been in much preventable sickness, suffering, and death, has offered us many striking object lessons in army organisation which will doubtless be of great service to us in the future. There has been demonstrated a pressing need of centralised power in the consistent distribution of those responsibilities which may make the army and all its different departments a grand and perfect machine. In every branch of the service there are too much antagonism of interest and too much shifting of blame from one to the other to make any break or starting-point in the convenient and bewildering round-robin system of common protection. So long as the present plan exists no change for the better need be expected. In regard to the transportation of food and medical supplies the quartermaster's department in its supreme and wide-reaching executive capacity decides absolutely all questions of emergency as to precedence and detail. Unfortunately the medical department is generally last of all considered and is made to wait its turn at the foot of the list. Ancient experiences in this line repeated themselves in the war with Spain with such disastrous results that an official investigation was made imperative. What the real outcome of the inquiry may be cannot be conjectured, but it is hoped that the great mass of testimony taken may ultimately eventuate in some formal recommendation for the reorganisation of our army supply system whereby the dreadful mistakes so familiar to all may be effectually prevented in the future."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6281 births and 3575 deaths were registered during the week ending Dec. 17th. The annual rate of mortality in these towns, which had been 19·1 and 17 8 per 1000 in the two preceding weeks, further declined last week to 16·6. In London the rate was 16·5 per 1000, while it averaged 16·7 in the thirty-two provincial towns. The lowest death-rates in these towns were 10·9 in Derby, 11·7 in Croydon, 12 0 in Hull, and 12·4 in Burnley; the highest rates were 20·9 in Manchester, 21·5 in Swansea, 21·7 in Sunderland, and 21·9 in Nottingham. The 3575 deaths in these towns included 372 which were referred to the principal zymotic diseases, against 426 and 399 in the two preceding weeks; of these 103 resulted from diphtheria, 97 from measles, 60 from "fever" (principally enteric), 55 from whooping-cough, 33 from diarrhœa, and 24 from scarlet fever. No fatal case of any of these diseases occurred last week in Burnley; in the other towns they caused the lowest death-rates in Plymouth, Derby, and Wolverhampton, and the highest rates in Norwich, Swansea, Nottingham, and Bolton. The greatest mortality from measles occurred in Nottingham, Manchester, and Bolton; from scarlet fever in Swansea; from whooping-cough in Swansea, Cardiff, and Preston; and from "fever" in Swansea, Salford, and Sheffield. The 103 deaths from diphtheria included 40 in London, 10 in Swansea, 7 in West Ham, 7 in Liverpool, 7 in Leeds, 6 in Sheffield, and 4 in Birmingham. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Dec. 17th, was 3043, against 3162, 3142, and 3090 at the end of the three preceding weeks; 260 new cases were admitted during the week, against 234, 264, and 276 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 340 and 295 in the two preceding weeks, further declined last week to 283, and were 160 below the corrected average. The causes of 36, or 1·0 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Manchester, Bradford, Hull, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·0 per 1000 in each of the two preceding weeks, declined to 19·4 during the week ending Dec. 17th, but exceeded by 2·8 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 10·2 in Perth and 13·1 in Paisley to 21·2 in Dundee and 22·2 in Aberdeen. The 584 deaths in these towns included 16 which were referred to whooping-cough, 12 to scarlet fever, 12 to diarrhœa, 10 to "fever," 8 to measles, and 6 to diphtheria. In all, 64 deaths resulted from these principal zymotic diseases, against 83 and 71 in the two preceding weeks. These 64 deaths were equal to an annual rate of 2·1 per 1000, which was 0·4 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 21 and 16 in the two preceding weeks, were again 16 last week, of which 9 occurred in Glasgow and 3 in Dundee. The 12 deaths referred to scarlet fever exceeded by 2 the number in the preceding week, and included 5 in Glasgow, 3 in Greenock, and 2 in Edinburgh. The deaths referred to different forms of "fever," which had been 10 and 11 in the two preceding weeks, were 10 last week, of which 6 occurred in Glasgow and 3 in Aberdeen. The 8 fatal cases of measles showed a further decline from recent weekly numbers, and included 5 in Glasgow. Of the 6 deaths from diphtheria 2 were recorded in Glasgow and 2 in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 147 and 163 in the two preceding weeks, declined again to 132 last week, and were slightly below the number in the corresponding period of last year. The causes of 26, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 31·6 and 25·4 per 1000 in the two preceding weeks, further declined to 25·2 during the week ending Dec. 17th. During the past four weeks the death-rate in the city has averaged 28·3 per 1000, the rate during the same period being 17·0 in London and 22·0 in Edinburgh. The 169 deaths registered in Dublin during the week under notice were within 1 of the number in the preceding week, and included 15 which were referred to the principal zymotic diseases, against numbers declining from 17 to 8 in the three preceding weeks; of these, 6 resulted from "fever," 5 from whooping-cough, 3 from diphtheria, 1 from scarlet fever, and not one either from small-pox, measles, or diarrhœa. These 15 deaths were equal to an annual rate of 2·2 per 1000, the zymotic death-rate during the same period being 1·6 both in London and in Edinburgh. The deaths referred to different forms of "fever," which had been 2 and 4 in the two preceding weeks, further rose to 6 last week. The fatal cases of whooping-cough, which had been 3 in each of the two preceding weeks, rose to 5 last week. The 3 deaths from diphtheria exceeded the number recorded in any recent week. The 169 deaths in Dublin last week included 29 of infants under one year of age and 48 of persons aged upwards of sixty years; the deaths of infants showed a decline, while those of elderly persons exceeded the number recorded in the preceding week. Six inquest cases and 5 deaths from violence were registered; and 60, or more than a third, of the deaths occurred in public institutions. The causes of 12, or more than 7 per cent., of the deaths in the city last week were not certified.

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THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON DUDLEY retires on half pay and is succeeded at the Royal Naval Hospital, Netley, by Fleet-Surgeon Standish O'Grady.

The following appointments are notified:—Surgeons: A. H. L. Cox to the *Victory*, C. Bradley, to the *Cambridge*, B. G. Heather to the *Magnificent*, T. Austen to the *Vivid*, and S. Croneen to the *Victory*.

ROYAL ARMY MEDICAL CORPS.

Captain Rawnsley embarks for service in India shortly. Major Hart is appointed Acting Principal Medical Officer, North-Western District. Majors Forman and Birrell have embarked for duty in India. Majors Wright, Russell, Stoney, and Power, and Captain Browne are *en route* to India in the transport *Dunera*. Major James and Captains Thacker and Buist arrive home next week from India in the transport *Dilwara*.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Frederick Augustus Smyth (Bengal) retires from the service, as does also Lieutenant-Colonel Walter Conry (Bengal). Surgeon-General W. A. Catherwood, A.M.S., to be Principal Medical Officer, Bengal Command, vice Surgeon-Major-General T. Walsh, A.M.S., retired. Captain R. H. Maddox to be Personal Assistant to the Principal Medical Officer, Bengal Command, *pro tem.*, vice Major G. B. French.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain W. B. Moir, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers. Surgeon-Lieutenant David Livingston Hamilton, 4th Volunteer Battalion the Manchester Regiment, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Midlothian: Surgeon-Captain G. Mackay resigns his commission. 1st Worcestershire and Warwickshire: Arthur Charles Oldham to be Surgeon-Lieutenant. *Royal Engineers* (Volunteers): 1st Hampshire: Henry Fulton to be Surgeon-Lieutenant. *Rifle:* Galloway: The under-mentioned officer retires, with permission to retain his rank and to continue to wear the uniform of the corps on his retirement: Surgeon-Lieutenant-Colonel W. Lorraine. 1st Volunteer Battalion the Cheshire Regiment: Lieutenant Andrew Robertson Wilson resigns his commission and is appointed Surgeon-Lieutenant. 3rd Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant J. Abernethy resigns his commission. 1st Nottinghamshire (Robin Hood): Robert Henry Cordeux to be Surgeon-Lieutenant.

ABSCESS OF THE LIVER IN DUTCH INDIA.

During the biennium 1894–95 46 patients were admitted to the military hospital at Soerabaya in Java on account of hepatitis, the disease in no fewer than 25 instances being complicated with suppuration of the gland. In 2 of these 25 cases the presence of pus was not recognised until after death. In 5 the pus made its way spontaneously either through the lungs or by the bowels; 2 of these patients recovered and 3 died. 4 cases recovered after evacuation of the abscesses by simple puncture (in one of these cases injection of the sac was practised after the removal of the pus). In 5 cases the abscesses were incised without resection of ribs. One of these proved fatal. Finally, out of 9 cases in which incision was accompanied by resection there were 5 deaths. The total mortality, 11 out of 25, was consequently equal to 44 per cent., and the post-operative mortality, 6 out of 18, to 33 per cent. In the military hospital at Malang during the same period 12 cases of abscess of the liver were treated. Spontaneous evacuation occurred twice with 1 death. 1 case recovered after simple puncture and 2 after incision of gland without resection of ribs. Out of 7 cases of incision with resection 3 recovered, 2 died, and 2 were doing well at the close of 1895. The total mortality was equal to 25 per cent. and the post-operative mortality to 20 per cent. For the above notes we are indebted to the *Medical Journal of Dutch India*.[1]

VOLUNTEER AMBULANCE SCHOOL.

The prizes won by successful members of the above school were distributed by Lieutenant-General Sir George White, V.C., Quartermaster-General, on the evening of Wednesday, Dec. 14th, at St. Martin's Town Hall, Charing-cross. Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, said that the Volunteer year 1897–98 had been a most successful one for the school. The classes had been well attended and the percentage of passes was very high. Sir George White, introduced by the president, Major Andrew Maclure, said that it gave him great pleasure to find himself associated with such an institution, as it showed that volunteers had not enrolled themselves for the defence of their country without due consideration of its rougher and sterner aspects. Prompt and efficient medical aid was essential for the alleviation of that suffering which must be part of a field of battle. He could bear testimony to that alleviation. A Bohemian entertainment was given during the evening and was thoroughly enjoyed by a very large audience.

THE ROYAL ARMY MEDICAL CORPS.

We may remind our readers that an examination for 24 commissions in this corps will be held in London on Feb. 3rd next and the following days. It is well known that the Royal Army Medical Corps has for some time been below its establishment and that as a consequence the home tour has been very brief as compared with that which medical officers have to put in on foreign service. This is very naturally productive of much discontent. We should have thought that with the view of overcoming this difficulty it would have required more than 24 candidates and it is quite possible that the recognised strength of the establishment requires to be augmented to meet the increasing demands upon it. Be this as it may, it is only right to say that the Government has conceded what the medical officers of the Army asked for and there is therefore no longer any reason on that score why young medical practitioners and students should not turn their attention to the Royal Army Medical Corps.

Captain Charles Christie Fleming, R.A.M.C., employed with the Egyptian Army, has been made a Companion of the Distinguished Service Order in recognition of his services during the recent operations in the Soudan.

[1] Geneeskundig Tijdschrift voor Nederlandsch Indrl.

Correspondence.

"Audi alteram partem."

THE SOURCES OF PUERPERAL FEVER.

To the Editors of THE LANCET.

SIRS,—Permit me to offer a few observations upon the conclusions of Dr. Whitridge Williams cited in an annotation in THE LANCET of Nov. 26th: "We shall not go far wrong if we regard the vagina of a healthy woman as free from all such organisms as usually produce puerperal fever," and that "death from puerperal infection is always due to infection from without," and that it "is usually due to neglect of aseptic precautions by physician or nurse." This doctrine may entail a grave reproach upon the physician and may expose him to the charge of malpractice if not of manslaughter. Before accepting this absolute and dangerous doctrine it is well to analyse the grounds upon which it is constructed. In the first place it is fair to observe that Dr. Williams's clinical observations are limited to "40 cases of fever in the puerperium," occurring, it may be presumed, in a very limited field; secondly, that "the vaginal secretion of pregnant women does not contain the usual pyogenic cocci"; and thirdly, that as the vagina does not contain pyogenic cocci auto-infection with them is impossible." Thus Dr. Williams builds up his doctrine on the assumption that there can be no auto-infection without pyogenic cocci. This is simply begging the question. A fundamental fallacy in the pursuit of the problem of puerperal fever has been the search for one all-embracing cause. But the laws of biology are not so simple. We must be prepared to accept many facts and not hastily to reject any.

It is well at the outset to understand what is meant by the term "puerperal fever." Is it one definite constant fever? Or is it not more logical to use the term "fever in a puerpera"? This expression—I will not call it a definition—clears the ground for free unprejudiced observation and analysis. When we see a puerpera suffering fever, unbiassed by arbitrary doctrine, we study all the associated conditions.

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In a proportion of cases undoubtedly we trace the action of a poison intruding from without. But there are certainly many cases in which the intrusion of a poison from without cannot be traced, and in which the essential causes spring in the patient's system. Fevers resulting from infection from without I originally distinguished by the term "heterogenetic" and those arising from processes inherent to the subject by the term "autogenetic." These terms have come into extensive use, but I have substituted for them "exogenetic" and "endogenetic." Nor are these quite satisfactory.

It is superfluous here to dwell upon the exogenetic forms of fever. It is enough to remember that many poisons, as zymotics, septic and others, account for a large proportion of cases. But do they account for all? When a woman is delivered there sets in at once a process of disintegration of superfluous tissue which has to be got rid of by disintegration, absorption, metabolism, and excretion. So long as the excretion of waste stuff keeps pace with its disintegration, absorption, and excretion the condition is physiological. But as soon as the physiological balance is disturbed the blood, becomes loaded with effete matters. Then any adequate disturbing factor may check the physiological disposal of the effete stuff, toxæmia ensues, and fever, endogenetic, sets in. The disturbing factors are many—chill, checking excretion by lungs, liver, kidneys, or skin; violent emotion or other form of nervous shock will often start fever. Evidence of the excretory and metabolic process in puerpery is proved by lactation, the *gravis odor puerperii*, and other phenomena. This *gravis odor* may be a source of toxæmia. This is seen in lying-in hospitals. Patients who go on breathing air tainted with their excretory emanations become easy prey to any disturbing influence. We may observe analogous conditions in menstruation, the analogue of gestation and puerpery. Who has not smelt the *gravis odor* of menstruation? Here there is no wound, unless we call the casting of the superficial cells of the uterine mucous membrane a wound. Yet there is absorption of effete matter which ought to be excreted. Arrest this process suddenly and there arises a form of toxæmia and fever analogous to the endogenetic puerperal fever. In some cases of retained menstrual fluid, absorption arises. To this condition I have applied the term "menosepsis."

The peculiar alteration of the blood induced by severe nervous and muscular exertion, like that which attends parturition, is illustrated in over-driven cattle, in animals hunted to death, in soldiers killed after a long fight. In these cases post-mortem rigidity comes quickly, is of short duration, and putrefaction soon begins. A woman who has undergone a severe labour presents similar phenomena. Thus we find in protracted labour a cause of endogenetic puerperal fever. I am, Sirs, yours faithfully,

Lingwood, Liss, Dec. 18th, 1898. ROBERT BARNES.

"DIPHTHERIA ANTITOXIN IN PRIVATE PRACTICE."

To the Editors of THE LANCET.

SIRS,—I have been much interested by reading in THE LANCET of Dec. 3rd and 10th the important papers on the above subject by writers of note, but I cannot help thinking that some of the deductions arrived at in the paper written by Mr. Bousfield are somewhat fallacious. Whilst advocating the very early use of antitoxin in suspicious cases he considers it to be a "diagnostic agent" as well as a curative one. To the former (which I have written in inverted commas) I must take exception. Two brothers, A and B, were admitted to the hospital here this year with typical scarlet fever rash all over the body and ulcerated throats. The throat of A was very like diphtheria on the left side and I gave two injections of 1500 B. units on successive days. The bacteriological report of the specimen sent on the day of the boy's admission was "No Klebs-Löffler," yet this boy's throat was quite clear in five days without any other treatment. B was treated with chlorate of potash, &c., but even after eight days there was very little difference in the appearance of his throat. To further test therefore the effect of antitoxin in bad scarlet fever throats would be somewhat interesting.

Mr. Bousfield later says: "Since the membrane clears off the throat within at most forty-eight hours it seems clear that there can be no further growth of virulent diphtheria bacilli and that a week probably represented the outside time during which it is necessary to isolate the patient." Surely this is a very dangerous dogma. I grant that as a rule the membrane clears off as stated, but I have seen it remain for more than five days. Is absence of membrane a proof of absence of virulence in the patient? For we know already that diphtheria may exist without the formation of membrane. There is absolutely no doubt in my mind that a large majority of patients are infective even in the absence of membrane for a much longer period than a week.

Diphtheritic patients in this small conjoint hospital containing 8 scarlet fever and 8 diphtheria beds are not discharged so long as the bacillus exists and I find that during the past four years patients have remained under treatment for not less than six weeks at any time, although for the past eighteen months formalin has been vapourised in the diphtheria wards every other day and the throats of some of the patients have been painted with formalin solution. I have now used the antitoxin over 100 times (34 times last year) and am therefore able to contribute my mite of observation on this important subject.

I am, Sirs, yours faithfully,

FRANK ARGLES,
Medical Officer of Health and Medical Officer to the Conjoint Hospital, Wanstead.

Wanstead, N.E., Dec. 16th, 1898.

To the Editors of THE LANCET.

SIRS,—In connexion with the admirable article by Mr. Bousfield in THE LANCET of Dec. 10th my experience with antitoxin in a country practice may offer some points of interest. From April 3rd, 1895, to Feb. 6th, 1896, I notified 41 cases of diphtheria, all of which recovered. Of these, 39 were treated with antitoxin. In 2 cases tracheotomy had to be resorted to as well and in both recovery was uninterrupted and rapid. All of the cases occurred in children under sixteen years of age except 3, 1 in a man aged thirty years, 1 in a woman aged thirty years, and the other in a woman over seventy years of age. Only in 5 instances did 2 cases occur in the same house, 4 times simultaneously and once the second case appeared three weeks after the first. In the first 4 instances the patients were all girls and the boys in the family escaped; in the fifth the mother was the first case and her two-year-old son was the second. In one instance 3 cases occurred in one house, the first on August 7th, the second on Sept. 12th, and the third on Nov. 21st; all were girls. Amongst the 41 cases 30 were females. Two cases were followed by paralysis. In every case the skin was washed first with soap and water and then with a lotion of carbolic acid and the syringe and all its parts were sterilised by boiling. In a few instances a small abscess nevertheless formed at the seat of injection and a few injections were followed by urticaria, although it struck me at the time as curious that when I injected two patients with the same serum one would get urticaria and the other would not. The injections were always made into the subcutaneous tissue of the abdomen and in no case was it found necessary to administer more than one injection. The membrane had in most cases disappeared within forty-eight hours and the employment of the remedy has been eminently satisfactory. The injection consisted usually of 10 cubic centimetres of serum supplied by the British Institute of Preventive Medicine. Although situated over 200 miles from London, by sending a telegram before 3 o'clock in the afternoon I was always sure of a supply before 8 o'clock the next morning. In one case, one in which tracheotomy was resorted to on account of the fulminating rapidity of the symptoms, it was not deemed advisable to wait until the following morning and I was fortunately able to procure some serum supplied by Messrs. Burroughs, Wellcome, and Co. from a local agent. Still, in most cases I could be satisfactorily supplied from London.

There is one other point which I am desirous of mentioning, not necessarily as an example to be followed. The last of the above-mentioned 41 cases occurred on Feb. 6th, 1896. From that time no other case occurred in my practice until May 21st of the following year when a part of the supply received from the last case was used without any ill effect, neither urticaria nor abscess nor any other untoward symptom resulting, and the same may be said of the remainder of the same supply which was used for my next case on April 21st, 1898, twenty-six months after it was received. With regard to the expense of the treatment I have looked at the matter

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from many points of view and I cannot see that it is any more costly than any other form of treatment. It is certainly one which involves little trouble and anxiety and much satisfaction to both patient and medical man. To summarise, this treatment is one which may be easily and inexpensively carried out even in remote places with very satisfactory results.—I am, Sirs, yours faithfully,

JAMES A. SAMUEL, M.D. Leipzig, L.S.A.

Torpoint, Devonport, Dec. 20th, 1898.

To the Editors of THE LANCET.

SIRS,—My experience in the treatment of diphtheria with antitoxin may perhaps interest some of your readers. Mine is an entirely country practice and upon my coming here I learned that diphtheria had been prevalent for something like eighteen months with a high percentage of deaths. My first case occurred on Dec. 8th, 1897, and from that date till Oct. 23rd, 1898, I had 33 cases, varying from the mildest to some very severe ones. In every case antitoxin (supplied by Messrs. Burroughs and Wellcome) was injected at once in a full dose, repeated two days after if necessary, and in the very worst cases injected a third time. In most of the cases and in all doubtful ones a swab was taken and a bacterial examination was made to verify the diagnosis. I have had no deaths. In all but exceptional cases the patient has been convalescent—indeed, I might say well—within the week. Only one or two showed signs of paralysis, and this but slight and evanescent. Urticariæ appeared in about five cases and inflammation or other untoward symptoms in none. I invariably injected the antitoxin into the tissues of the back below the scapula. In June last seeing that the spread of the disease continued even after isolation of the patient for six weeks, the rural district council decided that every patient should be pronounced free from the Löffler bacillus after bacterial examination before being allowed out of quarantine. This showed strange results. In some instances patients were free at the end of three weeks, others not till the lapse of two months, the apparently mildest cases being often the longest to throw off the bacillus. From the institution of this procedure the disease gradually died, no other case having occurred since Oct. 23rd last. This experience leads me to the conclusion that antitoxin used at once in full doses, repeated, if necessary, a second or even a third time, is the only treatment which need be employed to bring about success; also that so long as the diphtheria bacillus is present in the discharges about the throat, as shown by the result of a bacterial examination of a swab taken therefrom, so long is the patient an infectious person and to be isolated.

I am, Sirs, yours faithfully,

W. J. NICHOLLS, M.R.C.S. Eng., L.R.C.P. Edin.,
Medical Officer and Public Vaccinator, No. 4 District, Chipping Norton Union.

Milton-under-Wychwood, Oxon., Dec. 19th, 1898.

To the Editors of THE LANCET.

SIRS,—In connexion with the above subject may I add my experience, though limited, as a general practitioner? Within the past year I have had 9 cases of diphtheria with a mortality of 1, or about 11 per cent., the fatal case being a child whom I did not see until the fourth day of illness and who was practically in a moribund condition before injection. I am in entire accord with Mr. Bousfield as to the great value of an early injection, and may mention that I also use the serum supplied by Burroughs, Wellcome, and Co., some of that I have used having been kept for over two months. The only complication I have seen following its use has been an erythematous scarlatinoid rash which appeared in one case some days after the temperature had fallen to normal and which spread from the site of injection slowly over the whole surface of the body, being unaccompanied by any constitutional disturbance or rise of temperature. Two of the cases had severe laryngeal complications, in one of which I had arranged to perform tracheotomy, but after an injection of 1500 units, the quantity I usually inject, in a few hours the dyspnœa had abated so much as to render operation unnecessary. I first saw this case on the fourth day of illness. In diphtheria affecting the larynx primarily (membranous croup) I have injected antitoxin in one case which I first saw three days after the commencement of the illness and in which there was urgent dyspnœa, with the most gratifying result. As regards the site of injection I prefer the lumbar region of the back close to the spine, as by placing the child flat on its stomach its movements are easily controlled and, unlike an injection into the abdominal parietes, there is no risk of a sudden struggle causing the needle to perforate the abdominal wall.

I am, Sirs, yours faithfully,

H. C. BEASLEY, L.R.C.P., L.R.C.S. Irel.

Ashford, Middlesex, Dec. 19th, 1898.

To the Editors of THE LANCET.

SIRS,—Some of your correspondents seem astonished that diphtheria antitoxic serum is not universally used in private practice. I think I can enlighten them a little on this point. I, like one of your correspondents, have acted as assistant medical officer to one of the Metropolitan Asylums Board hospitals and there I was so convinced of the good results obtainable by the use of serum in cases of diphtheria that when recently I gave up hospital work for private practice I determined to adopt its use. I therefore purchased at a cost of a guinea an antitoxin syringe similar to that used at the hospital. But on looking up the price of the antitoxic serum in Parke, Davis, and Co.'s price list I found that 16,000 units (at 17*s.* 6*d.* per 2000 units) would cost £6 18*s.* I may mention that at the Metropolitan Asylums Board hospital at which I worked 8000-16,000 units was no uncommon dosage for a single case during the first forty-eight hours and I have seen 24,000 units administered. Then, too, to be of the greatest benefit the antitoxic serum must be immediately obtainable and that in many places means that it must be stocked by the practitioner himself. But to stock a perishable article like the serum means an additional expense.

Perhaps, Sirs, some of your readers will kindly advise the private practitioners who work in those districts in which sanitary authorities do not provide serum and in which, as is sometimes the case, practices include patients who have only small or moderate incomes, as to the ways and means of carrying out this admirable treatment. In particular, who should pay for the serum? Apart from the question of the cost of the serum the operation itself of injection, though very simple, has undoubtedly several deterrent characteristics, which make it more difficult to apply in private than in hospital practice—(*a*) it is painful to the patient; (*b*) the struggles of the child, if such the patient be, alarm the friends and relatives; (*c*) the injection tumour, though transient, is pretty obvious to the naked eye; and (*d*) time and trouble must be spent in antiseptic precautions. The least failure in these precautions means an abscess, and an antitoxin abscess is particularly prone to give rise to sloughing of the surrounding tissues.

I am, Sirs, yours faithfully,

Bournemouth, W., Dec. 17th, 1898. H. E. G.

"VITALITY."

To the Editors of THE LANCET.

SIRS,—You as well as your readers will, I am sure, agree with me in thinking that for the discussion of this question of "Vitality" a liberal amount of your space has been assigned. As I shall ask you next year to allow me to bring before my brother practitioners some further communications with reference to the bearing of "Vitality" upon the nature of morbid changes and upon the practice of medicine, I am anxious that your readers should not be tired of my work and therefore hope that for the present you will decree the "closure." Bear with me, however, while I draw attention to the letter on "Vitality" in THE LANCET of Dec. 3rd, page 1506, the writer of which considerately provides me with a more than adequate reason for declining further discussion for the present. He has appalled me by comparing my silent, peaceful, intangible "vitality" with horrid subterranean fires and dreadful violence, the last remains of antevital phenomena persistent during millions of æons—to us inconceivable, unknowable, and unthinkable. "In the growth (!) of Mount Vesuvius and that of an oak tree," he says, "I see a great similarity." Well,—considering that my spirits have risen rather high in consequence of the favour with which my views on "vitality" have been received by your readers I may be pardoned if, finding it rather difficult to be serious, and at this festive season, I call attention to a most curious and comical "similarity" between Vesuvius and "vitality" which are undoubtedly

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alike—in the number of their letters and in the number of their syllables, and do they not both begin with a V?

In conclusion let me propose that with due consideration and respect we consign to unfathomable volcanic depths our poor old "cell" with its walls and its non-living "contents," its supposed mechanical contrivances, its physical properties, and its dead and dying protoplasm, and let us look forward in hopeful confidence to the coming century and the gradual rise of living bioplasm, that lives and moves and forms and dies, and to the time not far off when the human mind shall be freed from its artificial fetters long imposed; and in accord with reason, shall demand its vital supremacy and acknowledge its transcendant position in the life world, which in times of comparative darkness as regards *natural knowledge* was accorded to it by tradition, contemplation, and thought—a position which by the advance of new knowledge and research will become for ever certain and secure. Let the human mind accept its great responsibilities and no longer bow to the reckless efforts to intimidate it and perplex its judgment with wordy sophisms forged to force it to believe that man is but one of the innumerable forms derived from the overwhelming vastness of lifeless matter, of which he sees around him and can study and know but an infinitesimal portion—man said to be one with the mechanisms he designs and makes—man asserted to be but one of the infinite powerless helpless outcomes of the material universe and passive immutable blind law!

I am, Sirs, yours faithfully,

Dec. 3rd, 1898. LIONEL S. BEALE.

*** This correspondence must now cease.—ED. L.

"A CASE OF DEATH FROM DIABETES MELLITUS IN WHICH THAT DISEASE GAVE NO PREMONITORY SYMPTOMS."

To the Editors of THE LANCET.

SIRS,—The following case, bearing a close resemblance to the one recorded by Dr. T. Wilson Parry in THE LANCET of Nov. 26th, 1898, came recently under my notice. The patient, a delicate-looking boy, aged eight years, was admitted to the Nottingham City Isolation Hospital on Sept. 3rd, 1898, suffering from a mild attack of scarlet fever. On Oct. 5th the patient who up to that time had progressed very favourably complained of headache and nausea. His urine on examination showed a specific gravity of 1025 and a faint trace of albumin. During the next two days the patient expressed himself as feeling quite well, though the slight albuminuria still remained. At 2 A.M. on Oct. 8th the patient woke suddenly from a sound sleep and commenced to scream with acute abdominal pain. As he was very constipated olive oil and simple enemata were given and a small, hard, dry motion was passed. The patient seemed much exhausted after this action of the bowels and aromatic spirit of ammonia was given as a restorative. Shortly afterwards the pain in the abdomen was relieved and the patient went quietly to sleep. At 7.30 A.M. he woke and passed a large motion of the same character as before. This was immediately followed by a sudden general collapse. At 8 A.M. the patient's condition was as follows: he was lying on his back semi-conscious; he could be roused when spoken to sharply but his answers were unintelligible; his face was pinched and drawn and there was much cyanosis of his lips and ears; his eyes were wide open, the pupils were dilated equally and reacted very slightly to light; his pulse could scarcely be felt at the wrist and his extremities were very cold; his heart sounds were weak—140 per minute; there were no murmurs; his respirations were slow, deep, and sighing, but nothing abnormal could be detected by examination of the chest. Examination of the urine gave the following result: the colour was pale, reaction was acid, the specific gravity was 1040, with a trace of albumin and a very large quantity of sugar. The coma gradually deepened and the patient died at 1 P.M. on Oct. 9th, thirty-five hours after the onset of the first symptom.

The chief interest in this case, as in the one recorded by Dr. Parry, lies in the sudden onset of fatal symptoms. The boy's parents stated that previously to the attack of scarlet fever he had always been a very healthy child and that he had certainly not had any of the usual symptoms of diabetes. For five weeks immediately preceding his death the patient was under close observation in this hospital and I am convinced that during this period and up to Oct. 8th his symptoms differed in no way from those of an ordinary healthy child convalescing from a mild attack of scarlet fever. The patient's urine had never to my knowledge been tested for sugar previously to the morning of Oct. 8th; the specific gravity had, however, been taken on several occasions and had never exceeded 1025.

I am, Sirs, yours faithfully,

T. O'NEILL ROE, M.B. Lond.,

Resident Medical Officer, Nottingham City Isolation Hospital.

THE GENERAL MEDICAL COUNCIL AND PRELIMINARY EXAMINATIONS.

To the Editors of THE LANCET.

SIRS,—I am instructed to send you the following table which was drawn up in this office from the returns supplied to the Medical Council by the various examining boards, including those for the Navy, Army, and Indian Medical Services, and submitted to the Education Committee when preparing the report quoted in Mr. Eve's letter to your journal of Dec. 17th. By an oversight in drafting the returns were described in the first lines of the paragraph quoted as if they came from the examining boards for the medical services only. These lines should read as follows: "During the years 1892–1898 returns have been made to the Council on behalf of the examining boards, including those for the Navy, Army, and Indian Medical Services, regarding those candidates who showed deficiency in general education." The necessary correction will be made in the report before it is issued to the public.

It will be observed that the summary of the statistics given in the remainder of the paragraph, and the conclusions drawn therefrom in the following paragraph of the report are in accordance with the figures in the table submitted to the Education Committee.

I am, Sirs, yours faithfully,

H. E. ALLEN,

Dec. 21st, 1898. Registrar of the General Medical Council.

Table showing the Numbers of Candidates reported as having been Deficient in General Education with the Preliminary Examinations passed by them during the Years 1892–1898.

—	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Total.
Royal University of Ireland... ...	1	—	1	—	—	—	—	2
College of Preceptors	1	9	2	—	—	1	1	14
Royal College of Surgeons in Ireland	2	4	—	—	—	—	—	6
University of Dublin	—	2	—	—	—	—	1	3
University of London	—	2	—	—	—	—	—	2
*Apothecaries' Society of London	—	7	2	—	—	—	1	10
Intermediate Education Board of Ireland (junior grade)	—	2	—	—	—	—	—	2
Educational Institute of Scotland	—	1	—	—	—	—	—	—
University of Aberdeen	—	—	1	—	—	—	1	2
*College of Physicians and Surgeons of Manitoba...	—	—	1	—	—	—	—	1
*Queen's University (Ireland) ...	—	—	1	—	—	—	—	1
University of Edinburgh	—	—	1	—	—	—	—	1
*Faculty of Physicians and Surgeons, Glasgow	—	—	—	—	1	—	—	1
University of Glasgow	—	—	—	—	1	—	—	1
Royal College of Physicians and Surgeons in Ireland	—	—	—	—	—	—	1	1
Totals	4	27	9	—	2	1	5	48

* Examinations not now on the Council's list.

The original letter from the War Office calling attention to deficiencies in preliminary education appears in the Executive Committee's minutes for February, 1891. In 1893 seven persons were reported by the India Office (particulars not given). Also in 1893 one candidate, whose name could not be traced in the Students' Register, was reported by the

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Conjoint Board of the Colleges of Physicians and Surgeons of Ireland. In 1896 one Army candidate, name not given, was reported for bad spelling. In 1897 one Army candidate was reported for bad spelling.

INFANTILE INSUSCEPTIBILITY TO VACCINATION.

To the Editors of THE LANCET.

SIRS,—It may be assumed to be generally accepted that there are several different causes which lead to the declaration that an infant is "insusceptible" to vaccination; well-known statistics such as those of Dr. Cory seem to show that vaccination performed thrice unsuccessfully by no means implies an actual insusceptibility to vaccinia and no doubt in a large majority of cases returned as "insusceptible" the vaccinator has been at fault either by scratching too minute an area of skin or by using inactive lymph, or, as has often been found, the mothers have prevented the success of the operation by purposely washing or otherwise interfering with the "places" immediately the vaccination has been completed. It will probably be agreed, however, that if such causes of failure are set aside there is a small residuum of cases truly insusceptible in the sense that vaccination of infants properly performed with efficient lymph on three occasions with intervals of a few weeks or months between them has failed altogether; and most vaccinators would recognise a degree of partial insusceptibility where out of several insertions of efficient vaccine over a considerable area made on each of two or more occasions at most a single small vesicle has resulted.

The purpose of my letter is to inquire of those who have had large experience of vaccination whether any information can be furnished of the relation, if any, between such truly insusceptible or partially insusceptible infants and the condition as to vaccination or variolation of the parents—particularly of the mothers. In the case of an infant born to a mother actually suffering from small-pox there are recorded instances in which the infant, vaccinated on several occasions with efficient lymph and remaining exposed to variola, has developed neither vaccinia nor variola. This appears to be the extreme case of true insusceptibility dependent on the maternal condition. Are there known comparable instances in which an infant has been born to a mother actually suffering from vaccinia and has proved insusceptible to vaccinations properly performed with efficient lymph? And, going further back, what has been the condition as to insusceptibility or partial insusceptibility of infants born to mothers who have suffered from variola or vaccinia before but not long antecedent to parturition? And, again, how long after birth does this insusceptibility last?

Beyond two cases recently under my observation of infants whose mothers had been successfully revaccinated shortly before commencement of pregnancy and who, after several vaccinations with lymph perfectly efficient and active when used in other cases both before and after these failures, presented in one case no reaction and in the other a single small vesicle on the second time of vaccinating, I am unable to contribute any facts upon the subject. But the matter has considerable interest and in Gloucester, Middlesbrough, and other places where no doubt there has lately been a considerable number of mothers vaccinated during pregnancy or having small-pox during or immediately antecedent to pregnancy there may have been several opportunities of observing what, if any, has been the degree of insusceptibility of their infants to vaccination.

I am, Sirs, your faithfully,

Chiswick-lane, W., Dec. 9th, 1898. G. P. SHUTER.

"THE 'OPEN-AIR' TREATMENT OF TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—When my letter on the "open-air" treatment of tuberculosis was inserted in your issue of Nov. 26th, that letter was written in London. This is dated from Arosa, at a height of over 6000 ft. in Switzerland. My letter has called forth a few remarks, one or two of which I should like to notice. I think Dr. Lionel Beale exactly hits it off when he says that life to be spent "in the contemplated sheds in many parts of England in such weather as we have lately enjoyed, would not be happy," and he might have added anything but beneficial. Then "M.O.H." proposes to erect at a cost of some £200 a heated greenhouse or glasshouse. One point seems to be entirely omitted and that is, as I before tried to emphasise, the essentials of these Alpine resorts—viz., intense *dryness* of the air, absence of wind, an intense *cold* dryness, brilliant hot sunshine, and lastly, the automatic expansion constantly going on of the lung under the atmospheric conditions such as cause the barometer to stand at from 24 in. to 23 in., and I still maintain that none of these conditions are in any way present or can be produced in England at any time of the year. Either the necessity for treatment under these conditions is a complete error or the method of building sanatoria in England is a mistake. Certainly the methods or theories in the treatment in England or in the high Alps in no way resemble each other. The conditions are, and must be, entirely different. I write as regards the *cure*—the permanent cure in many cases—of pulmonary tuberculosis, and I do really believe that the establishment in England of such sanatoria, though leading to possible improvement at the time owing to the greatly improved hygienic conditions and surroundings, will never in the same or even in more than a very minor degree lead to the arrest and cure of pulmonary tuberculosis.

I would add that the suggested cost of the glass erection suggested by "M.O.H." would more than pay for two seasons in the high Alps and he seems also to miss one of the chief points, and that is that the air in his "house" would be of necessity breathed and rebreathed. It is like applying a dirty dressing to a wound and it is only by being in the absolutely open air—not in rooms with even the windows open—that the same air is never breathed twice over The healthy lung may not actually suffer from inhaling the air over more than once—though it can certainly do it no good—but to the diseased lung the air breathed should be absolutely pure and this can only be obtained out of doors and not inside any building. I would finish by adding that Dr. Lionel Beale's description of the weather—four days of damp fog and wet and wind—more than fully confirms what I say about the impracticability of really carrying out the true "open-air" treatment of tuberculosis in England. I think I may say that unless it has been seen in its entirety as carried out here and in other high health resorts it is impossible to appreciate one-tenth of its benefits or the advantages to be derived from it or the actual methods employed. I am, Sirs, yours faithfully,

Arosa, Dec. 14th, 1898. A. G. P. GIPPS.

"COPYRIGHT IN PRESCRIPTIONS."

To the Editors of THE LANCET.

SIRS,—You were good enough to publish a letter f om me on the above subject some time ago[1] in which I advocated a scheme which would limit the use of prescriptions to the purposes for which they were intended, by granting copyright in them to their authors. By this means it would be easy to prevent a prescription written for a particular person at a particular time and in particular circumstances from abuse by being made up over and over again for an indefinite time and used at times and in manners and perhaps even by other persons which were never contemplated by the physician who was the author of the prescription. It is so clear to my mind that the author of a prescription should have control to such an extent of the way that it is applied that I feel sure that such an arrangement as I suggest must be brought about sooner or later, both as a matter of bare justice to medical men and also as conducive to the public welfare. A case that strongly enforces the desirability of such a scheme being carried out has lately come to my knowledge and is as follows:—

An inquest was held on Dec. 14th by Mr. Troutbeck, the coroner for Westminster, on the body of a lady, aged about fifty years. The jury returned a verdict of "Accidental death from an overdose of chloral hydrate." The following facts were given in evidence. The deceased had bought on Dec. 9th a 12 oz. bottle of a solution (syrup?) of chloral, containing 80 grains to the ounce, at one of the so-called coöperative stores. This bottle was obtained by means of a prescription that had been written for the deceased's husband who had died five years previously. His widow (the subject of the present inquest) had had it made up frequently

[1] THE LANCET, July 16th, 1898.

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since. The manager of the drug department of the said stores stated that it was a common thing to make up prescriptions of long standing and that he had even made up a prescription as ancient as twenty-seven years! How often might not the Pharmacopœia have been altered in this time?

I think that the above example bears out what I formerly said and speaks strongly in favour of my views, and I would ask for opinions as to the best course to pursue. Would it not be the simplest to do as I suggest and bring the subject before the Copyright Commission (which I understand is to resume its sittings), so that the requisite provision may be embodied in the next Copyright Act?

I am, Sirs, your faithfully,

F. LUCAS BENHAM, M.D., M.R.C.P. Lond.

Elizabeth-street, S.W., Dec. 17th, 1898.

"REGINA v. WALLACE."

To the Editors of THE LANCET.

SIRS,—I thank you for the able leading article in THE LANCET of Dec. 17th on my case and also for the expressions of sympathy therein. There are one or two points in the case of interest to the profession generally apart from the fact that any medical man is liable to be charged similarly.

When I saw the girl first she was menstruating. She had headache, sickness, pains in the back, and a history of irregular menstruation. I also learned that she had worn a Hodge's pessary for a displacement. She menstruated again in March which fact was denied by the Crown though entered in my day-book along with the mixture she got for the pain. It was also denied that she had been irregular, though Dr. Daly of Eastbourne stated that he was told the same thing, only when he inserted the Hodge, having previously examined her, he could not say whether she had a hymen or not as he did not look for one. She missed April, having gone to Brighton and Reigate at her usual time of menstruating. When she came home on April 30th I saw her and prescribed iron. Off and on till May 13th she had sickness, pains in the back, and headache, all of which symptoms she had when she was menstruating in February. On May 13th she was very ill, all her symptoms were more pronounced, and she fainted; the headache was intense. This was the time she ought to have come on. I ordered hot fomentations round the pelvis. She was better in the evening. I reinserted the ring pessary on May 18th. On May 20th and 21st she had a "show." On May 25th I saw her. She had been delirious for two nights, had a temperature of 101·5°, a rapid pulse, and a tongue in keeping with these phenomena. That was the condition previously to the use of the sound as a repositor and a mechanical stimulant. The enlargement of the womb was very slight and it was fairly moveable and seemed to be of normal depth when I used the sound.

Because the girl had a miscarriage and I, like an honest fool, told the mother that the use of the sound had no doubt caused the miscarriage, I was arrested on a sworn statement, which was afterwards said to be false by the woman who swore it and denied also by the girl herself, who was alleged to have said I assaulted her when she was in a state of semi-collapse consequent on the pain caused by the removal of a 2 in. rubber pessary. Yet this was quite sufficient for the Crown to bolster up a case against me and with the help of a detective inspector who *swore* that he had examined my books and that there were no entries after March 12th, and yet on my visiting book which was on me when arrested every visit down to May 31st was in it and not a date was disputed when they were produced in court. I say with all this I was kept in Holloway Gaol eight weeks and finally allowed out on bail of three sureties of £500 *each* and myself in £1000, and after a lapse of six months tried and acquitted before Mr. Justice Hawkins (who when he had summed up left the Crown not a leg to stand on.

I am, Sirs, yours faithfully,

Beckenham, Kent, Dec. 19th, 1898. DAVID WALLACE.

CLEANSING THE LESSER PERITONEAL CAVITY.

To the Editors of THE LANCET.

SIRS,—In a clinical note in THE LANCET of Dec. 17th, 1898, under the heading of "Perforated Gastric Ulcer" Mr. Verrall has somewhat confused statements of mine contained in a paper which I read before the Brighton and Sussex Medico-Chirurgical Society last Nov. 3rd and since forwarded for publication. I gave prominence to the cleansing of the lesser peritoneal cavity and advised that the great omentum should always be opened in operation for perforated gastric ulcer. 1. To ascertain the condition of the posterior wall of the stomach. 2. To flush by introducing the nozzle of the irrigator the lesser cavity of the peritoneum which was sometimes the site of abscess in perforated ulcer even of the anterior wall, produced either (*a*) by the passage of gastric contents from the greater cavity to the lesser at the time of perforation or (*b*) by the gastric contents forced through the foramen of Winslow by the irrigating fluid at the time of operation. As I nevertheless advocated irrigation in preference to sponging I urged that the lesser cavity should be flushed not less thoroughly than the greater.

I directed the attention of members present to this suggestion, stating at the time that so far as I was aware it was a new one and that the condition of the lesser cavity had hitherto been neglected. Mr. Verrall remarked at the meeting that this was a new point and said that he thought it strange that it had been hitherto overlooked.

Although I find my recollection confirmed by that of others present at the meeting, proof of which I have enclosed privately, I should not have troubled you with this had I not felt that the good faith of the statement contained in my paper seems to be impugned by my colleague in his communication to THE LANCET last week.

I am, Sirs, yours faithfully,

Brighton, Dec. 17th. WILLOUGHBY FURNER.

*** We hope to publish Mr. Furner's paper next week.—ED. L.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

To the Editors of THE LANCET.

SIRS,—Will you oblige me by inserting the enclosed resolution which was passed on the occasion of the final annual general meeting of the London Post-Graduate Course?

That this meeting, having learnt with pleasure that another scheme for post-graduate work has been organised which will have the advantage of a central college and that most of those who have taken an interest in the London Post-Graduate Course are now concerned in promoting the new one, thinks it desirable that the London Post-Graduate Course should now terminate its labours.

Thus, after nine years of useful work this organisation gives way to the Medical Graduates' College and Polyclinic, which it is hoped will be largely instrumental in making London the greatest centre in the Empire for post-graduate study.—I am, Sirs, yours faithfully,

FLETCHER LITTLE, M.B. CANTAB.,
Hon. Sec. Medical Graduates' College and Polyclinic.

Chenies-street, W.C., Dec. 20th, 1898.

THE SEAMEN'S HOSPITAL SOCIETY AND ITS VISITING STAFF.

To the Editors of THE LANCET.

SIRS,—The "honourable apology" of the committee of the Seamen's Hospital Society is obviously insufficient and is followed by a confused attempt at explanation and extenuation which makes it practically no apology at all. Such as it is it has not reached the visiting staff in any shape or form except as a publication in the *British Medical Journal*, and it has been published in that paper only.

The committee state in the *British Medical Journal* that they do not contemplate the transfer of all tropical cases to the Branch Hospital. At least four times previously they have refused this information to the visiting staff of the *Dreadnought*. There are other matters at issue between the committee and us than the premature publication of Sir Henry Burdett's letter and the unauthorised statements contained therein. As some of the visiting staff of the *Dreadnought* were intended to be teachers in the proposed school it was obviously improper and open to misconstruction for the committee to be in consultation with the physician of the Branch Hospital without the knowledge of his assumed future fellow medical teachers of the *Dreadnought*, both of them much senior to him in the

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service of the society. Even the statement of the committee that they have been in full and constant consultation with the visiting staff of the Branch Hospital cannot be allowed to pass.

The ophthalmic surgeon, who probably would have told us of what was going on, was like ourselves excluded from all information. His name was lately published in the list of the advisory committee without his consent, and it has now by his request been removed from it.

The committee quote an extract from Mr. Chamberlain's correspondence with them. It would be more satisfactory to have it *in extenso*. Are we to understand that the offer of public money came from the Colonial Office solely to increase the accommodation of the hospital to which the medical adviser to the Colonial Office is attached, that the committee deliberately kept their visiting officers of the *Dreadnought* in ignorance of their scheme until it had been decided to accept this offer, and to become responsible for the expenditure of this public money? If so, was this done with only one possible teacher of tropical medicine then at their disposal—the medical adviser to the Colonial Office himself?

The committee in their memorandum have referred to the assumption by this gentleman of the title of physician to the Seamen's Hospital, Greenwich (235 beds), when he was physician to the Branch Seamen's Hospital, Victoria and Albert Docks (18 beds), and say that we objected to his being so described. Dr. Manson really so described himself in Kelly's "London Medical Directory," 1895, Churchill's "Medical Directory," 1896, in the list of contributors to Davidson's "Hygiene and Diseases of Warm Climates," and in the *British Medical Journal*.

There is abundant evidence in the minute-book of the Seamen's Hospital Society and elsewhere to show that he was elected a physician to the Branch Seamen's Hospital at the Victoria and Albert Docks on the same day that Mr. Gunn was elected ophthalmic surgeon to the Seamen's Hospital Society. To this mistaken action of Dr. Manson's we took exception and for it he apologised. The matter has not hitherto in this controversy been publicly mentioned by us, although it might have ultimately become necessary, as we understand that this was the reason the committee deliberately refused to let us know of the proposed school.

Because the physician to the Branch Seamen's Hospital, Victoria and Albert Docks, was asked in 1896 why he described himself as physician to the Seamen's Hospital, Greenwich, the visiting staff of the latter are to have no voice in matters closely concerning them in 1898. Such has been the judgment of a committee that Sir William Broadbent has written "is unworthy of confidence." Resenting this criticism, they say they do not gather that the visiting staff have viewed their invitation as an insult or would join in Sir William Broadbent's protest. The visiting staff most cordially join in this protest against the treatment they have received and against the omission of parts of Sir Henry Burdett's letter. They regard the latter proceeding as unfair and misleading.

As the explanatory memoranda of the committee were not sent to any except a carefully selected *clientèle* from which we were excluded, it more than ever behoved the committee to omit nothing in the letter bearing on the present attitude of the visiting staff of the *Dreadnought*.

We are, Sirs, yours faithfully,

JOHN CURNOW, M.D., F.R.C.P.
JOHN ANDERSON, M.D., F.R.C.P.
G. R. TURNER, F.R.C.S.

Dec. 20th, 1898.

ACTION BY THE PHARMACEUTICAL SOCIETY.—At the Stonehouse County Court on Dec. 12th the Pharmaceutical Society brought an action to recover from Louis Fowler of Devonport a penalty of £5 for each of three infringements of the Pharmacy Act of 1868—viz., keeping "open shop" for retailing poisons and with using the designation of "chemist." The defendant admitted that he was not a pharmaceutical chemist although he had a qualified pharmaceutical chemist for his partner. Evidence showed that the defendant had used a label with an assumed name ("Livesay") and "dispensing chemist" written upon it and had also supplied two persons with oxalic acid and chlorodyne respectively. Judgment was given for the plaintiffs and the defendant was ordered to pay two penalties of £5 each for keeping "open shop," but the court did not think that he had rendered himself liable to a penalty for exhibiting the designation of "chemist."

THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

SECOND YEAR.

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 1668.)

To cope with the recrudescence of typhoid fever measures have been adopted which were not in force last year. As soon as a case is notified an inspector visits the house and fills up a form stating the condition of the drains, &c. If the house has a privy the inspector dissolves a tablet of corrosive sublimate in a pail of water and pours the water into the privy. He then leaves a pail, the ordinary metallic slop-pail with lid, for the use of the patient. At the bottom of the pail there is some sawdust mixed with carbolic acid. Instructions are given that all excreta from the patient must be kept in this pail and not thrown into the closet or privy. The pail is taken away every day and a clean one left in its stead. Some two miles from the centre of the town there is a vast expanse of vacant marshy ground redeemed from the sea where the sewer outfall is situated close to the pumping-station for raising the sewage. Above the main sewer is a road which stands some 15 ft. higher than the surrounding soil and pools of water. These pools are often 6 ft. deep and into one of them the typhoid dejections are thrown and the pails are then washed. There is no dwelling within a distance of about a mile. The pool will be filled up with earth or road sweepings, and it is solemnly declared that no buildings will ever be erected on this spot; but who can thus foretell the future? Nobody can defend this method of disposing of the typhoid dejections, but it is urged that it is only a temporary expedient pending the construction of a destructor. It is difficult to say why these dejections are not burnt even though there be no destroyer. The sawdust is inflammable; a little naphtha would render it still more inflammable, and it would not be necessary to add much more fuel to make a bonfire which would ensure perfect destruction and purification.

The patients may go to the hospital connected with the workhouse in the Lisburn-road and there are also a few beds for paying patients at the Royal Hospital. It is scandalous that so large and wealthy a town as Belfast should not have proper isolation and fever hospitals. The practical result is that the vast majority of the patients are nursed at home, though in most cases their homes are too small and crowded for such a purpose. The rule is that an officer shall call every two days and leave disinfectants wherever there is a case of typhoid fever. When the patient recovers or dies or is removed to the hospital the house is disinfected.

As a consequence of these measures it might be anticipated that at least those houses where a case of typhoid fever had actually occurred would be put in good order. If the sanitary authorities cannot proceed at once against all the owners of bad property they might in any case enforce the necessary alterations in the houses where cases of contagious fever had occurred. Yet—incredible as it may seem—this has not been done. The last time I was in Belfast I visited some of the worst quarters and houses of the town and described them in THE LANCET. On the present occasion I have visited some of the newest and what are supposed to be the better streets and also some of the houses where there had been cases of typhoid fever and where as a consequence it was to be presumed everything would have been put in order. The result of this investigation was as surprising as it was disappointing. My first visit was to a house in ——street. Here a patient suffering from typhoid fever had been removed to the hospital and apparently the house had been disinfected. It was provided with a water-closet situated in a small back-yard. On lifting the closet seat I saw that there were rat-holes close by the syphon which stood under the pan. On pulling the string to flush the closet I found that the water came out and splashed in the direction of the rat-holes. There was a distinct smell of sewage. The patient was a young woman who had slept in a back room close to this disjointed and leaking closet and the inhabitants of the house complained of the bad smell which came from this place. The yard is carefully paved but it is

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uneven so that the water does not all flow to the gully leading to the drain. This house, I was informed, stands on made-up ground, formerly a hollow which had been filled up with all manner of filth. The sanitary inspectors could not alter the nature of the subsoil but they might have sought to prevent the ground becoming still more foul by the leakage from a broken or disjointed closet. Close by there is a small shop where bread, cakes, biscuits, bacon, and other articles of food are sold. The owner of this shop had two daughters who had acquired considerable popularity and were much esteemed in the neighbourhood. Both these young women were struck down by the fever and both of them died, and their brother is now also ill. This dramatic occurrence has attracted much attention. The sanitary inspectors have been over and over again to the house. It has been disinfected and lime-washed throughout and after so much and such disastrous sickness it is only natural to expect that nothing would be neglected to render the dwelling more wholesome. Passing through the shop and a small back room I reached the yard. Here a wooden shanty had been built to hold empty cases, and the yard itself was much encumbered with boxes, &c. In fact, the premises are too small for the business, and it would be very difficult to clean out and dust properly a place so crowded with cases and the miscellaneous goods which constitute the tradesman's stock. The closet was in the yard but not far from the bedroom windows. To my great surprise I discovered that in spite of the numerous visits of the sanitary inspectors the pan of the closet was quite loose. It rested on the syphon trap but was not jointed and could be pushed to one side or the other or lifted right off. The trap itself seemed firmly set in the ground and could not be moved, but on flushing the closet I found that some water jutted out beyond the trap and near to the wall at the back of the closet. There were two leakages—one where the pan rested on the trap and the other beyond the trap, probably at the joint between the trap and the soil-pipe. Thus and in spite of the three cases and two deaths from typhoid fever occurring in this house, nothing had been done to put the drains in order, and yet without applying any smoke or water test it was easy to see that they leaked. It is difficult to conceive a more glaring instance of absolute neglect. This is all the more scandalous as the condition of the closet not only endangers the life of the inhabitants of the house but may contribute to contaminate the food sold in the shop to numerous customers. The two houses just described had had cases of typhoid fever and it was for that reason that I visited them. I now, however, entered a house close at hand but selected haphazard without knowing anything of the history of the place, and here again I found that the pan was not cemented on to the trap but was quite loose, wobbled about on being touched, and that a portion of the water of the flush escaped on to the floor of the closet instead of flowing down the soil-pipe.

Going to a neighbouring street composed of very small cottages my attention was attracted by a street door which suggested that the house had been besieged. A portion of the panels had apparently been kicked away. The apertures in this wreck of a door were large enough to admit the passage at least of a child. Inside the house bore an equally ruinous appearance. There was no furniture. A straw mattress on the ground did duty for a bed. There was fæcal matter on the floor inside the house and all over the back-yard where it mixed with stagnant water. There was no water-closet but an overflowing uncovered privy which gave forth the most horrible stench. The next-door house was hardly any better. The front door, it is true, had not been smashed and there was some slight attempt at furniture—a few planks nailed together to imitate chairs. The privy in the back was in a similar condition to that of the house first visited, and fæcal matter mixed with the stagnant water amid the ill-assorted tile flagging of the yard. There was a case of fever in the back room where the window overlooked the stinking uncovered privy, and in the front room a child, six months old, was suffering from congestion of the lungs. The squalor, the dirt, and the stench were appalling. A little further down the same street I noticed a medical man's carriage, or rather it was an Irish jaunting car. I found that there was a child suffering from typhoid fever and that the patient was going to be removed to the workhouse infirmary. This was the third case from this same house and the wonder is that there was anyone remaining in such a place to tell the tale. In the back-yard I saw the same sort of ghastly uncovered privy, but in this instance there was not even the pretence of a closet seat. There was a wall rising some 2 ft. above the side of the hole which constituted the privy and which might have supported a seat, but no seat had been placed there. The yard drain was covered with a plank of wood. It was untrapped. Under the bed in the back room, separated from the yard only by the wall of the house, a large hole could be seen which from time to time was filled up with foul-smelling water that came in from the yard. The boarding of the floor was rotten and there were large holes in it, so that the smell of the polluted earth and foul water beneath reached without hindrance the persons who slept above. Although three cases of typhoid fever have occurred in this house people are still allowed to live in it and nothing has been done to alter this shocking state of affairs. Surely, if a water-closet cannot be put into this house the privy might be cleaned out and rendered watertight, the yard might be properly paved and drained, and measures might be taken to prevent the formation of pools of sewage immediately under the bed in the back room. Now that three cases of typhoid fever have occurred in this house is it not time that some such measures should be taken? To merely whitewash walls and sprinkle disinfectants about is worse than doing nothing. Thus again I found another house in the same neighbourhood where a girl had typhoid fever so severely that little hope was entertained of her recovery. Here the house had been disinfected and whitewashed a day or two before my visit; but the inspector had not examined the closet and yet it was easy to see that the pan was loose, also the inhabitants complained that bad odours came from it. Now from this house, and apart from the case of typhoid fever referred to, a little boy had been removed to the hospital on July 15th last. He also was suffering from typhoid fever, nevertheless nothing had been done to the place before the month of November. In the house next door a part of the yard was boarded over and converted into a stable for horses. Here the water-closet pan was also loose. The pavement of the yard was not firm and squirted up dirty black water when trodden upon. In the house opposite there had been a case of typhoid fever, but in this instance the bed of the patient had been burnt, and this is the only case of effective disinfection I have to record in regard to this neighbourhood.

My next series of visits was to a district which had recently been flooded. Overflows from a main sewer were, I was informed, recently constructed and communicated with the Blackstaff rivulet. But on this particular occasion instead of the sewer overflowing it was the stream which overflowed into the sewer and forced the sewage back into the streets and houses. In a little street consisting of white-washed cottages I visited a dwelling where the privy in the back-yard was on a higher level than the ground-floor living-room. Here the water of the flood rose to a height of about 2 ft. In consequence of the higher level of the back-yard the door leading to it was barely 4 ft. high and it was necessary to stoop considerably to pass through. There was no trap for the yard drain, but a simple hole had been made in the wall which separated the yard from the back passage running behind all the houses. This hole went straight to the drain which passes down this back passage and thus the water and the smell rose freely from this passage drain into the back-yard which only measured some 8 ft. square. To make matters worse 3 ft. of this space were taken up by the privy. Thus the atmosphere was polluted by both drain and privy. When the water of the flood came rushing out of this drain in the back passage and out of the gullies in the street in front it brought all manner of filth into the houses. This occurred during the night and when the inhabitants came down in the dark from their sleeping room they plunged into water up to their knees. On the subsidence of the waters there was an awful stench from the dirt deposited on the floors and walls of the rooms, yet no measures whatsoever were taken to clean and dry these houses. The inhabitants had to do what they could at their own expense. In the house which I visited there had been a case of typhoid fever last August, yet the drain from the yard was left in the condition just described.

Behind a row of houses in —— street I came upon several cowsheds which to my utter surprise I found had been registered—that is to say, sanctioned by the municipal authorities. On one side of this long narrow back-yard was a row of privies which in some cases had been packed to overflowing with stable manure. But there was

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also a large amount of manure piled up in the yard. Nor was the yard properly paved. There were some rough uneven stones which facilitated rather than prevented the formation of pools of stagnant water and liquid manure. The cows were kept in small, dark, ill-ventilated stables which were not drained to a sewer. The liquid manure from the stables found its way to a small cesspool in the yard outside the stable door. This tank or cesspit was covered only by a wooden door, and if it rained heavily the rain-water which accidentally reached this inefficiently protected cesspit caused it to overflow into the yard. Formerly a man was employed to periodically empty this cesspit and the tenants had to pay 3*d*. a week extra in rent to have this done for them. But the man fell ill with fever and never returned. The tenants have to empty the cesspit themselves, though they still have to pay the 3*d*. per week. The liquid manure taken out of the cesspit is simply poured on to the surface of the yard and then it flows away into a drain which, I was told, is partly a pipe and partly a brick drain. The stench which this operation occasions is so terrible that several inhabitants asserted that they feel sick for the whole day. A woman volunteered the statement that her son had on one occasion emptied the cesspit but he was so ill afterwards that he had not ventured to do it again. When it is remembered that the cows are milked in this yard and amid these foul surroundings the danger of the situation will be better understood. But there was danger of specific as well as of general contamination, for in one of the houses forming part of this yard and where the inhabitants own one of the cows three children have suffered from typhoid fever. In answer to my inquiries I was assured that the children were not removed to the hospital but had remained in the house during the whole time of their illness. They were not even provided with pails, so that their dejections were thrown out into the open privies in the yard and close to the spot where the cows were milked. Yet these stables are registered—that is to say, they are sanctioned and approved by the authorities.

On leaving these abominable stables I came across one of the recent so-called improvements. This consisted of a sewer ventilating shaft going up the wall of a two-storey cottage. It was a 4½ in. pipe made of light metal and terminating about a foot above the edge of the roof. There was a hood placed above the pipe apparently for the purpose of deflecting the odour downwards into a window which was barely 2 ft. below. The inhabitants of the house complained of the bad smell blown down from the pipe through their bedroom window.

(To be continued.)

THE EPIDEMIC OF TYPHOID FEVER IN BELFAST, 1898: DR. LORRAIN SMITH'S REPORT.

(FROM OUR BELFAST CORRESPONDENT.)

WHEN the outbreak of typhoid fever in Belfast reached such a height as to alarm the citizens the Public Health Committee, at the suggestion of the chairman (Alderman Graham, M.D.R.U.I.), appointed Dr. J. Lorrain Smith, Lecturer on Pathology at Queen's College, Belfast, to investigate the cause of the epidemic and as a result that gentleman has for the past few months been busy at work, and as the outcome of this most careful study he has presented to the city corporation of Belfast a most original, able, and thoroughly scientific report. As Dr. Smith points out, as the probable causes of such an outbreak of typhoid fever two factors present themselves. These are: (1) deficiency in drainage and general arrangements for the disposal of refuse and infective material; and (2) possible infection of the water-supply.

As to the first factor, he admits that the insanitary conditions in Belfast which have been pointed out by experts in sanitation are of such a nature as to contribute materially to the spread of the infection from case to case and possibly to originate the outbreak, and especially in a city where typhoid fever is endemic these conditions if left unremedied would render futile any attempts at the extinction of the disease.

As to the second factor (contamination of the water-supply) Dr. Smith shows that there is no doubt that there had been recently cases of typhoid fever in one of the catchment areas and that no precautions were taken to prevent the infection of the water. The problem Dr. Smith set himself to solve was, Did the infected material reach the water-supply and was it in actual operation during the epidemic? This question only a bacteriological investigation would answer and it involved *in limine* the study of the micro-organisms which actually produced the disease. He first endeavoured to discover the cause of the disease in fatal cases and he found by examining the spleen and by making cultivations of the micro-organisms present there that there was evidence of two groups of bacilli which are in structure closely related—viz., the typhoid bacillus of Eberth and the bacillus coli communis of Escherich. The next part of the investigation was to determine the presence of one or both of these in the water, and to carry out this thoroughly Dr. Smith took over thirty samples of water at various infected houses in Belfast and in addition he had an apparatus at work continuously in Queen's College Pathological Laboratory by which he obtained a sample of the water bacteria during September and October. From these sources he failed to isolate the typhoid bacillus, but he had no difficulty in isolating a large number of varieties of the bacillus coli communis. Its presence indicates that the water is polluted with intestinal excreta and its significance in relation to the disease is increased when, in addition to possessing the typical cultural and structural characteristics, it has a high lethal power when injected into small animals, such as guinea-pigs. Certain of the bacilli isolated by Dr. Smith possessed all these characteristics. Now comes the most interesting part of Dr. Smith's report and I quote from his own words: "If this bacillus (bacillus communis coli) is actually a factor in the production of the disease one would expect that the blood of patients suffering from the disease would exhibit a certain reaction of infection to the bacillus known as the 'clumping reaction' (a full explanation of this point is given in the Appendix). On closely investigating the coli bacilli which I had isolated from a typhoid spleen I found that a number of those isolated gave this reaction with the blood of the typhoid patients in a certain percentage of the cases with which the typhoid bacillus had given a reaction. On examining in the same way the coli bacilli from the water it was found that certain numbers of the growth isolated gave the same reaction to the blood of typhoid patients. I have examined the blood of about 200 cases of typhoid fever, including, for the sake of comparison, some other centres (Lurgan and Dublin), and in the time I have had at my disposal I have done my utmost to test the evidence which this line of investigation furnishes, and I have come to the conclusion that we have in the coli bacilli which occur in the water a form of microbe which is directly concerned in the infection of typhoid fever. I give in detail the evidence on this point in the Appendix, but I may state here that 40 per cent. of the cases reacted to the coli bacillus, while at the very highest about 60 to 70 per cent. of the cases reacted to the typhoid bacillus. This latter percentage was obtained with a form of typhoid bacillus which gives exceedingly high results. Typhoid bacilli derived from other sources give fewer reactions. The highest percentage of reactions—viz., from 60 to 70 per cent.—is a low average, but this low average is due to the high standard adopted in the observations." To sum up, Dr. Smith says that the general result of his investigation is: 1. In the presence in the water of the typical bacillus coli communis there is evidence of contamination with intestinal excreta. 2. Certain of these bacilli exhibit their relationship to the process of infection in typhoid fever (*a*) by their lethal effect on small animals and (*b*) by showing the reaction of infection when exposed to the blood of typhoid fever patients. In conclusion, Dr. Smith reports that short of discovering in the water the typhoid bacillus also and thereby giving absolute proof regarding the primary cause of the epidemic he knows of no stronger bacteriological evidence than that which he has adduced in favour of the conclusion that the contamination of the water is one of the causes of the outbreak of the disease in Belfast.

From Dr. Smith's report it will be seen that there are many points of similarity between the epidemics of typhoid fever in Maidstone and in Belfast. In both the water-supply at a certain point was contaminated by typhoid excreta. In Belfast (the evidence is given in the Appendix A of Dr. Smith's report) it would appear that in January, 1897, three

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or four cases of typhoid fever occurred at a farm at the catchment area known as Stoneyford and portions of the discharges from the patients were thrown into the manure heap the liquid from which flows into the adjoining stream and thence into the Belfast water-supply. This occurred in January, 1897, and in March of the same year the epidemic broke out in Belfast. Dr. Smith thinks it very probable that these cases were the actual origin of the outbreak. Further, he states that from reports received of suspicious cases occurring recently among the inhabitants of the Stoneyford area the matter demands, not only now but as long as the present water-supply is used, the constant attention of the sanitary officers. The second point of similarity between the two epidemics of typhoid fever at Maidstone and Belfast is that in neither case did observers find the specific typhoid bacillus in the water, while at Maidstone as well as at Belfast the bacillus coli communis was present in abundance. In criticising the reports of those who examined the water at Maidstone Dr. Sims Woodhead stated that the presence of the bacillus coli communis should be regarded as evidence of contamination provided that the bacillus had certain biological characters and was pathogenic to animals. Certain of the bacilli isolated from the Belfast water, Dr. Smith states, answer to all Dr. Woodhead's criteria. There is, however, one point of distinction between Maidstone and Belfast, and that is the very important fact which Dr. Smith admits that in Belfast typhoid fever is endemic. From Dr. Smith's report there naturally follow two practical suggestions: (1) the Water Commissioners must take greater care in reference to their catchment areas and they must specially look to it that in their new works in the Mourne Mountains as well as in the reservoir at Carryduff the utmost precautions shall be put in force to prevent the least trace of local contamination; and (2) because this report of Dr. Smith seems to put the cause of the outbreak of typhoid fever on the infected water-supply the Public Health Committee must not think that they have nothing more to do than to blame the Water Commissioners. They must remember that their own expert and adviser, Dr. Smith, states in his report that "the insanitary conditions in the city which have been pointed out by experts in sanitation are of such a nature as to contribute materially to the spread of infection from case to case and, possibly, to originate the outbreak and, especially in a city where typhoid is endemic, these conditions if left unremedied would render futile any attempts at the extinction of the disease." The duty of the Public Health Committee is to push on with the sanitary reforms which they have already, I am glad to say, inaugurated, no matter what the cost may be, so that the disease may cease to be endemic.

In the Appendix to his report Dr. Lorrain Smith deals with: (*a*) observations on the catchment area at Stoneyford; (*b*) methods of analysis; (*c*) the number of bacteria present in the water; (*d*) the reaction of infection known as "clumping reaction"; and (*e*) the bacillus coli communis.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Sittings of the Plague Commission.—The Bombay Improvement Scheme.—The Pasteur Institute at Hyderabad.—The Faulty Administration of the Plague Regulations.

IT must be admitted that the sittings of the Plague Commission have not so far resulted in discovering anything new. The four days' examination of certain prominent officials has only reproduced what was known twelve months or more ago and what has all been published before. The Commission consists of Professor T. R. Fraser, M.D.Edin., LL.D., F R.S., Professor of Materia Medica in the University of Edinburgh, president; Mr. J. P. Hewett, C.I.E., I.C.S., Secretary to the Government of India, Home Department; Professor A. E. Wright, M.D. Dub., Professor of Pathology in the Army School, Netley; Mr. A. Cuming, I.C.S., of the Bombay Presidency; Dr. M. A. Ruffer, of the Egyptian Sanitary Department; and Mr. C. J. Halifax (secretary). The object with which the Commission has been appointed is—as was stated in the Government resolution—to inquire into the following questions: (1) the origin and outbreaks of plague; (2) the manner in which the disease was communicated; (3) the effects of the curative serum; and (4) the effects of the preventive serum. Many acute observers have already formulated their knowledge on these points and have expressed their opinions that plague in man is communicated from the lower animals and probably in most cases from the rat; that it extends chiefly by the spread of the disease among the lower animals but that the habitation in some way also becomes a source of infection; that, so far, no serum possessing curative properties can be said to have been discovered but that the preventive fluid has decided powers to diminish the liability to infection as well as to diminish the risks of the disease amongst the inoculated.

The first day was occupied with the examination of the Hon. Mr. Wingate (the Plague Commissioner) and of M. Haffkine. The evidence of the former consisted in giving a brief outline of the epidemic and of its spread to different parts in the Bombay Presidency. He enumerated the several measures adopted by Government with the aid of local bodies to check its progress and minimise its effects. Information on this head has already been published in a very comprehensive Government Report by Mr. Nathan. M. Haffkine explained the process of preparing the plague prophylactic fluid and the experiments first conducted to test its efficacy. He also laid before the Commission some statistics to show its results.

On the second day M. Haffkine gave further evidence concerning inoculation, its effects on different individuals, the dose, the method of cultivating and sterilising plague bacilli, his early curative serum, and its failure. He stated that he had not succeeded in detecting the plague microbe in rooms occupied by plague patients, but that experiments were *now* being conducted on the effect of exposure on artificial cultures in houses where the roofs had been removed, also as to the efficacy of disinfectants and the effect of cowdung on the microbes, and the duration of their life within it. He argued that there was no evidence to show that inoculation increased the sickness or death-rate from general causes amongst the inoculated. He stated that his researches had been restrained by consideration for the popular feeling with regard to experiments on animals.

On the third day Surgeon-General Bainbridge was examined. He candidly admitted that his experience was largely derived from official reports. He thought more laboratory inquiry was wanted. (This seems a curious statement because there were many men experienced in bacteriology and well able to perform this work, who were sent out from England for plague duties and to whom Surgeon-General Bainbridge in his official capacity might have entrusted this investigation.) With regard to the connexion between rats and plague, what he could say was that the rats were generally affected by plague and that before the outbreak in man the rats became ill and died. The attacks on human beings followed very closely. He supported the recognised sanitary measures—the isolation of the sick, the segregation of the occupants of infected houses, the cleansing and disinfection of the houses, the examination and detention of travellers, and the disinfection of persons. He now accepted inoculation as a prophylactic, although at the outset he was unwilling to do so. Dr. Galcott, representing Professor Lustig, explained the method of preparing his serum and gave some results obtained at several hospitals. He admitted that the results were not very satisfactory up to the present time. Dr. Viegas described how he observed and reported upon the earliest cases which had been discovered in Bombay.

On the fourth day Colonel Weir, health officer to the Bombay Municipality, was examined. He gave a description of the sanitary conditions under which the masses of the people lived and referred to the very limited powers which the Corporation possessed under the Municipal Act. He dwelt particularly on the overcrowding, to which there was no limit. He pointed out the course which plague took in spreading throughout the city and gave numerous statistics. He described how the measures at first taken were thought to be unnecessary and cruel. He expressed his belief in the destruction of rats in order to prevent the development and spread of plague. He showed the incidence of plague amongst the dwellers on the different storeys of the large *chawls*—the percentage of deaths to attacks being on the ground floor, 84; on the first floor, 74; on the second floor, 67; on the third floor, 59; on the fourth floor, 48; and on the fifth floor, 45. He strongly supported inoculation against plague and had done so from the commencement.

The Improvement Trust has begun work and promises to effect very great changes in the sanitary condition of

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Bombay. Several schemes of improvement are ready and one of them is likely to come up for sanction almost immediately. The proposal is to buy up the whole property of one large and thickly populated district—not one street only but a large area. Money will be raised by loan on the land of the properties, the houses will be pulled down and new and wider streets will be laid out, while sanitary dwellings will be constructed to replace the present overcrowded *chawls*. One district only will be taken at a time. While this is being done the people will be turned adrift to find accommodation wherever they can, but it is anticipated that the displacement of the people will not be of long duration. It is obvious, however, that other districts will be excessively overcrowded for the time being and that a twelvemonth at least must elapse before the new buildings will be ready for occupation. Probably also 25 per cent. of the population of the given area will have to find permanent accommodation elsewhere. The distinguishing feature of the new trust is that it can deal with large areas. The rebuilding of houses for 20,000 evicted people cannot be done in a day.

Notwithstanding the detailed account of the proposed Pasteur Institute for Hyderabad which was published apparently on high authority I have it from the Secretary to the Nizam's Government that the question has not yet been laid officially before the Government.

The public are still put to considerable annoyance from the irregular manner in which the plague regulations are enforced. There is no uniformity even in the same Presidency and travellers are subject to all sorts of inconveniences from ignorance of the varying regulations. At Poona the local authorities have been acting contrary to the recent pronouncement of the Government of India concerning the abolition of passes and detention camps, and besides enforcing passes have been offensively huddling together different classes of passengers and insisting without discrimination on the disinfection of all clothes and wearing apparel. In Madras the officials have actually prosecuted the Postmaster-General for a purely technical breach of the plague regulations notwithstanding that he had been inoculated and that the offence committed was practically cleared by the fresh regulations which appeared on the day of his prosecution. These are examples of the want of business-like administration which has characterised the plague work from the very beginning. The management is placed in the hands of civilians or military men instead of with medical officers, and the consequence is that these exceptional powers have been exercised in a high-handed and indiscriminate manner.

Dec. 3rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Mill-road Infirmary: Opening of a New Operating Theatre.

THE new operating theatre at the Mill-road Infirmary was formally opened last week in the presence of a large gathering of guardians and members of the medical profession. The theatre is situated in the upper storey of the building and is constructed upon highly approved scientific principles. To the right is the anæsthetic room whence the patient will be wheeled on an ambulance into the operating room. The theatre is well lighted by a large roof, the light facing south and west. The walls are lined with white glazed tiles and the floor is of marble, sloping to a sink for flushing purposes. Needless to say that artificial lighting is by means of electricity, the current of which is also utilised for medical and surgical purposes. All the instruments for use in operations will be sterilised and the dressings before being applied will also be sterilised by drying heat at a temperature of 220° F. Injectors for the supply of absolutely sterile water are provided and all the wash-basins are fitted with foot-pedals, thus obviating the necessity of touching the taps with the hand. The instruments are kept on glass shelves in a dust-proof case to ensure absolute cleanliness and to carry out the aseptic system of surgery. An average of 250 major operations are performed in the infirmary annually. After the inspection the company sat down to luncheon at the invitation of Dr. N. Raw, the medical superintendent. Professor Paterson of University College, who was one of the guests, in proposing the toast of "The West Derby Board of Guardians" complimented the board on the excellent work they were carrying out in the administration of the Poor-law and in their treatment of the 850 sick poor in the Mill-road institution in particular. Alderman Houlding (the late Lord Mayor of Liverpool) and Mr. Mitchell Banks also spoke in complimentary terms of the admirable arrangements made by the West Derby guardians for the comfort and treatment of the sick poor of their union.

Medical Faculty of University College, Liverpool.

The biennial dinner of the Medical Faculty of University College will be held on Jan. 28th, 1899. Professor A. M. Paterson, the Dean of the Medical Faculty, is particularly desirous of making the re-union a most successful one.

Ladies' Charity and Lying-in Hospital: the Proposed Admission of Unmarried Females.

I understand that summonses have been issued for a general meeting of the subscribers to the Ladies' Charity and Lying-in Hospital which has been fixed for an early date, when the question of the admission of unmarried females (about to be confined) to the wards of the lying-in hospital will be discussed in all its bearings. There is every reason to believe that the subject will be treated in a broad and generous spirit and that a long-deferred concession in the case of first confinements is within measurable distance of realisation.

Centenary of the Liverpool Athenæum.

The centenary of the Liverpool Athenæum was celebrated on Dec. 19th under auspicious circumstances. The programme of the proceedings included an address by the Lord Bishop of London and a reception afterwards in St. George's Hall. The Athenæum owes its foundation to the late Dr. James Currie, the biographer of Robert Burns, the late Dr. Rutter, Mr. Roscoe, and a few other prominent citizens of Liverpool, to whom a graceful tribute of admiration was paid by Mr. Alfred Booth, the President, in his introductory remarks relating to the history of the institution. The Athenæum contains a well-stored library in which are to be found many rare and valuable works. It is situated in a central part of the city in Church-street and numbers 500 members, largely recruited from the cream of the mercantile and professional classes.

Dec. 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

"*Glasgow Medical Pioneers.*"

AN address on this subject to the Anderson's College Medico-Chirurgical Society was delivered on Dec. 17th by Dr. Erskine, honorary president of the society. The lecturer gave a history of the leading local medical authorities since the institution of the Faculty of Physicians and Surgeons at the end of the sixteenth century. In connexion with this event there was necessarily special reference made to Maister Peter Lowe who was in his day physician to Henry IV. of Navarre and to Prince Henry, son of James I., and to whom the foundation of the Faculty is due. The work of Cullen when professor of medicine in the university and of John Burns, the first professor of surgery, was also discussed and allusion was made to the special local associations of the brothers William and John Hunter. Among other interesting particulars in connexion with the Royal Infirmary note was taken of the work of Dr. Robert Perry as one of the first to establish an essential distinction between typhus and typhoid fever. The same institution could also claim the establishment by Lord Lister of the antiseptic treatment of wounds and more recently the surgical triumphs of Dr. Macewen. Professor Moses Buchanan and his son, the present professor of clinical surgery, and Professor Allen Thomson were among others on the roll of fame, whilst the lecture was brought up to date by a description of the valuable sanitary work performed by Sir William Gairdner and Dr. J. B. Russell. The address was illustrated by lantern pictures, and was much appreciated by the audience.

University of Glasgow.

The special committee appointed to consider the development and extension of the medical school has proposed a scheme for the provision of a pharmacological laboratory and the proposal has received the approval of the University

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Court. It has also been decided to permit women to attend post-graduate classes in the medical faculty. Mr. D. C. M'Vail, M.B. Glasg., has been appointed to represent the court on the board of managers of the Glasgow Samaritan Hospital. The court has also approved of the nomination by the Senate of Mr. Hugh Galt, M.B., C.M. Glasg., to be a research fellow in the University.

Glasgow Sanitavy Department.

The recommendation of the health committee that Dr. A. K. Chalmers shall succeed Dr. J. B. Russell as medical officer of health and that an assistant medical officer shall be appointed has been approved by the town council.

Presentation to Mr. John Burns, Glasgow.

A long record of honest and unassuming work was recognised yesterday by the presentation to Mr. John Burns of his portrait, painted in oils by Mr. John P. Downie. Mr. Burns has for nearly sixty years been in practice in the East-end of Glasgow, and for that, as well as for other reasons, is one of our best known local worthies. The presentation was made on behalf of the subscribers by Sir William Gairdner who referred in eulogistic terms to the personal and professional merits of Mr. Burns and emphasised the value of his work and influence. In reply Mr. Burns acknowledged in feeling terms the kindly recognition accorded to him and related a number of interesting particulars of his Glasgow memories and associations. In the evening he was entertained to dinner at the Windsor Hotel. The portrait which is of life-size is to be placed in the custody of the Corporation and is to be exhibited in the People's Palace.

Typhoid Fever in Aberdeen.

There has just occurred in Aberdeen another outbreak of typhoid fever—19 cases with 2 deaths—which like the last has been traced to infection by milk.

University of Aberdeen.

The portrait of the Marquis of Huntly, Lord Rector of the University, painted by Mr. J. Coutts Michie, A.R.S.A., has been placed in the picture gallery at Marischal College. The portrait is the gift of the artist.

Aberdeen Medico-Chirurgical Society.

The annual dinner of this body was held in the society's hall, King-street, Aberdeen, on Dec. 16th. Dr. Thomas Milne of Ellon, president, occupied the chair, and there was a large attendance of members and guests. Professor Stephenson (Aberdeen University) was croupier. The President gave the toast of "The Medico-Chirurgical Society." Dr. Ashley W. Mackintosh replied for the "Navy, Army, and Reserve Forces," and Professor Findlay for "The University and Medical School." Professor Stephenson replied to the toast of "The Medical Charities," and Dr. Angus Fraser gave that of "The Founders of the Society." Dr. Edmond proposed "The Guests," coupled with the name of Dr. Wilson of Huntly. The speeches were happily interspersed with amusing anecdotes.

Dec. 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Regius Professorship of Physic, Dublin University.

DR. JAMES LITTLE has been elected Regius Professor of Physic of the University of Dublin in the room of Sir John Banks, resigned.

An Irish Patent Medicine Bankruptcy Case.

Of all the secret and patent medicines sold in Ireland the one most widely advertised of late years has been that known as "Trench's Remedy." It was a nostrum recommended for the cure of epilepsy, and was generally supposed by medical men to be a strong solution of the bromides. There is no doubt that the medicine was largely given away for purposes which seemed entirely charitable. In the Bankruptcy Court, on Dec. 9th, the case of J. Townsend Trench, a bankrupt, was heard by Judge Boyd. Mr. John Bernard, pharmaceutical chemist, of Clare-street, deposed that he had an arrangement for a number of years to supply the bankrupt with drugs and that he, witness, looked for a profit of from 10 to 15 per cent. It was proposed in last December that as Mr. Trench could not meet his liabilities a company should be formed and that the amount of the debts—viz., £9500—should be the amount of the purchase money. Mr. Trench is a man of considerable private property.

The Belfast Water-supply.

The Belfast Water Commissioners are about to promote in Parliament a Bill to authorise them among other things to construct certain works for the improvement and extension of their water-supply, and for this purpose to acquire and purchase large tracts of land in the neighbourhood of Carrickfergus and Stoneyford, at their catchment areas. As a result the farmers who will be affected by the proposed Bill are arranging to oppose it and an important meeting of those affected by this compulsory purchase of their homesteads was held on Dec. 17th in Carrickfergus at which those present pledged themselves to oppose in Parliament the proposed scheme of the Belfast Water Commissioners, a plan which they characterise as "iniquitous and most unjust as it is based on misleading and erroneous statements regarding the pollution of their water-supply." It is reported that those living in the Stoneyford catchment area will also join in this opposition. I think the Water Commissioners under very difficult circumstances are doing their best. They have been forced by public opinion to take the utmost precautions to keep their present supplies free from the risk of any pollution. This can only be done by safeguarding the catchment areas, and now when they are presenting a Bill for this purpose the farmers resident in the area (and there is nothing that an Irish farmer resents so much as forcible eviction even with compensation) threaten them with what in law will be a very awkward opposition to their measure. The absolute necessity for the Water Commissioners to take the proposed precautions at Stoneyford is still more strengthened by the published report that at the last meeting of the Lisburn Board of Guardians, Dr. Alexander, medical officer of Knocknadona dispensary district, reported that a case of typhoid fever recently occurred in a house near a river flowing into the Stoneyford reservoir and that the excreta from the patient were thrown on the manure heap without being disinfected. Dr. Alexander very wisely recommended that this manure should be removed by the Belfast Water Commissioners out of their catchment area, as being liable under certain conditions to contaminate the water. The guardians ordered that a copy of this report should be sent to the Belfast Water Commissioners.

The Belfast District Lunatic Asylum.

A deputation from the governors of the Belfast Lunatic Asylum met the finance committee of the city corporation on Dec. 19th to consider some important monetary matters. It was explained by the governors that the Board of Control of Asylums in Dublin made a demand from the corporation of £400, amount of fees due to the architects and surveyor in respect of the new Purdysburn Asylum. The finance committee of the corporation replied that they considered it strange that the Board of Control did not think it necessary to place before the corporation any details regarding the plans which had been prepared and the final amounts which they would be required to meet. In the absence of any statement regarding these they decided not to make an immediate advance of money, but to ask the Board of Control for further information on the points mentioned.

Dec. 21st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Men Prosecuted by a Confrère.

DURING the course of a trial held in September it came out in evidence that Dr. Choisnet of La Flèche had through negligence given the accused woman a certificate to say that she had not been recently delivered. The other medical men in La Flèche (five in number) accordingly wrote to Dr. Choisnet a letter which they also published saying that they considered him as no longer belonging to the medical body and demanding the erasure of his name from the list of those entitled to serve on public bodies. Dr. Choisnet prosecuted his five colleagues before the Correctional

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Tribunal of La Flèche and eventually they were condemned to pay a fine of 100 fr. respectively and to pay collectively 1000 fr. damages.

A Medical Trial.

A trial is about to be heard in which the facts possibly are not new but, it is believed, are to be submitted to a legal tribunal for the first time. Two years ago a patient was attended in her confinement by her usual medical attendant, but not recovering in a normal way she underwent an operation performed by a young surgeon who had been a pupil of Péan. The operation seemed to do no good and the patient still kept her bed. Despite the entreaties of the surgeon that she should have a second operation, she would never consent and fifteen months after the first operation she went into the Hospital of St. Louis where a laparotomy was performed by Dr. Marchand. In the course of this operation a Hegar's dilator (bougie) made of metal was discovered which had been overlooked by the first operator. Questioned on the matter the young surgeon admitted the facts and added that that was just the reason why he had urged the second operation—namely, to get rid of the dilator. The patient who is now quite well has commenced proceedings against her medical attendants for malpraxis.

A Touching Ceremony at the Hospital of St. Louis.

The inauguration of a memorial erected by public subscription to the memory of Dr. Henri Feulard took place recently in the library of St. Louis Hospital. The pedestal, carved by the sculptor Maurice Bouval, is very simple and dignified. The statue, cast and bronzed (*patiné*) by Siot-Decauville, stands under a canopy of *rouge antique* marble which was designed by the architect Michelieu. Sundry allocutions were given in the presence of the subscribers, friends, and colleagues of Dr. Feulard. The ceremony was a really heartfelt manifestation of the respect in which Dr. Feulard was held. It will be remembered that he perished owing to his devoted conduct at the lamentable fire at the Charity Bazaar last year.

Mushroom Juice as an Antitoxin against Serpent Venom.

M. Phisalix gave the result of some experiments which he had made on the use of mushroom juice as an antitoxin against serpent venom at the meeting of the Academy of Sciences held on Dec. 12th. He first of all pointed out that tyrosin, which is the chemical nucleus of all albuminous bodies, when extracted from the juices of serpents, is an immense power against their venom. He said that he had been led to seek whether the juice of mushrooms which contains plenty of tyrosin and some ferments as well would not possess the same properties. He made various experiments and found out that all kinds of mushrooms possess a substance which acts as an antitoxin against serpent venom. If, for instance, the juice of the ordinary hot-bed mushroom is extracted by pressure or by maceration in water and inoculated into a guinea pig the animal is rendered absolutely refractory to serpent venom. Unfortunately, however, the inoculation seems to possess toxic properties which vary in degree according to the size of the dose. In the rabbit, for instance, the injection of 25 c.cm. of mushroom juice is fatal, the animal dying from intervascular coagulation. With a view to avoiding these results M. Phisalix tried filtering and boiling the juice, but all the same the toxic properties remained although they were much diminished.

Fat in the Horny Layer of the Skin.

At the meeting of the Academy of Sciences held on Dec. 5th M. Ranvier put forward the idea that the horny layer of the skin is infiltrated with fat. This epidermal fat is of a yellow colour and solid at ordinary temperatures. It has the consistency of wax and melts at a temperature of about 36° C., just as beeswax does, with which it presents a very close analogy, an analogy all the more interesting because beeswax, like the similar substance found in mammals, is a secretion of the skin. The cells of the horny layer of the epidermis, far from being dried up, as is generally taught, are really hollow cells altered in shape by reciprocal pressure. Their walls are formed by a resisting substance and the contents are waxy. Owing to the mode of distribution of the epidermic wax in the horny layer of the skin it is obvious that the entire body is covered with a kind of varnish, and thus it is protected against both mechanical injuries and chemical injuries.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Excessive Cold.

THE steady fall in the temperature is felt severely throughout the peninsula. In northern Italy, particularly on the Adriatic side, Rovigo, for example, in the twenty-four hours between 8 A.M. of Dec. 15th and 8 A.M. of Dec. 16th registered 3° C. below zero; Mantua, 2°; Ferrara, 1·5°; Ravenna, 1·4°; and Belluno, 0·9°. In Central Italy Florence registered a minimum of 1·1° C. and a maximum of 7·5°. But it is in the southern provinces that the cold, which between Dec. 16th and 17th increased so suddenly, has numbered most victims. "Miseria"—that comprehensive word which includes starvation, semi-nudity, homelessness, and despair—is rampant in the ex-kingdom of the Two Sicilies and there, of course, the fall of temperature finds multitudes in town and country with a resisting power quite unequal to the visitation. In Naples three deaths are already announced as having occurred in the streets on Dec. 17th and many more may be expected according as the reports come in from the police offices and hospitals. Italians, as a rule, stand extremes of temperature wonderfully well—cold particularly. Of all the contingents of the Emperor Napoleon's Grande Armée in the disastrous retreat from Moscow in 1813 Murat's 10,000 Neapolitans suffered least from the frost-bite or from the numbness and the torpor which, in the case of thousands of their non-Italian comrades, lapsed into the sleep that knows no waking. The fact gives a measure of the "miseria" which has prepared so many victims in the Neapolitan districts within the last forty-eight hours. The season, as a whole, has commenced badly for the Mediterranean littoral and that means, in Italy *par excellence*, lack of custom for the many interests which profit by the moneyed visitor. Not only on the Riviera Levante as well as on the Riviera Ponente are the hotels all but empty, but in such favourite resorts as Florence, Rome herself, and Naples a similar tale is told. Impecuniosity and pauperism are intensified and with them the "miseria" that decimates the lower strata of society. The prevalence of abnormal cold and the menace of a severe winter will deter yet more the hitherto tardy tourist- or travelling-world and so the situation, financial and social, must become aggravated. Nowhere more than in the "genial South," particularly in those sun-traps which nestle along the Neapolitan Riviera, will it be said with the poignancy of truth, "Sadly falls our Christmas Eve!"

Tuberculosis of the Thoracic Duct.

At the last meeting of the Reale Accademia di Medicina of Turin Dr. Pio Foà, Professor of Pathological Anatomy in the University, drew attention to tuberculosis of the thoracic duct. Whence the tuberculosis had its point of departure was not, he said, very clear. Some of the abdominal ganglia around the cœliac trunk he found to be caseous. The tuberculosis seems to have gained access to the cisterna chyli (reservoir of Pecquet) and to all the thoracic duct which was, nevertheless, quite permeable. The duct in some tracts was extremely dilated and had its parietes greatly thickened and in the light showed an eruption of nodules large and small. There was further a miliary (granular) tuberculosis confined to the two lungs, but as the intromission of bacilli into the blood from the thoracic duct was probably affected "interpolatamente" (at intervals) so there followed an eruption of nodules in the lung at different stages of development. There were, in fact, chronic granulations (*miliari cronici*) and recent granulations, as well as many sub-granulations of quite recent standing. The patient died in consequence of profuse and uncontrollable epistaxis.

Dec. 19th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Influence of X Rays in Lupus.

AT a recent meeting of the Vienna Medical Society Dr. Schiff showed a case of lupus erythematodes in which the x rays had been made use of. At the beginning of the treatment the disease existed over the whole face. The rays were

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employed for two months and the effect is that the infiltration of the skin has entirely disappeared; the surface of the skin is smooth without elevations and the disease is now limited to some discrete isolated patches. In the treatment of lupus vulgaris by means of the x rays Dr. Schiff has met with very gratifying results which have also been obtained by Dr. Finsen of Copenhagen under a different system—viz., by the use of concentrated sunlight or concentrated electric light. This latter method, however, is only applicable to small patches of the disease in question and for extensive surfaces the x rays are to be preferred. Dr. Spiegler, who had seen Dr. Finsen's method put in practice, said that it can only be recommended in cases where the disease is confined to small areas; it never causes the lesions of the skin which sometimes follow exposure to x rays. Dr. Schiff, in his reply, said that the injury to the skin by the x rays may be avoided if the intensity of the radiation does not exceed a certain amount and if the treatment is discontinued on the appearance of the slightest hyperæmia. Professor Kaposi remarked that it was interesting to observe that pathological processes histologically so different as lupus vulgaris and lupus erythematodes both improve under the same treatment. The effect depends on the circumstance that there occurs first an active and then a passive hyperæmia—a paresis of the superior and the inferior vessels of the skin respectively. It is also possible that a chemical action may be exerted directly on the diseased structures, causing them to undergo retrogression.

Heroin.

Dr. Weiss has published in the *Heilkunde* an account of his experience with the new remedy heroin. He has found it very beneficial in chronic bronchitis attended by swelling of the mucous membrane, for after a dose of 5 milligrammes (about $\frac{1}{12}$ gr.) the cough decreases and the pain in the chest disappears. It gave relief in cases of chronic bronchitis where codein had no effect. In phthisis it is an excellent substitute for morphia; 5 milligrammes given three times a day relieve the cough and the pain in the chest.

Dec. 20th.

Obituary.

CHARLES JOHN HARE, M.D. CANTAB., F.R.C.P. LOND.

ONE of the old school of practitioners has passed away in the person of Dr. Charles Hare. He died on Dec. 15th at his residence, Berkeley House, Manchester-square, from carcinoma of the œsophagus, at the ripe age of eighty-one years. Charles John Hare was the son of Samuel Hare, F.R.C.S., who was for many years a surgical practitioner at Leeds and who died in 1867. Dr. Hare received his medical education at the University of Cambridge (where he graduated as M.B. in 1841, proceeding to M.D. in 1847), at University College, London, and at Paris. In 1850 he took the Membership of the Royal College of Physicians of London, being elected Fellow in 1859.

Although commencing his medical studies at Cambridge Dr. Hare took the (in those days) very unusual step of migrating to University College, London, where he continued the study of medicine, and he also visited Paris with the same object. His connexion with University College Hospital dates from the year 1850 when, along with the late Sir William Jenner, he was elected assistant physician. In 1860 he was allotted beds for in-patients to the number of four, being also appointed physician, but he does not seem to have had charge of a ward until the year 1862 when he was given the charge of the in-patients who had been previously under the care of Dr. Garrod. In 1863 he was appointed Professor of Clinical Medicine and in the following year, 1864, attended on his death-bed a certain Mr. Edward Yates of Etchingham, Surrey. We mention this fact because it has an important bearing upon the fortunes of the hospital. Dr. Hare was Mr. Yates's executor and very intimate friend and it was in great measure owing to this latter fact that Mr. Yates bequeathed £46,000 to the hospital. The income of one-half of this was applied to the general purposes of the hospital and the other half was to form a Samaritan Fund. This fund was duly started in 1867 and out of it patients are sent to convalescent homes, their families are supported while the bread-winner is in the hospital, surgical appliances are procured, and dinners are provided for such patients as need them more than medicine. In this year Dr. Hare found it necessary to terminate his connexion with the hospital which he had served for seventeen years—that is, so far as active work in the wards was concerned—for he never lost his interest in the institution and was a member of the hospital committee from 1861 until almost the day of his death. Upon his resignation of the physicianship and professorship both the council of the college and the committee of the hospital passed cordial votes of thanks, the latter specially referring to the services rendered by him in connexion with the Yates bequest.

In 1863 he married Catherine, the youngest daughter of Mr. E. Westhead, of Croston Tower, Cheshire. Dr. Hare was a man about whom not much was known outside the ranks of his immediate friends. He was very kindly, well read, and preserved to the last the dignified courtesy of the old school, together with the professional costume of the early "fifties." He had indomitable pluck and although months before his death he knew the nature of his complaint his spirits and courage never deserted him. One of his friends met him at the University College Hospital dinner on the opening of the present session to whom, in answer to some inquiry concerning his health, Dr. Hare said: "Well, I oughtn't to be here at all. You see I've got cancer of the œsophagus and I can hardly swallow anything. But I know I can't last long, so I want to go on as long as I can."

Dr. Hare, as is not unusual in men who have reached an advanced age, was somewhat a *laudator temporis acti*. Many will remember his trenchant little *brochure* entitled "Good Remedies out of Fashion," in which he strongly urged the claims of emetics, bleeding, and free purgation. No doubt these therapeutic measures have been abused in the past, but equally nowadays they are too much neglected. Although he never attained a very prominent position he was a most admirable clinical teacher, especially upon the somewhat difficult subject of abdominal diseases. He was uniformly kindly and courteous and always ready to help not only with advice but with more material aid those who were in trouble.

A friend of the late Dr. Hare and a representative member of the profession sends us the following words of appreciation: "Dr. Charles Hare had fully completed his years which were full of honour and of happiness—the happiness which consists in having lived usefully, methodically, and genially, with an eye to the happiness of others as well as his own. In many respects Dr. Hare was a model of what a physician should be. He had an abundant fund of common-sense and a very sound knowledge of his profession and of different systems of medical practice, his life having been long enough to see in full force the old treatment and the new and his mind being broad enough to accept what was true in both. But his culture was not confined to medical subjects. His knowledge of men and books and things was wide. He travelled much and with much method and observation. One of the oldest and one of the most highly esteemed of Cambridge medical graduates, he was much regarded by his university and especially by medical graduates. But he was bound by no academic limits and he took a large interest in the profession and in its prosperity, as well as in all public and political questions, expressing himself with the combined frankness and urbanity which are the great notes of true culture and which secure the respect of all sorts and conditions of men. But what most endeared Dr. Hare to those who knew him and gave additional force to the grief felt at the announcement of his death was his unfailing cheerfulness. It was an inspiration and a pleasure to meet him. In all men this is a precious gift, in the physician it is invaluable. In Dr. Hare it was always in evidence, even in late years, when symptoms of physical ill which might have disturbed the serenity of some men asserted themselves in his fine constitution. I have still before me the New Year's card for 1898 which he sent me. It may well serve for any successive year which the youngest member of the profession may see.

'1898.

'Take thy New Year with thankfulness—but is it not well, starting afresh with hope and trust, to commence a new year every morning, determining to leave, as far as may be, all worries (which "have killed their thousands") and all troubles and vexations to the last year's account—closed the night before?'

The sentiment was at once the expression and the secret of Dr. Hare's bright life: it was the practice of this happy philosophy that made him useful to his fellow-men."

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CHARLES EGERTON FITZ-GERALD, M.D. ST. AND., M.R.C.S. ENG.

BY the death of Dr. Fitz-Gerald who passed away on Dec. 11th Folkestone loses her oldest and most prominent practitioner. Dr. Fitz-Gerald was born in 1830 and was educated up to the age of fifteen years at a school in Brighton. On leaving school he was apprenticed to a surgeon at Bicester where he remained until he entered as a student at St. Bartholomew's Hospital. He became M.R.C.S. in 1856 and in the same year accompanied the present Marquis of Dufferin on his cruise to the north, the journey which forms the basis of that delightful book, "Letters from High Latitudes." On his return he commenced practice in Folkestone as a partner of the late Dr. Eastes and in 1858 he married. After having been in partnership a few years he commenced practice by himself under a friendly agreement with Dr. Eastes. In 1862 he graduated as M.D. at the University of St. Andrews. He was extremely popular, and in addition to his more strictly professional studies took a great interest in natural history, being the founder and for twenty years president of the Folkestone Natural History Society. The subject of the prevention of tuberculosis interested him deeply and in February, 1898, he read a paper on the subject dealing mainly with the precautions adopted in New York. He was a frequent contributor to our columns and the last paper from his pen which we published appeared so recently as Oct. 8th, 1898. He was buried on Dec. 14th at the Folkestone Cemetery, the first part of the service having been said at Christ Church. He was unceasing in his efforts to promote the well-being of Folkestone and contributed greatly towards its popularity as a health resort. He was an earnest and consistent Churchman, but all the same numbered among his friends many of other denominations and those who differed widely from him in matters of religious belief. As to the estimation in which he was held by his fellow townsmen we cannot do better than quote the closing lines of a leading article in the *Folkestone Herald* of Dec. 17th: "He has left behind the fragrance of a blameless life, the incentive to noble exertion, and above all the sentiments of gratitude which the inhabitants of a town must ever feel for work of such a high character as that which has been done for them by the distinguished physician whose death we are all deploring."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Jodko-Narkiewicz, one of the most eminent of Russian ophthalmic surgeons. He studied in Dorpat and Warsaw and subsequently held official posts in the latter university. He was sixty-eight years of age.—Dr. Caselli, Professor of Clinical Surgery in the Genoa Medical School.—Dr. Junge, formerly Professor of Ophthalmology in the Military Medical Academy, St. Petersburg.

Medical News.

UNIVERSITY OF OXFORD.—At the first M.B. examination the following candidates were successful in the subjects indicated:—

Anatomy and Physiology.—C. L. Coode, Hertford; V. S. Hodson, Marcon's Hall; G. A. Jones, Magdalen; and A. E. A. Loosely, Pembroke.

Organic Chemistry.—P. E. H. Adams, Exeter; C. V. Aitchison, Balliol; L. H. Badcock, Trinity; J. M. Bickerton, Merton; A. W. S. Fisher, New College; A. F. Hertz and F. P. T. Hilliard, Magdalen; V. S. Hodson, Marcon's Hall; F. Howson, non-collegiate; A. C. Inman, Wadham; H. W. Kaye, Magdalen; H. L. Laws, Wadham; H. C. Lecky, Christ Church; R. S. Macgregor, Exeter; C. F. Pinching, St. John's; P. F. Tinne and H. M. Turnbull, Magdalen; A. J. Wigmore, non-collegiate; E. A. G. Wilkinson, University; and H. M. M. Woodward, Keble.

Final M.B., B.Ch.—O. Eichholz, Magdalen; F. E. Fremantle, Balliol; E. Hopkinson, Trinity; R. O. Moon, New; R. W. Payne, Christ Church; E. H. Scholefield, New; E. W. Walker, Christ Church; S. Welby, Trinity.

Diploma in Public Health.—A. L. Ormerod, New; C. A. Reynolds, Keble; E. A. Saunders, St. John's.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore (Johns Hopkins University):* Dr. Simon Flexner has been appointed Professor of Pathological Anatomy.—*Budapest:* Dr. Ludwig Huttyasi has been recognised as *privat-docent* of Odontology, Dr. Karl Morelli as *privat-docent* of Laryngology, and Dr. Bernhard as *privat-docent* of Pathological Chemistry.—*Buenos Ayres:* Dr. Otto Voges, Assistant in the Berlin Institute for Infectious Diseases, has been offered the appointment of Professor of Hygiene and Director of the State Bacteriological Laboratory.—*Geneva:* Dr. de Marignac has been appointed Professor of Hygiene.—*Heidelberg:* Dr. C. Jung has been appointed Director of the Odontological Institute.—*Moscow:* Dr. A. V. Martinoff has been recognised as *privat-docent* of Surgery.—*Naples:* Dr. Maglieri has been recognised as *privat-docent* of Hygiene.—*Pavia:* Dr. F. Villa has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Turin:* Dr. Fusari of Modena has been appointed to the chair of Anatomy in succession to the late Dr. Giacomini.—*Vienna:* Dr. Philipp Knoll of the German University of Prague has been appointed to the chair of General and Experimental Pathology in succession to the late Professor von Stricker. Dr. Paltauf has been appointed Professor of General Pathology and Pathological Histology.

CARDIFF BOARD OF GUARDIANS.—At the meeting of the Cardiff Board of Guardians held on Dec. 10th a letter was received from Dr. J. J. Buist resigning his seat as a guardian. The chairman expressed his regret that Dr. Buist had found it necessary to leave the board.

DIPHTHERIA IN SWANSEA.—The medical officer of health of Swansea (Mr. E. Davies) has ordered all the schools in the borough of Swansea to be closed for the Christmas holidays a week earlier than was intended owing to the continued prevalence of diphtheria.

RAILWAY ACCIDENT TO A MEDICAL MAN.—On Dec. 15th Mr. A. Jeffreys, assistant to Dr. R. McGhie, of Abercanaid, Glamorganshire, by mistake got out of a train on the side opposite the platform at Abercynon Station, and falling on the line was run over by a mineral train, with the result that both arms were practically severed from the body. After receiving medical attention Mr. Jeffreys was conveyed to the Cardiff Infirmary.

CHARGE OF PERJURY AGAINST A SURGEON.—Mr. James Jerome Mackay, who was charged before Mr. Plowden at the South-Western police-court on Wednesday last with committing wilful and corrupt perjury at an inquest held by Mr. A. Braxton Hicks, coroner for the south-western district, on the body of a child named Ernest Mackenzie, was discharged, the magistrate remarking that in his opinion the case was simply one of difference of opinion among medical men and no assignment of perjury could be founded upon an expression of opinion.

DIPHTHERIA IN LONDON.—In the two periods, each of four weeks, ended respectively on Nov. 5th and Dec. 3rd, the amount of diphtheria in London was almost identical. Not so, however, either the deaths or the case-rate of mortality. In the earlier period all districts of London were invaded save one, but two escaped invasion in the later period. In the earlier there were seven districts each with 50 notifications and upwards, with an aggregate of 507, and other seven districts with only 10 in all; whilst in the later period eight districts had each upwards of 50 notifications and a total of 517, other six sanitary areas having only 17 in all amongst them. Despite these variations there was a difference of 3 only in the sum total of the notifications in London, the figures for the periods being 1087 and 1084 respectively, the latter yielding a weekly average of 271 cases. As regards deaths, the 145 deaths, with an average of 36 weekly, and a case-rate of 13·3 per cent. of the earlier period gave place to 156 deaths, or 39 weekly, and a case rate of 14·4 per cent. The minimum and maximum weekly deaths numbered 31 and 43, but the corrected decennial average for the corresponding weeks of the years 1888-97 was in no instance exceeded. The several weeks of this later period, in fact, yielded totals which respectively were 22, 5, 16, and 7 below the corrected average. In the outer circle, the 51 deaths in the early period gave place to 65 (11, 21, 16, and 17), of which 22 belonged to West Ham registration district.

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MEDICAL MAGISTRATES. — Mr. Thomas S. Rowe, M.D. Edin., of Margate, has been appointed a magistrate for the Cinque Ports.—Mr. William Brown Holderness, M.R.C.S. Eng., L.S.A., of Windsor, has been appointed a magistrate for that borough.—Mr. Charles W. Wilson, M.B. Durh., M.R.C.S. Eng., has been appointed a magistrate for the borough of Bridport.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL. — At a special meeting of the governors held on Dec. 15th for the purpose of electing an honorary surgeon in the place of Dr. Charles Booth, resigned, Mr. R. T. Gratton who presided remarked that Dr. Booth had served in that capacity for thirty-five years, rendering during that period most valuable services to the welfare of the institution and it was satisfactory to know that they would still retain him as an honorary consulting surgeon. Dr. Booth had declined to accept any personal gift in token of their appreciation of his services but had consented to sit for his portrait in oils, which is to adorn the walls of the hospital board-room.

APOTHECARIES' HALL OF IRELAND. — At a meeting of the Governor and Court of the Apothecaries' Hall of Ireland the following gentlemen were appointed to conduct the examination in medicine, surgery, and midwifery for the year 1899:—Chemistry and Physics: Professor W. N. Hartley, F.R.S., and Mr. C. R. C. Tichborne. Pharmacy: Mr. W. V. Furlong and Mr. G. A. Stritch. Anatomy: Dr. J. Campbell and Mr. P. J. Fagan. Biology: Dr. F. Adye-Curran and Dr. J. A. Johns. Materia Medica: Mr. John Evans and Mr. S. M. Thompson. Physiology: Dr. C. M. O'Brien and Dr. G. B. White. Hygiene: Sir Charles Cameron and Dr. J. M. Day. Medical Jurisprudence: Mr. H. A. Auchinleck and Mr. J. E. Kenny. Pathology: Dr. J. Knott and Dr. C. M. O'Brien. Midwifery and Gynæcology: Dr. T. More Madden and Dr. R. D. Purefoy. Ophthalmology: Mr. F. Odevaine and Dr. R. J. Montgomery. Surgery (appointed by the General Medical Council): Mr. H. G. Howse and Dr. H. A. Thomson. Medicine: Dr. W. E. Ashley Cummins and Dr. M. McHugh.

PRESENTATIONS TO MEDICAL MEN.—Mr. Arthur Nathaniel Davis, L.R.C.P., L.R.C.S. Edin., the late medical superintendent of the Plymouth Borough Asylum, Blackadown, who will shortly enter upon his duties as medical superintendent of the Devon County Asylum, was last week entertained to dinner at the Royal Hotel, Plymouth, by his municipal colleagues, on whose behalf he was presented by the Town Clerk (Mr. I. H. Ellis) with a case of silver salt-cellars as a token of esteem.—Mr. W. J. Howarth, M.D., D.P.H. Vict., Medical Officer of Health for the borough of Bury, Lancashire, has been the recipient of a silver inkstand from the Bury sanitary inspectors.—On his retirement from office as honorary physician to the Bradford Royal Infirmary Dr. H. C. Major was recently entertained at dinner by the honorary medical and surgical staff and presented with an illuminated address and an album containing the photographs of the staff. Previously Dr. Major had been the recipient of an illuminated address from the board of management of the infirmary and of an aneroid barometer from the resident staff.

LEEDS SCHOOL OF MEDICINE.—The twentieth annual dinner of past and present students was held on Dec. 8th at Powolny's Restaurant. The chair was occupied by Dr. James Braithwaite, honorary obstetric physician to the Leeds General Infirmary, the vice-chairmen being Dr. J. Dobson and Mr. Edmund Robinson. A large number of the staff of the medical school and infirmary were present, including Mr. Littlewood, Mr. W. H. Brown, Dr. T. W. Griffith, Dr. E. F. Trevelyan, and Mr. Moynihan. About 100 gentlemen sat down to dinner. After the loyal toasts had been duly honoured Mr. Hugh Kee'ing proposed "The Staff" which was replied to by Dr. Braithwaite and Mr. E. Robinson. Mr. W. H. Brown, in the absence of Dr. Barrs, proposed "The Students, Past and Present," which was replied to by Dr. Dobson and Mr. Collinson. The toast of "The Visitors," proposed by Dr. Griffith, was replied to by Mr. Hutton on behalf of Owens College, Manchester, and by Mr. Ouranofski on behalf of University College, Liverpool. Selections of music were played during dinner and songs were contributed during the evening by students both past and present. A most successful evening was brought to a close by the singing of "Auld Lang Syne."

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, E. W., F.R.C.S. Eng., L.R.C.P. Lond., M.R.C.S., D.P.H., has been re-appointed a Medical Officer by the Slough Urban District Council.

BLAKER, PERCY S., M.R.C.S., L.R.C.P. Lond., has been appointed a House Physician for the City of London Hospital for Diseases of the Chest, Victoria-park, E.

BURGESS, R., M.B., C.M. Aberd., has been appointed a certifying Factory Surgeon for the Stanley District, Perthshire, vice W. Peddie.

BURROW, VINCENT, M.B., B.S. Durh., M.R.C.S., L.R.C.P., has been appointed a Medical Officer for the No. 2 Sanitary District of the Aylesbury Union.

CRISP, A., M.R.C.S., has been re-appointed a District Medical Officer by the Smallburgh District Council.

EDMUNDS, F., L.R.C.P. Lond., M.R.C.S., has been appointed an honorary Surgeon for the Chesterfield and North Derbyshire Hospital, vice C. Booth, resigned.

FORSTER, J., M.B., C.M. Glasg., has been appointed a Medical Officer for the Conisbrough Sanitary District of the Doncaster Union.

GOSSAGE, A. M., M.B., B.Ch. Oxon., M.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Physician for the East London Hospital for Children and Dispensary for Women at Shadwell.

HALL, J. FIELD, M.B., M.Ch., has been appointed an Assistant Physician for the Hospital of St. Francis, New Kent-road, London.

HAMILTON, W. C., M.B., C.M. Edin., has been appointed a Certifying Factory Surgeon, Plymouth district, vice W. A. Buchan.

HAY, P. G., M.B., C.M. Aberd., has been re-appointed a Parochial Medical Officer by the Forgue Council.

HILLMAN, G. B., L.S.A., has been appointed a Medical Officer by the Castleford Urban Council, vice E. W. Kemp, resigned.

IRONSIDE, JAMES, M.B., C.M. Aberd., has been re-appointed a Medical Officer for the Parish of Laurencekirk.

JEPHCOTT, C., M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Physician for Guy's Hospital, London, E.C.

KELYNACK, T. N., M.D. Vict., Ch.B., M.R.C.P. Lond., has been re-appointed a Medical Officer for the Manchester Royal Infirmary.

KITCHIN, P. L. S. A., has been appointed a Medical Officer for the Box and Ditteridge Sanitary District of the Chippenham Union.

LAPTHORN, C. A., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed, *pro tem.*, Medical Officer for the Littlehampton district of the East Preston Union, vice F. C. Bryan, resigned.

LATHAM, A. C., M.A., M.B. Oxon., M.R.C.P., has been appointed Assistant Physician to St. George's Hospital, London.

LAWSON, F. H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon for the Darlington Hospital and Dispensary.

MATHEW, G. PORTER, M.A., M.D., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Assistant Surgeon for the Provincial Hospital, Port Elizabeth.

MAY, G. E., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Third Sanitary District of the Ware Union.

MELLAND, CHARLES, H., M.B. Lond., M.R.C.S., has been appointed a Resident Medical Officer for the Manchester Royal Infirmary.

MITCHELL, A., M.B., C.M. Edin., has been re-appointed a Medical Officer for the Parish of Old Machar.

RAWES, WILLIAM, M.D., F.R.C.S., has been appointed Medical Superintendent for St. Luke's Hospital, London, E.C.

ROBERTSON, W., M.D. Glasg., D.P.H., has been appointed a Medical Officer and Police Surgeon for the city of Perth.

ROLLESTON, H. D., M.D. Cantab., F.R.C.P., has been appointed Physician to St. George's Hospital, London.

SMITH, S., M.R.C.S., has been appointed a Medical Officer for the West Malvern Sanitary District of the Ledbury Union.

STEVENSON, BRUCE, L.D.S., has been appointed a Clinical Dental Assistant for the Hospital of St. Francis, New Kent-road, London.

STONHAM, H. A., L.R.C.P., M.R.C.S., D.P.H., has been appointed Public Vaccinator for the Stepney Union.

STREETEN, F. E., L.R.C.P. Edin., M.R.C.S., D.P.H., has been re-appointed a Medical Officer by the Old Swindon Urban District Council.

TARGETT, J. H., M.B. Lond., B.S., F.R.C.S., has been appointed an Assistant Obstetric Surgeon for Guy's Hospital, London.

TAYLOR, HUGH, L.R.C.P. Edin., M.R.C.S., has been re-appointed a Medical Officer of Health by the Smallburgh Rural District Council.

TURNER, JOHN ANDREW, M.B., D.P.H., has been appointed County Medical Officer of Health for Hertfordshire.

WILLANS, W. B., L.R.C.P. Edin., M.R.C.S., has been re-appointed a Medical Officer by the Ware Board of Guardians.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BURY INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence and attendance.

CITY ASYLUM, Birmingham.—Junior Assistant Medical Officer for one year, unmarried. Salary £100 a year, with board, lodging, &c.

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CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c. Also Second House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for twelve months. Salary £40 per annum, with board, residence, and washing.

FINSBURY DISPENSARY, Brewer-street, Goswell-road, London.—Resident Medical Officer for one year. Salary £100 per annum, with a furnished residence in the institution, attendance, coals, and gas.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120.

GOVAN DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £100 a year, with board and residence. Applications to the Medical Superintendent, Hawkhead Asylum, Paisley.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with residence, board, and washing.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £60 per annum, with board and lodging.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Resident Medical Officer. Salary £50 per annum, with board, lodging, and washing.

KENSINGTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £125 per annum, with furnished apartments, coals, gas, and attendance. Applications to the Honorary Secretary, 21, Lower Phillimore-place, Kensington, W.

LIVERPOOL NORTHERN HOSPITAL.—Owing to unforeseen circumstances the appointment of Assistant House Surgeon as advertised has been postponed for two months.

LONDON FEVER HOSPITAL, Islington.—Assistant Physician.

LONDON LOCK HOSPITAL, 91, Dean-street, W.—House Surgeon for the Male Hospital. Salary £50 per annum with board, lodging, and washing. Applications to the Secretary at Harrow-road.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Board, lodging, and washing provided. Also Dental Surgeon.

NORTHERN DIVISION OF SOUTH UIST PARISH.—Medical Officer and Public Vaccinator. Salary £77 10s., and private practice. Apply to Mr. T. Wilson, Solicitor, Lochmaddy, Clerk.

ROYAL BUCKINGHAMSHIRE HOSPITAL, Aylesbury.—Resident Surgeon and Apothecary, unmarried. Salary £80 the first year, with an advance of £10 per annum until it amounts to £100, with board, lodging, washing, coals, and lights, and furnished apartments.

ROYAL SOUTHERN HOSPITAL, Liverpool.—Junior House Surgeon. Salary £63 per annum.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon. Salary at the rate of £60 per annum, with board, lodging, and washing.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant, for six months. Board and residence provided.

ST. THOMAS'S HOSPITAL, London.—Assistant Surgeon.

SUNDERLAND INFIRMARY.—House Physician. Salary £80, rising £10 annually to £100, with board and residence.

UNIVERSITY OF ST. ANDREWS.—An additional Examiner for three years.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, London.—Assistant Surgeon.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Medical Registrar, for twelve months. Salary £50 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Assistant Medical Officer. Salary commencing at £100 a year, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

BIDWELL.—On Dec. 17th, at Wimpole-street, Cavendish-square, W., the wife of Leonard A. Bidwell, F.R.C.S., of a daughter.

VERRALL.—On Dec. 17th, at Montpelier-road, Brighton, the wife of T. Jenner Verrall, M.R.C.S., L.R.C.P., of a son.

WALL.—On Dec. 17th, at Porchester-square, wife of J. B. Wall, M.R.C.S., L.R.C.P. Lond., of a daughter.

MARRIAGES.

LAMB—SYMES.—At the Church of the Holy Cross, Crediton, Devon, on Dec. 14th, by the Rev. Prebendary Felton Smith, vicar of Crediton, James Henry Lamb, M.B. and C.M., of Crewkerne, Somerset, son of J. H. Lamb, The Latch, Brechin, N.B., to Ethel Mary, eldest daughter of the late William Henry Symes, the Manor House, Crediton.

TYSON—WITHERINGTON.—On Dec. 15th, at St. Andrew's Church, Sonning, Wilson Tyson, M.B. Cantab., of The Beeches, Lowestoft, to Maud, second daughter of Iltid Evans Witherington, of Aberlash, Sonning.

DEATHS.

HARE.—On Dec. 15th, at Berkeley House, Manchester-square, W., in his 81st year, Charles John Hare, M.D. Cantab., F.R.C.P.

MUNK.—On Dec. 20th, at Finsbury-square, William Munk, M.D., F.R.C.P., F.S.A., in his 83rd year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.), Cancer (2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (31st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

THE CUNEO GIANT.

"NATURE brings not back the mastodon," says Tennyson, and human giants since the semi-mythical days of Theseus who (according to Plutarch) did so much to destroy the breed do not tend to reproduce themselves; in fact, King Frederick the Great's father whose passion for colossal grenadiers Macaulay ridicules so effectively would find it hard to get together a company, much less a regiment, of recruits 7 ft. high. Year by year the armies of southern Europe especially experience greater difficulty in reinforcing the line with youths of the proper stature and thoracic girth, and in Italy the "gracilità

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crescente" (increasing slenderness) seems, according to her military authorities, coincident with an unexpected loss of height. In these circumstances the appearance of a veritable giant in the subalpine town of Cuneo is a phenomenon deserving of more than vulgar curiosity. This overgrown individual is a native of the Piedmontese hamlet of Vinadio where he was born twenty-two years ago. His altitude is (in metres) 2·25, his thoracic circumference is 1·60, and his feet are 45 centimetres long. He had to return from France the other day to present himself to the military authorities of this district who, finding it difficult to enrol him in the levy, keep him under observation at the hospital of Savigliano. His slow elephantine movements seemed to unfit him for active service; not a bed in the barracks was big enough for him; if he had to mount guard no sentry-box, in the event of a shower, could admit him. His railway journeys had to be performed in a cattle-truck, and he had to be brought round to the train by an entrance outside the station which had no wicket wide enough to let him through. What the poor fellow's occupation in life is to be is a grave problem to his relatives and friends. Mobbed wherever he appears in public he will be constrained to keep in doors—possibly to earn his livelihood by receiving visitors at so much a head. It will be as respectable a "profession" as that of his compatriot Succi, the fasting-man, who makes his bread by refusing to eat it!

WHAT IS LEGITIMATE ENTERPRISE AND WHAT IS "STEALING A MARCH"?

To the Editors of THE LANCET.

SIRS,—I wish to ask your views on a subject of some importance to myself. I live in a small town just outside what may be called the suburbs of London. In one direction the town has spread to a railway station beyond which lies a village. Here recent building has taken place so that the village and the town form practically one residential neighbourhood. At the junction lives a medical man concerning whose attitude towards me I am seeking advice. I have patients in the village and this spring I hired rooms from a chemist residing there and made arrangements to attend my patients at these rooms on certain days at certain hours to their obvious convenience and mine. One day I received a letter from the medical man who lives at the junction saying that he had "ascertained out of curiosity the opinion of the *British Medical Journal* on my recent step" and to my great surprise I found my conduct pilloried in that journal as "savouring strongly of touting, advertising, and stealing a march on a professional brother." Knowing that I had been guilty of none of these things I wrote for a copy of the letter which had betrayed the editor of the *British Medical Journal* into such vilification of me. On this being supplied to me I at once found that the *British Medical Journal* had been inaccurately briefed. I wrote to the *British Medical Journal* repudiating the conclusions that had been drawn and that paper with great courtesy said, "We willingly give publicity to this repudiation and take the opportunity of stating that our reply was not intended to have any individual application." In spite of this I am informed that a use has been made of the first opinion of the *British Medical Journal*—a use designed to prejudice me in the eyes of the medical profession and in my business connexions. Will you kindly advise me what steps, if any, I should take? The consulting-room in the village was started entirely for the convenience of patients who were already my patients. It was in no sense a branch practice, for it was not worked by an assistant but by myself as a *bonâ fide* development of my practice. I may add that the unfriendly action of my "professional brother" has done me no harm, but I naturally desire to stop further misrepresentation of my conduct.

If you would like the letters and newspaper cuttings respecting the whole matter I shall be pleased to let you have them.

I am, Sirs, yours faithfully,

Dec. 12th, 1898. E. J. D. M.

*** We have received the letters and newspaper cuttings. The *British Medical Journal* has expressly repudiated any intention of applying to "E. J. D. M.'s" individual conduct the offensive criticisms in question. To make use, therefore, of the earlier note, written before "E. J. D. M.'s" explanation reached our contemporary, is to commit the exact offence which the *British Medical Journal* has pilloried—it is "to steal a march on a professional brother" by representing him wrongly as a tout and an advertiser. We are asked by "E. J. D. M." to advise him about any steps he should take. As he admits that he has suffered no harm in his practice we advise him to take no steps at all.—ED. L.

MEDICAL JOURNALISM IN MARYLAND.

AT the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland held at Frederick on Nov. 16th, 1898, Dr. Horace M. Simmons of Baltimore, manager of the *Maryland Medical Journal*, read a paper entitled "Medical Journalism in Maryland." Medical journalism in that State dates, he said, from the month of April, 1808, when Dr. Tobias Watkins established in Baltimore the third medical journal edited and published in the United States. It was called the *Baltimore Medical and Surgical Recorder*. The founder is said to have been a man of ability and culture. His journal was announced as a quarterly and the first number contained eighty pages of printed matter, embracing original papers, extracts, selections, miscellany, reviews, and correspondence. It was ably conducted, but the editor acknowledged in the preface to his second year's volume that he had been disappointed of the coöperation and patronage which he expected and the paper came to an end in 1809. A period of two years then elapsed, at the end of which the *Baltimore Medical and Philosophical Lycaeum* made its appearance under the direction of Dr. Nathaniel Potter, professor in the College of Medicine of Maryland. It was published quarterly at $2 per annum, but was discontinued after the fourth number. Following the suspension of the *Lycaeum* there was an interval of eleven years, when the *Baltimore Philosophical Journal and Review* appeared under the editorship of Dr. John B. Davidge, professor of anatomy in the University of Maryland. It contained 200 pages of well-arranged original and selected matter, but did not get beyond the initial number. The next venture was the *Maryland Medical Recorder* which was established in 1829 by Dr. Horatio G. Jameson, professor of surgery in the Washington Medical College. It only reached the third volume. In February, 1830, prior to the suspension of the *Recorder*, a rival periodical appeared under the name of the *Baltimore Monthly Journal*, edited by Dr. Nathan R. Smith, professor of surgery in the University of Maryland. The subscription price of this monthly was $3 per year if paid in advance or $4 if paid at the end of the year. Dr. Smith contributed most of the matter to the journal and was assisted in his editorial duties by an association of physicians and surgeons. This venture did not long survive. In the year 1833 another association of physicians and surgeons, in coöperation with Dr. E. Geddings, professor of anatomy and physiology in the University of Maryland, established the *Baltimore Medical and Surgical Journal and Review*, published semi-annually. The suspension of the *Review* in 1834 occasioned so much regret on the part of the profession that the editor concluded to resume publication under the monthly form and with the name of the *North American Archives of Medical and Surgical Sciences*, but this renewed effort was terminated after one year's experience. Under the auspices of the Medical and Chirurgical Faculty of Maryland an official organ of the Medical Department of the United States army and navy was started in 1839 as the *Maryland Medical and Surgical Journal*. It was at first edited by a committee of six, but subsequently by Dr. G. C. M. Roberts and Dr. Samuel Chew. The journal was a marked improvement over all previous attempts, but in March, 1843, it ceased to exist. Maryland was now left without a professional journal for a period of seventeen years when, in January, 1860, the *Virginia Medical Monthly* changed its name to the *Maryland and Virginia Medical Monthly* and entered upon a new series. The office of publication was in Richmond. The troubles growing out of the civil war caused the early suspension of the journal. In January, 1861, Dr. Edward Warren, professor of materia medica and therapeutics in the University of Maryland, established the *Baltimore Journal of Medicine*. In consequence of the civil war Dr. Warren gave up the publication and went home to the south, but after the war he returned to Baltimore and established the *Medical Bulletin*, a semi-monthly journal of medicine and surgery. In 1870 this periodical having reached volume ii. was united with the *Baltimore Medical Journal* under the name of the *Baltimore Medical Journal and Bulletin*. The *Baltimore Medical Journal* had been started the same year by Dr. E. Lloyd Howard and Dr. T. S. Latimer. No. 10 of volume ii. was the last of the consolidated publications to appear. The College of Physicians and Surgeons in 1872 began the publication of the *Physician and Surgeon* which was afterwards changed to the *Baltimore Physician and Surgeon*. Volume vi., No. 5, marked the date of its demise. In May, 1877, the *Maryland Medical Journal* was brought out under the editorial and business direction of Dr. H. E. T. Manning and Dr. T. A. Ashby. Originally a monthly it was changed to a semi-monthly in May, 1880, and to a weekly when it reached volume x. The property was purchased in 1894 from Mr. William R. Ashby by the present owners who constitute an incorporated company. Since the date of the founding of this journal there have appeared and disappeared the *Independent Practitioner*, the *Baltimore Medical and Surgical Record*, and the *Medical Chronicle*. Dr. Simmons's paper is printed in the *Maryland Medical Journal* for Dec. 3rd, 1898, where it forms the opening article.

THE EXCRETION OF HIPPURIC ACID IN THE URINE.

IN the *Gazzetta degli Ospedali* of Dec. 4th Dr. A. Sertoli describes observations which he has made on the effect of disease of the kidney in the excretion of hippuric acid. For the estimation of hippuric acid in the urine he prefers Völcker's process which, although it requires considerable time, has the advantage of comparative accuracy. A sample of the twenty-four hours' urine measuring from 200 c.c. to 300 c.c. is evaporated to one-third in the water-bath, then mixed with 4 grammes of sodium phosphate and evaporated to a syrupy consistence, after which dry calcium sulphate is added and the whole well dried at from 80° to 90° C. The residue is then extracted with from 50 c.c. to 60 c.c. petroleum ether in a Soxhlet apparatus, the receiver of which is kept at 70° C. so that a continuous supply of condensed ether may pass through the percolator. In four or five hours the phenol, benzoic acid, and fatty acids are removed, after which the hippuric acid is extracted by percolating similarly with sulphuric ether for a period of from six to ten hours, and after crystallisation from the ether can either be weighed or estimated with decinormal caustic soda. Observations made on himself and continued for six days showed that his maximum ordinary excretion of hippuric acid was 0·88 gramme daily and the minimum 0·35 gramme, the average being 0·64 gramme. He then took increasing quantities of

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benzoic acid on each of five consecutive days, at the same time estimating the hippuric acid excreted. The results were as follows:—First day: benzoic acid taken, 1 gramme; hippuric acid in urine, 0·88 gramme. Second day: benzoic acid taken, 2 grammes; hippuric acid in urine, 2·22 grammes. Third day: benzoic acid taken, 3 grammes; hippuric acid in urine, 2·91 grammes. Fourth day: benzoic acid taken, 4 grammes; hippuric acid in urine, 3·75 grammes. Fifth day: benzoic acid taken, 5 grammes; hippuric acid in urine, 4·51 grammes. Dr. Sertoli then made analogous experiments with 3 cases of chronic parenchymatous nephritis, 2 of chronic interstitial nephritis, and 1 of pyelitis, and he came to the conclusion that the elimination of hippuric acid is not affected to any important extent by the pathological condition. He is therefore of opinion that in the human subject the kidney is not the organ primarily concerned in the formation of hippuric acid.

PROFESSIONAL CONFIDENCE.

To the Editors of THE LANCET.

SIRS,—I should feel much obliged by your inserting in your next issue a reply to the following questions. What should I do under the circumstances I am about to relate? A is a patient of mine and B is his agent, in whose office is C as a clerk. D is a bailiff employed by A. B and D are also patients of mine but C is not. C writes me a letter marked on the outside *Private* and on the inside *Confidential* saying "B was pressed for time so asked me to write you as to what you thought about D's case and what the upshot would be," signing it in his own name only. Am I justified in giving C or even B this information? Thanking you in anticipation,

I am, Sirs, yours faithfully,

Dec. 13th, 1898. X.

*** Of course our correspondent must respect D's confidence entirely. He must say nothing to B, C, or any other person concerning D's health which he has gathered in a professional way without D's express permission, and he will be wise, if that can be obtained, to have it in writing.—ED. L.

THE UNQUALIFIED PRACTITIONER AGAIN.

AN inquest was held recently at Wrexham upon the body of a child, aged five years, who died on the way to the Wrexham Infirmary from the results of burns. The child was burned some days before her death and was attended until the day of death by a man named William Henry Howard, a contractor at the Brymbo-street works. At the inquest Howard is reported as saying that he had attended thousands of burning cases and thought himself as good at the job as any medical man in North Wales. The coroner warned him that he might one day find himself committed for manslaughter, to which Howard replied, "If a doctor sends for me I cannot refuse to attend." The coroner, "You seem to me to be a mass of conceit. You are running a very grave risk indeed in attending these cases up and down the country and charging half-a-crown a visit." The inquiry was adjourned for the attendance of the infirmary surgeon.

"LUNATICK ASYLUMS."

WE have received a small pamphlet bearing the above title. The sub-title is "An Essay by a Doctor of Arts, Oxford." The degree is one we are not familiar with, and if conferred by any university it is certainly not so by the University of Oxford as would seem to be implied. The writer's argument would seem to be shortly that (1) asylums are too palatial and luxurious; (2) that weak-minded persons should be treated in separate establishments, however small and homely; (3) that there should be no private madhouses; (4) that asylums are conducted on the lines made familiar to us by such works as "Valentine Vox" and "Hard Cash"; and (5) that "into these establishments the young and unfortunate are trepanned—magisterial warrants not even solicited— ....." That the "overwrought" should be tended in a home something resembling the best kind of almshouse is an idea with which we can all agree, but that the modern lunatic asylum is anything like the institution which a "Doctor of Arts" describes or that Lunacy Commissioners neglect their duty, as he implies, is absurd.

A CORRECTION.

To the Editors of THE LANCET.

SIRS,—A curious error appears to have crept into the report of Koch's lecture given in THE LANCET of July 2nd. It is there stated that "the mosquitoes probably deposit their eggs on the human body, the parasites issue from these eggs and when their number has increased the disease develops." Koch's suggestion is otherwise. It is that the parasite is passed on through the eggs and larvæ to the imago which is the active agent for disseminating the disease. The exact words, taken from the authorised translation of the lecture, are: "The mosquito receives the parasites, transmits them to its eggs and the young larvæ, and only the next generation is able again to infect with malarial parasites. Nor does it seem to me impossible that the parasites maintain themselves in the mosquitoes through several generations."

I am, Sirs, yours faithfully,

Dec. 20th, 1898. C. H. E.

THE "CALTON" STYLOGRAPHIC PEN.

ONE of these pens has been sent to us for use and has given every satisfaction. We have found it simple in working and easy to write with. It is supplied by the Jewel Pen Company, 58, Fenchurch-street, E.C.

THE "INSTRA WARMER."

WE have received from Messrs. Blair and Co., of 47, Cannon-street, E.C., one of their Instra Warmers which was referred to under the title of the "Sun Pocket Stove" in THE LANCET of Nov. 28th, 1896. There is apparently no difference in the construction of the "Warmer" now before us and the one which we previously noticed. No doubt in many cases, especially in travelling, this handy little contrivance, easily carried in any pocket, being about 4½ in. by 2 in. by 1⅛ in., would be a boon on cold days; and to those who are constitutionally troubled with cold hands it appears to provide a solution of the difficulty experienced in meeting their requirements. The heat is obtained by the slow combustion of a carbon rod placed inside a metal case and each rod lasts for about four hours.

THE "LIBERATOR" FUND.

EVERYONE will remember Thackeray's masterly description of the arch-swindler Brough in the "Great Hoggarty Diamond" and how the fall of the Great Diddlesex Association brought misery upon thousands of small shareholders. The Liberator *fiasco* was upon exactly the same lines even to the unctuous piety and scoundrelism of the chief actors. It will be remembered that a fund was got up for the relief of the sufferers by the collapse of Jabez Balfour. Although £82,000 have been distributed some £18,000 are still required. In the appeal issued by Mr. Stockwell Watts it is sad to see the smallness of the amounts lost for it shows the humble circumstances of most of the victims. Hardly anyone seems to have lost more than £500. It is a truism to say that Christmas is above all others the season for charity, but the Liberator Fund is a most worthy one to help and those who can spare anything towards it may feel assured that their moneys will be only distributed to the really deserving.

A COMMON AILMENT.

A SANITARY engineer living in a Kentish village not far from London sends us the following amusing description of local feeling in the district concerning their water-supply: "Our village water-supply—the spoilt child of our parish council—is suffering from a very common ailment—*neglect*—which may develop into a serious attack of typhoid or other preventable disease. Its grandmother and mother ('Spiritual Scientists'), its godmothers and its aunts ('Peculiar People'), are terribly indignant to think that their only child should be taken from them and placed under the charge of the rural district council just because they refused to apply the simple common-sense remedies prescribed by the medical officer of health. Public sympathy is requested."

R. L. S.—We never recommend individual practitioners. Our correspondent must consult his own medical man.

Ignarus.—There is no breach of etiquette in the proposed addition under the circumstances described.

Mr. L. Weiss.—We do not recommend individual practitioners, whether specialists or not.

Colonial will find full information in the current Medical Directory p. 20.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 22nd, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 16	30·26	S.W.	...	56	55	41	41	43	Foggy
" 17	30·25	S.W.	...	56	56	43	51	52	Overcast
" 18	30·27	S.W.	...	72	57	52	52	54	Cloudy
" 19	30·09	N.W.	...	64	49	48	47	49	Cloudy
" 20	30·37	N.W.	...	53	44	36	36	38	Cloudy
" 21	30·38	N.E.	0·02	44	44	38	42	43	Overcast
" 22	30·47	S.	...	46	44	36	36	37	Foggy

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ABSTRACT OF

The Morison Lectures

ON

THE RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDER IN THE VISCERA.

Delivered before the Royal College of Physicians of Edinburgh on Nov. 7th, 9th, and 11th, 1898,

BY ALEXANDER MORISON, M.D., F.R.C.P. EDIN.,

PHYSICIAN TO OUT-PATIENTS AT THE GREAT NORTHERN CENTRAL HOSPITAL AND CHILDREN'S HOSPITAL, PADDINGTON-GREEN.

LECTURE III.[1]

Delivered on Nov. 11th.

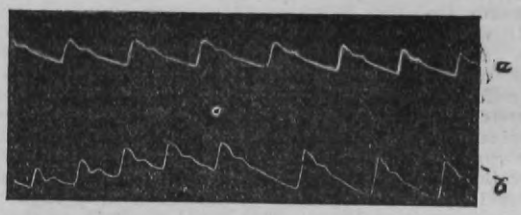
DISORDERS OF VISCERAL MOTION.

SIR JOHN TUKE AND FELLOWS,—The separation of sensation from motion is relatively to the mind a distinction in what may be termed objective consciousness. We feel pain and can localise it and we can observe movement. The separation of sensibility from motility is a finer distinction and is largely in what we may term subjective consciousness or reasoning. Essentially the transmutation of one form of motion into another merely emphasises the common property by which a living universe is conditioned. Clinically the distinction is convenient and no circumstance reveals more instructively the relation of the nervous system to visceral motion than the influence one organ has upon another. The displaced or twisted kidney which induces a tachycardia, the diminished thyroid secretion which causes a cardiac stagger or a bradycardia, the retained excretion or the peripheral excitation which induces a convulsion, or the functional inactivity generally which disturbs metabolism,—all show how intimately one form of motion is related to another; and when we emphasise motility in a given clinical condition we might rationally regard it in some instances as the motor feature of an essentially sensory and causal disorder. In touching upon some points illustrative of the relation of the nervous system to viscero-motor disease and disorder I shall follow the plan already adopted in discussing sensory disorders and take as the type of disordered visceral motion abnormalities in the action of the heart, making reference incidentally to analogous conditions in other organs.

The motor innervation of the heart we know is accelerant and augmentor-motor, inhibitory and depressor-motor, and trophic or pneumogastric proper, all these movements having necessarily their sensory concomitants or equivalents. Gaskell and his successors, anatomical and physiological, have revolutionised, as we learned last year, our conceptions of the visceral nervous outflow in general, including the innervation of the heart. For whereas we formerly regarded the pneumogastric as a primary and the cervical sympathetic as a secondary source of cardio-motor innervation, we now believe that the pneumogastric is a secondary and the cervical sympathetic a tertiary source of such innervation. Whether all the supra-thoracic vaso-motor outflow originates as low down as the second dorsal spinal nerve appears still to be somewhat doubtful. Hill and Bayliss[2] failed to evoke vaso-motor action in the intracranial circulation by electrical stimulation from this region. Without the aid of experimental physiology and merely using the microscope for anatomical research I have met with conditions bearing on this point which will be seen on the table and are reproduced on the screen. It will be seen that what appear to be the sources both of the pia matral and pia vascular innervation are certain tassel-shaped bodies which are arranged centripetally to the vessels and of which I give a short account this month (November) in the *Edinburgh Medical Journal*. The precise locality of these vessels I have not yet had an opportunity of determining, but they appear to me to be sufficiently characteristic in design to be capable of identification by injected specimens. Thus identified, the position of the bodies in question, whether they be the source of vaso-motor nerves or no, should also be determinable.[3] In the meantime we may assume, notwithstanding Hill's and Bayliss's failure to elicit response, that the outflow of the indubitably existent vaso-motor nerves in the pia mater is from the same region as the general vaso-motor outflow, that is, below the level of the first dorsal nerve, and thus bring the vaso-motor phenomena of all the viscera including the brain, into line.

Cardiac motion, like secretory and other motion, may be average or normal and plus or minus. A mid-point or equilibrium is a balance of extremes and vital equilibrium is maintained by a certain variation around a centre of equipoise. Acceleration and retardation, augmentation and depression, constantly correct one another with the sensitiveness of a species of tentacula to surrounding circumstances, these tentacles being the nerves and the properties with which they are endowed. This is well exemplified by the influence of respiration on the character and rate of the radial pulsation. (Fig. 1.) The sphygmogram I throw on

FIG. 1.



a, Pulse during quiet respiration. *b*, Pulse during forced respiration.

the screen shows the small waves of forced inspiration on the ascending portion of the curve, followed by the large waves of prolonged expiration on the descending portion. These are no more the evidences of a mere pneumatic suction and propulsion than the cerebral circulation is the passive arterio-venous balance which Monro and his disciples conceived it to be. The pneumatic conditions play a part in the one as the comparative resistance to atmospheric pressure does in the other, but the character and rate of the waves in the two portions of the curve indicate a vaso-motor regulation, the peripheral incentive to which is, I believe, to be found in the increased pressure in the dextral chambers of the heart and pulmonary circuit during inspiration. For comparison with the tracing of forced respiration I show one of the pulse of the same subject taken at the same time during quiet breathing in which the pneumatic factor is conspicuous by its absence, although in a minor degree doubtless still operative. (Fig. 1*a*.)

The antagonistic action of the accelerant and retardant nerves of the heart has been disputed. Retardation can be induced when artificial acceleration is in progress. It is none the less true that the safety of an abnormally inhibited heart consists in some acceleration of cardiac pulsation and, as was mentioned last year, in the sphere of secretory motion there appears to be a certain compensatory independence in the secretory influence of the cranial and sympathetic nerves of the submaxillary gland. It is probable that the same rule applies to other forms of vital motion. Dr. William Hunter,[4] referring to the fact that intense and even fatal jaundice may rapidly follow emotional shock, accounts for the phenomenon by suggesting a spasm or reversed peristalsis of the bile-ducts while the bile is in full flood as the probable cause. He admits, however (p. 81), that diminished quantity and increased viscidity of bile may be a cause of its absorption. The viscidity he attributes to catarrh of the bile-ducts. Can a more directly neurotic hypothesis be advanced?

The main secretory nerve of the liver is the pneumogastric and its sympathetic endowment is from the splanchnic nerve, while vaso-motor nerves for the portal vein are derived (according to Bayliss and Starling, quoted by Haliburton[5]) from nerves ranging from the third to the

[1] Lectures I. and II. were published in THE LANCET of Dec. 17th and 24th, 1898, respectively.

[2] Journal of Physiology, 1895.

[3] The neural nature of these structures has been disputed by a good microscopist, but I believe I am correct in maintaining the view I have expressed.

[4] Allbutt's System of Medicine, vol. iv., p. 68, et seq.

[5] Op. cit., p. 670.

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eleventh dorsal. It appears possible, therefore, that the sequence of events may be somewhat as follows: in sudden, severe, and mental cases shock is followed by pneumogastric inhibition and arrest of its secretory-motor function. This entails an attempt on the part of the sympathetic to come to the rescue which it does by producing a more potent but also a more viscid bile, the nature of such potency not being at present to the point, which, like a blundering but well-meaning friend, stands in the way just when the pneumogastric having recovered from its inhibition throws out by augmented activity too large an amount of bile for rapid escape, hence absorption and rapid toxæmia in some cases and slow poisoning in others. I do not for a moment presume to indicate this solution as correct, but it appears to me to be as probable as other theories suggested and brings the motor activities of the liver into line with those of the heart, which is my present purpose. Again, the striking phenomena on the one hand of Graves's disease, which I prefer on this occasion to call Begbie's disease, and on the other of myxœdema appear to suggest a parallel on similar lines. The thyroid gland is innervated by the pneumogastric and by visceral nerves which reach it by way of the inferior and middle ganglia of the cervical sympathetic. Of these its most active secretory nerve is probably the pneumogastric, although I am not aware that the fact has been experimentally proved. If we regard Begbie's disease as in the first instance a cardio-vascular neurosis, to employ a term expressive of our ignorance, we can conceive an increased though ineffectual effort upon the part of the pneumogastric system—that is, of motor fibres probably derived from the spinal accessory nerve and coursing in the pneumogastric—to restrain the cardio-vascular organs in excessive visceral motion, and although unsuccessful in that effort so stimulated by it as to provoke increased activity in its own secretory motor fibres. This would result in an excessive secretion among others of the thyroid juice, the effect of which upon the circulation is to accelerate it. Thus the increased activity of that gland may add fuel to the fire which burns so lustily as vaso-motor commotion in the circumstances in question. This secretory increase, as we know, is at present regarded as one of the most probable causes of excessive pulsation in Begbie's disease, the etiology of which, however, is not yet by any means clear. It is conceivable, moreover, that a period of persistent hypersecretion may result in one of hyposecretion, the retardant influence of which may be slow in showing itself for the following reason: the sympathetic system, besides its general vaso-motor over-action, may also induce a supplementary sympathetic juice as in the case of the submaxillary gland and thus maintain for a time the waning accelerant influence of pneumogastric secretion. We know, however, that ultimately in a large number of cases the excessive excitement of the cardio-vascular system subsides more or less, that in some cases bradycardia succeeds tachycardia and that in yet others myxœdema takes the place of Begbie's disease. The neuro-motor activity of the gland, in short, and its associated organs is worn out and we may expect some day to have demonstrable pathological changes in the controlling centres which together with peripheral degeneration would account satisfactorily for the striking complex of symptoms. Action and supplementary action, endeavour and support, over-action and reaction, error and correction, seem to be general laws of life, and there does not seem to be any just reason why they should not apply also to the life manifest in visceral motion in its various form.

To study the matter a little more closely, and taking cardiac action as the type, let us examine the motor effects of shock upon the heart, and in the first instance of the shock of physical pain, with which Laycock's "phrenalgia" must necessarily be associated and often is in a high degree. As has already been remarked in a previous section, pain or excessive sensibility in any organ may influence the heart's action in association with various degrees of concomitant mental emotion proportionate to the amount of the stimulus. The tachycardia associated with displaced kidney may be present without much associated pain and therefore without great mental distress. With more pain the same conditions will be emphasised. The reflex effects of nephroptosis may affect many organs besides the heart and the severity of these secondary motor disturbances is not proportionate, as MacAlister has stated, to the amount of mere displacement.[6] Calculi, we have seen, may induce an extreme of agony which may terminate in collapse and death, the associated cardio-vascular phenomena being those of rapid and enfeebled action of the heart and a general vaso-paresis accompanied by profuse perspiration and depression of temperature. These extreme phenomena differ from those associated with angina pectoris chiefly in the situation of referred pain and in the uninterrupted duration of the agony. With this distinction these might be termed cases of angina pectoris hepatica, renalis, et hæc species omnes.

The first effect of sudden visceral pain, whether cardiac or general, on the movement of the heart is to arrest its action and probably could we at the moment of the onset of pain auscultate that organ we should detect an inhibition. This, however, like peripheral spasm, which is usually regarded as the cause of angina pectoris, is so early a phenomenon that it must very rarely be indubitably observed and when observed and present it is not necessarily the essential cause of the general complex of symptoms. The conditions usually first observed by the ear and the hand are the phenomena of depression which follow inhibition, associated in many cases shortly afterwards with those of a rescuing augmentation and acceleration of the heart's beat. Dr. Lauder Brunton was the first, so far as I know, to note graphically the cardio-vascular movements connected with valvular angina. In the Transactions of the Clinical Society of London (vol. iii.) he published a case of aortic valvular disease with sphygmograms in which he showed the quick small pulse of the agony and the larger and slower pulse of the interval free from pain. I throw on the screen a slide prepared from the published tracings. Dr. Brunton considered the pulse of the agony to indicate peripheral spasm and was at a loss to reconcile its rate with its assumed condition. Since Brunton's original observations, however, opinion has modified a good deal on this point and there are those who feel more disposed to regard the peripheral signs usually observed as those of empty collapse rather than of active spasm—of profound collapse in other words such as might be caused by other visceral and even somatic pain of a certain degree of severity. Sir Richard Douglas Powell, however, in his recent Lumleian Lectures before the Royal College of Physicians of London,[7] also describing what he terms vaso-motor angina in the case of a young man suffering from aortic regurgitation, spoke as follows: "It was curious to note the absolute extinction of all the aortic characters in the pulse which became contracted to a small, hard, pulsating thread, whilst as the patient sat forward leaning against a chair in great pain the bed shook with the violence of the cardiac beats and his neck and subclavian vessels could be seen pulsating with responsive violence. A dose of trinitrine quickly brought back the aortic features of the pulse and dissolved the painful scene. One could not observe the labouring beat of the heart—the strongly pulsating large vessels contrasted with the almost effaced small vessels—without appreciating the power of vaso-motor contraction to cause cramp or paralysis of a healthy ventricle; yet there are physicians who still doubt the efficacy of vaso-motor spasm in the mechanism of angina."

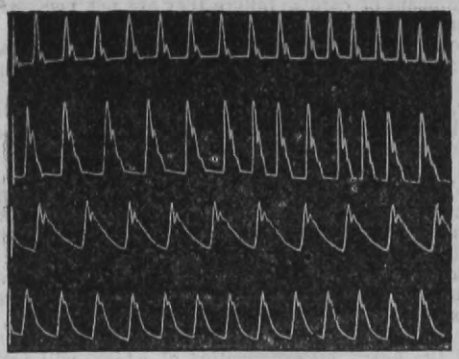
I presume it is because of the humane desire not to disturb unnecessarily the patient in the throes of cardiac agony that we find more frequent record of the condition of the radial pulse in these cases than of the heart itself. If, however, the heart of such a patient be examined it will be found that the extinction of "aortic character" which Sir Richard Powell noted in the radial pulse is also very distinctly appreciable at the aortic orifice itself. The usually very considerably hypertrophied left ventricle will be found to pulsate with increased frequency, the bruits significant of the valvular defect being almost or quite hushed, and increased tension in the pulmonary circuit indicated by a well-marked accentuation of the second sound at the pulmonary arterial orifice. There is repletion of the ventricular cavity and comparative emptiness of the extra-cardiac systemic arteries. The full and hypertrophied heart labours violently to rid itself of the residual stimulating and dilative burden of blood, not because it cannot jerk some of its contents into the larger comparatively empty vessels with more than "aortic" emphasis, but because its own intrinsic and momentary failure has cast upon it a paralysing weight which must be rapidly reduced if the organ is not to come to

[6] Allbutt's System of Medicine, vol. iv., p. 344.
[7] THE LANCET, March 26th, 1898.

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a standstill. The small peripheral pulse which is associated with such valvular angina during the period of cardiac failure is not on this showing one of spastic narrowing but of empty collapse. The following sphygmograms which I published to illustrate a paper on the blood-pressure in angina pectoris in the Edinburgh Hospital Reports for 1895 may render my meaning clearer. (Fig. 2). The first shows the attack at

FIG. 2.



a, During angina at its height. *b*, Pain subsiding. *c*, Pain gone. *d*, Sphygmogram from the same case during a period of comparative compensation.

its height with a lowering of the predicrotic wave and a flat drag in the diastolic interval, meaning, as I think, that the collapsed and comparatively empty artery had failed to reach the lever of the instrument. In the next the cardiac force is increasing, its action becoming slower, and although blood still fails to reach the periphery in normal abundance there is a rise in the position of the predicrotic wave and an indication of dicrotism. Pain is still present under these circumstances but the patient is easier. The next sphygmogram represents the refilled and retarded pulse and the cessation of pain. The fourth and last tracing shows the typical aortic regurgitant pulse of the patient during a period of temporarily re-established compensation.

The conditions are somewhat different in the angina of arterio-sclerosis without valvular disease and also in those mainly associated with fatty degeneration of the heart. In the former, while the initial conditions of the attack are to my mind indubitably central, not peripheral, there may at times be noted a short period of simultaneous arterial hardening in association with a quickly pulsating heart. How much of this is spasm and how much the induration of an arterio-sclerotic and imperfectly filled vessel I have not been able so far to convince myself. The angina of the fatty heart, again, may be associated with a slow, full, and soft pulse without suspicion of spasticity, the irresponsive and degenerated ventricle throwing its contents into the systemic arteries with bradycardial sluggishness and in imminent danger of that syncope which so frequently overtakes it.

It has been mentioned that shocks which so markedly affect cardio-vascular movement may likewise influence secretory motion and I have suggested the presence of a supplementary or balancing secretion in such cases. Shock to the liver may, indeed, prove fatal to hepatic motion as shock to the heart may to cardiac motion, but it is probable for the reasons stated that minor degrees of shock may have their consequences averted by a supplementary mechanism in such a way as would not be possible but for that double innervation which is a fact in the anatomy of the viscera and but for that bilateral and double innervation which appears to play an important part in the innervation of unified or single viscera such as the liver and heart. This bilateral action is probably secured by an incomplete peripheral and plexal decussation which has not yet been demonstrated anatomically but of which there is good experimental evidence. Thus, as has been stated, section of one pneumogastric nerve has little effect upon cardiac motion, while section of both nerves permanently disables it, just as a similar lesion abolishes the glycogenic function of the liver.[8]

In addition to the transient phenomena of disturbed or excited but not necessarily disordered cardiac action to which I have referred in connexion with angina pectoris, changes of cardiac rhythm of a more persistent character may be met with, and on the nervous relations of these, taken as a type of viscero-motor irregularity in general, I desire to comment very briefly. I trust enough has been said to justify the thesis that in the regulation and maintenance of sustained visceral motion the nervous system always plays an important part. Its regulating faculty is more generally conceded, however, than its sustaining power. I assume, therefore, for the reasons stated, that in this respect also it plays essentially as important a part as the blood and the inherent irritability of the cell manifesting any particular form of motion. As I have stated the functional unit is not one but triune in every form of visceral motion, mobile, secretory, metabolic, and excretory, and that, differ as these may from one another in details of manifestation, they are subject to essentially the same order or regularity of action and to the same disorder or irregularity of action as the more objectively mobile form which we associate most readily with muscular tissue. With this perhaps unnecessary reiteration I proceed to say a few words concerning abnormal variations in cardiac action and their relation to the nervous system, regarding such as typical of other forms of disordered visceral motion.

The heart's action, undisturbed by forced respiration, bodily exertion, or mental emotion is, normally, quite regular. The eviscerated heart of an animal recently killed is also usually quite regular. Auricular systole precedes ventricular systole with automatic precision. Circumstances, in other words, which induce variation in stimulation are removed and rhythmical cellular action, one of the factors in the triune partnership, for a short period, alone or assisted by some residual storage of nervous energy or some remnant of stimulation by blood, continues to act with the unvarying rhythm which blood, nerve, and muscle in common contribute towards during life, when the persistently isochronic and isodynamic organ is undisturbed by extraneous stimulation. The first observable departure from this isochronia and isodynamia is a variation in rate rather than in force. The heart-beats are all complete in themselves and if when more rapid they are individually less powerful than a single slower beat, they collectively carry on the circulation with much the same efficiency as when the heart's action is more regular, provided no call is made upon the heart for additional exertion. This condition, when not due to mental excitement, as it may be (in which case it may be characterised either by augmentation or by depression or by both these states alternately) is usually due to variation in the stimulation of the cardio-vascular nervous system caused by variation in the tone of the chambers of the heart and in the amount of their contents. This simplest form of abnormality may be termed "anisochronia" as variation in rate is more easily appreciable than variation in power. If the condition be present for any length of time the variation in force becomes more noticeable and to irregularity in rate is added irregularity in the size of the pulse wave. The systole may have half its normal force or less than half—a condition which may in general terms be called "hyposystole." (Fig. 4 *b*.) Now, inasmuch as the empty and eviscerated heart may have a perfectly regular rate and amount of systole this hyposystolic condition cannot be attributed to the amount of blood in the chambers of the heart. It must, therefore, be due either to the muscular or neural factor. The muscular factor, we have seen, with the nervous and hæmic factor at a minimum may act perfectly regularly and irregular post-mortem tremor of muscular tissue is most frequently observed in somatic, not visceral, muscle. On the other hand, there is abundant evidence—clinical, physiological, and pharmaceutical—to prove that stimulation of the nervous system may profoundly influence the action of visceral muscle in augmenting or depressing it and in hastening or retarding it. It seems, therefore, rational to conclude that variations in cardiac action during life, whatever the special character of the rhythm, must be largely, although not altogether, due to the combined or alternate and always associable play of the nervous mechanism which we have examined. Such nervous action even under abnormal circumstances may be rhythmically or arrhythmically exerted.

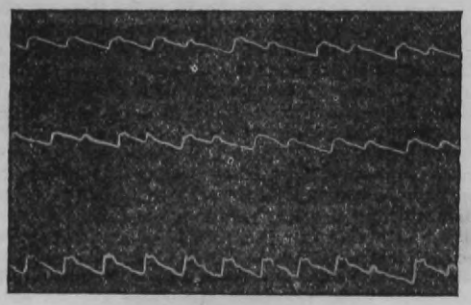
Reduplication of the second sound of the heart may at present be excluded from discussion, as it may be wholly due to hydraulic variation in the pulmonary artery and aorta. Triplication, however, otherwise termed *bruit de galop*, cantering rhythm and reduplication of the first sound of the

[8] Haliburton, op. cit., p. 670.

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heart, while it is capable of being influenced by gravitational conditions and modified by posture, is essentially a retarded systole, or in some cases a systole followed by a very small supplementary systole which for definiteness may be termed a "hypo-hemisystole" or something less than a hemisystole. Like variation induced in the pulse-wave by respiration, the neutral factor is necessary to its production, as we may convince ourselves comparatively satisfactorily by a study of the more pronounced condition to which it is related—namely, quadruplication, or one of the forms of rhythmically dropped beat. (Fig. 3.) Reduplication of the first sound

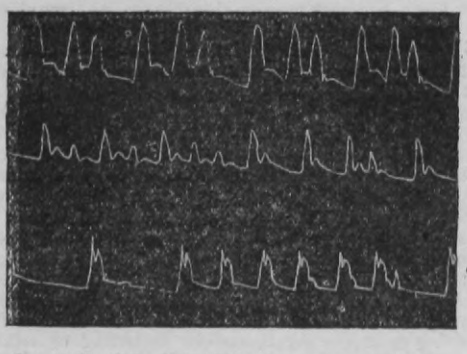
FIG. 3.



a, Occasional quadruplication. *b*, Regular quadruplication. *c*, Triplication with anacrotism.

has been variously accounted for. Dr. Sibson[9] considered it to be due to asynchronous action of the two ventricles, and Sir William Broadbent has recently expressed the same opinion.[10] Physiologists, however, such as François Franck, dispute the possibility of dissociated ventricular action, and clinical examination and sphygmography appear to me to support the physiologists. Two ventricular systoles would of course mean two diastoles and reduplication of the first sound on Sibson's hypothesis should usually be associated with a reduplication of the second sound which it is not. But were the double systole situated in the left ventricle it would not necessarily imply a reduplication of the second sound. Now, sphygmography shows that cases of quadruple pulsation consist of a long systole followed by a short diastole and this by a short systole followed by a long diastole. (Fig. 3 *b*.) Systole, in other words, is followed by hemidiastole, this by hemisystole and this finally by a long diastolic pause. The tracings I throw on the screen will emphasise these points. It has been observed that digitalis induces this rhythm in some cases and this fact, it

FIG. 4.



a, Quintuplication. *b*, Irregular hyposystole. *c*, Occasional acyclia.

appears to me, supports a neural view of its causation. When the beat is triple and the first sound reduplicated these events are crowded up, the first short diastole is omitted and the triple rhythm with anacrotism results. (Fig. 3 *c*.) Instead of the bigeminal pulse of quadruplication, a trigeminal pulse may be present which consists of three systoles and two diastoles. It is a quintuplication. (Fig. 4 *a*.) In all these varieties the ventricles act together, not apart, and the regulating factor in the rhythm is, I believe, neural. The cardiac cycle may, we know, be altogether or almost suppressed, and this acyclia it may fairly be argued is a variety of inhibition and probably not only neural but more precisely pneumogastric in origin and due to local cardiac or distant reflex stimuli. (Fig. 4 *c*.)

Some of the varieties of abnormal cardiac rhythm mentioned may be of long duration, but they are essentially an adaptation of the organ to certain circumstances with a view to carrying on the circulation, and while they may at times be significant of cardiac failure they are not necessarily so and cannot therefore be regarded as pathological. It is not so in some cases of persistent *bradycardia* and *tachycardia*. In the former, as we know, the heart's action is abnormally retarded, the neural cause of such retardation being, it would appear, either *in* the heart or *outside* the heart. Dehio[11] showed that extra-cardial bradycardia could be accelerated by the administration of atropin and that what he terms cardial bradycardia could not be so affected. It is the latter kind which constitutes the graver danger to life. (Fig. 4.) The precise neural mechanism of the condition can only be surmised not having yet been demonstrated. Retardation should normally provoke acceleration, and as it does not do so it would appear in the absence of myocardial degeneration or some general depressant such as a poison, whether auto- or hetero-genetic, that the seat of the disorder is in the spinal visceral innervation of the heart, an examination of which will probably ultimately reward the labour of someone. The transient bradycardia which follows fevers such as pneumonia may be attributable to exhaustion of the spinal visceral nerves, and Goldscheider and Flatau[12] have recently shown that high temperature has a very distinct effect upon the appearance of central nerve cells. We know, however, as little

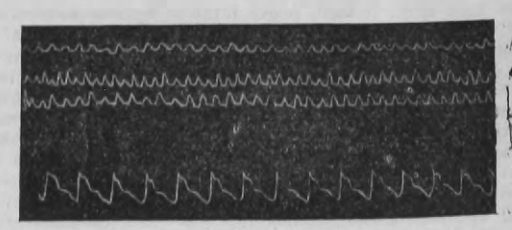
FIG. 5.



a, Persistent cardial bradycardia. *b*, Bradycardia with quadruplication.

positively about the essential neural causes of bradycardia at present as we do of those of persistent *tachycardia*. These very terms reveal our ignorance. There is some reason to believe, however, that persistent tachycardia like bradycardia may be of cardial and extra-cardial origin. My former colleague at the Great Northern Central Hospital, Mr. Spencer Watson, cured a case of persistent tachycardia by the removal of post-nasal growths. Martius also in his monograph has collected a number of cases in which a degree of persistent tachycardia was associated with disease of the pneumogastric nerve or nerves. I have already suggested that in some cases of cardiac dilatation associated with

FIG. 6.



a, Essential paroxysmal tachycardia. *b*, Sphygmogram from the same case showing the sudden restitution of normal pulsation.

persistent tachycardia a neural stimulation of the rich nerve-supply of the heart may be active in producing the condition and it is a common experience that the removal of dilatation also reduces the heart-rate to more leisurely and regular

[9] THE LANCET, March 28th and April 11th, 1874.
[10] Heart Disease, p. 34 (London, 1897).
[11] St. Petersburg. Medicinische Wochenschrift, 1892.
[12] Op. cit.

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action. In essential or paroxysmal tachycardia, however, we have an interesting nervous condition, at present unexplained but usually associated with cardiac dilatation, in which the delirious heart appears to escape from all nerve control, inhibitory and accelerant, depressant and augmentative, and to revel for a time in the fœtal tic-tac of emancipated visceral rhythmicality. (Fig. 6.[13]) This form of run-away heart is usually pulled up sharp by what appears to be an augmented inhibitory action of the vagus which asserts its authority with surprising abruptness. The sphygmograms I show illustrate these phenomena. This sudden restitution to normal visceral motion is not unknown in other organs. The defective biliary secretion of non-catarrhal inhibited hepatic motion may be rapidly followed by normal secretion. The oliguria of an actively podagral state may as quickly be succeeded by copious urination just as the mental irritability of suppressed gout may suddenly lessen when the disorder finds localisation in a joint. That these rapid changes may be due to neural conditions there is good reason to believe. It is related of vom Stein, the patriotic and able opponent of the First Napoleon, that when he was dismissed by the King of Prussia at the dictation of the ill-mannered Corsican he developed a bad attack of gout which resisted all treatment, balneological and other, until Queen Louisa, overruling the complaisance of her not too heroic consort, procured vom Stein's recall to office. The gout disappeared forthwith and the metabolic and excretory cripple of yesterday, restored to mental and bodily vigour, successfully organised the overthrow of the insolent invader of his country.

Just as visceral disorder may be the stimulus underlying somatic sensory phenomena, so also somatic motor phenomena may be due to visceral disorder. Irritative, septic, and stagnant conditions in the gastro-intestinal canal may apparently be the efficient cause of clonic and tonic disturbances of the somatic muscular system. In the case of the myoclonus multiplex which affects some neurotic and neurasthenic dyspeptics it is probable that these painless spasms are due to some general irritant in the blood, frequently aggravated by a certain amount of tabagism. But the question of reflex of unabsorptive and toxic origin in wide-spread tetany is more difficult to decide. The bilateral tetany of the infant, for example, with carpo-pedal contracture so frequently observed at our children's hospitals, and usually in association with gastro-intestinal irritation of a pronounced type or with the recent history of such, might very plausibly be argued to be a reflex due to bilateral stimulation of the bilateral innervation of such a single tube as the alimentary canal. This view is moreover still more plausible in those cases in which the higher centres are quite unaffected and the patient grins complacently at his carpo-pedal condition. It is, however, possible that there are toxic agents which in certain quantities act like strychnine chiefly upon the spinal cord and the alcoholic extract obtained from the gastric juice by Bouveret and Devic[14] seems to have been capable of producing tetanic convulsions on intravenous injection. The motor disturbances, moreover, need not be limited to the lower segment of the nervous system but may, according to the authors quoted, become generalised and even attended by epileptoid phenomena and unconsciousness. Under these circumstances, however plausible at first sight a reflex explanation of tetany may appear, it is probable that the toxic view now more generally entertained is the correct one. In minor degrees of the affection it is just possible that reflex action may also play a part. In any case the intimate connexion between the visceral disorder and the neuro-muscular phenomena in question is indubitable. Whether some cases of somatic contracture of a so-called "hysterical" nature are of visceral origin cannot be stated positively, notwithstanding the large *rôle* previously assigned to the sexual system in these disorders. Renal calculus may, however, provoke a lateral contraction of the trunk on the affected side[15] which must be regarded as a true reflex and I have observed the same condition in a neurotic patient the subject of consolidation of the base of the left lung due to aortic valvular disease. The length of time for which "hysterical" contracture may persist removes auto-intoxicant influences from the purview of causes, and the final discovery in some cases of central sclerotic changes indicates the possibility either of original disease there, or of so-called functional changes becoming organic lesions, whether the original stimulus were splanchnic or not. The somatic hysterical contractures bear a very strong resemblance to an interesting group of cases which Mr. Clinton Dent brought before the Medical Society of London in 1897[16] in which a spastic condition of portions of the alimentary canal may simulate tumour, cause severe pain on the principles laid down in a previous lecture, and even justify the operation of laparotomy from the urgency of discomfort. This intestinal neurosis or contracture appears like its somatic equivalent to be in the first instance reflex rather than due to a more general poisoning of the centres.

In bringing to a close this course of lectures, of the many defects in which no one can be more conscious than I am, I have again to express my thanks to the Fellows of the College for the indulgent courtesy which induced them to appoint me to the office and to pray that the leniency which they have already shown may suggest excuses for the inadequate manner in which I have executed my task. I am aware that I have touched but the fringe of a great subject of entrancing interest and supreme moment, the better knowledge of which is calculated to have an important influence upon much that is of interest to us as men and as physicians. If, however, in their opinion I have added anything in the course of these lectures to such knowledge—if, buried in the worthless quartz of much nebulous hypothesis, they should deem it possible to detect some grains of golden truth—I shall feel happy in believing that my labour has not been altogether in vain and that I have shown myself sensible of the honour which they have conferred upon me in appointing me to the lectureship.

[13] Figs. 3, 4, 5, and 6 have already been published in my book on Cardiac Failure and its Treatment (London: Rebman and Co.) and Fig. 1 appeared in the Brit. Med. Jour., March, 1896.

[14] Revue de Médecine, 1892, Jan., p. 40; Feb., p. 97.

[15] Allbutt's System of Medicine.

The Harveian Lectures

ON

DISEASE, ITS TREATMENT AND THE PROFESSION OF MEDICINE IN 1899.

Delivered before the Harveian Society of London on Dec. 1st, 8th, and 15th, 1898,

BY WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,

SENIOR PHYSICIAN TO ST. GEORGE'S HOSPITAL AND JOINT LECTURER ON MEDICINE TO THE MEDICAL SCHOOL; SENIOR PHYSICIAN TO THE BELGRAVE HOSPITAL FOR CHILDREN.

LECTURE III.[1]

Delivered on Dec. 15th.

EDUCATION AND MEDICAL PRACTICE: THEIR PRESSURES AND THEIR PROSPECTS.

GENTLEMEN,—Our attention is claimed to-day by the medical profession, its labours, its difficulties, its prospects, and its rewards; but the future of medical education and some questions of practice bearing upon our status will be dealt with more prominently.

THE PROFESSION AND ITS MEMBERS.

It has been said with truth that we are all debtors to our profession. We are associated with its great achievements and taught to appreciate them, and we are conscious also of an honourable participation in all its good works. Lastly, unlike what obtains elsewhere, a livelihood is fairly assured to all. There are, however, material concerns which through pressure of daily avocations are often imperfectly safeguarded or, may be, treated as secondary. Yet for the majority there was a practical purpose in the selection of their career. A few inherit medical traditions and grow up in a medical atmosphere; for them medicine may be a "calling"; for the remainder it is an "opening"; and once they have engaged upon their lifelong labour the material aspect of things cannot be ignored. How closely this object is connected with our professional position will be made clear as we proceed.

[16] Transactions of the Medical Society of London, vol. xx., p. 257.

[1] Lectures I. and II. were published in THE LANCET of Dec. 17th and 24th, 1898, respectively.

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OUR PRESSURES AND OUR REFORMS.

Witnessing disappointments and failures in every walk of life it would ill become us to complain of personal hardships or of those purely professional difficulties to which I shall allude. They may be regarded as transitory. The profession is undergoing "a cure of discomfort by counter irritation" which is but a stage in the return to a healthy state. Our pressures are of two kinds: (1) those exerted from outside by the public, by the State, or by the conditions or fashions of our time; and (2) those from within, our internal reforms, always well meant though liable to defects and to the need for readjustments. The lateral pressures have been sufficiently dealt with. Our worst pressure, however, has been from below and it is to this that we shall presently revert. From above our limitations arise from too much or too little legislation; and of late instances have not been wanting in which the unreasoning opposition of the uneducated vote and that from noisy or hysterical sections have been brought to bear against our action with the sanction of the law. Thus some of our professional events have been retrograde, with great detriment to public advantage, to national credit, and to personal safety. I need not dwell upon recent achievements such as the ticket-of-leave given to small-pox and syphilis and the setting back of the clock of experimental science. These evils were avoidable. Fortunately they may yet be remedied except for the loss of irrevocable time. Compared with the dealings of those well-ruled nations whose progress is not allowed to swerve from common sense and who follow a straight road to any social object we are in this country, thanks to these manœuvres, left hopelessly behind, electing to follow when we might lead. These risks and delays are the sport which delights a free people and which by way of compensation may perhaps keep us active and in fighting condition.

The lateral pressure will probably be relieved for the growing generation. The world is expanding at a rate for which there is no parallel in history. Looking back four hundred years, the discovery of America occasioned great developments and the treasures torn from the harmless natives went to feed the growing trade of the world. But the conquerors alone reaped the benefit and civilising operations were slow to compensate the vanquished for the barbarous inflictions of conquest. The exploration itself was not rapid and occupied many years. In our times an entire continent has not only been explored within a few years but is being wired and railed and the machinery of civilisation called into existence simultaneously at many centres. For this growing world medical aid will be requisite. China also may offer a large field where the English physician may come into fashion. The colonies, especially those where gold is the attraction, are only beginning their period of expansion. But we must realise that Canada, Australia, and New Zealand are no longer dependent upon home supply. They are now medically self-supporting; the pupils of their universities come home for the study of special subjects and to watch our clinical practice, but they are already fully qualified and their numbers are sufficient for the local needs.

Our internal reforms.—Other reforms are of our own making and the chief of these bear upon medical education and examinations and the rules which govern our mutual relations and our relations with the public and the State. Well considered and measured to suit the times, they may not be permanently adapted to meet all future needs; but they cannot be again modified until after a period of friction which makes us long for the next change and yet dread the unknown complications which it may cover.

PROFESSIONAL ALTRUISM AND SELF-SACRIFICE.

To practise medicine is to learn that our lives belong to others rather than to ourselves. There is an increasing altruism in the lives of most men, but a great deal of this is unconscious and passive, and the mass of mankind are unaware that they are wearing themselves out for the sake of others. Our altruism is both conscious and intended; it is an active altruism, which contrasts with the ways of diplomacy and of commerce. It is indeed a unique sight, that of a whole profession working strenuously for the sake of its fellow creatures at the systematic destruction of its own means of support. Is any disease voluntarily allowed to survive in the individual or the community, any contagion given free scope, any sanitary defect uncorrected, any oppressive or deleterious conditions of labour allowed to proceed unchecked? It is left for others outside the profession to marshal every resource of ignorance and prejudice for the purpose of keeping alive fatal diseases. To them the medical profession might have been thankful, but in our medical press we find only indignation at the resulting waste of life, of health, and of happiness.

The same unreckoning policy has led us to instruct our patients in practical matters of health. Institutions for teaching the principles of hygiene and elementary treatment and first-aid societies have been founded all over the country, every opportunity being utilised to spread among the public ample knowledge of the arcana of medicine, and with the same view medical writers are now lending their pen to the press.

The lateral pressure in our ranks.—But there are limits beyond which generosity itself ceases to be wise. The quality of work deteriorates when instead of strengthening it wears the labourer, and to avoid this is of importance, not alone to the profession. While the earnings of other workers have been rising with the general increase in our national prosperity the reverse has happened with us.

Events have brought about difficulties for which none can be held responsible. All sections of the profession have felt them, each section imagining itself to be the only one to suffer. To put the matter briefly, there may not be too many medical men, but whilst there might be work for all this is neither evenly apportioned nor remunerated. Of the two chief contributory factors the overcrowding of the profession is to my thinking the least. In proportion to the population our numbers are not so overflowing as in some other countries nor are they much greater than at earlier periods. But the opportunities for practice have been restricted by science and by charity. And it is now manifest that by seeking some relief from these difficulties in the provident system individual members have helped to restrict the supply of employment for the profession.

THE PROVIDENT SYSTEM AND ITS PROBLEMS.

In its ideal form this system seeks to secure the greatest good to the greatest number, benefiting alike the deserving poor and the profession. It seems to have been an early social development in China, dating beyond the commencement of historical times. In this country it is largely a growth of the second half of the century. Its principle is the insurance of the healthy against the expenses of future illness. That principle has been accepted by the profession as belonging to our scheme of usefulness and as tending to professional advantage if only it were fairly worked. The progressive development of the system and the increasing growth and prosperity of the provident societies is a spontaneous testimony to the worth of the medical advantage secured, but for the profession there has been more promise than realisation.

Our services are for many a necessity and it is right that they should be within the reach of those for whom they are intended. The poorer patients have five courses open to them: (1) some of them are sufficiently near the margin of pauperism to enable them to obtain Poor-law relief; (2) many apply to the chemist for advice and medicine, and this largely keeps up the practice of counter prescribing; (3) others are anxious for treatment by hospital physicians and surgeons and endeavour to obtain it at the hospital for which they have a predilection though this may not be the nearest one to their own home; (4) a large number enrol themselves in the lists of the provident dispensaries and of the clubs; and lastly (5) others prefer to get their advice independently and at the time when they think they need it. If the medical man's charges should be prohibitive he would drive this humble practice into the other channels which have been indicated. In order to meet the necessities of the case there must be for his advice a sliding scale within the reach of the humblest means. This unavoidable smallness of remuneration is a reason for his preferring a system where it is to a certain extent disguised. On our side it is a wise provision that the healthy, whilst able to do so, should contribute to the support of the profession whose services they will require when stricken with disease. Payment from the healthy instead of from the sick is, indeed, a principal admirably adapted to meet the crisis. This alone would prove an attraction; but there is a further inducement in the advantage of actual work. Unfortunately the slender compensation has been only partially reaped by the profession. Benevolent in its intent, coöperation has opened the door to

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novel dangers and abuses of which the practitioner is ultimately the victim.

The risk to independence and remuneration.—Our prestige is endangered by any hard-and-fast compact which places a definite value upon services. The contract is then apt to be regarded as a commercial transaction in which both sides are supposed to obtain an equivalent. The sentimental reservation may be kept in mind by one of the contracting parties. It is but too likely to be lost sight of by the other and from a strictly legal standpoint it may not then appear that the payment is not a full compensation but an honorarium only. The medical man's position is no longer that of unrestricted freedom and his place not easy, as at the best the bargain is a hard one. If the scale of remuneration should be unfairly low the growth and prosperity of the societies would entail a proportionate extension of the attendant injury. And when the hardship of inadequate payment has once been submitted to there is a danger that the curtailment may be made yet more severe. This downward progress as well as the low level now reached are the serious aspects of a system which we may look to the coming century to ameliorate.

The provident associations.—The beneficent institutions known as dispensaries seek to be self-supporting, but a charitable interest is taken in their management by members of a richer class, and this is a saving clause, for much depends upon the spirit of those who administer as well as of those who receive the relief. The collateral advantages which are often opened up by those who serve a well-conducted dispensary render it a matter for regret that it has not been found practicable to extend them to all the local practitioners or at least to as many as may wish to participate. The remuneration itself is small, but it is fairly divided according to the work done. The difference between these institutions and the *friendly societies* is fundamental; in the latter the softening element of charity is less prominent and that of sentiment in not included. In early days the medical man's willingness to help them may have been considered a favour. This is now changed and they have not always refrained from turning his difficulties to account. Other associations built purely upon the principle of commercial insurance, although businesslike in some directions, are free from any scruples connected with medical etiquette and in other directions there is even less regard than in the friendly societies for the individual interests and for the professional dignity of the medical officer.

The prevalent abuses.—The defects which have arisen are clearly unintentional and the outcome of ordinary economical principles, the societies seeking their corporate interest and securing it, whilst the practitioners have too often unwarily sacrificed their advantage. They include: (1) the obviously inadequate remuneration for excessive work and responsibility and the partial payment which is sometimes made when it should be made in full; and (2) the unjust appropriation of advantages intended for the poor by those able to pay. Were the charitable ministrations bestowed only on the deserving poor their cost would be a lighter burden. But it is well known that owing to imperfect checks and to the failure to realise the fault of which they are guilty many thoughtless individuals receive relief who are really able to pay a fair honorarium for private attendance, and this is contrary to the intentions of those who manage these institutions. A friend from the provinces reports to me an instance in point: "A farmer in quite a large way was in a club. After being ill for a year he desired to employ a private medical man, to whom he then paid 3*s.* 6*d.* or 4*s.* a visit. Thinking he would like still further advice he paid five guineas as a consultation fee with the greatest readiness. The medical officer must have travelled several miles of bad road to see this man, the only payment being less than cab hire." The same friend also writes: "Years ago most clubs' contributions were at the rate of 5*s.* per annum per member and that when wages were much lower than now and when membership was confined to the genuine working man. The working man earns more and pays less." ..... "Many clubs unfortunately have lowered the subscriptions to 3*s.* 6*d.* per annum." This abuse is not sufficiently guarded against in the organisation of the clubs. Some men of substance are admitted as members or retain a membership assumed in less prosperous days and do not refrain from getting their medical advice at an almost gratuitous rate. The practice of others is thus made to suffer besides that of the medical officer, for should he fail to meet cheerfully the behests of his employers, or refuse to submit to a reduction, the club may find a stranger to fill his place, and this will mean for his *confrères* additional competition in an already restricted field of practice.

The worst troubles arise in connexion with the medical aid societies. They actively canvass the public. Their medical man is advertised, not always fairly, it is said; but he may have to suffer for the advertisement. And the climax is reached when he is victimised not only by the societies but by intermediate agents. Instances have often occurred when agents have induced people to insure and to transfer themselves from the private list to the club list of the same medical man. It can hardly be doubted that funds have gradually accumulated out of the profit on the medical officers' work. In the case referred to by the same informant they did not get more than two-thirds of the payments made to the medical aid societies, whilst the least that should have been done was an equal division of the surplus after payment of working expenses. Illustrations such as these will suffice to show the mode of injury suffered by the profession.

The detriment to the profession.—Diminution in practice goes hand in hand with a lessened value set upon professional services. But the worst aspect of the whole position is the further decline in dignity and emolument due to the fact that, small as may be the pittance, it has its market and that any competition can only lower its figures. The low value which is thus forced by contract reacts upon the remuneration of others who but for this would have been in a position to resist the unmerited depreciation of their services. This means, moreover, a progressive reduction in the opportunities for private attendance upon paying patients of the humbler class, and this reduction tells even more upon practitioners who are not connected with the clubs than upon those belonging to them. Thus special correctives are needed against the evils known as the tyranny of the clubs, the lowering of the fees by competition, the exploitation by medical aid societies, the underselling of medical work, the insufficient wage limit, and also the admission of women and children at a lower subscription than men though they need more attention and previously contributed to private practice.

The remedy.—The continued expansion of the insurance system renders imperative some early provision for that minimum scale of honorarium which shall safeguard the public and the profession and for the adoption of an efficient wage limit. Where is the remedy to come from? Its possible sources are State interference, corporate action, independent combination within the profession, which might be purely local or more general, and education. Some action has already been taken, especially in the direction of local combination; and much credit is due to various local groups for their energy in resisting the pressure of powerful bodies. Though the action has been a purely local one the example may tell at a distance. Indeed, it has suggested the idea of an extended combination which might include representatives of all local associations and through them of all practitioners interested in the provident system. A totally distinct action has also been proposed—that of State aid in this difficult matter. This is a remedy not without a danger, for if the State is to come to our assistance in the details which we ought to arrange for ourselves it is possible that its inelastic control might fall heavily upon us and trammel us when it would be much to our advantage to be free. But leaving State control aside there remains the official action of the professional governing bodies who alone can speak for the entire profession. If I mistake not there is a strong feeling abroad that these difficulties should be noticed officially, but others are inclined to think that the profession ought not to be committed and that independent combination should be able to provide a remedy. Between courses so different it is difficult to choose. One of them pledges the profession, the other allows free scope to self-government without the assumption of too onerous a responsibility.

Among various suggestions in connexion with combination one worthy of notice is made by the Special Commissioner of THE LANCET:[2] "The best method for abolishing medical aid associations, clubs, &c., is for the profession to establish a model institution of its own open to all local practitioners and managed exclusively by the medical men themselves. Then no practitioner would have any excuse for selling his services to a speculating commercial concern; if he wanted

[2] THE LANCET, Oct. 29th, 1898.

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club patients he could join the public medical service. All patients who could not pay the usual fees would have the option either of joining this institution as subscribers or of claiming relief under the Poor-law. The battle of the clubs would be terminated, for the medical clubs would cease to exist." This proposal suggests a new field for professional activity. In itself the idea sounds practicable so long as care is taken that we are not involved in any undertakings outside the scope of the profession. Self-help is sound policy, but in this matter it is regarded with good reason as unequal to the task. There is a difficulty in repudiating arrangements firmly rooted in localities and any efforts in that direction are but too likely to be defeated by the action of members of the profession who are outside these local combinations. To meet this difficulty it is not to be wondered at that the General Medical Council should be appealed to for an exercise of their power to register and approve those arrangements which have been found by experience to be most suitable to the various districts and to restrain registered practitioners from an unprofessional intrusion which tends to render joint efforts nugatory. This would doubtless afford the easiest way out of the present complication provided it could safely be resorted to without prejudice to our future. It must not be forgotten that a march has been stolen upon the profession owing to individual members having entered into treaty with organised societies. It is to be feared that the local combinations must remain hampered by the influence of these unfortunate beginnings and that their proposals might not come up to the level which the profession may have in prospect when the time comes for corporate and entirely representative action. In view of that object it might be undesirable that the profession should stand committed to any adjustment arrived at locally or even by a combination of many local groups. Indeed, there might be a danger lest any larger combination might wear in the eyes of the public an importance other than that which it claimed for itself and be thought to carry a mandate from the profession. In this respect there is perhaps an advantage in combination preserving for the present its purely local character.

The reasons for delay.—In favour of a policy of waiting the fact should be remembered that we are still within the period of transition and that we cannot yet foretell the proportions which the coöperative movement may ultimately attain. How best to deal with the great question is another uncertainty. Should it be by means of unofficial combination within the profession or by the action of our representative authority, the General Medical Council? If by the former method practical conclusions may be obtained at an earlier date, but they may be found to have fallen short of the requirements which the future may disclose. If by the latter considerable delay can hardly be avoided but the value of the result would be the greater in proportion to the time involved in its elaboration. One point appears to be clear. Any final settlement should be made on an independent basis. A privilege usurped, however unintentional the usurpation, is not from the standpoint of the injured party a fair basis for negotiation. All local attempts at readjustment must suffer from this disadvantage. It must be made evident that the profession repudiates the estimate which has unfortunately been placed upon the value of the services of its members through the accident of circumstances even more than owing to unguarded action on the part of a few. Though I may not have much support in leaning towards cautious delay in any comprehensive handling of the difficulty I feel sure that I am with all of you in thinking that its study cannot be safely postponed and that it should engage the earnest and early attention of our authorities.

The remedy from education of the public and the profession.—There is a different remedy, most effectual, but slow—the teaching and the appreciation of that which we owe to ourselves and which is due to us by the public. On our side the great body of the profession are guided by those high principles which are being universally taught. The dangerous few must be either educated up to its level or kept out. It is difficult to overrate the influence which can be exercised on the minds and dispositions of our pupils whilst they are passing through the medical schools. More may be done perhaps to raise in their youthful mind a superior ideal of the dignity and of the unity of the profession. Men cast in this mould might be allowed to shape the higher interests of the profession wherever they go. Much more general is the lack of due appreciation on the part of the public, especially among the lower classes who are not unlikely at times to misinterpret the most charitable intentions. Literature might do much to enlighten them as to our position; and in the recent lofty achievements of the profession there is a theme which, if properly handled, might work in the direction which is wanted. The remedy would thus consist first and foremost in the cultivation of a high ideal in the study of medicine, and in the second place of the authoritative influence which combined action might exercise upon the press.

MEDICAL EDUCATION.

The aspects of this subject which you are invited to consider are the professional examinations and their standard, the general scheme of studies or curriculum, and—not least important—the preliminary examination.

Examinations are a necessary evil. The public must be protected and a mass of important facts must be grasped by the student. But under this load the freedom both of study and of teaching suffers and imagination and original thought are less developed than memory. I would be the last to criticise adversely the present system. It is regarded by those able to judge as the best that could have been framed and as a vast improvement upon all previous attempts. It must command admiration in respect of the completeness of the teaching and of the amount of the knowledge required. But we have recently heard it from great authorities that the burden of scientific facts is becoming intolerable for the student of medicine and that some part of the burden must be removed; and in anticipation of a yet distant revision it may be permitted me to bring forward impressions gathered from some observation of the student and of his work, especially in their clinical aspects. A few advances in that direction would bring us almost within reach of a very perfect system. Clinical work is for us all the essential and the almost entire professional function; and the difficulty is how to give it a share not altogether disproportionate to its importance, since, without exaggeration, it might claim attention during the entire period of medical education, whilst in that time a vast number of important subjects have to be dealt with.

The preliminary examination and the recruiting of the profession.—The entrance examination is our Rubicon—not to be crossed without influencing the fate of individuals and of the profession. Parents, and particularly those who belong to the profession, are anxious to start their son without delay on his long journey through the curriculum. But in his interest quite as much as in that of the public and of the profession our gates should not be thrown open too widely lest he should be caught in a groove in which, as time wears on, he may find neither success nor escape. Physical strength and staying power are needed, not only for medical study, but yet more for practice, to meet the fatigue of country work or the constant worry in town. Unusual gifts of the mind never were essential, but weak or imperfectly trained faculties should exclude. Now more than ever endless painstaking and endurance are the chief requisites. Medical students need not be picked men, but tried men they should be; and to ensure this is the chief office of the entrance examination which at the same time might be a means of checking an excessive supply. To those familiar with its difficulties the study of medicine seems to be too lightly undertaken and with insufficient preparation. In the navy professional life begins quite early and the studies are thenceforth directed towards the profession.

A similar early direction of the studies of the future pupil would relieve some of our troubles. Far from there being any idea of cramping his preliminary education there are practical and useful subjects, such as chemistry, botany, zoology, and geology, which would expand it. Our opportunity is to frame an entrance examination which should test the men as to their fitness for their future labours but should not demand of them anything wasteful from the point of view of their life's work. On the contrary, this examination might be rendered practically useful in relieving as much as possible the overloaded curriculum. An utilitarian position has been openly taken up in connexion with the preliminary examination and it was thought useful to sacrifice the ornament of a classical education as a necessary accomplishment. It remains doubtful whether the promise which had been held out as a compensation has been fulfilled. Though the study of Greek is discredited the ability to trace in a Greek dictionary the meaning of

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professional terms must appeal to reason as a requirement so long as our medical nomenclature is chiefly Greek. Since Greek is not an absolutely dead language it might perhaps be taught in the elementary proportion needed on a modern basis and without much loss of time. The utilitarian reform seems to have stopped short at this sacrifice of the classics. Yet there are studies now neglected in the curriculum the rudiments of which should not be entirely unknown to members of a learned profession—I refer to the elements of botany, of zoology, and of geology which are most desirable. If made compulsory together with chemistry and physics in the schedule of the preliminary examination these subjects would be useful to the student and educationally they would be some compensation for the loss of a classical training.

The curriculum.—How different medical education in the days when the curriculum was of two years and examinations were such as to suit that training! The curriculum was extended to three years and for a long time it was nominally four years, but in reality much longer for most students. The greatest improvement in medical education is the recently introduced five years' curriculum. This extension has already produced the best results, yet so much pressure remains that some change may become necessary early in the next century. The subjects are so numerous that they hardly fit within the period and from examination to examination the candidate has to slave to the end of his time. The question arises whether the best use is made of the additional year and whether a special claim upon it could not have been established in favour of our professional training so long and increasingly sacrificed to the preliminary subjects.

The old-fashioned apprenticeship was given up long ago without any equivalent as a substitute. It is impossible that we should ever return to it. Yet it was a thoroughly practical though primitive method of learning as much of the profession as the local opportunities allowed. When the apprentice came to town he was for his years a man of practical experience and in looking back upon his early difficulties and doubts he could appreciate the value of the theoretical knowledge to be gained in the dissecting room and in the wards. In that arrangement the supply of scientific knowledge was scanty but there was little waste from the point of view of utility. This distribution of the student's work has been completely reversed, but the partial sacrifice of the practical professional studies was the unintended result due to the desire to cultivate a higher science in the service of medicine. Unfortunately, for a long period the teaching of the sciences had to be theoretical and by lectures without any practical participation on the part of the learner. Thus the student, deprived of his apprenticeship, spent his early years in studying practical science in an unpractical way. When he joined the country practice as a qualified man it was the old apprenticeship over again—most things practical yet to be learnt—only the apprenticeship was at the wrong end of his time.

The academical and the utilitarian idea.—The present system might be regarded as "academical" to a fault. The subjects are dealt with as it were in compartments. The pupil is taken through each of them from its beginning to its end. This development was greatly stimulated from our seats of learning and in part reflected from universities abroad. Science was to be taught along systematic lines rather than towards any lateral goal of temporary or limited usefulness. The old universities have now given a practical turn to the academical idea and the medical schools throughout the country have laudably followed this intention, but not always with the necessary facilities, and in spite of a dearth of that first of all requisites, time, on the part of the student. Thus he has often had a complete course, but, as in those hasty visits to the wonders of the world, little of the inside of things may have been seen by him; he might perhaps have done more for himself had he attempted less. Too often also the teaching of valuable elementary subjects is practically divorced from their uses; and when the time comes when the chemical, the physiological, and the biological learning and methods might have been of practical value they have been forgotten. Often the ordinary student does not seem to connect the idea of the methods which he has applied in the physiological laboratory with the self-same methods as used in the wards. This would seem to suggest the desirability of associating, though not at too early a date, a medical purpose with the teaching of anatomy, physiology, biology, and chemistry, and to render their applications more clinical.

Method, which represents the academical idea, is essential; but it matters comparatively little in which field the mental powers are drilled. Any of the sciences well learnt, but particularly anatomy and physiology, would serve this educational need. But the utilitarian or professional idea looks to those few great principles and facts without which no physician or surgeon ought to trust himself to work as those upon which the main stress ought to be thrown in the teaching of the sciences. With these at his command the pupil might progress by imperceptible degrees to a higher level of scientific and clinical efficiency, and the acme of his scientific training would be the study of practical pharmacology which combines all the sciences bearing upon medicine. Here the better men would find their opportunity for individual research and intelligent clinical work would be stimulated.

We do not notice any progression of this sort in our present system. Whilst elementary physiological matters are imperfectly grasped some of the most difficult problems, those which tax the expert, are made the study of the beginner. For their due appreciation his highest level of scientific training and experience, his later periods of study, are best adapted. There is much to be said in favour of reserving these higher scientific developments as a reward for the veteran student. The younger student's practical work in laboratories might with advantage be concentrated upon those methods which are of practical use, further knowledge being added upon a firm foundation of facts previously known. Thus, whilst avoiding the risk of a premature entry into the wards it might be useful to shift a great deal of the practical physiological work from the physiological to the clinical laboratory. Work performed there in connexion with the examination of the urine, of the blood, of the physical conditions of the normal organs—a subject hitherto neglected—the study of the heart sounds independently of murmurs, of the respiratory sounds when uncomplicated by disease, of the position of viscera as recognised by palpation and auscultation would never be regarded as wasted either by the student or later by the practitioner and would be useful additions to the practical work of physiology. The full practical apprenticeship of the young clinical student would comprise a period of work in the physiological, in the chemical, and in the pharmaceutical laboratory. But for the greater number the chief apprenticeship would be that in the clinical laboratory, where he would acquire at an early date familiarity with those methods and apparatus which belong to his own future work.

Clinical laboratories in connexion with teaching hospitals are a great need for students and for research. Whilst in this country most philanthropists have made it their ideal to supply a sufficient number of beds and have overlooked the real pauper in the hospital, science, and the real need, that of the knowledge for curing the diseases which are put into these beds, a much clearer view of things has long prevailed on the other side of the ocean. Practical sense has made it obvious that the object of hospital treatment is not euthanasia but recovery, the secret of which cannot be learnt without the means of study. The time cannot be long delayed when the necessity for a clinical laboratory for all hospitals, however small, will be recognised in this country. And when this need is more widely understood among us generosity will soon flow in this neglected channel. In medical schools clinical laboratories should be of adequate size and completeness, but special research must continue to be conducted in laboratories or institutes of a more elaborate order. Of these we already possess a few at our universities in London and now at Liverpool. But many more are needed and there is ample scope for private munificence.

Clinical medicine.—The cry from the obstetric side is, "Give us more time to train the clinical pupil in the most responsible and important part of his future practice." A justifiable demand; but how can it be granted when clinical medicine itself is starved? Nominally three years are provided for clinical training, but too often after upwards of two years absorbed in the preliminary studies these subjects are forgotten and may have to be learned again at the expense of time properly belonging to clinical work. If the subjects are thus to overlap and to be blended after all would it not be economy to begin the clinical training earlier and to adopt the policy of a continuous and progressive study of anatomy and physiology, increasing stress being laid with

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the progress of education on the higher aspects of both sciences as they bear upon clinical work?

The elementary clinical work seems to be too long delayed. After much time devoted to pure science and to examinations the pupil suddenly enters the wards unprepared. To him all clinical things are new. He is yet unfitted to utilise the advantages of a clinical clerkship which too often is conferred upon him at this stage. General elementary clinical practice is what he needs, not the exclusive association with two or three cases which he is unable to investigate for want of sufficient general experience of patients and of clinical methods. This he would quickly gain in the wards by contact with others of older standing whilst completing his knowledge previously acquired in the practical work of physiology and of chemistry. A few weeks spent in this way within sight and hearing of all that concerns disease and its investigation would enable him to take up with full profit the privileges of a clinical clerkship and to apply himself to the practical study of disease and of its treatment in association with the physician whose functions do not include the teaching of elementary methods. Inefficiency at the onset would be a less serious objection if the clinical clerk were prepared to retain his office until he had exhausted its opportunities, but he lacks time for this. Barely has he completed six months of this clinical work and he is taken away to other subjects without any chance of holding the valuable office again. In this way the most important part of a clerk's advantages are often lost to him and this accounts for the unfinished clinical condition in which so many have entered upon practice. The five years' curriculum might have mitigated this evil, and some men in their fifth year have sufficient wisdom to walk the hospitals when an opportunity arises, but the greater part of their time is claimed for other pursuits and no provision has been made in the schedule for the much-needed extension of the clinical training.

Medical education would gain much in being made more continuous by blending the clinical idea from a relatively early date with the scientific studies and by keeping up a progression in the higher studies of anatomy and physiology. The student would find interest and meaning in each laboratory method because shown to be connected with some clinical point and his clinical anatomy and clinical physiology would remain his valued and lasting possessions.

Clinical anatomy.—Anatomy, the "mathematics of medicine," will never cease to be indispensable and paramount among preliminary subjects, a fitting introduction to the most laborious profession. I do not know which is the greater wonder, the teaching of anatomy or the feat of learning it. Might not labour and time be economised? A thousand brains have been exercised as to how to render its study easier for the student on the old lines till we almost despair of ultimate success. Yet if it be true that elsewhere there are shorter methods we cannot afford to neglect any help.

Can "anatomy" be compressed or extended?—No part of anatomy is superfluous; but we cannot forget that for the sake of this completeness entire subjects are being thrown overboard. Some parts of anatomy are of supreme importance throughout professional life and the final examinations wisely require a knowledge both of surgical and of medical anatomy. But the average student has to learn these parts of the subject over again because meanwhile he has been allowed to forget them. The knowledge slowly and laboriously built up collapses like a house of cards as soon as the strain is over. If this is to be the result too much time would seem to have been claimed by anatomy at the beginning. The first year might suffice for undivided attention to the foundations of anatomy, whilst further instalments might be added by degrees and with a practical bearing. A study of the relations of parts might thus coincide with the teaching of operative surgery and medical anatomy with that of practical medicine and of clinical work. The term "clinical anatomy" includes both the surgical and the medical aspect. In both cases the long anatomical curriculum should lead as a net result to an accurate knowledge of those parts of the body with which we shall be professionally concerned. If the rest is to be finally forgotten might not its teaching be compressed? For the higher examinations a late application to anatomy has always been necessary and this shows that the suggestions thrown out are not absolutely unpractical.

Clinical physiology.—Similar considerations apply to physiology. In physiology we use too little our great opportunities of studying man. What would not Harvey have accomplished had he been armed with our present instruments and methods of investigation? Have we done full justice to his great example in cultivating physiological observations in the human subject? What should we think of a practical course on the circulation which did not include listening with the stethoscope to the heart sounds and learning accurately where they are to be listened for? Or shall we deal practically with splanchnology and not make ourselves familiar by palpation and by percussion with the position of the various organs? The ophthalmoscope reveals some of the processes of life without interference with their integrity and the laryngoscope equals the perfection of the ophthalmoscope as an instrument of demonstration. Practical physiology, taught as it is according to the happy tendency of the day by personal instrumental manipulation, would hardly be complete without a knowledge of these among all other physiological instruments. Their exclusion under any pretext would lay us open to the reproach of a deliberate neglect of those instrumental methods which are the only ones professionally useful to us. All this is the physiology which is essential—not abstruse or difficult or repellent—and these physiological observations, though so important and indispensable, are of a purely elementary nature. They might afford an easy rise to the higher, truly difficult physiological inquiries for which many a young student is at first totally unprepared and remains to the last unappreciative, whilst the living body appeals to every intelligent youth. These, therefore, are instrumental methods to which the student might be initiated early and a skill in which he might then have ample time to develop. Efficiency of this sort is child's play to the learning of musical instruments. It presents a little difficulty only for the less gifted minority and for them of all others it is important to provide a long apprenticeship. The advantages of such a system would be great and would tell at both ends. Early in his career the student would be awakened to a professional interest in studies which would henceforth assume for him in all their theoretical details a practical purpose. The gain at the other end would be incalculable. Instead of his helplessness in approaching the bedside the novelty of the situation and its strangeness would have long been removed. He would feel the confidence of an observer and might proceed to truly clinical studies of disease instead of wasting the clinical opportunity upon mere instrumental practice at the wrong time.

Centralisation and the one-portal system.—The continued agitation for reform has been a prominent feature of recent years. In this the profession has shown its earnestness in the cause of progress, in spite of the conservatism which renders it tenacious of its traditional independence, a conservatism bred of constant contact with nature and trained by the practice of self-government. Centralisation is the question of the day; it lies behind most of our present problems and in particular of those relating to university teaching, to the multiplicity of schools, to the variety of examining bodies, and to the relative value of the titles conferred by examination. The allurements of centralisation are great and great is the longing for it on the part of the categorical mind. But we may be well advised in not departing more than is unavoidable from the opposite system, perhaps less perfect in its form but more fertilising, a system to which we owe that which we are. Let us beware of sacrificing the vitality and spirit of our great professional bodies to the doubtful advantage of a monotonous uniformity. The one-portal system was some years ago even more urgently needed than it now is. Further improvement is necessary, but it is a question whether any radical change is indispensable. All that is practically wanted might be attained by all the corporations raising the standard of their examinations to a uniform level which would obviate any downward competition between them and at the same time would exclude from the profession, if possible at the entrance examination, those who are not thoroughly equal to its responsibilities, so that none but the fittest could get their names on to the Medical Register.

THE PLACE OF THE PROFESSION: ITS PROSPECTS AND ITS REWARDS.

The service to the individual and to the State.—I have dwelt upon the altruism of the profession in its constant war against disease. The character of the personal service rendered by its individual members is well known to us. It is often true, and not alone on the field of battle, that life itself

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is offered in the hope of saving life. There is little wonder that our profession should supply a shorter average of life than any other. Alone, the medical man is never allowed to be ill and he is singular in continuing to work whilst ill. No other profession claims that its labour shall be carried on at night and on holidays and to this must be added the constant exposure to infection and to other risks. But it is not sufficiently realised that the work done by the profession in saving the life of individuals and in checking the spread of disease is a direct service and a direct gain to the State. Has its practical value been fully recognised? We enjoy, it is true, and are thankful for the favour and the protection of the State. But beyond charters and privileges such as are granted to great commercial associations working for their own profit and only indirectly for their fellow creatures and for the State little has been bestowed upon us. On the basis of this service we might as a profession be in a position to treat with the State. This was the custom with the ancient guilds. No such bargain has ever been submitted from our side. Men of medicine have parted with their "mystery" without even thinking of an equivalent which has not been proposed from the other side in the shape of any practical recognition. Whilst other professions act on the principle "Do ut des" the fruits of medical science which prosper our days of peace and ensure the success of our wars are a free gift to the State. And that profession which alone shares with the Church the direct care for the welfare of the community has little share in its honours.

The deserts of the profession.—Yet having regard to the value which the individual sets upon his own life, to the actual value which lives saved represent to the State and to the untold boon to humanity in the alleviation of suffering it is difficult to see what recognition could be adequate. In a younger world with such a record healers of the sick would have walked as gods among men. From the individual the medical attendant receives an honorarium only in acknowledgment of a debt which cannot be entirely paid. By the State this acknowledgment of debt is hardly made and the honorarium is scantily bestowed though statesmen admit that without a healthy population there can be no national greatness.

The place of medicine among professions. — Precedence between professions and their social status are regulated by custom and there is no desire among us to disturb these ancient traditions. It may be said of all professions that they have risen in dignity. In the case of medicine the rise in worth as estimated in vastly increased knowledge, in usefulness as judged from the amount of human life saved, and in influence as regards the practical reforms administered by the State under our guidance has been out of all proportion to any position which it has ever held. The end of the last century witnessed a revolution in France which brought to the front tumultuously the social layers by whom the chief work of the world had been carried on without recognition. Less turbulently but with unfaltering step medicine has been marching towards its proper place in the front rank of the professions. What is the medical profession in the State? Nothing. What should it be? The chief and most important influence. For it was truly said: "Sanitas sanitatum, omnia sanitas."

The reward: its deeds and its dignity.—The power silently wielded by our profession is ever increasing and must give it importance and ultimately a foremost position. For the present its reward lies in the consciousness of this fact, imperfectly realised by our fellow men; and also in its dignity, in its intellectual work, and in a knowledge that its ministrations are indispensable as well as beneficent. In this isolation and this consciousness of power there is a superiority. The profession if a self-made aristocracy of usefulness whose distinction is not exclusiveness but the widest sympathy, whose strength is not privilege but prodigal self-sacrifice. Let the estimate placed upon it by its members never fall beneath its great aims and achievements. Our part as its representatives is one of increasing loyalty and self-dignity. This duty lies before each of us and its fruits are within our own grasp as may be seen by the success of combined action of the profession whenever it has been attempted. In addition to Pandora's legacy to our race there is for our profession a large inheritance of charity as well as of faith in the progress of humanity and in its own destinies. These things that we see and know cannot much longer escape the notice of the people and of their leaders.

NOTES OF THREE CASES OF PERFORATED GASTRIC ULCER SHOWING COMPLICATIONS AFTER OPERATION,

ONE CASE ILLUSTRATING A NEW SURGICAL METHOD OF TREATING SEVERE RECURRENT HÆMORRHAGE FROM GASTRIC ULCERS.[1]

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SURGEON TO THE SUSSEX COUNTY HOSPITAL.

THE chief or primary complications of gastric ulcers—viz., perforation, hæmorrhage, and subphrenic abscess—are also met with as complications following an apparently successful operation for the cure of perforated ulcers. After reading the notes of the cases I will offer for consideration in the course of my subsequent remarks two suggestions which have occurred to me—one for the treatment of severe recurrent hæmorrhage from gastric ulcers and the other for the adoption of additional precautions against the formation of retro-gastric subphrenic abscess after operation.

CASE 1.—The patient, a female, aged thirty-seven years, was suddenly seized whilst attending to her duties on May 24th, 1895, with severe abdominal pains. I saw her five hours later and found her somewhat recovered from collapse but with signs of general peritonitis. She said that she had suffered for a long time from indigestion and pain in the pit of the stomach. Vomiting, not especially soon after food, but at any time, began some weeks earlier. On opening the abdomen in the epigastric region a large abscess containing foul-smelling pus was found leading directly into the stomach. The wall of the abscess was also deficient at the lower part and it was evident that here there was a rupture into the general peritoneal cavity. A second incision was made above the pubes and both the abscess cavity and the general peritoneal cavity were thoroughly flushed. The abscess cavity was lightly packed with gauze drain and a drainage-tube was inserted above the pubes. The patient did well at first, the peritonitis subsiding, and at the end of seven days she was removed to the Sussex County Hospital where she remained for a fortnight longer, but the epigastric wound showed no signs of healing. All fluids which were swallowed ran out directly through the wound which became septic and the patient died on June 13th from exhaustion, three weeks from the date of rupture. I had left the town for a holiday on June 1st and I learnt the final details of the case on my return. The necropsy showed, as I was informed, the stomach to be contracted and adherent to the adjacent viscera, but there was no malignant disease. The patient died worn out with hectic and inability to retain food. I have since thought that I might have prolonged her life by performing the operation which I will describe later.

CASE 2.—The patient was a female, aged twenty-two years. She was admitted into the Sussex County Hospital on April 1st, 1898, with symptoms of ruptured gastric ulcer. She had suffered for about five years from anæmia and from pain after food referred chiefly to the cardiac end of the stomach. For some months she had been subject to vomiting after food but there was never any blood. On March 31st, when running upstairs before dinner, she was seized suddenly with severe pain in the left side of the abdomen and epigastrium. On admission, twenty-four hours later, she was still somewhat collapsed; the abdomen was distended and hard but there was no liver dulness. On opening the abdomen gas escaped but no stomach contents were visible in the peritoneal cavity. The stomach was empty, showing on the anterior surface of the lesser curvature close to the cardiac end an indurated surface about 3 cm. in diameter in the centre of which was a tear about 1 cm. in length. The stomach walls were folded over the induration and were stitched together by one row of Lembert's sutures. The peritoneal cavity was washed out with saline fluid and a gauze drain was left in the epigastric wound. The patient did well in spite of frequent vomiting during the first twenty-four hours till April 12th when the temperature rose to 101° F. There was no rigor and no pain and the respirations

[1] A paper read before the Brighton and Sussex Medico-Chirurgical Society on Nov. 3rd, 1898, with paragraphs added referring to cases simulating perforations and those on the technique of the operations.

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were 32 per minute. Examination of the chest showed skodaic resonance over the left infra-clavicular region and dulness on the same side posteriorly over the base of the left lung. There was evidently a rapidly formed pleural effusion. On April 16th, the temperature being then 102°, the left pleural cavity was aspirated and 400 c.c. of clear fluid were withdrawn. After this the patient gradually improved and was discharged well with no pain after food on July 3rd. When seen two months later she had gained flesh and was well in all respects and showed no evidences of phthisis. The object in tapping the left chest at such an early date was to determine as soon as possible whether the fluid was purulent or not; if purulent there would have been stronger reason to suspect some irritation of the peritoneum, perhaps that of the lesser cavity which lies in relation with the posterior portion of the under surface of the diaphragm on the left side.

CASE 3.—The patient, a female, aged twenty-four years, was admitted into the Sussex County Hospital on Feb. 22nd, 1898, with symptoms of perforated gastric ulcer of four hours' duration. (She had been in the hospital for a few days in December, 1897, complaining of pain after food and nausea and she was then discharged feeling better.) For some time past the pain after food had been acute, coming on from half an hour to an hour after a meal, and was relieved by vomiting; there was also pain at night when the stomach was empty which was referred to the lower part of the sternum. There was no hæmatemesis. On Feb. 22nd after taking some bovril she was seized at once with acute pain in the epigastrium and with nausea but there was no vomiting. The patient was operated upon at 8.30 P.M., six and a half hours after the commencement of the symptoms. Perforation was found on the anterior surface of the lesser curvature about 2½ cm. from the pylorus. The peritoneal cavity contained gaseous and other contents of the stomach. The ulcer was closed by one row of Lembert's sutures and the peritoneal cavity was flushed with saline fluid and drained through the second opening above the pubes. Rectal feeding was followed for three days; then in addition small quantities of fluid food were given by the mouth, but as pain and flatulence followed feedig by the rectum only was resumed till Feb. 28th. On March 1st careful feeding with small quantities of milk and barley water by the mouth was again tried. There was no pain or flatulence. The patient passed a large, loose, black stool on the night of the 2nd, another soon after with a returned nutrient enema, and a third on the next morning. Melæna was absent on the 4th but it returned on the 5th. The patient was blanched and restless; nutrient injections were not retained and the rectum was full of black clot. Feeding by the mouth being out of the question and as it seemed too hazardous to trust to drugs to check the bleeding I decided to open the small intestine with the view of feeding the patient whilst resting the stomach. An incision through the abdominal muscles was made near the right semilunar line in order to avoid the sites of the epigastric and pubic incisions not yet healed and a thick-walled portion of small intestine, ascertained by drawing it out of the abdomen to be distant at least a metre from the ileo-cæcal valve and thought to be a good deal further, was opened and a small rubber tube was inserted; the intestine was fixed to the parietes. On the same evening the patient being very weak and restless after recovering from the anæsthetic was fed with 500 c.c. of peptonised milk through a tube in the intestine. A morphia suppository was administered per rectum. On the 6th the patient was much better. 500 c.c. of peptonised milk were given through the tube every four hours. She had a rigor during the night. On the morning of the 8th the temperature was 104° F. and the left parotid was swollen and tender; 25 c.c. of brandy were added occasionally to the food and 0·118 c.c. of solution of strychnine was given at each feeding. The morphia suppository was continued and a fomentation was applied to the parotid. On the 9th the patient was better. The temperature was 98·8° and the parotid was less swollen and not so painful. On the 12th feeding by the mouth in small quantities was re-commenced and feeding through the tube in the intestine was continued. The patient was beginning to gain flesh and she had no pain. On the 22nd she was fed entirely by the mouth; from this date onwards convalescence continued, but as the wound in the intestine left a small sinus which leaked this was closed by operation on July 6th and she left the hospital quite well with no pain after food on Sept. 9th. When seen six weeks later she was perfectly well.

Hæmorrhage after operation in any case similar to Case 3, excluding other causes of hæmorrhage, may proceed from the ulcer which perforated and has been closed; from injury during the operation to a previously healthy portion of the stomach; or from a second ulcer coexistent. Statistics [2] tell us that about 3 per cent. of cases of gastric ulcer die from hæmorrhage and that about 6½ per cent. of all cases perforate. Of those ulcers which perforate 36 per cent. are on the lesser curvature, 29 per cent. on the anterior surface, 9 per cent. on the pyloric end, 6 per cent. on the posterior surface, 5 per cent. on the cardiac end, and 2 per cent. on the middle of the stomach. In 13 per cent. there were two ulcers opposite to each other on the anterior and posterior surfaces of the stomach, the former being the site of the perforation while the latter was in most instances firmly adherent to the pancreas.

The above figures were collected prior to the time when operations for perforation were first performed. Quoting from more recent figures of gastric ulcers operated on at St. Mary's Hospital [3] Dr. Walter Broadbent tells us that out of 18 cases operated upon 3 cases had ulcers on the posterior wall as well, with their bases formed by the pancreas; 2 others had an ulcer on the posterior wall only through the mucous membrane; and in 1 case a perforation occurred in an ulcer on the posterior surface after the anterior one had been sewn up. In this list of all the cases which were operated upon one-third of the number had double ulcers. But whether a second ulcer is present or not, if grave symptoms such as perforation or hæmorrhage arise necessity for treatment is urgent whatever be the cause.

If there be a second perforation, surgically speaking, the abdomen can be reopened and the perforation closed with or without a gastro-jejunostomy. Before deciding to interfere surgically at all it is well to bear in mind the details of two cases in which serious symptoms of perforation are recorded, yet in which no second perforation was found. One of these cases [4] terminated fatally; no perforation existed and death was attributed to heart failure; in the other [5] the abdomen was reopened and the patient recovered. In each case the original ulcer was on the posterior wall of the stomach and the proximity of the solar plexus to the necessary adhesions may help to explain the symptoms.

Passing to the complication of hæmorrhage it will be remembered that in Case 3 life was threatened by profuse gastric hæmorrhage a few days after operation. Nutrient enemata could no longer be retained; the rectum was filled with clots and the small intestines (as proved subsequently during the second operation) also contained a quantity of black blood. Treatment by drugs seemed hopeless; nutriment was urgently required. Before deciding upon the best surgical proceeding in a case such as this after operation it may be well to consider the recently suggested surgical treatment performed in a few cases of hæmorrhage following gastric ulcer which have not perforated and have not therefore been subjected to operation. Mr. W. Rose,[6] writing on this subject in 1896, says: "Operations for hæmorrhage have not been frequent, indeed there are only two successful cases on record. Mikulicz performed one fatal operation and the two successful cases have occurred in the practice of Kuster." Dr. H. P. Hawkins [7] mentions Kuster as quoting four cases of excision of gastric ulcer where life was threatened by hæmorrhage, of which three were successful. These are the only cases of operation for non-perforated gastric ulcer accompanied by hæmorrhage which I have hitherto been able to find. Dr. Hawkins [8] quotes Leube as holding the opinion that operation should be performed not only where there are small and repeated hæmorrhages but also in a profuse hæmorrhage which is repeated. Leube reckons that in about 4 per cent. of all cases of non-perforated gastric ulcer surgical intervention is indicated.

The operations hitherto suggested or performed in non-perforated ulcer consist in opening the stomach and excising or cauterising the ulcer with or without pylorectomy and gastro-jejunostomy. I have found no record of any surgical measure for dealing with hæmorrhage following operation for perforated ulcer, but I submit that (*a*) temporary enterostomy such as was performed in Case 3 and might well

[2] Brinton: Ulcer of the Stomach.
[3] Brit. Med. Jour., vol. ii., 1897, p. 544.
[4] Ibid., vol. ii., 1898, p. 1407.
[5] THE LANCET, March 2nd, 1895.
[6] Year-book of Treatment, 1896, p. 215.
[7] Ibid., p. 88. [8] Ibid., p. 86.

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have been performed in Case 1 has this advantage, that when life is threatened by hæmorrhage from gastric ulcers, whether perforate or non-perforate, though enterostomy be not of itself a faultless or a curative measure, it offers nevertheless an alternative between a comparatively slight operation and a severe one and may enable us to sustain life during the critical period by feeding the patient while the stomach rests. The operation may be performed in non-perforated cases somewhat as follows. The abdominal incision is made with the centre level with the umbilicus or a little lower, 3 cm. from the middle line, 10 cm. in length, more or less, through the left rectus muscle. Push up the great omentum and the transverse colon. Slide the fingers along the lower surface of the transverse meso-colon to the spinal column and feel for the ligament of Treitz which is the guide to the commencement of the jejunum. Open the bowel about 1 metre or less from its commencement, avoiding risk of strangulation from taking a small loop, with a small sharp tenotomy knife so that a good sized Jacques catheter may be tightly grasped without leakage. Care should be taken to avoid a sharp spur by stitching the bowel above and below not too close to the opening or food may escape when feeding by the mouth is commenced. Adequate room should be allowed for the transverse colon in its normal position. The catheter passed into the rectal end of the jejunum may be stitched to the skin as well as to the Keith's dressing to avoid risk of displacement.

Reverting to cases already the subjects of operation such as Case 1 where food passed out immediately from the stomach through a gastro-cutaneous fistula or Case 3 where hæmorrhage occurred, few surgeons could confidently hope that patients in similar conditions would survive a second operation such as excision of the ulcer with or without gastro-jejunostomy. For these a temporary enterostomy as performed in Case 3 appears to be a reasonable surgical alternative to adopt. In such cases, however, choice of the site of incision may be limited owing to the presence of unhealed or septic wounds in the middle line. Where adhesions are absent at the site of incision a thick-walled portion of small intestine should be drawn out to ascertain that the future opening be not much within 1 metre either of the ileo-cæcal valve or of the commencement of the jejunum. If dense adhesions be present any guide (whether to the relative part of the small intestine to be opened or to its gastric or rectal extremity) might be entirely absent without employment of injudicious interference. The operator might then have to be content to open the most suitable portion of small gut presenting and to pass the tube a short distance only within its lumen. Under whatsoever condition the operation has been performed at a subsequent period the bowel should be released from its abdominal adhesions if pregnancy is likely to occur.

I come now to the consideration of retro-gastric subphrenic abscess as a complication following the operation, suggested but happily absent in Case 2. Some time ago the question was raised in this society[9] whether in cases where the cavity of the stomach could not be examined through the rent in a perforated ulcer on the anterior wall it might be well as a safeguard to ascertain the condition of the posterior wall through an opening in the omentum. I would go further than this and say that in all operations for perforated ulcer the lesser cavity of the peritoneum should be opened at the time of operation and for two important reasons. The first is, as suggested, for ascertaining the condition of the posterior surface of the stomach, because if we find that there is decided evidence of disease here, especially if implicating the pyloric end, after closing any ulcer we should more often go on to perform a gastro-jejunostomy than be content with only closing the ulcer. The second reason is that only by opening the lesser cavity and passing in the nozzle of the irrigator can this sac of the peritoneum be thoroughly flushed. The lesser cavity is well known to be a favourite site for subphrenic abscess when an ulcer affects the posterior wall of the stomach, but in the last fatal operation for perforated gastric ulcer which I saw death was due to an abscess in this situation, though there was only a single ulcer on the anterior wall which had perforated. Pus, as shown at the necropsy, had formed here, the foramen of Winslow was closed by adhesions; no recent general peritonitis existed, but both lungs were affected with extensive suppurative pleuro-pneumonia which was the immediate cause of death. The perforating ulcer on the anterior wall which had been closed by the operation was watertight and there was no other ulcer in the stomach, as I have said, to produce the subphrenic abscess. There can be no reasonable doubt, I think, that particles of the gastric contents had found their way from the greater cavity into the lesser, either before the operation or at the time of it, forced through the foramen of Winslow by the irrigating fluid.

Do not consider that I wish for a moment to advocate sponging in preference to irrigation for cleansing the peritoneum. I advocate irrigation but I contend that although the neglect to cleanse the lesser peritoneal cavity after operation for gastric ulcers has been often unattended with bad results this is a good fortune which should not be relied upon and that the lesser cavity of the peritoneum should be flushed as thoroughly as is the greater. Why has no notice been taken hitherto of the condition of the lesser cavity? Perhaps we may explain the omission in this way—that in many cases of general peritonitis following appendicitis, salpingitis, or other causes, effusion of pus or other septic fluid occurs in the lower part of the abdomen or about the pelvis and is not of great quantity; general peritonitis begins and the foramen of Winslow is closed by adhesions, thus shutting off the lesser cavity, just as we find in the converse condition when gradual leakage into the lesser cavity follows a gastric ulcer on the posterior wall general peritonitis does not ensue because the foramen closes. But in the case of a perforated anterior gastric ulcer the gastric contents have only to trickle round the right free border of the lesser omentum and both the greater and the lesser peritoneal cavities are practically simultaneously soiled. The lesser cavity of the peritoneum can be opened either through the layers of the great omentum or of the transverse meso-colon, preferably through the former. Division of the lesser omentum in part, though desirable sometimes when dealing with ulcers on the lesser curvature, does not give such convenient access to the lesser cavity.

Brighton.

[9] Proceedings of the Brighton and Sussex Medico-Chirurgical Society, 1897-98. See Mr. T. Jenner Verrall's Clinical Note, THE LANCET, Dec. 17th, 1898.

TWO CASES OF CÆSAREAN SECTION.

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CASE 1.—In May, 1897, I was called upon to operate in a case of pregnancy at full term in which the pelvis was blocked by an ovarian tumour so that delivery was impossible. Labour was threatening but it had not actually commenced. When the peritoneal cavity was opened the uterus was seen to be of a darkish blue colour, probably owing to the placenta having its attachment anteriorly. The uterus was rapidly opened by a scalpel which at the same time divided the placenta; the incision, however, was completed by the use of strong scissors. The hæmorrhage was very great but was controlled by pressure with the fingers by Mr. Knaggs who ably assisted me both in this case and in the second case and to whom I must tender my grateful thanks. The child was brought out by the head and the membranes and placenta were brought out immediately afterwards. The time from the commencement of the incision to the complete emptying of the uterus would not be more than five minutes. The finger was passed through the cervical canal which was found to be sufficiently open for drainage purposes. A sponge wrung out of hot boric lotion was put into the uterine cavity and one or two very large ones (also hot) were placed around and pressed upon the uterus which was now lifted out through the abdominal wound. No elastic ligature was used around the neck of the uterus. The wound in the uterine wall was closed by silkworm-gut sutures placed deeply at ½ in. intervals. These just missed the internal surface of the uterus. As it was noticed that the peritoneum was extremely loose and moveable owing to its not contracting in the same way that a muscular organ is capable of doing it was sewn over by a continuous catgut ligature. The original silkworm-gut ligatures were thus completely buried. The ovarian tumour was then removed in the ordinary way. The child was living and I hear that it is at present in good health. The mother made an uninterrupted recovery.

CASE 2.—This patient I saw first with her medical attendant, Mr. Spong of Leeds, at her own home, but she

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was removed to the Leeds General Infirmary soon afterwards as she had had threatenings of labour. As in the previous case the pelvis was blocked with an ovarian tumour which so far as could be made out did not extend upwards into the abdomen. The cervix which was high up above the pubes could only be reached with difficulty. The fundus uteri was felt about 3 in. above the umbilicus and the patient was probably about seven months pregnant. She was kept in bed or sitting up in the ward for six weeks as there were no urgent symptoms of any kind and I thought it better to wait till the child was more likely to live. It was found, however, that the ovarian tumour was growing more quickly than the uterus and at the beginning of September, 1898, the upper edge could be felt above the fundus uteri. The pelvis, however, was completely blocked as before. It was therefore decided to operate at once. This was done on Sept. 6th. The operation closely resembled that described in Case 1 except that the placenta was attached to the upper and posterior part of the uterus and was not cut into by the incision. In this case as in the other a pair of very strong scissors was used to divide the uterine wall after it had been opened sufficiently by a scalpel to allow of this operation. I think this plan is better than a scalpel and director, as the uterus is more rapidly opened and the operator is less likely to injure the child. The child was found to present with its right shoulder and it was removed shoulder first. The placenta and membranes came out with it as the membranes accidentally caught on the child. The wound in this case was closed with 2 to the inch green chromic catgut. This catgut is very strong and I believe it is not absorbed so rapidly as the ordinary yellow catgut. In order to ensure proper adaptation of the sides of the wound the first suture was of course placed in the middle. The ovarian tumour was then removed. As in Case 1 I sewed the peritoneum over the uterine sutures. The patient made an uninterrupted recovery. The child, who was not quite at full term, unfortunately died in about twenty-four hours from atelectasis or non-expansion of the lungs.

It is difficult to make any remarks upon this operation which would be new as so much has been written upon the subject. It is, however, probably the most fascinating and interesting operation in surgery. The dangerous condition of the patient, the impossibility of relief in any other way, the certainty of death if it is not done when, as in such cases as these, delivery in any other way is impossible, and lastly the complete triumph over disaster by removal of the child in this way, together with the rapidity of the process, present to the mind a tragedy ending, however, in a complete and successful issue. The history and literature of the operation which is one of great antiquity is full of tragedies. For instance, in the year 1647 the operation was done by a bull which gored a woman eight months advanced in her sixth pregnancy. An abdominal wound was made from one sacro-iliac spine to the other. The intestines fell out between the thighs and the uterus was torn open. During the process of washing the intestines a living child came out through the wound in the uterus. The patient, however, recovered without a bad symptom and was out of bed in a month. There are at least 6 cases reported in which the patient did the operation upon herself and 5 of these resulted in recovery. Probably the most interesting of these cases is the following an account of which I abbreviate from THE LANCET of May 22nd, 1886, where it is related in full and attested by two medical men of Viterbo in Italy. A peasant woman aged twenty-three years and unmarried was pregnant at full term. Having been much annoyed by the remarks which were made as to her condition she determined to end the matter summarily. With a common kitchen-knife, not too sharp, she opened her abdomen on the right side of the umbilicus and then cut into the uterus. She drew out the arm of the child and cut it off. She then pulled out the head and amputated it. She then was able to remove the rest of the body and also the placenta and membranes. She bound herself tightly round with a broad band, and having hidden the fœtus in a straw mattress she dressed and walked into Viterbo which was rather less than a mile from her house to visit a sister, with whom she breakfasted on bread and coffee and a cup of broth. She then walked about the town for some time in order, as she stated, to show herself and to put an end to the current talk about her pregnancy, and returned home at 10 A.M., having been on her feet for about five hours. Some time after this, when at home, she vomited and fainted. One of the two medical men whose names are attached to the narrative was sent for and he found nearly all the intestines outside the body, and he states that he believed them to have been outside for at least six hours. With the assistance of his colleague the intestines were carefully washed and replaced, a drainage-tube was put in and the abdominal wound was closed. It is not stated whether sutures were put into the uterine wound or not. The wound healed and the patient rapidly recovered. In a previous comment in an annotation in THE LANCET of May 8th, 1886, upon this incident, as reported in *La Gazzetta degli Ospedali*, it was remarked that the "fearless bravery" of the old Romans evidently still survives.

What has struck me more than anything else is the safety of the operation provided the patient is in a condition to bear it. Beyond exhaustion there is really nothing for her to die from except it be hæmorrhage or sepsis. The hæmorrhage is perfectly under control by nipping and at the same time everting the edges of the wound by the fingers. This is more easy because the bleeding does not come from the whole extent of the wound but from two or three points only. It is venous hæmorrhage at very low pressure and is arrested quite easily. Of course it is completely stopped when the wound is brought together. I think it is an improvement in the technique of the operation to close the upper end of the incision the last and just before putting in the last two sutures to syringe the uterus well out into the vagina so as to ensure that it is free from clots of blood. It is very important to place the sutures near together and not, as recommended by Saenger, at intervals of an inch or so with superficial sutures between. If green chromic catgut is used in tying the knots I think it is also important to pass the end through the loop twice in making the first half of the knot. A knot so made with catgut is secure, otherwise it is not secure. There was an interesting case recorded in the year 1885 in which the sutures in the uterus gave way from vomiting and a clot was forced from the uterus into the peritoneal cavity. Catgut was used but probably the knots were not made in the way mentioned. Active contraction of the uterus, it must be remembered, is not necessary to stop hæmorrhage as the condition known as retraction is sufficient. When a contracted womb relaxes it becomes in a state of retraction, in which condition hæmorrhage does not occur. It is only when the womb expands or opens that bleeding takes place.

It is a well-established rule that in ovarian tumour with pregnancy the tumour ought to be removed at once. Pregnancy by this plan will not be interfered with and will go on normally. It may be suggested that I ought to have followed this rule, but in neither case was it possible to do so as the pelvis was blocked by the tumour and the womb lay completely above and anterior to it. In the second case, as stated, towards the end it was found that the tumour extended higher behind the womb than was supposed, but when the abdomen was opened it could not be removed or even seen, as the womb lay entirely in front of it.

I have either actually attended, or seen in consultation, or been responsible for, between 11,000 and 12,000 cases of midwifery. This large number of cases is greatly accounted for by 600 cases a year on the average attended in the maternity department of the Leeds General Infirmary and it has only been necessary to do Cæsarean section twice. We have, however, escaped it in 3 cases by doing symphysiotomy when the conjugate diameter has been 2¾ in. or over. I am afraid, however, that even now craniotomy is done when symphysiotomy would suffice. This latter operation is very satisfactory, for of the 3 symphysiotomy cases all the mothers recovered, and 2 of the children lived.

Leeds.

THE "BLIND FLY" AND THE LOCUST IN THE EVOLUTION OF THE MALARIAL PARASITE.

BY ARTHUR DUNLEY-OWEN, B.SC., M.R.C.S. ENG., L.R.C.P. LOND.,
SURGEON TO THE BRITISH SOUTH AFRICA COMPANY.

IN a paper on Malaria published in THE LANCET of Sept. 24th, 1898, I stated that I had made cultivations of the malarial parasite. My attention has been drawn to the following paragraph in Manson's "Tropical Diseases" page 2, "Hitherto all attempts to cultivate the parasite ..... have failed." I only obtained Dr. Manson's book in October, and

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when I wrote my article my general knowledge of the subject was from "Fagge's Medicine." It is possible, therefore, that a brief description of the experiments which led me to contribute my notes to THE LANCET may prove of interest.

Rhodesian farmers have often told me that by keeping horses in during certain hours they prevented them from falling victims to "horse-sickness," and on investigating the subject I found, as I have mentioned before, that they were correct in their statements. This led me to inquire what there was in the herbage or the soil which could produce "horse-sickness" and I made microscopical examinations of dew, grass, and soil, but without any discovery. I then tried to make cultivations in the usual way on potato and with glucose gelatin, but again with no satisfactory result. On examining the blood of a horse suffering from "horse-sickness" I found the red blood corpuscles occupied by an amœboid body containing a black substance which I took to be melanin and also multitudes of sporules free in the blood serum. I examined the blood from 4 horses in this way and saw the amœboid bodies containing pigment and the free sporules in 3 cases. I did not, however, then find any crescentic bodies. This result being so similar to that which obtains in malarial blood in man I thought "horse-sickness" might be an analogous disease and with the hope of proving it I made the following experiments:—

A. "*Blind fly*."—I caught a number of that species of Tabanus which has a large grey-striped body, greenish-yellow eyes, and entirely transparent wings. This is locally termed the "blind fly" and it feeds on blood. I kept these in a cage of mosquito netting and at different times made the following investigations: 1. I examined several of the "flies" and found ?-curved bacilli in one case. 2. I allowed four of the "flies" to bite me during a malarial attack from which I suffered and examined them at intervals. (*a*) Two hours afterwards sporules and pigmented cells were to be found in the stomach contents. (*b*) In twelve hours pigmented cells were found in the stomach walls; and (*c*) on the fifth day while examining a third specimen I found deposits of pigment in the stomach walls and sporules and crescentic bodies in (?) lymph channels of the fly. 3. I allowed several "blind flies" to bite healthy horses but nothing abnormal was found in the contents of the stomachs. 4. I allowed others to feed on a horse suffering from "horse-sickness." The stomach contents of both the healthy horses and the "sick" horse showed sporules and pigmented cells. In one instance I found crescentic bodies.

B. *Locusts*.—I made the following experiments at different times with Acridium purpuriferum or the migratory locust: 1. I found flagellated bodies in the stomachs in 3 per cent. of locusts taken in early morning from the wet grass. 2. On keeping similar locusts for twelve hours I found sporules and crescentic bodies in the stomach walls in 1 case out of 50 which were examined. I considered these analogous to the malarial parasite because they were similar to acknowledged forms as seen in human malarial blood; but I dare say my conjectures are wrong.

C.—I injected rats with blood from a horse with "horse sickness" and produced rigors, elevation of temperature, and other signs of fever. On examining the blood of these rats I found amœboid bodies containing pigment and sporules, and in some cases in blood taken at a later period I saw many crescentic bodies. Other rats injected with blood from healthy horses showed only slight elevations of temperature, due, I take it, to the act of injection, and on examination their blood proved normal in every instance. Rats injected with the stomach contents of a "blind fly" which had been fed on my own blood showed the characteristic plasmodia in their blood five days afterwards. Rats injected with the "juice" of locusts caught in early morning showed symptoms of fever, but only once in 12 cases was I able to detect plasmodia in their blood.

I now see that I was in error in considering the crescentic bodies to be "bacilli"; I thought these were the active factors in true malaria and that the amœboid bodies were phagocytic in function.

Enkeldoorn, Rhodesia.

THE BOLTON AND DISTRICT ASSOCIATION OF COLLIERY SURGEONS.—This society has been successful in raising the remuneration for attendance upon accidents from 2*s*. 6*d*. per head per annum to 15*s*. per case per annum.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

NORTH-EASTERN HOSPITAL FOR CHILDREN.

A CASE OF INDURATIVE MEDIASTINO-PERICARDITIS IN A YOUNG INFANT.

(Under the care of Dr. J. H. SEQUEIRA.)

THE following case is an excellent example of a rare condition which has received but scanty recognition. The first case seems to have been described in 1854 by Griesinger and up to the present about twenty-five cases have been recorded. There is much uncertainty about their etiology though it is not improbable that many are associated with tubercle. It is possible also that some of these cases start from a septic mediastinitis. For the notes of the case we are indebted to Dr. J. Blumfeld, late senior resident medical officer.

A male infant, aged fifteen months, was admitted to the North-Eastern Hospital for Children on Oct. 1st, 1896, with the history that in August there had been an attack of bronchitis and in September swelling of the face and legs. The case was sent to hospital as one of meningitis owing to a peculiarity in the child's cry. On admission the infant was pale but otherwise apparently healthy; he cried constantly unless he was nursed but he did not appear to be in pain. The temperature was 99° F., the pulse was 80, regular, and of fair size, and the respirations were 20. The tongue was clean.

On examination of the chest the area of cardiac dulness was found to be enlarged upwards on the left side reaching to the upper border of the second intercostal space; it extended also beyond the middle line of the sternum except over the manubrium. The heart sounds were everywhere normal. There were no adventitious sounds or bronchial breathing and the movements of the chest were normal. The liver and spleen were not palpable below the ribs. There was no tenderness or rigidity of the abdomen and there was no evidence of fluid; the feet and legs felt cold and pitted slightly on pressure. The urine was of specific gravity 1015, acid, clear, and contained no albumin. The infant took his food and slept well. He usually sat up but while sleeping he lay on his back.

The patient's condition remained unchanged, except that on some days there was blueness of the lips and ears, until Nov. 3rd. There was then an obvious amount of fluid in the abdomen, the arms and legs were cold and blue, and the legs were considerably œdematous. There was no cardiac murmur and no albumin was present in the urine. Distension of the veins of the neck was noticed. On the 10th the edge of the liver was palpable 2½ in. below the costal arch and on the 23rd there was extreme ascites with much œdema of the abdominal wall. The urine contained phosphates and about one-eighth albumin. On the 30th there was much diarrhœa and on Dec. 2nd the infant died with all the symptoms of cardiac dilatation.

Necropsy.—A post-mortem examination was made fourteen hours after death. When the sternum was removed the mediastinal tissues were seen to be greatly thickened and adherent. The anterior mediastinal glands were enlarged and presented foci of caseation. The left lung was adherent to the chest-wall at the apex and over the posterior surface of the lower lobe was some thickened and adherent pleura. The pericardium was about three-quarters of an inch thick, fibrous, and adherent everywhere to the heart, and the fibrous tissue spread upwards around the great vessels. Firm adhesions united the pericardium with the thickened anterior and posterior mediastinal tissues. The left pleura was adherent to, but separable from, the pericardium. The valves of the heart were all healthy. Both ventricles were

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dilated and hypertrophied. The pericardium was carefully examined for evidence of tubercle but with negative result. The abdomen contained four pints of ascitic fluid. The liver was large, "nutmeg," and on section fatty; the kidneys and spleen showed changes due to venous engorgement. The heart was shown at a meeting of the Pathological Society of London on Dec. 15th, 1896.

Remarks by Dr. BLUMFELD.—Cases of primary disease of the pericardium without valvular affection are not very common. For this reason and because of the unusually early age at which the disease appeared this case seems to be worthy of record. In 1895 Dr. Thomas Harris published a monograph containing accounts of his own cases of mediastino-pericarditis and all others recorded up till then. The youngest patient mentioned by him was a child two years of age so that the above case probably represents the earliest age at which the affection has as yet been known to be present. Dr. Harris distinguished three pathologically distinct classes of "chronic inflammatory conditions in relation to the pericardium and mediastinum." In the first of these there is "adherent pericardium with marked increase of fibrous tissue in the mediastinum not infrequently associated with caseous affection of the lymphatic glands of the mediastinum and with adhesion of the exterior of the pericardium to surrounding parts." These cases, following Kussmaul, he named indurative mediastino-pericarditis, and the above case seems to be an excellent illustration of the condition, occurring, however, at an unusually early age. Such cases are of interest clinically because of the difficulty in diagnosing the condition and pathologically because their etiology is so obscure. If they are regarded as rheumatic one is confronted with the absence of endocardial affection—an absence which, at any rate in children, is so rare in rheumatic heart affections as almost to negative the supposition. Moreover, besides the absence of endocarditis and of joint affection there is in many of these cases no history of any illness which could be regarded as an attack of acute pericarditis, the disease beginning insidiously and the first symptoms being those of the consequent cardiac dilatation or of dropsy. In the present case except an increased area of cardiac dulness and an occasional lividity of the extremities there was nothing for weeks to lead anyone to suspect any affection of the heart. Cases such as these differ on the one hand from cases of obviously tuberculous pericarditis with generally much other evidence of tubercle and on the other from the obviously rheumatic cases where there is endocarditis as well.

Medical Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

THE third ordinary meeting of this society was held on Dec. 21st.

Professor CHIENE showed (1) a well-marked case of Coxa Vara occurring in a lad, sixteen years of age, said to have been a result of rickets, but much more likely to have been due to traumatism; and (2) Double Partial Dislocation of the Hip-joint occurring in a typically rachitic girl.

Dr. AFFLECK showed (1) two cases of Friedreich's Ataxia in brother and sister; and (2) an extremely well-marked case of Addison's Disease occurring in a young man, the mouth presenting so many dark patches that it resembled that of a dog. There was no pulmonary disease when he was first admitted to the infirmary, though there were some enlarged glands in the neck. Suprarenal gland extract was administered, but as alarming symptoms followed the treatment had to be stopped, after which he began to improve markedly and soon gained a stone in weight. His strength also improved remarkably. The pigmentation still remains as before however. In another earlier case which Dr. Affleck also treated by suprarenal gland extract similar collapse was noted and the patient ultimately died.

Mr. CAIRD showed:—1. A man, aged fifty-eight years, from whom he had removed a rectal carcinoma by a parasacral incision. The growth affected the anterior aspect of the rectum and the exploring finger could reach beyond it. An exploratory incision was first made in the middle line of the abdomen and the growth was then found to be perfectly localised. The operation for removal of the growth was done on Sept. 6th; the wound is now whole. The patient has no incontinence of fæces, has put on weight, and feels in perfect health. 2. A patient after Removal of the Appendix and of a Renal Calculus. This affection occurred in a young man, aged twenty-one years, who had suffered from repeated attacks of typhlitis along with lumbar pain. An incision was made in the abdominal wall and the appendix was found to enclose three masses of fæces which could not escape. It was also embedded in inflammatory lymph and was consequently removed. No improvement followed however; the lumbar pain was still severe and the urine contained albumin and red corpuscles, though there was no pain radiating to the bladder or the testes. The kidney was cut down upon from the lumbar region and a calculus of the size of the terminal phalanx was removed. Since the second operation the patient has been perfectly relieved.

Dr. MELVILLE DUNLOP showed (1) a child suffering from Congenital Double Athetosis due to Cerebral Atrophy; and (2) a boy in the Atrophic Stage of Pseudo-hypertrophic Paralysis.

Dr. JAMES exhibited:—1. A case of Scleroderma associated with Symptoms of Raynaud's Disease which was present in a man, aged thirty-four years. Fourteen months ago the right index finger became cold and numb and a small part sloughed off. The same happened with the other fingers. The left hand next became affected, also the feet, the nose, and the ears. Small sloughs also formed on these localities. The skin now became very hard, specially under the chin; that over the hands became so hard that he could scarcely move his fingers. The skin over the face, neck, and over the body generally became hide-bound. He had great difficulty in opening the jaw, protruding the tongue, or putting the head back. His spleen was enlarged and the thyroid diminished in size. Tactile impressions were not interfered with but those for temperature were. 2. A case of Angio-neurotic Œdema of the Tongue occurring in a girl.

In Dr. GIBSON'S absence Dr. GRAHAM BROWN showed (1) a woman suffering from Bulbar Paralysis; and (2) a man exhibiting signs of Pseudo-bulbar Paralysis.

Dr. JOHN THOMSON showed a child with Hemiatrophy of the Tongue.

Dr. GEORGE ELDER showed: 1. A boy, aged six years, who showed Congenital Hemiatrophy of the Face with Malformation of the Ear. The atrophy affected not only the lower but the upper part of the face as well. 2. A woman, aged thirty-four years, with Senile Chorea. Four years ago she had a fall and sustained a Colles's fracture of the left arm. Previously to this her health had been perfect. Movements began to show themselves in the right hand after the accident.

Dr. W. ALLAN JAMIESON showed: 1. A drawing from a case of Urticaria Pigmentosa occurring in a child a year old. 2. A Papulo-squamous Eruption, apparently Syphilitic, affecting the Palms, in a man, aged forty-six years. 3. A case of Psorospermosis Follicularis Vegetans (Darier's disease) in a boy, aged eleven years. The disease began a year ago as a small spot on the outer side of the arm and gradually spread. There were large fungating masses on the arm, thigh, and face. In its early stage it appeared as small papules resembling molluscum or lichen planus. The hypertrophy was seen chiefly about the hair follicles. The psorosperms found by Darier in this disease were absent in the present case. 4. The result of treatment in a case of Tylosis which was shown at the November meeting. 5. Case of Elephantiasis in a woman, aged forty-three years. Six years ago the left leg began to swell at the ankle. The swelling spread upwards towards the thigh and then the right leg was affected similarly. The features which the legs presented were those of elephantiasis. There were nodular prominences on the skin and dilatation of the lymphatic tissues. The filaria nocturnans had been found in the blood of patients in this country. The blood in this patient was carefully examined after 8 P.M. but no filaria were found.

Dr. HODSDON showed a girl, aged seventeen years, from whom he had removed a large Plexiform Neuromatous Tumour from the Right Axilla. The growth had lasted about nine years and was divided into lobules. On operation it was found to be adherent to the periosteum and the median nerve passed through the centre of the tumour. Several other nodules were present in the sheaths of the nerves and these were shelled out. Other neuromatous

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growths were present in other parts of her body—as, for example, in the right palm. Several other spots were present in the skin.

The following specimens were also exhibited:—

Mr. WALLACE: (1) A Renal Calculus; (2) Kidneys with Calculi *in situ;* (3) Fibro-adenoma removed from the Prostate; (4) Portions of Prostate removed from 3 Cases by Suprapubic Cystotomy; (5) 4 Kidneys (3 tuberculous and 1 carcinomatous) removed by operation; (6) Dermoid Cyst from the Floor of the Mouth; (7) a Biliary Cyst removed by Cholecystotomy; and (8) Microscopic Specimens of Tumours and of Prostate.

Dr. LOGAN TURNER: A Skull showing unusual Development of Frontal Sinuses.

Dr. DOWDEN: (1) Specimen of Plexiform Neuroma; (2) Microscopic sections of the same; and (3) Specimens of Hydatids.

Mr. CATHCART: (1) Abdominal Aneurysm which caused difficulties in Diagnosis; and (2) Multiple Abscesses in the Brain of a man convalescent from empyema treated by operation.

Mr. CAIRD: Preparations and Drawing from an unsuccessful case of Enterectomy and Suture for Carcinoma.

Dr. WILLIAM ELDER: (1) The Heart and Intestine from a case of Dysentery with Ulcerative Endocarditis; (2) Brain showing Hæmorrhage into the Occipital Lobe; and (3) Brain from a case of Word Blindness; the area of softening involved the supra-marginal convolution and the angular gyrus, extending as far inwards as the posterior horn of the left lateral ventricle.

Mr. CATHCART: Improvements in the Microtome.

Mr. CAIRD: Needle-case for Sterilising Needles and Sutures.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—Chronic Inversion of the Uterus.—Pelvi-abdominal Disease.—Ectopic Pregnancy.

A MEETING of this society was held on Dec. 14th, Dr. HALLIDAY CROOM, President, being in the chair.

The following specimens were exhibited:—

Dr. BREWIS: (1) An Ovarian Tumour and a Calcified Fibroid Tumour removed from a patient aged seventy-four years; (2) a Five Months Pregnant Uterus removed for Cancer of the Cervix; and (3) Specimens from Two Cases of Hysterectomy.

Dr. J. W. BALLANTYNE: (1) Frozen Sections of a Fœtus hardened in Formol; (2) Multilocular Ovarian Cyst; (3) Vulvar Epithelioma removed by the Thermo-cautery (no recurrence); (4) Twin Fœtus (and Placenta) showing the First Stage of Sympodia; and (5) Secundines from Cases of Placenta Prævia.

Dr. HAULTAIN: A Uterus successfully removed by Vaginal Hysterectomy for Deciduoma Malignum.

The PRESIDENT: (1) A Missed Abortion; (2) an Ovarian Tumour complicating Pregnancy; and (3) a Parovarian Cyst.

Dr. J. W. STRUTHERS read notes of a case of Chronic Inversion of the Uterus replaced by Manipulation after Posterior Colpotomy had been performed. The patient was thirty-eight years of age and when admitted to the hospital was suffering from menorrhagia and metrorrhagia Nineteen months previously she had been delivered of her eighth child. Labour was precipitate, the child being born on the floor. A medical man who was sent for removed the placenta without any difficulty and told the patient that her womb had come down. There was no shock or excessive hæmorrhage after the labour or during the puerperium. On admission a smooth, firm body of about the size of a hen's egg was found projecting through the cervix which was found to constrict the tumour slightly to the cervix; the diameter was about 1 in., lower down at its widest part it was about 1¼ in. No body of the uterus could be felt on bimanual examination. Attempts were made to reduce it under chloroform by hand and by Aveling's repositor but without result. Slow pressure by the repositor was also tried but failed. The vagina was douched and packed with iodoform gauze for eight days and then Dr. Berry Hart operated by incising the posterior wall of the vagina for 1¼ in. Two fingers were introduced through this and passed down into the infundibulum uteri. No adhesions were found. The fingers of the right hand manipulated the body of the uterus and the left fingers fixed the uterus and also kept the cervix stretched as contraction otherwise prevented the reposition. This gradually effected the replacement. A silk stitch was inserted through the lips of the cervix to prevent any tendency to recurrence and the vaginal incision was also united with silk. The patient did well.

Dr. HAULTAIN gave a Retrospect of a First Series of 110 Abdominal Sections for Pelvi-Abdominal Disease with 2 deaths. The table included 35 ovariotomies with no deaths; their ages varied from twenty-one to eighty-one years. The largest tumour weighed 83 lb. and after recovery the patient's weight was 84 lb., only 1 lb. more than the tumour. Of simple pedunculated cysts there were 18 unilateral and 3 bilateral; of simple sessile cysts 3 were abdominal and 4 were sub-peritoneal pelvic. There were 2 bilateral papillomata and 1 unilateral; also 2 fibromata, 1 oöphoroma, and 1 dermoid. With 2 of the solid tumours of the ovary ascites was present; with the cellular oöphoroma no peritoneal effusion was present. The presence of ascitic fluid with these solid tumours of the ovary was a matter of considerable interest and was difficult to account for especially when one considered that similar tumours of the uterus were not equally complicated. It was possibly due to the fact that the uterine fibroids obtained their nutriment from their capsule in which the inoculation was at all times easy, while the solid ovarian was nourished entirely by means of vessels which entered within a limited area and ramified through its structure. It would thus be evident that in dense fibrous growths the blood-return would become gradually impeded and a serous intra-peritoneal effusion result. As they were often of comparatively small size and of slow growth they would often remain undetected were it not for the accompanying ascites. The fungating papillomata were associated with extensive ascites; there had been no recurrence after removal in one of these patients, in this case no evidence of infection of the peritoneum could be found. Dr. Haultain's list of operations included 2 broad ligaments cysts and 3 hysterectomies. In the latter case the stump was treated by the intra-peritoneal method after ligature of the uterine arteries. There were also 3 myomectomies. In 2 patients there were mixed tumours: 1 had an ovarian tumour on the left side and a broad ligament cyst on the right; the other patient had a large ovarian cyst and a parovarian on the right side, numerous fibro-myomata of the uterus, and a large broad ligament cyst on the left. Extra-uterine gestation occurred in 5 cases of the series. 3 of these showed that the source of the bleeding was through the patent abdominal extremity of the tube. From a close examination of the specimens after removal it would seem that in the majority of the cases separation of the ovum with necessary bleeding was the primary factor in the so-called rupture. This bleeding might take place through the ostium and also might be the source of the irregular uterine discharge with which ectopic gestation was so constantly associated at the time of so-called rupture. One of the extra-uterine operations was rendered very difficult by the remains of an old appendicitis. Dr. Haultain performed ventro-fixation five times, twice for enlarged, congested, and fixed retroflexed uteri which gave rise to marked symptoms unrelieved by other treatment. In 2 cases of prolapse the result was satisfactory; in a third a secondary colporrhaphy had to be performed to rectify a pronounced rectocele. In performing the operation he stripped off the parietal peritoneum from the edges of the abdominal wound and fixed the fundus to the extra-peritoneal tissue by means of silkworm gut sutures which included the skin and recti muscles as well as penetrated the anterior uterine wall. The Porro-Cæsarean operation was performed on one patient. She was a dwarf and in the second stage of labour. The pains were violent and uncontrolled by anæsthesia. The conjugata vera measured 2 in. The stump was treated extra-peritoneally and was secured by the elastic tube. The child was saved and the mother recovered. Suprapubic cystotomy was performed in 3 cases for new growths in the bladder, all papillomatous and freely hæmorrhagic. The ages of the patients were seventeen, fifty-one, and fifty-two years. The suprapubic method was preferable to urethral dilatation or vaginal cystotomy. Urethral drainage was more comfortable to the patient than through the wound. There were 10 cases of exploratory incision with 1 death. These included operations for malignant disease of the peritoneum, tuberculous infiltration for adherent ovaries, to fix up prolapsed ovaries, and to release an adherent pedicle. The fatal case was an

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exploratory incision on a post-uterine tumour which was causing pressure symptoms. It was found to be a sub-serous cervical fibroid and as the vaginal route for its removal seemed preferable the abdominal wound was closed. The patient succumbed from acute septic peritonitis on the third day before the second operation was undertaken. The appendages were removed in 41 cases. 2 of these were for dysmenorrhœa, all other treatment proving of no avail. This operation was also undertaken on a patient with a monthly mental aberration that she was harbouring a man inside her; the delusion was cured for a few months and afterwards returned. 4 cases of fibro-myomata were treated in this way; 3 with excellent results; 1 is unimproved. In 23 cases this operation was performed for diseased ovaries or matted appendages. There were also 3 cases of hæmatosalpinx, 1 of hydrosalpinx, 6 of pyosalpinx, and 1 of tubercle of the tubes. The second death in the list was after operation on a pyosalpinx. As regards technique Dr. Haultain carried out asepsis in hospital practice but in private practice used antiseptic methods. Hæmorrhage should be fully controlled, especially by ligaturing the main sources of the blood-supply, before proceeding to free adherent tumours. Drainage was not used unless excessive hæmorrhage was feared and the vaginal route was preferred. In suturing the abdominal wound all the layers were included with silkworm-gut sutures. A nutrient enema was always given after the operation and was repeated every few hours if sickness was present. Light food was given whenever the stomach could retain it. Thirst was relieved by large saline enemata. As complications in this series he had had a case of double suppurative parotitis. In one case a pair of forceps had been accidently left in the peritoneum. The patient's temperature was irregular for twenty days after the operation, the next three days it was practically normal, but she was distinctly and rapidly failing. At the second operation the forceps were found embedded in plastic effusion and with difficulty were removed; the patient recovered slowly.—The PRESIDENT, Professor SIMPSON, Dr. HART, Dr. BREWIS, and Dr. MILNE MURRAY made remarks on the paper.

Dr. HAIG FERGUSON read a paper on Repeated Ectopic Pregnancy in the same patient with an account of a case where Two Gestation Sacs (one a Lithopædion) were successfully removed from either side at one operation. In surveying the published cases he found that in about 5 per cent. of all extra-uterine cases both tubes had been involved at the same time or at intervals more or less prolonged. The shortest interval was six weeks and the longest was five years. Dr. Ferguson's patient, after bearing 2 children, had menorrhœa for 4 months. She was then suddenly seized with pain on the right side with shivering and was confined to bed for many weeks. After 4 years her menses again stopped. After 2 months she suffered from pelvic pain and retention of urine. On examination a fluctuating swelling was found of about the size of a goose's egg on the left side of the uterus which was enlarged and pushed to the right. On the other side of the pelvis a hard, irregular body was found. A small piece of decidual membrane was passed from the uterus after the examination. On operating a tubal pregnancy with the ovary was removed from the left side. It had ruptured into the broad ligament, fresh blood-clot being found there. On the right side the tube was dilated to the size of the small intestine and was filled with serum. Attached to it was a sac which was found to contain the bones of a four months fœtus. This lithopædion sac lay in the peritoneal cavity attached to the tube by a narrow fibrous pedicle and looked as if it had been originally extruded through the peritoneal covering of the tube. The right ovary was cystic and was removed at the same time. The patient made an uneventful recovery. Appended to the paper was a list of all the references to the literature on the subject.—Dr. CROOM, Professor SIMPSON, Dr. HART, and Dr. HAULTAIN took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Acute Hæmorrhagic Ascites.—Medical Folk-lore.

A MEETING of this section was held on Nov. 18th, 1898, Dr. J. W. MOORE, the President, being in the chair.

Dr. FINNY described a case of Ascites in a man, aged forty-two years, which proved fatal in three months from its earliest onset and for which paracentesis was required five times in the last three weeks, six and a half gallons of fluid being removed by simple drainage. The fluid from first to last was like blood in colour and on standing deposited a soft deep-stained sediment forming one-eighth or one-tenth of the volume. The patient was apparently up to the last fortnight of his life a healthy, well-nourished man, of a good fresh colour, a bright disposition, and of very active habits. At the post-mortem examination the liver was found to be healthy. The intestines were pressed to the right side by an enormous thickening of the transverse mesocolon and omentum and by a soft growth which filled up the whole of the left side of the abdomen and was in parts 2 in. thick and which readily broke down on handling, blood oozing from every part.—Dr. PURSER pronounced the neoplasm to be sarcomatous.

Dr. J. KNOTT read a paper on a Country Herbalist's Cure for the King's Evil. The details had been procured from a sexton in the west of Ireland. The cure was carried out in three stages: (1) the "sore" was dressed with a preparation of the leaves of the cuckoo sorrel; (2) it was then dressed with a preparation of the root of the sweet meadow; and (3) the healing was completed under a plaster compounded of bees' wax, sheep suet, yelk of egg, and first flour. Dr. Knott had found on looking into the literature of herbal simples that both the plants employed in this rural remedy had enjoyed a high reputation during the ages in which such remedies were specially prized. The treatment of scrofulous ulcers by the application of these herbs is mentioned by Dr. Thomas Beddoes and the account of it was quoted from this writer by Dr. T. M. Winterbottom who compares it with a very similar treatment of scrofulous sores which he had found in general practice among the aboriginal African natives about Bassa, on the Grain Coast. Lengthy quotations were given from a number of authorities, showing the extensive employment of these remedies in the herbals and pharmacologies of past ages.—Dr. COX said that Dr. Knott had omitted to refer to a book written by Keogh, a distinguished graduate of Trinity College in the last century. There was formerly in Ireland much medical literature and even at the present day a large amount existed not only in the Dublin museums but also in the British Museum. They had to thank men like Whitely Stokes for having enlightened the world as to the position of Irish learning bearing on this as on many other subjects.—Dr. KNOTT, in reply, said he had, as Dr. Cox had mentioned, omitted to mention the name of Keogh in connexion with the extract which he had made. He hoped that some day someone, under the auspices of the Royal Academy of Medicine in Ireland, would give a translation of the Irish writers on medicine. He considered that there was one man especially capable of doing so and that was Dr. Cox himself.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 21st, Mr. Alexander Miller, President, being in the chair.—Dr. Edgar showed: (1) Placenta Duplex from a case of Placenta Prævia Centralis; (2) Retroflexed Fœtus; (3) Anencephalic Embryo of four weeks; and (4) Exencephalic Embryo of four weeks.—The President gave an interesting address on Twenty Years' Obstetric Practice. This embraced a consideration of 1000 cases. Of the many complications he referred to probably the most interesting was the one of acute inversion of the uterus. This was produced by the woman in attendance dragging on the cord. Mr. Miller found no difficulty in reducing with his hand the inversion which was complete.

PUBLIC ABATTOIRS FOR BRISTOL.—At the meeting of the Bristol Health Committee held on Dec. 20th there was a discussion on the question of public abattoirs which were strongly recommended in a report submitted some months ago by the medical officer of health (Dr. D. S. Davies). Apparently, however, the local tradesmen have some prejudice against municipal slaughter-houses and consequently, on the suggestion of the chairman, it was decided to have a conference between the committee and representative traders.

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Reviews and Notices of Books.

A Text-book of Diseases of the Nose and Throat. By FRANCKE HUNTINGTON BOSWORTH, A.M., M.D., Professor of Diseases of the Throat in Bellevue Hospital Medical College, New York, &c. Third edition. Illustrated with 186 engravings and 7 coloured plates. London: Baillière, Tindall, and Cox. 1897. Pp. 814.

DR. BOSWORTH'S larger work in two volumes is well-known as a valuable treatise on the nose and throat, but it was—not unreasonably—considered that it was too voluminous for the ordinary student and general practitioner; he has therefore had the work cut down to the size of the present volume. This has been done by Dr. A. R. Schroeder. The result is very satisfactory for we find a careful account of the diseases of these important regions of the body comprised within one volume of moderate size, though it still occupies more than 800 pages. A good account is given of the methods of examining the upper air passages and the author considers that the direct rays of the sun form by far the best source of illumination and that they should always be used where available, especially in the first examination of the case. In his opinion the incandescent electric light offers no advantages over the ordinary gas-jet or paraffin lamp. The anatomy of the nose and nasal cavities is fully described and an account is given of their functions. In the treatment of hypertrophic rhinitis the author prefers chromic acid to the galvano-cautery, as he considers that the latter is a cumbrous method for destroying merely a small portion of tissue. Dr. Bosworth, in agreement with many rhinologists, does not think that advanced cases of atropic rhinitis can ever be really cured though the annoying symptoms may be removed. The diseases of the cavities opening into the nose receive full consideration. In the account of the external surgery of the nose is given a large series of wood-cuts (42 in all) illustrating the skin incisions and the extent to which the bones are sawn in the various operations; they will serve to make clear to the reader what is often very difficult to understand from a description only. The next section is devoted to the diseases of the fauces. It is well written, and we need only remark that "croupous tonsillitis" is not a satisfactory synonym for acute follicular tonsillitis. The account of the larynx is good and quite full enough for all practical purposes. The last section describes the external surgery of the throat and contains accounts of pharyngotomy, thyrotomy, tracheotomy, and extirpation of the larynx. The illustrations throughout the book are numerous and the coloured plates are good. From a careful examination of the work we can recommend it with confidence to all who wish for a fuller account of the diseases of these regions than can be found in the ordinary text-books on surgery.

Disinfection and Disinfectants. By SAMUEL RIDEAL, D.Sc. Second edition. London: The Sanitary Publishing Co., Limited. 1898. Price 12*s.* 6*d.*

DR. RIDEAL has done a good service in the interests of sanitation by having written a reliable work dealing with the merits and demerits of the processes of disinfection in vogue and of the various chemical agents employed therein. We venture to maintain that the Government should provide some means of control over the various preparations placed on the market as disinfectants, since many of them are quite inert, exerting little or no bactericidal action, and thus deluding the public into the belief of security against infection. The work before us affords a useful means of discriminating between the active agents and those which are worse than useless. Moreover, in many instances it records the comparative bactericidal power of disinfectant substances. The list of these is now almost interminable, new ones said to eclipse previously existent ones in regard to bactericidal power being added almost day by day. Some idea of this number may be gained from the very interesting and instructive chapters of Dr. Rideal's book. Of a total of fifteen chapters no less than eight are devoted to chemical disinfectants which are classified as follows: the Non-Metallic Elements and their Derivatives (Chapters IV. and V.), Metallic Salts (Chapters VI. and VII.), Organic Substances (Chapters VIII., IX., and X.), and Compounds related to the Alcohols (Chapter XI.). The remaining chapters are devoted to the general principles of disinfection, mechanical disinfection, disinfection by heat, personal disinfection, the preservation of food, legal statutes and regulations, and lastly methods (bacteriological and chemical) of analysis.

The author freely recognises the assistance which a reference to the bibliography on the subject has afforded him and our own columns are frequently referred to in connexion both with practical inquiries which we have ourselves undertaken and the opinions and results expressed and contained in papers communicated to THE LANCET from time to time. It must have cost considerable time and labour in thus bringing together the gist of the literature which on this special subject is so very widespread. This alone merits a word of praise. But more than that, the book supplies in collective form just that information of which our medical officers of health and others concerned in sanitary organisation and administration are daily in search. It contains practical particulars and directions, and throws light upon the composition, character, and value (bactericidally) of many proprietary preparations and the bactericidal worth also of substances which are more familiar. In short, Dr. Rideal's book is a contribution of great importance to medical men, for it should very materially help them when they are confronted with the important question, as is so often the case, as to the best means of carrying out disinfection on the small scale and on the large.

LIBRARY TABLE.

A Short Manual of Analytical Chemistry. By JOHN MUTER, Ph.D., F.R.S.E., F.I.C., F.C.S. Eighth edition. Illustrated. London: Baillière, Tindall, and Cox. 1898. Price 6*s.* 6*d.*—There is an abundance of text-books on analytical chemistry, but Dr. Muter's manual is sharply distinguished from the bulk of these by not being confined to a special course or being written on the lines of examinational requirements. To some extent, however, the work has been written for those undergoing special study. Thus there are several chapters in it which are useful to medical and to pharmaceutical students. The sections on the qualitative detection of alkaloids and on certain organic bodies used in medicine with a general sketch of toxicological procedure and special processes for the analysis of drugs, urine, and urinary calculi may be quoted as examples. But the book, considering its size, is remarkably comprehensive in the treatment of the broad subject of analysis. The earlier portions are devoted to the ordinary methods of qualitative analysis and the detection of unknown salts, metals, acids, &c. In later sections we find chapters on volumetric and gravimetric quantitative analysis applied to the same class of substances. Then follows ultimate organic analysis until in Chapter X. the analysis of water, air, and food is described and the processes are in accordance with our present knowledge. The work is original in its plan and should serve as an excellent guide to those who are taking analytical chemistry as a study. Though a comparatively small volume it gives

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an excellent idea of the wideness of the application of chemical analysis in the sciences and arts.

Twenty-two Years' Experience in the Treatment of Cancerous and other Tumours, with an Introduction on the Increasing Prevalence of Cancer and the Remedy for that Disease. By HERBERT SNOW, M.D. Lond., Surgeon to the Cancer Hospital. London: Baillière, Tindall and Cox. 1898. 8vo. Pp. 191. Price 5*s.*—In this book Dr. Snow generally uses the word "cancer" in its popular sense as synonymous with malignant disease, though occasionally he gives it a less extensive signification. The introduction contains remarks "on the increasing prevalence of cancer and the true remedy for that disease"; and we are told that "this huge aggregate of yearly deaths signifies nothing less than imperfect acquaintance with technique by most of those who are entrusted with cancer operations." This is a grave accusation and should not have been made, for its lack of foundation is known to all those who are acquainted with the facts. Dr. Snow finds fault with the ordinary pathological ideas with regard to malignant disease, rejects the common classification, and proposes one which is certainly more complex. At the present time, when the association between surgery and pathology is so intimate, it is almost incomprehensible that an author should write the following sentence, which we find on page 33: "To the existing practical divorce between the two branches [surgery and pathology], to the confused state of the latter, to the defective way in which it is usually taught, to the ultra-conservative instincts of the societies devoted to its culture, must be ascribed a large share in the progressive increase of cancer mortality." As to etiology, Dr. Snow thinks that "some palpable derangement or perturbation of the central nervous system is the all but invariable precursor of the most prevalent form of cancer," though he does not think that sarcoma has any such origin. In the medicinal treatment of cancer the author extols the value of morphine and cocaine, but the utility of these drugs is already well known to every surgeon. We are told that the only drugs which can arrest the career of cancer are "neurotics"; this is decidedly a novel use of the word and it is clearly not a printer's error for it is repeated. On page 93 it is said that when opium is smoked like tobacco all the essential principles are burnt up and none inhaled. This statement is not in accordance with the experience of many. Rodent ulcer is said to be "easily" eradicated; surely the adverb is rather misapplied. Dr. Snow insists much on marrow infection in cancer; undoubtedly it frequently occurs but it does not deserve to be given the important position assigned to it by the author in the tendency to recurrence and secondary infection exhibited by malignant disease. There are many ideas of value in the book but throughout is manifested a tendency by the writer to magnify his own work, knowledge, and power and to belittle the skill and achievements of others.

The Deformities of the Fingers and Toes. By WILLIAM ANDERSON, F.R.C.S. Eng., Surgeon to St. Thomas's Hospital, Examiner in Surgery at the University of London and the Royal College of Surgeons of England, &c. London: J. & A. Churchill. 1897. Pp. 150. Price 6*s.*—In 1891 Mr. Anderson delivered a course of Hunterian Lectures on the Deformities of Fingers and Toes and this volume contains the substance of those lectures, revised and brought up to date and augmented by a chapter on the Congenital Deformities of the Hands and Feet. The lectures were much appreciated when they were delivered and were well worthy of this reprint. The first section is devoted chiefly to a very important subject—namely, Dupuytren's Contraction of the Fingers. The first description of this condition was given in 1820 by Sir Astley Cooper who recognised the non-tendinous origin of the disease, but it was more fully described by Dupuytren in 1821, so that his name has ever since been attached to the disease. As to its frequency Mr. Anderson examined 2600 adults in several London infirmaries and found 33 cases, or 1·27 per cent.; but in 800 children not even one case was found. From the author's own experience he is not inclined to attribute much effect in the etiology of the disease to neurotic or gouty predispositions, but he admits that as most of his cases were infirmary patients these constitutional states would not have been so likely to be present as in other classes of the community. In one case by a bacteriological examination the presence of a micrococcus was demonstrated, but obviously no satisfactory opinion can be based on a single case. As to treatment, Mr. Anderson thinks that in mild cases non-operative measures may be sufficient and he considers that, although Adams's subcutaneous method may be sufficient in some cases, yet a plastic operation gives better results. Few would imagine that any danger could arise from Dupuytren's contraction, but Mr. Anderson relates a case in which a gentleman caught his contracted finger in the door-handle of a railway carriage with the result that he was only saved from severe injury by throwing his other arm round a pillar and so arresting his involuntary flight, but the sudden stoppage tore open the contracted digit. Hammer toe is well described and the tendency which this deformity exhibits to be transmitted by heredity is illustrated by a pedigree which shows its appearance in four generations. The author does not consider that short boots have anything to do with the causation of this condition. Resection of the joint (the articular ends of both bones being removed) is recommended as the most eligible operation, and the relief is immediate and permanent. Hallux flexus has not received as much general recognition as hammer toe; a good account is given of it and of hallux valgus and varus. The final chapter, on Congenital Deformity of the Hands and Feet, is not the least interesting in the volume.

New Inventions.

THE "ASSOCIATION" VACCINATOR.

WE have received from the Association for the Supply of Pure Vaccine Lymph, 12, Pall Mall East, one of their "Association" vaccinators, for which it is claimed that by its use the cuticle may be removed without the risk of drawing blood. This is a desirable property in an instrument employed for the insertion of lymph because the oozing of blood during the operation is not only unnecessary but it dilutes the lymph, interferes with its absorption, and is occasionally somewhat of a deterrent to mothers of infants. The vaccinator consists of three parts—a hollow handle of polished metal 3¾ in. in length, a set of four parallel needles fixed permanently to a needle-piece or mount which screws into the handle, and, lastly, a metal cap to cover



the needles when not in use. The illustration shows the needles and needle-piece, full size, screwed into the handle and covered by the cap represented by the dotted line. It will be seen that only about 1½ in. of the handle appears in the illustration. The hollow handle is convenient for carrying tubes and a small hole drilled right through the needle-piece, as shown in the figure, is useful for breaking off their sealed ends. The needles are sterilised by boiling, since, if held in a flame, they will be softened and easily bent. Their shape is the special feature of the instrument, for they are not brought to a sharp point but have their ends quite flat. The price of the vaccinator is 5*s.*

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THE LANCET.

LONDON: SATURDAY, DECEMBER 31, 1898.

THE ANNUS MEDICUS 1898.

Medicine.

THE most important medical event of the year has probably been the passing of the Vaccination Act. This subject is dealt with at length in another part of our present issue (see p. 1790).

The proposal to establish a national crusade against tuberculosis has met with a large amount of support. The meeting held at Marlborough House under the Presidency of H.R.H. the PRINCE of WALES on Dec. 20th was indicative of the widespread interest which the movement has aroused. The presence of prominent statesmen and other well-known personages as well as many leaders of the medical profession augured well for the success of the association. But with another aspect of the case the National Association for the Prevention of Consumption and Other Forms of Tuberculosis promises to work much good for the general community—namely, in agitating for reforms in our food-supplies. Sir RICHARD THORNE in delivering the Harben Lectures chose as his subject the Administrative Control of Tuberculosis. He expressed the view that the source of danger from the meat-supply had been exaggerated, but that the remedy for such risk as existed lay in the abolition of private slaughter-houses and the provision of public ones in which a uniform system of inspection and a uniform standard for condemnation would be observed. The danger of the milk-supply to man and especially to the infant population he considered to be one of real gravity, and the loss of child-life due to tuberculosis in milch-cows was appalling. He laid great stress on the adequate ventilation of cowsheds and advocated frequent and systematic inspection of cowsheds and dairies by expert officials. The value of the open-air treatment of pulmonary tuberculosis is rapidly becoming recognised and promises to be the principal treatment of this disease in the future. In this country there are obvious difficulties with regard to its general adoption, but Dr. BURTON-FANNING and Dr. POTT have done much to encourage further trials in suitable districts.

During the past year there have not been so many bacteriological discoveries to record as in previous years. Dr. SIDNEY MARTIN in delivering the Croonian Lectures discussed generally the nature and action of the Poisons and Chemical Products formed by Pathogenic Bacteria and illustrated the subject by an original investigation of the pathogenic action and the chemical pathology of the bacillus of typhoid fever and two other bacilli closely related to it—namely, the bacillus enteritidis (GÄRTNER) and the bacillus coli communis. These lectures have added valuable information to our knowledge of the more precise action of these organisms. Investigations have been made by GRASSI, BASTIANELLI, and BIGNAMI in Italy and by Dr. PATRICK MANSON in this country which promise to have an important bearing on the prophylaxis of malaria. These observers maintain, and their contention is supported by experiments, that malaria may be contracted by means of mosquitoes. Their investigations are not yet complete and before definite statements can be made extensive observations will have to be carried out in other malarious districts than those in which experiments have already been conducted.

A full report on the Plague in India in 1896 by Mr. R. LATHOM, of the Indian Civil Service, has recently been published. It forms an excellent report of the epidemic and affords information of the greatest importance. It shows that the plague is no longer the inevitable scourge of former times. The malady remains a virulent and dangerous one but it has been found that careful nursing and healthy surroundings give the patients a chance of recovery greater than would have seemed possible during the epidemics of former days. The infection has been found to spread according to simple natural laws and can be fought by the prompt adoption of the measures dictated by science, common-sense, and experience. Sanitary and well-ventilated dwellings and cities containing ample space for their inmates are the conditions which render the spread of plague practically impossible. The bacillus of plague was first discovered by KITASATO and YERSIN in 1894. During the present epidemic the previous conclusions have been verified and the investigations into the bacteriology of the disease have been carried further by M. HAFFKINE, Professor HANKIN, and others.

Three fatal cases of plague occurring in Vienna caused much consternation, but fortunately, owing to the lessons learned from larger outbreaks, due precautions were taken and its spread was prevented. The facts are known to our readers but may be briefly recapitulated. For several months the members of the Austrian Commission who went to India for the purpose of studying plague in its clinical and bacteriological aspects had been continuing their investigations in the laboratories. In some manner an attendant who was engaged in looking after the inoculated animals contracted the disease and succumbed. Dr. MÜLLER who was in charge of him and two nurses who attended him also became affected and Dr. MÜLLER and one of the nurses died, but no further cases occurred. The sad occurrence emphasises the fact that where the organisms which cause this deadly disease are being experimented with, and, in fact, whenever they are present, whether accidentally or not, no precaution, either great or trifling, is to be neglected for the purpose of confining the organisms to the sphere allotted to them.

Dr. ROSE BRADFORD in the Goulstonian Lectures dwelt upon several points in the pathology of the kidneys. He detailed the results following partial nephrectomies (of varying degrees of severity) both on the composition of the urine and on the general metabolism of the body, and showed that whereas all partial nephrectomies increased the flow of urinary water only the more severe ones increased the excretion and production of urea. The effects following complete double nephrectomy were also considered and the lecturer explained his views as regards the nature of uræmia. He came to the conclusion (1) that uræmia cannot be held to

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be due to simple retention and (2) that in kidney disease and after experimental lesions of the kidneys there is evidence of great tissue disintegration, and that it is more than probable that uræmia is dependent on this directly or indirectly.

Dr. HUGHLINGS JACKSON'S lecture on the Relations of Different Divisions of the Central Nervous System to One Another and to Parts of the Body showed the originality of thought and keen powers of observation for which the lecturer is well known. His observations on the various forms of epilepsy and allied conditions and the relations between the cerebral centres and nerve discharges will prove most valuable to those who are engaged in the study of these conditions.

In the Lumleian Lectures Sir R. DOUGLAS POWELL considered the Principles which Govern Treatment in Diseases and Disorders of the Heart. Especially interesting were his remarks on the cardio-vascular neuroses. He defined "cardio-vascular neurosis" as increased sensibility and a disordered action of the heart and vessels not dependent upon structural change. He also defined—and the term certainly needed definition—a "neurotic person" thus: "One may say that such a person is one whose whole nervous system, and especially that portion of it known as the organic nervous system, is hypersensitive and abnormally within his cognisance."

The excellent "System of Medicine" edited by Dr. CLIFFORD ALLBUTT has reached the fifth volume. This last addition contains articles on Diseases of the Respiratory and Circulatory Systems. A review has already appeared in our columns and it is unnecessary to again draw attention to the separate contributions. The whole publication will form a landmark in medical history and constitute the standard of reference for many years to come.

Dr. OSLER in the third edition of his "Principles and Practice of Medicine" has had the courage to introduce into the classification of diseases innovations which have long been foreseen but never adopted—namely, the inclusion of "Pneumonia" and "Rheumatic Fever" amongst "Specific Infectious Diseases." His decision in the former case will doubtless be accepted without cavil, whilst many authorities will prefer to wait before unhesitatingly removing the latter from the list of "Constitutional Diseases." Dr. ORD, as the Bradshaw Lecturer, chose for his subject Myxœdema and its Allied Disorders in their clinical aspect, considering their recognition, their differential diagnosis and their treatment. He expressed the opinion that the administration of the thyroid gland itself, when it could be carefully and regularly maintained, was the most appropriate form of treatment.

Great interest was naturally taken in the delivery of the HUXLEY Lecture on Recent Advances in Science and their Bearing on Medicine and Surgery, by Professor VIRCHOW. He propounded his original thesis that pathology is in reality a branch of biology. An especially interesting part of his address was the exposition of parasitism and the great extension which has been given to this study in the discovery of the minute parasitic agents which cause the infective diseases. He reminded his hearers that the reaction of the tissues and organs to the bacterial poisons forms an essential part of these diseases; he bade them remember that there may be some infections in whic

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bacteria have no share; to the incalculable gains to humanity arising from the recognition of these agencies he bore ample witness, and he instanced the introduction of serum therapeutics as evidence of this assertion.

At the annual meeting of the British Medical Association held in Edinburgh three important discussions were held. Dr. ALEXANDER JAMES introduced the subject of the Clinical Varieties of Hepatic Cirrhosis; Dr. T. F. S. CAVERHILL that of the Open-air or Hygienic Treatment of Phthisis; and Sir WILLIAM BROADBENT that of the Significance and Consequences of Different States of Vascular Pressure, with their General Management. He devoted himself to a consideration of the resistance at the periphery; variations in intravascular pressure as occurring in the individual, or as presented by different persons, or in different states of health; the causation, significance, and treatment of low intravascular pressure; and, finally, the high intravascular tension and its treatment. He referred especially to the tension in uræmic convulsions and chronic bronchial catarrh, maintaining that in the latter while attacks may be warded off by wintering in warmer climates much more effectual relief may be afforded by eliminants.

Surgery.

In reviewing the work which has been done in surgery during the present year we are struck, not by any specially notable new departure either in the science or the art, but by the general progress which has been made in all departments. Operations which are now of almost daily occurrence once excited the attention and admiration of the surgical world, and this fact shows how much has been done to simplify and perfect our operative procedures so that even difficult operations can be undertaken with every reasonable hope of success. Perhaps it is in the surgery of the abdomen that the greatest progress has been made. On various occasions portions of the stomach have been removed for malignant disease, but it was reserved for Dr. CARL SCHLATTER of Zurich to remove the whole of the human stomach, and we were able to publish early in the year an account, specially translated for THE LANCET, of this heroic operation. The patient was a woman, fifty-six years of age, who for several months had suffered from persistent vomiting and an obvious swelling was felt above the umbilicus. When the abdomen was opened it was seen that the whole stomach from the cardia to the pylorus was converted into a hard mass of carcinoma. Gastro-enterostomy was impossible and Dr. SCHLATTER determined to attempt complete removal. The cardiac end of the stomach was separated from the œsophagus which had been clamped and the pylorus was also cut through. It was not found possible to bring the duodenum up to the œsophagus, so its open end was turned inwards and closed, and the œsophagus was united by lateral anastomosis to the jejunum about a foot from its commencement. Although some vomiting occurred for a few days, the patient's progress towards recovery was rapid and the latest reports of the case state that she is still in good health. Obviously a case like this is suited for solving many important physiological problems in digestion and numerous careful observations have been made. Since the publication of

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Dr. SCHLATTER'S case, Dr. C. B. BRIGHAM of San Francisco has recorded a successful case of extirpation of the stomach. The patient was a woman, aged sixty-six years, who had suffered from gastric distress for a year, but by liquid food she was able to keep up her usual weight. In this case after removal of the stomach it was found to be possible to unite the duodenum directly to the œsophagus by means of a Murphy's button. Recovery followed and the patient was well seven weeks after the operation. The number of cases which will prove suitable for extirpation of the stomach will always be small, for it is inadmissible if the organ has become fixed, but in certain cases it offers a radical treatment where only palliative measures have hitherto been available. The survival and good health of Dr. SCHLATTER'S patient for nine months after the operation prove that the functions of the stomach can be dispensed with without the general well-being of the patient materially suffering.

Of late years a condition has been from time to time recorded to which the title of "idiopathic dilatation of the colon" has been applied. The etiology is obscure, but in many cases no obstruction exists, though it is possible that in some of the young children in whom it has been observed it was the result of congenital stenosis. The majority of the cases end fatally, but the formation of an artificial anus has in some cases resulted in recovery. Mr. FREDERICK TREVES has published a case in which the tolerance shown by the human body to the removal of large portions of the alimentary canal was strikingly manifested. A little girl, six years of age, had been the subject of idiopathic dilatation of the colon from birth and the interference with the onward passage of fæces was so great that Mr. TREVES made an artificial anus and nine months later he removed the whole of the descending colon, sigmoid flexure, and rectum, and brought the end of the transverse colon down to the anus where it was secured. The child made a speedy and excellent recovery. Another interesting case in which much large intestine was removed was that of a woman, thirty-three years of age, from whom Mr. R. LAWFORD KNAGGS successfully removed the cæcum and the ascending and transverse colon for malignant disease of the colon extending from the ileo-cæcal valve to the splenic flexure. Gastrorrhaphy or gastroplication is a recently introduced operation which has been devised for the treatment of non-obstructive dilatation of the stomach—it consists in infolding a portion of the stomach wall and fixing it with sutures. We published a successful case operated on by Mr. B. G. A. MOYNIHAN of Leeds in which a novel modification of the operation was employed. Mr. MAYO ROBSON has recorded 3 cases in which irregular muscular spasms were associated with dilatation of the stomach due to fibrous stricture of the pylorus. After pyloroplasty all the cases were relieved of the spasms which were probably the result of the absorption of toxins from the dilated stomach.

It is difficult to imagine a more serious surgical condition than acute general peritonitis, and the frequency of its occurrence amply justifies the recording of the comparatively few cases in which recovery has followed, and with our increasing knowledge of the powers of the peritoneum a favourable result is becoming increasingly frequent. The procedure to be adopted to cleanse the infected peritoneum must vary with the extent of the serous membrane which is implicated. If only a small portion is affected careful wiping with a sponge is sufficient, but with larger areas this becomes very difficult and in recorded cases recovery has followed the most diverse treatment; in some flushing with hot water has proved successful, in others the surgeon has carefully wiped all over the inflamed peritoneum, while in others merely a drainage-tube has been inserted, and yet the patient has not died. We can only imagine that the form of septic organism present has not been the same in all these cases, for it not rarely happens that the most energetic cleansing of the peritoneum is completely unsuccessful.

Rupture of the gall-bladder unassociated with injury to the liver is rare and therefore especial interest was felt in a case recorded by Dr. J. M. H. MARTIN of Blackburn in which rupture of the gall-bladder occurred in a boy, aged nine years, who was run over by a heavy cart; distension of the abdomen followed and though no jaundice was present the stools were clay-coloured. On opening the abdomen it was found that a large quantity of bile-stained fluid was free in the peritoneal cavity; 5 pints of this fluid were evacuated and a drainage-tube was inserted. Complete recovery followed. The difficult operation of suture of the bile-ducts after rupture or after removal of a calculus has been facilitated by an ingenious device of Professor W. S. HALSTED of Baltimore. This consists in a little hammer-shaped instrument by which the duct can be drawn up towards the operator, so that stitches can be fairly readily applied; it is likely to prove of great service.

Repeated aspiration in suppurative pericarditis has occasionally proved successful but generally it has failed. Dr. J. B. ROBERTS advocates incision after an exploratory aspiration has been performed to determine the presence of pus; in the method which he advises the fourth and fifth costal cartilages at the sternal junction are exposed and are divided, care being taken to avoid injuring the pleura, and on cutting through the soft tissues the surface of the pericardium is laid bare, and it can then be incised and the cavity drained or if necessary irrigated.

The surgery of the lung is practically the most recent of all the departments of surgery, and although it can hardly be said that at present very much has been done yet there is at least much promise for the future. Drainage of large tuberculous cavities in some cases saves a patient much distress even if it does not interfere with the onward progress of the disease. Mr. NORMAN PORRITT of Huddersfield considers that tuberculous disease of the apex of the lung has a natural tendency to heal by the drawing in of the chest wall over the diseased area, but that the rigidity of the ribs prevents this; he therefore suggests that portions of the second and third ribs should be excised both in front and behind in order to allow of this contraction, and he has performed the operation in three cases, in one of which much improvement followed, though in the two others death occurred a few days after the operation.

The treatment of peripheral aneurysms by ligature above and below and extirpation of the sac has been followed now in a large number of cases. We have published notes of one case in which Professor DÖLLINGER performed this

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operation for an aneurysm of the iliac artery at its junction with the femoral, and the patient recovered without any adverse symptoms.

Arterio-venous aneurysm of the orbit has always been but little amenable to operation. Dr. J. H. WOODWARD of New York treated a case of this description by ligature of the left common carotid. Some temporary improvement followed, but complete recovery resulted after subsequent ligature of the arteries of the collateral circulation at the root of the nose.

The dangers of the treatment of carotid aneurysm by manipulation are so great that it is now never employed, but occasionally the examination of the aneurysm by the surgeon results in such displacement of the clot that solidification results; this was well illustrated in the case of a man who had been in the Royal Portsmouth Hospital but who left declining any operation; a few days after leaving the hospital pressure on the aneurysm by Mr. BOND of Havant was followed by cessation of the pulsation.

Mr. W. H. BENNETT contributed a useful paper on the Value of Massage in the Treatment of Recent Fractures. Although the method has been ably advocated by many surgeons, yet it is too little employed. By carelessness of course harm may result, but the benefits are so great that, as far as we are aware, no surgeon who has adopted the method has ever discarded it in favour of the usual treatment by complete fixation. In injuries and dislocations of joints also early massage goes far towards obviating the occurrence of the most troublesome sequelæ; and attention has recently been drawn to this matter by Dr. LUCIEN TIBERGHIEN of Brussels.

It is now generally recognised that basal meningitis, including the tuberculous variety, leads to a fatal result owing to the distension of the ventricles of the brain which is caused by the blocking of the foramen of Majendie. In such cases the only chance of relief is by draining the ventricles and this has usually been attempted by puncture through the vertex of the brain. About five years ago PARKIN suggested "basal drainage"—that is, the making of an opening into the subcerebellar space. This operation has been performed on several occasions and sometimes with success. We published a case under the care of Dr. OVEREND and Mr. CROSS in which this form of drainage was employed in a case of basal meningitis apparently traumatic in origin. Unfortunately, very little improvement followed, the child dying three weeks later; but although no benefit resulted the operation apparently did no harm.

Much attention was naturally attracted to the subject of fracture of the patella by the accident which befell H.R.H. the PRINCE of WALES. The result which has been obtained in that case has fully justified the decision of the surgeons who were consulted not to recommend the performance of any operation. In the majority of cases primary suture, if performed with complete asepsis, gives very satisfactory results.

The employment of COLEY'S fluid for malignant growths cannot even yet be said to stand on a certain basis, for even those who advocate its use claim that it only affects spindle-celled sarcomata. The great difficulty in appraising correctly the value of this remedy is due to the fact that the diagnosis of sarcomata is frequently very difficult, for it is often practically impossible to distinguish a sarcoma from an inflammatory growth. However the cases which have been recorded fully justify the administration of this substance in all cases of tumours which are thought to be sarcomata and which are not suitable for removal.

Obstetrics and Gynæcology.

One of the most interesting events of the year has been the appearance of the English translation of Professor SCHENK'S work upon the production of sex. His theory, shortly, is as follows. If the tissue metabolism of the mother is carried on in the highest possible perfection she is likely to bear a male child. If, on the contrary, her metabolism is imperfect, as shown by the presence of sugar in the urine, she is more likely to bear a female child. Professor SCHENK in cases where male children are desired endeavours to rectify any faulty metabolism by appropriate diet and judges of his success by the examination of the urine for sugar. It is evident that this theory does not provide for the production of female children and is not applicable to cases where the mother's metabolism is already perfect. It remains to be seen whether Professor SCHENK'S theory of the determination of sex will hold its own or whether it will not quickly pass into oblivion, like the many other theories which have preceded it.

At various times the treatment of uterine fibroids by ligaturing the uterine arteries and so cutting off their main blood-supply has been advocated. The recent anatomical studies of M. FREDET have shown that the uterine arteries practically supply the whole of the uterus and that the ovarian artery sends a very small and comparatively insignificant branch to anastomose with the uterine. This anatomical fact explains the remarkably good results which often temporarily follow the ligature of the uterine arteries, since until the anastomotic branches become enlarged ligature of these arteries cuts off practically the whole blood-supply to the uterus. Dr. HOFMEIER'S work upon the cilia of the uterine epithelium has been lately confirmed by Dr. MANDL who finds that the current produced by their action is from the fundus of the uterus to the cervix and therefore against the course of the spermatozoa. An important contribution to the anatomy of the third stage of labour has been made by Professor STEPHENSON who has published a plate of the uterus with the placenta still *in situ*.

There has been a considerable amount of activity during the past year in both obstetrical and gynæcological practice and although no very new departure has been initiated yet many old theories have been confirmed and others shown to be no longer tenable. An interesting discussion took place at the British Medical Association meeting upon the use of forceps. The debate was opened by Dr. MILNE MURRAY and continued by many obstetric authorities. On the whole, opinion seemed to be upon the side of axis-traction forceps as the best type of instrument, and there was a considerable amount of dissent expressed from the views as to the abuse of forceps at the present day put forward by Professor SINCLAIR at the meeting in 1897. One of the most interesting obstetrical cases recorded in THE LANCET during the past year was one of

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incomplete retroflexion of the gravid uterus related by Dr. HERMAN in which the patient, a primipara, was prematurely confined at the eighth month without interference. The child presented by the breech and was born dead, but the mother did well. As the writer points out interference in such cases is uncalled for and as a rule useless. The treatment of irreducible cases of incarcerated retroverted gravid uteri by abdominal section has been further tested by Professor JACOBS of Brussels who has treated 11 cases in this way with very good results, abortion occurring after the operation in only one case. Such a mode of treatment would certainly appear to be justifiable where the only other alternative is the production of abortion. A most important contribution to the study of Cæsarean section has been the publication by Professor LEOPOLD of the results of 100 cases of Cæsarean section and Porro's operation. He considers the conditions under which the operation may be done must include the means of attaining most rigorous asepsis. He therefore thinks it should not be performed except in a properly equipped institution. The conditions necessary for the conservative operation he lays down as follows: (1) that the woman in labour has energetic contractions of the uterus; (2) that the general health has not been enfeebled; and (3) that it is certain that the patient has not become infected at the time of the operation. He also insists upon the fact that the operation must not be performed upon a patient the subject of gonorrhœal infection, whether acute or chronic. There were 7 deaths amongst the 71 cases of Cæsarean section, or 9·8 per cent., and 3 amongst the 29 cases of Porro's operation, or 10·3 per cent. All the children of the cases of Cæsarean section lived, while 2 of the children died during the performance of Porro's operation. In conclusion the author compares his results with those of symphysiotomy as published by Professor MORISANI, Professor PINARD, and others, and finds that the rate of mortality is slightly in favour of the Cæsarean section. The method of making a transverse incision in the uterus in performing Cæsarean section recommended by Professor FRITSCH last year has been adopted with good results by several other surgeons. It promotes contractions of the uterus, renders the control of hæmorrhage more certain, enables the child to be extracted with ease, reduces the risk of subsequent hernia as it allows the incision in the abdominal wall to be made higher up, and assists in preventing the escape of blood or amniotic fluid into the peritoneal cavity.

At the end of last year a paper was read before the Obstetrical Society of London by Dr. MACKERRON upon the Treatment of Ovarian Tumours Complicating Labour. The author had collected 183 cases and concluded that reposition should be tried in all cases, while if this failed resource must be had to puncture of the tumour, Cæsarean section, or abdominal or vaginal ovariotomy. Professor SPENCER related a case of a dermoid tumour removed during labour by abdominal ovariotomy, the child being delivered by forceps *per vias naturales*, both mother and child doing well. In the discussion upon Dr. MACKERRON'S paper the general opinion appeared to be that this was probably the best method of treating such cases when reposition was impossible. M. LINDENTHAL has succeeded in isolating an anaerobic bacillus which he regards as the essential factor in producing the conditions of physometra or gas in the uterus. He has also succeeded in producing an analogous condition by introducing a pure culture of the organism into the amniotic cavity of a pregnant bitch.

A very valuable addition to our knowledge of ectopic gestation has been made during the year by the delivery of the Ingleby Lectures for 1898 upon this subject by Mr. JOHN W. TAYLOR. It is astonishing to think how our knowledge of this condition has grown during the last few years and these lectures derive an additional importance from the fact that we owe much of our knowledge to their author. Mr. TAYLOR draws attention to Professor LEOPOLD'S important and recent case of utero-abdominal gestation. The patient ruptured her uterus by falling down stairs two or three weeks before quickening. At the operation at term the dead fœtus was found lying in a thin sac in the abdominal cavity, the cord passing into the uterus through a perpendicular opening 2 cm. long behind the right broad ligament. An uninterrupted recovery followed.

Numerous cases of puerperal septicæmia have been recorded from time to time during the year in our columns in which the treatment by anti-streptococcic serum has been carried out. Unfortunately from the absence of any bacteriological examination many of these cases are valueless as proofs of the efficacy of the treatment. Now that we know that puerperal septicæmia may be due to a variety of organisms it is most essential that whenever possible a bacteriological examination of the contents of the uterus should be made so that a definite conclusion may be come to as to the value of the serum. The matter was discussed at a meeting of the Obstetrical Society when very different opinions were expressed as to the value of the treatment. At the present time it may be said that while the injection of anti-streptococcic serum in cases of puerperal septicæmia does no harm it has yet to be proved that it does much good. A very important *résumé* by Dr. COBBETT of the whole subject appeared in our columns in April.

At the British Medical Association meeting in the Gynæcological Section a discussion was opened by Dr. CULLINGWORTH upon the Treatment of Pelvic Inflammation. The subject was considered under the two heads of the indications for operative interference in pelvic inflammation and the choice of time for operation. The conclusions arrived at with regard to operative interference were that it was as a rule necessary in all cases where there was pus present; in cases where after the acute attack had subsided a swelling still remained which showed no signs of diminishing or even grew larger, as, for example, in cases of hydrosalpinx or diseased ovaries; and in certain cases of non-suppurative salpingitis where the patient belonged to the labouring classes and where it was important that she should be restored to health as soon as possible.

With regard to the choice of time Dr. CULLINGWORTH was of opinion that any operative interference should be avoided as far as possible during an acute attack. The discussion which followed was one of great interest, as the speakers included Professor DOYEN of Paris, Professor JACOBS of Brussels, Professor LANDAU of Berlin, Professor SAENGER of Leipzig, Professor FEHLING of Halle, and Professor MARTIN of Berlin.

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An important communication was made in May by Mr. ALBAN DORAN to the Obstetrical Society amplifying his previous paper upon the subject and including all the cases, 23 in number, of Primary Carcinoma of the Fallopian Tube recorded up to April, 1898.

Among the papers read before the British Gynæcological Society was one by Dr. BANTOCK upon Dysmenorrhœa and one by Dr. PURCELL upon the Risks to the Ureters when performing Hysterectomy, illustrated by a case in which both ureters were occluded and freed fifty-eight hours afterwards.

The operation of ovariotomy has been performed both upon the very aged and the very young, but the youngest successful case would appear to be that of a child, aged four months, reported by Mr. D'ARCY POWER to the Pathological Society in March last in which he removed a multilocular ovarian cyst. The question of the best method of operating in cases of carcinoma of the uterus still occupies very largely the attention of gynæcologists. The method of removing the uterus by abdominal hysterectomy with a free excision of the broad ligaments and removal of all the glands lying in the cellular tissue appears to be gaining ground. There can be no doubt that an operation of this kind is more in keeping with the trend of modern surgery than the relatively more incomplete operation of vaginal hysterectomy. Whether the ultimate results will render the additional risk of such a procedure justifiable remains to be seen. There appears to be no reason why the modern methods of removing the disease as widely as possible should not be applied to the uterus as well as to other viscera in the body. A number of cases have been operated upon in this way during the past year and the immediate results of the operations show that the mortality has been definitely diminished, and no doubt further experience will tend to produce still better results. The question as to whether a sound can be passed into the Fallopian tube or not would appear to be set at rest by a case recorded by Dr. HIND in which a sound was actually found lying in the tube on abdominal section. The sound in this instance passed in a distance of 8 in. and protruded at the abdominal ostium of the tube. Attention has been drawn in our columns to the application of steam to the interior of the uterus and it was shown that this method was not without its dangers, several cases having been recorded where the uterine cavity had been completely obliterated as a result of its employment. A good deal of attention has been paid to this mode of treatment lately and if used with due precaution it may prove of value in suitable cases where curettage even when repeated has failed to arrest hæmorrhage.

The past year has been unusually prolific in the production of new works upon midwifery and gynæcology, some of them of great merit.

Therapeutic Progress.

Perhaps one of the events of the greatest interest in the current year has been the production of the long promised British Pharmacopœia. It is not customary to look to the Pharmacopœia for new drugs, but to a great extent the Pharmacopœia indicates the trend of modern thought in the administration of remedies and it undoubtedly greatly influences the teaching of medical students, while it also affects the practice of medical men. For a short time after a new issue has been published some degree of chaos usually results. New remedies are introduced, new preparations are substituted and doses are altered, and the more conservative members of the profession are perhaps prone to rebel against the interference with their daily routine. In the Pharmacopœia of 1898 the comparative absence of complaints in the medical journals appears to indicate that changes affecting practice have been made with the greatest caution and that these changes are generally welcomed. The elimination of antiquated material has been performed with considerable tact and there have been but few protests against the extremely lengthy lists of drugs and preparations omitted from the last British Pharmacopœia. On the other hand, the additions appear to have given general satisfaction, and amongst the criticisms to which the volume has been subjected there have been but few suggestions for other additions. Amongst pharmacists it is true that some degree of criticism has arisen, but it would be impossible to expect any volume which is full of directions to pass unchallenged and although now more than six months have elapsed since its appearance the new Pharmacopœia has not yet been charged with any serious error or misstatement.

The publication of the Pharmacopœia has necessarily led to the publication of new editions of text-books on materia medica and the year is also noteworthy for new editions of several text-books on therapeutics.

At the meeting of the British Medical Association in Edinburgh the Therapeutic Section devoted three days to Discussions—(1) upon the Treatment of Diseases of the Stomach; (2) upon the Treatment of Chronic Renal Disease; and (3) upon the Therapeutic Value of Recent Synthetic Analgesics. In the first discussion Professor EWALD of Berlin made a valuable contribution, summarising the influence of treatment upon the gastric chemical processes, while Professor TURCK of Chicago read an interesting paper on the Treatment of Dilatation of the Stomach by a System of Gastric Gymnastics. In the discussion on Chronic Renal Disease, introduced by Dr. TIRARD the subjects chiefly considered were the value of pilocarpin in the treatment of uræmia and the administration of morphine in the presence of uræmic convulsions. On neither of these points, however, were the speakers unanimous. Professor STOCKMAN gave an interesting account of the risks of the various recent synthetic analgesics and he was followed by Dr. C. D. F. PHILLIPS, who spoke in favour of antipyrin, antefebrin, phenacetin, and exalgin.

Amongst the other papers read at this meeting may be mentioned that by Professor CASH dealing with the pharmacology of the alkaloids of aconite; one by Dr. GILLESPIE on the Value of Bromide and Iodide of Strontium for Exophthalmic Goitre in Children; and one by Dr. MCWALTER of Dublin propounding numerous curious criticisms upon the Pharmacopœia and upon the mode of its production.

Comparatively little has been added to our knowledge of the local anæsthetics. Less is now heard of the value of eucaine, while the actions of holocaine have been further investigated. Methylene blue continues to attract attention, but it is somewhat difficult to group its actions since it has been employed for such a variety of conditions. It has been

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used in malaria and has been credited with possessing prophylactic as well as curative properties. It has also been employed for the relief of pains varying from the lightning pains of locomotor ataxy to slighter forms of facial and sciatic pains. It has also continued to be administered in gonorrhœal urethritis and benefit during its administration is claimed in some few cases of diabetes mellitus.

The list of antiseptics has not been greatly extended during the year. Protargol has been employed in the treatment of ophthalmia and in acute conjunctivitis, while further advocates have been found for chinosol and iodoformogen, the latter being substituted for iodoform.

For the treatment of cardio-vascular troubles the more general employment of morphine has been advocated and its effects have been attributed to its influence upon the nervous apparatus of the cardio-vascular system, both central and local. Periplœin, a glucoside from periplœa græca, has been found to increase the blood-pressure, to reduce the frequency of the pulse, and to act as a diuretic like digitalis, while it can be administered more easily by hypodermic injection.

In the early part of the year an interesting paper appeared in our columns summarising the actions of creosote and of guaiacol and giving a description of creosotal, for which certain advantages were claimed, the chief being that it provoked less gastro-intestinal trouble. Other remedies which have been employed in the treatment of tuberculosis are guaiacolate of piperidin, cinnamic acid, and geosote. Of these cinnamic acid has been applied hypodermically, but it possesses the great disadvantage of producing severe burning pain. Geosote is a valerianate of guaiacol which may be employed internally or administered by subcutaneous injection. For all three of these remedies good results have been claimed. There is very little that need be said of the drugs influencing the digestive system. Although many papers have appeared on this subject they have in the main followed well-beaten lines. It is true that a new vermifuge named "tenaline" has been suggested, but hitherto it has only been administered to animals and it does not appear to be wholly devoid of danger.

Sparteine sulphate, the active principle of broom, has been recommended for the treatment of dropsy, and it has been claimed for this remedy that it is an efficient diaphoretic which is less nauseous than other preparations of broom. Diuretin has also been discussed and it is said to have given good results in cases of chronic tubal nephritis after digitalis had ceased to act. Dr. DRESCHFELD states that occasionally with cirrhosis of the liver he has found benefit when the symptoms have arisen suddenly, while little relief was given when the onset had been more gradual.

The influence of drugs upon gout forms the subject of some papers which appeared in our columns. The general result of some experimental researches appears to be that alkalies, lithium salts, piperazine, and lysidine exert no special solvent effect upon sodium biurate, while sodium salicylate not only has no special solvent action, but leads to an increased formation of uric acid in the kidneys.

Veratrum viride has been used in a case of puerperal eclampsia and, inasmuch as it relieves arterial tension and causes diminution of the pulse-rate, it has been credited with good results.

The year has shown continuous research for remedies which will influence the growth of cancer, or which will control tuberculous processes either in the lungs or in the joints. Chelidonium has been recommended for cancer and it appears to produce much local irritation when injected in the neighbourhood of new growths. It was at one time hoped that the x rays would be of service in the control of tuberculosis, but recent observers maintain that they possess no therapeutic efficacy. In tuberculous caries and in gland affections chinosol has given some satisfaction. Whooping-cough, which forms such a cheerful field for investigation, has been treated with pertussin, a proprietary preparation of thymol, which has been strongly recommended; while one observer has recently advised syringing out the ears night and morning with lukewarm boric solution or water, and the application to the meatus and tympanum of a paint containing hydrochlorate of cocaine, glycerine, and perchloride of mercury.

The foregoing account sufficiently indicates that both medical men and chemists continue to prosecute researches unremittingly and in many directions. The interest in producing new antiseptics, new antipyretics, and new hypnotics has largely given place to a struggle with tuberculosis. There is a growing belief in the efficacy of the "open-air" treatment, but work continues meanwhile with respiratory antiseptics. Some therapeutic habits have been challenged as though they were articles of belief but improvement in our resources must result from scepticism and inquiry and our treatment must benefit as it is thus rendered less empirical and more scientific.

Ophthalmology.

The Bowman Lecture was delivered by Mr. PRIESTLEY SMITH who, whilst fully recognising the value of optical treatment in strabismus and the frequent necessity for operative procedures either by tenotomy of the stronger or by the advancement of the weaker muscle, yet availed himself of the opportunity of warmly advocating the orthoptic or, as he prefers to name it, the "educative" mode of treatment, in which the patient is taught the forgotten art of binocular vision by means of the monocular shade, the reading bar, the stereoscope, and other exercises—a method practised with good results by M. JAVAL in Paris but somewhat neglected elsewhere.

Several new remedies have been recommended such as euphthalmin, itrol, protargol, airol, holocaine, and various others none of which seem to be superior in reducing inflammation to such old-fashioned remedies as alum and nitrate of silver or more effective in their action on the pupil than atropine or eserine.

It is not right to make *a priori* statements or to limit the powers of nature, but we should hardly expect that detachment of the retina and sundry other affections of the eye could be advantageously treated by a glycerine extract of ciliary body and vitreous humour taken by the mouth or injected subcutaneously as recommended under the name of "oculine" by Dr. LAGRANGE of Bordeaux. M. FROMAGET, however, states that he has found the aqueous extract of the adrenals to be of service in the treatment of various forms

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of conjunctivitis and blepharitis as an adjunct to antiseptic measures and that it has a powerful hæmostatic effect in hæmorrhage.

The Roentgen rays have been used with success on different occasions by HOTZ, STARR, DE SCHWEINITZ, and others, and instruments have been devised by Mr. MACKENZIE DAVIDSON in this country and by Dr. SWEET in the United States to overcome the difficulty of locating with exactness the position of the foreign body in view of the great thickness of the region through which the rays have to pass. A remarkable circumstance noted by M. FOVEAU DE COURCELLES was thought by him to be of sufficient importance to be brought under the notice of the French Académie des Sciences—viz., that amongst 204 blind children 5 boys and 4 girls were able to recognise the Roentgen rays. Some saw the x, cathodic, and fluorescent rays, others only the cathodic and x rays, and one described them as being of reddish colour.

The importance of preventing the introduction of trachoma or "granular lids" into a community or of eradicating it by prompt and effective measures is shown by the observation of FEUER in Hungary. In that country there are between 7,000,000 and 8,000,000 inhabitants and the proportion of trachomatous patients is no less than 4 per 1000. He believes it to be independent of nationality, soil, race, altitude, and even of cleanliness, since the Tsiganes who are certainly the dirtiest are the least affected. It spreads by contagion and its ravages are so serious that not only is subjection to treatment made compulsory, but neglect on the part of the patient is liable to fine and even to imprisonment.

Dr. PRIOUZEAU has been led from his observations to establish a connexion between chalazion and ametropia, for he finds that 70 per cent. of cases of chalazion are hypermetropic, 12 myopic, and 13 astigmic, whilst the most careful research has failed in his hands to demonstrate the presence of a microbe to account for the disease.

In view of the fact that certain forms of lenticular cataract, and especially those presenting equatorial striæ, develop in many instances very slowly or remain stationary for months or years there is good sense in the opinion expressed by Dr. HOTZ of Chicago, that the word "cataract" should not be mentioned to the patient except where the disease is moderately advanced or a positive statement demanded, for the quacks who state that they can cure cataract by absorption, electricity, or prayer are apt to claim the retention of vision as the result of their operations, and to throw discredit on legitimate means of relief. It may be remarked that Professor SCHMIDT-RIMPLER has brought together several cases of the clearing up of cataracts recorded by reliable authorities and gives the details of two which were seen by himself, and Professor EWALD of Strasburg describes a condition of haziness of the lens in a rabbit which he was able to remove or disperse without operation.

The subject of glioma of the retina was discussed in the Ophthalmological Section of the American Medical Association which met last summer at Denver. Dr. J. Q. THOMPSON, who introduced the subject, had seen 13 cases of glioma of the retina in the course of twenty-seven years out of 24,500 cases, whilst it was stated that a Parisian ophthalmologist had only seen 4 cases of glioma out of 50,000 cases. Like cancer in other parts of the body, it is irregularly distributed and it appears to be more frequent in the negro than in the white man. In the discussion which followed it was agreed on all hands that the only treatment which promised success was early and complete excision of the eye with removal of the contents of the orbit if the disease was not in an early stage and strictly confined to the globe.

A novel and somewhat startling application of physiological knowledge to the treatment of disease has been made by MM. ABADIE and JOANNESCO who recommend ablation of the superior cervical ganglion or section of the sympathetic cord in the neck on both sides for the treatment of glaucoma. That such an operation amongst other effects lowers the tension of the globe is undoubted, whilst that the tension can be raised by galvanisation of the upper extremity of the divided nerve was shown by the late Dr. BROWN-SÉQUARD, but its mode of action in relieving glaucoma, as Dr. CAMPOS remarks in an article contributed to the *Recueil d'Ophtalmologie*, is not clear and is, indeed, in opposition to the generally accepted explanation of the nervous origin of glaucoma. It seems to be a formidable proceeding considering our ignorance of the secondary effects which may occur in man, but the preservation of sight is paramount to most considerations. Dr. HUGUENIN has performed a useful labour in following up the ultimate effects of the ordinary treatment of glaucoma by iridectomy in 76 patients operated on in private practice by Dr. HAAB of Zurich, and his observations are encouraging since they show that the tension of the eyes is permanently reduced by the operation and that the vision improved not only in acute but also in subacute and chronic cases of the disease.

It would appear that small degrees of astigmatism, if with reversed axes in the two eyes are especially troublesome to the patient, and Dr. GEORGE M. GOULD records a case of severe and repeated sub-conjunctival hæmorrhages where this condition having been diagnosed under atropine the employment of suitable corrected glasses prevented any recurrence of the affection. Dr. OSTWALT strongly recommends, both on practical and on theoretical grounds, the use of periscopic glasses—that is to say, of menisci with the convex surface outwards and the concave next the eye in all myopic cases instead of the biconcave glasses in ordinary use. Dr. BERNHEIMER has availed himself of opportunities to study the origins of the third nerves after removal of the globe, with the result that he finds that the branch to the inferior rectus has a crossed origin, that the branch to the inferior oblique has the major part crossed, while that to the internal rectus is both crossed and direct and those to the superior rectus and levator palpebræ are direct.

Two very finely illustrated works have recently been published, both of which are highly creditable to their authors and useful alike to teachers, practitioners, and students. The first of these is the Ophthalmoscopic Atlas by Mr. ADAMS FROST, the ophthalmic surgeon to St. George's Hospital, which contains many well-executed chromo-lithographed plates of the fundus oculi and numerous woodcuts, whilst the accompanying letter-press gives the results of his large experience. The second is a

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Atlas of External Diseases of the Eye by Dr. A. MAITLAND RAMSAY of Glasgow who has made an advantageous innovation by appending to the 30 full-page coloured plates, each presenting several diseases depicted with great accuracy and delicacy, a series of full-page photogravures which supply life-like representations of diseases not otherwise so well exhibited. A Student's Manual on Diseases of the Eye has also been published by Mr. JESSOP, one of the ophthalmic surgeons to St. Bartholomew's Hospital.

In accordance with the general principle of evolution, and just as the modern surgeon is the outcome and higher phase of the barber-surgeon, so the Spectaclemakers' Company are desirous of blossoming into a scientific craft, or at least of introducing scientific knowledge amongst the highly intelligent artisans in their workshops, and have instituted a system of examinations which will probably have a beneficial effect for the public by causing ophthalmic surgeons to bestow their utmost care and pains on the cases of refraction which come under their charge, knowing that in the skilled optician they will have a keen critic well acquainted with the properties of lenses and prisms and accustomed to the most precise and delicate work. The optician's diploma question seems to have aroused more interest in America than in this country, perhaps owing to the more highly strung nervous systems of the Americans leading them to seek relief from glasses in conditions which would be borne without complaint in England. Hence a large number of ophthalmic surgeons have arisen and doubtless some clashing of interests occurs.

Here there is, we think, little chance of unpleasant friction between the surgeon and the optician. After obtaining his diploma—if the Spectaclemakers' Examination is conducted on the same lines as those mapped out by Dr. LINDSAY JOHNSON and his coadjutors in the first examination which has just been held—the optician will be a highly instructed and competent man. The ophthalmic surgeon must be content to know that some of the patients who would have applied to him have gone to the optician; but, on the other hand, the optician will with larger information recognise that there are numerous cases which require a different kind of knowledge from that which he possesses and he will, if he be wise, transfer them to the ophthalmic surgeon. There will be no loss on either side and the patient will benefit, which, after all, is the result to be achieved.

Forensic Medicine.

The year has been memorable in the annals of Forensic Medicine chiefly on account of the unprecedented number of prosecutions of persons charged with having attempted or procured criminal abortion. It is sad to contemplate that in several instances the accused has been a qualified or formerly qualified medical man. It was high time that the law should be set rigorously in motion since there was overwhelming evidence that the odious crime was practised with alarming frequency. JAMES CHARLES ADY was convicted at the Central Criminal Court and sentenced to seven years' penal servitude for having attempted to procure abortion and for conspiracy with a man named TOMASSO. WILLIAM MAUNSELL COLLINS, a medical man who had previously been convicted for forgery (and whose name had been removed from the Medical Register) and who, there is reason to believe, was an habitual abortionist, was found guilty of the manslaughter of Mrs. UZIELLI and sentenced by Mr. Justice GRANTHAM to seven years' penal servitude. More recently JOHN LLOYD WHITMARSH was tried for the murder of a single woman named ALICE BAYLY by using an instrument and by the topical use of a mercurial salt. Mr. Justice BIGHAM who presided at the trial ruled that if the jury found that the prisoner had acted feloniously they must return a verdict of "Wilful murder," which they accordingly did and WHITMARSH was sentenced to death. The punishment was subsequently commuted to twelve years' penal servitude. We cannot help remarking the disparity between the sentence in this case and that of COLLINS. In THE LANCET of Dec. 17th will be found an account of the recent trial at the Kent assizes of Dr. DAVID WALLACE, a medical man in practice at Beckenham, who was indicted for having ravished a young woman named WARRILOW whilst in a state of unconsciousness and for having criminally induced abortion. Dr. WALLACE was acquitted of the latter offence and no evidence was offered by the prosecution on the former charge. The case illustrates the desirability of a medical man insisting on the presence of a third person when a particular examination has to be made on a female patient. Mr. JAMES BROWN, a physician and surgeon of Wigan, was charged with having unlawfully used an instrument and procured the abortion of JANE SHARPLES, aged twenty years. The case is remarkable in that Mr. BROWN was found chargeable by the coroner's jury with having by illegally procuring the miscarriage of SHARPLES contributed to the death of the child prematurely born. The magistrates dismissed the charge of inducing abortion. The Public Prosecutor preferred an indictment at the assizes, but the grand jury very properly, in our opinion, threw out the bill.

A woman named NANCY BEDFORD of Wigan was awarded six months' hard labour for having supplied medicine containing colocynth, aloes, and savin, and pills containing hellebore, aloes, and savin, with the intent to procure abortion. At Milford a woman named ANN COURTNAGE, aged twenty-four years, lost her life from septicæmia and peritonitis consequent on miscarriage brought on by taking in excess pills containing aloes (3½ grs.). The pills were contained in a box having the Government stamp upon it and were represented as having been supplied by a person who had been connected with a women's hospital. We would draw attention to Dr. LUFF'S evidence that where such drugs as were contained in these pills did procure abortion (and they generally failed) they nearly always procured it at the cost of the life of the woman. This case showed the necessity for legislative enactment forbidding the sale of substances injurious to health and dangerous to human life.

The cases of WHITMARSH and WARK who were sentenced to death for procuring abortion direct attention to the desirability of an alteration in the law either by making the crime one of manslaughter only or by recognising "degrees of murder." Though legally guilty of the crime of murder according to the statute the offence is in some sense extenuated by the fact that it is not committed with

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malice aforethought and that there is no intent to take away life.

Before dismissing from notice this hideous blot on social life we may refer to the case of GOFF *v.* GOFF and GORDON in which Dr. GOFF sought a divorce from his wife. The respondent pleaded amongst other things that her husband had been guilty of cruelty—in fact, she practically charged him with having procured criminal abortion upon her. The jury found for the petitioner on all issues. To this verdict we gave unqualified assent.

Several trials for infanticide of newly born children by their mothers have ended in acquittal although there was the clearest evidence that the offspring were legally born alive and that their deaths were due to violence or neglect. Judges have naturally—and, as we think, rightly—a tendency to direct juries very strongly that they must be certain before convicting that the unhappy women were in such a state of mind at the parturient period as to render them criminally responsible. Something more than the alternative of "concealment of birth" is required to meet the occasion. Here, again, we are of opinion that an alteration in the law is called for.

It is difficult to move the legislative machinery or long ere this a more scientific and comprehensive definition of criminal responsibility would have been forthcoming. The old criterion of "the knowledge of right from wrong and of the nature and quality of the act" is still the legal test of insanity as bearing on criminal charges. Certain of our judges are disposed to give a wider interpretation of the law than is logically justified, but there are others who adhere to the terms of the statute with unflinching integrity. At the Gloucester assizes where a lad named ALBERT GRIFFITHS was tried for the murder of a farmer by stabbing him to death, although no premeditation was proved and although there was a strong presumption that the prisoner's mind was disordered Mr. Justice DAY refused to admit the evidence of an expert medical witness as to his opinion of the condition of mind of the accused at the time of the murder.

We have on many occasions reverted to the question of "professional secrecy," still a vexed question. We had occasion to express the belief that a medical man engaged by an employer to attend his employés has no right to divulge facts relating to the illness of the patient which he has become possessed of in his professional capacity unless the patient gives permission or that it is desirable in the public interest. A medical man cannot contract with an employer for other than attendance on the employé.

Several actions, criminal and civil, have been brought against medical men. Mr. L. V. PARRY of Birmingham was charged with a criminal assault on a woman who had been treated for hysteria. To the credit of the prosecution be it said the case was withdrawn when it came on for hearing.

Dr. H. COLGATE and Mr. G. A. SKINNER were sued for damages for "neligence in treatment and false imprisonment." The judge agreed with the verdict of the jury that the evidence utterly failed to support the allegation.

A remarkable trial which lasted six days in the Probate Court was that of KINGSBURY *v.* HOWARD. Dr. KINGSBURY who had attended the testatrix was left as her residuary legatee. It was sought to establish that by hypnotic suggestion Dr. KINGSBURY had induced the deceased lady to make her will in his favour. The jury found this not proved and the provisions of the will were undisturbed.

The Court for the Consideration of Crown Cases Reserved have unanimously decided that THOMAS GEORGE SENIOR was properly convicted of the manslaughter of his child through not having called in medical aid. It will be remembered that the prisoner belonged to the sect called the "Peculiar People." At the November sessions of the Central Criminal Court he was convicted of manslaughter. Mr. Justice WILLS who tried the case eventually passed sentence of hard labour for four months. The judgment of the higher criminal court is in accordance with common-sense and common humanitarian principles.

CAMILLA NICHOLLS was sentenced to seven years' penal servitude for the manslaughter of her servant EMILY JANE POPEJOY. The prisoner had habitually starved the girl and had mercilessly assaulted her on several occasions. As we wrote at the time, she was guilty of "criminal omission of duty and commission of illegal acts."

The most notorious case of poisoning which has happened during the year was that for which WALTER HORSFORD was convicted, sentenced to death, and executed for having murdered his cousin, ANNIE HOLMES, by giving her a huge quantity of strychnine. The motive was the utterly inadequate one of getting rid of a source of annoyance. HORSFORD had had immoral relations with the woman who represented to him her belief that she was *enceinte*—although such was not the fact.

It seems that in certain parts of the country it is a common practice for women to take diachylon to procure abortion. Dr. G. F. CROOKE has given us an exceedingly interesting account of a fatal case of acute lead poisoning. The woman had succeeded in inducing abortion by eating diachylon.

A man died at Aston from acute congestion of the lungs caused by inhaling nitric fumes. His occupation was that of dipping copper cups in dilute nitric acid. A child, aged eight years, succumbed to the effects of poisoning by privet berries. The wife of a medical man died from swallowing a solution of cocaine. The act seems to have been a suicidal one. A rare case of poisoning by paraffin oil happened to a child, aged fourteen months. One and a quarter ounces of the oil were swallowed and death ensued in one hour and fifty minutes.

We would draw attention to the presentment of the Public Control Committee of the London County Council to the Home Office in the matter of the enrichment of coal-gas with water-gas for public purposes. They recommended amongst other things (1) that non-carburetted and non-odorised water-gas should not be used under any conditions; (2) that not more than 25 per cent of water-gas should be used in the enrichment of coal-gas; and (3) that where the enriched gas is employed it should be under official supervision and inspection. We cordially endorse these recommendations seeing the great danger of poisoning by carbonic oxide.

Dental Surgery and the Practice of Dentistry.

The past year will always be memorable in the annals of dental surgery from the fact that for the first time in the

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history of the profession a dental surgeon obtained a seat on the General Medical Council. The British Dental Association for some years has been bringing the claims of dentists for representation on the Council before the proper authorities and so persistent have been the efforts and so reasonable the request that it is not unnatural that Mr. CHARLES TOMES should have been appointed to the vacancy caused by the death of Sir RICHARD QUAIN.

During the year several papers have been published which have advanced the knowledge of dental pathology. Dr. ZNAMENSKY of Moscow, in a communication to the January and February issues of the *Journal of the British Dental Association*, recounted some interesting experimental investigations he had made on the pathology of erosion. Mr. STORER BENNETT endeavoured to repeat these experiments but in the majority of instances he was unable to achieve the same results as Dr. ZNAMENSKY. Although the results obtained by these investigators are so different, the manner in which the subject was approached is undoubtedly excellent and it is quite possible that by further repetition, modification, and development of the experiments in various ways substantial results may be obtained. A paper from the pen of Mr. A. S. UNDERWOOD on Erosion has also appeared and he has described certain minute defects in the structure of the enamel of teeth attacked by erosion. The pathology of dental cysts has been considerably advanced by the researches of Mr. J. G. TURNER. From a thorough microscopical examination of many specimens he has been able to show pretty definitely the development of these cysts from aberrant masses of epithelium met with in the alveolo-dental ligament. He has also demonstrated that the exciting cause which starts activity in these epithelial masses is septic matter from pulpless teeth. Mr. TURNER in the same paper described three specimens of gingival cysts and suggested that in all probability they originated from the masses of epithelium found in the substance of the gum and known as "glands of Serres." Mr. KENNETH GOADBY in a paper read before the Odontological Society has added to the knowledge of micro-organisms of the mouth, and Mr. DENCER WHITTLES claims to have found a micro-organism which he considers the cause of pyorrhœa alveolaris, but the details so far given by him are somewhat meagre.

A paper by Mr. HOPEWELL SMITH has thrown a good deal of fresh light on the Healing Processes of the Dental Pulp and an easy and exact way of estimating the amount of potassium sulpho-cyanide in the saliva has been introduced by Mr. H. ALBERT. Ankylosis of Teeth to the Jaws formed the subject of a paper by Mr. STORER BENNETT, and from the illustrations given there can be no doubt that under certain conditions ankylosis of teeth to the jaws may take place.

No special advance has been made in operative dental surgery. The use of crowns as a method of treating teeth much affected by caries has come into increased favour, while bridge work is being adopted with more caution and judgment. The conservative treatment of the pulp has attracted a fair share of attention due to the introduction of various preparations claiming to have as their active ingredient formalin. A plan by which the tedious processes of cleansing and filling pulp canals could be overcome would be a great step in advance not only to the patient but also to the operator, and although the methods of mummifying or preserving pulps have not proved constantly successful the prospect certainly seems encouraging, and with an increased knowledge of the pathology of the pulp and the actions of drugs on that tissue a satisfactory plan will no doubt be evolved in the near future.

The use of oxy-phosphate of zinc with amalgam has come into more general use and the experience of practice shows that it is possible to insert reliable fillings by this method. The prolongation of nitrous oxide anæsthesia has attracted much attention and the methods advocated by Dr. MCCARDIE, Mr. H. HILLIARD, and Mr. A. COLEMAN seem likely to supplant to a great extent the use of ether for dental operations. A smaller number of deaths has been recorded from chloroform used as an anæsthetic in dental practice. This is satisfactory and it is to be hoped that in the near future its use will be abandoned except under very exceptional circumstances.

The British Dental Association has continued to exert its beneficial influence on the profession and also on the public. The annual meeting at Bath was most successful, the papers read and demonstrations given being interesting and valuable. Under the name of "South Wales and Monmouthshire" a new branch has been added and the quite recently formed School Dentists' Society may be also regarded as an offshoot of the Association.

Fair activity has marked the dental literary world. The fifth edition of "Tomes's Dental Anatomy" has appeared and an excellent little work on Dental Metallurgy by Mr. ERNEST A. SMITH has been published. Mr. E. W. ROUGHTON has written a useful manual on Oral Surgery, while Dr. G. BLACK'S well-known work on the Human Teeth has reached a further edition. Other books worthy of mention are "L'Art Dentaire en Médecine Légale," by Dr. OSCAR AMÆDO and Dr. W. C. BARRETT'S "Oral Pathology and Practice."

An interesting event in the social world has been the golden wedding of Sir EDWIN and Lady SAUNDERS and the occasion was taken by a few old friends for presenting an address in remembrance of the happy occasion.

The death roll is happily a small one. It includes Mr. SIDNEY WORMALD, one of the pioneers of dental reform, Mr. J. MAIN NICOL of Leeds, and Mr. MCADAM of Hereford.

Biology and Physiology.

The subjects of Biology and Physiology have been prosecuted with unabated ardour by a thoughtful band of men, one of the most conspicuous of whom—M. MAREY—has in an important memoir read before the French Academy of Sciences drawn attention to the necessity which is daily becoming more urgent of the adoption of some standard of excellence in the several instruments which are in common use in the laboratory. Many prolonged series of experiments have proved almost valueless, especially in those where graphic curves are represented owing to the unreliability of the apparatus employed. Such records are worse than

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useless since they encumber the pages of journals with erroneous data which cannot be distinguished from those which are exact and at the same time constitute fruitful sources of waste of time, temper, and work. M. MAREY hints his regret that there is no common language in use amongst men of science, meaning probably that his own language is that which is best adapted to be a common medium of intercourse; but with the rival claims of English and German in the immense scientific literature they represent there would appear to be little chance that French would be accepted, clear and precise as it undoubtedly is. M. PERRIER in another carefully considered memoir read before the same distinguished body discusses the always interesting subject of the origin of the Vertebrata, and whilst on various grounds rejecting the Tunicate origin advocated by Professor HAECKEL, the descent through the balanoglossus maintained by Mr. BATESON, that through the crustacea by Dr. GASKELL, that through the arachnida by Dr. PATTEN, and others, holds that vertebrates are descended from the annelida through the amphioxus. The counter and well-maintained arguments of Dr. WALTER GASKELL in favour of his own views on this subject may be read in the April number of the *Journal of Anatomy and Physiology* for this year.

The Roentgen rays, as was to be expected, have been utilised in the service of anatomy. Both Mr. W. S. HAUGHTON and Mr. HAROLD STILES have taken instructive skiagraphs after injection of the blood-vessels in which, owing to the opacity of mercury to these rays, the position, and subdivisions of the arteries are rendered very conspicuous.

The Anatomical Society of Great Britain and Ireland has done good work by circulating amongst the teachers of anatomy a series of questions and comparing or tabulating the answers, too few, unfortunately, which have been returned. Some very useful facts have been thus ascertained which would probably otherwise have been lost. For example, to the question of the frequency of an opening between the right and left auricles at the seat of the fœtal foramen ovale statements of 399 observations were received of which it must be said to his credit that Dr. SEQUEIRA, the medical registrar of the London Hospital, contributed no less than 188; the collective answers showed that the defect exists to a variable extent in one out of every four persons examined and rather more frequently in females than in males.

The chemical side of physiology is being actively pursued by many chemists as the multitude of articles in HOPPE-SEYLER'S *Zeitschrift für Physiologische Chemie* and other journals sufficiently testifies. Such difficult subjects as the constitution of the simplest proteids, the products of disintegration of albumin in plants and in animals, the nature of the albuminous constituents of hæmoglobin, the formation of urea in the liver, the generation of fat from sugar in the animal body, and the like, are being daily attacked by competent men from whose researches it may reasonably be hoped that a clearer insight into the more recondite processes of metabolism than we at present possess will in due time be acquired.

The same may be said of the other great support of physiology—microscopic work. The beautiful execution of many of the plates in the *Quarterly Journal of Microscopical Science* and in the *Archiv für Mikroscopische Anatomie*—as, for example, those illustrating Mr. MINCHIN'S Memoir on Ascons and Mr. MORRIS'S Molluscs of the Great African Lakes and those of Dr. KOSTANECKI on the Fertilisation of the Ovum of Myzostoma, of Dr. DOGIEL on the Sensory Nerve-endings in the Heart and Blood-vessels of Mammals, and of Dr. FRIEDMANN on the Anatomy and Physiology of the Male Sexual Organs of Man with quadruple staining—leave little to be desired and are not only instructive in showing what excellent results have been obtained, but are suggestive of vast fields of research which have been as yet scarcely more than entered. A useful collection of references to the original papers describing upwards of 100 dyes is given in the *Archiv für Mikroscopische Anatomie* by Dr. K. TELLYESNICKI, and Dr. JOSEPH S. BOLTON gives the results of a searching examination into the nature of the Weigert-Pal method of staining. The chrome-silver method is strongly recommended by Mr. W. HUNTER of Aberdeen for the demonstration of nerve-cells.

The histology of the animal cell has received much attention. Dr. A. KOLOSSOW, by using a mixture of osmic acid and uranium nitrate as a fixative and employing various dyes, has established the existence of connecting processes extending between the protoplasmic contents of many forms of cell. The processes are generally very numerous and appear to be subservient to the conduction of impulses and of nutrient material. Such processes occur between the cells of the liver, pancreas, testis, ovary, thyroid body and other organs, and his observations have been repeated, confirmed, and extended by Mr. WALTER GARDINER. A continuity of living material is thus established not only in the several parts of the same tissue but of contiguous organs throughout the body and serves in some degree to explain the secondary effects which are exhibited by parts far removed from the primary lesion. The great complexity of the internal structure of the animal cell is also being rendered more apparent by the methods of treble and quadruple staining to which allusion has just been made. Dr. HANS HELD has given beautiful illustrations of this complexity in nerve cells and Dr. GUSTAV SCHLATER in the cells of the liver, the several parts being rendered conspicuous by their differing affinity for different dyes.

The chemistry and histology of the thymus, thyroid, parathyroid, and suprarenal bodies, with in some cases the effects of the intravenous injection of their watery extracts, have been carefully studied. Dr. P. LANGLOIS found that the suprarenal extract injected into the veins of rabbit and dogs disappears from the arterial blood in less than three minutes, the augmented blood-pressure returning to the normal and the liver playing the chief part in its destruction. Mr. VINCENT found that the watery extract of 60 grammes of fresh adrenals subcutaneously injected into dogs first excited, then paralysed, and finally killed them, with great fall of temperature. Dr. BORDIER, experimenting on rabbits, observed after injection of the extract of the adrenals rise of blood-pressure, slowness of pulse, and then arrhythmia lasting for half an hour. Several observers have called attention to the absence of any similar effects from the injection of the extracts of brain, muscle, liver, spleen, or kidney. A statement has recently been made by Dr. CH. BOUCHARD that both in man and the dog under certain conditions

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increase of weight may occur without the ingestion of food. As much as 600 grains or considerably more than an ounce can thus be gained in the course of an hour. The fact is not quite so isolated as might appear at first sight, for jockeys in training have been known to increase in weight to a noticeable extent after the consumption of a little wine and some animals maintain their weight during hibernation. Dr. BOUCHARD'S experiments demonstrate that the increase in weight is due to the absorption or retention of oxygen in the system and this he considers to be associated with the imperfect oxidation of fat and the formation of glycogen. M. BERTHELOT, an accomplished chemist, sees difficulties in this view and admitting the fact attributes it to the partial oxidation of albuminoid bodies with formation of special products. In experiments on the movements of the stomach as seen by the cathodic rays MM. ROUX and VON BALTHAZARD found that in man, the dog, and the frog alike, when the stomach is about to evacuate its contents, the contraction begins about the middle of the great curvature, the wave passing rapidly towards the pylorus and this is succeeded by another deep depression, so that a kind of pre-pyloric antrum is formed. GRÜTZNER has demonstrated that fluids and solid particles, such as lycopodium spores, introduced into the rectum may wander upwards and may even reach the stomach in man and mammals. MM. DASTRE and FLORESCO, as the result of many analyses, show that the liver is the ferruginous organ *par excellence* in the invertebrata, though in vertebrata iron is certainly a constituent of the blood and of the splenic tissue. Dr. AITCHISON ROBERTSON has made an experimental inquiry into the salivary digestion of starch in simple and mixed diets and his experiments show clearly the deleterious effects of wines and spirits on the process. WEISS, supporting the statements of SEEGEN, shows that the minced liver of the rabbit is capable of forming sugar out of fat and the fatty acids. MM. KOLISCH and STEJSKAL find that the jecorin discovered by DRECHSEL very easily splits off a molecule of sugar and that this is a process which is actively taking place in diabetes, the jecorin probably existing in the blood in some kind of combination with albumin.

The destruction of some kinds of sugar when injected into the blood in 10 per cent. solutions is swift and complete whilst others when thus introduced into the system seem to be capable of resisting disintegration. Thus in the experiments of VOIT the monosaccharides grape sugar, sorbinose, and arabinose were rapidly broken up and in the case of grape sugar as much as 100 grammes could be injected with the re-appearance of less than 3 per cent. in the urine. On the contrary, with the disaccharides cane and milk sugar nearly the whole quantity injected was eliminated by the kidneys. Yet the disaccharides maltose and trehalose were largely destroyed. The trisaccharide raffinose was used up to the extent of 35 per cent., whilst the polysaccharide glycogen was completely destroyed.

The subject of the nervous system has been worked at by Dr. BURDON SANDERSON who has studied the electrical response to stimulation of muscle; by Dr. J. BERNSTEIN, S. AMAYA of Tokio, and Dr. F. SCHENK who have investigated the subject of negative variation of the nerve current under different circumstances; by Dr. F. B. HOFMANN who has described the influence of the vagus upon the heart; by Mr. B. T. TEBBS and Dr. PAUL MANS who give the innervation of the heart and of the aorta and intercostal arteries; by Dr. OTTO WEISS who has experimented on the excitability of a nerve in its course, showing that the excitability remains the same throughout its whole length; and by Dr. E. STEINACH whose conclusions have been corroborated by Dr. SZYMANOWSKI and are to the effect that the posterior roots of the spinal nerves contain viscero-motor fibres. Mr. BISHOP HARMAN as the result of numerous dissections has demonstrated that the caudal limit of the lumbar efferent visceral nerves in man is at the level of the second lumbar nerve. The insular district of the cerebral cortex in man and the man-like apes has been an object of special study by Professor D. J. CUNNINGHAM of Dublin, and Dr. F. W. EURICH has written a good article on the comparative anatomy of the neuroglia. The subject of muscle has been elucidated by Mr. PARSONS who delivered a course of lectures at the Royal College of Surgeons of England on the muscles of animals with special relation to human myology; by Dr. TAIT MACKENZIE in his article on natural selection as shown in the typical speed skater in the *Journal of Anatomy and Physiology*, which is illustrated by photographs of the professional champion, J. NILLSON, an American of Swedish parentage, of J. JOHNSON, late professional champion, and of the amateur champion, J. K. MCCULLOCH. A new theory of muscular contraction has been advanced by Mr. W. MCDOUGALL which is to the effect that contraction is due to the elimination of lactic acid in the fluid contents of the sarcomeres which occasions the passage of fluid into the sarcomeres from the sarcoplasm.

The mode in which experimental physiology may correct the impressions derived from clinical observation is well shown in the explanation it affords of the phenomena of incontinence of urine and fæces, which have been generally regarded as indicative of destructive lesion of the lumbar region of the spinal cord; but MM. ARLOING and CHANTRE have removed the whole lumbar segment of the cord in dogs, with the result that in the course of a short time the animals recovered the power of retaining and of evacuating at will, though, perhaps, not completely the contents of the rectum and bladder. They attribute this remarkable circumstance to the elasticity of the sphincters which they have demonstrated to be fully capable of effecting the retention of these excreta. Hence, when incontinence occurs there is reason for believing that some stimulation of the expulsive agencies is being exercised. They found also that unilateral section of the nerves to the sphincters was quite without effect.

The observations of several physiologists seem to show that the fæces do not consist in more than a small proportion of the remains and indigestible residue of the food, but that they are chiefly the products of intestinal secretion and excretion. Thus M. KERMAUNER has shown that when meat is ingested in the adult only a very small proportion is discharged in the fæces, whilst the total nitrogen excreted is much larger, varying from 4 per cent. to 5·5 per cent., and both PRAUSNITZ and TSÜBOI have arrived at the same conclusion from their independently conducted experiments.

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Residence in high altitudes being constantly recommended for patients suffering from anæmia it may be worth noting that the benefit obtained is apparently not owing to any increase in the amount of hæmoglobin, for in some experiments made by Dr. P. GIACOSA on rabbits, dogs, and himself during a residence at heights of about 8000 and 15,000 ft., though variations occurred at intervals no increase was observed in the quantity of hæmoglobin contained in the blood.

Amongst the books which have been published in the course of the year attention may be called to "The Text-book of Physiology," by Professor E. A. SCHÄFER, aided by several distinguished collaborators; to "The Text-book of Zoology," by Dr. T. JEFFERY PARKER and Dr. WILLIAM A. HASWELL; to the "Anatomie du Système Nerveux de l'Homme," by A. VAN GEHUCHTEN; and also to the new edition of STEWART'S "Human Physiology"; to the successive parts of the fine "Dictionnaire de Physiologie," by RICHET and others; to the first part of DOYON and MORAT'S "Traité de Physiologie," embracing the subjects of nutrition and calorification; and to STÖHR'S "Text-book of Histology," translated by Dr. ALFRED SCHAPER of Boston, U.S.A.

Anæsthetics.

The increased interest which has of late years been taken in the study of anæsthetics has during 1898 been more than maintained if we may judge by the large number of papers published and of researches undertaken in elucidation of the subject. Abroad especial attention has been directed towards means whereby local as opposed to general anæsthesia can be effectually obtained. In Professor SCHLEICH'S infiltration method the tissues operated upon are made insensitive by injecting a highly diluted solution of cocaine in normal saline. The injection, made first endermically, subsequently hypodermically, and eventually into the deeper structures, produces an œdematous and anæsthetic state of the tissues acted upon. The nerve endings become anæsthetised and as long as the effect lasts the parts remain insensitive. The initial pain of the first few punctures is removed in some cases by freezing the skin and in others by painting with a solution of cocaine, but DREYFUS[1] has used orthoform after infiltration as it tends to intensify and prolong the anæsthesia. The plan of SCHLEICH has now been employed for both minor and major operations, many of the latter of the first magnitude. As pointed out by KRECKE, however, the method has its limits. In the first place the patient is not always able to maintain his calm self-control throughout a prolonged operation, even although actual pain is absent. The tissues when infiltrated lose much of their natural appearance, and it is not easy to decide the line of demarcation between disease and health. The most scrupulous care is requisite to sterilise the solutions employed and to avoid forcing *materies morbi* from the region infiltrated into the subjacent zone. TITO COSTA, who has employed the Schleich plan, finds heated solutions act far more rapidly than if injection is made of cold solutions. During the year the infiltration methods, both that of SCHLEICH and that of RECLUS, have been modified by the use of other anæsthetics than cocaine. Thus tropacocaine and eucaine with and without minute quantities of morphine have been tried and found successful. Orthoform, referred to above, has found some favour. Its insolubility restricts its use save as a powder, although HIRSCHBRUCK has used it for injection, employing a 3 per cent. strength suspended in water.

The employment of nitrous oxide in the minor operations of surgery, excepting in dental practice, has never been extensive, probably owing to the evanescent and restless character of the narcosis it produces. These disadvantages have been in some way removed during the past few years. Within the last year methods, or perhaps more accurately variants upon older methods, have been introduced whereby nitrous oxide given alone or mixed with definite proportions of oxygen can be given for prolonged periods even although the mouth be the seat of the operation. Thus Mr. ALFRED COLEMAN covers the mouth and gives the gas solely through a cap which fits over the nose, Mr. HARVEY HILLIARD relies upon a nasal catheter for maintaining anæsthesia after the usual method of induction, while Mr. COXON and Mr. MACCARDIE warm the gas-supply and maintain the anæsthesia after removal of the face-piece by means of a buccal tube which conducts gas into the air-passages. The use of nitrous oxide with oxygen for operations lasting for periods of twenty minutes or more has received some attention, and it is claimed that the plan possesses special advantages over the use of the alcoholic narcotics.

The mortality under chloroform and the frequent pulmonary troubles following ether led SCHLEICH to attempt to obtain an anæsthetic with a boiling-point which was approximately of blood temperature so as to enter and leave the lungs without, on the one hand, accumulating in the circulation or, on the other hand, leaving the tissues still sensitive. With this view he employed a mixture of sulphuric ether diluted with petroleum ether, and chloroform in three proportions. The solutions so arrived at had definite boiling-points of 38°, 40°, and 42° C. and were to be used respectively for slight, medium, or deep anæsthesia. SCHLEICH himself, WILLY MEYER, MADURO, GARRIQUES, EMIL MAYER, and others affirm that perfect anæsthesia resulted from such solutions, while no after-effects were produced even in patients the subjects of heart, kidney, or pulmonary disease. RODMAN, however, after a prolonged use of these solutions, came to an opposite conclusion. He not only found heart failure, and renal and pulmonary complications accompany their use, but averred that the sickness, headache, &c., during recovery were as bad as with ether or chloroform. The valuable tables collected by GURLT, dealing with the mortality under anæsthetics, show curious figures which of course refer only to Germany. It is still a reproach to Great Britain that no general statistical record is kept of the enormous number of anæsthetics given in the United Kingdom. The statistics of GURLT now extend back to 1891 and show from 1895-97 a record of 27,025 cases of chloroform narcosis with 29 deaths, 19,875 cases of ether inhalation with 3 deaths, and 4927 cases of Billroth's mixture. In the period 1891 to 1897 the death-rate is 1 in 2039 for chloroform, 1 in 5000 for ether, 1 in 5228 for bromide of ethyl,

[1] Münchener Medicinische Wochenschrift, p. 527.

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1 in 7594 for the mixture of chloroform and ether, and 1 in 213 for pental. He notes that the deaths due to chloroform are annually increasing and are mainly due to circulatory failure, while fatalities from ether are chiefly due to pneumonia after the operation. Italy returns a record of 53,972 cases of chloroform inhalation with 13 deaths and of 1 death in 2802 cases in which cocaine was used. These statistics include two years. Some important work in the field of the physiology of anæsthesia has been done during the year. Two observers, Dr. W. H. THOMSON and Dr. R. C. KEMP, have shown that ether is distinctly more dangerous to the epithelium lining the glomeruli of the kidneys of dogs than is chloroform, although ether is markedly less liable to lower the blood-pressure. Their examination of SCHLEICH'S mixtures referred to above and the A.C.E. mixture lead them to consider such mixtures in no way safer as regards the kidneys and circulation than ether or chloroform. Their results in the case of ether showing rapidly produced albuminuria and suppression of urine are not borne out by clinical investigations. LEGRAIN examined the urine of 54 persons who took chloroform and he found 10 cases of albuminuria with 12 out of 41 cases of etherisation. His experiments on dogs gave similar results and led him to believe that chloroform produced more lasting effects upon the renal structures.

PARASPORO'S research on the results following the repeated daily inhalation of chloroform or ether by dogs is one of importance as showing that parenchymatous degeneration and necrotic processes follow the prolonged administration of these narcotics. These experiments appear to have a close connexion with those of THIEM and FISCHER, who found that fatty degeneration followed chloroformisation. It is at least suggestive that DESGRÈS and NICLOUX found that potassium salts or alkalies in the presence of chloroform lead to liberation of carbon monoxide and, further, that in alkaline blood a like decomposition takes place. The fact that cholemia has followed and has proved fatal after chloroformisation if not coincidental is at least worthy of note, as CHIARLEONI has pointed out. The râles occurring during and after ether inhalation are commonly imputed to bronchitis. In contravention of this HÖLSCHER[2] has undertaken experiments which lead him to believe that ether does not act as an irritant to the mucous membrane of the respiratory tract. The râles are due at first to aspiration of saliva and mucus from the mouth, due to local irritation, into the trachea and subsequent bronchial trouble is in its turn due to further aspiration of these secretions into the bronchi. Thus if buccal secretions are excluded ether will cause no bronchitis. It can hardly be said that the vexed question of the action of chloroform upon the organism has been settled. The researches of WALLER upon nerve structure have taught us that nerve like other protoplasm is harder to kill with ether than with chloroform, at least at the time of administration. No doubt now exists that chloroform will kill under any circumstances if a large enough dose enters the circulation, whether it be at one time, as in the case published by Lieutenant-Colonel LAWRIE, R.A.M.C., in which the patient took an overdose during struggling and but for the prompt action of the surgeon might have died, or by slow accumulation in the blood. Equally certain is it that the blood-pressure falls under chloroform and that this is a source of danger, since the peril lies not in whether more chloroform is then taken in but in the quantity of the anæsthetic already in the blood. HILL'S researches pursued and confirmed during the year appear to prove this. WOOD has already pointed out that all the blood pressure tracings taken during chloroformisation have shown severe falls of pressure. The respiration, he urges, fails before the heart because cerebral anæmia is the first factor in the onset of this toxæmia; the coronary circulation, being at a lower level, proceeds for some seconds later, due to its more advantageous position.

Dr. BOWLES, whose papers on Resuscitation have thrown so much light on the subject, has again pointed out that the Sylvester method of artificial respiration is not the one which gives the best means of ventilating the lungs and removing air saturated with chloroform. Dealing with the dangers of impure anæsthetics it has been shown that spasm during anæsthetisation as well as cough and bronchitis may and do follow the respiring of impure chloroform. During the past year the matter has been painfully emphasised by the report of more than one death from inhaling chloroform the vapour of which had escaped into a room where lamps were alight. The carbonyl chloride formed, which splits up into carbonic and hydrochloric acids in moist air, has been shown by Dr. SEBASTIANO FAMULARI[3] to be extremely dangerous when inhaled. RAMSAY has further pointed out before the Society of Anæsthetists of London that carbonyl chloride is formed when chloroform is exposed to light in the presence of air. The paper of Dr. FAMULARI enters very fully into the chemistry of the matter.

Prophylaxis against accidents under and consequent upon anæsthesia has received much attention and various fresh agents have been suggested for use in chloroform toxæmia as correcting the effects on the respiration and blood-pressure. Hydrocyanic acid has been recommended as a direct stimulant to respiration by Professor HOBDAY, and MAGNKOWSKY has resorted to freshly prepared and sterilised suprarenal extract as a powerful circulatory stimulant, although from its very power it is one to be used with discretion. HENSEN'S researches upon uterine contractions under anæsthetics favour ether, but our space does not permit more than passing mention of his important communication.

Among the publications dealing with anæsthetics issued during the year may be mentioned the following:—H. Laing Gordon: Sir James Young Simpson and Chloroform. Transactions of the Society of Anæsthetists, London. Briegleb: Die Schleich'sche Infiltrations-Anästhesie und der practische Arzt (*Therapeutisches Monatsheft*, Berlin). Für Schleich? (*Medicinisch-Chirurgisches Centralblatt*, Wien). Grube: Zur Lehre von der Chloroform-Narkose (*Archiv für Klinische Chirurgie*, Berlin). Honigmann: Zur Lokalanästhesie (*Centralblatt für Chirurgie*, Leipzig). Vidal: Influence des Inhalations chloroformiques sur la Résistance de l'Organisme aux Infections (Compte rendu de la

[2] Archiv für Klinische Chirurgie, Band lvii.

[3] I Prodotti di Decomposizione del Cloroformio. Il Policlinico, Roma, Giugno, 1889.

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The Mirror of Hospital Practice.

Among the many interesting and instructive cases which have appeared during the past year in the Mirror of Hospital Practice there are probably none of more importance than those illustrating the present treatment of intussusception. Of all the forms of intestinal obstruction intussusception may be said to take the first place in order of frequency, for it occasions the obstruction in about one-third of the cases. A very slight knowledge of the pathological anatomy of the disease would suggest the advisability of attempting reduction by means of the injection of water or other liquid into the bowel, and the method has without doubt in numerous cases been followed by recovery, and it is equally true that inflation by air introduced sixty years ago by Mr. GORHAM has proved successful in many instances. But neither injection nor inflation is free from danger. The over-distended bowel has in several instances given way and death has resulted. These methods, moreover, by no means rarely fail; when the air- or water-pressure has been pushed to the limit of safety, or even beyond, the invaginated bowel still refuses to return. This will occasion no surprise to anyone who has experienced the difficulty which so often exists of reducing an intussusception after opening the abdomen. The only hope which then exists is to be found in a laparotomy; but can we wonder that a child—for 95 per cent. of these cases occur in children—who has for several, often many, hours been afflicted with so depressing a condition and who has then been subjected to a forcible distension of the large intestine fails to survive the added shock of an abdominal section? It is unreasonable to expect it, yet the chance of recovery would assuredly have been greater if no inflation had preceded the laparotomy. It must further be borne in mind that no intussusception which is entirely confined to the small intestine can ever be benefited in the slightest degree by distension of the colon. To us the conclusion to be drawn appears inevitable. Every case of intussusception should undergo a primary laparotomy—that is to say, no injection, inflation, or manipulation should precede the opening of the abdominal cavity. The earlier the operation the better will be the prognosis, for the longer the duration of the intussusception before operative interference the greater will be the mortality. In comparing the statistics of inflation with those of intussusception we must not take the figures of those who always inflate before operating, for then only the more severe cases will have been operated on and the mortality will assuredly be worse in cases operated on than in those which were treated only by inflation. The statistics which should be compared are those relating to the cases which were treated by distension on the one hand and those in which a primary laparotomy was performed on the other. The results even now are good and they will improve when the general public appreciate more fully the great dangers of intussusception. Of the 6 cases of this condition which we have recorded in the Mirror during the year 5 patients recovered and 1 died, but in the fatal case the death occurred within twenty-four hours of the onset. In one of the successful cases the patient was only six months old.

We have been able to publish 5 cases in which a laparotomy was performed for perforation of a gastric ulcer. Four of these patients recovered and only 1 died. For recovery to occur after operation for this severe lesion the most essential condition is that not many hours should have elapsed between the perforation and the laparotomy: it may fairly be said that the probability of recovery if more than twenty-four hours intervene is very small indeed. In one of the successful cases 2 perforations were discovered.

Up to a very recent date a large class of cases was utterly beyond either medical or surgical skill: the patients were those in whom septic micro-organisms, especially streptococci, had passed into the blood-stream — cases of true septicæmia. None of the usual antiseptics can be of any use; even if the original wound might be made completely aseptic, the germs which are already absorbed are fully capable of causing death. So short a period of time has elapsed since anti-streptococcic serum was introduced that it is not possible to speak definitely on its value. There are several difficulties in the way. In the first place, only those cases should be considered in which bacteriological proof was obtained that the streptococcus was present in the blood, and, in the second place, the serums in use differ very widely in their anti-streptococcic powers. We have recorded three cases during the year in which the serum was employed. In one of the cases erysipelas was present, and with it was some acute endocarditis; after the injection the temperature fell rapidly and the endocardial signs greatly diminished. In the second case puerperal septicæmia was present and bacteriological examination of the blood and

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urine proved the presence of streptococci, and the recovery seemed almost certainly to be due to the serum. Unfortunately in this case severe symptoms were apparently produced by some of the injections and the serum was found to contain living staphylococci. In the third case much improvement was apparently due to the serum. We must hope in the future for more bacteriological confirmation of the streptococcic origin of the septic symptoms present before this treatment can be put on a sure footing.

The closely allied subject of the employment of antitoxic serum in tetanus has been illustrated by 3 cases in the Mirror. In the laboratory tetanus antitoxin has a very definite action in checking the progress of the disease in animals, but in man the results have hardly come up to what we were apparently justified in expecting; yet we must not relinquish this mode of treatment, for it is undoubtedly of value and we may look for better results when the preparations of the antitoxin are more uniform in strength. It can hardly be said at present that the general mortality from tetanus has been materially lowered by the serum treatment. It seems, however, certain that the earlier the antitoxin is injected the more efficacious it is. We have printed two cases of great interest in which foreign bodies which had been swallowed were removed from the stomach. In the first case, which was under the care of Mr. JOHN MORGAN, a young man had swallowed numerous metallic bodies during an attack of acute mania; some had been passed with the motions, but epigastric pain and the formation of a swelling in the same region pointed to some complication resulting from the continued residence of one of the foreign bodies in the stomach. A skiagram gave no indication of the presence of any metallic substance. At the operation, however, a piece of steel stay-busk about 4 in. long was discovered immediately beneath the abdominal wall lying in a cavity formed by peritoneal adhesions. The absence of any sign on the skiagram is probably to be explained by the fact that the piece of steel was vertical to the photographic plate. In the second case, which was under the care of Dr. PERCY POTTER, the presence and position of the foreign body, a steel button-hook, were very definitely shown by the Roentgen ray picture, and it was easily removed by a gastrotomy. In both cases the patients recovered.

Perhaps the most dangerous complication of an operation for the removal of an ovarian cyst is the tearing of a piece of the bowel in separating an adhesion. In two instances under the care of Dr. LEWERS which we recorded this serious accident happened, but the cases served well to illustrate the fact that prompt recognition and careful treatment of the lesion suffice to lead to an uneventful recovery.

We know so little of the real cause of the formation of cheloid that the case under the care of Mr. GOLDING-BIRD was of interest, and especially important was the fact, mentioned in his remarks on it, that in a district in British Central Africa every wound is likely to become the seat of cheloid. This evidence in favour of a special poison, probably microbic in nature, is very noteworthy.

Dr. WILLIAM DUNCAN described a unique case. A woman, thirty-three years of age, had had a vesico-uterine fistula for about six months and he determined to fix the vaginal portion of the posterior lip of the cervix into the opening in the bladder and thus close the fistula at the expense of diverting the uterine canal into the bladder. This operation was performed successfully and a month later both ovaries and tubes were removed. When she left the hospital three months after admission the patient was able to hold her urine for eight or nine hours and the vagina was quite free from moisture.

An interesting example of Richter's hernia, or partial enterocele, which was under the care of Mr. STANMORE BISHOP, was published. The constricted portion of bowel gave way into the scrotum but no peritonitis occurred beyond that required to fix the bowel in position. The operation performed to remedy the fæcal fistula which resulted was completely successful.

The general opinion of surgeons has always been decidedly opposed to simultaneous ligature of the popliteal artery and vein and the chance of gangrene has been considered to be so great that amputation at the knee-joint has been looked upon as a preferable operation. Still, a few cases have been recorded in which no gangrene followed the double ligature and we published two similar cases; in one under Mr. EDMUND OWEN'S care the vessels had been accidentally wounded; in the other Mr. G. P. NEWBOLT tied both vessels in order to cure an arterio-venous aneurysm which had formed. No gangrene followed in either instance. In all 17 cases have been recorded and in only one did gangrene result. Transperitoneal ligature of the iliac arteries is gradually becoming the operation which is to be preferred. This operation is already acknowledged to be the best in the case of the common and internal iliacs, but there is room for a little more difference of opinion with regard to the external iliac artery, though we believe that for this vessel also it will ultimately come to be the ordinary method. Mr. FREDERICK PAGE has recorded a case which illustrates well the simplicity of the operation. The value of intravenous injection of normal saline solution is generally appreciated nowadays and so much is this the case that transfusion of blood is hardly ever performed. A very striking example of the rapidly beneficial results of this operation is to be found in a case under Mr. BOYCE BARROW which we published. On one occasion five pints and on another two pints were injected with remarkable improvement in the general condition; in fact, at one time immediately before an injection the patient seemed to be moribund.

The Naval and Military Services.

The past year has not only been an eventful one as far as the naval and military services are concerned, but it has been crowded with incidents some of which are historical and destined to have a far-reaching tendency. If a country may be said to be blessed whose annals are inglorious there would be some difficulty in selecting one entitled to that blessing at the present time. We have been living amid wars and rumours of wars on all sides and the year that is past has been notable from the fact that it had no "silly season," for it was at the time when there is usually a dearth of exciting political intelligence that the journals of Europe, America, and the East were heavy-laden with news of grave and varied import. In India we have had a big war on the North-West frontier, in

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addition to the continued and increased prevalence of plague with its serious effect on the commercial prosperity of that country and the grave risk of political disaffection on the part of the native population, to say nothing of the enormous amount of extra labour and responsibility these occurrences entailed upon all classes and not least upon the medical services of that country. Nor can it yet be said of India that there is any promise of "the land having rest" for some years to come. In Egypt we have had the Soudan Expedition, now happily terminated by the victories at Atbara and Omdurman and the annihilation of the Khalifa's cruel and oppressive rule. This was speedily followed by the Fashoda incident with its attendant complication with France. There have also been explorations, complications, and fighting in other parts of the African Continent, as well as at Crete and in China. The officials of the Foreign Office, the Admiralty, and the War Office have had ample employment, notwithstanding which, we are glad to say, the War Minister has found time to introduce a wise and comprehensive measure effecting the welding together of the Army Medical Service into the Royal Army Medical Corps, in addition to redressing a number of grievances of which the members of that branch of the Army Service legitimately complained. It was a happy inspiration of Lord LANSDOWNE to announce at the Lord Mayor's dinner to the medical profession in May last his intentions regarding the Army Medical Service and to foreshadow the Warrant in a handsome and outspoken speech appreciative of the services of army medical officers and those of the profession generally to the public service, and it is needless to add that the speech gave great and general satisfaction. Turning to other parts of the world we have had the Spanish-American war with its striking and dramatic incidents and results, the full effects of which have yet to be realised and harvested. That these will be for the good of humanity and the world at large cannot be doubted; and we have only to take account of the inimical feeling and even consternation with which the drawing together of the American and British nations is regarded by foreign Powers to see that they, at any rate, realise the meaning and import of such a combination. We heartily congratulate the United States on the successful termination of that war, believing as we do that its results will be favourable to the freedom of the oppressed and eventually turn out to be for the benefit of all concerned. The year 1898 is the most eventful to the American Republic since the end of its civil war. For the first time the United States Government finds itself face to face with the problem of dealing with foreign possessions outside its own continent. Considering that a commission is inquiring into the causes and extent of the alleged breakdown of the sanitary and medical arrangements of the late war, for which the United States was apparently unprepared, there is no need to dwell further upon the subject now; but we may add a word to the effect that it is only by the organisation and perfecting of all that appertains to a medical service in times of peace that successful results can be attained in time of war. There is no royal road to success in this respect as this and other countries have had to learn by bitter experiences in the field.

We have endeavoured to keep our readers *au courant* with the medical history of all the campaigns and expeditions in which this and other countries have been engaged. Our information in this respect, and especially in regard to the big and very difficult campaign against the frontier tribes on the North-West of India, has been, we believe, both full and reliable. As regards the Soudan it is worthy of record that Lord KITCHENER of KHARTOUM, in his military dispatch after Omdurman, spoke in the highest terms of commendation of the "unremitting energy, untiring zeal and devotion to their duty of the entire medical staff."

It has been our pride and satisfaction to chronicle in connexion with these campaigns the conduct and devotion of medical officers and the rewards which have been conferred upon a number of them for their gallantry and distinguished services in the face of the enemy. In these respects no branches of the naval and army services have done better, or have had a longer list of names mentioned in despatches or of Victoria Crosses and Distinguished Service Orders, than the various medical services. It was only the other day that Her Majesty added another to the list by conferring the docoration of the Victoria Cross on Surgeon W. J. MAILLARD, M.D., of the Royal Navy, for his conspicuous bravery displayed in September last during the outbreak at Candia.

During the year the autumn manœuvres have taken place on a far larger scale than has hitherto been the case. It is almost superfluous to remark that if the Royal Army Medical Corps is to be really effective it must rehearse in times of peace the duties which it will have to put in practice in the field during war and these military manœuvres afford the only opportunity of doing this.

Nor should it be forgotten that the QUEEN, in conformity with the compassionate interest which HER MAJESTY has always manifested in the distress of any of her subjects, has exhibited a lively sympathy with her sick and wounded soldiers invalided from the campaigns on the north-west of India and from the Nile Expeditionary Force in Egypt by repeated visits to Netley during the past year.

The Warrant of 1898 constituting the Royal Army Medical Corps appeared in THE LANCET of July 9th last. It is a satisfactory warrant and we have no hesitation in saying that the Army holds out a good prospect for medical candidates for the Royal Army Medical Corps. We have so recently dealt with the memorial of the Royal College of Surgeons of Edinburgh to Lord LANSDOWNE regarding the changes which might still be advantageously made in the regulations for competitive entrance examination into the corps that it is needless to refer to the matter beyond saying that we agree with the College in their opinion that too much importance is attached in those regulations to elementary subjects and too little to the practical and clinical work which now occupies the latter years of professional study. That some change will hereafter be made in this direction we do not doubt. We also hope to see some alterations carried out in regard to the present rates of pay and allowances of officers of the Royal Army Medical Corps serving in India.

With regard to the changes in the services, the Naval Medical Department has during the year had a new Director-General in the person of Sir HENRY F. NORBURY, K.C.B. Surgeon-General CLEGHORN having retired from the post

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of Director-General of the Indian Medical Service and Sanitary Commissioner with the Government of India has been succeeded in these appointments by Surgeon-General R. HARVEY, C.B. Surgeon-General A. A. GORE, Principal Medical Officer of Her Majesty's Forces in India, who retires this month, is to be succeeded by Surgeon-General W. TAYLOR, C.B., who was the Principal Medical Officer of the Nile Military Expedition during the late campaign.

The Indian Medical Service has undertaken and discharged a large amount of work and responsibility during the epidemic of plague in that country, in addition to its labours in the field in connexion with the expeditions on the North-west frontier, where several of the medical officers greatly distinguished themselves and all did excellent work. The new Army Warrant has, of course, been made applicable to this service as regards the rank and titles of medical officers, but its name—Indian Medical Service—has been retained, carrying with it as it does so many honourable traditions.

We regret to add that death has as usual thinned the ranks of the different medical services. When death comes to men who have done their work and retired this is neither unexpected nor to be lamented; it is when it cuts off relatively young and promising men while their careers are still unfulfilled that death is so regretful and occasionally so pathetic. It would be impossible as well as wearisome to enumerate all our losses in this direction. But we may mention the names of Inspector-General T. R. PICKTHORN, Deputy-Inspector-General LEONARD LUCAS, Deputy-Inspector-General G. J. KELLIE, and Deputy-Inspector-General E. W. BAWTREE, Fleet-Surgeon C. KNOX ORD and Fleet-Surgeon C. A. MACAULAY of the Naval Medical Service; of Surgeon-General MACLEAN, C.B., LL.D., M.D. Edin., whose name was so long associated with the Army Medical School at Netley; of Inspector-General JOHN MURRAY; of Deputy-Surgeon-General PARTRIDGE, who was an excellent surgeon and did good work at the College Hospital in Calcutta; and of Surgeon-General F. M. CLIFFORD and Surgeon-General W. JOHNSTON,—all of the Indian Medical Service. The Army Medical Service has lost during the year Surgeon-General S. CURRIE, C.B., Surgeon-General S. FULLER, Surgeon-General ALEXANDER SMITH, C.B., Surgeon-Major-General JAMES INKSON, and several medical officers of other ranks.

Chemistry.

Chemists this year would seem to have paused in their practical labours and to have rested awhile, so to speak, in order to ponder over the significance of the results which their arduous work has presented to the world during the last decade. This, at any rate, seems to have been the course adopted by that brilliant investigator, Sir WILLIAM CROOKES, who in his remarkable address at the meeting of the British Association at Bristol sounded a distinct note of concern as to the future of the world's wheat supply. He feared that the future demands of an ever-increasing population would sooner or later not be supplied by the ordinary methods of agriculture, the soil would be exhausted of its nitrogen, and he suggested that the teaching of the chemical laboratory would furnish the only means of escape. The question that confronts us is how to compensate for the exhaustion of the world's stock of fixed nitrogen, a matter in Sir WILLIAM CROOKES'S opinion of far greater importance than the exhaustion of British coal-fields. He has been therefore led to suggest that the nitrogen of the air should be turned to account by burning it into nitric acid by the agency of the electric discharge. This conversion might be effected, he thought, by the utilisation of some colossal natural force as by the falls of Niagara. On the other hand, those veteran agricultural chemists, Sir HENRY GILBERT and Sir JOHN LAWES, maintain that there is no ground for such fears. In their exhaustive experiments they have shown that the wheat plant can flourish on the land again and again without manuring, and they show that nitrate may be derived from the soil even at a depth of nearly 9 ft. There is little doubt that nature herself provides a means, though it be a slow process, of fertilising the land. Again, we know how certain plants are nourished by direct assimilation of free nitrogen through the nodules on the roots and probably by microscopic agencies. Chemistry in its relation to food supply would seem to be the subject also underlying the announcement made during the year by Dr. LILENFELD at the International Congress of Applied Chemistry at Vienna to the effect that he had discovered the synthesis of albumin. The announcement created considerable excitement in chemical and physiological circles, but was very generally discredited, we ourselves being amongst the incredulous. Nor has the subsequent publication of the results conveyed any assurance that the synthesis of either albumin or peptone has been accomplished. Still there can be little doubt that some progress in a very important direction has been made since probably the investigator has thrown further light on the constitution of those complex bodies, the proteids.

There has been a remarkable revival of the old theory of "vitalism" during the year and a very instructive discussion took place in the Chemical Section of the British Association for the Advancement of Science, the subject having been opened by Professor F. R. JAPP in a very scholarly address. It is well known that the majority of chemists hold that the synthesis and separation of optically active compounds have been effected without the intervention of life either directly or indirectly. Professor JAPP holds the contrary opinion and it would appear that another well-known chemist, Professor CRUM BROWN, partly shares in this belief, which amounts to the theory that a living organism exerts an action in separating, for instance, two kinds of crystals as in the classic and well-known experiments of PASTEUR on tartaric acid and racemic acid. It is curious that as the study of stereo-chemistry or structural chemistry has advanced it should induce chemists to revert to the old theory of "vitalism" which everybody had accepted as overthrown when WOHLER announced the synthesis of urea—a body which had been known formerly as exclusively the product of the living organism. The pursuit after new elements has proceeded apace, and investigators appear to hold the conviction that we have not exhausted the atmosphere of its list of elements. Professor RAMSAY now speaks of others in addition to argon, which he calls its companions—namely, krypton, neon, and xenon, all of which are spectroscopically distinct. That the spectroscope, however, may

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lead into some curious errors of observation would seem to be the case according to an example which we recorded in THE LANCET a few weeks ago. It was announced from America that a new gas—etherion—had been discovered in the atmosphere which possessed physical properties, placing it more nearly than ever to the *materia prima* the protyle of CROOKES. Sir WILLIAM CROOKES, however, suggested that it was nothing more than very highly attenuated water vapour, and he quoted evidence which is certainly in favour of this view. Subsequent observations leave little room for doubt that aqueous vapour under a high degree of exhaustion was the "new gas." In our *résumé* last year of the chemical progress of 1897 we mentioned how an American investigator had convinced himself that he had found out a means of converting silver into gold. He claimed to have discovered how to utilise that force by which the transmutation of metals could be brought about. Sir WILLIAM CROOKES, we believe, has failed to accept this as an accomplished fact after careful inquiry, having had the opportunity of examining the details of the process and the materials employed.

The discovery of rare elements in the atmosphere may possess little significance in the ordinary affairs of life, but the importance of this line of research has become exceedingly great owing to the enormous advances which these discoveries have made in our knowledge of the composition and character of stars. Sir J. NORMAN LOCKYER finds that in the very hottest stars we deal almost exclusively with the gases hydrogen, helion, and doubtless others still unknown. At the next lowest temperatures these gases are replaced by metals in the state in which they are observed in our laboratories when the most powerful jar spark is employed. At a lower temperature still the gases almost disappear entirely and the metals exist in the state produced by the electric arc. Thus it is possible to classify the stars into those which are getting hotter and those which are cooling. In this classification the spectroscope is the greatest help and the discovery of elements on this earth which were formerly known to exist only in the stars has materially aided in the work. The chemistry of the stars has thus become a new and possible source of fruitful study.

The year has been marked by the output of a smaller number of synthetic products although the investigating chemist has been very busily engaged in attacking the problem of the *constitution* and *structure* of compounds. We believe that this is a direction of research which, if pursued diligently, will add more materially than by paying attention merely to *composition* to our knowledge of the therapeutics of remedies and of the processes concerned in that mysterious chemical laboratory the human body.

Vaccination.

The year has been a most momentous one with regard to vaccination and its administration. The various points of interest may be most conveniently considered here in the order in which they present themselves in the Vaccination Act of 1898. As a result of the final report of the Royal Commission which had sat for seven years and had considered the subject from every possible aspect the Government concluded that fresh legislation was necessary. They accordingly introduced last session into the House of Commons a Bill which was the subject of lengthened discussion both in Parliament and in the country and which ultimately resolved itself into an Act differing in various important respects from the Bill as originally introduced.

The primary vaccination age limit.—The Bill proposed that the age limit for primary vaccination as required by the law should be extended from three months to twelve months. In the course of discussion, however, it was pointed out that owing to change of residence many children would be difficult to trace at the end of twelve months, especially in large towns, and the age of six months as in the Scottish Act was finally adopted. The change from three months to six months is advantageous in so far as it may diminish the sentimental objection which some parents have to submit their offspring to vaccination at a very early age and in so far also as it will render vaccination free from suspicion of being the cause of those infantile deaths which under the old age limit would have followed vaccination but which under the new age limit will precede vaccination. Section 1 (5) enacts that no regulation of any lying-in hospital or infirmary or other such institution shall interfere with the extension of the age limit for primary vaccination.

Domiciliary vaccination.—An important feature of the new measure is its introduction of domiciliary vaccination by public vaccinators in substitution for vaccination at public stations which has been the system in force under the Vaccination Acts up to the present time. Several advantages are claimed for the new procedure. Children will not be exposed to any risks from bad weather incident to their being carried to and from a public station for purposes both of vaccination and of subsequent inspection. Nor will they be exposed to any risk of infection from mingling with a gathering of many children at a public station. It is possible also that some parents who might refuse or neglect to bring their children to a public station may be willing to have them vaccinated at their own homes. The Act requires that when the child has reached the age of four months the public vaccinator of the district shall give to the parent or guardian at least twenty-four hours' notice of his domiciliary visit. By an Order made by the Local Government Board under the Act the vaccination officer must provide the public vaccinator periodically with lists of children aged four months at whose homes it will be his duty to call, and his visits must be made within a fortnight of his receiving each list. He is required to make one other visit during the second week and to make any additional visits which he may find necessary in any case.

Glycerinated calf-lymph.—Following the sections of the Act the next point to be noted is that the material to be used by the public vaccinator in his domiciliary vaccinations shall be "glycerinated calf-lymph or such other lymph as may be issued by the Local Government Board." This mention of glycerinated calf-lymph is of much importance. In the first place, it involves the discontinuance of humanised lymph. While the risks of humanised lymph were very trifling—were, indeed, so trifling that medical men have habitually used it in their own families—there is no doubt that, mainly as a result of elaborate exaggeration on the part of opponents of vaccination, these risks have bulked very considerably in the public mind. The substitution of calf-lymph should do much to allay these ill-founded fears

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though it is a matter of course that strenuous efforts are being made by anti-vaccinationists to inflame and prejudice the public mind against the new system. Incidentally the use of calf-lymph means the discontinuance of the habit of opening the vesicles on a child's arm on the eighth day, and in so far as any risk, say, of the subsequent introduction of erysipelas has attached to this procedure such risk will disappear. It is not meant here that erysipelas will never again follow a vaccination, for under no system can parental carelessness be always and entirely freed from its own punishment. But the lymph to be used is not merely to be calf-lymph, it is to be glycerinated calf-lymph. To mix calf-lymph with glycerine is not a new thing and that fact has of late been largely advertised by opponents of vaccination. The essence of the new system consists in so conducting the treatment of the lymph with glycerine as to cause the destruction of extraneous organisms. Briefly stated this is accomplished by not merely mixing the lymph with glycerine, but by storing it in glycerine. The details of the process have been most carefully wrought out by Dr. MONCKTON COPEMAN. The additional words of the section of the new Act—namely, "or such other lymph as may be issued by the Local Government Board"—are evidently intended to cover the possibility of other means being introduced for bringing about the required result. It is most important that public and private vaccinators and makers of glycerinated lymph should recollect the fact just mentioned—namely, that the mere mixing of glycerine with lymph does not necessarily attain the desired end. Just as carbolic acid may be used without resulting in surgical antisepsis, so glycerine may be used without destroying all the organisms which ought to be destroyed.

Postponement of vaccination.—The Act adds to the conditions previously recognised by law as justifying the granting of a certificate for the postponement of vaccination. Section 1 (4) is partly as follows: "The public vaccinator shall not vaccinate a child if in his opinion the condition of the house in which it resides is such, or there is or has been such recent prevalence of infectious disease in the district, that it cannot be safely vaccinated ....." Under these circumstances not only is a certificate of postponement to be granted but the public vaccinator is to give notice to the medical officer of health for the district. This section is open to some difference of interpretation. It may be assumed that every public vaccinator would consider the existence of erysipelas in the dwelling a reason for postponement, but the question whether the prevalence, say, of whooping-cough in a neighbourhood would render the child's vaccination unsafe would have to be answered according to circumstances.

The "conscience clause."—Section 2 of the Act is popularly known as the "conscience clause" and has been a cause of more discussion than all its other provisions. The Bill originally proposed that not more than one or at the most two penalties should be inflicted with regard to any child. This provision was keenly debated in the Grand Committee but was retained by a narrow majority as against a proposal for a conscience clause. In the House of Commons on the report stage the Government yielded to what it was probably mistaken in believing to be the opinion of the House in favour of further relaxation to the extent of providing for the acceptance of the plea of conscientious objection as a means of relief from the infliction of even a single penalty. The House of Lords threw out this proposal and sent the Bill back to the Commons altered accordingly. In the Lower House the Government re-affirmed its new determination in favour of a conscience clause, and when the Bill again came before the Lords much public and professional interest was felt in the result. It was thought very likely that the clause would once more be rejected and this would have meant the withdrawal of the Bill, at least for the session. Lord LISTER, however, was in a position to make a most important announcement which was immediately afterwards officially confirmed on behalf of the Government and which had the effect of inducing the Lords to accept the conscience clause, though not even then by a very large majority. The announcement was that the Government would during the recess set itself to consider the preparation and introduction in the next session of Parliament of a Revaccination Bill. The conscience clause as it now stands in the Act is as follows:—

"Section 2—(1). No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two justices or a stipendiary or metropolitan police magistrate in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate of such conscientious objection.

(2) This section shall come into operation on the passing of this Act, but in its application to a child born before the passing of this Act there shall be substituted for the period of four months from the birth of the child the period of four months from the passing of this Act.

The rest of the Act will come into operation on Jan. 1st, 1899, but it will be observed that the conscience clause came into operation from the date of the passing of the Act, so that already some experience has been gained regarding it. This experience has shown that, leaving aside the question of the desirability of having such a clause, the section is very vague and doubtful in meaning. Some justices of the peace have held that even if they are in a minority on the Bench any two of them can grant a certificate of exemption. The word "satisfies" in the section has evoked much diversity of opinion among magistrates. In some places all applicants have been put on oath; in others sworn testimony has been considered unnecessary. In some places applicants have been questioned with more or less detail as to the nature of their objection to vaccination; in others a mere statement of objection or the presentation of a printed declaration with the signature attached has been looked upon as sufficient. In some places the father of the child has been required to appear; in others the attendance of the mother has been accepted. In some places a birth certificate has been demanded in order to satisfy the Bench as to the age of the child; in others it has been held that no birth certificate is needed. In some places applicants have paid the fees for certificates exigible under the regulations of the court; in others applicants have refused to pay these fees and have in consequence gone away without certificates. Had the section been more

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carefully considered no such crop of difficulties would have arisen regarding it. By sub-section (2), as above quoted, it will be observed that all children whose vaccination has been omitted in recent years come under the operation of the new Act and that where no certificate has been lodged by December 12th ("four months from the passing of this Act") the parent becomes liable to a penalty under the Act of 1867. The early months of 1899 should therefore witness some interesting proceedings, as it cannot be doubted that there has been failure to apply for certificates in the case of many children in various parts of the country. In THE LANCET we have held all through the course of the discussions which have taken place on this subject that it is not right to assume that everyone who is in favour of a conscience clause is opposed to vaccination or even that some who favour such a clause are anything less than hearty supporters of vaccination. The Royal Commission, which contained medical members such as Sir JAMES PAGET, Professor MICHAEL FOSTER, Mr. HUTCHINSON, and Sir W. GUYER HUNTER, and lay members like Lord HERSCHELL, the late Mr. MEADOWS WHITE, Q.C., Sir EDWIN GALSWORTHY, and others, reported strongly and unequivocally their belief in the value and essential importance of vaccination. At the same time they reported in favour of a conscience clause, and they did so believing that relaxation of the law might tend rather to the increase than to the diminution of vaccination. Looking to the fact that about a fourth of the boards of guardians in England had ceased to administer the law and that about a third of the children born last year remained unvaccinated, it is a mere misuse of language to speak of England as having been under a system of compulsory vaccination in recent years. It is true that there was on the statute book a penal law, but in many parts of the country it was not administered and in some places where it was administered the imposition of penalties did not procure vaccination. What exactly will be the effect of the new Act on the prevalence of vaccination it is not yet possible to say, but it must be recollected that the law is altered not merely with regard to its so-called compulsory provisions, and that some of the alterations, such as the adoption of a system of domiciliary vaccination and the use of glycerinated calf-lymph, may, taken together with the conscience clause, have the result of making vaccination more acceptable than before and of rendering organised opposition less effective and successful than it has been in the last few years. The new Act, however, remains in force for only five years and at the end of that period the whole subject must again come up for consideration by Parliament.

A Revaccination Bill.—It is of the utmost importance that the Government should now proceed to fulfil those promises regarding a Revaccination Bill by means of which they succeeded in passing the conscience clause through the House of Lords. If there should in this matter be any evidence or likelihood of delay it would be the duty of the medical profession to call immediate and emphatic attention to the subject and we have no doubt whatever that Lord LISTER, to whom the Government owes so much, would here lend his powerful aid.

Penalties.—In the discussion on the Bill previously to the adoption of the conscience clause considerable importance attached to the question of repeated penalties, and though it is now of much less moment the effect of Sections 3 and 4 may be noted. Where a parent has not taken advantage of the relief provided by Section 2 he may be prosecuted under Section 29 of the Vaccination Act of 1867. If a conviction is obtained under this section the new Act provides that an order under Section 31 of the Act of 1867 directing that a child be vaccinated shall not be made until the child has reached the age of four years, and that a single conviction under Section 31 will prevent any repetition of proceedings under that section. The effect will be that anti-vaccinationists who are obstinate enough to refuse the means of relief provided by Section 2 will be liable to one penalty when the unvaccinated child reaches the age of six months and to another penalty when it reaches the age of four years, after which there will be permanent release from the operation of the Acts. If owing to refusal to pay fines or costs imprisonment becomes necessary the prisoner will in future be treated as a first-class misdemeanant.

Public vaccinatorships.—The purpose of Section 6 of the new Act is to enable the Local Government Board to regulate the duties and remuneration of public vaccinators, whether appointed before or after the passing of the Act. It is under this section that the Board recently fixed the minimum scale of fees which has been the subject of so much discussion by boards of guardians and public vaccinators. It is only necessary to mention here that the minimum scale consists of a fee of 1*s.* in respect of the name of every child contained in lists to be periodically submitted by the vaccination officer to the public vaccinator for the purpose of being visited, and a fee of 5*s.* for every successful infantile vaccination, excepting in workhouses, where the minimum fee is 2*s.* 6*d.*, and for vaccination or revaccination of persons over fourteen years of age at the public vaccinator's consulting-rooms or elsewhere, for which also the minimum fee is 2*s.* 6*d.* In many places scales of payment considerably in excess of these minima have already been agreed upon by guardians and their public vaccinators.

Vaccination stations.—The Act further provides (in Section 7) that in exceptional circumstances, as where prevalence of small-pox is threatened, the Local Government Board may modify the requirements regarding domiciliary vaccination and may order the guardians to establish temporarily public vaccination stations which are otherwise to be abolished.

Hospital records.—In view of the wild allegations which have sometimes been made as to manipulation of the records of small-pox hospitals, the Act lays on all sanitary authorities the duty of keeping lists of small-pox cases treated in their hospitals, including a statement of their vaccinal condition on admission, and public access to these lists is to be allowed at all reasonable times.

The Act does not extend to Scotland or to Ireland.

As we have already indicated it is at present impossible to make a profit-and-loss estimate of the results of the new Vaccination Law. Excepting as regards the conscience clause the Act comes into operation only on Jan. 1st, 1899, and domiciliary vaccination in England is therefore as yet an untried experiment. Already the conscience clause has been construed so differently in different districts as to

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show the need for its immediate amendment by Parliament, so that magistrates and the public generally may know what is really meant to be enacted. Where a father has had to leave his work in order to attend court and has there had to produce a child's birth certificate and to state on oath his conscientious objection to the vaccination of such child the test has had in it something of reality. Where no oath has been administered, where no birth certificate has been required, where the attendance of the father has been unnecessary, where the objector has been put to no trouble or inconvenience of any sort the clause in its operation has provided no test whatever between conscientious objection and mere indifference or laziness. For the working of the remainder of the Act it will be necessary to wait to see.

Public Health.

So far as can be judged from the vital statistics as yet available the year 1898 bids fair to turn out in the main a healthy one. Not only was the general rate of mortality below the average for the first two quarters of the year, but the same would have applied to the third quarter also had it not been for excess in death from one single disease affecting one age-period only. Subject to the same exception the death-rate from the zymotic group of diseases during the three quarters in question was also below the average for the past ten years. The exception has to do with diarrhœa which was essentially infantile in its incidence and which caused a considerable increase in death during the third quarter of the year. The rate of mortality under one year of age during that quarter showed an excess of 55 on every 1000 births beyond the average; the zymotic rate also exceeded the average, and the diarrhœa rate reached 2·85 per 1000 living, or 1·21 above the average for the preceding ten years. As is usually the case this excess coincided with a high temperature and a diminished rainfall. Thus during August the temperature on certain occasions reached 12° F. and in September 17·7° above the average, and the rainfall for the third quarter was nearly 5 in. below the average. The towns always suffer most under these circumtances, and amongst those which had the highest diarrhœa death-rates were Hull, Sunderland, Sheffield, Wolverhampton, Preston, and Salford. Notwithstanding the failure of a constant service of water in an important portion of the metropolis London as a whole finds no position of unenviable prominence in the Registrar-General's returns for the third quarter of the year as regards either diarrhœa or fever. The subject of a deficient water service was, however, one to which great prominence was given during the year and it was associated with an effort on the part of the Government to obtain both for water consumers and in some respects also for water companies more control than they now possess in the matter of protecting from pollution the sources of water which companies and sanitary authorities deliver to the consumers and which the public are compelled to take and to pay for. But the attempt was frustrated on the plea that any restrictions in this respect beyond those now existing ought to be embodied in a general Act and not in special Acts even though new powers were being asked for from Parliament. It remains to be seen whether the Government will bring in any such general Bill next session and what will be the attitude of those representing water companies to it if their own suggestion is thus complied with.

But little has as yet been achieved to diminish the prevalence and fatality of diphtheria, especially in large towns and cities, including the metropolis. Few who are conversant with the etiology of this disease now entertain any doubt that with the largely increased facilities for personal communication which are afforded to children at the age when they are most liable to be attacked by diphtheria which are the outcome of attendance in elementary schools there has been a marked increase in the amount of death from this disease. The majority of observers also feel confident that by reason of the aggregation of young children in schools diphtheria amongst them is apt at times to assume a character of special potency for spread. Some time since it was announced that the Education Department of the Privy Council intended to make inquiry into the subject, but no indication of any such investigation has as yet been apparent. It is therefore opportune that the London County Council should at the present moment be pressing the need for an exhaustive inquiry into the matter both upon the Local Government Board and upon the Education Department. Whatever can be done reasonably by school restrictions in this matter ought to be carried out without further delay.

The country has happily been free from any widespread epidemics whether it be considered as a whole or in regard of special communities and similarly we have not suffered from the importation of any foreign epidemics. Our relations with Bombay where plague has now so long prevailed have been fully maintained but only on three occasions have vessels that could be regarded as infected with that disease reached our ports. On each occasion the measures of precaution which have been adopted have sufficed to prevent any extension of the disease after the vessel had once come within the control of an English port authority. The last occurrence of this sort took place during the week ending Dec. 10th.

The most important event in relation to public health in this country which has taken place during the past year has been the passing of the Vaccination Act, 1898. This subject is treated at length on page 1790. No other legislation bearing upon public health calls for notice. Indeed, apart from the limited number of subjects to which we have adverted the year 1898 has been a somewhat uneventful one in so far as the public health is concerned.

The University of London.

After many years of waiting—and not of patient waiting—we have at last in our annual summary of events something definite and promising to chronicle concerning reform in the University of London. The Bill for appointing a Statutory Commission to deal with the questions arising out of the reconstitution of the University passed through the Committee stage of the House of Commons on July 26th of this year, was allowed a third reading on that date, and received the QUEEN'S assent on August 12th. The Commission immediately got to work, Mr. T. BAILEY SAUNDERS being appointed secretary. We tender our hearty congratulations to Sir JOHN GORST for the manner in which he piloted the Bill through

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the Lower House, while we consider that the solution of the important problems in education which have been thus boldly tackled will redound greatly to the credit of the Government. That teaching functions should be added to the University of London is clearly for the benefit of the London medical student and this has been the main reason for giving prominence in our columns to all the schemes which have had this object in view. A *résumé* of these schemes, forming a history of the movement for reform in the University from its inception in 1864 down to its present interesting position, was published in our Students' Number of this year[1] and to this we refer our readers. A proposal to locate the University in the buildings of the Imperial Institute, in view of its insecure tenure of its present home, has received serious discussion and will necessarily call for criticism from some of those interested in University College, Gower-street.

The General Medical Council.

The General Medical Council has held three meetings in the past year. In addition to the ordinary meetings in May and November respectively a special meeting was held on April 5th and the succeeding day for the consideration of the Midwives Bill, then before Parliament, at the request of the Government. At that time the Council was without a President, in consequence of the lamented death of Sir RICHARD QUAIN. The meeting was summoned at the instance of the senior treasurer, Sir DYCE DUCKWORTH, who was voted into the chair. Thereafter Sir WILLIAM TURNER was duly elected President. His connexion with the Council on and off for twenty-five years, his active share in its work and knowledge of its procedure, together with his sound judgment and capacity for the transaction of business, account for the unanimity of his election. The first act of Sir WILLIAM TURNER after returning thanks for his election was to propose a resolution expressing sympathy with the family of the late President, which he did with much feeling. As the result of the two days' meeting the Council, basing itself mainly on the report of its Midwives Committee, came to a unanimous declaration, on the motion of Dr. DONALD MACALISTER, that the Bill submitted to the Council did not solve the question under consideration and it proceeded to lay down certain principles as being essential in any such measure. In one point the Council departed from the report of its committee on the suggestion of Sir WM. GAIRDNER. It reported in favour of licensing midwives annually instead of registering them, the licence to be granted by the local sanitary authority. A chief feature of the report of the Council was the emphasis with which it urged that any unlicensed woman, whether calling herself a midwife or not, who not being registered under the Medical Acts practised as a midwife for gain should be made liable to a substantial penalty. In the course of the Parliamentary session a deputation in favour of the Midwives Bill waited on the Lord President to urge the passage of the measure but he gave them no encouragement and advised them to seek an understanding with the General Medical Council. Accordingly they sought a conference with the Council, which was arranged. Sir RICHARD THORNE, Dr. GLOVER, Dr. MACALISTER, and Sir CHRISTOPHER NIXON were appointed a committee for this purpose. The conference was duly held. The deputation representing the Midwives Bill stated their objections to the system of licence and to the prohibition of practice as well as of titles by unregistered persons, but the committee representing the Council remained firm on these and other points. At the recent meeting of the Council the same committee, with the addition of Mr. HORSLEY, was appointed to watch any attempt at legislation on the subject in the coming session.

The second meeting of the Council extended from May 24th to the 31st. A novel subject for discussion arose early at this meeting on Mr. HORSLEY getting permission to call the attention of the Council to an alleged infringement of the rights and privileges of the members by the President in directing the Registrar to refuse a member the exercise of his right of inspection of documents, the property of the Council. The President explained to the complete satisfaction of the Council that in the course he took he acted entirely on the advice of the Council's counsel. The necessity of safeguarding these documents was universally admitted. A committee of inquiry into the conduct of legal business and the cost incurred was moved by Mr. HORSLEY and seconded by Dr. GLOVER, but the motion was lost. In the end a resolution was passed requiring members desiring access to the documents which are the property of the Council to obtain leave either from the Council, or the Executive Committee, or the President of the Council. In penal cases the leave of the Council itself must be given. It will be remembered that at the recent meeting the rule passed in May was found to be inconvenient and was referred to the Executive Committee for consideration and report at its next meeting.

At the May meeting an extraordinary case came under the judicial notice of the Council—that of a practitioner named JOSHUA HAMILTON HART—charged with associating himself with "Munyon's Homœopathic Home Remedies." Mr. HART stated that he had nothing to do with the medicines prescribed but only to say what the complaint of the patient was. The appropriate remedy followed of necessity on the complaint being labelled, being already fixed by the genius of MUNYON. The Council, of course, had no hesitation in removing the name from the Register. A very important improvement in penal procedure was made on the motion of Sir BATTY TUKE that no case of complaint should be considered by the Penal Cases Committee until a statutory declaration as to the facts of the case had been supplied by the complainant. In the educational part of the work of the Council in May one of the principal subjects dealt with was the consideration of a communication from the Secretary of State for the Colonies on Instruction in Tropical Medicine, Hygiene and Climatology. The Council did not see its way to lay any heavier burdens on the ordinary medical student, but strongly recommended that arrangements should be made by Government for special instruction of the sort for duly qualified practitioners selected for colonial medical service or intending to practise in the colonies. Another feature of the May meeting was the discussion of

[1] THE LANCET, Sept. 3rd, 1898, p. 591.

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a series of recommendations, in the form of propositions, as to the course of study and examinations to be required of candidates for diplomas in dental surgery. There was great rejoicing over the completion of the new Pharmacopœia which was handed over to the Executive Committee for publication by the late President, Sir RICHARD QUAIN, on Feb. 19th—his last official act.

At both the May meeting and the November meeting communications on the subject of unqualified assistants occupied the time of a special committee presided over by Mr. TEALE without any change in the letter of the resolution adopted by the Council on Nov. 24th, 1897. At both meetings, too, reports were received from the Examination Committee on the reports of the inspector of the examinations of the Apothecaries' Hall of Ireland.

The lengthy proceedings of the November meeting are so recent and have been so fully commented upon in our columns that they need not detain us at the present time. The most important part of the work of the Council was its discussion of the report of the Education Committee on the list of preliminary examinations recognised by the Council and its deletion of the second-class certificate (first and second division) of the College of Preceptors. But clear warning has been given that further deletions will be made and that the notice of them will not be very prolonged. We must not forget to record the efficient action of the President in his communication with the Privy Council with regard to such an amendment of the Medical Act of 1858 as shall deprive any graduate or diplomate whose name has been erased under Section 29 of the right to use the title attaching to his degree or diploma so long as the erasure continues.

The British Medical Association.

The sixty-sixth annual meeting of the British Medical Association was opened at Edinburgh on Tuesday, July 26th, under the presidency of Sir THOMAS GRAINGER STEWART, M.D., LL.D., F.R.S. Edin., Professor of Medicine in the University of Edinburgh and Physician-in-Ordinary to Her Majesty the QUEEN in Scotland. That it was a success we need hardly venture to remind our readers, for not only is the capital of North Britain so associated with culture as to have earned for itself the *sobriquet* of Modern Athens but its architecture and surroundings possess all the attractiveness that visitors could desire. Added to this was the fact that everything that could be done was done for the convenience and comfort of members and their friends.

The Presidential Address dealt with a large number of questions affecting the relations and efficiency of the medical profession and may be described as a masterly performance. The Address in Medicine delivered by Professor T. R. FRASER was mainly occupied with a remarkably lucid and exhaustive account of the present position of science in regard to the share taken by toxins in the production of disease and the new aspect which has been given to the interpretation of the facts of infective disease and the prospects which are offered for their mitigation and abolition. The Address in Surgery was delivered by Mr. ANNANDALE who dealt with the present position of that branch of the healing art. In Psychological Medicine the name of Sir JOHN BATTY TUKE is an ample guarantee that the address was an able one. At the general meeting it was decided that medical defence should not be undertaken by the Association.

As a *rapprochement* between this country and the United States is so much in evidence just now it is noteworthy that among the social features of the Edinburgh meeting was a luncheon given by the Anglo-American Continental Medical Society whose object it is to serve as a bond of union between the British and American practitioners established on the continent of Europe and Northern America. At the annual dinner the toast of the evening was given by Professor BOWDITCH of Harvard College, Boston, U.S.A., who took occasion to remark on the essential unity of the two nations.

At the summer graduation ceremonial of the University of Edinburgh the honorary degree of LL.D. was conferred upon the following gentlemen among others: Dr. H. PICKERING BOWDITCH, Professor of Physiology in Harvard University; Sir WILLIAM BROADBENT, M.D., F.R.S; Dr. LAUDER BRUNTON, F.R.S.; Dr. EUGENE DOYEN of Paris; Dr. DAVID FERRIER, F.R.S.; Dr. JOSEPH FORSTER, Professor of Hygiene and Bacteriology in the University of Strassburg; Dr. CARL GERHARDT, Professor of Medicine in the University of Berlin; Mr. HUTCHINSON, F.R.S.; Dr. THEODOR KOCHER, Professor of Surgery in the University of Berne; Dr. AUGUST MARTIN, Professor of Gynæcology in the University of Berlin; Dr. JOHANN MICULICZ, Professor of Surgery in the University of Breslau; Dr. MORISANI, Professor of Midwifery in the University of Naples; Dr. William OSLER, F.R.S., Professor of Medicine in the Johns Hopkins University, Baltimore; Dr. WILLIAM S. PLAYFAIR; Dr. THOMAS RODDICK, Professor of Surgery in the M'Gill University of Montreal, ex-President of the British Medical Association; Dr. SIEGMUND ROSENSTEIN, Professor of Clinical Medicine in the University of Leyden; Dr. HERMAN SNELLEN, Professor of Ophthalmology in the University of Utrecht; and Sir RICHARD THORNE, F.R.S.

It was decided to hold the next meeting of the Association at Portsmouth.

The Metropolitan Hospital Sunday Fund and the Prince of Wales's Hospital Fund.

Under the Presidency of the Right Honourable Sir HORATIO D. DAVIES, K.C.M.G., M.P., Lord Mayor, the twenty-sixth year's collection of this Fund resulted in a total of £40,397 2*s.* 10*d.* The Rev. C. J. RIDGEWAY, M.A., of Christ Church, Lancaster-gate, headed the list of contributions with £1367; the Rev. Canon FLEMING, B.D., of St. Michael's, Chester-square, collected £1268; the Rev. J. STORRS, M.A., of St. Peter's, Eaton-square, £681; the Rev. Prebendary EARDLEY-WILMOT, M.A., of St. Jude's, South Kensington, £623; and the Rev. F. E. RIDGEWAY, D.D., of St. Peter's, Cranley-gardens, £501. Sir SAVILE CROSSLEY, Bart., again contributed £500, and a sum of £500 was also sent by him to "The Prince of Wales's Hospital Fund"; £300 were received from A. G. P.; "Delta" sent his twentieth donation of £200; and Mr. GEORGE HERRING gave £200. The sum collected this year may on the whole be considered satisfactory for it must be remembered that the exceptional influence of the special claims of the year of HER MAJESTY'S Diamond Jubilee has, probably, not yet ceased to be felt.

A recent report of the Prince of Wales's Hospital Fund

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states that a sum of £30,000 is still required to meet the minimum necessities of the hospitals for the present year. Last year the Prince of Wales's Fund was the means of opening 180 beds which previously had remained closed for want of money. The amount in hand at the close of the financial year was £203,490, of which £32,500 were available for distribution.

Sanitation: Special Articles and Investigations.

The sanitary state of Belfast.—The articles published in the month of December, 1897, on the typhoid fever epidemic at Belfast were followed in February this year by a series (illustrated by some photographs) on jerry-building in that town. These showed the privy middens exposed to the public view from a frequented thoroughfare or, when situated in the privacy of a small backyard, placed so close to bedroom windows that there was no escape possible from the effluvia of the uncovered offensive matter. The household refuse and nightsoil which these open privies contained escaped into the yards or percolated through the walls into the dwelling-houses. In some cases the situation was aggravated by the presence of ponies, donkeys, pigs, or poultry in the small backyards. Here and there the cottages were of such a wretched description that the floor was not boarded. The inhabitants were so poor that they had no bedsteads but slept on a mattress placed on the bare, damp earth. Though quite exceptional still there were a few floorless houses in the very midst of the wealthy town of Belfast. The speculations in land and in jerry-building were explained and denounced, as was also the lack of energy on the part of the authorities in dealing with these matters. In contrast with the inefficient and antiquated methods of draining employed in Belfast we published some account of the new system of drainage now being installed at Bombay. Here the difficulty of low-lying levels is met by the employment of compressed air to raise the sewage at frequent intervals. Thus the sewers, even in the lowest districts, will have sufficient gradients to be self-cleansing.

The Ninth International Congress of Hygiene.—The fullest account of this important Congress, published at the time when it was held, appeared in our columns. From the general secretary, writing in the name of the Spanish authorities and organisers of the Congress, we have received courteous letters of acknowledgment for the large share of publicity which we gave to the efforts of the sanitary reformers of Spain. Though the Congress was held a few days before the outbreak of the war—i.e., from April 10th to the 17th—it was a great success. The hospitality and the courtesy of the Spanish people were displayed to the best advantage under the most trying circumstances. Even the American delegates to the Congress were treated with the greatest consideration and politeness. The debates, attended by some 2000 members and delegates, naturally embraced a great variety of subjects and several new and important questions were brought forward—such as, for instance, the treatment of infected walls in buildings or hospitals by inoculation in the same manner as living beings are rendered immune by antitoxins; the yearly school feasts when every child plants a tree so as to improve the climate; the cure of the bites of venomous snakes by inoculation of serum, &c. It is much to be regretted that the British delegation to this Congress was, comparatively speaking, small. The next Congress will be held at Paris in 1900, and it is to be hoped that on that occasion British sanitary reformers will be present in larger numbers and that British sanitation will figure to greater advantage.

Sanitation in Spain.—After the Congress our Special Commissioner was able to visit the military hospital at Cadiz and to depict its deplorable condition. On the other hand, he at great length described the new military hospital at Madrid which is a model for all nations. Then our Commissioner showed what great economies had been effected in the military medical services by the State. From the Central Laboratory at Madrid medical stores which had cost the Government 3,059,526 pesetas to produce had been sent out to Cuba since 1894. If these same articles had been bought on the spot they would have cost 8,826,248 pesetas and thus an economy of 5,766,722 pesetas was realised. (If there were no premium on gold the peseta would be equal to the franc or to 10*d.*) The various medical and hygienic educational institutions of Spain were likewise described as also were the medical services organised by the Spaniards in Cuba.

Morocco.—From Spain our Special Commissioner was able to pay a flying visit to Tangier, which by reason of its climate is so well suited for a health and winter resort. Since the last account which we published of Tangier in 1887 many improvements have been effected and a sort of European municipality has been brought into existence. These alterations, however, have the disadvantages of somewhat spoiling the appearance of the place which owes its charm to its purely Oriental character and to the great relief which it affords to the mind of the European traveller who on reaching Tangier experiences a complete change in all his usual surroundings.

Gibraltar and social purity.—From Tangier it is but a short sea passage to Gibraltar and we published an account of the sanitary progress recently accomplished in that important fortress. From 1851 to 1866 the average death-rate was 29·25 per 1000; from 1891 to 1895 it was 19·97; but last year it rose again to 23·56 per 1000, the zymotic death-rate being equal in that year to 3·77 per 1000. The chief sanitary defect is overcrowding, resulting to a great extent from the military exigencies of the situation. Gibraltar being also a very important commercial centre there is much to attract business men and workmen. Great efforts are being made to increase and improve the water-supply. The house drainage is good, the public sewers have been somewhat improved, but the method of ventilating the sewers is still very defective. At the military hospital there were evidences of unwise and exaggerated economy which would prove very costly if an emergency were to arise. The most startling fact published related, however, to the disastrous effect produced by the social purity campaign organised at Gibraltar. As nearly all the public women were foreigners it was the custom not to give them permission to reside in the colony unless they consented to be medically examined every week. As this examination did not differ from that to which they were accustomed before leaving their own country they readily assented and thus venereal

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disease was kept somewhat in abeyance. But this did not suit the social purity agitators and some six or seven years ago this practice was abolished. The only measure which can now be taken is to send such women away altogether. To avoid this contingency several of them have preferred paying British subjects to marry them and then they cannot be sent away. The direct effect of the social purity agitation is that there is now a class of men in Gibraltar who are living on the prostitution of their wives. These women having by marriage become British subjects cannot, as was the case formerly, be compelled to reside in one particular and distant part of the town, but may frequent and corrupt any quarter of Gibraltar. All control having been abolished venereal disease is so prevalent that the inhabitants of Gibraltar lose no opportunity of going over to Spain where the women are safer. The consequence is that Gibraltar is looked upon as a sort of plague spot by the Spanish authorities. At Algeciras notably, where a great many English families from Gibraltar spend the hottest months of the summer, far more disease is prevalent among the Spanish women at that season, and as soon as the English begin to arrive the Spanish public women have to be examined with exceptional care to protect the population generally from British contamination. Finally, the women at Gibraltar are not at all satisfied with the abolition of control and do not thank the social purity party for what they have done. Far from considering a medical examination as a degradation they are voluntarily seeking to re-establish the control which the law used to enforce. They now pay medical men to examine them and are proud of the certificates which they thus obtain. It is becoming more and more the custom at Gibraltar to ask a woman for her medical certificate, and thus the very system which the social purity party have so strenuously denounced is being re-established by voluntary effort and by the women themselves.

Bordeaux.—Returning homewards from Spain our Special Commissioner examined closely the new sanitary service established at Bordeaux where a very ingenious system has been organised for compiling a complete sanitary record of all the dwellings of the town. Here also the practice of disinfecting by steam under pressure not only such bedding and clothing as are known to have been contaminated but also articles about which only doubts are entertained is gaining ground rapidly. The State pawn-shop causes all bedding which is pledged to be disinfected, and some of the more respectable auctioneers will not sell bedding which has not been first disinfected. The account of these new services in Bordeaux was followed by some description of the somewhat feeble and tentative attempts made in Paris to deal with the very difficult question of the spread of disease through laundries. In England the matter has been considered principally from the point of view of the danger which the public incurred of having the linen contaminated by the laundresses ; in France the fear is rather that the laundresses themselves may be contaminated by the linen. But, as the French would say, *l'un n'empêche pas l'autre.*

Diphtheria at Tunbridge Wells.—We sent a Commissioner to Tunbridge Wells where diphtheria had been exceptionally prevalent and he described a condition of things which for so prosperous a town should not exist. The fact is that it is almost impossible to obtain land for the building of workmen's cottages. Consequently the few cottages that exist are let at exorbitant rents and this occasions much overcrowding which, together with sewers that do not work satisfactorily, accounts in a measure for more sickness than there need be in so prosperous and well-situated a residential and pleasure town. At the recent elections of town councillors some medical men and others pledged to sanitary reform were at the head of the poll and the infusion of this new blood may bring about a better state of affairs.

The second typhoid fever epidemic at Belfast.—The recurrence in epidemic form of typhoid fever at Belfast, coming so soon after the epidemic of last year, induced us to institute a further inquiry into the condition of that town. The old grievances though so glaring and fatal in their consequence have not yet been removed. The privy closets still abound though it has been shown that typhoid fever occurred in 5·5 per cent. of the houses with privies and in only 2·7 per cent. of houses with water-closets. Nor has any measure been taken to deal with the contaminated subsoil. Whole districts are built on the rubbish, including the contents of the privies of the town, but how to prevent the evil results is so vast a question that no one seems to have the courage to approach it. Nor is anything said about the main drainage which as a scheme was devised for a smaller population and works in a very defective manner. That Belfast is absolutely unhealthy is proved by the exceptional number and fatality of cases of typhoid fever which occur among the police and others who are not natives of the town and well inured to its unwholesome characteristics. A new town council was, however, elected a year ago which contains a stronger element of progress.

The Royal College of Physicians of London.

Several matters of importance engaged the attention of the College at the various meetings of the Comitia. Some of these were of general interest whilst others related to medical education only. Steps were taken to promote the introduction of the University of London Commission Bill and the long preliminary struggle has at last terminated, although numerous difficulties will probably present themselves after the report of the Statutory Commission has been issued. The President, in conjunction with the President of the Royal College of Surgeons, addressed a memorial to the Secretary for War in behalf of reform of the Army Medical Department. This vexed question has also now been settled.

Whilst the debate on the Vaccination Bill was in progress the College forwarded to the Government a strongly worded resolution reiterating their conviction that vaccination properly performed and duly repeated is the only known preventive of small-pox.

The most animated discussion of the year took place on the subject of the preliminary education of the medical student. A report was submitted from the Committee of Management pointing out that although students were encouraged to complete their studies in chemistry, physics, practical chemistry, and biology before entrance on the professional course proper, and although certain institutions had been recognised as suitable places of instruction in these subjects, there was little gained

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by the student, who was still required by the regulations to go through a course of five years at a medical school, no matter whether he had been registered previously or not. The committee therefore suggested that the regulation should be altered so that "the first of the five years of the curriculum may be spent in obtaining instruction in chemistry, physics, practical chemistry, and biology, either at a recognised institution or at a recognised medical school and that the candidate be required to spend four winter and four summer sessions from the date of passing Parts I. and III. of the joint examination at a recognised medical school and hospital before entrance to the examinations in medicine and surgery." After a prolonged discussion occupying the greater part of the time of two meetings of the Comitia this was carried.

The report of a special committee appointed on Oct. 28th, 1897, to consider the subject of elementary biology recommended that in order that the time devoted to the study of biology should not encroach on that given to anatomy and physiology the regulation for the second examination as to twelve months dissection be modified by words indicating that the period of dissection required by the regulations should be subsequent to the instruction required for the preliminary subjects—chemistry, physics, and biology.

A Special Leprosy Committee reported: "That the communicability of leprosy by direct or indirect means from lepers to the healthy must now be accepted as an established fact"; but further recommendations were referred to the Committee for certain alterations. The Committee on Infectious Puerperal Diseases recorded their opinion that with a view to the limitation of dangerous infectious diseases the London County Council would be acting rightly in adopting the view that the expression "'puerperal fever' should be taken to include septicæmia, pyæmia, septic peritonitis, septic metritis, and other acute septic inflammations in the pelvis occurring as the direct result of childbirth." Sir SAMUEL WILKS was re-elected President by a majority which showed the high appreciation of the College of his value in such a position. The Murchison Scholarship was gained by Mr. J. BASIL PAGE of St. Mary's Hospital.

The following were the lectures delivered during the year:—The Milroy Lectures, by Dr. S. MONCKTON COPEMAN, on the Natural History of Vaccination; the Goulstonian Lectures, by Dr. J. ROSE BRADFORD, on Observations on the Pathology of the Kidneys; the Lumleian Lectures, by Sir R. DOUGLAS POWELL, on the Principles which Govern Treatment in Diseases and Disorders of the Heart; and the Croonian Lectures, by Dr. SIDNEY MARTIN, on the Chemical Products of the Pathogenic Bacteria considered with Special Reference to Enteric Fever. Dr. W. M. ORD was the Bradshaw Lecturer, whilst the Harveian Orator of the year was Sir DYCE DUCKWORTH.

The Royal College of Surgeons of England.

A very uneventful year for the Royal College of Surgeons is drawing to its close. It can hardly be said that any substantial progress has been made towards the extension to the Members of the College of the right of voting at the election of the Council, but the general tone of the November meeting of the Fellows and Members was much better than that which has prevailed on previous occasions and we look forward with hope for better things in the not far distant future. The Council has at several of its meetings considered complaints of canvassing by Members of the College and has expressed its willingness to hear any evidence put before it, yet it has not been able to make a definite pronouncement in any individual case.

A few years ago half-yearly meetings were granted to the Fellows, but the proceedings have hardly ever been of much interest or importance and in January last no quorum could be formed. As a result of this the Council decided to do away with the January meeting, but unfortunately at the July meeting also a quorum was not present, only 26 Fellows attending. We fear that these meetings may cease to be held if the Fellows do not attend more regularly. In March the Council received a petition from some Fellows and Members which claimed that the right of appointment of the representative of the College on the General Medical Council legally belonged to the whole body of the Fellows and Members. There is much to be said in favour of the petitioners' view, but the Council was unable to admit the justice of the claim.

When prohibitive restrictions were threatened as to the practice of British medical men in Italy the Council succeeded in obtaining through the Secretary of State for Foreign Affairs an assurance that no such intention existed. In the matter, too, of the formation of the Royal Army Medical Corps the action of the President of the College was of great usefulness.

Sir WILLIAM MACCORMAC, Bart., K.C.V.O., was re-elected President in July, and at the election of members of Council Mr. JOHN LANGTON and Mr. HENRY MORRIS were re-elected and Mr. RICHARDSON CROSS was elected. Only 26 Fellows voted in person, but 651 voted through the post. Mr. PICKERING PICK and Mr. HOWARD MARSH were appointed Vice-Presidents.

Mr. PICKERING PICK delivered the Bradshaw Lecture in December, the subject being the Healing of Wounds. Sir WILLIAM MACCORMAC will be Hunterian Orator in 1899. Two former members of Council have died during the year—Mr. EDWARD LUND and Mr. HENRY LEE. The Jacksonian Prize was awarded to Mr. PERCY FURNIVALL, F.R.C.S. Eng., the subject being the Pathology, Diagnosis, and Treatment of the Various Neoplasms met with in the Stomach, Small Intestine, Cæcum, and Colon. The subject for the Jacksonian Prize in 1899 is the Pathology, Diagnosis, and Treatment of the Inflammatory Affections of the Nasal Fossæ and the Associated Sinuses and Air Cells. For the College Triennial Prize the subject is the Thyroid Gland, its Structure, Comparative Anatomy, and Physiology. Mr. CHARLES SISSMORE TOMES, F.R.S., and Mr. W. DUNNETT SPANTON were elected Fellows under the twenty years' rule. An academic gown has been chosen which Fellows of the College may wear on State occasions, and a similar privilege will probably be granted shortly to the Members.

The Council have applied in vain for exemption from corporation duty, but they have decided to appeal against the adverse judgment.

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The Benevolent Agencies of the Profession.

The reports of the benevolent societies of the profession show not only that medical charities do not obtain the support which they deserve but that they do not receive the help which they need. Temporary or acute distress such as is dealt with by THE LANCET Relief Fund (the report of which will be published next week) is apparently not so great as during last year, or at any rate stationary, but the more chronic form of need is probably as prevalent as in the past. The forty-fifth annual report of the Royal Medical Benevolent College stated that the year with which it dealt had been one of great anxiety in consequence of large but necessary expenses; nevertheless, it is satisfactory to know that there was a small credit balance. The amount received from annual subscriptions was under £3500, while the expenses on the benevolent side of the institution are over £6000 annually. In an appeal which was issued in October last signed by Sir JOSEPH FAYRER, K.C.S.I., Dr. CONSTANTINE HOLMAN, and the Secretary, it was said:

"If each member of the profession would give 10*s.* or even 5*s.* a year for a very few years the position of the pensioners and foundation scholars would be placed on a secure financial basis and the Council would be able to improve the school and extend its usefulness still more."

The report of the committee of the British Medical Benevolent Fund for the year 1897 shows the amount received in subscriptions and donations to have been £1367. The sum paid out in grants was £1236. It is sad to note that many of the cases requiring relief had to be put off from month to month owing to want of funds. There are 107 annuitants of the fund who collectively receive £2168. At the last quarterly court of the Society for the Relief of Widows and Orphans of Medical Men applications for relief were read from 49 widows, 11 orphans, and 6 recipients from the Copeland Fund. £1197 11*s.* were recommended for distribution amongst them.

The Analytical and other Commissions of THE LANCET.

Towards the end of the year 1897 we instituted an inquiry into the quality of the milk supplied to the metropolitan hospitals. To that end samples were obtained under what we thought to be fair and representative conditions and brought to THE LANCET Laboratory for analysis. The result of the inquiry was interesting. Of the 11 samples obtained from the leading general hospitals in London 7 proved to be of good average quality, 2 of indifferent quality, 2 decidedly poor and in all probability watered, while 3 specimens contained distinct though not excessive quantities of boric acid. In the report of this Commission which appeared in THE LANCET of Jan. 1st, 1898, we commented upon the employment of preservatives in food for general purposes, pointing out that however justified this recourse may be in such cases the practice in the case of milk which is intended for the sick should be vigorously prohibited. We suggested that the officials appointed to take samples under the Food and Drugs Act should pay special attention to the hospitals whose supply of milk in many cases must be equal to the stock of the ordinary milk-shop. We have reason for believing that our inquiry bore excellent fruit, for we have since learned that some of the hospital authorities concerned have sought the assistance of the scientific departments connected with the institutions to examine and report from time to time on the quality of the milk supplied.

In THE LANCET of March 5th, 1898, we recorded some experiments made in THE LANCET Laboratory with certain hair combs which proved to be composed of a very highly and easily inflammable substance. The danger is increased by the fact that the hair fastener with which we experimented could only with difficulty be drawn from the hair. The ornament consisted in reality of two combs fastened together at one end by means of a hinge in the same way as a pair of compasses, the hair being caught up by the combs when interlocked. We found that a hot curling iron was sufficient in contact with this comb to start the evolution of dense fumes which are easily ignited even when some distance away from a flame. We mentioned an instance which was known to us of this accident having actually occurred. We urged that the public should be fully aware of the dangerous nature of these combs and we suggested that the manufacturers should be compelled to stamp plainly on all such articles the words "Highly Inflammable."

In the following issue of THE LANCET we pointed out the very common but mistaken notion that the electric incandescent lamp is free from heating effect. On the contrary we found in laboratory experiments that the heat of the electric incandescent lamp is considerable. When buried in cotton-wool, for example, the material soon scorches and ultimately bursts into flame, the lamp generally collapsing with a loud report. The bearing of this result upon the use of incandescent electric lamps in shop windows where a profusion of highly inflammable fabrics is displayed was pointed out as a corollary.

Much of the practical work in THE LANCET Laboratory this year has been devoted to an inquiry into the production, composition, and character of sherry. Sherry is a wine of some importance in medicine since it is the only wine ordered in the preparation of certain pharmaceutical compounds. Further, there has been considerable discussion in medical circles as to the effects of a wine containing sulphate of potassium which is the product of the so-called "plastering" process. We therefore thought the subject was one well worthy of investigation. Obviously this could not be thorough without an inquiry on the spot and an inspection from beginning to end of the processes which are concerned in the production of this wine, and accordingly one of our Commissioners visited the scene of sherry production, Jerez de la Frontera in Spain. We venture to think that the information so gained was of interest to our readers. A great number of analyses were subsequently made in THE LANCET Laboratory and the results together with the conclusions to which they pointed appeared in THE LANCET of Oct. 29th, 1898. It was shown that the "plastering" process was an exceedingly old custom which even PLINY mentions as ancient and that the process probably had its origin in the fact that the vintages were more satisfactory when the grapes had an unusual amount of the vineyard soil attached to them, the soil consisting largely of lime salts. The analyses which we made confirmed in a very interesting way the experience of the grower—namely, that without the treatment with sulphate of lime the wine develops but a feeble character. On the other hand, after

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treatment with a small quantity of sulphate of lime which is dusted over the grapes a remarkable development of vinous ethers takes place. Our analyses offered an explanation of this from the fact that tartaric acid is largely set free by the sulphate of lime treatment, and this acting upon the alcohols produces the corresponding ethers. It was further shown that the adulteration of Spanish wines is exceedingly unlikely since grape juice in that country is the cheapest possible material for producing spirituous liquids.

A Select Committee of the House of Commons issued a report this year upon a subject with which a Commission of THE LANCET dealt practically in our columns on Jan. 4th, 1896, and the report of the Select Committee on Petroleum to which we refer was published in the second week of August. The upshot of this report was a recommendation of the adoption of a flash-point of 100° F.—that is, of about 27° above the flash-point of the oil commonly supplied. The Committee were careful to add, however, that in their opinion statutory powers should be created to enable the Secretary of State to issue orders affecting the manufacture and sale of lamps. In the report of THE LANCET Commission referred to we ventured to suggest that legislation could effectively deal with the danger arising from lamp accidents by insisting upon the sale of safely constructed lamps. We still doubt whether the Government will adopt the somewhat drastic measure recommended by this Committee—namely, to exclude for burning purposes all oil of a flash-point lower than 100°. We have pointed out also that the effect of this recommendation will be to necessitate in addition the use of specially constructed lamps. This will obviously and, as we think, unnecessarily complicate the future legislative requirements thus indicated.

Quite recently our analytical staff has been closely engaged upon the analysis of abortifacients—pills and potions—the results of which are contained in the three previous numbers of THE LANCET, the fourth article appearing in another place in our present issue. This analytical work has thrown no little light upon the unscrupulous and shameful methods which are described in the inquiry under the heading of "Quacks and Abortion: A Critical and Analytical Inquiry."

Under the heading of "Analytical Records from THE LANCET Laboratory" some 115 samples of foods and drugs have been reported upon during the year. This has involved the carrying out of 327 individual analytical determinations. If we add to these figures the analytical work concerned in the special work summarised above, the total number of samples examined reaches 140 and the number of analyses made amounts to no less than 452, which is distinctly in advance of the number recorded last year.

Hospital Abuse.

Our series of special articles on this subject was continued during the year, commencing with the town of Glasgow. Here the advance of sanitation has greatly reduced the death-rate and sick-rate, yet the facilities for obtaining medicine and advice gratuitously are ever increasing. From 1871 to 1880 there were beds provided by the hospitals which amounted to 2·7 beds per 1000 of the population. Since 1891 the proportion equals 4·2 beds per 1000 and if to this we add the fever hospitals and the workhouse infirmaries then the proportion is 9·5 per 1000. Of course this has led to much and manifest abuse and it is calculated that 52 per 1000 of the population received gratuitous medical treatment during the course of twelve months. The proportion of those treated at the public expense was 22·6 and of those treated by the charities 29·3 per 1000 of the population.

From Glasgow our Special Commissioner proceeded to Bradford and there, also, the death-rate has considerably decreased, falling from 21·01 in 1882 to 16·77 per 1000 in 1896. Nevertheless, the number of persons who attend the hospitals and obtain gratuitous medical advice has greatly increased. The evidence collected all went to show that a better class of people now avail themselves of these facilities and an incident was related where one of the members of a hospital staff was invited to a Christmas dinner given in the handsome villa of one of his hospital patients. Then there is also a plethora of trivial cases such as boils, &c. Where there is a medical school it is necessary that the students should see such cases, but as there is no medical school at Bradford persons suffering from such slight ailments ought not to crowd the out-patient department and thus waste the time of the medical staff.

Brighton, again, is a town with a low death-rate and, what is more, a town where there is comparatively little poverty and many wealthy inhabitants. Nevertheless, out of 3704 births registered in 1894, no less than 1240 were attended by one charity. In the same year 38,113 hospital tickets were distributed amid a population of 115,000. The grievances and abuse arising from this state of things were described at length by our Special Commissioner and he related the efforts made by the local practitioners to cope with this difficulty.

Noteworthy energy has been shown by the medical men practising in the Eastern suburbs of London. Here a "Medical Protection Society" was recently formed, and the successful action already taken by this active body supplied the subject-matter of several special articles and reports. These appeared under the title of "The Abuse of Nursing Institutions," for it was against the Plaistow Maternity Charity that the energies of this body were first directed. This is another form of hospital abuse and, as interfering with the midwifery fees which medical practitioners are legitimately entitled to receive, is a very important matter. But the East Suburban Medical Protection Society have dealt with many other questions. They have drawn up a black list of patients who do not pay, they have established a system for collecting debts, they attempt to check unprofessional conduct, and they have insisted on the adequate representation of the medical profession on the boards of management of hospitals, &c. In a word they are engaged in organising medical men for the defence of their economical interests and the honour and dignity of their calling.

The Battle of the Clubs.

Though from time to time we have published reports reaching us from various districts concerning the struggle between the medical practitioners and the medical aid associations we have only made one special investigation on

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this subject during the year. This was at Tunbridge Wells, a town from which we had received several complaints. Here, however, the grievance was not so acute as it was found to be in other towns, but the fact that the medical officer of the Friendly Societies' Medical Association did not receive more than 2½*d.* per visit or consultation shows that it was bad enough. Unfortunately there is no medical union in this town, though some of the local medical practitioners have individually acted with great spirit and energy. Still, these isolated efforts are very risky and uncertain in their result and it is time that the medical practitioners of Tunbridge Wells should seek to unite for common action.

Honours to Medical Men.

It now becomes our pleasing duty to record the honours which have been bestowed upon members of the profession during the past twelve months. In the list of those receiving New Year honours the names of six medical men appeared and it was noticeable that four out of the six were associated with Scot h degrees. This was as it should have been, for while last New Year's list was essentially English the Jubilee list was an Irish one. The New Year's list for 1898 contained the names of JOHN STRUTHERS, M.D., F.R.C.S. Edin., LL.D. Glasg., and JOHN BATTY TUKE, M.D., F.R.C.P., F.R.S. Edin., upon whom were conferred knighthoods; of WILLIAM TENNANT GAIRDNER, LL.D., M.D., F.R.C.P. Edin., F.R.S., Physician-in-Ordinary to Her Majesty the Queen in Scotland, who was created a Knight Commander of the Bath; of Brigade-Surgeon-Lieutenant-Colonel GEORGE KING, C.I.E., who was raised to a Knight Commandership of his Order; and of Surgeon-Lieutenant-Colonel SAMUEL JOHN THOMSON and Surgeon-Major FREDERICK FITZGERALD MACCARTIE, who were appointed Companions of the Most Eminent Order of the Indian Empire. On Her Majesty's birthday honours were received by Surgeon-Lieutenant-Colonel J. G. ROGERS, D.S.O., head of the Egyptian Sanitary Department, who was made a K.C.M.G., and Dr. ANDREW MILROY FLEMING, Principal Medical Officer of the British South African Police, who was made a C.M.G. Surgeon-Major-General ROBERT HARVEY, D.S.O., was made a C.B., and Brigade-Surgeon-Lieutenant-Colonel A. M. BRANFOOT, Professor of Midwifery in the Madras Medical College, a C.I.E.

Mashonaland and North-west Frontier rewards were announced on the same occasion and were as follows, as far as decorative Orders are concerned: To be Knight Commander of the Most Honourable Order of the Bath: Surgeon-Colonel GEORGE THOMSON, C.B., Indian Medical Service. To be Companions of the said Most Honourable Order: Surgeon-Colonel EDMOND TOWNSEND, Army Medical Staff, and Surgeon-Colonel GEORGE MCBRIDE DAVIS, D.S.O., Indian Medical Service. To be Companions of the Distinguished Service Order: Brigade-Surgeon-Lieutenant-Colonel CHARLES HENRY SWAYNE, Army Medical Staff; Surgeon-Major JOHNSTON SHEARER, Indian Medical Service; Surgeon-Captain THOMAS HERBERT JOHN CHAPMAN GOODWIN, Army Medical Staff; Surgeon-Captain JOHN FISHER, Indian Medical Service; Surgeon-Captain WILLIAM SELBY, Indian Medical Service; and Surgeon-Lieutenant JAMES HENRY HUGO, Indian Medical Service.

Among the Soudan Gazette honours occur the names of Surgeon-General WILLIAM TAYLOR, and Colonel W. H. MACNAMARA, R.A.M.C., who received the Companionship of the Order of the Bath; and of Lieutenant-Colonel G. A. HUGHES, R.A.M.C., Major E. M. WILSON, R.A.M.C., Major H. B. MATHIAS, R.A.M.C., and Captain C. S. SPONG, R.A.M.C., who received the Distinguished Service Order.

During the year Mr. PEARSON ROBERT CRESSWELL, F.R.C.S. Edin., Lieutenant-Colonel Commandant of the 3rd V.B. Welsh Regiment, was made a Companion of the Bath.

Of the Order of the Hospital of St. John of Jerusalem in England Sir RICHARD DOUGLAS POWELL, Bart., M.D. Lond., Mr. WILLIAM HAMERTON JALLAND, F.R.C.S. Eng., and Surgeon-Major-General WILLIAM ROE HOOPER, C.S.I., were made Knights of Grace.

The Roll of the Royal Victorian Order has been augmented during the year by the names of Sir WILLIAM MACCORMAC, Bart., Sir FRANCIS LAKING, Mr. A. D. FRIPP, and Fleet-Surgeon A. G. DELMEGE, M.D. R.U.I. The two former gentlemen have been appointed Knights Commanders of the Order and the two latter gentlemen Members of the Fourth Class, in recognition of their services in connexion with the accident met with by His Royal Highness the PRINCE of WALES. Staff-Surgeon JAMES LAWRENCE SMITH who attended the late Prince HENRY of BATTENBERG on the *Blonde* was appointed a Member of the Fourth Class of the same order.

Captain CHARLES CHRISTIE FLEMING, R.A.M.C., employed with the Egyptian Army, was made a Companion of the Distinguished Service Order in recognition of his services during the recent operations in the Soudan.

Among the foreign Orders which have been bestowed upon members of the profession during the year the first place must be given to that of the Cross of the Legion of Honour which was conferred upon Dr. BARTEL, a young naval surgeon employed on active service in Upper Dahomey. During the affairs of Nov. 4th and 8th, 1897, while serving with the Borgou column, this officer carried out his difficult duties to the wounded under a perfect rain of arrows. Dr. KESER, Physician to the French Hospital and Dispensary, was made a Knight of the Legion of Honour. Sir WILLIAM H. FLOWER, K.C.B., F.R.C.S. Eng., F.R.S., Director of the Natural History Department of the British Museum, and President of the Zoological Society of London, was the recipient from the German Emperor of the Royal Prussian Order *Pour le Mérite* for Science and Art; and the QUEEN REGENT of SPAIN created Mr. CHARLES LANE SANSOM, F.R.C.S. Edin., a Knight of the Order of Isabella.

Our list is fittingly concluded by the record of the latest addition to the names of medical heroes who have gained the Victoria Cross—i.e., that of Surgeon WILLIAM JOB MAILLARD, M.D. Lond., of the Royal Navy. The decoration was conferred for conspicuous bravery during the outbreak at Candia. On Sept. 6th, 1898, during the landing of seamen from Her Majesty's ship *Hazard* Surgeon MAILLARD, who had disembarked and reached a place of safety, returned through a perfect deluge of bullets to the boat and endeavoured to

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bring into safety ARTHUR STROUD, ordinary seaman, who had fallen back wounded into the boat as the other men jumped ashore. Surgeon MAILLARD failed to bring STROUD in only through the boat being adrift and it being beyond his strength to lift the man (who was almost dead) from so unstable a platform. Surgeon MAILLARD returned to his post with his clothes riddled with bullets though he himself was happily unhurt. It is worthy of record that this officer is the only medical man in the Royal Navy holding this much coveted decoration.

Obituary.

In glancing over our Obituary columns for the year we find ample illustration of the many-sidedness of our profession and many proofs of the fact that some even of our busiest practitioners find time to do much public work. There are numerous examples of longevity, though there are too many cases in which the strain and pressure of life brought it prematurely and abruptly to a close. Mr. HENRY HAYMAN, F.R.C.S. Eng., of Stokenchurch, Oxfordshire, a man of high culture, attained the age of eighty-six years but not without a breakdown in his health in mid-age fifty years ago; after a rest he recovered and achieved the age mentioned. Mr. JOHN BARRITT MELSON, M.D. Cantab., a good classical scholar, a preacher among the Wesleyans, a friend of FARADAY, who, as Professor of Natural and Experimental Philosophy in Queen's College, Birmingham, had for pupils the late Archbishop BENSON and the present Bishop of DURHAM, died at the age of eighty-seven years. Mr. JOSEPH JOHN FOX, M.R.C.S. Eng., L.S.A., of Stoke Newington, who found his recreation from the fatigues of practice in the study of the calculus of variations and the dynamics of a particle and who sent five of his six sons into the medical profession, died at seventy-nine years of age. Mr. KESTER EDWARD KNIGHT, M.R.C.S. Eng., L.S.A., died at Southsea at the age of eighty-four years, having been 60 years in practice. Mr. JOHN STEWART, R.N., M.D. St. And., of Perth, a staunch advocate of total abstinence, died at eighty-nine years of age. He had served in the *Bellerophon*, was at the siege of Sebastopol, and had seen much service. Mr. THOMAS GIORDANI WRIGHT, M.D. Leyden, was born in Wakefield and practised there for sixty-six years, reaching the age of ninety years. Mr. ROBERT WALLIS, M.R.C.S. Eng., L.S.A., of Old Ridley, Northumberland, a pupil of LISTER, was an instance of a successful practitioner retiring and successfully assuming all sorts of public functions as Justice of the Peace and District Councillor and remaining active up to the age of eighty-eight years. So was Mr. MAURICE DAVIS, M.D. St. And., who on the loss of his wife retired from a most successful practice and found his solace in the active discharge of magisterial and other duties. Mr. HENRY ALFORD, F.R.C.S. Eng., qualified in 1828 and retained good health up to within a fortnight of his death at ninety-two years of age. Mr. AUGUSTIN PRICHARD, M.D. Berlin, F.R.C.S. Eng., of Bristol, son of the famous ethnologist and an ophthalmic surgeon, died at eighty years of age. Mr. JOHN STEELE PERKINS, F.R.C.S. Eng., of Exeter, died at ninety-one years of age. Mr. GEORGE ROPER, M.D. Aberd., died at seventy-five years after every variety of practice and experience and much travel, through all of which he bore himself well and in a way that called forth a very graphic tribute in our columns from the President of the Royal College of Physicians of London, Sir SAMUEL WILKS. Mr. WILLIAM FREDERICK CLEVELAND, M.D. St. And., of Maida Vale, was at the time of his death President of the St. Andrews Medical Graduates' Association. He was a very much respected practitioner and had filled many offices of honour in the profession. Unfortunately we have had to record many deaths all too premature. Mr. HUGH CALDERWOOD, B.Sc., M.B., C.M. Glasg., of most brilliant promise; DUNCAN JAMES CADDY, M.D. Durh., of Her Majesty's Colonial Service; and Mr. WILLIAM FRANCIS ADAMS, L.R.C.P. Lond., M.R.C.S. Eng., senior assistant medical officer of the Cornwall County Asylum, all died young—the last, only twenty-six years of age, dying in his bed in syncope from fatty degeneration of the heart. Mr. THOMAS W. MUIR LONGMORE, M.R.C.S. Eng., L.R.C.P. Lond., son of the late Sir THOMAS LONGMORE, died at Luxor at the age of thirty-four years. One of the saddest deaths in the year was that of Mr. JOHN ANDREW MALCOLMSON, M.D. R.U.I., the gifted medical officer of health of Middlesbrough, who at the age of forty-six years died at his post, so to speak—that is to say, from pressure of work in the great outbreak of small-pox, bravely fighting the epidemic. Mr. LEONARD REMFRY, M.D. Cantab., died at the age of thirty-eight years. The death of Mr. HENRY CASE, M.R.C.S. Eng., L.S.A., at the early age of forty-five years, whose work in the Leavesden Asylum and elsewhere had been so good, was a misfortune for the insane. So was the death of Mr. HACON, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., of Christchurch, New Zealand, who was medical officer of an asylum but who found time to distribute through the colony a large quantity of lymph obtained from calves inoculated by himself.

Some very distinguished members of the profession have passed away in the course of the year. In an early number of THE LANCET we had to record the death of Dr. GREGORY ANTONOVITCH ZAKHARIN of Moscow who enjoyed the favour and confidence of the late Tsar and who had the largest and most lucrative practice in Russia. Though Dr. ZAKHARIN did not escape the fierce criticism which is apt to gather round the work of Court physicians when it fails to achieve impossibilities, he will be long remembered for his rare powers of diagnosis and his valuable clinical lectures. M. JULES PÉAN died from influenza at the age of sixty-seven years. He was a very remarkable man. The son of a miller and often supporting himself as a student by coaching his fellow students, he attained the very highest eminence as a surgeon, especially in abdominal surgery. He laughed at criticism. He is said, probably with exaggeration, to have made £40,000 a year. Dr. JAMES MURPHY'S graphic notice of him in our obituary columns is worthy of being re-read. In August we had to record the death of Professor WILLIAM PEPPER, M.D., Provost of the University of Pennsylvania, Professor of the Theory and Practice of Medicine, and editor of a System of Practice of Medicine by American Authors. The cause of Higher Medical Education in the States and all good causes have lost by his death a valued friend. About the same time we had to report the death of an equal friend of medical education and reform in

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India, KAIKHOSRO NASARVANJI BAHADHURJI, M.D. Lond. The event evoked a great expression of respect from the native members of the profession. The medical world of London has lost in the course of the year some of its most active and conspicuous members—amongst others Sir RICHARD QUAIN, Bart., M.D., F.R.C.P. Lond., F.R.S., &c., President of the General Medical Council, and Mr. ERNEST HART, M.R.C.S. Eng., D.C.L. Durh. (*hon. causâ*). Sir RICHARD QUAIN'S age at death was eighty-two years. His long and intimate connexion with the Royal College of Physicians of London, the London University, and the General Medical Council, his valuable services to these bodies, and his position in society and in the profession are matters of history. His pathological work and his great "Dictionary of Medicine" together with the force of his personal qualities will secure his not being forgotten for many years. Mr. ERNEST HART was not known much in connexion with practice but as the editor of the *British Medical Journal* and one who in many ways brought the influence of the profession to bear on public questions he will be remembered. In our first number of the year we recorded the death, at the age of seventy-five years, of WILLIAM WADHAM, M.D. St. And., F.R.C.P. Lond., &c., who will be long and well remembered as Dean of St. George's Hospital Medical School and a good type of the physician and teacher of his day. Mr. CHARLES WEST, M.D. Berlin, F.R.C.P. Lond., so well known for his works on Diseases of Women and Children and as a chief promoter of the Great Ormond-street Hospital for Children, died at the age of eighty-two years. We have lately had to record the death of a very distinguished member of HER MAJESTY'S service and of the medical profession—that of WILLIAM CAMPBELL MCLEAN, C.B., LL.D., M.D. Edin., Surgeon-General, Indian Medical Service, Honorary Surgeon to the Queen. He was of Highland descent and was born in 1811. He went first to India in 1833. He served in China in 1840 but in 1843 he returned to India. When he came back to England in 1855 he had been absent on continuous service for seventeen years. He was appointed the first superintendent of the first Vernacular School in India, the students being all Mahomedans. On the foundation of the Army Medical School at Netley he was appointed to teach tropical diseases and it is estimated that 1476 medical officers received instruction from him. The mere enumeration of such services is an education to those who stay at home at ease. Of the same kind and significance was the life of Surgeon-General ALEXANDER SMITH, C.B., M.D., L.R.C.S. Edin., who died at the age of seventy-four years, suddenly, after long and distinguished service in the Crimea, at Sebastopol and at the Redan, and against the Afridis and other tribes in the Afghan war of 1878. Fleet-Surgeon CHARLES ALBERT MACAULAY, M.D. R.U.I., died at Wei-hai-wei. He was a man of distinguished merit and had been present at the bombardment of Alexandria and at Tel-el-Kebir. Amongst home practitioners whose deaths have been much regretted we must not forget that of Mr. EDMUND LUND, F.R.C.S. Eng., of Manchester at the age of seventy-five years, or that of Mr. JOHN HODGSON WRIGHT, M.R.C.S. Eng., of Halifax, from neurotic angina following influenza. Mr. WRIGHT was a very charitable man, his favourite charity being that of providing nurses for the poor and a home for twelve incurable patients.

In the closing weeks of the year we have had to record the life and death of two members of the profession of the very highest merit—of Sir WILLIAM JENNER, Bart., M.D., F.R.C.P. Lond., F.R.S., and ALFREDO ANTUNES KANTHACK, M.D., F.R.C.P. Lond., F.R.C.S. Eng., Professor of Pathology in the University of Cambridge. The death of CHARLES JOHN HARE, M.D. Cantab., F.R.C.P. Lond., and that of WILLIAM MUNK, M.D., F.R.C.P. Lond., Harveian Librarian of the Royal College of Physicians of London, occurred at ripe ages, but leave a great blank in the College of Physicians and in the profession.

There are many other names in our own Obituary columns which deserve to be recalled here; but we must forbear. We shall make one exception in favour of a lady practitioner, MABEL ELIZABETH WEBB, M.B. Lond., who won golden opinions from all who knew her and worked with her as the curator of the museum at the Royal Free Hospital. For fourteen years she had laboured under symptoms of gastric ulcer, temporarily cured, it seemed, by a holiday in Egypt, only to return under the hospital conditions of her life at home.

Such are specimens of the men and women moulded in the profession of medicine. Many of them, it seems to us more than the average, were called to their account suddenly. But to true servants working "ever as in the Great Taskmaster's eye" that does not matter. By a plentiful use of their talents in all the great spheres of life—in the army, in the fleet, in private practice—they have sustained the honours of the profession and earned the "well done" of the Master whom most of them served in true piety and humility.

Annotations.

"Ne quid nimis."

A GIFT TO SCIENCE AND HUMANITY.

THE announcement which appeared in the morning journals of Dec. 23rd that Lord Iveagh had offered half a million to be devoted to two great objects of public importance may be said to have excited a thrill of admiration throughout the country. It was not the magnitude of the gift alone that evoked this feeling, although in point of munificence it has been seldom excelled. It was rather the spirit which animated the donor and the objects which he had selected as most worthy to be furthered by his wealth which fastened on the imagination and the sympathy of the people. Take first his benefaction of £250,000 to his own city. For long has Dublin striven to improve the sordid conditions under which so large a proportion of her inhabitants dwell and much credit is due to the municipal and sanitary authorities for what has already been effected towards the improvement of those conditions with the gratifying result of a diminishing sickness and death-rate. But very much remains to be done; many slums and rookeries need to be swept away and more healthful dwellings to be erected before the metropolis of Ireland can boast of her beauty or her health. Now comes this munificent offer of Lord Iveagh, a representative of a family to whom already Dublin owes much in the matter of public

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improvements, and with the aid of this gift a whole insanitary area will be replaced by dwellings fit for the habitation and the health of the artisan class. There is a poetic justice as well as a spirit of generosity in this rendering of their wealth by Lord Ardilaun and Lord Iveagh to the city with which their interests are bound up and their fortunes knit. Dublin may well be proud of having such worthy sons who thus prove to the world that they are not unmindful of the claims of citizenship. Had Lord Iveagh limited his bounty to this great local scheme his name would have still been highly honoured, but how much greater is the recognition of his generous deed when simultaneously it is announced that he has also devoted a like sum to another and wider purpose. With one hand he assists the practical operations of the sanitary reformer just where this aid is most needed; with the other he endows science with the means for prosecuting researches upon diseases that flourish under the conditions against which the sanitarian strives. Surely this is the true spirit of philanthropy combined with practical wisdom and foresight which makes it all the more worthy of public approbation. The Jenner (formerly known as the "British") Institute of Preventive Medicine, founded by Lord Lister and other distinguished men, has, like all scientific undertakings in this country, had to exist upon private contributions. Crippled by lack of material resources it has only quite lately entered into possession of appropriate buildings and its association with the name of Jenner would, it was hoped, lead to a more widespread recognition of its objects besides claiming support from those who regard the work of the founder of vaccination as beneficent in itself and as the precursor to the scientific researches upon the origin, nature, and prophylaxis of infective disease which originated with Pasteur and which now embrace so wide a field. By Lord Iveagh's generosity the Council of the Institute—or rather the trustees who will be appointed by that Council, the donor, and the Royal Society—will have at their command resources ample enough to establish the Institute on a permanent basis and to expand its useful work. The Institute will emerge from its comparative obscurity and will become a centre of scientific activity equal to any of the State-established laboratories of foreign countries, but founded and maintained by private enterprise. The letter addressed to the press by Lord Lister, the chairman of the Council, and Professor Roscoe, the treasurer, in which the munificent gift was announced stated in general terms the conditions under which it was offered and accepted. Here, too, as with regard to his Dublin benefaction, Lord Iveagh has marked his liberality in giving by an equal liberality in acting. There is no narrow restriction imposed on the trustees as to the manner in which they are to dispose of this rich endowment. The extension of buildings, the adequate remuneration of the staff, the prosecution of scientific inquiries into disease at home and abroad, the foundation of fellowships and scholarships to encourage the prosecution of these studies, and the provision for the maintenance of the establishment—these are conditions which can be interpreted in the freest spirit and which we may be sure will be faithfully carried out. In recognising the great value to medical science of this memorable gift we cannot do better than quote from the letter referred to, the expressions in which will be endorsed by all who value the labours of science. Lord Lister and Professor Roscoe say: "Lord Iveagh, in our opinion, deserves the gratitude of the nation for thus munificently providing for the cultivation in the British dominions of biology and the allied sciences for the good of mankind in an institution which thenceforth will compare favourably with any similar establishment in other parts of the world." We may rejoice, too, at the evidence which this noble gift shows of the estimation in which the life-saving labours of those who pursue science in the spirit of Jenner or of Pasteur or of Lister are coming to be regarded by the world at large. When we consider how much has been done by men of science to enlarge our knowledge of diseases, how often that work has entailed sacrifice of self, and how poorly requited it often has been we may well take heart at the awakening of public sympathy in those labours. Professor Virchow on his return from his visit to England last October has reprinted the address which he delivered in London at the International Medical Congress in 1881 and has appended some remarks which show that he has been struck by the signs of this appreciation here. He especially dwells upon the admirable laboratories at Liverpool at the opening of which he assisted and expresses his gratification at the fact that they were established by the munificence of a private individual—the Rev. S. A. Thompson-Yates, whilst the occasion of their inauguration was celebrated by the leading citizens. May we not regard, then, with some justifiable pride this fact of the practical encouragement of scientific research by our wealthy compatriots and trust that the benefactions of Lord Iveagh and Mr. Thompson-Yates will be followed by others devoted to the like objects of the common weal?

SIX DAYS' BICYCLE RACE IN NEW YORK CITY.

ANOTHER exhibition of human beings bringing themselves to the level of animals for the sake of incommensurate gain and of unenviable fame has just taken place in New York City. We say incommensurate gain because no sane person would contend that even the sum of money received by the leaders can compensate them for the harm which such extraordinary exertion, coupled with the fearful strain put upon the nervous system by the want of sleep, must do them both in body and mind. The fame, too, resulting to the participants in a contest of this description is unenviable, because every sensible person has the feeling that it is pitiable rather than praiseworthy for a man thus to prostitute his physical powers. If any good end were reached the case would be different, but we are already well aware that man can easily outvie in staying endurance any other animal. One race of this kind is quite enough. Emulation is all very well, but when it is carried to the lengths recently witnessed in New York it is neither more nor less than inhuman. The reports given in the "yellow journals" of the latter stages of the six days' contest were simply revolting and enough to occasion doubt as to whether instead of living at the end of the nineteenth century we had not slipped back to 200 B.C. But when all is said and done the blame of such exhibitions being possible rests on the heads of those who are willing to pay to witness men in all cases injuring themselves and in some instances probably shortening their lives by many years. The *New York Herald* in a leading article in its issue of Saturday, Dec. 10th, expresses the sentiments of the majority of the rational members of the community in the following words: "The bicycle race which is being so hotly contested by the leading competitors will soon be ended and the foolishly coveted prize of championship will be awarded accordingly. The lesser lights will take their respective places in the line of relative merit and the question of brute force and misapplied pluck as against reason and moderation will be answered for a time at least. To such as have read from day to day of the sufferings of the riders and the overstrain of their physical energies it must be plain enough that the victory, great as it may appear to the parties most directly interested, will be dearly bought. ..... Stimulated by music, goaded by cheers, and sickened by the foul emanations of an ever-present crowd, the pitiable victims of the showman, gatekeeper, and trainer receive no more consideration than the racehorse with spur in side or whip to neck or the gladiators of old who trusted to the

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mercy of the down-turned thumb when nothing more was left. Can we wonder that the riders fall from their wheels from sheer weakness, gulp their food as they go, wobble along in dazed unconsciousness, and cry for the sleep they dare not take. While the race shows in a great degree what persistent training can accomplish in keeping the men on the track until the finish in spite of crippled limbs, stiffened muscles, aching stomachs, and inflamed eyes, the ultimate damage to the health of all the participants must sooner or later be manifest either in premature stalling of energy or the insidious collapse of progressive invalidism. At the best what will the results of the race demonstrate? Nothing more than the fact that man, the noblest work of God, with a physical organism unequalled in its adaptability to everything high and glorious, is willing to pedal round a boarded ring for days and nights merely to prove that he can outog a dog on the treadmill or tire a horse on his own track. The absurd interest manifested in the outcome of the struggle proves the necessity of educating the public to a higher appreciation of what is real sport and healthy athletics. It is against the gross abuse of the thing as done at the Garden that every sensible person has a just right to complain. ..... After the last bicycle tournament many of the participants were compelled to keep their beds for weeks in order to recover even partially from the effects of the wilful and persistent overstrain of their strength. It is by no means unlikely that a similar experience awaits some of those who are now being praised for their staying powers, long stretches, and desperate spurts." As will be observed the foregoing remarks were made before the conclusion of the race. It may be mentioned that the winner succeeded in breaking the record, that he covered more than 2000 miles in the six days, that several of the other competitors had to be taken off the course in an exhausted and broken-down condition, and that the organisers of the contest are stated to have netted more than £6000 clear profit.

THE VACCINATION RETURNS OF THE LOCAL GOVERNMENT BOARD.

THE vaccination returns published in the supplement to the annual report of the Local Government Board refer to the year 1895. There is no doubt that this unavoidable delay robs them in some measure of their interest, especially under present circumstances. Yet they contain much useful and suggestive information. The proportion of births "not finally accounted for" and conveniently looked on as representing default, amounted to 20·5 per cent. of the whole. In the metropolis the figure was 24·9 per cent. and in the provinces 19·8 per cent. The way in which default has varied since the Act of 1871 came into operation is shown in the following table of percentages:—

—	Metropolis.	Rest of England.	—	Metropolis.	Rest of England.
1872	8·8	4·5	1884	6·8	5·3
1873	8·7	4·2	1885	7·0	5·5
1874	8·8	4·1	1886	7·8	6·1
1875	9·3	3·8	1887	9·0	6·7
1876	6·5	4·0	1888	10·3	8·2
1877	7·1	4·1	1889	11·6	9·6
1878	7·1	4·3	1890	12·0	10·9
1879	7·8	4·5	1891	16·4	12·9
1880	7·0	4·5	1892	18·4	14·3
1881	5·7	4·3	1893	18·2	15·7
1882	6·6	4·5	1894	20·6	19·0
1883	6·5	4·9	1895	24·9	19·8

Unsatisfactory as these figures are it is certain that if they could be brought up to date they would be much more so, something like 30 per cent. being now the estimated amount of default. The default is, of course, most unequally distributed. Taking the counties, the Leicestershire deficiency is no less than 76·5 per cent., and Bedfordshire with 75·4 per cent. comes very close at its heels. Northampton takes third place with 63 per cent., and then there is a big drop to 40 per cent. in the small county of Radnor (the only Welsh county which shows very badly), and 35 per cent. in Derbyshire. The best figures are found in Anglesey (3·0 per cent.) and Westmoreland (3·4 per cent.), and these were in 1895 the only two counties which had a percentage lower than that of the provinces as a whole in the best year, 1875, when the default was only 3·8 per cent. In the metropolis the years of low-water mark were 1881 with 5·7 per cent. and 1876 and 1883 with 6·5 per cent. The educative influence of a small-pox epidemic has no doubt much to do with the figures for 1881 in London. In 1895 the worst unions in London were Bethnal-green, 73·0 per cent.; Hackney, 63·4; Mile End Old Town, 63·1; and Shoreditch, 47·5. The best were Woolwich, 4·7; Whitechapel (which has now, alas, gone far astray), 5·3; and George-street Hanover-square, 5·8. In the provinces Barrow-on-Soar in Leicestershire (87·3 per cent.) and Leighton Buzzard in Bedfordshire (86·3 per cent.) share a bad pre-eminence. No less than fourteen unions show a default of over 80 per cent., 18 of between 70 and 80 per cent., 13 of between 60 and 70 per cent., and 14 of between 50 and 60 per cent. In only 69 unions is the default less than 5 per cent., and in 174 it is between 5 and 10 per cent. It is for the public welfare that the facts with regard to popular watering-places and health resorts should be known and it is a great pity that vaccination is being so sadly neglected in certain of these. Eastbourne shows a default of 70 per cent., Scarborough of 59·9 per cent., and Cheltenham of 38 per cent. Health-seekers who do not choose to take advantage for themselves and their families of the great protective power of revaccination cannot safely afford to neglect such figures as these, nor can they be neglected by medical men when consulted by patients as to the choice of a permanent or temporary place of residence. But the fact is that independently of health resorts, vaccinated or unvaccinated, the opportunities for attack by small-pox are likely now to increase so much throughout the country that it is the duty of every parent who cares for the welfare of those who are dependent upon him to see that he obtains for every one of them that protection which efficiently carried out vaccination and, where age renders it necessary, revaccination are so well calculated to afford.

NETLEY AS A SCHOOL FOR TROPICAL MEDICINE.

OUR readers have no doubt noticed in the controversial correspondence which has been going on regarding the proposed establishment of a school and hospital for the study of tropical disease in connexion with the Branch Seamen's Hospital that attention has been called to the advantages which the Netley Hospital and School afford in this respect. Although it seems to be assumed that the sanction of the War Office could not be obtained for the purpose no one, as a matter of fact, seems to have taken any steps to apply for it. Moreover, it is alleged that the Netley institution is unsuitable for the purpose; that it is too far from London; that the course of instruction followed there, however well adapted it may be to officers of the British and Indian Medical Services, is unnecessary and unsuitable for candidates for the Colonial Medical Service; and that in point of variety of cases illustrative of tropical disease it would not fulfil the necessary requirements. It seems to us that the last-named in the foregoing objections is the only one of any force. Let us, however, examine them a little more closely. The Royal Victoria

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Hospital is a large military hospital to which sick and wounded soldiers are relegated from all parts of the world wherever soldiers are stationed and numerous cases of malarial disease in all its forms and dysentery are nearly always forthcoming, together with diseases of the liver including abscess of that organ. An excellent bacteriological laboratory, microscopes, and all appliances for the scientific investigation of disease are available, together with a pathological museum. Practical instruction is systematically given in the microscopical examination of the various fluids and tissues of the body, including of course the examination of the blood for the detection of the plasmodium malariæ. The instruction is afforded by men practically acquainted with tropical disease and there are always present and doing duty in the hospital wards medical officers who have had foreign service and experience in various parts of the world. Of course the distance of Netley from London would be prohibitory to its being used by residents in London, but why should not candidates for the Colonial Medical Service be required to go through a course of instruction in tropical medicine and remain at Netley whilst doing so? There is no reason, moreover, why such candidates should not confine themselves to this work without entering upon that connected with the more purely military course, unless they desired to do so in the direction of practical hygiene which would be very much to their advantage. If Netley Hospital does not offer all the varieties of tropical disease that could be desired it nevertheless affords a larger amount of tropical disease and more facilities for studying that subject than could probably be obtained elsewhere. For all those who were not seeking to enter the Colonial Medical Service but were desirous of practising in the colonies there would still remain open to them for clinical study the Seamen's Hospital at Greenwich and its Branch, as well as the metropolitan hospitals and such bacteriological laboratories as that at King's College. It is, we think, to be regretted that, instead of having years ago selected Netley as the site for our largest military hospital with its Army Medical School, London was not chosen for the purpose. The school might then have formed a teaching institution for a united medical service and for all medical officers in the employment of the State. The hospital and its attached school would then have been more largely available for all concerned and the hospital might have been fully utilised as such all the year round which is not, we believe, the case with the Royal Victoria Hospital at Netley. It is obviously too late, however, to think of this now; but that is no reason why its sphere of usefulness should not be enlarged and developed in the public interest and in that of the Government.

THE PLAGUE COMMISSION IN INDIA.

THE pressure on our space entailed by the "Annus Medicus" compels us to hold over the weekly letter from our Special Correspondent in India. But one piece of news in his communication is so interesting that we do not delay its publication. He writes under date Dec. 10th:—"The Commissioners sitting at Bombay on Dec. 5th examined Mr. R. H. Vincent, C.I.E., the Commissioner of Police. He stated that in the months of May, June, and July of 1896 a large number of Sadhus (ascetics) came to Bombay from Kumaon in the Himalayas and that they lived in Mandvie. They were subsequently sent by some rich Banias to Nassik, a holy place of pilgrimage for the Hindus. He stated that the mortality during their stay was very high and he was of opinion that the plague broke out in Bombay in July and not in September. This evidence is so extraordinary and has been so unexpectedly given that it has excited considerable comment. The facts have not been published before. That this information should have been kept dark for over two years and then made known by the head of the police in Bombay is passing strange, more especially as Dr. Weir's two annual health reports, Mr. Nathan's four-volume official report, and numberless minor contributions have all appeared without allusion to any particulars of such importance."

THE NATIONAL HEALTH SOCIETY AND PREVENTABLE DISEASE.

WE have received two little pamphlets written by Dr. Christopher Childs for the National Health Society. The one deals with typhoid fever and the other with tuberculosis. They set out in clear and simple language the precautions to be taken by those who have charge of persons suffering from any manifestation of the above diseases and in the case of tuberculosis reference is made to the necessity of keeping a strict watch over milk- and meat-supplies. If the average citizen can only be brought not only to read these instructions but also to act up to them the National Health Society may pride itself upon an eminently useful piece of work.

NORWICH MEDICO-CHIRURGICAL SOCIETY.

THE Medico-Chirurgical Society of Norwich has now been in existence for fifty years. It was originated in 1848 under the first presidency of Mr. John Greene Crosse with the name of the Norwich Pathological Society. After some years this was amalgamated with the Norwich Medical Book Society with the new name of the Norwich Medico-Chirurgical Society, under which title it now exists. The result of this amalgamation was that the members of the medical society became possessed of a large and very valuable library. This being the jubilee year of the society the president (Mr. W. E. Wyllys of Yarmouth) most hospitably invited its members to a banquet at the Royal Hotel, Norwich, on Dec. 8th to celebrate the occasion—an invitation which was accepted by seventy-eight gentlemen, including three of its honorary members—i.e., Dr. Robert Barnes, Mr. Richard Barwell, and Mr. A. Pearce Gould of London and two of the earliest members, Sir Peter Eade and Mr. W. Hankes Day. It may be mentioned that the Norwich Medico-Chirurgical Society has 136 members and it now includes almost the entire profession of Norfolk as well as many residents in Suffolk and adjacent districts.

THE PLAGUE ON THE "GOLCONDA."

A MILD case of plague is stated to have been discovered on the steamship *Golconda* at Plymouth on Saturday last. The *Golconda* is a British India Company's ship sailing from Calcutta and the case did not manifest itself until Marseilles was reached, a fact which is at variance with our usual theories concerning the incubation period of plague. Due precautions having been taken by the authorities the *Golconda* was allowed to proceed to London, where she underwent the usual processes of disinfection in such cases. The patient was left at Plymouth, the report current about his arrival in London as well as the statement that a second case was discovered on board being unfounded.

WE have received the Medical Directory for 1899. In a future issue we shall give a more detailed notice of this most useful work. We may, however, mention that the Directory for 1898 comprised 1936 pages, while that for 1899 comprises 1960 pages

THE annual banquet of the Worshipful Company of Plumbers, to meet the Lord Mayor and Sheriffs of the City of London, which was postponed on account of the death of

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Sir Stuart Knill, has now been fixed for Wednesday, Jan. 18th. The guests will include the representatives of various sanitary and educational bodies and others who are in sympathy with the Company's efforts to promote the higher and more systematic technical instruction of plumbers.

QUACKS AND ABORTION:
A CRITICAL AND ANALYTICAL INQUIRY.

IV.[1]

AT the conclusion of the recent trial of blackmailers at the Old Bailey Mr. Justice Hawkins sentenced two of the infamous Chrimes brothers to twelve years' penal servitude and the youngest of them, who had possibly been led away by the elder ones, to seven years' penal servitude. Their case, as we have already pointed out, exemplifies in a strikingly complete manner the evils which may result from the advertisements that drew our attention to the trade in "female remedies" and caused us to commence our inquiry into its methods.

More particularly the case proved beyond all doubt, firstly, that very nearly all the persons who buy medicines advertised for "irregularities" buy them in the hopes that by their aid they will be enabled to procure abortion. This is clearly shown by the vast number of women who allowed themselves to be blackmailed without any attempt at resistance. Certainly in cases of blackmail innocent, or comparatively innocent, people who have placed themselves in compromising circumstances pay to avoid publicity or some charge not obviously easy to refute; but no one can believe that the most ignorant woman suffering from amenorrhœa, neither pregnant nor having incurred the risk of pregnancy, would submit to extortion because she had taken an emmenagogue mixture or would believe that to take such a mixture was a criminal act. The mass of women having guilty consciences who sent money to "Charles J. Mitchell, Public Official," bears out our observations as to the small number of women who could possibly desire to bring on menstruation if those pregnant were eliminated. Secondly, we have repeatedly referred in these articles to the fact that it was the ignorant whom the trade in abortifacients, or pretended abortifacients, was likely to tempt into crime. Ingeniously worded as the letter of the Chrimes brothers undoubtedly was, few but the ignorant, guilty or not, would have imagined that "Charles J. Mitchell, Public Official," was an officer of the law trying to extort money by virtue of his official power. Thirdly, we have spoken of the enormous trade done in these concoctions. In the course of the trial of the Chrimes brothers it was elicited that thousands of pounds had been spent on advertisements. Sir Henry Hawkins drew attention to the fact that £800 had been received in three or four days (including presumably blackmail and purchase money), while a letter-box put up expressly by the prisoners at one of their offices was produced in court which must have contained at least 6 or 7 cubic feet of space to accommodate their correspondence. Fourthly and most obviously, the case illustrates the dangers of blackmail connected with this trade which we have already stated must exist. It is difficult to prove the prevalence of blackmail for obvious reasons, but it is known to be a means of livelihood for many persons in London and elsewhere who are never convicted, and we believe it to be an important source of income to most of those persons who carry on businesses connected with sexual vice, such as, for example and not to exhaust the list, indecent exhibitions, the sale of alleged cures for defective virility, and so-called massage establishments.

The more prudent offenders escape—for a time at any rate. It was not their attempts at blackmail that brought the Chrimes brothers to trial but their wholesale and reckless adoption of it. Threatening, as they apparently did, all the hundreds of women who had purchased goods from them, they naturally lighted on some innocent of any wrong design in purchasing the medicine and of sufficient education and courage to see that their only safe and prudent course was to inform the police. We conclude our comment on this case by printing one of the advertisements which was before us when we began our inquiry through which we should in due course have opened up a correspondence with the Chrimes brothers had not their arrest rendered this unnecessary:—

Acknowledged by Ladies throughout the World to be worth a Guinea per Tabule.

LADIES ONLY.

THE "LADY MONTROSE"

MIRACULOUS

FEMALE TABULES

Are positively unequalled for all FEMALE AILMENTS. The most OBSTINATE Obstructions, Irregularities, etc., of the female system are removed in a few doses. Being SPECIALLY prepared, they are guaranteed STRONGER in action than the strongest (or "No. 2" and "3") LIQUID Female Mixture, Pill, or Fluid Medicine on earth. Failure is impossible. Post free, under cover, with full directions and advice 4s. 6d., with SWORN EVIDENCE as an absolute guarantee enclosed in every case. One case sufficient. A special and valuable OUTWARD Remedy sent free.

A FEW TESTIMONIALS FROM MANY THOUSANDS.

"Am overwhelmed with delight to say that your miraculous (for miraculous they are) Tabules painlessly restored regularity before taking one quarter of a box."—Mrs. N., Long-lane, Orford, Warrington.

"After taking the last dose late Saturday night I was quite well early Sunday morning."—Mrs. C., Mount Pleasant, East Hill, Dartford.

"I heard from my sister, Mrs. Weentell, to say they had proved successful. She is exceedingly grateful."—Mrs. H., Northern Hospital, London.

"The Tabules you sent were marvellous. I was advised by a friend who had been relieved herself after a few doses. Mine being a case of MONTHS, I tried a box, and after taking a few doses I was astounded to find myself relieved. I had spent a great deal in 'FAMOUS' FEMALE MIXTURE, etc., but only had pain and no relief. I enclose 4s. 6d. for another box for another lady friend."—Mrs. L., Merton-street, Huddersfield, Yorks.

THE ABOVE TESTIMONIALS (AND THOUSANDS OF OTHERS) ARE EACH SEEN AND SWORN TO, UNDER OATH, BEFORE ONE OF HER MAJESTY'S COMMISSIONERS FOR OATHS, TO BE TRUE AND GENUINE.

Don't delay. Send To-day for full particulars, and absolutely Conclusive Proofs. Be cured without trouble and expense with these startling Tabules. Address, H. A. N. MONTROSE, 64, Imperial Buildings, Ludgate Circus, London.

CAUTION.—Don't waste money on useless "Famous," "Important," etc., Fluid mixtures, Cones, "Without Medicine" Remedies, "Indispensable" Pills, etc. It is utterly impossible for these weak "Water and Medicine," etc., Remedies, to be as strong as my powerful, irresistible Compressed Tabules, and I have a Certificate GUARANTEEING these Tabules.

It will be seen that the above advertisement differs in no material respect from the examples that have afforded the materials for the rest of our inquiry. Like many of the other advertisements—as, for instance, that of Ottey—it says nothing of the more expensive medicines to be urged upon the victim when once communication is established. Like that of the vendor of Irristum it seeks to dupe the credulous with a statement that the testimonials are sworn on oath to be genuine. Its testimonials are of the same pattern as those concocted by other vendors. If the purchasers of H. A. N. Montrose's tabules fell easy victims to the blackmailer, those who buy from any other persons carrying on the same trade have been and will be always in danger of blackmail also. We remind our readers that in our first article we alluded to an advertisement received from a quack to whom we had not written and who alleged, no doubt truly, that he had bought our name and address (which was not the name of this journal or the address of this office) from one of the others to whom we had written. The bearing of this transaction on the danger of blackmail is so obvious that no further comment upon it is needed. We now conclude our analyses of the various pills and potions for which we applied.

H

The advertisement in this case was as follows:—

Dodd's Female Pills.—The Proprietor, who was for several years at THE HOSPITAL FOR WOMEN, SOHO, LONDON, has never known them to fail in removing the most obstinate cases of IRREGULARITIES in either MARRIED or SINGLE WOMEN. REMARKABLE TESTIMONY. 95,000 Boxes of these Wonderful Pills were sold last year through recommendations alone of NURSES and PATIENTS of THE HOSPITAL FOR WOMEN.

In Boxes 1s. 1½d., 2s. 9d., 4s. 6d., and 11s. each, of all Medicine Vendors. ASK for DODD'S. INSIST ON HAVING DODD'S. Or post free from JEFFERSON DODD, CHEMIST. CHIEF DEPOT: 70, Tottenham Court-road, London, W. Branch Depot: 123, Judd-street, W.C., near King's Cross.

Our letter represented the writer as desiring a box of pills for an "obstinate case," as being an unmarried woman, a

[1] Articles I., II., and III. were published in THE LANCET of Dec. 10th, 17th, and 24th, 1898, respectively.

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servant, while it further asked for the pills to be packed secure from observation. As a matter of fact they arrived in a General Post Office envelope, that in which they were originally despatched having burst in the post. The advertisement sheet accompanying them referred largely to Mr. Dodd having been connected with the Hospital for Women, Soho-square. It stated among other things that "Dodd's Female Remedies are recognised by the most eminent medical authorities in London on Diseases of Women as being the safest and most beneficial Medicines that science, skill, and long years of practice have been able to discover for the cure and relief of complaints peculiar to the Female Sex." We note that Mr. Dodd states that 95,000 boxes of his pills were sold last year through recommendations alone of nurses and patients of the Hospital for Women. We think the authorities of the hospital in question would be well advised to try conclusions with Mr. Dodd as to his right thus to use the name of their institution.

Analysis of DODD'S FEMALE PILLS.

Moisture, 6·3 per cent.
Organic substances, 38·8 per cent.
Mineral matter, 54·9 per cent.

As will be seen these pills contain more than half their weight of mineral matter which was found to consist chiefly of iron. On incinerating, however, the pills in a platinum basin a marked green flame occurred characteristic of boron compounds.

The alcoholic extract yielded several well-marked reactions characteristic of aloes.

On treatment with potash an odour like myrrh was noticed. There was no evidence of poisonous metallic salts.

The important constituents, then, of these pills are iron, aloes, and probably borax. With regard to the second it should be mentioned that already this year evidence has been given at an inquest to the effect that a woman had been poisoned by the enormous purgative doses of aloes that she had swallowed in taking so-called Female Pills. With regard to the indications of borax present we have only to quote Squire's Companion to the British Pharmacopœia where borax is classified as an ecbolic "which promotes the contraction of the uterus and facilitates the expulsion of the contents."

I

The following is the next advertisement which attracted our attention. We may find space to discuss hereafter the extent to which it is the duty of proprietors or editors to consider the nature of the advertisements appearing in their papers and the extent of their power to detect objectionable qualities in the trade advertised from the advertisements themselves without further inquiry or recourse to extraneous sources of knowledge. We submit, however, to the good sense of our readers that to call such notice as that we now print "suggestive" would be to employ an unnecessarily mild term to it.

AN HONEST MEDICINE.

Dr. Davis's Famous Female Pills. Pearl-coated and Tasteless. Most efficacious and reliable. No Irregularity or Obstruction can resist them. They possess a world-wide reputation as A BOON TO WOMANKIND.

In boxes 9½d., 1s. 1½d., 2s. 9d., and 4s. 6d. Prepared only by Dr. Davis, 309, Portobello-road, London, W., by whom they will be forwarded free from observation on receipt of Postal Order, or order of any Chemist.

SENT FREE.—Dr. DAVIS'S little Book for Married Women most invaluable, on receipt of a Stamped Addressed Envelope.

These pills were among the least expensive we have had experience of in our inquiry, for we selected those at 9½d. per box and ordered them in the usual terms, asking for secrecy, the purchaser being represented as a servant. We referred in our first article to a printed slip which accompanied these pills when we received them; from it we learn that "Dr. Davis" compounds them of varying strengths, some proclaimed to be of "Special Strength" being priced at £1 2s. He states that he gives advice free on certain evenings and says in a note that "these Pills must not be taken by those expecting to become mothers." He also says: "Dr. Davis's Famous Female Pills are the greatest preventive in the world; they should be taken four or five days before every month." He further marks as "very important" a warning that his pills "are not intended, and should not in any case purge," and he appends an advertisement of a book entitled "How to Limit your Family and Woman her Complaints." The analysis of what he sent us is as follows; we did not correspond with him further or test his pills of extra strength at £1 2s.

Analysis of "Dr." DAVIS'S PILLS.

Moisture, 9·75 per cent.
Organic substances, 56·25 per cent.
Mineral matter, 34·00 per cent.

As in most other cases, the mineral residue was practically all iron. On employing solvents with the pills residues were obtained which gave a good response to the reactions characteristic of rhubarb. The pills contained also an aromatic substance with a smell resembling oil of roses. Neither mercury nor arsenic was detected.

J

The next advertisement to which we replied ran as follows:—

DR. HESELDINE'S FEMALE PILLS

Never fail in removing the most obstinate cases of irregularity or obstruction, from whatever cause, as a rule in a few hours. Boxes 7½d., 1s. 1½d., and 2s. 9d. Extra strong 4s. 6d. Post free. Obtainable only from 118, FALCON ROAD, CLAPHAM JUNCTION, LONDON.

Our letter represented the sender as in domestic service and asked for a box of pills at 7½d. packed so as to be safe from observation. We give below the analysis of the contents of the pills which we received in reply. The box, it may be mentioned, bore the Revenue stamp, as did also the boxes of "Dr." Davis and Mr. Dodd. This stamp is believed by many ignorant purchasers to be a sort of Government certificate of favourable official recognition or guarantee of the medicine that it accompanies, while, needless to say, it in no way whatever guarantees or recognises anything. For instance, in the case of "Dr." Heseldine's pills the Inland Revenue officials, representing the Chancellor of the Exchequer, presumably do not claim to be aware that their stamp is affixed to pills which "never fail in removing obstruction from whatever cause" and are of such a nature that the vendor encloses the following caution with them:—"These medicines though quite harmless in their operation are most powerful in their effects and must not be resorted to for illegal purposes nor on any account be taken by ladies desirous of becoming mothers." The analysis below will enable our readers to judge whether this is a genuine caution or whether it merely exaggerates the qualities of the pills with a view to inducing pregnant women to purchase them. We note that the vendor says, "Prevention is better than cure; Dr. Heseldine's pills are the greatest preventive in the world," and that the rest of the literature accompanying the box sent to us dealt mainly with the merits of various mechanical means for preventing conception similar to those referred to in other cases.

The analysis of the pills is as follows:—

Analysis of "Dr." HESELDINE'S FEMALE PILLS.

Moisture, 7·71 per cent.
Organic substances, 75·99 per cent.
Mineral matter, 16·30 per cent.

The mineral matter contained both iron and an alkaline carbonate so that it is probable that these pills were made up partly on the basis of a Blaud's pill. The organic extract gave no evidence of any aperient substance being present other than aloes. Mercury and arsenic were carefully tested for but without the slightest positive indication.

The pills had a characteristic smell suggesting valerian.

K

The advertisement in this case was printed in our first article. It was as follows:—

Apiol and Steel Pills for Ladies.—A French Remedy for all Irregularities. Obtainable only from Martin, Chemist, Southampton. Price 4s. 6d., post free.

Our letter stated that the writer was a servant, enclosed 4s. 6d., and asked for the pills as advertised to be sent packed secure from observation. They duly arrived with printed advertisements of other goods sold by the same chemist, the pills themselves figuring on a piece of paper which also extolled "Dr. Fournier's Soluble Preventive Cones, Introduced and recommended by the late Dr. Fournier, a celebrated Parisian lady specialist." Beneath further details of this invention the medicine we have analysed is described as "Apiol and Steel Pills, the French

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Remedy for Irregularities." On a separate slip of paper is recommended "For Obstinate Cases of Female Irregularity" a "Hygienique Mixture, Dr. Fournier's Formula at 11*s*." From these announcements must be inferred the purpose for which these pills were advertised; the extent to which they are calculated to fulfil the promises of their vendor will be appreciated by those who study their analysis below.

Analysis of MARTIN'S APIOL AND STEEL PILLS.

Moisture, 5·00 per cent.
Mineral matter, 34·21 per cent.
Organic substances, 60·79 per cent.

These pills are described as steel and apiol pills. They are pink in colour which is due to the use of a fluorescent aniline dye.

The mineral matter consisted almost exclusively of iron. There was no satisfactory evidence of the presence of, at any rate, any important quantity of apiol. On distillation a trifling quantity of oil was obtained possessing a smell suggestive of apiol. Ether also extracted a small quantity of oil which had a parsley-like odour. Very satisfactory evidence was obtained in favour of the view that these pills contain more aloes than anything else.

The case of the Chrimes brothers has demonstrated the possibility that blackmail may be associated with traffic in these abortifacients and so-called "preventive" remedies. The crime, however, is so serious and entails with universal applause such severe penalties upon the criminal that it possibly has not been common. But another contingency presents itself forcibly for consideration and that is that the advertisements can be made the medium for simple robbery. The circumstances attending our communications with Madame Frain suggest to us that this may have occurred frequently. Madame Frain is an individual who advertises largely, or was wont to do so when these articles were commenced. Here is the specimen of her advertisement which attracted our attention:—

Ladies. — Absolutely Indispensable to LADIES! Particularly those who desire a quick, safe and reliable and non-injurious remedy for all obstructions and irregularities, a medicine which cures (usually in a few hours) cases which have baffled the skill of the best medical men. No lady need despair, as the most obstinate and helpless cases have been immediately relieved by this remedy. Mrs. Wilson, of Honor Oak Park, Forest Hill, says: "Your invaluable remedy took immediate effect; in less than 12 hours I was all right, after 18 weeks of misery and hopelessness." A properly certified guarantee is enclosed with testimonials and medicine. One package at 4/6 is usually sufficient for any case. Ladies send at once fully directed envelope for particulars and proofs. I will forfeit £2,000 if the testimonials are not genuine. Thousands of unsolicited testimonials have been received. Do not be misled by showy advertisements and other so-called remedies which are utterly worthless and *fraudulent* imitations.

NOTICE.—This wonderful remedy guaranteed to have the largest sale in the entire world, being the oldest and only harmless medicine of its kind for ladies, and cures more patients in one month than all other Female Remedies put together in twelve months. This can be proved by our Testimonials.

If you require more particulars I will send you per return of post, in sealed letter, post free, a splendid Book (34 pages) and Guide (cloth covers, 60 pages and 40 illustrations of Ladies' Appliances), and full particulars of the wonderful effective remedies as advertised and sold in every town and village in Great Britain. Consultations Free every day 3 to 7. Established over 100 years.

Do not delay, but write at once privately to Madame FRAIN, Medical Institute, Hackney-road, London, N.E. (opposite Shoreditch Church).

In replying to this advertisement after receiving preliminary particulars we wrote on Nov. 19th to Hackney-road for a bottle of the "Strongest Mixture" and a box of pills and we enclosed a postal order for 15*s*. We received no reply and no goods. We therefore wrote again on Nov. 29th complaining of their non-receipt to which letter we received the following reply:—

Telegrams—Frain, Hackney-road, London.
Bankers—London & Midland.
Herbal Institute, 1a, Hackney-road (opposite Shoreditch Church), London, N.E., Dec. 1st, 1898.

MY DEAR MADAME,—I am very sorry your letter has been overlooked, Kindly write stating full particulars what you require and how much money was enclosed in your letter.

And oblige, yours faithfully,
MADAME FRAIN.

To this letter we replied on Dec. 2nd repeating our request for the bottle of "Strongest Mixture" and a box of pills, and pointing out that a postal order had been sent. From that day to this we have heard nothing from Madame Frain. The train of conclusion is obvious. The wording of Madame Frain's advertisements clearly invites communications from unchaste women. The enormous majority of women with amenorrhœa are *enceinte*, and another large class of persons who would be allured to answer Madame Frain are the persons who place themselves in the position of being *enceinte* and who fondly think that by swallowing preventive nostrums the processes of procreation may be fended off. How are these unfortunate women, having sent money to Madame Frain and having received no reply, to compel her to send it back? Some perhaps know that the purpose for which they sent the money was illegal; others without much respect for the law still regard very highly the opinion of their friends or their employers. How can they ask the police to assist them in making Madame Frain disgorge and yet preserve their secrets? The calm proceeding of keeping our postal order (the number of which we warn this predatory matron we have noted) is what might have been expected from the literature disseminated by the Herbal Institution (or Ladies' Medical Institution, to give the shop its alternative title) in the Hackney-road, for everything about Madame Frain's methods reeks of fraud. In her first reply to us she posted us a bundle of testimonials "from ladies selected from all parts" and adds that she has "thousands of others which I will gladly show and will forfeit £2000 if the testimonials are not absolutely genuine." We will excuse Madame Frain from paying us the £2000, not out of any consideration for her but solely out of consideration for the vile origin of her money; nevertheless the testimonials are not genuine. It is true that the envelope in which they were enclosed bears the following inscription:—

Personal & Private.

DEAR MADAME,

To demonstrate beyond doubt the effecacy of our Female Mixture & Pills I am enabled to enclose herewith for your perusal *in Strictest Confidence* a few testimonials (among many thousands which can be seen at any time by you in their post-marked envelopes) of Ladies who have *unsolicited* acknowledged their marvellous unequalled and unfailing effect I know I may rely upon *your honour to immediately post the enclosed back to me after perusal* for which I enclose a directed envelope.

Trusting this will satisfy you as to our *Bona Fides* and referring you to the book of printed testimonials also enclosed

Yours very faithfully,
M. C. FRAIN.

Alas for Madame Frain's *bona fides!* All the original "testimonials" which she relied on our honour to return to her are lithographs. They are reproduced on different coloured paper in different coloured inks and if in some cases different handwritings are obvious in others their similarity is striking; but the documents are merely lithographs of the sort that can be turned out by the thousand.

We shall publish no more analyses of pills and potions. We have now made known the constituents of the most widely advertised nostrums and on the basis of the knowledge thus derived shall be able later to discuss some of the broader issues opened up by our articles.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE forty-second meeting of this Commission was held on Monday, Dec. 19th, when Lord LLANDAFF (chairman) presided, and the other Commissioners present were Sir George Barclay Bruce, Mr. Cripps, Q.C., Mr. de Bock Porter, Major-General Scott, and Mr. Robert Lewis. The entire sitting was devoted to the examination of Mr. Charles Hawksley, C.E.

Mr. HAWKSLEY, in reply to the CHAIRMAN, said that he had had considerable experience in the designing and construction of waterworks both for companies and for local authorities. He was in partnership for upwards of twenty-five years with his father, the late Mr. Thomas Hawksley, C.E., who first introduced into this country the system of constant supply. His father and Sir Frederick Bramwell in 1892 considered and approved the proposals of Messrs. Hunter and Fraser for the storage of Thames water at Staines and gave evidence in support of them before the Balfour Commission. Subsequently Sir Frederick Bramwell and the witness were consulted in reference to, and they approved of, the scheme embodied in the Staines Reservoirs Bill which received the sanction of Parliament in 1896 and he and others had been requested by the London water companies to give evidence before this Commission. In preparing the various tables which he now presented he had taken the

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growth of population at the rates suggested by the Balfour Commission of 18·2 per cent. per decennium for Greater London and 19·7 per cent. per decennium for the outlying parts of Water London. The result was that in the case of Greater London the population was estimated to increase from 5,656,909 in 1891 to 13,043,712 in 1941 and in the case of the outlying parts from 76,041 in 1891 to 187,504 in 1941. Witness explained that there are no official figures to show how far the estimate of the growth made by the Balfour Commission has been borne out by experience, but he did not believe it would be found far amiss. He felt certain that the figures given by the Commission are perfectly safe for the purposes of calculation. The average daily supply from all sources for the year 1897 amounted to 202,102,544 gallons, made up as follows:—From the River Thames 112,178,641 gallons, from the River Lee 55,292,863 gallons, from springs and wells 34,488,016 gallons, and from ponds at Hampstead and Highgate 143,024 gallons. The witness presented a table showing the quantity of water to be provided in the future by the eight London companies and by other companies and local authorities deriving their supplies from the basins of the rivers Thames and Lee to meet the requirements of the estimated population of Greater London and the outlying parts of Water London during the period up to 1941. In this calculation Mr. Hawksley took 35 gallons as the daily quantity of water required per head of the population and the results he worked out were:—

	Estimated population.	Gallons required per day.		Estimated population.	Gallons required per day.
1891 ...	5,733,000	... 200,655,000	1921 ...	9,468,000	... 331,380,000
1901 ...	6,777,000	... 237,195,000	1931 ...	11,192,000	... 391,720,000
1911 ...	8,010,000	... 280,350,000	1941 ...	13,231,000	... 463,085,000

Witness explained that the object of introducing 1891 was to get a starting-point which was familiar, although as a matter of fact 35 gallons per head of the population were not supplied in that year.

Major-General SCOTT reminded Mr. Hawksley that the reference of the present Royal Commission deals only with the eight metropolitan water companies and their responsibilities, while the calculation he now put forward was much wider in its scope.

Mr. HAWKSLEY, admitting this, said that the Balfour Commission intimated that inasmuch as the water for the other districts must be obtained from the same sources as those which supplied the metropolitan companies they ought to be considered in determining the effect on the Thames or the Lee. Continuing his evidence Mr. Hawksley said that to meet this quantity required the Balfour Commission considered that they might reckon on 52½ million gallons per day from the River Lee, 40 million gallons from wells in the Lee Valley, and 27½ million gallons from wells in the Kent Company's district—a total of 120 million gallons per day. Accepting these figures they left 343 million gallons to be obtained from the Thames or from wells in the Thames Valley to meet the estimated daily requirement of 1941 and witness was decidedly of opinion that the Thames could yield this without reaching the limit of its capabilities. He had given the matter very careful attention and he was of opinion that it could yield a great deal more than this quantity. In the Thames Valley there were a great many convenient sites for reservoirs.

Mr. PORTER: Then you think it is idle to look elsewhere than the Thames?

Mr. HAWKSLEY: Yes, within the period to which we need look forward at the present moment. If you speak of 500 years hence, that, of course, is another matter, for when we have used up all available water in the Thames we must go elsewhere.

Mr. PORTER: Would you say that for the next 100 years at all events, it is not necessary to go to Wales?

Mr. HAWKSLEY: I do not think it is.

The CHAIRMAN: You think it is an unnecessary precaution at the present time?

Mr. HAWKSLEY: I think so.

The CHAIRMAN: Would you wait till another party brought in a Bill to appropriate the water?

Mr. HAWKSLEY: I would wait till there was talk of appropriation.

In reply to Major-General SCOTT witness said that the Staines reservoir scheme contemplated a total extent of 6000 acres.

Major-General SCOTT: That is to say nearly 10 square miles.

The CHAIRMAN: Ten square miles of water in the neighbourhood of Staines!

Mr. PEMBER, Q.C.: That is nothing to a flood.

Mr. HAWKSLEY: No. And it would not do the damage that a flood does; it would not go into the people's houses.

In further examination Mr. HAWKSLEY said that in his opinion much more than the 343 million gallons per day might with propriety be taken from the Thames. He had not fixed a limit but any limit he might fix would have for its basis the flow over Teddington Weir and the financial considerations governing storage. His opinion was that the flow over Teddington Weir might very properly be reduced to 100 million gallons per day or even to a smaller quantity in exceptional years. He was not prepared to give a description of what the river below would be like if only 100 million gallons passed over the Teddington Weir. Witness presented a series of figures making a comparison of the cost of the Thames and the Welsh schemes. They showed he said, that up to the year 1941, the accumulated expenditure in respect of interest on capital would in the case of the Welsh scheme, even when reckoned on Sir Alexander Binnie's own estimate, have exceeded the corresponding accumulated expenditure in respect of interest on capital and cost of pumping in the case of the Thames scheme by the sum of £5,464,179 and that thenceforward the expenditure on the Welsh scheme would exceed the corresponding expenditure on the Thames scheme by the sum of £28,373 per annum to be borne in perpetuity. The next point taken up by Mr. Hawksley was the comparative merits of company and corporation management. His experience, he said, extended to both systems and he had no hesitation in saying that water management was generally better in the hands of a company than in those of a corporation. A company was not subject to being influenced by political considerations which was generally the case with a public authority, and it looked at the matter from a more solid and commercial basis than was done by a public authority. In addition public authorities were swayed not only by politicians but also by faddists.

The CHAIRMAN: Is it not your experience that corporations and public bodies which have acquired the water-supply have ultimately reduced the charge to the consumer.

Mr. HAWKSLEY: Not usually until a considerable period has elapsed and then there have been instances where there has been a reduction.. In the meantime, however, there has frequently been a large loss incurred. Witness proceeded to cite the experience of such places as Heywood, Rochdale, and Middlesbrough, where there has been a transference of the water undertaking from a company to the public authority and where after the tranference there have been applications to Parliament for power to increase the rates charged to consumers. He also cited several cases where grants in aid have been found necessary.

In reply to Mr. PORTER witness said he did not doubt that many of these water undertakings were capable of being ultimately worked at a profit by the corporations. He was not prepared to say that he knew any corporation which would like to go back to company management. Quite apart from results corporations were not likely to give up the power and patronage involved and the prestige. As to whether the consumers if polled would declare in favour of a return to company management it was difficult to say because the consumers seldom understood these matters.

Mr. PORTER: But surely the consumers know whether they are paying more or less for their water?

Mr. HAWKSLEY: The consumer does not find that out.

The CHAIRMAN: I suppose you recommend all your public authority clients to turn over their concerns to private companies?

Mr. HAWKSLEY: That would not suit the corporations. It would be of no use giving such advice because they could not sell their undertakings at a price which would make it remunerative to a company to buy and they would not like the loss of prestige.

The CHAIRMAN: Does the management of a water undertaking bring prestige? I thought it only brought abuse.

Mr. HAWKSLEY: Yes, I think there is some prestige.

The CHAIRMAN: You dropped a hint about patronage.

Mr. HAWKSLEY: Yes, a corporation employs a large staff of men in connexion with its waterworks.

Mr. PORTER: Can you give a case apart from London where you think things are better in the hands of a company than they would be if transferred to the municipality?

Mr. HAWKSLEY: Yes; I can give Norwich, Yarmouth,

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Lowestoft, Bristol, Sunderland, and others, and of course I think London would be much worse off.

The usual time for adjournment having arrived the CHAIRMAN announced that the Commissioners proposed meeting on the following day and further examining Mr. Hawksley.

Mr. HAWKSLEY explained to his lordship that he had an important arbitration case to attend on that day.

The CHAIRMAN, addressing counsel for the companies, asked whether they had any other witnesses to tender.

Mr. POPE, Q.C., said that Mr. Eaton was prepared to give evidence.

The CHAIRMAN said that so far as he could gather Mr. Eaton proposed to do nothing more than corroborate Mr. Hawksley and he would remind the companies that the main question after all was the question of financial expediency. Long ago certain statements had been made as to the capital of the companies and he should have expected to find them eager to meet these statements. If the companies did not have their evidence ready the Commissioners would have to proceed with something else.

Mr. POPE assured his lordship that his clients had no desire to keep back evidence.

After some further conversation it was decided that the Commission should not meet again until Monday, Jan. 9th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6169 births and 3830 deaths were registered during the week ending Dec. 24th. The annual rate of mortality in these towns, which had declined in the three preceding weeks from 19·1 to 16·6 per 1000, rose again last week to 17·8. In London the rate was 17·0 per 1000, while it averaged 18·3 in the thirty-two large provincial towns. The lowest death-rates in these towns were 10·6 in Cardiff, 12·4 in Wolverhampton, 12·5 in Leicester, and 13·8 in Croydon; the highest rates were 22·1 in Liverpool, 23·0 in Manchester, 25·4 in Salford, and 30·2 in Swansea. The 3830 deaths in these towns included 424 which were referred to the principal zymotic diseases, against 399 and 372 in the two preceding weeks; of these 115 resulted from diphtheria, 104 from measles, 70 from "fever" (principally enteric), 53 from whooping-cough, 50 from diarrhœa, and 32 from scarlet fever. The lowest death-rates from these diseases were recorded in Croydon, Leicester, Derby, and Burnley, and the highest rates in Leeds, Nottingham, Bolton, and Swansea. The greatest mortality from measles occurred in Manchester, Salford, Bolton, and Nottingham; from whooping-cough in Halifax and Boston; and from "fever" in Salford, Bolton, Brighton, and Norwich. The mortality from scarlet fever showed no marked excess in any of the large towns. The 115 deaths from diphtheria included 46 in London, 17 in Leeds, 10 in Swansea, 7 in Sheffield, 6 in West Ham, 6 in Liverpool, and 4 in Brighton. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Dec. 24th, was 2901, against 3142, 3099, and 3043 at the end of the three preceding weeks; 221 new cases were admitted during the week, against 264, 276, and 260 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 295 and 283 in the two preceding weeks, were last week 284, and were 195 below the corrected average. The causes of 52, or 1·4 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Leeds, Hull, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Liverpool, Huddersfield, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·0 and 19·4 per 1000 in the two preceding weeks, further declined to 18·2 during the week ending Dec. 24th, but slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 11·6 in Leith and 15·2 in Paisley to 21·1 in Aberdeen and 22·1 in Perth. The 549 deaths in these towns included 14 which were referred to scarlet fever, 14 to whooping-cough, 13 to diarrhœa, 12 to measles, 11 to "fever," and 4 to diphtheria. In all, 68 deaths resulted from these principal zymotic diseases, against 71 and 64 in the two preceding weeks. These 68 deaths were equal to an annual rate of 2·3 per 1000, which was 0·3 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of scarlet fever, which had increased from 3 to 12 in the four preceding weeks, further rose to 14 last week, of which 9 occurred in Glasgow and 2 in Dundee. The 14 deaths from whooping-cough were within 2 of the number in the preceding week, and included 9 in Glasgow, 2 in Paisley, and 2 in Dundee. The fatal cases of measles, which had declined from 19 to 8 in the three preceding weeks, rose again to 12 last week, of which 6 occurred in Glasgow, 3 in Edinburgh, and 3 in Aberdeen. The 11 deaths referred to different forms of "fever" exceeded by one the number in the preceding week, and included 8 in Glasgow and 2 in Edinburgh. The deaths from diseases of the respiratory organs in these towns, which had been 163 and 132 in the two preceding weeks, further declined to 119 last week, and were 30 below the number in the corresponding period of last year. The causes of 30, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the three preceding weeks from 31·6 to 25·2 per 1000, was again 25·2 during the week ending Dec. 24th. During the past four weeks the rate of mortality in the city has averaged 27·0 per 1000, the rate during the same period being 17·1 in London and 21·3 in Edinburgh. The 169 deaths registered in Dublin during the week under notice corresponded with the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against 8 and 15 in the two preceding weeks; of these, 4 resulted from whooping-cough, 3 from diarrhœa, 2 from scarlet fever, 1 from "fever," and not one either from small-pox, measles, or diphtheria. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·7 in London and 1·6 in Edinburgh. The fatal cases of whooping-cough, which had been 3 and 5 in the two preceding weeks, declined again to 4 last week. Two deaths resulted from scarlet fever, against 1 in the preceding week; while the mortality from "fever" was below that recorded in any week since August last. The 169 deaths in Dublin last week included 37 of infants under one year of age and 38 of persons aged upwards of sixty years; the deaths of infants exceeded those recorded in the preceding week; while those of elderly persons showed a decline. Nine inquest cases and 7 deaths from violence were registered; and 63, or more than a third, of the deaths occurred in public institutions. The causes of 13, or nearly 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is notified:—Staff Surgeon C. J. Mansfield to the *Pearl*.

ROYAL ARMY MEDICAL CORPS.

Colonel E. Townsend takes over the duties of the Principal Medical Officer of Her Majesty's Forces in India pending the arrival of Surgeon-General Taylor, C.B. Major R. Stuart is directed to proceed from Poona to Bombay for temporary duty in the Colaba Station Hospital. Lieutenant G. S. Nickerson has been appointed for service with the Egyptian Army. Captain H. J. M. Buist shortly proceeds to Woolwich. Surgeon-General W. A. Catherwood is appointed Principal Medical Officer, Bengal Command.

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ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant John K. Tomory, 1st Sutherland Highland Rifle Volunteers, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Cheshire and Carnarvonshire: Surgeon-Lieutenant John Oldershaw resigns his commission and is appointed Captain. The Highland: George Wilson to be Surgeon-Lieutenant. *Rifle:* 1st Volunteer Battalion the Suffolk Regiment: Surgeon-Major M. E. Ling resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the battalion on his retirement. 3rd (The Blythswood) Volunteer Battalion the Highland Light Infantry: John William Logie to be Surgeon-Lieutenant.

DEATHS IN THE SERVICES.

A correspondent writes:—The news was received in Plymouth last week of the death of Surgeon-Lieutenant-Colonel James Powell, M.R.C.S. Eng., L.R.C.P. Edin., R.A.M.C., which occurred on Dec. 17th on board the transport ship *Simla* while on his way to India. He was born in 1851, received his medical education at King's College Hospital, London, and took the qualifications of M.R.C.S. Eng. and L.R.C.P. Edin. in 1873 and 1874 respectively. In the latter year he entered the army and became Surgeon-Major in 1886 and Surgeon-Lieutenant-Colonel in 1894. Surgeon-Lieutenant-Colonel Powell was with the Natal Field Force in 1881 in the Transvaal Campaign and and in 1884–85 with the Soudan Expedition on the Nile when he was in charge of the Kaibur Field Hospital, and in 1885–86 with the Frontier Field Force when he took part in the action of Kosheh. In the military operations of 1885–86 he obtained mention in despatches and for the preceding campaign he received the medal with clasp and the Khedive's bronze star.

Deputy Inspector-General Duncan MacRae, retired list, Indian Medical Service, at Kames Castle, Bute, on Dec. 14th, in his eighty-third year. He joined the Honourable East India Company's service in January, 1839, served through the Afghan campaign of 1842, and was present at the capture of the fort of Khythul in 1843. He also served with the Bugti campaign in Scinde in 1846 and the Punjab campaign in 1848–49, including the siege of Mooltan and the battle of Goojerat. He was in the Indian Mutiny of 1857–58, and was present at Umballa, Meerut, and the capture of Delhi (three medals and three clasps).

Fleet Surgeon W. E. O'Brien, retired, at Dublin recently, aged seventy-six years. He joined the service in 1846, became Staff Surgeon in 1856, Fleet Surgeon in 1871, and retired in 1875.

REVISED REGULATIONS FOR ADMISSION TO THE ROYAL ARMY MEDICAL CORPS.

Revised regulations for admission to the above corps have been issued by the War Office. Candidates for appointment to the corps must be not under twenty-one and not over twenty-eight years of age at the date of commencement of the competitive examination. They will be required to produce an extract from the register of their birth or a declaration made before a magistrate by one of their parents, a recommendation from a person in society as to their habits, &c., and a certificate of moral character from a clergyman. They will also be required to produce two diplomas or licences recognised by the General Medical Council, one to practise medicine and the other surgery, and they must be registered under the Medical Act. They must also produce certificates of having discharged the duties of medical clinical clerk for six months and one of having attended a course of at least three months in an ophthalmic hospital. There will be two competitive examinations each year. Captains of the Royal Army Medical Corps serving in India will in future be allowed to undergo short courses of operative surgery at the medical colleges at Calcutta, Madras, and Bombay under arrangements just made by the Government of India.

THE INDIAN PLAGUE COMMISSION.

Touching the constitution of the Commission appointed from Great Britain for the investigation of plague in India it seems to have very naturally given rise to some surprise that no officer of the Indian Medical Service was nominated to serve upon that Commission. There are several medical officers of the Indian Medical Service of scientific reputation who have been trained in bacteriological work and who have made it a subject of special study, to say nothing of their knowledge of the country and the personal experience which they have acquired of the disease during the progress of the epidemic in India. It may, we think, be assumed, however, that the Government either thought it best to have a perfectly independent inquiry or that the omission was simply the result of inadvertence.

THE PLAGUE IN INDIA.

The number of victims of the plague shows a marked decline in the Bombay districts and in Bangalore but no change is reported in the Madras Presidency and the Central Provinces. The epidemic is raging in the Mysore and Hyderabad districts. Captain J. Davidson and Lieutenant J. S. Stevenson, both of the Indian Medical Service, Bengal, have been posted for plague duty in Mysore. The Chief Commissioner of Coorg has been empowered to deal with plague under the Epidemic Diseases Act.

Colonel A. Stephen, Indian Medical Service, returns to England on retirement, having tendered the resignation of his appointment as Inspector-General of Civil Hospitals, Punjab.

THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

SECOND YEAR.

(FROM OUR SPECIAL COMMISSIONER.)

(Concluded from p. 1739.)

ON another occasion I made my way over the Lagan to visit some of the newest streets and what are supposed to be among the best built workmen's cottages. On my way I stopped at a cheap eating-house situated in the main thoroughfare. Behind the house there was a large back-yard unpaved and with mounds of dirt and manure divided by pools of stagnant water. At one end there was a shanty with a fire burning on the floor, for there was no chimney. By the side of the fire a pig had made himself quite at home and there were plenty of poultry strutting around. Lengthways along the yard there were several stables at present only occupied by pigs, and these stables drained on to the unpaved soil. The yard was therefore full of mire and slush. A sanitary inspector had been there to see that the drain which runs near the back of the houses and at the farthest point from the stables should be repaired but he had said nothing about the paving of the yard and establishing a connexion between the drain and the stables. The rain-water from the stable roof as well as the liquid manure could not reach the drain but soaked into the soil, for the drain was some 25 ft. away from the waterspout. Eleven cartloads of manure were removed from this yard some four months ago, but it was the incoming new tenant who had to pay to have this done and now fresh accumulations are rising on all sides.

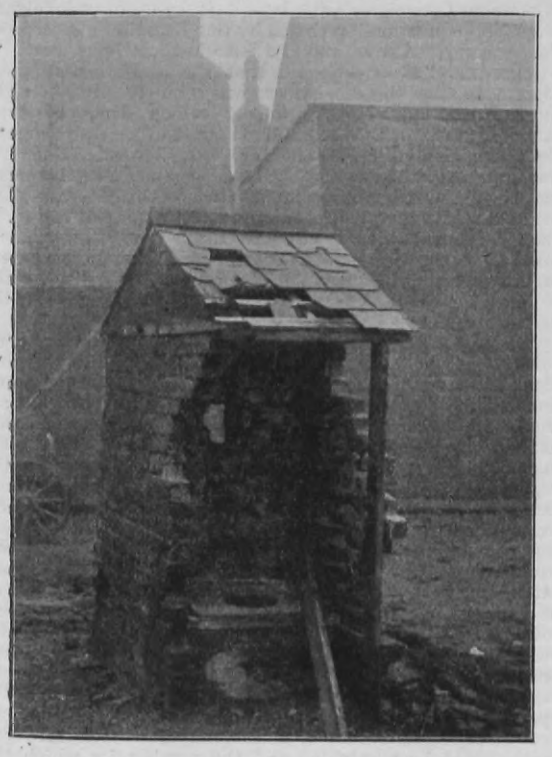
A little further on I came upon a small butcher's shop. The wall of the closet in the little back-yard had partially broken away. Only fragments of the seat remained and they were covered with soil. In the open privy behind the seat there was a pool of water with offal floating in it. The half of the yard nearest to the house was roofed over and formed a sort of shanty in which a store of meat was hung at a distance of not more than 16 ft. from this disgusting uncovered privy. There was also a big dog and its kennel here and though the yard was supposed to drain into a gully the flow was towards the privy. The flag stones used to pave the yard were loose and there was water underneath. The boards of the floor of the shop had great holes which gave a view of the low inaccessible basement beneath. Sawdust, blood, and fragments from the meat dropped down through these holes into this sort of cellar and could not be cleared away. As fermentation and decomposition proceeded the effluvium rose up through the holes and mixed with the meat exposed for sale. The inspection of this butcher's shop provided one of the strongest arguments in favour of vegetarianism which I have ever encountered.

In the —— road I entered a small cookshop where the owners were busy making tea-cakes in the back close to some pig-swill and in the midst of much dirt. The sanitary inspector had been there recently and had caused the pigsty to be removed to the furthest end

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of the yard so that it might be at a distance of at least 15 ft. from the dwelling. But apparently he had not examined the closet, for I found that the pan was loose and that a part of the flush came out against the back wall. The water thus spilt does not, however, run out from under the seat and as it gets away readily it is to be presumed that it drains into the soil-pipe at some point a little below the closet-seat, where there is probably a faulty joint or a hole in the pipe. Pending such time as the sanitary inspector shall think fit to look into these matters the tea-cakes will be kneaded and baked within a few feet of this leaking closet. Of course other edibles and milk are also kept here for the customers' tea.

Adjoining the —— road there is a small street paved with round stones which are irregular and create little pools of water. The houses are so damp that bright green moss grows on the walls to a height of some 18 in. On the right-hand side some houses have been demolished and behind those which remain there is a large unpaved yard with a wooden structure in one corner which serves as a stable. Near to this stable stands the closet which I have photographed. The door, it will be seen, has disappeared long ago. The walls on both sides of the seat are in a great



measure destroyed and there is a big hole through the third wall at the back of the seat. The roof is likewise shattered. There is another seat immediately behind this perforated back wall which is scarcely less exposed to the public view than the one which is shown in the photograph. Yet this is all the accommodation afforded for the persons who live in the three houses giving on to this yard. Belfast is a town where the inhabitants profess to uphold a high standard of public morals and decency. What sense of decency and modesty is such a closet as this likely to engender? In one of the three houses which have no better provision made for them than this closet a child in my presence showed her appreciation of such accommodation by relieving herself in the middle of the back room. Her elder brother mildly suggested that she should have waited till "the gentleman was gone." Such are the manners which naturally result when no proper sanitary contrivances are available. In the yard where this dilapidated closet stands there is no dustbin, therefore the household refuse is deposited anywhere and forms mounds which stand out like islands amid the surrounding mud and slush. The wet from the stables slowly winds its way between these protuberancies till it reaches some deeper hollow and there it stagnates. Some of these pools were so foul that the water had acquired a bright green colour; and it is amidst such dirt and round this ruined closet that the boys and girls of the neighbourhood come to play and pass what should be the sunny days of their childhood.

On leaving this scene of dirt and desolation I passed by a muddy back passage with a heap of manure in it. In —— street I found that some scavengers had been extracting black mud out of the gullies, but instead of carting it away immediately and to a safe distance from the town they had spread it out over the street pavement. Here it was left to be trodden into the earth by the traffic of the street. As this black mud was spread out in thin layers and to a distance of several feet instead of being thrown up in a heap, it was evident that there was no intention of carting it away. The earth, already foul, will thus be rendered even more unwholesome. I now reached —— street. A portion of this thoroughfare consists of some of the newest and presumably the best workmen's cottages in Belfast, yet there is a back passage so full of mud and stagnant water that a pair of scavengers' waterproof boots would be required for its exploration. Evidently there are no precautions taken here and this passage has been shamefully neglected. At one end it faces an open, unbuilt, and unpaved space made up of dirty earth and pools of stagnant water. The chopped straw from the interior of some mattresses which had been destroyed was blowing about. Why were these mattresses destroyed? who had slept upon them? and was the straw they contained clean enough to be allowed to blow about and to be kicked about in the open spaces where the street-children went to play? These questions remain unanswered. I now entered one of the new cottages and at first sight it seemed a great improvement on the older houses which I had previously visited. In the back room which served as a sort of pantry there was a sink brightly enamelled which drained through the wall over the yard gully so that the disconnexion was complete. The closet in the back-yard had a good flush and at first it appeared as if no fault could be found with this cottage, but on closer examination I discovered that there had been here the same lack of supervision noticed in other parts of the town. The pan of the closet was quite loose. It had not been cemented to the trap and therefore there was nothing to prevent leakage. The earth under the seat was damp from the washings from the pan and the subsoil on which the house stood thus became contaminated when the closet pan was flushed out. There never was a better instance of the proverbial spoiling of a good ship for the want of a pennyworth of tar.

But all the houses in —— street have not got water-closets. In another house I ascertained that there had been two cases of typhoid fever — a mother and her son. At a distance of only 6 ft. from the back window there was a privy full up to the very rim of the seat. The mother had so far recovered that she was up and about but she explained to me that she was still too weak to allow the privy to be emptied. She dreaded the awful stench which would result from carrying the filth through the house, for there was no back passage for this side of the street. Also, this woman felt that she would not have the strength to clear up the mess which the scavengers would make. As her son and herself had been provided with pails during their illness she hoped that the contents of the privy were not specially dangerous. This is a good illustration of the evil effects of the absence of back passages. The privy of another house on the same side of the street was in a similar condition and here also there had been a case of typhoid fever. The inhabitants were making a sort of tea-cake close to this overflowing and uncovered privy.

—— street runs parallel with —— street and here I entered another new and nicely arranged cottage. The back-yard was well paved though not quite level. There was a clean dustbin, a good water-closet, and the pan this time was firmly fixed; but the gully in the yard over which the sink water emptied had a big hole in its side so that only a portion of the water went to the drain and the rest escaped into the subsoil through this hole. In this case, again, all that is wanted is better supervision and a handful of cement to block up a little hole. In the next house the inhabitants complained of bad odours from the back passage and in the adjoining house there was a case of typhoid fever. The patient, a youth, was recovering. Here I found that the gully in the yard did not fit properly and that the pan of the closet

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was loose. No pail, I was assured, had been brought to this house; therefore the dejections from the patient had been thrown into the closet where the loose pan would allow some part of the wet to escape on to the ground under the seat. In the next house to this one there had also been fever, no less than 5 cases. A pail had been provided and the loose tile paving in the back-yard had been repaired, but the grate to drain this yard was in a bad position and a part of the water did not reach it. There was a very nasty close smell in this house.

At one end of the street there is a narrow opening forming a short passage leading to the long back passage which runs between the two streets. A board is suspended here announcing that this is the way to the —— street National School. It is true that it only leads to the back entrance and that there is a better way to the front entrance, but it is the shortest road for many of the children. One poor girl availed herself of this passage while I was looking on. It was pitiful to see her efforts to keep her feet dry and to avoid the filth. Both her arms were stretched out wide to balance herself by pressing on the walls on either side. Then she tried to step on pebbles and small stones. There was fæcal matter on all sides and a filthy stained palliasse, thrown out here no one knows by whom, though it might infect the narrow passage where so many children have to pass. Where are the scavengers? How is it that these back passages remain in such a condition? The passage running behind —— and —— street I found even in a worse condition. The doors which give access to the dust-bins were swinging or open. Straw, garbage, and vegetable refuse of all sorts were lying about, and in the midst of this filth a drunken man had fallen and was now fast asleep. Yet while these foul things fester behind the houses, in front the cottages have a smart appearance. Some are hardly more than four years old and the street is broad. Judged superficially this would be thought a healthy district. In the last house I visited there was upstairs a young woman suffering from typhoid fever. No pail had been sent for this patient and her dejections were thrown into the water-closet. On removing the seat I found that here again the pan was quite loose. The lead pipe to deliver the water for the flush was affixed to the pan by a bit of rag fastened round with some string. The pan rested loosely on the trap, nor did the trap seem to have been jointed to the soil-pipe. On the exit side of the trap there was some slight trace of clay where there should have been cement. On the other hand, the dustbin or ashpit was carefully covered over and it was evident that only a little care was needed to make this a sanitary dwelling. The sanitary inspector, I was informed, had called—he had even entered the closet and pulled the string to see if the flush worked well, but, satisfied by this perfunctory form of inspection, he had left the place without ever discovering that a bit of rag and a bit of string had been substituted for plumber's work and that the drains were not secure at the joints.

Not far from here I had noticed some digging done to lay the foundations of new dwellings. The earth looked so black and forbidding that I made my way to the end to see how ground was produced by the dumping process. Here there is a bridge over some railway lines and between the line and the last houses there is a rubbish shoot. At the foot of the rubbish there was a large pool of green water. On the opposite side of the railway the corporation carts shoot their rubbish and are thus piling up what is denominated in the neighbourhood as "Microbe Hill." It is said that the contents of privies are no longer emptied here. Perhaps this is so, but the bubbling water at the foot of these rubbish shoots smells strongly of sulphuretted hydrogen. In some places it is green, at others more like ink and it is always foul. At one "tip" now used by the Northern Railway Company I saw much straw and what seemed to have been manure. Also the heap was hot and smoking, and one wonders if houses are ever built here what sort of health the inhabitants will enjoy.

After all these investigations I must confess to being overwhelmed with a deep sense of despair. When even such easy trifles as the cementing of a closet-pan on its syphon trap are so generally neglected, though the presence of typhoid fever in the houses should have caused all such defects to be promptly detected and remedied, it is impossible to hope with much confidence that the great and sweeping measures of sanitary reform urgently needed will be efficaciously applied. Is it likely that an administration which, at any rate in the past, has displayed such crass incapacity and has been guilty of such palpable life-destroying neglect will ever be able to produce a Hercules capable of cleaning out these Augean stables? Does this not rather suggest that a higher and outside authority should interfere so that the law shall at last be enforced and that the work of efficient sanitary supervision shall be no longer neglected?

Correspondence.

"Audi alteram partem."

"THE GENERAL MEDICAL COUNCIL AND PRELIMINARY EXAMINATIONS."

To the Editors of THE LANCET.

SIRS,—In the letter of the Registrar of the General Medical Council which appears in this week's number of THE LANCET the incorrectness of the figures given in the report of the Education Committee with regard to cases of "deficiency in general education," reported by the Examining Boards of the "Navy, Army, and Indian Medical Services," is admitted, and it is explained that the limitation of these reports to the three services was due to an oversight in the drafting of the report which has, however, already been issued to the public in the half-yearly volume of the Council's minutes, is printed in THE LANCET of Dec. 3rd, has been made the subject of general comment in the press, and has been officially communicated to this College. The oversight is, to say the least, unfortunate, as the report, in the form in which it was presented to the Council, was calculated to convey a most erroneous impression as to the extent of the alleged "deficiency in general education" attaching to persons who had registered as medical students on the certificates of this College.

It is now stated that the figures given in the report comprise the whole of the cases reported by the various Examining Boards, "including those for the Navy, Army, and Indian Medical Services," and that out of these 14 are those of candidates who had passed their preliminary examination at the College of Preceptors. With regard to the accuracy or otherwise of the figures given in the table in the registrar's letter, it may be sufficient to say that the total number of cases reported is, after the most careful examination of the published minutes, found to be, as set out in the accompanying table, not 58 but 84, or, exclusive of cases not traced, 65. The number of the cases attributed to the College of Preceptors is apparently arrived at by including some cases in which under the old "piecemeal" regulation of the General Medical Council candidates were registered on certificates obtained from more than one examining body. As it would be impossible to say whether the subject of "English," in which the spelling test is usually included, was passed at one or the other examination, it seems only fair that all such cases should be eliminated and the number for which the College of Preceptors may be held to be responsible would then be reduced to 11—,11 cases in seven years out of a total of 2133 candidates who during that period have come on the Medical Students' Register by means of College of Preceptors' certificates. The proportion of cases traced to the College is therefore represented by the fraction $\frac{11}{193}$, or about ½ per cent. The total number of medical students registered during the past seven years amounts to 12,526. The average of traced cases of deficiency would therefore be 1 in 193, or ½ per cent., the same proportion as that attributable to the College of Preceptors. But if only the number of those who have qualified on one or other of the *junior* or *preliminary* examinations in the United Kingdom be considered the proportion would be 65 out of 8467, or 1 in 130, or about ¾ per cent.

The proportion of reported cases of "deficiency in general education" amongst candidates who have qualified during the same period on certificates of the Irish Intermediate Education Board is represented by the fraction $\frac{3}{100}$, or nearly 2 per cent., which is a somewhat different ratio from $\frac{11}{193}$. Nevertheless this examination is retained on the list, as are also the public entrance and other pre-graduate examinations of Trinity College, Dublin, with a proportion taken together of $\frac{3}{100}$, or nearly 3 per cent. The mere statement of these

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facts reduces the whole matter to its true proportions and exhibits in the clearest light the triviality of the charge that has been brought against the College of Preceptors' examination and made so prominent a feature in the report drafted, as was stated by the chairman of the committee, by Dr. MacAlister. I am, Sirs, yours faithfully,

H. W. EVE,
Dean of the College of Preceptors.

Bloomsbury-square, W.C., Dec. 27th, 1898.

Table showing the Numbers of Candidates reported as having been Deficient in General Education with the Preliminary Examinations in which they Qualified for Registration as Medical Students during the Years 1892–1898.

Preliminary examinations.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Total.
University of London	—	2	—	—	—	—	—	2
University of Dublin	—	2	1	—	—	—	1	4
University of Aberdeen	—	—	1	—	—	—	1	2
Royal University of Ireland... ...	1	—	3	—	—	—	—	4
Queen's University of Ireland ...	—	—	2	—	—	—	—	2
College of Preceptors	1	6	2	—	—	1	1	11
Intermediate Education Board of Ireland	—	2	1	—	—	—	—	3
Society of Apothecaries, London ...	—	2	—	—	—	—	1	3
Royal College of Surgeons in Ireland	2	5	12	—	—	—	—	19
Royal College of Physicians and Surgeons in Ireland	—	—	1	—	—	—	1	2
College of Physicians and Surgeons of Manitoba...	—	—	1	—	—	—	—	1
University of Edinburgh and College of Physicians and Surgeons, Edinburgh	—	1	—	—	—	—	—	1
University of Edinburgh and Society of Apothecaries	—	—	1	—	—	—	—	1
University of Glasgow and College of Physicians and Surgeons, Glasgow	—	—	—	—	1	—	—	1
Society of Apothecaries and College of Preceptors	2	1	1	—	—	—	—	4
Society of Apothecaries (*bis*) and College of Preceptors	1	2	—	—	—	—	—	3
Educational Institute of Scotland and College of Preceptors	—	1	—	—	—	—	—	1
Royal University of Ireland and Queen's University of Ireland...	—	1	—	—	—	—	—	1
Not traced	—	8	1	—	1	9	—	19
Totals	7	33	27	—	2	10	5	84

"THE SEAMEN'S HOSPITAL SOCIETY AND ITS VISITING STAFF."

To the Editors of THE LANCET.

SIRS,—The letter in your issue of last week, signed John Curnow, M.D., F.R.C.P., John Anderson, M.D., F.R.C.P., G. R. Turner, F.R.C.S., might lead readers to infer that in various publications I had deliberately assumed a title to which I had no claim, that knowing that this description was untrue I had designated myself "Physician to the Seamen's Hospital, Greenwich." In self-defence I am constrained to ask you to allow me space to make the following statement.

In 1892 I was appointed a physician to the Seamen's Hospital Society. My duties, I was informed, were sole charge of the medical cases in the society's Branch Hospital, Albert Docks; to visit convalescents at the *Dreadnought* Hospital, Greenwich, when transferred there from the Branch Hospital; to take part in the meetings of the society's honorary visiting staff. In discharge of these duties I visited the Seamen's Hospital, Albert Docks, twice a week, and the Seamen's Hospital, Greenwich (*Dreadnought*), once a week, and attended most, if not all, of the meetings of the medical staff to which I was summoned. At the time of my election I was not informed that my office carried with it any particular title; but as I performed all the duties of a hospital physician at both of the Seamen's Hospitals I naturally inferred that I was a physician to both of these hospitals and that I had a perfect right to designate myself as such. Accordingly, and in conformity with medical custom, I called myself, or was called in various publications, sometimes "Physician to the Seamen's Hospital, Greenwich," sometimes "Physician to the Seamen's Hospital, Greenwich, and Seamen's Hospital, Albert Docks."

Some three years ago I was pained and surprised to be informed by the secretary of the Seamen's Hospital Society that my colleagues (as I regarded them) at the *Dreadnought* (Seamen's Hospital, Greenwich) had collectively and officially represented to him that I had assumed a title to which I had no right and that he had been asked officially to request that I should discontinue the practice. If I am not mistaken (unfortunately I have destroyed the correspondence) I was requested to write to the medical press and publicly intimate that I was not a physician to the Seamen's Hospital, Greenwich, and that I had no right so to describe myself. I protested. After some correspondence, in the course of which I intimated that I considered that my colleagues might have spoken to me privately if they thought I was in error or considered themselves aggrieved, I expressed regret if I had unwittingly arrogated to myself a title to which I had no claim. In consequence of the want of consideration shown me by my colleagues at the *Dreadnought* I have ceased to visit there, feeling that my seniors did not care to be associated with me, and myself not caring to be associated with those who, I considered, had treated me with scant courtesy, not to say fairness or friendliness.

At the time of the correspondence referred to I did consider, as I still consider, that I had a perfect right—in fact as much right as either Dr. Curnow or Dr. Anderson had—to designate myself "Physician to the Seamen's Hospital, Greenwich." I regret now that, shrinking from a petty squabble and for the sake of peace, I gave way on what at the time seemed to me to be a most trivial matter.

I am, Sirs, yours faithfully,

PATRICK MANSON.

Queen Anne-street, Cavendish-square, Dec. 28th, 1898.

"CLEANSING THE LESSER PERITONEAL CAVITY."

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to reply to Mr. Furner's letter in your issue of Dec. 24th? My "note" was headed "Perforated Gastric Ulcer" and dealt for the most part with two points other than that of cleansing the lesser peritoneal cavity. The facts are very simple. Some time ago, as my "note" says, I read a case of death from the giving way of a second ulcer opposite to one on the anterior wall which had perforated and which I had closed. *At that time* I pointed out that it would be well to adopt a practice of examining the posterior wall to prevent this disaster. *Mr. Furner, when reading his paper, spoke of my case and of my suggestion that the posterior wall should be examined.* I did not, when advocating this, make any allusion to cleansing the cavity or the prevention thereby of the formation of an abscess. What I claim to have advised (a simple but not unimportant custom) no one who heard me read my case will deny that I did advise. Again anyone fairly reading my "note" in your paper will see that as between Mr. Furner and myself I give him full credit for drawing attention to the need of cleansing the lesser peritoneal cavity and the good which would arise from doing it as a matter of routine.

I had a perfect right to draw the attention of surgeons to two points I thought my experience had shown me were important and not generally recognised. Had I known Mr. Furner was about to publish his paper I would certainly have left out any allusion to his point of cleansing the cavity. I must add, however, that I am not conscious of having treated him unfairly by accident even, certainly not by design. I am, Sirs, yours faithfully,

Brighton, Dec. 26th, 1898. T. JENNER VERRALL.

"FIRES IN LUNATIC ASYLUMS."

To the Editors of THE LANCET.

SIRS,—Your note on the recent fire at this house scarcely does justice to the staff.

The patient whose life was lost was not merely aroused

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but was brought downstairs into a place of perfect safety, being the very first person in the house to be rescued. He met his death by going back to the scene of the fire to get his belongings. It was not on the arrival of the firemen that the unfortunate man was first missed and searched for. He was missed a quarter of an hour before the firemen arrived and every room had been searched and every bed had been felt before the firemen arrived at the house. The closet in which the deceased was eventually found had been searched after he was missed and before the firemen arrived and he was not then in it. The firemen are deserving of the highest praise for the manner in which they performed their duties; but, in giving them the credit which is justly their due it is only fair to add that the house staff was equally efficient in circumstances that to them were much more trying.

I am, Sirs, yours faithfully,

Catford, S.E., Dec. 24th, 1898. CHARLES MERCIER.

A SUGGESTED EXPLANATION OF CERTAIN PECULIAR CARDIAC PHYSICAL SIGNS IN PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Attention has recently been called [1] to the presence of cardiac impulse and sounds on the right side of the chest although on post-mortem examination the heart was found in its normal position. In the cases referred to there existed cavity formation at the upper part of the right lung with consolidation of the lower lobes. At first sight it seems difficult to account for the peculiar phenomena observed, but a few remarks will, I hope, make the reason quite clear. It is a well-known fact, demonstrated by many authorities, that during respiration we often find cardio-pneumatic sounds produced which simulate closely organic cardiac murmurs, and indeed are often mistaken for these. They may be heard either in cardiac systole or in cardiac diastole and at times during both movements of the heart. Where there exists a cavity in the lung the sounds produced in that cavity may give rise to similar cardio-pneumatic murmurs. In the cases already referred to the cavities present were situated close to the cardiac organ and, moreover, had, so to speak, a bridge of consolidated lung connecting the heart with the cavity. In this way the cardio-pneumatic murmurs were conducted downwards from the cavity to the intercostal space on the right side over which they were audible. In a similar manner the impact of the heart was rendered visible and palpable on the right side of the chest by this combination of cavity and consolidation. It would appear that the presence of consolidated lung cannot of itself cause this conveyance of cardiac impulse else it would be observed in cases of lobar pneumonia; there must also be cavity formation present above the consolidated area. It is the presence of a cavity that is one of the *sine quâ nons* of cardio-pneumatic murmurs in phthisis and it is likewise the essential in the conveyance of cardiac movement to the right side of the chest. During the stage of cavity formation in phthisis I have frequently remarked the presence of these so-called cardio-pneumatic sounds not only in the region of the cavity but at an entirely opposite part of the chest and have always observed that in such cases there was a well-defined bridge of consolidated lung substance existing between the cavity and the area other than that of the cavity itself over which these murmurs were audible. There can be no doubt whatever that the cardiac impulse is conveyed in a similar manner, the transmission being due to the peculiar combination of cavity and consolidation in direct proximity to the heart. Cases of this kind are by no means rare and a clear understanding of the conditions present is most essential to the practitioner. I am quite convinced from personal observations that such misleading phenomena as I have been considering never occur unless we have cavity formation co-existent with consolidation in the same lung. If this fact is borne in mind I think no further difficulty will be experienced in accounting for what must always prove to be interesting, as they are striking, phenomena.

I am, Sirs, yours faithfully,

JAMES BURNET, M.A. Edin., M.B. Edin.

Cumin-place, Edinburgh, Dec. 12th, 1898.

ERRATUM.—In a letter signed "H. E. G." which appeared in our issue of Dec. 24th upon "Diphtheria Antitoxin in Private Practice," p. 1733, the price quoted for 2000 units of serum was wrongly printed as 17*s.* 6*d.* It should have been 17*s.* 3*d.*

[1] THE LANCET, Nov. 19th, 1898, p. 1323; and Dec. 10th, 1898, p. 1548.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Bacterial Treatment of Manchester Sewage.

A PRELIMINARY report, signed by the three experts appointed some months ago to consider and report on the best methods of treating the Manchester sewage, has been addressed to the Rivers Committee of the corporation. It is a very satisfactory one to those who have been looking with hope to the bacterial treatment for solving the difficult problem of sewage disposal. The report is too long for transcription, but Messrs. Baldwin Latham, Percy F. Frankland, and W. H. Perkin, jun., say, "without hesitation that from the results obtained with the double contact beds constructed according to our instructions at Davyhulme by your city surveyor and the experiments carried on by us which have been directed to the treatment and purification of settled and crude sewage without the use of any chemicals we are of opinion that the bacteriological system, notwithstanding the particular nature of the Manchester sewage, will purify that sewage and will yield an effluent which will comply with all the requirements of the Mersey and Irwell Joint Committee and which when discharged into the Ship Canal will, in our judgment, be the means of greatly improving the waters of the latter." One of the strongest *a priori* points which the advocates of the culvert to the sea or other modes of dealing with the sewage of Manchester insisted on was that the chemical refuse which was discharged into the sewers would put a stop to bacterial action. In an appendix to the report Mr. Gilbert J. Fowler, the chemist, says: "In no case has the presence of manufacturing refuse shown a marked tendency to render the purification less effective." Any mineral acids seem to be neutralised by the alkaline carbonates, soaps, &c., for "in no case has the sewage been found to be acid with mineral acid." The Local Government Board is to hold an inquiry on Jan. 12th, 1899, into the working of the system, when the experts are expected to give evidence. It is proposed to limit the inquiry to the main principles determining the treatment of the sewage at Davyhulme, reserving details as to plans and estimates for a later inquiry.

Bromoform Poisoning.

An inquest was held on Dec. 22nd at Lancaster concerning the death of a little girl, five years old, the daughter of the infirmary porter. It seems that 36 minims of bromoform were put in a mixture made up with mucilage and water and the child died after the last dose had been taken. The theory was that the whole of the bromoform had been left at the bottom of the bottle and taken in the last dose from its not having been well shaken as directed. The report is rather meagre and as this is said to be the first recorded case of bromoform poisoning it would be well if a fuller account were given.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh.

THE following are the numbers of students who attended the several courses of lectures in the University of Edinburgh during the year 1897-98: botany, 174; zoology, 205; chemistry, 241; anatomy, 228; physiology, 436; materia medica, 217; pathology, 180; medical jurisprudence, 203; medicine, 252; surgery, 241; midwifery, 113; mental diseases, 166; and opthalmology, 117.

The Inebriates Act, 1898.

This important statute will come into operation on Jan. 1st, 1899. Meantime a committee to frame regulations for the proposed inebriate reformatories in Scotland and generally to advise the Secretary for Scotland as to the methods of working the Act is sitting. At first there was no medical man on that committee. The Royal Colleges of Physicians and Surgeons of Edinburgh and the Glasgow Faculty of Physicians and Surgeons pointed out this omission to the Lord Advocate, who at once requested the presidents of those

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corporations to name a medical man who "would command the confidence of the profession." They nominated Dr. Clouston, who accordingly has been added to the committee.

Glasgow University.

The George A. Clark Scholarship of £170 for four years has been awarded to Mr. Hugh R. Buchanan, M.A.; the senior Arnott prize for an examination in physiological physics to Mr. James M'Pherson, M.A.; and the junior Arnott prize for an examination in general physics to Mr. Alex. Macintyre. At a recent meeting of one of the students' clubs Professor Bradley, in replying to the toast of "Alma Mater," alluded to the work of the University Commission and expressed the opinion that the results would in all respects be beneficial, even though in some respects the necessary alterations produced temporary difficulties. The diminution in the number of students, largely consequent upon a more stringent preliminary examination, was in one sense unfortunate, but compensation might be expected in the shape of more efficient secondary education throughout the country and the cessation of junior classes in the University would leave more energy free for the prosecution of the higher ranges of scholarship. The new arrangements by which the emoluments of the professors are independent of the number of students attending their classes Professor Bradley regarded with unqualified approval. He advocated a scheme by which students on coming up to the University could receive directions in reference to the curriculum they should pursue. Hitherto the public professional criticisms on the University Commissioners have been rather of an adverse order; it is refreshing to hear a more optimistic note from one of the younger members of the senatus. To the general regret Professor Coats is again laid aside by illness; his senior assistant, Dr. L. R. Sutherland, has also been somewhat seriously ill. The charge of the pathological department has been committed to the care of Dr. A. R. Ferguson.

The Royal Infirmary, Aberdeen.

The number of in-patients admitted to the Royal Infirmary during the year is given as 2363, and 208 were left under treatment on Dec. 19th. There were also 2116 casualty cases of a minor kind and 3382 out-patients. It is stated that there will be a deficit in the funds for the year of upwards of £1200.

Dec. 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Christmas at the Dublin Hospitals.

THE Royal Hospital Infirmary was visited by Field-Marshal Lord Roberts, V.C., accompanied by the Hon. Aileen Roberts, Lieutenant the Hon. F. H. S. Roberts, A.D.C., the Adjutant, Captain Fielding, and the Staff Surgeon, Dr. Carte. His lordship presented the old warriors with gifts of wine, fruit, and tobacco. At the Children's Hospital, Temple-street, Her Excellency the Countess Cadogan will preside at the Christmas tree *fête* which will take place on Dec. 28th.

Filled-up Dumping Ground.

A very important case was tried at the Belfast Recorder's Court on Dec. 22nd in which a man brought an action against another man to recover £50 for alleged damages caused by a nuisance which resulted in a noxious smell owing to filth having accumulated on the defendant's lands and for wrongfully allowing polluted water to flow into the lands of the plaintiff. It would appear that the plaintiff lives in a cottage near the River Lagan and that about one year ago the defendant caused to be deposited near his house a material with a most offensive smell which a sanitary engineer who was examined said was "filling-up" matter composed of ashpit refuse and road scrapings. He was told it was done by the corporation. Dr. Whitaker, medical officer of health of Belfast, said the main damage was that the view of the River Lagan from plaintiff's house was interfered with. The plaintiff's case was that the matter used as "filling up" substance was hurtful to his family's health and a medical man swore that he had treated plaintiff's daughter for typhoid fever in the month of July. The jury found for the plaintiff and awarded the full amount claimed—£50. I trust the result of this case will put an end for ever to this abominable practice, so prevalent in Belfast, of "dumping" down stuff (often from ashpits, &c.) in various parts of the city. The case will in the future in Belfast be regarded as a test one.

Dec. 27th.

Obituary.

ALFREDO ANTUNES KANTHACK, M.A. CANTAB., M.D., F.R.C.P. LOND., F.R.C.S. ENG.,

PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF CAMBRIDGE.

ON Dec. 21st there passed away the foremost of the younger generation of pathologists in the person of the Professor of Pathology in the University of Cambridge. Alfredo Antunes Kanthack was born in Brazil in 1863, the second son of Emilio Kanthack of Para, at one time Her Majesty's Consul in that town. He was educated in Germany, chiefly at Hamburg and Luneburg, during his early years, but afterwards he studied at University College, Liverpool, St. Bartholomew's Hospital, St. John's College, Cambridge, and Berlin. He became a Member of the Royal College of Surgeons of England in 1887 and a Fellow in 1888, a Member of the Royal College of Physicians of London in 1892 and a Fellow in 1897.

After taking the Fellowship of the Royal College of Surgeons and completing his M.B. and B.S. at the University of London he went almost at once to Berlin. Here he began his first real work in pathology. A pupil of Virchow, of Koch, and of Krause he speedily attracted the attention of his teachers as an ardent worker, both clinically and in the laboratory. A paper on the Histology of the Larynx, published in Virchow's Archives, established his reputation as an original observer and a controversialist of skill. Using to the full his enormous capacity for work he laid here the foundation of his all-round knowledge of pathology which was so striking a feature of his later years. He made many friendships and only a few days before his last illness he was the companion of Professor Virchow in many of the journeys which the latter made during his recent stay in this country. In the year 1890 he went as a Commissioner appointed by the National Leprosy Fund to India with the late Dr. Beaven Rake and Dr. Buckmaster to investigate the question of leprosy in that country. Some of the conclusions embodied in the report did not find favour with certain of the members of a special committee appointed to consider it, but it received the approval of the scientific members of the executive committee who accepted the conclusions while bearing testimony to the great care and ability with which the inquiry had been conducted.

On his return from India in 1891 he was elected John Lucas Walker Student at Cambridge and he published several papers as the result of his year's work. Many of the papers dealt with the question of immunity and, whilst denying the claims of Metchnikoff, at that time almost universally allowed, that the phenomena of phagocytosis completely explained the processes of immunity, he guarded himself from accepting the extreme claims of the supporters of the humoral theorists. The most important of these papers, published conjointly with Mr. Hardy, appears in the Proceedings of the Royal Society, vol. lii. At this time was published his paper on Madura Disease in which he demonstrated the parasitic nature of the affection and its close resemblance, if not identity, with actinomycosis. After a year passed in Liverpool he went to St. Bartholomew's Hospital in 1893, and while there, notwithstanding the claims made on his time by the work of his post—that of lecturer on pathology—he was able to contribute many valuable papers, mostly in connexion with his daily work and on a great variety of subjects to the medical journals and the publications of the various societies. On leaving St. Bartholomew's in 1897 to succeed Professor Roy at Cambridge it seemed possible that he would gain the leisure necessary for a larger measure of work of his own.

During the autumn of this year, 1898, came the report on the inquiry into the tsetse fly disease which he was conducting with the aid of Dr. Durham and Mr. Blandford. The failure of all attempts to find a cure for this South African scourge is disappointing, but the report contains much that is of value concerning points in doubt or of error with regard to

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infectivity of various animals. His last work, published with Dr. St. B. Sladen a few days before his death, was concerned with the infectivity of milk as supplied to the consumer in regard to tuberculosis. His acquaintance with the literature of his subject in nearly all its branches was very remarkable and this with his wide practical experience made him an authority alike in general pathology, pathological histology, and bacteriology. In addition a fine critical sense and the extraordinary influence which he had over his pupils made him almost an ideal teacher, especially of beginners in research. An assured position he already held and his work seemed to promise great things in the future, but his loss to pathology in England is to be especially deplored for had he been spared he would by his example and guidance, by his energy and enthusiasm in the post which he held, have had a very large influence on its progress. His travels abroad had brought him in contact with many of the best workers on the continent and in India and he had many friends in America. His foreign correspondence was very large—much of it created by his own writings. Abroad as well as in England many will grieve at the loss of a friend and counsellor removed from our midst at so early an age.

His published works include "Leprosy in India," which was the report of the Leprosy Commission published in 1892 conjointly with his fellow Commissioners, "A Manual of Practical Morbid Anatomy," 1894, and "A Handbook of Practical Bacteriology," 1895. Besides these he wrote many most valuable communications to the scientific journals, especially to the *Journal of Pathology* and the Proceedings of the Royal Society. His Jacksonian Prize Essay was won in 1895 and bore for motto a drawing of some bacilli with the following words:

> "What are these
> So withered and so wild in their attire,
> That look not like the inhabitants o' the earth
> And yet are on't?"

It is scarcely necessary to add that the essay dealt with the subject of Tetanus.

Professor Kanthack was widely read—a good linguist and a man of thoroughly cultured mind, with a singular charm of manner. Dowered as he was with so many gifts his place will indeed be hard to fill. The funeral—which took place on Dec 24th at Cambridge, the first part of the service being sung in the chapel of King's College, of which society he was recently elected a fellow—was attended by a large number of friends and relations, and representatives of the University and the various scientific and learned bodies of which the deceased was a member.

WILLIAM MUNK, M.D. LEYDEN, F.R.C.P. LOND.,

HARVEIAN LIBRARIAN TO THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

BY the death of Dr. William Munk who passed away at his residence, Finsbury-square, on Dec. 26th the medical profession loses one whom it can ill afford to spare. In addition to being a sound and capable physician Dr. Munk was a scholar, an antiquarian, and a writer of fluent and stylish prose. As librarian to the Royal College of Physicians of London he exhibited all those qualities which are so necessary for the post but which it is almost impossible to acquire unless the possessor of them is so gifted by nature.

Dr. Munk was born in 1816. He received his medical education at University College, London, and at the University of Leyden where he graduated M.D. in 1837. He became a member of the Royal College of Physicians of London in 1844 and a Fellow of the same body in 1854, being elected Harveian Librarian in 1857. He was senior censor of the College in 1882 and vice-president in 1888–1889. His first medical appointment was that of demonstrator of morbid anatomy to the medical school of St. Thomas's Hospital. For many years he was physician to the Royal Infirmary for Asthma, Consumption, and Diseases of the Chest and at the time of his death was consulting physician to the Royal Hospital for Incurables. He held the post of consulting physician to the Small-pox and Vaccination Hospital for some forty years, and was one of the first authorities upon small-pox. Of his literary labours the most important was without doubt the extremely carefully edited volume entitled "The Roll of the Royal College of Physicians," of which the first edition appeared in 1861 and the second, revised and enlarged, in 1878. The first edition was in two volumes and the second in three. The third edition comprised the period between 1518 and 1825, at which latter date the Royal College of Physicians of London was removed from Warwick-lane to its present site in Pall-mall. The work consists of a series of short biographies of the practitioners included in the "Roll" and its tenor may be judged from an extract from the preface to the third edition. After apologising for the necessarily monotonous character of the work Dr. Munk proceeds: "The more successful a physician is, the more he is engaged in the best duties of his office, the less is there to meet observation or to court publicity, and the less material, therefore, for biography. 'The physician's part,' says Johnson, 'lies hid in domestic privacy, and silent duties and silent excellencies are soon forgotten.'" Other works from his pen were "Euthanasia, or Medical Treatment in Aid of an Easy Natural Death," which appeared in 1887, and "The Life of Sir Henry Halford, Bart., M.D.," which appeared in 1895. In 1884 he edited "The Gold-headed Cane." This last little book was originally written by Dr. Macmichael, the registrar of the College from 1824 to 1829, and was cast in the form of an autobiography related by "The Gold-headed Cane" preserved in the library of the College, which was carried successively by Radcliffe, Mead, Askew Pitcairn, and Baillie. Dr. Munk, in editing the original edition, added particulars dealing with Halford, Paris, and Mayo, bringing the autobiography down to 1862. "Euthanasia" was an earnest and learned plea for the recognition of the duty which physicians owe to their patients not to end life but to render its passing in hopeless cases more easy. The book was the foundation of a leading article in THE LANCET of Dec. 10th, 1887. In the early part of this year the Fellows of the Royal College of Physicians, as a mark of their gratitude for the forty years' labour of Dr. Munk as librarian, subscribed for his portrait to be painted. The commission was entrusted to the Hon. John Collier and the picture which was completed in July now hangs in the dining room of the College. The primary cause of the death of Dr. Munk was glycosuria.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and having conformed to the by-laws and regulations have been admitted Fellows of the College and have received their diplomas:—

Claud Alley Worth, L.R.C.P. Lond., St. Bartholomew's Hospital; diploma of Membership dated May 11th, 1893.
Arthur Godfrey Ince, L.R.C.P. Lond., Charing-cross Hospital; May 10th, 1894.
George Herbert Sowry, M.B., B.S. Lond., L.R.C.P. Lond., St. Bartholomew's Hospital; May 9th, 1895.
Nathaniel Bishop Harmar, M.B. Cantab., L.R.C.P. Lond., Cambridge University and Middlesex Hospital; July 29th, 1895.
Hugh Thomas Symes Bell, L.R.C.P. Lond., Guy's Hospital; Feb. 13th, 1896.
Arthur William Ormond, L.R.C.P. Lond., Guy's Hospital; August 4th, 1896.
Alfred Walter Sikes, B.Sc., L.R.C.P. Lond., St. Thomas's Hospital; August 4th, 1896.
William Ilbert Hancock, L.R.C.P. Lond., Guy's Hospital; Nov. 12th, 1896.
William Stuart-Low, L.R.C.P. Edin., L.F.P.S. Glasg., Edinburgh, St. Thomas's and St. Bartholomew's Hospitals; May 13th, 1897.
James Atkinson Bonnin, M.B., Ch.B. Adel., L.R.C.P. Lond., Adelaide University and London Hospital; July 29th, 1897.

Four other gentlemen passed the examination, but have not yet attained the legal age, and will receive their diplomas at future dates. Twenty gentlemen were referred for six months and one gentleman for twelve months.

UNIVERSITY OF CAMBRIDGE.—The following candidates were successful at the examinations for medical and surgical degrees Michaelmas term:—

THIRD EXAMINATION.

Part I., Surgery and Midwifery.—R. Ainsworth, B.A., Pembroke; H. F. Bassano, B.A., Trinity; E. H. Cornaby, B.A., non-collegiate; E. Cox, B.A., Caius; S. W. Curl, B.A., Downing; W. S. Darby, B.A., Trinity; N. Devereux, M.A., H. Selwyn; A. T. Fraser, B.A., Caius; J. H. P. Fraser, Jesus; A. C. Fry, Pembroke; H. A. Gaitskell, M.A., Clare; F. A. Godson, B.A., St. John's; J. Cutch, M.A., Christ's; G. E. Harthan, B.A., Jesus; H. M. Harwood, B.A., Trinity; C. L. Hawkins, B.A., Emmanuel; N. Heard, B.A., Down; J. E. Helm, B.A., Magdalene; M. Horne, B.A., Trinity; R. J. Horton-Smith, M.A., and O. Inchley, B.A., St. John's; G. F. Lobb, B.A., and N. J. McCaskie, B.A., Caius; A. E. Martin, B.A., Down; J. C. Matthews, B.A., St. John's; H. R. Mayo, B.A., Caius; T. A. Mayo, B.A., Clare; W. T. Mullings, B.A., Christ's; J. P. L. Mummery, B.A., Caius; F. J. Nicholls, B.A.

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St. John's; G. E. Orme, B.A., Caius; F. A. Rose, B.A., St. John's; R. N. Salaman, B.A., Trinity Hall; F. Shufflebotham, B.A., Trinity; J. F. Skrimshire, St. John's; E. Talbot, B.A., Trinity; R. S. Trevor, M.A., Clare; A. N. Walker, B.A., Queens', and W. B. Winton, B.A., Clare.

Part II., Medicine, &c.—J. L. Allen, B.A., King's; C. H. Barnes, B.A., Christ's; P. F. Barton, B.A., and J. A. H. Brincker, B.A., St. John's; A. E. Carsberg, B.A., Caius; A. W. Daniel, B.A., Emmanuel; S. E. Denyer, M.A., Queens'; W. Eardley, M.A., St. John's; E. E. Glynn, B.A., Clare; W. D. Harmer, B.A., King's; G. E. Harthan, B.A., Jesus; H. M. Hart-Smith, B.A., and J. H. F. Jerrard, B.A., Caius; M. B. Johnson, B.A., Trinity Hall; A. C. Jordan, B.A., Sidney-Sussex; G. S. Keeling, B.A., Caius; T. W. Letchworth, B.A., Emmanuel; F. J. Lidderdale, Trinity; A. F. MacCallan, B.A., Christ's; P. L. Moore, B.A., and B. A. Percival, B.A., St. John's; S. P. Pollard, B.A., Caius; C. Powell, B.A., Emmanuel; C. Reissmann, B.A., St. John's; E. P. Sewell, B.A., Pembroke; C. C. Simson, M.A., Trinity; P. T. Sutcliffe, B.A., Emmanuel; E. C. Taylor, B.A., St. John's; H. C. Thorp, B.A., Emmanuel; I. Ll. Tuckett, M.A., Trinity; A. N. Walker, B.A., Queens'; A. M. Ware, B.A., Pembroke; W. K. Wills, M.A., St. John's; R. J. Willson, B.A., Emmanuel; and A. G. Wilson, B.A., Caius.

The Special Board for Medicine have elected Dr. Allbutt, Regius Professor of Medicine, to be their representative on the General Board of Studies until Dec. 31st, 1902. The General Board of Studies have re-appointed Dr. Hill, Master of Downing College, University Lecturer in Advanced Human Anatomy till Michaelmas, 1903, and the appointment has been confirmed by the Special Board for Medicine.

THE QUEEN has conferred the Hon. Associateship of the Order of St. John of Jerusalem on Dr. G. T. Cattell.

SOUTH DEVON AND EAST CORNWALL HOSPITAL.—The committee of the South Devon and East Cornwall Hospital has acknowledged the receipt of £560 from the Hospital Saturday Fund.

RAILWAY ACCIDENT TO A MEDICAL MAN.—Mr. A. Jeffreys of Abercanaid who was injured so seriously at Abercynon Station has had both arms amputated in the Cardiff Infirmary and is progressing favourably.

FOOTBALL CASUALTY.—A verdict of "Accidental death" was returned at an inquest held in Aberdare upon a football player, aged thirty years, who was injured in a football match played between Aberdare and Porth. Deceased sustained a compound fracture of the left leg and tetanus followed.

COCAINE POISONING.—An inquest has been held at Trefusis, Cornwall, upon the body of a man who was found dead in bed on Dec. 19th. Evidence showed that the deceased was in the habit of taking cocaine. Dr. Knuthsen stated that death was due to an overdose of cocaine and a verdict to that effect was returned.

THE VACCINATION ACT.—At the meeting of the Chipping Sodbury Board of Guardians held on Dec. 21st, under the presidency of Sir G. Codrington, Bart., a resolution was passed with only two dissentients to petition the Houses of Parliament to repeal the Vaccination Act of 1898 without delay. The Duke of Beaufort spoke strongly in favour of the resolution, giving some of his military experiences which plainly showed the efficiency of vaccination, and added that unless something was done to re-establish compulsory vaccination they would have a plague of small pox all over the country.—At a meeting of the Torrington Board of Guardians held on Dec. 17th a resolution was passed condemning the new Vaccination Act.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BAIN, J. W. D., M.R.C.S., has been appointed a Public Vaccinator for South Australia.

BENINGTON, R. C., M.D., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed a Health Officer for Claremont, Western Australia.

BROWN, WILLIAM, M.D., C.M. Glasg., has been appointed Public Vaccinator for the Fishponds District by the Bristol Board of Guardians.

BURD, CYRIL P., M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon for the Salop Infirmary, Shrewbury.

CARLEW, T. W., M.D. Canada, has been appointed a Clinical Assistant for the Chelsea Hospital for Women, Fulham-road, London, S.W.

COLE, J. W. E., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary of the City of London Union.

DAVIES, RICHARD, M.D., Ch.M. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of the Cheltenham Union Workhouse, vice S. T. Pruen, resigned.

DICKINSON, J., M.B. Lond., has been appointed a Health Officer for Bridgetown, Western Australia.

DOUGLAS, C. E., M.D. Edin., has been re-appointed Medical Officer by the Cupar Town Council.

FLOOD, PHILIP, L.R.C.S., L.R.C.P. Irel., has been appointed Public Vaccinator for the St. Philip and Jacob Registration District by the Bristol Board of Guardians.

GARD, HENRY, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Northern District by the Devonport Board of Guardians.

GENT, W. C., L.R.C.P. & S. Edin., has been appointed Public Vaccinator for the Knowle Registration District by the Bristol Board of Guardians.

GIBSON, THOMAS, M.B., Ch.M. Edin., has been appointed a Public Vaccinator for South Australia.

HALFORD, A. C. F., M.B., Ch.B. Melb., has been appointed a Resident Surgeon for the Claremont Hospital, Queensland.

HARKNESS, E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for Yea, Victoria, Australia, vice J. F. Matthews.

HOGG, J. B., L.R.C.P., L.R.C.S. Edin., has been appointed an Inspector of Hospitals for the Insane in Queensland and Medical Superintendent for the Goodna Hospital for Insane, Queensland, vice R. B. Scholes.

HUTCHINSON, M. M. L., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Buckhurst Hill Sanitary District of the Epping Union.

JONES, R., L.K.Q.C.P. Irel., L.R.C.S., has been appointed a Public Vaccinator for Eaglehawk, Victoria, Australia, vice J. C. McKie.

KELLAND, JAMES, M.B. Edin., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health for the Salisbury Rural District.

LETHBRIDGE, R. W., M.B., Ch.M. Edin., has been appointed a Senior Medical Officer for Hospitals for the Insane, Victoria, Australia, vice E. E. Rosenblum.

LUCKHAM, L. S., M.R.C.S., has been re-appointed Medical Officer for the No. 4 Sanitary District of the Salisbury Union.

MACDONALD, M., M.B., Ch.B. Glasg., has been appointed Officer of Health for the Burgh of Greenock.

MACGREGOR, G. R., M.D. Aberd., has been appointed Medical Officer of Health for the Bingley Urban District, vice J. W. Craig.

MACQUARIE, C. N., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Officer of Health for Bright Shire, Victoria, Australia, vice C. W. Simons.

MASON, J. J., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Officer for the Bollington Sanitary District of the Macclesfield Union.

MELLAND, C. H., M.B. Lond., M.R.C.S., has been appointed Resident Medical Officer for the Manchester Royal Infirmary.

MISKIN, L. J., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed a Resident Medical Officer for the Perth Public Hospital, Western Australia.

NEVILL, W. NAPPER, B.A., M.D., B.Ch. Dubl., has been appointed Public Vaccinator for the Bedminster Registration District by the Bristol Board of Guardians.

NICOLL, J. R., M.B., Ch.M. Aberd., has been appointed Resident Medical Superintendent for the Toowoomba Hospital for the Insane, Queensland, vice J. B. Hogg.

PAGE, G. SHEPLEY, L.R.C.P., L.R.C.S. Edin., has been appointed Public Vaccinator for the Bristol Ward by the Guardians of the City and County of Bristol.

ROBERTS, E. D. D., M.B., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Workhouse and the First Sanitary District of the Dursley Union.

ROBERTS, J. L., M.B., C.M. Edin., D.P.H. Lond., has been re-appointed Medical Officer of Health by the Prestatyn Urban District Council.

SCHOLEFIELD, G. E., M.D. Edin., D.P.H. Vict., has been appointed Medical Officer of Health by the West Lancashire Rural District Council.

SCOTT, J. A. N., M.D. Glasg., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for Hamilton, Victoria, Australia, vice L. Robinson.

SHEPPARD, E. J., L.R.C.P., L.R.C.S. Ed., has been appointed Public Vaccinator for the Clifton Registration District by the Bristol Board of Guardians.

STAPLE, JAMES DIBBLE, M.R.C.S., L.S.A. Lond., has been appointed Public Vaccinator for the Ashley Registration District by the Guardians of the City and County of Bristol.

STEELL, J., M.B., Ch.M. Edin., L.R.C.P., L.R.C.S. Edin., has been appointed a Senior Medical Officer for Hospitals for the Insane, Victoria, Australia, vice W. A. Barker.

WARD, JOHN, M.D. St. And., M.R.C.S., has been appointed a Public Vaccinator for the District of Lumsden, New Zealand.

YOUNG, JAMES, M.D., C.M. Glasg., has been appointed Public Vaccinator for the St. George's Registration District by the Guardians of the City and County of Bristol.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street, Birmingham.—House Surgeon. Appointment tenable to April 30th, 1899. Salary at the rate of £42 per annum, with board lodging, and washing.

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CITY ASYLUM, Birmingham.—Junior Assistant Medical Officer for one year, unmarried. Salary £100 a year, with board, lodging, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c. Also Second House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £100 per annum, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

COUNTY HOSPITAL, Ryde.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for twelve months. Salary £40 per annum, with board, residence, and washing.

FINSBURY DISPENSARY, Brewer-street, Goswell-road, London.—Resident Medical Officer for one year. Salary £100 per annum, with a furnished residence in the institution, attendance, coals, and gas.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GOVAN DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £100 a year, with board and residence. Applications to the Medical Superintendent, Hawkhead Asylum, Paisley.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Resident Medical Officer. Salary £50 per annum, with board, lodging, and washing.

KENSINGTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £125 per annum, with furnished apartments, coals, gas, and attendance. Applications to the Honorary Secretary, 21, Lower Phillimore-place, Kensington, W.

LONDON FEVER HOSPITAL, Islington.—Assistant Physician.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—Pathologist. An annual honorarium of 50 guineas. Also House Physician. Salary £100 per annum.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Board, lodging, and washing provided. Also Dental Surgeon.

ROYAL LANCASTER INFIRMARY.—Certificated Dispenser. Salary £80 per annum.

ROYAL SOUTHERN HOSPITAL, Liverpool.—Resident Junior House Surgeon. Salary £60 per annum.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon. Salary at the rate of £60 per annum, with board, lodging, and washing.

SOMERSET AND BATH LUNATIC ASYLUM, Cotford, Taunton.—Assistant Medical Officer for five years, single. Salary £120 per annum, rising annually by £10 to £150, with furnished apartments, board, fuel, lighting, and washing.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant, for six months. Board and residence provided.

ST. THOMAS'S HOSPITAL, London.—Assistant Surgeon.

SUNDERLAND INFIRMARY.—House Physician. Salary £80, rising £10 annually to £100, with board and residence.

TOWNSHIP OF TOXTETH PARK.—Senior Assistant Medical Officer for the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments. No extra fees allowed, and subject to statutory deductions. Applications to the Clerk to the Guardians, 15, High-street, Liverpool.

TYNEMOUTH VICTORIA JUBILEE INFIRMARY, Spring-gardens, North Shields.—Resident House Surgeon. Salary £120 per annum, of which £55 per year will be required for board, lodgings, and washing. Applications to the Secretary, 43, Howard-street, North Shields.

UNIVERSITY OF ST. ANDREWS.—An additional Examiner for three years.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, London.—Assistant Surgeon.

Births, Marriages, and Deaths.

BIRTH.

WRIGHT.—On Dec. 24th, the wife of W. Southey Wright, B.A., M.R.C.S., of Park View, Carshalton, of a son.

MARRIAGES.

REID—LAMBERT.—On Dec. 22nd, in London, John Reid, M.D., of Solna, Barnes, to Emily Bardsley Lambert, The Firs, Nottingham.

RUTHERFURD—NAPIER.—At Hyndland Church, Glasgow, on Dec. 22nd, by the Very Reverend Principal Story, D.D., assisted by the Rev. Henry Grey Graham, Henry Rutherfurd, M.B., C.M., to Jean Hay Frew, second daughter of the late Robert Assheton Napier, Esq., shipowner, Glasgow.

DEATHS.

KANTHACK.—On Dec. 21st, at Huntingdon-road, Cambridge, Alfred A. Kanthack, M.A., M.D. Lond., F.R.C.P., F.R.C.S., Professor of Pathology at the University of Cambridge and Fellow of King's College, aged 35 years.

KEBBELL.—At Flaxton, York, Alfred Kebbell, M.R.C.S., aged 51 years.

MAGORIS.—On Dec. 26th, at the Seamen's Hospital, Royal Albert Docks, Nicholas Magoris, M.D., aged 30, late Surgeon to the P. and O. Steam Navigation Co.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 29th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 23	30·44	S.W.	...	66	45	33	33	35	Foggy
,, 24	30·35	S.W.	...	46	45	34	35	37	Foggy
,, 25	30·37	S.W.	...	65	51	36	43	46	Fine
,, 26	30·14	S.W.	...	67	56	44	46	47	Overcast
,, 27	29·62	S.W.	...	60	57	47	49	55	Stormy
,, 28	29·51	W.	0·69	65	56	45	46	47	Cloudy
,, 29	29·32	S.W.	0·04	52	50	53	46	47	Raining

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.), Royal Ear Hospital (3 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.), Cancer (2 P.M.).

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (7th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (3rd). — PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. A. E. Barker: The Final Sequel to a Case already reported of Removal of Cystic Disease of a supposed Accessory Thyroid Body.—Dr. P. Weber: On an Apparent Thickening of the Subcutaneous Veins.—Dr. C. D. Green: Primary Carcinoma of the Liver.—Mr. D'Arcy Power: A Case of Intussusception.—Mr. R. H. Lucy: A Case of Intussusception.—Mr. Barwell: A Case of Congenital Limb Deficiency and Redundancy (illustrated by lantern slides and stereoscopic skiagrams).

WEDNESDAY (4th). — OBSTETRICAL SOCIETY OF LONDON. —8 P.M. Specimens will be shown by Dr. Lea, Dr. Addinsell, and Dr. J. Phillips. Papers:—Dr. Donald: A Case of Ectopic (Intra-ligamentous) Gestation at the Seventh Month in which the Fœtus was Extracted by Vaginal Incision.—Dr. D. Robinson: Vulval Discharges in Children.

THURSDAY (5th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—8.30 P.M. Mr. H. Marsh: On the Subsequent History of Cases in which Adhesions have formed in Joints, the Peritoneal Cavity, and other parts.

FRIDAY (6th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—8.30 P.M. Mr. R. Lake: The Treatment of Laryngeal Phthisis.—Mr. J. R. Lunn: Two Cases of Optic Neuritis associated with Mastoid Disease.—Dr. J. Allan: A Series of Twelve Tracheotomies for Laryngeal Diphtheria in Young Children with Nine Recoveries.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—4.30 P.M. Annual General Meeting. Election of Officers and Annual Reports. Cases will be shown by Dr. S. Spicer, Dr. D. Grant, Mr. C. Symonds, Dr. B. Baron, Mr. M. Agar, Dr. Tilley, Sir Felix Semon, Dr. W. Williams, Mr. W. Wingrave, Mr. A. Thorne, Dr. StClair Thomson, Dr. W. Hill, and others. 8 P.M. Dinner at the Café Royal.

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Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, **AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.**

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1898 which is completed with the issue of to-day will be given in the next number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1898 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.* carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

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THE WAG'S CONSCIENTIOUS OBJECTION.

CONSCIENTIOUS objectors have been rather in evidence recently, but a young man who applied this week to Mr. Sheil basing his claim for immunity for his child on the alleged fact that he had lost two children from diphtheria following vaccination certainly supplied the most startling example of ignorance. Mr. Sheil refused to accept the objection on this plea as a conscientious one, and it is difficult to see how a man can claim that his conscience has proved him to believe in what five minutes of inquiry would have proved false.

DEATH FROM PTOMAINE POISONING.

MR. G. E. HILLEARY held an inquiry on Tuesday night last at the Canning Town Coroner's Court into the circumstances attending the death of a little girl, aged three and a half years, who was taken ill shortly after eating some tinned beef for dinner. No other member of the family felt any ill effects after partaking of the beef and the coroner elicited that the deceased had eaten some painted sweets. Mr. W. W. Farnfield, resident medical officer of St. Mary's Hospital, Plaistow, said the cause of death was ptomaine poisoning, the result most probably of eating some unwholesome articles of diet, it being his opinion that the tinned beef was the cause. The jury returned a verdict of "Death from misadventure," and the question of the composition of the sweets appears not to have been gone into.

PLAGUE IN MALEGAON.

ONE of the most interesting pictures of work in a plague-stricken community appears in a place which at first sight would seem most unlikely for this kind of literature—namely, the pages of a public school magazine—*The Wykehamist* for Dec. 20th. "Year by year," says Kipling, "England sends out fresh drafts for the first fighting line which is officially called the Indian Civil Service. These die or kill themselves by overwork, or are worried to death or broken in health and hope, in order that the land may be protected from death and sickness, famine and war, and may eventually become capable of standing alone. It will never stand alone, but the idea is a pretty one and men are willing to die for it." The article referred to is written by one of this fighting line in question, an old Wykehamist and is a plain unvarnished record of hard work. The population of Malegaon is mainly composed of Mussulman weavers who wander over the country-side selling their work and it was by the agency of one of their customers from Bombay who eluded the cordon of guards that plague was introduced. The old Wykehamist set to work with the help of one native doctor who, we are sorry to say, was a venal person. A few days after the outbreak he appeared in a new suit of shiny black broadcloth which was considered suspicious. Suspicion soon crystallised into certainty when he was caught letting off the family of a rich man from going to hospital although there was a case of plague. In a week the native doctor was dead. There was no hospital so they had to convert a rest-house situated in the Mussulman cemetery into one, a place which, as the old Wykehamist says with grim humour, was "very handy, for the cases usually die in under five days." Eventually he got an English surgeon to help him who had a rather bad time for the first few weeks, for he was imbued with modern ideas as to stethoscopes and thermometers which naturally appalled the intensely conservative Oriental mind. However, this wore off and when the epidemic was over he was *fêted* by the very people who had previously looted his house and this, too, after having been smitten by the plague himself. The old Wykehamist was obviously endued with the dogged British pluck which a public school education affords a man. "I dug up lots of bodies when concealed plague was suspected. Sometimes a body would be left unclaimed in a house and I had to shoulder it and bring it out myself. One day I built a very fine funeral pyre myself and roasted a gentleman. ....." Winchester may well be proud of her son: and the editor of *The Wykehamist* is to be congratulated upon his magazine for it is certainly superior to the usual run of school journals.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Evesham Journal, Rugby Advertiser, Leicester Post, Wilts County Mirror, Hampshire Advertiser, Batley News, Dewsbury Reporter, Lowestoft Standard, Kenilworth Advertiser, Times of India, Pioneer Mail, Scotsman, Citizen, Weston Mercury, Keene's Bath Journal, Leeds Mercury, Builder, Liverpool Daily Post, Cheltenham Free Press, Newcastle Leader, Architect, Bury Guardian, Brecon County Times, Bristol Mercury, Essex Telegraph, Walsall Observer, Yorkshire Post, Local Government Chronicle, Derby Times, Todmorden News, Pullen's Kent Argus, Eastern Morning News, Orsett Observer, Wigan Examiner, Kentish Gazette, South Wales Guardian, Lynn News, Guernsey Star, Hemel Hempstead Gazette, Midland Counties Express, Retford Times, Birmingham Post, Kidderminster Sun, Brighton Gazette, Sanitary Record, Meath Herald, City Press, Shipley Times, Reading Mercury, Hertfordshire Mercury, Australian Medical Gazette, Local Government Journal, Portadown News, Southampton Observer, Alfreton and Belper Journal, Surrey Advertiser, Surrey Comet, Lloyd's Weekly Newspaper, Devon County Standard, &c., &c.*

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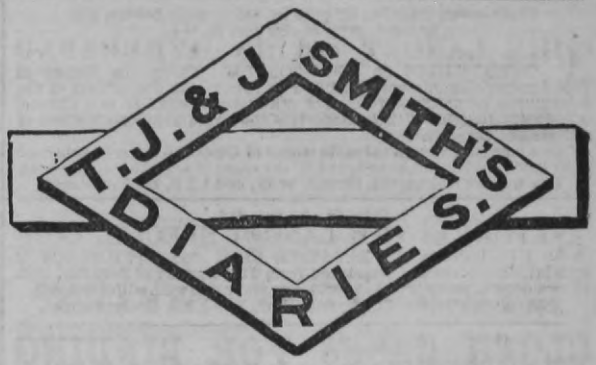
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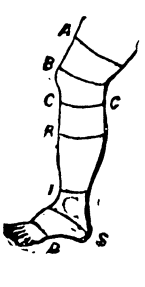
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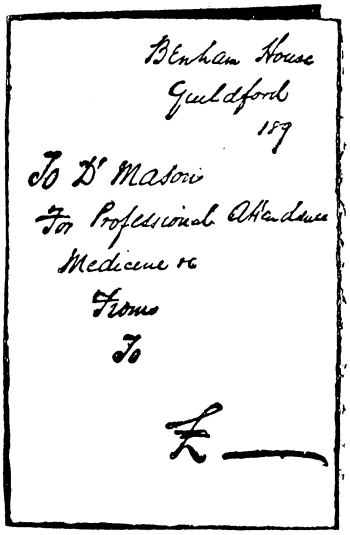
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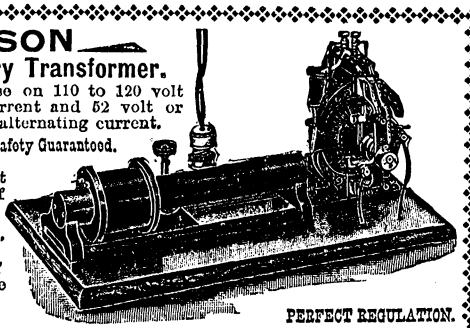
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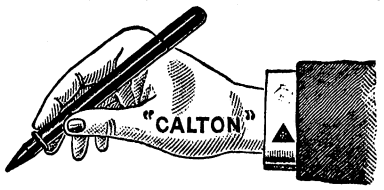
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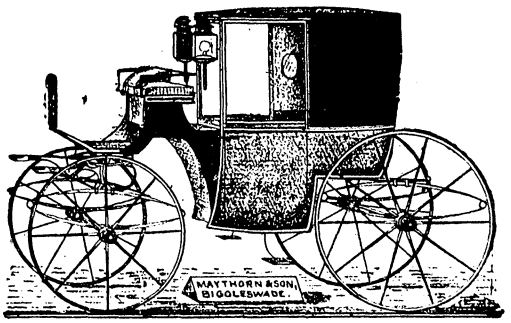
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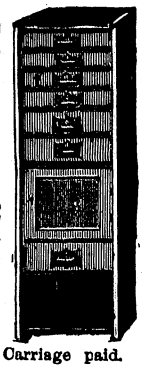
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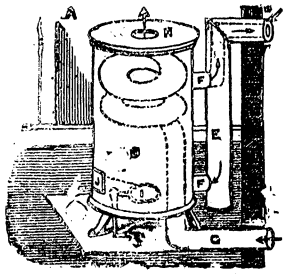
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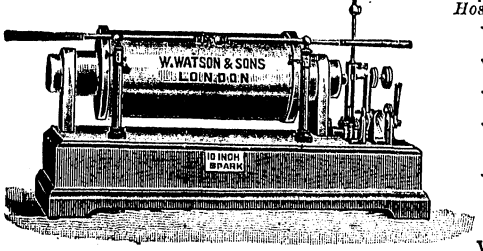
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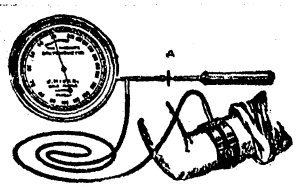


FIG. 1.

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FIG. 3.

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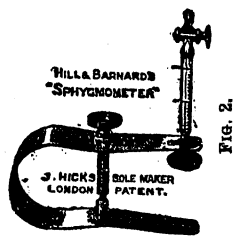


FIG. 2.

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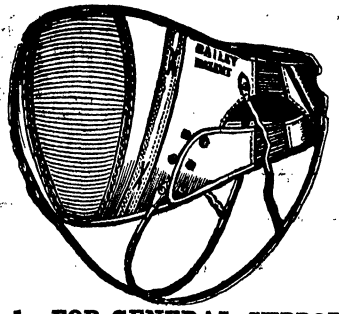
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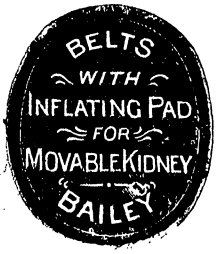
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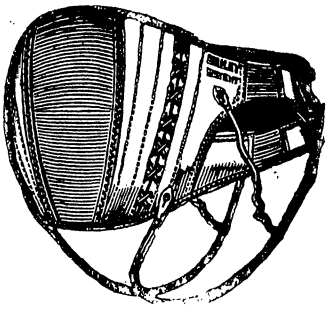
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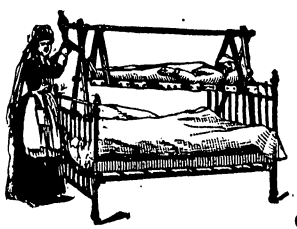
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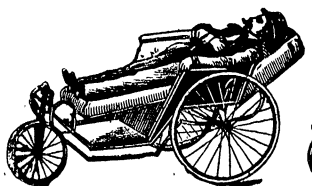


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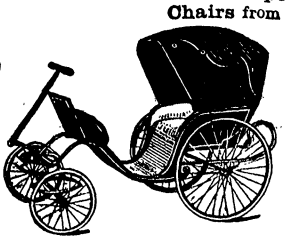
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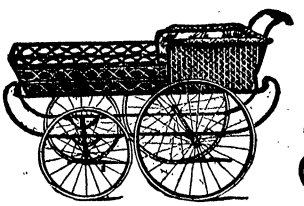




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CHLOROFORM DUNCAN'S PURE S.G. 1·490. PREPARED ENTIRELY FROM BRITISH ETHYLIC ALCOHOL BY DUNCAN, FLOCKHART & CO., EDINBURGH & LONDON.	*NOTE.*—This, which is prepared entirely from British Ethylic Alcohol, is the only CHLOROFORM which we supply as *Duncan's Pure*, S.G. 1490. To be kept Cool, and not exposed to a Strong Light. POISON.	THIS LABEL IS PRINTED IN BLACK INK.
CHLOROFORM DUNCAN'S METHYLATED S.G. 1·490. PREPARED ENTIRELY FROM METHYLATED SPIRIT BY DUNCAN, FLOCKHART & CO., EDINBURGH & LONDON.	*NOTE.*—This CHLOROFORM answers the tests of the British Pharmacopœia, but it must *not be confounded with* "DUNCAN'S PURE," which is prepared entirely from Ethylic Alcohol. To be kept Cool, and not exposed to a Strong Light. POISON.	THIS LABEL IS PRINTED IN BLACK INK ON ORANGE PAPER.

DUNCAN, FLOCKHART, & CO.,

Manufacturing Chemists, EDINBURGH.

London Branch—38 & 39, SNOW HILL, E.C.

Telegrams: "Dunhart, Edinburgh." "Dunhart, London."] [Telephone: No. 374 Edinburgh. Holborn 282, London.

N.B.—We now keep a Register of Locum Tenens and Assistants at 30, Beamsley Road, Frizinghall, Bradfor under the charge of Mr. Dawson, our Representative there. Telegraph Address—"Dunhart, Bradford."

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That Medical Man is yet to be found who after investigation and trial fails to fully endorse the claims made for

FELS'S GERMICIDE SOAP.

Nearly three thousand letters of approval have been received from the Medical Profession of Great Britain, showing that in Obstetrics, most forms of Skin Diseases, in Dental Practice, as a Germicide, as a Deodorant, and in numerous other uses, including the Toilet,

FELS'S GERMICIDE SOAP

stands alone.

It contains **HYDRARG. BICHLORID., SAL. ALEMBROTH, B. NAPHTHOL, and EUCALYPTOL.**

Every Physician who tests it believes in it.

Every modern Chemist stocks it and sells it at protected prices.

All Wholesale Houses supply it.

1/- per CAKE; 8/4 per Dozen.

LORIMER & CO.,

Sole Agents for FELS'S GERMICIDE SOAP,

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CHINOSOL

ANTISEPTIC DISINFECTANT DEODORANT.

NON-POISONOUS. NON-CORROSIVE. NON-VOLATILE. READILY SOLUBLE. VERY PORTABLE. ECONOMICAL.

A large circle of the **Medical and Surgical Profession** have now finally adopted the use of **CHINOSOL** in preference to Corrosive Sublimate and Carbolic Acid. **CHINOSOL** is supplied to the **Metropolitan and Counties Asylum Boards, Infirmaries, Hospitals, Schools,** &c., for **Inodorous Disinfection** and General **Sanitation.** The **non-poisonous** and **non-corrosive** character, the important **germicidal** and **deodorising** power and the **great portability** of **CHINOSOL** are no doubt some of the points which gain for it a daily increasing number of patrons.

NOTICE.—Each Package of CHINOSOL Preparations bears full instructions, and where these have been removed, a fresh copy will be sent on application.

TANNALBIN

(KNOLL.)

This non-toxic **INTESTINAL ASTRINGENT** and **ANTI-DIARRHŒAL** occurs in the form of a light-brown powder, which is insoluble in the gastric juice and only slowly soluble in intestinal fluids; it causes no disturbance in the stomach, no nausea, no anorexia; it is tasteless, odourless, and is readily taken by adults and children. Dr. von ENGEL, Brunn, and Prof. Dr. VIERORDT, University Clinic, Heidelberg, and many other observers recommend **TANNALBIN in all cases of Sub-acute and Chronic Enteritis, whether of Children or Adults, as it unquestionably deserves the first place among astringent medicines.** See pamphlet just published: *Hints on the Use of Tannalbin* (1) in Acute, Subacute, and Chronic Enteritis, Dysentery; (2) in Diarrhœa of Phthisical Patients; (3) in Diarrhœa of Infants and Children; and (4) its Preventive use in conjunction with other remedies. Tannalbin is supplied in powder and 5-grain tablets, the latter is most convenient for prescribing.

PAPAÏN-FINKLER.

This ideal purely vegetable digestive ferment is largely used in the curative treatment of **Gastric Ulcer** (THE LANCET, Feb. 9th, 1895, p. 333), and as an aid to the nutrition of patients suffering from **Phthisis,** its value cannot be overrated (see THE LANCET, April 27th, 1895, page 1050). The solvent action of Papaïn on albuminous bodies is also turned to account in Diphtheria. Under the application of a 5 per cent. aqueous mixture the false membranes promptly disappear, leaving the mucous membrane accessible to the action of suitable antiseptics. The importance of this effectual local treatment is in no wise diminished by the constitutional effects of the Antitoxin treatment. Papaïn is further indicated in all forms of dyspepsia, its action being fully maintained in acid, alkaline, and neutral medium, exhibiting at the same time a tonic and antiseptic effect.

COLCHI-SAL.

(Colchicine (Methyl) Salicylate).

FOR SUBACUTE, CHRONIC, & ARTICULAR PERICARDITIS, PLEURISY, LUMBAGO,



BETUL-OL.

(Lin. Methyl Salicyl. Comp.).

RHEUMATISM, RHEUMATOID ARTHRITIS, SCIATICA, GOUT, & ALLIED AFFECTIONS.

COLCHI-SAL CAPSULES.—The difficulty of administering this compound as a remedy in Gouty and Rheumatic Affections has been overcome by dispensing the same in small, accurately dosed capsules. Each capsule contains $\frac{1}{200}$ grain chemically pure **Colchicine** dissolved in 3 grains of Natural Methyl Salicylate from Betula Lenta, equivalent to 5 grains Salicylate of Soda.

BETUL-OL.—An Anodyne Compound Liniment of Methyl Salicylate, specially prepared in such a way that it is absorbed almost as soon as applied to the skin. To supplement the action of Colchi-Sal and to replace Salicylate of Soda, when this salt is not tolerated internally. Colchi-Sal Capsules and Betul-Ol are dispensed only on prescription.

Above Preparations are Sold by all Wholesale and Retail Chemists; where not promptly obtainable please apply direct to



Trade Mark.

B. KÜHN, 36, St. Mary-at-Hill, LONDON.



Trade Mark.

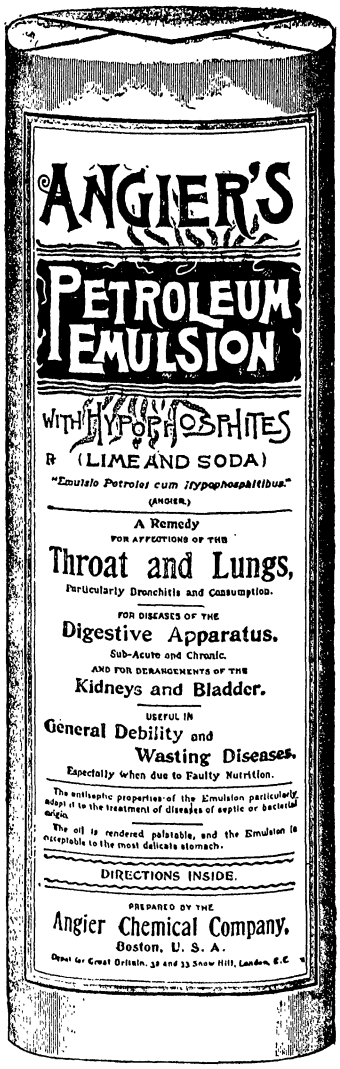
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SAMPLES, FULL LITERATURE, & PRICE LIST SENT FREE to the MEDICAL PROFESSION.

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THE ORIGINAL
Petroleum Emulsion.

Introduced to the Medical Profession of Gt. Britain in 1892.



CAUTION.

The success of **ANGIER'S PETROLEUM EMULSION** has, as is usual in such cases, led to widespread imitation and substitution, and it is therefore necessary to offer a few words of caution.

Medicinal petroleum preparations are our speciality, and Angier's Emulsion is but one of a number of such preparations manufactured by our house at Boston, U.S.A. We purify our own oil by a special process of our own, and know that we have a product not obtainable by manufacturing chemists generally. The numerous imitations now offered for sale are probably made with some one of the ordinary petroleum oils of commerce, which were never intended by the refiners for internal administration, and which in our opinion are wholly unfit for such a purpose. In fact, owing to imperfect methods of treatment, or to the presence of impurities, their use in some cases might even prove harmful. We therefore strongly urge medical men when prescribing to specify **ANGIER'S** Emulsion, for otherwise some imitation made with ordinary petroleum might be substituted, and disappointment be the result.

FREE SAMPLES TO THE MEDICAL PROFESSION.

THE ANGIER CHEMICAL CO., LTD.,

31 & 32, SNOW HILL, LONDON, E.C.

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SAMPLES FREE TO MEMBERS OF THE MEDICAL PROFESSION.

THE PERFECTION OF

HUMANIZED MILK

IS ATTAINED IN

A Speciality For INFANTS, For the AGED, For INVALIDS. Soft, Flocculent Curd. Readily Digested.



Retains the Delicate Flavour & Colour of the Original Milk. Easily Assimilated, Palatable, and Nourishing.

Prepared from PERFECTLY FRESH MILK, produced on the Company's own Farms; the preparation being under the direct superintendence of their resident Chemist.

ASSES' MILK

FROM OUR OWN HERD OF MILCH ASSES.

SUPPLIED ON RECEIPT OF TELEGRAM TO ANY PART OF THE KINGDOM.

FULL PARTICULARS OF

Milk Preparations and Nursery Supplies

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WELFORD & SONS

DAIRY COMPANY, LIMITED.

Chief Dairy and Offices: ELGIN AVENUE, MAIDA VALE, LONDON, W.

Telegraphic Address: "WELFORDS, LONDON." *Telephone No. 107 "PADDINGTON."*

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PEPSENCIA.

PEPSENCIA is an ever-ready digestive fluid, containing all the soluble constituents of the gastric juice, preserved in an agreeable aromatic menstruum. It represents both the peptic and milk curdling ferments obtained directly from the fresh peptic glands.

PEPSENCIA is acceptable to the most delicate and fastidious patient, while it excels all other allied preparations in activity and utility.

One teaspoonful before or after a meal will be found of service in all cases where pepsin is indicated.

Supplied to the Medical Profession in 4 oz. and 8 oz. bottles, at 1s. 9d. and 3s. each.

* * * * * * * * * * * *

Peptogenic Milk Powder.

Cows' milk prepared with PEPTOGENIC MILK POWDER becomes remarkably like mothers' milk in all particulars: in physical properties, in colour and taste, and in the percentage of nutritive constituents: in its digestibility, its behaviour with acid, with rennet, and in the infant's stomach.

Milk prepared with the PEPTOGENIC POWDER has simply the normal digestibility of mothers' milk: is not too easily or unnaturally digestible, and contains no aid to digestion. It affords a complete substitute for mothers' milk during the entire nursing period.

Supplied to the Medical Profession in two sizes, at 1s. 9d. and 3s. 4d. each.

Specimens and Literature will be forwarded on request.

Originated and Manufactured by

FAIRCHILD BROS. & FOSTER,

NEW YORK.

Agents for Europe, Asia, Africa, and Australasia:

BURROUGHS, WELLCOME & CO.,

LONDON and SYDNEY.

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SOMATOSE

is an Albumose Food product. It is prepared from meat, and contains the albuminous elements of the latter in an easily soluble form. The salts present in SOMATOSE correspond to the nutritive salts of fresh meat, among which occur Phosphate of Potassium, so important in the formation of muscular and cellular tissue.

SOMATOSE is a Tasteless, Odourless Powder,—is easily tolerated, even by the most delicate stomachs. It is invaluable in Wasting Diseases, and is especially indicated in Children of Backward Development.

SOMATOSE is well borne when no other aliment can be administered. It is also of the greatest service in cases requiring rectal alimentation.

SOMATOSE has been found to act as a most efficient Galactogogue. Remarkably successful results attending its use when administered to nursing women whose milk secretion is deficient or scanty.

SOMATOSE is indicated in all conditions where an invigorating and easily absorbed food is required. With the aid of SOMATOSE it is possible to tide the patient over critical periods, since it is capable of acting for a long time as a complete substitute for other nitrogenous foods.

ADULT DOSE: One teaspoonful three times a day, in milk, soup, coffee, cocoa, &c.

The following is the Analysis of SOMATOSE as obtained by Goldman:—

Water	9·20
Total Nitrogen	12·84
Albumoses	77·85
Peptone	2·20
Ash	6·78

IRON-SOMATOSE

(Ferro-Somatose).—An excellent tonic, containing the albuminous substances of the meat (albumoses) organically combined with Iron in the proportion of 2 per cent. of the latter. Under the use of Iron-Somatose the weight of the body is increased and the amount of hæmoglobin is augmented. Iron-Somatose combines in a most suitable way the well-known and appreciated properties of Somatose with a good Iron preparation.

SPECIAL INDICATIONS: Chlorosis and Anæmia. DAILY DOSE: 75 to 150 grains.

MILK-SOMATOSE

(Lacto-Somatose).—A strength-giving food containing the albuminous matter (albumoses) of the Milk, with 5 per cent. of Tannic Acid in firm organic combination. The chief indications of Milk-Somatose are the various chronic maladies of the digestive organs, and especially those disturbances of digestion which, as in Enteroptosis and Anæmia, can be referred to the atonic condition of the muscular organs of the stomach. Milk-Somatose is a good flesh-forming preparation, without irritation, and slightly astringent with patients of weak or diseased digestive organs. In the case of Typhus maladies it is of great value.

Samples and Literature can be had on application to the Wholesale Depôt for all Bayer's Drug Specialities:—

ELBERFELD FARBEN FABRIKEN CO., Ltd.,

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Also at MANCHESTER, GLASGOW, and BRADFORD.

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BAYER'S
PHARMACEUTICAL SPECIALITIES

TRIONAL. (*Diethylsulfonmethylethylmethan*).—A most reliable and quickly acting hypnotic of the Sulfonal group. In simple insomnia Trional will produce sleep with absolute certainty in from fifteen to thirty minutes. Has no influence on the heart, respiration, or temperature. DOSE: From 15 to 30 grains, followed by a hot drink. Oxycarbonated Trional Water, manufactured by Messrs. Cooper & Co., 80, Gloucester-road, S.W., is recommended as a good and agreeable method of administration. In this form a smaller dose suffices.

TANNIGEN. (*Triacetyl of Tannin*).—A most valuable remedy in cases of Acute and Chronic Diarrhœa, and invaluable for the Summer Diarrhœa of Children. Tasteless and Odourless. Passes through the stomach entirely unchanged, decomposition only occurring in the intestines. DOSE FOR CHILDREN: 2 to 5 grains. DOSE FOR ADULTS: 8 grains every three hours.

TANNOPINE. (*Hexamethylene-tetramine Tannin*).—A New Intestinal Astringent. Has an excellent effect, without secondary phenomena, in all the various kinds of Enteritis. Has given especially good results in cases of Tuberculous Inflammation of the Bowels, in cases of Non-Tuberculous, Subacute and Chronic Intestinal Inflammation, and also in cases of Typhoid. DOSE FOR CHILDREN: 3 to 10 grains. DOSE FOR ADULTS: 16 grains, two to four times daily.

SALOPHEN. (*Acetyl-para-amydosalol*).—The best substitute for Salicylate of Sodium, as it acts quite as promptly, but without any of the unpleasant after-effects of the latter. Its special indication is Acute Articular Rheumatism. It is invaluable for Influenza, Migraine, &c. DOSE: 16 to 24 grains three or four times a day.

LYCETOL. (*Tartrate of Di-Methyl-Piperazine*).—Combines the Uric Acid solvent properties of Piperazine, with the diuretic properties of Tartaric Acid. Invaluable in all cases of Uric Acid Diathesis. DOSE: 16 to 32 grains daily. Best administered in the form of Effervescing Lycetol, Messrs. A. Bishop & Sons. Ltd., Spelman-street, E.; or Oxycarbonated Lycetol Water, Messrs. Cooper & Co., 80, Gloucester-road, S.W.

IODOTHYRINE. The active principle of the Thyroid Gland. A stable product containing a definite amount of the Iodine compound which forms the active principle of the Gland. Iodothyrine acts more quickly than either the fresh or dried gland substance. It is a preparation of perfectly definite composition, stable and permanent. ADULT DOSE: 5 grains two to eight times a day. Prepared also in Tablet form.

CREOSOTAL. (*Creosotum Carbonas puriss.*).—A mixture of the phenol carbonates of creosote. Most valuable in Tuberculosis of the lungs. DOSE: ½ to 5 drachms per day in wine, brandy, or cod-liver oil.

DUOTAL. (*Guaiacolum Carbonas puriss.*).—Great success in cases of Pulmonary Phthisis. DOSE: 8 to 96 grains per day.

HEROIN. (*Ester of Morphine.*)—An excellent Substitute for Morphine. Most satisfactory results in cases of Bronchitis, Pharyngitis, Laryngitis, Catarrh of the Lungs in Phthisical persons, and in Asthma Bronchiale. DOSE: 0 005 gramme, from 3 to 4 times daily. In the latter two cases the dose may be increased to 0.01 gramme.

EUROPHEN. (*Isobutylorthocresoliodide.*)—A perfect substitute for Iodoform. Odourless and non-toxic. Five times lighter than Iodoform. Non-irritating and does not produce a rash. Adheres closely to mucous surfaces. Specially indicated in Syphilitic Diseases, Gynæcology, Burns and Bedsores, Eye, Ear, Throat, and Nose Affections, &c., &c.

ARISTOL. An Iodine Derivative containing 48% of Iodine. Is an ideal Cicatrisant, forming an absolutely unirritating covering over the surfaces on which it is placed, under which the processes of granulation and cicatrization proceed with extraordinary rapidity. It is a convenient, Non-Irritating and Effective Antiseptic Dressing in General Surgery, Dentistry, Gynæcology, Diseases of the Eye, Ear, and Nose. In the treatment of Burns, Aristol has proved to be of the greatest value, its antiseptic and healing properties being specially marked.

PROTARGOL. A new proteid compound of silver for the treatment of Gonorrhœa, containing 8% of silver, easily soluble in warm or cold water. Has a better penetrating effect on the tissues than any other known silver preparation. Non-irritating. Usual strength of injection, ¼ to 2%. An excellent antiseptic in the treatment of Wounds. Of the greatest possible service in Ocular Therapeutics. Protargol is manufactured in Bougie form by Messrs. Sumner & Co. of Liverpool, and Mr. R. Manson, 75, Fortess-road, Kentish-town, N.W., from whom samples may be had.

PHENACETINE-BAYER, SULFONAL-BAYER, PIPERAZINE-BAYER, SALOL-BAYER, SOMATOSE, IRON SOMATOSE, MILK SOMATOSE, ANALGEN, LOSOPHAN, TETRONAL, &c.

Samples and Literature can be had on application to the Wholesale Depôt for all Bayer's Drug Specialities:—

ELBERFELD FARBEN FABRIKEN CO., Ltd.,

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HIGH-CLASS PHARMACY.

SAVARESSE'S CAPSULES.

NOT MADE OF GELATINE.

Being made of MEMBRANE, they are free from the objections to all Gelatine Capsules.

SANDAL WOOD OIL, 4/6.

COPAIBA, 2/6.



SAVARESSE'S Capsules of ORGANIC MEMBRANE do not dissolve in the stomach (avoiding nausea and irritation), but generally in the intestines.

The late Mr. W. ACTON, F.R.C.S. (p. 96, "Urinary Diseases"), recommended them.

SAVAR'S Cubeb Cigarettes.



For Asthma, Chronic Cough, Influenza, and Hay Fever, Cubebs smoked so far as to get the effect of the resins down the throat are always worth a trial. 1/- and 2/6 boxes.

MONTSERRAT LIME-FRUIT JUICE

True Lime Fruit Juice is a very useful acid drink, when diluted. The best is from the Consignee's Estate in Montserrat, W.I., of which over 100,000 gallons annually come over to the Sole Consignees. It is pure, reliable, pleasant, and a genuine anti-scorbutic. Imperial Pints and Quarts.

PRESCRIBE CASCARA-HAWLEY FOR CONSTIPATION.



A reliable Laxative is often wanted (especially for Ladies and Children). Nothing can be better than the B.P. Fl. Extract of Cascara Sagrada, rendered tasteless by an envelope of gelatine, equal to ½ drachm of fl. extract. In Pregnancy and Habitual Constipation invaluable. 1/1½ and 4/6 boxes.



SAVAR'S COCA WINE

WHAT COCA WINE SHALL WE ORDER?

SAVAR'S, brought out in 1875, is standardised to contain ½ grain pure Cocaine in each fl. oz., and 2 fl. drachms is a dose. Many Coca Wines *cannot* be sold by chemists without a wine licence, because so weak in Cocaine—SAVAR'S *can*. Physicians know exactly what they are doing in ordering this stimulating tonic.

Bottles 4/- and 7/-.

EVANS' FLUID EXTRACTS.

The Perfection of Pharmacy. Made with special menstrua, they represent weight for weight of the crude drug, of which they contain the *whole* of the medicinal properties. Always reliable; keep well. Tinctures and infusions can be immediately prepared from them, one minim representing one grain of the drug. Full List, with Doses, &c., on application.

Lescher's Recent Materia Medica, 4th Edition, 500 Drugs, with Doses, Formulæ, &c., 2/6.

EVANS, LESCHER, & WEBB,
60, Bartholomew Close, London. *Paris & Sydney Agencies.*

EVANS, SONS, & CO., Liverpool.
EVANS and SONS, Limited, Montreal.

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The "Allenburys" TRADE MARK. A.D. 1715.

Throat Pastilles.

SOFT. DEMULCENT. PALATABLE.

THESE PASTILLES have now for many years been employed by the Faculty in the relief of Throat Affections. Their form enables them to be more easily sucked than the ordinary hard lozenge; while the Pâte de Jujube from which they are manufactured is particularly palatable, soluble, and demulcent in its action.



Owing to the accumulated prescriptions and suggestions of Physicians and Specialists on the throat, ALLEN & HANBURYS are enabled to manufacture upwards of fifty varieties to meet various morbid conditions. Each variety has a specified number in the List, where the prescriptions are quoted in full. The following are examples of the Pastilles in very general use.

In prescribing it is only necessary to add the letters A. & H., these being registered as a Trade Mark; thus—Tannin Pastilles A. & H.

No. 9. Menthol, Cocaine, and Red Gum. *Menthol et Cocainæ, aa. gr. 1/10; Gummi Rubri, gr. ii.*
Antiseptic, Sedative, and Astringent.

" 11. Chlorate of Potash. *1 grain in each.*
Better than the B.P. form.

" 27. Compound Eucalyptus.
(Red Gum, Chlorate of Potash, and Cubebs). A valuable astringent.

" 29. Compound Rhatany and Cocaine. *Ext. of Rhatany grain 2, Cocaine Hydrochlor. grain 1/10th.*
A very efficacious astringent and anodyne.

" 38. Cocaine, Chlorate of Potash, and Borax.
Especially useful for the tickling of a slightly relaxed throat.

" 44. Menthol and Cocaine. *1/10th of a grain of each in a Pastille.*
The antiseptic and stimulating action of the Menthol, combined with an effective Anodyne.

" 45. Menthol & Rhatany. *1/10 of a grain of Menthol in a Pastille.*
Stimulating, antiseptic, and mildly astringent.

" 46. Tannin, Cayenne, and Black Currant.
Is far more palatable and efficacious than the ordinary lozenge.

MANUFACTURED BY

Allen & Hanburys Ltd., Plough Court, Lombard Street, London.

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"A distinct advance on Easton's Syrup."—*The Lancet.*

Bynin Amara.

TRADE MARK.

This preparation is a greatly improved modification of the well-known Easton's Syrup, in which the Phosphates of Iron, Quinine, and Strychnine are united with **BYNIN (Liquid Malt)**, affording at one and the same time a specific digestive, restorative, and anti-febrile tonic. The nervous system is restored in tone, the enfeebled blood corpuscles are strengthened, and the digestive apparatus is helped and guided by this valuable combination of necessary drugs. The desire for food is once more restored, and further, and what is most important, the capability of digesting it (especially the farinaceous portion) is increased.

The vehicle "BYNIN" is prepared from the finest Barley Malt by a special process, so that, although liquid, it contains as powerful diastasic properties as the ordinary viscid extract. Hence in cases where formerly Easton's Syrup was contra-indicated, owing to its tendency to produce indigestion, BYNIN AMARA is now successfully given, thereby supplying a most useful therapeutic agent.

Recent Medical Reports.

The British Medical Journal writes :—

"The preparation is very palatable, and there is no doubt it will be appreciated as a pleasant means of obtaining the tonic effects of Easton's Syrup combined with the diastasic and nutritive value of Extract of Malt."

The Lancet writes :—

"This excellent preparation is a distinct advance on Easton's Syrup . . . admirably adapted for the administration of one of the best tonic combinations known."

The Medical Press writes :—

". . . Not only is the taste improved, but, in addition to the well-known tonic properties of the formula we have an active digestive agent of farinaceous foods . . . a very ingenious and useful modification of an old and esteemed formula."

The Hospital Gazette writes :—

"The digestive properties of Bynin are so powerful that alone it is a valuable therapeutic agent; and it is obvious that Bynin Amara, containing as it does the above-named phosphates, is a tonic of exceptional potency and value."

Put up in bottles at (retail) 2/6 and 4/6 each.

SAMPLES FREE TO MEDICAL MEN ON APPLICATION.

ALLEN & HANBURYS Ltd., Plough Court, Lombard Street, LONDON.

Laboratories and Warehouse: BETHNAL GREEN, LONDON, E.

Infants' Food Manufactory: WARE MILLS, HERTFORDSHIRE.
Cod-liver Oil Factories: LOFODEN, LONGVA, & KJERSTAD, NORWAY.
Australian Agency: 484, COLLINS STREET, MELBOURNE.
West End House: VERE STREET, CAVENDISH SQUARE, W.
Surgical Instruments: 48, WIGMORE STREET, LONDON, W.
Surgical Instrument Manufactory: WEYMOUTH STREET, W

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Allen & Hanburys'

"Perfected" Cod-Liver Oil

IS prepared at their own factories in Lofoden and Söndmör, in Norway, from absolutely fresh and selected livers of the **Cod-fish only**, all stale livers being rejected. In stormy weather the fishing boats are often delayed, the fish being landed in a state of partial decomposition. This, together with the fact that manufacturers are frequently not careful to use only Cod livers, results in the Oil being of varying composition and contaminated with bye-products nauseous to the taste, indigestible, and irritating to the stomach.



By the special processes employed the elimination of all nauseous oxidation products is effected without impairing in the smallest degree the invaluable nutritive and medicinal properties. By a very recent modification of our methods the "PERFECTED" Oil is now rendered freer from taste than at any period since its introduction to the Profession in 1879, when the British Medical Journal described it as having "almost the delicacy of Salad Oil," and the Lancet as being "as nearly free from taste as Cod-liver Oil can be."

Being easily borne and assimilated where ordinary Cod-liver Oil is refused, it is, for these and the above reasons, the most efficacious kind in use.

"It is a great boon to get such an Oil." —*The Practitioner.*

"No nauseous eructations follow after it is swallowed."—*Med. Press & Circular.*

In the "PERFECTED" Oil we have a food which can be easily digested, even in cases of Phthisical Dyspepsia, where Cod-liver Oil is specially indicated, yet cannot be borne.

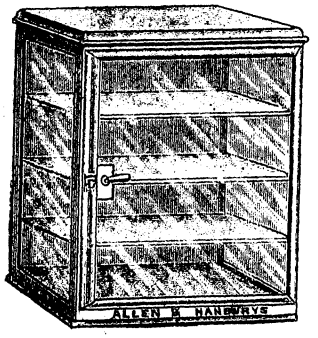
ALLEN & HANBURYS desire to state, as emphatically as possible, that their "PERFECTED" Cod-liver Oil is *NEVER* supplied in bulk to be bottled by retail dealers, and that no Cod-liver Oil represented as being their "Perfected" is genuine unless sold in their original capsuled bottles and bearing their Signature in white across the label, and their Trade Mark—a Plough. Frequent misrepresentations have involved disappointment both to doctor and patient, and necessitated legal proceedings against the vendor.

TRADE MARK.

A.D. 1715.

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ASEPTIC INSTRUMENT CABINETS.

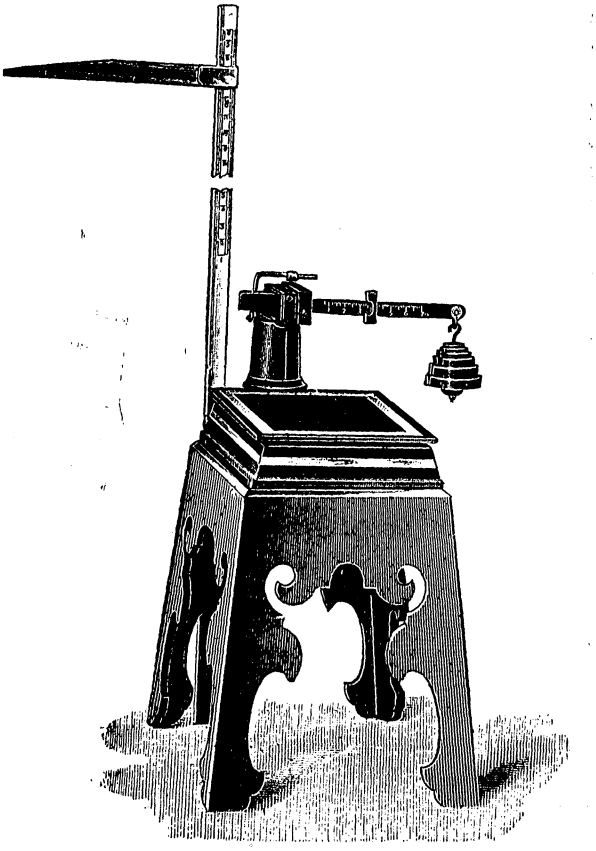


To meet the wants of Cottage Hospitals, Nursing Institutions, and Surgeons requiring a small and cheap Instrument Cabinet, Allen & Hanburys Ltd. have introduced the following, of London manufacture. These Cabinets are of iron enamelled white and fitted with plate-glass sides and door, and with shelves with polished edges.

Sizes: 20 × 15 × 9. with 2 shelves ... ... 45s.
,, 24 × 18 × 11, with 3 shelves ... ... 60s.

PORTABLE WEIGHING MACHINES AND MEASURING ROD

(As Sketch).



The machine is fitted with an adjusting rod to correct any inaccuracy in the balance. An elegant stand is also supplied on which to place the machine. An accurate Measuring Rod is also supplied.

Price, complete, 44s.

Or either part can be had separately:—

Weighing Machine, 21s. Stand, 12s. 6d.
Measuring Rod, 10s. 6d.

Allen & Hanburys Ltd.,

SURGICAL INSTRUMENT MANUFACTURERS,

48, WIGMORE STREET, W.

City House: **PLOUGH COURT, LOMBARD STREET.** *Instrument Factory:* **59, WEYMOUTH STREET.**

LONDON.

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THE

"Allenburys" Foods

FOR

TRADE MARK. A.D. 1715.

Infant Feeding

A PROGRESSIVE SERIES OF FOODS.

The Foods constituting the series described below are not interchangeable, but should be used in succession as indicated. Perfectly sterile in themselves, they are best given with the "Allenburys" Feeder, which is capable of easy and complete sterilization, thus presenting a physiologically accurate diet, free from all fear of contamination by the products of decomposition.

THE

"Allenburys" Milk Food No. 1

Affords, when prepared for use, a correct substitute for human milk. It is manufactured from fresh cow's milk, so modified as to present all the constituents of human milk in their true relative proportions. Being in a desiccated and sterilized form, it requires only the addition of *boiled* water to obtain a pure and sterile food suitable for infants during the first three months of life.

THE

"Allenburys" Milk Food No. 2

Is identical with No. 1, with the addition of small quantities of maltose, dextrine, and soluble phosphates derived from the digestion of whole meal with Malt Extract. These ingredients are a valuable adjunct to the increasing needs of digestion, yet the Food is readily and easily assimilated, there being no unconverted starch present. The No. 2 Food is designed for children between three and six months of age.

THE

"Allenburys" Malted Food, No. 3,

USUALLY KNOWN AS

Allen & Hanburys' Malted Infants' Food,

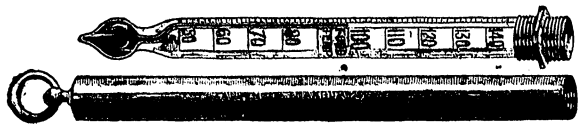
Is not a *milk*, but a purely *farinaceous* Food, prepared by improved methods after Baron von LIEBIG's formula. The basis is fine wheaten flour, which has been thoroughly cooked and partially digested by an active Malt Extract, so that a large proportion, but not all of the starch has been converted. It is particularly rich in soluble phosphates and albumenoids.

This Food should be given from six months and upwards. For the first month or so after the change of diet it is generally advisable, instead of using cow's milk, to employ the "ALLENBURYS" MILK FOOD No. 1 or No. 2 in preparing it. The demand on the child's digestive organs is less abrupt, and a humanized milk is used in place of the more indigestible cow's milk. This precaution is specially recommended in the case of delicate children.

The "Allenburys" Feeder.

This bottle has the nipple at one end and a valve-stopper at the other, so that, both being removed, it can readily be cleansed under the tap. The valve admits air behind the column of milk, thus avoiding the swallowing of air and the resulting wind-colic; while the rubber nipple is easily detached, and can be turned inside out. The bottle is graduated approximately in ounces. Price 1/- each.





The "Allenburys" Thermometer, in nickel case, as figured, is provided for determining the right temperature at which the Foods should be given, and for general Nursery use. 1/- each.

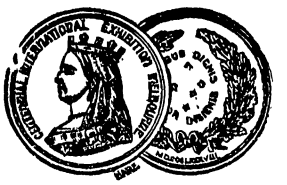
Allen & Hanburys Ltd., Plough Court, Lombard Street, London.

Infants' Food Manufactory: WARE MILLS, HERTFORDSHIRE.

☞ **For further details concerning these Foods, see succeeding numbers of the *British Medical Journal* and *Lancet*.**

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AWARDS.

GOLD MEDAL, International Health Exhibition, London, 1884.
FIRST ORDER OF MERIT AND MEDAL (Highest Award), Adelaide, 1887.
HIGHEST AWARD, Medical and Sanitary Exhibition, London, 1882.
FIRST ORDER OF MERIT AND MEDAL, Melbourne, 1888.

Liquor Pancreaticus (Benger).

For the preparation of peptonised or partially digested Milk and other articles of food.

Simple directions for use enclosed. In 4 oz., 8 oz., and 16 oz. Bottles.

The *British Medical Journal*, in an article on Benger's Preparations, says:—"Time and use have justified the claims put forward for these preparations."

The *London Medical Record* says:—"These are undoubtedly a great advance on any previous attempt in this direction. . . . The introduction of these preparations is a distinct advance in therapeutics."

The *Medical Times and Gazette* says:—"Benger's Preparations have deservedly a very high reputation, and are all largely used."

Liquor Pepticus (Benger).

An exceedingly active fluid pepsine, without disagreeable taste.

DOSE.—One or two teaspoonfuls with meals. In 4 oz., 8 oz., and 16 oz. Bottles.

Benger's Peptonised Beef Jelly.

A delicious quick restorative for Invalids and the Aged. In patent glass jars, no metallic contamination possible. Retail, 2s. each.

The Lancet says:—"It is a most valuable form of concentrated food."

The *London Medical Record* says:—"Invaluable for old people; also in convalescence from acute diseases."

A Physician writes:—"I feel I cannot express my gratitude to you sufficiently, as your Beef Jelly is the only thing my niece can retain, and it has certainly kept her alive for the last week."

Benger's Peptonised Chicken Jelly.

In similar glass jars. Retail, 2s. each.

The Lancet says:—"Mr. Benger's Preparations are now so well known that all we need say of the sample before us is—that it is excellent. It has a delicate chicken flavour."

The *Medical Press* says:—"Few modern improvements in pharmacy have done so much as Benger's Preparations to assist the physician in the treatment of the sick."

Benger's Preparations may be obtained through all Retail and Wholesale Houses and Shippers, or of the Manufacturers—

F. B. BENGER & CO., LTD., Otter Works, Manchester.

TELEGRAPHIC ADDRESS—"Benger's, Manchester."

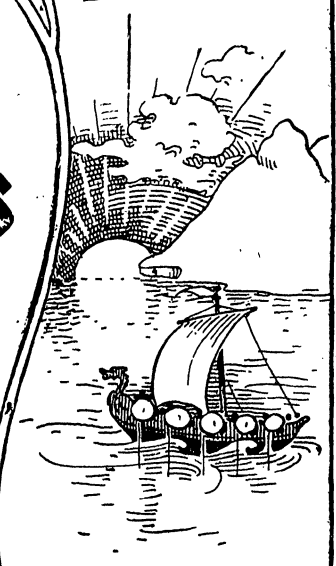
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HAVE FROM THE FIRST BEEN RECOGNISED AS STANDARD PREPARATIONS OF UNDENIABLE EXCELLENCE AND RELIABILITY.

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'Kepler' Malt Extract

IS the "best known and largest used Extract of Malt" *(The Lancet)*. It is the Malt Extract upon which the medical profession relies, and its unique reputation to-day is built upon the solid foundation of practical experience. Its perfection is not, therefore, theoretical only, but is established by actual clinical facts.

Small and large bottles, 1s. 8d. and 3s. per bottle.

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'Kepler' Solution

IS a molecular incorporation of the finest Norwegian Cod Liver Oil in 'Kepler' Malt Extract. It is readily assimilated, and no nausea or eructations follow its administration. Its palatability is such that even children relish it. "An ideal form for the administration of fat."—

British Medical Journal.

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Hypodermic Drugs

As to the superiority of 'Tabloid' Hypodermic Drugs over ready-made solutions there can be no question. 'Tabloid' Drugs are accurate in dosage, portable, and keep perfectly. Stock solutions are unreliable as to strength, bulky, inconvenient and frequently septic.

In hypodermic medication pure and non-irritating drugs are essential. The use of the word 'Tabloid' when ordering ensures the supply of such drugs. There are many imitations, which are inferior in every way.

'Tabloid' Hypodermic Drugs are instantly soluble in the syringe barrel. "They are quite free from objectionable and irritating salts."

—*BRITISH MEDICAL JOURNAL*

LIST.

'Tabloid' Hypodermic Products are put up in tubes containing 20, with the exception of those marked with an asterisk, which are in tubes of 12.

	Per tube
Aconitine Nitrate .. .. .. gr. 1/260	8d.
Apomorphine Hydrochloride gr. 1/15 and 1/10	6d.
Atropine Sulphate gr. 1/150, 1/100 and 1/60	6d.
Caffeine Sodio-salicylate .. .. gr. *1/2	8d.
Cocaine Hydrochloride gr. 1/10, 1/6, *1/4 and *1/2	6d.
Cocaine Compound— (*Weak, *Medium, and *Strong Anæsthetic)	8d.
Codeine Phosphate .. .. .. gr. 1/4	8d.
Cornutine Citrate .. .. .. gr. *1/60	8d.
Cotarnine Hydrochloride (Stypticin) gr. *1/4	8d.
Curare .. .. gr. 1/12	8d.
Digitalin .. .. gr. 1/100	6d.
Ergotinine Citrate .. gr. 1/200 and 1/100	8d.
Ergotinine Citrate .. .. .. *gr. 1/100) Strychnine Sulphate .. .. .. gr. 1/30)	8d.
Eserine Salicylate .. .. .. gr. 1/100	6d.
Eucaine Hydrochloride .. .. gr. *1/3	6d.
,, ,, ... gr. 1	1s.
Homatropine Hydrochloride .. .. gr. 1/250	8d.
Hydrarg. Perchlor. .. .. gr. 1/60 and 1/30	6d.
Hyoscine Hydrobromide gr. 1/200 and *1/75	6d.
Hyoscyamine Sulphate .. .. gr. *1/80	6d.
,, ,, ... gr. *1/20	8d.
Mercury Perchloride (*See Hydrarg. Perchlor.*)	
Morphine Bimeconate .. gr. 1/8, 1/6, 1/4 and 1/3	8d.
Morphine Hydrochloride .. gr. 1/6 and 1/4	6d.
Morphine Hydrochloride .. .. gr. *1/6) Atropine Sulphate .. .. .. gr. 1/70)	6d.
Morphine Sulphate gr. 1/8, 1/6, 1/4, 1/3 and *1/2	6d.
,, ,, ... gr. 1	8d.
Morphine Sulphate gr. 1/8 . 1/6 . 1/4 . 1/3) Atropine Sulphate gr. 1/200 . 1/180 . 1/150 . 1/120)	6d.
Morphine Sulphate .. .. gr. 1/3 . *1/2) Atropine Sulphate 1/60 . 1/100)	6d.
Nitroglycerin (Trinitrin) .. .. gr. 1/250	6d.
Physostigmine Salicylate .. .. gr. 1/100	6d.
Picrotoxin .. .. gr. 1/60	8d.
Pilocarpine Nitrate .. gr. 1/10, 1/6 and *1/3	8d.
,, ,, ... gr. *1/2	1s.
Potassium Permanganate .. .. gr. *2	6d.
Quinine Bihydrochloride .. .. gr. *1	6d.
,, ,, ... gr. *3	8d.
Quinine Hydrobromide .. .. gr. *1/2	8d.
Sparteine Sulphate .. .. .. gr. *1/2	8d.
Strophanthin .. .. gr. 1/500	8d.
Strychnine Nitrate .. .. gr. 1/15 and 1/10	8d.
Strychnine Sulph. gr. 1/150; 1/100; 1/60 and 1/30	6d.
Stypticin (Cotarnine Hydrochloride) gr. *1/4	8d.
Trinitrin (Nitroglycerin) .. .. gr. 1/250	6d.

The B. W. & Co. Patent Hypodermic Syringe.

With detachable nozzle, so that 'Tabloid' Hypodermic Products can be dissolved in the barrel. Capacity, min. 15 or 20. Two needles .. .. 7s.

See Wellcome's Medical Diary, 1899, pages 52—59.

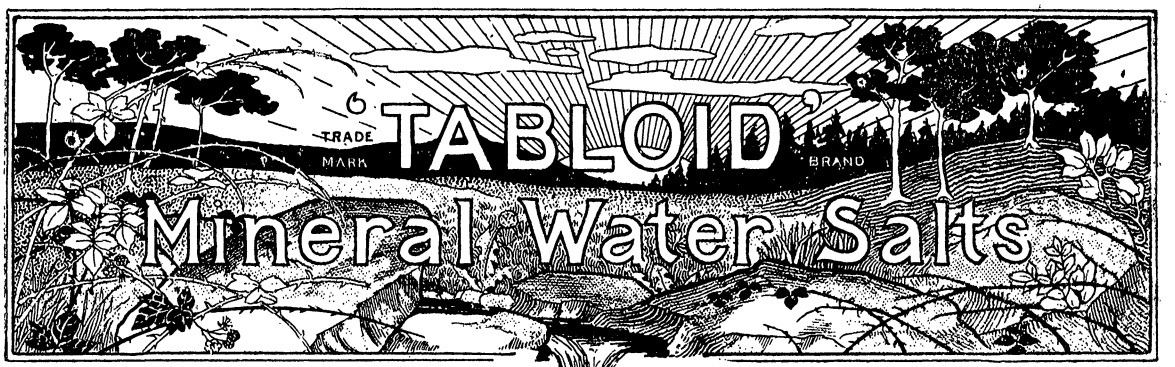
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A COURSE of mineral water treatment, either in England or abroad, has long been a recognized therapeutic measure in certain diseases. Its advantages are many and obvious, but it is, unfortunately, an impossible method of treatment for a large number of patients.

'TABLOID' Effervescent Artificial Mineral Water Salts contain in small bulk the essential constituents of the natural waters whose names they bear. By prescribing them in conjunction with a suitable dietary the physician is enabled to adopt the treatment carried out at British and Continental spas, and his patients have the advantage of being constantly under the care of their own medical adviser.

In addition to the therapeutic advantages which this series of 'Tabloid' Salts offers, their compactness and portability must be considered as important factors in securing regular and continuous treatment. One in a stated quantity of water forms a pleasant effervescing draught, which represents an equal volume of Carlsbad, Vichy, Kissingen or Seltzer water. The group is further extended by the inclusion of 'Tabloid' Effervescent Caffeine Citrate, Lithium Citrate, Magnesium Citrate (true), Magnesium Sulphate, Potassium Citrate, Sodium Phosphate, and Sodium Sulphate, particulars of which will be gladly sent on request. *(See also Wellcome's Medical Diary, 1899.)*

LIST OF

'TABLOID' MINERAL WATER SALTS

(Effervescent Artificial).

'TABLOID' CARLSBAD SALT.
'TABLOID' KISSINGEN SALT.
'TABLOID' SELTZER SALT.
'TABLOID' VICHY SALT.
'TABLOID' VICHY SALT WITH LITHIUM.

Supplied in tubes of 25, at 9d. per tube.

Full literature on application to

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Why is *Vibrona* The Ideal Tonic ?

Because VIBRONA is a new and improved form of the **one incomparable Tonic** *CINCHONA*, whose claims rest on the accumulated experience of **more than two centuries.**

Because VIBRONA is pleasant to take, and **does not produce the headache, deafness, or other disagreeable sensations** caused by Quinine.

Because VIBRONA contains **all the tonic and aromatic principles** of Cinchona and is therefore **superior to Quinine alone.**

Because VIBRONA **is entirely free from Coca,** "the third scourge of humanity." (*vide British Medical Journal.*)

Because VIBRONA can be obtained either blended with a light dry Sherry, a rich Vintage Port, or a fine *Brut* Champagne.

Because For those who do not take Wine, VIBRONA MALT constitutes a Tonic nutritive of superlative value.

Because Overwhelming evidence that VIBRONA fulfils the claims made on its behalf is to be found in the spontaneous testimony of the **highest medical authorities.**

VIBRONA-SHERRY	*per bottle 2/9, per dozen 30/-*
VIBRONA-PORT	*per bottle 4/-., per dozen 45/-*
VIBRONA-CHAMPAGNE ...	*per doz. pints, 38/-, per case 72/-*
VIBRONA-MALT	*per bottle 2/9, double size 4/6.*

Of all leading CHEMISTS, WINE MERCHANTS AND STORES.

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Superior to Cod Liver Oil, Tincture of Iron, or Peptone.

HOMMEL'S HÆMATOGEN

(Hæmoglobinum concentratum et Glycerinum purissimum [Imperial German Patent, No. 81391], agreeably flavoured).
Entirely free from Antiseptic Chemicals.

A BLOOD-FORMING TONIC, OF THE UTMOST VALUE

In General Debility, Anæmia, Chlorosis, Neurasthenia, Rickets, Scrofula, Weak Heart, Wasting Diseases of Children, Chronic Catarrh of the Stomach and Bowels, Loss of Appetite, Slow Convalescence after Fevers, and Over-Rapid Growth in Young Persons.

UNSURPASSED AS A MEDICINE FOR CHILDREN.

No Flavouring Required. Highly Relished by Patients of all Ages. Being a Fluid, it is very easy to take.
Gives Excellent Results in Rickets and Scrofula.
Far Superior to Cod Liver Oil, Iodide of Iron, and similar preparations.

"Using Hommel's Hæmatogen, I have had surprising success in cases of Anæmia, Debility, and Weak Digestion. In the treatment of Children, I have given up Cod Liver Oil, Chemical Preparations of Iron, and Sweet Wines, and instead of them I use only Hæmatogen, which has proved itself in my experience to be efficacious and prompt in its action. It has the further advantage of possessing an agreeable taste, **which makes it preferable to all other Hæmoglobin Preparations.**"
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A POWERFUL RESTORATIVE IN DISEASES OF THE LUNGS.

"I consider Hommel's Hæmatogen to be a Food Product which has not as yet any equal, especially in the treatment of those who are recovering from illness."
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"I have employed Hommel's Hæmatogen in about 100 cases of Anæmia, Scrofula, Consumption, Tedious Convalescence, and Debility. **I have been so satisfied with it, that I do not now prescribe any other preparation of Iron.**"
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Hommel's Hæmatogen may be given to Infants at the Breast, to Children of any Age, and to Adults continuously from year to year. Being a Natural Organic Product, it never causes any unpleasant symptoms whatever, nor does it ever produce vascular excitement or throbbing of the temples (orgasm), which are a necessary consequence of the long-continued use of Chemical Preparations of Iron.

GIVES AN APPETITE EVEN IN THE WORST CASES OF DISTASTE FOR FOOD.

Hommel's Hæmatogen contains (1) Perfectly Pure Hæmoglobin, (2) the whole of the salts which are found in Fresh Blood, and (3) the Highly Important Albuminous Constituents of the Serum in a Concentrated and Purified Form, without any Trace of Decomposition. It is not peptonised or predigested, for artificial digestion, whether it is accomplished by the action of acids and pepsin or by heat, is quite different from the natural process. It has been proved by Professor NEUMEISTER, of Jena, and Professor CAHN, of Strasbourg, that peptones, albumoses and peptonised preparations are not by any means absorbed directly, but are converted into albuminate before being absorbed. There is no doubt that artificial digestion brings about the decomposition of substances which are of the highest importance for building up the tissues of the body. This is strikingly shown by the great success of Hommel's Hæmatogen, in cases of Rickets, Scrofula, Wasting Diseases of Childhood, &c., in which not only Peptonised Preparations, but Cod Liver Oil, Iodide of Iron, &c., had been employed without any benefit.

We shall be happy to forward **Samples and Literature** *of Hommel's Hæmatogen, gratis and carriage paid, to Medical Practitioners who may wish to give it a trial.*

Kept in Stock by all Pharmaceutical Chemists. Price of Original 9-ounce Bottle **4s.**

Dose for young Infants, Half a Tea-spoonful, or one Tea-spoonful, twice a day in Milk, of the proper heat for drinking. For **Children,** One Table-spoonful, either pure or mixed with any convenient liquid. For **Adults,** One or Two Table-spoonfuls twice a day **before** food, so as to secure the full benefit of its powerful appetising effect.

NICOLAY & CO., 36 and 36a, St. Andrew's Hill, London, E.C.

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Always Trustworthy.

IT has been proven by clinical tests that **BROMIDIA** is the best and safest hypnotic yet known to the Profession.

It is always of the same strength and, hence, can always be relied upon to produce the same results under the same conditions.

It is so well known and so well liked by the Profession everywhere that it can be obtained in almost every drug store in every country in the world.

Avoid substitution. The doctor should always take special care to get the genuine, which is only made by BATTLE. Substitutes not only injure the well deserved reputation of **BROMIDIA**, and the Chemical House of BATTLE, but it also affects the reputation of the doctor and is often harmful to the patient.

DOSE:—One-half to one fluid drachm, repeated as indicated.

BATTLE & CO. (Chemists Corporation),
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A Sample Bottle of BROMIDIA and Pamphlet will be forwarded free of charge to Medical Men on application to

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GENERAL DEPOT FOR GREAT BRITAIN.

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ANTI-DIPHTHERITIC SERUM.

GENUINE. RELIABLE. EXTRA POTENT.

Submitted for examination in the Laboratories of the Royal Colleges of Physicians (London), and Surgeons (England), and after being thoroughly tested, certified as to Antitoxin Unit Potency, freedom from micro-organisms, and from excessive amount of antiseptic.



Supplied in hermetically sealed glass bulbs, in potencies ranging from 500 to 750 Antitoxin Units per c c. in the following doses :—

No. 1,	containing	500	units*	in	about	1	c c.	or less.
2,	„	1000	„	„		2	„	„
3,	„	1500	„	„		3	„	„
4,	„	2000	„	„		4	„	„
5,	„	3000	„	„		5	„	„
6,	„	4000	„	„		7	„	„
7,	„	5000	„	„		9	„	„
8,	„	6000	„	„		10	„	„

ACCORDING TO POTENCY.

* Plus 25 per cent. excess not charged for.

We make a uniform charge of 6d. per 100 units.

POTENCY.—750 Units in the c c., thus, for the first time, commercially, putting it in the physician's power to administer the high number of Units now prescribed. The Serum will retain its *potency* for months.

QUALITY.—The only Serum on the market certified by an independent authority.

We also supply:—

ANTI-STREPTOCOCCIC SERUM in oz. cases (3 bulbs) ... ... per oz. **12s.**
For Puerperal Fever, Erysipelas, Scarlatina, and Streptococcus Diseases generally.

ANTI-TETANIC SERUM, Liquid, in oz. cases (3 bulbs) ... ... per oz. **20s.**

„ „ **dry,** equal to 1 oz. liquid ... ...per vial **20s.**

ANTI-TUBERCLE „ in oz. vials ... ... per oz. **12s.**

COLEY'S MIXTURE OF ERYSIPELAS AND PRODIGIOSUS TOXINS, in oz vials ... ... per oz. **12s.**
For the Treatment of Inoperable Malignant Tumours.

TUBERCULIN (Concentrated for Veterinary Use) in vials containing four doses ... ...per vial **3s.**
The only reliable agent for detecting Tuberculosis in Cattle and other animals.

SERUM SYRINGES.

No. 1. Complete, with four needles, 13s, 6d. | No. 2. Complete, with three needles, 12s.

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NEW SYNTHETIC REMEDIES.

SYNTHESIZED and MANUFACTURED in ENGLAND.

PIPERIDINE TARTRATE. The New Uric Acid Solvent.

Piperidine possesses uric acid solvent powers greatly superior to any other known substance, and, in combination with tartaric acid, forms a pleasant salt, which may be taken in 5 to 15 gr. doses in all wines, mineral waters, &c., at or before meals.

(See THE LANCET, July 23th, 1898; BRITISH MEDICAL JOURNAL, Feb. 27th, 1897; CENTRALBLATT DER PHYSIOLOGIE, Bd. iii., p. 434.)

GUAIPEROL (Guaiacolate of Piperidine).

This **REMEDY for PHTHISIS**, which combines the antiseptic properties of Guaiacol with the vascular tonic action of Piperidine, has been tried with considerable success at the London and other Chest Hospitals. It has not the irritant properties of Guaiacol, and possesses many advantages over the latter substance and preparations of the same now on the market. DOSE: from 10 gr. twice a day, preferably in cachets, after meals.

(See BRITISH MEDICAL JOURNAL, January 16th, 1897, and July 16th, 1898, &c.)

ERYTHROL TETRA NITRATE (Turner).
The New Vaso Dilator.

The difference between the action of Erythrol Tetra Nitrate and other vaso dilators consists mainly in the fact that the vaso dilatation produced from it is of a *much more permanent* nature, the administration of gr. i. by the mouth causing a reduction in arterial tension lasting for more than five hours.

(See BRADSHAW LECTURE, 1896; CROONIAN LECTURE, 1896; BRITISH MEDICAL JOURNAL, April 10th, 1897, January 1st, 1898, and January 8th, 1898, &c.)

SOLE PATENTEES & MANUFACTURERS, from whom Samples and Literature may be obtained:—

JOSEPH TURNER & CO., Ltd., QUEENSFERRY, FLINTSHIRE N.W.

Re PHENACETINE.

IMPORTANT WARNING to MEDICAL MEN.

As discoverers and original makers of this **safe and valuable antipyretic**, we consider it to be our duty to **warn** the Medical Profession that an adulterated substance is now on the market, and is being sold as genuine Phenacetine. (*Vide* current Chemical and Pharmaceutical periodicals.) Our name is so well known in connexion with this product, that, for our reputation's sake, we are compelled to issue this notice.

Medical Men can protect themselves and their patients, and can rely upon obtaining a thoroughly pure product by adding the name BAYER when prescribing Phenacetine.

PHENACETINE-BAYER

is the pure and original product: the name is a guarantee of purity. Phenacetine-Bayer is put up in 4, 5, 8, and 16 grain Tablets, as well as in the Powder and Crystal form.

Samples and Literature can be obtained on application to the Wholesale Depots for all Bayer's Pharmaceutical Specialties—

ELBERFELD FARBEN FABRIKEN CO., Ld., 19, St. Dunstan's Hill, LONDON, E.C.

Also at MANCHESTER, GLASGOW and BRADFORD.

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A Wide Field.

To name the affections in which the Thyroid treatment has been tried would necessitate the enumeration of the whole list of pathological conditions.

It is a specific of the first importance in Myxœdema, Cretinism, simple Goitre, and Obesity. It is of great value in Acute and Chronic Melancholia and Acute Delirium. The results following its employment in Psoriasis, Scleroderma, Eczema, Tetany, certain phases of Insanity, and in retarded development of children, have been such as to warrant further experiment.

Armour's Desiccated Thyroids and Thyroid Tablets are carefully made from selected material and may be depended upon in all cases where the Thyroid treatment is indicated.

Samples and Descriptive Matter forwarded to Physicians interested on application to

ARMOUR & COMPANY

(CHICAGO). LONDON, E.C.

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CELERINA.

W. P. England, M. D., White Pine, Pa., says: I have used Celerina and am pleased to say that in all cases of nervous prostration, such as follows the use of alcohol, and for all cases of nervous debility, I find it without an equal. After the experience I have had with it I do not hesitate in recommending it to the profession as one of our best nerve tonics.

The action of Celerina on the brain and nervous system is that of an exhilarant and slight narcotic, relieving depressions and lessens irritable nerve conditions. In cases of organic and functional lesions of the heart, an increased steadiness of pulse-beat and diminution of pulse irritation is apparent.

A. J. Wesco, M. D., Seven Mile, O., says: I have tested Celerina and got good results. Man, aged sixty-five years, mechanic, habits very intemperate, will spree for weeks, came to me with nervous system in bad fix; could not eat or sleep. Gave him eight ounces Celerina, teaspoonful three times a day, which placed him on his feet again, and for that I think it par excellence.

Convulsions may frequently be cut short, like magic, by teaspoonful doses of Celerina repeated at short intervals. The nausea as an after effect of chloroform or other narcosis, may generally be controlled in the same manner.

T. J. Haile, M. D., Atlanta, Ga., says: Celerina has always acted finely in all cases where I have tried it, especially in those troublesome cases of hysteria, nervous depression and feebleness, and prostration resulting from alcoholic excess. Have found its effects very exhilarating and nourishing. In fact it is my main dependence in all nervous diseases.

The psychological depressions and neuralgias, so common in the period following a debauch, are lessened or disappear altogether by the use of Celerina.

J. B. Johnson, M. D., 920 N St., Washington, D. C., says: I used Celerina not only as a nervine and tonic, but also found it most excellent, in two drachm doses, in sobering persons who were made drunk by alcoholic drink, and such patients informed me that they were greatly assisted in recovering from a spree by the use of Celerina.

After the removal of alcohol, Celerina, given in doses of from one-half to one ounce every four hours, is speedily followed by the most characteristic symptoms of improvement.

Dr. B——, Whitley, Northumberland, England, says: I have found Celerina valuable as a nerve stimulant and restorative in a patient suffering from the effects of a severe drinking bout.

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THE ABOVE PREPARATION IS PREPARED EXCLUSIVELY FOR THE PRESCRIPTIONS OF MEDICAL MEN. A SAMPLE WILL BE SENT FREE TO ANY MEDICAL MAN WHO DESIRES TO TEST IT, ON APPLICATION TO

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For the Treatment of Tuberculosis, Chronic Intestinal Diseases, Enteric Fever, &c.

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Guaiacol Carbonate and Creosotal act *continuously and mildly* on the digestive tract and the entire organism. This continuous absorption is a necessary condition for their therapeutic effect. Disassociation takes place slowly in the intestines; and, unlike other antiseptics, the *Carbonates are distributed over the whole duodenum, jejunum, and ileum.* While creosote and liquid guaiacol injure the digestive tract by causing chronic inflammation of its mucous membrane, Creosote Carbonate and Guaiacol Carbonate tone it up and stimulate it.

We beg to draw attention to Von Heyden's Preparations:—

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"VAN HOUTEN'S PROCESS of manu-
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"VILNAC" Registered Trade Mark. (PATENTED)

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The Contrexéville Mineral Water (Pavillon SPRING) is a diuretic and laxative, a tonic, a stimulant, and aid to digestion. — It acts upon the secret mechanism of nutrition, as is proved by its influence in checking the production of uric acid and glucose : it favourably modifies those morbid processus of biological chemistry which result in the accumulation of uric acid in the blood, inducing the phenomena of gout. — It facilitates the elimination of urinary deposits, by contracting the ducts containing them and increasing the quantity of liquid by which these vessels are flushed. — It assists the cicatrization of the inflamed mucus of the urinary organs, and helps to restore the normal acidity of the urine; facilitates the flow of the bile, by causing contraction of the biliary ducts and the expulsion of calculi: and is invaluable in the treatment of congestion of the liver.

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Tonic, Strengthening, digestive wine. Ordered for weak and fatigued stomachs, in chlorosis, anæmia and to convalescent people. Unrivalled adjuvant in consumption.

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"The nourishing qualities of Stout are due mainly to a comparatively high proportion of Malt extractions, which, consisting principally of maltose and dextrine, offer little task to the digestive organs. The sample before us is marked by an excellent proportion of these extractions, while, at the same time, the alcoholic strength is by no means excessive.

"The results of analysis were as follows: Malt extractions, 9·0 per cent.; mineral matter, 1·38 per cent.; alcohol—by weight 4·62 per cent., by volume 5·78 per cent.; equal to proof spirit 10·13 per cent. The mineral matters consisted almost entirely of soluble potassium phosphate. The Stout was in good condition, ripe, yet free from undue acidity, and possessed a characteristic malty flavour."

SIR CHARLES CAMERON'S ANALYSIS.

"DUBLIN.

"I have analysed a specimen of **Nourishing Dublin Stout**, submitted to me for that purpose by **The Mountjoy Brewery, Dublin.** I have never examined a specimen of Porter in which the solid or nutritive constituents were so abundant as in the case of this Stout. It contains **Ten Per Cent.** of its weight of solid matter, or nearly the amount of solids contained in milk. Its flavour is good, and it is **Remarkably Free from Acidity.**

"CHARLES A. CAMERON,

"*Professor of Chemistry, College of Surgeons, Dublin.*"

PROFESSOR TICHBORNE'S ANALYSIS.

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"I have examined and analysed for several years the Stouts brewed by **The Mountjoy Brewery**—viz., **Single, Extra,** and their speciality known as **Nourishing** or **Crown** Stout. The gravities of all these Stouts are very high, as proved by my analysis. **The Crown** or **Nourishing** Stout gave me one of the highest gravities I have ever seen in Stout. They are all of first-class quality. **The Nourishing** Stout being exceptionally fine, and owing to its **strength and purity,** is a most valuable food for **Invalids.** They are all brewed from **Malt** and **Hops only,** the water used being the best brewing water the City of Dublin affords.

"CHARLES R. C. TICHBORNE,

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MIGRAININE in **Migraine and Nervous Headaches.**

LYSIDINE, excellent **Solvent for Uric Acid in Gouty Complaints.**

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By augmenting the peristaltic movement of the intestine without producing undue secretion of the liquids. Unlike pills and the usual purgatives, it does not predispose to intestinal sluggishness; and the same dose always produces the same effect—that is to say, never needs increasing.

It is recommended by the most eminent physicians of Paris, notably Drs. BELIN and TARDIEU, who prescribe it constantly for the above complaints, and with most marked success.

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One of these Cigarettes gives IMMEDIATE RELIEF in cases of ASTHMA, CHRONIC BRONCHITIS, HAY FEVER, COUGH, and SHORTNESS OF BREATH, and their daily use effects a COMPLETE CURE. The contraction of the air tubes, which causes tightness of chest and difficulty of breathing, is at once lessened by inhaling the medicated smoke of the Cigarette; a free expectoration ensues, and the breathing organs resume their natural action. Persons who suffer at night with COUGHING, PHLEGM, and SHORT BREATH find them invaluable, as they instantly check the spasm, promote sleep, and allow the patient to pass a good night.

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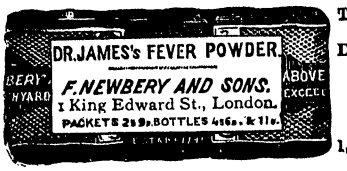
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For DIABETES.

STRENGTHENS the SYSTEM, ASSUAGES THIRST, RAPIDLY DECREASES the SUGAR and PREVENTS DIABETIC COMPLICATIONS, GANGRENE, ANTHRAX, &c.

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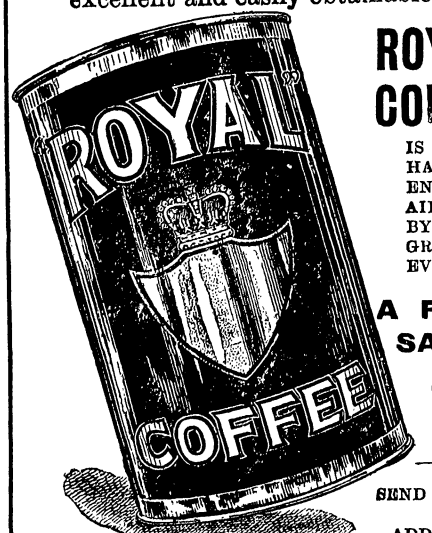
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SOUTH AFRICAN ANTI-ASTHMATIC PAPER & CIGARETTES give immediate relief in the worst attacks of Asthma, Bronchitis, Hay Fever, Whooping Cough, and ordinary Colds. Used under high medical sanction. A well-known scientist writes:—"I may tell you I have tried Stramonium and Datura Tatula Cigars and Cigarettes, and other well-known remedies, English and Foreign, but they do not give so much relief." In boxes at 2s. 6d. and 4s. 6d. A sample sent post free to the Profession.

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The Juice of the FINEST SELECTED ENGLISH MEAT in its Natural State, containing the Albumen uncoagulated, together with the other NUTRITIVE PROPERTIES READY FOR IMMEDIATE ASSIMILATION.

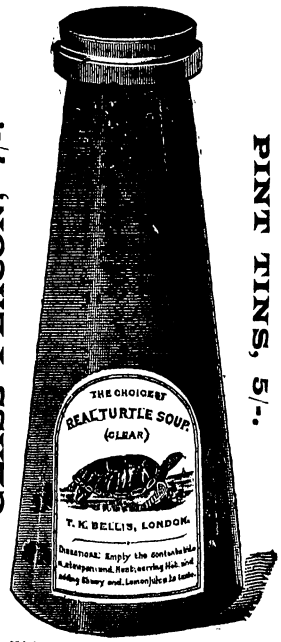
Of ALL CHEMISTS, or direct of **BRAND & CO., LTD., MAYFAIR, W.**

THE FINEST RESTORATIVE AFTER ANY ILLNESS IS

BELLIS'S World-Famed

REAL TURTLE SOUP.

GLASS FLACON, 7/-.



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Guaranteed to be the product of the finest Live Turtle, imported twice a month.

FOR INVALIDS there is no Food so nourishing, sustaining, or easily digested as Turtle Soup.

REAL TURTLE JELLY.

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A few spoonfuls taken between meals is a valuable tonic.

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Bellis's Specialities are obtainable at all Stores, Grocers, and Chemists throughout the United Kingdom.

"G. B." DIABETES WHISKY.

48/- PER DOZEN, CARRIAGE PAID.

THE LANCET Analysis post free.

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AËRATED LIME-WATER.

An efficacious Remedy for Nausea and Sickness. Mixed with milk, it forms a valuable Beverage for Ladies nursing or Delicate Children.

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NO MUSTY FLAVOUR.

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BLATCHLEY'S Celebrated Breads and Biscuits supplied to nearly all the London and County Hospitals & Infirmaries. Blatchley's Gluten and Bran Biscuits, a speciality in treatment of Obesity, made from a receipt of Dr. Yorke-Davies. Price Lists free.
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When diluted in the proportion of one part to forty parts of water at 60° temperature, they faithfully represent the Medicated Waters of the British Pharmacopœia. They are always of uniform strength, and will keep good any length of time in any climate.

Aqua Amygd. Amar. Conc. (U.S.) ... 4/- per lb.	Aqua Cassiæ Conc. ... ... 4/- per lb.	Aqua Menth. Virid. Conc. ... ... 4/- per lb.
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The above may be had in ½-lb. or 1-lb. Bottles and upwards, through most of the Wholesale Drug Houses.

Each Bottle has the Inventor's Protection Label over the cork, without which none are genuine.

SAMPLES OF ANY OF THE ABOVE SENT FREE ON APPLICATION FROM

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TAURINE
(BARFF).

THE LANCET:—"There can be little doubt of the nutrient value of TAURINE, since it contains both the invigorating and sustaining constituents of Prime Beef. It is practically destitute of taste and agreeable to take in the jelly form."

TAURINE contains the whole of the Albumen Uncoagulated. Very Highly Concentrated.

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Clean on the Palate.
Devoid of Strong Meaty Flavour.
Absolutely Self-Digestive.
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KREOCHYLE (BARFF & WIRE) **LIQUID MEAT.** Food and Stimulant for Invalids and Infants.

The Best and Richest Natural Tonic Water.



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Arsenious Acid, Iron Sulphates, and Copper Sulphate in natural solution. Indicated in Anæmic, Chlorotic, Neurasthenic, and Neurotic Conditions.

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1 oz. 6d., 2 oz. 11d., in bottles.

BORTHWICK'S BOUILLON BRAND "BI-WIN"

The Acme of Beef Nourishment.

And 4 oz. 1s. 8d. Of all Grocers and Chemists.

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IT ENRICHES THE BLOOD

Prepared under MEDICAL INSTRUCTION from Purest COCOA, KOLA NUT, MALT and the FERRUGINOUS or IRON BEARING ELEMENTS of FOOD.

A DELICIOUS, REFRESHING, AND SUSTAINING BEVERAGE.

Owing to the Ferruginous Elements contained in it, Ferru-Cocoa largely assists in the formation of Hæmoglobin, or red colouring matter in the Blood, thereby being of the greatest value to children and invalids in aiding to build up a sound, healthy constitution.

FERRU-COCOA is Muscle-forming, Force-producing, and ENRICHES THE BLOOD.

The "LANCET" says:—"Normally Cocoa contains NO iron, and its addition in an organic form in the preparation before us (Ferru-Cocoa) is a step of some importance."

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Strongly recommended by the highest medical experts and analysts as the most valuable Blood-forming and Blood-enriching FOOD BEVERAGE known.

Packed in 6d., 9d., and 1/6 Tins of all Chemists and Grocers.

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BEST HAVANA CIGARS AT IMPORT PRICES.

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Good Foreign Cigars, 12s., 16s., 20s., 22s., 100. Samples five for 1s., post free. Cigars to suit the most delicate palates.

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REAL TURTLE SOUP
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10s. 6d. per pint.

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And all KINDS of LIGHT COMESTIBLES,
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Particulars on application.

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"I beg on behalf of the Relief Fund Committee to acknowledge with grateful thanks your generous gift of 'Carbolacene.' I may say that it is asked for specially by orders from Medical Men. If you would be kind enough to send us another consignment it would be thankfully received."

CARBOLACENE.

The FIRST Disinfecting Liquid Soap in the World.

NO OTHER SOAP REQUIRED.

WILL WASH CLOTHES.

Cleans and Disinfects in one operation.
Used by H.M. Government, Hospitals, Private Families, &c.

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Sample Tins will be sent free to Public Institutions, Nurses, and Doctors, carriage paid.

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29, African House, Water St., LIVERPOOL.

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Introduced into England in 1882.

EVERY ANTISEPTIC PRECAUTION MOST CAREFULLY OBSERVED.

Tubes, 1s. 9d.; Half Tubes, 1s. each, post free.

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(As prepared by him for many years and recently adopted by THE LOCAL GOVERNMENT BOARD.)

TUBES: for one child, 6d. each; for three children, 1s. each; 3 ditto, ditto, 2s. 6d. each. Conserve, in Vials, 2s. 6d., 5s. (according to size). Other preparations as ordered. *Special arrangements for large quantities and contracts.*

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GLYCERINATED CALF LYMPH.

"PURE CULTURE BRAND."

Prepared in the country under the direct supervision of a Bacteriological Expert, and guaranteed to be absolutely Aseptic and free from all Disease Germs.

Glycerinated Lymph is now strongly recommended by the Local Government Board, and it has an additional advantage over other Lymph in that it will retain its properties and continue to improve for a period of at least ten months.

Price 1s. per Tube. (Any inert Tubes will be replaced free of charge.)

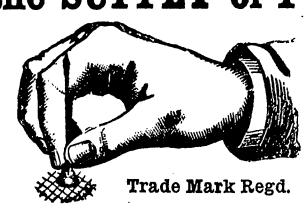
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The ASSOCIATION for the SUPPLY of PURE VACCINE LYMPH.

ESTABLISHED 1877.

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Office hours, 10 till 4; Saturday 10 till 2.

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GLYCERINATED PURE CALF VACCINE was first introduced in England in 1882, and since that date no other preparation has been sold by this Association. Its use in S.V. TUBES with a VACCINE ANTISEPTIC EJECTOR is now required by the Local Government Board (*See "Instruction to Public Vaccinators,"* 19th October, 1893).

SINGLE VACCINATION (S.V.) TUBES, 6d. each. TUBES and HALF TUBES, 1/6 and 1/- each. PIN POINTS, 1/- per dozen.

VACCINE ANTISEPTIC EJECTORS, 1/3 each. VACCINATORS, which remove the cuticle without drawing blood, 5/-.

HUMAN VACCINE from healthy children only, microscopically examined and source quoted. Tubes two-thirds full, 1s. 3d. each; one-third full, 1s. each. Special quotations for quantities. Pin points gratis with Vaccine when requested.

P.O.O. (including postage, and crossed London and Westminster Bank) with orders payable to EDWARD DARKE, Secretary.

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"GAMGEE TISSUE"

(Absorbent Gauze and Cotton Tissue).

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GLYCERINATED CALF LYMPH ("Half" Tubes 1/- each, Three for 2/3.)
HUMAN LYMPH (Tubes 1/- each, 10/- doz.)

All the LYMPH we supply may be relied upon as PERFECTLY FRESH.

FERRIS & CO., BRISTOL.

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204, Victoria Road, Aston, Birmingham.

Director: JNO. ROUND, L.R.C.P., L.R.C.S.

Prices of the Lymph:—

1 large Tube (4 vaccinations) 1/- ... ... 12 for 10/-
2 small Tubes (1 vaccination each) 1/- ... ... 12 for 5/6
2 Ivory Points (1 ,, ,,) 1/- ... ... 12 for 5/6

Sent to the Medical Profession, post free, on receipt of remittance, by the Director of the Establishment, or by the

Wholesale Agents, WYLEYS LIMITED, Coventry.

Faulkner's & The British CALF VACCINE INSTITUTION,

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Established 1860.

GLYCERINATED CALF LYMPH, most Reliable and Pure. Tubes 1s. and 2s. each; 10s. per dozen. Smallest Tubes 6s. per dozen. Conserves 2s. 6d. each.

PURE HUMAN LYMPH, same price, sent on receipt of postal order.

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186, MARYLEBONE ROAD, LONDON, N.W.

The Oldest Original Calf Vaccine Institution in this country.

Prices of Calf Lymph (GLYCERINATED):—

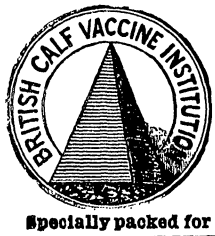
Tubes ... { Large ... ... 2s. each or 3 for 5s. 0d.
Small ... ... 1s. each or 3 for 2s. 6d.
,, (sufficient for 1 Vaccination only) 2 for 1s. or 6 for 2s. 6d.
Squares ... ... 2s. 6d. each.

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Director: WM. FAULKNER, M.R.C.S.



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Guaranteed of Exceptionally Pure Quality

Put up in Tin Cases containing 1 large tube (2—4 vaccinations) ... ... per case 1/-
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Sent Post Free on receipt of Postal Order or Stamps.

UNSATISFACTORY TUBES EXCHANGED FREE OF CHARGE.

Specially packed for Export at same prices. Postage extra.

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CALF LYMPH

Free from ERYSIPELAS & TUBERCLE.

Tubes, 1s. each, 10s. per dozen; Half Tubes, 3 for 1/6. Postage 1d.

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1/- and -/6 per Tube.

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ANTISTREPTOCOCCUS SERUM (Liquid or Dried), 2/6 per Flask of 10 c.c.

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CHICAGO EXHIBITION, HIGHEST AWARD.

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THE NEW SHAPE, with Rounded Edges or the Ordinary Kind
3 and 4 oz., plain or graduated ..... 7s. 6d. per gross.
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WHITE MOULDED PHIALS, Plain or Teaspoons.
½ oz. and under, 3s. 4d. per gross. | 1 oz. ..... 3s. 6d. ,, | 2 oz. ..... 4s. 3d. per gross | 3 oz. ..... 5s. 0d. ,,
Best Quality.

BLUE POISON BOTTLES, all sizes.

PLEASE NOTE.—The Green Glass can be had, washed and corked, ready for use, 6d. per gross extra. A trial of these would oblige.

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Or the ordinary kind, plain or graduated.

3 & 4	ounce...	7s. 6d. per gross.
6 & 8	,, ...	8s. 6d. ,,
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Oval, octagon, or direct square shape the same price.

WHITE MOULDED PHIALS—BEST QUALITY.

½	ounce and under	3s. 4d. per gross.
1	,, ...	3s. 6d. ,,
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2	,, ...	5s. 0d. ,,

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CRYSTAL BLUE TINTED BOTTLES—SPLENDID QUALITY.

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6 & 8	,, ...	9s. 0d. ,,

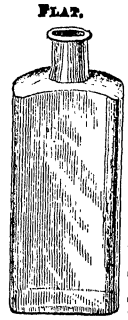
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The Medical Profession should see a sample of these, which is forwarded free on application.

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ROUND EDGES.

DISPENSING BOTTLES.

GREEN FLINT.—ALL SHAPES.

3 oz.	4 oz.	6 oz.	8 oz.	
8/-	8/-	9/-	9/-	For Corks.
11/-	11/-	12/-	12/-	Screw Stopd.

WHITE VIALS.—Plain & Graduated

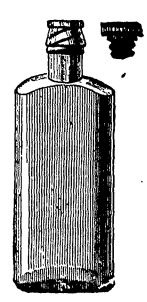
½ oz.	1 oz.	1½ oz.	2 oz.	
3/3	3/6	4/1	4/9	per gross.

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No. 8, G. N. GOODS STATION, KING'S CROSS, LONDON.

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NEW ASEPTIC VACCINE CASES.

Complete with LANCETS, TUBES, STERILIZER, & BLOWER.

(Devised to meet the requirements of the New Act and the Order of the Local Government Board.)

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(Opposite Guy's Hospital). Factory—KING'S HEAD YARD.
Telegrams: "DOWN, LONDON." [Telephone: 965 HOP.

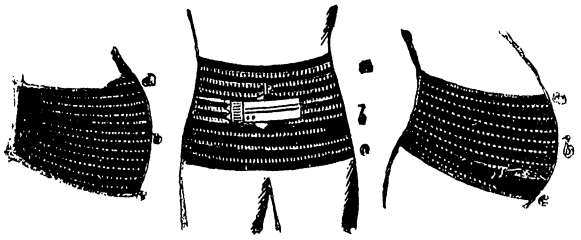
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OPHTHALMIC OPTICIANS,

And at LIVERPOOL and BRISTOL. 195 to 199a, GT. PORTLAND ST., LONDON;

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The only makers of English Ophthalmoscopes. C. & P. will not guarantee any instrument not purchased from them OR BEARING THEIR NAME

HUXLEY'S ABDOMINAL BELTS,

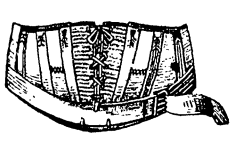


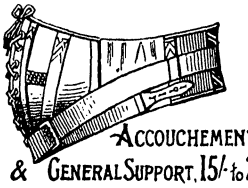
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(THE INVENTION OF VALLAISE,)
are made expressly in all cases, the material being selected with due regard to the requirements of each case. Made of cotton and silk, each of *best* quality only.

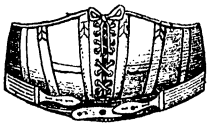
MEASUREMENT REQUIRED.—Circumference at *a*, *b*, and *c*, depth from *a* to *c*, stating sex and any other particulars that can be given.

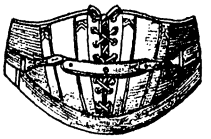
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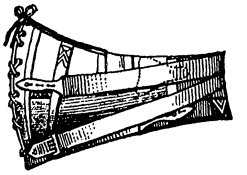

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The next PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday, January 17th.

Candidates are required to give fourteen days' notice in writing to the Registrar of the College, with whom all certificates and testimonials required by the By-laws are to be left at the same time.

Pall Mall East, S.W. EDWARD LIVEING, M.D., Registrar.

DIPLOMA IN PUBLIC HEALTH.
University College, London.

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Demonstrations of Sanitary Appliances and Excursions to places of Public Health interest are undertaken by the Professor each week.

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Those intending to join the class are invited to call at the Laboratory between the hours of 2 and 4 P.M., or the prospectus and further information may be obtained on application to

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DIPLOMA IN PUBLIC HEALTH.
London Hospital Medical College.

A SIX MONTHS' COURSE of Laboratory Instruction, including Lectures on Public Health and Out-door Sanitary Work, will commence on January 3rd.

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WEST LONDON POST-GRADUATE COLLEGE.

WEST LONDON HOSPITAL, Hammersmith-road, W.—The next Course of Eighteen PRACTICAL DEMONSTRATIONS will commence on Monday, January 16th, 1899 The fee for the complete course is £1 11s. 6d., or £1 1s. for any ten demonstrations.

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For Syllabus of the next Course, and for the Prospectus of the College, application should be made to me, at the Hospital.

L. A. BIDWELL, Dean.

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SESSION 1899.

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(*c*) A SHORT PRACTICAL COURSE.—This course will be conducted by Dr. R. T. Hewlett, and extends over four to six weeks. The class commences on Jan. 9th, at 2.30 P.M., and will meet three times weekly. Fee £5 5s.

II. CHEMICAL AND WATER LABORATORY.

This Laboratory is available for investigation and instruction of a chemical nature in connexion with Public Health and Bacteriology, and is under the superintendence of Dr. Arthur Harden.

III. HANSEN LABORATORY.

This Laboratory is devoted to instruction and investigation in connection with Technical Bacteriology and is under the superintendence of Dr. G. Harris Morris. The work is specially adapted for those interested in the Bacteriology of Brewing, Distilling, Agriculture and other Industries. The first course will commence on Jan. 9th.

IV.—PHOTOMICROGRAPHIC LABORATORY.

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ST CLAIR THOMSON, M.D., F.R.C.S.—Friday 9.30 A.M.

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Jan. 24th.—On the Surgical Treatment of Paralytic Deformities, with Illustrative Cases—Mr. JAMES CANTLIE.

Jan. 31st.—Cases of Acroparæsthesia and other Angio-neuroses—Dr. T. D SAVILL.

Feb. 7th.—Cases of General Paralysis of the Insane and Allied Disorders—Dr. FLETCHER BEACH.

Feb. 14th.—Cases of Facial Paralysis—Dr. HARRY CAMPBELL.

Feb. 21st.—On the Slighter Forms of Mental Disorder, and how to deal with them—Dr. T. D. SAVILL.

Feb 28th.—Cases of Aural and other forms of Vertigo—Dr. DUNDAS GRANT.

March 7th.—Electricity in the Treatment and Diagnosis of Diseases of the Nervous System—Dr. T. D. SAVILL.

March 14th.—Cases of Visual Disorder in relation to Diseases of the Nervous System—Mr H. WORK DODD.

March 21st.—Disorders attended by Loss of Consciousness—Dr. HARRY CAMPBELL.

Further particulars may be obtained from the Hon. Sec., Post-Graduation Course.

DIPLOMA IN PUBLIC HEALTH.
King's College, London.

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British Medical Benevolent Fund.—

The ANNUAL GENERAL MEETING of Subscribers to the BRITISH MEDICAL BENEVOLENT FUND will be held at 84, Brook-street, Grosvenor-square, the residence of the Treasurer, on FRIDAY, JANUARY 13th, 1899, for the purpose of receiving the Treasurer's Financial Statement and the Report of the Committee, and for the election of a Committee and other Officers.

The Meeting will be constituted SPECIAL for the consideration of the Revision of the By-Laws.

The President, SIR JAMES PAGET, Bart, F.R.S., &c., will take the Chair at 5 o'clock.

6, Southwell gardens, S.W. JOSEPH WHITE, Hon. Sec.

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HOSPITAL TRAINED NURSES ON THE STAFF. Male and Female Nurses, for Medical, Surgical, Mental, Dipsomania, Maternity, Fever, and Travelling Cases. Also skilled Masseurs. THE GREATEST CARE IS TAKEN TO ONLY HAVE REFINED AND TEMPERATE Obtainable Day or Night. Terms from 1½ guineas per week.—Apply W. H. LANGTON, or Lady Superintendent.

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FULLY-TRAINED HOSPITAL NURSES & MATERNITY.

Also **MENTAL** Male and Female NURSES, all holding PSYCHOLOGICAL CERTIFICATES. The Largest Staff in the Kingdom. Terms: 1 guinea and a half or 2 guineas and upwards per week. Apply, G. GORDON, or Lady Superintendent.

St. John's House.—Trained and Experienced Medical, Surgical, Monthly NURSES and MASSEUSES can be obtained by application, personally or by letter, to the Sister Superior, 8, Norfolk-street, Strand. Telephone No. 2577. Telegraphic Address: "Private Nurses, London."

Queen Charlotte's Lying-in Hospital and MIDWIFERY TRAINING SCHOOL, Marylebone, N.W.—MEDICAL PUPILS admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing obstetrical complications and operative midwifery, upwards of three-fourths of the total admissions being primiparous cases.

CERTIFICATES AWARDED as required by the various Examining Bodies.

PUPILS RECEIVED and SPECIALLY TRAINED for MIDWIVES and MONTHLY NURSES. On completion of the period of Training, each pupil, on being found competent, is awarded a Certificate of efficiency.

For rules, fees, &c., apply ARTHUR WATTS, Secretary.

GENERAL NURSING INSTITUTE.

5, Mandeville Place, Manchester Square, W.

ESTABLISHED 1862 at Henrietta-street, Covent-garden.

Thoroughly experienced Hospital-trained NURSES supplied at a moment's notice. being resident in the Home.

Also, specially-trained NURSES for Mental and Nerve Cases.

Worked under the system of Co-operation.

Apply to the SUPERINTENDENT.

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General Lying-in Hospital, York-road, Lambeth.—Respectable WET NURSES and Certificated MONTHLY NURSES, also Certificated MIDWIVES, supplied on application. Female Pupils are trained in Midwifery and Monthly Nursing.—Address, A. Atkinson, Matron.

Doctor residing in the most healthy suburb of London receives Lady or Gentleman, or children requiring medical care. Terms moderate. References to old patients.—Address, No. 1265, THE LANCET Office, 423, Strand, W.C.

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DUMPFORD HOUSE HYDRO.,

Near Petersfield, Hants.

Highly recommended to those needing rest and change.

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Vacancy in a Nursing Home in Scarborough, very comfortable, for a CHRONIC PATIENT, slight Mental not objected to; or Lady for Accouchement. Terms moderate Unexceptionable references given.—Apply, Miss Penty, Nursing Home, Scarborough.

Mountain City of Innsbruck.—HEALTH RESORT for those in delicate health, altitude 2000 ft., sheltered by mountains from all cold winds, no fogs, dry climate, good water-supply and drainage.

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GRISSONS (1800 meter above sea level), Switzerland, will be reopened for Winter Season on 1st November, 1898. The Hotel is in a very sheltered position and commands a fine view of the opposite mountain range. Large covered verandah, large public rooms, including billiard-room, 100 well-furnished rooms and saloons, comfortably arranged in modern style. Central heating, electric light, telephone, telegraph. Boarding price, including room, light, and service, from 8 francs a day.

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Full particulars from the LONDON OFFICES, 14, COCKSPUR STREET, S.W.

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CELEBRATED AUTUMN, WINTER, & SPRING HEALTH RESORT.

A fine First-class English Family Hotel, modern comforts, latest sanitary and heating arrangements, in the **healthiest, most quiet,** and **charming** part, stands well up from the lake, surrounded by shady **terraces, Park,** splendid panoramic views. Easy access from town. **Charming Residence for change and rest. Lift. Bath rooms. Electric light. Dark room. Balconies. Tennis.** Omnibus (use of omnibus for churches and Kursaal).

Orotava, Teneriffe. — The finest CLIMATE IN THE WORLD.

The ENGLISH GRAND HOTEL is Open all the Year. Excellent Cycling roads. The Golf Links have been laid out by Tom Dunn.

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Select Temperance Boarding House.

Liberal diet, quiet, and comfort studied. 42s. to 52s. 6d. per week (inclusive); or apartments with or without board. Reduced terms from October to Easter.

Convalescents from infectious complaints inadmissible.

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Passenger lift. Ask for Hotel Tickets, available by all trains.

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ABERYSTWITH, "The Biarritz of Wales,"

is highly recommended for invalids. It possesses the most equable temperature, its shore being swept by the Gulf Stream and the S.W. breezes of the Atlantic. The drainage is perfect, and the town is supplied with the purest water from Plynlimmon.

The late Sir James Clarke, M.D., says: "A fortnight in Aberystwyth is equivalent to a month's residence in most watering-places."

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Home for Private Paying Patients under the care of their own doctors. Medical, surgical, monthly, nervous, and chronic cases received. Massage. Skilled nursing. Excellent situation, close to Hampstead Heath.—14, Thurlow-road, Hampstead, N.W.

FLOWER HOUSE,

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A Sanatorium of the highest class for the Treatment and Care Gentlemen of Unsound Mind.

N.B.—Under the New Act voluntary boarders can be received o their own personal application.

Apply to Dr. MERCIER, Resident Medical Superintendent.

Resident Patient.—A Medical Man residing in a well-arranged house with garden, near London, S.W., and receiving only one patient, is at present disengaged. Own nurse or servant could be accommodated upon same floor. Terms moderate.—Address, No. 445, THE LANCET Office, 423, Strand, W.C.

Private Home for Patients or Invalids requiring a permanent home. Medical, nervous and hysterical cases received. Vacancy for lady before and during accouchement. Large house standing in well-secluded grounds. Trained nurse. Medical references.—For terms, &c., apply Proprietor, Round Hill Villa, High-street, Sydenham, S.E.

Resident Patients.—One or two Ladies requiring rest and treatment received in a Medical Man's house. Vacancy for Lady before and during Accouchement. Large country house standing in well-secluded grounds, within easy access of London. Trained nurse and carriage exercise if desired. Every home comfort. Terms from 2½ guineas. For particulars apply to Mrs. Allen, Little Gearies, Cranbrook-road, Ilford.

Resident Patients. — A List of Medical Men in all parts willing to receive into their houses Resident Patients, together with a full description of the accommodation offered, terms, &c., can be had without charge from Mr. G. B. Stocker, 8, Lancaster-place, Strand, W.C.

Private Home for the Care, Instruction, and Training of Backward, Delicate, and Feeble-minded Children, under Medical management. Special department for elder Girls and Boys. Resident Teachers. Home comforts. Cycling, gardening, basket-making, &c., taught. Seventeen years' experience. Large secluded grounds.—Apply, Lady Superintendent or Medical Director, Woodside Court, East Croydon. N.B.—Tram car from station to Addiscombe.

WYKE HOUSE,

ISLEWORTH, MIDDLESEX.

A Private Asylum for Ladies and Gentlemen mentally afflicted. Voluntary Boarders are received. The grounds are very extensive and various amusements are provided. For terms apply to

F. MURCHISON, M.A., M.B., Resident Proprietor.

ASHWOOD HOUSE, KINGSWINFORD, STAFFORDSHIRE.

An old-established and modernised Institution for the Medical Treatment of Ladies and Gentlemen mentally afflicted.

The House, pleasantly situated, stands in picturesque grounds of forty acres in extent, with a surrounding country noted for the beauty of its walks and drives. The climate is genial and bracing. Occupation, in-door and out-door amusements, and carriage and other exercise amply provided.

Terms range from 2½ to 6 guineas per week, inclusive, according to requirements as to accommodation, special attendance, &c.

Railway Stations: Stourbridge Junction (G.W.R.), 3½ miles; Dudley (L. & N.W.R.), 4 miles; Wolverhampton (G.W.R. or L. & N.W.R.), 7 miles. Intending visitors can be met at any of these stations.

For further particulars apply to the Medical Superintendent.

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Exeter Asylum.—Private Patients

are admitted into this Asylum at a uniform rate of 25s. a week. This sum includes everything except clothing. For further information, printed forms of certificates, &c., apply, R. L. Rutherford, M.D., Medical Superintendent.

"The wards are in excellent order, bright and cheerful, and those occupied by the patients of the private class should attract many whose means are limited from all parts of England."—Extract from the Forty-eighth Report of the Commissioners in Lunacy.

THE COPPICE, NOTTINGHAM.

HOSPITAL FOR MENTAL DISEASES.

President: The Right Hon. the Earl MANVERS.

This Institution is exclusively for the reception of a limited number of PRIVATE PATIENTS of both sexes, of the UPPER and MIDDLE CLASSES, at moderate rates of payment. It is beautifully situated in its own grounds, on an eminence a short distance from Nottingham, and commands an extensive view of the surrounding country; and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted.

For terms, &c., apply to Dr. TATE, Medical Superintendent.

Private Home for the Treatment of

INSANE LADIES,
ASHBROOK HALL, HOLLINGTON,

within half an hour's walk of St. Leonards-on-Sea, conducted by the Widow of the late Samuel Hitch, M.D., formerly of Sandywell-park, near Cheltenham, for many years Physician to the General Lunatic Asylum for the County of Gloucester.

Station: Warrior-square, St. Leonards. Telegraph Office: Hollington.

For particulars and terms apply to
Mrs. LETITIA A. HITCH or Miss ADAMS, Co-Licensee.

Stretton House, Church Stretton,

Salop.—A Private Institution for the Treatment of Mental Diseases (Upper Class only).

See Medical Directory, p. 1943, or Album.
Prospectus from Resident Medical Officer.
Telegrams: Campbell Hyslop, Church Stretton.

THE MOAT HOUSE,

TAMWORTH, STAFFORDSHIRE.

A HOME for NERVOUS and MENTAL CASES. Stations, L. & N. West. and Mid. Railways.

The House stands in grounds of ten acres (within 5 minutes' drive of either station), and is devoted to the care and treatment of a few Ladies suffering from Nervous and Mental Disorders, who enjoy the comfort, privacy, and occupations of home life. Voluntary patients are received without certificates.

Medical Attendants—J. HOLMES JOY, M.A., M.D., and H. H. RUBRA, L.R.C.P. Lond. For terms, &c., apply to the Resident Proprietor, E. HOLLINS, M.A.Camb., J.P.

Barnwood House Hospital for

MENTAL DISEASES, Barnwood, near Gloucester. Exclusively for Private Patients of the Upper and Middle Classes. This Institution is devoted to the Care and Treatment of persons of both sexes at moderate rates of payment. The terms vary according to the requirements of the patients, who can have private rooms and special attendants, or be accommodated in Detached Villas and in the Branch Convalescent Establishment on the hills. Under special circumstances the rates of payment may be greatly reduced by the Committee.—For further information apply to J. G. Soutar, M.B., the Med. Supt.

St. Luke's Hospital. London, E.C.

Established 1751.

This Hospital was established for the Treatment of Mental Diseases of the Middle Classes. Preference is given to acute cases, and these are admitted either gratuitously or on payment of a weekly sum varying from 14s. to 30s., according to the circumstances of each. Patients are eligible for admission from any part of the United Kingdom.

The Convalescent Establishment in connexion with the Hospital is at St. Lawrence, Ramsgate.

Forms of application may be had from, and inquiries addressed to, the Secretary, at the Hospital, Old-street, London, E.C.

Aug. 31st, 1896. W. H. BAIRD, Secretary.

SPRINGFIELD HOUSE PRIVATE ASYLUM, BEDFORD.

For forms of admission, &c., address DAVID BOWER, M.D., as above. (Dr. B. attends at 5, Duchess-street, Portland-place, W., on Tuesdays, from 3 to 4.)

Terms 2½ guineas per week.

There are now Vacancies for both Ladies and Gentlemen.

THE HUGUENOTS,

EAST HILL, WANDSWORTH.

A HOME FOR THE TREATMENT OF LADIES OF UNSOUND MIND.

TWELVE LADIES are received either under certificates or as Voluntary Boarders. The house has large grounds and is healthily situated near several commons. A Mental Specialist visits.

Resident Licensee, Mrs. LERCH.

Wye House Asylum, Buxton, Derbyshire,

for the middle and upper classes of BOTH SEXES, is beautifully situated in the healthy and bracing climate of the Derbyshire hills, and is directly accessible by the Midland and the London and North-Western Railways.—For terms and other particulars, address the Resident Physician and Proprietor, Dr. F. K. DICKSON.



INEBRIETY, THE MORPHIA HABIT, AND THE ABUSE OF DRUGS.

A PRIVATE HOME, ESTABLISHED 1864,

for the Treatment and Cure of Ladies of the Upper and Higher Middle Classes suffering from the above. Highly successful results. Medical Attendant: Dr. J. St. T. CLARKE, Leicester.—For terms, &c., apply, Mrs. THEOBALD, Tower House, Leicester.

Telegraphic Address: "Theobald, Leicester."

St. Andrew's Hospital for Mental

DISEASES,
NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President—The Right Honble. the EARL SPENCER, K.G.

The Institution is pleasantly situated in a healthy locality, one mile from the London and North-Western or Midland lines, and one and a half hour only from London.

It is surrounded by more than 100 acres of pleasure grounds.

Great care is exercised in the classification of the Patients according to their habits and different degrees of mental aberration, so that those who are quiet or convalescent may not associate with those whose minds are more affected.

Ample means of occupation and amusement are provided, including Cricket, Croquet, Lawn Tennis, and Archery. There are also Billiard Rooms, and a large Recreation Hall and Theatre.

The terms vary from 25s. to £4 4s. week, according to the requirements of the case.

Patients paying higher rates can have Special Attendants, Horses, and Carriages; and Private Rooms in the hospital; or in detached villas in the grounds of the hospital; or at Moulton Park, a branch establishment, two miles from the hospital.

There is also a Seaside House, to which Patients may be sent.

For further information apply to the Medical Superintendent.

Warneford Asylum, Oxford.—This

Asylum, for the care and treatment of the Insane of both sexes of the Middle and Upper Classes, is pleasantly situated on Headlington-hill, near Oxford, and has been recently enlarged. The grounds are extensive, and cricket, tennis, billiards, dances, and other amusements are amply provided. There are now vacancies for patients at moderate charges. Voluntary patients can also be received.—For particulars apply to the Medical Superintendent, Dr. NEIL.

NERVOUS & MENTAL AFFECTIONS.

The Grove, Catton, near Norwich.—

A quiet **HOME** for the **Special Treatment** of a limited number of **Ladies** suffering from **Nervous** and **Mental Affections.** The house stands in beautiful grounds of about ten acres in extent, is situated a mile and a half from the **City** of **Norwich**, and contains the most modern requirements and comforts.

Carriage drives and **amusements** of all kinds are provided for patients. **Boarders** are also received **without certificates.**

For further particulars apply to the Resident Physician, CECIL A. P. OSBURNE (formerly Medical Attendant, Grove House Asylum and The Oaks Sanatorium, Hythe); or to the Misses McLintock.

INEBRIETY.

MELBOURNE HOUSE, LEICESTER.

PRIVATE HOME FOR LADIES.

Medical Attendant: CHAS. J. BOND, F.R.C.S. Eng., L.R.C.P. Lond.
Principal: H. M. RILEY, Assoc. Soc. Study of Inebriety.
Thirty Years' Experience. Excellent Medical References.
For terms and particulars apply Miss RILEY, or PRINCIPAL.

Grove House, All Stretton, Church

STRETTON, SHROPSHIRE.

A PRIVATE HOME for the Care and Treatment of a limited number of Ladies mentally afflicted. Climate healthy and bracing.

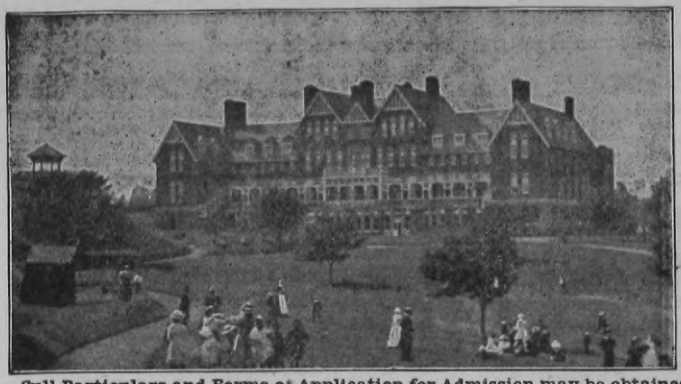
Apply to Mrs. McLintock (widow of the late Dr. McLintock), the Resident Proprietress, or to the Medical Superintendent.

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THE YARROW HOME FOR CONVALESCENT CHILDREN

OF THE BETTER CLASSES,

BROADSTAIRS.



Established and endowed for 100 well-mannered children of respectable and educated persons who are unable to afford the entire cost of a change of air at the seaside for their convalescent children.

Children of the lower class poor are NOT eligible.

Boys from 4 to 14 years and Girls from 4 to 16 years are admitted irrespective of nationality or creed.

A charge of 5s. per week is made for each child.

This Home is equally available in Winter and Summer, the Building throughout being heated and ventilated upon the latest scientific principles. The Spacious Play Rooms are fully equipped for recreation.

The Building stands in 10½ acres of ornamental grounds, with large sheltered garden and shrubberies, and faces the sea.

The Home is under the management of a highly experienced Matron. A Medical Officer and Certificated Nurses form a part of the Staff.

Full Particulars and Forms of Application for Admission may be obtained on application to Mr. T. F. MYERS, Secretary, at the LONDON OFFICES, 73½, QUEEN VICTORIA STREET, E.C.

INTEMPERANCE.

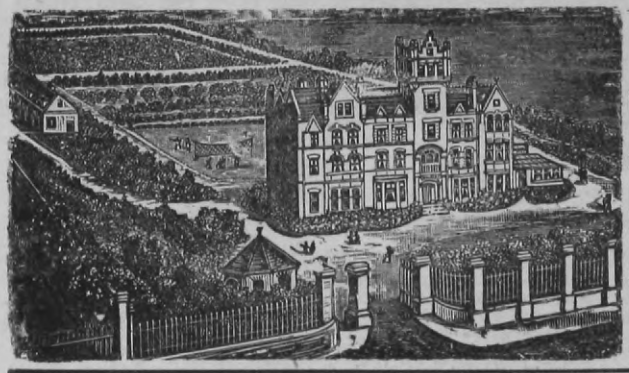
CAPEL LODGE, NEAR FOLKESTONE.

Licensed Under the Inebriates Acts, 1879, 1888.

Resident Proprietor and Licensee—E. NORTON, M.D., L.R.C.P., M.R.C.S.

Resident Medical Superintendent—LEONARD N. PENTREATH, M.A. Oxon., L.R.C.P., M.R.C.S.

The only Private RETREAT and HOME on the South Coast for the care and treatment of GENTLEMEN suffering from Inebriety or the abuse of drugs. The HOUSE has been specially designed and built to carry out the requirements of the Act. It stands in its own extensive grounds on the high chalk cliffs between Folkestone and Dover. This unique situation ensures privacy, while the bracing and tonic properties of the sea air are most beneficial in these cases. Billiard Room, Library, occupations, and amusements. Home Dairy. Patients received under the Act, or privately. For prospectus and terms apply, Dr. NORTON, Capel Lodge, near Folkestone.



INEBRIETY.

TOWER HOUSE RETREAT & SANATORIUM (Ltd.), Westgate-on-Sea, Kent.

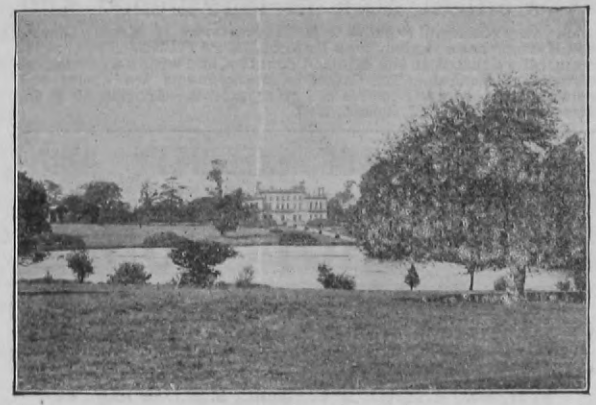
Principal and Licensee—ALFRED F. STREET, M.A., M.D., B.C. Cantab.

Licensed under the Inebriates' Acts, 1879-88. The only establishment in the United Kingdom specially erected for the reception and treatment of Ladies and Gentlemen desirous of overcoming habits of Intemperance or of the abuse of Narcotic Drugs.

The house stands in its own grounds of nearly three acres, and is replete with every convenience, containing a large Billiard-room, spacious Drawing-rooms, Smoking-rooms, Bath-rooms, &c.

Patients can be received under the Act or privately.

For prospectus, forms (when required) for signature under the Act, and further particulars, address Principal, Tower House, Westgate-on-Sea.



INEBRIETY.

ASTON HALL, near Sutton Coldfield, WARWICKSHIRE.

Established 25 years. *Licensed under the Inebriates Act.*

Eighty acres of Private Grounds, including Lakes of twelve acres.

Fishing, Shooting, nine-hole Golf Course, Billiards, Cricket, &c., &c.

For terms, Act forms (if required), apply to

THE SECRETARY.

Telegraphic Address—"REST, ALDRIDGE."

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PATIENTS RECEIVED IN RESIDENCE. **NAUHEIM TREATMENT IN LONDON.** PATIENTS RECEIVED IN RESIDENCE

MRS. A. M. CAMPBELL'S PRIVATE ESTABLISHMENT FOR ACTIVE AND PASSIVE GYMNASTICS, MASSAGE, ELECTRICITY, AND MINERAL BATHS.

NAUHEIM, 58, Leinster Square. Kensington Gardens, W. Telegrams—"NAUHEIM, LONDON."

WEST MALLING PLACE, KENT, for MENTAL and NERVOUS DISORDERS. An easy distance from LONDON, between SEVENOAKS and MAIDSTONE. A commodious country residence, beautifully situated in a retired position, on its own ample grounds, in one of the healthiest localities in England. It is old-established, reconstructed. Most modern nursing and other requirements; HOME-LIKE. Dr. ADAM, Resident Physician, formerly Physician-Superintendent Crichton Royal and Metropolitan Public Institutions. London address, 64, Welbeck-st, Cavendish-sq., W. (Wednesday mornings). Voluntary boarders received. Teleg. ad: "Adam, West Malling."

TREATMENT OF INEBRIETY.

KINGSWOOD PARK, near BRISTOL.

"LICENSED UNDER THE INEBRIATES ACTS."

Resident Medical Superintendent—C. E. MACNAMARA, D.P.H., L.R.C.P., and L.R.C.S.I.

A Home for the reception of Gentlemen suffering from the abuse of Alcohol, Opium, or other Drugs, under the Acts or privately. The house is situated nearly 400 ft. above sea-level, between Clifton and Bath.

For particulars apply to **T. WALTER BRIMACOMBE (Licensee).**

HAYDOCK LODGE, NEWTON-LE-WILLOWS, LANCASHIRE,



Is charmingly situated in a healthy and retired neighbourhood, midway between Liverpool and Manchester, about two miles from Newton-le-Willows Station on the London and North-Western Railway. It is a comfortably furnished country mansion, especially adapted for the care and treatment of persons of unsound mind. Besides the use of the general sitting-rooms, &c., patients of both sexes can have private apartments and special attendants at moderate rates of payment.

Information as to terms, &c., may obtained on application to the Resident Medical Superintendent — CHARLES STREET, L.R.C.P. Lond., M.R.C.S. Eng., who attends at 51A, Rodney-st. Liverpool, every Thursday, from

Telegrams: Street, Ashton-in-Makerfield Telephone (National) No. 3, Ashton-in-Makerfield.

Visiting Physician: ALEXANDER DAVIDSON, M.D., F.R.C.P., Physician to the Liverpool Royal Infirmary.

The Women's Temperance Home at Sydenham receives a limited number of LADIES desirous of overcoming habits of Intemperance. Terms moderate, varying according to requirements.—For particulars, apply The Matron, The Tor, Silverdale, Sydenham.

OVERDALE ASYLUM

(Late CLIFTON HALL), WHITEFIELD, LANCASHIRE.

Licensed for a limited number of PATIENTS of the Upper and Middle Classes. It is beautifully situated in a retired neighbourhood, and has all the comforts of home life.—For terms, &c., apply to J. HOLMES, M.D., Resident Medical Superintendent.

ACCOUCHEMENT.

Ladies received in the houses of a Medical Man—one house in London, the other in a quiet country village, within one hour of Town—whose wife is a skilled and practised Obstetrician.—For terms, &c., address M. O. S., care of Messrs. Gale & Co., 15, Bouverie-street, London, E.C.

NORTHWOODS HOUSE,

Winterbourne, near Bristol.

PRIVATE ASYLUM for Ladies and Gentlemen, situated in a large Park in a healthy and picturesque locality easily accessible by rail viâ Bristol, Patchway, or Yate Stations.

Voluntary Boarders can now be received. For further information, see "Medical Directory," page 2059; and for terms, &c., apply to Dr. EAGER, Resident Physician.

St. Leonards-on-Sea, 80, Warrior-square.—HOME for Paying Patients, Medical, Surgical, Massage, Weir Mitchell, Electricity, Dr. Schott's Nauheim movements and baths under medical supervision. Monthly, slight mental, chronic, or convalescents received.

Terms from 2 guineas weekly. Sanitary certificate.—Superintendent, Mrs. F. Reynolds, C.M.L.O.S.

A Medical Man of lengthened and very successful experience in the treatment of Mental Disease and Hysteria has a vacancy for a RESIDENT PATIENT. The house is beautifully situated in the Midland counties, and within a convenient distance of London. The domestic arrangements are liberal and refined. References to relatives of former patients.—Address, M. B. G., THE LANCET Office, 423, Strand, W.C.

TREATMENT OF INEBRIETY AND ABUSE OF DRUGS.

HIGH SHOT HOUSE,

ST. MARGARETS, TWICKENHAM.

For Gentlemen under the Acts and Privately.

For terms, &c., apply to
F. H. BROMHEAD, M.B. Camb., M.R.C.S. Eng., &c.,
Resident Medical Superintendent.

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Brighton.—Establishment for those requiring Medical, Surgical, Nursing care, or Change and Rest after Illness. Medical Baths, Massage, Electricity. Resident and Visiting Doctors. Patients' own doctors can attend if desired; also friends can remain if wished. House is large, close to sea, overlooking ornamental gardens. Every attention to comfort, nursing, and diet. Terms from £2 2s.—Apply, Dr. Pendleton, Sellwood Lodge, Brighton.

INEBRIETY AND ABUSE OF DRUGS.

"Northlands," 10 and 12, North- street, Old Wandsworth, S.W.—HOME for LADIES, under the Act or privately. A few Patients received, requiring care or rest. No undue restrictions. Established 30 years. Large garden. Near several commons. On L. & S.W.R. Medical supervision. Moderate terms. Mrs. Blackmore.

Hampstead.—A Student can be received into the house of a medical man (M.S., M.D. Lond.) (where is one other). Supervision of studies and coaching if required. —Address, No. 1406, THE LANCET Office, 423, Strand, W.C.

Wanted, care of Lady requiring slight supervision (Mental or otherwise). Every care and attention. Or one with an attendant. Good home in private house, pretty country town in Herts. twenty-eight miles from London, G.N.R. main line. Good references. Terms £2 2s.—Address, No. 1421, THE LANCET Office, 423, Strand, W.C.

A Home wanted near London in a married Medical Man's family, experienced in slightly mental cases, for a Lady aged forty-three; terms must be moderate.—Mrs. W., Hestercombe, The Beeches, Slough.

TREATMENT OF INEBRIETY.

DALRYMPLE HOME,

RICKMANSWORTH, HERTS.

For Gentlemen under the Act and privately. Terms—2 to 5 guineas. Apply to the Medical Superintendent.

CLIFTON GRAND SPA HYDRO., BRISTOL.

Near Suspension Bridge, Channel Steamers, and Downs.

Physician: C. J. WHITBY, M.D. Cantab.

Splendid Turkish, Russian, and Hydropathic Baths. Greville's New Local Electric Heat Baths. Weir-Mitchell and Open-air Treatments. Address, MANAGER. Telegrams: "SPA, BRISTOL."

WONFORD HOUSE.

HOSPITAL FOR THE INSANE, near EXETER.

A REGISTERED HOSPITAL FOR THE UPPER AND MIDDLE CLASSES.

This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter.

There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea air and a mild salubrious climate.

Private Rooms and Special Attendants provided, if required.

Voluntary Patients or Boarders also received without certificates.

For terms, &c., apply to

P. MAURY DEAS, M.B., M.S. Lond.,
Resident Medical Superintendent.

District Nurse required immediately for Country District, West coast of Cumberland. Salary £1 per week.—Apply for all particulars, and state qualifications and certificates, to Miss Barratt, Carleton Hall, Holmrook, Cumberland.

To Nurses.—Wanted, at the PARK FEVER HOSPITAL, Hither-green, Lewisham, S.E. (under the Metropolitan Asylums Board), CHARGE NURSES, who must be at least twenty-five years of age and possess a certificate of three years' training. Salary £36, rising to £40, with board, lodging, washing, and uniform.

FIRST ASSISTANT NURSES, who must be at least twenty-three years of age, and possess evidence of having received one year's training. Salary £24, rising to £28, with board, lodging, washing, and uniform.

Apply to the Matron at the Hospital, either personally (10 to 1) or by letter, with copies of testimonials.

28th December, 1898.

Queen Charlotte's Lying-in Hos- PITAL, Marylebone-road, N.W.—SISTER required for day duty and night duty alternately. Must have been trained in general nursing and be a certificated midwife and monthly nurse. Salary to commence at £35 per annum, with board, residence, in-door uniform, and washing.—Applications, stating age, previous experience, &c., accompanied by copies (not originals) of not more than six testimonials, will be received by the Secretary up to Tuesday, January 10th.

By order.

December 27th, 1898. ARTHUR WATTS, Secretary.

London Society for Promoting CHRISTIANITY AMONGST THE JEWS.—Wanted immediately for the Mission Hospital, Jerusalem, two fully trained NURSES of earnest Christian character.—Apply, to the Secretary, 16, Lincoln's Inn-fields, W.C.

County Borough of Huddersfield.— Wanted, a MATRON for the new HUDDERSFIELD SANATORIUM. Must be a fully trained Nurse, between thirty and forty-five years of age, experienced in housekeeping, and must have held similar position. Salary £70 per annum, with board, lodging, washing, and uniform. Further particulars, together with forms of application, can be obtained from the Medical Officer of Health. Applications, stating age and experience, with copies (only) of recent testimonials, to be sent to the undersigned not later than January 2nd, 1899, endorsed on the outside "Application for Matron."

Town Hall, Huddersfield. F. C. LLOYD, Town Clerk.

Hospital and Dispensary, Newark- upon-Trent.—HOUSE SURGEON (unmarried) wanted. To commence duties about the second week in January, 1899. Salary £80 per annum, with board and lodging in the Hospital. Candidates must be registered. Applications to be made on printed forms obtainable from the Secretary. Applications must be received by the end of December, 1898. HY. CRAMPTON, Secretary.

Royal United Hospital, Bath.—The office of HOUSE SURGEON will be vacant shortly. Candidates must be M.R.C.S.Eng. and registered. Salary at the rate of £60 per annum, with board, lodging, and washing. The appointment will be until 1st October, 1899. Applications must be forwarded to the undersigned on or before Wednesday, January 5th.

J. M. SHEPPARD, Secretary.

Royal Southern Hospital, Liverpool. Wanted, RESIDENT JUNIOR HOUSE SURGEON. Salary 60 guineas per annum.—Applications and testimonials to "Chairman of Medical Board," not later than Jan. 9th.

Norfolk and Norwich Hospital, Norwich.—ASSISTANT to HOUSE SURGEON required. Must possess a double qualification. Appointment for six months. Board, lodging, and washing provided. No salary.

Send application, with testimonials, to the undersigned, before Tuesday, the 10th of January, 1899.

December 21st, 1898. POOLE GABBETT, Secretary.

Medical Officer and Public Vacci- NATOR wanted for the Northern Division of SOUTH UIST PARISH. Salary £77 10s. and private practice. For particulars apply to Thomas Wilson, Solicitor, Lochmaddy, Clerk.

Govan District Asylum.—Wanted, a JUNIOR ASSISTANT MEDICAL OFFICER to enter on his duties about the beginning of February. Salary £100 a year, with board and residence.—Applications to the Medical Superintendent, Hawkhead Asylum, Paisley, by the 5th January next.

University of St. Andrews.—The University Court of St. Andrews will, at a meeting to be held on 24th January prox., appoint, for a period of three years as from 1st January, 1899, an additional EXAMINER for Graduation in the subject of Materia Medica.

Further information may be obtained from Mr. C. S. Grace, W.S., Secretary of the University Court, with whom applications, with testimonials, may be lodged until 14th prox.

St. Andrews, December, 1898.

Sunderland Infirmary.—The Com- mittee at their meeting on January 12th will elect a HOUSE PHYSICIAN approved by the Medical Board. Candidates must possess double qualifications (registered). The duties of the office are chiefly at the Medical side of the Infirmary, but the selected candidate will be expected to assist the House Surgeon in some of his work. He must be prepared to enter upon his duties February 10th. He will give or receive two months' notice on relinquishing office. The salary is £80, rising £10 annually to £100, with board and residence. Applications, with testimonials, to be sent to the Chairman of the Medical Board on or before January 5th, 1899.

Further information may be obtained by application to the undersigned.

Dec. 19th, 1898. THOS. ROBINSON, Secretary.

Derbyshire Royal Infirmary, Derby. The Elective Committee is prepared to receive applications for the post of ASSISTANT HOUSE SURGEON.

In addition to the ordinary duties the Assistant House Surgeon will be required to act as the Anæsthetist to the Hospital.

Candidates must be qualified and registered under the Medical Acts.

The appointment will be for twelve months, at a salary of £40 per annum, with board, residence, and washing.

Applications, with copies of not more than five testimonials, to be sent to me by noon on Wednesday, 18th Jan., 1899.

Duties to commence on 1st Feb., 1899.

By order,

WALTER G. CARNT, Secretary.

Royal Infirmary, Derby, 19th Dec., 1898.

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London Fever Hospital, Islington, N.—The office of ASSISTANT PHYSICIAN is vacant.

Candidates, who must be Members or Fellows of the Royal College of Physicians, are invited to send in their applications to the Secretary, at the Hospital, on or before 10th January, 1899.

W. CHRISTIE (Major), Secretary.

Western Ophthalmic Hospital.—Applications are invited for the post of ASSISTANT SURGEON. Applications, with copies of testimonials, to be sent to the Secretary, 163, Marylebone-road, W., not later than January 4th, 1899.

City of London Hospital for Diseases OF THE CHEST, Victoria Park, E.—Applications, with testimonials, for the post of RESIDENT MEDICAL OFFICER are invited to be sent to the Secretary at the Hospital not later than January 6th, next. Salary £100 per annum, with board, &c.

Candidates must be doubly qualified.

Information as to duties, &c., can be obtained on application to the Secretary by letter or personally.

The successful Candidate will be required to enter upon his duties on or about February 1st.

HENRY T. DUDLEY RYDER, Secretary.

City of London Hospital for Diseases of the CHEST, Victoria-park, E.—Applications, with testimonials, for the post of SECOND HOUSE PHYSICIAN are invited to be sent to the Secretary not later than the 6th January. The appointment will be for six months.

Candidates must be qualified. Board and residence provided, and salary at the rate of £30 per annum. Information as to duties, &c., can be obtained on application to Secretary by letter or personally.

HENRY T. DUDLEY RYDER, Secretary.

St. Luke's Hospital, London, E.C.—There is a vacancy for a CLINICAL ASSISTANT. The gentleman to be appointed must be duly qualified to practise and registered. The appointment is for six months, with board and residence.

Candidates are requested to send in their applications, with copies of testimonials, to the undersigned at the Hospital, Old-street, London.

By order.

W. H. BAIRD, Secretary.

Hospital for Diseases of the Throat, Golden-square, W.—A RESIDENT MEDICAL OFFICER is required for the above Hospital. Salary £50 per annum, with board, lodging, and washing.

Candidates must be registered Medical Practitioners.

Applications to be submitted, with copies of testimonials, to the undersigned, not later than January 7th, 1899.

W. HOLT, Secy-Supt.

Pathologist. — National Hospital for the PARALYSED and EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury. — The Board of Management invite applications from Gentlemen duly qualified for this appointment. Applicants must be Fellows or Members of the Royal College of Physicians, London, or undertake to become so within six months of appointment. An annual honorarium of 50 guineas is attached to the office.

Particulars of the duties may be obtained of the undersigned, to whom applications should be addressed on or before January 9th, 1899.

B. BURFORD RAWLINGS, Secretary and Director.

House Physician.—National Hospital for the PARALYSED and EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—A vacancy has been created by the resignation of Dr. Purves Stewart, Senior House Physician. The Board of Management invite applications from gentlemen possessed of a double qualification. The present Junior House Physician is a candidate for the Senior post, and applicants should state whether they are prepared to accept either appointment. The salary of the Senior House Physician is £100 and that of the Junior £50 per annum, with board and apartments. Applications with copies of recent testimonials should be sent to the undersigned on or before Jan. 9th, 1899.

B. BURFORD RAWLINGS,
Secretary and Director.

Tynemouth Victoria Jubilee Infirmary, Spring-gardens, North Shields.—Appointment of RESIDENT HOUSE SURGEON.—The General Committee of the above Institution invite applications for the appointment of Resident House Surgeon at a salary of £120 per annum, of which £55 per year will be required for board, lodgings, and washing. The appointment will be terminable by one month's notice on either side, and the successful candidate will be required to conform to the rules and by-laws of the Institution, copies of which can be obtained from the undersigned.

Candidates must be duly registered under the Medical Acts, and be qualified to practise both Medicine and Surgery. The Medical Officer appointed will be required to enter into a bond not to practise within three miles of the Borough within two years of vacating his office.—Applications, stating age, accompanied by legal proof of qualifications and copies of testimonials, which latter will not be returned, to be sent to me not later than the 11th January next.

By order,

JOHN W. MEADOWS, Secretary.

43, Howard-street, North Shields, Dec. 22nd, 1898.

St. Thomas's Hospital.—Vacancy.—The appointment of an ASSISTANT SURGEON. Candidates must be Fellows of the Royal College of Surgeons of England.

Applications with testimonials should be forwarded to Mr. E. M. Harry, Treasurer's Clerk, at the Counting House, Westminster Bridge, on or before Saturday, Jan. 7th, 1899, from whom all necessary information may be obtained.

Ancoats Hospital, Manchester.—Wanted, RESIDENT JUNIOR HOUSE SURGEON, to attend home-patients and accidents. Salary £50, with board and washing.

Candidates must be duly qualified, and on the Medical Register.

Address, stating age, with copies of testimonials.

SAML. BARON, Secretary.

Wanted, in a large Metropolitan Private Asylum, an ASSISTANT MEDICAL OFFICER, duly registered, unmarried, and with some lunacy experience.

Salary £150 per annum, with board, apartments, &c.

Applications, with copies of testimonials, age, &c., to be sent to Peckham House, Peckham.

Royal Lancaster Infirmary. — CERTIFICATED DISPENSER required at once. Salary £80 per annum. Application to be made on form to be obtained from the Hon. Sec., Royal Lancaster Infirmary, Lancaster.

County Asylum, Rainhill, near Liverpool.—ASSISTANT MEDICAL OFFICER wanted. Candidates must be unmarried and not more than thirty years of age. Salary commences at £100 per annum, with prospect of increase to £250, together with furnished apartments, board, attendance and washing.—Applications, with testimonials and full particulars, to be sent to the Medical Superintendent as soon as possible.

City Asylum, Birmingham.—There is a Vacancy in this Asylum for a JUNIOR ASSISTANT MEDICAL OFFICER. Salary £100 a year, with board, lodging, &c. Candidates must be unmarried. The appointment will be made for not more than a year, but may be renewable. Applications, stating age, qualifications, and accompanied by copies of not more than three testimonials, to be sent to the Medical Superintendent.

Somerset and Bath Lunatic Asylum, COTFORD, TAUNTON.—Wanted, an ASSISTANT MEDICAL OFFICER, not over 30 years of age, single, doubly qualified and registered. Salary, £120 per annum, rising by annual instalments of £10 to £ 50, with furnished apartments, board, fuel, lighting, and washing. Appointment for 5 years, renewable at the end of that time by mutual arrangement and terminable at any time by a month's notice on either side.

Application with testimonials to be addressed to the Medical Superintendent on or before Jan. 7th, 1899

General Hospital, Nottingham.—Wanted, a HOUSE PHYSICIAN. Salary £100, rising £10 a year to £120, with board, lodging, and washing. He will be elected for two years, and is eligible for re-election for one similar term.

Applications, stating age, with testimonials, to be sent in to the Secretary not later than 31st January, 1899.

By order. E. M. KERLY, Secretary.

County Hospital, Ryde.—Wanted, a HOUSE SURGEON. Salary £50 per annum, with board, lodging, &c. Double qualification, duly registered.—Applications, with not more than three recent testimonials, to be sent in by Jan. 1st addressed to House Surgeon. Successful candidate to enter upon his duties, Jan. 15th, 1899.

The elected candidate will be required to give a course of instruction to the nurses, for which a fee of ten guineas is given.

Birmingham and Midland Ear and THROAT HOSPITAL, Edmund-street, Birmingham (30 beds).—HOUSE SURGEON (qualified) wanted. Appointment tenable to 30th April, 1899, with re-appointment for a further six months, subject to the approval of the Medical Committee. Salary at the rate of £42 per annum, with board, lodging, and washing. Applications, testimonials, and certificates of registration to be forwarded to the undersigned on or before 14th January, 1899.

The elected candidate will be required to commence his duties on 21st January, 1899. By order,

23rd December, 1898. S. G. GREW Secretary.

Township of Toxteth Park.—Resident MEDICAL OFFICER.—The Guardians of the Poor of this Township are desirous of appointing a Gentleman to fill the office of SENIOR ASSISTANT MEDICAL OFFICER of the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments. No extra fees nor fees under the lunacy statutes will be allowed, but all drugs and appliances will be found by the Guardians. A deduction of 2 per cent. will be made under the Superannuation Act on the salary and money value of the emoluments, which are fixed at £88 per annum. Candidates must be registered and possess a double qualification, and should send their applications, stating age, qualification, previous experience, and enclosing copies of testimonials, to me marked "Assistant Medical Officer," not later than the 11th January next.

J. MOULDING,
Clerk to the Guardians.

15, High-park-street, Liverpool.

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Kensington Dispensary.—Resident MEDICAL OFFICER.—This post being about to become vacant, Registered Medical Practitioners, unmarried, under thirty-five years of age and qualified to practise in Medicine and Surgery, are invited to send testimonials of qualification and character to the Honorary Secretary by the 9th of January next.

Notice will be given to selected candidates when they will be required to attend before the Committee.

The gentleman appointed must devote his whole time to the duties of his office.

Salary £125 per annum, with furnished apartments, coals, gas and attendance.

Further particulars may be obtained by applying to the Honorary Secretary, T. W. O. WHEELER, 21, Lower Phillimore-place, Kensington, W.

The Finsbury Dispensary, Brewer-street, Goswell-road, E.C.—A vacancy has occurred in the office of RESIDENT MEDICAL OFFICER.

The appointment is an annual one, but a suitable officer would probably be re-elected for three successive years.

Candidates must be registered medical practitioners.

A salary of £100 per annum will be paid and a furnished residence provided in the institution, with attendance, coals, and gas.

Further information may be obtained by letter addressed to the Secretary at the Dispensary.

Applications, accompanied by copies of testimonials, to be sent in no later than the 7th January, 1899.

The successful candidate will be required to enter upon his duties on the 21st January, 1899.

W. H. PRATT, Secretary.

Bedford & Co., Auctioneers and Surveyors, 10, Wigmore-street, Cavendish-square, W. (established 1860), have on their Books most of the principal Houses and Consulting-rooms to Let and for Sale in the Cavendish-square, Grosvenor-square, Portman-square, and leading Medical Districts. Properties registered free of charge.

Elliott, Son & Boyton, 6, Vere-street, Cavendish-sq., are the best local AGENTS for Houses and Consulting Rooms in Harley, Wimpole, Welbeck, Queen Anne, and other leading streets off Cavendish and Portman-squares. Lists on application. Their old-established connexion affords them special knowledge and much exclusive information concerning properties in the neighbourhood.

To Doctors.—For immediate Disposal, DOCTOR'S SURGERY. Quite new. Length 22 ft., breadth 11 ft., height 8½ ft.; divided into two rooms.—For full particulars, apply Bowden & Bowden, Accountants and Estate Agents, Princess-street, Morley.

For Consulting-rooms and Houses suitable to the Medical Profession in Harley-street, Wimpole-street, New Cavendish-street, Brook-street, and Grosvenor-street, apply, Samuel B. Clark & Son, 8, New Cavendish-street, W., and 10, Hanover-square, W.

To Doctors and Dentists. — For Sale, with possession, near Norwood, convenient corner RESIDENCE containing 9 rooms, occupying a commanding corner position in a good neighbourhood close to railway-station. Lease over 50 years. Low price, £400.—Write or call, M.A., 79, Thicket-road, Anerley.

Required, by a Medical Man, a CONSULTING ROOM and Use of Waiting Room, on Ground Floor, between Oxford-street and Piccadilly.—Address, A. X., care of Willing's Advertising Offices, 162, Piccadilly, W.

Splendid chance offers to convert CHEMIST'S SHOP into open SURGERY. Crowding working-class neighbourhood, W. Good house, low rent, trifling opposition. Apply, Edwards, Chemist, Devonshire-road, Chiswick.

Messrs. H. Wilson & Son,
26, CHARLES STREET, ST. JAMES'S SQUARE, S.W.
(Established Half a Century.)
PRACTICES and PARTNERSHIPS to offer, £400 to £3000 per annum.
MEDICAL VACANCIES.—Gentlemen wanted for Town and Country.

ADAMS & PARKES (B.A.Cantab.),
UNIVERSITIES AND GENERAL MEDICAL BUREAU,
8, JOHN STREET, ADELPHI, STRAND, W.C.

This Agency is conducted by CAMBRIDGE GRADUATES. Highest references and testimonials. PARTNERSHIPS and Transfer of PRACTICES speedily arranged. LOCUM TENENS or ASSISTANTS; a large number of reliable, well-qualified men always available.

Open to all Medical Men. No CHARGE to PURCHASERS or for ENQUIRIES.

Every application receives the immediate personal attention of the principals.

All communications treated as confidential.

List of terms (which are moderate) and references gratis on application.

Telegraphic Address: "Interjoin, London."

MEDICAL PARTNERSHIP AND CONVEYANCING AGENCY,
1, ADAM-STREET, ADELPHI, W.C.

The SALE of PRACTICES and PARTNERSHIPS NEGOTIATED.

Trustworthy LOCUM TENENS and ASSISTANTS can be had at a few hours' notice.

N.B.—No charge made to Purchasers.

Notice.—Mr. J. C. Needes, with an experience of over a quarter of a century, is in an exceptional position to give intending purchasers independent information concerning most PRACTICES and PARTNERSHIPS. Those investments in the following List marked with an asterisk are well known to him, having been purchased through his Office by the present Incumbents years ago, and in many other cases an introduction can be given to gentlemen who have taken charge of the Practices during the absence of the Incumbents.

WEST.—A PRACTICE of many years' standing situated in a prosperous Seaport Town, over 20,000 inhabitants, is for negotiation. Held by vendor twenty years. The income is between £800 and £1000 per annum, including valuable transferable appointments. Practice easily worked with one horse. A good introduction given.

SOUTH.—Easily-worked PRACTICE, about £500 a year, in a small Country Town within seventy miles of London. Railway station in place. Capable of increase. Commodious house with land attached, held at a moderate rental. Further particulars on application.

CASH PRACTICE without residence. Established twenty years. Receipts over £12 per week. An assistant is kept and the incumbent resides at a distance. The Practice which is steadily increasing, is situated on the borders of the E.C. and N. postal districts.

WEST LONDON.—A Lucrative PRACTICE (held nearly twenty years by the present incumbent), yielding £1400 per annum, of which about £18 per week is received in ready cash at a separate surgery. The private house (rent £70) is situated in a residential locality and is connected with the surgery by telephone. Premium £1550.

PARTNERSHIP, LONDON.—The third share of a good-class cash PRACTICE in the S.E. District can be secured by an active gentleman. Receipts £2000 per annum. Dispenser and carriage kept. About 150 cases of midwifery yearly at 1 to 2 guineas. The ingoing partner's income will be guaranteed.

COLONIAL.—In a residential suburb of one of the principal cities in Australia a Non-dispensing PRACTICE averaging for the last three years over £1200 per annum, including appointments £350. Held by vendor twelve years. The connexion (which includes the best people in the place) is principally confined to a radius of two miles. The opposition is not formidable. Detached house (half a mile from the sea and standing in its own grounds), containing thirteen rooms, bath-room, &c.; gas and water laid on; rent £110 a year or can be purchased if wished, as it is vendor's freehold. The climate is cool and healthy. Educational advantages in the place for boys and girls. Premium £800. A good introduction and London references given.

SOUTH LONDON.—A very old-established PRACTICE yielding upwards of £500 per annum. Clubs, &c., £80. Horse no kept. Visits 2s. 6d. About thirty cases of Midwifery early. Commodious corner Residence (3 sitting-rooms, 5 bedrooms, bath-room, &c.), with garden attached. Rent £60. Premium £650, to include drugs. An efficient introduction.

OVER £1500 A YEAR.—SOUTH.—The Succession to a Good-class PRACTICE in a Cathedral City in the South of England can be negotiated for by a Gentleman of age and experience. Midwifery has been refused. Large family residence; rent under £100 per annum. Premium £2000.

SEASIDE TOWN.—SOUTH.—An increasing middle-class PRACTICE, the cash receipts of which last year were between £700 and £800. 30 to 40 cases of Midwifery yearly at one guinea upwards. Neither horse nor assistant is kept. House rent moderate. Premium £350.

Apply to J. C. NEEDES, 1, Adam-street, Adelphi, W.C.

Required. — A Gentleman with private means is prepared to pay a liberal price for a Country PRACTICE in the West of England, where there are opportunities for hunting and sport generally. Income from £400 to £800 a year. Good house essential. Particulars will be received in confidence by J. C. Needes, 1, Adam-street, Adelphi, W.C.

Locum Tenens and Temporary ASSISTANTS.—Practitioners requiring the above can immediately obtain thoroughly reliable qualified Gentlemen upon application to 1, Adam-street, Adelphi, W.C. Every Gentleman engaged by the Office in either of the above capacities is personally known to Mr. J. C. Needes. An office fee of half a guinea is payable by the Principal.

Telegraphic Address, "Acquirement, London."

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THE SCHOLASTIC, CLERICAL, & MEDICAL ASSOCIATION, LTD.

MEDICAL DEPARTMENT.

This Association was established in 1889 as a Limited Liability Company under the direction of professional men, its object being the creation of a RESPONSIBLE and THOROUGHLY TRUSTWORTHY Agency. The Medical Department has met with so great success that it has been found necessary for one of the Managing Directors (Mr. G. B. Stocker) to devote his whole attention thereto; and he has the assistance of an experienced Medical Accountant and a large staff of clerks. Further, a Board composed entirely of gentlemen of high standing in the Medical Profession has been appointed, and to them matters of dispute and complaint are referred.

The Association undertakes the SALE of PRACTICES and PARTNERSHIPS; the Introduction of LOCUM TENENS and ASSISTANTS; MEDICAL ACCOUNTANCY (by a duly qualified Medical Accountant); INVESTIGATION and VALUATION of Practices, &c.; POSTING BOOKS and sending out Bills, &c., &c.

A Pamphlet relating to the Medical Department, with the names of the "Directors" and "The Medical Advising Board," and terms, will be sent on application to—MR. G. B. STOCKER,* MANAGING DIRECTOR, 8, LANCASTER PLACE, STRAND, W.C.

Telegraphic Address—"Triform, London." Telephone No. 1854 (Gerrard).

FOR SALE.

(1) FOR TRANSFER.—A PRACTICE in a beautiful part of the country (seaside). Charming and agreeable climate. Receipts £700 (including appointment of about £50 just obtained), with scope for considerable increase. Very attractive house and grounds. Educational facilities. Good golf and other sport. Six months' introduction. Premium £1400.

(2) YORKSHIRE.—WEST RIDING.—An old-established PRACTICE in a rapidly increasing Town. Cash receipts average £867 per annum. Visiting fees 2s. 6d. upwards. Very good house, with stabling and garden. Rent £117. Sport of all kinds. Six months' introduction. Premium £1200. The Practice can be worked by hiring only.

(3) SMALL PRIVATE ASYLUM. Within fifty miles of London. Premium £1000.

(4) HOME COUNTIES.—Old-established PRACTICE in a residential town, within easy access of London, estimated to be worth about £600 per annum. Visiting fees, 3s. 6d. to 10s. 6d. Would take a partner to live in the house for three years or so, and succeed to the whole.

(5) YORKS, WEST RIDING.—Old-established country PRACTICE of about £1500 per annum. Two horses. Good house, with tennis lawn and stabling. Rent £100. Twelve months' introduction. Premium £2250.

(6) PARTNERSHIP in a middle and working-class Practice in a manufacturing town in the West Riding of Yorkshire. Cash receipts for 1897 £1148, including appointments of £150. Visiting fees 3s. to 10s. 6d. A one-third or a one-fourth share would be sold with option of increasing the share after five years.

(7) LONDON, N.—RESIDENTIAL SUBURB.—Good middle-class PRACTICE of close on £500, including transferable appointments worth £245. Usual visiting fees 3s. 6d. to 7s. Good house; rent £65. Premium £630.

(8) LANCS.—Country town PRACTICE. Cash receipts over £600, including appointments (clubs, &c.), of £260. Visiting fees, 3s. 6d. Good house and stabling. Rent £45. Premium £750, to include two carriages, horse, drugs, &c.

(9) LONDON, S.W.—A good-class PRACTICE in a first-rate Residential Suburb. Cash receipts for twelve months ending Oct. 23rd, 1898, £405. Very attractive house with very good garden and stabling; rent £130. Premium £500. The Practice would only suit a man with private income.

(10) SOUTH WEST OF ENGLAND.—Small Seaside Town. Cash receipts for last three years have averaged about £650 including appointments. Exceptionally good house overlooking the sea, which must be purchased. Price £4000 (£1500 could remain on mortgage). Premium for goodwill £600.

(11) LONDON, S.E. (about 2 miles from Charing-cross) —Old-established PRACTICE. Cash receipts average £572 per annum. Midwifery fees £1 1s. to £2 2s. Very good house with garden; rent £60. Premium £650.

(12) LANCS.—MANUFACTURING TOWN.—A PRACTICE (largely ready-money). Cash receipts for 1897 £590, including appointments of about £110. Large detached house with stabling and large garden. Rent, with stabling let off, £32 10s. No carriage. Premium £600.

(13) CAPE COLONY.—Within 24 miles of the sea. Cash receipts for 1897 £731. Two horses. Excellent climate. Premium only £200 cash.

(14) MIDLANDS.—Large Manufacturing Town. Cash PRACTICE averaging £837 per annum. No appointments. Visiting fees 1s. 6d. to 5s. One horse. Rent £40.

15) AUSTRALIA.—Small town within six hours by rail of large centre. Cash receipts £907, including transferable appointments, £550. Mostly prescribing. No long distances. Price £550.

16) BIRMINGHAM.—Middle and working class. Cash receipts average £642 per annum. Midwifery fees 15s. and £1 1s.; about 50 cases. Well-situated house. Rent £60. Great scope for increase. Premium £500.

(17) FAVOURITE TOWN, within 25 miles of London.—PARTNERSHIP (one Half share), with view to succession after three years, in a practice of over £500 per annum, including appointments of £300. Rent of house £81. Would only suit a man with private income.

FOR SALE (*continued*).

(18) SOUTH MIDLANDS.—Unopposed Country PRACTICE of over £800 per annum, including appointments of £180. Good house, with stabling and large garden. Rent £70. Good hunting. Premium £1000.

(19) SOUTH AFRICA.—PARTNERSHIP in a large Town in a Non-dispensing PRACTICE, at present doing at the rate of £1000 per annum. Fees 2s. 6d. to 7s. 6d. A One-half Share would be sold for £650, or the whole practice for £1250.

(20) NORTH OF ENGLAND.—PRACTICE in a town of about 40,000 population near a large city. Cash receipts for 1897 £455. Visiting fees 2s. 6d. to 7s. 6d. No horse. Good house; rent £34. Premium £500.

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Wanted, Assistant (in-door). £108 a year. Colliery district.—T. W. Bevan, Nantyglo, Mon.

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Wanted, a qualified in-door Assist- ANT, to Visit, Dispense, and attend Midwifery.—Apply, stating age, salary required, recent references, and enclose carte (to be returned), to G. T. May, Surgeon, Well-street, Tunstall, Staffs.

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Wanted, out-door Assistant, in good Country Practice, to Visit, Dispense, and attend Midwifery. Salary £150. Able to ride, drive, and cycle.—Apply to H. Abdy Collins, The Chantry, Saxmundham, Suffolk.

Wanted, qualified Assistant, to Visit, attend Midwifery, and Dispense. Able to ride and cycle.—Reply, stating age, weight, qualifications, and salary required, &c., Atkinson, Long Clawson, Melton Mowbray.

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Wanted, in-door Assistant.— Address, stating terms, qualifications, and experience, to No. 1423, THE LANCET Office, 423, Strand, W.C.

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Wanted, qualified out-door Assist- ANT single, for colliery practice in Co. Durham. Usual bond. Salary £130 a year, with rooms and attendance.—Address, giving references, to No. 1364, THE LANCET Office, 423, Strand, W.C.

Wanted, early in the year, a Dis- PENSER and DRESSER, in-door. Light work, ample time for reading, and a comfortable home.—Apply, stating age, references, and classes attended, to Dr. Lyttle, Cilfynydd, Pontypridd, Glam.

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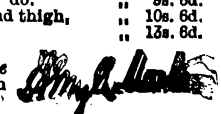
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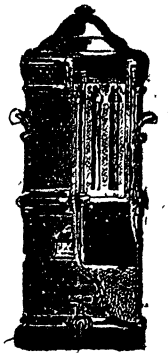
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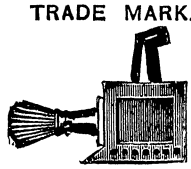
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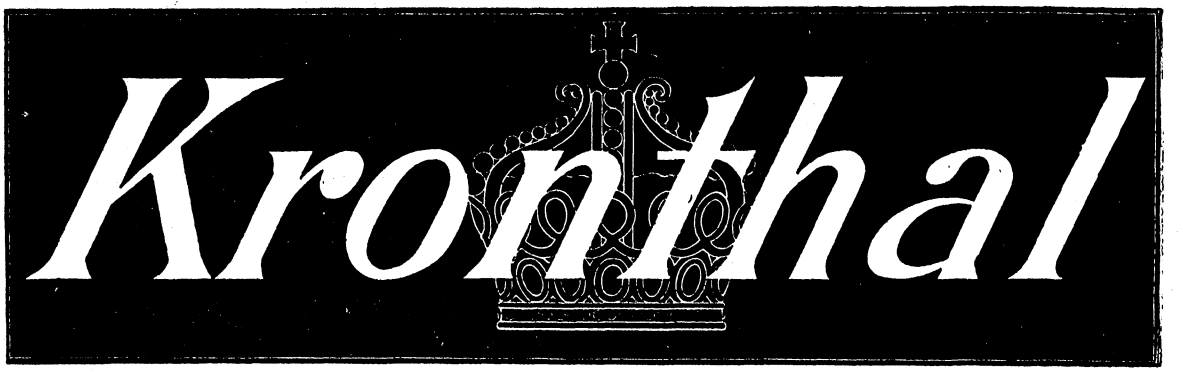
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